AN ANALYSIS OF WHY SAPPI LIMITED HAD TO ISSUE FOREIGN DENOMINATED DEBT

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MINOR DISSERTATION IN FINANCIAL MANAGEMENT (FTX5029W)

Submitted to the Faculty of Commerce of the University of Cape Town in partial fulfilment of the requirements for the degree of

Masters in Commerce in Financial and Risk Management

February 2016
Cape Town, South Africa

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ABSTRACT

SAPPI Limited ("SAPPI") is a company that was established in South Africa in the 1930's and has grown into a global player in the paper and pulp industry, as well as the chemical cellulose industry. Historical financing decisions made in the growth phases of the company's life cycle left it with the need to re-finance debt obligations payable in the early 2010's. In order to meet these obligations, four callable bonds with high coupon rates denominated in Euro and US Dollar were issued in 2011 and 2012 below investment grade.

This study examines the cost at which these high yield bonds were issued by SAPPI and discusses the potential reasoning behind the decisions made by SAPPI in the process to obtain further financing. Financing solutions within the South African market are discussed with the conclusion that the South African listed high yield corporate bond market was not adequate for SAPPI, given its credit rating being below investment grade and the value of funding required. In addition, SAPPI's exposure to foreign currencies through global operations made the Euro and US Dollar denominated bond issues favourable to the business.

To illustrate the cost of the bonds issued in both Euro and US Dollar, the second part of this study consists of an analysis of the option-adjusted spreads at which these bonds were issued. Our analysis involved taking into account the probability of the call provisions being exercised by SAPPI at the date of issue through a detailed application of the option-adjusted spread methodology and the use of a recombining binomial lattice. Through a quantitative example of the process followed and a discussion of the spreads determined, we indicate the true cost at which finance was obtained by SAPPI for each bond issued. A brief discussion on the hedging decisions taken by SAPPI management on the issuance of the debt has also been included. Furthermore, the retrospective performance of the foreign exchange hedging decisions made have been assessed through movements in global financial markets from the time hedging decisions were enacted up until 30 September 2015.

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GLOSSARY OF TERMS

2018 notes	€ 250-million bonds issued in April 2011 at a coupon of 6.625% maturing in April 2018
2021 notes	$ 350-million bonds issued in April 2011 at a coupon of 6.625% maturing in April 2021
2017 notes	$ 400-million bonds issued in July 2012 at a coupon of 7.75% maturing in July 2017
2019 notes	$ 350-million bonds issued in July 2012 at a coupon of 8.375% maturing in June 2019
ADS	American Depositary Share
ACT/360	Actual days over 360 days; day count convention
BDT model	Black, Derman and Toy (1990) model
BESA	Bond Exchange of South Africa
BMA	Bond Market Association
BUND	German government bond
EMU	European Monetary Union
Fallen angel	Original issue investment grade bonds that have been downgraded below investment grade
Junk bond	Higher risk instrument which has a credit rating lower than the investment grade of the respective rating agency
JSE	Johannesburg Stock Exchange
LBO	Leveraged buy-out
LIBOR	London interbank offered rate
NACA	Nominal annual interest rate compounded annually
NACM	Nominal annual interest rate compounded monthly
NYSE	New York Stock Exchange
OAS	Option-adjusted spread
SAPPI	SAPPI Limited
SOE	State-owned enterprise
S&P	Standard & Poor's Financial Services LLC
US/USA	United States of America
USD	United States Dollar
T-bill	United States government issue treasury bill
YTM	Yield-to-maturity
ZAR	South African Rand
ZARc	South African cents

1. INTRODUCTION

1.1. BACKGROUND

The evolution of the corporate bond market has led to the increase in prevalence of callable, convertible and redeemable bonds. Since the mid-1990's, the corporate bond markets have become an important source of financing in the private sector (Luengnaruemitchai & Ong, 2005). As corporate bond markets have developed, the markets have increased in depth, liquidity and market variety which has enabled market participants to utilise it for more financing and investing decisions as growth has occurred.

In addition, as the market has grown in volume of instruments and value of the total market, the emergence of high-yield junk bonds in the market has been observed. Junk bonds are higher risk instruments which have a credit rating lower than the investment grade of the respective rating agency. Historically, the junk bond market consisted primarily of investment grade bond issuances which had seen a deterioration in the credit rating of the issuer to below investment grade. As markets have developed, investors have developed an appetite for the issuance of junk bonds where the counterparties have a credit rating lower than investment grade. These bonds are issued at attractive higher yields or coupon spreads to compensate for the additional risk associated with the credit quality of the issuer, with the market comprising the aforementioned bond issuances referred to as the high yield bond market.

Another layer within the bond market is the emergence of corporate bond markets outside of the United States of America and the growth of these markets in recent history. This growth enables issuers and investors to assess the possibility of transacting on platforms outside of the US which may be more financially beneficial to them.

SAPPI Limited ("SAPPI") is a company that was established in South Africa in the 1930's and has grown into a global player in the paper and pulp industry, as well as the chemical cellulose industry. Financing decisions made in the growth phases of the company's life cycle in the 1990's left it with the need to re-finance debt obligations payable in the early 2010's.

In order to meet their re-financing obligations, SAPPI issued two bonds in April 2011 and two bonds in July 2012, through their wholly-owned Austrian subsidiary Sappi Papier Holding GmbH. Three of these issuances were in US Dollar with the fourth issuance being in Euro. Upon issuance, the obligations of two of the Dollar-denominated obligations were swapped for Euro exposure through the use of cross currency swaps.

For a South African-based company, the research question over why the bonds were issued in foreign currencies and markets requires further research into the nature and location of the company's global position. Particularly as South African bond issuer credit ratings are capped by the sovereign foreign rating ceiling of South Africa when issuing off-shore. Furthermore, the immediate swapping of US Dollar exposure to Euro exposure presents the question as to whether cheaper funding available was in the US debt market.

The focus of this study will be these four bond issuances, and the main research questions addressed in this study are:

- What financing options did SAPPI have in the selection of the most appropriate source of financing;
- what is the state of the South African bond market and what would the viability of utilising this market be for SAPPI;
- why did SAPPI issue the foreign bonds and what were the costs and benefits of doing so;
- what was the cost of issuance on the bonds for SAPPI in both US and European debt markets; and
- what are the retrospective effects of the hedging decisions taken by the management of SAPPI relating to the four bond issuances?

In answering these questions, we particularly focus on the financing decisions made by SAPPI and the respective costs of these decisions. In providing an understanding of the market conditions in which SAPPI was seeking financing, a brief history of both the global bonds market and SAPPI are provided. This context provides readers with a sufficient basis to understand any discursive elements encountered throughout this paper.

By way of a case study, we illustrate the cost that was incurred by SAPPI on the bonds issued through the calculation of an option-adjusted spread ("OAS") for each bond issue. Furthermore, we analyse the retrospective performance of the foreign exchange decisions made by SAPPI management through movements in global financial exchange rates. Through both qualitative and quantitative consideration, the following research questions are addressed:

- why is the use of an OAS methodology appropriate for the comparison of bond issuances;
- what was the OAS on issue date for each bond issuance;
- what were the comparative OASs on the bond issuances; and
- how has SAPPI benefitted or been penalised by hedging decisions made at the issue date of the bonds?

This study contributes to the South African bond market by demonstrating the costs that are incurred by South African entities when financing in foreign bond markets. It further provides a basis to measure these costs relative to each option through the introduction of an OAS methodology.

1.2. OBJECTIVES

The objective of the study is to explore the financing options available to SAPPI and assess the cost of issuance incurred by SAPPI by means of an OAS analysis. Retrospective analysis on the performance of SAPPI will also be performed to assess the viability of the foreign exchange decisions made.

1.3. OUTLINE

This study is set over seven chapters. Chapter 1 provides an introduction including background, problem statement, objectives and outline. Chapter 2 introduces SAPPI as the focal point of the case study and provides the context and required detail to follow the key decisions made within the text. Chapter 3 is a literature review, which provides a brief history of the global corporate bond market with a particular focus on the growth of the high yield debt market. This chapter also considers the historical default rates on debt instruments and the prevalence of callable bonds within corporate bond market. Finally, the chapter introduces the considerations for the use of an OAS analysis to value debt instruments and the use of interest rate swaps and natural hedges as risk management tools. Chapter 4 is a case study on the corporate bonds issued by SAPPI and an analysis of the cost of the financing selected. This section provides detailed guidance on the methodology applied in order to calculate an OAS on the issue date of all four instruments and comments on the findings thereof. Chapter 5 introduces the hedging decisions made by SAPPI subsequent to the issuance of the bonds and provides a retrospective assessment of the decisions made. Chapter 6 is a summarised update of SAPPI's financial performance subsequent for the period ended 30 September 2015. Finally, chapter 7 presents the overall conclusion and observations made within work performed and provides scope for future research.

2. SAPPI LIMITED

2.1. INTRODUCTION

SAPPI Limited ("SAPPI") is a company listed in the Basic Materials, Forestry and Paper sector of the Johannesburg Stock Exchange ("JSE"). SAPPI was the second largest producer of both coated wood free paper and coated mechanical paper in the world in 2015 (SAPPI, 2015) with business operations in Europe, North America and Southern Africa and product sales in over 100 countries (SAPPI, n.d.). In 2015, the market capitalisation of SAPPI was approximately R35 billion (Bloomberg).

This chapter introduces SAPPI as the subject of the case study. The case study, predominantly in chapter 4, analyses the two bond issues made by SAPPI in 2011 and the further two bond issues made in 2012. Particular focus is given to the following research questions:

- what is a brief history of SAPPI Limited including its the growth and the strategic decisions made by the company's governance;
- what are the historical financing mechanisms utilised by SAPPI;
- what performance have SAPPI equity shares provided to shareholders;
- what viable funding mechanisms did SAPPI have available to them in 2011 and 2012; and
- what is the geographical distribution of operational assets, sales and profits for the SAPPI group?

This chapter is laid out in a number of sections. The chapter begins with a brief history of SAPPI from its formation in the 1930's up until the end of 2015. This is followed by discussions on the historical funding mechanisms utilised by SAPPI and the historical share price movement of SAPPI on the JSE. The next section discusses the financial position of SAPPI at the time re-financing was required in 2011 and 2012 and details the global operational exposure of SAPPI at this time. The chapter concludes with the outcome of the factors discussed and the potential reasoning for the financing mechanism of foreign denominated debt issuances being provided.

2.2. BACKGROUND TO THE SAPPI GROUP

SAPPI was founded and incorporated as 'South African Pulp and Paper Industries Limited' in South Africa in 1936 and construction of their first paper and pulp mill started in Springs in 1937 (SAPPI, n.d.). The company listed on the JSE in 1937 under the ticker SAP, which is still in use today, began to grow within the South African paper industry. The first years of existence saw the business continue to grow through the acquisition of strategic subsidiaries. Twenty five years after its incorporation, SAPPI produced its millionth ton of paper (SAPPI, n.d.), a sign of the growth the company had experienced.

The following twenty years saw the addition of a timber division and the production of its third millionth ton of paper indicating the exponential growth of the business. In 1973, the company was re-registered as 'SAPPI Limited' and the formation of separate operating divisions, namely paper and timber, within the company was finalised (SAPPI, n.d.). Growth through the acquisition of South African subsidiaries that provided synergistic benefits continued over the next fifteen years.

SAPPI's growth into the global marketplace, including Europe and United States, began in the late 1980's. SAPPI acquired five fine paper mills in the United Kingdom and established the headquarters of SAPPI Europe in 1990; followed by acquisitions of operating facilities in Germany in 1992 (SAPPI, n.d.).

Diversification from the paper industry was introduced into the business when SAPPI acquired Saiccor, the world's largest producer of chemical cellulose at the time. Furthermore, SAPPI was established as the largest global producer of coated fine paper when it acquired a 75% controlling stake in S.D. Warren, incorporated in the United States, in 1994. This acquisitive growth strategy demonstrated by SAPPI continued throughout the remainder of the twentieth century (SAPPI, n.d.).

SAPPI appeared to be moving from strength to strength and the turn of the century continued to deliver returns to investors. The growth strategy followed by management helped to raise earnings for most of the 2000's and the share price, as discussed in 2.4 below, demonstrated that with the highest historical share prices of SAPPI being observed during this period.

Market conditions declined following this high point and SAPPI began to struggle in an industry that was put under pressure by the global financial crisis of 2008. In addition to the initial pressures of the financial crisis, the paper and pulp industry struggled to recover going into 2009 and the early 2009 share price fell to levels last seen by investors in 1998. Dividend payments were halted in 2009, as cash flow constraints threatened the operational viability of the business (SAPPI, 2009).

The pressure experienced by SAPPI operationally, coupled with the decline in market share prices signified the need for a change in the business strategy followed by management. As such, a consolidation of global operations was started with a focus on long-term profitable growth established by the company (SAPPI, 2009). Non-core operations were disposed of and low-cost production methodologies were investigated and implemented throughout SAPPI's global operations. The implementation of the strategy reduced the production capacity of the company as high-cost unutilised operational capacity was eliminated. A focus was also placed on the sustainability of operations including the efficient use of water, wood, chemicals and energy (SAPPI, 2009).

The capital intensive nature of the paper and pulp industry, as well as the chemical cellulose industry, can be viewed in as both a blessing and a curse to SAPPI. In times of economic growth and industry profitability, the capital expenditure required acts as a barrier of entry to other market participants, but in times of economic uncertainty and industry pressure the reaction required to react to increasing input costs and high overheads in tough market conditions can be more strenuous and timely to implement. The difficult operating conditions within the industry continue to affect the business and the sustainability thereof and SAPPI's (2015) current strategy includes focusing on obtaining costs advantages, consolidating declining business segments, improving the business cash position and developing potential growth segments in the industry through moderate investments.

The shift in the strategy of the business indicates the pressures and changes that have been evident within the industry in more recent times. The tough operating conditions of the late 2000's were difficult to navigate and SAPPI (2009) indicated in the 2009 Annual Report that the year was the worst in the group's 73 year history. In addition to a difficult trading environment, the company was struggling to generate sufficient cash to service the debt obligations inherited from previously implemented acquisitive growth strategies.

2.3. HISTORICAL FUNDING MECHANISMS

The acquisitive growth strategy historically implemented by SAPPI included the use of long term debt funding mechanisms. These decisions involved issuing debt at unfavourable yields or spreads in markets in both South African and US markets. The other mechanism utilised for the specific purpose of financing a European acquisition was a rights offer, completed in 2009 (SAPPI, 2011). While these mechanisms were available and enabled the company to take advantage of growth opportunities, they reduced the operational flexibility of the company through an increase in finance costs and more onerous and sizeable debt obligations. The net debt position of SAPPI was in excess of USD 2 billion over the period from 2008 to 2011, demonstrated graphically in figure 1, indicating the sizeable value of debt obligations which SAPPI had.

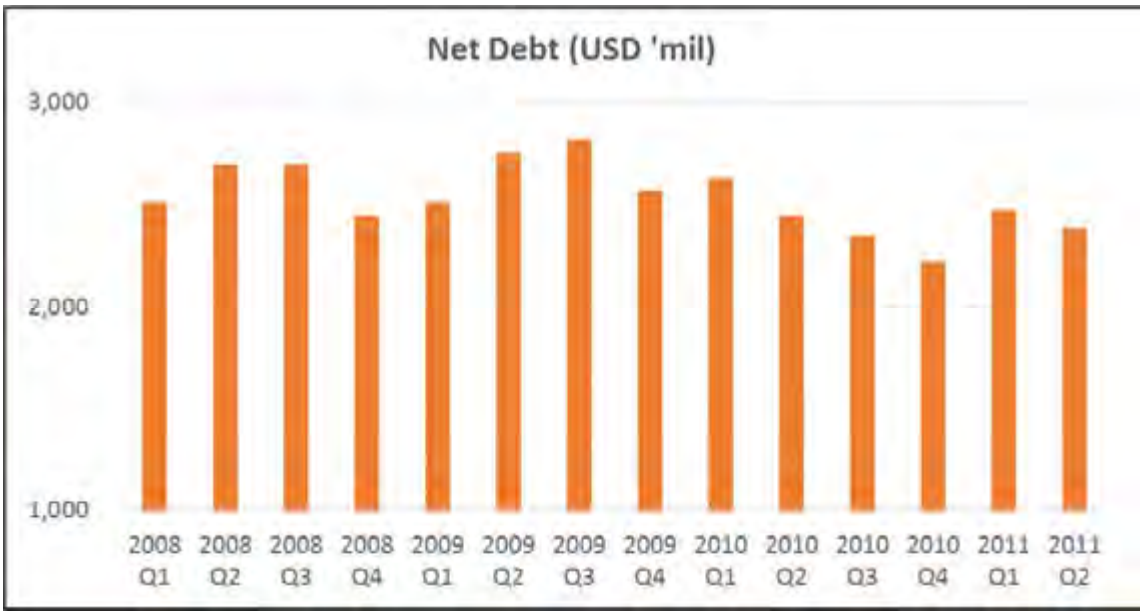


FIGURE 1: SAPPI NET DEBT DEVELOPMENT – USD MILLIONS (SAPPI, 2011, P. 8)

The decisions that were made in the 1990's and early 2000's had repercussions for the business and weakened SAPPI's financial position, which was sufficiently poor for SAPPI to cut its dividend to nil as all funds were required to keep the business in operation. In a year indicated as its toughest in the company's operating history, 2009, SAPPI had to go the market to raise debt and re-finance existing debt obligations. This introduced a dilemma to SAPPI as it did not have the financial position to support favourable financing terms but needed the financing to service their debt obligations and remain solvent.

A total of USD 650 million payable in 2014 had been raised in the United States in 2009, with an additional USD 60 million raised in the South African bond markets to meet debt obligations of that period. Furthermore, the interest repayments associated with these issues significantly increased SAPPI's finance costs (SAPPI, 2009). Two years later, SAPPI's financial outlook continued to look bleak but the sheer need for funding eliminated any reservations that SAPPI had about approaching the market in 2011.

2.4. SHARE PRICE PERFORMANCE

SAPPI has been listed on the JSE under the ticker SAP since 1937. Figure 2 provides the historical share price of SAPPI quoted in South African cents ("ZARc") from September 1990 until September 2015. The share price movements have, as would be expected, tracked the historical performance and market perception of SAPPI. Notable data points have been discussed below.

FIGURE 2: 1990 – 2015 SAPPI SHARE PRICE (ZARC) (BLOOMBERG)

The early 1990's share price demonstrates the success of the acquisitive growth strategy taken by SAPPI and, with a growth in global operations, SAPPI investor sentiment carried the share to prices in excess of R40 in 1995. The latter years within the twentieth century saw a mismatch between the performance of SAPPI and the share performance thereof. The decline in the 1998 share price was related to US American Depositary Shares ("ADSs") being issued on the New York Stock Exchange ("NYSE") and further shares being issued on the JSE (SAPPI, 1999). These share issues diluted the value of existing shares in issue and resulted in a decrease in the SAPPI's share price on the JSE. The ADSs were subsequently voluntarily delisted from the NYSE by SAPPI in 2013 due to the savings in costs and management time associated therewith (SAPPI, 2015).

The early 2000's share price supported the perceived growth observed in SAPPI's business, with the share price peaking in 2002 at R99.42. While there were cyclical movements in the industry over this time, the share price remained in the region of forty to sixty Rand per share until the global financial crisis of 2008. Following the financial crisis, and SAPPI's decision to cut all dividend payments (SAPPI, 2009), the share price plummeted below R20 per share. Following this decline, the share price continued to stay under pressure over the next two years as a result of market conditions and SAPPI's poor financial performance. Share prices of particular significance for this study were around the times of the four bond issuances. The share price in July 2011 was in the region of R30 per share, with this price declining to approximately R27 per share in July 2012.

The market was factoring in the upcoming debt obligations which were expected to be re-financed at expensive spreads into the share price and indicated that the re-financing of debt was not likely to be favourable to shareholders. In addition, SAPPI was still not paying any dividends and investors did not see the required returns given the share price.

The SAPPI share price indicated that a rights issue would not be able to raise sufficient capital for SAPPI through the equity market, either locally on the JSE or within foreign equity markets.

The share price has strengthened subsequent to the re-financing of SAPPI's debt and focal point of this study. A perceived improvement in the company's performance over the three years ending in 2015 is observed with the 2015 share price exceeding R60 per share for the first time in almost a decade.

2.5. FINANCIAL POSITION IN 2011 AND 2012

SAPPI's acquisitive growth strategy relied on the issuance of debt in combination with equity rights issues at favourable times in equity markets. The debt maturity profile, included in figure 10 of chapter 4.2, indicated SAPPI's need for financing to service both the upcoming debt obligations of approximately USD 2.5 billion over the next two years (SAPPI, 2011) and the operating cash requirement of the business. As SAPPI did not have sufficient cash on hand to furnish these obligations as they fell due, the possible mechanisms that SAPPI had available included issuing equity (either ordinary or preference), obtaining bank financing or issuing corporate debt.

The share price in 2011 and 2012, as discussed in 2.4., was under pressure and not at levels favourable to the issuance of equity as it would not be possible to raise funding from the historically low share prices. Hence, preference shares, ordinary shares or an equity rights issue were not financing mechanisms that SAPPI could utilise. Furthermore, the financial appeal to investors of debt issuances convertible to equity would be diminished by the equity price of the company at the time of issuance.

The SAPPI group had been assigned credit ratings of Ba3 and BB-, according to the Moody's and Standard & Poor's ("S&P") rating agencies respectively (SAPPI, 2015A). The secured debt of SAPPI had a higher rating that the group, with ratings of Ba2 and BB assigned by Moody's and S&P. The ratings on both the SAPPI group and the secured debt are below investment grade. There is no evidence available that a South African bank was approached for either a financing arrangement or syndicated loan.

The remaining mechanism which SAPPI could utilise was the issuance of debt instruments. The credit rating of the group indicates that the issuance of debt would include higher spreads as investors would require compensation for the risk inherent in an investment in a company such as SAPPI in its 2011 or 2012 financial position.

Alongside the consideration of whether or not to issue debt, SAPPI would need to consider the currency in which the issuances would be denominated.

Given the operational exposure to the US, Europe and South Africa, the three logical options would be US Dollar, Euro or South African Rand denominated debt. The South African corporate debt market, as discussed in further detail in 3.3, did not have the depth for a high-yield bond issuance below investment grade of the notional size that SAPPI would require. Furthermore, SAPPI had existing debt in issue in the South African market, reducing the market's potential appetite for a new SAPPI debt issuance denominated in South African Rand.

2.6. SAPPI'S GLOBAL OPERATIONAL EXPOSURE

Through the course of the acquisitive growth strategy of SAPPI, the company had grown from its inception as a South African company into a global entity with exposure to economies other than South Africa through foreign operations. Acquisitions of European and American operations had helped to diversify SAPPI to the extent where foreign operations exceed South African operations. SAPPI provides disclosure for three separate operating segments, namely North America, Europe and South Africa within its financial results. Figures 3, 4 and 5 provide segmental assets, sales and profits as proportions of the total figure within the SAPPI group results for the period from 2010 to 2015.

SAPPI's three operating divisions have remained consistent in size relative to each other over the past six years, with the sales of the North America, Europe and Southern Africa segments accounting for approximately 25%, 50% and 25% of total group sales in this time. The ratio of segment assets differs slightly, but the proportions between divisions have remained relatively constant over the preceding six years with Europe accounting for approximately 40% of SAPPI's segmental assets.

Segmental operating profits deviate from the trends observed in the asset bases and total sales. Operating profit margins of approximately 6% over the six year period in focus are notably low, and under these circumstances it is possible for operating profit behaviour to deviate from other trends within the business. Figure 6 includes an analysis of the segmental operating profits in US Dollar and provides further detail relating to year-on-year movements. The South African operating segment managed to perform better than the North American and European segments in a time of declining profitability, increasing the profits of the South African segment in relation to the other segments.

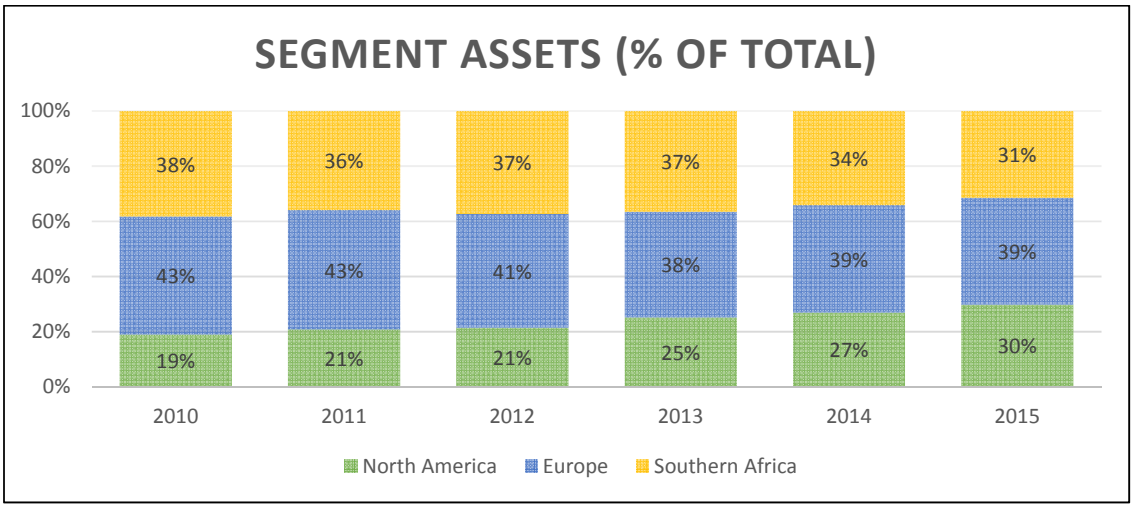


FIGURE 3: SAPPI SEGMENTAL ASSETS – PROPORTIONAL {OPERATING SEGMENTS NOTE IN AFS} (SAPPI)

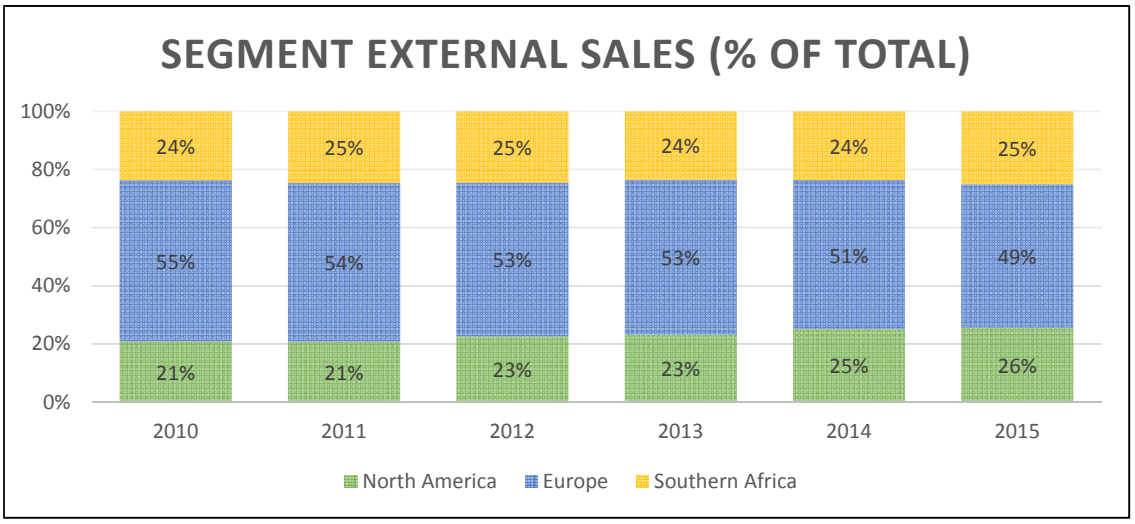


FIGURE 4: SAPPI SEGMENTAL SALES – PROPORTIONAL {OPERATING SEGMENTS NOTE IN AFS} (SAPPI)

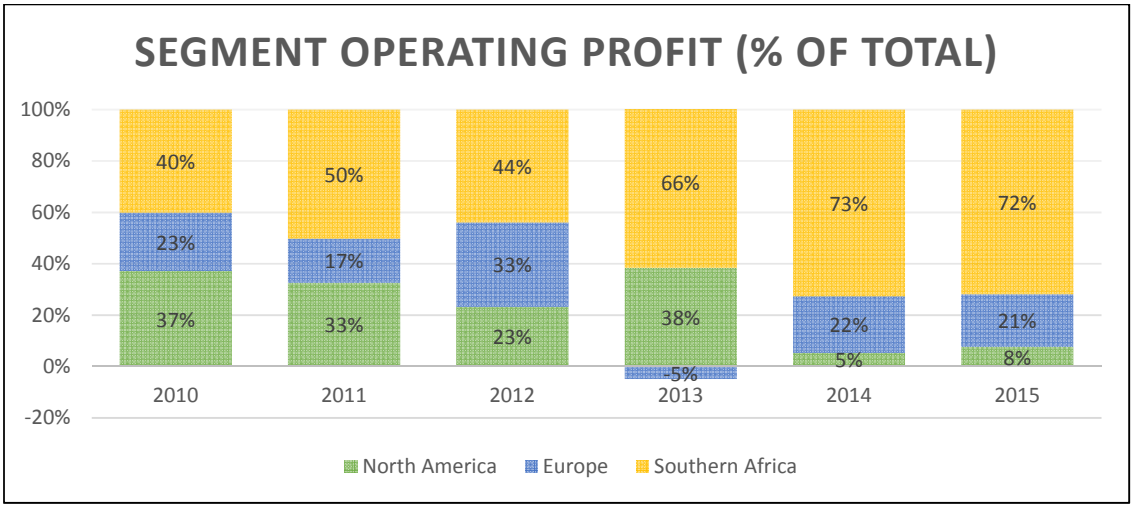


FIGURE 5: SAPPI SEGMENTAL PROFITS - PROPORTIONAL {OPERATING SEGMENTS NOTE IN AFS} (SAPPI)

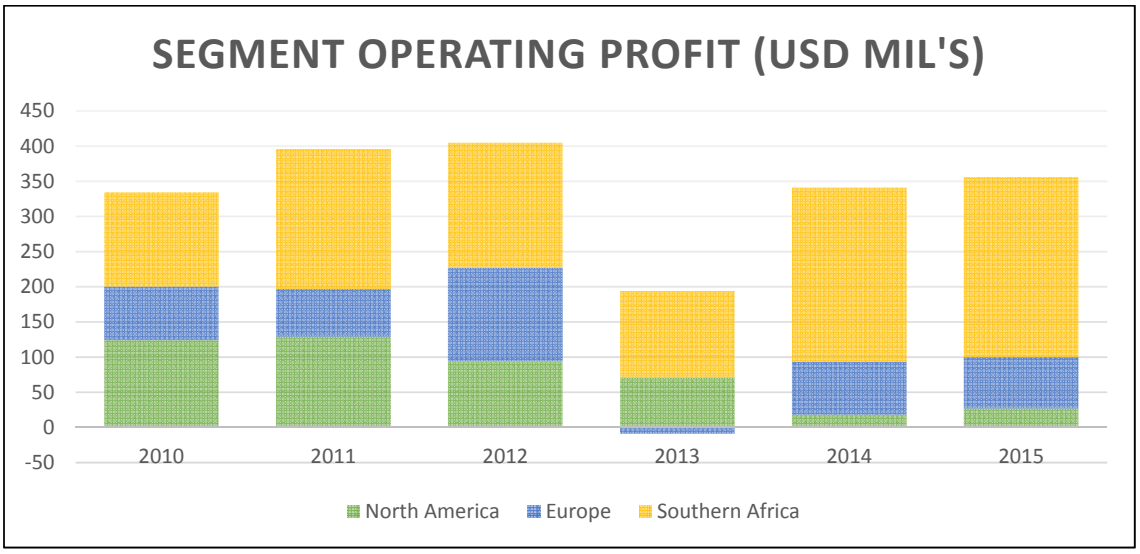


FIGURE 6: SAPPI SEGMENTAL PROFITS – USD {INFORMATION FROM SEGMENTAL NOTE IN ANNUAL FINANCIAL STATEMENTS} (SAPPI)

The operational figures included above provide the user with a brief understanding of the current geographical positioning of SAPPI's global operations and enable us to better assess the company's hedging of the bond issuances global exposure included in chapter 5.

2.7. OUTCOME

The funding mechanism of choice for SAPPI management was the issuance of four bonds, denominated in Euro and US Dollar, in 2011 and 2012, through their wholly-owned Austrian subsidiary Sappi Papier Holding GmbH. All four bond issuances in the two year period were completed at high coupon spreads to compensate investors for the aforementioned risks associated with SAPPI. These bonds are discussed in further detail in chapter 4. The motivation behind management's decision to issue the bonds outside of South Africa would have been twofold. Firstly, while SAPPI did have South African corporate debt in issue, the South African high yield corporate debt market would not have the capacity or appetite for an issuance of the size SAPPI required. Secondly, the global operations of SAPPI indicate the need for financing that matches the global risk profile of the company.

The focus of this study will be these four bond issuances, and an investigation into the cost of these issues to SAPPI and the procedures they utilised to hedge out their resultant exposures. The details of the bonds are discussed in further detail in chapter 4, followed by a discussion of the foreign exchange hedging considerations in chapter 5.

3. LITERATURE REVIEW

3.1. INTRODUCTION

This chapter provides a definition for a junk bond and provides a brief history of the global high yield corporate bond markets. As both the corporate bond market and the high yield bond market have their roots in the United States, the overview begins with the corporate bond market in the United States and then extends to the European and South African markets.

In the next section, we introduce the research performed by Altman on historical default rates within bond markets and demonstrate how these have fluctuated over time. We then explore academic literature of theoretical concepts applicable to this study; including the prevalence of callable bonds in debt markets, the valuation of bonds with call provisions, the use of interest rate swaps and the concept of a natural hedge which can be utilised to hedge risks to which a business is exposed.

We answer the following research questions in this chapter:

- what is the definition of a junk bond;
- with particular focus on the high yield corporate bond markets, how has the global bond market developed over time;
- what were the conditions in the global, US and European bond markets at the time of SAPPI's bond issuances;
- what was the state of the South African corporate bond market at the time of SAPPI's bond issuances;
- how do historical default rates relate to growth in bond markets;
- what is an appropriate methodology to value an instrument with an embedded call provision;
- would an option-adjusted spread methodology be appropriate for valuation and what practical assumptions would be needed for this methodology to be used;
- what is the definition of an interest rate swap; and
- what foreign operational hedging strategies can be utilised by multinational entities?

3.2. JUNK BOND DEFINITION

Fixed-income security yields are determined from the market's determination of three risks on a given issue: "(i) its sensitivity to changes in interest rates, (ii) its illiquidity, and (iii) its probability of default" (Altman, 1992, p. 78). These yields will increase as the investor's assessment of the three risks is heightened. Market risk assessments are assigned to instruments through the use of credit ratings.

These ratings are assigned by credit rating agencies with the three most commonly referred to being Standard & Poor's Financial Services LLC ("S&P"), Moody's Investors Service and Fitch Ratings Inc.

The need for standardised credit ratings stems from investor risk management requirements and an investment grade threshold provides a benchmark with which to compare investment securities. The threshold for investment grade is 'Baa' as rated by Moody's, or 'BBB-' as rated by S&P and Fitch. With particular reference to the liquidity and probability of default, the most risky debt securities will receive ratings below investment grade and are more commonly referred to as high yield or "junk" bonds (Altman, 1992).

Junk bonds are issued by three different types of debt issuers: "fallen angels" – which were originally investment grade bonds that have been downgraded as the company's financial status has declined; original issue junk bonds by corporate's without investment grade ratings; and junk bonds issued to finance large corporate restructurings (Altman, 1992).

3.3. A HISTORY OF THE GLOBAL HIGH YIELD BOND MARKET

The junk bond market had humble beginnings in the United States during the 1960's and 1970's, with the total junk bond market of the mid-1970's worth approximately $7 billion (Altman, 1992) and consisting almost entirely of fallen angels. The market began to develop and expand in 1977, when original issue junk bonds of corporate entities with non-investment grade ratings (or no credit rating) were first issued in significant quantities (Taggart Jr., 1987).

The economic environment of the late 1970's and 1980's was suited to the emergence of the original issue junk bond market (The Economist, 2013). As investors' appetites for higher yield securities were growing, the number of non-investment grade medium-sized firms that were seeking means of stimulating growth was increasing. The high yield bond market provided non-investment grade firms access to funding that had the potential to be a cheaper alternative than historically utilised financial intermediaries (Taggart Jr., 1987).

The competitive pressures in the investment banking environment were reducing the profitability of investment grade bond underwriting, hence the large, previously untapped market of high yield bond issues had the potential to increase the margins and profitability in the bond sector of investment banking (Taggart Jr., 1987).

The junk bond market was of particular appeal to Drexel Burnham Lambert Inc., who had a small share in the existing investment grade market but had successfully established their junk bond trading operations, under the supervision of Michael Milken (Taggart Jr., 1987). The grouping of a network of potential investors and the building of an infrastructure to speedily obtain capital for potential issues

enabled Drexel Burnham Lambert to create a liquid secondary high yield market and emerge as the market leading underwriter within the sector (Taggart Jr., 1987).

The improvement in the secondary market and increased number of firms considering funding in the high yield market contributed to a rise in the number of original issue junk bonds and, in 1978 10.8% of all public bond issues were straight junk bonds (Taggart Jr., 1987). Michael Milken and Drexel Burnham Lambert managed to grow their share of the market through the efficient operation of the established secondary market and their ability to buy or sell bonds and match the demands of their clients (The Economist, 2010). The liquidity that Milken managed to create in the junk bond market and the fact that Drexel Burnham Lambert issued over 60% of all US junk-bonds up until 1981 earned him the nickname of the 'junk bond king' (Meserve, 2012).

In the early 1980's, the number of junk bond issues continued to increase and the market continued to expand as it provided a new way for companies to access funding and both corporate issuers and investors experienced the benefit of the boom (Meserve, 2012)

Milken took the junk bond market further by using the junk bond market and his connections within the markets to finance leveraged buy-outs ("LBOs") and in doing so helped Drexel Burnham Lambert to become the leading investment bank in the US during 1986 (Meserve, 2012). While other investment banks began to retreat from the underwriting of new issues, Milken continued to underwrite new issues (The Economist, 2010). Corporate raiders now had the ability to raise large amounts of capital to fund takeover bids that were not possible before the prominence of the junk bond market (Epstein, 1987).

The growth in the market was substantial, with the junk bond market growing from approximately $93 billion in June 1986 to over $125 billion by April 1987 (Altman, 1987). The success of the LBOs that Milken was underwriting and the ease with which they were actioned led to the US government passing bills in 1986 and 1987 to implement anti-takeover legislation and protect American businesses from hostile takeovers and corporate raiders (Meserve, 2012).

The economic landscape began to transform in the late 1980's. While 1986 was a record-setting year for the high yield market, it was also a year where debt to the value of $3 billion (approximately 3.9 percent of the total debt outstanding) was defaulted upon by the issuer (Altman, 1987). The increased regulation and resultant costs, along with rising interest rates and increased rates of default in the high yield bond market combined to drive down prices in the market (The Economist, 2010).

Michael Milken was indicted in 1989 on 89 charges, including insider trading, securities fraud and racketeering and pleaded guilty to 6 charges that primarily involved tax and securities fraud in 1990 and was sentenced to 10 years in prison (Meserve, 2012).

The culmination of these factors led to a decline in the high yield bond market with no significant new issues being entered into in 1990 (Yago, 2008). The next decade saw corporate entities approaching fixed income markets to re-finance existing debt and drive an increase in both high yield and investment grade markets (Yago & Trimbath, 2003). This trend continued until the turn of the century, where the bond market was affected by the global decline of financial markets (Yago & Trimbath, 2003). Difficulties in the telecommunications industry sparked a general downturn in the global economy and the high yield bond market struggled under these difficult market conditions (Yago, 2008).The decline experienced in global bond markets in the early 2000's was short-lived and an upturn in the market returned until the global economic recession of 2008.

An analysis of the volatility of the returns over the 30 year period, ending 2008, leads Reilly, et al. (2009) to observe that when there is stability in global markets, high yield bond market volatilities are likely to be more similar to those of their investment grade counterparts; however during times of political or economic uncertainty the volatility of high yield bonds increases by two to three times the volatility of investment grade bonds. Figure 7 below indicates fluctuations in new issue high yield debt over the time period from 1977 until 2008.

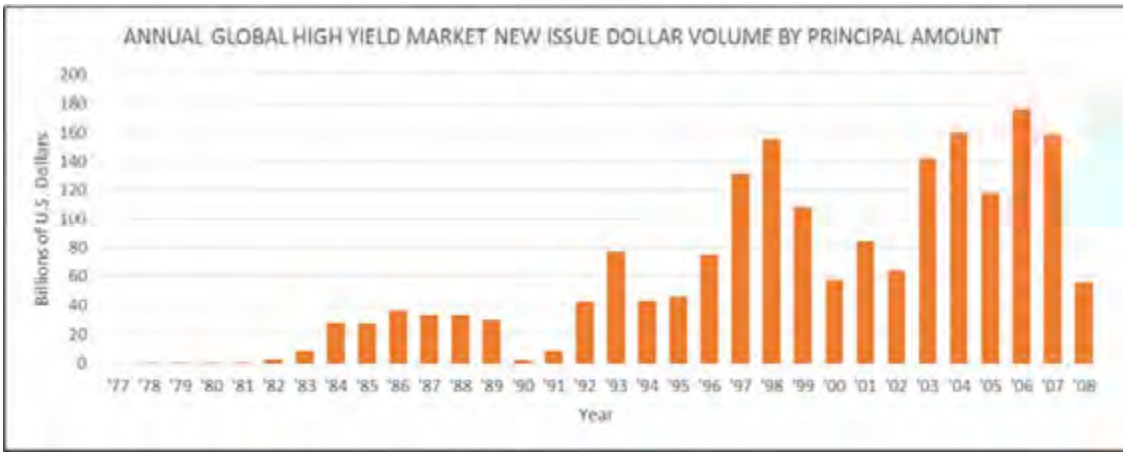


FIGURE 7: ANNUAL GLOBAL HIGH YIELD MARKET NEW ISSUE DOLLAR VOLUME BY PRINCIPAL AMOUNT (REILLY, ET AL., 2009)

The 2008 financial year was a year with markedly less global high yield bond issuances due to the global financial crisis, as depicted in figure 7 and further supported by data provided in figure 8. Following this decline, the global bond market started to grow again, as the reduction of banks' lending capacities and low equity markets led to entities approaching the bond market for corporate financing (The Economist, 2013). Figure 8 shows the issuance of new bonds from 2007 until 2013, with the issuance of high-yield bonds being depicted in dark blue.

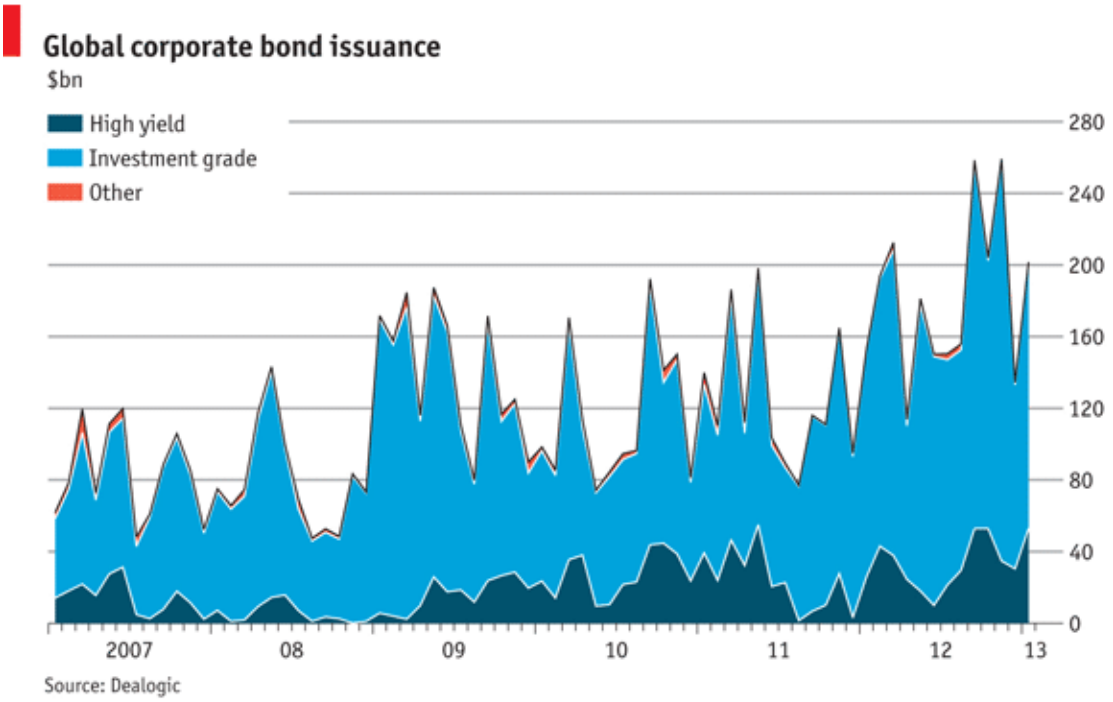


FIGURE 8: GLOBAL CORPORATE BOND ISSUANCES 2007 – 2013 (THE ECONOMIST, 2013)

The economic climate since the crisis of 2008 has meant that interest rates within the global economy have fallen, making the high-yield bonds more appealing to investors (The Economist, 2013). In addition, the high yield bond market has broadened its global base and, in October 2013, was estimated to be worth approximately $1.7 trillion and comprise almost half the value of all bonds in global markets (The Economist, 2013). In 1998, the United States ("US") and Europe comprised 88% and 3% of the market, respectively; while in 2013, the US accounted for 57% and Europe for 27% (The Economist, 2013). These statistics demonstrate that the market is growing both in value and investment locale, but the large majority of the global bond market is still concentrated in the developed economies of the US and Europe.

The total value of debt outstanding in the US in June 2015 was valued at USD 38.4 trillion, while the value of debt outstanding in Europe totalled approximately USD 39 trillion (Bank for International Settlements, 2015). In comparison, the South African bond market comprised debt securities to the value USD 233 million, of which 200 million were domestic debt securities (Bank for International Settlements, 2015). This demonstrates the ground that the South African bond exchanges would need to make up to reach the levels in more established markets.

European Bond market

The US corporate bond market, where the high-yield bond market was pioneered, has been an important source of funding for the US private sector (Luengnaruemitchai & Ong, 2005). In contrast, corporate bond markets in Canada, Japan and Europe have historically been insignificant when compared to other private sector funding sources (Luengnaruemitchai & Ong, 2005).

A major feature of European bond markets at the start of the 1990's was a segmentation of markets along national boundaries with secondary markets remaining largely domestically domiciled until the late 1990's (Pagano & von Thadden, 2004). The formation of the European Monetary Union ("EMU") and the 1999 introduction of the Euro helped to develop the European corporate bond market with Euro-area bond issuances more than doubling in 1999 (Pagano & von Thadden, 2004). As the European corporate bond market grew in size and liquidity, it became a more viable location for the issuance of high-yield debt.

Trends in the European high-yield market have mirrored those of the global market in more recent years. Following the decline experienced during the 2008 financial crisis, the market has continued to grow with issuances in the market exceeding €60 billion in 2015 (Millar, 2015). The largest European market in June 2015, with a value of debt outstanding of approximately USD 9.5 trillion, was the United Kingdom, followed by the largest Euro-denominated market of Germany with approximately USD 5 trillion outstanding (Bank for International Settlements, 2015).

South African bond market

In the late 1980's Eskom, the South African state-owned enterprise ("SOE") that produces energy products, began to issue and make a market for their bond issues. Until this point, the South African corporate public debt market was virtually non-existent (Ojah & Pillay, 2009). However, following the success of Eskom, other South African SOEs, Transnet and Telkom, began to issue bonds and grow the South African bond market. The South African bond market was formalised in 1987 when the self-regulating Bond Market Association ("BMA") was formed (Ojah & Pillay, 2009).

Economic sanctions were imposed on South Africa in 1986 as the world reacted to apartheid in South Africa. The formation of the BMA coincided with the economic sanctions imposed on South Africa as it was a means by which the South African government could raise funding locally in lieu of sanctions (Heft & Staehelin-Witt, n.d.). The sanctions placed on South Africa as a result of apartheid prevented the South African bond market from being exposed to the growth in global markets in the early 1990's. Furthermore, it became an important source of funding for the South African government and related SOEs.

The funding source was of such importance to the South African government and SOEs that the sole corporate listing in the BMA era was a 1992 corporate bond that was issued by South African Breweries. The BMA obtained a formal exchange license in 1996 and the formation of the Bond Exchange of South Africa ("BESA") was completed.

The first four years in the existence of BESA did not have any issuances of corporate bonds, but the first six years of the new millennium saw the issuance of 305 corporate bonds (Ojah & Pillay, 2009). While corporate bond issuances increased over this period, they still accounted for only 22 percent of the total nominal value of issuances over this period (Ojah & Pillay, 2009). In 2008, the corporate bond market accounted for approximately a third of the total South African bond market (Hassan, 2013). BESA became a wholly-owned subsidiary of the Johannesburg Stock Exchange ("JSE") in 2009 (Floor, 2013) and the JSE has made a concerted effort to improve governance and regulation of the exchange (JSE Limited, 2014).

The South African bond market caters primarily for the needs of the South African government, with approximately 79% of the market being government and parastatal debt (Standard Bank, 2013). The market is not diversified and does not contain the liquidity that investors are accustomed to in more developed global markets (Standard Bank, 2013), with the majority of the large investments coming from South African pension funds with legislated asset allocations including investment grade bonds.

BESA's market capitalisation was approximately ZAR 1 370 billion in 2014 (JSE Limited, 2014), which is small in comparison to the global bond markets, and the corporate debt is an even smaller component thereof. The South African junk bond market is an even smaller component of the market, with only 7 bonds listed on the exchange in 2013 defined as 'junk bonds' and a total of 10 high-yield debt instruments with a total value of ZAR 8.56 billion (Thomas, 2013A).

The first default event in the South African bond market occurred in August 2013, and involved First Tech Group's R925m First Strut bond (Thomas, 2013B). While there was no actual default of debt, First Strut applied for provisional liquidation in July 2013 after the death of the company's chairman and subsequently on-sold the outstanding high yield debt (Bonorchis, 2013). The default event served to negatively influence market sentiment and the high yield market in South Africa experienced a decline through the remainder of 2013 (Bonorchis, 2013).

Consistent and sound budgetary practices within the South African economy have enabled the country to reach further into global bond markets (The World Bank, 2015). Therefore, while the South African market is notably smaller than other developed markets, it should begin to grow in line with trends historically observed in global bond markets while sustainable policies are maintained.

The current South African market exists but is comprised of unlisted bonds and issuers are price takers as there no auction mechanism by which to obtain favourable prices. Finally, South Africa companies have tended to prefer equity and bank financing to fund their operations. With higher funding costs and interest rates, companies would tend to obtain syndicated bank financing over issuing debt in a volatile market where they don't have access to an auction mechanism to lock in lower, more favourable spreads.

3.4. Edward Altman, historical default rates and the effect on the high yield debt market

Altman (1987, p. 17) defines a corporate bond default as "either debt issues dropping to a D rating or involved in formal bankruptcy (whichever comes first)." Investors in high yield bonds should be aware of the short term default risk associated with these bonds. Hence, these bonds have lower credit ratings in the market. Furthermore, increased default rates are likely to adversely affect growth in the high yield bond market more so than investment grade instruments. High yield bond have equity-like features in volatile market conditions as the financial performance of their issuers is more likely to fluctuate than that of their investment grade counterparts (Altman, 1992).

The fluctuations expected through an understanding of the high yield market is confirmed by research performed by Altman & Kuehne (2013) whereby default rates increase in years where the markets are experiencing external pressure. Figure 9 below graphically depicts the fluctuations in historical default rates on US high yield debt as reported by Altman & Kuehne (2013, p. 276) {Refer to Appendix H for underlying data utilised to create figure 9}. The periods where increases in default rates are observed coincide with the periods, identified in 3.3, where the high yield debt market and global economy were under pressure.

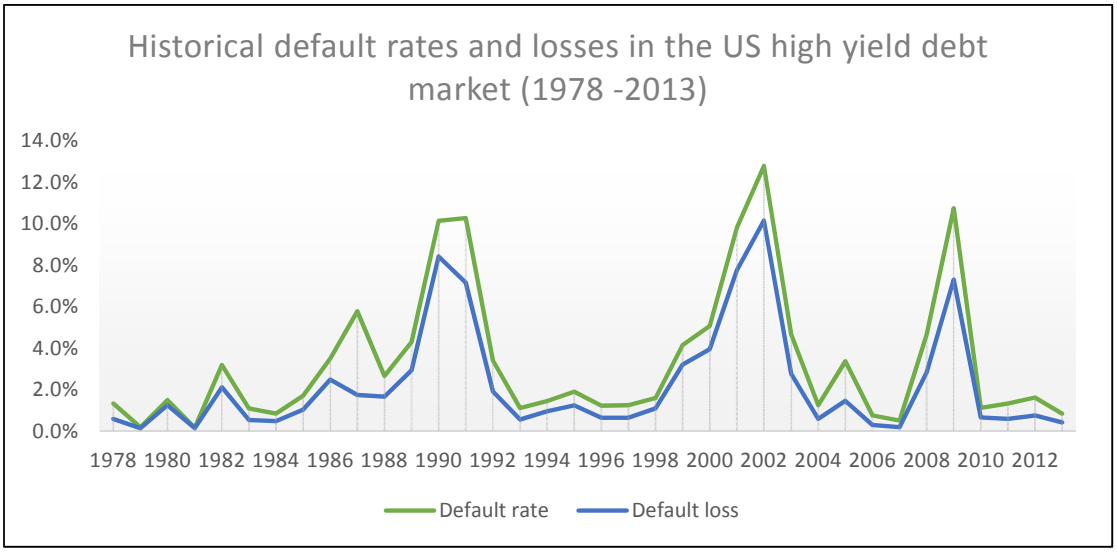


Figure 9: Historical high yield debt default rates (Altman & Kuehne, 2013)

The major spikes in default rates identified by Altman & Kuehne are linked to declines in new issue high yield bonds within the market. Figure 7 above graphically depicts the decline in new issues over the periods 1988 to 1990 and 2000 to 2002 coinciding with the first two spikes in the default rates of figure 9. Furthermore, the new high yield debt issues over the period 2008 to 2010 depicted in figure 8 are close to nil, corresponding with the third spike in figure 9.

3.5. Increase in market prevalence of the callable bond

Callable bonds are a form of fixed income security with a call provision that can be exercised at the option of the issuer. Upon exercising the call provision, the issuer would redeem the principal amount of the security through a payment to the holder of the security. The call provision would be exercised where market rates have declined and the issuer can re-finance the instrument at lower market-related rates. For example, if a callable bond issued with a call provision of R 100 on 'X' date is priced at R 105 in the market on 'X' date, the issuer would exercise their call provision and redeem the principal amount of the security at R 100.

Fabozzi (2005) intimates the market value of a callable bond would be lower than that of an identical fixed income security with no call provision due to the limited benefit to the holder where market rates decline. Furthermore, the uncertain cash flow pattern of the bond and uncertainty of future capital appreciate due to interest rate movements may lead to the issuance of callable bonds being unfavourable to investors (Fabozzi, 2005). Interest rate hedging is thought to be the primary reason for the inclusion of call provisions, with the intention of aligning the interests of bond and equity holders (Banko & Zhou, 2010).

The callable bond provisions included in new bond issuances declined in the decade of the 1990's, following a period of twenty years where these provisions were popular and common in most bond issuances, due to the availability of interest rate hedging derivatives that were now available to corporate issuers that were not available in the 1970's and 1980's (Banko & Zhou, 2010). Furthermore, investors do not like call provisions as the call is generally at par and the market value of the bond may shift with market rates and render the bond holder unable to exercise the call at par without making a loss on mark-to-market.

Callable bonds can exhibit negative convexity at certain price-yield combinations, which refers to the certain market conditions where a decrease in market yield will be combined with a decrease in the duration of the bond (Fabozzi, 2005). This may be unfavourable to market participants as it is difficult to hedge against these market movement. Following these market developments, Banko & Zou (2010) noted that the bonds that included call provisions were also more likely to be high yield debt issuances.

The inclusion of call provision in high yield debt instruments was empirically found by Banko & Zou (2010) to improve the combined situation of a relatively smaller issuer where information is not readily available to investors and incentivises investment by the issuer in future projects that are likely to generate returns. The alignment of shareholder and bondholder interests can be summarised through the findings made by Barnea, et al. (1980) whereby both the value of an embedded call provision and the price of a bond will decrease if default risk increases. As high yield bonds are more sensitive to market and economic condition changes, the alignment is more prominent on changes in high yield instrument default risk.

3.6. USING OPTION-ADJUSTED SPREAD ANALYSIS TO VALUE BONDS

The traditional method of valuing and pricing a fixed income instrument with no embedded options involves the calculation of a bonds yield-to-maturity ("YTM") and comparison of the given bond to similar instruments in the market. This method of valuation assumes that all payments of interest and capital are made as scheduled and that these payments are re-invested at the same yield until the maturity date of the instrument.

This method is particularly useful in the valuation of an instrument that does not contain early redemption call or put provisions, nor any exotic terms as the instrument's cash flows can be determined with a large degree of certainty.

The inclusion of provisions in an issued instrument introduces uncertainty to the prediction of future cash flows. The additional uncertainty that is introduced with a callable bond would relate to uncertain future movements in interest rates that would affect the issuer's decision on whether or not to exercise the call provision. In order to perform a yield analysis on callable bonds, assumptions are required to address the uncertainty introduced by the call provision. Miller (2007) indicates that the implications of the assumptions made would have a significant effect on the value determined on a callable bond due to the number of coupon payments being directly related to the assumed redemption date specified and the price of the bond as at the date of valuation.

Market participants may take into account the shortfalls of the YTM approach by using a yield-to-call or yield-to-worst basis. In the yield-to-call approach, the investor would forecast the date at which the call provision would be exercised and calculate the YTM utilising the assumed date as the redemption date. The yield-to-worst approach involves the consideration of all potential outcomes and their respective yields and then selecting the redemption date which would result in the worst-case YTM for the investor.

The prediction of future redemption dates would be performed using market information available at the day of pricing to forecast the future interest rate environment. Hence, the inherent uncertainty of future interest rates is present in any YTM based approach utilised. Miller (2007) proposes that a better method that takes into account the inherent uncertainty of future market conditions and provides a means to measure returns relative to a riskless benchmark is that of option-adjusted spread ("OAS") analysis.

The OAS methodology is briefly described by Kopprasch (1994) as the generation of a series of future interest rate paths, with equal probabilities, according to a strict set of constraints followed by the discounting of the future predicted cash flows of a security utilising the forecasted future interest rate paths and a spread in order to obtain the current market price. The spread utilised to obtain the instruments current market price is referred to as the option-adjusted spread. While the OAS determined is not the precise amount that is expected to be earned on the instrument, it does however provide a relative measure on which instruments with different maturity profiles and embedded options can be comparatively measured.

The generation of future interest rate paths is formulated through the development of a recombining binomial lattice tree from implied forward rates. The binomial model was first introduced by Cox, et al. (1979) as a simplified method to value options with a discrete set of nodes over which an instruments cash flow are determined. This methodology can be used to value a security from the developed binomial lattice tree, whereby the securities' determined cash flows at each node on the lattice are discounted backwards along the tree (Pedersen, 2006). A fixed spread is added to all short rates at each node within the lattice and the spread that determines the current market price of the security is referred to as the OAS.

Some of the advantages that the OAS spread analysis has over conventional yield measures include taking into account factors not considered in conventional measures (including interest rate volatility and cash flow sensitivities), the ability to compute the measure for both assets and liabilities and, primarily, the ability to meaningfully compare the relative returns of different securities (Babbel & Zenios, 1992).

However, as with most financial models, there are limitations to the use of an OAS analysis. Perhaps the greatest limitation of the methodology is the dependency on the model utilised and the assumptions inherent in its construction (Kopprasch, 1994). Parties making use of OAS models keep their inputs closely guarded, thus limiting market consensus available to an investor without an understanding and/or access to the OAS model inputs (Babbel & Zenios, 1992).

Another pitfall of the methodology lies in the construction of the binomial lattice with equal probabilities (thus enabling it to recombine) leading to most numbers along the lattice being averaged in the model and casting a degree of uncertainty over the precise relation between the interest rate level and the OAS (Babbel & Zenios, 1992). Finally, there may be minor discrepancies through the addition of a fixed spread to a lognormal lattice (Babbel & Zenios, 1992).

OAS CONSIDERATIONS APPLICABLE TO THIS CASE

The construction of a binomial lattice for the determination of an OAS can involve a number of different methods and schools of academic thought. The academic process followed in this paper involves the use of the lognormal model as it allows for the use of a single volatility input in the construction of a binomial tree (Miller, 2007).

The methodology, technically referred to as a 'onefactor, arbitrage-free, binomial tree of lognormally distributed short rates' (Miller, 2007, p. 47), was developed by Fischer Black, Emmanuel Derman and William Toy (1990) and is commonly referred to as the Black Derman Toy ("BDT") model or the lognormal model (Fabozzi, 2005). The use of lognormal rates prevents negative rates and accounts for the expectation that rates will increase over time (Fabozzi, 2005).

The model is dependent on market data at discrete points in the future, as quoted at valuation date. Black, et al. (1990) demonstrate the need for implied spot rates at the nodes of the lattice in order to build the curve. This process utilised is referred to as the bootstrapping of interest rates to fit the term structure required, whereby the determined implied forward rates available in the market at the valuation date are utilised to construct a zero coupon curve as at the valuation date (Fabozzi, 2005).

The zero curve constructed could be a means of valuing an instrument where all coupons are discounted with the applicable zero coupon forward rate but this approach would create a simplifying assumption whereby current market rates remain unchanged over time. This assumption is avoided by BDT as the model treats the implied forward rates as outcomes of the binomial process and provides for future market uncertainty through the introduction of a volatility factor (Miller, 2007). The model produces a possible range of outcomes that could occur based on the volatility factor utilised therein. Hence, the volatility input can drastically influence the output interest rates and care needs to be taken in selecting an appropriate factor. The trade-off for a modeller is between the consistency of the volatility utilised and the accuracy thereof in the market (Miller, 2007).

The primary choice in the volatility factor is whether to use a historical or implied volatility, while the secondary choice is whether to use one rate throughout a binomial model's construction or to make adjustments at discrete points.

The historical volatility would be determined through an estimation of the historical yield movements in the market, while the implied volatility involves estimating the future yield movements based on currently observable interest rate derivative prices (Fabozzi, 2009).

$$X_t = \ln\left(\frac{y_t}{y_{t-1}}\right)$$

EQUATION 3.1: LOGNORMAL RETURNS ON MARKET YIELD

The historical volatility is easier to determine as it relies solely on market information that has occurred in the past but does not always provide a good indicator of future market conditions (Fabozzi, 2009). The most basic calculation of historical volatility includes the simplifying assumption that all yield returns (X_t) are lognormally distributed and determined in terms of equation 3.1 (Fabozzi, 2009).

One shortfall of this assumption would be that it assumes that proportional yield volatility remains constant and does not depend on time or yield level (Fabozzi, 2009). This assumption is referred to as the '*Constant Elasticity of Variance Model*' or '*Power Function Model*' within financial literature (Fabozzi, 2009). Fabozzi (2009) recommends the use of a moving average lognormal return to smooth the volatility present in daily trade data and recommends the number of daily observations utilised be specifically related to the situation at hand. Another possible solution, instead of moving average returns, suggested by Longerstacy & Zangari (1995) is to assume returns are distributed around a mean of zero simplifying the resultant equation for the determination of variance to equation 3.2 below. In other words, when scaling volatility to an annualised volatility the square root of time function is it assumed that returns are independently and identically distributed and that the underlying returns are normally distributed. Where moving average returns are utilised, variance would be determined relative to the mean of the sample population.

$$Variance = \sum_{t=1}^{T} \frac{X_t^2}{T-1}$$

EQUATION 3.2: VARIANCE OF LOGNORMAL RETURNS WITH ASSUMED MEAN OF NIL (LONGERSTACY & ZANGARI, 1995)

The variance is converted to annualised volatility through the use of equation 3.3 below. This equation combines the conversion of the calculated variance to the standard deviation ($\sqrt{Variance}$) and the conversion of the determined standard deviation to an annualised figure depending on the number of annual data points in the data utilised ($\sqrt{Number\ of\ data\ points\ in\ year}$). For instance, an annualised volatility would be derived from monthly data through the multiplication of $\sqrt{12}$.

$$Annualised\ volatility = \sqrt{Variance} \times \sqrt{Number\ of\ data\ points\ in\ year}$$

EQUATION 3.3: CONVERSION OF VARIANCE TO ANNUALISED VOLATILITY (FABOZZI, 2009)

Calculation of an implied volatility is dependent on observable market prices on derivatives such as options on bond futures, swaptions, and interest rate caps and floors but follows the same construction process as detailed for historical volatility. Fabozzi (2009) notes that implied volatility results determined are dependent on the model applied and availability of market information. Hence, the determination of an implied volatility is generally more complex than its historical counterpart.

The volatility assumption, either historical or implied, can be kept constant throughout the construction of the binomial lattice or amended at discrete points at the discretion of the model builder. All rates at one discrete time period within the binomial lattice are related through the volatility assumption and, when combined by taking into account their probability of outcome, should equate to the implied forward rate at that time period.

Many market participants utilise the implied volatility of equity option prices as a proxy of volatility as they deem this to be superior to realised historical volatility observed. Furthermore, other market participants utilise a volatility term surface when valuing OAS spreads.

The rates that have been calculated, taking into account the volatility assumptions of the model, will form that binomial lattice. At this point, it is recommended that the model is calibrated, with the instruments utilised to bootstrap the zero curve, to ensure the constructed model is matched to current market conditions when pricing instruments (Fabozzi, 2005).

The final step in the OAS methodology involves using the BDT binomial model constructed to calculate an instrument price by discounting future cash flows at each node until the present value is determined. A fixed spread is added on to each node within the model until the current market value of the instrument is calculated by the model. The final fixed spread with which the market value is determined is referred to as the option-adjusted spread (Miller, 2007).

3.7. USING INTEREST RATE SWAPS

McNulty (1990) asserts that one of the most crucial financial innovations of the 1980s is the interest rate swap. The interest rate swap instrument is one of the most commonly used financial instruments in the current market as the variety of hedging strategies that it can be used for make it a popular hedging mechanism for many market participants (Henshall-Howard, 2011).

The interest rate swap agreement occurs between two parties who agree to exchange interest rate payments based on an underlying notional principal amount. The market for interest rate swaps is usually arranged by dealers who act as the principal and maintain a swap book (McNulty, 1990).The most common interest rate swap is the fixed for floating swap which involves the agreement of one party to pay interest based off a predetermined fixed rate while receiving interest based off a floating

rate over the same period. Other interest rate swaps could involve the agreement to pay interest in one currency while receiving interest in another, referred to as a cross-currency swap.

Cash flows between the two parties are settled net, with the party liable once interest amounts are offset making the payment. It will be contractually dependent as to whether or not parties exchange the principal amount at the inception and maturity of the contract. Valuation of the interest rate swap is performed through the forecasting of future payments and discounting these amounts back under market conditions and rates at a valuation date.

The initial fair value of the agreement would be nil as fixed rates or floating rate spreads are utilised to ensure the present value of all future cash flows is nil at issue date. Subsequent movements in market conditions will see a shift in the fair value of the interest rate swap. Should market rates increase, the fixed rate payer will benefit while the floating rate payer would experience an equal but opposite decrease in the fair value of the instrument.

The applicability of interest rate swaps to the corporate bond market is in the ability that it presents to investors and issuers to hedge out interest rate and cash flow risks. Should an issuer of a fixed rate coupon bond wish to exchange fixed payment obligations for a floating rate dependent on market conditions, an interest rate swap paying interest dependant on a floating interest rate and receiving fixed rate interest payments at the same rate as the bond issued could be utilised. The terms of the interest rate swap could be fully matched to the notional and date of payment of the bond issued to fully transfer the interest rate profile.

Furthermore, an issuer initially paying coupons in Currency A could elect to receive interest based off a Currency A notional and rate and then pay interest based off a Currency B notional and interest rate. By this process the issuer has swapped the obligations of Currency A for equivalent obligations in Currency B at the date at which the interest rate swap was entered into.

3.8. Exchange rate hedging

A significant risk for a multinational company would be the fluctuation in exchange rates to which it may be operationally exposed, and the mitigation thereof is an important aspect of the company's risk management procedures (Allayannis, et al., 2001). One manner in which the exchange rate risk of the company can be reduced is to finance operations in the currency of the operations which the funding is intended for (Boyabatli & Toktay, 2004). In doing so, movements in exchange rates would have the same effect on both the cash inflows and outflows in operational regions where this hedging approach is taken. This approach is a form of natural hedging which a global entity can utilise, whereby

exchange rate fluctuations effects on global results are reduced by the matching the location of funding to the location of operations (Makar, et al., 1999).

The proportion of sales in each region is one of the most common measures used in practice to determine a foreign exchange funding mix (Aabo, et al., 2011) due to being able to match liability cash outflows with the related cash inflows from third party sales. Shapiro (1975) shows that one of the major factors affecting the exchange rate risk of an entity is the sales within each domicile. Furthermore, Allayannis and Ofek (2001) found that the foreign sales of a multinational entity have historically been used as the primary decision metric of the balance of foreign debt to be issued to form a suitable natural hedge.

4. SAPPI DEBT ISSUANCE

4.1. INTRODUCTION

SAPPI issued four callable bonds in 2011 and 2012 to re-finance debt obligations. This chapter explores the bond issues made by SAPPI as a case study. Particular focus is given to the following research questions:

- what was the financial position of SAPPI at the time the bonds were issued;
- what are the terms of the callable bonds;
- what was the option-adjusted spread ("OAS") on date of issue for each bond; and
- what observations are made on comparison of the determined OAS's amongst the four issues?

This chapter is laid out in four sections. First, the financial position of SAPPI in 2011 is outlined to provide context to the company's need for finance. We then detail the key terms and contractual provisions of the bonds issued, including dates of issuance, coupon rates, maturity dates, and a timeline of each bond's call provisions and the dates at which these can be exercised. We then turn our focus to calculating an OAS for each bond issue through the construction of a recombining binomial tree and solving for the appropriate spread priced onto each bond at the date of issue.

Based on the results determined and an understanding of SAPPI, we then comment on the calculated spreads. The calculated OASs for each bond are analysed and compared across the four issuances, with specific comparisons made on the currency and timing of the bonds issued.

4.2. BACKGROUND OF BOND ISSUES

SAPPI's financial position and pending financial obligations in 2011 and 2012 required the entity to issue debt in order to re-finance existing debt obligations and meet the operational cash flow requirements of the business. Chapter 2 provided an understanding of the growth of SAPPI's business and we indicated that one of the consequences of the acquisitive growth model employed by the company and unfavourable global market movements left it with the repayment of debt obligations which could not met solely by operational cash flows.

The financing raised by SAPPI in 2009 payable in 2014, as referred to in chapter 2.3., did not provide a long term solution to the cash flow constraints and debt obligations of the business. The maturity profile of SAPPI in March 2011, included in Figure 10, indicated the need for approximately USD 1.5 billion to service their debt obligations payable within one year and a further USD 1 billion payable within two years.

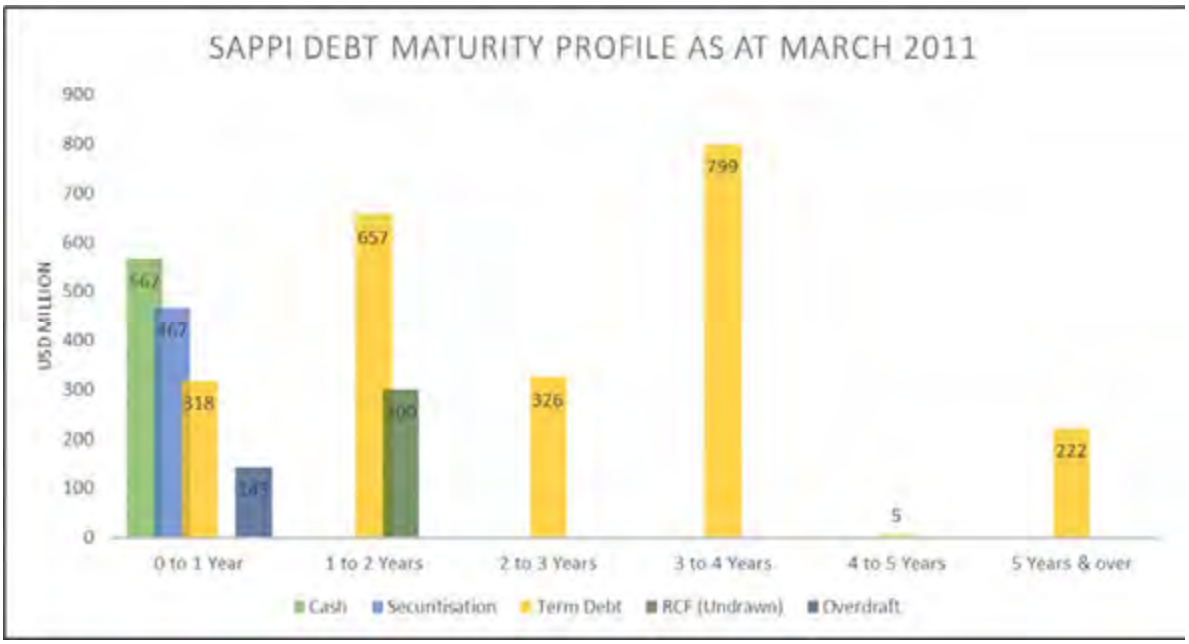


FIGURE 10: SAPPI DEBT MATURITY PROFILE AS AT MARCH 2011 (SAPPI, 2011, P. 9)

SAPPI Limited did not have the cash on hand to fund these debt obligations as they fell due and, for reasons indicated in chapter 2, the decision to issue three US Dollar ("USD") denominated bonds and one Euro denominated bond was taken. The first two callable bonds were issued in April 2011, one Euro and US Dollar, with a further two US Dollar tranches of callable bonds being issued fifteen months later, in July 2012.

The April 2011 issues comprised two notes: Euro-denominated bonds with an aggregate principal amount of € 250-million maturing in April 2018 with a semi-annual coupon rate of 6.625% (referred to as the "2018 notes") and USD-denominated bonds with an aggregate principal amount of $ 350-million maturing in 2021 with a semi-annual coupon rate of 6.625% ("2021 notes").

The two secured notes issued as the second tranche in July 2012 were both USD-denominated bonds with the following key terms: bonds with an aggregate principal amount of $ 400-million bonds maturing in July 2017 with a semi-annual coupon rate of 7.75% ("2017 notes") and bonds with an aggregate principal amount of $ 300-million maturing in June 2019 with a semi-annual coupon rate of 8.375% ("2019 notes").

All four of the bonds are listed on the Luxembourg stock exchange and all four bonds have been structured similarly, making it a simple task to simultaneously analyse all four issuances and highlight any differences identified. Table 1 outlines the key terms of these issuances.

Issued	April 2011	April 2011	July 2012	July 2012
Maturity – Year	2018	2021	2017	2019
Maturity – Date	15 April 2018	15 April 2021	15 July 2017	15 June 2019
Aggregated Principal	€ 250-million	$ 350-million	$ 400-million	$ 300-million
Coupon (p.a.)	6.625%	6.625%	7.75%	8.375%
Issue Price	100% of principal	100% of principal	100% of principal	100% of principal
Interest Payable (* first interest)	15 April; 15 October*	15 April; 15 October*	15 January*; 15 July	15 June; 15 December*

TABLE 1: SUMMARY OF KEY BOND ISSUE TERMS (OWN CALCULATIONS)

The bond issuances are ranked as senior, secured instruments with a Moody's credit rating of Ba2 assigned to them. The rating of Ba2 is higher than the credit rating of SAPPI Limited, due to the secured, collateralised nature of the bonds issued (Moody's Investor Services, 2015). Therefore, these bond issuances were done with a rating below investment grade and the high coupons attached to the bonds indicate that the bonds were issued with high yields and would meet the definition of high-yield debt, or junk bonds.

4.3. CALLABLE BOND TERMS

All four issuances include specific call provisions with the specific terms thereof summarised below. All callable terms are subject to notice of 30 or 60 days.

Prior to a pre-specified date, the bonds can be redeemed at an aggregate of the par value, accrued interest and an applicable premium. The applicable premium is defined in the offering memorandum as the greater of:

a) 1% of the principal amount of the relevant notes; or
b) The excess of:
    (i) The present value (using an applicable treasury yield to maturity plus 50 basis points as a discount factor) of the redemption price (per the table below) and all accrued interest; over
    (ii) The principal amount of said note.

Note	2018 notes (issued 2011)	2021 notes (issued 2011)	2017 notes (issued 2012)	2019 notes (issued 2012)
Redemption price	103.313%	103.313%	100%	106.281%
Date at which first call option expires	15 April 2015	15 April 2016	15 April 2017	15 April 2017

TABLE 2: APPLICABLE BOND REDEMPTION PRICE (SAPPI BOND PROSPECTUS)

Following the expiry of the first call option, the specific call options of each bond differ due to issue and expiry dates, with explicit call prices. The timelines of each bond can be seen below, with the applicable redemption price starting on the dates per the specific timeline:

2018 BOND TIMELINE

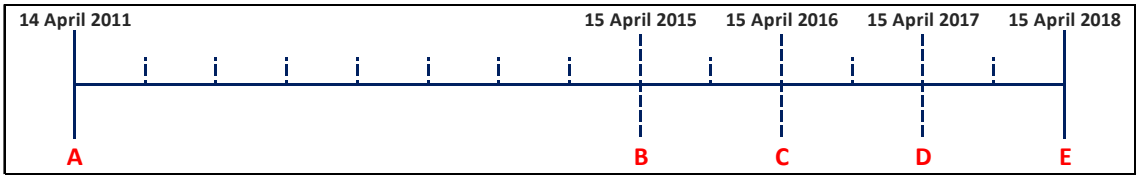


FIGURE 11: 2018 NOTE TIMELINE

The timeline of the bond demonstrates the contractually stipulated dates between which the following redemption prices are applicable:

Redemption price 1: 103.313%
Redemption price 2: 101.656%
Redemption price 3: 100.000%

KEY	
A	Issue date
B	Expiry of initial redemption terms
B - C	Redemption price 1
C - D	Redemption price 2
D - E	Redemption price 3
E	Bond maturity date

2021 BOND TIMELINE

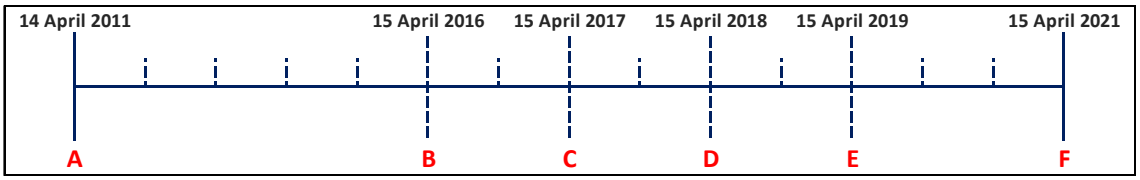


FIGURE 12: 2021 NOTE TIMELINE

The timeline of the bond demonstrates the contractually stipulated dates between which the following redemption prices are applicable:

Redemption price 1: 103.313%
Redemption price 2: 102.208%
Redemption price 3: 101.104%
Redemption price 4: 100.000%

KEY	
A	Issue date
B	Expiry of initial redemption terms
B - C	Redemption price 1
C - D	Redemption price 2
D - E	Redemption price 3
E - F	Redemption price 4
F	Bond maturity date

2017 BOND TIMELINE

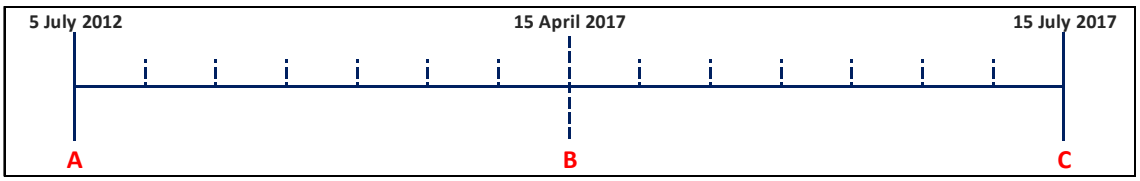


FIGURE 13: 2017 NOTE TIMELINE

The timeline of the bond demonstrates the contractually stipulated dates. After 15 April 2017, the bond can be called at its par value.

KEY	
A	Issue date
B	Expiry of initial redemption terms
B - C	Redemption at 100%
C	Bond maturity date

2019 BOND TIMELINE

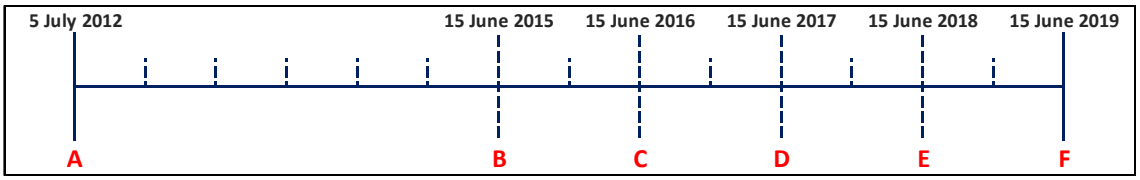


FIGURE 14: 2019 NOTE TIMELINE

The timeline of the bond demonstrates the contractually stipulated dates between which the following redemption prices are applicable:

Redemption price 1: 106.281%
Redemption price 2: 104.188%
Redemption price 3: 102.094%
Redemption price 4: 100.000%

KEY	
A	Issue date
B	Expiry of initial redemption terms
B - C	Redemption price 1
C - D	Redemption price 2
D - E	Redemption price 3
E - F	Redemption price 4
F	Bond maturity date

FURTHER BOND TERMS

In addition to the call provisions and their applicable premiums highlighted above, further bond terms have been included in Appendix A.

4.4. OPTION-ADJUSTED SPREAD ON SAPPI CALLABLE BONDS

The analysis of the relative cost of financing that SAPPI obtained can be determined through an OAS analysis. While other methodologies can be utilised to determine a cost of financing, the consistent application of an OAS methodology will provide results which can be used for a comparison of relative costs of financing obtained by SAPPI. Refer to discussion in chapter 3.6 for applicability of the methodology utilised and further motivation into the decisions taken in the construction of the model.

Methodology

The OAS calculated for each bond will be determined relative to a benchmark yield curve approximating an appropriate risk free rate. The results and analysis of the OAS will vary depending on the model utilised in the analysis with the model utilised in this study referred to as the *lognormal model* or more technically as the "onefactor, arbitrage-free, binomial tree of lognormally distributed short rates" (Miller, 2007, p. 48).

In the following analysis, we must first develop an appropriate recombining binomial tree, also referred to as a binomial lattice, which incorporates the market interest rates at the date of determination and the expected volatility of these rates over the period of forecast. This model is first built from determined forward rates within the market and then calibrated to ensure that prices as determined by the model match those in the market.

The second step in the process is to value the callable bond off the binomial lattice developed, including all expected coupon payments and building in all dates at which the specific bond can have a call provision exercised. At the date where a call provision may be exercised and the projected value of the bond exceeds the value of the provision, the model needs to be programmed to select the callable value as the value for further discounting periods.

The final step incorporates a fixed spread into the binomial tree model used for discounting purposes. A goal-seek function within excel is utilised to determine the spread which, when added to the discount rate at each node of the binomial tree, produces the market value of the bond at the valuation date. The derived spread is referred to as the OAS, as it takes into account the call provisions within the bond terms.

Once the OAS has been calculated for each bond, it enables us to compare the spreads on each issue and consider the costs incurred by SAPPI on each bond issue.

Construction of binomial lattice

The key inputs when developing the recombining binomial tree are the market risk-free interest rates at initiation date, the time duration of each step between nodes and the underlying volatility of the aforementioned rates. The market risk-free rates in the currency of issue will be used to determine the implied forward rate for each step, or node, in the binomial tree.

We have elected to construct a binomial tree with monthly nodes to incorporate market volatility. As such, the nodes of the binomial tree constructed will match the coupon dates for the bond which is being valued but will also include points in between each coupon date for further arithmetic accuracy.

There may be an argument for using a weekly frequency of nodes but given that this tree is being used for a long term period, this would add minor potential additional accuracy with a significant amount of additional computation required. Hence, we have deemed the monthly period to be appropriate.

All cash flows occur on the fifteenth of the month in this case, therefore the binomial tree for the 2021 notes will start on the issue date of 15 April 2011 and continue with nodes every month (on the fifteenth of each month) until the maturity of the bond, namely 15 April 2021.

The underlying volatility assumption utilised in the building of the binomial lattice incorporates the inherent uncertainty of interest rates into the analysis (Miller, 2007). The volatility utilised could be either the implied or historical volatility. As discussed in chapter 3.6, while both are appropriate, the historical volatility is utilised in this study due to the availability of information and the ability to apply volatility consistently at any date. Furthermore, while it may be appropriate to change volatility at a certain point within the model, this approach has not been taken to increase comparability between OASs calculated.

The methodology for each valuation date will be the same, with the inputs varying slightly in each model. We will model the 2021 notes issued in April 2011 as the primary issue for calculation purposes and then repeat the same process for the three other issues. While the 2018 notes issued in April 2011 match the coupon periods of the 2021 notes, the same lattice cannot be used for this bond as the 2018 notes were issued in Euros while the 2021 notes were issued in US Dollars. Conversely, the monthly nodes of the binomial tree enable the same binomial tree to be utilised for the 2017 and 2019 notes which were both issued in July 2012 in US Dollar with coupon periods of January/July and June/December, respectively. Market data from Bloomberg has been utilised in all calculations.

Binomial nodes

All four bond issues pay interest semi-annually, but monthly nodes provide further data points and increase the accuracy of the model. Hence, a monthly binomial tree will be utilised with a length of time period (Δt) of 0.833 years. Throughout this chapter, decimals are carried until final amounts are presented to maintain calculation integrity and coupon dates will be consistent with those summarised in earlier in this chapter.

Market risk-free rates

Consideration must be given to the appropriate data to be utilised for a risk-free rate. The US Treasuries Actives Curve comprising US treasury bills ("US T-bill") and government bonds provides a suitable basis for the US Dollar-backed securities due to the availability of instruments at discrete point and the liquidity of the instruments at the discrete points.

German government bonds ("BUNDs") are an accepted benchmark, within the European market, for Euro-denominated fixed income products due to their liquidity in the secondary market and being a perceived safer investment product in times of financial crisis (Kempf, et al., 2012). Hence, the EUR German Sovereign Curve, comprising German government bills and BUNDs, is deemed to be an appropriate benchmark curve for the 2018 notes denominated in Euro.

The market risk-free rate data has been obtained from Bloomberg, as required for each respective note, and included in Appendix B. The quoted bond mid prices as at the required valuation dates have been provided in table 3. These prices will be utilised to determine the implied spot and forward rates in the market as at valuation date. In addition, these prices will be utilised to calibrate the binomial tree once constructed. A simplifying assumption made in this case is that all coupon and principal payments on underlying instruments will be made on the discrete 'days' as per table 3. US government bond coupons are paid semi-annually, in contrast to BUNDs which pay an annual coupon. At all times a day count convention of ACT/360 has been utilised.

US T-Bill mid prices as quoted by Bloomberg ($Q_{Bloomberg}$) have been converted to a valuation date price (P_{bill}) as determined by equation 4.1, where d represents days to maturity on a T-Bill with a face value (F_{bill}) of $100. US government bond prices, which have been quoted by Bloomberg in US Dollars and 32nd fractions of Dollars, have been converted to decimal format in table 3.

$$P_{bill} = F_{bill} - \frac{(Q_{Bloomberg} \times d)}{360}$$

EQUATION 4.1: VALUATION DATE PRICE OF A US TREASURY BILL

	Days	2018 notes (Euro) [EUR German Sovereign Curve]		2021 notes (USD) [US Treasuries Actives Curve]		2017 & 2019 notes (USD) [US Treasuries Actives Curve]	
Date of valuation		15 April 2011		15 April 2011		15 July 2012	
		Instr.	Mid-Price	Instr.	Mid-Price	Instr.	Mid-Price
1 month	30	N/A	N/A	T-BILL 0	99.9975**	T-BILL 0	99.9956**
3 month	90	BUBILL 0	99.829	T-BILL 0	99.9843**	T-BILL 0	99.9792**
6 month	180	BUBILL 0	99.474	T-BILL 0	99.9432**	T-BILL 0	99.9304**
1 year	360	BKO 1	99.689	T-BILL 0	99.7795**	T-BILL 0	99.8381**
2 year	720	BKO 1.5	99.366	BND 0.75	100.1016*	BND 0.25	100.0195*
3 year	1 080	OBL 2.25	100.376	BND 1.25	100.1641*	BND 0.25	99.7383*
4 year	1 440	OBL 2.5	100.236	N/A	N/A	N/A	N/A
5 year	1 800	OBL 2.5	96.819	BND 2.25	100.6016*	BND 0.75	100.6289*
7 year	2 520	DBR 4	105.724	BND 2.875	100.4609*	BND 1	100.1641*
10 year	3 600	N/A	N/A	BND 3.625	101.7813*	BND 1.75	102.3828*

**Prices converted to decimal notation for consistency and rounded within table.*

*** Prices converted for consistency using Equation 4.1 and rounded within table.*

TABLE 3: MARKET RISK-FREE MID-PRICES {DATA AMENDED AS INDICATED} (BLOOMBERG)

Bootstrapping of implied spot curve and implied forward rates

The instrument details in table 3 include the coupon rate on each of the underlying instruments. Where no coupon is paid and the sole cash flow on the instrument occurs at the maturity date, the implied spot rate (s_n) is determined by equation 4.2 utilising an annual compounding period. Inputs include the instruments face value (FV), current price (PV) and days till maturity (d).

$$s_n = \left(\frac{FV}{PV}\right)^{\frac{360}{d}} - 1$$

EQUATION 4.2: IMPLIED SPOT RATE ON ZERO COUPON INSTRUMENTS

Due to no coupons being paid on the underlying instruments making the data points up to one year on the 2011 US Treasuries curve, the implied spot rates for these points can be determined utilising equation 4.2. At the two year point and beyond, the underlying instruments include coupon payments that would be made at regular intervals over the life of the instrument. The implied spot rate at the maturity of the instrument must take into account the implied spot rates at each coupon payment date.

The process, commonly referred to as the bootstrapping of a curve, would involve solving for implied spot rate (s_n) utilising equation 4.3, the instrument-specific coupon payments (C) and the previously calculated spot rates at these points. Where an implied spot rate at a coupon date has not been determined, the cubic spline interpolation function is utilised to predict the rate at the date required. This predicted rate is then used for all further coupons at this date to ensure consistency in the determination of later implied spot rates that may utilise the same data point.

$$PV = \frac{C_1}{(1+s_1)^{\frac{d_1}{360}}} + \frac{C_2}{(1+s_2)^{\frac{d_2}{360}}} + \frac{C_3}{(1+s_3)^{\frac{d_3}{360}}} + \ldots + \frac{FV + C_n}{(1+s_n)^{\frac{d_n}{360}}}$$

EQUATION 4.3: VALUATION DATE PRICE OF INSTRUMENT UTILISING IMPLIED SPOT RATES

Equation 4.3 would be re-arranged into equation 4.4 for the determination of the two year implied spot rate (s_2) of the 2011 US Dollar Curve. An implied spot rate of 0.703% is calculated from a face value of $100, current price of $100.1016 and semi-annual coupon of 0.375 on the two-year US government bond. The implied spot rate at $s_{1.5}$ was determined with cubic spline and previous implied spot data to be 0.328%.

$$s_2 = \left\{ \frac{FV + C_2}{PV - \frac{C_{0.5}}{(1+s_{0.5})^{0.5}} - \frac{C_1}{(1+s_1)^1} - \frac{C_{1.5}}{(1+s_{1.5})^{1.5}}} \right\}^{\frac{360}{720}} - 1$$

EQUATION 4.4: IMPLIED SPOT RATE ON ZERO COUPON INSTRUMENTS

Following the same process for all data points on the 2011 US curve, the implied spot rates indicated in table 4 are determined with t in years and nominal annual interest rates compounded annually ("NACA"). Appendix C includes the implied spot rates determined for the 2011 Euro curve and 2012 USD curve.

t	s_n
0.083	0.030%
0.25	0.063%
0.5	0.114%
1	0.221%
2	0.703%
3	1.207%
5	2.179%
7	2.915%
10	3.609%

TABLE 4: IMPLIED NACA SPOT RATES ON 2011 USD CURVE {OWN CALCULATIONS}

The forward rates utilised in the construction of the binomial lattice are required to match the compounding frequency of the binomial lattice. Hence, the NACA rates in table 4 are converted into nominal annual interest rates compounded monthly ("NACM") and interpolated. Cubic spline interpolation is the interpolation methodology utilised in this study as it provides interest rate projections outside the bounds of known data points. Another commonly utilised method is linear interpolation, however resulting spot rate differences between the two methods are minor. Figure 15 graphically compares the determined 2011 US Dollar zero curves off both, while Appendix D includes similar comparisons for the two additional zero curves.

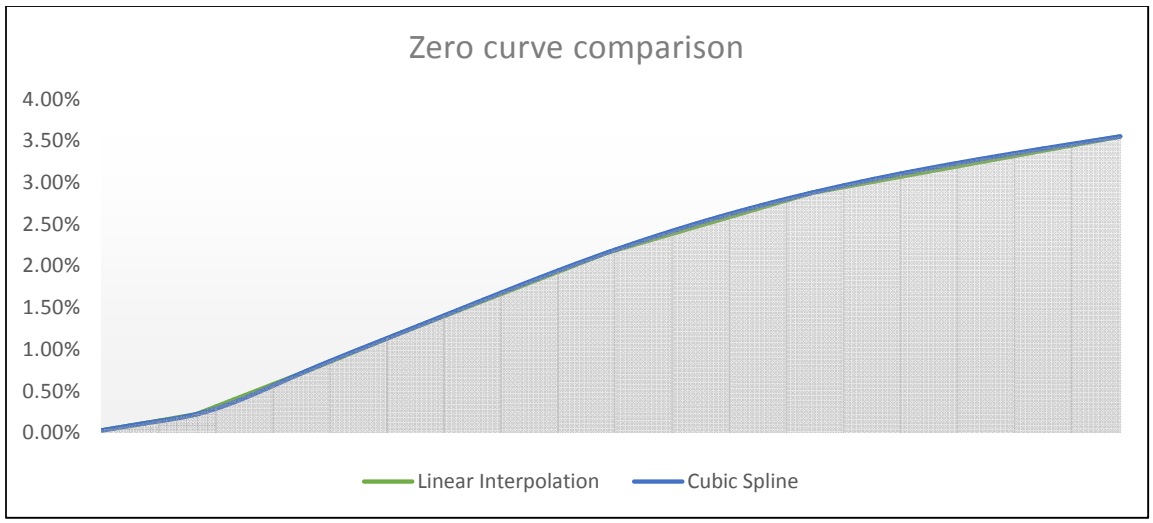


FIGURE 15: GRAPHICAL COMPARISON OF LINEAR AND CUBIC SPLINE INTERPOLATION {OWN CALCULATIONS}

Once the implied spot market rates are obtained and interpolated, the spot rates at the discrete points required for the binomial lattice are selected. As a monthly lattice is to be constructed, monthly spot rates are selected and equation 4.5 is utilised to obtain implied forward rate (f), where n and t are both quoted in years.

$$f_n = 2\left\{\sqrt[2\Delta t]{\left(\frac{\left(1+\frac{S_n}{2}\right)^{2n}}{\left(1+\frac{S_{n-\Delta t}}{2}\right)^{2(n-\Delta t)}}\right)}-1\right\}$$

EQUATION 4.5

t	spot	fwd	t	spot	fwd	t	spot	fwd	t	spot	fwd	t	spot	fwd
0.08	0.029%	0.029%	2.08	0.745%	1.810%	4.08	1.733%	3.679%	6.08	2.583%	4.718%	8.08	3.157%	5.029%
0.17	0.046%	0.063%	2.17	0.788%	1.878%	4.17	1.773%	3.749%	6.17	2.612%	4.740%	8.17	3.176%	5.039%
0.25	0.063%	0.098%	2.25	0.831%	1.947%	4.25	1.813%	3.817%	6.25	2.641%	4.761%	8.25	3.195%	5.050%
0.33	0.080%	0.132%	2.33	0.873%	2.016%	4.33	1.853%	3.883%	6.33	2.669%	4.781%	8.33	3.214%	5.062%
0.42	0.097%	0.165%	2.42	0.915%	2.085%	4.42	1.892%	3.946%	6.42	2.696%	4.800%	8.42	3.232%	5.074%
0.50	0.114%	0.195%	2.50	0.957%	2.156%	4.50	1.932%	4.007%	6.50	2.724%	4.818%	8.50	3.250%	5.086%
0.58	0.129%	0.222%	2.58	0.998%	2.228%	4.58	1.970%	4.065%	6.58	2.750%	4.835%	8.58	3.268%	5.099%
0.67	0.144%	0.251%	2.67	1.038%	2.302%	4.67	2.009%	4.120%	6.67	2.777%	4.850%	8.67	3.286%	5.113%
0.75	0.160%	0.288%	2.75	1.079%	2.378%	4.75	2.047%	4.172%	6.75	2.802%	4.865%	8.75	3.304%	5.127%
0.83	0.178%	0.335%	2.83	1.119%	2.456%	4.83	2.084%	4.222%	6.83	2.828%	4.878%	8.83	3.321%	5.142%
0.92	0.198%	0.396%	2.92	1.160%	2.537%	4.92	2.121%	4.268%	6.92	2.852%	4.890%	8.92	3.338%	5.158%
1.00	0.221%	0.476%	3.00	1.200%	2.622%	5.00	2.158%	4.310%	7.00	2.877%	4.902%	9.00	3.355%	5.175%
1.08	0.248%	0.573%	3.08	1.241%	2.709%	5.08	2.193%	4.350%	7.08	2.901%	4.912%	9.08	3.372%	5.192%
1.17	0.279%	0.680%	3.17	1.282%	2.796%	5.17	2.229%	4.388%	7.17	2.924%	4.922%	9.17	3.389%	5.211%
1.25	0.313%	0.791%	3.25	1.323%	2.882%	5.25	2.264%	4.425%	7.25	2.947%	4.932%	9.25	3.405%	5.230%
1.33	0.350%	0.906%	3.33	1.364%	2.968%	5.33	2.298%	4.460%	7.33	2.970%	4.942%	9.33	3.422%	5.251%
1.42	0.389%	1.022%	3.42	1.405%	3.052%	5.42	2.332%	4.494%	7.42	2.992%	4.951%	9.42	3.438%	5.273%
1.50	0.431%	1.138%	3.50	1.446%	3.136%	5.50	2.365%	4.526%	7.50	3.014%	4.961%	9.50	3.454%	5.295%
1.58	0.474%	1.252%	3.58	1.488%	3.218%	5.58	2.398%	4.557%	7.58	3.035%	4.970%	9.58	3.471%	5.319%
1.67	0.519%	1.363%	3.67	1.529%	3.299%	5.67	2.430%	4.587%	7.67	3.057%	4.979%	9.67	3.487%	5.344%
1.75	0.564%	1.469%	3.75	1.570%	3.378%	5.75	2.461%	4.616%	7.75	3.077%	4.989%	9.75	3.503%	5.371%
1.83	0.610%	1.568%	3.83	1.611%	3.456%	5.83	2.493%	4.643%	7.83	3.098%	4.999%	9.83	3.519%	5.398%
1.92	0.655%	1.659%	3.92	1.652%	3.532%	5.92	2.523%	4.669%	7.92	3.118%	5.008%	9.92	3.535%	5.428%
2.00	0.700%	1.739%	4.00	1.692%	3.607%	6.00	2.553%	4.694%	8.00	3.138%	5.018%	10.00	3.551%	5.458%

TABLE 5: IMPLIED FORWARD RATES FOR 2021 NOTES {OWN CALCULATIONS}

The NACM implied forward rates for the 2021 are included in table 6 alongside the NACM implied spot rates. Appendix E includes the NACM forward and spot for both the 2011 Euro and 2012 USD curves.

Historical volatility

The volatility utilised in each lattice has been calculated from historical market yield information available for the ten year USD government bond and ten year German government bonds (Investing.com, 2016). We have elected to use daily data off the respective ten year US and German government bonds, with the derived lognormal returns adjusted for a moving average of 21 days to approximate one month (260 trading days in a year) and match the construction period of the binomial lattice. Historical moving averages were determined for a full calendar year preceding the valuation date and, due to moving averages being utilised, Longerstacy & Zangari's (1995) recommendation for a mean of zero when calculating variance has not been applied within this case.

We have calculated an annualised volatility in terms of the methodology outlined in equation 3.3 of chapter 3 for use in the three binomial constructions and summarised in table 6. Figures were annualised on the assumption of 260 trading days in a year. Refer to Appendix F for the full data sets of market information and the respective moving average and annualised volatility calculations.

Valuation date	Currency	Annualised volatility
15 April 2011	USD	7.0349%
15 April 2011	EUR	6.6493%
15 July 2012	USD	8.7615%

TABLE 6: DETERMINED ANNUALISED HISTORICAL VOLATILITIES {OWN CALCULATIONS}

Notation

The notation utilised in this case for the interest rate and probability at each node follows the form $R_{t,j}$ and $p_{t,j}$ respectively, where t is the time period from inception date in years and j is the number of the node from top to bottom. Refer to figure 16 for a demonstration of the notation used throughout this study for co-ordinates within the binomial tree.

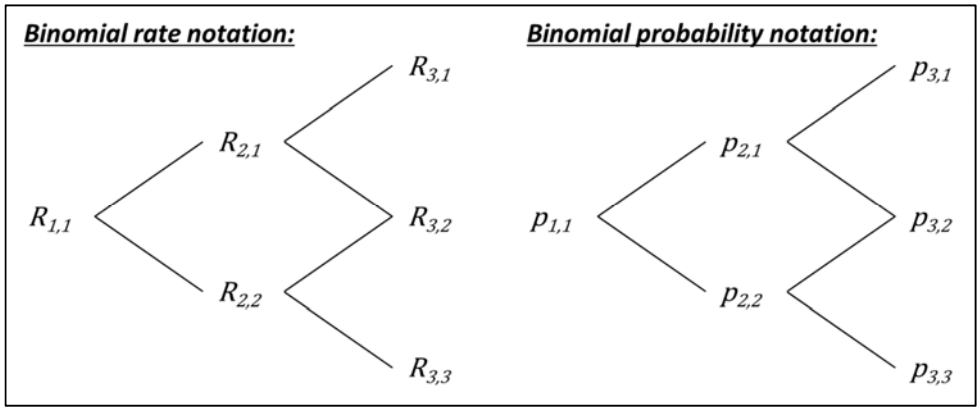


FIGURE 16: DEMONSTRATION OF BINOMIAL TREE NOTATION

Construction

The methodology applied to the construction of the binomial lattice involved starting at the front end of the tree ($R_{1,1}$) and continuing to build the tree to the final node required for each instrument. The final node required will be one period (Δt) before the maturity date of the instrument as this rate is utilised to discount the final cash flows.

The first node in the lattice, in this case $R_{0.08,1}$, is available in the market on the valuation date as the quoted spot rate. For the 2011 USD curve, this value will be 0.0286%. Following the first node, each node at the same time (t) will have a relationship with the node above or below it, as applicable for the particular node, determined by the assumed volatility ($V(r)$) and length of each step in the model (Δt). We note that the volatility utilised in the construction of each model, detailed in table 6, have been kept constant to ensure comparability between the OAS's calculated. Equation 4.6 quantifies the lower node's rate relative to the node above it, with a re-arranging on the terms allowing for the determination of the upper node.

$$R_{t,i+1} = R_{t,i} \times e^{2 \times V(R) \times \sqrt{\Delta t}}$$

EQUATION 4.6

The implied forward rate for each time (t) calculated from market rates and the probability of each node are utilised to calculate the forecasted interest rate at each node using equation 4.5. Substituting the expression from equation 4.6 into equation 4.7, the interest rate at node $R_{t,1}$ is calculated. Following the determination of $R_{t,1}$, equation 4.6 is utilised to calculate all applicable nodes.

$$f_n = \sum_{i=1}^{j} \left\{ (p_{t,i} \times R_{t,i}) + (p_{t,i+1} \times R_{t,i+1}) + (p_{t,i+2} \times R_{t,i+2}) + \ \ldots + (p_{t,j} \times R_{t,j}) \right\}$$

EQUATION 4.7

A practical demonstration of this construction can be done using the nodes $R_{0.17,1}$ and $R_{0.17,2}$ for the 2011 USD binomial tree, where there are two outcomes and each will have an equal probability of 0.5. The substitution of equation 4.6 into equation 4.7 enables us to derive equation 4.8. With an implied forward rate of 0.0627% and an assumed volatility of 7.0349%, this would lead to a values of 0.0614% at $R_{0.17,1}$ and 0.0639% at $R_{0.17,2}$.

$$R_{0.17,1} = \left\{ p_{0.17,1} \right\} + \left\{ \frac{f_1}{p_{0.17,2} \times e^{2 \times V(R) \times \sqrt{\Delta t}}} \right\}$$

EQUATION 4.8

The number of nodes at each leg in the binomial lattice increases by one, increasing the number rates to be determined and the number of times that Equation 4.6 is substituted into Equation 4.7. This process is continued until the final nodes required are determined, which in the case of the 2011 USD lattice will be as at 15 March 2021 (t=10). The pre-calibration lattices for all three models have been included in Appendix G.

Valuation using the binomial lattice

The binomial lattice incorporates the probabilities of each node in the rate determined and, as such, the value of an instrument would be the present value of the applicable discount rates for each node. The price of the instrument ($P_{t,j}$) is determined with equation 4.9, where m is the number of compounding periods per year.

$$P_{t,j} = \frac{\left(P_{t+1,j} + P_{t+1,j+1} \right)}{2 \times \left(1 + \frac{R_{t,j}}{m} \right)}$$

EQUATION 4.9

Equation 4.9 would be utilised from the right hand side of the binomial tree with cash flows incorporated until the outcome of $P_{0,1}$ is derived.

Calibration

The usage of the binomial tree is dependent on the model being able to accurately price instruments in line with their market-based prices. Instrument which were used to derive the implied forward rates are also used for model calibration, starting with the most near dated maturity. The calibration of the models involves the solving for the correct rate at $R_{t,1}$, with other nodes in that tree leg determined with equation 4.6, that would allow the binomial lattice created to produce the market value of the instrument on valuation date. Calibration of each binomial tree is performed at the discrete points utilised to determine the implied spot rates for each curve, as detailed in table 4.

The GRG Nonlinear solver function within excel can be used to set the implied forward rate for each node to a value which would determine the market mid-price for each underlying instrument. Refer to Appendix H for all three post-calibration binomial lattices determined.

DETERMINATION OF OAS

The determination of the OAS involves further use of the now-calibrated binomial tree in three steps. First, the instrument is loaded as a bullet bond, assuming that there are no call provisions included within the instrument and one final return of the par value at the maturity date. The valuation of the bullet bond is programmed off the binomial lattice in terms of equation 4.9 but will not produce the market price of the instrument as the spread related to the risk of the investment has not been taken into account.

Secondly, the call provisions of the instrument are incorporated into the model. Where the value of the present value of future cash flows exceeds the value of a call provision exercisable at a specific node, the valuation model will be programmed to select the value of the call provision and continue to discount this value along the binomial tree until $P_{0,1}$ is derived. Call provisions outlined in chapter 4.3 have been included in the valuation of all four bond issuances.

The third and final step involves adding a fixed spread to the discount rates used at each node within the binomial lattice. Since a constant spread is added to all data points within the lattice, equation 4.10 can be utilised for the valuation of bonds incorporating said fixed spread.

$$P_{t,j} = \frac{\left(P_{t+1,j} + P_{t+1,j+1}\right)}{2 \times \left(1 + \frac{R_{t,j} + spread}{m}\right)}$$

EQUATION 4.10

The GRG Nonlinear solving method within excel is utilised to determine the constant spread adjustment that would be made within the model to generate the bond issue price. As all bonds were issued at 100% of the principal amount, a par value of 100 currency units was utilised for both the notional value and issue price of the all issuances. Furthermore, models were confirmed to accurately account for call provisions as outlined in chapter 4.3. The determined fixed spread is referred to as the OAS, with table 7 listing the four OAS's calculated on the respective issuances. Refer to Appendix I for all four bond valuation models utilised to determine the OAS.

	2021 notes (USD)	2018 notes (EUR)	2017 Notes (USD)	2019 Notes (USD)
Option-adjusted spread	329.33 basis pts	355.49 basis pts	704.48 basis pts	749.62 basis pts

TABLE 7: CALCULATED OAS AT ISSUE DATE {OWN CALCULATIONS}

4.5. RESULTS

This chapter, by means of a case study, has taken the reader through the thought process SAPPI management would have followed in deciding what mechanism to utilise when re-financing debt obligations in 2011 and 2012. As the South African corporate debt market did not have the depth required for an issuance of the size SAPPI required, the sole viable financing option remaining was to issue corporate debt denominated in Euro or USD.

The global exposure of SAPPI to both Euro and US Dollar through the European and North American business segments, respectively, afforded the opportunity for SAPPI to approach these debt markets for funding. Through the methodology applied in this study on the 2018 and 2021 notes issued in April 2011, it can be observed that the OAS in the US market was lower than the comparable spread in the European market. Given the longer time to maturity on the 2021 notes, the disparity may be even greater than the 25 basis points that appears on an initial observation.

The relatively cheaper source of financing in the US identified in this study on the 2011 issuances could have been a contributor to the decision made by SAPPI management to domicile both 2012 issuances in USD. Furthermore, as discussed in chapter 5, the USD obligations were immediately swapped to Euro exposures by SAPPI, supporting the notion that it was more affordable to raise debt in the US high yield market and enter into an interest rate swap to obtain Euro exposure than it would be to raise debt primarily in the European high yield market.

The second significant observation in 4.4 relates to the calculated OASs on the 2012 issuances being notably higher than the OASs determined on the 2011 issuances. The reasoning could be due to SAPPI's financial position being weaker in 2012 than 2011 but also could be indicative of shifts in the market conditions in 2012.

SAPPI's financial performance in 2011 and 2012 saw year-on-year growth in profits (SAPPI, 2012) and the likelihood of such an unfavourable shift in the company position is not clearly noticeable within financial information available. Hence, more viable reasons for the unfavourable OASs in 2012 need to be investigated.

The higher OAS on the 2012 issues may be due to less successful negotiation of financing terms by SAPPI management or a failure of SAPPI management to update financial decision-making tools for shifts within the market in the fifteen months since the 2011 issuances.

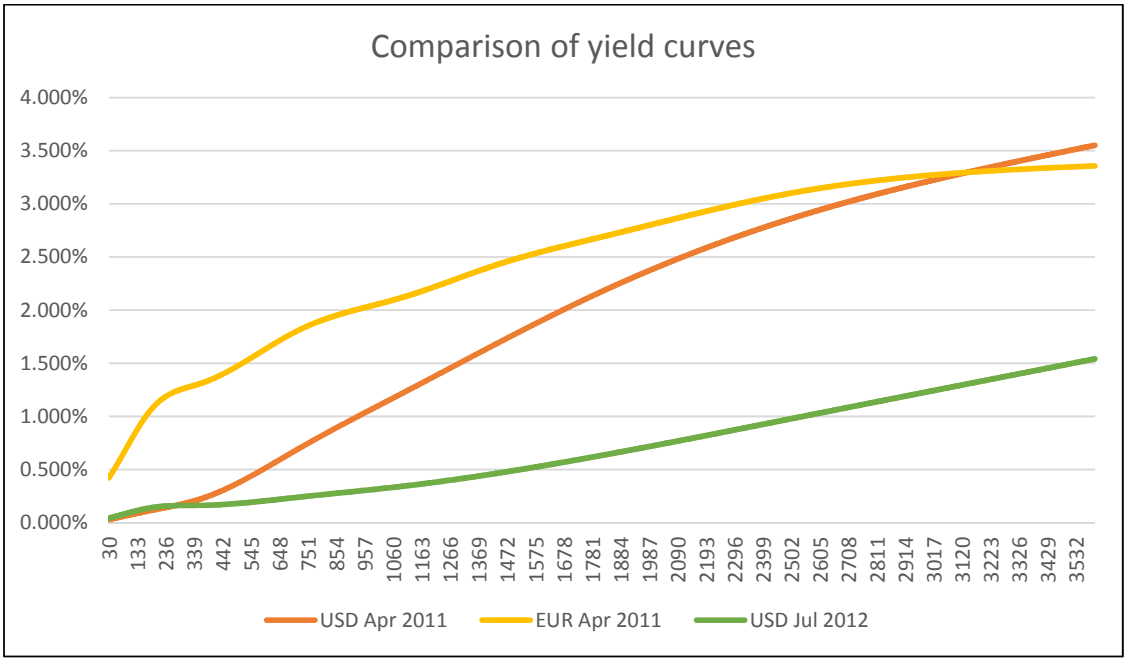


FIGURE 17: GRAPHICAL COMPARISON OF BOOTSTRAPPED YIELD CURVES DERIVED IN CHAPTER 4.4 {OWN CALCULATIONS}

Figure 17 graphically depicts how the USD 2012 zero curve derived within this chapter is almost a full two percent below the comparable USD curve fifteen months earlier at almost all data points. However, the coupons on the 2017 and 2019 notes (7.75% and 8.375% respectively) are more than one percent higher than both 2011 issues. The shift in the underlying risk free rate would increase the OAS by approximately 200 basis points, which still leaves a remaining 200 basis points unexplained.

The yields in the European market, included as part of the risk free data in Appendix A, have also observably declined in the fifteen month period from April 2011 until July 2012. The decrease in rates within the European bond market may also indicate that SAPPI could potentially have obtained funding at lower spreads in the European high yield corporate bond market. While this would have to be investigated in further detail, this may also indicate that SAPPI had incurred unnecessary costs on the sourcing of funding in USD and subsequent swapping to Euro, when it could have gone directly to European markets.

5. SAPPI HEDGING OF BOND ISSUANCE GLOBAL EXPOSURES

5.1. INTRODUCTION

The acquisitive growth of SAPPI led to the company being one of the largest in the global paper and pulp industry, as well as the chemical cellulose industry, with operating segments in South Africa, Europe and North America. While three bond issues were at fixed coupons in US Dollar and an additional bond issue in Euro with a fixed coupon, the management of SAPPI hedged these initial exposures with interest rate swaps. Two of the US Dollar issues where swapped to Euro with the remaining USD Dollar fixed exposure swapped to floating interest rate exposure.

SAPPI utilised swap contracts to hedge the coupon exposure of three of the bonds issued. This chapter continues to explore the bond issues as a case study with a particular focus on the hedging strategies employed and the following research questions:

- what was management's potential reasoning for the hedging decisions made;
- did the hedging decisions made align financing obligations and the assets which they were financing; and
- what were the retrospective effects of the hedging decisions up until 30 September 2015?

5.2. SAPPI MANAGEMENT'S POTENTIAL REASONING FOR HEDGING DECISIONS MADE

SAPPI management made the decision to hedge some of the risks attached to notes issued in 2011 and 2012. In April 2011, upon issuance of the 2021 notes, the fixed US Dollar payments were swapped for 6 month US Dollar LIBOR payments to match bond repayments for the duration of the bond's life. From an economic perspective, SAPPI introduced exposure to a variability in US exchange rate through this hedge and in order to benefit from this hedging decision would want US interest rates to remain low. Hence, management's potential justification for this decision could be linked to an expectation that US interest rates are to remain lower than currently priced into market rates.

The 2017 and 2019 notes future obligations were both swapped, in July 2012, from US Dollar exposure to fixed Euro payments at 7.56% and 8.33% respectively. Economically, this shifted the underlying exposure of the financing from the US to Europe.

Chapter 4 of this case calculated the OAS on the US Dollar denominated debt issued in 2011 to be lower than the OAS determined on Euro denominated debt issued in 2011, thereby indicating the possibility that SAPPI was able to raise funding at comparatively lower spreads and costs in US Dollar.

Therefore, while SAPPI would prefer Euro denominated funding, this observation would justify the decision to made by SAPPI obtain funding in US Dollar and immediately swap the future obligations to Euro to produce a more cost-effective natural hedge.

A brief summary of the hedging decisions made can be seen in table 8. The most likely motivation that SAPPI management would have for the described hedging decisions being made subsequent to the debt issuances would relate to the global operational exposure of SAPPI and an attempt to align the currency exposures of operational assets and financing liabilities. These decisions would follow the risk management approach of introducing a natural hedge to reduce the foreign exchange risk of the business, as discussed in 3.8.

Issued	2018 notes	2021 notes	2017 notes	2019 notes
Base Currency	€ 250-million	$ 350-million	$ 400-million	$ 300-million
Swap fixed to floating?		YES (floating 6m LIBOR USD)		
Swap USD to EUR?			YES (fixed EUR at 7.56%)	YES (fixed EUR at 8.33%)
Final exposure	Fixed EUR	Floating USD	Fixed EUR	Fixed EUR

TABLE 8: SUMMARY OF HEDGING DECISIONS MADE THROUGH UTILISATION OF INTEREST RATE SWAPS

We will assess the subsequent economic viability of the two hedging options taken by SAPPI in 5.4 below with the proviso that economic movements within the operating regions are likely to be the driver of the exchange rates and interest rates. While the presence of a natural hedge may be easily observable, the measurement of the effectiveness thereof is more difficult to quantify due to the vast number of factors that may affect both segmental performance and the fair value of amounts payable. Hence, the assessment of the hedging decision will relate more closely to the fluctuations in global markets and their effects on SAPPI's financial performance and not be extrapolated into an isolated assessment of the business's operational performance.

5.3. MATCHING OF SAPPI OPERATIONAL ASSETS AND FINANCING OBLIGATIONS

SAPPI provides disclosure for three separate operating segments, namely North America, Europe and South Africa. The global exposure of SAPPI has been introduced in chapter 2.6, with the proportion of operational assets in each region remaining relatively stable over the period from 2010 to 2015.

The operational figures provide us with the data necessary to assess whether the operational assets in each division are matched to financial obligations across the SAPPI group. As can be seen in the

figure 18 below, before taking into account the debt that was swapped into Euro the majority of SAPPI's exposure to interest-bearing debt is in US Dollar.

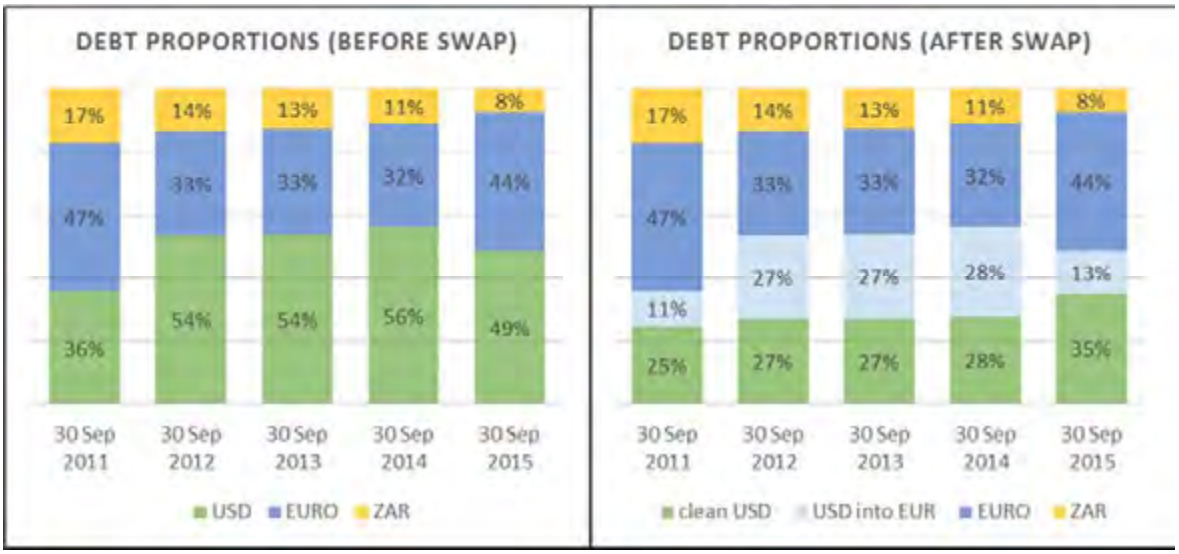


FIGURE 18: CURRENCY EXPOSURE BEFORE AND AFTER SWAPPING OF USD EXPOSURE (SAPPI, 2015)

The currency exposure before the swapping of rates is disproportionate to the underlying assets of the business segments but figure 19 depicts how, immediately after the swapping of the USD exposure to Euro, the 2012 foreign currency funding exposure is more aligned to the underlying assets. The South African Rand ("ZAR") liability exposure is disproportional to the South African segment as the debt market, as discussed in chapters 2 and 3, is not a suitable corporate bond market for SAPPI to raise significantly more funding than the debt already in issue.

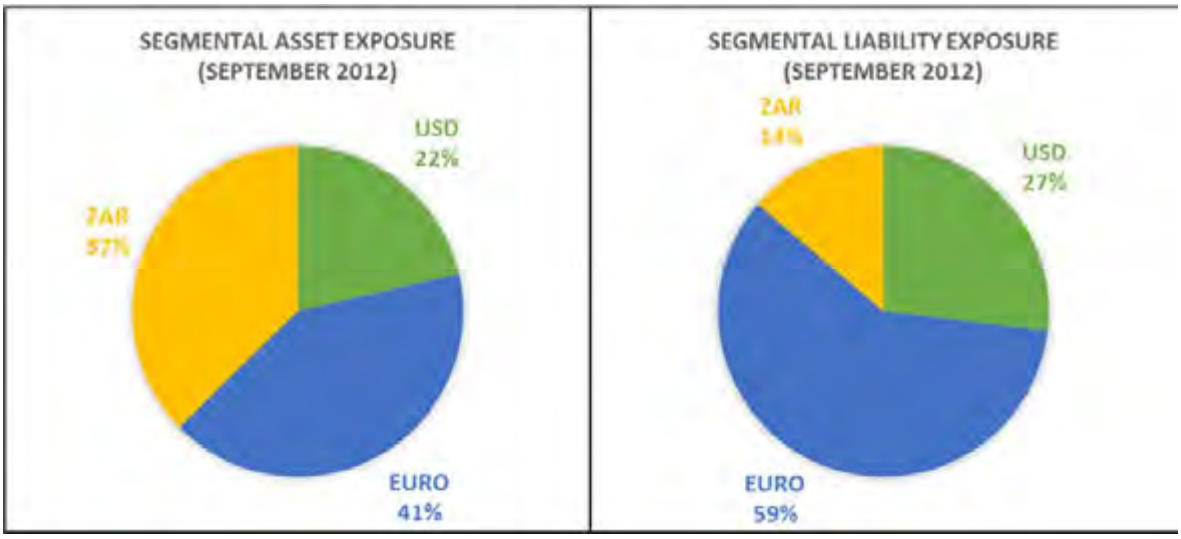


FIGURE 19: SEGMENTAL ASSET AND LIABILITY EXPOSURE AS AT 30 SEPTEMBER 2012 (SAPPI, 2012)

These switches indicate that the exposure that SAPPI desired was to European markets, as the majority of their business operations are in the European operating segment. Due to the variation in division splits when utilising different measures like sales and segment assets, SAPPI had to decide on the basis on which to assess the proportions of debt exposure to the Dollar, Euro and South African Rand. Figure 20 demonstrates how the funding exposure of US Dollar and Euro closely matches the sales of the North American and European segment after the swap to Euro has been made.

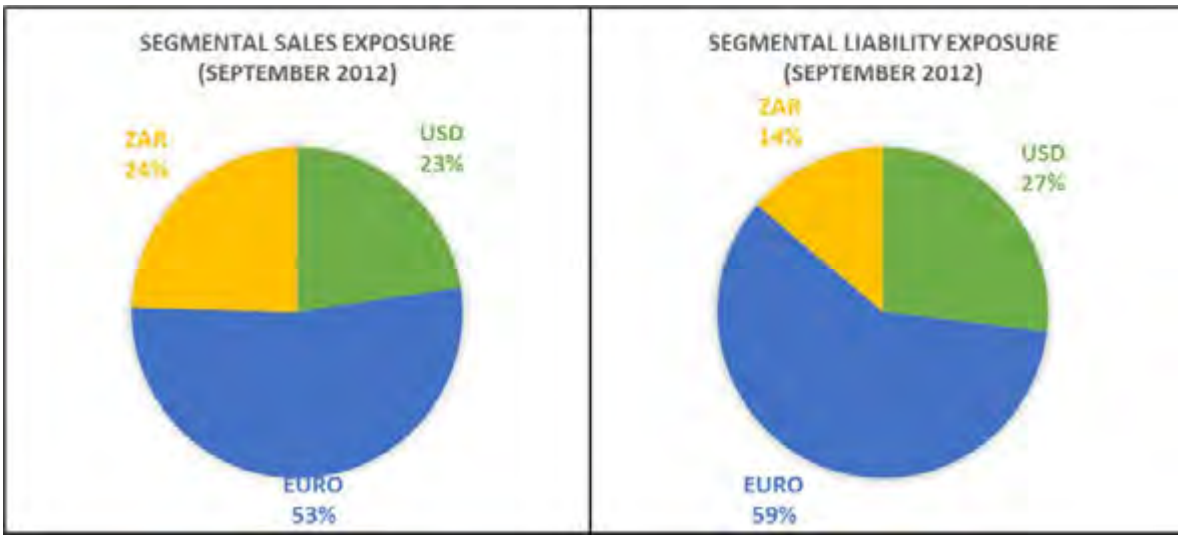


FIGURE 20: SEGMENTAL SALES AND LIABILITY EXPOSURES AS AT 30 SEPTEMBER 2012 (SAPPI, 2012)

The effort which SAPPI management appears to have taken to match funding liabilities to the segmental sales exposure of the respective segments indicates the strong possibility that SAPPI management were looking to make use of a natural hedge in global operations. The main drivers of the exchange and interest rates within an economy are likely to be related to the financial performance of an entity witin that economy. Therefore, movements in underlying market conditions are likely to affect the performance of SAPPI within that segment in addition to affecting the market rates that would affect the fair value of the debt obligations SAPPI has within that segment.

The motivation behind SAPPI wanting to match their interest-bearing liabilities' currency exposure with their operational exposure is based on theoretical concepts discussed in chapter 3.8. The finding that companies have historically been able to hedge their foreign exposure to reduce exchange rate volatilities supports the decisions that SAPPI made with the multiple domiciles of their debt financing.

Regardless of the measure on which the currency exposure decision was made, it is observable that the Rand currency exposure is lower than the respective Southern Africa divisional size. The decision not to utilise further South African debt funding is presumably due to the systemic conditions of the South African market discussed in this paper.

5.4. Retrospective effects of hedging decisions made

SAPPI made two explicit hedging decisions; to exchange fixed USD exposure for floating USD exposure and to swap the remaining USD exposure to Euro exposure. While these decision could have been made for speculation or hedging purposes, we will assess the retrospective effects under the assumption that management had made the decisions for the purpose of hedging foreign exposure. This assumption is supported by management's assertion in the 2012 annual report (SAPPI, 2012) that their purpose for entering into these hedging transactions was not for speculative reasons.

The hedging decision would only be economically beneficial if the market movements are in the direction that the hedge has been enacted against. Should the movements be opposite to the direction hedged, the entity would have been economically better off without the hedge in place. While it is not possible to assess the hedging decisions made at the time they were made, it is possible to retrospectively assess the decisions with subsequent movements in global markets. The economic effect of these hedging transactions will be investigated from the time at which they were entered into until 30 September 2015. Hedge accounting may have been applied by SAPPI to ensure reduced financial statement volatility, but external market conditions and movements can be utilised to determine whether the decisions have been beneficial to SAPPI.

Pay Floating US Dollar LIBOR to receive Fixed Interest payments

The decision to swap the fixed interest payments to floating payments provides a natural hedge against movements within the US economy. Floating interest rates fluctuate with state of the economy and will increase as the economy strengthens (Montiel, 2009). Furthermore, increased interest rates have the effect of strengthening a currency, ceteris paribus (Montiel, 2009). The natural hedge that SAPPI management have introduced with this decision based on the premise that a stronger economy will increase interest rates, and subsequently debt obligations, but that these movements should be offset by improved company performance in a stronger economy.

SAPPI entered into an interest rate swap contract in April 2011 receiving fixed USD payments (to offset the coupon payments on the 2021 notes) and paying a floating rate linked to USD 6 month LIBOR. A contractual spread would be added onto the floating rate to ensure the value of the swap on day one is nil.

The fair value of the swap will fluctuate as USD LIBOR rates shift in the market. Figure 21 below graphically depicts the movement in the USD LIBOR over the period from 2011 to 2016. While there was a minor fall in rates during the first six months, the first year of the hedge appeared to be unfavourable due to higher rates in the market. However, the reducing rates in the period from

September 2012 until 31 March 2015 would have benefitted SAPPI through the hedge entered into. Given the low rates in the US economy observed in the more recent past due to the US policy of quantitative easing, this appears to have been a good business decision made by SAPPI.

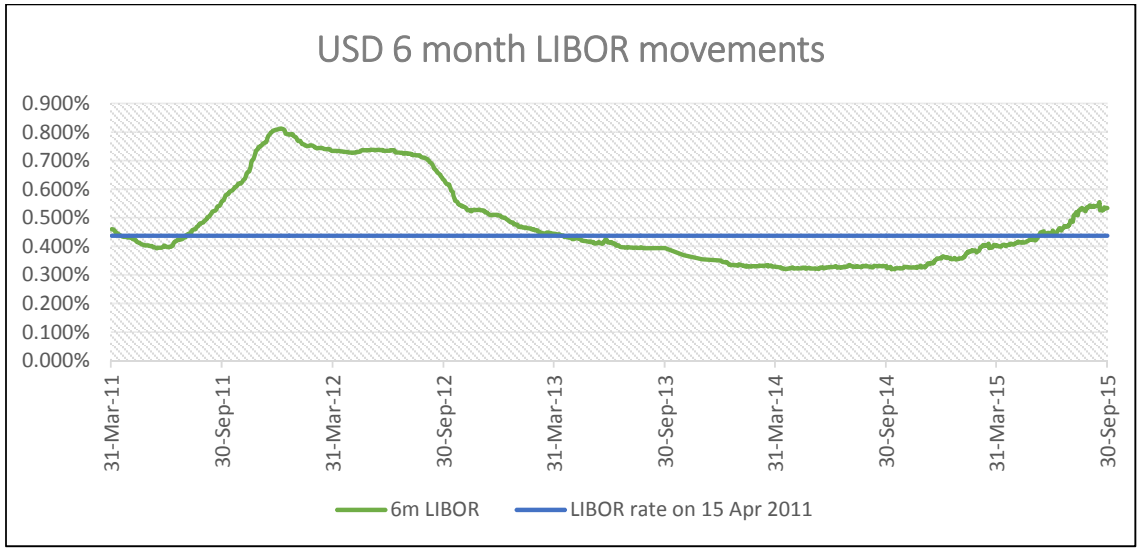


FIGURE 21: USD 6 MONTH LIBOR MOVEMENTS (BLOOMBERG)

RECEIVE FIXED US DOLLAR TO PAY FIXED EURO

SAPPI entered into an interest rate swap contract in July 2012 to receive fixed USD payments in exchange for paying fixed Euro interest. Both the 7.75% USD coupon 2017 notes and 8.375% USD coupon 2019 notes were switched to Euro at rates of 7.56% and 8.33%, respectively. The interest rate swap utilised would be a cross-currency swap where the fixed payments are based on a notional amount in the base currency indicative of the market USD/Euro foreign exchange rate at the time the contract was issued.

SAPPI (2014) has disclosed that the movements in their coupon obligations are matched by the movements in the fair value of the hedging instruments, thereby implying that the notional amount of Euro at which the swap is based would be at the exchange rate around the time at which the swap was entered into, which was approximately $1/€0.8.

The graphical movement in the Euro/USD exchange rate over the period of hedge inception in July 2012 until 30 September 2015 can be seen below in figure 22. The Euro initially strengthened relative to the US Dollar and remained relatively stronger up until December 2014, thereby inferring that SAPPI would have been a stronger financial position without the hedge in place over this period. However, the strengthening of the US Dollar from the period since December 2014 indicates how SAPPI's hedge would have protected them from increased US cash flows and has enabled them to benefit from the hedge they had enacted.

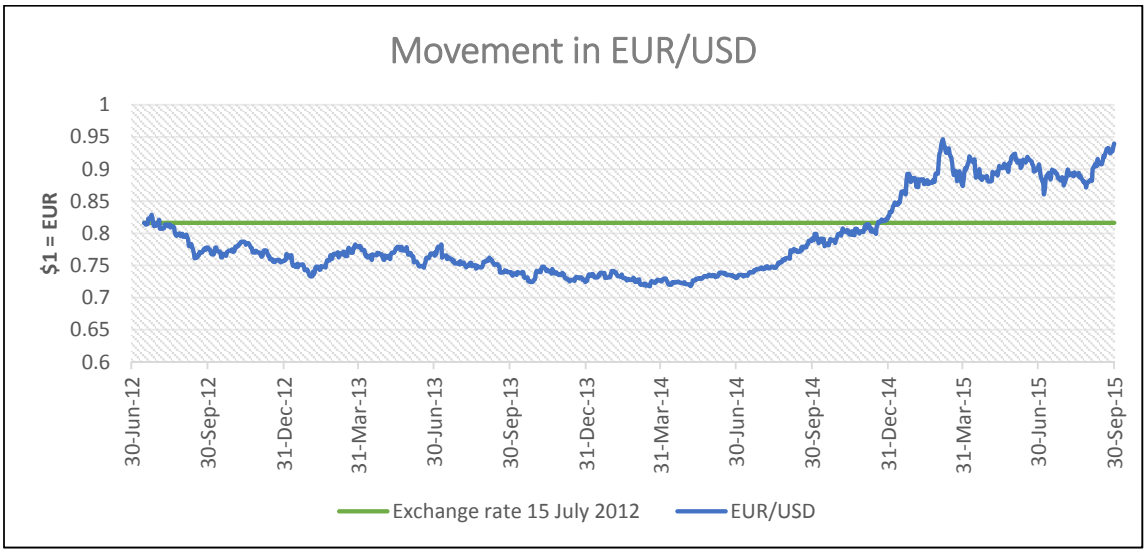


FIGURE 22: EUR/USD EXCHANGE RATE MOVEMENT 2012 - 2015 (BLOOMBERG)

5.5. RESULTS

The approach that SAPPI management appear to be taking with respect to operational foreign exchange exposures is to make use of natural hedges within funding mechanisms and resultant hedging decisions. We have demonstrated how the hedging decisions made appear to better align the segmental operations and financing obligations in the same currencies, with the exception of the South African segment due to a lack of depth in the corporate debt market.

The decision taken by SAPPI management to expose the business to floating USD payments appeared to have increased USD debt obligations as market rates rose steadily in the period up until March 2015, but these obligations would have decreased as rates decreased from this date.

The decision taken to swap USD debt obligation for Euro obligations appears to have been disadvantageous to SAPPI for the majority of the time examined, however the relative strengthening of the USD over the last year examined would have favourably affected SAPPI's hedged position.

While the performance of both the USD fixed to floating and USD to Euro swaps appear to have been beneficial to SAPPI for most of the periods observed, the fluctuations may also have affected the underlying performance of the segment. For instance, a weaker Euro may be beneficial from a funding perspective, but may adversely affect the performance of the European division in a tougher economic environment.

6. RECENT DEVELOPMENTS UPDATE

The financial performance of SAPPI for the period ended 30 September 2015 indicated higher earnings as a result of the execution of the strategy detailed in chapter 2 aimed at consolidating operations and reducing net debt within the business (SAPPI, 2015).

SAPPI was able to react to market conditions and a new debt issue was announced in early 2015 with the purpose of restructuring debt obligations within the business. SAPPI intended to use the proceeds from the new issue to exercise the call provisions on both the 2018 (issued in Euro) and 2019 (swapped into Euro) notes. The aggregate principal amount of the new issue in April 2015 would be € 450 million. The notes will pay a coupon 3.375%, significantly lower than the coupons of the respective notes discussed within this study, semi-annually and will mature on 1 April 2022.

The 2018 notes were redeemed on 15 April 2015 and an aggregate principal amount of USD 291 million and a further USD 9 million of accrued interest. The 2019 notes were redeemed on 15 June 2015 at an aggregate principal and accrued interest amount of USD 313 million. The applicable premiums on the exercising of the call provisions, as outlined in chapter 4.3, totalled USD 42 million.

The cross-currency swap associated with the 2019 notes was unwound out at the same time as the underlying notes in June 2015 and generated approximately USD 9 million in cash proceeds (SAPPI, 2015) due to favourable market movements on the hedge discussed in chapter 5.

7. CONCLUSION AND RECOMMENDATIONS

7.1. CONCLUSION

SAPPI issued four USD and Euro denominated bonds in 2011 and 2012. The objective of this study was to explore the financing options available to SAPPI and assess the cost incurred by SAPPI on these issuances by means of an OAS analysis and retrospective assessment of hedging decisions made.

The main research questions that this paper planned to address were:

- What financing options did SAPPI have in the selection of the most appropriate source of financing;
- what is the state of the South African bond market and what would the viability of utilising this market be for SAPPI;
- why did SAPPI issue the foreign bonds and what were the costs and benefits of doing so;
- what was the cost of issuance on the bonds for SAPPI in both US and European debt markets; and
- what are the retrospective effects of the foreign exchange hedging decisions taken by the management of SAPPI?

SAPPI was introduced by means of a brief history of the company detailing historical funding mechanisms used in an acquisitive growth strategy and the development of global operating segments in Southern Africa, Europe and North America. We then presented the adverse market conditions in place since the late 2000's and how those conditions had unfavourably affected SAPPI's operations and increased their debt obligations. The financial position of SAPPI at the time of the bond issuances was discussed to provide the user with the funding options SAPPI management had at their disposal.

A brief history of the global high yield corporate bond market was provided and we found that the current South African bond market was small in comparison to developed corporate bond markets. In addition, we commented on the volatility of yields on high yield bonds in times of economic downturn and uncertainty.

In response to the research questions above, we outlined how the South African corporate high yield market did not have sufficient depth for a bond issue of the size SAPPI required and the use of any equity-linked financing mechanism or bank financing were not viable for the business. Hence, SAPPI's only alternative was to issue USD and Euro denominated debt.

We calculated option-adjusted spreads on all four bonds on their respective dates of issuances and made two prominent observations. Firstly, a comparison of the OASs calculated on 2011 bond issuances in Euro and USD indicated that SAPPI was able to access funding through the US high yield market at relatively lower spreads than through the European debt market. It appears that SAPPI management were aware of the apparently cheaper funding on USD denominated securities as both 2012 issuances were denominated in USD and immediately swapped to Euro through the use of an interest rate swap.

Secondly, the OASs determined on the 2012 issuances were significantly higher than the OASs on issuances fifteen months earlier. The reasoning for these increases is clearly observable but we intimate that market movements may not have been fully taken into account for the period between the two issuances. We observed that benchmark rates within the US decreased significantly while the coupon spreads on both issuances were higher than their 2011 counterparts.

The global operations of SAPPI outside of Southern Africa are currently greater than those in South Africa, hence the decision to approach corporate bond markets domiciled in currencies their operations were exposed to was a logical step for management to take. The global operations of SAPPI provided a natural hedge to the obligations of the USD and Euro denominated debt, a benefit which SAPPI management was clearly aware of. We indicated how management was clearly aware of the natural hedging possibilities through a comparison of segmental assets and funding obligations in the segments currency. While the value of South African funding lagged behind the value of assets and sales within the region, due to the lack of funding alternatives within the region, the proportions of US and European funding obligations outstanding within the SAPPI group were closely aligned to the proportions of US and European assets and sales within the group.

SAPPI entered into two hedging transactions on the issuance of the bonds. The 2021 notes USD fixed rate obligations were exchanged for USD floating rate obligations and the USD obligations on both 2012 issuances were swapped for Euro obligations. The retrospective assessment of the hedging decisions indicated that exposure to USD floating rates was beneficial for the period from September 2012 until March 2015 while the increased exposure to the Euro was only beneficial on the strengthening of the US Dollar in the period since from December 2014.

7.2. SCOPE FOR FUTURE RESEARCH

The research performed in this case and the findings thereof provide a number of areas for further study.

Firstly, there is scope for further research into the OAS methodology and the producing of publicly available information which can be utilised in the construction of binomial lattices. Due to the lack of readily available market standards within this branch of corporate finance, research could assess and compare current methodologies and academic theories deployed in the global market. Specific focus could also be given to the volatility assumptions utilised in the construction of the binomial lattice.

Secondly, the case study focused on the foreign denominated debt issued by SAPPI in 2011 and 2012. As highlighted in chapter 6, there have been subsequent debt issuances for which the same methodology could be applied. Furthermore, the same debt issuances were only assessed at the date of issuance and future research could extend the scope of the analysis on the bonds herein.

Thirdly, the OAS methodology could be applied to the SAPPI debt issued in the South African corporate bond market to investigate whether the OAS varies from those observed on SAPPI's foreign denominated issuances. Should the results indicate comparable spreads, it may provide an indication that the South African market is a more viable funding alternative than local companies are currently aware of.

Finally, within our research of the South African high yield corporate bond market, we observe that the market is still in the early stages of its development. A future study could research what steps could be taken within South Africa to enhance the corporate high yield market. Reference could be made to countries and markets where high yield bond issuances have been successfully incorporated into the debt market.

APPENDICES

APPENDIX A: FURTHER BOND DETAILS

In addition to the call provisions and their applicable premiums highlighted within the case, the following key terms are similar in all bonds issued, with a brief explanation on each point included below:

- *Optional redemption from equity offering* – summarised below;
- *Senior secured debt* – the notes will all rank equally with all senior debt obligations currently in existence and SAPPI limited and subsidiaries will be jointly and severally liable to guarantee these notes on a senior basis.;
- *Change in tax legislation* – should tax legislation be changed as defined within the offering memorandum, SAPPI has the right to redeem the bond issues at their principal amount (including accrued interest); and
- *Change in control* – should SAPPI experience a change in control of ownership, as defined in the memorandum, the holder may redeem the notes at a price of 101% of the principal amount (including accrued interest).

OPTIONAL REDEMPTION FROM EQUITY OFFERING

SAPPI has the ability to redeem up to 35% of each of the bond offerings at a contractually specified redemption price through the net cash from an equity offering, provided that the following terms are met:

(i) At least 65% of the original bonds issued, excluding those held by SAPPI's related parties, remain outstanding after the exercising of the terms; and

(ii) Redemption occurs within 90 days of the date of the closing of such Equity Offering.

Refer below for the dates specified for each bond issued:

Note	2018 notes (issued 2011)	2021 notes (issued 2011)	2017 notes (issued 2012)	2019 notes (issued 2012)
Optional redemption until	15 April 2014	15 April 2014	15 July 2015	15 June 2015
Redemption price	106.625%	106.625%	107.750%	108.375%

TABLE 9: OPTIONAL BOND REDEMPTION TERMS

The “equity offering” referred to is simplistically defined as the tradable shares of SAPPI Limited or any direct parent entity, should there be a restructuring within the group. The benefit of this clause to both bond holders and SAPPI is that, should the share price of SAPPI increase significantly, a rights or standard share issue could be utilised to repay a portion of their debt obligations.

Senior Obligations – Collateral described

The notes will all rank equally with all senior debt obligations currently in existence and SAPPI limited and subsidiaries will be jointly and severally liable to guarantee these notes on a senior basis.

APPENDIX B: BLOOMBERG RISK-FREE RATES AND PRICES UTILISED

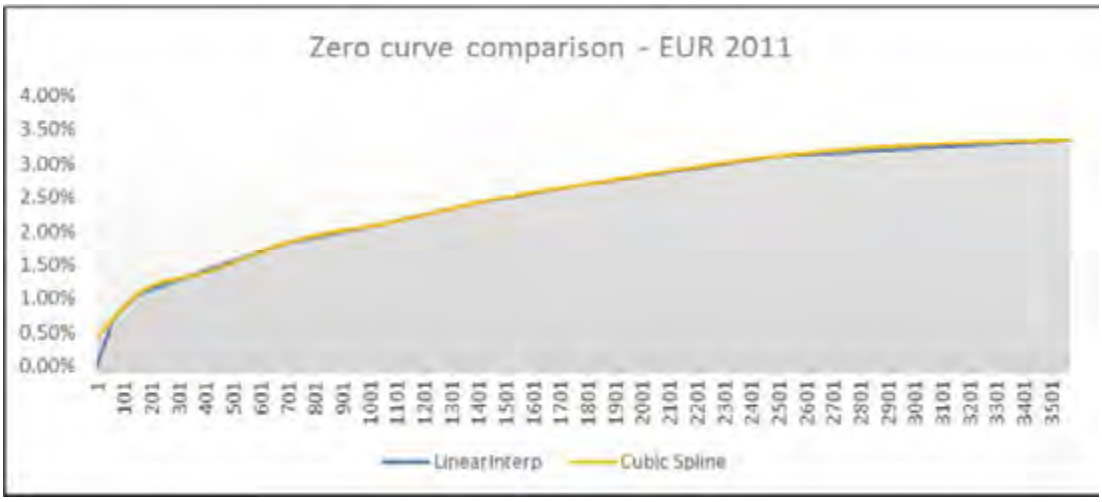
B1. US TREASURY PRICES AS AT 13 JULY 2012 AND 15 APRIL 2011 {SOURCE: BLOOMBERG}

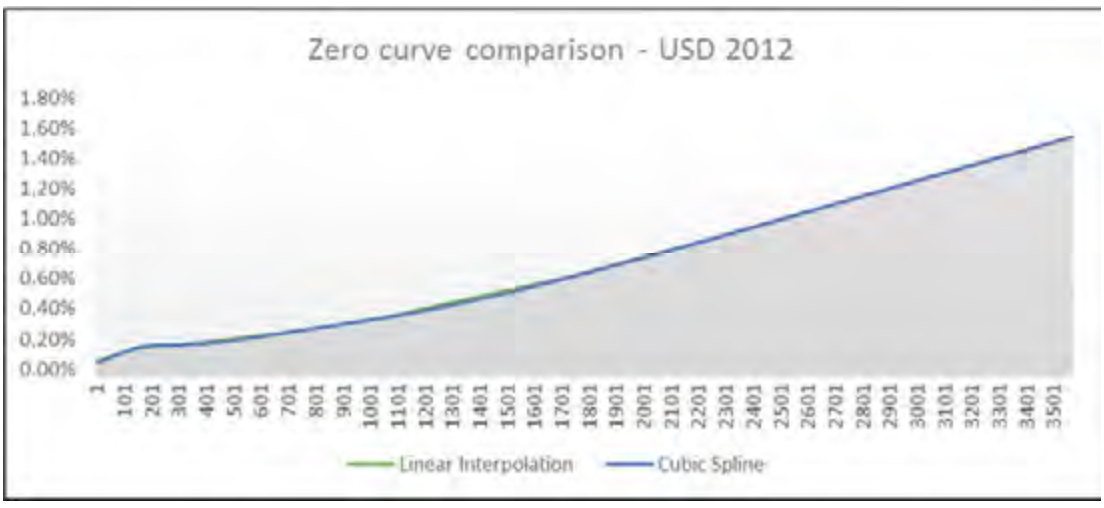
B2. GERMAN SOVEREIGN PRICES AS AT 13 JULY 2012 AND 15 APRIL 2011 {SOURCE: BLOOMBERG}

APPENDIX C: IMPLIED SPOT RATES DETERMINED (NACA)

t	s_n – USD 2011	s_n – EUR 2011	s_n – USD 2012
0.083	0.030%	N/A	0.053%
0.25	0.063%	0.687%	0.083%
0.5	0.114%	1.060%	0.139%
1	0.221%	1.315%	0.162%
2	0.703%	1.830%	0.240%
3	1.207%	2.130%	0.338%
4	N/A	2.458%	N/A
5	2.179%	2.713%	0.628%
7	2.915%	3.155%	0.992%
10	3.609%	3.409%	1.552%

APPENDIX D: ZERO CURVE COMPARISONS - LINEAR AND CUBIC SPLINE INTERPOLATION





APPENDIX E: IMPLIED SPOT RATES AND FORWARD RATES DETERMINED (NACM)

E1. EUR 2011 DETERMINED RATES

t	spot	fwd	t	spot	fwd	t	spot	fwd	t	spot	fwd	t	spot	fwd
0.08	0.422%	0.422%	2.08	1.850%	2.717%	4.08	2.456%	3.639%	6.08	2.928%	4.267%	8.08	3.247%	4.001%
0.17	0.548%	0.675%	2.17	1.883%	2.693%	4.17	2.479%	3.633%	6.17	2.947%	4.286%	8.17	3.255%	3.980%
0.25	0.685%	0.958%	2.25	1.912%	2.670%	4.25	2.502%	3.630%	6.25	2.965%	4.302%	8.25	3.262%	3.959%
0.33	0.821%	1.231%	2.33	1.938%	2.652%	4.33	2.524%	3.629%	6.33	2.982%	4.316%	8.33	3.268%	3.939%
0.42	0.948%	1.455%	2.42	1.963%	2.639%	4.42	2.544%	3.633%	6.42	3.000%	4.325%	8.42	3.275%	3.919%
0.50	1.055%	1.592%	2.50	1.985%	2.634%	4.50	2.565%	3.640%	6.50	3.017%	4.331%	8.50	3.281%	3.901%
0.58	1.136%	1.619%	2.58	2.006%	2.639%	4.58	2.585%	3.652%	6.58	3.034%	4.334%	8.58	3.287%	3.883%
0.67	1.193%	1.594%	2.67	2.026%	2.656%	4.67	2.604%	3.668%	6.67	3.050%	4.333%	8.67	3.292%	3.866%
0.75	1.233%	1.552%	2.75	2.046%	2.686%	4.75	2.623%	3.690%	6.75	3.066%	4.328%	8.75	3.298%	3.849%
0.83	1.261%	1.516%	2.83	2.067%	2.732%	4.83	2.642%	3.718%	6.83	3.081%	4.319%	8.83	3.303%	3.834%
0.92	1.284%	1.512%	2.92	2.087%	2.796%	4.92	2.661%	3.752%	6.92	3.096%	4.306%	8.92	3.308%	3.820%
1.00	1.307%	1.562%	3.00	2.109%	2.879%	5.00	2.679%	3.793%	7.00	3.110%	4.289%	9.00	3.312%	3.806%
1.08	1.336%	1.676%	3.08	2.133%	2.979%	5.08	2.698%	3.840%	7.08	3.124%	4.268%	9.08	3.317%	3.794%
1.17	1.369%	1.809%	3.17	2.158%	3.079%	5.17	2.718%	3.886%	7.17	3.137%	4.246%	9.17	3.321%	3.783%
1.25	1.408%	1.946%	3.25	2.184%	3.174%	5.25	2.737%	3.931%	7.25	3.149%	4.224%	9.25	3.325%	3.774%
1.33	1.450%	2.082%	3.33	2.211%	3.263%	5.33	2.756%	3.975%	7.33	3.161%	4.202%	9.33	3.329%	3.765%
1.42	1.495%	2.214%	3.42	2.238%	3.345%	5.42	2.776%	4.016%	7.42	3.172%	4.179%	9.42	3.333%	3.759%
1.50	1.542%	2.338%	3.50	2.267%	3.419%	5.50	2.795%	4.056%	7.50	3.183%	4.156%	9.50	3.336%	3.753%
1.58	1.590%	2.452%	3.58	2.295%	3.484%	5.58	2.814%	4.093%	7.58	3.194%	4.134%	9.58	3.340%	3.749%
1.67	1.638%	2.552%	3.67	2.323%	3.540%	5.67	2.834%	4.128%	7.67	3.204%	4.111%	9.67	3.343%	3.747%
1.75	1.685%	2.634%	3.75	2.351%	3.584%	5.75	2.853%	4.161%	7.75	3.213%	4.089%	9.75	3.347%	3.746%
1.83	1.731%	2.694%	3.83	2.379%	3.617%	5.83	2.872%	4.192%	7.83	3.222%	4.066%	9.83	3.350%	3.747%
1.92	1.774%	2.729%	3.92	2.405%	3.637%	5.92	2.891%	4.219%	7.92	3.231%	4.044%	9.92	3.354%	3.750%
2.00	1.814%	2.736%	4.00	2.431%	3.644%	6.00	2.910%	4.245%	8.00	3.239%	4.022%	10.00	3.357%	3.755%

E2. USD 2012 DETERMINED RATES

t	spot	fwd	t	spot	fwd	t	spot	fwd	t	spot	fwd	t	spot	fwd
0.08	0.043%	0.043%	2.08	0.249%	0.449%	4.08	0.478%	1.070%	6.08	0.818%	1.916%	8.08	1.188%	2.665%
0.17	0.062%	0.081%	2.17	0.257%	0.460%	4.17	0.491%	1.105%	6.17	0.834%	1.950%	8.17	1.204%	2.695%
0.25	0.083%	0.125%	2.25	0.265%	0.473%	4.25	0.504%	1.140%	6.25	0.849%	1.983%	8.25	1.219%	2.725%
0.33	0.104%	0.168%	2.33	0.273%	0.486%	4.33	0.517%	1.176%	6.33	0.864%	2.017%	8.33	1.234%	2.756%
0.42	0.124%	0.201%	2.42	0.280%	0.500%	4.42	0.530%	1.211%	6.42	0.880%	2.050%	8.42	1.250%	2.786%
0.50	0.139%	0.218%	2.50	0.288%	0.516%	4.50	0.543%	1.247%	6.50	0.895%	2.083%	8.50	1.265%	2.816%
0.58	0.150%	0.214%	2.58	0.296%	0.533%	4.58	0.556%	1.283%	6.58	0.910%	2.116%	8.58	1.280%	2.846%
0.67	0.156%	0.201%	2.67	0.304%	0.551%	4.67	0.570%	1.318%	6.67	0.926%	2.148%	8.67	1.296%	2.876%
0.75	0.160%	0.186%	2.75	0.312%	0.572%	4.75	0.584%	1.354%	6.75	0.941%	2.180%	8.75	1.311%	2.907%
0.83	0.161%	0.172%	2.83	0.321%	0.594%	4.83	0.598%	1.390%	6.83	0.957%	2.211%	8.83	1.326%	2.937%
0.92	0.161%	0.165%	2.92	0.329%	0.619%	4.92	0.612%	1.425%	6.92	0.972%	2.242%	8.92	1.342%	2.967%
1.00	0.162%	0.170%	3.00	0.338%	0.646%	5.00	0.626%	1.461%	7.00	0.988%	2.273%	9.00	1.357%	2.998%
1.08	0.164%	0.187%	3.08	0.347%	0.675%	5.08	0.640%	1.496%	7.08	1.003%	2.303%	9.08	1.372%	3.028%
1.17	0.167%	0.209%	3.17	0.356%	0.705%	5.17	0.654%	1.531%	7.17	1.019%	2.333%	9.17	1.388%	3.058%
1.25	0.172%	0.233%	3.25	0.366%	0.736%	5.25	0.669%	1.567%	7.25	1.034%	2.363%	9.25	1.403%	3.089%
1.33	0.177%	0.258%	3.33	0.376%	0.767%	5.33	0.683%	1.602%	7.33	1.050%	2.393%	9.33	1.418%	3.119%
1.42	0.183%	0.284%	3.42	0.386%	0.799%	5.42	0.698%	1.637%	7.42	1.065%	2.424%	9.42	1.434%	3.149%
1.50	0.190%	0.310%	3.50	0.397%	0.832%	5.50	0.713%	1.672%	7.50	1.080%	2.454%	9.50	1.449%	3.180%
1.58	0.198%	0.335%	3.58	0.408%	0.865%	5.58	0.728%	1.708%	7.58	1.096%	2.484%	9.58	1.464%	3.210%
1.67	0.206%	0.360%	3.67	0.419%	0.898%	5.67	0.743%	1.743%	7.67	1.111%	2.514%	9.67	1.479%	3.241%
1.75	0.214%	0.383%	3.75	0.430%	0.932%	5.75	0.758%	1.778%	7.75	1.127%	2.544%	9.75	1.495%	3.271%
1.83	0.223%	0.404%	3.83	0.442%	0.966%	5.83	0.773%	1.812%	7.83	1.142%	2.574%	9.83	1.510%	3.302%
1.92	0.232%	0.422%	3.92	0.454%	1.000%	5.92	0.788%	1.847%	7.92	1.157%	2.605%	9.92	1.525%	3.332%
2.00	0.240%	0.437%	4.00	0.466%	1.035%	6.00	0.803%	1.881%	8.00	1.173%	2.635%	10.00	1.541%	3.363%

APPENDIX F: VOLATILITY DATA SETS

F1. USD 2011 VOLATILITY CALCULATION

USD Apr '11																	
DATE	Yield	Lognormal return	Moving average return	DATE	Yield	Lognormal return	Moving average return	DATE	Yield	Lognormal return	Moving average return	DATE	Yield	Lognormal return	Moving average return	STDEV.S	ANNUALISED VOL
Apr 15, 2011	3.413	-0.02403	0.002228	Jan 06, 2011	3.399	-0.01865	0.001813	Sep 29, 2010	2.505	0.01529	0.00067	Jun 23, 2010	3.125	-0.01272	-0.00053	0.4363%	7.0349%
Apr 14, 2011	3.496	0.01093	0.004332	Jan 05, 2011	3.463	0.03676	0.004738	Sep 28, 2010	2.467	-0.02561	-0.0012	Jun 22, 2010	3.165	-0.02435	-0.00049		
Apr 13, 2011	3.458	-0.00978	0.002126	Jan 04, 2011	3.338	0.00120	0.006224	Sep 27, 2010	2.531	-0.03074	-0.00213	Jun 21, 2010	3.243	0.00557	0.000103		
Apr 12, 2011	3.492	-0.02684	0.001764	Jan 03, 2011	3.334	0.01389	0.004916	Sep 24, 2010	2.61	0.02208	0.002414	Jun 18, 2010	3.225	0.00966	0.000133		
Apr 11, 2011	3.587	0.00112	0.002522	Dec 31, 2010	3.288	-0.02374	0.004429	Sep 23, 2010	2.553	-0.00078	0.000262	Jun 17, 2010	3.194	-0.02168	-0.00255		
Apr 08, 2011	3.583	0.00953	0.003032	Dec 30, 2010	3.367	0.00357	0.006038	Sep 22, 2010	2.555	-0.00819	0.001265	Jun 16, 2010	3.264	-0.01279	-0.00128		
Apr 07, 2011	3.549	-	0.001086	Dec 29, 2010	3.355	-0.03716	0.008662	Sep 21, 2010	2.576	-0.04849	-0.00048	Jun 15, 2010	3.306	0.01340	-0.00259		
Apr 06, 2011	3.549	0.01762	-2.7E-05	Dec 28, 2010	3.482	0.04554	0.00994	Sep 20, 2010	2.704	-0.01286	0.001612	Jun 14, 2010	3.262	0.00893	-0.00274		
Apr 05, 2011	3.487	0.01794	-0.00039	Dec 27, 2010	3.327	-0.02581	0.007036	Sep 17, 2010	2.739	-0.00909	0.00294	Jun 11, 2010	3.233	-0.02806	-0.00428		
Apr 04, 2011	3.425	-0.00727	-0.00092	Dec 24, 2010	3.414	0.00499	0.00759	Sep 16, 2010	2.764	0.01494	0.002222	Jun 10, 2010	3.325	0.04522	-0.0034		
Apr 01, 2011	3.45	-0.00578	-0.00148	Dec 23, 2010	3.397	0.01453	0.007336	Sep 15, 2010	2.723	0.01480	0.001456	Jun 09, 2010	3.178	-0.00346	-0.00496		
Mar 31, 2011	3.47	0.00752	-1.4E-05	Dec 22, 2010	3.348	0.01353	0.008819	Sep 14, 2010	2.683	-0.02321	0.001993	Jun 08, 2010	3.189	0.01358	-0.00503		
Mar 30, 2011	3.444	-0.01355	0.00057	Dec 21, 2010	3.303	-0.01114	0.007765	Sep 13, 2010	2.746	-0.01769	0.001176	Jun 07, 2010	3.146	-0.01952	-0.00398		
Mar 29, 2011	3.491	0.01443	0.000951	Dec 20, 2010	3.34	0.00240	0.007172	Sep 10, 2010	2.795	0.01188	0.000721	Jun 04, 2010	3.208	-0.04897	-0.00284		
Mar 28, 2011	3.441	-0.00029	0.000347	Dec 17, 2010	3.332	-0.03015	0.006596	Sep 09, 2010	2.762	0.03989	0.001311	Jun 03, 2010	3.369	0.00655	-0.00244		
Mar 25, 2011	3.442	0.01022	-0.00011	Dec 16, 2010	3.434	-0.02984	0.008345	Sep 08, 2010	2.654	0.02133	-0.002	Jun 02, 2010	3.347	0.02542	-0.00344		
Mar 24, 2011	3.407	0.01568	-0.00105	Dec 15, 2010	3.538	0.01854	0.010381	Sep 07, 2010	2.598	-0.04368	-0.00406	Jun 01, 2010	3.263	-0.01128	-0.00588		
Mar 23, 2011	3.354	0.00778	-0.00147	Dec 14, 2010	3.473	0.05809	0.007498	Sep 06, 2010	2.714	0.00443	-0.00186	May 31, 2010	3.3	-0.00091	-0.00492		
Mar 22, 2011	3.328	-0.00120	-0.00342	Dec 13, 2010	3.277	-0.01394	0.007678	Sep 03, 2010	2.702	0.02891	-0.00347	May 28, 2010	3.303	-0.01622	-0.00579		
Mar 21, 2011	3.332	0.01939	-0.00345	Dec 10, 2010	3.323	0.03366	0.010669	Sep 02, 2010	2.625	0.01729	-0.00561	May 27, 2010	3.357	0.05040	-0.00549		
Mar 18, 2011	3.268	0.00337	-0.00429	Dec 09, 2010	3.213	-0.01820	0.009372	Sep 01, 2010	2.58	0.04357	-0.00572	May 26, 2010	3.192	0.01008	-0.00694		
Mar 17, 2011	3.257	0.02016	-0.00507	Dec 08, 2010	3.272	0.04277	0.009807	Aug 31, 2010	2.47	-0.02400	-0.00867	May 25, 2010	3.16	-0.01195	-0.00889		
Mar 16, 2011	3.192	-0.03539	-0.00578	Dec 07, 2010	3.135	0.06797	0.009686	Aug 30, 2010	2.53	-0.04521	-0.00658	May 24, 2010	3.198	-0.01181	-0.00843		
Mar 15, 2011	3.307	-0.01739	-0.00437	Dec 06, 2010	2.929	-0.02628	0.006804	Aug 27, 2010	2.647	0.06477	-0.00577	May 21, 2010	3.236	0.00620	-0.00727		
Mar 14, 2011	3.365	-0.01094	-0.00371	Dec 03, 2010	3.007	0.00366	0.008926	Aug 26, 2010	2.481	-0.02311	-0.00889	May 20, 2010	3.216	-0.04677	-0.00716		
Mar 11, 2011	3.402	0.01183	-0.00402	Dec 02, 2010	2.996	0.01006	0.007137	Aug 25, 2010	2.539	0.02029	-0.00872	May 19, 2010	3.37	0.00506	-0.00568		
Mar 10, 2011	3.362	-0.03133	-0.00394	Dec 01, 2010	2.966	0.05867	0.00651	Aug 24, 2010	2.488	-0.04480	-0.00885	May 18, 2010	3.353	-0.04033	-0.006		
Mar 09, 2011	3.469	-0.02336	-0.00354	Nov 30, 2010	2.797	-0.01031	0.003022	Aug 23, 2010	2.602	-0.00460	-0.00678	May 17, 2010	3.491	0.01037	-0.00366		
Mar 08, 2011	3.551	0.00991	-0.00118	Nov 29, 2010	2.826	-0.01545	0.003914	Aug 20, 2010	2.614	0.01503	-0.00547	May 14, 2010	3.455	-0.02346	-0.00498		
Mar 07, 2011	3.516	0.00685	-0.00162	Nov 26, 2010	2.87	-0.01418	0.003636	Aug 19, 2010	2.575	-0.02417	-0.00536	May 13, 2010	3.537	-0.00957	-0.00422		
Mar 04, 2011	3.492	-0.01900	-0.00074	Nov 25, 2010	2.911	-0.00034	0.003197	Aug 18, 2010	2.638	-0.00114	-0.00539	May 12, 2010	3.571	0.01240	-0.00321		
Mar 03, 2011	3.559	0.02504	0.001083	Nov 24, 2010	2.912	0.04567	0.004579	Aug 17, 2010	2.641	0.02609	-0.00545	May 11, 2010	3.527	-0.00481	-0.00402		
Mar 02, 2011	3.471	0.01979	0.000496	Nov 23, 2010	2.782	-0.00859	0.003867	Aug 16, 2010	2.573	-0.04037	-0.00611	May 10, 2010	3.544	0.03562	-0.00433		
Mar 01, 2011	3.403	-0.00557	0.000408	Nov 22, 2010	2.806	-0.02360	0.004351	Aug 13, 2010	2.679	-0.02725	-0.00534	May 07, 2010	3.42	0.00440	-0.00613		
Feb 28, 2011	3.422	0.00175	0.001312	Nov 19, 2010	2.873	-0.00970	0.005829	Aug 12, 2010	2.753	0.02427	-0.00488	May 06, 2010	3.405	-0.04058	-0.00601		
Feb 25, 2011	3.416	-0.00990	0.000378	Nov 18, 2010	2.901	0.00657	0.007447	Aug 11, 2010	2.687	-0.02970	-0.00719	May 05, 2010	3.546	-0.01456	-0.00521		
Feb 24, 2011	3.45	-0.00952	0.000402	Nov 17, 2010	2.882	0.01292	0.007134	Aug 10, 2010	2.768	-0.02180	-0.00487	May 04, 2010	3.598	-0.02579	-0.00492		
Feb 23, 2011	3.483	0.00691	0.002139	Nov 16, 2010	2.845	-0.04199	0.005871	Aug 09, 2010	2.829	0.00248	-0.00368	May 03, 2010	3.692	0.00898	-0.00313		
Feb 22, 2011	3.459	-0.03327	0.000735	Nov 15, 2010	2.967	0.06187	0.006896	Aug 06, 2010	2.822	-0.02933	-0.00345	Apr 30, 2010	3.659	-0.01922	-0.00267		
Feb 21, 2011	3.576	-0.00168	0.002291	Nov 12, 2010	2.789	0.04886	0.005038	Aug 05, 2010	2.906	-0.01604	-0.00129	Apr 29, 2010	3.73	-0.00987	-0.0013		
Feb 18, 2011	3.582	0.00168	0.001774	Nov 11, 2010	2.656	0.00642	0.004254	Aug 04, 2010	2.953	0.01501	0.000275	Apr 28, 2010	3.767	0.01984	-0.00115		
Feb 17, 2011	3.576	-0.01306	0.003294	Nov 10, 2010	2.639	-0.00905	0.00387	Aug 03, 2010	2.909	-0.01839	-0.00115	Apr 27, 2010	3.693	-0.03093	-0.00218		
Feb 16, 2011	3.623	0.00526	0.003447	Nov 09, 2010	2.663	0.04023	0.00517	Aug 02, 2010	2.963	0.01977	-0.00034	Apr 26, 2010	3.809	-0.00210	-0.00052		
Feb 15, 2011	3.604	-0.00581	0.00398	Nov 08, 2010	2.558	0.00746	0.003115	Jul 30, 2010	2.905	-0.02817	-0.0008	Apr 23, 2010	3.817	0.01239	-0.0008		
Feb 14, 2011	3.625	-0.00358	0.004028	Nov 05, 2010	2.539	0.01828	0.00298	Jul 29, 2010	2.988	-0.00067	0.000852	Apr 22, 2010	3.77	0.00852	-0.00105		
Feb 11, 2011	3.638	-0.01744	0.004658	Nov 04, 2010	2.493	-0.03391	0.001791	Jul 28, 2010	2.99	-0.01954	0.000593	Apr 21, 2010	3.738	-0.01566	0.000654		
Feb 10, 2011	3.702	0.01360	0.004517	Nov 03, 2010	2.579	-0.00310	0.001979	Jul 27, 2010	3.049	0.01754	0.000408	Apr 20, 2010	3.797	-0.00158	0.001737		
Feb 09, 2011	3.652	-0.02301	0.004253	Nov 02, 2010	2.587	-0.01458	0.002031	Jul 26, 2010	2.996	-0.00133	-0.00178	Apr 19, 2010	3.803	0.00872	0.001398		
Feb 08, 2011	3.737	0.02630	0.00611	Nov 01, 2010	2.625	0.00842	0.002076	Jul 23, 2010	3	0.02293	-0.00222	Apr 16, 2010	3.77	-0.01736	0.001125		
Feb 07, 2011	3.64	0.00055	0.004267	Oct 29, 2010	2.603	-0.02129	0.001695	Jul 22, 2010	2.932	0.01720	-0.00304	Apr 15, 2010	3.836	-0.00753			
Feb 04, 2011	3.638	0.02533	0.003236	Oct 28, 2010	2.659	-0.02342	0.002841	Jul 21, 2010	2.882	-0.02468	-0.00446	Apr 14, 2010	3.865	0.01171			
Feb 03, 2011	3.547	0.01936	0.001141	Oct 27, 2010	2.722	0.02870	0.004684	Jul 20, 2010	2.954	-0.00237	-0.00444	Apr 13, 2010	3.82	-0.00470			
Feb 02, 2011	3.479	0.01273	0.00197	Oct 26, 2010	2.645	0.03071	0.002098	Jul 19, 2010	2.961	0.01223	-0.00407	Apr 12, 2010	3.838	-0.01114			
Feb 01, 2011	3.435	0.01792	0.001421	Oct 25, 2010	2.565	0.00156	-0.00083	Jul 16, 2010	2.925	-0.02432	-0.00419	Apr 09, 2010	3.881	-0.00232			
Jan 31, 2011	3.374	0.01343	0.00123	Oct 22, 2010	2.561	0.00745	0.000149	Jul 15, 2010	2.997	-0.01753	-0.00406	Apr 08, 2010	3.89	0.00697			
Jan 28, 2011	3.329	-0.01786	-0.00054	Oct 21, 2010	2.542	0.02429	-0.00024	Jul 14, 2010	3.05	-0.02429	-0.00384	Apr 07, 2010	3.863	-0.02379			
Jan 27, 2011	3.389	-0.00940	0.00048	Oct 20, 2010	2.481	-	-0.00179	Jul 13, 2010	3.125	0.01906	-0.00204	Apr 06, 2010	3.956	-0.00856			
Jan 26, 2011	3.421	0.02696	-0.00084	Oct 19, 2010	2.481	-0.01361	-0.0041	Jul 12, 2010	3.066	0.00327	-0.00253	Apr 05, 2010	3.99	0.01185			
Jan 25, 2011	3.33	-0.02257	4.29E-05	Oct 18, 2010	2.515	-0.02047	-0.00406	Jul 09, 2010	3.056	0.00722	-0.00402	Apr 02, 2010	3.943	0.01869			
Jan 24, 2011	3.406	-0.00059	-0.00011	Oct 15, 2010	2.567	0.02285	-0.00352	Jul 08, 2010	3.034	0.01595	-0.00221	Apr 01, 2010	3.87	0.00961			
Jan 21, 2011	3.408	-0.01254	0.000154	Oct 14, 2010	2.509	0.03240	-0.0039	Jul 07, 2010	2.986	0.01689	-0.00313	Mar 31, 2010	3.833	-0.00676			
Jan 20, 2011	3.451	0.03359	0.001443	Oct 13, 2010	2.429	-0.00165	-0.00474	Jul 06, 2010	2.936	-0.01488	-0.00329	Mar 30, 2010	3.859	-0.00181			
Jan 19, 2011	3.337	-0.00984	0.000488	Oct 12, 2010	2.433	0.01825	-0.00576	Jul 05, 2010	2.98	-0.00134	-0.00351	Mar 29, 2010	3.866	0.00389			
Jan 18, 2011	3.37	0.01646	0.000426	Oct 11, 2010	2.389	-0.00293	-0.00747	Jul 02, 2010	2.984	0.01010	-0.00578	Mar 26, 2010	3.851	-0.00802			
Jan 17, 2011	3.315	-0.00481	-0.00024	Oct 08, 2010	2.396	0.00460	-0.00677	Jul 01, 2010	2.954	0.00645	-0.00595	Mar 25, 2010	3.882	0.00724			
Jan 14, 2011	3.331	0.00965	-0.00145	Oct 07, 2010	2.385	-0.00669	-0.00509	Jun 30, 2010	2.935	-0.00611	-0.00504	Mar 24, 2010	3.854	0.04430			
Jan 13, 2011	3.299	-0.02040	-0.00333	Oct 06, 2010	2.401	-0.02995	-0.00376	Jun 29, 2010	2.953	-0.02343	-0.00529	Mar 23, 2010	3.687	0.00708			
Jan 12, 2011	3.367	0.00805	-0.00148	Oct 05, 2010	2.474	-0.00202	-0.00441	Jun 28, 2010	3.023	-0.02837	-0.00422	Mar 22, 2010	3.661	-0.00870			
Jan 11, 2011	3.34	0.01600	0.000907	Oct 04, 2010	2.479	-0.01362	-0.0041	Jun 25, 2010	3.11	-0.01056	-0.00364	Mar 19, 2010	3.693	0.00298			
Jan 10, 2011	3.287	-0.01240	-0.00052	Oct 01, 2010	2.513	0.00040	-0.00208	Jun 24, 2010	3.143	0.00574	-0.00074	Mar 18, 2010	3.682				
Jan 07, 2011	3.328	-0.02111	0.001675	Sep 30, 2010	2.512	0.00279	-0.00127										

F2. EUR 2011 VOLATILITY CALCULATION

EUR Apr '11																	
DATE	Yield	Lognormal return	Moving average return	DATE	Yield	Lognormal return	Moving average return	DATE	Yield	Lognormal return	Moving average return	DATE	Yield	Lognormal return	Moving average return	STDEV.S	ANNUALISED VOL
Apr 15, 2011	3.379	-0.01731	0.00298	Jan 06, 2011	2.922	-0.01123	0.001188	Sep 27, 2010	2.283	-0.02594	0.002483	Jun 21, 2010	2.762	0.01056	0.00172	0.4124%	6.6493%
Apr 14, 2011	3.438	-0.00348	0.005159	Jan 05, 2011	2.955	0.02224	0.00134	Sep 24, 2010	2.343	0.02157	0.003631	Jun 18, 2010	2.733	0.02520	0.000808		
Apr 13, 2011	3.45	0.00029	0.004514	Jan 04, 2011	2.89	-0.00621	0.00105	Sep 23, 2010	2.293	-0.03092	0.003177	Jun 17, 2010	2.665	-0.00075	-0.00198		
Apr 12, 2011	3.449	-0.01354	0.003212	Jan 03, 2011	2.908	-0.01400	0.002281	Sep 22, 2010	2.365	-0.03694	0.00377	Jun 16, 2010	2.667	-0.00635	-0.00282		
Apr 11, 2011	3.496	0.00258	0.004124	Dec 30, 2010	2.949	-0.02180	0.004786	Sep 21, 2010	2.454	-0.01456	0.003481	Jun 15, 2010	2.684	0.01956	-0.00317		
Apr 08, 2011	3.487	0.02145	0.00341	Dec 29, 2010	3.014	0.00766	0.003951	Sep 20, 2010	2.49	0.01619	0.004237	Jun 14, 2010	2.632	0.01879	-0.00399		
Apr 07, 2011	3.413	-0.00555	0.001762	Dec 28, 2010	2.991	-0.01394	0.004226	Sep 17, 2010	2.45	-0.01177	0.003237	Jun 11, 2010	2.583	-0.01575	-0.00607		
Apr 06, 2011	3.432	0.01143	0.001796	Dec 27, 2010	3.033	0.01729	0.006142	Sep 16, 2010	2.479	0.02989	0.003239	Jun 10, 2010	2.624	0.02118	-0.00545		
Apr 05, 2011	3.393	0.00443	0.001497	Dec 23, 2010	2.981	0.00910	0.005497	Sep 15, 2010	2.406	0.01339	0.000818	Jun 09, 2010	2.569	0.02323	-0.00624		
Apr 04, 2011	3.378	-0.00207	0.001344	Dec 22, 2010	2.954	-0.00876	0.006835	Sep 14, 2010	2.374	-0.02865	0.00083	Jun 08, 2010	2.51	-0.01620	-0.00777		
Apr 01, 2011	3.385	0.00801	0.000837	Dec 21, 2010	2.98	0.00471	0.005535	Sep 13, 2010	2.443	0.01402	0.001025	Jun 07, 2010	2.551	-0.01324	-0.00384		
Mar 31, 2011	3.358	0.00508	0.002132	Dec 20, 2010	2.966	-0.01904	0.004281	Sep 10, 2010	2.409	0.03163	-0.0002	Jun 04, 2010	2.585	-0.03572	-0.00375		
Mar 30, 2011	3.341	-	0.002337	Dec 17, 2010	3.023	-0.01933	0.005328	Sep 09, 2010	2.334	0.01337	-0.00174	Jun 03, 2010	2.679	0.01051	-0.0032		
Mar 29, 2011	3.341	0.01114	0.002487	Dec 16, 2010	3.082	0.01603	0.008153	Sep 08, 2010	2.303	0.01929	-0.00463	Jun 02, 2010	2.651	-0.00452	-0.00506		
Mar 28, 2011	3.304	0.00943	0.002349	Dec 15, 2010	3.033	0.00496	0.007171	Sep 07, 2010	2.259	-0.03608	-0.00538	Jun 01, 2010	2.663	0.00376	-0.00651		
Mar 25, 2011	3.273	0.00398	0.002082	Dec 14, 2010	3.018	0.01066	0.007893	Sep 06, 2010	2.342	-0.00171	-0.00358	May 31, 2010	2.653	-0.01199	-0.00529		
Mar 24, 2011	3.26	0.00646	0.001771	Dec 13, 2010	2.986	0.01349	0.008402	Sep 03, 2010	2.346	0.02285	-0.0044	May 28, 2010	2.685	-0.00853	-0.00547		
Mar 23, 2011	3.239	-0.00493	0.001297	Dec 10, 2010	2.946	-0.00440	0.009228	Sep 02, 2010	2.293	0.02965	-0.00609	May 27, 2010	2.708	0.02278	-0.00475		
Mar 22, 2011	3.255	0.00369	0.000975	Dec 09, 2010	2.959	-0.01808	0.009418	Sep 01, 2010	2.226	0.05257	-0.00763	May 26, 2010	2.647	0.02913	-0.0061		
Mar 21, 2011	3.243	0.01522	-0.00013	Dec 08, 2010	3.013	0.02351	0.010891	Aug 31, 2010	2.112	-0.01177	-0.01168	May 25, 2010	2.571	-0.03064	-0.0081		
Mar 18, 2011	3.194	0.00628	0.000149	Dec 07, 2010	2.943	0.03211	0.009951	Aug 30, 2010	2.137	-0.01394	-0.01064	May 24, 2010	2.651	-0.00489	-0.00696		
Mar 17, 2011	3.174	0.02844	-0.00099	Dec 06, 2010	2.85	-0.00804	0.007768	Aug 27, 2010	2.167	-0.00184	-0.01102	May 21, 2010	2.664	-0.00860	-0.0066		
Mar 16, 2011	3.085	-0.01703	-0.00309	Dec 03, 2010	2.873	0.01614	0.008368	Aug 26, 2010	2.171	0.01205	-0.01128	May 20, 2010	2.687	-0.03331	-0.00648		
Mar 15, 2011	3.138	-0.02704	-0.0023	Dec 02, 2010	2.827	0.01965	0.007481	Aug 25, 2010	2.145	-0.01848	-0.01221	May 19, 2010	2.778	-0.01855	-0.00524		
Mar 14, 2011	3.224	0.00560	-0.00095	Dec 01, 2010	2.772	0.03861	0.005686	Aug 24, 2010	2.185	-0.04300	-0.01109	May 18, 2010	2.83	-0.01369	-0.00411		
Mar 11, 2011	3.206	-0.01240	-0.00142	Nov 30, 2010	2.667	-0.03934	0.003577	Aug 23, 2010	2.281	0.00132	-0.00798	May 17, 2010	2.869	0.00244	-0.00358		
Mar 10, 2011	3.246	-0.01316	-0.00092	Nov 29, 2010	2.774	0.01343	0.004497	Aug 20, 2010	2.278	-0.00482	-0.00715	May 14, 2010	2.862	-0.02485	-0.00425		
Mar 09, 2011	3.289	-0.00485	0.000466	Nov 26, 2010	2.737	0.02628	0.002998	Aug 19, 2010	2.289	-0.01173	-0.00688	May 13, 2010	2.934	-0.00272	-0.00323		
Mar 08, 2011	3.305	0.00516	0.000799	Nov 25, 2010	2.666	0.00376	0.001709	Aug 18, 2010	2.316	-0.02094	-0.0062	May 12, 2010	2.942	0.00443	-0.00321		
Mar 07, 2011	3.288	0.00122	0.000393	Nov 24, 2010	2.656	0.03720	0.002749	Aug 17, 2010	2.365	0.01362	-0.00526	May 11, 2010	2.929	-0.00884	-0.00398		
Mar 04, 2011	3.284	-0.01271	0.0011	Nov 23, 2010	2.559	-0.03607	0.001937	Aug 16, 2010	2.333	-0.02456	-0.00558	May 10, 2010	2.955	0.06646	-0.00316		
Mar 03, 2011	3.326	0.03519	0.001115	Nov 22, 2010	2.653	-0.02163	0.003288	Aug 13, 2010	2.391	-0.01164	-0.00497	May 07, 2010	2.765	-0.01151	-0.00538		
Mar 02, 2011	3.211	0.00939	-0.00018	Nov 19, 2010	2.711	0.00296	0.004318	Aug 12, 2010	2.419	-0.00083	-0.00452	May 06, 2010	2.797	-0.02402	-0.00533		
Mar 01, 2011	3.181	0.00315	0.00027	Nov 18, 2010	2.703	0.04001	0.004953	Aug 11, 2010	2.421	-0.04720	-0.00402	May 05, 2010	2.865	-0.02856	-0.00443		
Feb 28, 2011	3.171	0.00823	9.02E-05	Nov 17, 2010	2.597	-0.00461	0.00344	Aug 10, 2010	2.538	0.00355	-0.00093	May 04, 2010	2.948	-0.03500	-0.00238		
Feb 25, 2011	3.145	0.00382	-0.00093	Nov 16, 2010	2.609	0.02013	0.004435	Aug 09, 2010	2.529	0.00158	-0.00188	May 03, 2010	3.053	0.02925	-0.00076		
Feb 24, 2011	3.133	-0.00255	-0.00077	Nov 15, 2010	2.557	0.02134	0.003838	Aug 06, 2010	2.525	-0.01883	-0.0021	Apr 30, 2010	2.965	-0.01573	-0.00249		
Feb 23, 2011	3.141	-0.00350	-9.1E-05	Nov 12, 2010	2.503	0.03083	0.004173	Aug 05, 2010	2.573	-0.01274	-0.00035	Apr 29, 2010	3.012	0.00666	-0.00185		
Feb 22, 2011	3.152	-0.01167	0.000166	Nov 11, 2010	2.427	-0.00041	0.002725	Aug 04, 2010	2.606	-0.00268	0.000128	Apr 28, 2010	2.992	-0.00567	-0.00254		
Feb 21, 2011	3.189	-0.01956	0.00018	Nov 10, 2010	2.428	0.01285	0.003816	Aug 03, 2010	2.613	-0.03238	0.001312	Apr 27, 2010	3.009	-0.01288	-0.00186		
Feb 18, 2011	3.252	0.02113	0.001487	Nov 09, 2010	2.397	0.00376	0.002592	Aug 02, 2010	2.699	0.01005	0.002147	Apr 26, 2010	3.048	-0.00654	-0.00045		
Feb 17, 2011	3.184	-0.01774	0.001166	Nov 08, 2010	2.388	-0.01372	0.002729	Jul 30, 2010	2.672	-0.02184	0.001779	Apr 23, 2010	3.068	0.00261	0.000171		
Feb 16, 2011	3.241	-0.01561	0.001858	Nov 05, 2010	2.421	0.00455	0.002878	Jul 29, 2010	2.731	-0.00730	0.003228	Apr 22, 2010	3.06	-0.00619	-9.3E-05		
Feb 15, 2011	3.292	-0.00030	0.003792	Nov 04, 2010	2.41	-0.00249	0.003526	Jul 28, 2010	2.751	-0.00760	0.003389	Apr 21, 2010	3.079	-0.00712	-0.00046		
Feb 14, 2011	3.293	0.00122	0.003885	Nov 03, 2010	2.416	-0.01805	0.002655	Jul 27, 2010	2.772	0.00506	0.003271	Apr 20, 2010	3.101	0.00517	-0.00026		
Feb 11, 2011	3.289	-0.00425	0.003733	Nov 02, 2010	2.46	-0.00567	0.004313	Jul 26, 2010	2.758	0.02237	0.002791	Apr 19, 2010	3.085	-0.00259	-0.00045		
Feb 10, 2011	3.303	-0.00181	0.003639	Nov 01, 2010	2.474	-0.02001	0.003618	Jul 23, 2010	2.697	0.01871	0.001671	Apr 16, 2010	3.093	-0.01157	-0.00075		
Feb 09, 2011	3.309	0.01584	0.00576	Oct 29, 2010	2.524	-0.01806	0.004737	Jul 22, 2010	2.647	0.00076	-0.00013	Apr 15, 2010	3.129	-0.00351	-0.00032		
Feb 08, 2011	3.257	0.00215	0.006123	Oct 28, 2010	2.57	-0.00078	0.006693	Jul 21, 2010	2.645	0.00265	-0.00086	Apr 14, 2010	3.14	-0.00223	-0.00057		
Feb 07, 2011	3.25	-0.00338	0.006104	Oct 27, 2010	2.572	0.02560	0.006221	Jul 20, 2010	2.638	-0.00114	-0.00219	Apr 13, 2010	3.147	-0.01169			
Feb 04, 2011	3.261	0.01607	0.005227	Oct 26, 2010	2.507	0.02015	0.004457	Jul 19, 2010	2.641	0.00684	-0.00163	Apr 12, 2010	3.184	0.00820			
Feb 03, 2011	3.209	-0.01239	0.003927	Oct 25, 2010	2.457	-0.00770	0.002262	Jul 16, 2010	2.623	-0.01175	-0.00076	Apr 09, 2010	3.158	0.01983			
Feb 02, 2011	3.249	0.00803	0.005576	Oct 22, 2010	2.476	-	0.003656	Jul 15, 2010	2.654	-0.00226	-0.00023	Apr 08, 2010	3.096	-0.01028			
Feb 01, 2011	3.223	0.01879	0.004897	Oct 21, 2010	2.476	0.01629	0.002184	Jul 14, 2010	2.66	0.00982	-0.00043	Apr 07, 2010	3.128	-0.00510			
Jan 31, 2011	3.163	-0.00063	0.003336	Oct 20, 2010	2.436	0.00824	-0.00035	Jul 13, 2010	2.634	0.01762	3.62E-05	Apr 06, 2010	3.144	0.01442			
Jan 28, 2011	3.165	-0.01318	0.002328	Oct 19, 2010	2.416	0.01627	-0.00144	Jul 12, 2010	2.588	-0.01648	9.21E-05	Apr 01, 2010	3.099	-0.00097			
Jan 27, 2011	3.207	0.00720	0.00332	Oct 18, 2010	2.377	0.00760	-0.00144	Jul 09, 2010	2.631	-0.00304	0.000127	Mar 31, 2010	3.102	-0.00707			
Jan 26, 2011	3.184	0.01169	0.002314	Oct 15, 2010	2.359	0.02838	-0.00236	Jul 08, 2010	2.639	0.01797	0.00128	Mar 30, 2010	3.124	-0.00224			
Jan 25, 2011	3.147	0.00191	0.002581	Oct 14, 2010	2.293	0.00044	-0.00229	Jul 07, 2010	2.592	-0.00270	0.001531	Mar 29, 2010	3.131	-0.00795			
Jan 24, 2011	3.141	-0.01140	0.002923	Oct 13, 2010	2.292	0.02250	-0.00167	Jul 06, 2010	2.599	0.02218	0.000888	Mar 26, 2010	3.156	0.00859			
Jan 21, 2011	3.177	0.00790	0.003048	Oct 12, 2010	2.241	-0.01286	-0.00411	Jul 05, 2010	2.542	-0.01484	-0.0008	Mar 25, 2010	3.129	0.01676			
Jan 20, 2011	3.152	0.01438	0.002896	Oct 11, 2010	2.27	0.00663	-0.00283	Jul 02, 2010	2.58	0.00233	-0.00179	Mar 24, 2010	3.077	0.00652			
Jan 19, 2011	3.107	-0.00321	0.001305	Oct 08, 2010	2.255	-0.01059	-0.00164	Jul 01, 2010	2.574	0.00858	-0.0014	Mar 23, 2010	3.057	-0.00294			
Jan 18, 2011	3.117	0.02501	0.000538	Oct 07, 2010	2.279	0.01815	-0.0005	Jun 30, 2010	2.552	-0.00391	-0.00203	Mar 22, 2010	3.066	-0.01393			
Jan 17, 2011	3.04	0.00165	0.00011	Oct 06, 2010	2.238	-0.02078	-0.00044	Jun 29, 2010	2.562	-0.01010	-0.00166	Mar 19, 2010	3.109	-0.00289			
Jan 14, 2011	3.035	-0.00197	0.000267	Oct 05, 2010	2.285	0.01677	-0.00117	Jun 28, 2010	2.588	-0.00501	-0.00175	Mar 18, 2010	3.118	0.00128			
Jan 13, 2011	3.041	-0.00623	0.000869	Oct 04, 2010	2.247	-0.02027	-0.00205	Jun 25, 2010	2.601	-0.00115	-0.00192	Mar 17, 2010	3.114	-0.00895			
Jan 12, 2011	3.06	0.04273	0.001808	Oct 01, 2010	2.293	0.00349	-8.1E-18	Jun 24, 2010	2.604	-0.01902	-0.00078	Mar 16, 2010	3.142	-0.00254			
Jan 11, 2011	2.932	0.02347	-0.00044	Sep 30, 2010	2.285	0.02302	0.001246	Jun 23, 2010	2.654	-0.01459	0.001513	Mar 15, 2010	3.15	-0.00885			
Jan 10, 2011	2.864	0.00175	-0.00242	Sep 29, 2010	2.233	-0.01069	0.002653	Jun 22, 2010	2.693	-0.02530	0.000749	Mar 12, 2010	3.178				
Jan 07, 2011	2.859	-0.02180	-0.00138	Sep 28, 2010	2.257	-0.01145	0.002602										

F3. USD 2012 VOLATILITY CALCULATION

USD Jul' 12																	
DATE	Yield	Lognormal return	Moving average return	DATE	Yield	Lognormal return	Moving average return	DATE	Yield	Lognormal return	Moving average return	DATE	Yield	Lognormal return	Moving average return	STDEV.S	ANNUALISED VOL
Jul 13, 2012	1.491	0.00876	-0.00333	Apr 04, 2012	2.223	-0.03100	0.006239	Dec 27, 2011	2.002	-0.01192	0.000767	Sep 20, 2011	1.937	-0.00976	-0.00405	0.5434%	8.7615%
Jul 12, 2012	1.478	-0.02473	-0.00564	Apr 03, 2012	2.293	0.05054	0.006344	Dec 26, 2011	2.026	0.00247	0.001456	Sep 19, 2011	1.956	-0.05035	-0.00263		
Jul 11, 2012	1.515	0.00862	-0.00218	Apr 02, 2012	2.18	-0.01548	0.004606	Dec 23, 2011	2.021	0.03423	0.003091	Sep 16, 2011	2.057	-0.01256	-0.00025		
Jul 10, 2012	1.502	-0.00730	-0.00395	Mar 30, 2012	2.214	0.02516	0.004132	Dec 22, 2011	1.953	-0.00867	0.001612	Sep 15, 2011	2.083	0.04467	-0.00188		
Jul 09, 2012	1.513	-0.02352	-0.00395	Mar 29, 2012	2.159	-0.01927	0.004266	Dec 21, 2011	1.97	0.02207	0.001175	Sep 14, 2011	1.992	-	-0.00527		
Jul 06, 2012	1.549	-0.03177	-0.00332	Mar 28, 2012	2.201	0.00638	0.005986	Dec 20, 2011	1.927	0.06264	-0.00093	Sep 13, 2011	1.992	0.02234	-0.00701		
Jul 05, 2012	1.599	-0.01797	0.000781	Mar 27, 2012	2.187	-0.02973	0.006076	Dec 19, 2011	1.81	-0.02240	-0.00487	Sep 12, 2011	1.948	0.01709	-0.00707		
Jul 03, 2012	1.628	0.02551	0.003144	Mar 26, 2012	2.253	0.00892	0.006223	Dec 16, 2011	1.851	-0.03190	-0.00285	Sep 09, 2011	1.915	-0.03186	-0.0094		
Jul 02, 2012	1.587	-0.03468	0.004004	Mar 23, 2012	2.233	-0.02171	0.005343	Dec 15, 2011	1.911	0.00367	-0.00217	Sep 08, 2011	1.977	-0.03186	-0.00276		
Jun 29, 2012	1.643	0.03657	0.002377	Mar 22, 2012	2.282	-0.00612	0.006234	Dec 14, 2011	1.904	-0.03052	-0.00349	Sep 07, 2011	2.041	0.02933	-0.00517		
Jun 28, 2012	1.584	-0.02309	-0.00104	Mar 21, 2012	2.296	-0.02876	0.005142	Dec 13, 2011	1.963	-0.02714	-0.00195	Sep 06, 2011	1.982	-0.00302	-0.00742		
Jun 27, 2012	1.621	-0.00431	-0.00359	Mar 20, 2012	2.363	-0.00507	0.007046	Dec 12, 2011	2.017	-0.02255	-0.00094	Sep 05, 2011	1.988	-0.00301	-0.0121		
Jun 26, 2012	1.628	0.01485	-0.0033	Mar 19, 2012	2.375	0.03296	0.008183	Dec 09, 2011	2.063	0.04613	0.000139	Sep 02, 2011	1.994	-0.06692	-0.00896		
Jun 25, 2012	1.604	-0.04391	-0.00404	Mar 16, 2012	2.298	0.00830	0.006996	Dec 08, 2011	1.97	-0.03148	9.68E-05	Sep 01, 2011	2.132	-0.04673	-0.00972		
Jun 22, 2012	1.676	0.03398	-0.00295	Mar 15, 2012	2.279	0.00220	0.007841	Dec 07, 2011	2.033	-0.02574	-0.00107	Aug 31, 2011	2.234	0.02631	-0.00746		
Jun 21, 2012	1.62	-0.01835	-0.00321	Mar 14, 2012	2.274	0.06730	0.007614	Dec 06, 2011	2.086	0.02574	0.001531	Aug 30, 2011	2.176	-0.03964	-0.0112		
Jun 20, 2012	1.65	0.01835	-0.00353	Mar 13, 2012	2.126	0.04276	0.003436	Dec 05, 2011	2.033	-	-0.00012	Aug 29, 2011	2.264	0.03323	-0.00998		
Jun 19, 2012	1.62	0.02881	-0.00348	Mar 12, 2012	2.037	0.00344	0.001255	Dec 02, 2011	2.033	-0.02574	-0.00093	Aug 26, 2011	2.19	-0.01989	-0.01427		
Jun 18, 2012	1.574	-0.00759	-0.00431	Mar 09, 2012	2.03	0.00692	-0.00014	Dec 01, 2011	2.086	0.00722	0.002267	Aug 25, 2011	2.234	-0.02650	-0.01375		
Jun 15, 2012	1.586	-0.03470	-0.00302	Mar 08, 2012	2.016	0.02207	0.00081	Nov 30, 2011	2.071	0.04090	0.001876	Aug 24, 2011	2.294	0.06112	-0.01206		
Jun 14, 2012	1.642	0.02654	-0.00328	Mar 07, 2012	1.972	0.01122	-0.00012	Nov 29, 2011	1.988	0.00910	-0.00297	Aug 23, 2011	2.158	0.02297	-0.01575		
Jun 13, 2012	1.599	-0.03985	-0.00484	Mar 06, 2012	1.95	-0.02881	0.001212	Nov 28, 2011	1.97	0.00254	-0.00787	Aug 22, 2011	2.109	0.02012	-0.01621		
Jun 12, 2012	1.664	0.04801	-0.00291	Mar 05, 2012	2.007	0.01405	0.002011	Nov 25, 2011	1.965	0.03680	-0.00922	Aug 19, 2011	2.067	-0.00048	-0.01796		
Jun 11, 2012	1.586	-0.02859	-0.0071	Mar 02, 2012	1.979	-0.02544	0.00391	Nov 24, 2011	1.894	0.00317	-0.00728	Aug 18, 2011	2.068	-0.04676	-0.01661		
Jun 08, 2012	1.632	-0.00733	-0.00658	Mar 01, 2012	2.03	0.02797	0.004939	Nov 23, 2011	1.888	-0.01785	-0.00538	Aug 17, 2011	2.167	-0.02641	-0.01351		
Jun 07, 2012	1.644	-0.01029	-0.005	Feb 29, 2012	1.974	0.01686	0.004527	Nov 22, 2011	1.922	-0.02213	-0.00716	Aug 16, 2011	2.225	-0.03662	-0.01294		
Jun 06, 2012	1.661	0.05444	-0.00493	Feb 28, 2012	1.941	0.00828	0.00239	Nov 21, 2011	1.965	-0.02015	-0.00572	Aug 15, 2011	2.308	0.02102	-0.011		
Jun 05, 2012	1.573	0.03165	-0.00831	Feb 27, 2012	1.925	-0.02665	0.000849	Nov 18, 2011	2.005	0.02015	-0.00414	Aug 12, 2011	2.26	-0.03179	-0.01274		
Jun 04, 2012	1.524	0.04359	-0.00997	Feb 24, 2012	1.977	-0.00956	0.0009	Nov 17, 2011	1.965	-0.01765	-0.00444	Aug 11, 2011	2.333	0.10760	-0.0101		
Jun 01, 2012	1.459	-0.06886	-0.0134	Feb 23, 2012	1.996	-0.00300	-0.00014	Nov 16, 2011	2	-0.02420	-0.00399	Aug 10, 2011	2.095	-0.08243	-0.0151		
May 31, 2012	1.563	-0.03520	-0.00999	Feb 22, 2012	2.002	-0.02904	-0.00143	Nov 15, 2011	2.049	0.00195	-0.0024	Aug 09, 2011	2.275	-0.01786	-0.01195		
May 30, 2012	1.619	-0.07666	-0.00874	Feb 21, 2012	2.061	0.01122	6.94E-05	Nov 14, 2011	2.045	-0.00585	-0.00457	Aug 08, 2011	2.316	-0.10134	-0.0128		
May 29, 2012	1.748	0.00172	-0.00444	Feb 20, 2012	2.038	0.01882	0.000305	Nov 11, 2011	2.057	-	-0.00281	Aug 05, 2011	2.563	0.06280	-0.00964		
May 28, 2012	1.745	-0.00057	-0.00497	Feb 17, 2012	2	0.00803	0.000431	Nov 10, 2011	2.057	0.04525	-0.00346	Aug 04, 2011	2.407	-0.08288	-0.0122		
May 25, 2012	1.746	-0.02097	-0.00519	Feb 16, 2012	1.984	0.02604	0.00211	Nov 09, 2011	1.966	-0.05589	-0.00446	Aug 03, 2011	2.615	0.00077	-0.00839		
May 24, 2012	1.783	0.02844	-0.00518	Feb 15, 2012	1.933	-0.00258	0.001884	Nov 08, 2011	2.079	0.02879	0.000207	Aug 02, 2011	2.613	-0.05219	-0.00965		
May 23, 2012	1.733	-0.02507	-0.0062	Feb 14, 2012	1.938	-0.02043	0.001548	Nov 07, 2011	2.02	-0.00887	-0.00128	Aug 01, 2011	2.753	-0.01407	-0.0069		
May 22, 2012	1.777	0.01932	-0.00418	Feb 13, 2012	1.978	-0.00303	0.002648	Nov 04, 2011	2.038	-0.01703	0.001087	Jul 29, 2011	2.792	-0.05674	-0.0059		
May 21, 2012	1.743	0.01154	-0.00556	Feb 10, 2012	1.984	-0.02587	0.001413	Nov 03, 2011	2.073	0.04136	0.004376	Jul 28, 2011	2.955	-0.00910	-0.0026		
May 18, 2012	1.723	0.01934	-0.00633	Feb 09, 2012	2.036	0.02688	0.003167	Nov 02, 2011	1.989	-0.00101	0.004307	Jul 27, 2011	2.982	0.00910	-0.00082		
May 17, 2012	1.69	-0.04002	-0.00742	Feb 08, 2012	1.982	0.00253	0.000459	Nov 01, 2011	1.991	-0.06089	0.006171	Jul 26, 2011	2.955	-0.01645	0.000372		
May 16, 2012	1.759	-0.00623	-0.00602	Feb 07, 2012	1.977	0.03920	0.000509	Oct 31, 2011	2.116	-0.09376	0.004703	Jul 25, 2011	3.004	0.01341	0.002156		
May 15, 2012	1.77	0.00057	-0.00539	Feb 06, 2012	1.901	-0.01203	-0.00141	Oct 28, 2011	2.324	-0.02591	0.007102	Jul 22, 2011	2.964	-0.01673	0.00081		
May 14, 2012	1.769	-0.03989	-0.00558	Feb 03, 2012	1.924	0.05392	-0.00175	Oct 27, 2011	2.385	0.07756	0.008694	Jul 21, 2011	3.014	0.02792	0.00054		
May 11, 2012	1.841	-0.01777	-0.00526	Feb 02, 2012	1.823	-0.00383	-0.00403	Oct 26, 2011	2.207	0.04305	0.005168	Jul 20, 2011	2.931	0.01825	-0.00079		
May 10, 2012	1.874	0.02595	-0.00397	Feb 01, 2012	1.83	0.01931	-0.00317	Oct 25, 2011	2.114	-0.05521	0.004982	Jul 19, 2011	2.878	-0.01449	-0.00127		
May 09, 2012	1.826	-0.00872	-0.004	Jan 31, 2012	1.795	-0.02802	-0.00203	Oct 24, 2011	2.234	0.00809	0.009499	Jul 18, 2011	2.92	0.00412	-0.00039		
May 08, 2012	1.842	-0.01669	-0.00502	Jan 30, 2012	1.846	-0.02408	-0.00077	Oct 21, 2011	2.216	0.01317	0.012066	Jul 15, 2011	2.908	-0.01536	-0.00029		
May 07, 2012	1.873	-0.00320	-0.00423	Jan 27, 2012	1.891	-0.02558	-0.0002	Oct 20, 2011	2.187	0.01381	0.007815	Jul 14, 2011	2.953	0.02364	-0.00023		
May 04, 2012	1.879	-0.02833	-0.00708	Jan 26, 2012	1.94	-0.03146	0.000469	Oct 19, 2011	2.157	-0.00831	0.005123	Jul 13, 2011	2.884	0.00243			
May 03, 2012	1.933	0.00259	-0.00666	Jan 25, 2012	2.002	-0.03001	1.12E-17	Oct 18, 2011	2.175	0.00924	0.005054	Jul 12, 2011	2.877	-0.01620			
May 02, 2012	1.928	-0.00878	-0.00826	Jan 24, 2012	2.063	0.00243	0.000862	Oct 17, 2011	2.155	-0.04358	0.002216	Jul 11, 2011	2.924	-0.03561			
May 01, 2012	1.945	0.01346	-0.00543	Jan 23, 2012	2.058	0.01616	0.000864	Oct 14, 2011	2.251	0.03113	0.003694	Jul 08, 2011	3.03	-0.03502			
Apr 30, 2012	1.919	-0.00934	-0.00681	Jan 20, 2012	2.025	0.02146	0.001724	Oct 13, 2011	2.182	-0.01366	0.004338	Jul 07, 2011	3.138	0.00896			
Apr 27, 2012	1.937	-0.00515	-0.00517	Jan 19, 2012	1.982	0.04331	0.000289	Oct 12, 2011	2.212	0.02425	0.004988	Jul 06, 2011	3.11	-0.00289			
Apr 26, 2012	1.947	-0.02084	-0.00584	Jan 18, 2012	1.898	0.02130	-0.00072	Oct 11, 2011	2.159	0.04210	0.004897	Jul 05, 2011	3.119	-0.02564			
Apr 25, 2012	1.988	0.00707	-0.00454	Jan 17, 2012	1.858	-0.00964	0.001246	Oct 10, 2011	2.07	-0.00241	0.003706	Jul 04, 2011	3.2	0.00564			
Apr 24, 2012	1.974	0.01737	-0.0063	Jan 16, 2012	1.876	0.00267	0.000639	Oct 07, 2011	2.075	0.04082	0.002304	Jul 01, 2011	3.182	0.00694			
Apr 23, 2012	1.94	-0.00975	-0.0067	Jan 13, 2012	1.871	-0.02897	-0.00101	Oct 06, 2011	1.992	0.05203	-0.00116	Jun 30, 2011	3.16	0.01242			
Apr 20, 2012	1.959	-0.00458	-0.00727	Jan 12, 2012	1.926	0.01096	0.000547	Oct 05, 2011	1.891	0.03992	-0.00224	Jun 29, 2011	3.121	0.02827			
Apr 19, 2012	1.968	-0.00355	-0.00734	Jan 11, 2012	1.905	-0.02999	-0.00143	Oct 04, 2011	1.817	0.03814	-0.00428	Jun 28, 2011	3.034	0.03420			
Apr 18, 2012	1.975	-0.01058	-0.00854	Jan 10, 2012	1.963	0.00357	-0.00129	Oct 03, 2011	1.749	-0.09172	-0.00624	Jun 27, 2011	2.932	0.02102			
Apr 17, 2012	1.996	0.00704	-0.00828	Jan 09, 2012	1.956	-0.00102	-0.00254	Sep 30, 2011	1.917	-0.04339	-0.00506	Jun 24, 2011	2.871	-0.01487			
Apr 16, 2012	1.982	-0.00353	-0.00704	Jan 06, 2012	1.958	-0.01922	-0.00029	Sep 29, 2011	2.002	0.00752	-0.00522	Jun 23, 2011	2.914	-0.02240			
Apr 13, 2012	1.989	-0.03313	-0.00648	Jan 05, 2012	1.996	0.00603	-0.00087	Sep 28, 2011	1.987	0.00353	-0.00433	Jun 22, 2011	2.98	-			
Apr 12, 2012	2.056	0.00928	-0.0048	Jan 04, 2012	1.984	0.01421	-0.00239	Sep 27, 2011	1.98	0.03914	-0.00638	Jun 21, 2011	2.98	0.00809			
Apr 11, 2012	2.037	0.02536	-0.00204	Jan 03, 2012	1.956	0.04336	-0.00184	Sep 26, 2011	1.904	0.03964	-0.00666	Jun 20, 2011	2.956	0.00407			
Apr 10, 2012	1.986	-0.03025	-0.00121	Jan 02, 2012	1.873	-0.00160	-0.0039	Sep 23, 2011	1.83	0.06199	-0.0095	Jun 17, 2011	2.944	0.00613			
Apr 09, 2012	2.047	-	0.000397	Dec 30, 2011	1.876	-0.01219	-0.00505	Sep 22, 2011	1.72	-0.07610	-0.01371	Jun 16, 2011	2.926	-0.01392			
Apr 06, 2012	2.047	-0.06295	0.000727	Dec 29, 2011	1.899	-0.01152	-0.00413	Sep 21, 2011	1.856	-0.04272	-0.00718	Jun 15, 2011	2.967				
Apr 05, 2012	2.18	-0.01953	0.004775	Dec 28, 2011	1.921	-0.04130	-0.00163										

APPENDIX G: PRE-CALIBRATION BINOMIAL LATTICES

G1. USD 2011 PRE-CALIBRATION LATTICE

Refer to following pages.

G2. EUR 2011 PRE-CALIBRATION LATTICE

Refer to following pages.

G3. USD 2012 PRE-CALIBRATION LATTICE

Refer to following pages.

APPENDIX H: POST-CALIBRATION BINOMIAL LATTICES

H1. USD 2011 POST-CALIBRATION LATTICE

Refer to following pages.

H2. EUR 2011 POST-CALIBRATION LATTICE

Refer to following pages.

H3. USD 2012 POST-CALIBRATION LATTICE

Refer to following pages.

USD 2011 pre-calibration lattice

15-Jul-12	15-Aug-12	15-Sep-12	15-Oct-12	15-Nov-12	15-Dec-12	15-Jan-13	15-Feb-13	15-Mar-13	15-Apr-13	15-May-13	15-Jun-13	15-Jul-13	15-Aug-13	15-Sep-13	15-Oct-13	15-Nov-13
t = 1.33	t = 1.42	t = 1.5	t = 1.58	t = 1.67	t = 1.75	t = 1.83	t = 1.92	t = 2	t = 2.08	t = 2.17	t = 2.25	t = 2.33	t = 2.42	t = 2.5	t = 2.58	t = 2.67
0.6898%	0.7643%	0.8359%	0.9034%	0.9657%	1.0220%	1.0713%	1.1128%	1.1458%	1.1709%	1.1934%	1.2147%	1.2350%	1.2547%	1.2738%	1.2927%	1.3115%
0.7150%	0.7923%	0.8665%	0.9364%	1.0011%	1.0594%	1.1105%	1.1535%	1.1877%	1.2138%	1.2371%	1.2592%	1.2802%	1.3006%	1.3205%	1.3401%	1.3596%
0.7412%	0.8213%	0.8982%	0.9707%	1.0377%	1.0982%	1.1512%	1.1958%	1.2312%	1.2583%	1.2824%	1.3053%	1.3271%	1.3483%	1.3689%	1.3892%	1.4094%
0.7684%	0.8514%	0.9311%	1.0063%	1.0757%	1.1384%	1.1933%	1.2396%	1.2763%	1.3044%	1.3294%	1.3531%	1.3757%	1.3976%	1.4190%	1.4400%	1.4610%
0.7965%	0.8826%	0.9652%	1.0431%	1.1151%	1.1801%	1.2370%	1.2850%	1.3231%	1.3521%	1.3781%	1.4026%	1.4261%	1.4488%	1.4710%	1.4928%	1.5145%
0.8257%	0.9149%	1.0006%	1.0814%	1.1560%	1.2233%	1.2823%	1.3320%	1.3715%	1.4016%	1.4285%	1.4540%	1.4784%	1.5019%	1.5248%	1.5474%	1.5700%
0.8559%	0.9484%	1.0372%	1.1210%	1.1983%	1.2681%	1.3293%	1.3808%	1.4217%	1.4530%	1.4808%	1.5072%	1.5325%	1.5569%	1.5807%	1.6041%	1.6274%
0.8873%	0.9832%	1.0752%	1.1620%	1.2422%	1.3146%	1.3780%	1.4314%	1.4738%	1.5062%	1.5351%	1.5624%	1.5886%	1.6139%	1.6386%	1.6629%	1.6871%
0.9198%	1.0192%	1.1146%	1.2046%	1.2877%	1.3627%	1.4284%	1.4838%	1.5278%	1.5614%	1.5913%	1.6197%	1.6468%	1.6730%	1.6986%	1.7238%	1.7488%
0.9535%	1.0565%	1.1554%	1.2487%	1.3349%	1.4126%	1.4807%	1.5381%	1.5837%	1.6185%	1.6496%	1.6790%	1.7071%	1.7343%	1.7608%	1.7869%	1.8129%
0.9884%	1.0952%	1.1977%	1.2944%	1.3837%	1.4644%	1.5350%	1.5945%	1.6417%	1.6778%	1.7100%	1.7405%	1.7696%	1.7978%	1.8253%	1.8523%	1.8793%
1.0246%	1.1353%	1.2416%	1.3418%	1.4344%	1.5180%	1.5912%	1.6529%	1.7019%	1.7393%	1.7726%	1.8042%	1.8344%	1.8636%	1.8921%	1.9202%	1.9481%
1.0621%	1.1769%	1.2871%	1.3910%	1.4870%	1.5736%	1.6495%	1.7134%	1.7642%	1.8030%	1.8375%	1.8703%	1.9016%	1.9319%	1.9614%	1.9905%	2.0195%
1.1010%	1.2200%	1.3342%	1.4419%	1.5414%	1.6312%	1.7099%	1.7761%	1.8288%	1.8690%	1.9048%	1.9388%	1.9713%	2.0026%	2.0332%	2.0634%	2.0934%
1.1413%	1.2647%	1.3831%	1.4947%	1.5979%	1.6910%	1.7725%	1.8412%	1.8958%	1.9374%	1.9746%	2.0098%	2.0435%	2.0760%	2.1077%	2.1390%	2.1701%
1.1831%	1.3110%	1.4337%	1.5495%	1.6564%	1.7529%	1.8374%	1.9086%	1.9652%	2.0084%	2.0469%	2.0834%	2.1183%	2.1520%	2.1849%	2.2173%	2.2496%
	1.3590%	1.4862%	1.6062%	1.7171%	1.8171%	1.9047%	1.9785%	2.0372%	2.0820%	2.1219%	2.1597%	2.1959%	2.2308%	2.2649%	2.2985%	2.3319%
		1.5407%	1.6650%	1.7799%	1.8836%	1.9745%	2.0510%	2.1118%	2.1582%	2.1996%	2.2388%	2.2763%	2.3125%	2.3479%	2.3827%	2.4174%
			1.7260%	1.8451%	1.9526%	2.0468%	2.1261%	2.1891%	2.2372%	2.2801%	2.3208%	2.3597%	2.3972%	2.4339%	2.4700%	2.5059%
				1.9127%	2.0241%	2.1217%	2.2040%	2.2693%	2.3192%	2.3637%	2.4058%	2.4461%	2.4850%	2.5230%	2.5604%	2.5977%
					2.0983%	2.1994%	2.2847%	2.3524%	2.4041%	2.4502%	2.4939%	2.5357%	2.5760%	2.6154%	2.6542%	2.6928%
						2.2800%	2.3683%	2.4386%	2.4922%	2.5400%	2.5852%	2.6286%	2.6704%	2.7112%	2.7514%	2.7914%
							2.4551%	2.5279%	2.5834%	2.6330%	2.6799%	2.7248%	2.7682%	2.8105%	2.8522%	2.8936%
								2.6205%	2.6780%	2.7294%	2.7781%	2.8246%	2.8696%	2.9134%	2.9566%	2.9996%
									2.7761%	2.8294%	2.8798%	2.9281%	2.9747%	3.0201%	3.0649%	3.1095%
										2.9330%	2.9853%	3.0353%	3.0836%	3.1307%	3.1771%	3.2234%
											3.0946%	3.1465%	3.1965%	3.2454%	3.2935%	3.3414%
												3.2617%	3.3136%	3.3642%	3.4141%	3.4638%
													3.4349%	3.4874%	3.5392%	3.5906%
														3.6152%	3.6688%	3.7221%
															3.8031%	3.8585%
																3.9998%

USD 2011 pre-calibration lattice

15-Dec-13	15-Jan-14	15-Feb-14	15-Mar-14	15-Apr-14	15-May-14	15-Jun-14	15-Jul-14	15-Aug-14	15-Sep-14	15-Oct-14	15-Nov-14	15-Dec-14	15-Jan-15	15-Feb-15	15-Mar-15	15-Apr-15
t = 2.75	t = 2.83	t = 2.92	t = 3	t = 3.08	t = 3.17	t = 3.25	t = 3.33	t = 3.42	t = 3.5	t = 3.58	t = 3.67	t = 3.75	t = 3.83	t = 3.92	t = 4	t = 4.08
1.3304%	1.3496%	1.3691%	1.3891%	1.4095%	1.4287%	1.4463%	1.4625%	1.4771%	1.4902%	1.5018%	1.5119%	1.5204%	1.5275%	1.5330%	1.5371%	1.5398%
1.3791%	1.3990%	1.4192%	1.4400%	1.4611%	1.4810%	1.4993%	1.5161%	1.5312%	1.5448%	1.5568%	1.5672%	1.5761%	1.5834%	1.5892%	1.5934%	1.5961%
1.4297%	1.4502%	1.4712%	1.4928%	1.5146%	1.5352%	1.5542%	1.5716%	1.5873%	1.6014%	1.6138%	1.6246%	1.6338%	1.6414%	1.6474%	1.6518%	1.6546%
1.4820%	1.5033%	1.5251%	1.5474%	1.5701%	1.5915%	1.6111%	1.6291%	1.6454%	1.6600%	1.6729%	1.6841%	1.6937%	1.7015%	1.7077%	1.7123%	1.7152%
1.5363%	1.5584%	1.5809%	1.6041%	1.6276%	1.6497%	1.6702%	1.6888%	1.7057%	1.7208%	1.7342%	1.7458%	1.7557%	1.7638%	1.7703%	1.7750%	1.7780%
1.5926%	1.6155%	1.6388%	1.6628%	1.6872%	1.7102%	1.7313%	1.7507%	1.7682%	1.7838%	1.7977%	1.8098%	1.8200%	1.8284%	1.8351%	1.8400%	1.8431%
1.6509%	1.6746%	1.6989%	1.7237%	1.7490%	1.7728%	1.7947%	1.8148%	1.8329%	1.8492%	1.8636%	1.8760%	1.8867%	1.8954%	1.9023%	1.9074%	1.9106%
1.7113%	1.7360%	1.7611%	1.7869%	1.8130%	1.8377%	1.8605%	1.8812%	1.9000%	1.9169%	1.9318%	1.9447%	1.9557%	1.9648%	1.9720%	1.9772%	1.9806%
1.7740%	1.7995%	1.8256%	1.8523%	1.8794%	1.9050%	1.9286%	1.9501%	1.9696%	1.9871%	2.0025%	2.0160%	2.0274%	2.0368%	2.0442%	2.0497%	2.0532%
1.8390%	1.8654%	1.8924%	1.9202%	1.9483%	1.9748%	1.9992%	2.0216%	2.0418%	2.0599%	2.0759%	2.0898%	2.1016%	2.1114%	2.1191%	2.1247%	2.1283%
1.9063%	1.9338%	1.9617%	1.9905%	2.0196%	2.0471%	2.0724%	2.0956%	2.1165%	2.1353%	2.1519%	2.1663%	2.1786%	2.1887%	2.1967%	2.2025%	2.2063%
1.9762%	2.0046%	2.0336%	2.0634%	2.0936%	2.1221%	2.1483%	2.1723%	2.1941%	2.2135%	2.2307%	2.2457%	2.2584%	2.2689%	2.2771%	2.2832%	2.2871%
2.0485%	2.0780%	2.1081%	2.1389%	2.1703%	2.1998%	2.2270%	2.2519%	2.2744%	2.2946%	2.3124%	2.3279%	2.3411%	2.3520%	2.3605%	2.3668%	2.3709%
2.1236%	2.1541%	2.1853%	2.2173%	2.2497%	2.2804%	2.3086%	2.3344%	2.3577%	2.3786%	2.3971%	2.4132%	2.4268%	2.4381%	2.4470%	2.4535%	2.4577%
2.2013%	2.2330%	2.2653%	2.2985%	2.3321%	2.3639%	2.3931%	2.4199%	2.4441%	2.4657%	2.4849%	2.5016%	2.5157%	2.5274%	2.5366%	2.5434%	2.5477%
2.2820%	2.3148%	2.3483%	2.3827%	2.4175%	2.4505%	2.4808%	2.5085%	2.5336%	2.5560%	2.5759%	2.5932%	2.6078%	2.6199%	2.6295%	2.6365%	2.6410%
2.3655%	2.3995%	2.4343%	2.4699%	2.5061%	2.5402%	2.5716%	2.6004%	2.6264%	2.6497%	2.6703%	2.6881%	2.7034%	2.7159%	2.7258%	2.7331%	2.7377%
2.4522%	2.4874%	2.5234%	2.5604%	2.5979%	2.6332%	2.6658%	2.6956%	2.7226%	2.7467%	2.7680%	2.7866%	2.8024%	2.8154%	2.8256%	2.8332%	2.8380%
2.5420%	2.5785%	2.6158%	2.6542%	2.6930%	2.7297%	2.7635%	2.7943%	2.8223%	2.8473%	2.8694%	2.8887%	2.9050%	2.9185%	2.9291%	2.9369%	2.9419%
2.6351%	2.6730%	2.7116%	2.7514%	2.7916%	2.8297%	2.8647%	2.8967%	2.9256%	2.9516%	2.9745%	2.9944%	3.0114%	3.0254%	3.0364%	3.0445%	3.0497%
2.7316%	2.7709%	2.8109%	2.8521%	2.8939%	2.9333%	2.9696%	3.0027%	3.0328%	3.0597%	3.0834%	3.1041%	3.1217%	3.1362%	3.1476%	3.1560%	3.1614%
2.8316%	2.8723%	2.9139%	2.9566%	2.9999%	3.0407%	3.0783%	3.1127%	3.1438%	3.1717%	3.1964%	3.2178%	3.2360%	3.2510%	3.2629%	3.2716%	3.2771%
2.9353%	2.9775%	3.0206%	3.0649%	3.1097%	3.1521%	3.1911%	3.2267%	3.2590%	3.2879%	3.3134%	3.3356%	3.3545%	3.3701%	3.3824%	3.3914%	3.3972%
3.0428%	3.0866%	3.1312%	3.1771%	3.2236%	3.2675%	3.3079%	3.3449%	3.3783%	3.4083%	3.4348%	3.4578%	3.4774%	3.4935%	3.5062%	3.5156%	3.5216%
3.1543%	3.1996%	3.2459%	3.2935%	3.3417%	3.3872%	3.4291%	3.4674%	3.5021%	3.5331%	3.5606%	3.5844%	3.6047%	3.6214%	3.6346%	3.6443%	3.6506%
3.2698%	3.3168%	3.3648%	3.4141%	3.4641%	3.5112%	3.5547%	3.5944%	3.6303%	3.6625%	3.6910%	3.7157%	3.7367%	3.7541%	3.7678%	3.7778%	3.7842%
3.3895%	3.4383%	3.4880%	3.5391%	3.5909%	3.6398%	3.6849%	3.7260%	3.7633%	3.7967%	3.8262%	3.8518%	3.8736%	3.8916%	3.9057%	3.9162%	3.9228%
3.5137%	3.5642%	3.6158%	3.6687%	3.7224%	3.7731%	3.8198%	3.8625%	3.9011%	3.9357%	3.9663%	3.9929%	4.0155%	4.0341%	4.0488%	4.0596%	4.0665%
3.6423%	3.6947%	3.7482%	3.8031%	3.8588%	3.9113%	3.9597%	4.0039%	4.0440%	4.0798%	4.1115%	4.1391%	4.1625%	4.1818%	4.1971%	4.2083%	4.2154%
3.7757%	3.8300%	3.8855%	3.9424%	4.0001%	4.0546%	4.1047%	4.1506%	4.1921%	4.2293%	4.2621%	4.2907%	4.3150%	4.3350%	4.3508%	4.3624%	4.3698%
3.9140%	3.9703%	4.0278%	4.0868%	4.1466%	4.2031%	4.2551%	4.3026%	4.3456%	4.3842%	4.4182%	4.4478%	4.4730%	4.4937%	4.5101%	4.5221%	4.5299%
4.0574%	4.1157%	4.1753%	4.2364%	4.2985%	4.3570%	4.4109%	4.4602%	4.5048%	4.5447%	4.5800%	4.6107%	4.6368%	4.6583%	4.6753%	4.6878%	4.6958%
4.2060%	4.2664%	4.3282%	4.3916%	4.4559%	4.5166%	4.5724%	4.6235%	4.6697%	4.7112%	4.7478%	4.7796%	4.8066%	4.8289%	4.8465%	4.8594%	4.8677%
	4.4227%	4.4867%	4.5524%	4.6191%	4.6820%	4.7399%	4.7928%	4.8408%	4.8837%	4.9217%	4.9546%	4.9827%	5.0058%	5.0240%	5.0374%	5.0460%
		4.6510%	4.7192%	4.7882%	4.8534%	4.9135%	4.9684%	5.0180%	5.0626%	5.1019%	5.1361%	5.1652%	5.1891%	5.2080%	5.2219%	5.2308%
			4.8920%	4.9636%	5.0312%	5.0934%	5.1503%	5.2018%	5.2480%	5.2888%	5.3242%	5.3543%	5.3792%	5.3988%	5.4131%	5.4224%
				5.1454%	5.2155%	5.2800%	5.3389%	5.3923%	5.4402%	5.4824%	5.5192%	5.5504%	5.5762%	5.5965%	5.6114%	5.6210%
					5.4065%	5.4733%	5.5345%	5.5898%	5.6394%	5.6832%	5.7213%	5.7537%	5.7804%	5.8014%	5.8169%	5.8268%
						5.6738%	5.7372%	5.7945%	5.8459%	5.8914%	5.9309%	5.9644%	5.9921%	6.0139%	6.0299%	6.0402%
							5.9473%	6.0068%	6.0600%	6.1071%	6.1481%	6.1828%	6.2115%	6.2342%	6.2508%	6.2615%
								6.2268%	6.2820%	6.3308%	6.3732%	6.4093%	6.4390%	6.4625%	6.4797%	6.4908%
									6.5121%	6.5627%	6.6066%	6.6440%	6.6748%	6.6992%	6.7170%	6.7285%
										6.8030%	6.8486%	6.8873%	6.9193%	6.9445%	6.9630%	6.9749%
											7.0994%	7.1396%	7.1727%	7.1988%	7.2180%	7.2304%
												7.4011%	7.4354%	7.4625%	7.4824%	7.4952%
													7.7077%	7.7358%	7.7564%	7.7697%
														8.0191%	8.0405%	8.0542%
															8.3349%	8.3492%
																8.6550%

USD 2011 pre-calibration lattice

15-May-15	15-Jun-15	15-Jul-15	15-Aug-15	15-Sep-15	15-Oct-15	15-Nov-15	15-Dec-15	15-Jan-16	15-Feb-16	15-Mar-16	15-Apr-16	15-May-16	15-Jun-16	15-Jul-16	15-Aug-16	15-Sep-16
t = 4.17	t = 4.25	t = 4.33	t = 4.42	t = 4.5	t = 4.58	t = 4.67	t = 4.75	t = 4.83	t = 4.92	t = 5	t = 5.08	t = 5.17	t = 5.25	t = 5.33	t = 5.42	t = 5.5
1.5409%	1.5407%	1.5390%	1.5360%	1.5316%	1.5258%	1.5187%	1.5103%	1.5006%	1.4897%	1.4776%	1.4644%	1.4506%	1.4363%	1.4217%	1.4068%	1.3914%
1.5974%	1.5971%	1.5954%	1.5922%	1.5876%	1.5817%	1.5743%	1.5656%	1.5556%	1.5443%	1.5317%	1.5180%	1.5037%	1.4889%	1.4738%	1.4583%	1.4424%
1.6559%	1.6556%	1.6538%	1.6505%	1.6458%	1.6396%	1.6320%	1.6230%	1.6126%	1.6008%	1.5878%	1.5736%	1.5588%	1.5435%	1.5278%	1.5117%	1.4952%
1.7165%	1.7162%	1.7144%	1.7110%	1.7061%	1.6996%	1.6917%	1.6824%	1.6716%	1.6595%	1.6459%	1.6312%	1.6158%	1.6000%	1.5837%	1.5670%	1.5500%
1.7794%	1.7791%	1.7772%	1.7736%	1.7685%	1.7619%	1.7537%	1.7440%	1.7328%	1.7202%	1.7062%	1.6910%	1.6750%	1.6586%	1.6417%	1.6244%	1.6068%
1.8445%	1.8442%	1.8423%	1.8386%	1.8333%	1.8264%	1.8179%	1.8079%	1.7963%	1.7832%	1.7687%	1.7529%	1.7364%	1.7193%	1.7019%	1.6839%	1.6656%
1.9121%	1.9118%	1.9097%	1.9059%	1.9005%	1.8933%	1.8845%	1.8741%	1.8621%	1.8485%	1.8335%	1.8171%	1.8000%	1.7823%	1.7642%	1.7456%	1.7266%
1.9821%	1.9818%	1.9797%	1.9757%	1.9701%	1.9626%	1.9535%	1.9427%	1.9303%	1.9162%	1.9006%	1.8836%	1.8659%	1.8476%	1.8288%	1.8095%	1.7898%
2.0547%	2.0544%	2.0522%	2.0481%	2.0422%	2.0345%	2.0251%	2.0139%	2.0010%	1.9864%	1.9702%	1.9526%	1.9342%	1.9153%	1.8958%	1.8758%	1.8554%
2.1300%	2.1296%	2.1273%	2.1231%	2.1170%	2.1090%	2.0992%	2.0876%	2.0743%	2.0592%	2.0424%	2.0241%	2.0051%	1.9854%	1.9652%	1.9445%	1.9233%
2.2080%	2.2076%	2.2052%	2.2009%	2.1945%	2.1863%	2.1761%	2.1641%	2.1502%	2.1346%	2.1172%	2.0983%	2.0785%	2.0581%	2.0372%	2.0157%	1.9938%
2.2888%	2.2885%	2.2860%	2.2815%	2.2749%	2.2663%	2.2558%	2.2433%	2.2290%	2.2128%	2.1947%	2.1751%	2.1546%	2.1335%	2.1118%	2.0895%	2.0668%
2.3727%	2.3723%	2.3697%	2.3650%	2.3582%	2.3493%	2.3384%	2.3255%	2.3106%	2.2938%	2.2751%	2.2548%	2.2335%	2.2116%	2.1891%	2.1661%	2.1425%
2.4596%	2.4592%	2.4565%	2.4516%	2.4446%	2.4354%	2.4241%	2.4107%	2.3952%	2.3778%	2.3584%	2.3373%	2.3153%	2.2926%	2.2693%	2.2454%	2.2210%
2.5496%	2.5492%	2.5465%	2.5414%	2.5341%	2.5246%	2.5128%	2.4990%	2.4830%	2.4649%	2.4448%	2.4229%	2.4001%	2.3766%	2.3524%	2.3276%	2.3023%
2.6430%	2.6426%	2.6397%	2.6345%	2.6269%	2.6170%	2.6049%	2.5905%	2.5739%	2.5552%	2.5343%	2.5117%	2.4880%	2.4636%	2.4386%	2.4129%	2.3866%
2.7398%	2.7394%	2.7364%	2.7310%	2.7231%	2.7129%	2.7003%	2.6853%	2.6682%	2.6488%	2.6272%	2.6037%	2.5791%	2.5539%	2.5279%	2.5012%	2.4740%
2.8402%	2.8397%	2.8366%	2.8310%	2.8229%	2.8122%	2.7992%	2.7837%	2.7659%	2.7458%	2.7234%	2.6990%	2.6736%	2.6474%	2.6204%	2.5928%	2.5646%
2.9442%	2.9437%	2.9405%	2.9347%	2.9262%	2.9152%	2.9017%	2.8856%	2.8672%	2.8463%	2.8231%	2.7979%	2.7715%	2.7443%	2.7164%	2.6878%	2.6586%
3.0520%	3.0515%	3.0482%	3.0422%	3.0334%	3.0220%	3.0079%	2.9913%	2.9722%	2.9506%	2.9265%	2.9003%	2.8730%	2.8448%	2.8159%	2.7862%	2.7559%
3.1638%	3.1633%	3.1599%	3.1536%	3.1445%	3.1327%	3.1181%	3.1009%	3.0810%	3.0586%	3.0337%	3.0066%	2.9782%	2.9490%	2.9190%	2.8883%	2.8569%
3.2796%	3.2791%	3.2756%	3.2691%	3.2597%	3.2474%	3.2323%	3.2144%	3.1939%	3.1706%	3.1448%	3.1167%	3.0873%	3.0570%	3.0259%	2.9941%	2.9615%
3.3998%	3.3992%	3.3955%	3.3888%	3.3791%	3.3663%	3.3507%	3.3322%	3.3108%	3.2868%	3.2600%	3.2308%	3.2004%	3.1690%	3.1368%	3.1037%	3.0699%
3.5243%	3.5237%	3.5199%	3.5129%	3.5028%	3.4896%	3.4734%	3.4542%	3.4321%	3.4071%	3.3794%	3.3491%	3.3176%	3.2851%	3.2516%	3.2174%	3.1824%
3.6533%	3.6528%	3.6488%	3.6416%	3.6311%	3.6174%	3.6006%	3.5807%	3.5578%	3.5319%	3.5031%	3.4718%	3.4391%	3.4054%	3.3707%	3.3352%	3.2989%
3.7871%	3.7865%	3.7824%	3.7749%	3.7641%	3.7499%	3.7325%	3.7119%	3.6881%	3.6613%	3.6314%	3.5989%	3.5650%	3.5301%	3.4942%	3.4574%	3.4197%
3.9258%	3.9252%	3.9210%	3.9132%	3.9019%	3.8872%	3.8692%	3.8478%	3.8232%	3.7954%	3.7644%	3.7307%	3.6956%	3.6594%	3.6221%	3.5840%	3.5450%
4.0696%	4.0690%	4.0646%	4.0565%	4.0448%	4.0296%	4.0109%	3.9887%	3.9632%	3.9344%	3.9023%	3.8674%	3.8310%	3.7934%	3.7548%	3.7152%	3.6748%
4.2187%	4.2180%	4.2134%	4.2051%	4.1930%	4.1772%	4.1578%	4.1348%	4.1083%	4.0784%	4.0452%	4.0090%	3.9713%	3.9323%	3.8923%	3.8513%	3.8094%
4.3732%	4.3725%	4.3677%	4.3591%	4.3465%	4.3302%	4.3100%	4.2862%	4.2588%	4.2278%	4.1934%	4.1558%	4.1167%	4.0763%	4.0349%	3.9924%	3.9489%
4.5333%	4.5326%	4.5277%	4.5187%	4.5057%	4.4888%	4.4679%	4.4432%	4.4148%	4.3826%	4.3469%	4.3080%	4.2675%	4.2256%	4.1826%	4.1386%	4.0935%
4.6994%	4.6986%	4.6935%	4.6842%	4.6707%	4.6532%	4.6315%	4.6059%	4.5764%	4.5432%	4.5061%	4.4658%	4.4238%	4.3804%	4.3358%	4.2901%	4.2435%
4.8715%	4.8707%	4.8654%	4.8558%	4.8418%	4.8236%	4.8011%	4.7746%	4.7441%	4.7095%	4.6712%	4.6294%	4.5858%	4.5408%	4.4946%	4.4473%	4.3989%
5.0499%	5.0491%	5.0436%	5.0336%	5.0191%	5.0002%	4.9770%	4.9495%	4.9178%	4.8820%	4.8422%	4.7989%	4.7537%	4.7071%	4.6592%	4.6101%	4.5600%
5.2348%	5.2340%	5.2283%	5.2180%	5.2029%	5.1833%	5.1593%	5.1307%	5.0979%	5.0608%	5.0196%	4.9747%	4.9278%	4.8795%	4.8299%	4.7790%	4.7270%
5.4265%	5.4257%	5.4198%	5.4091%	5.3935%	5.3732%	5.3482%	5.3187%	5.2846%	5.2462%	5.2034%	5.1569%	5.1083%	5.0582%	5.0067%	4.9540%	4.9001%
5.6253%	5.6244%	5.6183%	5.6072%	5.5910%	5.5700%	5.5441%	5.5134%	5.4782%	5.4383%	5.3940%	5.3457%	5.2954%	5.2435%	5.1901%	5.1354%	5.0796%
5.8313%	5.8303%	5.8241%	5.8125%	5.7958%	5.7740%	5.7471%	5.7154%	5.6788%	5.6375%	5.5915%	5.5415%	5.4893%	5.4355%	5.3802%	5.3235%	5.2656%
6.0449%	6.0439%	6.0374%	6.0254%	6.0080%	5.9854%	5.9576%	5.9247%	5.8868%	5.8439%	5.7963%	5.7445%	5.6903%	5.6346%	5.5772%	5.5185%	5.4584%
6.2662%	6.2652%	6.2585%	6.2461%	6.2281%	6.2046%	6.1758%	6.1417%	6.1024%	6.0580%	6.0086%	5.9548%	5.8987%	5.8409%	5.7815%	5.7206%	5.6583%
6.4957%	6.4947%	6.4877%	6.4748%	6.4562%	6.4319%	6.4020%	6.3666%	6.3258%	6.2798%	6.2287%	6.1729%	6.1148%	6.0548%	5.9932%	5.9301%	5.8656%
6.7336%	6.7325%	6.7253%	6.7119%	6.6926%	6.6674%	6.6364%	6.5998%	6.5575%	6.5098%	6.4568%	6.3990%	6.3387%	6.2766%	6.2127%	6.1473%	6.0804%
6.9802%	6.9791%	6.9716%	6.9578%	6.9377%	6.9116%	6.8795%	6.8415%	6.7977%	6.7482%	6.6932%	6.6334%	6.5709%	6.5065%	6.4403%	6.3724%	6.3031%
7.2359%	7.2347%	7.2269%	7.2126%	7.1918%	7.1647%	7.1314%	7.0920%	7.0466%	6.9954%	6.9384%	6.8763%	6.8115%	6.7447%	6.6761%	6.6058%	6.5339%
7.5009%	7.4997%	7.4916%	7.4767%	7.4552%	7.4271%	7.3926%	7.3518%	7.3047%	7.2516%	7.1925%	7.1281%	7.0610%	6.9918%	6.9206%	6.8477%	6.7732%
7.7756%	7.7743%	7.7660%	7.7506%	7.7283%	7.6991%	7.6634%	7.6210%	7.5722%	7.5171%	7.4559%	7.3892%	7.3196%	7.2478%	7.1741%	7.0985%	7.0213%
8.0604%	8.0591%	8.0504%	8.0344%	8.0113%	7.9811%	7.9440%	7.9001%	7.8496%	7.7925%	7.7290%	7.6598%	7.5877%	7.5133%	7.4368%	7.3585%	7.2784%
8.3556%	8.3542%	8.3452%	8.3287%	8.3047%	8.2734%	8.2350%	8.1895%	8.1370%	8.0778%	8.0120%	7.9403%	7.8655%	7.7884%	7.7092%	7.6280%	7.5450%
8.6616%	8.6602%	8.6508%	8.6337%	8.6088%	8.5764%	8.5366%	8.4894%	8.4350%	8.3737%	8.3054%	8.2311%	8.1536%	8.0737%	7.9915%	7.9073%	7.8213%
8.9788%	8.9773%	8.9677%	8.9499%	8.9241%	8.8905%	8.8492%	8.8003%	8.7440%	8.6804%	8.6096%	8.5326%	8.4522%	8.3694%	8.2842%	8.1969%	8.1077%
	9.3061%	9.2961%	9.2777%	9.2510%	9.2161%	9.1733%	9.1226%	9.0642%	8.9983%	8.9249%	8.8451%	8.7618%	8.6759%	8.5876%	8.4971%	8.4047%
		9.6365%	9.6174%	9.5898%	9.5536%	9.5092%	9.4567%	9.3962%	9.3278%	9.2518%	9.1690%	9.0827%	8.9936%	8.9021%	8.8083%	8.7125%
			9.9697%	9.9410%	9.9035%	9.8575%	9.8030%	9.7403%	9.6694%	9.5906%	9.5048%	9.4153%	9.3230%	9.2281%	9.1309%	9.0316%
				10.3050%	10.2662%	10.2185%	10.1621%	10.0970%	10.0236%	9.9419%	9.8529%	9.7601%	9.6644%	9.5661%	9.4653%	9.3623%
					10.6422%	10.5928%	10.5342%	10.4668%	10.3907%	10.3060%	10.2138%	10.1176%	10.0184%	9.9164%	9.8120%	9.7052%
						10.9807%	10.9200%	10.8501%	10.7712%	10.6834%	10.5879%	10.4881%	10.3853%	10.2796%	10.1713%	10.0607%
							11.3200%	11.2475%	11.1657%	11.0747%	10.9756%	10.8722%	10.7656%	10.6561%	10.5439%	10.4291%
								11.6594%	11.5746%	11.4803%	11.3776%	11.2704%	11.1599%	11.0464%	10.9300%	10.8111%
									11.9985%	11.9007%	11.7943%	11.6832%	11.5686%	11.4509%	11.3303%	11.2070%
										12.3366%	12.2262%	12.1111%	11.9923%	11.8703%	11.7453%	11.6175%
											12.6740%	12.5546%	12.4315%	12.3050%	12.1754%	12.0429%
												13.0144%	12.8868%	12.7557%	12.6213%	12.4840%
													13.3588%	13.2228%	13.0836%	12.9412%
														13.7071%	13.5627%	13.4152%
															14.0594%	13.9065%
																14.4158%

USD 2011 pre-calibration lattice

15-Oct-16	15-Nov-16	15-Dec-16	15-Jan-17	15-Feb-17	15-Mar-17	15-Apr-17	15-May-17	15-Jun-17	15-Jul-17	15-Aug-17	15-Sep-17	15-Oct-17	15-Nov-17	15-Dec-17	15-Jan-18	15-Feb-18
t = 5.58	t = 5.67	t = 5.75	t = 5.83	t = 5.92	t = 6	t = 6.08	t = 6.17	t = 6.25	t = 6.33	t = 6.42	t = 6.5	t = 6.58	t = 6.67	t = 6.75	t = 6.83	t = 6.92
1.3758%	1.3600%	1.3438%	1.3275%	1.3109%	1.2942%	1.2773%	1.2603%	1.2432%	1.2260%	1.2087%	1.1914%	1.1740%	1.1566%	1.1392%	1.1218%	1.1044%
1.4262%	1.4098%	1.3930%	1.3761%	1.3589%	1.3416%	1.3241%	1.3065%	1.2887%	1.2709%	1.2530%	1.2350%	1.2170%	1.1990%	1.1809%	1.1629%	1.1449%
1.4785%	1.4614%	1.4441%	1.4265%	1.4087%	1.3907%	1.3726%	1.3543%	1.3359%	1.3174%	1.2989%	1.2802%	1.2616%	1.2429%	1.2242%	1.2055%	1.1868%
1.5326%	1.5149%	1.4969%	1.4787%	1.4603%	1.4417%	1.4229%	1.4039%	1.3849%	1.3657%	1.3464%	1.3271%	1.3078%	1.2884%	1.2690%	1.2496%	1.2302%
1.5887%	1.5704%	1.5518%	1.5329%	1.5138%	1.4945%	1.4750%	1.4553%	1.4356%	1.4157%	1.3957%	1.3757%	1.3557%	1.3356%	1.3155%	1.2954%	1.2753%
1.6469%	1.6279%	1.6086%	1.5890%	1.5692%	1.5492%	1.5290%	1.5086%	1.4881%	1.4675%	1.4469%	1.4261%	1.4053%	1.3845%	1.3636%	1.3428%	1.3220%
1.7072%	1.6875%	1.6675%	1.6472%	1.6267%	1.6059%	1.5850%	1.5639%	1.5427%	1.5213%	1.4999%	1.4783%	1.4568%	1.4352%	1.4136%	1.3920%	1.3704%
1.7698%	1.7493%	1.7286%	1.7075%	1.6863%	1.6648%	1.6430%	1.6212%	1.5991%	1.5770%	1.5548%	1.5325%	1.5101%	1.4877%	1.4654%	1.4430%	1.4206%
1.8346%	1.8134%	1.7919%	1.7701%	1.7480%	1.7257%	1.7032%	1.6805%	1.6577%	1.6348%	1.6117%	1.5886%	1.5654%	1.5422%	1.5190%	1.4958%	1.4726%
1.9018%	1.8798%	1.8575%	1.8349%	1.8120%	1.7889%	1.7656%	1.7421%	1.7184%	1.6946%	1.6708%	1.6468%	1.6228%	1.5987%	1.5747%	1.5506%	1.5266%
1.9714%	1.9487%	1.9255%	1.9021%	1.8784%	1.8544%	1.8303%	1.8059%	1.7814%	1.7567%	1.7319%	1.7071%	1.6822%	1.6573%	1.6323%	1.6074%	1.5825%
2.0436%	2.0200%	1.9961%	1.9718%	1.9472%	1.9224%	1.8973%	1.8720%	1.8466%	1.8210%	1.7954%	1.7696%	1.7438%	1.7180%	1.6921%	1.6663%	1.6404%
2.1185%	2.0940%	2.0692%	2.0440%	2.0185%	1.9928%	1.9668%	1.9406%	1.9142%	1.8877%	1.8611%	1.8344%	1.8077%	1.7809%	1.7541%	1.7273%	1.7005%
2.1960%	2.1707%	2.1449%	2.1188%	2.0924%	2.0657%	2.0388%	2.0117%	1.9843%	1.9569%	1.9293%	1.9016%	1.8739%	1.8461%	1.8183%	1.7905%	1.7628%
2.2765%	2.2502%	2.2235%	2.1964%	2.1691%	2.1414%	2.1135%	2.0853%	2.0570%	2.0285%	1.9999%	1.9713%	1.9425%	1.9137%	1.8849%	1.8561%	1.8274%
2.3598%	2.3326%	2.3049%	2.2769%	2.2485%	2.2198%	2.1909%	2.1617%	2.1323%	2.1028%	2.0732%	2.0434%	2.0136%	1.9838%	1.9539%	1.9241%	1.8943%
2.4463%	2.4180%	2.3894%	2.3603%	2.3309%	2.3011%	2.2711%	2.2409%	2.2104%	2.1798%	2.1491%	2.1183%	2.0874%	2.0565%	2.0255%	1.9946%	1.9637%
2.5359%	2.5066%	2.4769%	2.4467%	2.4162%	2.3854%	2.3543%	2.3229%	2.2914%	2.2597%	2.2278%	2.1959%	2.1638%	2.1318%	2.0997%	2.0676%	2.0356%
2.6287%	2.5984%	2.5676%	2.5363%	2.5047%	2.4728%	2.4405%	2.4080%	2.3753%	2.3424%	2.3094%	2.2763%	2.2431%	2.2098%	2.1766%	2.1433%	2.1101%
2.7250%	2.6936%	2.6616%	2.6292%	2.5964%	2.5633%	2.5299%	2.4962%	2.4623%	2.4282%	2.3940%	2.3597%	2.3252%	2.2908%	2.2563%	2.2218%	2.1874%
2.8248%	2.7922%	2.7591%	2.7255%	2.6915%	2.6572%	2.6225%	2.5876%	2.5525%	2.5172%	2.4817%	2.4461%	2.4104%	2.3747%	2.3389%	2.3032%	2.2675%
2.9283%	2.8945%	2.8601%	2.8253%	2.7901%	2.7545%	2.7186%	2.6824%	2.6460%	2.6093%	2.5726%	2.5357%	2.4987%	2.4616%	2.4246%	2.3876%	2.3506%
3.0355%	3.0005%	2.9649%	2.9288%	2.8923%	2.8554%	2.8182%	2.7806%	2.7429%	2.7049%	2.6668%	2.6285%	2.5902%	2.5518%	2.5134%	2.4750%	2.4366%
3.1467%	3.1104%	3.0735%	3.0361%	2.9982%	2.9600%	2.9214%	2.8825%	2.8433%	2.8040%	2.7644%	2.7248%	2.6850%	2.6453%	2.6054%	2.5656%	2.5259%
3.2619%	3.2243%	3.1860%	3.1473%	3.1080%	3.0684%	3.0284%	2.9880%	2.9475%	2.9067%	2.8657%	2.8246%	2.7834%	2.7421%	2.7009%	2.6596%	2.6184%
3.3814%	3.3424%	3.3027%	3.2625%	3.2218%	3.1807%	3.1393%	3.0975%	3.0554%	3.0131%	2.9706%	2.9280%	2.8853%	2.8426%	2.7998%	2.7570%	2.7143%
3.5052%	3.4648%	3.4237%	3.3820%	3.3398%	3.2972%	3.2542%	3.2109%	3.1673%	3.1235%	3.0794%	3.0353%	2.9910%	2.9467%	2.9023%	2.8580%	2.8137%
3.6336%	3.5917%	3.5491%	3.5059%	3.4622%	3.4180%	3.3734%	3.3285%	3.2833%	3.2379%	3.1922%	3.1464%	3.1005%	3.0546%	3.0086%	2.9626%	2.9167%
3.7667%	3.7232%	3.6790%	3.6343%	3.5890%	3.5432%	3.4970%	3.4504%	3.4035%	3.3564%	3.3091%	3.2617%	3.2141%	3.1664%	3.1188%	3.0712%	3.0236%
3.9046%	3.8595%	3.8138%	3.7674%	3.7204%	3.6729%	3.6250%	3.5768%	3.5282%	3.4794%	3.4303%	3.3811%	3.3318%	3.2824%	3.2330%	3.1836%	3.1343%
4.0476%	4.0009%	3.9534%	3.9053%	3.8567%	3.8075%	3.7578%	3.7078%	3.6574%	3.6068%	3.5559%	3.5049%	3.4538%	3.4026%	3.3514%	3.3002%	3.2491%
4.1959%	4.1474%	4.0982%	4.0484%	3.9979%	3.9469%	3.8954%	3.8436%	3.7914%	3.7389%	3.6862%	3.6333%	3.5803%	3.5272%	3.4742%	3.4211%	3.3681%
4.3495%	4.2993%	4.2483%	4.1966%	4.1443%	4.0914%	4.0381%	3.9843%	3.9302%	3.8758%	3.8212%	3.7664%	3.7114%	3.6564%	3.6014%	3.5464%	3.4914%
4.5088%	4.4568%	4.4039%	4.3503%	4.2961%	4.2413%	4.1860%	4.1302%	4.0742%	4.0178%	3.9611%	3.9043%	3.8474%	3.7903%	3.7333%	3.6763%	3.6193%
4.6740%	4.6200%	4.5652%	4.5097%	4.4534%	4.3966%	4.3393%	4.2815%	4.2234%	4.1649%	4.1062%	4.0473%	3.9883%	3.9292%	3.8700%	3.8109%	3.7519%
4.8451%	4.7892%	4.7324%	4.6748%	4.6165%	4.5576%	4.4982%	4.4383%	4.3780%	4.3174%	4.2566%	4.1955%	4.1343%	4.0731%	4.0118%	3.9505%	3.8893%
5.0226%	4.9646%	4.9057%	4.8460%	4.7856%	4.7246%	4.6630%	4.6009%	4.5384%	4.4756%	4.4125%	4.3492%	4.2857%	4.2222%	4.1587%	4.0952%	4.0317%
5.2065%	5.1464%	5.0854%	5.0235%	4.9609%	4.8976%	4.8337%	4.7694%	4.7046%	4.6395%	4.5741%	4.5085%	4.4427%	4.3769%	4.3110%	4.2451%	4.1794%
5.3972%	5.3349%	5.2716%	5.2075%	5.1426%	5.0770%	5.0108%	4.9440%	4.8769%	4.8094%	4.7416%	4.6736%	4.6054%	4.5372%	4.4689%	4.4006%	4.3324%
5.5949%	5.5303%	5.4647%	5.3982%	5.3309%	5.2629%	5.1943%	5.1251%	5.0555%	4.9855%	4.9152%	4.8447%	4.7741%	4.7033%	4.6325%	4.5618%	4.4911%
5.7998%	5.7328%	5.6648%	5.5959%	5.5261%	5.4556%	5.3845%	5.3128%	5.2406%	5.1681%	5.0953%	5.0222%	4.9489%	4.8756%	4.8022%	4.7288%	4.6556%
6.0122%	5.9428%	5.8723%	5.8008%	5.7285%	5.6554%	5.5817%	5.5074%	5.4326%	5.3574%	5.2819%	5.2061%	5.1302%	5.0541%	4.9781%	4.9020%	4.8261%
6.2324%	6.1604%	6.0874%	6.0133%	5.9383%	5.8626%	5.7861%	5.7091%	5.6315%	5.5536%	5.4753%	5.3968%	5.3181%	5.2392%	5.1604%	5.0816%	5.0028%
6.4606%	6.3860%	6.3103%	6.2335%	6.1558%	6.0773%	5.9980%	5.9182%	5.8378%	5.7570%	5.6758%	5.5944%	5.5128%	5.4311%	5.3494%	5.2677%	5.1860%
6.6972%	6.6199%	6.5414%	6.4618%	6.3813%	6.2998%	6.2177%	6.1349%	6.0516%	5.9678%	5.8837%	5.7993%	5.7147%	5.6300%	5.5453%	5.4606%	5.3760%
6.9425%	6.8624%	6.7810%	6.6985%	6.6150%	6.5306%	6.4454%	6.3596%	6.2732%	6.1864%	6.0992%	6.0117%	5.9240%	5.8362%	5.7484%	5.6606%	5.5729%
7.1968%	7.1137%	7.0293%	6.9438%	6.8572%	6.7697%	6.6815%	6.5925%	6.5030%	6.4130%	6.3226%	6.2319%	6.1410%	6.0500%	5.9589%	5.8679%	5.7770%
7.4603%	7.3742%	7.2868%	7.1981%	7.1084%	7.0177%	6.9262%	6.8339%	6.7411%	6.6478%	6.5541%	6.4601%	6.3659%	6.2715%	6.1771%	6.0828%	5.9885%
7.7336%	7.6443%	7.5536%	7.4617%	7.3687%	7.2747%	7.1798%	7.0842%	6.9880%	6.8913%	6.7941%	6.6967%	6.5990%	6.5012%	6.4034%	6.3056%	6.2079%
8.0168%	7.9243%	7.8303%	7.7350%	7.6386%	7.5411%	7.4428%	7.3437%	7.2439%	7.1437%	7.0430%	6.9419%	6.8407%	6.7393%	6.6379%	6.5365%	6.4352%
8.3104%	8.2145%	8.1170%	8.0183%	7.9183%	7.8173%	7.7154%	7.6126%	7.5092%	7.4053%	7.3009%	7.1962%	7.0912%	6.9861%	6.8810%	6.7759%	6.6709%
8.6148%	8.5153%	8.4143%	8.3119%	8.2083%	8.1036%	7.9979%	7.8914%	7.7843%	7.6765%	7.5683%	7.4597%	7.3509%	7.2420%	7.1330%	7.0240%	6.9152%
8.9303%	8.8272%	8.7225%	8.6163%	8.5089%	8.4004%	8.2908%	8.1805%	8.0693%	7.9576%	7.8455%	7.7329%	7.6202%	7.5072%	7.3942%	7.2813%	7.1685%
9.2573%	9.1505%	9.0419%	8.9319%	8.8206%	8.7080%	8.5945%	8.4800%	8.3649%	8.2491%	8.1328%	8.0161%	7.8992%	7.7822%	7.6650%	7.5479%	7.4310%
9.5964%	9.4856%	9.3731%	9.2590%	9.1436%	9.0269%	8.9092%	8.7906%	8.6712%	8.5512%	8.4307%	8.3097%	8.1885%	8.0672%	7.9458%	7.8244%	7.7031%
9.9478%	9.8330%	9.7164%	9.5981%	9.4785%	9.3575%	9.2355%	9.1126%	8.9888%	8.8644%	8.7394%	8.6141%	8.4884%	8.3626%	8.2368%	8.1109%	7.9853%
10.3121%	10.1931%	10.0722%	9.9496%	9.8256%	9.7003%	9.5738%	9.4463%	9.3180%	9.1890%	9.0595%	8.9295%	8.7993%	8.6689%	8.5384%	8.4080%	8.2777%
10.6898%	10.5664%	10.4411%	10.3140%	10.1855%	10.0555%	9.9244%	9.7923%	9.6593%	9.5256%	9.3913%	9.2566%	9.1216%	8.9864%	8.8511%	8.7159%	8.5809%
11.0813%	10.9534%	10.8235%	10.6918%	10.5585%	10.4238%	10.2879%	10.1509%	10.0130%	9.8744%	9.7352%	9.5956%	9.4556%	9.3155%	9.1753%	9.0351%	8.8951%
11.4871%	11.3545%	11.2199%	11.0833%	10.9452%	10.8055%	10.6646%	10.5226%	10.3797%	10.2361%	10.0918%	9.9470%	9.8019%	9.6567%	9.5113%	9.3660%	9.2209%
11.9078%	11.7704%	11.6308%	11.4893%	11.3460%	11.2013%	11.0552%	10.9080%	10.7599%	10.6109%	10.4614%	10.3113%	10.1609%	10.0103%	9.8597%	9.7090%	9.5586%
12.3440%	12.2015%	12.0567%	11.9100%	11.7616%	11.6115%	11.4601%	11.3075%	11.1539%	10.9995%	10.8445%	10.6889%	10.5330%	10.3769%	10.2207%	10.0646%	9.9087%
12.7960%	12.6483%	12.4983%	12.3462%	12.1923%	12.0368%	11.8798%	11.7216%	11.5624%	11.4024%	11.2417%	11.0804%	10.9188%	10.7570%	10.5951%	10.4332%	10.2716%
13.2647%	13.1115%	12.9560%	12.7984%	12.6388%	12.4776%	12.3149%	12.1509%	11.9859%	11.8200%	11.6534%	11.4862%	11.3187%	11.1509%	10.9831%	10.8153%	10.6478%
13.7505%	13.5917%	13.4305%	13.2671%	13.1017%	12.9346%	12.7659%	12.5959%	12.4249%	12.2529%	12.0802%	11.9069%	11.7332%	11.5593%	11.3853%	11.2114%	11.0377%
14.2541%	14.0895%	13.9224%	13.7530%	13.5815%	13.4083%	13.2334%	13.0572%	12.8799%	12.7016%	12.5226%	12.3430%	12.1629%	11.9827%	11.8023%	11.6220%	11.4420%
14.7761%	14.6055%	14.4323%	14.2567%	14.0789%	13.8993%	13.7181%	13.5355%	13.3516%	13.1668%	12.9812%	12.7950%	12.6084%	12.4215%	12.2346%	12.0477%	11.8610%
	15.1404%	14.9609%	14.7788%	14.5946%	14.4084%	14.2205%	14.0312%	13.8406%	13.6490%	13.4566%	13.2636%	13.0701%	12.8764%	12.6826%	12.4889%	12.2954%
		15.5088%	15.3201%	15.1291%	14.9361%	14.7413%	14.5450%	14.3475%	14.1489%	13.9494%	13.7494%	13.5488%	13.3480%	13.1471%	12.9463%	12.7457%
			15.8811%	15.6832%	15.4831%	15.2812%	15.0777%	14.8730%	14.6671%	14.4603%	14.2529%	14.0450%	13.8369%	13.6286%	13.4204%	13.2125%
				16.2575%	16.0501%	15.8408%	15.6299%	15.4177%	15.2042%	14.9899%	14.7749%	14.5594%	14.3436%	14.1277%	13.9119%	13.6964%
					16.6379%	16.4210%	16.2024%	15.9823%	15.7611%	15.5389%	15.3160%	15.0926%	14.8689%	14.6451%	14.4214%	14.1980%
						17.0224%	16.7957%	16.5676%	16.3383%	16.1080%	15.8769%	15.6454%	15.4135%	15.1815%	14.9496%	14.7180%
							17.4109%	17.1744%	16.9367%	16.6979%	16.4584%	16.2184%	15.9780%	15.7375%	15.4971%	15.2570%
								17.8034%	17.5569%	17.3095%	17.0612%	16.8123%	16.5632%	16.3139%	16.0647%	15.8158%
									18.1999%	17.9434%	17.6860%	17.4281%	17.1698%	16.9113%	16.6530%	16.3950%
										18.6005%	18.3337%	18.0663%	17.7986%	17.5307%	17.2629%	16.9954%
											19.0052%	18.7280%	18.4504%	18.1727%	17.8951%	17.6179%
												19.4139%	19.1262%	18.8383%	18.5505%	18.2631%
													19.8266%	19.5282%	19.2299%	18.9320%
														20.2434%	19.9342%	19.6253%
															20.6643%	20.3441%
																21.0891%

USD 2011 pre-calibration lattice

15-Mar-18	15-Apr-18	15-May-18	15-Jun-18	15-Jul-18	15-Aug-18	15-Sep-18	15-Oct-18	15-Nov-18	15-Dec-18	15-Jan-19	15-Feb-19	15-Mar-19	15-Apr-19	15-May-19	15-Jun-19	15-Jul-19
t = 7	t = 7.08	t = 7.17	t = 7.25	t = 7.33	t = 7.42	t = 7.5	t = 7.58	t = 7.67	t = 7.75	t = 7.83	t = 7.92	t = 8	t = 8.08	t = 8.17	t = 8.25	t = 8.33
1.0871%	1.0698%	1.0527%	1.0358%	1.0192%	1.0028%	0.9866%	0.9707%	0.9551%	0.9397%	0.9246%	0.9097%	0.8952%	0.8809%	0.8669%	0.8531%	0.8397%
1.1269%	1.1090%	1.0912%	1.0738%	1.0565%	1.0395%	1.0227%	1.0063%	0.9900%	0.9741%	0.9584%	0.9430%	0.9279%	0.9131%	0.8986%	0.8844%	0.8704%
1.1681%	1.1496%	1.1312%	1.1131%	1.0952%	1.0776%	1.0602%	1.0431%	1.0263%	1.0098%	0.9935%	0.9776%	0.9619%	0.9466%	0.9315%	0.9168%	0.9023%
1.2109%	1.1917%	1.1726%	1.1538%	1.1353%	1.1170%	1.0990%	1.0813%	1.0639%	1.0468%	1.0299%	1.0134%	0.9971%	0.9812%	0.9656%	0.9503%	0.9354%
1.2553%	1.2353%	1.2156%	1.1961%	1.1769%	1.1579%	1.1393%	1.1209%	1.1029%	1.0851%	1.0676%	1.0505%	1.0337%	1.0172%	1.0010%	0.9851%	0.9696%
1.3012%	1.2806%	1.2601%	1.2399%	1.2200%	1.2003%	1.1810%	1.1620%	1.1432%	1.1248%	1.1067%	1.0890%	1.0715%	1.0544%	1.0376%	1.0212%	1.0051%
1.3489%	1.3275%	1.3062%	1.2853%	1.2647%	1.2443%	1.2243%	1.2045%	1.1851%	1.1660%	1.1473%	1.1288%	1.1108%	1.0930%	1.0757%	1.0586%	1.0419%
1.3983%	1.3761%	1.3541%	1.3324%	1.3110%	1.2899%	1.2691%	1.2486%	1.2285%	1.2087%	1.1893%	1.1702%	1.1514%	1.1331%	1.1150%	1.0974%	1.0801%
1.4495%	1.4265%	1.4037%	1.3812%	1.3590%	1.3371%	1.3156%	1.2944%	1.2735%	1.2530%	1.2328%	1.2130%	1.1936%	1.1746%	1.1559%	1.1376%	1.1197%
1.5026%	1.4787%	1.4551%	1.4318%	1.4088%	1.3861%	1.3638%	1.3418%	1.3201%	1.2989%	1.2780%	1.2575%	1.2373%	1.2176%	1.1982%	1.1792%	1.1607%
1.5576%	1.5329%	1.5084%	1.4842%	1.4604%	1.4369%	1.4137%	1.3909%	1.3685%	1.3465%	1.3248%	1.3035%	1.2826%	1.2622%	1.2421%	1.2224%	1.2032%
1.6147%	1.5890%	1.5636%	1.5386%	1.5138%	1.4895%	1.4655%	1.4419%	1.4186%	1.3958%	1.3733%	1.3513%	1.3296%	1.3084%	1.2876%	1.2672%	1.2472%
1.6738%	1.6472%	1.6209%	1.5949%	1.5693%	1.5440%	1.5192%	1.4947%	1.4706%	1.4469%	1.4236%	1.4008%	1.3783%	1.3563%	1.3347%	1.3136%	1.2929%
1.7351%	1.7075%	1.6802%	1.6533%	1.6268%	1.6006%	1.5748%	1.5494%	1.5244%	1.4999%	1.4757%	1.4521%	1.4288%	1.4060%	1.3836%	1.3617%	1.3403%
1.7987%	1.7701%	1.7418%	1.7139%	1.6863%	1.6592%	1.6325%	1.6061%	1.5803%	1.5548%	1.5298%	1.5052%	1.4811%	1.4575%	1.4343%	1.4116%	1.3893%
1.8645%	1.8349%	1.8056%	1.7766%	1.7481%	1.7200%	1.6922%	1.6650%	1.6381%	1.6117%	1.5858%	1.5604%	1.5354%	1.5109%	1.4868%	1.4633%	1.4402%
1.9328%	1.9021%	1.8717%	1.8417%	1.8121%	1.7830%	1.7542%	1.7259%	1.6981%	1.6708%	1.6439%	1.6175%	1.5916%	1.5662%	1.5413%	1.5169%	1.4930%
2.0036%	1.9718%	1.9402%	1.9092%	1.8785%	1.8483%	1.8185%	1.7892%	1.7603%	1.7320%	1.7041%	1.6767%	1.6499%	1.6236%	1.5977%	1.5724%	1.5477%
2.0770%	2.0440%	2.0113%	1.9791%	1.9473%	1.9159%	1.8851%	1.8547%	1.8248%	1.7954%	1.7665%	1.7382%	1.7103%	1.6830%	1.6562%	1.6300%	1.6043%
2.1530%	2.1188%	2.0850%	2.0516%	2.0186%	1.9861%	1.9541%	1.9226%	1.8916%	1.8611%	1.8312%	1.8018%	1.7730%	1.7446%	1.7169%	1.6897%	1.6631%
2.2319%	2.1964%	2.1613%	2.1267%	2.0925%	2.0588%	2.0257%	1.9930%	1.9609%	1.9293%	1.8983%	1.8678%	1.8379%	1.8085%	1.7798%	1.7516%	1.7240%
2.3136%	2.2769%	2.2405%	2.2046%	2.1692%	2.1343%	2.0999%	2.0660%	2.0327%	2.0000%	1.9678%	1.9362%	1.9052%	1.8748%	1.8450%	1.8157%	1.7871%
2.3984%	2.3602%	2.3225%	2.2853%	2.2486%	2.2124%	2.1768%	2.1417%	2.1072%	2.0732%	2.0399%	2.0071%	1.9750%	1.9434%	1.9125%	1.8822%	1.8526%
2.4862%	2.4467%	2.4076%	2.3690%	2.3310%	2.2934%	2.2565%	2.2201%	2.1843%	2.1491%	2.1146%	2.0806%	2.0473%	2.0146%	1.9826%	1.9512%	1.9204%
2.5773%	2.5363%	2.4958%	2.4558%	2.4163%	2.3774%	2.3391%	2.3014%	2.2643%	2.2279%	2.1920%	2.1568%	2.1223%	2.0884%	2.0552%	2.0226%	1.9908%
2.6716%	2.6292%	2.5872%	2.5457%	2.5048%	2.4645%	2.4248%	2.3857%	2.3473%	2.3094%	2.2723%	2.2358%	2.2000%	2.1649%	2.1305%	2.0967%	2.0637%
2.7695%	2.7255%	2.6819%	2.6389%	2.5966%	2.5548%	2.5136%	2.4731%	2.4332%	2.3940%	2.3555%	2.3177%	2.2806%	2.2442%	2.2085%	2.1735%	2.1393%
2.8709%	2.8253%	2.7802%	2.7356%	2.6916%	2.6483%	2.6057%	2.5637%	2.5223%	2.4817%	2.4418%	2.4026%	2.3641%	2.3264%	2.2894%	2.2531%	2.2176%
2.9761%	2.9288%	2.8820%	2.8358%	2.7902%	2.7453%	2.7011%	2.6575%	2.6147%	2.5726%	2.5312%	2.4906%	2.4507%	2.4116%	2.3732%	2.3356%	2.2988%
3.0851%	3.0360%	2.9875%	2.9396%	2.8924%	2.8459%	2.8000%	2.7549%	2.7105%	2.6668%	2.6239%	2.5818%	2.5404%	2.4999%	2.4601%	2.4212%	2.3830%
3.1980%	3.1472%	3.0969%	3.0473%	2.9983%	2.9501%	2.9026%	2.8558%	2.8097%	2.7645%	2.7200%	2.6763%	2.6335%	2.5914%	2.5502%	2.5098%	2.4703%
3.3152%	3.2625%	3.2104%	3.1589%	3.1082%	3.0581%	3.0089%	2.9604%	2.9126%	2.8657%	2.8196%	2.7744%	2.7299%	2.6863%	2.6436%	2.6018%	2.5608%
3.4366%	3.3820%	3.3279%	3.2746%	3.2220%	3.1701%	3.1191%	3.0688%	3.0193%	2.9707%	2.9229%	2.8760%	2.8299%	2.7847%	2.7404%	2.6970%	2.6545%
3.5624%	3.5058%	3.4498%	3.3945%	3.3400%	3.2862%	3.2333%	3.1812%	3.1299%	3.0795%	3.0299%	2.9813%	2.9335%	2.8867%	2.8408%	2.7958%	2.7518%
3.6929%	3.6342%	3.5762%	3.5188%	3.4623%	3.4066%	3.3517%	3.2977%	3.2445%	3.1923%	3.1409%	3.0905%	3.0410%	2.9924%	2.9448%	2.8982%	2.8525%
3.8282%	3.7673%	3.7071%	3.6477%	3.5891%	3.5313%	3.4745%	3.4184%	3.3633%	3.3092%	3.2559%	3.2037%	3.1524%	3.1020%	3.0527%	3.0044%	2.9570%
3.9684%	3.9053%	3.8429%	3.7813%	3.7206%	3.6607%	3.6017%	3.5436%	3.4865%	3.4304%	3.3752%	3.3210%	3.2678%	3.2156%	3.1645%	3.1144%	3.0653%
4.1137%	4.0483%	3.9836%	3.9198%	3.8568%	3.7947%	3.7336%	3.6734%	3.6142%	3.5560%	3.4988%	3.4426%	3.3875%	3.3334%	3.2804%	3.2284%	3.1776%
4.2644%	4.1966%	4.1295%	4.0633%	3.9981%	3.9337%	3.8703%	3.8080%	3.7466%	3.6862%	3.6269%	3.5687%	3.5115%	3.4555%	3.4005%	3.3467%	3.2939%
4.4205%	4.3503%	4.2808%	4.2122%	4.1445%	4.0778%	4.0121%	3.9474%	3.8838%	3.8212%	3.7598%	3.6994%	3.6401%	3.5820%	3.5251%	3.4692%	3.4146%
4.5824%	4.5096%	4.4375%	4.3664%	4.2963%	4.2271%	4.1590%	4.0920%	4.0260%	3.9612%	3.8975%	3.8349%	3.7735%	3.7132%	3.6542%	3.5963%	3.5396%
4.7503%	4.6748%	4.6001%	4.5263%	4.4536%	4.3819%	4.3113%	4.2418%	4.1735%	4.1062%	4.0402%	3.9753%	3.9117%	3.8492%	3.7880%	3.7280%	3.6693%
4.9242%	4.8460%	4.7685%	4.6921%	4.6167%	4.5424%	4.4692%	4.3972%	4.3263%	4.2566%	4.1882%	4.1209%	4.0549%	3.9902%	3.9267%	3.8645%	3.8037%
5.1046%	5.0234%	4.9432%	4.8640%	4.7858%	4.7088%	4.6329%	4.5582%	4.4848%	4.4125%	4.3415%	4.2718%	4.2034%	4.1363%	4.0705%	4.0061%	3.9430%
5.2915%	5.2074%	5.1242%	5.0421%	4.9611%	4.8812%	4.8026%	4.7252%	4.6490%	4.5741%	4.5005%	4.4283%	4.3574%	4.2878%	4.2196%	4.1528%	4.0874%
5.4853%	5.3981%	5.3119%	5.2268%	5.1428%	5.0600%	4.9785%	4.8982%	4.8193%	4.7416%	4.6654%	4.5905%	4.5170%	4.4448%	4.3742%	4.3049%	4.2371%
5.6862%	5.5958%	5.5064%	5.4182%	5.3311%	5.2453%	5.1608%	5.0776%	4.9958%	4.9153%	4.8362%	4.7586%	4.6824%	4.6076%	4.5344%	4.4626%	4.3922%
5.8945%	5.8008%	5.7081%	5.6166%	5.5264%	5.4374%	5.3498%	5.2636%	5.1787%	5.0953%	5.0134%	4.9329%	4.8539%	4.7764%	4.7004%	4.6260%	4.5531%
6.1103%	6.0132%	5.9171%	5.8223%	5.7288%	5.6366%	5.5458%	5.4564%	5.3684%	5.2819%	5.1970%	5.1135%	5.0316%	4.9513%	4.8726%	4.7954%	4.7198%
6.3341%	6.2334%	6.1338%	6.0355%	5.9386%	5.8430%	5.7489%	5.6562%	5.5650%	5.4754%	5.3873%	5.3008%	5.2159%	5.1326%	5.0510%	4.9710%	4.8927%
6.5661%	6.4617%	6.3585%	6.2566%	6.1561%	6.0570%	5.9594%	5.8633%	5.7688%	5.6759%	5.5846%	5.4949%	5.4069%	5.3206%	5.2360%	5.1531%	5.0719%
6.8066%	6.6984%	6.5914%	6.4857%	6.3815%	6.2788%	6.1777%	6.0781%	5.9801%	5.8838%	5.7891%	5.6962%	5.6050%	5.5155%	5.4278%	5.3418%	5.2576%
7.0558%	6.9437%	6.8328%	6.7233%	6.6152%	6.5088%	6.4039%	6.3007%	6.1991%	6.0993%	6.0011%	5.9048%	5.8102%	5.7175%	5.6265%	5.5374%	5.4502%
7.3143%	7.1980%	7.0830%	6.9695%	6.8575%	6.7472%	6.6384%	6.5314%	6.4261%	6.3226%	6.2209%	6.1211%	6.0230%	5.9269%	5.8326%	5.7403%	5.6498%
7.5821%	7.4616%	7.3424%	7.2247%	7.1087%	6.9943%	6.8816%	6.7706%	6.6615%	6.5542%	6.4488%	6.3452%	6.2436%	6.1439%	6.0462%	5.9505%	5.8567%
7.8598%	7.7349%	7.6113%	7.4893%	7.3690%	7.2504%	7.1336%	7.0186%	6.9055%	6.7942%	6.6849%	6.5776%	6.4723%	6.3690%	6.2677%	6.1684%	6.0712%
8.1477%	8.0182%	7.8901%	7.7636%	7.6389%	7.5160%	7.3949%	7.2756%	7.1584%	7.0431%	6.9298%	6.8185%	6.7093%	6.6022%	6.4972%	6.3943%	6.2936%
8.4461%	8.3118%	8.1790%	8.0479%	7.9187%	7.7912%	7.6657%	7.5421%	7.4205%	7.3010%	7.1836%	7.0682%	6.9550%	6.8440%	6.7352%	6.6285%	6.5241%
8.7554%	8.6162%	8.4786%	8.3427%	8.2087%	8.0766%	7.9464%	7.8183%	7.6923%	7.5684%	7.4466%	7.3271%	7.2098%	7.0947%	6.9818%	6.8713%	6.7630%
9.0761%	8.9318%	8.7891%	8.6482%	8.5093%	8.3723%	8.2375%	8.1047%	7.9740%	7.8456%	7.7194%	7.5954%	7.4738%	7.3545%	7.2375%	7.1229%	7.0107%
9.4085%	9.2589%	9.1110%	8.9650%	8.8209%	8.6790%	8.5391%	8.4015%	8.2661%	8.1329%	8.0021%	7.8736%	7.7475%	7.6238%	7.5026%	7.3838%	7.2674%
9.7530%	9.5980%	9.4447%	9.2933%	9.1440%	8.9968%	8.8519%	8.7092%	8.5688%	8.4308%	8.2951%	8.1620%	8.0313%	7.9030%	7.7774%	7.6542%	7.5336%
10.1102%	9.9495%	9.7906%	9.6336%	9.4789%	9.3263%	9.1761%	9.0281%	8.8826%	8.7395%	8.5989%	8.4609%	8.3254%	8.1925%	8.0622%	7.9345%	7.8095%
10.4805%	10.3139%	10.1491%	9.9865%	9.8260%	9.6679%	9.5121%	9.3588%	9.2079%	9.0596%	8.9139%	8.7708%	8.6303%	8.4925%	8.3575%	8.2251%	8.0955%
10.8643%	10.6916%	10.5208%	10.3522%	10.1859%	10.0220%	9.8605%	9.7015%	9.5451%	9.3914%	9.2403%	9.0920%	8.9464%	8.8035%	8.6635%	8.5263%	8.3920%
11.2622%	11.0832%	10.9061%	10.7313%	10.5589%	10.3890%	10.2216%	10.0568%	9.8947%	9.7353%	9.5787%	9.4250%	9.2740%	9.1260%	8.9808%	8.8386%	8.6993%
11.6747%	11.4891%	11.3055%	11.1244%	10.9456%	10.7695%	10.5960%	10.4252%	10.2571%	10.0919%	9.9296%	9.7701%	9.6137%	9.4602%	9.3097%	9.1623%	9.0179%
12.1022%	11.9099%	11.7196%	11.5318%	11.3465%	11.1639%	10.9840%	10.8070%	10.6328%	10.4615%	10.2932%	10.1279%	9.9658%	9.8067%	9.6507%	9.4979%	9.3482%
12.5455%	12.3461%	12.1488%	11.9541%	11.7621%	11.5728%	11.3863%	11.2027%	11.0222%	10.8446%	10.6702%	10.4989%	10.3307%	10.1658%	10.0041%	9.8457%	9.6906%
13.0049%	12.7982%	12.5937%	12.3919%	12.1928%	11.9966%	11.8033%	11.6130%	11.4258%	11.2418%	11.0610%	10.8834%	10.7091%	10.5381%	10.3705%	10.2063%	10.0455%
13.4812%	13.2669%	13.0550%	12.8457%	12.6394%	12.4360%	12.2356%	12.0383%	11.8443%	11.6535%	11.4661%	11.2820%	11.1013%	10.9241%	10.7503%	10.5801%	10.4134%
13.9750%	13.7528%	13.5331%	13.3162%	13.1023%	12.8914%	12.6837%	12.4792%	12.2781%	12.0803%	11.8860%	11.6952%	11.5079%	11.3241%	11.1440%	10.9676%	10.7948%
14.4868%	14.2565%	14.0287%	13.8039%	13.5821%	13.3635%	13.1482%	12.9363%	12.7277%	12.5227%	12.3213%	12.1235%	11.9293%	11.7389%	11.5522%	11.3693%	11.1901%
15.0173%	14.7786%	14.5425%	14.3094%	14.0796%	13.8530%	13.6298%	13.4100%	13.1939%	12.9814%	12.7725%	12.5675%	12.3662%	12.1688%	11.9753%	11.7856%	11.5999%
15.5673%	15.3199%	15.0751%	14.8335%	14.5952%	14.3603%	14.1289%	13.9012%	13.6771%	13.4568%	13.2403%	13.0277%	12.8191%	12.6145%	12.4138%	12.2173%	12.0248%
16.1374%	15.8809%	15.6272%	15.3768%	15.1297%	14.8862%	14.6464%	14.4103%	14.1780%	13.9496%	13.7252%	13.5049%	13.2886%	13.0765%	12.8685%	12.6647%	12.4652%
16.7285%	16.4626%	16.1995%	15.9399%	15.6838%	15.4314%	15.1828%	14.9380%	14.6972%	14.4605%	14.2279%	13.9995%	13.7753%	13.5554%	13.3398%	13.1285%	12.9217%
17.3411%	17.0655%	16.7928%	16.5237%	16.2582%	15.9966%	15.7388%	15.4851%	15.2355%	14.9901%	14.7490%	14.5122%	14.2798%	14.0518%	13.8283%	13.6093%	13.3949%
17.9762%	17.6905%	17.4078%	17.1289%	16.8537%	16.5824%	16.3153%	16.0522%	15.7935%	15.5391%	15.2891%	15.0437%	14.8027%	14.5664%	14.3348%	14.1078%	13.8855%
18.6346%	18.3384%	18.0454%	17.7562%	17.4709%	17.1897%	16.9128%	16.6401%	16.3719%	16.1082%	15.8491%	15.5946%	15.3449%	15.0999%	14.8598%	14.6245%	14.3940%
19.3170%	19.0100%	18.7063%	18.4065%	18.1108%	17.8193%	17.5322%	17.2496%	16.9715%	16.6981%	16.4295%	16.1657%	15.9069%	15.6529%	15.4040%	15.1601%	14.9212%
20.0245%	19.7062%	19.3914%	19.0806%	18.7740%	18.4719%	18.1743%	17.8813%	17.5931%	17.3097%	17.0312%	16.7578%	16.4894%	16.2262%	15.9681%	15.7153%	15.4677%
20.7579%	20.4279%	20.1015%	19.7794%	19.4616%	19.1484%	18.8399%	18.5362%	18.2374%	17.9436%	17.6550%	17.3715%	17.0933%	16.8205%	16.5529%	16.2908%	16.0341%
21.5181%	21.1761%	20.8377%	20.5038%	20.1744%	19.8497%	19.5299%	19.2150%	18.9053%	18.6008%	18.3016%	18.0077%	17.7194%	17.4365%	17.1592%	16.8874%	16.6214%
	21.9516%	21.6009%	21.2547%	20.9132%	20.5767%	20.2451%	19.9188%	19.5977%	19.2820%	18.9718%	18.6672%	18.3683%	18.0751%	17.7876%	17.5059%	17.2301%
		22.3920%	22.0331%	21.6792%	21.3303%	20.9866%	20.6483%	20.3154%	19.9882%	19.6667%	19.3509%	19.0410%	18.7370%	18.4390%	18.1471%	17.8611%
			22.8401%	22.4731%	22.1114%	21.7552%	21.4045%	21.0595%	20.7202%	20.3869%	20.0596%	19.7384%	19.4233%	19.1143%	18.8117%	18.5153%
				23.2962%	22.9212%	22.5519%	22.1884%	21.8307%	21.4791%	21.1336%	20.7943%	20.4613%	20.1346%	19.8144%	19.5006%	19.1934%
					23.7607%	23.3779%	23.0010%	22.6302%	22.2657%	21.9076%	21.5558%	21.2106%	20.8720%	20.5401%	20.2148%	19.8963%
						24.2340%	23.8434%	23.4590%	23.0812%	22.7099%	22.3453%	21.9874%	21.6364%	21.2923%	20.9551%	20.6250%
							24.7166%	24.3182%	23.9265%	23.5416%	23.1636%	22.7927%	22.4288%	22.0721%	21.7226%	21.3803%
								25.2088%	24.8028%	24.4038%	24.0120%	23.6274%	23.2502%	22.8805%	22.5182%	22.1633%
									25.7111%	25.2975%	24.8914%	24.4928%	24.1018%	23.7184%	23.3429%	22.9751%
										26.2240%	25.8030%	25.3898%	24.9845%	24.5871%	24.1978%	23.8165%
											26.7480%	26.3196%	25.8995%	25.4876%	25.0840%	24.6887%
												27.2836%	26.8480%	26.4210%	26.0026%	25.5929%
													27.8313%	27.3886%	26.9549%	26.5302%
														28.3917%	27.9421%	27.5019%
															28.9655%	28.5091%
																29.5532%

USD 2011 pre-calibration lattice

15-Aug-19	15-Sep-19	15-Oct-19	15-Nov-19	15-Dec-19	15-Jan-20	15-Feb-20	15-Mar-20	15-Apr-20	15-May-20	15-Jun-20	15-Jul-20	15-Aug-20	15-Sep-20	15-Oct-20	15-Nov-20	15-Dec-20
t = 8.42	t = 8.5	t = 8.58	t = 8.67	t = 8.75	t = 8.83	t = 8.92	t = 9	t = 9.08	t = 9.17	t = 9.25	t = 9.33	t = 9.42	t = 9.5	t = 9.58	t = 9.67	t = 9.75
0.8265%	0.8137%	0.8011%	0.7888%	0.7768%	0.7650%	0.7536%	0.7424%	0.7316%	0.7210%	0.7106%	0.7006%	0.6908%	0.6813%	0.6721%	0.6631%	0.6544%
0.8568%	0.8435%	0.8304%	0.8177%	0.8052%	0.7931%	0.7812%	0.7696%	0.7584%	0.7474%	0.7367%	0.7263%	0.7161%	0.7063%	0.6967%	0.6874%	0.6784%
0.8882%	0.8743%	0.8608%	0.8476%	0.8347%	0.8221%	0.8098%	0.7978%	0.7861%	0.7747%	0.7637%	0.7529%	0.7424%	0.7322%	0.7222%	0.7126%	0.7032%
0.9207%	0.9064%	0.8923%	0.8786%	0.8653%	0.8522%	0.8395%	0.8270%	0.8149%	0.8031%	0.7916%	0.7804%	0.7695%	0.7590%	0.7487%	0.7387%	0.7290%
0.9544%	0.9396%	0.9250%	0.9108%	0.8970%	0.8834%	0.8702%	0.8573%	0.8448%	0.8325%	0.8206%	0.8090%	0.7977%	0.7868%	0.7761%	0.7657%	0.7557%
0.9894%	0.9740%	0.9589%	0.9442%	0.9298%	0.9158%	0.9021%	0.8887%	0.8757%	0.8630%	0.8507%	0.8386%	0.8269%	0.8156%	0.8045%	0.7938%	0.7834%
1.0256%	1.0096%	0.9940%	0.9788%	0.9639%	0.9493%	0.9351%	0.9213%	0.9078%	0.8946%	0.8818%	0.8694%	0.8572%	0.8454%	0.8340%	0.8229%	0.8121%
1.0632%	1.0466%	1.0304%	1.0146%	0.9992%	0.9841%	0.9694%	0.9550%	0.9410%	0.9274%	0.9141%	0.9012%	0.8886%	0.8764%	0.8645%	0.8530%	0.8418%
1.1021%	1.0849%	1.0682%	1.0518%	1.0358%	1.0201%	1.0049%	0.9900%	0.9755%	0.9614%	0.9476%	0.9342%	0.9212%	0.9085%	0.8962%	0.8842%	0.8726%
1.1425%	1.1247%	1.1073%	1.0903%	1.0737%	1.0575%	1.0417%	1.0262%	1.0112%	0.9966%	0.9823%	0.9684%	0.9549%	0.9418%	0.9290%	0.9166%	0.9046%
1.1843%	1.1659%	1.1478%	1.1302%	1.1130%	1.0962%	1.0798%	1.0638%	1.0482%	1.0331%	1.0183%	1.0039%	0.9899%	0.9763%	0.9630%	0.9502%	0.9377%
1.2277%	1.2086%	1.1899%	1.1716%	1.1538%	1.1364%	1.1194%	1.1028%	1.0866%	1.0709%	1.0556%	1.0406%	1.0261%	1.0120%	0.9983%	0.9850%	0.9721%
1.2727%	1.2528%	1.2335%	1.2145%	1.1960%	1.1780%	1.1604%	1.1432%	1.1264%	1.1101%	1.0942%	1.0788%	1.0637%	1.0491%	1.0349%	1.0211%	1.0077%
1.3193%	1.2987%	1.2786%	1.2590%	1.2398%	1.2211%	1.2029%	1.1850%	1.1677%	1.1508%	1.1343%	1.1183%	1.1027%	1.0875%	1.0728%	1.0585%	1.0446%
1.3676%	1.3463%	1.3255%	1.3051%	1.2852%	1.2658%	1.2469%	1.2284%	1.2104%	1.1929%	1.1758%	1.1592%	1.1431%	1.1273%	1.1121%	1.0972%	1.0828%
1.4177%	1.3956%	1.3740%	1.3529%	1.3323%	1.3122%	1.2926%	1.2734%	1.2548%	1.2366%	1.2189%	1.2017%	1.1849%	1.1686%	1.1528%	1.1374%	1.1225%
1.4696%	1.4467%	1.4243%	1.4025%	1.3811%	1.3603%	1.3399%	1.3201%	1.3007%	1.2819%	1.2635%	1.2457%	1.2283%	1.2114%	1.1950%	1.1791%	1.1636%
1.5234%	1.4997%	1.4765%	1.4538%	1.4317%	1.4101%	1.3890%	1.3684%	1.3484%	1.3288%	1.3098%	1.2913%	1.2733%	1.2558%	1.2388%	1.2223%	1.2062%
1.5792%	1.5546%	1.5306%	1.5071%	1.4841%	1.4617%	1.4399%	1.4185%	1.3978%	1.3775%	1.3578%	1.3386%	1.3199%	1.3018%	1.2841%	1.2670%	1.2504%
1.6370%	1.6115%	1.5866%	1.5623%	1.5385%	1.5152%	1.4926%	1.4705%	1.4489%	1.4280%	1.4075%	1.3876%	1.3683%	1.3495%	1.3312%	1.3134%	1.2962%
1.6970%	1.6706%	1.6447%	1.6195%	1.5948%	1.5707%	1.5472%	1.5243%	1.5020%	1.4803%	1.4591%	1.4384%	1.4184%	1.3989%	1.3799%	1.3615%	1.3436%
1.7591%	1.7317%	1.7050%	1.6788%	1.6532%	1.6283%	1.6039%	1.5802%	1.5570%	1.5345%	1.5125%	1.4911%	1.4703%	1.4501%	1.4305%	1.4114%	1.3929%
1.8236%	1.7952%	1.7674%	1.7403%	1.7138%	1.6879%	1.6627%	1.6380%	1.6140%	1.5907%	1.5679%	1.5457%	1.5242%	1.5032%	1.4829%	1.4631%	1.4439%
1.8903%	1.8609%	1.8321%	1.8040%	1.7765%	1.7497%	1.7235%	1.6980%	1.6732%	1.6489%	1.6253%	1.6023%	1.5800%	1.5583%	1.5372%	1.5167%	1.4967%
1.9596%	1.9291%	1.8992%	1.8701%	1.8416%	1.8138%	1.7867%	1.7602%	1.7344%	1.7093%	1.6848%	1.6610%	1.6379%	1.6153%	1.5935%	1.5722%	1.5516%
2.0313%	1.9997%	1.9688%	1.9386%	1.9090%	1.8802%	1.8521%	1.8247%	1.7980%	1.7719%	1.7465%	1.7219%	1.6979%	1.6745%	1.6518%	1.6298%	1.6084%
2.1057%	2.0730%	2.0409%	2.0096%	1.9790%	1.9491%	1.9199%	1.8915%	1.8638%	1.8368%	1.8105%	1.7849%	1.7600%	1.7358%	1.7123%	1.6895%	1.6673%
2.1829%	2.1489%	2.1156%	2.0832%	2.0514%	2.0205%	1.9903%	1.9608%	1.9321%	1.9041%	1.8768%	1.8503%	1.8245%	1.7994%	1.7750%	1.7513%	1.7284%
2.2628%	2.2276%	2.1931%	2.1595%	2.1266%	2.0945%	2.0631%	2.0326%	2.0028%	1.9738%	1.9456%	1.9181%	1.8913%	1.8653%	1.8400%	1.8155%	1.7917%
2.3457%	2.3092%	2.2734%	2.2385%	2.2044%	2.1712%	2.1387%	2.1070%	2.0762%	2.0461%	2.0168%	1.9883%	1.9606%	1.9336%	1.9074%	1.8820%	1.8573%
2.4316%	2.3937%	2.3567%	2.3205%	2.2852%	2.2507%	2.2170%	2.1842%	2.1522%	2.1210%	2.0907%	2.0611%	2.0324%	2.0044%	1.9773%	1.9509%	1.9253%
2.5206%	2.4814%	2.4430%	2.4055%	2.3689%	2.3331%	2.2982%	2.2642%	2.2310%	2.1987%	2.1672%	2.1366%	2.1068%	2.0778%	2.0497%	2.0223%	1.9958%
2.6130%	2.5723%	2.5325%	2.4936%	2.4556%	2.4186%	2.3824%	2.3471%	2.3127%	2.2792%	2.2466%	2.2149%	2.1840%	2.1539%	2.1248%	2.0964%	2.0689%
2.7086%	2.6665%	2.6252%	2.5849%	2.5456%	2.5071%	2.4696%	2.4331%	2.3974%	2.3627%	2.3289%	2.2960%	2.2640%	2.2328%	2.2026%	2.1732%	2.1447%
2.8078%	2.7641%	2.7214%	2.6796%	2.6388%	2.5990%	2.5601%	2.5222%	2.4852%	2.4492%	2.4142%	2.3801%	2.3469%	2.3146%	2.2832%	2.2528%	2.2232%
2.9107%	2.8654%	2.8210%	2.7777%	2.7354%	2.6941%	2.6539%	2.6146%	2.5763%	2.5389%	2.5026%	2.4672%	2.4328%	2.3994%	2.3669%	2.3353%	2.3046%
3.0173%	2.9703%	2.9244%	2.8795%	2.8356%	2.7928%	2.7510%	2.7103%	2.6706%	2.6319%	2.5943%	2.5576%	2.5219%	2.4872%	2.4535%	2.4208%	2.3890%
3.1278%	3.0791%	3.0315%	2.9849%	2.9395%	2.8951%	2.8518%	2.8096%	2.7684%	2.7283%	2.6893%	2.6513%	2.6143%	2.5783%	2.5434%	2.5095%	2.4765%
3.2423%	3.1918%	3.1425%	3.0942%	3.0471%	3.0011%	2.9562%	2.9125%	2.8698%	2.8282%	2.7878%	2.7484%	2.7100%	2.6728%	2.6366%	2.6014%	2.5672%
3.3611%	3.3087%	3.2576%	3.2076%	3.1587%	3.1110%	3.0645%	3.0191%	2.9749%	2.9318%	2.8899%	2.8490%	2.8093%	2.7707%	2.7331%	2.6967%	2.6612%
3.4842%	3.4299%	3.3769%	3.3250%	3.2744%	3.2250%	3.1767%	3.1297%	3.0839%	3.0392%	2.9957%	2.9534%	2.9122%	2.8721%	2.8332%	2.7954%	2.7587%
3.6118%	3.5555%	3.5005%	3.4468%	3.3943%	3.3431%	3.2931%	3.2443%	3.1968%	3.1505%	3.1054%	3.0615%	3.0188%	2.9773%	2.9370%	2.8978%	2.8597%
3.7441%	3.6858%	3.6288%	3.5730%	3.5186%	3.4655%	3.4137%	3.3631%	3.3139%	3.2659%	3.2191%	3.1736%	3.1294%	3.0864%	3.0445%	3.0039%	2.9645%
3.8812%	3.8207%	3.7617%	3.7039%	3.6475%	3.5924%	3.5387%	3.4863%	3.4352%	3.3855%	3.3370%	3.2899%	3.2440%	3.1994%	3.1560%	3.1139%	3.0731%
4.0233%	3.9607%	3.8994%	3.8396%	3.7811%	3.7240%	3.6683%	3.6140%	3.5611%	3.5095%	3.4592%	3.4104%	3.3628%	3.3166%	3.2716%	3.2280%	3.1856%
4.1707%	4.1057%	4.0422%	3.9802%	3.9196%	3.8604%	3.8027%	3.7464%	3.6915%	3.6380%	3.5859%	3.5353%	3.4860%	3.4380%	3.3914%	3.3462%	3.3023%
4.3234%	4.2561%	4.1903%	4.1259%	4.0631%	4.0018%	3.9419%	3.8836%	3.8267%	3.7712%	3.7173%	3.6647%	3.6136%	3.5639%	3.5157%	3.4687%	3.4232%
4.4818%	4.4120%	4.3437%	4.2770%	4.2119%	4.1483%	4.0863%	4.0258%	3.9668%	3.9094%	3.8534%	3.7990%	3.7460%	3.6945%	3.6444%	3.5958%	3.5486%
4.6459%	4.5735%	4.5028%	4.4337%	4.3662%	4.3003%	4.2360%	4.1732%	4.1121%	4.0525%	3.9945%	3.9381%	3.8832%	3.8298%	3.7779%	3.7275%	3.6785%
4.8160%	4.7410%	4.6677%	4.5961%	4.5261%	4.4578%	4.3911%	4.3261%	4.2627%	4.2010%	4.1408%	4.0823%	4.0254%	3.9700%	3.9162%	3.8640%	3.8133%
4.9924%	4.9147%	4.8387%	4.7644%	4.6918%	4.6210%	4.5519%	4.4845%	4.4188%	4.3548%	4.2925%	4.2318%	4.1728%	4.1154%	4.0597%	4.0055%	3.9529%
5.1753%	5.0947%	5.0159%	4.9389%	4.8637%	4.7903%	4.7186%	4.6487%	4.5806%	4.5143%	4.4497%	4.3868%	4.3256%	4.2661%	4.2083%	4.1522%	4.0977%
5.3648%	5.2813%	5.1996%	5.1198%	5.0418%	4.9657%	4.8914%	4.8190%	4.7484%	4.6796%	4.6126%	4.5475%	4.4840%	4.4224%	4.3625%	4.3043%	4.2478%
5.5613%	5.4747%	5.3900%	5.3073%	5.2264%	5.1476%	5.0706%	4.9955%	4.9223%	4.8510%	4.7816%	4.7140%	4.6483%	4.5844%	4.5222%	4.4619%	4.4033%
5.7650%	5.6752%	5.5874%	5.5016%	5.4179%	5.3361%	5.2563%	5.1784%	5.1026%	5.0287%	4.9567%	4.8867%	4.8185%	4.7522%	4.6879%	4.6253%	4.5646%
5.9761%	5.8830%	5.7920%	5.7031%	5.6163%	5.5315%	5.4488%	5.3681%	5.2895%	5.2128%	5.1382%	5.0656%	4.9950%	4.9263%	4.8595%	4.7947%	4.7318%
6.1950%	6.0985%	6.0042%	5.9120%	5.8220%	5.7341%	5.6483%	5.5647%	5.4832%	5.4038%	5.3264%	5.2511%	5.1779%	5.1067%	5.0375%	4.9703%	4.9051%
6.4218%	6.3218%	6.2241%	6.1285%	6.0352%	5.9441%	5.8552%	5.7685%	5.6840%	5.6017%	5.5215%	5.4435%	5.3675%	5.2937%	5.2220%	5.1523%	5.0847%
6.6570%	6.5534%	6.4520%	6.3530%	6.2562%	6.1618%	6.0696%	5.9798%	5.8922%	5.8068%	5.7237%	5.6428%	5.5641%	5.4876%	5.4133%	5.3410%	5.2709%
6.9008%	6.7934%	6.6883%	6.5856%	6.4853%	6.3874%	6.2919%	6.1988%	6.1080%	6.0195%	5.9333%	5.8495%	5.7679%	5.6886%	5.6115%	5.5366%	5.4640%
7.1536%	7.0422%	6.9333%	6.8268%	6.7229%	6.6214%	6.5224%	6.4258%	6.3316%	6.2399%	6.1506%	6.0637%	5.9791%	5.8969%	5.8170%	5.7394%	5.6641%
7.4156%	7.3001%	7.1872%	7.0768%	6.9691%	6.8639%	6.7612%	6.6611%	6.5635%	6.4685%	6.3759%	6.2858%	6.1981%	6.1129%	6.0301%	5.9496%	5.8715%
7.6871%	7.5674%	7.4504%	7.3360%	7.2243%	7.1153%	7.0088%	6.9051%	6.8039%	6.7054%	6.6094%	6.5160%	6.4251%	6.3368%	6.2509%	6.1675%	6.0865%
7.9687%	7.8446%	7.7233%	7.6047%	7.4889%	7.3758%	7.2655%	7.1580%	7.0531%	6.9509%	6.8515%	6.7546%	6.6604%	6.5688%	6.4798%	6.3934%	6.3095%
8.2605%	8.1319%	8.0061%	7.8832%	7.7632%	7.6460%	7.5316%	7.4201%	7.3114%	7.2055%	7.1024%	7.0020%	6.9044%	6.8094%	6.7172%	6.6275%	6.5405%
8.5630%	8.4297%	8.2993%	8.1719%	8.0475%	7.9260%	7.8075%	7.6919%	7.5792%	7.4694%	7.3625%	7.2584%	7.1572%	7.0588%	6.9632%	6.8703%	6.7801%
8.8766%	8.7384%	8.6033%	8.4712%	8.3422%	8.2163%	8.0934%	7.9736%	7.8568%	7.7430%	7.6321%	7.5243%	7.4193%	7.3173%	7.2182%	7.1219%	7.0284%
9.2017%	9.0585%	8.9184%	8.7815%	8.6477%	8.5172%	8.3898%	8.2656%	8.1445%	8.0265%	7.9116%	7.7998%	7.6911%	7.5853%	7.4825%	7.3827%	7.2858%
9.5387%	9.3902%	9.2450%	9.1031%	8.9644%	8.8291%	8.6971%	8.5683%	8.4428%	8.3205%	8.2014%	8.0855%	7.9727%	7.8631%	7.7566%	7.6531%	7.5526%
9.8881%	9.7341%	9.5836%	9.4364%	9.2928%	9.1525%	9.0156%	8.8821%	8.7520%	8.6252%	8.5018%	8.3816%	8.2647%	8.1511%	8.0406%	7.9334%	7.8292%
10.2502%	10.0906%	9.9346%	9.7820%	9.6331%	9.4877%	9.3458%	9.2074%	9.0725%	8.9411%	8.8131%	8.6886%	8.5674%	8.4496%	8.3351%	8.2239%	8.1160%
10.6256%	10.4602%	10.2984%	10.1403%	9.9859%	9.8351%	9.6881%	9.5446%	9.4048%	9.2686%	9.1359%	9.0068%	8.8812%	8.7591%	8.6404%	8.5251%	8.4132%
11.0148%	10.8433%	10.6756%	10.5117%	10.3516%	10.1953%	10.0429%	9.8942%	9.7492%	9.6080%	9.4705%	9.3367%	9.2065%	9.0799%	8.9568%	8.8373%	8.7213%
11.4182%	11.2404%	11.0665%	10.8966%	10.7307%	10.5687%	10.4107%	10.2565%	10.1063%	9.9599%	9.8173%	9.6786%	9.5436%	9.4124%	9.2849%	9.1610%	9.0407%
11.8364%	11.6520%	11.4718%	11.2957%	11.1237%	10.9558%	10.7919%	10.6322%	10.4764%	10.3247%	10.1769%	10.0331%	9.8932%	9.7571%	9.6249%	9.4965%	9.3718%
12.2698%	12.0788%	11.8920%	11.7094%	11.5311%	11.3570%	11.1872%	11.0215%	10.8601%	10.7028%	10.5496%	10.4005%	10.2555%	10.1145%	9.9774%	9.8443%	9.7151%
12.7192%	12.5211%	12.3275%	12.1383%	11.9534%	11.7730%	11.5969%	11.4252%	11.2578%	11.0948%	10.9360%	10.7814%	10.6311%	10.4849%	10.3428%	10.2048%	10.0709%
13.1850%	12.9797%	12.7790%	12.5828%	12.3912%	12.2041%	12.0216%	11.8436%	11.6701%	11.5011%	11.3365%	11.1763%	11.0204%	10.8689%	10.7216%	10.5786%	10.4397%
13.6679%	13.4551%	13.2470%	13.0436%	12.8450%	12.6511%	12.4619%	12.2774%	12.0975%	11.9223%	11.7517%	11.5856%	11.4240%	11.2669%	11.1143%	10.9660%	10.8220%
14.1685%	13.9479%	13.7321%	13.5213%	13.3154%	13.1144%	12.9183%	12.7270%	12.5406%	12.3589%	12.1820%	12.0099%	11.8424%	11.6796%	11.5213%	11.3676%	11.2184%
14.6874%	14.4587%	14.2351%	14.0165%	13.8031%	13.5947%	13.3914%	13.1931%	12.9999%	12.8116%	12.6282%	12.4497%	12.2761%	12.1073%	11.9433%	11.7839%	11.6292%
15.2253%	14.9882%	14.7564%	14.5299%	14.3086%	14.0926%	13.8819%	13.6763%	13.4760%	13.2808%	13.0907%	12.9057%	12.7257%	12.5507%	12.3807%	12.2155%	12.0551%
15.7829%	15.5371%	15.2968%	15.0620%	14.8326%	14.6087%	14.3903%	14.1772%	13.9695%	13.7672%	13.5701%	13.3783%	13.1918%	13.0104%	12.8341%	12.6629%	12.4966%
16.3609%	16.1062%	15.8571%	15.6136%	15.3759%	15.1438%	14.9173%	14.6964%	14.4811%	14.2714%	14.0671%	13.8683%	13.6749%	13.4869%	13.3041%	13.1266%	12.9543%
16.9601%	16.6960%	16.4378%	16.1855%	15.9390%	15.6984%	15.4636%	15.2346%	15.0115%	14.7940%	14.5823%	14.3762%	14.1757%	13.9808%	13.7914%	13.6074%	13.4287%
17.5813%	17.3075%	17.0398%	16.7782%	16.5227%	16.2733%	16.0299%	15.7926%	15.5612%	15.3358%	15.1163%	14.9027%	14.6949%	14.4928%	14.2965%	14.1057%	13.9205%
18.2252%	17.9414%	17.6639%	17.3927%	17.1279%	16.8693%	16.6170%	16.3710%	16.1312%	15.8975%	15.6700%	15.4485%	15.2331%	15.0236%	14.8201%	14.6223%	14.4304%
18.8926%	18.5984%	18.3108%	18.0297%	17.7551%	17.4871%	17.2256%	16.9705%	16.7219%	16.4797%	16.2439%	16.0143%	15.7910%	15.5738%	15.3628%	15.1579%	14.9589%
19.5845%	19.2796%	18.9814%	18.6900%	18.4054%	18.1276%	17.8565%	17.5921%	17.3343%	17.0833%	16.8388%	16.6008%	16.3693%	16.1442%	15.9255%	15.7130%	15.5067%
20.3018%	19.9857%	19.6766%	19.3745%	19.0795%	18.7915%	18.5104%	18.2364%	17.9692%	17.7089%	17.4555%	17.2088%	16.9688%	16.7355%	16.5087%	16.2885%	16.0746%
21.0453%	20.7176%	20.3972%	20.0841%	19.7782%	19.4797%	19.1883%	18.9042%	18.6273%	18.3575%	18.0947%	17.8390%	17.5903%	17.3484%	17.1133%	16.8850%	16.6633%
21.8161%	21.4764%	21.1442%	20.8196%	20.5026%	20.1931%	19.8911%	19.5966%	19.3095%	19.0298%	18.7574%	18.4924%	18.2345%	17.9837%	17.7401%	17.5034%	17.2736%
22.6151%	22.2629%	21.9186%	21.5821%	21.2535%	20.9326%	20.6196%	20.3143%	20.0167%	19.7267%	19.4444%	19.1696%	18.9023%	18.6424%	18.3898%	18.1444%	17.9062%
23.4433%	23.0783%	22.7213%	22.3725%	22.0318%	21.6993%	21.3747%	21.0583%	20.7498%	20.4492%	20.1565%	19.8717%	19.5946%	19.3251%	19.0633%	18.8089%	18.5620%
24.3019%	23.9235%	23.5535%	23.1919%	22.8387%	22.4940%	22.1576%	21.8295%	21.5097%	21.1981%	20.8947%	20.5994%	20.3122%	20.0329%	19.7614%	19.4978%	19.2418%
25.1919%	24.7996%	24.4161%	24.0413%	23.6752%	23.3178%	22.9690%	22.6290%	22.2975%	21.9745%	21.6600%	21.3539%	21.0561%	20.7666%	20.4852%	20.2119%	19.9465%
26.1145%	25.7079%	25.3103%	24.9217%	24.5422%	24.1718%	23.8103%	23.4577%	23.1141%	22.7793%	22.4532%	22.1359%	21.8272%	21.5271%	21.2354%	20.9521%	20.6770%
27.0709%	26.6494%	26.2372%	25.8345%	25.4411%	25.0570%	24.6823%	24.3168%	23.9606%	23.6135%	23.2756%	22.9466%	22.6266%	22.3155%	22.0131%	21.7194%	21.4343%
28.0624%	27.6254%	27.1981%	26.7806%	26.3728%	25.9747%	25.5862%	25.2074%	24.8381%	24.4783%	24.1280%	23.7870%	23.4553%	23.1328%	22.8193%	22.5149%	22.2193%
29.0901%	28.6371%	28.1942%	27.7614%	27.3387%	26.9260%	26.5233%	26.1306%	25.7478%	25.3748%	25.0117%	24.6582%	24.3143%	23.9800%	23.6551%	23.3395%	23.0331%
30.1555%	29.6859%	29.2268%	28.7781%	28.3399%	27.9121%	27.4947%	27.0876%	26.6908%	26.3041%	25.9277%	25.5613%	25.2048%	24.8582%	24.5214%	24.1942%	23.8766%
	30.7731%	30.2972%	29.8321%	29.3778%	28.9343%	28.5016%	28.0796%	27.6683%	27.2675%	26.8772%	26.4974%	26.1279%	25.7686%	25.4195%	25.0803%	24.7511%
		31.4068%	30.9247%	30.4537%	29.9940%	29.5455%	29.1080%	28.6816%	28.2661%	27.8616%	27.4678%	27.0848%	26.7124%	26.3504%	25.9989%	25.6575%
			32.0572%	31.5691%	31.0925%	30.6275%	30.1740%	29.7320%	29.3013%	28.8820%	28.4738%	28.0767%	27.6907%	27.3155%	26.9510%	26.5972%
				32.7252%	32.2312%	31.7492%	31.2791%	30.8209%	30.3745%	29.9397%	29.5166%	29.1050%	28.7048%	28.3159%	27.9381%	27.5713%
					33.4117%	32.9120%	32.4247%	31.9497%	31.4869%	31.0362%	30.5976%	30.1709%	29.7561%	29.3529%	28.9613%	28.5811%
						34.1173%	33.6122%	33.1198%	32.6400%	32.1729%	31.7182%	31.2759%	30.8458%	30.4279%	30.0219%	29.6278%
							34.8432%	34.3327%	33.8354%	33.3512%	32.8799%	32.4213%	31.9755%	31.5423%	31.1214%	30.7129%
								35.5901%	35.0746%	34.5726%	34.0840%	33.6087%	33.1466%	32.6975%	32.2612%	31.8377%
									36.3592%	35.8388%	35.3323%	34.8396%	34.3605%	33.8950%	33.4427%	33.0037%
										37.1513%	36.6263%	36.1156%	35.6189%	35.1363%	34.6675%	34.2124%
											37.9677%	37.4382%	36.9234%	36.4231%	35.9372%	35.4654%
												38.8094%	38.2757%	37.7571%	37.2533%	36.7643%
													39.6775%	39.1399%	38.6177%	38.1107%
														40.5733%	40.0320%	39.5065%
															41.4981%	40.9534%
																42.4532%

USD 2011 pre-calibration lattice

15-Jan-21	15-Feb-21	15-Mar-21
t = 9.83	t = 9.92	t = 10
0.6460%	0.6378%	0.6298%
0.6696%	0.6611%	0.6529%
0.6942%	0.6854%	0.6768%
0.7196%	0.7105%	0.7016%
0.7459%	0.7365%	0.7273%
0.7733%	0.7635%	0.7539%
0.8016%	0.7914%	0.7816%
0.8309%	0.8204%	0.8102%
0.8614%	0.8504%	0.8399%
0.8929%	0.8816%	0.8706%
0.9256%	0.9139%	0.9025%
0.9595%	0.9473%	0.9356%
0.9947%	0.9820%	0.9698%
1.0311%	1.0180%	1.0053%
1.0688%	1.0553%	1.0422%
1.1080%	1.0939%	1.0803%
1.1486%	1.1340%	1.1199%
1.1906%	1.1755%	1.1609%
1.2342%	1.2186%	1.2034%
1.2794%	1.2632%	1.2475%
1.3263%	1.3095%	1.2932%
1.3749%	1.3574%	1.3405%
1.4252%	1.4072%	1.3896%
1.4774%	1.4587%	1.4405%
1.5315%	1.5121%	1.4933%
1.5876%	1.5675%	1.5480%
1.6458%	1.6249%	1.6047%
1.7060%	1.6844%	1.6634%
1.7685%	1.7461%	1.7244%
1.8333%	1.8100%	1.7875%
1.9004%	1.8763%	1.8530%
1.9700%	1.9451%	1.9208%
2.0422%	2.0163%	1.9912%
2.1170%	2.0901%	2.0641%
2.1945%	2.1667%	2.1397%
2.2749%	2.2460%	2.2181%
2.3582%	2.3283%	2.2993%
2.4446%	2.4136%	2.3835%
2.5341%	2.5020%	2.4708%
2.6269%	2.5936%	2.5613%
2.7231%	2.6886%	2.6551%
2.8228%	2.7870%	2.7523%
2.9262%	2.8891%	2.8531%
3.0334%	2.9949%	2.9576%
3.1445%	3.1046%	3.0659%
3.2596%	3.2183%	3.1782%
3.3790%	3.3362%	3.2946%
3.5028%	3.4583%	3.4153%
3.6311%	3.5850%	3.5404%
3.7640%	3.7163%	3.6700%
3.9019%	3.8524%	3.8044%
4.0448%	3.9935%	3.9438%
4.1929%	4.1398%	4.0882%
4.3465%	4.2914%	4.2379%
4.5057%	4.4485%	4.3931%
4.6707%	4.6115%	4.5540%
4.8417%	4.7803%	4.7208%
5.0191%	4.9554%	4.8937%
5.2029%	5.1369%	5.0729%
5.3934%	5.3250%	5.2587%
5.5910%	5.5201%	5.4513%
5.7957%	5.7222%	5.6510%
6.0080%	5.9318%	5.8579%
6.2280%	6.1490%	6.0725%
6.4561%	6.3742%	6.2949%
6.6926%	6.6077%	6.5254%
6.9377%	6.8497%	6.7644%
7.1917%	7.1005%	7.0121%
7.4551%	7.3606%	7.2689%
7.7282%	7.6302%	7.5351%
8.0112%	7.9096%	7.8111%
8.3046%	8.1993%	8.0972%
8.6087%	8.4996%	8.3937%
8.9240%	8.8108%	8.7011%
9.2509%	9.1335%	9.0198%
9.5897%	9.4680%	9.3501%
9.9409%	9.8148%	9.6926%
10.3049%	10.1742%	10.0476%
10.6823%	10.5469%	10.4155%
11.0736%	10.9331%	10.7970%
11.4791%	11.3335%	11.1924%
11.8995%	11.7486%	11.6023%
12.3353%	12.1789%	12.0272%
12.7871%	12.6249%	12.4677%
13.2554%	13.0873%	12.9243%
13.7409%	13.5666%	13.3977%
14.2441%	14.0635%	13.8883%
14.7658%	14.5785%	14.3970%
15.3065%	15.1124%	14.9243%
15.8671%	15.6659%	15.4708%
16.4482%	16.2396%	16.0374%
17.0506%	16.8344%	16.6248%
17.6751%	17.4509%	17.2336%
18.3224%	18.0900%	17.8648%
18.9935%	18.7526%	18.5191%
19.6891%	19.4394%	19.1973%
20.4101%	20.1513%	19.9004%
21.1576%	20.8893%	20.6292%
21.9325%	21.6544%	21.3847%
22.7358%	22.4474%	22.1679%
23.5684%	23.2695%	22.9798%
24.4316%	24.1217%	23.8214%
25.3264%	25.0052%	24.6938%
26.2539%	25.9209%	25.5982%
27.2154%	26.8703%	26.5357%
28.2121%	27.8543%	27.5075%
29.2454%	28.8745%	28.5149%
30.3164%	29.9320%	29.5593%
31.4267%	31.0282%	30.6418%
32.5777%	32.1645%	31.7640%
33.7708%	33.3425%	32.9274%
35.0076%	34.5636%	34.1333%
36.2897%	35.8295%	35.3834%
37.6188%	37.1417%	36.6792%
38.9965%	38.5020%	38.0226%
40.4247%	39.9120%	39.4151%
41.9052%	41.3738%	40.8586%
43.4399%	42.8890%	42.3550%
	44.4598%	43.9062%
		45.5142%

EUR 2011 pre-calibration lattice

date	15-Apr-11	15-May-11	15-Jun-11	15-Jul-11	15-Aug-11	15-Sep-11	15-Oct-11	15-Nov-11	15-Dec-11	15-Jan-12	15-Feb-12	15-Mar-12
EUR Apr 2011 lattice												
	t = 0.08	t = 0.17	t = 0.25	t = 0.33	t = 0.42	t = 0.5	t = 0.58	t = 0.67	t = 0.75	t = 0.83	t = 0.92	t = 1
j = 1	0.4215%	0.6621%	0.9214%	1.1613%	1.3466%	1.4445%	1.4416%	1.3916%	1.3287%	1.2737%	1.2458%	1.2625%
j = 2		0.6880%	0.9575%	1.2068%	1.3993%	1.5011%	1.4980%	1.4460%	1.3807%	1.3236%	1.2945%	1.3119%
j = 3			0.9949%	1.2540%	1.4540%	1.5598%	1.5566%	1.5026%	1.4347%	1.3754%	1.3452%	1.3633%
j = 4				1.3031%	1.5109%	1.6209%	1.6176%	1.5614%	1.4909%	1.4292%	1.3978%	1.4166%
j = 5					1.5701%	1.6843%	1.6809%	1.6225%	1.5492%	1.4851%	1.4525%	1.4720%
j = 6						1.7502%	1.7466%	1.6860%	1.6099%	1.5432%	1.5094%	1.5297%
j = 7							1.8150%	1.7520%	1.6729%	1.6036%	1.5684%	1.5895%
j = 8								1.8206%	1.7383%	1.6664%	1.6298%	1.6517%
j = 9									1.8064%	1.7316%	1.6936%	1.7164%
j = 10										1.7994%	1.7599%	1.7835%
j = 11											1.8288%	1.8533%
j = 12												1.9259%
j = 13												
j = 14												
j = 15												
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15-Apr-12	15-May-12	15-Jun-12	15-Jul-12	15-Aug-12	15-Sep-12	15-Oct-12	15-Nov-12	15-Dec-12	15-Jan-13	15-Feb-13	15-Mar-13	15-Apr-13
t = 1.08	t = 1.17	t = 1.25	t = 1.33	t = 1.42	t = 1.5	t = 1.58	t = 1.67	t = 1.75	t = 1.83	t = 1.92	t = 2	t = 2.08
1.3285%	1.4064%	1.4833%	1.5565%	1.6235%	1.6821%	1.7302%	1.7658%	1.7874%	1.7932%	1.7819%	1.7522%	1.7065%
1.3805%	1.4615%	1.5414%	1.6174%	1.6870%	1.7479%	1.7979%	1.8350%	1.8573%	1.8634%	1.8517%	1.8208%	1.7733%
1.4345%	1.5187%	1.6017%	1.6807%	1.7531%	1.8163%	1.8682%	1.9068%	1.9300%	1.9363%	1.9241%	1.8920%	1.8427%
1.4907%	1.5781%	1.6644%	1.7465%	1.8217%	1.8874%	1.9414%	1.9814%	2.0056%	2.0121%	1.9994%	1.9661%	1.9148%
1.5490%	1.6399%	1.7295%	1.8148%	1.8930%	1.9613%	2.0173%	2.0589%	2.0841%	2.0909%	2.0777%	2.0430%	1.9897%
1.6096%	1.7040%	1.7972%	1.8858%	1.9670%	2.0380%	2.0963%	2.1395%	2.1656%	2.1727%	2.1590%	2.1230%	2.0676%
1.6726%	1.7707%	1.8675%	1.9597%	2.0440%	2.1178%	2.1783%	2.2232%	2.2504%	2.2577%	2.2435%	2.2061%	2.1485%
1.7381%	1.8400%	1.9406%	2.0363%	2.1240%	2.2007%	2.2636%	2.3103%	2.3384%	2.3461%	2.3313%	2.2924%	2.2326%
1.8061%	1.9120%	2.0166%	2.1160%	2.2071%	2.2868%	2.3522%	2.4007%	2.4300%	2.4379%	2.4225%	2.3821%	2.3200%
1.8768%	1.9869%	2.0955%	2.1989%	2.2935%	2.3763%	2.4442%	2.4946%	2.5251%	2.5333%	2.5173%	2.4754%	2.4108%
1.9502%	2.0646%	2.1775%	2.2849%	2.3833%	2.4693%	2.5399%	2.5923%	2.6239%	2.6324%	2.6159%	2.5722%	2.5051%
2.0266%	2.1454%	2.2627%	2.3743%	2.4766%	2.5659%	2.6393%	2.6937%	2.7266%	2.7355%	2.7182%	2.6729%	2.6032%
2.1059%	2.2294%	2.3513%	2.4673%	2.5735%	2.6663%	2.7426%	2.7991%	2.8333%	2.8425%	2.8246%	2.7775%	2.7051%
	2.3167%	2.4433%	2.5638%	2.6742%	2.7707%	2.8499%	2.9087%	2.9442%	2.9538%	2.9352%	2.8862%	2.8109%
		2.5389%	2.6642%	2.7788%	2.8791%	2.9614%	3.0225%	3.0594%	3.0694%	3.0500%	2.9992%	2.9209%
			2.7684%	2.8876%	2.9918%	3.0773%	3.1408%	3.1791%	3.1895%	3.1694%	3.1165%	3.0352%
				3.0006%	3.1089%	3.1978%	3.2637%	3.3035%	3.3143%	3.2934%	3.2385%	3.1540%
					3.2306%	3.3229%	3.3914%	3.4328%	3.4440%	3.4223%	3.3652%	3.2775%
						3.4530%	3.5242%	3.5672%	3.5788%	3.5563%	3.4969%	3.4057%
							3.6621%	3.7068%	3.7189%	3.6954%	3.6338%	3.5390%
								3.8518%	3.8644%	3.8401%	3.7760%	3.6775%
									4.0157%	3.9903%	3.9238%	3.8215%
										4.1465%	4.0774%	3.9710%
											4.2369%	4.1264%
												4.2879%

15-May-13	15-Jun-13	15-Jul-13	15-Aug-13	15-Sep-13	15-Oct-13	15-Nov-13	15-Dec-13	15-Jan-14	15-Feb-14	15-Mar-14	15-Apr-14	15-May-14
t = 2.17	t = 2.25	t = 2.33	t = 2.42	t = 2.5	t = 2.58	t = 2.67	t = 2.75	t = 2.83	t = 2.92	t = 3	t = 3.08	t = 3.17
1.6587%	1.6133%	1.5714%	1.5339%	1.5018%	1.4757%	1.4566%	1.4450%	1.4415%	1.4467%	1.4610%	1.4828%	1.5032%
1.7236%	1.6765%	1.6329%	1.5940%	1.5605%	1.5335%	1.5136%	1.5015%	1.4979%	1.5033%	1.5182%	1.5408%	1.5620%
1.7911%	1.7421%	1.6968%	1.6563%	1.6216%	1.5935%	1.5728%	1.5603%	1.5565%	1.5621%	1.5776%	1.6011%	1.6231%
1.8612%	1.8103%	1.7632%	1.7212%	1.6851%	1.6559%	1.6344%	1.6213%	1.6174%	1.6233%	1.6394%	1.6638%	1.6867%
1.9340%	1.8811%	1.8322%	1.7885%	1.7510%	1.7207%	1.6983%	1.6848%	1.6807%	1.6868%	1.7035%	1.7289%	1.7527%
2.0097%	1.9547%	1.9039%	1.8585%	1.8196%	1.7880%	1.7648%	1.7507%	1.7465%	1.7528%	1.7702%	1.7965%	1.8213%
2.0884%	2.0312%	1.9785%	1.9313%	1.8908%	1.8580%	1.8339%	1.8192%	1.8148%	1.8214%	1.8395%	1.8668%	1.8925%
2.1701%	2.1107%	2.0559%	2.0068%	1.9648%	1.9307%	1.9056%	1.8904%	1.8859%	1.8927%	1.9115%	1.9399%	1.9666%
2.2550%	2.1933%	2.1363%	2.0854%	2.0417%	2.0063%	1.9802%	1.9644%	1.9597%	1.9668%	1.9863%	2.0158%	2.0436%
2.3433%	2.2792%	2.2200%	2.1670%	2.1216%	2.0848%	2.0577%	2.0413%	2.0364%	2.0437%	2.0640%	2.0947%	2.1236%
2.4350%	2.3684%	2.3068%	2.2518%	2.2046%	2.1664%	2.1382%	2.1212%	2.1161%	2.1237%	2.1448%	2.1767%	2.2067%
2.5303%	2.4611%	2.3971%	2.3399%	2.2909%	2.2512%	2.2219%	2.2042%	2.1989%	2.2068%	2.2287%	2.2619%	2.2930%
2.6293%	2.5574%	2.4909%	2.4315%	2.3805%	2.3393%	2.3089%	2.2905%	2.2849%	2.2932%	2.3160%	2.3504%	2.3828%
2.7322%	2.6575%	2.5884%	2.5267%	2.4737%	2.4308%	2.3992%	2.3801%	2.3744%	2.3829%	2.4066%	2.4424%	2.4760%
2.8391%	2.7615%	2.6897%	2.6256%	2.5705%	2.5259%	2.4931%	2.4732%	2.4673%	2.4762%	2.5008%	2.5380%	2.5729%
2.9502%	2.8695%	2.7950%	2.7283%	2.6711%	2.6248%	2.5907%	2.5700%	2.5638%	2.5731%	2.5987%	2.6373%	2.6736%
3.0657%	2.9818%	2.9044%	2.8351%	2.7756%	2.7275%	2.6921%	2.6706%	2.6642%	2.6738%	2.7004%	2.7405%	2.7782%
3.1857%	3.0985%	3.0180%	2.9460%	2.8843%	2.8343%	2.7975%	2.7751%	2.7685%	2.7784%	2.8060%	2.8478%	2.8870%
3.3104%	3.2198%	3.1361%	3.0613%	2.9971%	2.9452%	2.9069%	2.8837%	2.8768%	2.8872%	2.9159%	2.9592%	3.0000%
3.4399%	3.3458%	3.2589%	3.1811%	3.1144%	3.0605%	3.0207%	2.9966%	2.9894%	3.0002%	3.0300%	3.0750%	3.1174%
3.5745%	3.4767%	3.3864%	3.3056%	3.2363%	3.1802%	3.1389%	3.1139%	3.1064%	3.1176%	3.1485%	3.1954%	3.2394%
3.7144%	3.6128%	3.5189%	3.4350%	3.3630%	3.3047%	3.2618%	3.2357%	3.2280%	3.2396%	3.2718%	3.3204%	3.3661%
3.8598%	3.7542%	3.6567%	3.5694%	3.4946%	3.4340%	3.3894%	3.3624%	3.3543%	3.3664%	3.3998%	3.4504%	3.4979%
4.0109%	3.9011%	3.7998%	3.7091%	3.6314%	3.5684%	3.5221%	3.4940%	3.4856%	3.4981%	3.5329%	3.5854%	3.6348%
4.1678%	4.0538%	3.9485%	3.8543%	3.7735%	3.7081%	3.6599%	3.6307%	3.6220%	3.6350%	3.6711%	3.7257%	3.7770%
4.3309%	4.2125%	4.1030%	4.0051%	3.9212%	3.8532%	3.8032%	3.7728%	3.7637%	3.7773%	3.8148%	3.8716%	3.9248%
	4.3773%	4.2636%	4.1619%	4.0746%	4.0040%	3.9520%	3.9205%	3.9110%	3.9251%	3.9641%	4.0231%	4.0785%
		4.4304%	4.3248%	4.2341%	4.1607%	4.1067%	4.0739%	4.0641%	4.0787%	4.1192%	4.1805%	4.2381%
			4.4940%	4.3998%	4.3235%	4.2674%	4.2333%	4.2231%	4.2384%	4.2805%	4.3441%	4.4039%
				4.5720%	4.4927%	4.4344%	4.3990%	4.3884%	4.4042%	4.4480%	4.5141%	4.5763%
					4.6686%	4.6079%	4.5712%	4.5602%	4.5766%	4.6221%	4.6908%	4.7554%
						4.7883%	4.7501%	4.7386%	4.7557%	4.8029%	4.8744%	4.9415%
							4.9360%	4.9241%	4.9418%	4.9909%	5.0652%	5.1349%
								5.1168%	5.1352%	5.1862%	5.2634%	5.3358%
									5.3362%	5.3892%	5.4694%	5.5447%
										5.6001%	5.6834%	5.7617%
											5.9059%	5.9871%
												6.2215%

15-Jun-14	15-Jul-14	15-Aug-14	15-Sep-14	15-Oct-14	15-Nov-14	15-Dec-14	15-Jan-15	15-Feb-15	15-Mar-15	15-Apr-15	15-May-15	15-Jun-15
t = 3.25	t = 3.33	t = 3.42	t = 3.5	t = 3.58	t = 3.67	t = 3.75	t = 3.83	t = 3.92	t = 4	t = 4.08	t = 4.17	t = 4.25
1.5198%	1.5325%	1.5408%	1.5447%	1.5440%	1.5384%	1.5279%	1.5123%	1.4915%	1.4655%	1.4354%	1.4056%	1.3774%
1.5793%	1.5924%	1.6011%	1.6052%	1.6044%	1.5986%	1.5877%	1.5715%	1.5499%	1.5229%	1.4915%	1.4606%	1.4313%
1.6411%	1.6548%	1.6638%	1.6680%	1.6672%	1.6612%	1.6498%	1.6330%	1.6106%	1.5825%	1.5499%	1.5177%	1.4873%
1.7053%	1.7195%	1.7289%	1.7333%	1.7324%	1.7262%	1.7144%	1.6969%	1.6736%	1.6444%	1.6106%	1.5771%	1.5455%
1.7721%	1.7868%	1.7966%	1.8011%	1.8002%	1.7937%	1.7815%	1.7633%	1.7391%	1.7088%	1.6736%	1.6389%	1.6060%
1.8414%	1.8567%	1.8669%	1.8716%	1.8707%	1.8639%	1.8512%	1.8323%	1.8072%	1.7757%	1.7391%	1.7030%	1.6688%
1.9135%	1.9294%	1.9399%	1.9449%	1.9439%	1.9369%	1.9236%	1.9040%	1.8779%	1.8451%	1.8072%	1.7696%	1.7341%
1.9884%	2.0049%	2.0159%	2.0210%	2.0200%	2.0127%	1.9989%	1.9785%	1.9514%	1.9174%	1.8779%	1.8389%	1.8020%
2.0662%	2.0834%	2.0948%	2.1001%	2.0990%	2.0915%	2.0772%	2.0560%	2.0277%	1.9924%	1.9514%	1.9109%	1.8725%
2.1471%	2.1649%	2.1767%	2.1822%	2.1812%	2.1733%	2.1585%	2.1364%	2.1071%	2.0704%	2.0278%	1.9857%	1.9458%
2.2311%	2.2496%	2.2619%	2.2677%	2.2665%	2.2584%	2.2429%	2.2200%	2.1896%	2.1514%	2.1071%	2.0634%	2.0220%
2.3184%	2.3377%	2.3505%	2.3564%	2.3553%	2.3468%	2.3307%	2.3069%	2.2753%	2.2356%	2.1896%	2.1441%	2.1011%
2.4092%	2.4292%	2.4424%	2.4486%	2.4474%	2.4386%	2.4219%	2.3972%	2.3643%	2.3231%	2.2753%	2.2280%	2.1833%
2.5034%	2.5242%	2.5380%	2.5445%	2.5432%	2.5340%	2.5167%	2.4910%	2.4568%	2.4140%	2.3643%	2.3152%	2.2688%
2.6014%	2.6230%	2.6374%	2.6440%	2.6427%	2.6332%	2.6152%	2.5885%	2.5530%	2.5085%	2.4568%	2.4058%	2.3576%
2.7032%	2.7257%	2.7406%	2.7475%	2.7462%	2.7363%	2.7176%	2.6898%	2.6529%	2.6067%	2.5530%	2.5000%	2.4498%
2.8090%	2.8324%	2.8478%	2.8550%	2.8536%	2.8434%	2.8239%	2.7951%	2.7567%	2.7087%	2.6529%	2.5978%	2.5457%
2.9190%	2.9432%	2.9593%	2.9668%	2.9653%	2.9546%	2.9344%	2.9045%	2.8646%	2.8147%	2.7567%	2.6995%	2.6453%
3.0332%	3.0584%	3.0751%	3.0829%	3.0814%	3.0703%	3.0493%	3.0182%	2.9767%	2.9248%	2.8646%	2.8051%	2.7489%
3.1519%	3.1781%	3.1954%	3.2035%	3.2020%	3.1904%	3.1686%	3.1363%	3.0932%	3.0393%	2.9767%	2.9149%	2.8564%
3.2753%	3.3025%	3.3205%	3.3289%	3.3273%	3.3153%	3.2926%	3.2590%	3.2143%	3.1582%	3.0932%	3.0290%	2.9682%
3.4034%	3.4317%	3.4505%	3.4592%	3.4575%	3.4450%	3.4215%	3.3866%	3.3401%	3.2818%	3.2143%	3.1475%	3.0844%
3.5366%	3.5660%	3.5855%	3.5946%	3.5928%	3.5799%	3.5554%	3.5191%	3.4708%	3.4103%	3.3401%	3.2707%	3.2051%
3.6750%	3.7056%	3.7258%	3.7352%	3.7334%	3.7200%	3.6945%	3.6568%	3.6066%	3.5437%	3.4708%	3.3987%	3.3305%
3.8189%	3.8506%	3.8716%	3.8814%	3.8795%	3.8655%	3.8391%	3.7999%	3.7478%	3.6824%	3.6066%	3.5317%	3.4609%
3.9683%	4.0013%	4.0231%	4.0333%	4.0314%	4.0168%	3.9894%	3.9486%	3.8944%	3.8266%	3.7478%	3.6700%	3.5963%
4.1236%	4.1579%	4.1806%	4.1912%	4.1891%	4.1740%	4.1455%	4.1032%	4.0469%	3.9763%	3.8944%	3.8136%	3.7371%
4.2850%	4.3206%	4.3442%	4.3552%	4.3531%	4.3374%	4.3077%	4.2638%	4.2052%	4.1319%	4.0469%	3.9628%	3.8833%
4.4527%	4.4897%	4.5142%	4.5256%	4.5234%	4.5071%	4.4763%	4.4306%	4.3698%	4.2936%	4.2052%	4.1179%	4.0353%
4.6270%	4.6654%	4.6909%	4.7028%	4.7005%	4.6835%	4.6515%	4.6040%	4.5408%	4.4617%	4.3698%	4.2791%	4.1932%
4.8081%	4.8480%	4.8745%	4.8868%	4.8844%	4.8668%	4.8335%	4.7842%	4.7185%	4.6363%	4.5408%	4.4466%	4.3573%
4.9962%	5.0377%	5.0652%	5.0781%	5.0756%	5.0573%	5.0227%	4.9714%	4.9032%	4.8177%	4.7185%	4.6206%	4.5279%
5.1918%	5.2349%	5.2635%	5.2768%	5.2742%	5.2552%	5.2193%	5.1660%	5.0951%	5.0063%	4.9032%	4.8014%	4.7051%
5.3949%	5.4398%	5.4695%	5.4833%	5.4806%	5.4609%	5.4235%	5.3682%	5.2945%	5.2022%	5.0951%	4.9893%	4.8892%
5.6061%	5.6527%	5.6835%	5.6979%	5.6951%	5.6746%	5.6358%	5.5783%	5.5017%	5.4058%	5.2945%	5.1846%	5.0806%
5.8255%	5.8739%	5.9060%	5.9209%	5.9180%	5.8967%	5.8563%	5.7966%	5.7170%	5.6174%	5.5017%	5.3875%	5.2794%
6.0535%	6.1038%	6.1371%	6.1526%	6.1496%	6.1274%	6.0855%	6.0234%	5.9408%	5.8372%	5.7170%	5.5983%	5.4860%
6.2904%	6.3426%	6.3773%	6.3934%	6.3903%	6.3672%	6.3237%	6.2592%	6.1733%	6.0656%	5.9408%	5.8174%	5.7007%
6.5366%	6.5909%	6.6269%	6.6436%	6.6404%	6.6164%	6.5712%	6.5041%	6.4149%	6.3030%	6.1733%	6.0451%	5.9238%
	6.8488%	6.8862%	6.9036%	6.9003%	6.8754%	6.8284%	6.7587%	6.6659%	6.5497%	6.4149%	6.2817%	6.1556%
		7.1557%	7.1738%	7.1703%	7.1445%	7.0956%	7.0232%	6.9268%	6.8060%	6.6659%	6.5275%	6.3966%
			7.4546%	7.4509%	7.4241%	7.3733%	7.2981%	7.1979%	7.0724%	6.9268%	6.7830%	6.6469%
				7.7425%	7.7146%	7.6619%	7.5837%	7.4796%	7.3492%	7.1979%	7.0485%	6.9070%
					8.0165%	7.9617%	7.8805%	7.7723%	7.6368%	7.4796%	7.3243%	7.1773%
						8.2733%	8.1889%	8.0765%	7.9357%	7.7723%	7.6109%	7.4582%
							8.5094%	8.3926%	8.2463%	8.0765%	7.9088%	7.7501%
								8.7210%	8.5690%	8.3926%	8.2183%	8.0534%
									8.9043%	8.7210%	8.5400%	8.3686%
										9.0623%	8.8742%	8.6961%
											9.2215%	9.0365%
												9.3901%

15-Jul-15	15-Aug-15	15-Sep-15	15-Oct-15	15-Nov-15	15-Dec-15	15-Jan-16	15-Feb-16	15-Mar-16	15-Apr-16	15-May-16	15-Jun-16	15-Jul-16
t = 4.33	t = 4.42	t = 4.5	t = 4.58	t = 4.67	t = 4.75	t = 4.83	t = 4.92	t = 5	t = 5.08	t = 5.17	t = 5.25	t = 5.33
1.3509%	1.3261%	1.3033%	1.2824%	1.2635%	1.2467%	1.2320%	1.2194%	1.2091%	1.2004%	1.1916%	1.1823%	1.1724%
1.4037%	1.3780%	1.3543%	1.3326%	1.3130%	1.2955%	1.2802%	1.2672%	1.2564%	1.2474%	1.2383%	1.2286%	1.2183%
1.4587%	1.4320%	1.4073%	1.3848%	1.3644%	1.3462%	1.3303%	1.3168%	1.3055%	1.2962%	1.2867%	1.2767%	1.2659%
1.5157%	1.4880%	1.4624%	1.4390%	1.4178%	1.3989%	1.3824%	1.3683%	1.3566%	1.3469%	1.3371%	1.3266%	1.3155%
1.5751%	1.5463%	1.5196%	1.4953%	1.4733%	1.4536%	1.4365%	1.4218%	1.4097%	1.3996%	1.3894%	1.3785%	1.3670%
1.6367%	1.6068%	1.5791%	1.5538%	1.5309%	1.5105%	1.4927%	1.4775%	1.4649%	1.4544%	1.4438%	1.4325%	1.4205%
1.7008%	1.6697%	1.6409%	1.6146%	1.5908%	1.5696%	1.5511%	1.5353%	1.5222%	1.5113%	1.5003%	1.4886%	1.4761%
1.7673%	1.7350%	1.7051%	1.6778%	1.6531%	1.6311%	1.6118%	1.5954%	1.5818%	1.5705%	1.5590%	1.5468%	1.5338%
1.8365%	1.8029%	1.7719%	1.7434%	1.7178%	1.6949%	1.6749%	1.6578%	1.6437%	1.6320%	1.6200%	1.6073%	1.5939%
1.9084%	1.8735%	1.8412%	1.8117%	1.7850%	1.7612%	1.7405%	1.7227%	1.7080%	1.6958%	1.6834%	1.6703%	1.6562%
1.9831%	1.9468%	1.9133%	1.8826%	1.8549%	1.8302%	1.8086%	1.7901%	1.7749%	1.7622%	1.7493%	1.7356%	1.7211%
2.0607%	2.0230%	1.9881%	1.9563%	1.9275%	1.9018%	1.8794%	1.8602%	1.8444%	1.8312%	1.8178%	1.8035%	1.7884%
2.1413%	2.1021%	2.0659%	2.0328%	2.0029%	1.9762%	1.9529%	1.9330%	1.9165%	1.9028%	1.8889%	1.8741%	1.8584%
2.2251%	2.1844%	2.1468%	2.1124%	2.0813%	2.0536%	2.0293%	2.0086%	1.9915%	1.9773%	1.9629%	1.9475%	1.9311%
2.3122%	2.2699%	2.2308%	2.1950%	2.1627%	2.1339%	2.1088%	2.0873%	2.0695%	2.0547%	2.0397%	2.0237%	2.0067%
2.4027%	2.3587%	2.3181%	2.2810%	2.2474%	2.2175%	2.1913%	2.1689%	2.1505%	2.1351%	2.1195%	2.1029%	2.0852%
2.4967%	2.4510%	2.4088%	2.3702%	2.3353%	2.3042%	2.2770%	2.2538%	2.2346%	2.2186%	2.2025%	2.1852%	2.1668%
2.5944%	2.5470%	2.5031%	2.4630%	2.4267%	2.3944%	2.3662%	2.3420%	2.3221%	2.3055%	2.2886%	2.2707%	2.2517%
2.6960%	2.6466%	2.6011%	2.5594%	2.5217%	2.4881%	2.4588%	2.4337%	2.4130%	2.3957%	2.3782%	2.3596%	2.3398%
2.8015%	2.7502%	2.7029%	2.6595%	2.6204%	2.5855%	2.5550%	2.5289%	2.5074%	2.4895%	2.4713%	2.4519%	2.4313%
2.9111%	2.8579%	2.8086%	2.7636%	2.7229%	2.6867%	2.6550%	2.6279%	2.6055%	2.5869%	2.5680%	2.5479%	2.5265%
3.0250%	2.9697%	2.9186%	2.8718%	2.8295%	2.7918%	2.7589%	2.7308%	2.7075%	2.6881%	2.6685%	2.6476%	2.6254%
3.1434%	3.0859%	3.0328%	2.9842%	2.9402%	2.9011%	2.8669%	2.8376%	2.8135%	2.7933%	2.7729%	2.7512%	2.7281%
3.2664%	3.2067%	3.1515%	3.1010%	3.0553%	3.0146%	2.9791%	2.9487%	2.9236%	2.9027%	2.8815%	2.8589%	2.8349%
3.3943%	3.3322%	3.2748%	3.2223%	3.1749%	3.1326%	3.0956%	3.0641%	3.0380%	3.0163%	2.9942%	2.9708%	2.9458%
3.5271%	3.4626%	3.4030%	3.3484%	3.2991%	3.2552%	3.2168%	3.1840%	3.1569%	3.1343%	3.1114%	3.0870%	3.0611%
3.6652%	3.5981%	3.5362%	3.4795%	3.4282%	3.3826%	3.3427%	3.3086%	3.2804%	3.2570%	3.2332%	3.2078%	3.1809%
3.8086%	3.7389%	3.6745%	3.6156%	3.5624%	3.5150%	3.4735%	3.4381%	3.4088%	3.3844%	3.3597%	3.3334%	3.3054%
3.9577%	3.8853%	3.8184%	3.7571%	3.7018%	3.6525%	3.6094%	3.5726%	3.5422%	3.5169%	3.4912%	3.4638%	3.4348%
4.1125%	4.0373%	3.9678%	3.9042%	3.8467%	3.7955%	3.7507%	3.7125%	3.6808%	3.6545%	3.6278%	3.5994%	3.5692%
4.2735%	4.1953%	4.1231%	4.0570%	3.9972%	3.9440%	3.8975%	3.8578%	3.8249%	3.7975%	3.7698%	3.7403%	3.7089%
4.4407%	4.3595%	4.2844%	4.2158%	4.1537%	4.0984%	4.0500%	4.0087%	3.9746%	3.9462%	3.9174%	3.8867%	3.8540%
4.6145%	4.5301%	4.4521%	4.3807%	4.3162%	4.2588%	4.2085%	4.1656%	4.1301%	4.1006%	4.0707%	4.0388%	4.0049%
4.7951%	4.7074%	4.6263%	4.5522%	4.4852%	4.4255%	4.3732%	4.3286%	4.2918%	4.2611%	4.2300%	4.1968%	4.1616%
4.9828%	4.8916%	4.8074%	4.7303%	4.6607%	4.5987%	4.5444%	4.4981%	4.4597%	4.4278%	4.3955%	4.3611%	4.3245%
5.1778%	5.0831%	4.9955%	4.9155%	4.8431%	4.7786%	4.7222%	4.6741%	4.6343%	4.6011%	4.5676%	4.5317%	4.4937%
5.3804%	5.2820%	5.1911%	5.1078%	5.0326%	4.9656%	4.9071%	4.8570%	4.8157%	4.7812%	4.7463%	4.7091%	4.6696%
5.5910%	5.4887%	5.3942%	5.3077%	5.2296%	5.1600%	5.0991%	5.0471%	5.0041%	4.9683%	4.9321%	4.8934%	4.8523%
5.8098%	5.7035%	5.6053%	5.5155%	5.4343%	5.3619%	5.2987%	5.2446%	5.2000%	5.1628%	5.1251%	5.0849%	5.0422%
6.0372%	5.9268%	5.8247%	5.7313%	5.6469%	5.5718%	5.5060%	5.4499%	5.4035%	5.3648%	5.3257%	5.2839%	5.2396%
6.2735%	6.1587%	6.0526%	5.9556%	5.8679%	5.7898%	5.7215%	5.6632%	5.6149%	5.5748%	5.5341%	5.4907%	5.4446%
6.5190%	6.3997%	6.2895%	6.1887%	6.0976%	6.0164%	5.9454%	5.8848%	5.8347%	5.7930%	5.7507%	5.7056%	5.6577%
6.7741%	6.6502%	6.5357%	6.4309%	6.3362%	6.2519%	6.1781%	6.1151%	6.0630%	6.0197%	5.9757%	5.9289%	5.8791%
7.0392%	6.9105%	6.7915%	6.6826%	6.5842%	6.4965%	6.4199%	6.3544%	6.3003%	6.2553%	6.2096%	6.1609%	6.1092%
7.3147%	7.1809%	7.0572%	6.9441%	6.8419%	6.7508%	6.6711%	6.6031%	6.5469%	6.5001%	6.4526%	6.4020%	6.3483%
7.6010%	7.4619%	7.3334%	7.2159%	7.1096%	7.0150%	6.9322%	6.8615%	6.8031%	6.7544%	6.7051%	6.6526%	6.5967%
7.8985%	7.7540%	7.6204%	7.4983%	7.3879%	7.2895%	7.2035%	7.1301%	7.0694%	7.0188%	6.9676%	6.9129%	6.8549%
8.2076%	8.0574%	7.9187%	7.7917%	7.6770%	7.5748%	7.4854%	7.4091%	7.3460%	7.2935%	7.2402%	7.1835%	7.1232%
8.5288%	8.3728%	8.2286%	8.0967%	7.9775%	7.8713%	7.7784%	7.6991%	7.6335%	7.5789%	7.5236%	7.4646%	7.4020%
8.8626%	8.7004%	8.5506%	8.4136%	8.2897%	8.1793%	8.0828%	8.0004%	7.9323%	7.8755%	7.8180%	7.7568%	7.6916%
9.2094%	9.0409%	8.8853%	8.7428%	8.6141%	8.4994%	8.3991%	8.3135%	8.2427%	8.1837%	8.1240%	8.0603%	7.9927%
9.5698%	9.3948%	9.2330%	9.0850%	8.9512%	8.8321%	8.7279%	8.6389%	8.5653%	8.5040%	8.4419%	8.3758%	8.3055%
	9.7625%	9.5943%	9.4405%	9.3015%	9.1777%	9.0694%	8.9769%	8.9005%	8.8368%	8.7723%	8.7036%	8.6305%
		9.9698%	9.8100%	9.6656%	9.5369%	9.4244%	9.3283%	9.2488%	9.1827%	9.1156%	9.0442%	8.9683%
			10.1939%	10.0438%	9.9101%	9.7932%	9.6933%	9.6108%	9.5420%	9.4724%	9.3981%	9.3193%
				10.4369%	10.2980%	10.1765%	10.0727%	9.9869%	9.9155%	9.8431%	9.7660%	9.6840%
					10.7010%	10.5747%	10.4669%	10.3778%	10.3035%	10.2283%	10.1482%	10.0630%
						10.9886%	10.8765%	10.7839%	10.7068%	10.6286%	10.5453%	10.4568%
							11.3022%	11.2060%	11.1258%	11.0446%	10.9580%	10.8660%
								11.6445%	11.5612%	11.4768%	11.3869%	11.2913%
									12.0137%	11.9260%	11.8325%	11.7332%
										12.3927%	12.2956%	12.1924%
											12.7768%	12.6696%
												13.1654%

15-Aug-16	15-Sep-16	15-Oct-16	15-Nov-16	15-Dec-16	15-Jan-17	15-Feb-17	15-Mar-17	15-Apr-17	15-May-17	15-Jun-17	15-Jul-17	15-Aug-17
t = 5.42	t = 5.5	t = 5.58	t = 5.67	t = 5.75	t = 5.83	t = 5.92	t = 6	t = 6.08	t = 6.17	t = 6.25	t = 6.33	t = 6.42
1.1619%	1.1508%	1.1391%	1.1269%	1.1141%	1.1007%	1.0867%	1.0722%	1.0572%	1.0416%	1.0255%	1.0088%	0.9917%
1.2073%	1.1958%	1.1837%	1.1710%	1.1577%	1.1437%	1.1292%	1.1142%	1.0985%	1.0823%	1.0656%	1.0483%	1.0305%
1.2546%	1.2426%	1.2300%	1.2168%	1.2030%	1.1885%	1.1734%	1.1578%	1.1415%	1.1247%	1.1073%	1.0893%	1.0708%
1.3037%	1.2913%	1.2782%	1.2644%	1.2500%	1.2350%	1.2194%	1.2031%	1.1862%	1.1687%	1.1506%	1.1320%	1.1127%
1.3547%	1.3418%	1.3282%	1.3139%	1.2990%	1.2833%	1.2671%	1.2502%	1.2326%	1.2144%	1.1957%	1.1763%	1.1563%
1.4077%	1.3943%	1.3802%	1.3653%	1.3498%	1.3336%	1.3167%	1.2991%	1.2809%	1.2620%	1.2424%	1.2223%	1.2015%
1.4628%	1.4489%	1.4342%	1.4188%	1.4026%	1.3858%	1.3682%	1.3499%	1.3310%	1.3114%	1.2911%	1.2701%	1.2486%
1.5201%	1.5056%	1.4903%	1.4743%	1.4575%	1.4400%	1.4217%	1.4028%	1.3831%	1.3627%	1.3416%	1.3198%	1.2974%
1.5796%	1.5645%	1.5486%	1.5320%	1.5146%	1.4964%	1.4774%	1.4577%	1.4372%	1.4160%	1.3941%	1.3715%	1.3482%
1.6414%	1.6257%	1.6092%	1.5919%	1.5738%	1.5549%	1.5352%	1.5147%	1.4935%	1.4714%	1.4487%	1.4252%	1.4010%
1.7056%	1.6894%	1.6722%	1.6542%	1.6354%	1.6158%	1.5953%	1.5740%	1.5519%	1.5290%	1.5054%	1.4809%	1.4558%
1.7724%	1.7555%	1.7377%	1.7190%	1.6994%	1.6790%	1.6577%	1.6356%	1.6126%	1.5889%	1.5643%	1.5389%	1.5128%
1.8417%	1.8242%	1.8057%	1.7863%	1.7659%	1.7447%	1.7226%	1.6996%	1.6757%	1.6510%	1.6255%	1.5991%	1.5720%
1.9138%	1.8956%	1.8763%	1.8562%	1.8350%	1.8130%	1.7900%	1.7661%	1.7413%	1.7157%	1.6891%	1.6617%	1.6335%
1.9887%	1.9697%	1.9498%	1.9288%	1.9069%	1.8839%	1.8601%	1.8352%	1.8095%	1.7828%	1.7552%	1.7267%	1.6974%
2.0666%	2.0468%	2.0261%	2.0043%	1.9815%	1.9577%	1.9329%	1.9071%	1.8803%	1.8526%	1.8239%	1.7943%	1.7638%
2.1474%	2.1269%	2.1054%	2.0827%	2.0590%	2.0343%	2.0085%	1.9817%	1.9539%	1.9251%	1.8953%	1.8645%	1.8329%
2.2315%	2.2102%	2.1878%	2.1642%	2.1396%	2.1139%	2.0871%	2.0593%	2.0303%	2.0004%	1.9695%	1.9375%	1.9046%
2.3188%	2.2967%	2.2734%	2.2489%	2.2234%	2.1966%	2.1688%	2.1398%	2.1098%	2.0787%	2.0465%	2.0133%	1.9791%
2.4096%	2.3866%	2.3624%	2.3370%	2.3104%	2.2826%	2.2537%	2.2236%	2.1924%	2.1601%	2.1266%	2.0921%	2.0566%
2.5039%	2.4800%	2.4548%	2.4284%	2.4008%	2.3719%	2.3419%	2.3106%	2.2782%	2.2446%	2.2099%	2.1740%	2.1371%
2.6018%	2.5770%	2.5509%	2.5235%	2.4947%	2.4648%	2.4335%	2.4010%	2.3673%	2.3324%	2.2963%	2.2591%	2.2207%
2.7037%	2.6779%	2.6507%	2.6222%	2.5924%	2.5612%	2.5288%	2.4950%	2.4600%	2.4237%	2.3862%	2.3475%	2.3076%
2.8095%	2.7827%	2.7545%	2.7248%	2.6938%	2.6615%	2.6277%	2.5927%	2.5563%	2.5186%	2.4796%	2.4394%	2.3980%
2.9194%	2.8916%	2.8623%	2.8315%	2.7993%	2.7656%	2.7306%	2.6941%	2.6563%	2.6171%	2.5766%	2.5349%	2.4918%
3.0337%	3.0047%	2.9743%	2.9423%	2.9088%	2.8739%	2.8374%	2.7996%	2.7603%	2.7196%	2.6775%	2.6341%	2.5893%
3.1524%	3.1223%	3.0907%	3.0574%	3.0227%	2.9863%	2.9485%	2.9091%	2.8683%	2.8260%	2.7823%	2.7371%	2.6907%
3.2758%	3.2445%	3.2116%	3.1771%	3.1410%	3.1032%	3.0639%	3.0230%	2.9805%	2.9366%	2.8912%	2.8443%	2.7960%
3.4040%	3.3715%	3.3373%	3.3014%	3.2639%	3.2247%	3.1838%	3.1413%	3.0972%	3.0515%	3.0043%	2.9556%	2.9054%
3.5372%	3.5035%	3.4679%	3.4306%	3.3916%	3.3509%	3.3084%	3.2642%	3.2184%	3.1709%	3.1219%	3.0713%	3.0191%
3.6756%	3.6406%	3.6036%	3.5649%	3.5243%	3.4820%	3.4379%	3.3920%	3.3444%	3.2950%	3.2441%	3.1915%	3.1372%
3.8195%	3.7830%	3.7447%	3.7044%	3.6623%	3.6183%	3.5724%	3.5247%	3.4752%	3.4240%	3.3710%	3.3164%	3.2600%
3.9690%	3.9311%	3.8912%	3.8494%	3.8056%	3.7599%	3.7122%	3.6627%	3.6113%	3.5580%	3.5030%	3.4461%	3.3876%
4.1243%	4.0849%	4.0435%	4.0000%	3.9545%	3.9070%	3.8575%	3.8060%	3.7526%	3.6972%	3.6400%	3.5810%	3.5202%
4.2857%	4.2448%	4.2018%	4.1566%	4.1093%	4.0599%	4.0085%	3.9550%	3.8994%	3.8419%	3.7825%	3.7212%	3.6579%
4.4534%	4.4109%	4.3662%	4.3193%	4.2701%	4.2188%	4.1653%	4.1097%	4.0521%	3.9923%	3.9305%	3.8668%	3.8011%
4.6277%	4.5836%	4.5371%	4.4883%	4.4372%	4.3839%	4.3284%	4.2706%	4.2106%	4.1485%	4.0844%	4.0181%	3.9499%
4.8088%	4.7630%	4.7147%	4.6640%	4.6109%	4.5555%	4.4977%	4.4377%	4.3754%	4.3109%	4.2442%	4.1754%	4.1045%
4.9970%	4.9494%	4.8992%	4.8465%	4.7914%	4.7338%	4.6738%	4.6114%	4.5467%	4.4796%	4.4103%	4.3388%	4.2651%
5.1926%	5.1431%	5.0909%	5.0362%	4.9789%	4.9190%	4.8567%	4.7919%	4.7246%	4.6549%	4.5829%	4.5086%	4.4320%
5.3958%	5.3443%	5.2901%	5.2333%	5.1737%	5.1115%	5.0468%	4.9794%	4.9095%	4.8371%	4.7623%	4.6850%	4.6055%
5.6070%	5.5535%	5.4972%	5.4381%	5.3762%	5.3116%	5.2443%	5.1743%	5.1016%	5.0264%	4.9486%	4.8684%	4.7857%
5.8264%	5.7708%	5.7123%	5.6509%	5.5866%	5.5195%	5.4495%	5.3768%	5.3013%	5.2231%	5.1423%	5.0589%	4.9730%
6.0545%	5.9967%	5.9359%	5.8721%	5.8052%	5.7355%	5.6628%	5.5872%	5.5088%	5.4275%	5.3436%	5.2569%	5.1676%
6.2914%	6.2314%	6.1682%	6.1019%	6.0324%	5.9599%	5.8844%	5.8059%	5.7244%	5.6400%	5.5527%	5.4626%	5.3699%
6.5376%	6.4752%	6.4096%	6.3407%	6.2685%	6.1932%	6.1147%	6.0331%	5.9484%	5.8607%	5.7700%	5.6764%	5.5800%
6.7935%	6.7287%	6.6604%	6.5888%	6.5139%	6.4356%	6.3540%	6.2692%	6.1812%	6.0900%	5.9958%	5.8986%	5.7984%
7.0594%	6.9920%	6.9211%	6.8467%	6.7688%	6.6874%	6.6027%	6.5145%	6.4231%	6.3284%	6.2305%	6.1294%	6.0253%
7.3356%	7.2656%	7.1919%	7.1146%	7.0337%	6.9492%	6.8611%	6.7695%	6.6745%	6.5761%	6.4743%	6.3693%	6.2611%
7.6227%	7.5500%	7.4734%	7.3931%	7.3090%	7.2211%	7.1296%	7.0344%	6.9357%	6.8334%	6.7277%	6.6186%	6.5062%
7.9210%	7.8455%	7.7659%	7.6824%	7.5950%	7.5037%	7.4086%	7.3097%	7.2071%	7.1009%	6.9910%	6.8776%	6.7608%
8.2310%	8.1525%	8.0698%	7.9831%	7.8922%	7.7974%	7.6986%	7.5958%	7.4892%	7.3787%	7.2646%	7.1468%	7.0254%
8.5532%	8.4715%	8.3856%	8.2955%	8.2011%	8.1025%	7.9998%	7.8931%	7.7823%	7.6675%	7.5489%	7.4265%	7.3003%
8.8879%	8.8031%	8.7138%	8.6201%	8.5221%	8.4196%	8.3129%	8.2020%	8.0868%	7.9676%	7.8443%	7.7171%	7.5860%
9.2358%	9.1476%	9.0549%	8.9575%	8.8556%	8.7492%	8.6383%	8.5230%	8.4033%	8.2794%	8.1513%	8.0191%	7.8829%
9.5972%	9.5056%	9.4092%	9.3081%	9.2022%	9.0916%	8.9763%	8.8565%	8.7322%	8.6034%	8.4703%	8.3330%	8.1914%
9.9728%	9.8776%	9.7775%	9.6723%	9.5623%	9.4474%	9.3276%	9.2031%	9.0740%	8.9402%	8.8018%	8.6591%	8.5120%
10.3631%	10.2642%	10.1601%	10.0509%	9.9365%	9.8171%	9.6927%	9.5633%	9.4291%	9.2900%	9.1463%	8.9980%	8.8451%
10.7687%	10.6659%	10.5577%	10.4442%	10.3254%	10.2013%	10.0720%	9.9376%	9.7981%	9.6536%	9.5043%	9.3501%	9.1913%
11.1901%	11.0833%	10.9709%	10.8530%	10.7295%	10.6006%	10.4662%	10.3265%	10.1815%	10.0314%	9.8762%	9.7160%	9.5510%
11.6281%	11.5171%	11.4003%	11.2777%	11.1494%	11.0154%	10.8758%	10.7306%	10.5800%	10.4240%	10.2627%	10.0963%	9.9248%
12.0831%	11.9678%	11.8465%	11.7191%	11.5858%	11.4465%	11.3014%	11.1506%	10.9941%	10.8320%	10.6644%	10.4914%	10.3132%
12.5560%	12.4362%	12.3101%	12.1777%	12.0392%	11.8945%	11.7437%	11.5870%	11.4243%	11.2559%	11.0817%	10.9020%	10.7168%
13.0474%	12.9229%	12.7919%	12.6543%	12.5104%	12.3600%	12.2033%	12.0405%	11.8714%	11.6964%	11.5154%	11.3287%	11.1362%
13.5580%	13.4286%	13.2925%	13.1496%	13.0000%	12.8437%	12.6809%	12.5117%	12.3360%	12.1542%	11.9661%	11.7720%	11.5721%
	13.9542%	13.8127%	13.6642%	13.5087%	13.3464%	13.1772%	13.0013%	12.8188%	12.6298%	12.4344%	12.2328%	12.0250%
		14.3533%	14.1989%	14.0374%	13.8687%	13.6929%	13.5102%	13.3205%	13.1241%	12.9210%	12.7115%	12.4956%
			14.7546%	14.5868%	14.4115%	14.2288%	14.0389%	13.8418%	13.6377%	13.4267%	13.2090%	12.9846%
				15.1576%	14.9755%	14.7857%	14.5883%	14.3835%	14.1715%	13.9522%	13.7259%	13.4928%
					15.5616%	15.3643%	15.1593%	14.9465%	14.7261%	14.4982%	14.2631%	14.0208%
						15.9656%	15.7525%	15.5314%	15.3024%	15.0656%	14.8213%	14.5695%
							16.3690%	16.1392%	15.9013%	15.6553%	15.4014%	15.1397%
								16.7709%	16.5236%	16.2679%	16.0041%	15.7322%
									17.1703%	16.9046%	16.6304%	16.3479%
										17.5662%	17.2813%	16.9877%
											17.9576%	17.6526%
												18.3434%

15-Sep-17	15-Oct-17	15-Nov-17	15-Dec-17	15-Jan-18	15-Feb-18	15-Mar-21
t = 6.5	t = 6.58	t = 6.67	t = 6.75	t = 6.83	t = 6.92	t = 7
0.9741%	0.9559%	0.9374%	0.9183%	0.8989%	0.8790%	0.8586%
1.0122%	0.9934%	0.9741%	0.9543%	0.9340%	0.9134%	0.8923%
1.0518%	1.0322%	1.0122%	0.9916%	0.9706%	0.9491%	0.9272%
1.0930%	1.0726%	1.0518%	1.0304%	1.0086%	0.9863%	0.9635%
1.1357%	1.1146%	1.0929%	1.0708%	1.0481%	1.0248%	1.0012%
1.1802%	1.1582%	1.1357%	1.1127%	1.0891%	1.0650%	1.0403%
1.2264%	1.2036%	1.1802%	1.1562%	1.1317%	1.1066%	1.0811%
1.2744%	1.2507%	1.2264%	1.2015%	1.1760%	1.1499%	1.1234%
1.3242%	1.2996%	1.2744%	1.2485%	1.2220%	1.1950%	1.1673%
1.3761%	1.3505%	1.3242%	1.2973%	1.2698%	1.2417%	1.2130%
1.4299%	1.4033%	1.3761%	1.3481%	1.3195%	1.2903%	1.2605%
1.4859%	1.4582%	1.4299%	1.4009%	1.3712%	1.3408%	1.3098%
1.5440%	1.5153%	1.4859%	1.4557%	1.4248%	1.3933%	1.3611%
1.6045%	1.5746%	1.5440%	1.5127%	1.4806%	1.4478%	1.4144%
1.6672%	1.6362%	1.6044%	1.5719%	1.5385%	1.5045%	1.4697%
1.7325%	1.7003%	1.6672%	1.6334%	1.5987%	1.5634%	1.5272%
1.8003%	1.7668%	1.7325%	1.6973%	1.6613%	1.6245%	1.5870%
1.8708%	1.8360%	1.8003%	1.7637%	1.7263%	1.6881%	1.6491%
1.9440%	1.9078%	1.8707%	1.8328%	1.7939%	1.7542%	1.7136%
2.0200%	1.9825%	1.9440%	1.9045%	1.8641%	1.8228%	1.7807%
2.0991%	2.0601%	2.0200%	1.9790%	1.9371%	1.8942%	1.8504%
2.1813%	2.1407%	2.0991%	2.0565%	2.0129%	1.9683%	1.9228%
2.2666%	2.2245%	2.1812%	2.1370%	2.0916%	2.0453%	1.9981%
2.3553%	2.3115%	2.2666%	2.2206%	2.1735%	2.1254%	2.0763%
2.4475%	2.4020%	2.3553%	2.3075%	2.2586%	2.2086%	2.1575%
2.5433%	2.4960%	2.4475%	2.3978%	2.3470%	2.2950%	2.2420%
2.6428%	2.5937%	2.5433%	2.4916%	2.4388%	2.3848%	2.3297%
2.7463%	2.6952%	2.6428%	2.5892%	2.5342%	2.4781%	2.4209%
2.8537%	2.8007%	2.7462%	2.6905%	2.6334%	2.5751%	2.5156%
2.9654%	2.9103%	2.8537%	2.7958%	2.7365%	2.6759%	2.6141%
3.0815%	3.0242%	2.9654%	2.9052%	2.8436%	2.7806%	2.7164%
3.2021%	3.1425%	3.0815%	3.0189%	2.9549%	2.8895%	2.8227%
3.3274%	3.2655%	3.2021%	3.1370%	3.0705%	3.0025%	2.9332%
3.4576%	3.3933%	3.3274%	3.2598%	3.1907%	3.1200%	3.0479%
3.5929%	3.5261%	3.4576%	3.3874%	3.3156%	3.2422%	3.1672%
3.7335%	3.6641%	3.5929%	3.5200%	3.4453%	3.3690%	3.2912%
3.8797%	3.8075%	3.7335%	3.6577%	3.5802%	3.5009%	3.4200%
4.0315%	3.9565%	3.8796%	3.8009%	3.7203%	3.6379%	3.5538%
4.1893%	4.1114%	4.0315%	3.9496%	3.8659%	3.7803%	3.6929%
4.3532%	4.2723%	4.1892%	4.1042%	4.0172%	3.9282%	3.8374%
4.5236%	4.4395%	4.3532%	4.2648%	4.1744%	4.0820%	3.9876%
4.7006%	4.6132%	4.5236%	4.4317%	4.3377%	4.2417%	4.1437%
4.8846%	4.7938%	4.7006%	4.6052%	4.5075%	4.4077%	4.3059%
5.0757%	4.9814%	4.8846%	4.7854%	4.6839%	4.5802%	4.4744%
5.2744%	5.1763%	5.0757%	4.9727%	4.8672%	4.7595%	4.6495%
5.4808%	5.3789%	5.2744%	5.1673%	5.0577%	4.9457%	4.8314%
5.6953%	5.5894%	5.4808%	5.3695%	5.2556%	5.1393%	5.0205%
5.9182%	5.8082%	5.6953%	5.5796%	5.4613%	5.3404%	5.2170%
6.1498%	6.0355%	5.9182%	5.7980%	5.6751%	5.5494%	5.4212%
6.3905%	6.2717%	6.1498%	6.0249%	5.8972%	5.7666%	5.6333%
6.6406%	6.5171%	6.3905%	6.2607%	6.1280%	5.9923%	5.8538%
6.9005%	6.7722%	6.6406%	6.5057%	6.3678%	6.2268%	6.0829%
7.1705%	7.0372%	6.9005%	6.7603%	6.6170%	6.4705%	6.3210%
7.4512%	7.3126%	7.1705%	7.0249%	6.8760%	6.7237%	6.5683%
7.7428%	7.5988%	7.4511%	7.2999%	7.1451%	6.9869%	6.8254%
8.0458%	7.8962%	7.7428%	7.5855%	7.4247%	7.2603%	7.0925%
8.3607%	8.2052%	8.0458%	7.8824%	7.7153%	7.5444%	7.3701%
8.6879%	8.5264%	8.3607%	8.1909%	8.0172%	7.8397%	7.6585%
9.0279%	8.8600%	8.6879%	8.5115%	8.3310%	8.1465%	7.9583%
9.3812%	9.2068%	9.0279%	8.8446%	8.6570%	8.4653%	8.2697%
9.7484%	9.5671%	9.3812%	9.1907%	8.9958%	8.7966%	8.5934%
10.1299%	9.9415%	9.7483%	9.5504%	9.3479%	9.1409%	8.9297%
10.5263%	10.3306%	10.1298%	9.9242%	9.7137%	9.4987%	9.2791%
10.9383%	10.7349%	10.5263%	10.3125%	10.0939%	9.8704%	9.6423%
11.3664%	11.1550%	10.9382%	10.7161%	10.4889%	10.2567%	10.0197%
11.8112%	11.5916%	11.3663%	11.1355%	10.8994%	10.6581%	10.4118%
12.2734%	12.0452%	11.8112%	11.5713%	11.3260%	11.0752%	10.8193%
12.7538%	12.5166%	12.2734%	12.0242%	11.7692%	11.5087%	11.2427%
13.2529%	13.0065%	12.7537%	12.4948%	12.2298%	11.9591%	11.6827%
13.7716%	13.5155%	13.2529%	12.9838%	12.7084%	12.4271%	12.1399%
14.3105%	14.0445%	13.7715%	13.4919%	13.2058%	12.9134%	12.6150%
14.8706%	14.5941%	14.3105%	14.0199%	13.7226%	13.4188%	13.1087%
15.4526%	15.1653%	14.8705%	14.5686%	14.2597%	13.9440%	13.6217%
16.0573%	15.7588%	15.4525%	15.1388%	14.8177%	14.4897%	14.1548%
16.6858%	16.3755%	16.0573%	15.7312%	15.3977%	15.0568%	14.7088%
17.3388%	17.0164%	16.6857%	16.3469%	16.0003%	15.6460%	15.2844%
18.0173%	17.6824%	17.3387%	16.9867%	16.6264%	16.2584%	15.8826%
18.7225%	18.3744%	18.0173%	17.6514%	17.2771%	16.8946%	16.5042%
	19.0935%	18.7224%	18.3423%	17.9533%	17.5558%	17.1501%
		19.4551%	19.0601%	18.6559%	18.2429%	17.8213%
			19.8060%	19.3860%	18.9569%	18.5188%
				20.1447%	19.6988%	19.2435%
					20.4697%	19.9966%
						20.7792%

USD 2012 pre-calibration lattice

date	15-Jul-12	15-Aug-12	15-Sep-12	15-Oct-12	15-Nov-12	15-Dec-12	15-Jan-13	15-Feb-13	15-Mar-13	15-Apr-13	15-May-13	15-Jun-13	15-Jul-13	15-Aug-13	15-Sep-13
USD Apr 2012 lattice															
	t = 0.08	t = 0.17	t = 0.25	t = 0.33	t = 0.42	t = 0.5	t = 0.58	t = 0.67	t = 0.75	t = 0.83	t = 0.92	t = 1	t = 1.08	t = 1.17	t = 1.25
j = 1	0.0427%	0.0792%	0.1191%	0.1553%	0.1813%	0.1916%	0.1839%	0.1684%	0.1514%	0.1369%	0.1281%	0.1281%	0.1376%	0.1499%	0.1628%
j = 2		0.0834%	0.1253%	0.1633%	0.1907%	0.2015%	0.1934%	0.1771%	0.1593%	0.1440%	0.1347%	0.1347%	0.1447%	0.1577%	0.1712%
j = 3			0.1318%	0.1718%	0.2006%	0.2120%	0.2034%	0.1863%	0.1676%	0.1514%	0.1417%	0.1417%	0.1522%	0.1659%	0.1801%
j = 4				0.1807%	0.2110%	0.2229%	0.2140%	0.1960%	0.1763%	0.1593%	0.1490%	0.1491%	0.1601%	0.1745%	0.1895%
j = 5					0.2220%	0.2345%	0.2251%	0.2061%	0.1854%	0.1676%	0.1568%	0.1568%	0.1684%	0.1835%	0.1993%
j = 6						0.2467%	0.2368%	0.2168%	0.1950%	0.1763%	0.1649%	0.1649%	0.1772%	0.1930%	0.2096%
j = 7							0.2490%	0.2281%	0.2051%	0.1854%	0.1735%	0.1735%	0.1864%	0.2031%	0.2205%
j = 8								0.2399%	0.2158%	0.1950%	0.1825%	0.1825%	0.1960%	0.2136%	0.2319%
j = 9									0.2270%	0.2051%	0.1919%	0.1920%	0.2062%	0.2247%	0.2440%
j = 10										0.2158%	0.2019%	0.2019%	0.2169%	0.2363%	0.2566%
j = 11											0.2124%	0.2124%	0.2282%	0.2486%	0.2700%
j = 12												0.2234%	0.2400%	0.2615%	0.2840%
j = 13													0.2524%	0.2751%	0.2987%
j = 14														0.2893%	0.3142%
j = 15															0.3305%
j = 16															
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15-Oct-13	15-Nov-13	15-Dec-13	15-Jan-14	15-Feb-14	15-Mar-14	15-Apr-14	15-May-14	15-Jun-14	15-Jul-14	15-Aug-14	15-Sep-14	15-Oct-14	15-Nov-14	15-Dec-14	15-Jan-15	15-Feb-15
t = 1.33	t = 1.42	t = 1.5	t = 1.58	t = 1.67	t = 1.75	t = 1.83	t = 1.92	t = 2	t = 2.08	t = 2.17	t = 2.25	t = 2.33	t = 2.42	t = 2.5	t = 2.58	t = 2.67
0.1758%	0.1884%	0.2004%	0.2114%	0.2211%	0.2293%	0.2356%	0.2400%	0.2422%	0.2426%	0.2426%	0.2428%	0.2433%	0.2442%	0.2454%	0.2471%	0.2493%
0.1849%	0.1982%	0.2108%	0.2224%	0.2326%	0.2412%	0.2479%	0.2525%	0.2548%	0.2551%	0.2552%	0.2554%	0.2559%	0.2568%	0.2581%	0.2599%	0.2622%
0.1945%	0.2085%	0.2218%	0.2339%	0.2447%	0.2537%	0.2607%	0.2656%	0.2680%	0.2684%	0.2684%	0.2687%	0.2692%	0.2702%	0.2715%	0.2734%	0.2758%
0.2046%	0.2193%	0.2333%	0.2461%	0.2574%	0.2669%	0.2743%	0.2794%	0.2819%	0.2823%	0.2823%	0.2826%	0.2832%	0.2842%	0.2856%	0.2876%	0.2901%
0.2152%	0.2307%	0.2454%	0.2588%	0.2707%	0.2807%	0.2885%	0.2939%	0.2966%	0.2969%	0.2970%	0.2973%	0.2979%	0.2989%	0.3004%	0.3025%	0.3052%
0.2263%	0.2427%	0.2581%	0.2723%	0.2848%	0.2953%	0.3035%	0.3091%	0.3119%	0.3124%	0.3124%	0.3127%	0.3133%	0.3144%	0.3160%	0.3182%	0.3210%
0.2381%	0.2552%	0.2715%	0.2864%	0.2996%	0.3106%	0.3192%	0.3251%	0.3281%	0.3286%	0.3286%	0.3289%	0.3296%	0.3307%	0.3324%	0.3347%	0.3377%
0.2504%	0.2685%	0.2856%	0.3013%	0.3151%	0.3267%	0.3358%	0.3420%	0.3452%	0.3456%	0.3457%	0.3460%	0.3467%	0.3479%	0.3497%	0.3521%	0.3552%
0.2634%	0.2824%	0.3004%	0.3169%	0.3314%	0.3437%	0.3532%	0.3598%	0.3631%	0.3635%	0.3636%	0.3639%	0.3647%	0.3660%	0.3678%	0.3703%	0.3736%
0.2771%	0.2971%	0.3160%	0.3333%	0.3486%	0.3615%	0.3715%	0.3784%	0.3819%	0.3824%	0.3825%	0.3828%	0.3836%	0.3849%	0.3869%	0.3896%	0.3930%
0.2915%	0.3125%	0.3324%	0.3506%	0.3667%	0.3802%	0.3908%	0.3981%	0.4017%	0.4022%	0.4023%	0.4027%	0.4035%	0.4049%	0.4070%	0.4098%	0.4134%
0.3066%	0.3287%	0.3496%	0.3688%	0.3858%	0.4000%	0.4111%	0.4187%	0.4226%	0.4231%	0.4232%	0.4236%	0.4245%	0.4259%	0.4281%	0.4310%	0.4348%
0.3225%	0.3458%	0.3678%	0.3880%	0.4058%	0.4207%	0.4324%	0.4404%	0.4445%	0.4451%	0.4451%	0.4456%	0.4465%	0.4480%	0.4503%	0.4534%	0.4574%
0.3392%	0.3637%	0.3869%	0.4081%	0.4268%	0.4426%	0.4548%	0.4633%	0.4676%	0.4682%	0.4682%	0.4687%	0.4697%	0.4713%	0.4737%	0.4769%	0.4811%
0.3568%	0.3826%	0.4069%	0.4293%	0.4490%	0.4655%	0.4784%	0.4873%	0.4918%	0.4925%	0.4925%	0.4930%	0.4940%	0.4957%	0.4982%	0.5017%	0.5061%
0.3754%	0.4024%	0.4280%	0.4515%	0.4723%	0.4897%	0.5033%	0.5126%	0.5173%	0.5180%	0.5181%	0.5186%	0.5197%	0.5214%	0.5241%	0.5277%	0.5323%
	0.4233%	0.4503%	0.4750%	0.4968%	0.5151%	0.5294%	0.5392%	0.5442%	0.5449%	0.5450%	0.5455%	0.5466%	0.5485%	0.5513%	0.5551%	0.5600%
		0.4736%	0.4996%	0.5225%	0.5418%	0.5568%	0.5672%	0.5724%	0.5732%	0.5732%	0.5738%	0.5750%	0.5770%	0.5799%	0.5839%	0.5890%
			0.5255%	0.5497%	0.5699%	0.5857%	0.5966%	0.6021%	0.6029%	0.6030%	0.6036%	0.6048%	0.6069%	0.6100%	0.6142%	0.6196%
				0.5782%	0.5995%	0.6161%	0.6276%	0.6334%	0.6342%	0.6343%	0.6349%	0.6362%	0.6384%	0.6416%	0.6460%	0.6517%
					0.6306%	0.6481%	0.6601%	0.6662%	0.6671%	0.6672%	0.6678%	0.6692%	0.6715%	0.6749%	0.6795%	0.6855%
						0.6817%	0.6944%	0.7008%	0.7017%	0.7018%	0.7025%	0.7039%	0.7064%	0.7099%	0.7148%	0.7211%
							0.7304%	0.7371%	0.7381%	0.7382%	0.7389%	0.7404%	0.7430%	0.7468%	0.7519%	0.7585%
								0.7754%	0.7764%	0.7765%	0.7773%	0.7789%	0.7816%	0.7855%	0.7909%	0.7979%
									0.8167%	0.8168%	0.8176%	0.8193%	0.8221%	0.8263%	0.8319%	0.8393%
										0.8592%	0.8600%	0.8618%	0.8648%	0.8691%	0.8751%	0.8828%
											0.9046%	0.9065%	0.9096%	0.9142%	0.9205%	0.9286%
												0.9535%	0.9568%	0.9617%	0.9683%	0.9768%
													1.0065%	1.0116%	1.0185%	1.0275%
														1.0641%	1.0714%	1.0808%
															1.1270%	1.1369%
																1.1959%

15-Mar-15	15-Apr-15	15-May-15	15-Jun-15	15-Jul-15	15-Aug-15	15-Sep-15	15-Oct-15	15-Nov-15	15-Dec-15	15-Jan-16	15-Feb-16	15-Mar-16	15-Apr-16	15-May-16	15-Jun-16	15-Jul-16
t = 2.75	t = 2.83	t = 2.92	t = 3	t = 3.08	t = 3.17	t = 3.25	t = 3.33	t = 3.42	t = 3.5	t = 3.58	t = 3.67	t = 3.75	t = 3.83	t = 3.92	t = 4	t = 4.08
0.2520%	0.2552%	0.2591%	0.2636%	0.2685%	0.2734%	0.2781%	0.2827%	0.2870%	0.2910%	0.2949%	0.2985%	0.3019%	0.3050%	0.3078%	0.3105%	0.3128%
0.2650%	0.2685%	0.2725%	0.2772%	0.2824%	0.2876%	0.2926%	0.2973%	0.3018%	0.3061%	0.3102%	0.3140%	0.3175%	0.3208%	0.3238%	0.3266%	0.3290%
0.2788%	0.2824%	0.2867%	0.2916%	0.2971%	0.3025%	0.3077%	0.3127%	0.3175%	0.3220%	0.3263%	0.3303%	0.3340%	0.3374%	0.3406%	0.3435%	0.3461%
0.2933%	0.2971%	0.3015%	0.3067%	0.3125%	0.3182%	0.3237%	0.3290%	0.3340%	0.3387%	0.3432%	0.3474%	0.3513%	0.3549%	0.3583%	0.3613%	0.3641%
0.3085%	0.3125%	0.3172%	0.3227%	0.3287%	0.3347%	0.3405%	0.3460%	0.3513%	0.3563%	0.3610%	0.3654%	0.3695%	0.3734%	0.3769%	0.3801%	0.3830%
0.3245%	0.3287%	0.3337%	0.3394%	0.3458%	0.3521%	0.3582%	0.3640%	0.3695%	0.3748%	0.3797%	0.3844%	0.3887%	0.3927%	0.3964%	0.3998%	0.4028%
0.3413%	0.3457%	0.3510%	0.3570%	0.3637%	0.3704%	0.3768%	0.3829%	0.3887%	0.3942%	0.3994%	0.4043%	0.4089%	0.4131%	0.4170%	0.4205%	0.4237%
0.3590%	0.3637%	0.3692%	0.3755%	0.3826%	0.3896%	0.3963%	0.4027%	0.4089%	0.4147%	0.4202%	0.4253%	0.4301%	0.4345%	0.4386%	0.4424%	0.4457%
0.3777%	0.3826%	0.3883%	0.3950%	0.4025%	0.4098%	0.4169%	0.4236%	0.4301%	0.4362%	0.4420%	0.4474%	0.4524%	0.4571%	0.4614%	0.4653%	0.4689%
0.3973%	0.4024%	0.4085%	0.4155%	0.4233%	0.4311%	0.4385%	0.4456%	0.4524%	0.4588%	0.4649%	0.4706%	0.4759%	0.4808%	0.4853%	0.4895%	0.4932%
0.4179%	0.4233%	0.4297%	0.4371%	0.4453%	0.4534%	0.4613%	0.4687%	0.4759%	0.4826%	0.4890%	0.4950%	0.5006%	0.5058%	0.5105%	0.5149%	0.5188%
0.4395%	0.4452%	0.4520%	0.4598%	0.4684%	0.4770%	0.4852%	0.4931%	0.5006%	0.5077%	0.5144%	0.5207%	0.5266%	0.5320%	0.5370%	0.5416%	0.5457%
0.4623%	0.4683%	0.4754%	0.4836%	0.4927%	0.5017%	0.5104%	0.5187%	0.5265%	0.5340%	0.5411%	0.5477%	0.5539%	0.5596%	0.5649%	0.5697%	0.5740%
0.4863%	0.4926%	0.5001%	0.5087%	0.5183%	0.5277%	0.5369%	0.5456%	0.5539%	0.5617%	0.5692%	0.5761%	0.5826%	0.5886%	0.5942%	0.5992%	0.6038%
0.5116%	0.5182%	0.5260%	0.5351%	0.5452%	0.5551%	0.5647%	0.5739%	0.5826%	0.5909%	0.5987%	0.6060%	0.6128%	0.6192%	0.6250%	0.6303%	0.6351%
0.5381%	0.5451%	0.5533%	0.5629%	0.5734%	0.5839%	0.5940%	0.6036%	0.6128%	0.6215%	0.6298%	0.6375%	0.6446%	0.6513%	0.6574%	0.6630%	0.6681%
0.5660%	0.5734%	0.5820%	0.5921%	0.6032%	0.6142%	0.6248%	0.6350%	0.6446%	0.6538%	0.6624%	0.6705%	0.6781%	0.6851%	0.6915%	0.6974%	0.7027%
0.5954%	0.6031%	0.6122%	0.6228%	0.6345%	0.6461%	0.6572%	0.6679%	0.6781%	0.6877%	0.6968%	0.7053%	0.7133%	0.7206%	0.7274%	0.7336%	0.7392%
0.6263%	0.6344%	0.6440%	0.6551%	0.6674%	0.6796%	0.6913%	0.7026%	0.7133%	0.7234%	0.7330%	0.7419%	0.7503%	0.7580%	0.7652%	0.7717%	0.7775%
0.6588%	0.6673%	0.6774%	0.6891%	0.7021%	0.7149%	0.7272%	0.7390%	0.7503%	0.7609%	0.7710%	0.7804%	0.7892%	0.7974%	0.8049%	0.8117%	0.8179%
0.6930%	0.7020%	0.7126%	0.7248%	0.7385%	0.7520%	0.7650%	0.7774%	0.7892%	0.8004%	0.8110%	0.8209%	0.8302%	0.8387%	0.8466%	0.8538%	0.8603%
0.7289%	0.7384%	0.7495%	0.7625%	0.7768%	0.7910%	0.8046%	0.8177%	0.8301%	0.8419%	0.8531%	0.8635%	0.8732%	0.8823%	0.8906%	0.8981%	0.9050%
0.7668%	0.7767%	0.7884%	0.8020%	0.8171%	0.8320%	0.8464%	0.8601%	0.8732%	0.8856%	0.8973%	0.9083%	0.9186%	0.9280%	0.9368%	0.9447%	0.9519%
0.8065%	0.8170%	0.8293%	0.8436%	0.8595%	0.8752%	0.8903%	0.9048%	0.9185%	0.9316%	0.9439%	0.9554%	0.9662%	0.9762%	0.9854%	0.9938%	1.0013%
0.8484%	0.8594%	0.8724%	0.8874%	0.9041%	0.9206%	0.9365%	0.9517%	0.9662%	0.9799%	0.9929%	1.0050%	1.0163%	1.0268%	1.0365%	1.0453%	1.0533%
0.8924%	0.9040%	0.9176%	0.9335%	0.9510%	0.9684%	0.9851%	1.0011%	1.0163%	1.0308%	1.0444%	1.0572%	1.0691%	1.0801%	1.0903%	1.0996%	1.1079%
0.9387%	0.9509%	0.9652%	0.9819%	1.0003%	1.0186%	1.0362%	1.0530%	1.0690%	1.0842%	1.0986%	1.1120%	1.1245%	1.1362%	1.1469%	1.1566%	1.1654%
0.9874%	1.0002%	1.0153%	1.0328%	1.0522%	1.0715%	1.0900%	1.1077%	1.1245%	1.1405%	1.1556%	1.1697%	1.1829%	1.1951%	1.2064%	1.2166%	1.2259%
1.0387%	1.0521%	1.0680%	1.0864%	1.1068%	1.1271%	1.1465%	1.1651%	1.1829%	1.1997%	1.2155%	1.2304%	1.2443%	1.2571%	1.2690%	1.2797%	1.2895%
1.0925%	1.1067%	1.1234%	1.1428%	1.1643%	1.1856%	1.2060%	1.2256%	1.2442%	1.2619%	1.2786%	1.2942%	1.3088%	1.3224%	1.3348%	1.3461%	1.3564%
1.1492%	1.1641%	1.1817%	1.2021%	1.2247%	1.2471%	1.2686%	1.2892%	1.3088%	1.3274%	1.3449%	1.3614%	1.3767%	1.3910%	1.4041%	1.4160%	1.4268%
1.2089%	1.2245%	1.2430%	1.2645%	1.2882%	1.3118%	1.3344%	1.3561%	1.3767%	1.3963%	1.4147%	1.4320%	1.4482%	1.4631%	1.4769%	1.4895%	1.5008%
1.2716%	1.2881%	1.3075%	1.3301%	1.3551%	1.3798%	1.4037%	1.4264%	1.4481%	1.4687%	1.4881%	1.5063%	1.5233%	1.5391%	1.5535%	1.5667%	1.5787%
	1.3549%	1.3754%	1.3991%	1.4254%	1.4514%	1.4765%	1.5004%	1.5233%	1.5449%	1.5653%	1.5845%	1.6024%	1.6189%	1.6341%	1.6480%	1.6606%
		1.4467%	1.4717%	1.4993%	1.5267%	1.5531%	1.5783%	1.6023%	1.6251%	1.6465%	1.6667%	1.6855%	1.7029%	1.7189%	1.7335%	1.7467%
			1.5480%	1.5771%	1.6060%	1.6337%	1.6602%	1.6854%	1.7094%	1.7320%	1.7532%	1.7729%	1.7913%	1.8081%	1.8235%	1.8374%
				1.6590%	1.6893%	1.7184%	1.7463%	1.7729%	1.7981%	1.8218%	1.8441%	1.8649%	1.8842%	1.9019%	1.9181%	1.9327%
					1.7769%	1.8076%	1.8369%	1.8649%	1.8914%	1.9164%	1.9398%	1.9617%	1.9820%	2.0006%	2.0176%	2.0330%
						1.9014%	1.9322%	1.9616%	1.9895%	2.0158%	2.0405%	2.0635%	2.0848%	2.1044%	2.1223%	2.1385%
							2.0325%	2.0634%	2.0927%	2.1204%	2.1463%	2.1706%	2.1930%	2.2136%	2.2324%	2.2494%
								2.1705%	2.2013%	2.2304%	2.2577%	2.2832%	2.3068%	2.3285%	2.3483%	2.3661%
									2.3155%	2.3461%	2.3749%	2.4016%	2.4265%	2.4493%	2.4701%	2.4889%
										2.4679%	2.4981%	2.5263%	2.5524%	2.5764%	2.5983%	2.6180%
											2.6277%	2.6573%	2.6848%	2.7100%	2.7331%	2.7539%
												2.7952%	2.8241%	2.8507%	2.8749%	2.8968%
													2.9706%	2.9986%	3.0241%	3.0471%
														3.1542%	3.1810%	3.2052%
															3.3460%	3.3715%
																3.5464%

15-Aug-16	15-Sep-16	15-Oct-16	15-Nov-16	15-Dec-16	15-Jan-17	15-Feb-17	15-Mar-17	15-Apr-17	15-May-17	15-Jun-17	15-Jul-17	15-Aug-17	15-Sep-17	15-Oct-17	15-Nov-17	15-Dec-17
t = 4.17	t = 4.25	t = 4.33	t = 4.42	t = 4.5	t = 4.58	t = 4.67	t = 4.75	t = 4.83	t = 4.92	t = 5	t = 5.08	t = 5.17	t = 5.25	t = 5.33	t = 5.42	t = 5.5
0.3149%	0.3168%	0.3184%	0.3197%	0.3208%	0.3217%	0.3223%	0.3226%	0.3228%	0.3227%	0.3223%	0.3218%	0.3210%	0.3201%	0.3191%	0.3179%	0.3165%
0.3313%	0.3332%	0.3349%	0.3363%	0.3375%	0.3384%	0.3390%	0.3394%	0.3395%	0.3394%	0.3391%	0.3385%	0.3377%	0.3368%	0.3356%	0.3344%	0.3329%
0.3485%	0.3505%	0.3523%	0.3538%	0.3550%	0.3559%	0.3566%	0.3570%	0.3571%	0.3570%	0.3566%	0.3560%	0.3552%	0.3542%	0.3531%	0.3517%	0.3502%
0.3665%	0.3687%	0.3706%	0.3721%	0.3734%	0.3744%	0.3751%	0.3755%	0.3757%	0.3755%	0.3751%	0.3745%	0.3737%	0.3726%	0.3714%	0.3700%	0.3684%
0.3856%	0.3878%	0.3898%	0.3914%	0.3928%	0.3938%	0.3946%	0.3950%	0.3952%	0.3950%	0.3946%	0.3939%	0.3930%	0.3919%	0.3906%	0.3891%	0.3875%
0.4056%	0.4079%	0.4100%	0.4117%	0.4132%	0.4142%	0.4150%	0.4155%	0.4157%	0.4155%	0.4151%	0.4144%	0.4134%	0.4123%	0.4109%	0.4093%	0.4076%
0.4266%	0.4291%	0.4313%	0.4331%	0.4346%	0.4357%	0.4366%	0.4371%	0.4372%	0.4371%	0.4366%	0.4359%	0.4349%	0.4337%	0.4322%	0.4306%	0.4287%
0.4487%	0.4514%	0.4537%	0.4556%	0.4571%	0.4584%	0.4592%	0.4597%	0.4599%	0.4598%	0.4593%	0.4585%	0.4575%	0.4562%	0.4547%	0.4529%	0.4510%
0.4720%	0.4748%	0.4772%	0.4792%	0.4809%	0.4821%	0.4830%	0.4836%	0.4838%	0.4836%	0.4831%	0.4823%	0.4812%	0.4798%	0.4782%	0.4764%	0.4744%
0.4965%	0.4994%	0.5020%	0.5041%	0.5058%	0.5071%	0.5081%	0.5087%	0.5089%	0.5087%	0.5082%	0.5073%	0.5062%	0.5047%	0.5031%	0.5011%	0.4990%
0.5223%	0.5253%	0.5280%	0.5302%	0.5321%	0.5335%	0.5345%	0.5351%	0.5353%	0.5351%	0.5345%	0.5336%	0.5324%	0.5309%	0.5292%	0.5271%	0.5249%
0.5494%	0.5526%	0.5554%	0.5577%	0.5597%	0.5611%	0.5622%	0.5628%	0.5631%	0.5629%	0.5623%	0.5613%	0.5600%	0.5585%	0.5566%	0.5545%	0.5521%
0.5779%	0.5813%	0.5842%	0.5867%	0.5887%	0.5903%	0.5914%	0.5920%	0.5923%	0.5921%	0.5915%	0.5904%	0.5891%	0.5875%	0.5855%	0.5833%	0.5807%
0.6079%	0.6114%	0.6145%	0.6171%	0.6192%	0.6209%	0.6221%	0.6228%	0.6230%	0.6228%	0.6221%	0.6211%	0.6197%	0.6179%	0.6159%	0.6135%	0.6109%
0.6394%	0.6432%	0.6464%	0.6491%	0.6514%	0.6531%	0.6543%	0.6551%	0.6553%	0.6551%	0.6544%	0.6533%	0.6518%	0.6500%	0.6478%	0.6454%	0.6426%
0.6726%	0.6765%	0.6799%	0.6828%	0.6852%	0.6870%	0.6883%	0.6891%	0.6893%	0.6891%	0.6884%	0.6872%	0.6856%	0.6837%	0.6814%	0.6788%	0.6759%
0.7075%	0.7116%	0.7152%	0.7183%	0.7207%	0.7226%	0.7240%	0.7248%	0.7251%	0.7249%	0.7241%	0.7229%	0.7212%	0.7192%	0.7168%	0.7141%	0.7110%
0.7442%	0.7486%	0.7523%	0.7555%	0.7581%	0.7601%	0.7616%	0.7624%	0.7627%	0.7625%	0.7617%	0.7604%	0.7586%	0.7565%	0.7540%	0.7511%	0.7479%
0.7828%	0.7874%	0.7914%	0.7947%	0.7975%	0.7996%	0.8011%	0.8020%	0.8023%	0.8020%	0.8012%	0.7998%	0.7980%	0.7958%	0.7931%	0.7901%	0.7867%
0.8234%	0.8283%	0.8324%	0.8360%	0.8388%	0.8411%	0.8426%	0.8436%	0.8439%	0.8436%	0.8428%	0.8413%	0.8394%	0.8371%	0.8343%	0.8311%	0.8275%
0.8661%	0.8712%	0.8756%	0.8793%	0.8824%	0.8847%	0.8864%	0.8874%	0.8877%	0.8874%	0.8865%	0.8850%	0.8830%	0.8805%	0.8776%	0.8742%	0.8704%
0.9111%	0.9164%	0.9211%	0.9250%	0.9281%	0.9306%	0.9323%	0.9334%	0.9338%	0.9335%	0.9325%	0.9309%	0.9288%	0.9262%	0.9231%	0.9196%	0.9156%
0.9583%	0.9640%	0.9689%	0.9730%	0.9763%	0.9789%	0.9807%	0.9818%	0.9822%	0.9819%	0.9809%	0.9792%	0.9770%	0.9742%	0.9710%	0.9673%	0.9631%
1.0081%	1.0140%	1.0191%	1.0234%	1.0269%	1.0297%	1.0316%	1.0328%	1.0332%	1.0328%	1.0318%	1.0300%	1.0277%	1.0248%	1.0214%	1.0175%	1.0131%
1.0604%	1.0666%	1.0720%	1.0765%	1.0802%	1.0831%	1.0851%	1.0864%	1.0868%	1.0864%	1.0853%	1.0834%	1.0810%	1.0779%	1.0744%	1.0703%	1.0656%
1.1154%	1.1220%	1.1276%	1.1324%	1.1363%	1.1393%	1.1414%	1.1427%	1.1432%	1.1428%	1.1416%	1.1397%	1.1371%	1.1339%	1.1301%	1.1258%	1.1209%
1.1733%	1.1802%	1.1861%	1.1911%	1.1952%	1.1984%	1.2007%	1.2020%	1.2025%	1.2021%	1.2008%	1.1988%	1.1961%	1.1927%	1.1887%	1.1842%	1.1791%
1.2341%	1.2414%	1.2477%	1.2530%	1.2573%	1.2606%	1.2630%	1.2644%	1.2649%	1.2645%	1.2631%	1.2610%	1.2581%	1.2546%	1.2504%	1.2456%	1.2403%
1.2982%	1.3058%	1.3124%	1.3180%	1.3225%	1.3260%	1.3285%	1.3300%	1.3305%	1.3301%	1.3287%	1.3264%	1.3234%	1.3197%	1.3153%	1.3103%	1.3046%
1.3655%	1.3736%	1.3805%	1.3863%	1.3911%	1.3948%	1.3974%	1.3990%	1.3995%	1.3991%	1.3976%	1.3952%	1.3921%	1.3882%	1.3836%	1.3783%	1.3723%
1.4364%	1.4448%	1.4521%	1.4583%	1.4633%	1.4672%	1.4699%	1.4716%	1.4722%	1.4717%	1.4701%	1.4676%	1.4643%	1.4602%	1.4553%	1.4498%	1.4435%
1.5109%	1.5198%	1.5275%	1.5339%	1.5392%	1.5433%	1.5462%	1.5479%	1.5485%	1.5480%	1.5464%	1.5438%	1.5403%	1.5359%	1.5308%	1.5250%	1.5184%
1.5893%	1.5987%	1.6067%	1.6135%	1.6191%	1.6234%	1.6264%	1.6283%	1.6289%	1.6284%	1.6267%	1.6239%	1.6202%	1.6156%	1.6103%	1.6041%	1.5972%
1.6718%	1.6816%	1.6901%	1.6973%	1.7031%	1.7076%	1.7108%	1.7127%	1.7134%	1.7128%	1.7111%	1.7081%	1.7042%	1.6995%	1.6938%	1.6873%	1.6800%
1.7585%	1.7689%	1.7778%	1.7853%	1.7914%	1.7962%	1.7996%	1.8016%	1.8023%	1.8017%	1.7998%	1.7968%	1.7927%	1.7877%	1.7817%	1.7749%	1.7672%
1.8497%	1.8606%	1.8700%	1.8780%	1.8844%	1.8894%	1.8929%	1.8951%	1.8958%	1.8952%	1.8932%	1.8900%	1.8857%	1.8804%	1.8742%	1.8670%	1.8589%
1.9457%	1.9572%	1.9671%	1.9754%	1.9822%	1.9874%	1.9912%	1.9934%	1.9942%	1.9935%	1.9915%	1.9881%	1.9835%	1.9780%	1.9714%	1.9639%	1.9554%
2.0467%	2.0587%	2.0691%	2.0779%	2.0850%	2.0905%	2.0945%	2.0968%	2.0977%	2.0970%	2.0948%	2.0912%	2.0864%	2.0806%	2.0737%	2.0658%	2.0568%
2.1529%	2.1655%	2.1765%	2.1857%	2.1932%	2.1990%	2.2031%	2.2056%	2.2065%	2.2058%	2.2035%	2.1997%	2.1947%	2.1886%	2.1813%	2.1729%	2.1635%
2.2646%	2.2779%	2.2894%	2.2991%	2.3070%	2.3131%	2.3175%	2.3201%	2.3210%	2.3202%	2.3178%	2.3138%	2.3086%	2.3021%	2.2945%	2.2857%	2.2758%
2.3821%	2.3961%	2.4082%	2.4184%	2.4267%	2.4331%	2.4377%	2.4405%	2.4414%	2.4406%	2.4381%	2.4339%	2.4284%	2.4216%	2.4135%	2.4043%	2.3939%
2.5057%	2.5204%	2.5332%	2.5439%	2.5526%	2.5594%	2.5642%	2.5671%	2.5681%	2.5672%	2.5646%	2.5602%	2.5544%	2.5472%	2.5387%	2.5290%	2.5181%
2.6357%	2.6512%	2.6646%	2.6759%	2.6851%	2.6922%	2.6972%	2.7003%	2.7013%	2.7004%	2.6976%	2.6930%	2.6869%	2.6794%	2.6705%	2.6603%	2.6487%
2.7724%	2.7888%	2.8028%	2.8147%	2.8244%	2.8319%	2.8372%	2.8404%	2.8415%	2.8406%	2.8376%	2.8328%	2.8263%	2.8184%	2.8090%	2.7983%	2.7862%
2.9163%	2.9335%	2.9483%	2.9608%	2.9709%	2.9788%	2.9844%	2.9878%	2.9889%	2.9879%	2.9848%	2.9797%	2.9730%	2.9646%	2.9548%	2.9435%	2.9307%
3.0676%	3.0857%	3.1013%	3.1144%	3.1251%	3.1333%	3.1392%	3.1428%	3.1440%	3.1430%	3.1397%	3.1343%	3.1272%	3.1184%	3.1081%	3.0962%	3.0828%
3.2268%	3.2458%	3.2622%	3.2760%	3.2872%	3.2959%	3.3021%	3.3059%	3.3071%	3.3061%	3.3026%	3.2970%	3.2895%	3.2803%	3.2694%	3.2568%	3.2428%
3.3942%	3.4142%	3.4314%	3.4459%	3.4578%	3.4669%	3.4735%	3.4774%	3.4787%	3.4776%	3.4740%	3.4680%	3.4602%	3.4505%	3.4390%	3.4258%	3.4110%
3.5703%	3.5913%	3.6095%	3.6247%	3.6372%	3.6468%	3.6537%	3.6578%	3.6592%	3.6580%	3.6542%	3.6480%	3.6397%	3.6295%	3.6174%	3.6036%	3.5880%
3.7556%	3.7777%	3.7967%	3.8128%	3.8259%	3.8360%	3.8433%	3.8476%	3.8491%	3.8478%	3.8438%	3.8373%	3.8285%	3.8178%	3.8051%	3.7906%	3.7742%
	3.9737%	3.9937%	4.0107%	4.0244%	4.0351%	4.0427%	4.0472%	4.0488%	4.0475%	4.0433%	4.0364%	4.0272%	4.0159%	4.0026%	3.9872%	3.9700%
		4.2010%	4.2187%	4.2332%	4.2444%	4.2524%	4.2572%	4.2589%	4.2575%	4.2531%	4.2458%	4.2361%	4.2243%	4.2102%	4.1941%	4.1760%
			4.4376%	4.4529%	4.4647%	4.4731%	4.4781%	4.4799%	4.4784%	4.4737%	4.4661%	4.4559%	4.4434%	4.4287%	4.4117%	4.3927%
				4.6839%	4.6963%	4.7052%	4.7105%	4.7123%	4.7108%	4.7059%	4.6978%	4.6871%	4.6740%	4.6585%	4.6406%	4.6206%
					4.9400%	4.9493%	4.9549%	4.9568%	4.9552%	4.9500%	4.9416%	4.9303%	4.9165%	4.9002%	4.8814%	4.8603%
						5.2061%	5.2120%	5.2140%	5.2123%	5.2069%	5.1980%	5.1861%	5.1716%	5.1544%	5.1347%	5.1125%
							5.4824%	5.4845%	5.4827%	5.4770%	5.4677%	5.4552%	5.4399%	5.4219%	5.4011%	5.3778%
								5.7691%	5.7672%	5.7612%	5.7514%	5.7383%	5.7222%	5.7032%	5.6814%	5.6568%
									6.0664%	6.0601%	6.0498%	6.0360%	6.0191%	5.9991%	5.9762%	5.9503%
										6.3746%	6.3637%	6.3492%	6.3314%	6.3104%	6.2862%	6.2590%
											6.6939%	6.6786%	6.6599%	6.6378%	6.6124%	6.5838%
												7.0252%	7.0055%	6.9822%	6.9555%	6.9254%
													7.3690%	7.3445%	7.3164%	7.2847%
														7.7256%	7.6960%	7.6627%
															8.0953%	8.0603%
																8.4785%

15-Jan-18	15-Feb-18	15-Mar-18	15-Apr-18	15-May-18	15-Jun-18	15-Jul-18	15-Aug-18	15-Sep-18	15-Oct-18	15-Nov-18	15-Dec-18	15-Jan-19	15-Feb-19	15-Mar-19	15-Apr-19	15-May-19
t = 5.58	t = 5.67	t = 5.75	t = 5.83	t = 5.92	t = 6	t = 6.08	t = 6.17	t = 6.25	t = 6.33	t = 6.42	t = 6.5	t = 6.58	t = 6.67	t = 6.75	t = 6.83	t = 6.92
0.3150%	0.3133%	0.3115%	0.3096%	0.3075%	0.3053%	0.3030%	0.3006%	0.2980%	0.2954%	0.2927%	0.2899%	0.2869%	0.2840%	0.2809%	0.2777%	0.2745%
0.3313%	0.3296%	0.3277%	0.3256%	0.3234%	0.3211%	0.3187%	0.3162%	0.3135%	0.3107%	0.3079%	0.3049%	0.3018%	0.2987%	0.2955%	0.2921%	0.2887%
0.3485%	0.3467%	0.3447%	0.3425%	0.3402%	0.3378%	0.3353%	0.3326%	0.3298%	0.3269%	0.3238%	0.3207%	0.3175%	0.3142%	0.3108%	0.3073%	0.3037%
0.3666%	0.3646%	0.3625%	0.3603%	0.3579%	0.3553%	0.3526%	0.3498%	0.3469%	0.3438%	0.3406%	0.3374%	0.3340%	0.3305%	0.3269%	0.3232%	0.3195%
0.3856%	0.3836%	0.3813%	0.3790%	0.3764%	0.3738%	0.3709%	0.3680%	0.3649%	0.3617%	0.3583%	0.3549%	0.3513%	0.3476%	0.3439%	0.3400%	0.3361%
0.4056%	0.4035%	0.4011%	0.3986%	0.3960%	0.3932%	0.3902%	0.3871%	0.3838%	0.3804%	0.3769%	0.3733%	0.3695%	0.3657%	0.3617%	0.3577%	0.3535%
0.4267%	0.4244%	0.4219%	0.4193%	0.4165%	0.4136%	0.4104%	0.4072%	0.4037%	0.4002%	0.3965%	0.3926%	0.3887%	0.3846%	0.3805%	0.3762%	0.3718%
0.4488%	0.4464%	0.4438%	0.4411%	0.4381%	0.4350%	0.4317%	0.4283%	0.4247%	0.4209%	0.4170%	0.4130%	0.4089%	0.4046%	0.4002%	0.3957%	0.3911%
0.4721%	0.4696%	0.4669%	0.4640%	0.4609%	0.4576%	0.4541%	0.4505%	0.4467%	0.4428%	0.4387%	0.4344%	0.4301%	0.4256%	0.4210%	0.4163%	0.4114%
0.4966%	0.4939%	0.4911%	0.4880%	0.4848%	0.4813%	0.4777%	0.4739%	0.4699%	0.4657%	0.4614%	0.4570%	0.4524%	0.4477%	0.4428%	0.4379%	0.4328%
0.5223%	0.5196%	0.5166%	0.5134%	0.5099%	0.5063%	0.5025%	0.4985%	0.4943%	0.4899%	0.4854%	0.4807%	0.4759%	0.4709%	0.4658%	0.4606%	0.4552%
0.5494%	0.5465%	0.5434%	0.5400%	0.5364%	0.5326%	0.5286%	0.5243%	0.5199%	0.5153%	0.5106%	0.5056%	0.5006%	0.4953%	0.4900%	0.4845%	0.4789%
0.5779%	0.5749%	0.5716%	0.5680%	0.5642%	0.5602%	0.5560%	0.5515%	0.5469%	0.5421%	0.5371%	0.5319%	0.5265%	0.5210%	0.5154%	0.5096%	0.5037%
0.6079%	0.6047%	0.6012%	0.5975%	0.5935%	0.5893%	0.5848%	0.5802%	0.5753%	0.5702%	0.5649%	0.5595%	0.5539%	0.5481%	0.5421%	0.5361%	0.5298%
0.6395%	0.6361%	0.6324%	0.6285%	0.6243%	0.6199%	0.6152%	0.6103%	0.6051%	0.5998%	0.5942%	0.5885%	0.5826%	0.5765%	0.5703%	0.5639%	0.5573%
0.6727%	0.6691%	0.6652%	0.6611%	0.6567%	0.6520%	0.6471%	0.6419%	0.6365%	0.6309%	0.6251%	0.6190%	0.6128%	0.6064%	0.5999%	0.5931%	0.5862%
0.7076%	0.7038%	0.6998%	0.6954%	0.6908%	0.6858%	0.6807%	0.6752%	0.6695%	0.6636%	0.6575%	0.6512%	0.6446%	0.6379%	0.6310%	0.6239%	0.6167%
0.7443%	0.7403%	0.7361%	0.7315%	0.7266%	0.7214%	0.7160%	0.7103%	0.7043%	0.6981%	0.6916%	0.6849%	0.6781%	0.6710%	0.6637%	0.6563%	0.6487%
0.7829%	0.7787%	0.7743%	0.7694%	0.7643%	0.7589%	0.7531%	0.7471%	0.7408%	0.7343%	0.7275%	0.7205%	0.7132%	0.7058%	0.6982%	0.6903%	0.6823%
0.8235%	0.8191%	0.8144%	0.8094%	0.8040%	0.7982%	0.7922%	0.7859%	0.7793%	0.7724%	0.7653%	0.7579%	0.7503%	0.7424%	0.7344%	0.7261%	0.7177%
0.8662%	0.8616%	0.8567%	0.8514%	0.8457%	0.8397%	0.8333%	0.8267%	0.8197%	0.8125%	0.8050%	0.7972%	0.7892%	0.7809%	0.7725%	0.7638%	0.7550%
0.9112%	0.9064%	0.9011%	0.8955%	0.8896%	0.8832%	0.8765%	0.8695%	0.8622%	0.8546%	0.8467%	0.8386%	0.8301%	0.8215%	0.8126%	0.8035%	0.7941%
0.9585%	0.9534%	0.9479%	0.9420%	0.9357%	0.9290%	0.9220%	0.9147%	0.9070%	0.8990%	0.8907%	0.8821%	0.8732%	0.8641%	0.8547%	0.8451%	0.8353%
1.0082%	1.0029%	0.9971%	0.9909%	0.9843%	0.9773%	0.9699%	0.9621%	0.9540%	0.9456%	0.9369%	0.9278%	0.9185%	0.9089%	0.8991%	0.8890%	0.8787%
1.0605%	1.0549%	1.0488%	1.0423%	1.0353%	1.0280%	1.0202%	1.0120%	1.0035%	0.9947%	0.9855%	0.9760%	0.9662%	0.9561%	0.9457%	0.9351%	0.9243%
1.1155%	1.1096%	1.1032%	1.0964%	1.0890%	1.0813%	1.0731%	1.0646%	1.0556%	1.0463%	1.0366%	1.0266%	1.0163%	1.0057%	0.9948%	0.9836%	0.9722%
1.1734%	1.1672%	1.1605%	1.1533%	1.1456%	1.1374%	1.1288%	1.1198%	1.1104%	1.1006%	1.0904%	1.0799%	1.0690%	1.0579%	1.0464%	1.0347%	1.0227%
1.2343%	1.2278%	1.2207%	1.2131%	1.2050%	1.1964%	1.1874%	1.1779%	1.1680%	1.1577%	1.1470%	1.1359%	1.1245%	1.1128%	1.1007%	1.0884%	1.0757%
1.2983%	1.2915%	1.2840%	1.2760%	1.2675%	1.2585%	1.2490%	1.2390%	1.2286%	1.2177%	1.2065%	1.1948%	1.1828%	1.1705%	1.1578%	1.1448%	1.1316%
1.3657%	1.3585%	1.3506%	1.3422%	1.3333%	1.3238%	1.3138%	1.3033%	1.2923%	1.2809%	1.2691%	1.2568%	1.2442%	1.2312%	1.2179%	1.2042%	1.1903%
1.4366%	1.4290%	1.4207%	1.4119%	1.4025%	1.3925%	1.3820%	1.3709%	1.3594%	1.3474%	1.3349%	1.3221%	1.3088%	1.2951%	1.2811%	1.2667%	1.2520%
1.5111%	1.5031%	1.4944%	1.4851%	1.4752%	1.4647%	1.4537%	1.4420%	1.4299%	1.4173%	1.4042%	1.3907%	1.3767%	1.3623%	1.3476%	1.3324%	1.3170%
1.5895%	1.5811%	1.5720%	1.5622%	1.5518%	1.5407%	1.5291%	1.5169%	1.5041%	1.4908%	1.4771%	1.4628%	1.4481%	1.4330%	1.4175%	1.4016%	1.3853%
1.6720%	1.6631%	1.6535%	1.6433%	1.6323%	1.6207%	1.6084%	1.5956%	1.5822%	1.5682%	1.5537%	1.5387%	1.5232%	1.5073%	1.4910%	1.4743%	1.4572%
1.7587%	1.7494%	1.7393%	1.7285%	1.7170%	1.7048%	1.6919%	1.6784%	1.6642%	1.6496%	1.6343%	1.6185%	1.6023%	1.5856%	1.5684%	1.5508%	1.5328%
1.8500%	1.8402%	1.8296%	1.8182%	1.8061%	1.7932%	1.7797%	1.7654%	1.7506%	1.7351%	1.7191%	1.7025%	1.6854%	1.6678%	1.6498%	1.6313%	1.6123%
1.9460%	1.9357%	1.9245%	1.9125%	1.8998%	1.8863%	1.8720%	1.8570%	1.8414%	1.8252%	1.8083%	1.7909%	1.7729%	1.7544%	1.7354%	1.7159%	1.6960%
2.0469%	2.0361%	2.0244%	2.0118%	1.9983%	1.9841%	1.9691%	1.9534%	1.9370%	1.9199%	1.9021%	1.8838%	1.8649%	1.8454%	1.8254%	1.8049%	1.7840%
2.1531%	2.1417%	2.1294%	2.1162%	2.1020%	2.0871%	2.0713%	2.0548%	2.0375%	2.0195%	2.0008%	1.9815%	1.9616%	1.9411%	1.9201%	1.8986%	1.8766%
2.2648%	2.2529%	2.2399%	2.2260%	2.2111%	2.1954%	2.1788%	2.1614%	2.1432%	2.1243%	2.1046%	2.0843%	2.0634%	2.0419%	2.0197%	1.9971%	1.9739%
2.3824%	2.3698%	2.3561%	2.3415%	2.3258%	2.3093%	2.2918%	2.2735%	2.2544%	2.2345%	2.2138%	2.1925%	2.1705%	2.1478%	2.1245%	2.1007%	2.0763%
2.5060%	2.4927%	2.4784%	2.4629%	2.4465%	2.4291%	2.4107%	2.3915%	2.3714%	2.3504%	2.3287%	2.3062%	2.2831%	2.2592%	2.2348%	2.2097%	2.1841%
2.6360%	2.6221%	2.6070%	2.5907%	2.5734%	2.5551%	2.5358%	2.5156%	2.4944%	2.4724%	2.4495%	2.4259%	2.4015%	2.3765%	2.3507%	2.3244%	2.2974%
2.7728%	2.7581%	2.7422%	2.7252%	2.7070%	2.6877%	2.6674%	2.6461%	2.6238%	2.6007%	2.5766%	2.5518%	2.5261%	2.4998%	2.4727%	2.4450%	2.4166%
2.9166%	2.9012%	2.8845%	2.8666%	2.8474%	2.8272%	2.8058%	2.7834%	2.7600%	2.7356%	2.7103%	2.6842%	2.6572%	2.6295%	2.6010%	2.5718%	2.5420%
3.0680%	3.0517%	3.0342%	3.0153%	2.9952%	2.9738%	2.9514%	2.9278%	2.9032%	2.8775%	2.8510%	2.8235%	2.7951%	2.7659%	2.7359%	2.7053%	2.6739%
3.2272%	3.2101%	3.1916%	3.1717%	3.1506%	3.1281%	3.1045%	3.0797%	3.0538%	3.0268%	2.9989%	2.9699%	2.9401%	2.9094%	2.8779%	2.8456%	2.8126%
3.3946%	3.3766%	3.3572%	3.3363%	3.3140%	3.2905%	3.2656%	3.2395%	3.2123%	3.1839%	3.1545%	3.1240%	3.0927%	3.0604%	3.0272%	2.9933%	2.9586%
3.5707%	3.5518%	3.5314%	3.5094%	3.4860%	3.4612%	3.4350%	3.4076%	3.3789%	3.3491%	3.3181%	3.2861%	3.2531%	3.2192%	3.1843%	3.1486%	3.1121%
3.7560%	3.7361%	3.7146%	3.6915%	3.6669%	3.6408%	3.6133%	3.5844%	3.5542%	3.5229%	3.4903%	3.4566%	3.4219%	3.3862%	3.3495%	3.3119%	3.2735%
3.9509%	3.9300%	3.9074%	3.8830%	3.8571%	3.8297%	3.8007%	3.7704%	3.7387%	3.7057%	3.6714%	3.6360%	3.5995%	3.5619%	3.5233%	3.4838%	3.4434%
4.1559%	4.1339%	4.1101%	4.0845%	4.0573%	4.0284%	3.9979%	3.9660%	3.9326%	3.8979%	3.8619%	3.8247%	3.7862%	3.7467%	3.7061%	3.6646%	3.6221%
4.3715%	4.3484%	4.3233%	4.2965%	4.2678%	4.2374%	4.2054%	4.1718%	4.1367%	4.1002%	4.0623%	4.0231%	3.9827%	3.9411%	3.8984%	3.8547%	3.8100%
4.5983%	4.5740%	4.5477%	4.5194%	4.4892%	4.4573%	4.4236%	4.3882%	4.3513%	4.3129%	4.2731%	4.2318%	4.1893%	4.1456%	4.1007%	4.0547%	4.0077%
4.8369%	4.8113%	4.7836%	4.7539%	4.7221%	4.6885%	4.6531%	4.6159%	4.5771%	4.5367%	4.4948%	4.4514%	4.4067%	4.3607%	4.3135%	4.2651%	4.2156%
5.0879%	5.0610%	5.0318%	5.0005%	4.9672%	4.9318%	4.8945%	4.8554%	4.8146%	4.7721%	4.7280%	4.6824%	4.6353%	4.5870%	4.5373%	4.4864%	4.4343%
5.3519%	5.3236%	5.2929%	5.2600%	5.2249%	5.1877%	5.1485%	5.1074%	5.0644%	5.0197%	4.9733%	4.9253%	4.8759%	4.8249%	4.7727%	4.7192%	4.6644%
5.6296%	5.5998%	5.5675%	5.5329%	5.4960%	5.4569%	5.4156%	5.3724%	5.3272%	5.2801%	5.2314%	5.1809%	5.1288%	5.0753%	5.0203%	4.9640%	4.9064%
5.9217%	5.8903%	5.8564%	5.8200%	5.7811%	5.7400%	5.6966%	5.6511%	5.6036%	5.5541%	5.5028%	5.4497%	5.3950%	5.3386%	5.2808%	5.2216%	5.1610%
6.2289%	6.1960%	6.1603%	6.1220%	6.0811%	6.0378%	5.9922%	5.9443%	5.8943%	5.8423%	5.7883%	5.7325%	5.6749%	5.6156%	5.5548%	5.4925%	5.4288%
6.5521%	6.5175%	6.4799%	6.4396%	6.3966%	6.3511%	6.3031%	6.2528%	6.2002%	6.1454%	6.0886%	6.0299%	5.9693%	5.9070%	5.8430%	5.7775%	5.7105%
6.8921%	6.8556%	6.8161%	6.7737%	6.7285%	6.6806%	6.6301%	6.5772%	6.5219%	6.4643%	6.4046%	6.3428%	6.2791%	6.2135%	6.1462%	6.0773%	6.0068%
7.2497%	7.2113%	7.1698%	7.1252%	7.0776%	7.0273%	6.9742%	6.9185%	6.8603%	6.7997%	6.7369%	6.6719%	6.6049%	6.5359%	6.4651%	6.3926%	6.3185%
7.6258%	7.5855%	7.5418%	7.4949%	7.4449%	7.3919%	7.3360%	7.2774%	7.2162%	7.1525%	7.0864%	7.0181%	6.9476%	6.8750%	6.8006%	6.7243%	6.6463%
8.0215%	7.9791%	7.9331%	7.8838%	7.8312%	7.7754%	7.7167%	7.6550%	7.5906%	7.5236%	7.4541%	7.3822%	7.3080%	7.2317%	7.1534%	7.0732%	6.9911%
8.4377%	8.3931%	8.3447%	8.2928%	8.2375%	8.1788%	8.1170%	8.0522%	7.9845%	7.9140%	7.8409%	7.7652%	7.6872%	7.6070%	7.5246%	7.4402%	7.3539%
8.8755%	8.8286%	8.7777%	8.7231%	8.6649%	8.6032%	8.5382%	8.4700%	8.3988%	8.3246%	8.2477%	8.1681%	8.0861%	8.0017%	7.9150%	7.8262%	7.7354%
	9.2867%	9.2332%	9.1757%	9.1145%	9.0496%	8.9812%	8.9095%	8.8345%	8.7565%	8.6756%	8.5920%	8.5056%	8.4168%	8.3257%	8.2323%	8.1368%
		9.7122%	9.6518%	9.5874%	9.5192%	9.4472%	9.3718%	9.2929%	9.2109%	9.1258%	9.0378%	8.9470%	8.8535%	8.7577%	8.6594%	8.5590%
			10.1526%	10.0849%	10.0131%	9.9374%	9.8580%	9.7751%	9.6888%	9.5993%	9.5067%	9.4112%	9.3129%	9.2121%	9.1087%	9.0031%
				10.6081%	10.5326%	10.4530%	10.3695%	10.2823%	10.1915%	10.0973%	10.0000%	9.8995%	9.7961%	9.6900%	9.5813%	9.4702%
					11.0791%	10.9954%	10.9076%	10.8158%	10.7203%	10.6213%	10.5188%	10.4131%	10.3044%	10.1928%	10.0785%	9.9616%
						11.5659%	11.4735%	11.3770%	11.2766%	11.1724%	11.0646%	10.9534%	10.8391%	10.7217%	10.6014%	10.4785%
							12.0688%	11.9673%	11.8617%	11.7520%	11.6387%	11.5218%	11.4015%	11.2780%	11.1515%	11.0222%
								12.5882%	12.4771%	12.3618%	12.2426%	12.1196%	11.9930%	11.8631%	11.7301%	11.5940%
									13.1245%	13.0032%	12.8778%	12.7484%	12.6153%	12.4787%	12.3387%	12.1956%
										13.6779%	13.5460%	13.4099%	13.2699%	13.1261%	12.9789%	12.8284%
											14.2488%	14.1057%	13.9584%	13.8072%	13.6523%	13.4940%
												14.8376%	14.6826%	14.5236%	14.3607%	14.1942%
													15.4445%	15.2772%	15.1058%	14.9306%
														16.0699%	15.8896%	15.7053%
															16.7141%	16.5202%
																17.3774%

15-Jun-19	15-Jul-19	15-Aug-19	15-Sep-19	15-Oct-19	15-Nov-19	15-Dec-19	15-Jan-20	15-Feb-20	15-Mar-20	15-Apr-20	15-May-20	15-Jun-20	15-Jul-20	15-Aug-20	15-Sep-20	15-Oct-20
t = 7	t = 7.08	t = 7.17	t = 7.25	t = 7.33	t = 7.42	t = 7.5	t = 7.58	t = 7.67	t = 7.75	t = 7.83	t = 7.92	t = 8	t = 8.08	t = 8.17	t = 8.25	t = 8.33
0.2712%	0.2679%	0.2645%	0.2612%	0.2578%	0.2545%	0.2511%	0.2478%	0.2444%	0.2411%	0.2378%	0.2345%	0.2312%	0.2280%	0.2247%	0.2215%	0.2183%
0.2853%	0.2818%	0.2783%	0.2747%	0.2712%	0.2677%	0.2641%	0.2606%	0.2571%	0.2536%	0.2501%	0.2467%	0.2432%	0.2398%	0.2364%	0.2330%	0.2296%
0.3001%	0.2964%	0.2927%	0.2890%	0.2853%	0.2816%	0.2778%	0.2741%	0.2705%	0.2668%	0.2631%	0.2595%	0.2558%	0.2522%	0.2486%	0.2451%	0.2415%
0.3157%	0.3118%	0.3079%	0.3040%	0.3001%	0.2962%	0.2923%	0.2884%	0.2845%	0.2806%	0.2768%	0.2729%	0.2691%	0.2653%	0.2615%	0.2578%	0.2540%
0.3320%	0.3280%	0.3238%	0.3197%	0.3156%	0.3115%	0.3074%	0.3033%	0.2993%	0.2952%	0.2911%	0.2871%	0.2831%	0.2791%	0.2751%	0.2712%	0.2672%
0.3493%	0.3450%	0.3407%	0.3363%	0.3320%	0.3277%	0.3234%	0.3191%	0.3148%	0.3105%	0.3062%	0.3020%	0.2978%	0.2936%	0.2894%	0.2852%	0.2811%
0.3674%	0.3629%	0.3583%	0.3538%	0.3492%	0.3447%	0.3402%	0.3356%	0.3311%	0.3266%	0.3221%	0.3177%	0.3132%	0.3088%	0.3044%	0.3000%	0.2957%
0.3865%	0.3817%	0.3769%	0.3721%	0.3674%	0.3626%	0.3578%	0.3530%	0.3483%	0.3436%	0.3388%	0.3341%	0.3295%	0.3248%	0.3202%	0.3156%	0.3110%
0.4065%	0.4015%	0.3965%	0.3914%	0.3864%	0.3814%	0.3764%	0.3714%	0.3664%	0.3614%	0.3564%	0.3515%	0.3466%	0.3417%	0.3368%	0.3320%	0.3272%
0.4276%	0.4223%	0.4170%	0.4118%	0.4065%	0.4012%	0.3959%	0.3906%	0.3854%	0.3801%	0.3749%	0.3697%	0.3645%	0.3594%	0.3543%	0.3492%	0.3441%
0.4498%	0.4442%	0.4387%	0.4331%	0.4276%	0.4220%	0.4164%	0.4109%	0.4054%	0.3999%	0.3944%	0.3889%	0.3835%	0.3780%	0.3727%	0.3673%	0.3620%
0.4731%	0.4673%	0.4614%	0.4556%	0.4497%	0.4439%	0.4381%	0.4322%	0.4264%	0.4206%	0.4148%	0.4091%	0.4034%	0.3977%	0.3920%	0.3864%	0.3808%
0.4977%	0.4915%	0.4854%	0.4792%	0.4731%	0.4669%	0.4608%	0.4546%	0.4485%	0.4424%	0.4364%	0.4303%	0.4243%	0.4183%	0.4123%	0.4064%	0.4005%
0.5235%	0.5170%	0.5106%	0.5041%	0.4976%	0.4912%	0.4847%	0.4782%	0.4718%	0.4654%	0.4590%	0.4526%	0.4463%	0.4400%	0.4337%	0.4275%	0.4213%
0.5507%	0.5439%	0.5371%	0.5303%	0.5234%	0.5166%	0.5098%	0.5031%	0.4963%	0.4895%	0.4828%	0.4761%	0.4695%	0.4628%	0.4562%	0.4497%	0.4432%
0.5792%	0.5721%	0.5649%	0.5578%	0.5506%	0.5434%	0.5363%	0.5292%	0.5220%	0.5149%	0.5079%	0.5008%	0.4938%	0.4868%	0.4799%	0.4730%	0.4662%
0.6093%	0.6018%	0.5942%	0.5867%	0.5792%	0.5716%	0.5641%	0.5566%	0.5491%	0.5417%	0.5342%	0.5268%	0.5194%	0.5121%	0.5048%	0.4976%	0.4903%
0.6409%	0.6330%	0.6251%	0.6171%	0.6092%	0.6013%	0.5934%	0.5855%	0.5776%	0.5698%	0.5619%	0.5541%	0.5464%	0.5387%	0.5310%	0.5234%	0.5158%
0.6741%	0.6658%	0.6575%	0.6492%	0.6408%	0.6325%	0.6242%	0.6159%	0.6076%	0.5993%	0.5911%	0.5829%	0.5747%	0.5666%	0.5585%	0.5505%	0.5425%
0.7091%	0.7004%	0.6916%	0.6829%	0.6741%	0.6653%	0.6566%	0.6478%	0.6391%	0.6304%	0.6218%	0.6131%	0.6046%	0.5960%	0.5875%	0.5791%	0.5707%
0.7459%	0.7367%	0.7275%	0.7183%	0.7091%	0.6998%	0.6906%	0.6814%	0.6723%	0.6631%	0.6540%	0.6450%	0.6359%	0.6269%	0.6180%	0.6091%	0.6003%
0.7846%	0.7750%	0.7653%	0.7556%	0.7458%	0.7361%	0.7265%	0.7168%	0.7071%	0.6975%	0.6880%	0.6784%	0.6689%	0.6595%	0.6501%	0.6407%	0.6315%
0.8253%	0.8152%	0.8050%	0.7948%	0.7845%	0.7743%	0.7642%	0.7540%	0.7438%	0.7337%	0.7237%	0.7136%	0.7036%	0.6937%	0.6838%	0.6740%	0.6642%
0.8682%	0.8575%	0.8467%	0.8360%	0.8253%	0.8145%	0.8038%	0.7931%	0.7824%	0.7718%	0.7612%	0.7506%	0.7401%	0.7297%	0.7193%	0.7090%	0.6987%
0.9132%	0.9020%	0.8907%	0.8794%	0.8681%	0.8568%	0.8455%	0.8343%	0.8230%	0.8118%	0.8007%	0.7896%	0.7785%	0.7675%	0.7566%	0.7457%	0.7349%
0.9606%	0.9488%	0.9369%	0.9250%	0.9131%	0.9012%	0.8894%	0.8775%	0.8657%	0.8540%	0.8422%	0.8306%	0.8189%	0.8074%	0.7959%	0.7844%	0.7731%
0.1004%	0.9980%	0.9855%	0.9730%	0.9605%	0.9480%	0.9355%	0.9231%	0.9107%	0.8983%	0.8859%	0.8737%	0.8614%	0.8493%	0.8372%	0.8251%	0.8132%
1.0629%	1.0498%	1.0366%	1.0235%	1.0103%	0.9972%	0.9841%	0.9710%	0.9579%	0.9449%	0.9319%	0.9190%	0.9061%	0.8933%	0.8806%	0.8679%	0.8554%
1.1180%	1.1042%	1.0904%	1.0766%	1.0627%	1.0489%	1.0351%	1.0213%	1.0076%	0.9939%	0.9803%	0.9667%	0.9531%	0.9397%	0.9263%	0.9130%	0.8998%
1.1760%	1.1615%	1.1470%	1.1324%	1.1179%	1.1034%	1.0888%	1.0743%	1.0599%	1.0455%	1.0311%	1.0168%	1.0026%	0.9884%	0.9744%	0.9604%	0.9464%
1.2370%	1.2218%	1.2065%	1.1912%	1.1759%	1.1606%	1.1453%	1.1301%	1.1149%	1.0997%	1.0846%	1.0696%	1.0546%	1.0397%	1.0249%	1.0102%	0.9955%
1.3012%	1.2852%	1.2691%	1.2530%	1.2369%	1.2208%	1.2048%	1.1887%	1.1727%	1.1568%	1.1409%	1.1251%	1.1093%	1.0937%	1.0781%	1.0626%	1.0472%
1.3687%	1.3519%	1.3350%	1.3180%	1.3011%	1.2842%	1.2673%	1.2504%	1.2336%	1.2168%	1.2001%	1.1835%	1.1669%	1.1504%	1.1340%	1.1177%	1.1015%
1.4397%	1.4220%	1.4042%	1.3864%	1.3686%	1.3508%	1.3330%	1.3153%	1.2976%	1.2799%	1.2624%	1.2449%	1.2274%	1.2101%	1.1929%	1.1757%	1.1587%
1.5145%	1.4958%	1.4771%	1.4583%	1.4396%	1.4209%	1.4022%	1.3835%	1.3649%	1.3464%	1.3279%	1.3095%	1.2911%	1.2729%	1.2548%	1.2367%	1.2188%
1.5930%	1.5734%	1.5537%	1.5340%	1.5143%	1.4946%	1.4749%	1.4553%	1.4357%	1.4162%	1.3968%	1.3774%	1.3581%	1.3389%	1.3199%	1.3009%	1.2821%
1.6757%	1.6551%	1.6343%	1.6136%	1.5929%	1.5722%	1.5515%	1.5308%	1.5102%	1.4897%	1.4692%	1.4489%	1.4286%	1.4084%	1.3883%	1.3684%	1.3486%
1.7626%	1.7409%	1.7191%	1.6973%	1.6755%	1.6537%	1.6320%	1.6102%	1.5886%	1.5670%	1.5455%	1.5240%	1.5027%	1.4815%	1.4604%	1.4394%	1.4185%
1.8541%	1.8313%	1.8083%	1.7854%	1.7625%	1.7395%	1.7166%	1.6938%	1.6710%	1.6483%	1.6257%	1.6031%	1.5807%	1.5584%	1.5362%	1.5141%	1.4921%
1.9503%	1.9263%	1.9022%	1.8780%	1.8539%	1.8298%	1.8057%	1.7817%	1.7577%	1.7338%	1.7100%	1.6863%	1.6627%	1.6392%	1.6159%	1.5926%	1.5696%
2.0515%	2.0262%	2.0009%	1.9755%	1.9501%	1.9247%	1.8994%	1.8741%	1.8489%	1.8238%	1.7987%	1.7738%	1.7490%	1.7243%	1.6997%	1.6753%	1.6510%
2.1579%	2.1314%	2.1047%	2.0780%	2.0513%	2.0246%	1.9980%	1.9714%	1.9448%	1.9184%	1.8921%	1.8658%	1.8397%	1.8137%	1.7879%	1.7622%	1.7367%
2.2699%	2.2419%	2.2139%	2.1858%	2.1577%	2.1296%	2.1016%	2.0737%	2.0458%	2.0179%	1.9902%	1.9626%	1.9352%	1.9078%	1.8807%	1.8536%	1.8268%
2.3877%	2.3583%	2.3287%	2.2992%	2.2697%	2.2401%	2.2107%	2.1812%	2.1519%	2.1226%	2.0935%	2.0645%	2.0356%	2.0068%	1.9782%	1.9498%	1.9216%
2.5116%	2.4806%	2.4496%	2.4185%	2.3874%	2.3564%	2.3254%	2.2944%	2.2636%	2.2328%	2.2021%	2.1716%	2.1412%	2.1110%	2.0809%	2.0510%	2.0213%
2.6419%	2.6093%	2.5767%	2.5440%	2.5113%	2.4786%	2.4460%	2.4135%	2.3810%	2.3486%	2.3164%	2.2843%	2.2523%	2.2205%	2.1888%	2.1574%	2.1261%
2.7789%	2.7447%	2.7104%	2.6760%	2.6416%	2.6072%	2.5729%	2.5387%	2.5045%	2.4705%	2.4366%	2.4028%	2.3692%	2.3357%	2.3024%	2.2693%	2.2365%
2.9231%	2.8871%	2.8510%	2.8148%	2.7787%	2.7425%	2.7064%	2.6704%	2.6345%	2.5987%	2.5630%	2.5275%	2.4921%	2.4569%	2.4219%	2.3871%	2.3525%
3.0748%	3.0369%	2.9989%	2.9609%	2.9228%	2.8848%	2.8469%	2.8090%	2.7712%	2.7335%	2.6960%	2.6586%	2.6214%	2.5844%	2.5475%	2.5109%	2.4746%
3.2343%	3.1945%	3.1545%	3.1145%	3.0745%	3.0345%	2.9946%	2.9547%	2.9150%	2.8753%	2.8359%	2.7965%	2.7574%	2.7185%	2.6797%	2.6412%	2.6030%
3.4022%	3.3603%	3.3182%	3.2761%	3.2340%	3.1920%	3.1500%	3.1080%	3.0662%	3.0245%	2.9830%	2.9416%	2.9005%	2.8595%	2.8188%	2.7783%	2.7380%
3.5787%	3.5346%	3.4904%	3.4461%	3.4018%	3.3576%	3.3134%	3.2693%	3.2253%	3.1815%	3.1378%	3.0943%	3.0510%	3.0079%	2.9650%	2.9224%	2.8801%
3.7644%	3.7180%	3.6715%	3.6249%	3.5783%	3.5318%	3.4853%	3.4389%	3.3927%	3.3465%	3.3006%	3.2548%	3.2093%	3.1639%	3.1189%	3.0740%	3.0295%
3.9597%	3.9109%	3.8620%	3.8130%	3.7640%	3.7150%	3.6661%	3.6174%	3.5687%	3.5202%	3.4718%	3.4237%	3.3758%	3.3281%	3.2807%	3.2336%	3.1867%
4.1651%	4.1138%	4.0623%	4.0108%	3.9593%	3.9078%	3.8564%	3.8051%	3.7539%	3.7028%	3.6520%	3.6013%	3.5509%	3.5008%	3.4509%	3.4013%	3.3521%
4.3813%	4.3273%	4.2731%	4.2189%	4.1647%	4.1106%	4.0565%	4.0025%	3.9486%	3.8950%	3.8415%	3.7882%	3.7352%	3.6824%	3.6300%	3.5778%	3.5260%
4.6086%	4.5518%	4.4948%	4.4378%	4.3808%	4.3238%	4.2669%	4.2102%	4.1535%	4.0970%	4.0408%	3.9848%	3.9290%	3.8735%	3.8183%	3.7634%	3.7089%
4.8477%	4.7880%	4.7281%	4.6681%	4.6081%	4.5482%	4.4883%	4.4286%	4.3690%	4.3096%	4.2504%	4.1915%	4.1328%	4.0745%	4.0164%	3.9587%	3.9014%
5.0992%	5.0364%	4.9734%	4.9103%	4.8472%	4.7842%	4.7212%	4.6584%	4.5957%	4.5332%	4.4710%	4.4090%	4.3473%	4.2859%	4.2248%	4.1641%	4.1038%
5.3638%	5.2978%	5.2314%	5.1651%	5.0987%	5.0324%	4.9662%	4.9001%	4.8342%	4.7685%	4.7030%	4.6378%	4.5728%	4.5083%	4.4440%	4.3802%	4.3167%
5.6421%	5.5726%	5.5029%	5.4331%	5.3633%	5.2935%	5.2239%	5.1543%	5.0850%	5.0159%	4.9470%	4.8784%	4.8101%	4.7422%	4.6746%	4.6074%	4.5407%
5.9349%	5.8618%	5.7884%	5.7150%	5.6415%	5.5682%	5.4949%	5.4218%	5.3488%	5.2761%	5.2037%	5.1315%	5.0597%	4.9882%	4.9172%	4.8465%	4.7763%
6.2428%	6.1659%	6.0887%	6.0115%	5.9343%	5.8571%	5.7800%	5.7031%	5.6264%	5.5499%	5.4737%	5.3978%	5.3222%	5.2471%	5.1723%	5.0980%	5.0241%
6.5667%	6.4858%	6.4047%	6.3234%	6.2422%	6.1610%	6.0799%	5.9990%	5.9183%	5.8378%	5.7577%	5.6778%	5.5984%	5.5193%	5.4407%	5.3625%	5.2848%
6.9074%	6.8224%	6.7370%	6.6515%	6.5660%	6.4807%	6.3954%	6.3103%	6.2254%	6.1407%	6.0564%	5.9724%	5.8888%	5.8057%	5.7230%	5.6407%	5.5590%
7.2658%	7.1764%	7.0865%	6.9966%	6.9067%	6.8169%	6.7272%	6.6377%	6.5484%	6.4594%	6.3707%	6.2823%	6.1944%	6.1069%	6.0199%	5.9334%	5.8475%
7.6428%	7.5487%	7.4542%	7.3597%	7.2651%	7.1706%	7.0763%	6.9821%	6.8882%	6.7945%	6.7012%	6.6083%	6.5158%	6.4238%	6.3322%	6.2413%	6.1509%
8.0394%	7.9404%	7.8410%	7.7415%	7.6421%	7.5427%	7.4434%	7.3444%	7.2456%	7.1471%	7.0489%	6.9512%	6.8539%	6.7571%	6.6608%	6.5651%	6.4700%
8.4565%	8.3524%	8.2478%	8.1432%	8.0386%	7.9340%	7.8296%	7.7254%	7.6215%	7.5179%	7.4146%	7.3118%	7.2095%	7.1077%	7.0064%	6.9057%	6.8057%
8.8953%	8.7857%	8.6758%	8.5657%	8.4557%	8.3457%	8.2359%	8.1263%	8.0169%	7.9080%	7.7994%	7.6912%	7.5836%	7.4765%	7.3699%	7.2641%	7.1588%
9.3568%	9.2416%	9.1259%	9.0101%	8.8944%	8.7787%	8.6632%	8.5479%	8.4329%	8.3183%	8.2040%	8.0903%	7.9771%	7.8644%	7.7523%	7.6410%	7.5303%
9.8423%	9.7211%	9.5994%	9.4777%	9.3559%	9.2342%	9.1127%	8.9914%	8.8705%	8.7499%	8.6297%	8.5101%	8.3909%	8.2724%	8.1546%	8.0374%	7.9210%
10.3530%	10.2255%	10.0975%	9.9694%	9.8413%	9.7133%	9.5855%	9.4580%	9.3307%	9.2039%	9.0775%	8.9516%	8.8263%	8.7017%	8.5777%	8.4544%	8.3320%
10.8902%	10.7561%	10.6214%	10.4867%	10.3520%	10.2173%	10.0829%	9.9487%	9.8148%	9.6814%	9.5485%	9.4161%	9.2843%	9.1532%	9.0228%	8.8931%	8.7643%
11.4552%	11.3142%	11.1725%	11.0308%	10.8891%	10.7475%	10.6060%	10.4649%	10.3241%	10.1838%	10.0439%	9.9046%	9.7660%	9.6281%	9.4909%	9.3545%	9.2190%
12.0496%	11.9012%	11.7522%	11.6031%	11.4541%	11.3051%	11.1563%	11.0079%	10.8598%	10.7121%	10.5650%	10.4186%	10.2727%	10.1276%	9.9834%	9.8399%	9.6974%
12.6748%	12.5187%	12.3620%	12.2052%	12.0484%	11.8917%	11.7352%	11.5790%	11.4233%	11.2680%	11.1132%	10.9591%	10.8057%	10.6531%	10.5013%	10.3505%	10.2005%
13.3324%	13.1683%	13.0034%	12.8385%	12.6735%	12.5087%	12.3441%	12.1798%	12.0160%	11.8526%	11.6898%	11.5278%	11.3664%	11.2059%	11.0462%	10.8875%	10.7298%
14.0242%	13.8515%	13.6781%	13.5046%	13.3311%	13.1577%	12.9846%	12.8118%	12.6394%	12.4676%	12.2964%	12.1259%	11.9562%	11.7873%	11.6194%	11.4524%	11.2865%
14.7519%	14.5702%	14.3878%	14.2053%	14.0228%	13.8404%	13.6583%	13.4765%	13.2952%	13.1145%	12.9344%	12.7551%	12.5765%	12.3989%	12.2223%	12.0466%	11.8721%
15.5173%	15.3262%	15.1343%	14.9424%	14.7504%	14.5585%	14.3670%	14.1758%	13.9851%	13.7949%	13.6055%	13.4169%	13.2291%	13.0422%	12.8564%	12.6717%	12.4881%
16.3224%	16.1214%	15.9196%	15.7177%	15.5157%	15.3139%	15.1124%	14.9113%	14.7107%	14.5107%	14.3115%	14.1130%	13.9155%	13.7189%	13.5235%	13.3292%	13.1361%
17.1693%	16.9579%	16.7456%	16.5332%	16.3208%	16.1085%	15.8965%	15.6850%	15.4740%	15.2636%	15.0540%	14.8453%	14.6375%	14.4308%	14.2252%	14.0208%	13.8177%
18.0602%	17.8378%	17.6145%	17.3910%	17.1676%	16.9443%	16.7213%	16.4988%	16.2769%	16.0556%	15.8351%	15.6155%	15.3970%	15.1795%	14.9633%	14.7483%	14.5346%
	18.7633%	18.5284%	18.2934%	18.0583%	17.8235%	17.5890%	17.3549%	17.1214%	16.8886%	16.6567%	16.4258%	16.1959%	15.9671%	15.7396%	15.5135%	15.2888%
		19.4898%	19.2425%	18.9953%	18.7483%	18.5016%	18.2554%	18.0098%	17.7649%	17.5210%	17.2780%	17.0362%	16.7956%	16.5563%	16.3184%	16.0820%
			20.2410%	19.9809%	19.7211%	19.4616%	19.2026%	18.9442%	18.6867%	18.4301%	18.1745%	17.9202%	17.6671%	17.4153%	17.1651%	16.9165%
				21.0176%	20.7443%	20.4713%	20.1989%	19.9272%	19.6563%	19.3863%	19.1175%	18.8500%	18.5837%	18.3190%	18.0558%	17.7942%
					21.8206%	21.5335%	21.2469%	20.9611%	20.6761%	20.3922%	20.1095%	19.8280%	19.5480%	19.2695%	18.9926%	18.7175%
						22.6508%	22.3494%	22.0487%	21.7490%	21.4503%	21.1529%	20.8568%	20.5622%	20.2693%	19.9780%	19.6886%
							23.5090%	23.1927%	22.8774%	22.5633%	22.2504%	21.9390%	21.6291%	21.3210%	21.0146%	20.7102%
								24.3961%	24.0644%	23.7340%	23.4049%	23.0773%	22.7514%	22.4272%	22.1050%	21.7848%
									25.3131%	24.9655%	24.6193%	24.2747%	23.9319%	23.5909%	23.2519%	22.9151%
										26.2608%	25.8967%	25.5342%	25.1736%	24.8149%	24.4584%	24.1041%
											27.2404%	26.8591%	26.4797%	26.1025%	25.7274%	25.3547%
												28.2527%	27.8537%	27.4568%	27.0623%	26.6703%
													29.2989%	28.8815%	28.4665%	28.0541%
														30.3800%	29.9435%	29.5097%
															31.4972%	31.0409%
																32.6515%

15-Nov-20	15-Dec-20	15-Jan-21	15-Feb-21	15-Mar-21	15-Apr-21	15-May-21	15-Jun-21	15-Jul-21	15-Aug-21	15-Sep-21	15-Oct-21	15-Nov-21	15-Dec-21	15-Jan-22	15-Feb-22	15-Mar-22
t = 8.42	t = 8.5	t = 8.58	t = 8.67	t = 8.75	t = 8.83	t = 8.92	t = 9	t = 9.08	t = 9.17	t = 9.25	t = 9.33	t = 9.42	t = 9.5	t = 9.58	t = 9.67	t = 9.75
0.2151%	0.2119%	0.2088%	0.2057%	0.2026%	0.1995%	0.1965%	0.1935%	0.1905%	0.1875%	0.1846%	0.1817%	0.1788%	0.1760%	0.1732%	0.1704%	0.1677%
0.2262%	0.2229%	0.2196%	0.2163%	0.2131%	0.2099%	0.2067%	0.2035%	0.2004%	0.1972%	0.1942%	0.1911%	0.1881%	0.1851%	0.1822%	0.1792%	0.1764%
0.2380%	0.2345%	0.2310%	0.2276%	0.2241%	0.2207%	0.2174%	0.2141%	0.2107%	0.2075%	0.2042%	0.2010%	0.1979%	0.1947%	0.1916%	0.1885%	0.1855%
0.2503%	0.2467%	0.2430%	0.2394%	0.2358%	0.2322%	0.2287%	0.2252%	0.2217%	0.2182%	0.2148%	0.2115%	0.2081%	0.2048%	0.2016%	0.1983%	0.1951%
0.2633%	0.2594%	0.2556%	0.2518%	0.2480%	0.2442%	0.2405%	0.2368%	0.2332%	0.2296%	0.2260%	0.2224%	0.2189%	0.2155%	0.2120%	0.2086%	0.2053%
0.2770%	0.2729%	0.2689%	0.2649%	0.2609%	0.2569%	0.2530%	0.2491%	0.2453%	0.2415%	0.2377%	0.2340%	0.2303%	0.2266%	0.2230%	0.2194%	0.2159%
0.2914%	0.2871%	0.2828%	0.2786%	0.2744%	0.2703%	0.2661%	0.2621%	0.2580%	0.2540%	0.2500%	0.2461%	0.2422%	0.2384%	0.2346%	0.2308%	0.2271%
0.3065%	0.3020%	0.2975%	0.2930%	0.2886%	0.2843%	0.2799%	0.2757%	0.2714%	0.2672%	0.2630%	0.2589%	0.2548%	0.2508%	0.2468%	0.2428%	0.2389%
0.3224%	0.3176%	0.3129%	0.3083%	0.3036%	0.2990%	0.2945%	0.2900%	0.2855%	0.2811%	0.2767%	0.2723%	0.2680%	0.2638%	0.2596%	0.2554%	0.2513%
0.3391%	0.3341%	0.3292%	0.3242%	0.3194%	0.3145%	0.3097%	0.3050%	0.3003%	0.2956%	0.2910%	0.2865%	0.2819%	0.2775%	0.2730%	0.2687%	0.2643%
0.3567%	0.3514%	0.3462%	0.3411%	0.3359%	0.3309%	0.3258%	0.3208%	0.3159%	0.3110%	0.3061%	0.3013%	0.2966%	0.2919%	0.2872%	0.2826%	0.2780%
0.3752%	0.3697%	0.3642%	0.3588%	0.3534%	0.3480%	0.3427%	0.3375%	0.3323%	0.3271%	0.3220%	0.3169%	0.3119%	0.3070%	0.3021%	0.2973%	0.2925%
0.3947%	0.3889%	0.3831%	0.3774%	0.3717%	0.3661%	0.3605%	0.3550%	0.3495%	0.3441%	0.3387%	0.3334%	0.3281%	0.3229%	0.3178%	0.3127%	0.3076%
0.4152%	0.4090%	0.4030%	0.3970%	0.3910%	0.3851%	0.3792%	0.3734%	0.3676%	0.3619%	0.3563%	0.3507%	0.3452%	0.3397%	0.3343%	0.3289%	0.3236%
0.4367%	0.4303%	0.4239%	0.4176%	0.4113%	0.4051%	0.3989%	0.3928%	0.3867%	0.3807%	0.3748%	0.3689%	0.3631%	0.3573%	0.3516%	0.3460%	0.3404%
0.4594%	0.4526%	0.4459%	0.4392%	0.4326%	0.4261%	0.4196%	0.4132%	0.4068%	0.4005%	0.3942%	0.3880%	0.3819%	0.3758%	0.3698%	0.3639%	0.3581%
0.4832%	0.4761%	0.4690%	0.4620%	0.4551%	0.4482%	0.4414%	0.4346%	0.4279%	0.4212%	0.4147%	0.4082%	0.4017%	0.3953%	0.3890%	0.3828%	0.3766%
0.5083%	0.5008%	0.4934%	0.4860%	0.4787%	0.4714%	0.4643%	0.4571%	0.4501%	0.4431%	0.4362%	0.4293%	0.4226%	0.4159%	0.4092%	0.4027%	0.3962%
0.5346%	0.5268%	0.5190%	0.5112%	0.5035%	0.4959%	0.4883%	0.4809%	0.4734%	0.4661%	0.4588%	0.4516%	0.4445%	0.4374%	0.4305%	0.4236%	0.4167%
0.5624%	0.5541%	0.5459%	0.5377%	0.5296%	0.5216%	0.5137%	0.5058%	0.4980%	0.4903%	0.4826%	0.4750%	0.4676%	0.4601%	0.4528%	0.4455%	0.4384%
0.5915%	0.5828%	0.5742%	0.5656%	0.5571%	0.5487%	0.5403%	0.5321%	0.5238%	0.5157%	0.5077%	0.4997%	0.4918%	0.4840%	0.4763%	0.4687%	0.4611%
0.6222%	0.6131%	0.6040%	0.5950%	0.5860%	0.5772%	0.5684%	0.5597%	0.5510%	0.5425%	0.5340%	0.5256%	0.5173%	0.5091%	0.5010%	0.4930%	0.4850%
0.6545%	0.6449%	0.6353%	0.6258%	0.6164%	0.6071%	0.5979%	0.5887%	0.5796%	0.5706%	0.5617%	0.5529%	0.5442%	0.5355%	0.5270%	0.5185%	0.5102%
0.6885%	0.6784%	0.6683%	0.6583%	0.6484%	0.6386%	0.6289%	0.6192%	0.6097%	0.6002%	0.5909%	0.5816%	0.5724%	0.5633%	0.5543%	0.5455%	0.5367%
0.7242%	0.7136%	0.7030%	0.6925%	0.6821%	0.6717%	0.6615%	0.6514%	0.6413%	0.6314%	0.6215%	0.6118%	0.6021%	0.5926%	0.5831%	0.5738%	0.5645%
0.7618%	0.7506%	0.7394%	0.7284%	0.7175%	0.7066%	0.6958%	0.6852%	0.6746%	0.6641%	0.6538%	0.6435%	0.6333%	0.6233%	0.6134%	0.6035%	0.5938%
0.8013%	0.7895%	0.7778%	0.7662%	0.7547%	0.7433%	0.7319%	0.7207%	0.7096%	0.6986%	0.6877%	0.6769%	0.6662%	0.6556%	0.6452%	0.6348%	0.6246%
0.8429%	0.8305%	0.8182%	0.8060%	0.7938%	0.7818%	0.7699%	0.7581%	0.7464%	0.7348%	0.7234%	0.7120%	0.7008%	0.6897%	0.6787%	0.6678%	0.6570%
0.8866%	0.8736%	0.8606%	0.8478%	0.8350%	0.8224%	0.8099%	0.7975%	0.7852%	0.7730%	0.7609%	0.7490%	0.7371%	0.7254%	0.7139%	0.7024%	0.6911%
0.9326%	0.9189%	0.9053%	0.8918%	0.8784%	0.8651%	0.8519%	0.8388%	0.8259%	0.8131%	0.8004%	0.7878%	0.7754%	0.7631%	0.7509%	0.7389%	0.7270%
0.9810%	0.9666%	0.9523%	0.9380%	0.9239%	0.9100%	0.8961%	0.8824%	0.8687%	0.8553%	0.8419%	0.8287%	0.8156%	0.8027%	0.7899%	0.7772%	0.7647%
1.0319%	1.0167%	1.0017%	0.9867%	0.9719%	0.9572%	0.9426%	0.9281%	0.9138%	0.8996%	0.8856%	0.8717%	0.8579%	0.8443%	0.8309%	0.8175%	0.8044%
1.0855%	1.0695%	1.0536%	1.0379%	1.0223%	1.0068%	0.9915%	0.9763%	0.9612%	0.9463%	0.9315%	0.9169%	0.9024%	0.8881%	0.8740%	0.8600%	0.8461%
1.1418%	1.1250%	1.1083%	1.0918%	1.0753%	1.0591%	1.0429%	1.0269%	1.0111%	0.9954%	0.9799%	0.9645%	0.9493%	0.9342%	0.9193%	0.9046%	0.8900%
1.2010%	1.1833%	1.1658%	1.1484%	1.1311%	1.1140%	1.0970%	1.0802%	1.0636%	1.0471%	1.0307%	1.0145%	0.9985%	0.9827%	0.9670%	0.9515%	0.9362%
1.2633%	1.2447%	1.2263%	1.2080%	1.1898%	1.1718%	1.1540%	1.1363%	1.1188%	1.1014%	1.0842%	1.0672%	1.0503%	1.0337%	1.0172%	1.0009%	0.9848%
1.3289%	1.3093%	1.2899%	1.2707%	1.2516%	1.2326%	1.2138%	1.1952%	1.1768%	1.1585%	1.1405%	1.1226%	1.1048%	1.0873%	1.0700%	1.0528%	1.0358%
1.3978%	1.3773%	1.3569%	1.3366%	1.3165%	1.2966%	1.2768%	1.2573%	1.2379%	1.2186%	1.1996%	1.1808%	1.1622%	1.1437%	1.1255%	1.1074%	1.0896%
1.4704%	1.4487%	1.4273%	1.4059%	1.3848%	1.3639%	1.3431%	1.3225%	1.3021%	1.2819%	1.2619%	1.2421%	1.2225%	1.2031%	1.1839%	1.1649%	1.1461%
1.5467%	1.5239%	1.5013%	1.4789%	1.4567%	1.4346%	1.4128%	1.3911%	1.3696%	1.3484%	1.3273%	1.3065%	1.2859%	1.2655%	1.2453%	1.2253%	1.2056%
1.6269%	1.6030%	1.5792%	1.5556%	1.5322%	1.5091%	1.4861%	1.4633%	1.4407%	1.4184%	1.3962%	1.3743%	1.3526%	1.3311%	1.3099%	1.2889%	1.2681%
1.7113%	1.6861%	1.6611%	1.6363%	1.6117%	1.5874%	1.5632%	1.5392%	1.5155%	1.4919%	1.4687%	1.4456%	1.4228%	1.4002%	1.3779%	1.3558%	1.3339%
1.8001%	1.7736%	1.7473%	1.7213%	1.6954%	1.6697%	1.6443%	1.6191%	1.5941%	1.5694%	1.5449%	1.5206%	1.4966%	1.4729%	1.4494%	1.4261%	1.4032%
1.8935%	1.8657%	1.8380%	1.8106%	1.7833%	1.7564%	1.7296%	1.7031%	1.6768%	1.6508%	1.6250%	1.5995%	1.5743%	1.5493%	1.5246%	1.5001%	1.4760%
1.9918%	1.9625%	1.9334%	1.9045%	1.8759%	1.8475%	1.8193%	1.7914%	1.7638%	1.7364%	1.7093%	1.6825%	1.6559%	1.6297%	1.6037%	1.5780%	1.5525%
2.0951%	2.0643%	2.0337%	2.0033%	1.9732%	1.9433%	1.9137%	1.8844%	1.8553%	1.8265%	1.7980%	1.7698%	1.7419%	1.7142%	1.6869%	1.6598%	1.6331%
2.2038%	2.1714%	2.1392%	2.1073%	2.0756%	2.0442%	2.0130%	1.9822%	1.9516%	1.9213%	1.8913%	1.8616%	1.8322%	1.8032%	1.7744%	1.7460%	1.7178%
2.3182%	2.2840%	2.2502%	2.2166%	2.1833%	2.1502%	2.1175%	2.0850%	2.0529%	2.0210%	1.9895%	1.9582%	1.9273%	1.8967%	1.8665%	1.8366%	1.8070%
2.4384%	2.4026%	2.3669%	2.3316%	2.2966%	2.2618%	2.2273%	2.1932%	2.1594%	2.1259%	2.0927%	2.0598%	2.0273%	1.9951%	1.9633%	1.9319%	1.9007%
2.5650%	2.5272%	2.4898%	2.4526%	2.4157%	2.3792%	2.3429%	2.3070%	2.2714%	2.2362%	2.2013%	2.1667%	2.1325%	2.0987%	2.0652%	2.0321%	1.9993%
2.6980%	2.6583%	2.6189%	2.5798%	2.5411%	2.5026%	2.4645%	2.4267%	2.3893%	2.3522%	2.3155%	2.2791%	2.2432%	2.2076%	2.1723%	2.1375%	2.1031%
2.8380%	2.7963%	2.7548%	2.7137%	2.6729%	2.6325%	2.5924%	2.5526%	2.5132%	2.4742%	2.4356%	2.3974%	2.3595%	2.3221%	2.2851%	2.2484%	2.2122%
2.9853%	2.9414%	2.8978%	2.8545%	2.8116%	2.7690%	2.7269%	2.6851%	2.6436%	2.6026%	2.5620%	2.5218%	2.4820%	2.4426%	2.4036%	2.3651%	2.3270%
3.1402%	3.0940%	3.0481%	3.0026%	2.9575%	2.9127%	2.8683%	2.8244%	2.7808%	2.7377%	2.6949%	2.6526%	2.6108%	2.5693%	2.5283%	2.4878%	2.4477%
3.3031%	3.2545%	3.2063%	3.1584%	3.1109%	3.0638%	3.0172%	2.9709%	2.9251%	2.8797%	2.8347%	2.7903%	2.7462%	2.7026%	2.6595%	2.6169%	2.5747%
3.4745%	3.4234%	3.3726%	3.3223%	3.2723%	3.2228%	3.1737%	3.1251%	3.0769%	3.0291%	2.9818%	2.9350%	2.8887%	2.8429%	2.7975%	2.7527%	2.7083%
3.6548%	3.6010%	3.5476%	3.4947%	3.4421%	3.3900%	3.3384%	3.2872%	3.2365%	3.1863%	3.1365%	3.0873%	3.0386%	2.9904%	2.9427%	2.8955%	2.8488%
3.8444%	3.7878%	3.7317%	3.6760%	3.6207%	3.5659%	3.5116%	3.4578%	3.4044%	3.3516%	3.2993%	3.2475%	3.1962%	3.1455%	3.0954%	3.0457%	2.9967%
4.0439%	3.9844%	3.9253%	3.8667%	3.8086%	3.7510%	3.6938%	3.6372%	3.5811%	3.5255%	3.4705%	3.4160%	3.3621%	3.3087%	3.2560%	3.2038%	3.1521%
4.2537%	4.1911%	4.1290%	4.0674%	4.0062%	3.9456%	3.8855%	3.8259%	3.7669%	3.7084%	3.6505%	3.5932%	3.5365%	3.4804%	3.4249%	3.3700%	3.3157%
4.4744%	4.4086%	4.3432%	4.2784%	4.2141%	4.1503%	4.0871%	4.0244%	3.9623%	3.9008%	3.8400%	3.7797%	3.7200%	3.6610%	3.6026%	3.5449%	3.4877%
4.7066%	4.6373%	4.5686%	4.5004%	4.4327%	4.3656%	4.2991%	4.2332%	4.1679%	4.1032%	4.0392%	3.9758%	3.9130%	3.8510%	3.7895%	3.7288%	3.6687%
4.9508%	4.8779%	4.8056%	4.7339%	4.6627%	4.5922%	4.5222%	4.4529%	4.3842%	4.3162%	4.2488%	4.1821%	4.1161%	4.0508%	3.9862%	3.9223%	3.8591%
5.2076%	5.1310%	5.0550%	4.9795%	4.9047%	4.8304%	4.7568%	4.6839%	4.6117%	4.5401%	4.4692%	4.3991%	4.3296%	4.2609%	4.1930%	4.1258%	4.0593%
5.4779%	5.3973%	5.3173%	5.2379%	5.1591%	5.0811%	5.0037%	4.9269%	4.8509%	4.7757%	4.7011%	4.6273%	4.5543%	4.4820%	4.4105%	4.3398%	4.2699%
5.7621%	5.6773%	5.5932%	5.5097%	5.4268%	5.3447%	5.2633%	5.1826%	5.1026%	5.0235%	4.9450%	4.8674%	4.7906%	4.7146%	4.6394%	4.5650%	4.4915%
6.0610%	5.9719%	5.8834%	5.7955%	5.7084%	5.6220%	5.5364%	5.4515%	5.3674%	5.2841%	5.2016%	5.1200%	5.0392%	4.9592%	4.8801%	4.8019%	4.7245%
6.3755%	6.2817%	6.1886%	6.0962%	6.0046%	5.9137%	5.8236%	5.7343%	5.6459%	5.5583%	5.4715%	5.3856%	5.3006%	5.2165%	5.1333%	5.0510%	4.9696%
6.7063%	6.6077%	6.5097%	6.4125%	6.3161%	6.2206%	6.1258%	6.0319%	5.9388%	5.8467%	5.7554%	5.6651%	5.5757%	5.4872%	5.3997%	5.3131%	5.2275%
7.0543%	6.9505%	6.8475%	6.7453%	6.6439%	6.5433%	6.4436%	6.3448%	6.2470%	6.1500%	6.0540%	5.9590%	5.8650%	5.7719%	5.6798%	5.5888%	5.4987%
7.4203%	7.3111%	7.2028%	7.0953%	6.9886%	6.8828%	6.7780%	6.6741%	6.5711%	6.4691%	6.3682%	6.2682%	6.1693%	6.0714%	5.9745%	5.8787%	5.7840%
7.8053%	7.6905%	7.5765%	7.4634%	7.3512%	7.2399%	7.1297%	7.0203%	6.9121%	6.8048%	6.6986%	6.5934%	6.4894%	6.3864%	6.2845%	6.1838%	6.0842%
8.2103%	8.0895%	7.9696%	7.8506%	7.7326%	7.6156%	7.4996%	7.3846%	7.2707%	7.1579%	7.0461%	6.9355%	6.8261%	6.7178%	6.6106%	6.5046%	6.3998%
8.6363%	8.5093%	8.3831%	8.2580%	8.1338%	8.0107%	7.8887%	7.7678%	7.6479%	7.5293%	7.4117%	7.2954%	7.1803%	7.0663%	6.9536%	6.8421%	6.7319%
9.0844%	8.9508%	8.8181%	8.6865%	8.5559%	8.4264%	8.2980%	8.1708%	8.0448%	7.9199%	7.7963%	7.6739%	7.5528%	7.4330%	7.3144%	7.1971%	7.0812%
9.5558%	9.4152%	9.2756%	9.1372%	8.9998%	8.8636%	8.7286%	8.5948%	8.4622%	8.3309%	8.2008%	8.0721%	7.9447%	7.8186%	7.6939%	7.5706%	7.4486%
10.0516%	9.9037%	9.7569%	9.6113%	9.4668%	9.3235%	9.1815%	9.0407%	8.9012%	8.7631%	8.6263%	8.4909%	8.3569%	8.2243%	8.0931%	7.9634%	7.8351%
10.5731%	10.4176%	10.2632%	10.1099%	9.9580%	9.8073%	9.6579%	9.5098%	9.3631%	9.2178%	9.0739%	8.9315%	8.7905%	8.6510%	8.5130%	8.3766%	8.2416%
11.1217%	10.9581%	10.7957%	10.6345%	10.4746%	10.3161%	10.1590%	10.0032%	9.8489%	9.6961%	9.5447%	9.3949%	9.2466%	9.0999%	8.9547%	8.8112%	8.6692%
11.6988%	11.5267%	11.3558%	11.1863%	11.0181%	10.8514%	10.6861%	10.5222%	10.3599%	10.1992%	10.0400%	9.8824%	9.7264%	9.5721%	9.4194%	9.2684%	9.1191%
12.3058%	12.1247%	11.9450%	11.7667%	11.5898%	11.4144%	11.2405%	11.0682%	10.8975%	10.7284%	10.5609%	10.3951%	10.2311%	10.0687%	9.9081%	9.7493%	9.5922%
12.9443%	12.7538%	12.5648%	12.3772%	12.1912%	12.0067%	11.8238%	11.6425%	11.4629%	11.2850%	11.1089%	10.9345%	10.7619%	10.5911%	10.4222%	10.2551%	10.0899%
13.6159%	13.4156%	13.2167%	13.0194%	12.8237%	12.6296%	12.4372%	12.2466%	12.0577%	11.8705%	11.6853%	11.5018%	11.3203%	11.1407%	10.9630%	10.7872%	10.6134%
14.3224%	14.1117%	13.9025%	13.6950%	13.4891%	13.2849%	13.0826%	12.8820%	12.6833%	12.4865%	12.2916%	12.0986%	11.9077%	11.7187%	11.5318%	11.3469%	11.1641%
15.0655%	14.8439%	14.6239%	14.4055%	14.1890%	13.9742%	13.7614%	13.5504%	13.3414%	13.1343%	12.9293%	12.7264%	12.5255%	12.3268%	12.1301%	11.9357%	11.7434%
15.8472%	15.6141%	15.3826%	15.1530%	14.9252%	14.6993%	14.4754%	14.2535%	14.0336%	13.8158%	13.6002%	13.3867%	13.1754%	12.9663%	12.7595%	12.5550%	12.3527%
16.6695%	16.4242%	16.1808%	15.9392%	15.6996%	15.4620%	15.2265%	14.9930%	14.7617%	14.5327%	14.3058%	14.0813%	13.8590%	13.6391%	13.4216%	13.2064%	12.9936%
17.5344%	17.2764%	17.0203%	16.7662%	16.5142%	16.2643%	16.0165%	15.7710%	15.5277%	15.2867%	15.0481%	14.8119%	14.5781%	14.3468%	14.1180%	13.8916%	13.6678%
18.4442%	18.1728%	17.9035%	17.6362%	17.3711%	17.1082%	16.8475%	16.5892%	16.3333%	16.0799%	15.8289%	15.5804%	15.3345%	15.0912%	14.8505%	14.6124%	14.3770%
19.4012%	19.1157%	18.8324%	18.5513%	18.2724%	17.9958%	17.7217%	17.4500%	17.1808%	16.9142%	16.6502%	16.3888%	16.1302%	15.8742%	15.6210%	15.3706%	15.1230%
20.4078%	20.1076%	19.8095%	19.5138%	19.2205%	18.9296%	18.6412%	18.3554%	18.0723%	17.7918%	17.5141%	17.2392%	16.9671%	16.6979%	16.4315%	16.1681%	15.9076%
21.4667%	21.1509%	20.8374%	20.5263%	20.2177%	19.9117%	19.6084%	19.3078%	19.0100%	18.7150%	18.4228%	18.1337%	17.8475%	17.5643%	17.2841%	17.0070%	16.7330%
22.5805%	22.2483%	21.9185%	21.5913%	21.2667%	20.9449%	20.6258%	20.3096%	19.9963%	19.6860%	19.3787%	19.0746%	18.7735%	18.4756%	18.1809%	17.8894%	17.6012%
23.7521%	23.4027%	23.0558%	22.7116%	22.3702%	22.0316%	21.6960%	21.3634%	21.0338%	20.7074%	20.3842%	20.0643%	19.7476%	19.4342%	19.1242%	18.8176%	18.5145%
24.9846%	24.6170%	24.2521%	23.8900%	23.5309%	23.1748%	22.8217%	22.4718%	22.1252%	21.7819%	21.4419%	21.1053%	20.7722%	20.4426%	20.1165%	19.7940%	19.4751%
26.2809%	25.8942%	25.5104%	25.1296%	24.7518%	24.3772%	24.0059%	23.6378%	23.2732%	22.9120%	22.5544%	22.2004%	21.8500%	21.5033%	21.1603%	20.8210%	20.4856%
27.6445%	27.2378%	26.8341%	26.4335%	26.0361%	25.6420%	25.2514%	24.8643%	24.4808%	24.1009%	23.7247%	23.3523%	22.9837%	22.6190%	22.2582%	21.9014%	21.5485%
29.0789%	28.6510%	28.2264%	27.8050%	27.3870%	26.9725%	26.5616%	26.1544%	25.7510%	25.3514%	24.9557%	24.5639%	24.1762%	23.7926%	23.4131%	23.0377%	22.6666%
30.5877%	30.1376%	29.6909%	29.2477%	28.8080%	28.3720%	27.9398%	27.5115%	27.0871%	26.6667%	26.2505%	25.8385%	25.4306%	25.0271%	24.6279%	24.2331%	23.8427%
32.1747%	31.7014%	31.2315%	30.7652%	30.3027%	29.8441%	29.3895%	28.9389%	28.4925%	28.0504%	27.6125%	27.1791%	26.7501%	26.3257%	25.9058%	25.4904%	25.0798%
33.8442%	33.3462%	32.8520%	32.3615%	31.8750%	31.3926%	30.9144%	30.4404%	29.9709%	29.5058%	29.0453%	28.5893%	28.1381%	27.6916%	27.2499%	26.8130%	26.3811%
	35.0764%	34.5565%	34.0406%	33.5289%	33.0215%	32.5184%	32.0199%	31.5260%	31.0367%	30.5523%	30.0727%	29.5981%	29.1284%	28.6638%	28.2043%	27.7499%
		36.3495%	35.8069%	35.2686%	34.7348%	34.2057%	33.6813%	33.1617%	32.6471%	32.1375%	31.6331%	31.1338%	30.6398%	30.1510%	29.6677%	29.1897%
			37.6647%	37.0985%	36.5371%	35.9805%	35.4289%	34.8823%	34.3410%	33.8050%	33.2744%	32.7492%	32.2295%	31.7155%	31.2070%	30.7043%
				39.0234%	38.4328%	37.8474%	37.2671%	36.6923%	36.1229%	35.5590%	35.0009%	34.4484%	33.9018%	33.3610%	32.8262%	32.2974%
					40.4270%	39.8111%	39.2008%	38.5961%	37.9971%	37.4041%	36.8169%	36.2358%	35.6608%	35.0920%	34.5294%	33.9732%
						41.8767%	41.2347%	40.5987%	39.9687%	39.3448%	38.7272%	38.1160%	37.5111%	36.9128%	36.3210%	35.7359%
							43.3742%	42.7052%	42.0425%	41.3862%	40.7366%	40.0936%	39.4574%	38.8281%	38.2056%	37.5901%
								44.9210%	44.2239%	43.5336%	42.8503%	42.1739%	41.5047%	40.8427%	40.1879%	39.5405%
									46.5185%	45.7924%	45.0736%	44.3622%	43.6583%	42.9619%	42.2731%	41.5921%
										48.1684%	47.4123%	46.6640%	45.9235%	45.1910%	44.4665%	43.7501%
											49.8723%	49.0852%	48.3063%	47.5358%	46.7737%	46.0202%
												51.6320%	50.8127%	50.0022%	49.2006%	48.4080%
													53.4492%	52.5966%	51.7534%	50.9197%
														55.3257%	54.4387%	53.5617%
															57.2633%	56.3408%
																59.2641%

15-Apr-22	15-May-22	15-Jun-22
t = 9.83	t = 9.92	t = 10
0.1649%	0.1623%	0.1596%
0.1735%	0.1707%	0.1679%
0.1825%	0.1795%	0.1766%
0.1920%	0.1889%	0.1858%
0.2019%	0.1986%	0.1954%
0.2124%	0.2090%	0.2055%
0.2234%	0.2198%	0.2162%
0.2350%	0.2312%	0.2274%
0.2472%	0.2432%	0.2392%
0.2600%	0.2558%	0.2516%
0.2735%	0.2691%	0.2647%
0.2877%	0.2831%	0.2784%
0.3027%	0.2977%	0.2929%
0.3184%	0.3132%	0.3081%
0.3349%	0.3294%	0.3241%
0.3523%	0.3465%	0.3409%
0.3705%	0.3645%	0.3586%
0.3898%	0.3834%	0.3772%
0.4100%	0.4033%	0.3967%
0.4313%	0.4242%	0.4173%
0.4536%	0.4463%	0.4390%
0.4772%	0.4694%	0.4617%
0.5019%	0.4938%	0.4857%
0.5280%	0.5194%	0.5109%
0.5554%	0.5463%	0.5374%
0.5842%	0.5747%	0.5653%
0.6145%	0.6045%	0.5946%
0.6464%	0.6359%	0.6255%
0.6799%	0.6689%	0.6579%
0.7152%	0.7036%	0.6921%
0.7523%	0.7401%	0.7280%
0.7913%	0.7785%	0.7658%
0.8324%	0.8189%	0.8055%
0.8756%	0.8614%	0.8473%
0.9210%	0.9060%	0.8912%
0.9688%	0.9531%	0.9375%
1.0191%	1.0025%	0.9861%
1.0720%	1.0545%	1.0373%
1.1276%	1.1092%	1.0911%
1.1861%	1.1668%	1.1477%
1.2476%	1.2273%	1.2073%
1.3124%	1.2910%	1.2699%
1.3804%	1.3580%	1.3358%
1.4521%	1.4285%	1.4051%
1.5274%	1.5026%	1.4780%
1.6067%	1.5805%	1.5547%
1.6900%	1.6625%	1.6354%
1.7777%	1.7488%	1.7202%
1.8700%	1.8395%	1.8095%
1.9670%	1.9350%	1.9034%
2.0690%	2.0354%	2.0021%
2.1764%	2.1410%	2.1060%
2.2893%	2.2521%	2.2153%
2.4081%	2.3689%	2.3302%
2.5331%	2.4919%	2.4511%
2.6645%	2.6211%	2.5783%
2.8027%	2.7571%	2.7121%
2.9482%	2.9002%	2.8528%
3.1011%	3.0507%	3.0008%
3.2620%	3.2090%	3.1565%
3.4313%	3.3755%	3.3203%
3.6093%	3.5506%	3.4926%
3.7966%	3.7348%	3.6738%
3.9936%	3.9286%	3.8644%
4.2008%	4.1325%	4.0650%
4.4188%	4.3469%	4.2759%
4.6480%	4.5724%	4.4977%
4.8892%	4.8097%	4.7311%
5.1429%	5.0592%	4.9766%
5.4097%	5.3217%	5.2348%
5.6904%	5.5979%	5.5064%
5.9857%	5.8883%	5.7921%
6.2962%	6.1938%	6.0926%
6.6229%	6.5152%	6.4088%
6.9666%	6.8533%	6.7413%
7.3280%	7.2088%	7.0911%
7.7082%	7.5829%	7.4590%
8.1082%	7.9763%	7.8460%
8.5289%	8.3902%	8.2531%
8.9714%	8.8255%	8.6813%
9.4369%	9.2834%	9.1318%
9.9266%	9.7651%	9.6056%
10.4416%	10.2718%	10.1040%
10.9834%	10.8048%	10.6282%
11.5533%	11.3654%	11.1797%
12.1527%	11.9551%	11.7598%
12.7833%	12.5754%	12.3699%
13.4466%	13.2279%	13.0118%
14.1443%	13.9142%	13.6869%
14.8781%	14.6362%	14.3971%
15.6501%	15.3956%	15.1441%
16.4621%	16.1944%	15.9298%
17.3163%	17.0347%	16.7564%
18.2148%	17.9185%	17.6258%
19.1599%	18.8483%	18.5403%
20.1540%	19.8262%	19.5023%
21.1997%	20.8549%	20.5142%
22.2997%	21.9370%	21.5786%
23.4567%	23.0752%	22.6982%
24.6738%	24.2725%	23.8759%
25.9540%	25.5319%	25.1148%
27.3007%	26.8567%	26.4179%
28.7172%	28.2501%	27.7886%
30.2072%	29.7159%	29.2304%
31.7745%	31.2578%	30.7471%
33.4232%	32.8796%	32.3424%
35.1574%	34.5856%	34.0206%
36.9816%	36.3801%	35.7858%
38.9004%	38.2678%	37.6425%
40.9188%	40.2533%	39.5957%
43.0419%	42.3419%	41.6501%
45.2752%	44.5389%	43.8112%
47.6243%	46.8498%	46.0844%
50.0954%	49.2807%	48.4755%
52.6946%	51.8376%	50.9907%
55.4288%	54.5273%	53.6364%
58.3047%	57.3565%	56.4194%
61.3299%	60.3325%	59.3468%
	63.4629%	62.4261%
		65.6651%

APPENDIX H: POST-CALIBRATION BINOMIAL LATTICES

H1. USD 2011 POST-CALIBRATION LATTICE

Refer to following pages.

H2. EUR 2011 POST-CALIBRATION LATTICE

Refer to following pages.

H3. USD 2012 POST-CALIBRATION LATTICE

Refer to following pages.

USD 2011 post-calibration lattice

date	15-Apr-11	15-May-11	15-Jun-11	15-Jul-11	15-Aug-11	15-Sep-11	15-Oct-11	15-Nov-11	15-Dec-11	15-Jan-12	15-Feb-12	15-Mar-12	15-Apr-12	15-May-12	15-Jun-12
USD Apr 2011 lattice															
	t = 0.08	t = 0.17	t = 0.25	t = 0.33	t = 0.42	t = 0.5	t = 0.58	t = 0.67	t = 0.75	t = 0.83	t = 0.92	t = 1	t = 1.08	t = 1.17	t = 1.25
j = 1	0.0297%	0.0609%	0.0933%	0.1245%	0.1524%	0.1761%	0.1961%	0.2175%	0.2441%	0.2785%	0.3229%	0.3795%	0.4476%	0.5201%	0.5931%
j = 2		0.0634%	0.0972%	0.1297%	0.1587%	0.1834%	0.2042%	0.2265%	0.2543%	0.2900%	0.3363%	0.3953%	0.4662%	0.5416%	0.6177%
j = 3			0.1012%	0.1351%	0.1653%	0.1910%	0.2127%	0.2359%	0.2648%	0.3021%	0.3502%	0.4116%	0.4855%	0.5641%	0.6433%
j = 4				0.1407%	0.1721%	0.1990%	0.2215%	0.2457%	0.2758%	0.3146%	0.3648%	0.4287%	0.5056%	0.5875%	0.6699%
j = 5					0.1792%	0.2072%	0.2307%	0.2559%	0.2872%	0.3276%	0.3799%	0.4465%	0.5266%	0.6118%	0.6977%
j = 6						0.2158%	0.2402%	0.2665%	0.2991%	0.3412%	0.3956%	0.4650%	0.5484%	0.6372%	0.7266%
j = 7							0.2502%	0.2775%	0.3115%	0.3553%	0.4120%	0.4843%	0.5712%	0.6636%	0.7568%
j = 8								0.2890%	0.3244%	0.3701%	0.4291%	0.5043%	0.5948%	0.6911%	0.7881%
j = 9									0.3379%	0.3854%	0.4469%	0.5252%	0.6195%	0.7197%	0.8208%
j = 10										0.4014%	0.4654%	0.5470%	0.6452%	0.7496%	0.8548%
j = 11											0.4847%	0.5697%	0.6719%	0.7807%	0.8903%
j = 12												0.5933%	0.6998%	0.8130%	0.9272%
j = 13													0.7288%	0.8467%	0.9656%
j = 14														0.8818%	1.0056%
j = 15															1.0473%
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15-Jul-12	15-Aug-12	15-Sep-12	15-Oct-12	15-Nov-12	15-Dec-12	15-Jan-13	15-Feb-13	15-Mar-13	15-Apr-13	15-May-13	15-Jun-13	15-Jul-13	15-Aug-13	15-Sep-13	15-Oct-13	15-Nov-13
t = 1.33	t = 1.42	t = 1.5	t = 1.58	t = 1.67	t = 1.75	t = 1.83	t = 1.92	t = 2	t = 2.08	t = 2.17	t = 2.25	t = 2.33	t = 2.42	t = 2.5	t = 2.58	t = 2.67
0.6653%	0.7355%	0.8025%	0.8653%	0.9229%	0.9743%	1.0189%	1.0559%	1.0847%	1.1065%	1.1250%	1.1424%	1.1587%	1.1744%	1.1895%	1.2043%	1.2189%
0.6929%	0.7660%	0.8358%	0.9012%	0.9611%	1.0147%	1.0612%	1.0997%	1.1297%	1.1523%	1.1716%	1.1897%	1.2068%	1.2231%	1.2388%	1.2542%	1.2694%
0.7216%	0.7978%	0.8705%	0.9385%	1.0010%	1.0568%	1.1052%	1.1453%	1.1765%	1.2001%	1.2202%	1.2390%	1.2568%	1.2738%	1.2902%	1.3062%	1.3221%
0.7515%	0.8308%	0.9065%	0.9774%	1.0425%	1.1006%	1.1510%	1.1928%	1.2253%	1.2498%	1.2708%	1.2904%	1.3089%	1.3266%	1.3436%	1.3603%	1.3769%
0.7827%	0.8653%	0.9441%	1.0180%	1.0857%	1.1462%	1.1987%	1.2422%	1.2760%	1.3017%	1.3235%	1.3439%	1.3631%	1.3816%	1.3993%	1.4167%	1.4339%
0.8151%	0.9011%	0.9832%	1.0601%	1.1307%	1.1937%	1.2484%	1.2937%	1.3289%	1.3556%	1.3783%	1.3996%	1.4197%	1.4388%	1.4573%	1.4755%	1.4934%
0.8489%	0.9385%	1.0240%	1.1041%	1.1775%	1.2432%	1.3001%	1.3473%	1.3840%	1.4118%	1.4355%	1.4576%	1.4785%	1.4985%	1.5178%	1.5366%	1.5553%
0.8841%	0.9774%	1.0664%	1.1499%	1.2264%	1.2948%	1.3540%	1.4032%	1.4414%	1.4703%	1.4950%	1.5180%	1.5398%	1.5606%	1.5807%	1.6003%	1.6197%
0.9208%	1.0179%	1.1107%	1.1975%	1.2772%	1.3484%	1.4101%	1.4614%	1.5012%	1.5313%	1.5569%	1.5809%	1.6036%	1.6253%	1.6462%	1.6666%	1.6869%
0.9589%	1.0601%	1.1567%	1.2472%	1.3301%	1.4043%	1.4686%	1.5219%	1.5634%	1.5948%	1.6215%	1.6465%	1.6701%	1.6926%	1.7144%	1.7357%	1.7568%
0.9987%	1.1041%	1.2046%	1.2989%	1.3853%	1.4625%	1.5295%	1.5850%	1.6282%	1.6609%	1.6887%	1.7147%	1.7393%	1.7628%	1.7855%	1.8077%	1.8296%
1.0401%	1.1498%	1.2546%	1.3527%	1.4427%	1.5232%	1.5929%	1.6507%	1.6957%	1.7297%	1.7587%	1.7858%	1.8114%	1.8359%	1.8595%	1.8826%	1.9055%
1.0832%	1.1975%	1.3066%	1.4088%	1.5025%	1.5863%	1.6589%	1.7191%	1.7660%	1.8014%	1.8316%	1.8598%	1.8865%	1.9120%	1.9366%	1.9607%	1.9845%
1.1281%	1.2471%	1.3607%	1.4672%	1.5648%	1.6521%	1.7277%	1.7904%	1.8392%	1.8761%	1.9075%	1.9369%	1.9647%	1.9912%	2.0169%	2.0419%	2.0667%
1.1749%	1.2988%	1.4171%	1.5280%	1.6296%	1.7205%	1.7993%	1.8646%	1.9154%	1.9538%	1.9866%	2.0172%	2.0461%	2.0738%	2.1005%	2.1266%	2.1524%
1.2236%	1.3527%	1.4759%	1.5913%	1.6972%	1.7919%	1.8739%	1.9419%	1.9948%	2.0348%	2.0689%	2.1008%	2.1310%	2.1597%	2.1875%	2.2147%	2.2416%
	1.4087%	1.5371%	1.6573%	1.7675%	1.8661%	1.9515%	2.0224%	2.0775%	2.1192%	2.1547%	2.1879%	2.2193%	2.2493%	2.2782%	2.3065%	2.3345%
		1.6008%	1.7260%	1.8408%	1.9435%	2.0324%	2.1062%	2.1636%	2.2070%	2.2440%	2.2786%	2.3113%	2.3425%	2.3726%	2.4021%	2.4313%
			1.7975%	1.9171%	2.0240%	2.1167%	2.1936%	2.2533%	2.2985%	2.3370%	2.3731%	2.4071%	2.4396%	2.4710%	2.5017%	2.5321%
				1.9966%	2.1079%	2.2044%	2.2845%	2.3467%	2.3938%	2.4339%	2.4714%	2.5069%	2.5407%	2.5734%	2.6054%	2.6370%
					2.1953%	2.2958%	2.3792%	2.4440%	2.4930%	2.5348%	2.5739%	2.6108%	2.6460%	2.6801%	2.7134%	2.7463%
						2.3910%	2.4778%	2.5453%	2.5964%	2.6399%	2.6806%	2.7190%	2.7557%	2.7912%	2.8259%	2.8602%
							2.5805%	2.6508%	2.7040%	2.7493%	2.7917%	2.8317%	2.8700%	2.9069%	2.9430%	2.9787%
								2.7607%	2.8161%	2.8633%	2.9074%	2.9491%	2.9889%	3.0274%	3.0650%	3.1022%
									2.9328%	2.9819%	3.0279%	3.0713%	3.1128%	3.1529%	3.1921%	3.2308%
										3.1056%	3.1534%	3.1987%	3.2418%	3.2836%	3.3244%	3.3647%
											3.2841%	3.3312%	3.3762%	3.4197%	3.4622%	3.5042%
												3.4693%	3.5162%	3.5614%	3.6057%	3.6495%
													3.6619%	3.7091%	3.7552%	3.8007%
														3.8628%	3.9108%	3.9583%
															4.0729%	4.1224%
																4.2932%

15-Dec-13	15-Jan-14	15-Feb-14	15-Mar-14	15-Apr-14	15-May-14	15-Jun-14	15-Jul-14	15-Aug-14	15-Sep-14	15-Oct-14	15-Nov-14	15-Dec-14	15-Jan-15	15-Feb-15	15-Mar-15	15-Apr-15
t = 2.75	t = 2.83	t = 2.92	t = 3	t = 3.08	t = 3.17	t = 3.25	t = 3.33	t = 3.42	t = 3.5	t = 3.58	t = 3.67	t = 3.75	t = 3.83	t = 3.92	t = 4	t = 4.08
1.2335%	1.2483%	1.2634%	1.2788%	1.2966%	1.3111%	1.3241%	1.3357%	1.3458%	1.3545%	1.3617%	1.3675%	1.3719%	1.3750%	1.3767%	1.3771%	1.3761%
1.2847%	1.3000%	1.3157%	1.3318%	1.3504%	1.3655%	1.3790%	1.3910%	1.4016%	1.4106%	1.4181%	1.4242%	1.4288%	1.4320%	1.4338%	1.4342%	1.4332%
1.3379%	1.3539%	1.3703%	1.3871%	1.4064%	1.4221%	1.4362%	1.4487%	1.4597%	1.4691%	1.4769%	1.4832%	1.4880%	1.4914%	1.4932%	1.4936%	1.4926%
1.3934%	1.4101%	1.4271%	1.4445%	1.4647%	1.4810%	1.4957%	1.5088%	1.5202%	1.5300%	1.5381%	1.5447%	1.5497%	1.5532%	1.5551%	1.5555%	1.5544%
1.4511%	1.4685%	1.4862%	1.5044%	1.5254%	1.5424%	1.5577%	1.5713%	1.5832%	1.5934%	1.6019%	1.6087%	1.6140%	1.6176%	1.6196%	1.6200%	1.6189%
1.5113%	1.5294%	1.5478%	1.5668%	1.5886%	1.6063%	1.6223%	1.6364%	1.6488%	1.6594%	1.6683%	1.6754%	1.6809%	1.6846%	1.6867%	1.6872%	1.6860%
1.5739%	1.5928%	1.6120%	1.6317%	1.6545%	1.6729%	1.6895%	1.7043%	1.7172%	1.7282%	1.7374%	1.7449%	1.7505%	1.7544%	1.7566%	1.7571%	1.7559%
1.6392%	1.6588%	1.6788%	1.6994%	1.7230%	1.7423%	1.7596%	1.7749%	1.7883%	1.7999%	1.8095%	1.8172%	1.8231%	1.8272%	1.8294%	1.8299%	1.8286%
1.7071%	1.7276%	1.7484%	1.7698%	1.7945%	1.8145%	1.8325%	1.8485%	1.8625%	1.8745%	1.8845%	1.8925%	1.8987%	1.9029%	1.9053%	1.9058%	1.9044%
1.7779%	1.7992%	1.8209%	1.8432%	1.8688%	1.8897%	1.9085%	1.9251%	1.9397%	1.9522%	1.9626%	1.9710%	1.9774%	1.9818%	1.9842%	1.9848%	1.9834%
1.8516%	1.8738%	1.8964%	1.9196%	1.9463%	1.9680%	1.9876%	2.0049%	2.0201%	2.0331%	2.0439%	2.0527%	2.0593%	2.0639%	2.0665%	2.0670%	2.0656%
1.9283%	1.9514%	1.9750%	1.9992%	2.0270%	2.0496%	2.0700%	2.0880%	2.1038%	2.1174%	2.1287%	2.1378%	2.1447%	2.1495%	2.1522%	2.1527%	2.1512%
2.0083%	2.0323%	2.0568%	2.0820%	2.1110%	2.1346%	2.1558%	2.1746%	2.1910%	2.2051%	2.2169%	2.2264%	2.2336%	2.2386%	2.2414%	2.2420%	2.2404%
2.0915%	2.1166%	2.1421%	2.1683%	2.1985%	2.2231%	2.2451%	2.2647%	2.2818%	2.2965%	2.3088%	2.3187%	2.3262%	2.3314%	2.3343%	2.3349%	2.3333%
2.1782%	2.2043%	2.2309%	2.2582%	2.2897%	2.3152%	2.3382%	2.3586%	2.3764%	2.3917%	2.4045%	2.4148%	2.4226%	2.4280%	2.4310%	2.4317%	2.4300%
2.2685%	2.2957%	2.3234%	2.3518%	2.3846%	2.4112%	2.4351%	2.4564%	2.4749%	2.4909%	2.5042%	2.5149%	2.5230%	2.5287%	2.5318%	2.5325%	2.5307%
2.3625%	2.3908%	2.4197%	2.4493%	2.4834%	2.5111%	2.5360%	2.5582%	2.5775%	2.5941%	2.6080%	2.6191%	2.6276%	2.6335%	2.6368%	2.6375%	2.6356%
2.4605%	2.4899%	2.5200%	2.5508%	2.5863%	2.6152%	2.6412%	2.6642%	2.6844%	2.7017%	2.7161%	2.7277%	2.7366%	2.7427%	2.7461%	2.7468%	2.7449%
2.5624%	2.5931%	2.6244%	2.6566%	2.6936%	2.7236%	2.7507%	2.7747%	2.7957%	2.8137%	2.8287%	2.8408%	2.8500%	2.8563%	2.8599%	2.8606%	2.8586%
2.6687%	2.7006%	2.7332%	2.7667%	2.8052%	2.8365%	2.8647%	2.8897%	2.9115%	2.9303%	2.9459%	2.9585%	2.9681%	2.9747%	2.9784%	2.9792%	2.9771%
2.7793%	2.8126%	2.8465%	2.8814%	2.9215%	2.9541%	2.9834%	3.0095%	3.0322%	3.0518%	3.0680%	3.0812%	3.0912%	3.0981%	3.1019%	3.1027%	3.1005%
2.8945%	2.9292%	2.9645%	3.0008%	3.0426%	3.0766%	3.1071%	3.1342%	3.1579%	3.1783%	3.1952%	3.2089%	3.2193%	3.2265%	3.2305%	3.2313%	3.2291%
3.0145%	3.0506%	3.0874%	3.1252%	3.1687%	3.2041%	3.2359%	3.2641%	3.2888%	3.3100%	3.3276%	3.3419%	3.3527%	3.3602%	3.3644%	3.3653%	3.3629%
3.1394%	3.1770%	3.2154%	3.2547%	3.3001%	3.3369%	3.3700%	3.3994%	3.4251%	3.4472%	3.4656%	3.4804%	3.4917%	3.4995%	3.5038%	3.5048%	3.5023%
3.2696%	3.3087%	3.3486%	3.3897%	3.4369%	3.4752%	3.5097%	3.5403%	3.5671%	3.5901%	3.6092%	3.6247%	3.6365%	3.6446%	3.6491%	3.6501%	3.6475%
3.4051%	3.4459%	3.4875%	3.5302%	3.5793%	3.6193%	3.6552%	3.6871%	3.7150%	3.7389%	3.7588%	3.7749%	3.7872%	3.7956%	3.8003%	3.8014%	3.7987%
3.5462%	3.5887%	3.6320%	3.6765%	3.7277%	3.7693%	3.8067%	3.8399%	3.8690%	3.8939%	3.9147%	3.9314%	3.9442%	3.9530%	3.9579%	3.9589%	3.9561%
3.6932%	3.7375%	3.7826%	3.8289%	3.8822%	3.9255%	3.9645%	3.9991%	4.0294%	4.0553%	4.0769%	4.0944%	4.1077%	4.1168%	4.1219%	4.1230%	4.1201%
3.8463%	3.8924%	3.9394%	3.9876%	4.0431%	4.0883%	4.1288%	4.1649%	4.1964%	4.2234%	4.2459%	4.2641%	4.2779%	4.2875%	4.2928%	4.2939%	4.2909%
4.0058%	4.0537%	4.1027%	4.1529%	4.2107%	4.2577%	4.3000%	4.3375%	4.3703%	4.3985%	4.4219%	4.4409%	4.4553%	4.4652%	4.4707%	4.4719%	4.4688%
4.1718%	4.2218%	4.2727%	4.3250%	4.3853%	4.4342%	4.4782%	4.5173%	4.5515%	4.5808%	4.6052%	4.6249%	4.6400%	4.6503%	4.6561%	4.6573%	4.6540%
4.3448%	4.3968%	4.4498%	4.5043%	4.5671%	4.6180%	4.6639%	4.7046%	4.7402%	4.7707%	4.7961%	4.8167%	4.8323%	4.8431%	4.8491%	4.8504%	4.8470%
4.5248%	4.5790%	4.6343%	4.6910%	4.7564%	4.8095%	4.8572%	4.8996%	4.9366%	4.9684%	4.9949%	5.0163%	5.0326%	5.0438%	5.0501%	5.0514%	5.0479%
	4.7689%	4.8264%	4.8855%	4.9535%	5.0088%	5.0585%	5.1027%	5.1413%	5.1744%	5.2020%	5.2243%	5.2412%	5.2529%	5.2594%	5.2608%	5.2571%
		5.0264%	5.0880%	5.1589%	5.2164%	5.2682%	5.3142%	5.3544%	5.3889%	5.4176%	5.4408%	5.4585%	5.4706%	5.4774%	5.4789%	5.4750%
			5.2989%	5.3727%	5.4327%	5.4866%	5.5345%	5.5763%	5.6123%	5.6422%	5.6663%	5.6847%	5.6974%	5.7045%	5.7060%	5.7020%
				5.5954%	5.6579%	5.7140%	5.7639%	5.8075%	5.8449%	5.8761%	5.9012%	5.9204%	5.9336%	5.9409%	5.9425%	5.9383%
					5.8924%	5.9509%	6.0028%	6.0482%	6.0872%	6.1196%	6.1458%	6.1658%	6.1795%	6.1872%	6.1888%	6.1845%
						6.1976%	6.2516%	6.2989%	6.3395%	6.3733%	6.4006%	6.4214%	6.4357%	6.4437%	6.4454%	6.4409%
							6.5108%	6.5600%	6.6023%	6.6375%	6.6659%	6.6875%	6.7025%	6.7108%	6.7126%	6.7078%
								6.8320%	6.8760%	6.9126%	6.9422%	6.9648%	6.9803%	6.9889%	6.9908%	6.9859%
									7.1610%	7.1992%	7.2300%	7.2535%	7.2696%	7.2786%	7.2806%	7.2755%
										7.4976%	7.5297%	7.5541%	7.5710%	7.5804%	7.5824%	7.5771%
											7.8418%	7.8673%	7.8848%	7.8946%	7.8967%	7.8911%
												8.1934%	8.2117%	8.2218%	8.2240%	8.2182%
													8.5520%	8.5626%	8.5649%	8.5589%
														8.9176%	8.9199%	8.9137%
															9.2897%	9.2832%
																9.6680%

15-May-15	15-Jun-15	15-Jul-15	15-Aug-15	15-Sep-15	15-Oct-15	15-Nov-15	15-Dec-15	15-Jan-16	15-Feb-16	15-Mar-16	15-Apr-16	15-May-16	15-Jun-16	15-Jul-16	15-Aug-16	15-Sep-16
t = 4.17	t = 4.25	t = 4.33	t = 4.42	t = 4.5	t = 4.58	t = 4.67	t = 4.75	t = 4.83	t = 4.92	t = 5	t = 5.08	t = 5.17	t = 5.25	t = 5.33	t = 5.42	t = 5.5
1.3739%	1.3704%	1.3656%	1.3597%	1.3525%	1.3442%	1.3348%	1.3242%	1.3126%	1.3000%	1.2863%	1.2784%	1.2633%	1.2478%	1.2322%	1.2162%	1.2001%
1.4308%	1.4272%	1.4222%	1.4160%	1.4086%	1.3999%	1.3901%	1.3791%	1.3670%	1.3539%	1.3396%	1.3313%	1.3156%	1.2996%	1.2832%	1.2667%	1.2499%
1.4901%	1.4863%	1.4812%	1.4747%	1.4670%	1.4580%	1.4477%	1.4363%	1.4237%	1.4100%	1.3952%	1.3865%	1.3702%	1.3534%	1.3364%	1.3192%	1.3017%
1.5519%	1.5479%	1.5426%	1.5359%	1.5278%	1.5184%	1.5077%	1.4958%	1.4827%	1.4684%	1.4530%	1.4440%	1.4269%	1.4095%	1.3918%	1.3739%	1.3556%
1.6162%	1.6121%	1.6065%	1.5995%	1.5911%	1.5813%	1.5702%	1.5578%	1.5442%	1.5293%	1.5132%	1.5039%	1.4861%	1.4680%	1.4495%	1.4308%	1.4118%
1.6832%	1.6789%	1.6731%	1.6658%	1.6571%	1.6469%	1.6353%	1.6224%	1.6082%	1.5927%	1.5760%	1.5662%	1.5477%	1.5288%	1.5096%	1.4901%	1.4703%
1.7530%	1.7485%	1.7425%	1.7349%	1.7258%	1.7151%	1.7031%	1.6897%	1.6749%	1.6587%	1.6413%	1.6311%	1.6119%	1.5922%	1.5722%	1.5519%	1.5313%
1.8257%	1.8210%	1.8147%	1.8068%	1.7973%	1.7862%	1.7737%	1.7597%	1.7443%	1.7275%	1.7093%	1.6987%	1.6787%	1.6582%	1.6374%	1.6162%	1.5948%
1.9013%	1.8965%	1.8899%	1.8817%	1.8718%	1.8603%	1.8472%	1.8326%	1.8166%	1.7991%	1.7802%	1.7692%	1.7483%	1.7269%	1.7052%	1.6832%	1.6609%
1.9802%	1.9751%	1.9683%	1.9597%	1.9494%	1.9374%	1.9238%	1.9086%	1.8919%	1.8737%	1.8540%	1.8425%	1.8207%	1.7985%	1.7759%	1.7530%	1.7297%
2.0622%	2.0570%	2.0499%	2.0409%	2.0302%	2.0177%	2.0035%	1.9877%	1.9703%	1.9513%	1.9308%	1.9189%	1.8962%	1.8731%	1.8495%	1.8256%	1.8014%
2.1477%	2.1422%	2.1348%	2.1255%	2.1143%	2.1013%	2.0866%	2.0701%	2.0520%	2.0322%	2.0109%	1.9984%	1.9748%	1.9507%	1.9262%	1.9013%	1.8761%
2.2367%	2.2310%	2.2233%	2.2136%	2.2020%	2.1884%	2.1731%	2.1559%	2.1370%	2.1165%	2.0942%	2.0812%	2.0567%	2.0316%	2.0060%	1.9801%	1.9539%
2.3295%	2.3235%	2.3155%	2.3054%	2.2933%	2.2792%	2.2632%	2.2453%	2.2256%	2.2042%	2.1810%	2.1675%	2.1419%	2.1158%	2.0892%	2.0622%	2.0349%
2.4260%	2.4198%	2.4115%	2.4009%	2.3883%	2.3736%	2.3570%	2.3384%	2.3179%	2.2955%	2.2714%	2.2574%	2.2307%	2.2035%	2.1758%	2.1477%	2.1192%
2.5266%	2.5201%	2.5114%	2.5005%	2.4873%	2.4720%	2.4547%	2.4353%	2.4140%	2.3907%	2.3656%	2.3509%	2.3232%	2.2948%	2.2660%	2.2367%	2.2071%
2.6313%	2.6246%	2.6155%	2.6041%	2.5904%	2.5745%	2.5564%	2.5363%	2.5140%	2.4898%	2.4636%	2.4484%	2.4195%	2.3899%	2.3599%	2.3294%	2.2985%
2.7404%	2.7334%	2.7239%	2.7121%	2.6978%	2.6812%	2.6624%	2.6414%	2.6182%	2.5930%	2.5658%	2.5499%	2.5197%	2.4890%	2.4577%	2.4260%	2.3938%
2.8540%	2.8467%	2.8369%	2.8245%	2.8096%	2.7924%	2.7728%	2.7509%	2.7268%	2.7005%	2.6721%	2.6556%	2.6242%	2.5922%	2.5596%	2.5266%	2.4930%
2.9723%	2.9647%	2.9544%	2.9416%	2.9261%	2.9081%	2.8877%	2.8649%	2.8398%	2.8124%	2.7829%	2.7657%	2.7330%	2.6996%	2.6657%	2.6313%	2.5964%
3.0955%	3.0876%	3.0769%	3.0635%	3.0474%	3.0286%	3.0074%	2.9837%	2.9575%	2.9290%	2.8982%	2.8803%	2.8463%	2.8115%	2.7762%	2.7404%	2.7040%
3.2238%	3.2156%	3.2045%	3.1905%	3.1737%	3.1542%	3.1321%	3.1073%	3.0801%	3.0504%	3.0184%	2.9997%	2.9642%	2.9281%	2.8913%	2.8539%	2.8161%
3.3574%	3.3489%	3.3373%	3.3227%	3.3053%	3.2849%	3.2619%	3.2361%	3.2078%	3.1769%	3.1435%	3.1240%	3.0871%	3.0495%	3.0112%	2.9723%	2.9328%
3.4966%	3.4877%	3.4756%	3.4605%	3.4423%	3.4211%	3.3971%	3.3703%	3.3407%	3.3086%	3.2738%	3.2535%	3.2151%	3.1759%	3.1360%	3.0955%	3.0544%
3.6416%	3.6323%	3.6197%	3.6039%	3.5850%	3.5629%	3.5379%	3.5100%	3.4792%	3.4457%	3.4095%	3.3884%	3.3484%	3.3075%	3.2660%	3.2238%	3.1810%
3.7925%	3.7828%	3.7697%	3.7533%	3.7336%	3.7106%	3.6846%	3.6555%	3.6235%	3.5885%	3.5508%	3.5289%	3.4872%	3.4446%	3.4013%	3.3574%	3.3129%
3.9497%	3.9396%	3.9260%	3.9089%	3.8883%	3.8644%	3.8373%	3.8070%	3.7737%	3.7373%	3.6980%	3.6751%	3.6317%	3.5874%	3.5423%	3.4966%	3.4502%
4.1134%	4.1030%	4.0887%	4.0709%	4.0495%	4.0246%	3.9964%	3.9648%	3.9301%	3.8922%	3.8513%	3.8275%	3.7822%	3.7361%	3.6892%	3.6415%	3.5932%
4.2840%	4.2730%	4.2582%	4.2397%	4.2174%	4.1914%	4.1620%	4.1292%	4.0930%	4.0536%	4.0110%	3.9861%	3.9390%	3.8910%	3.8421%	3.7925%	3.7422%
4.4615%	4.4502%	4.4347%	4.4154%	4.3922%	4.3652%	4.3345%	4.3003%	4.2626%	4.2216%	4.1772%	4.1514%	4.1023%	4.0523%	4.0014%	3.9497%	3.8973%
4.6465%	4.6346%	4.6186%	4.5984%	4.5743%	4.5461%	4.5142%	4.4786%	4.4393%	4.3966%	4.3504%	4.3234%	4.2723%	4.2202%	4.1672%	4.1134%	4.0588%
4.8391%	4.8267%	4.8100%	4.7890%	4.7639%	4.7346%	4.7013%	4.6642%	4.6234%	4.5788%	4.5307%	4.5027%	4.4494%	4.3952%	4.3400%	4.2839%	4.2271%
5.0397%	5.0268%	5.0094%	4.9876%	4.9613%	4.9308%	4.8962%	4.8576%	4.8150%	4.7686%	4.7185%	4.6893%	4.6339%	4.5774%	4.5199%	4.4615%	4.4023%
5.2486%	5.2352%	5.2171%	5.1943%	5.1670%	5.1352%	5.0992%	5.0589%	5.0146%	4.9663%	4.9141%	4.8837%	4.8260%	4.7671%	4.7072%	4.6464%	4.5848%
5.4661%	5.4522%	5.4333%	5.4096%	5.3812%	5.3481%	5.3105%	5.2686%	5.2225%	5.1721%	5.1178%	5.0861%	5.0260%	4.9647%	4.9023%	4.8390%	4.7748%
5.6927%	5.6782%	5.6585%	5.6338%	5.6042%	5.5698%	5.5307%	5.4870%	5.4389%	5.3865%	5.3300%	5.2969%	5.2344%	5.1705%	5.1055%	5.0396%	4.9727%
5.9287%	5.9136%	5.8931%	5.8674%	5.8366%	5.8006%	5.7599%	5.7145%	5.6644%	5.6098%	5.5509%	5.5165%	5.4513%	5.3848%	5.3172%	5.2485%	5.1789%
6.1744%	6.1587%	6.1374%	6.1106%	6.0785%	6.0411%	5.9987%	5.9514%	5.8992%	5.8424%	5.7810%	5.7452%	5.6773%	5.6080%	5.5376%	5.4661%	5.3936%
6.4304%	6.4140%	6.3918%	6.3639%	6.3305%	6.2915%	6.2474%	6.1980%	6.1437%	6.0845%	6.0206%	5.9833%	5.9126%	5.8405%	5.7671%	5.6926%	5.6171%
6.6969%	6.6799%	6.6567%	6.6277%	6.5929%	6.5523%	6.5063%	6.4550%	6.3984%	6.3368%	6.2702%	6.2314%	6.1577%	6.0826%	6.0062%	5.9286%	5.8500%
6.9745%	6.9567%	6.9327%	6.9024%	6.8661%	6.8239%	6.7760%	6.7225%	6.6636%	6.5994%	6.5301%	6.4897%	6.4130%	6.3347%	6.2552%	6.1744%	6.0925%
7.2636%	7.2451%	7.2200%	7.1885%	7.1508%	7.1068%	7.0569%	7.0012%	6.9398%	6.8730%	6.8008%	6.7587%	6.6788%	6.5973%	6.5145%	6.4303%	6.3450%
7.5647%	7.5454%	7.5193%	7.4865%	7.4472%	7.4014%	7.3494%	7.2914%	7.2275%	7.1579%	7.0827%	7.0388%	6.9556%	6.8708%	6.7845%	6.6968%	6.6080%
7.8783%	7.8582%	7.8310%	7.7968%	7.7559%	7.7082%	7.6541%	7.5937%	7.5271%	7.4546%	7.3763%	7.3306%	7.2440%	7.1556%	7.0657%	6.9744%	6.8819%
8.2049%	8.1840%	8.1556%	8.1200%	8.0774%	8.0277%	7.9713%	7.9084%	7.8391%	7.7636%	7.6820%	7.6345%	7.5442%	7.4522%	7.3586%	7.2635%	7.1672%
8.5450%	8.5232%	8.4937%	8.4566%	8.4122%	8.3604%	8.3018%	8.2363%	8.1641%	8.0854%	8.0005%	7.9509%	7.8570%	7.7611%	7.6636%	7.5646%	7.4643%
8.8992%	8.8765%	8.8458%	8.8072%	8.7609%	8.7070%	8.6459%	8.5777%	8.5025%	8.4206%	8.3321%	8.2805%	8.1827%	8.0829%	7.9813%	7.8782%	7.7737%
9.2681%	9.2444%	9.2124%	9.1722%	9.1240%	9.0679%	9.0043%	8.9332%	8.8549%	8.7696%	8.6775%	8.6237%	8.5218%	8.4179%	8.3121%	8.2048%	8.0959%
9.6523%	9.6276%	9.5943%	9.5525%	9.5023%	9.4438%	9.3775%	9.3035%	9.2220%	9.1331%	9.0372%	8.9812%	8.8751%	8.7668%	8.6567%	8.5449%	8.4315%
10.0524%	10.0267%	9.9920%	9.9484%	9.8961%	9.8353%	9.7662%	9.6892%	9.6043%	9.5117%	9.4118%	9.3535%	9.2430%	9.1302%	9.0155%	8.8991%	8.7810%
	10.4424%	10.4062%	10.3608%	10.3064%	10.2430%	10.1711%	10.0908%	10.0024%	9.9060%	9.8019%	9.7412%	9.6261%	9.5087%	9.3892%	9.2679%	9.1450%
		10.8376%	10.7903%	10.7336%	10.6675%	10.5927%	10.5091%	10.4170%	10.3166%	10.2082%	10.1450%	10.0251%	9.9029%	9.7784%	9.6521%	9.5241%
			11.2376%	11.1785%	11.1097%	11.0318%	10.9447%	10.8488%	10.7443%	10.6314%	10.5656%	10.4407%	10.3134%	10.1838%	10.0522%	9.9189%
				11.6419%	11.5703%	11.4891%	11.3984%	11.2985%	11.1896%	11.0721%	11.0035%	10.8735%	10.7409%	10.6059%	10.4689%	10.3301%
					12.0499%	11.9653%	11.8709%	11.7668%	11.6535%	11.5310%	11.4596%	11.3242%	11.1861%	11.0456%	10.9029%	10.7583%
						12.4613%	12.3629%	12.2546%	12.1365%	12.0090%	11.9347%	11.7936%	11.6498%	11.5034%	11.3548%	11.2042%
							12.8754%	12.7626%	12.6396%	12.5068%	12.4294%	12.2825%	12.1327%	11.9803%	11.8255%	11.6686%
								13.2916%	13.1635%	13.0253%	12.9446%	12.7916%	12.6356%	12.4769%	12.3157%	12.1523%
									13.7092%	13.5652%	13.4812%	13.3219%	13.1594%	12.9940%	12.8262%	12.6561%
										14.1275%	14.0400%	13.8741%	13.7049%	13.5327%	13.3578%	13.1807%
											14.6220%	14.4492%	14.2730%	14.0936%	13.9116%	13.7270%
												15.0481%	14.8646%	14.6778%	14.4882%	14.2961%
													15.4808%	15.2863%	15.0888%	14.8887%
														15.9199%	15.7142%	15.5058%
															16.3656%	16.1486%
																16.8180%

15-Oct-16	15-Nov-16	15-Dec-16	15-Jan-17	15-Feb-17	15-Mar-17	15-Apr-17	15-May-17	15-Jun-17	15-Jul-17	15-Aug-17	15-Sep-17	15-Oct-17	15-Nov-17	15-Dec-17	15-Jan-18	15-Feb-18
t = 5.58	t = 5.67	t = 5.75	t = 5.83	t = 5.92	t = 6	t = 6.08	t = 6.17	t = 6.25	t = 6.33	t = 6.42	t = 6.5	t = 6.58	t = 6.67	t = 6.75	t = 6.83	t = 6.92
1.1837%	1.1672%	1.1506%	1.1339%	1.1171%	1.1002%	1.0831%	1.0662%	1.0492%	1.0322%	1.0152%	0.9982%	0.9813%	0.9644%	0.9476%	0.9309%	0.9143%
1.2328%	1.2156%	1.1983%	1.1809%	1.1634%	1.1458%	1.1280%	1.1104%	1.0927%	1.0750%	1.0573%	1.0396%	1.0219%	1.0044%	0.9869%	0.9695%	0.9522%
1.2839%	1.2660%	1.2480%	1.2298%	1.2116%	1.1933%	1.1748%	1.1564%	1.1379%	1.1195%	1.1011%	1.0827%	1.0643%	1.0460%	1.0278%	1.0097%	0.9917%
1.3371%	1.3185%	1.2997%	1.2808%	1.2618%	1.2427%	1.2235%	1.2043%	1.1851%	1.1659%	1.1467%	1.1276%	1.1084%	1.0894%	1.0704%	1.0516%	1.0328%
1.3925%	1.3731%	1.3536%	1.3339%	1.3141%	1.2942%	1.2742%	1.2542%	1.2342%	1.2142%	1.1943%	1.1743%	1.1544%	1.1345%	1.1148%	1.0952%	1.0756%
1.4502%	1.4300%	1.4097%	1.3892%	1.3686%	1.3479%	1.3270%	1.3062%	1.2854%	1.2646%	1.2438%	1.2230%	1.2022%	1.1816%	1.1610%	1.1406%	1.1202%
1.5103%	1.4893%	1.4681%	1.4468%	1.4253%	1.4038%	1.3820%	1.3604%	1.3387%	1.3170%	1.2953%	1.2737%	1.2520%	1.2305%	1.2091%	1.1878%	1.1667%
1.5730%	1.5511%	1.5290%	1.5068%	1.4844%	1.4620%	1.4393%	1.4168%	1.3942%	1.3716%	1.3490%	1.3265%	1.3039%	1.2816%	1.2593%	1.2371%	1.2150%
1.6382%	1.6154%	1.5924%	1.5692%	1.5459%	1.5226%	1.4990%	1.4755%	1.4520%	1.4284%	1.4050%	1.3815%	1.3580%	1.3347%	1.3115%	1.2884%	1.2654%
1.7061%	1.6823%	1.6584%	1.6343%	1.6100%	1.5857%	1.5611%	1.5366%	1.5122%	1.4877%	1.4632%	1.4388%	1.4143%	1.3900%	1.3658%	1.3418%	1.3178%
1.7768%	1.7520%	1.7271%	1.7020%	1.6768%	1.6514%	1.6258%	1.6003%	1.5748%	1.5493%	1.5238%	1.4984%	1.4729%	1.4476%	1.4224%	1.3974%	1.3725%
1.8504%	1.8247%	1.7987%	1.7726%	1.7463%	1.7198%	1.6932%	1.6667%	1.6401%	1.6135%	1.5870%	1.5605%	1.5340%	1.5076%	1.4814%	1.4553%	1.4293%
1.9271%	1.9003%	1.8733%	1.8460%	1.8186%	1.7911%	1.7634%	1.7358%	1.7081%	1.6804%	1.6528%	1.6252%	1.5976%	1.5701%	1.5428%	1.5156%	1.4886%
2.0070%	1.9791%	1.9509%	1.9225%	1.8940%	1.8654%	1.8365%	1.8077%	1.7789%	1.7501%	1.7213%	1.6926%	1.6638%	1.6352%	1.6068%	1.5785%	1.5503%
2.0902%	2.0611%	2.0318%	2.0022%	1.9725%	1.9427%	1.9126%	1.8827%	1.8526%	1.8226%	1.7927%	1.7627%	1.7327%	1.7030%	1.6734%	1.6439%	1.6146%
2.1769%	2.1466%	2.1160%	2.0852%	2.0543%	2.0232%	1.9919%	1.9607%	1.9294%	1.8982%	1.8670%	1.8358%	1.8046%	1.7736%	1.7427%	1.7120%	1.6815%
2.2671%	2.2355%	2.2037%	2.1717%	2.1395%	2.1071%	2.0745%	2.0420%	2.0094%	1.9769%	1.9444%	1.9119%	1.8794%	1.8471%	1.8150%	1.7830%	1.7512%
2.3611%	2.3282%	2.2951%	2.2617%	2.2281%	2.1944%	2.1605%	2.1266%	2.0927%	2.0588%	2.0249%	1.9911%	1.9573%	1.9237%	1.8902%	1.8569%	1.8238%
2.4589%	2.4247%	2.3902%	2.3554%	2.3205%	2.2854%	2.2500%	2.2148%	2.1795%	2.1442%	2.1089%	2.0737%	2.0384%	2.0034%	1.9686%	1.9339%	1.8994%
2.5609%	2.5252%	2.4893%	2.4531%	2.4167%	2.3801%	2.3433%	2.3066%	2.2698%	2.2330%	2.1963%	2.1596%	2.1229%	2.0865%	2.0502%	2.0140%	1.9781%
2.6670%	2.6299%	2.5925%	2.5548%	2.5169%	2.4788%	2.4404%	2.4022%	2.3639%	2.3256%	2.2873%	2.2492%	2.2109%	2.1729%	2.1351%	2.0975%	2.0601%
2.7776%	2.7389%	2.6999%	2.6607%	2.6212%	2.5816%	2.5416%	2.5018%	2.4619%	2.4220%	2.3822%	2.3424%	2.3025%	2.2630%	2.2236%	2.1845%	2.1455%
2.8927%	2.8524%	2.8118%	2.7710%	2.7299%	2.6886%	2.6469%	2.6055%	2.5639%	2.5224%	2.4809%	2.4395%	2.3980%	2.3568%	2.3158%	2.2750%	2.2344%
3.0126%	2.9707%	2.9284%	2.8858%	2.8430%	2.8000%	2.7567%	2.7135%	2.6702%	2.6270%	2.5837%	2.5406%	2.4974%	2.4545%	2.4118%	2.3693%	2.3271%
3.1375%	3.0938%	3.0498%	3.0054%	2.9609%	2.9161%	2.8709%	2.8259%	2.7809%	2.7358%	2.6908%	2.6459%	2.6009%	2.5563%	2.5118%	2.4675%	2.4235%
3.2675%	3.2221%	3.1762%	3.1300%	3.0836%	3.0370%	2.9899%	2.9431%	2.8962%	2.8493%	2.8024%	2.7556%	2.7087%	2.6622%	2.6159%	2.5698%	2.5240%
3.4030%	3.3556%	3.3079%	3.2598%	3.2114%	3.1628%	3.1139%	3.0651%	3.0162%	2.9674%	2.9185%	2.8698%	2.8210%	2.7726%	2.7243%	2.6763%	2.6286%
3.5440%	3.4947%	3.4450%	3.3949%	3.3445%	3.2940%	3.2430%	3.1921%	3.1412%	3.0904%	3.0395%	2.9888%	2.9379%	2.8875%	2.8373%	2.7873%	2.7376%
3.6910%	3.6396%	3.5878%	3.5356%	3.4832%	3.4305%	3.3774%	3.3244%	3.2715%	3.2185%	3.1655%	3.1127%	3.0597%	3.0072%	2.9549%	2.9028%	2.8510%
3.8440%	3.7904%	3.7365%	3.6822%	3.6276%	3.5727%	3.5174%	3.4623%	3.4071%	3.3519%	3.2967%	3.2417%	3.1866%	3.1319%	3.0774%	3.0231%	2.9692%
4.0033%	3.9476%	3.8914%	3.8348%	3.7779%	3.7208%	3.6632%	3.6058%	3.5483%	3.4908%	3.4334%	3.3761%	3.3186%	3.2617%	3.2049%	3.1485%	3.0923%
4.1692%	4.1112%	4.0527%	3.9938%	3.9345%	3.8750%	3.8150%	3.7552%	3.6954%	3.6355%	3.5757%	3.5160%	3.4562%	3.3969%	3.3378%	3.2790%	3.2205%
4.3421%	4.2816%	4.2207%	4.1593%	4.0976%	4.0357%	3.9732%	3.9109%	3.8486%	3.7862%	3.7239%	3.6618%	3.5995%	3.5377%	3.4761%	3.4149%	3.3540%
4.5220%	4.4591%	4.3956%	4.3317%	4.2675%	4.2029%	4.1379%	4.0730%	4.0081%	3.9432%	3.8783%	3.8136%	3.7487%	3.6843%	3.6202%	3.5564%	3.4930%
4.7095%	4.6439%	4.5778%	4.5113%	4.4444%	4.3772%	4.3094%	4.2418%	4.1742%	4.1066%	4.0391%	3.9716%	3.9041%	3.8370%	3.7703%	3.7039%	3.6378%
4.9047%	4.8364%	4.7676%	4.6983%	4.6286%	4.5586%	4.4880%	4.4177%	4.3473%	4.2768%	4.2065%	4.1363%	4.0659%	3.9961%	3.9266%	3.8574%	3.7886%
5.1080%	5.0369%	4.9652%	4.8930%	4.8205%	4.7476%	4.6741%	4.6008%	4.5275%	4.4541%	4.3809%	4.3077%	4.2344%	4.1617%	4.0893%	4.0173%	3.9456%
5.3198%	5.2457%	5.1710%	5.0959%	5.0203%	4.9444%	4.8678%	4.7915%	4.7151%	4.6388%	4.5625%	4.4863%	4.4100%	4.3343%	4.2589%	4.1838%	4.1092%
5.5403%	5.4632%	5.3854%	5.3071%	5.2284%	5.1493%	5.0696%	4.9901%	4.9106%	4.8310%	4.7516%	4.6722%	4.5928%	4.5139%	4.4354%	4.3573%	4.2795%
5.7699%	5.6896%	5.6086%	5.5271%	5.4451%	5.3628%	5.2797%	5.1970%	5.1141%	5.0313%	4.9485%	4.8659%	4.7831%	4.7010%	4.6193%	4.5379%	4.4569%
6.0091%	5.9255%	5.8411%	5.7562%	5.6708%	5.5851%	5.4986%	5.4124%	5.3261%	5.2399%	5.1537%	5.0676%	4.9814%	4.8959%	4.8107%	4.7260%	4.6417%
6.2582%	6.1711%	6.0832%	5.9948%	5.9059%	5.8166%	5.7265%	5.6368%	5.5469%	5.4571%	5.3673%	5.2777%	5.1879%	5.0988%	5.0101%	4.9219%	4.8341%
6.5176%	6.4269%	6.3354%	6.2433%	6.1507%	6.0577%	5.9639%	5.8704%	5.7768%	5.6833%	5.5898%	5.4965%	5.4030%	5.3102%	5.2178%	5.1259%	5.0345%
6.7878%	6.6933%	6.5980%	6.5021%	6.4056%	6.3088%	6.2111%	6.1137%	6.0163%	5.9188%	5.8215%	5.7243%	5.6269%	5.5303%	5.4341%	5.3384%	5.2432%
7.0691%	6.9707%	6.8715%	6.7716%	6.6712%	6.5703%	6.4686%	6.3672%	6.2657%	6.1642%	6.0628%	5.9616%	5.8602%	5.7596%	5.6594%	5.5597%	5.4605%
7.3622%	7.2597%	7.1564%	7.0523%	6.9477%	6.8426%	6.7367%	6.6311%	6.5254%	6.4197%	6.3141%	6.2087%	6.1031%	5.9983%	5.8940%	5.7901%	5.6868%
7.6673%	7.5606%	7.4530%	7.3446%	7.2357%	7.1263%	7.0159%	6.9060%	6.7959%	6.6858%	6.5758%	6.4661%	6.3561%	6.2469%	6.1383%	6.0301%	5.9226%
7.9852%	7.8740%	7.7619%	7.6491%	7.5356%	7.4217%	7.3068%	7.1922%	7.0776%	6.9630%	6.8484%	6.7341%	6.6195%	6.5059%	6.3927%	6.2801%	6.1681%
8.3162%	8.2004%	8.0837%	7.9662%	7.8480%	7.7293%	7.6096%	7.4904%	7.3710%	7.2516%	7.1323%	7.0132%	6.8939%	6.7756%	6.6577%	6.5404%	6.4238%
8.6609%	8.5403%	8.4188%	8.2964%	8.1733%	8.0497%	7.9251%	7.8009%	7.6765%	7.5522%	7.4280%	7.3039%	7.1797%	7.0564%	6.9337%	6.8115%	6.6900%
9.0199%	8.8943%	8.7678%	8.6403%	8.5121%	8.3834%	8.2536%	8.1242%	7.9947%	7.8652%	7.7359%	7.6067%	7.4773%	7.3489%	7.2211%	7.0939%	6.9673%
9.3938%	9.2630%	9.1312%	8.9984%	8.8650%	8.7309%	8.5957%	8.4610%	8.3261%	8.1913%	8.0565%	7.9220%	7.7873%	7.6536%	7.5204%	7.3879%	7.2562%
9.7832%	9.6470%	9.5097%	9.3714%	9.2324%	9.0928%	8.9520%	8.8117%	8.6713%	8.5308%	8.3905%	8.2504%	8.1101%	7.9708%	7.8322%	7.6942%	7.5569%
10.1887%	10.0469%	9.9039%	9.7599%	9.6151%	9.4697%	9.3231%	9.1770%	9.0307%	8.8844%	8.7383%	8.5924%	8.4462%	8.3012%	8.1568%	8.0131%	7.8702%
10.6111%	10.4634%	10.3144%	10.1645%	10.0137%	9.8623%	9.7096%	9.5574%	9.4050%	9.2527%	9.1005%	8.9486%	8.7963%	8.6453%	8.4949%	8.3453%	8.1964%
11.0509%	10.8971%	10.7420%	10.5858%	10.4288%	10.2711%	10.1120%	9.9536%	9.7949%	9.6362%	9.4777%	9.3195%	9.1610%	9.0037%	8.8471%	8.6912%	8.5362%
11.5090%	11.3488%	11.1873%	11.0246%	10.8611%	10.6968%	10.5312%	10.3661%	10.2009%	10.0357%	9.8706%	9.7058%	9.5407%	9.3769%	9.2138%	9.0515%	8.8900%
11.9861%	11.8192%	11.6510%	11.4816%	11.3113%	11.1402%	10.9678%	10.7958%	10.6238%	10.4517%	10.2798%	10.1081%	9.9362%	9.7656%	9.5957%	9.4267%	9.2585%
12.4829%	12.3091%	12.1339%	11.9575%	11.7802%	11.6020%	11.4224%	11.2433%	11.0641%	10.8849%	10.7059%	10.5271%	10.3481%	10.1704%	9.9935%	9.8174%	9.6423%
13.0003%	12.8194%	12.6369%	12.4532%	12.2685%	12.0829%	11.8959%	11.7094%	11.5228%	11.3361%	11.1497%	10.9635%	10.7770%	10.5920%	10.4077%	10.2244%	10.0420%
13.5392%	13.3508%	13.1607%	12.9694%	12.7770%	12.5838%	12.3890%	12.1948%	12.0004%	12.4978%	12.2954%	12.0932%	11.8913%	11.6890%	11.4883%	11.2885%	11.0896%	10.8918%
14.1005%	13.9042%	13.7063%	13.5070%	13.3066%	13.1054%	12.9025%	12.7003%	12.4978%	12.2954%	12.0932%	11.8913%	11.6890%	11.4883%	11.2885%	11.0896%	10.8918%
14.6849%	14.4805%	14.2744%	14.0669%	13.8582%	13.6487%	13.4374%	13.2267%	13.0159%	12.8051%	12.5944%	12.3842%	12.1735%	11.9645%	11.7564%	11.5493%	11.3433%
15.2937%	15.0808%	14.8661%	14.6500%	14.4327%	14.2144%	13.9944%	13.7750%	13.5554%	13.3359%	13.1165%	12.8975%	12.6781%	12.4605%	12.2437%	12.0280%	11.8135%
15.9276%	15.7059%	15.4824%	15.2573%	15.0309%	14.8036%	14.5744%	14.3460%	14.1173%	13.8887%	13.6602%	13.4322%	13.2037%	12.9770%	12.7512%	12.5266%	12.3031%
16.5878%	16.3570%	16.1241%	15.8897%	15.6540%	15.4173%	15.1786%	14.9407%	14.7025%	14.4644%	14.2265%	13.9889%	13.7510%	13.5149%	13.2798%	13.0458%	12.8131%
17.2754%	17.0350%	16.7925%	16.5484%	16.3029%	16.0564%	15.8078%	15.5600%	15.3120%	15.0640%	14.8162%	14.5688%	14.3210%	14.0751%	13.8303%	13.5866%	13.3443%
	17.7411%	17.4886%	17.2343%	16.9787%	16.7219%	16.4630%	16.2050%	15.9467%	15.6884%	15.4303%	15.1727%	14.9146%	14.6586%	14.4036%	14.1498%	13.8974%
		18.2135%	17.9487%	17.6825%	17.4151%	17.1455%	16.8767%	16.6077%	16.3387%	16.0699%	15.8017%	15.5328%	15.2662%	15.0006%	14.7363%	14.4735%
			18.6927%	18.4155%	18.1370%	17.8562%	17.5763%	17.2961%	17.0160%	16.7361%	16.4567%	16.1767%	15.8990%	15.6224%	15.3472%	15.0734%
				19.1788%	18.8888%	18.5963%	18.3049%	18.0131%	17.7213%	17.4298%	17.1388%	16.8473%	16.5580%	16.2700%	15.9833%	15.6983%
					19.6718%	19.3672%	19.0636%	18.7598%	18.4559%	18.1523%	17.8493%	17.5456%	17.2444%	16.9444%	16.6459%	16.3490%
						20.1700%	19.8538%	19.5374%	19.2209%	18.9048%	18.5891%	18.2729%	17.9592%	17.6468%	17.3359%	17.0267%
							20.6768%	20.3473%	20.0177%	19.6884%	19.3597%	19.0304%	18.7037%	18.3783%	18.0545%	17.7325%
								21.1907%	20.8474%	20.5045%	20.1622%	19.8192%	19.4790%	19.1401%	18.8029%	18.4675%
									21.7116%	21.3545%	20.9980%	20.6408%	20.2864%	19.9335%	19.5823%	19.2330%
										22.2396%	21.8684%	21.4964%	21.1273%	20.7598%	20.3940%	20.0303%
											22.7748%	22.3874%	22.0031%	21.6203%	21.2394%	20.8606%
												23.3154%	22.9151%	22.5165%	22.1198%	21.7253%
													23.8650%	23.4499%	23.0367%	22.6258%
														24.4219%	23.9916%	23.5637%
															24.9861%	24.5405%
																25.5577%

15-Mar-18	15-Apr-18	15-May-18	15-Jun-18	15-Jul-18	15-Aug-18	15-Sep-18	15-Oct-18	15-Nov-18	15-Dec-18	15-Jan-19	15-Feb-19	15-Mar-19	15-Apr-19	15-May-19	15-Jun-19	15-Jul-19
t = 7	t = 7.08	t = 7.17	t = 7.25	t = 7.33	t = 7.42	t = 7.5	t = 7.58	t = 7.67	t = 7.75	t = 7.83	t = 7.92	t = 8	t = 8.08	t = 8.17	t = 8.25	t = 8.33
0.8978%	0.8907%	0.8744%	0.8583%	0.8425%	0.8270%	0.8117%	0.7965%	0.7818%	0.7673%	0.7532%	0.7393%	0.7257%	0.7122%	0.6992%	0.6865%	0.6741%
0.9351%	0.9277%	0.9106%	0.8939%	0.8774%	0.8612%	0.8453%	0.8295%	0.8142%	0.7991%	0.7844%	0.7699%	0.7558%	0.7417%	0.7282%	0.7150%	0.7020%
0.9738%	0.9661%	0.9484%	0.9310%	0.9138%	0.8969%	0.8804%	0.8639%	0.8479%	0.8323%	0.8169%	0.8019%	0.7871%	0.7725%	0.7584%	0.7446%	0.7311%
1.0142%	1.0062%	0.9877%	0.9695%	0.9517%	0.9341%	0.9169%	0.8997%	0.8831%	0.8667%	0.8508%	0.8351%	0.8198%	0.8045%	0.7898%	0.7755%	0.7614%
1.0562%	1.0479%	1.0287%	1.0097%	0.9911%	0.9728%	0.9549%	0.9370%	0.9197%	0.9027%	0.8860%	0.8697%	0.8537%	0.8379%	0.8226%	0.8076%	0.7930%
1.1000%	1.0913%	1.0713%	1.0516%	1.0322%	1.0132%	0.9945%	0.9758%	0.9578%	0.9401%	0.9228%	0.9058%	0.8891%	0.8726%	0.8567%	0.8411%	0.8258%
1.1456%	1.1365%	1.1157%	1.0952%	1.0750%	1.0552%	1.0357%	1.0163%	0.9975%	0.9791%	0.9610%	0.9433%	0.9260%	0.9088%	0.8922%	0.8759%	0.8601%
1.1931%	1.1836%	1.1619%	1.1406%	1.1196%	1.0989%	1.0786%	1.0584%	1.0388%	1.0196%	1.0008%	0.9824%	0.9644%	0.9464%	0.9292%	0.9122%	0.8957%
1.2425%	1.2327%	1.2101%	1.1879%	1.1660%	1.1445%	1.1233%	1.1023%	1.0819%	1.0619%	1.0423%	1.0231%	1.0043%	0.9857%	0.9677%	0.9501%	0.9328%
1.2940%	1.2838%	1.2603%	1.2371%	1.2143%	1.1919%	1.1699%	1.1479%	1.1267%	1.1059%	1.0855%	1.0656%	1.0460%	1.0265%	1.0078%	0.9894%	0.9715%
1.3477%	1.3370%	1.3125%	1.2884%	1.2646%	1.2413%	1.2184%	1.1955%	1.1734%	1.1518%	1.1305%	1.1097%	1.0893%	1.0691%	1.0496%	1.0305%	1.0118%
1.4035%	1.3925%	1.3669%	1.3418%	1.3171%	1.2928%	1.2689%	1.2451%	1.2221%	1.1995%	1.1774%	1.1557%	1.1345%	1.1134%	1.0931%	1.0732%	1.0537%
1.4617%	1.4502%	1.4236%	1.3974%	1.3717%	1.3464%	1.3215%	1.2967%	1.2727%	1.2492%	1.2262%	1.2036%	1.1815%	1.1595%	1.1384%	1.1177%	1.0974%
1.5223%	1.5103%	1.4826%	1.4553%	1.4285%	1.4022%	1.3763%	1.3504%	1.3255%	1.3010%	1.2770%	1.2535%	1.2305%	1.2076%	1.1856%	1.1640%	1.1429%
1.5854%	1.5729%	1.5440%	1.5157%	1.4877%	1.4603%	1.4333%	1.4064%	1.3804%	1.3550%	1.3300%	1.3055%	1.2815%	1.2577%	1.2347%	1.2122%	1.1903%
1.6511%	1.6381%	1.6080%	1.5785%	1.5494%	1.5208%	1.4927%	1.4647%	1.4377%	1.4111%	1.3851%	1.3596%	1.3346%	1.3098%	1.2859%	1.2625%	1.2396%
1.7196%	1.7060%	1.6747%	1.6439%	1.6136%	1.5839%	1.5546%	1.5254%	1.4973%	1.4696%	1.4425%	1.4160%	1.3899%	1.3641%	1.3392%	1.3148%	1.2910%
1.7909%	1.7767%	1.7441%	1.7121%	1.6805%	1.6495%	1.6190%	1.5887%	1.5593%	1.5305%	1.5023%	1.4746%	1.4476%	1.4206%	1.3947%	1.3693%	1.3445%
1.8651%	1.8504%	1.8164%	1.7830%	1.7502%	1.7179%	1.6862%	1.6545%	1.6240%	1.5940%	1.5646%	1.5358%	1.5076%	1.4795%	1.4525%	1.4261%	1.4002%
1.9424%	1.9271%	1.8917%	1.8569%	1.8227%	1.7891%	1.7561%	1.7231%	1.6913%	1.6601%	1.6294%	1.5994%	1.5700%	1.5409%	1.5127%	1.4852%	1.4583%
2.0229%	2.0069%	1.9701%	1.9339%	1.8983%	1.8633%	1.8288%	1.7945%	1.7614%	1.7289%	1.6970%	1.6657%	1.6351%	1.6047%	1.5754%	1.5468%	1.5187%
2.1068%	2.0901%	2.0518%	2.0141%	1.9770%	1.9405%	1.9047%	1.8689%	1.8344%	1.8005%	1.7673%	1.7348%	1.7029%	1.6712%	1.6407%	1.6109%	1.5817%
2.1941%	2.1768%	2.1368%	2.0976%	2.0589%	2.0209%	1.9836%	1.9464%	1.9104%	1.8752%	1.8406%	1.8067%	1.7735%	1.7405%	1.7087%	1.6776%	1.6473%
2.2851%	2.2670%	2.2254%	2.1845%	2.1443%	2.1047%	2.0658%	2.0271%	1.9896%	1.9529%	1.9169%	1.8816%	1.8470%	1.8127%	1.7796%	1.7472%	1.7155%
2.3798%	2.3610%	2.3177%	2.2751%	2.2331%	2.1919%	2.1515%	2.1111%	2.0721%	2.0338%	1.9963%	1.9596%	1.9236%	1.8878%	1.8533%	1.8196%	1.7866%
2.4784%	2.4588%	2.4137%	2.3694%	2.3257%	2.2828%	2.2406%	2.1986%	2.1580%	2.1181%	2.0791%	2.0408%	2.0033%	1.9661%	1.9302%	1.8950%	1.8607%
2.5812%	2.5608%	2.5138%	2.4676%	2.4221%	2.3774%	2.3335%	2.2898%	2.2474%	2.2060%	2.1653%	2.1254%	2.0864%	2.0476%	2.0102%	1.9736%	1.9378%
2.6882%	2.6669%	2.6180%	2.5699%	2.5225%	2.4760%	2.4303%	2.3847%	2.3406%	2.2974%	2.2550%	2.2135%	2.1728%	2.1324%	2.0935%	2.0554%	2.0182%
2.7996%	2.7775%	2.7265%	2.6764%	2.6271%	2.5786%	2.5310%	2.4835%	2.4376%	2.3926%	2.3485%	2.3053%	2.2629%	2.2208%	2.1803%	2.1406%	2.1018%
2.9156%	2.8926%	2.8395%	2.7873%	2.7360%	2.6855%	2.6359%	2.5865%	2.5387%	2.4918%	2.4458%	2.4008%	2.3567%	2.3129%	2.2706%	2.2293%	2.1889%
3.0365%	3.0125%	2.9572%	2.9029%	2.8494%	2.7968%	2.7452%	2.6937%	2.6439%	2.5951%	2.5472%	2.5003%	2.4544%	2.4088%	2.3648%	2.3217%	2.2797%
3.1624%	3.1374%	3.0798%	3.0232%	2.9675%	2.9128%	2.8590%	2.8053%	2.7535%	2.7027%	2.6528%	2.6040%	2.5561%	2.5086%	2.4628%	2.4180%	2.3742%
3.2934%	3.2674%	3.2075%	3.1485%	3.0905%	3.0335%	2.9775%	2.9216%	2.8676%	2.8147%	2.7628%	2.7119%	2.6621%	2.6126%	2.5649%	2.5182%	2.4726%
3.4300%	3.4028%	3.3405%	3.2790%	3.2186%	3.1592%	3.1009%	3.0427%	2.9865%	2.9314%	2.8773%	2.8243%	2.7724%	2.7209%	2.6712%	2.6226%	2.5751%
3.5721%	3.5439%	3.4789%	3.4150%	3.3520%	3.2902%	3.2294%	3.1689%	3.1103%	3.0529%	2.9966%	2.9414%	2.8874%	2.8337%	2.7819%	2.7313%	2.6818%
3.7202%	3.6908%	3.6231%	3.5565%	3.4910%	3.4266%	3.3633%	3.3002%	3.2392%	3.1794%	3.1208%	3.0633%	3.0070%	2.9511%	2.8972%	2.8445%	2.7930%
3.8744%	3.8438%	3.7733%	3.7039%	3.6357%	3.5686%	3.5027%	3.4370%	3.3735%	3.3112%	3.2502%	3.1903%	3.1317%	3.0735%	3.0173%	2.9624%	2.9088%
4.0350%	4.0031%	3.9297%	3.8575%	3.7864%	3.7165%	3.6479%	3.5795%	3.5133%	3.4485%	3.3849%	3.3226%	3.2615%	3.2009%	3.1424%	3.0852%	3.0293%
4.2023%	4.1691%	4.0926%	4.0174%	3.9434%	3.8706%	3.7991%	3.7279%	3.6590%	3.5914%	3.5252%	3.4603%	3.3967%	3.3336%	3.2727%	3.2131%	3.1549%
4.3765%	4.3419%	4.2623%	4.1839%	4.1068%	4.0310%	3.9566%	3.8824%	3.8107%	3.7403%	3.6713%	3.6037%	3.5375%	3.4717%	3.4083%	3.3463%	3.2857%
4.5579%	4.5219%	4.4389%	4.3573%	4.2771%	4.1981%	4.1206%	4.0433%	3.9686%	3.8953%	3.8235%	3.7531%	3.6841%	3.6156%	3.5496%	3.4850%	3.4219%
4.7468%	4.7093%	4.6229%	4.5380%	4.4544%	4.3722%	4.2914%	4.2109%	4.1331%	4.0568%	3.9820%	3.9087%	3.8369%	3.7655%	3.6967%	3.6295%	3.5637%
4.9436%	4.9045%	4.8146%	4.7261%	4.6390%	4.5534%	4.4693%	4.3855%	4.3044%	4.2250%	4.1470%	4.0707%	3.9959%	3.9216%	3.8500%	3.7799%	3.7115%
5.1485%	5.1078%	5.0142%	4.9220%	4.8313%	4.7421%	4.6546%	4.5673%	4.4829%	4.4001%	4.3189%	4.2394%	4.1615%	4.0842%	4.0096%	3.9366%	3.8653%
5.3619%	5.3195%	5.2220%	5.1260%	5.0316%	4.9387%	4.8475%	4.7566%	4.6687%	4.5825%	4.4980%	4.4152%	4.3340%	4.2535%	4.1758%	4.0998%	4.0255%
5.5842%	5.5400%	5.4385%	5.3385%	5.2401%	5.1434%	5.0484%	4.9537%	4.8622%	4.7724%	4.6844%	4.5982%	4.5137%	4.4298%	4.3489%	4.2697%	4.1924%
5.8157%	5.7697%	5.6639%	5.5598%	5.4573%	5.3566%	5.2577%	5.1591%	5.0638%	4.9703%	4.8786%	4.7888%	4.7008%	4.6134%	4.5291%	4.4467%	4.3662%
6.0567%	6.0089%	5.8987%	5.7902%	5.6835%	5.5787%	5.4756%	5.3729%	5.2737%	5.1763%	5.0808%	4.9873%	4.8957%	4.8046%	4.7169%	4.6311%	4.5472%
6.3078%	6.2579%	6.1432%	6.0302%	5.9191%	5.8099%	5.7026%	5.5957%	5.4923%	5.3909%	5.2914%	5.1940%	5.0986%	5.0038%	4.9124%	4.8230%	4.7356%
6.5693%	6.5173%	6.3978%	6.2802%	6.1645%	6.0508%	5.9390%	5.8276%	5.7199%	5.6143%	5.5108%	5.4093%	5.3099%	5.2112%	5.1160%	5.0230%	4.9319%
6.8416%	6.7875%	6.6630%	6.5405%	6.4200%	6.3016%	6.1852%	6.0692%	5.9570%	5.8471%	5.7392%	5.6335%	5.5300%	5.4272%	5.3281%	5.2312%	5.1364%
7.1252%	7.0688%	6.9392%	6.8116%	6.6862%	6.5628%	6.4416%	6.3207%	6.2040%	6.0894%	5.9771%	5.8671%	5.7593%	5.6522%	5.5490%	5.4480%	5.3493%
7.4205%	7.3619%	7.2269%	7.0940%	6.9633%	6.8348%	6.7086%	6.5828%	6.4611%	6.3418%	6.2249%	6.1103%	5.9980%	5.8865%	5.7790%	5.6738%	5.5710%
7.7281%	7.6670%	7.5264%	7.3881%	7.2520%	7.1181%	6.9867%	6.8556%	6.7290%	6.6047%	6.4829%	6.3636%	6.2466%	6.1305%	6.0185%	5.9090%	5.8020%
8.0485%	7.9848%	7.8384%	7.6943%	7.5526%	7.4132%	7.2763%	7.1398%	7.0079%	6.8785%	6.7516%	6.6273%	6.5056%	6.3846%	6.2680%	6.1540%	6.0425%
8.3821%	8.3158%	8.1633%	8.0133%	7.8656%	7.7205%	7.5779%	7.4358%	7.2984%	7.1636%	7.0315%	6.9020%	6.7752%	6.6493%	6.5278%	6.4091%	6.2929%
8.7296%	8.6605%	8.5017%	8.3454%	8.1917%	8.0405%	7.8920%	7.7440%	7.6009%	7.4606%	7.3230%	7.1881%	7.0561%	6.9249%	6.7984%	6.6747%	6.5538%
9.0914%	9.0195%	8.8541%	8.6914%	8.5312%	8.3738%	8.2192%	8.0650%	7.9160%	7.7698%	7.6265%	7.4861%	7.3486%	7.2119%	7.0802%	6.9514%	6.8255%
9.4683%	9.3934%	9.2212%	9.0516%	8.8849%	8.7209%	8.5599%	8.3993%	8.2441%	8.0919%	7.9427%	7.7964%	7.6532%	7.5109%	7.3737%	7.2396%	7.1084%
9.8607%	9.7828%	9.6034%	9.4268%	9.2532%	9.0824%	8.9147%	8.7475%	8.5859%	8.4273%	8.2719%	8.1196%	7.9704%	7.8222%	7.6794%	7.5397%	7.4031%
10.2695%	10.1883%	10.0015%	9.8176%	9.6367%	9.4589%	9.2842%	9.1101%	8.9418%	8.7767%	8.6148%	8.4562%	8.3008%	8.1465%	7.9977%	7.8522%	7.7099%
10.6952%	10.6106%	10.4161%	10.2246%	10.0362%	9.8510%	9.6691%	9.4877%	9.3124%	9.1405%	8.9719%	8.8067%	8.6449%	8.4842%	8.3292%	8.1777%	8.0295%
11.1385%	11.0505%	10.8478%	10.6484%	10.4522%	10.2594%	10.0699%	9.8810%	9.6984%	9.5194%	9.3438%	9.1718%	9.0033%	8.8359%	8.6745%	8.5167%	8.3624%
11.6002%	11.5085%	11.2975%	11.0898%	10.8855%	10.6846%	10.4873%	10.2906%	10.1004%	9.9140%	9.7311%	9.5519%	9.3765%	9.2021%	9.0341%	8.8697%	8.7090%
12.0811%	11.9856%	11.7658%	11.5495%	11.3367%	11.1275%	10.9220%	10.7171%	10.5191%	10.3249%	10.1345%	9.9479%	9.7651%	9.5836%	9.4085%	9.2373%	9.0700%
12.5819%	12.4824%	12.2535%	12.0282%	11.8066%	11.5888%	11.3747%	11.1614%	10.9552%	10.7529%	10.5546%	10.3602%	10.1699%	9.9808%	9.7985%	9.6203%	9.4460%
13.1034%	12.9998%	12.7614%	12.5268%	12.2960%	12.0692%	11.8462%	11.6240%	11.4093%	11.1986%	10.9921%	10.7897%	10.5915%	10.3945%	10.2047%	10.0190%	9.8375%
13.6466%	13.5387%	13.2904%	13.0461%	12.8057%	12.5694%	12.3373%	12.1059%	11.8822%	11.6628%	11.4477%	11.2370%	11.0305%	10.8254%	10.6277%	10.4343%	10.2453%
14.2122%	14.0999%	13.8413%	13.5869%	13.3365%	13.0905%	12.8487%	12.6077%	12.3748%	12.1463%	11.9223%	11.7027%	11.4877%	11.2741%	11.0682%	10.8669%	10.6700%
14.8014%	14.6843%	14.4151%	14.1501%	13.8894%	13.6331%	13.3813%	13.1303%	12.8877%	12.6498%	12.4165%	12.1878%	11.9639%	11.7415%	11.5270%	11.3173%	11.1123%
15.4149%	15.2930%	15.0126%	14.7366%	14.4651%	14.1982%	13.9360%	13.6746%	13.4219%	13.1741%	12.9311%	12.6931%	12.4599%	12.2282%	12.0049%	11.7864%	11.5729%
16.0539%	15.9270%	15.6349%	15.3475%	15.0647%	14.7868%	14.5137%	14.2414%	13.9783%	13.7202%	13.4672%	13.2192%	12.9763%	12.7351%	12.5025%	12.2750%	12.0526%
16.7194%	16.5872%	16.2830%	15.9836%	15.6892%	15.3997%	15.1153%	14.8317%	14.5577%	14.2889%	14.0254%	13.7672%	13.5142%	13.2630%	13.0207%	12.7838%	12.5522%
17.4124%	17.2747%	16.9580%	16.6462%	16.3395%	16.0380%	15.7418%	15.4465%	15.1612%	14.8812%	14.6068%	14.3378%	14.0744%	13.8127%	13.5605%	13.3137%	13.0725%
18.1342%	17.9908%	17.6609%	17.3362%	17.0168%	16.7028%	16.3944%	16.0868%	15.7896%	15.4981%	15.2123%	14.9322%	14.6578%	14.3853%	14.1226%	13.8656%	13.6144%
18.8859%	18.7366%	18.3930%	18.0548%	17.7222%	17.3952%	17.0739%	16.7537%	16.4441%	16.1405%	15.8428%	15.5511%	15.2654%	14.9816%	14.7080%	14.4404%	14.1788%
19.6687%	19.5132%	19.1554%	18.8032%	18.4568%	18.1163%	17.7817%	17.4481%	17.1258%	16.8096%	16.4996%	16.1958%	15.8982%	15.6026%	15.3177%	15.0390%	14.7665%
20.4840%	20.3221%	19.9494%	19.5827%	19.2219%	18.8672%	18.5188%	18.1714%	17.8357%	17.5064%	17.1835%	16.8671%	16.5572%	16.2494%	15.9526%	15.6624%	15.3786%
21.3331%	21.1645%	20.7764%	20.3944%	20.0187%	19.6493%	19.2864%	18.9246%	18.5750%	18.2320%	17.8958%	17.5663%	17.2436%	16.9229%	16.6139%	16.3116%	16.0161%
22.2174%	22.0418%	21.6376%	21.2398%	20.8485%	20.4638%	20.0859%	19.7091%	19.3450%	18.9878%	18.6376%	18.2944%	17.9583%	17.6244%	17.3026%	16.9877%	16.6800%
23.1384%	22.9555%	22.5345%	22.1202%	21.7127%	21.3121%	20.9185%	20.5261%	20.1468%	19.7749%	19.4102%	19.0528%	18.7027%	18.3550%	18.0198%	17.6919%	17.3714%
24.0975%	23.9070%	23.4686%	23.0371%	22.6127%	22.1955%	21.7856%	21.3769%	20.9820%	20.5946%	20.2147%	19.8426%	19.4780%	19.1158%	18.7667%	18.4253%	18.0915%
25.0964%	24.8980%	24.4414%	23.9921%	23.5501%	23.1155%	22.6886%	22.2630%	21.8517%	21.4483%	21.0527%	20.6651%	20.2854%	19.9082%	19.5447%	19.1890%	18.8414%
26.1367%	25.9301%	25.4546%	24.9866%	24.5263%	24.0737%	23.6291%	23.1859%	22.7575%	22.3373%	21.9254%	21.5217%	21.1263%	20.7335%	20.3548%	19.9845%	19.6224%
	27.0049%	26.5097%	26.0223%	25.5429%	25.0716%	24.6086%	24.1470%	23.7009%	23.2632%	22.8342%	22.4138%	22.0020%	21.5929%	21.1986%	20.8129%	20.4358%
		27.6086%	27.1010%	26.6017%	26.1109%	25.6287%	25.1479%	24.6833%	24.2276%	23.7807%	23.3429%	22.9140%	22.4880%	22.0773%	21.6756%	21.2829%
			28.2244%	27.7044%	27.1932%	26.6910%	26.1903%	25.7065%	25.2318%	24.7665%	24.3105%	23.8639%	23.4201%	22.9924%	22.5741%	22.1651%
				28.8528%	28.3205%	27.7974%	27.2760%	26.7720%	26.2777%	25.7931%	25.3182%	24.8531%	24.3910%	23.9455%	23.5098%	23.0839%
					29.4944%	28.9497%	28.4066%	27.8818%	27.3670%	26.8623%	26.3677%	25.8833%	25.4020%	24.9381%	24.4843%	24.0407%
						30.1497%	29.5841%	29.0376%	28.5014%	27.9758%	27.4607%	26.9562%	26.4550%	25.9718%	25.4993%	25.0373%
							30.8104%	30.2412%	29.6829%	29.1354%	28.5990%	28.0736%	27.5516%	27.0484%	26.5563%	26.0751%
								31.4948%	30.9133%	30.3431%	29.7845%	29.2373%	28.6936%	28.1696%	27.6571%	27.1560%
									32.1947%	31.6009%	31.0191%	30.4492%	29.8830%	29.3373%	28.8035%	28.2817%
										32.9108%	32.3049%	31.7114%	31.1218%	30.5534%	29.9975%	29.4540%
											33.6440%	33.0259%	32.4118%	31.8199%	31.2409%	30.6749%
												34.3949%	33.7553%	33.1389%	32.5359%	31.9464%
													35.1546%	34.5125%	33.8846%	33.2707%
														35.9432%	35.2892%	34.6498%
															36.7520%	36.0861%
																37.5820%

15-Aug-19	15-Sep-19	15-Oct-19	15-Nov-19	15-Dec-19	15-Jan-20	15-Feb-20	15-Mar-20	15-Apr-20	15-May-20	15-Jun-20	15-Jul-20	15-Aug-20	15-Sep-20	15-Oct-20	15-Nov-20	15-Dec-20
t = 8.42	t = 8.5	t = 8.58	t = 8.67	t = 8.75	t = 8.83	t = 8.92	t = 9	t = 9.08	t = 9.17	t = 9.25	t = 9.33	t = 9.42	t = 9.5	t = 9.58	t = 9.67	t = 9.75
0.6619%	0.6500%	0.6383%	0.6270%	0.6159%	0.6052%	0.5947%	0.5845%	0.5744%	0.5647%	0.5553%	0.5461%	0.5372%	0.5285%	0.5199%	0.5118%	0.5038%
0.6893%	0.6770%	0.6647%	0.6530%	0.6415%	0.6303%	0.6193%	0.6087%	0.5982%	0.5881%	0.5783%	0.5687%	0.5594%	0.5504%	0.5415%	0.5330%	0.5247%
0.7179%	0.7050%	0.6923%	0.6800%	0.6681%	0.6564%	0.6450%	0.6339%	0.6230%	0.6125%	0.6022%	0.5923%	0.5826%	0.5732%	0.5639%	0.5551%	0.5465%
0.7477%	0.7343%	0.7210%	0.7082%	0.6957%	0.6836%	0.6717%	0.6602%	0.6488%	0.6379%	0.6272%	0.6168%	0.6068%	0.5970%	0.5873%	0.5781%	0.5691%
0.7787%	0.7647%	0.7509%	0.7376%	0.7246%	0.7119%	0.6996%	0.6876%	0.6757%	0.6643%	0.6532%	0.6424%	0.6319%	0.6217%	0.6117%	0.6020%	0.5927%
0.8109%	0.7964%	0.7820%	0.7681%	0.7546%	0.7414%	0.7286%	0.7161%	0.7037%	0.6918%	0.6803%	0.6690%	0.6581%	0.6475%	0.6370%	0.6270%	0.6173%
0.8446%	0.8294%	0.8144%	0.8000%	0.7859%	0.7722%	0.7588%	0.7458%	0.7329%	0.7205%	0.7085%	0.6968%	0.6854%	0.6743%	0.6634%	0.6530%	0.6428%
0.8796%	0.8638%	0.8482%	0.8331%	0.8185%	0.8042%	0.7902%	0.7767%	0.7632%	0.7504%	0.7379%	0.7257%	0.7138%	0.7023%	0.6909%	0.6801%	0.6695%
0.9160%	0.8996%	0.8833%	0.8677%	0.8524%	0.8375%	0.8230%	0.8089%	0.7949%	0.7815%	0.7684%	0.7557%	0.7434%	0.7314%	0.7196%	0.7082%	0.6972%
0.9540%	0.9369%	0.9199%	0.9036%	0.8877%	0.8722%	0.8571%	0.8424%	0.8278%	0.8139%	0.8003%	0.7871%	0.7742%	0.7617%	0.7494%	0.7376%	0.7262%
0.9935%	0.9757%	0.9581%	0.9411%	0.9245%	0.9084%	0.8926%	0.8773%	0.8622%	0.8476%	0.8335%	0.8197%	0.8063%	0.7933%	0.7805%	0.7682%	0.7563%
1.0347%	1.0162%	0.9978%	0.9801%	0.9629%	0.9460%	0.9296%	0.9137%	0.8979%	0.8827%	0.8680%	0.8537%	0.8397%	0.8262%	0.8128%	0.8000%	0.7876%
1.0776%	1.0583%	1.0391%	1.0207%	1.0028%	0.9853%	0.9682%	0.9515%	0.9351%	0.9193%	0.9040%	0.8891%	0.8745%	0.8604%	0.8465%	0.8332%	0.8202%
1.1223%	1.1022%	1.0822%	1.0630%	1.0443%	1.0261%	1.0083%	0.9910%	0.9739%	0.9574%	0.9415%	0.9259%	0.9108%	0.8961%	0.8816%	0.8677%	0.8542%
1.1688%	1.1478%	1.1271%	1.1071%	1.0876%	1.0686%	1.0501%	1.0321%	1.0142%	0.9971%	0.9805%	0.9643%	0.9485%	0.9332%	0.9181%	0.9037%	0.8897%
1.2173%	1.1954%	1.1738%	1.1530%	1.1327%	1.1129%	1.0936%	1.0749%	1.0563%	1.0385%	1.0211%	1.0043%	0.9879%	0.9719%	0.9562%	0.9411%	0.9265%
1.2677%	1.2450%	1.2225%	1.2008%	1.1797%	1.1591%	1.1390%	1.1194%	1.1001%	1.0815%	1.0635%	1.0459%	1.0288%	1.0122%	0.9958%	0.9802%	0.9649%
1.3203%	1.2966%	1.2731%	1.2506%	1.2286%	1.2071%	1.1862%	1.1658%	1.1457%	1.1263%	1.1075%	1.0893%	1.0715%	1.0542%	1.0371%	1.0208%	1.0049%
1.3750%	1.3503%	1.3259%	1.3024%	1.2795%	1.2571%	1.2354%	1.2141%	1.1932%	1.1730%	1.1535%	1.1344%	1.1159%	1.0979%	1.0801%	1.0631%	1.0466%
1.4320%	1.4063%	1.3809%	1.3564%	1.3325%	1.3093%	1.2866%	1.2645%	1.2426%	1.2217%	1.2013%	1.1814%	1.1621%	1.1434%	1.1249%	1.1072%	1.0900%
1.4913%	1.4646%	1.4381%	1.4126%	1.3878%	1.3635%	1.3399%	1.3169%	1.2941%	1.2723%	1.2511%	1.2304%	1.2103%	1.1908%	1.1715%	1.1531%	1.1352%
1.5532%	1.5253%	1.4977%	1.4712%	1.4453%	1.4200%	1.3954%	1.3715%	1.3478%	1.3250%	1.3029%	1.2814%	1.2605%	1.2401%	1.2201%	1.2009%	1.1822%
1.6175%	1.5885%	1.5598%	1.5322%	1.5052%	1.4789%	1.4533%	1.4283%	1.4036%	1.3800%	1.3569%	1.3345%	1.3127%	1.2915%	1.2706%	1.2506%	1.2312%
1.6846%	1.6544%	1.6245%	1.5957%	1.5676%	1.5402%	1.5135%	1.4875%	1.4618%	1.4372%	1.4132%	1.3898%	1.3671%	1.3451%	1.3233%	1.3025%	1.2823%
1.7544%	1.7230%	1.6918%	1.6618%	1.6326%	1.6041%	1.5763%	1.5492%	1.5224%	1.4967%	1.4718%	1.4474%	1.4238%	1.4008%	1.3782%	1.3565%	1.3354%
1.8272%	1.7944%	1.7619%	1.7307%	1.7002%	1.6705%	1.6416%	1.6134%	1.5855%	1.5588%	1.5328%	1.5074%	1.4828%	1.4589%	1.4353%	1.4127%	1.3908%
1.9029%	1.8688%	1.8350%	1.8024%	1.7707%	1.7398%	1.7096%	1.6803%	1.6512%	1.6234%	1.5963%	1.5699%	1.5443%	1.5194%	1.4948%	1.4713%	1.4484%
1.9818%	1.9462%	1.9110%	1.8772%	1.8441%	1.8119%	1.7805%	1.7499%	1.7197%	1.6907%	1.6625%	1.6350%	1.6083%	1.5823%	1.5567%	1.5322%	1.5085%
2.0639%	2.0269%	1.9902%	1.9550%	1.9206%	1.8870%	1.8543%	1.8225%	1.7910%	1.7608%	1.7314%	1.7028%	1.6750%	1.6479%	1.6213%	1.5958%	1.5710%
2.1495%	2.1109%	2.0727%	2.0360%	2.0002%	1.9652%	1.9312%	1.8980%	1.8652%	1.8338%	1.8031%	1.7734%	1.7444%	1.7162%	1.6885%	1.6619%	1.6361%
2.2386%	2.1984%	2.1586%	2.1204%	2.0831%	2.0467%	2.0112%	1.9767%	1.9425%	1.9098%	1.8779%	1.8469%	1.8167%	1.7874%	1.7585%	1.7308%	1.7039%
2.3314%	2.2896%	2.2481%	2.2083%	2.1694%	2.1315%	2.0946%	2.0586%	2.0231%	1.9889%	1.9557%	1.9234%	1.8920%	1.8615%	1.8314%	1.8025%	1.7746%
2.4280%	2.3845%	2.3413%	2.2998%	2.2594%	2.2199%	2.1814%	2.1440%	2.1069%	2.0714%	2.0368%	2.0032%	1.9704%	1.9386%	1.9073%	1.8773%	1.8481%
2.5287%	2.4833%	2.4384%	2.3952%	2.3530%	2.3119%	2.2719%	2.2328%	2.1942%	2.1572%	2.1212%	2.0862%	2.0521%	2.0190%	1.9863%	1.9551%	1.9247%
2.6335%	2.5862%	2.5394%	2.4945%	2.4506%	2.4078%	2.3660%	2.3254%	2.2852%	2.2467%	2.2092%	2.1727%	2.1372%	2.1027%	2.0687%	2.0361%	2.0045%
2.7426%	2.6934%	2.6447%	2.5978%	2.5521%	2.5076%	2.4641%	2.4218%	2.3799%	2.3398%	2.3007%	2.2627%	2.2258%	2.1899%	2.1544%	2.1205%	2.0876%
2.8563%	2.8051%	2.7543%	2.7055%	2.6579%	2.6115%	2.5663%	2.5222%	2.4786%	2.4368%	2.3961%	2.3565%	2.3180%	2.2806%	2.2437%	2.2084%	2.1741%
2.9747%	2.9214%	2.8685%	2.8177%	2.7681%	2.7198%	2.6726%	2.6267%	2.5813%	2.5378%	2.4954%	2.4542%	2.4141%	2.3752%	2.3367%	2.3000%	2.2643%
3.0980%	3.0425%	2.9874%	2.9345%	2.8828%	2.8325%	2.7834%	2.7356%	2.6883%	2.6430%	2.5989%	2.5559%	2.5142%	2.4736%	2.4336%	2.3953%	2.3581%
3.2264%	3.1686%	3.1112%	3.0561%	3.0023%	2.9499%	2.8988%	2.8490%	2.7998%	2.7525%	2.7066%	2.6619%	2.6184%	2.5762%	2.5345%	2.4946%	2.4559%
3.3602%	3.2999%	3.2402%	3.1828%	3.1268%	3.0722%	3.0190%	2.9671%	2.9158%	2.8666%	2.8188%	2.7722%	2.7270%	2.6829%	2.6395%	2.5980%	2.5577%
3.4995%	3.4367%	3.3745%	3.3147%	3.2564%	3.1995%	3.1441%	3.0901%	3.0367%	2.9855%	2.9356%	2.8871%	2.8400%	2.7942%	2.7489%	2.7057%	2.6637%
3.6445%	3.5792%	3.5144%	3.4521%	3.3914%	3.3322%	3.2744%	3.2182%	3.1626%	3.1092%	3.0573%	3.0068%	2.9577%	2.9100%	2.8629%	2.8178%	2.7741%
3.7956%	3.7275%	3.6601%	3.5952%	3.5320%	3.4703%	3.4102%	3.3516%	3.2937%	3.2381%	3.1841%	3.1315%	3.0803%	3.0306%	2.9816%	2.9346%	2.8891%
3.9529%	3.8820%	3.8118%	3.7443%	3.6784%	3.6141%	3.5515%	3.4905%	3.4302%	3.3723%	3.3160%	3.2613%	3.2080%	3.1562%	3.1052%	3.0563%	3.0088%
4.1168%	4.0430%	3.9698%	3.8995%	3.8309%	3.7639%	3.6987%	3.6352%	3.5724%	3.5121%	3.4535%	3.3965%	3.3410%	3.2871%	3.2339%	3.1830%	3.1336%
4.2874%	4.2105%	4.1344%	4.0611%	3.9897%	3.9200%	3.8520%	3.7859%	3.7205%	3.6577%	3.5966%	3.5372%	3.4795%	3.4233%	3.3679%	3.3149%	3.2635%
4.4652%	4.3851%	4.3057%	4.2295%	4.1550%	4.0825%	4.0117%	3.9428%	3.8747%	3.8093%	3.7457%	3.6839%	3.6237%	3.5652%	3.5075%	3.4523%	3.3987%
4.6503%	4.5669%	4.4842%	4.4048%	4.3273%	4.2517%	4.1780%	4.1062%	4.0353%	3.9672%	3.9010%	3.8366%	3.7739%	3.7130%	3.6529%	3.5954%	3.5396%
4.8430%	4.7562%	4.6701%	4.5874%	4.5066%	4.4279%	4.3512%	4.2764%	4.2026%	4.1317%	4.0627%	3.9956%	3.9303%	3.8669%	3.8043%	3.7445%	3.6863%
5.0438%	4.9533%	4.8637%	4.7775%	4.6934%	4.6115%	4.5316%	4.4537%	4.3768%	4.3029%	4.2311%	4.1612%	4.0933%	4.0272%	3.9620%	3.8997%	3.8391%
5.2528%	5.1586%	5.0653%	4.9756%	4.8880%	4.8026%	4.7194%	4.6383%	4.5582%	4.4813%	4.4065%	4.3337%	4.2629%	4.1941%	4.1263%	4.0613%	3.9983%
5.4706%	5.3725%	5.2753%	5.1818%	5.0906%	5.0017%	4.9150%	4.8306%	4.7471%	4.6671%	4.5892%	4.5134%	4.4396%	4.3680%	4.2973%	4.2297%	4.1640%
5.6974%	5.5952%	5.4939%	5.3966%	5.3016%	5.2090%	5.1188%	5.0308%	4.9439%	4.8605%	4.7794%	4.7005%	4.6237%	4.5491%	4.4754%	4.4050%	4.3366%
5.9335%	5.8271%	5.7217%	5.6203%	5.5214%	5.4250%	5.3310%	5.2394%	5.1488%	5.0620%	4.9775%	4.8953%	4.8153%	4.7376%	4.6610%	4.5876%	4.5164%
6.1795%	6.0686%	5.9588%	5.8533%	5.7503%	5.6498%	5.5519%	5.4565%	5.3623%	5.2718%	5.1838%	5.0982%	5.0149%	4.9340%	4.8542%	4.7778%	4.7036%
6.4356%	6.3202%	6.2059%	6.0959%	5.9886%	5.8840%	5.7821%	5.6827%	5.5845%	5.4904%	5.3987%	5.3095%	5.2228%	5.1385%	5.0554%	4.9758%	4.8986%
6.7024%	6.5822%	6.4631%	6.3486%	6.2369%	6.1279%	6.0217%	5.9183%	5.8160%	5.7180%	5.6225%	5.5296%	5.4393%	5.3515%	5.2649%	5.1821%	5.1016%
6.9802%	6.8550%	6.7310%	6.6117%	6.4954%	6.3819%	6.2714%	6.1636%	6.0571%	5.9550%	5.8556%	5.7588%	5.6648%	5.5734%	5.4832%	5.3969%	5.3131%
7.2696%	7.1392%	7.0100%	6.8858%	6.7646%	6.6465%	6.5313%	6.4191%	6.3082%	6.2018%	6.0983%	5.9976%	5.8996%	5.8044%	5.7105%	5.6206%	5.5333%
7.5709%	7.4351%	7.3006%	7.1712%	7.0451%	6.9220%	6.8021%	6.6852%	6.5697%	6.4589%	6.3511%	6.2462%	6.1442%	6.0450%	5.9472%	5.8536%	5.7627%
7.8847%	7.7433%	7.6032%	7.4685%	7.3371%	7.2089%	7.0840%	6.9623%	6.8420%	6.7266%	6.6143%	6.5051%	6.3988%	6.2956%	6.1937%	6.0962%	6.0016%
8.2116%	8.0643%	7.9184%	7.7781%	7.6412%	7.5078%	7.3777%	7.2509%	7.1256%	7.0055%	6.8885%	6.7747%	6.6641%	6.5565%	6.4504%	6.3489%	6.2504%
8.5520%	8.3986%	8.2466%	8.1005%	7.9580%	7.8190%	7.6835%	7.5515%	7.4210%	7.2959%	7.1741%	7.0556%	6.9403%	6.8283%	6.7178%	6.6121%	6.5095%
8.9064%	8.7467%	8.5885%	8.4363%	8.2878%	8.1431%	8.0020%	7.8645%	7.7286%	7.5983%	7.4714%	7.3480%	7.2280%	7.1114%	6.9963%	6.8862%	6.7793%
9.2756%	9.1093%	8.9445%	8.7860%	8.6314%	8.4806%	8.3337%	8.1905%	8.0490%	7.9132%	7.7811%	7.6526%	7.5276%	7.4061%	7.2863%	7.1716%	7.0603%
9.6601%	9.4869%	9.3152%	9.1502%	8.9892%	8.8322%	8.6791%	8.5300%	8.3826%	8.2413%	8.1037%	7.9698%	7.8397%	7.7131%	7.5883%	7.4689%	7.3530%
10.0606%	9.8801%	9.7014%	9.5295%	9.3618%	9.1983%	9.0389%	8.8836%	8.7301%	8.5829%	8.4396%	8.3002%	8.1646%	8.0329%	7.9029%	7.7785%	7.6577%
10.4776%	10.2897%	10.1035%	9.9245%	9.7499%	9.5796%	9.4136%	9.2518%	9.0920%	8.9387%	8.7894%	8.6443%	8.5031%	8.3658%	8.2305%	8.1010%	7.9752%
10.9119%	10.7162%	10.5223%	10.3359%	10.1540%	9.9766%	9.8038%	9.6353%	9.4689%	9.3092%	9.1538%	9.0026%	8.8555%	8.7126%	8.5716%	8.4368%	8.3058%
11.3642%	11.1604%	10.9585%	10.7643%	10.5749%	10.3902%	10.2102%	10.0347%	9.8614%	9.6951%	9.5332%	9.3758%	9.2226%	9.0738%	8.9270%	8.7865%	8.6501%
11.8353%	11.6230%	11.4127%	11.2105%	11.0133%	10.8209%	10.6334%	10.4507%	10.2701%	10.0969%	9.9284%	9.7644%	9.6049%	9.4499%	9.2970%	9.1507%	9.0086%
12.3259%	12.1048%	11.8858%	11.6752%	11.4698%	11.2694%	11.0742%	10.8839%	10.6959%	10.5155%	10.3399%	10.1691%	10.0031%	9.8416%	9.6824%	9.5300%	9.3820%
12.8368%	12.6066%	12.3785%	12.1592%	11.9452%	11.7366%	11.5332%	11.3350%	11.1392%	10.9514%	10.7685%	10.5907%	10.4177%	10.2496%	10.0837%	9.9250%	9.7709%
13.3689%	13.1291%	12.8916%	12.6632%	12.4404%	12.2231%	12.0113%	11.8049%	11.6010%	11.4053%	11.2149%	11.0297%	10.8495%	10.6744%	10.5017%	10.3364%	10.1760%
13.9231%	13.6734%	13.4260%	13.1881%	12.9560%	12.7298%	12.5092%	12.2942%	12.0818%	11.8781%	11.6798%	11.4869%	11.2993%	11.1169%	10.9370%	10.7649%	10.5978%
14.5002%	14.2402%	13.9825%	13.7348%	13.4931%	13.2574%	13.0277%	12.8039%	12.5827%	12.3705%	12.1639%	11.9630%	11.7677%	11.5777%	11.3904%	11.2111%	11.0371%
15.1013%	14.8304%	14.5621%	14.3041%	14.0524%	13.8070%	13.5677%	13.3346%	13.1042%	12.8832%	12.6682%	12.4589%	12.2554%	12.0576%	11.8625%	11.6759%	11.4946%
15.7273%	15.4452%	15.1658%	14.8971%	14.6349%	14.3793%	14.1301%	13.8874%	13.6474%	13.4173%	13.1933%	12.9754%	12.7635%	12.5574%	12.3543%	12.1599%	11.9711%
16.3792%	16.0854%	15.7944%	15.5146%	15.2416%	14.9753%	14.7159%	14.4630%	14.2131%	13.9734%	13.7402%	13.5132%	13.2925%	13.0780%	12.8664%	12.6639%	12.4673%
17.0582%	16.7522%	16.4491%	16.1577%	15.8734%	15.5961%	15.3259%	15.0625%	14.8023%	14.5527%	14.3097%	14.0734%	13.8435%	13.6201%	13.3997%	13.1888%	12.9841%
17.7652%	17.4466%	17.1310%	16.8274%	16.5313%	16.2426%	15.9611%	15.6869%	15.4159%	15.1559%	14.9029%	14.6567%	14.4174%	14.1847%	13.9552%	13.7355%	13.5223%
18.5016%	18.1698%	17.8411%	17.5250%	17.2166%	16.9159%	16.6228%	16.3371%	16.0549%	15.7841%	15.5206%	15.2643%	15.0150%	14.7726%	14.5336%	14.3049%	14.0828%
19.2686%	18.9230%	18.5806%	18.2514%	17.9302%	17.6171%	17.3118%	17.0144%	16.7204%	16.4384%	16.1640%	15.8970%	15.6374%	15.3850%	15.1361%	14.8979%	14.6666%
20.0673%	19.7074%	19.3508%	19.0080%	18.6735%	18.3473%	18.0294%	17.7196%	17.4135%	17.1198%	16.8340%	16.5560%	16.2856%	16.0227%	15.7635%	15.5154%	15.2745%
20.8991%	20.5243%	20.1530%	19.7959%	19.4475%	19.1079%	18.7768%	18.4541%	18.1353%	17.8295%	17.5318%	17.2423%	16.9607%	16.6869%	16.4169%	16.1586%	15.9077%
21.7654%	21.3750%	20.9883%	20.6165%	20.2537%	19.8999%	19.5551%	19.2191%	18.8871%	18.5686%	18.2586%	17.9570%	17.6637%	17.3786%	17.0974%	16.8284%	16.5671%
22.6676%	22.2611%	21.8583%	21.4711%	21.0932%	20.7248%	20.3657%	20.0158%	19.6700%	19.3383%	19.0154%	18.7013%	18.3959%	18.0990%	17.8061%	17.5259%	17.2538%
23.6073%	23.1838%	22.7644%	22.3611%	21.9676%	21.5839%	21.2099%	20.8455%	20.4853%	20.1399%	19.8036%	19.4766%	19.1585%	18.8492%	18.5442%	18.2524%	17.9690%
24.5858%	24.1449%	23.7080%	23.2880%	22.8782%	22.4786%	22.0891%	21.7095%	21.3345%	20.9747%	20.6245%	20.2839%	19.9526%	19.6306%	19.3129%	19.0090%	18.7139%
25.6050%	25.1457%	24.6908%	24.2533%	23.8265%	23.4104%	23.0047%	22.6094%	22.2188%	21.8441%	21.4795%	21.1247%	20.7797%	20.4443%	20.1135%	19.7970%	19.4896%
26.6663%	26.1881%	25.7143%	25.2587%	24.8142%	24.3808%	23.9583%	23.5467%	23.1399%	22.7496%	22.3698%	22.0004%	21.6410%	21.2917%	20.9472%	20.6176%	20.2975%
27.7717%	27.2736%	26.7802%	26.3057%	25.8428%	25.3914%	24.9514%	24.5227%	24.0990%	23.6926%	23.2971%	22.9123%	22.5381%	22.1743%	21.8155%	21.4722%	21.1389%
28.9229%	28.4041%	27.8903%	27.3961%	26.9140%	26.4439%	25.9857%	25.5392%	25.0980%	24.6747%	24.2628%	23.8621%	23.4723%	23.0935%	22.7198%	22.3623%	22.0151%
30.1218%	29.5815%	29.0464%	28.5317%	28.0297%	27.5401%	27.0629%	26.5979%	26.1384%	25.6976%	25.2686%	24.8512%	24.4453%	24.0508%	23.6616%	23.2893%	22.9277%
31.3704%	30.8078%	30.2504%	29.7144%	29.1915%	28.6817%	28.1847%	27.7004%	27.2218%	26.7628%	26.3160%	25.8813%	25.4586%	25.0477%	24.6424%	24.2546%	23.8781%
32.6708%	32.0848%	31.5043%	30.9461%	30.4016%	29.8706%	29.3530%	28.8486%	28.3502%	27.8721%	27.4068%	26.9542%	26.5139%	26.0860%	25.6639%	25.2600%	24.8679%
34.0250%	33.4148%	32.8102%	32.2289%	31.6618%	31.1088%	30.5697%	30.0445%	29.5254%	29.0275%	28.5429%	28.0715%	27.6130%	27.1673%	26.7277%	26.3071%	25.8987%
35.4354%	34.7999%	34.1703%	33.5648%	32.9742%	32.3983%	31.8369%	31.2899%	30.7493%	30.2307%	29.7261%	29.2351%	28.7576%	28.2934%	27.8356%	27.3976%	26.9722%
36.9043%	36.2424%	35.5867%	34.9562%	34.3411%	33.7412%	33.1566%	32.5869%	32.0239%	31.4839%	30.9583%	30.4469%	29.9497%	29.4662%	28.9895%	28.5333%	28.0903%
38.4341%	37.7447%	37.0618%	36.4052%	35.7646%	35.1399%	34.5310%	33.9377%	33.3514%	32.7889%	32.2415%	31.7090%	31.1911%	30.6877%	30.1912%	29.7160%	29.2547%
	39.3093%	38.5981%	37.9142%	37.2471%	36.5965%	35.9624%	35.3445%	34.7338%	34.1481%	33.5780%	33.0234%	32.4841%	31.9597%	31.4426%	30.9478%	30.4673%
		40.1981%	39.4859%	38.7910%	38.1135%	37.4531%	36.8096%	36.1736%	35.5636%	34.9699%	34.3923%	33.8306%	33.2845%	32.7460%	32.2307%	31.7303%
			41.1226%	40.3990%	39.6934%	39.0056%	38.3354%	37.6731%	37.0378%	36.4194%	35.8179%	35.2329%	34.6642%	34.1034%	33.5667%	33.0455%
				42.0736%	41.3387%	40.6224%	39.9245%	39.2347%	38.5730%	37.9291%	37.3026%	36.6934%	36.1011%	35.5170%	34.9581%	34.4153%
					43.0523%	42.3063%	41.5794%	40.8611%	40.1720%	39.5013%	38.8489%	38.2144%	37.5976%	36.9893%	36.4072%	35.8419%
						44.0600%	43.3029%	42.5548%	41.8372%	41.1387%	40.4593%	39.7985%	39.1561%	38.5226%	37.9163%	37.3276%
							45.0979%	44.3188%	43.5714%	42.8440%	42.1364%	41.4482%	40.7792%	40.1194%	39.4880%	38.8749%
								46.1559%	45.3775%	44.6200%	43.8830%	43.1663%	42.4696%	41.7824%	41.1249%	40.4864%
									47.2585%	46.4696%	45.7020%	44.9556%	44.2300%	43.5144%	42.8296%	42.1646%
										48.3958%	47.5965%	46.8191%	46.0634%	45.3181%	44.6050%	43.9124%
											49.5694%	48.7599%	47.9728%	47.1966%	46.4539%	45.7327%
												50.7810%	49.9614%	49.1530%	48.3795%	47.6284%
													52.0324%	51.1905%	50.3849%	49.6027%
														53.3125%	52.4735%	51.6588%
															54.6486%	53.8002%
																56.0303%

15-Jan-21	15-Feb-21	15-Mar-21
t = 9.83	t = 9.92	t = 10
0.4961%	0.4886%	0.4814%
0.5167%	0.5089%	0.5013%
0.5381%	0.5300%	0.5221%
0.5604%	0.5519%	0.5437%
0.5836%	0.5748%	0.5663%
0.6078%	0.5986%	0.5897%
0.6330%	0.6235%	0.6142%
0.6592%	0.6493%	0.6397%
0.6866%	0.6762%	0.6662%
0.7150%	0.7042%	0.6938%
0.7447%	0.7334%	0.7225%
0.7755%	0.7638%	0.7525%
0.8077%	0.7955%	0.7837%
0.8412%	0.8285%	0.8162%
0.8760%	0.8628%	0.8500%
0.9124%	0.8986%	0.8852%
0.9502%	0.9358%	0.9219%
0.9896%	0.9746%	0.9601%
1.0306%	1.0150%	0.9999%
1.0733%	1.0571%	1.0414%
1.1178%	1.1009%	1.0846%
1.1641%	1.1466%	1.1295%
1.2124%	1.1941%	1.1763%
1.2626%	1.2436%	1.2251%
1.3150%	1.2951%	1.2759%
1.3695%	1.3488%	1.3288%
1.4262%	1.4047%	1.3839%
1.4854%	1.4630%	1.4412%
1.5469%	1.5236%	1.5010%
1.6111%	1.5868%	1.5632%
1.6778%	1.6525%	1.6280%
1.7474%	1.7210%	1.6955%
1.8198%	1.7924%	1.7657%
1.8953%	1.8667%	1.8389%
1.9738%	1.9440%	1.9152%
2.0556%	2.0246%	1.9945%
2.1408%	2.1085%	2.0772%
2.2296%	2.1960%	2.1633%
2.3220%	2.2870%	2.2530%
2.4183%	2.3818%	2.3464%
2.5185%	2.4805%	2.4436%
2.6229%	2.5833%	2.5449%
2.7316%	2.6904%	2.6504%
2.8449%	2.8019%	2.7603%
2.9628%	2.9181%	2.8747%
3.0856%	3.0390%	2.9939%
3.2135%	3.1650%	3.1180%
3.3467%	3.2962%	3.2472%
3.4854%	3.4328%	3.3818%
3.6299%	3.5751%	3.5220%
3.7804%	3.7233%	3.6680%
3.9371%	3.8777%	3.8201%
4.1003%	4.0384%	3.9784%
4.2702%	4.2058%	4.1433%
4.4472%	4.3802%	4.3151%
4.6316%	4.5617%	4.4939%
4.8236%	4.7508%	4.6802%
5.0235%	4.9477%	4.8742%
5.2318%	5.1528%	5.0763%
5.4486%	5.3664%	5.2867%
5.6745%	5.5889%	5.5058%
5.9097%	5.8205%	5.7341%
6.1547%	6.0618%	5.9718%
6.4098%	6.3131%	6.2193%
6.6755%	6.5748%	6.4771%
6.9522%	6.8473%	6.7456%
7.2404%	7.1312%	7.0252%
7.5405%	7.4268%	7.3164%
7.8531%	7.7346%	7.6197%
8.1786%	8.0552%	7.9355%
8.5176%	8.3891%	8.2645%
8.8707%	8.7369%	8.6071%
9.2384%	9.0990%	8.9638%
9.6214%	9.4762%	9.3354%
10.0202%	9.8690%	9.7224%
10.4355%	10.2781%	10.1254%
10.8681%	10.7041%	10.5451%
11.3186%	11.1479%	10.9822%
11.7878%	11.6100%	11.4374%
12.2764%	12.0912%	11.9116%
12.7853%	12.5924%	12.4053%
13.3153%	13.1144%	12.9195%
13.8672%	13.6580%	13.4551%
14.4420%	14.2242%	14.0128%
15.0407%	14.8138%	14.5937%
15.6642%	15.4278%	15.1986%
16.3135%	16.0674%	15.8286%
16.9897%	16.7334%	16.4847%
17.6939%	17.4270%	17.1681%
18.4274%	18.1494%	17.8797%
19.1912%	18.9017%	18.6209%
19.9868%	19.6852%	19.3927%
20.8152%	20.5012%	20.1966%
21.6781%	21.3510%	21.0338%
22.5767%	22.2361%	21.9057%
23.5125%	23.1578%	22.8137%
24.4872%	24.1177%	23.7594%
25.5022%	25.1175%	24.7442%
26.5593%	26.1586%	25.7699%
27.6602%	27.2430%	26.8382%
28.8068%	28.3722%	27.9506%
30.0009%	29.5483%	29.1093%
31.2445%	30.7731%	30.3159%
32.5397%	32.0487%	31.5725%
33.8885%	33.3772%	32.8813%
35.2932%	34.7608%	34.2443%
36.7562%	36.2017%	35.6638%
38.2798%	37.7023%	37.1421%
39.8666%	39.2651%	38.6817%
41.5191%	40.8927%	40.2851%
43.2402%	42.5878%	41.9550%
45.0326%	44.3532%	43.6941%
46.8992%	46.1917%	45.5054%
48.8433%	48.1064%	47.3916%
50.8680%	50.1005%	49.3561%
52.9765%	52.1773%	51.4020%
55.1725%	54.3401%	53.5327%
57.4595%	56.5926%	55.7518%
	58.9385%	58.0628%
		60.4696%

EUR 2011 post-calibration lattice

date	15-Apr-11	15-May-11	15-Jun-11	15-Jul-11	15-Aug-11	15-Sep-11	15-Oct-11	15-Nov-11	15-Dec-11	15-Jan-12	15-Feb-12	15-Mar-12
EUR Apr 2011 lattice												
	t = 0.08	t = 0.17	t = 0.25	t = 0.33	t = 0.42	t = 0.5	t = 0.58	t = 0.67	t = 0.75	t = 0.83	t = 0.92	t = 1
j = 1	0.4215%	0.6621%	0.9214%	1.1613%	1.3466%	1.4445%	1.4416%	1.3916%	1.3287%	1.2737%	1.2458%	1.2625%
j = 2		0.6880%	0.9575%	1.2068%	1.3993%	1.5011%	1.4980%	1.4461%	1.3807%	1.3236%	1.2945%	1.3119%
j = 3			0.9949%	1.2540%	1.4540%	1.5598%	1.5567%	1.5026%	1.4348%	1.3754%	1.3452%	1.3633%
j = 4				1.3031%	1.5109%	1.6209%	1.6176%	1.5615%	1.4909%	1.4292%	1.3978%	1.4166%
j = 5					1.5701%	1.6843%	1.6809%	1.6226%	1.5493%	1.4851%	1.4526%	1.4721%
j = 6						1.7502%	1.7467%	1.6861%	1.6099%	1.5433%	1.5094%	1.5297%
j = 7							1.8150%	1.7521%	1.6729%	1.6037%	1.5685%	1.5896%
j = 8								1.8206%	1.7384%	1.6664%	1.6299%	1.6518%
j = 9									1.8064%	1.7316%	1.6936%	1.7164%
j = 10										1.7994%	1.7599%	1.7836%
j = 11											1.8288%	1.8534%
j = 12												1.9259%
j = 13												
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15-Apr-12	15-May-12	15-Jun-12	15-Jul-12	15-Aug-12	15-Sep-12	15-Oct-12	15-Nov-12	15-Dec-12	15-Jan-13	15-Feb-13	15-Mar-13	15-Apr-13
t = 1.08	t = 1.17	t = 1.25	t = 1.33	t = 1.42	t = 1.5	t = 1.58	t = 1.67	t = 1.75	t = 1.83	t = 1.92	t = 2	t = 2.08
1.3286%	1.4065%	1.4834%	1.5566%	1.6237%	1.6823%	1.7304%	1.7660%	1.7876%	1.7934%	1.7821%	1.7524%	1.7071%
1.3806%	1.4616%	1.5415%	1.6175%	1.6872%	1.7481%	1.7981%	1.8352%	1.8576%	1.8636%	1.8519%	1.8210%	1.7739%
1.4346%	1.5188%	1.6018%	1.6809%	1.7532%	1.8165%	1.8684%	1.9070%	1.9303%	1.9366%	1.9244%	1.8923%	1.8433%
1.4908%	1.5782%	1.6645%	1.7466%	1.8218%	1.8876%	1.9416%	1.9816%	2.0058%	2.0124%	1.9997%	1.9663%	1.9154%
1.5491%	1.6400%	1.7297%	1.8150%	1.8931%	1.9615%	2.0176%	2.0592%	2.0843%	2.0911%	2.0779%	2.0433%	1.9904%
1.6098%	1.7042%	1.7973%	1.8860%	1.9672%	2.0382%	2.0965%	2.1398%	2.1659%	2.1729%	2.1593%	2.1232%	2.0683%
1.6728%	1.7709%	1.8677%	1.9598%	2.0442%	2.1180%	2.1786%	2.2235%	2.2506%	2.2580%	2.2438%	2.2063%	2.1493%
1.7382%	1.8402%	1.9408%	2.0365%	2.1242%	2.2009%	2.2638%	2.3105%	2.3387%	2.3464%	2.3316%	2.2927%	2.2334%
1.8062%	1.9122%	2.0167%	2.1162%	2.2074%	2.2870%	2.3524%	2.4009%	2.4302%	2.4382%	2.4228%	2.3824%	2.3208%
1.8769%	1.9870%	2.0957%	2.1991%	2.2937%	2.3765%	2.4445%	2.4949%	2.5254%	2.5336%	2.5176%	2.4757%	2.4116%
1.9504%	2.0648%	2.1777%	2.2851%	2.3835%	2.4695%	2.5401%	2.5925%	2.6242%	2.6328%	2.6162%	2.5725%	2.5060%
2.0267%	2.1456%	2.2629%	2.3746%	2.4768%	2.5662%	2.6396%	2.6940%	2.7269%	2.7358%	2.7186%	2.6732%	2.6041%
2.1060%	2.2296%	2.3515%	2.4675%	2.5737%	2.6666%	2.7429%	2.7994%	2.8336%	2.8429%	2.8250%	2.7778%	2.7060%
	2.3168%	2.4435%	2.5641%	2.6745%	2.7710%	2.8502%	2.9090%	2.9445%	2.9541%	2.9355%	2.8866%	2.8119%
		2.5391%	2.6644%	2.7791%	2.8794%	2.9618%	3.0229%	3.0597%	3.0697%	3.0504%	2.9995%	2.9219%
			2.7687%	2.8879%	2.9921%	3.0777%	3.1412%	3.1795%	3.1899%	3.1698%	3.1169%	3.0363%
				3.0009%	3.1092%	3.1981%	3.2641%	3.3039%	3.3147%	3.2938%	3.2389%	3.1551%
					3.2309%	3.3233%	3.3918%	3.4332%	3.4444%	3.4227%	3.3657%	3.2786%
						3.4533%	3.5246%	3.5676%	3.5792%	3.5567%	3.4974%	3.4069%
							3.6625%	3.7072%	3.7193%	3.6959%	3.6343%	3.5402%
								3.8523%	3.8649%	3.8405%	3.7765%	3.6788%
									4.0161%	3.9908%	3.9243%	3.8227%
										4.1470%	4.0779%	3.9723%
											4.2375%	4.1278%
												4.2894%

15-May-13	15-Jun-13	15-Jul-13	15-Aug-13	15-Sep-13	15-Oct-13	15-Nov-13	15-Dec-13	15-Jan-14	15-Feb-14	15-Mar-14	15-Apr-14	15-May-14
t = 2.17	t = 2.25	t = 2.33	t = 2.42	t = 2.5	t = 2.58	t = 2.67	t = 2.75	t = 2.83	t = 2.92	t = 3	t = 3.08	t = 3.17
1.6593%	1.6139%	1.5719%	1.5344%	1.5023%	1.4762%	1.4571%	1.4454%	1.4420%	1.4472%	1.4616%	1.4837%	1.5042%
1.7242%	1.6770%	1.6335%	1.5945%	1.5611%	1.5340%	1.5141%	1.5020%	1.4984%	1.5038%	1.5188%	1.5418%	1.5631%
1.7917%	1.7427%	1.6974%	1.6569%	1.6221%	1.5940%	1.5733%	1.5608%	1.5570%	1.5627%	1.5782%	1.6022%	1.6242%
1.8618%	1.8109%	1.7638%	1.7217%	1.6856%	1.6564%	1.6349%	1.6219%	1.6180%	1.6238%	1.6400%	1.6649%	1.6878%
1.9347%	1.8817%	1.8328%	1.7891%	1.7516%	1.7212%	1.6989%	1.6853%	1.6813%	1.6874%	1.7041%	1.7300%	1.7539%
2.0104%	1.9554%	1.9046%	1.8591%	1.8201%	1.7886%	1.7654%	1.7513%	1.7471%	1.7534%	1.7708%	1.7977%	1.8225%
2.0891%	2.0319%	1.9791%	1.9319%	1.8914%	1.8586%	1.8345%	1.8198%	1.8155%	1.8220%	1.8401%	1.8681%	1.8938%
2.1708%	2.1114%	2.0566%	2.0075%	1.9654%	1.9313%	1.9063%	1.8911%	1.8865%	1.8933%	1.9122%	1.9412%	1.9679%
2.2558%	2.1941%	2.1370%	2.0861%	2.0423%	2.0069%	1.9809%	1.9651%	1.9603%	1.9674%	1.9870%	2.0172%	2.0450%
2.3441%	2.2799%	2.2207%	2.1677%	2.1223%	2.0855%	2.0584%	2.0420%	2.0371%	2.0444%	2.0648%	2.0961%	2.1250%
2.4358%	2.3691%	2.3076%	2.2525%	2.2053%	2.1671%	2.1389%	2.1219%	2.1168%	2.1244%	2.1456%	2.1781%	2.2082%
2.5311%	2.4619%	2.3979%	2.3407%	2.2916%	2.2519%	2.2227%	2.2049%	2.1996%	2.2076%	2.2295%	2.2634%	2.2946%
2.6302%	2.5582%	2.4917%	2.4323%	2.3813%	2.3400%	2.3096%	2.2912%	2.2857%	2.2940%	2.3168%	2.3520%	2.3844%
2.7331%	2.6583%	2.5893%	2.5275%	2.4745%	2.4316%	2.4000%	2.3809%	2.3752%	2.3838%	2.4075%	2.4440%	2.4777%
2.8401%	2.7624%	2.6906%	2.6264%	2.5713%	2.5268%	2.4940%	2.4741%	2.4681%	2.4770%	2.5017%	2.5396%	2.5747%
2.9512%	2.8705%	2.7959%	2.7292%	2.6720%	2.6257%	2.5916%	2.5709%	2.5647%	2.5740%	2.5996%	2.6390%	2.6754%
3.0667%	2.9828%	2.9053%	2.8360%	2.7765%	2.7284%	2.6930%	2.6715%	2.6651%	2.6747%	2.7013%	2.7423%	2.7801%
3.1867%	3.0996%	3.0190%	2.9470%	2.8852%	2.8352%	2.7984%	2.7761%	2.7694%	2.7794%	2.8070%	2.8496%	2.8889%
3.3115%	3.2209%	3.1372%	3.0623%	2.9981%	2.9462%	2.9079%	2.8847%	2.8778%	2.8882%	2.9169%	2.9612%	3.0020%
3.4411%	3.3469%	3.2599%	3.1822%	3.1155%	3.0615%	3.0217%	2.9976%	2.9904%	3.0012%	3.0310%	3.0771%	3.1195%
3.5757%	3.4779%	3.3875%	3.3067%	3.2374%	3.1813%	3.1400%	3.1149%	3.1074%	3.1187%	3.1497%	3.1975%	3.2416%
3.7157%	3.6140%	3.5201%	3.4361%	3.3641%	3.3058%	3.2629%	3.2368%	3.2290%	3.2407%	3.2729%	3.3226%	3.3684%
3.8611%	3.7554%	3.6579%	3.5706%	3.4957%	3.4351%	3.3905%	3.3635%	3.3554%	3.3676%	3.4010%	3.4527%	3.5003%
4.0122%	3.9024%	3.8010%	3.7103%	3.6325%	3.5696%	3.5232%	3.4951%	3.4867%	3.4993%	3.5341%	3.5878%	3.6372%
4.1692%	4.0551%	3.9498%	3.8556%	3.7747%	3.7093%	3.6611%	3.6319%	3.6232%	3.6363%	3.6724%	3.7282%	3.7796%
4.3324%	4.2139%	4.1044%	4.0064%	3.9224%	3.8544%	3.8044%	3.7741%	3.7650%	3.7786%	3.8162%	3.8741%	3.9275%
	4.3788%	4.2650%	4.1632%	4.0759%	4.0053%	3.9533%	3.9218%	3.9123%	3.9265%	3.9655%	4.0257%	4.0812%
		4.4319%	4.3262%	4.2355%	4.1620%	4.1080%	4.0752%	4.0655%	4.0802%	4.1207%	4.1833%	4.2409%
			4.4955%	4.4012%	4.3249%	4.2688%	4.2347%	4.2246%	4.2398%	4.2820%	4.3470%	4.4069%
				4.5735%	4.4942%	4.4358%	4.4005%	4.3899%	4.4058%	4.4496%	4.5171%	4.5794%
					4.6701%	4.6095%	4.5727%	4.5617%	4.5782%	4.6237%	4.6939%	4.7586%
						4.7898%	4.7516%	4.7402%	4.7574%	4.8047%	4.8776%	4.9448%
							4.9376%	4.9257%	4.9435%	4.9927%	5.0685%	5.1384%
								5.1185%	5.1370%	5.1881%	5.2668%	5.3395%
									5.3381%	5.3911%	5.4730%	5.5484%
										5.6021%	5.6872%	5.7656%
											5.9097%	5.9912%
												6.2257%

15-Jun-14	15-Jul-14	15-Aug-14	15-Sep-14	15-Oct-14	15-Nov-14	15-Dec-14	15-Jan-15	15-Feb-15	15-Mar-15	15-Apr-15	15-May-15	15-Jun-15
t = 3.25	t = 3.33	t = 3.42	t = 3.5	t = 3.58	t = 3.67	t = 3.75	t = 3.83	t = 3.92	t = 4	t = 4.08	t = 4.17	t = 4.25
1.5209%	1.5336%	1.5420%	1.5459%	1.5452%	1.5396%	1.5291%	1.5135%	1.4927%	1.4667%	1.4373%	1.4075%	1.3792%
1.5804%	1.5936%	1.6023%	1.6064%	1.6056%	1.5999%	1.5889%	1.5727%	1.5512%	1.5241%	1.4936%	1.4626%	1.4332%
1.6423%	1.6559%	1.6650%	1.6693%	1.6685%	1.6625%	1.6511%	1.6343%	1.6119%	1.5838%	1.5520%	1.5198%	1.4893%
1.7065%	1.7208%	1.7302%	1.7346%	1.7338%	1.7275%	1.7157%	1.6982%	1.6749%	1.6457%	1.6128%	1.5793%	1.5476%
1.7733%	1.7881%	1.7979%	1.8025%	1.8016%	1.7951%	1.7829%	1.7647%	1.7405%	1.7102%	1.6759%	1.6411%	1.6082%
1.8427%	1.8581%	1.8683%	1.8730%	1.8721%	1.8654%	1.8527%	1.8338%	1.8086%	1.7771%	1.7415%	1.7053%	1.6711%
1.9148%	1.9308%	1.9414%	1.9463%	1.9454%	1.9384%	1.9252%	1.9055%	1.8794%	1.8466%	1.8096%	1.7721%	1.7365%
1.9898%	2.0064%	2.0174%	2.0225%	2.0215%	2.0143%	2.0005%	1.9801%	1.9529%	1.9189%	1.8805%	1.8414%	1.8045%
2.0677%	2.0849%	2.0963%	2.1016%	2.1006%	2.0931%	2.0788%	2.0576%	2.0294%	1.9940%	1.9541%	1.9135%	1.8751%
2.1486%	2.1665%	2.1783%	2.1839%	2.1829%	2.1750%	2.1602%	2.1381%	2.1088%	2.0720%	2.0305%	1.9884%	1.9485%
2.2327%	2.2513%	2.2636%	2.2694%	2.2683%	2.2601%	2.2447%	2.2218%	2.1913%	2.1531%	2.1100%	2.0662%	2.0247%
2.3200%	2.3394%	2.3522%	2.3582%	2.3571%	2.3486%	2.3325%	2.3088%	2.2771%	2.2374%	2.1926%	2.1471%	2.1040%
2.4108%	2.4309%	2.4442%	2.4505%	2.4493%	2.4405%	2.4238%	2.3991%	2.3662%	2.3250%	2.2784%	2.2311%	2.1863%
2.5052%	2.5261%	2.5399%	2.5464%	2.5452%	2.5360%	2.5187%	2.4930%	2.4588%	2.4159%	2.3676%	2.3184%	2.2719%
2.6032%	2.6249%	2.6393%	2.6460%	2.6448%	2.6353%	2.6173%	2.5906%	2.5550%	2.5105%	2.4602%	2.4091%	2.3608%
2.7051%	2.7276%	2.7426%	2.7496%	2.7483%	2.7384%	2.7197%	2.6920%	2.6550%	2.6087%	2.5565%	2.5034%	2.4532%
2.8110%	2.8344%	2.8499%	2.8572%	2.8558%	2.8456%	2.8261%	2.7973%	2.7589%	2.7108%	2.6565%	2.6014%	2.5492%
2.9210%	2.9453%	2.9615%	2.9690%	2.9676%	2.9569%	2.9367%	2.9068%	2.8669%	2.8169%	2.7605%	2.7032%	2.6489%
3.0353%	3.0606%	3.0774%	3.0852%	3.0837%	3.0727%	3.0517%	3.0206%	2.9791%	2.9272%	2.8685%	2.8090%	2.7526%
3.1541%	3.1804%	3.1978%	3.2059%	3.2044%	3.1929%	3.1711%	3.1388%	3.0957%	3.0417%	2.9808%	2.9189%	2.8603%
3.2775%	3.3048%	3.3229%	3.3314%	3.3298%	3.3179%	3.2952%	3.2616%	3.2169%	3.1608%	3.0975%	3.0332%	2.9723%
3.4058%	3.4342%	3.4530%	3.4618%	3.4601%	3.4477%	3.4242%	3.3893%	3.3427%	3.2845%	3.2187%	3.1519%	3.0886%
3.5391%	3.5686%	3.5881%	3.5973%	3.5956%	3.5826%	3.5582%	3.5219%	3.4736%	3.4130%	3.3447%	3.2752%	3.2095%
3.6776%	3.7082%	3.7286%	3.7381%	3.7363%	3.7229%	3.6974%	3.6597%	3.6095%	3.5466%	3.4756%	3.4034%	3.3351%
3.8215%	3.8534%	3.8745%	3.8843%	3.8825%	3.8686%	3.8421%	3.8030%	3.7508%	3.6854%	3.6116%	3.5366%	3.4656%
3.9711%	4.0042%	4.0261%	4.0364%	4.0345%	4.0200%	3.9925%	3.9518%	3.8976%	3.8296%	3.7529%	3.6750%	3.6012%
4.1265%	4.1609%	4.1837%	4.1943%	4.1923%	4.1773%	4.1488%	4.1064%	4.0501%	3.9795%	3.8998%	3.8188%	3.7422%
4.2880%	4.3237%	4.3474%	4.3585%	4.3564%	4.3408%	4.3111%	4.2672%	4.2086%	4.1352%	4.0524%	3.9683%	3.8886%
4.4558%	4.4929%	4.5175%	4.5291%	4.5269%	4.5106%	4.4798%	4.4342%	4.3733%	4.2971%	4.2110%	4.1236%	4.0408%
4.6302%	4.6688%	4.6943%	4.7063%	4.7041%	4.6872%	4.6552%	4.6077%	4.5445%	4.4653%	4.3758%	4.2850%	4.1990%
4.8114%	4.8515%	4.8781%	4.8905%	4.8882%	4.8706%	4.8373%	4.7880%	4.7223%	4.6400%	4.5471%	4.4527%	4.3633%
4.9997%	5.0414%	5.0690%	5.0819%	5.0795%	5.0612%	5.0267%	4.9754%	4.9071%	4.8216%	4.7250%	4.6269%	4.5341%
5.1954%	5.2387%	5.2674%	5.2808%	5.2783%	5.2593%	5.2234%	5.1701%	5.0992%	5.0103%	4.9099%	4.8080%	4.7115%
5.3987%	5.4437%	5.4735%	5.4874%	5.4848%	5.4651%	5.4278%	5.3725%	5.2987%	5.2064%	5.1021%	4.9962%	4.8959%
5.6100%	5.6567%	5.6877%	5.7022%	5.6995%	5.6790%	5.6402%	5.5827%	5.5061%	5.4101%	5.3018%	5.1917%	5.0875%
5.8296%	5.8781%	5.9103%	5.9254%	5.9226%	5.9013%	5.8610%	5.8012%	5.7216%	5.6219%	5.5093%	5.3949%	5.2866%
6.0577%	6.1081%	6.1416%	6.1573%	6.1543%	6.1322%	6.0903%	6.0282%	5.9455%	5.8419%	5.7249%	5.6060%	5.4935%
6.2948%	6.3472%	6.3820%	6.3982%	6.3952%	6.3722%	6.3287%	6.2642%	6.1782%	6.0705%	5.9489%	5.8254%	5.7085%
6.5411%	6.5956%	6.6317%	6.6486%	6.6455%	6.6216%	6.5764%	6.5093%	6.4200%	6.3081%	6.1817%	6.0534%	5.9319%
	6.8537%	6.8913%	6.9088%	6.9056%	6.8807%	6.8338%	6.7641%	6.6713%	6.5550%	6.4237%	6.2903%	6.1641%
		7.1610%	7.1792%	7.1758%	7.1500%	7.1012%	7.0288%	6.9323%	6.8115%	6.6751%	6.5365%	6.4053%
			7.4602%	7.4567%	7.4299%	7.3791%	7.3039%	7.2037%	7.0781%	6.9363%	6.7923%	6.6560%
				7.7485%	7.7206%	7.6679%	7.5897%	7.4856%	7.3551%	7.2078%	7.0581%	6.9165%
					8.0228%	7.9680%	7.8868%	7.7785%	7.6429%	7.4899%	7.3343%	7.1872%
						8.2798%	8.1954%	8.0830%	7.9421%	7.7830%	7.6214%	7.4684%
							8.5161%	8.3993%	8.2529%	8.0876%	7.9196%	7.7607%
								8.7280%	8.5759%	8.4041%	8.2296%	8.0644%
									8.9115%	8.7330%	8.5517%	8.3801%
										9.0748%	8.8863%	8.7080%
											9.2341%	9.0488%
												9.4030%

15-Jul-15	15-Aug-15	15-Sep-15	15-Oct-15	15-Nov-15	15-Dec-15	15-Jan-16	15-Feb-16	15-Mar-16	15-Apr-16	15-May-16	15-Jun-16	15-Jul-16
t = 4.33	t = 4.42	t = 4.5	t = 4.58	t = 4.67	t = 4.75	t = 4.83	t = 4.92	t = 5	t = 5.08	t = 5.17	t = 5.25	t = 5.33
1.3527%	1.3280%	1.3051%	1.2842%	1.2653%	1.2485%	1.2337%	1.2212%	1.2108%	1.2041%	1.1954%	1.1861%	1.1762%
1.4056%	1.3799%	1.3562%	1.3344%	1.3148%	1.2973%	1.2820%	1.2690%	1.2582%	1.2513%	1.2422%	1.2325%	1.2222%
1.4607%	1.4339%	1.4093%	1.3867%	1.3663%	1.3481%	1.3322%	1.3186%	1.3074%	1.3002%	1.2908%	1.2807%	1.2700%
1.5178%	1.4901%	1.4644%	1.4409%	1.4197%	1.4008%	1.3843%	1.3702%	1.3586%	1.3511%	1.3413%	1.3308%	1.3197%
1.5772%	1.5484%	1.5217%	1.4973%	1.4753%	1.4557%	1.4385%	1.4239%	1.4117%	1.4040%	1.3938%	1.3829%	1.3714%
1.6390%	1.6090%	1.5813%	1.5559%	1.5330%	1.5126%	1.4948%	1.4796%	1.4670%	1.4589%	1.4483%	1.4370%	1.4250%
1.7031%	1.6719%	1.6432%	1.6168%	1.5930%	1.5718%	1.5533%	1.5375%	1.5244%	1.5160%	1.5050%	1.4933%	1.4808%
1.7697%	1.7374%	1.7075%	1.6801%	1.6554%	1.6333%	1.6141%	1.5977%	1.5841%	1.5754%	1.5639%	1.5517%	1.5388%
1.8390%	1.8054%	1.7743%	1.7458%	1.7202%	1.6973%	1.6773%	1.6602%	1.6461%	1.6370%	1.6251%	1.6125%	1.5990%
1.9110%	1.8760%	1.8437%	1.8142%	1.7875%	1.7637%	1.7429%	1.7252%	1.7105%	1.7011%	1.6887%	1.6756%	1.6616%
1.9858%	1.9494%	1.9159%	1.8852%	1.8574%	1.8327%	1.8111%	1.7927%	1.7774%	1.7677%	1.7548%	1.7411%	1.7266%
2.0635%	2.0257%	1.9909%	1.9590%	1.9301%	1.9044%	1.8820%	1.8628%	1.8470%	1.8368%	1.8235%	1.8093%	1.7942%
2.1442%	2.1050%	2.0688%	2.0356%	2.0057%	1.9790%	1.9556%	1.9357%	1.9193%	1.9087%	1.8949%	1.8801%	1.8644%
2.2282%	2.1874%	2.1497%	2.1153%	2.0842%	2.0564%	2.0322%	2.0115%	1.9944%	1.9834%	1.9690%	1.9537%	1.9373%
2.3154%	2.2730%	2.2339%	2.1981%	2.1657%	2.1369%	2.1117%	2.0902%	2.0724%	2.0611%	2.0461%	2.0301%	2.0132%
2.4060%	2.3620%	2.3213%	2.2841%	2.2505%	2.2205%	2.1944%	2.1720%	2.1535%	2.1417%	2.1262%	2.1096%	2.0919%
2.5001%	2.4544%	2.4121%	2.3735%	2.3386%	2.3074%	2.2802%	2.2570%	2.2378%	2.2255%	2.2094%	2.1921%	2.1738%
2.5980%	2.5505%	2.5065%	2.4664%	2.4301%	2.3977%	2.3695%	2.3453%	2.3254%	2.3126%	2.2958%	2.2779%	2.2589%
2.6997%	2.6503%	2.6046%	2.5629%	2.5252%	2.4916%	2.4622%	2.4371%	2.4164%	2.4031%	2.3857%	2.3671%	2.3473%
2.8053%	2.7540%	2.7066%	2.6632%	2.6240%	2.5891%	2.5586%	2.5325%	2.5110%	2.4972%	2.4791%	2.4597%	2.4392%
2.9151%	2.8618%	2.8125%	2.7674%	2.7267%	2.6904%	2.6587%	2.6316%	2.6093%	2.5949%	2.5761%	2.5560%	2.5346%
3.0292%	2.9738%	2.9226%	2.8757%	2.8334%	2.7957%	2.7628%	2.7346%	2.7114%	2.6965%	2.6769%	2.6560%	2.6338%
3.1477%	3.0902%	3.0369%	2.9883%	2.9443%	2.9051%	2.8709%	2.8416%	2.8175%	2.8020%	2.7817%	2.7600%	2.7369%
3.2709%	3.2111%	3.1558%	3.1052%	3.0595%	3.0188%	2.9832%	2.9529%	2.9278%	2.9117%	2.8905%	2.8680%	2.8440%
3.3989%	3.3368%	3.2793%	3.2268%	3.1793%	3.1370%	3.1000%	3.0684%	3.0423%	3.0256%	3.0037%	2.9802%	2.9553%
3.5320%	3.4673%	3.4076%	3.3530%	3.3037%	3.2597%	3.2213%	3.1885%	3.1614%	3.1440%	3.1212%	3.0968%	3.0710%
3.6702%	3.6030%	3.5410%	3.4843%	3.4330%	3.3873%	3.3474%	3.3133%	3.2851%	3.2671%	3.2434%	3.2180%	3.1911%
3.8138%	3.7441%	3.6796%	3.6206%	3.5673%	3.5199%	3.4784%	3.4430%	3.4137%	3.3949%	3.3703%	3.3440%	3.3160%
3.9631%	3.8906%	3.8236%	3.7623%	3.7069%	3.6576%	3.6145%	3.5777%	3.5473%	3.5278%	3.5022%	3.4749%	3.4458%
4.1182%	4.0428%	3.9732%	3.9096%	3.8520%	3.8008%	3.7560%	3.7177%	3.6861%	3.6659%	3.6392%	3.6109%	3.5807%
4.2793%	4.2011%	4.1287%	4.0626%	4.0028%	3.9495%	3.9030%	3.8632%	3.8304%	3.8093%	3.7817%	3.7522%	3.7208%
4.4468%	4.3655%	4.2903%	4.2216%	4.1594%	4.1041%	4.0557%	4.0144%	3.9803%	3.9584%	3.9297%	3.8990%	3.8664%
4.6209%	4.5363%	4.4582%	4.3868%	4.3222%	4.2647%	4.2144%	4.1715%	4.1361%	4.1133%	4.0835%	4.0516%	4.0177%
4.8017%	4.7139%	4.6327%	4.5585%	4.4914%	4.4316%	4.3794%	4.3348%	4.2979%	4.2743%	4.2433%	4.2102%	4.1750%
4.9896%	4.8983%	4.8140%	4.7369%	4.6671%	4.6051%	4.5508%	4.5044%	4.4661%	4.4416%	4.4093%	4.3749%	4.3384%
5.1849%	5.0900%	5.0024%	4.9222%	4.8498%	4.7853%	4.7289%	4.6807%	4.6409%	4.6154%	4.5819%	4.5462%	4.5082%
5.3878%	5.2893%	5.1982%	5.1149%	5.0396%	4.9726%	4.9139%	4.8639%	4.8225%	4.7961%	4.7612%	4.7241%	4.6846%
5.5987%	5.4963%	5.4016%	5.3151%	5.2368%	5.1672%	5.1062%	5.0542%	5.0113%	4.9838%	4.9476%	4.9090%	4.8679%
5.8178%	5.7114%	5.6130%	5.5231%	5.4418%	5.3694%	5.3061%	5.2520%	5.2074%	5.1788%	5.1412%	5.1011%	5.0584%
6.0455%	5.9349%	5.8327%	5.7392%	5.6547%	5.5795%	5.5137%	5.4576%	5.4112%	5.3815%	5.3424%	5.3007%	5.2564%
6.2821%	6.1671%	6.0610%	5.9638%	5.8761%	5.7979%	5.7295%	5.6712%	5.6230%	5.5921%	5.5515%	5.5082%	5.4621%
6.5279%	6.4085%	6.2982%	6.1972%	6.1060%	6.0248%	5.9538%	5.8931%	5.8430%	5.8109%	5.7687%	5.7237%	5.6759%
6.7834%	6.6593%	6.5446%	6.4398%	6.3450%	6.2606%	6.1868%	6.1238%	6.0717%	6.0384%	5.9945%	5.9477%	5.8980%
7.0489%	6.9199%	6.8008%	6.6918%	6.5933%	6.5056%	6.4289%	6.3634%	6.3093%	6.2747%	6.2291%	6.1805%	6.1288%
7.3247%	7.1907%	7.0669%	6.9537%	6.8513%	6.7602%	6.6805%	6.6125%	6.5563%	6.5202%	6.4729%	6.4224%	6.3687%
7.6114%	7.4722%	7.3435%	7.2258%	7.1195%	7.0248%	6.9419%	6.8712%	6.8128%	6.7754%	6.7262%	6.6737%	6.6179%
7.9093%	7.7646%	7.6309%	7.5086%	7.3981%	7.2997%	7.2136%	7.1402%	7.0795%	7.0406%	6.9895%	6.9349%	6.8770%
8.2188%	8.0685%	7.9295%	7.8025%	7.6876%	7.5854%	7.4959%	7.4196%	7.3565%	7.3161%	7.2630%	7.2063%	7.1461%
8.5405%	8.3842%	8.2399%	8.1078%	7.9885%	7.8822%	7.7893%	7.7100%	7.6444%	7.6025%	7.5472%	7.4884%	7.4258%
8.8747%	8.7124%	8.5624%	8.4251%	8.3011%	8.1907%	8.0941%	8.0117%	7.9436%	7.9000%	7.8426%	7.7814%	7.7164%
9.2220%	9.0533%	8.8975%	8.7549%	8.6260%	8.5113%	8.4109%	8.3253%	8.2545%	8.2092%	8.1495%	8.0860%	8.0184%
9.5829%	9.4077%	9.2457%	9.0975%	8.9636%	8.8444%	8.7401%	8.6511%	8.5775%	8.5304%	8.4685%	8.4024%	8.3322%
	9.7758%	9.6075%	9.4535%	9.3144%	9.1905%	9.0821%	8.9896%	8.9132%	8.8643%	8.7999%	8.7312%	8.6583%
		9.9835%	9.8235%	9.6789%	9.5502%	9.4376%	9.3415%	9.2621%	9.2112%	9.1443%	9.0729%	8.9971%
			10.2080%	10.0577%	9.9239%	9.8069%	9.7071%	9.6245%	9.5717%	9.5022%	9.4280%	9.3492%
				10.4514%	10.3123%	10.1907%	10.0870%	10.0012%	9.9463%	9.8741%	9.7970%	9.7151%
					10.7159%	10.5896%	10.4817%	10.3926%	10.3355%	10.2605%	10.1804%	10.0953%
						11.0040%	10.8919%	10.7993%	10.7400%	10.6620%	10.5788%	10.4904%
							11.3182%	11.2220%	11.1604%	11.0793%	10.9929%	10.9010%
								11.6612%	11.5971%	11.5129%	11.4231%	11.3276%
									12.0510%	11.9635%	11.8701%	11.7709%
										12.4317%	12.3347%	12.2316%
											12.8174%	12.7103%
												13.2077%

15-Aug-16	15-Sep-16	15-Oct-16	15-Nov-16	15-Dec-16	15-Jan-17	15-Feb-17	15-Mar-17	15-Apr-17	15-May-17	15-Jun-17	15-Jul-17	15-Aug-17
t = 5.42	t = 5.5	t = 5.58	t = 5.67	t = 5.75	t = 5.83	t = 5.92	t = 6	t = 6.08	t = 6.17	t = 6.25	t = 6.33	t = 6.42
1.1657%	1.1546%	1.1429%	1.1306%	1.1178%	1.1044%	1.0904%	1.0759%	1.0607%	1.0450%	1.0289%	1.0122%	0.9950%
1.2113%	1.1997%	1.1876%	1.1749%	1.1615%	1.1476%	1.1331%	1.1180%	1.1022%	1.0859%	1.0691%	1.0518%	1.0340%
1.2587%	1.2467%	1.2341%	1.2209%	1.2070%	1.1925%	1.1774%	1.1617%	1.1453%	1.1284%	1.1110%	1.0930%	1.0744%
1.3079%	1.2955%	1.2824%	1.2686%	1.2542%	1.2392%	1.2235%	1.2072%	1.1901%	1.1726%	1.1545%	1.1358%	1.1165%
1.3591%	1.3462%	1.3326%	1.3183%	1.3033%	1.2877%	1.2714%	1.2545%	1.2367%	1.2185%	1.1997%	1.1802%	1.1602%
1.4123%	1.3989%	1.3847%	1.3699%	1.3543%	1.3381%	1.3212%	1.3036%	1.2851%	1.2662%	1.2466%	1.2264%	1.2056%
1.4676%	1.4536%	1.4389%	1.4235%	1.4073%	1.3905%	1.3729%	1.3546%	1.3354%	1.3157%	1.2954%	1.2744%	1.2528%
1.5250%	1.5105%	1.4952%	1.4792%	1.4624%	1.4449%	1.4266%	1.4076%	1.3877%	1.3672%	1.3461%	1.3243%	1.3018%
1.5847%	1.5696%	1.5538%	1.5371%	1.5196%	1.5014%	1.4824%	1.4627%	1.4420%	1.4207%	1.3988%	1.3761%	1.3527%
1.6467%	1.6311%	1.6146%	1.5973%	1.5791%	1.5602%	1.5404%	1.5199%	1.4984%	1.4763%	1.4535%	1.4300%	1.4057%
1.7112%	1.6949%	1.6778%	1.6598%	1.6409%	1.6212%	1.6007%	1.5794%	1.5570%	1.5341%	1.5104%	1.4859%	1.4607%
1.7781%	1.7612%	1.7434%	1.7247%	1.7051%	1.6847%	1.6634%	1.6412%	1.6180%	1.5941%	1.5695%	1.5441%	1.5178%
1.8477%	1.8302%	1.8116%	1.7922%	1.7719%	1.7506%	1.7285%	1.7054%	1.6813%	1.6565%	1.6309%	1.6045%	1.5773%
1.9200%	1.9018%	1.8825%	1.8624%	1.8412%	1.8191%	1.7961%	1.7722%	1.7471%	1.7214%	1.6948%	1.6673%	1.6390%
1.9952%	1.9762%	1.9562%	1.9352%	1.9133%	1.8903%	1.8664%	1.8415%	1.8155%	1.7887%	1.7611%	1.7325%	1.7031%
2.0733%	2.0535%	2.0328%	2.0110%	1.9882%	1.9643%	1.9395%	1.9136%	1.8865%	1.8587%	1.8300%	1.8003%	1.7698%
2.1544%	2.1339%	2.1123%	2.0897%	2.0660%	2.0412%	2.0154%	1.9885%	1.9604%	1.9315%	1.9016%	1.8708%	1.8390%
2.2387%	2.2174%	2.1950%	2.1715%	2.1468%	2.1211%	2.0942%	2.0663%	2.0371%	2.0071%	1.9760%	1.9440%	1.9110%
2.3263%	2.3042%	2.2809%	2.2565%	2.2308%	2.2041%	2.1762%	2.1472%	2.1168%	2.0856%	2.0534%	2.0201%	1.9858%
2.4174%	2.3944%	2.3702%	2.3448%	2.3181%	2.2903%	2.2614%	2.2312%	2.1996%	2.1672%	2.1337%	2.0992%	2.0635%
2.5120%	2.4881%	2.4629%	2.4365%	2.4089%	2.3800%	2.3499%	2.3185%	2.2857%	2.2521%	2.2173%	2.1813%	2.1443%
2.6103%	2.5855%	2.5593%	2.5319%	2.5031%	2.4731%	2.4418%	2.4093%	2.3752%	2.3402%	2.3040%	2.2667%	2.2282%
2.7125%	2.6867%	2.6595%	2.6310%	2.6011%	2.5699%	2.5374%	2.5036%	2.4681%	2.4318%	2.3942%	2.3554%	2.3154%
2.8186%	2.7918%	2.7636%	2.7339%	2.7029%	2.6705%	2.6367%	2.6016%	2.5647%	2.5270%	2.4879%	2.4476%	2.4060%
2.9289%	2.9011%	2.8717%	2.8409%	2.8087%	2.7750%	2.7399%	2.7034%	2.6651%	2.6259%	2.5853%	2.5434%	2.5002%
3.0435%	3.0146%	2.9841%	2.9521%	2.9186%	2.8836%	2.8471%	2.8092%	2.7694%	2.7286%	2.6864%	2.6429%	2.5980%
3.1627%	3.1326%	3.1009%	3.0676%	3.0328%	2.9965%	2.9585%	2.9191%	2.8778%	2.8354%	2.7916%	2.7463%	2.6997%
3.2864%	3.2552%	3.2223%	3.1877%	3.1515%	3.1137%	3.0743%	3.0333%	2.9904%	2.9464%	2.9008%	2.8538%	2.8054%
3.4150%	3.3826%	3.3484%	3.3125%	3.2749%	3.2356%	3.1946%	3.1521%	3.1075%	3.0617%	3.0144%	2.9655%	2.9151%
3.5487%	3.5149%	3.4794%	3.4421%	3.4030%	3.3622%	3.3197%	3.2754%	3.2291%	3.1815%	3.1323%	3.0816%	3.0292%
3.6876%	3.6525%	3.6156%	3.5768%	3.5362%	3.4938%	3.4496%	3.4036%	3.3554%	3.3060%	3.2549%	3.2022%	3.1478%
3.8319%	3.7955%	3.7571%	3.7168%	3.6746%	3.6305%	3.5846%	3.5368%	3.4868%	3.4354%	3.3823%	3.3275%	3.2710%
3.9819%	3.9440%	3.9041%	3.8622%	3.8184%	3.7726%	3.7249%	3.6752%	3.6232%	3.5699%	3.5147%	3.4577%	3.3990%
4.1377%	4.0983%	4.0569%	4.0134%	3.9678%	3.9203%	3.8707%	3.8191%	3.7650%	3.7096%	3.6522%	3.5930%	3.5320%
4.2996%	4.2587%	4.2157%	4.1705%	4.1231%	4.0737%	4.0221%	3.9685%	3.9124%	3.8547%	3.7952%	3.7336%	3.6702%
4.4679%	4.4254%	4.3807%	4.3337%	4.2845%	4.2331%	4.1795%	4.1238%	4.0655%	4.0056%	3.9437%	3.8798%	3.8139%
4.6428%	4.5986%	4.5521%	4.5033%	4.4522%	4.3988%	4.3431%	4.2852%	4.2246%	4.1624%	4.0980%	4.0316%	3.9631%
4.8245%	4.7786%	4.7303%	4.6795%	4.6264%	4.5709%	4.5131%	4.4529%	4.3899%	4.3253%	4.2584%	4.1894%	4.1182%
5.0133%	4.9656%	4.9154%	4.8627%	4.8075%	4.7498%	4.6897%	4.6272%	4.5617%	4.4945%	4.4251%	4.3533%	4.2794%
5.2095%	5.1599%	5.1077%	5.0530%	4.9956%	4.9357%	4.8733%	4.8083%	4.7403%	4.6704%	4.5982%	4.5237%	4.4469%
5.4134%	5.3619%	5.3076%	5.2507%	5.1911%	5.1289%	5.0640%	4.9965%	4.9258%	4.8532%	4.7782%	4.7007%	4.6209%
5.6252%	5.5717%	5.5154%	5.4562%	5.3943%	5.3296%	5.2622%	5.1920%	5.1186%	5.0432%	4.9652%	4.8847%	4.8018%
5.8454%	5.7898%	5.7312%	5.6698%	5.6054%	5.5382%	5.4681%	5.3952%	5.3189%	5.2405%	5.1595%	5.0759%	4.9897%
6.0741%	6.0163%	5.9555%	5.8917%	5.8248%	5.7549%	5.6821%	5.6064%	5.5270%	5.4456%	5.3614%	5.2745%	5.1850%
6.3118%	6.2518%	6.1886%	6.1222%	6.0527%	5.9801%	5.9045%	5.8258%	5.7433%	5.6587%	5.5713%	5.4810%	5.3879%
6.5589%	6.4965%	6.4308%	6.3618%	6.2896%	6.2142%	6.1356%	6.0538%	5.9681%	5.8802%	5.7893%	5.6955%	5.5988%
6.8156%	6.7507%	6.6825%	6.6108%	6.5358%	6.4574%	6.3757%	6.2907%	6.2017%	6.1103%	6.0159%	5.9184%	5.8179%
7.0823%	7.0149%	6.9440%	6.8695%	6.7916%	6.7101%	6.6252%	6.5369%	6.4444%	6.3495%	6.2513%	6.1500%	6.0456%
7.3595%	7.2895%	7.2158%	7.1384%	7.0573%	6.9727%	6.8845%	6.7927%	6.6966%	6.5980%	6.4960%	6.3907%	6.2822%
7.6475%	7.5747%	7.4981%	7.4177%	7.3335%	7.2456%	7.1539%	7.0586%	6.9587%	6.8562%	6.7502%	6.6408%	6.5280%
7.9468%	7.8712%	7.7916%	7.7080%	7.6205%	7.5291%	7.4339%	7.3348%	7.2310%	7.1245%	7.0144%	6.9007%	6.7835%
8.2578%	8.1792%	8.0965%	8.0097%	7.9188%	7.8238%	7.7248%	7.6219%	7.5140%	7.4033%	7.2889%	7.1707%	7.0490%
8.5810%	8.4993%	8.4134%	8.3232%	8.2287%	8.1300%	8.0271%	7.9202%	7.8081%	7.6931%	7.5741%	7.4514%	7.3249%
8.9168%	8.8320%	8.7427%	8.6489%	8.5507%	8.4482%	8.3413%	8.2301%	8.1137%	7.9941%	7.8706%	7.7430%	7.6115%
9.2657%	9.1776%	9.0848%	8.9874%	8.8854%	8.7788%	8.6677%	8.5522%	8.4312%	8.3070%	8.1786%	8.0460%	7.9094%
9.6284%	9.5368%	9.4404%	9.3391%	9.2331%	9.1224%	9.0070%	8.8869%	8.7612%	8.6321%	8.4987%	8.3609%	8.2190%
10.0052%	9.9100%	9.8098%	9.7046%	9.5945%	9.4794%	9.3595%	9.2347%	9.1040%	8.9699%	8.8313%	8.6881%	8.5406%
10.3968%	10.2979%	10.1937%	10.0844%	9.9700%	9.8504%	9.7257%	9.5961%	9.4603%	9.3210%	9.1769%	9.0281%	8.8749%
10.8036%	10.7009%	10.5927%	10.4791%	10.3601%	10.2359%	10.1064%	9.9717%	9.8306%	9.6858%	9.5360%	9.3815%	9.2222%
11.2265%	11.1197%	11.0072%	10.8892%	10.7656%	10.6365%	10.5019%	10.3619%	10.2153%	10.0648%	9.9092%	9.7486%	9.5831%
11.6658%	11.5549%	11.4380%	11.3154%	11.1869%	11.0528%	10.9129%	10.7675%	10.6151%	10.4587%	10.2970%	10.1301%	9.9581%
12.1224%	12.0071%	11.8857%	11.7582%	11.6247%	11.4853%	11.3400%	11.1889%	11.0305%	10.8680%	10.7000%	10.5266%	10.3479%
12.5968%	12.4770%	12.3508%	12.2184%	12.0797%	11.9348%	11.7838%	11.6267%	11.4622%	11.2934%	11.1188%	10.9386%	10.7528%
13.0898%	12.9653%	12.8342%	12.6966%	12.5524%	12.4019%	12.2450%	12.0818%	11.9108%	11.7354%	11.5539%	11.3667%	11.1737%
13.6021%	13.4727%	13.3365%	13.1935%	13.0437%	12.8872%	12.7242%	12.5546%	12.3770%	12.1946%	12.0061%	11.8115%	11.6110%
	14.0000%	13.8584%	13.7098%	13.5542%	13.3916%	13.2222%	13.0459%	12.8613%	12.6719%	12.4760%	12.2738%	12.0654%
		14.4008%	14.2463%	14.0846%	13.9157%	13.7396%	13.5565%	13.3647%	13.1678%	12.9643%	12.7541%	12.5376%
			14.8039%	14.6359%	14.4603%	14.2773%	14.0871%	13.8877%	13.6832%	13.4716%	13.2533%	13.0282%
				15.2086%	15.0262%	14.8361%	14.6384%	14.4312%	14.2187%	13.9988%	13.7720%	13.5381%
					15.6143%	15.4167%	15.2113%	14.9960%	14.7751%	14.5467%	14.3109%	14.0679%
						16.0201%	15.8066%	15.5829%	15.3534%	15.1160%	14.8710%	14.6185%
							16.4252%	16.1928%	15.9542%	15.7076%	15.4530%	15.1906%
								16.8265%	16.5786%	16.3223%	16.0578%	15.7851%
									17.2274%	16.9611%	16.6862%	16.4029%
										17.6249%	17.3392%	17.0448%
											18.0178%	17.7119%
												18.4051%

15-Sep-17	15-Oct-17	15-Nov-17	15-Dec-17	15-Jan-18	15-Feb-18	15-Mar-18	
t = 6.5	t = 6.58	t = 6.67	t = 6.75	t = 6.83	t = 6.92	t = 7	
0.9773%	0.9592%	0.9405%	0.9214%	0.9019%	0.8819%	0.8615%	0.002678787
1.0156%	0.9967%	0.9773%	0.9575%	0.9372%	0.9164%	0.8952%	0.002817779
1.0553%	1.0357%	1.0156%	0.9950%	0.9739%	0.9523%	0.9303%	0.002963983
1.0966%	1.0762%	1.0553%	1.0339%	1.0120%	0.9896%	0.9667%	0.003117772
1.1396%	1.1184%	1.0966%	1.0744%	1.0516%	1.0283%	1.0045%	0.003279541
1.1841%	1.1621%	1.1395%	1.1164%	1.0927%	1.0685%	1.0438%	0.003449703
1.2305%	1.2076%	1.1841%	1.1601%	1.1355%	1.1103%	1.0847%	0.003628695
1.2786%	1.2549%	1.2305%	1.2055%	1.1799%	1.1538%	1.1271%	0.003816974
1.3287%	1.3040%	1.2786%	1.2527%	1.2261%	1.1989%	1.1712%	0.004015021
1.3807%	1.3550%	1.3287%	1.3017%	1.2741%	1.2459%	1.2171%	0.004223345
1.4347%	1.4081%	1.3807%	1.3526%	1.3240%	1.2946%	1.2647%	0.004442478
1.4909%	1.4632%	1.4347%	1.4056%	1.3758%	1.3453%	1.3142%	0.004672981
1.5492%	1.5204%	1.4909%	1.4606%	1.4296%	1.3979%	1.3656%	0.004915443
1.6099%	1.5799%	1.5492%	1.5178%	1.4856%	1.4527%	1.4191%	0.005170486
1.6729%	1.6418%	1.6098%	1.5772%	1.5437%	1.5095%	1.4746%	0.005438762
1.7383%	1.7060%	1.6729%	1.6389%	1.6041%	1.5686%	1.5323%	0.005720958
1.8064%	1.7728%	1.7383%	1.7030%	1.6669%	1.6300%	1.5923%	0.006017796
1.8770%	1.8422%	1.8064%	1.7697%	1.7321%	1.6938%	1.6546%	0.006330036
1.9505%	1.9142%	1.8770%	1.8389%	1.7999%	1.7601%	1.7194%	0.006658477
2.0268%	1.9892%	1.9505%	1.9109%	1.8704%	1.8289%	1.7866%	0.007003959
2.1062%	2.0670%	2.0268%	1.9857%	1.9436%	1.9005%	1.8566%	0.007367367
2.1886%	2.1479%	2.1062%	2.0634%	2.0196%	1.9749%	1.9292%	0.007749631
2.2742%	2.2320%	2.1886%	2.1441%	2.0987%	2.0522%	2.0047%	0.008151729
2.3633%	2.3193%	2.2742%	2.2281%	2.1808%	2.1325%	2.0832%	0.00857469
2.4557%	2.4101%	2.3632%	2.3153%	2.2661%	2.2159%	2.1647%	0.009019597
2.5518%	2.5044%	2.4557%	2.4059%	2.3548%	2.3027%	2.2494%	0.009487588
2.6517%	2.6024%	2.5518%	2.5000%	2.4470%	2.3928%	2.3375%	0.009979862
2.7555%	2.7043%	2.6517%	2.5979%	2.5428%	2.4864%	2.4289%	0.010497678
2.8633%	2.8101%	2.7555%	2.6995%	2.6423%	2.5837%	2.5240%	0.011042361
2.9754%	2.9201%	2.8633%	2.8052%	2.7457%	2.6849%	2.6228%	0.011615306
3.0918%	3.0344%	2.9754%	2.9150%	2.8531%	2.7899%	2.7254%	0.012217978
3.2128%	3.1531%	3.0918%	3.0290%	2.9648%	2.8991%	2.8321%	0.012851921
3.3386%	3.2765%	3.2128%	3.1476%	3.0808%	3.0126%	2.9429%	0.013518757
3.4692%	3.4047%	3.3386%	3.2708%	3.2014%	3.1305%	3.0581%	0.014220192
3.6050%	3.5380%	3.4692%	3.3988%	3.3267%	3.2530%	3.1778%	0.014958022
3.7461%	3.6765%	3.6050%	3.5318%	3.4569%	3.3803%	3.3022%	0.015734135
3.8927%	3.8203%	3.7461%	3.6700%	3.5922%	3.5126%	3.4314%	0.016550517
4.0451%	3.9699%	3.8927%	3.8136%	3.7328%	3.6501%	3.5657%	0.017409259
4.2034%	4.1252%	4.0450%	3.9629%	3.8788%	3.7929%	3.7052%	0.018312557
4.3679%	4.2867%	4.2034%	4.1180%	4.0306%	3.9414%	3.8502%	0.019262723
4.5388%	4.4544%	4.3679%	4.2792%	4.1884%	4.0956%	4.0009%	0.020262191
4.7164%	4.6288%	4.5388%	4.4466%	4.3523%	4.2559%	4.1575%	0.021313516
4.9010%	4.8099%	4.7164%	4.6206%	4.5226%	4.4225%	4.3202%	0.022419391
5.0928%	4.9982%	4.9010%	4.8015%	4.6996%	4.5955%	4.4893%	0.023582645
5.2921%	5.1938%	5.0928%	4.9894%	4.8836%	4.7754%	4.6650%	0.024806255
5.4993%	5.3970%	5.2921%	5.1847%	5.0747%	4.9623%	4.8475%	0.026093355
5.7145%	5.6082%	5.4992%	5.3876%	5.2733%	5.1565%	5.0373%	0.027447236
5.9381%	5.8277%	5.7145%	5.5984%	5.4797%	5.3583%	5.2344%	0.028871365
6.1705%	6.0558%	5.9381%	5.8175%	5.6941%	5.5680%	5.4392%	0.030369387
6.4120%	6.2928%	6.1705%	6.0452%	5.9170%	5.7859%	5.6521%	0.031945135
6.6629%	6.5391%	6.4120%	6.2818%	6.1485%	6.0123%	5.8733%	0.033602643
6.9237%	6.7950%	6.6629%	6.5276%	6.3892%	6.2476%	6.1032%	0.035346152
7.1947%	7.0609%	6.9237%	6.7831%	6.6392%	6.4921%	6.3420%	0.037180125
7.4762%	7.3373%	7.1947%	7.0485%	6.8990%	6.7462%	6.5902%	0.039109255
7.7688%	7.6244%	7.4762%	7.3244%	7.1690%	7.0102%	6.8482%	0.041138481
8.0729%	7.9228%	7.7688%	7.6110%	7.4496%	7.2846%	7.1162%	0.043272995
8.3888%	8.2329%	8.0729%	7.9089%	7.7412%	7.5697%	7.3947%	0.045518261
8.7171%	8.5551%	8.3888%	8.2184%	8.0441%	7.8659%	7.6841%	0.047880025
9.0583%	8.8899%	8.7171%	8.5401%	8.3589%	8.1738%	7.9848%	0.050364331
9.4128%	9.2378%	9.0583%	8.8743%	8.6861%	8.4937%	8.2973%	0.052977538
9.7812%	9.5993%	9.4128%	9.2216%	9.0260%	8.8261%	8.6220%	0.055726335
10.1640%	9.9750%	9.7811%	9.5825%	9.3792%	9.1715%	8.9594%	0.058617755
10.5617%	10.3654%	10.1639%	9.9575%	9.7463%	9.5304%	9.3101%	0.0616592
10.9751%	10.7711%	10.5617%	10.3472%	10.1277%	9.9034%	9.6744%	0.064858454
11.4046%	11.1926%	10.9751%	10.7522%	10.5241%	10.2910%	10.0531%	0.068223704
11.8509%	11.6306%	11.4046%	11.1730%	10.9360%	10.6938%	10.4465%	0.071763564
12.3147%	12.0858%	11.8509%	11.6102%	11.3640%	11.1123%	10.8553%	0.075487093
12.7967%	12.5588%	12.3147%	12.0646%	11.8087%	11.5472%	11.2802%	0.079403822
13.2975%	13.0503%	12.7967%	12.5368%	12.2709%	11.9991%	11.7216%	0.083523774
13.8179%	13.5610%	13.2975%	13.0274%	12.7511%	12.4687%	12.1804%	0.087857495
14.3587%	14.0918%	13.8179%	13.5373%	13.2501%	12.9566%	12.6571%	0.092416075
14.9206%	14.6433%	14.3587%	14.0671%	13.7687%	13.4637%	13.1524%	0.097211182
15.5046%	15.2163%	14.9206%	14.6176%	14.3075%	13.9906%	13.6671%	0.102255088
16.1114%	15.8119%	15.5045%	15.1897%	14.8675%	14.5382%	14.2020%	0.107560703
16.7419%	16.4307%	16.1113%	15.7841%	15.4493%	15.1071%	14.7578%	0.113141605
17.3971%	17.0737%	16.7419%	16.4019%	16.0540%	15.6984%	15.3354%	0.119012079
18.0780%	17.7419%	17.3971%	17.0438%	16.6823%	16.3128%	15.9356%	0.125187148
18.7855%	18.4363%	18.0779%	17.7108%	17.3351%	16.9512%	16.5592%	0.131682617
	19.1578%	18.7854%	18.4039%	18.0136%	17.6146%	17.2073%	0.138515111
		19.5206%	19.1242%	18.7185%	18.3039%	17.8807%	0.145702115
			19.8727%	19.4511%	19.0203%	18.5805%	0.153262026
				20.2124%	19.7647%	19.3077%	0.16121419
					20.5382%	20.0633%	0.169578961
						20.8485%	0.178377747
							0.187633067

USD 2012 post-calibration lattice

date	15-Jul-12	15-Aug-12	15-Sep-12	15-Oct-12	15-Nov-12	15-Dec-12	15-Jan-13	15-Feb-13	15-Mar-13	15-Apr-13	15-May-13	15-Jun-13	15-Jul-13	15-Aug-13	15-Sep-13
USD Apr 2012 lattice															
	t = 0.08	t = 0.17	t = 0.25	t = 0.33	t = 0.42	t = 0.5	t = 0.58	t = 0.67	t = 0.75	t = 0.83	t = 0.92	t = 1	t = 1.08	t = 1.17	t = 1.25
j = 1	0.0525%	0.0745%	0.1145%	0.1553%	0.1813%	0.1916%	0.1839%	0.1684%	0.1514%	0.1369%	0.1281%	0.1281%	0.1376%	0.1499%	0.1628%
j = 2		0.0783%	0.1204%	0.1633%	0.1907%	0.2015%	0.1934%	0.1771%	0.1593%	0.1440%	0.1347%	0.1347%	0.1447%	0.1577%	0.1712%
j = 3			0.1267%	0.1718%	0.2006%	0.2120%	0.2034%	0.1863%	0.1676%	0.1514%	0.1417%	0.1417%	0.1522%	0.1659%	0.1801%
j = 4				0.1807%	0.2110%	0.2229%	0.2140%	0.1960%	0.1763%	0.1593%	0.1490%	0.1491%	0.1601%	0.1745%	0.1895%
j = 5					0.2220%	0.2345%	0.2251%	0.2061%	0.1854%	0.1676%	0.1568%	0.1568%	0.1684%	0.1835%	0.1993%
j = 6						0.2467%	0.2368%	0.2168%	0.1950%	0.1763%	0.1649%	0.1649%	0.1772%	0.1930%	0.2096%
j = 7							0.2491%	0.2281%	0.2051%	0.1854%	0.1735%	0.1735%	0.1864%	0.2031%	0.2205%
j = 8								0.2399%	0.2158%	0.1950%	0.1825%	0.1825%	0.1960%	0.2136%	0.2319%
j = 9									0.2270%	0.2051%	0.1919%	0.1920%	0.2062%	0.2247%	0.2440%
j = 10										0.2158%	0.2019%	0.2019%	0.2169%	0.2363%	0.2566%
j = 11											0.2124%	0.2124%	0.2282%	0.2486%	0.2700%
j = 12												0.2234%	0.2400%	0.2615%	0.2840%
j = 13													0.2524%	0.2751%	0.2987%
j = 14														0.2893%	0.3142%
j = 15															0.3305%
j = 16															
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15-Oct-13	15-Nov-13	15-Dec-13	15-Jan-14	15-Feb-14	15-Mar-14	15-Apr-14	15-May-14	15-Jun-14	15-Jul-14	15-Aug-14	15-Sep-14	15-Oct-14	15-Nov-14	15-Dec-14	15-Jan-15	15-Feb-15
t = 1.33	t = 1.42	t = 1.5	t = 1.58	t = 1.67	t = 1.75	t = 1.83	t = 1.92	t = 2	t = 2.08	t = 2.17	t = 2.25	t = 2.33	t = 2.42	t = 2.5	t = 2.58	t = 2.67
0.1758%	0.1884%	0.2004%	0.2114%	0.2211%	0.2293%	0.2356%	0.2400%	0.2422%	0.2426%	0.2426%	0.2428%	0.2433%	0.2442%	0.2454%	0.2471%	0.2493%
0.1849%	0.1982%	0.2108%	0.2224%	0.2326%	0.2412%	0.2479%	0.2525%	0.2548%	0.2552%	0.2552%	0.2554%	0.2560%	0.2569%	0.2582%	0.2599%	0.2622%
0.1945%	0.2085%	0.2218%	0.2339%	0.2447%	0.2537%	0.2607%	0.2656%	0.2680%	0.2684%	0.2684%	0.2687%	0.2692%	0.2702%	0.2715%	0.2734%	0.2758%
0.2046%	0.2193%	0.2333%	0.2461%	0.2574%	0.2669%	0.2743%	0.2794%	0.2819%	0.2823%	0.2824%	0.2826%	0.2832%	0.2842%	0.2856%	0.2876%	0.2901%
0.2152%	0.2307%	0.2454%	0.2588%	0.2707%	0.2807%	0.2885%	0.2939%	0.2966%	0.2970%	0.2970%	0.2973%	0.2979%	0.2989%	0.3005%	0.3025%	0.3052%
0.2263%	0.2427%	0.2581%	0.2723%	0.2848%	0.2953%	0.3035%	0.3091%	0.3119%	0.3124%	0.3124%	0.3127%	0.3134%	0.3145%	0.3160%	0.3182%	0.3210%
0.2381%	0.2552%	0.2715%	0.2864%	0.2995%	0.3106%	0.3192%	0.3251%	0.3281%	0.3286%	0.3286%	0.3289%	0.3296%	0.3308%	0.3324%	0.3347%	0.3377%
0.2504%	0.2685%	0.2856%	0.3013%	0.3151%	0.3267%	0.3358%	0.3420%	0.3452%	0.3456%	0.3457%	0.3460%	0.3467%	0.3479%	0.3497%	0.3521%	0.3552%
0.2634%	0.2824%	0.3004%	0.3169%	0.3314%	0.3437%	0.3532%	0.3598%	0.3631%	0.3636%	0.3636%	0.3640%	0.3647%	0.3660%	0.3678%	0.3704%	0.3736%
0.2771%	0.2971%	0.3160%	0.3333%	0.3486%	0.3615%	0.3715%	0.3784%	0.3819%	0.3824%	0.3825%	0.3829%	0.3836%	0.3850%	0.3869%	0.3896%	0.3930%
0.2915%	0.3125%	0.3324%	0.3506%	0.3667%	0.3802%	0.3908%	0.3981%	0.4017%	0.4023%	0.4023%	0.4027%	0.4036%	0.4049%	0.4070%	0.4098%	0.4134%
0.3066%	0.3287%	0.3496%	0.3688%	0.3858%	0.4000%	0.4111%	0.4187%	0.4226%	0.4232%	0.4232%	0.4236%	0.4245%	0.4260%	0.4281%	0.4311%	0.4349%
0.3225%	0.3458%	0.3678%	0.3880%	0.4058%	0.4207%	0.4324%	0.4404%	0.4445%	0.4451%	0.4452%	0.4456%	0.4465%	0.4481%	0.4503%	0.4534%	0.4574%
0.3392%	0.3637%	0.3869%	0.4081%	0.4268%	0.4426%	0.4548%	0.4633%	0.4676%	0.4682%	0.4683%	0.4687%	0.4697%	0.4713%	0.4737%	0.4769%	0.4811%
0.3568%	0.3826%	0.4069%	0.4293%	0.4490%	0.4655%	0.4784%	0.4873%	0.4918%	0.4925%	0.4926%	0.4930%	0.4941%	0.4958%	0.4983%	0.5017%	0.5061%
0.3754%	0.4024%	0.4280%	0.4515%	0.4723%	0.4897%	0.5033%	0.5126%	0.5173%	0.5181%	0.5181%	0.5186%	0.5197%	0.5215%	0.5241%	0.5277%	0.5324%
	0.4233%	0.4503%	0.4750%	0.4968%	0.5151%	0.5294%	0.5392%	0.5442%	0.5449%	0.5450%	0.5455%	0.5467%	0.5485%	0.5513%	0.5551%	0.5600%
		0.4736%	0.4996%	0.5225%	0.5418%	0.5568%	0.5672%	0.5724%	0.5732%	0.5733%	0.5738%	0.5750%	0.5770%	0.5799%	0.5839%	0.5891%
			0.5255%	0.5497%	0.5699%	0.5857%	0.5966%	0.6021%	0.6029%	0.6030%	0.6036%	0.6049%	0.6069%	0.6100%	0.6142%	0.6196%
				0.5782%	0.5995%	0.6161%	0.6276%	0.6333%	0.6342%	0.6343%	0.6349%	0.6362%	0.6384%	0.6417%	0.6461%	0.6518%
					0.6306%	0.6481%	0.6601%	0.6662%	0.6671%	0.6672%	0.6679%	0.6692%	0.6716%	0.6750%	0.6796%	0.6856%
						0.6817%	0.6944%	0.7008%	0.7018%	0.7019%	0.7025%	0.7040%	0.7064%	0.7100%	0.7149%	0.7212%
							0.7304%	0.7371%	0.7382%	0.7383%	0.7390%	0.7405%	0.7431%	0.7468%	0.7519%	0.7586%
								0.7754%	0.7765%	0.7766%	0.7773%	0.7789%	0.7816%	0.7856%	0.7910%	0.7979%
									0.8168%	0.8169%	0.8176%	0.8193%	0.8222%	0.8263%	0.8320%	0.8393%
										0.8593%	0.8601%	0.8618%	0.8648%	0.8692%	0.8752%	0.8829%
											0.9047%	0.9066%	0.9097%	0.9143%	0.9206%	0.9287%
												0.9536%	0.9569%	0.9617%	0.9683%	0.9769%
													1.0065%	1.0116%	1.0186%	1.0276%
														1.0641%	1.0714%	1.0809%
															1.1270%	1.1370%
																1.1960%

15-Mar-15	15-Apr-15	15-May-15	15-Jun-15	15-Jul-15	15-Aug-15	15-Sep-15	15-Oct-15	15-Nov-15	15-Dec-15	15-Jan-16	15-Feb-16	15-Mar-16	15-Apr-16	15-May-16	15-Jun-16	15-Jul-16
t = 2.75	t = 2.83	t = 2.92	t = 3	t = 3.08	t = 3.17	t = 3.25	t = 3.33	t = 3.42	t = 3.5	t = 3.58	t = 3.67	t = 3.75	t = 3.83	t = 3.92	t = 4	t = 4.08
0.2520%	0.2553%	0.2591%	0.2636%	0.2684%	0.2733%	0.2780%	0.2826%	0.2869%	0.2909%	0.2948%	0.2984%	0.3018%	0.3049%	0.3078%	0.3104%	0.3127%
0.2651%	0.2685%	0.2726%	0.2772%	0.2823%	0.2875%	0.2925%	0.2972%	0.3017%	0.3060%	0.3101%	0.3139%	0.3174%	0.3207%	0.3237%	0.3265%	0.3290%
0.2788%	0.2824%	0.2867%	0.2916%	0.2970%	0.3024%	0.3076%	0.3126%	0.3174%	0.3219%	0.3262%	0.3302%	0.3339%	0.3373%	0.3405%	0.3434%	0.3460%
0.2933%	0.2971%	0.3016%	0.3068%	0.3124%	0.3181%	0.3236%	0.3289%	0.3339%	0.3386%	0.3431%	0.3473%	0.3512%	0.3548%	0.3582%	0.3612%	0.3640%
0.3085%	0.3125%	0.3172%	0.3227%	0.3286%	0.3346%	0.3404%	0.3459%	0.3512%	0.3562%	0.3609%	0.3653%	0.3694%	0.3733%	0.3768%	0.3800%	0.3829%
0.3245%	0.3287%	0.3337%	0.3394%	0.3456%	0.3520%	0.3581%	0.3639%	0.3694%	0.3747%	0.3796%	0.3843%	0.3886%	0.3926%	0.3963%	0.3997%	0.4027%
0.3413%	0.3458%	0.3510%	0.3570%	0.3636%	0.3702%	0.3766%	0.3827%	0.3886%	0.3941%	0.3993%	0.4042%	0.4088%	0.4130%	0.4169%	0.4204%	0.4236%
0.3590%	0.3637%	0.3692%	0.3756%	0.3824%	0.3894%	0.3962%	0.4026%	0.4087%	0.4146%	0.4200%	0.4252%	0.4300%	0.4344%	0.4385%	0.4422%	0.4456%
0.3777%	0.3826%	0.3884%	0.3950%	0.4023%	0.4097%	0.4167%	0.4235%	0.4299%	0.4361%	0.4418%	0.4472%	0.4523%	0.4570%	0.4613%	0.4652%	0.4687%
0.3973%	0.4024%	0.4085%	0.4155%	0.4232%	0.4309%	0.4383%	0.4455%	0.4523%	0.4587%	0.4648%	0.4704%	0.4758%	0.4807%	0.4852%	0.4893%	0.4931%
0.4179%	0.4233%	0.4297%	0.4371%	0.4451%	0.4533%	0.4611%	0.4686%	0.4757%	0.4825%	0.4889%	0.4949%	0.5004%	0.5056%	0.5104%	0.5147%	0.5186%
0.4396%	0.4453%	0.4520%	0.4598%	0.4682%	0.4768%	0.4850%	0.4929%	0.5004%	0.5075%	0.5142%	0.5205%	0.5264%	0.5319%	0.5369%	0.5414%	0.5456%
0.4624%	0.4684%	0.4754%	0.4836%	0.4925%	0.5015%	0.5102%	0.5185%	0.5264%	0.5339%	0.5409%	0.5475%	0.5537%	0.5594%	0.5647%	0.5695%	0.5739%
0.4864%	0.4927%	0.5001%	0.5087%	0.5181%	0.5275%	0.5367%	0.5454%	0.5537%	0.5616%	0.5690%	0.5759%	0.5825%	0.5885%	0.5940%	0.5991%	0.6036%
0.5116%	0.5182%	0.5261%	0.5351%	0.5449%	0.5549%	0.5645%	0.5737%	0.5824%	0.5907%	0.5985%	0.6058%	0.6127%	0.6190%	0.6248%	0.6302%	0.6350%
0.5382%	0.5451%	0.5534%	0.5629%	0.5732%	0.5837%	0.5938%	0.6034%	0.6126%	0.6213%	0.6296%	0.6373%	0.6445%	0.6511%	0.6573%	0.6629%	0.6679%
0.5661%	0.5734%	0.5821%	0.5921%	0.6030%	0.6140%	0.6246%	0.6347%	0.6444%	0.6536%	0.6622%	0.6703%	0.6779%	0.6849%	0.6914%	0.6972%	0.7026%
0.5954%	0.6032%	0.6123%	0.6228%	0.6342%	0.6459%	0.6570%	0.6677%	0.6778%	0.6875%	0.6966%	0.7051%	0.7131%	0.7205%	0.7272%	0.7334%	0.7390%
0.6263%	0.6345%	0.6440%	0.6551%	0.6672%	0.6794%	0.6911%	0.7023%	0.7130%	0.7232%	0.7327%	0.7417%	0.7501%	0.7578%	0.7650%	0.7715%	0.7774%
0.6588%	0.6674%	0.6775%	0.6891%	0.7018%	0.7146%	0.7270%	0.7388%	0.7500%	0.7607%	0.7707%	0.7802%	0.7890%	0.7972%	0.8047%	0.8115%	0.8177%
0.6930%	0.7020%	0.7126%	0.7249%	0.7382%	0.7517%	0.7647%	0.7771%	0.7889%	0.8001%	0.8107%	0.8207%	0.8299%	0.8385%	0.8464%	0.8536%	0.8601%
0.7290%	0.7384%	0.7496%	0.7625%	0.7765%	0.7907%	0.8043%	0.8174%	0.8299%	0.8417%	0.8528%	0.8632%	0.8730%	0.8820%	0.8903%	0.8979%	0.9047%
0.7668%	0.7767%	0.7885%	0.8021%	0.8168%	0.8317%	0.8461%	0.8598%	0.8729%	0.8853%	0.8970%	0.9080%	0.9183%	0.9278%	0.9365%	0.9445%	0.9517%
0.8066%	0.8170%	0.8294%	0.8437%	0.8592%	0.8749%	0.8900%	0.9044%	0.9182%	0.9313%	0.9436%	0.9552%	0.9659%	0.9759%	0.9851%	0.9935%	1.0011%
0.8484%	0.8594%	0.8724%	0.8875%	0.9037%	0.9203%	0.9362%	0.9514%	0.9659%	0.9796%	0.9926%	1.0047%	1.0161%	1.0266%	1.0362%	1.0450%	1.0530%
0.8925%	0.9040%	0.9177%	0.9335%	0.9506%	0.9680%	0.9847%	1.0007%	1.0160%	1.0304%	1.0441%	1.0568%	1.0688%	1.0798%	1.0900%	1.0993%	1.1076%
0.9388%	0.9509%	0.9653%	0.9819%	0.9999%	1.0182%	1.0358%	1.0527%	1.0687%	1.0839%	1.0982%	1.1117%	1.1242%	1.1359%	1.1465%	1.1563%	1.1651%
0.9875%	1.0003%	1.0154%	1.0329%	1.0518%	1.0711%	1.0896%	1.1073%	1.1241%	1.1401%	1.1552%	1.1694%	1.1826%	1.1948%	1.2060%	1.2163%	1.2256%
1.0387%	1.0522%	1.0681%	1.0865%	1.1064%	1.1267%	1.1461%	1.1647%	1.1825%	1.1993%	1.2151%	1.2300%	1.2439%	1.2568%	1.2686%	1.2794%	1.2892%
1.0926%	1.1068%	1.1235%	1.1429%	1.1638%	1.1851%	1.2056%	1.2252%	1.2438%	1.2615%	1.2782%	1.2939%	1.3085%	1.3220%	1.3344%	1.3458%	1.3560%
1.1493%	1.1642%	1.1818%	1.2022%	1.2242%	1.2466%	1.2681%	1.2887%	1.3084%	1.3270%	1.3445%	1.3610%	1.3763%	1.3906%	1.4037%	1.4156%	1.4264%
1.2089%	1.2246%	1.2431%	1.2645%	1.2877%	1.3113%	1.3339%	1.3556%	1.3762%	1.3958%	1.4143%	1.4316%	1.4478%	1.4627%	1.4765%	1.4891%	1.5004%
1.2717%	1.2881%	1.3076%	1.3301%	1.3545%	1.3793%	1.4031%	1.4259%	1.4476%	1.4682%	1.4877%	1.5059%	1.5229%	1.5386%	1.5531%	1.5663%	1.5783%
	1.3550%	1.3755%	1.3992%	1.4248%	1.4509%	1.4759%	1.4999%	1.5228%	1.5444%	1.5648%	1.5840%	1.6019%	1.6185%	1.6337%	1.6476%	1.6602%
		1.4468%	1.4717%	1.4987%	1.5262%	1.5525%	1.5777%	1.6018%	1.6245%	1.6460%	1.6662%	1.6850%	1.7024%	1.7185%	1.7331%	1.7463%
			1.5481%	1.5765%	1.6054%	1.6331%	1.6596%	1.6849%	1.7088%	1.7314%	1.7527%	1.7724%	1.7908%	1.8076%	1.8230%	1.8369%
				1.6583%	1.6886%	1.7178%	1.7457%	1.7723%	1.7975%	1.8213%	1.8436%	1.8644%	1.8837%	1.9014%	1.9176%	1.9322%
					1.7763%	1.8069%	1.8363%	1.8643%	1.8908%	1.9158%	1.9392%	1.9611%	1.9814%	2.0001%	2.0171%	2.0325%
						1.9007%	1.9316%	1.9610%	1.9889%	2.0152%	2.0399%	2.0629%	2.0842%	2.1039%	2.1218%	2.1379%
							2.0318%	2.0627%	2.0921%	2.1197%	2.1457%	2.1699%	2.1924%	2.2130%	2.2319%	2.2489%
								2.1698%	2.2006%	2.2297%	2.2570%	2.2825%	2.3061%	2.3278%	2.3477%	2.3655%
									2.3148%	2.3454%	2.3742%	2.4010%	2.4258%	2.4486%	2.4695%	2.4883%
										2.4671%	2.4973%	2.5255%	2.5517%	2.5757%	2.5976%	2.6174%
											2.6269%	2.6566%	2.6840%	2.7093%	2.7324%	2.7532%
												2.7944%	2.8233%	2.8499%	2.8742%	2.8961%
													2.9698%	2.9978%	3.0233%	3.0463%
														3.1533%	3.1801%	3.2044%
															3.3451%	3.3706%
																3.5455%

15-Aug-16	15-Sep-16	15-Oct-16	15-Nov-16	15-Dec-16	15-Jan-17	15-Feb-17	15-Mar-17	15-Apr-17	15-May-17	15-Jun-17	15-Jul-17	15-Aug-17	15-Sep-17	15-Oct-17	15-Nov-17	15-Dec-17
t = 4.17	t = 4.25	t = 4.33	t = 4.42	t = 4.5	t = 4.58	t = 4.67	t = 4.75	t = 4.83	t = 4.92	t = 5	t = 5.08	t = 5.17	t = 5.25	t = 5.33	t = 5.42	t = 5.5
0.3148%	0.3167%	0.3183%	0.3197%	0.3208%	0.3216%	0.3222%	0.3226%	0.3227%	0.3226%	0.3223%	0.3222%	0.3214%	0.3205%	0.3195%	0.3182%	0.3168%
0.3312%	0.3331%	0.3348%	0.3362%	0.3374%	0.3383%	0.3389%	0.3393%	0.3395%	0.3393%	0.3390%	0.3389%	0.3381%	0.3372%	0.3360%	0.3347%	0.3333%
0.3484%	0.3504%	0.3522%	0.3537%	0.3549%	0.3558%	0.3565%	0.3569%	0.3571%	0.3569%	0.3566%	0.3565%	0.3557%	0.3546%	0.3535%	0.3521%	0.3506%
0.3664%	0.3686%	0.3705%	0.3720%	0.3733%	0.3743%	0.3750%	0.3754%	0.3756%	0.3755%	0.3751%	0.3750%	0.3741%	0.3731%	0.3718%	0.3704%	0.3688%
0.3855%	0.3877%	0.3897%	0.3913%	0.3927%	0.3937%	0.3945%	0.3949%	0.3951%	0.3950%	0.3945%	0.3944%	0.3935%	0.3924%	0.3911%	0.3896%	0.3879%
0.4055%	0.4078%	0.4099%	0.4116%	0.4131%	0.4142%	0.4149%	0.4154%	0.4156%	0.4154%	0.4150%	0.4149%	0.4139%	0.4128%	0.4114%	0.4098%	0.4080%
0.4265%	0.4290%	0.4312%	0.4330%	0.4345%	0.4357%	0.4365%	0.4370%	0.4371%	0.4370%	0.4365%	0.4364%	0.4354%	0.4342%	0.4327%	0.4311%	0.4292%
0.4486%	0.4513%	0.4536%	0.4555%	0.4570%	0.4583%	0.4591%	0.4596%	0.4598%	0.4597%	0.4592%	0.4591%	0.4580%	0.4567%	0.4552%	0.4534%	0.4515%
0.4719%	0.4747%	0.4771%	0.4791%	0.4808%	0.4820%	0.4829%	0.4835%	0.4837%	0.4835%	0.4830%	0.4829%	0.4818%	0.4804%	0.4788%	0.4770%	0.4749%
0.4964%	0.4993%	0.5018%	0.5040%	0.5057%	0.5070%	0.5080%	0.5086%	0.5088%	0.5086%	0.5081%	0.5079%	0.5068%	0.5053%	0.5036%	0.5017%	0.4995%
0.5221%	0.5252%	0.5279%	0.5301%	0.5319%	0.5334%	0.5344%	0.5350%	0.5352%	0.5350%	0.5344%	0.5343%	0.5331%	0.5316%	0.5298%	0.5277%	0.5254%
0.5492%	0.5525%	0.5553%	0.5576%	0.5595%	0.5610%	0.5621%	0.5627%	0.5629%	0.5628%	0.5622%	0.5620%	0.5607%	0.5591%	0.5573%	0.5551%	0.5527%
0.5777%	0.5811%	0.5841%	0.5866%	0.5886%	0.5901%	0.5912%	0.5919%	0.5922%	0.5920%	0.5913%	0.5912%	0.5898%	0.5881%	0.5862%	0.5839%	0.5814%
0.6077%	0.6113%	0.6144%	0.6170%	0.6191%	0.6208%	0.6219%	0.6226%	0.6229%	0.6227%	0.6220%	0.6219%	0.6204%	0.6187%	0.6166%	0.6142%	0.6115%
0.6392%	0.6430%	0.6463%	0.6490%	0.6512%	0.6530%	0.6542%	0.6549%	0.6552%	0.6550%	0.6543%	0.6541%	0.6526%	0.6508%	0.6486%	0.6461%	0.6433%
0.6724%	0.6764%	0.6798%	0.6827%	0.6850%	0.6868%	0.6881%	0.6889%	0.6892%	0.6890%	0.6883%	0.6881%	0.6865%	0.6845%	0.6822%	0.6796%	0.6767%
0.7073%	0.7115%	0.7151%	0.7181%	0.7206%	0.7225%	0.7238%	0.7247%	0.7250%	0.7247%	0.7240%	0.7238%	0.7221%	0.7200%	0.7176%	0.7149%	0.7118%
0.7440%	0.7484%	0.7522%	0.7554%	0.7580%	0.7600%	0.7614%	0.7623%	0.7626%	0.7623%	0.7615%	0.7613%	0.7596%	0.7574%	0.7549%	0.7520%	0.7487%
0.7826%	0.7872%	0.7912%	0.7945%	0.7973%	0.7994%	0.8009%	0.8018%	0.8021%	0.8019%	0.8010%	0.8008%	0.7990%	0.7967%	0.7940%	0.7910%	0.7875%
0.8232%	0.8281%	0.8322%	0.8358%	0.8386%	0.8409%	0.8425%	0.8434%	0.8438%	0.8435%	0.8426%	0.8424%	0.8404%	0.8380%	0.8352%	0.8320%	0.8284%
0.8659%	0.8710%	0.8754%	0.8791%	0.8822%	0.8845%	0.8862%	0.8872%	0.8875%	0.8872%	0.8863%	0.8861%	0.8840%	0.8815%	0.8786%	0.8752%	0.8714%
0.9108%	0.9162%	0.9209%	0.9248%	0.9279%	0.9304%	0.9322%	0.9332%	0.9336%	0.9333%	0.9323%	0.9320%	0.9299%	0.9273%	0.9242%	0.9206%	0.9166%
0.9581%	0.9638%	0.9686%	0.9727%	0.9761%	0.9787%	0.9805%	0.9816%	0.9820%	0.9817%	0.9807%	0.9804%	0.9781%	0.9754%	0.9721%	0.9684%	0.9642%
1.0078%	1.0138%	1.0189%	1.0232%	1.0267%	1.0295%	1.0314%	1.0326%	1.0330%	1.0326%	1.0316%	1.0313%	1.0289%	1.0260%	1.0226%	1.0186%	1.0142%
1.0601%	1.0664%	1.0718%	1.0763%	1.0800%	1.0829%	1.0849%	1.0861%	1.0866%	1.0862%	1.0851%	1.0848%	1.0823%	1.0792%	1.0756%	1.0715%	1.0668%
1.1151%	1.1217%	1.1274%	1.1321%	1.1360%	1.1391%	1.1412%	1.1425%	1.1430%	1.1426%	1.1414%	1.1411%	1.1384%	1.1352%	1.1314%	1.1271%	1.1222%
1.1730%	1.1799%	1.1859%	1.1909%	1.1950%	1.1982%	1.2004%	1.2018%	1.2023%	1.2019%	1.2006%	1.2003%	1.1975%	1.1941%	1.1901%	1.1855%	1.1804%
1.2338%	1.2411%	1.2474%	1.2527%	1.2570%	1.2603%	1.2627%	1.2641%	1.2646%	1.2642%	1.2629%	1.2626%	1.2596%	1.2561%	1.2519%	1.2471%	1.2416%
1.2979%	1.3055%	1.3121%	1.3177%	1.3222%	1.3257%	1.3282%	1.3297%	1.3303%	1.3298%	1.3284%	1.3281%	1.3250%	1.3213%	1.3168%	1.3118%	1.3061%
1.3652%	1.3732%	1.3802%	1.3860%	1.3908%	1.3945%	1.3971%	1.3987%	1.3993%	1.3988%	1.3974%	1.3970%	1.3938%	1.3898%	1.3852%	1.3798%	1.3738%
1.4360%	1.4445%	1.4518%	1.4580%	1.4630%	1.4669%	1.4696%	1.4713%	1.4719%	1.4714%	1.4699%	1.4695%	1.4661%	1.4619%	1.4570%	1.4514%	1.4451%
1.5105%	1.5194%	1.5271%	1.5336%	1.5389%	1.5430%	1.5459%	1.5476%	1.5482%	1.5477%	1.5461%	1.5457%	1.5421%	1.5378%	1.5326%	1.5267%	1.5201%
1.5889%	1.5983%	1.6064%	1.6132%	1.6187%	1.6230%	1.6261%	1.6279%	1.6286%	1.6280%	1.6264%	1.6259%	1.6222%	1.6176%	1.6121%	1.6059%	1.5990%
1.6714%	1.6812%	1.6897%	1.6969%	1.7027%	1.7072%	1.7105%	1.7124%	1.7131%	1.7125%	1.7107%	1.7103%	1.7063%	1.7015%	1.6958%	1.6893%	1.6819%
1.7581%	1.7684%	1.7774%	1.7849%	1.7911%	1.7958%	1.7992%	1.8012%	1.8020%	1.8014%	1.7995%	1.7990%	1.7949%	1.7898%	1.7838%	1.7769%	1.7692%
1.8493%	1.8602%	1.8696%	1.8775%	1.8840%	1.8890%	1.8926%	1.8947%	1.8955%	1.8948%	1.8929%	1.8923%	1.8880%	1.8826%	1.8763%	1.8691%	1.8610%
1.9453%	1.9567%	1.9666%	1.9750%	1.9817%	1.9870%	1.9908%	1.9930%	1.9938%	1.9932%	1.9911%	1.9905%	1.9859%	1.9803%	1.9737%	1.9661%	1.9575%
2.0462%	2.0582%	2.0687%	2.0774%	2.0846%	2.0901%	2.0941%	2.0964%	2.0973%	2.0966%	2.0944%	2.0938%	2.0890%	2.0831%	2.0761%	2.0681%	2.0591%
2.1524%	2.1650%	2.1760%	2.1852%	2.1927%	2.1986%	2.2027%	2.2052%	2.2061%	2.2054%	2.2031%	2.2024%	2.1974%	2.1912%	2.1838%	2.1754%	2.1659%
2.2640%	2.2774%	2.2889%	2.2986%	2.3065%	2.3126%	2.3170%	2.3196%	2.3205%	2.3198%	2.3174%	2.3167%	2.3114%	2.3048%	2.2971%	2.2883%	2.2783%
2.3815%	2.3955%	2.4077%	2.4179%	2.4262%	2.4326%	2.4372%	2.4400%	2.4409%	2.4402%	2.4376%	2.4369%	2.4313%	2.4244%	2.4163%	2.4070%	2.3965%
2.5051%	2.5198%	2.5326%	2.5433%	2.5521%	2.5588%	2.5637%	2.5666%	2.5676%	2.5668%	2.5641%	2.5634%	2.5575%	2.5502%	2.5417%	2.5319%	2.5209%
2.6351%	2.6506%	2.6640%	2.6753%	2.6845%	2.6916%	2.6967%	2.6997%	2.7008%	2.6999%	2.6971%	2.6964%	2.6902%	2.6825%	2.6736%	2.6633%	2.6517%
2.7718%	2.7881%	2.8022%	2.8141%	2.8238%	2.8313%	2.8366%	2.8398%	2.8410%	2.8400%	2.8371%	2.8363%	2.8297%	2.8217%	2.8123%	2.8015%	2.7893%
2.9156%	2.9328%	2.9476%	2.9601%	2.9703%	2.9782%	2.9838%	2.9872%	2.9884%	2.9874%	2.9843%	2.9834%	2.9766%	2.9681%	2.9582%	2.9468%	2.9340%
3.0669%	3.0849%	3.1005%	3.1137%	3.1244%	3.1327%	3.1386%	3.1422%	3.1434%	3.1424%	3.1391%	3.1382%	3.1310%	3.1221%	3.1117%	3.0997%	3.0862%
3.2260%	3.2450%	3.2614%	3.2753%	3.2865%	3.2952%	3.3015%	3.3052%	3.3065%	3.3054%	3.3020%	3.3011%	3.2935%	3.2841%	3.2732%	3.2605%	3.2464%
3.3934%	3.4134%	3.4306%	3.4452%	3.4570%	3.4662%	3.4728%	3.4767%	3.4781%	3.4769%	3.4733%	3.4723%	3.4643%	3.4545%	3.4430%	3.4297%	3.4148%
3.5695%	3.5905%	3.6086%	3.6239%	3.6364%	3.6461%	3.6529%	3.6571%	3.6585%	3.6573%	3.6536%	3.6525%	3.6441%	3.6338%	3.6216%	3.6077%	3.5920%
3.7547%	3.7768%	3.7959%	3.8120%	3.8251%	3.8352%	3.8425%	3.8468%	3.8484%	3.8471%	3.8431%	3.8420%	3.8332%	3.8223%	3.8095%	3.7949%	3.7784%
	3.9727%	3.9928%	4.0098%	4.0236%	4.0342%	4.0419%	4.0464%	4.0480%	4.0467%	4.0425%	4.0414%	4.0321%	4.0207%	4.0072%	3.9918%	3.9744%
		4.2000%	4.2178%	4.2323%	4.2436%	4.2516%	4.2564%	4.2581%	4.2567%	4.2523%	4.2511%	4.2413%	4.2293%	4.2151%	4.1989%	4.1806%
			4.4367%	4.4519%	4.4637%	4.4722%	4.4772%	4.4790%	4.4776%	4.4729%	4.4716%	4.4613%	4.4487%	4.4338%	4.4167%	4.3975%
				4.6829%	4.6954%	4.7042%	4.7095%	4.7114%	4.7099%	4.7050%	4.7037%	4.6928%	4.6795%	4.6639%	4.6459%	4.6257%
					4.9390%	4.9483%	4.9539%	4.9559%	4.9543%	4.9491%	4.9477%	4.9363%	4.9223%	4.9059%	4.8870%	4.8657%
						5.2050%	5.2109%	5.2130%	5.2113%	5.2059%	5.2044%	5.1924%	5.1777%	5.1604%	5.1405%	5.1182%
							5.4813%	5.4835%	5.4817%	5.4760%	5.4745%	5.4619%	5.4464%	5.4282%	5.4073%	5.3837%
								5.7680%	5.7661%	5.7602%	5.7585%	5.7452%	5.7290%	5.7098%	5.6878%	5.6631%
									6.0653%	6.0590%	6.0573%	6.0433%	6.0262%	6.0061%	5.9829%	5.9569%
										6.3734%	6.3716%	6.3569%	6.3389%	6.3177%	6.2934%	6.2660%
											6.7022%	6.6867%	6.6678%	6.6455%	6.6199%	6.5911%
												7.0337%	7.0138%	6.9903%	6.9634%	6.9331%
													7.3777%	7.3530%	7.3247%	7.2928%
														7.7345%	7.7047%	7.6712%
															8.1045%	8.0693%
																8.4879%

15-Jan-18	15-Feb-18	15-Mar-18	15-Apr-18	15-May-18	15-Jun-18	15-Jul-18	15-Aug-18	15-Sep-18	15-Oct-18	15-Nov-18	15-Dec-18	15-Jan-19	15-Feb-19	15-Mar-19	15-Apr-19	15-May-19
t = 5.58	t = 5.67	t = 5.75	t = 5.83	t = 5.92	t = 6	t = 6.08	t = 6.17	t = 6.25	t = 6.33	t = 6.42	t = 6.5	t = 6.58	t = 6.67	t = 6.75	t = 6.83	t = 6.92
0.3153%	0.3136%	0.3118%	0.3099%	0.3078%	0.3056%	0.3033%	0.3009%	0.2983%	0.2957%	0.2929%	0.2901%	0.2872%	0.2842%	0.2811%	0.2780%	0.2747%
0.3317%	0.3299%	0.3280%	0.3259%	0.3238%	0.3215%	0.3190%	0.3165%	0.3138%	0.3110%	0.3081%	0.3052%	0.3021%	0.2989%	0.2957%	0.2924%	0.2890%
0.3489%	0.3470%	0.3450%	0.3429%	0.3406%	0.3381%	0.3356%	0.3329%	0.3301%	0.3272%	0.3241%	0.3210%	0.3178%	0.3145%	0.3110%	0.3075%	0.3040%
0.3670%	0.3650%	0.3629%	0.3607%	0.3582%	0.3557%	0.3530%	0.3502%	0.3472%	0.3441%	0.3410%	0.3377%	0.3343%	0.3308%	0.3272%	0.3235%	0.3198%
0.3860%	0.3840%	0.3817%	0.3794%	0.3768%	0.3741%	0.3713%	0.3683%	0.3652%	0.3620%	0.3586%	0.3552%	0.3516%	0.3479%	0.3442%	0.3403%	0.3363%
0.4060%	0.4039%	0.4016%	0.3990%	0.3964%	0.3935%	0.3906%	0.3874%	0.3842%	0.3808%	0.3773%	0.3736%	0.3698%	0.3660%	0.3620%	0.3579%	0.3538%
0.4271%	0.4248%	0.4224%	0.4198%	0.4169%	0.4140%	0.4108%	0.4075%	0.4041%	0.4005%	0.3968%	0.3930%	0.3890%	0.3850%	0.3808%	0.3765%	0.3721%
0.4493%	0.4469%	0.4443%	0.4415%	0.4386%	0.4354%	0.4321%	0.4287%	0.4251%	0.4213%	0.4174%	0.4134%	0.4092%	0.4049%	0.4006%	0.3961%	0.3915%
0.4726%	0.4701%	0.4674%	0.4644%	0.4613%	0.4580%	0.4546%	0.4509%	0.4471%	0.4432%	0.4391%	0.4348%	0.4305%	0.4260%	0.4213%	0.4166%	0.4118%
0.4971%	0.4945%	0.4916%	0.4885%	0.4853%	0.4818%	0.4782%	0.4743%	0.4703%	0.4662%	0.4619%	0.4574%	0.4528%	0.4481%	0.4432%	0.4382%	0.4331%
0.5229%	0.5201%	0.5171%	0.5139%	0.5104%	0.5068%	0.5030%	0.4989%	0.4947%	0.4904%	0.4858%	0.4811%	0.4763%	0.4713%	0.4662%	0.4610%	0.4556%
0.5500%	0.5471%	0.5439%	0.5405%	0.5369%	0.5331%	0.5291%	0.5248%	0.5204%	0.5158%	0.5110%	0.5061%	0.5010%	0.4958%	0.4904%	0.4849%	0.4792%
0.5786%	0.5755%	0.5722%	0.5686%	0.5648%	0.5608%	0.5565%	0.5521%	0.5474%	0.5426%	0.5375%	0.5323%	0.5270%	0.5215%	0.5158%	0.5100%	0.5041%
0.6086%	0.6054%	0.6019%	0.5981%	0.5941%	0.5899%	0.5854%	0.5807%	0.5758%	0.5707%	0.5654%	0.5600%	0.5543%	0.5485%	0.5426%	0.5365%	0.5303%
0.6402%	0.6368%	0.6331%	0.6291%	0.6249%	0.6205%	0.6158%	0.6108%	0.6057%	0.6003%	0.5948%	0.5890%	0.5831%	0.5770%	0.5707%	0.5643%	0.5578%
0.6734%	0.6698%	0.6659%	0.6618%	0.6573%	0.6527%	0.6477%	0.6425%	0.6371%	0.6315%	0.6256%	0.6196%	0.6134%	0.6069%	0.6004%	0.5936%	0.5867%
0.7083%	0.7046%	0.7005%	0.6961%	0.6915%	0.6865%	0.6813%	0.6759%	0.6702%	0.6642%	0.6581%	0.6517%	0.6452%	0.6384%	0.6315%	0.6244%	0.6172%
0.7451%	0.7411%	0.7368%	0.7322%	0.7273%	0.7221%	0.7167%	0.7109%	0.7049%	0.6987%	0.6922%	0.6856%	0.6787%	0.6716%	0.6643%	0.6568%	0.6492%
0.7837%	0.7796%	0.7751%	0.7702%	0.7651%	0.7596%	0.7539%	0.7478%	0.7415%	0.7350%	0.7282%	0.7211%	0.7139%	0.7064%	0.6987%	0.6909%	0.6829%
0.8244%	0.8200%	0.8153%	0.8102%	0.8048%	0.7990%	0.7930%	0.7866%	0.7800%	0.7731%	0.7659%	0.7585%	0.7509%	0.7431%	0.7350%	0.7267%	0.7183%
0.8672%	0.8626%	0.8576%	0.8522%	0.8465%	0.8405%	0.8341%	0.8274%	0.8205%	0.8132%	0.8057%	0.7979%	0.7899%	0.7816%	0.7731%	0.7645%	0.7556%
0.9122%	0.9073%	0.9021%	0.8964%	0.8904%	0.8841%	0.8774%	0.8704%	0.8630%	0.8554%	0.8475%	0.8393%	0.8308%	0.8222%	0.8132%	0.8041%	0.7948%
0.9595%	0.9544%	0.9489%	0.9430%	0.9366%	0.9300%	0.9229%	0.9155%	0.9078%	0.8998%	0.8915%	0.8828%	0.8740%	0.8648%	0.8554%	0.8458%	0.8360%
1.0093%	1.0039%	0.9981%	0.9919%	0.9852%	0.9782%	0.9708%	0.9630%	0.9549%	0.9465%	0.9377%	0.9286%	0.9193%	0.9097%	0.8998%	0.8897%	0.8794%
1.0616%	1.0560%	1.0499%	1.0433%	1.0364%	1.0290%	1.0212%	1.0130%	1.0045%	0.9956%	0.9864%	0.9768%	0.9670%	0.9569%	0.9465%	0.9359%	0.9250%
1.1167%	1.1108%	1.1044%	1.0975%	1.0901%	1.0824%	1.0742%	1.0656%	1.0566%	1.0472%	1.0375%	1.0275%	1.0172%	1.0065%	0.9956%	0.9845%	0.9730%
1.1747%	1.1684%	1.1617%	1.1544%	1.1467%	1.1385%	1.1299%	1.1208%	1.1114%	1.1016%	1.0914%	1.0808%	1.0700%	1.0588%	1.0473%	1.0355%	1.0235%
1.2356%	1.2291%	1.2220%	1.2143%	1.2062%	1.1976%	1.1885%	1.1790%	1.1691%	1.1587%	1.1480%	1.1369%	1.1255%	1.1137%	1.1016%	1.0893%	1.0766%
1.2997%	1.2928%	1.2854%	1.2773%	1.2688%	1.2597%	1.2502%	1.2402%	1.2297%	1.2188%	1.2076%	1.1959%	1.1839%	1.1715%	1.1588%	1.1458%	1.1325%
1.3672%	1.3599%	1.3520%	1.3436%	1.3346%	1.3251%	1.3150%	1.3045%	1.2935%	1.2821%	1.2702%	1.2580%	1.2453%	1.2323%	1.2189%	1.2052%	1.1912%
1.4381%	1.4305%	1.4222%	1.4133%	1.4039%	1.3938%	1.3833%	1.3722%	1.3606%	1.3486%	1.3361%	1.3232%	1.3099%	1.2962%	1.2822%	1.2678%	1.2530%
1.5127%	1.5047%	1.4960%	1.4867%	1.4767%	1.4662%	1.4551%	1.4434%	1.4312%	1.4186%	1.4055%	1.3919%	1.3779%	1.3635%	1.3487%	1.3335%	1.3181%
1.5912%	1.5828%	1.5736%	1.5638%	1.5533%	1.5422%	1.5305%	1.5183%	1.5055%	1.4922%	1.4784%	1.4641%	1.4494%	1.4342%	1.4187%	1.4027%	1.3864%
1.6738%	1.6649%	1.6553%	1.6449%	1.6339%	1.6223%	1.6100%	1.5971%	1.5836%	1.5696%	1.5551%	1.5401%	1.5246%	1.5086%	1.4923%	1.4755%	1.4584%
1.7606%	1.7513%	1.7411%	1.7303%	1.7187%	1.7064%	1.6935%	1.6799%	1.6658%	1.6511%	1.6358%	1.6200%	1.6037%	1.5869%	1.5697%	1.5521%	1.5341%
1.8520%	1.8421%	1.8315%	1.8201%	1.8079%	1.7950%	1.7814%	1.7671%	1.7522%	1.7367%	1.7206%	1.7040%	1.6869%	1.6692%	1.6511%	1.6326%	1.6137%
1.9481%	1.9377%	1.9265%	1.9145%	1.9017%	1.8881%	1.8738%	1.8588%	1.8431%	1.8268%	1.8099%	1.7924%	1.7744%	1.7559%	1.7368%	1.7173%	1.6974%
2.0491%	2.0383%	2.0265%	2.0138%	2.0003%	1.9861%	1.9710%	1.9552%	1.9388%	1.9216%	1.9038%	1.8854%	1.8665%	1.8470%	1.8269%	1.8064%	1.7854%
2.1555%	2.1440%	2.1316%	2.1183%	2.1041%	2.0891%	2.0733%	2.0567%	2.0394%	2.0213%	2.0026%	1.9833%	1.9633%	1.9428%	1.9217%	1.9001%	1.8781%
2.2673%	2.2553%	2.2422%	2.2282%	2.2133%	2.1975%	2.1809%	2.1634%	2.1452%	2.1262%	2.1065%	2.0862%	2.0652%	2.0436%	2.0214%	1.9987%	1.9755%
2.3849%	2.3723%	2.3586%	2.3438%	2.3282%	2.3115%	2.2940%	2.2757%	2.2565%	2.2365%	2.2158%	2.1944%	2.1723%	2.1496%	2.1263%	2.1024%	2.0780%
2.5087%	2.4954%	2.4809%	2.4655%	2.4490%	2.4315%	2.4130%	2.3937%	2.3736%	2.3526%	2.3308%	2.3083%	2.2851%	2.2612%	2.2366%	2.2115%	2.1859%
2.6389%	2.6248%	2.6097%	2.5934%	2.5760%	2.5576%	2.5382%	2.5179%	2.4967%	2.4746%	2.4517%	2.4280%	2.4036%	2.3785%	2.3527%	2.3263%	2.2993%
2.7758%	2.7610%	2.7451%	2.7279%	2.7097%	2.6903%	2.6699%	2.6486%	2.6263%	2.6030%	2.5789%	2.5540%	2.5283%	2.5019%	2.4748%	2.4470%	2.4186%
2.9198%	2.9043%	2.8875%	2.8695%	2.8503%	2.8299%	2.8085%	2.7860%	2.7625%	2.7381%	2.7128%	2.6865%	2.6595%	2.6317%	2.6032%	2.5739%	2.5441%
3.0713%	3.0550%	3.0373%	3.0184%	2.9982%	2.9768%	2.9542%	2.9306%	2.9059%	2.8802%	2.8535%	2.8259%	2.7975%	2.7683%	2.7382%	2.7075%	2.6761%
3.2307%	3.2135%	3.1949%	3.1750%	3.1537%	3.1312%	3.1075%	3.0826%	3.0566%	3.0296%	3.0016%	2.9726%	2.9427%	2.9119%	2.8803%	2.8480%	2.8149%
3.3983%	3.3802%	3.3607%	3.3397%	3.3174%	3.2937%	3.2687%	3.2426%	3.2152%	3.1868%	3.1573%	3.1268%	3.0953%	3.0630%	3.0298%	2.9957%	2.9610%
3.5746%	3.5556%	3.5351%	3.5130%	3.4895%	3.4646%	3.4383%	3.4108%	3.3821%	3.3521%	3.3211%	3.2890%	3.2559%	3.2219%	3.1870%	3.1512%	3.1146%
3.7601%	3.7401%	3.7185%	3.6953%	3.6705%	3.6443%	3.6167%	3.5878%	3.5575%	3.5261%	3.4934%	3.4597%	3.4249%	3.3891%	3.3523%	3.3147%	3.2762%
3.9552%	3.9342%	3.9114%	3.8870%	3.8610%	3.8334%	3.8044%	3.7739%	3.7421%	3.7090%	3.6747%	3.6392%	3.6026%	3.5649%	3.5263%	3.4867%	3.4462%
4.1604%	4.1383%	4.1144%	4.0887%	4.0613%	4.0323%	4.0018%	3.9697%	3.9363%	3.9015%	3.8654%	3.8280%	3.7895%	3.7499%	3.7092%	3.6676%	3.6250%
4.3763%	4.3530%	4.3278%	4.3008%	4.2720%	4.2416%	4.2094%	4.1757%	4.1405%	4.1039%	4.0659%	4.0267%	3.9861%	3.9445%	3.9017%	3.8579%	3.8131%
4.6033%	4.5789%	4.5524%	4.5240%	4.4937%	4.4616%	4.4278%	4.3924%	4.3554%	4.3168%	4.2769%	4.2356%	4.1930%	4.1491%	4.1041%	4.0581%	4.0109%
4.8422%	4.8164%	4.7886%	4.7587%	4.7269%	4.6931%	4.6576%	4.6203%	4.5813%	4.5408%	4.4988%	4.4553%	4.4105%	4.3644%	4.3171%	4.2686%	4.2191%
5.0934%	5.0663%	5.0371%	5.0056%	4.9721%	4.9366%	4.8992%	4.8600%	4.8191%	4.7764%	4.7322%	4.6865%	4.6394%	4.5909%	4.5411%	4.4901%	4.4380%
5.3577%	5.3292%	5.2984%	5.2654%	5.2301%	5.1928%	5.1534%	5.1122%	5.0691%	5.0243%	4.9778%	4.9297%	4.8801%	4.8291%	4.7767%	4.7231%	4.6682%
5.6357%	5.6057%	5.5733%	5.5385%	5.5015%	5.4622%	5.4208%	5.3774%	5.3321%	5.2850%	5.2360%	5.1855%	5.1333%	5.0796%	5.0245%	4.9681%	4.9104%
5.9281%	5.8966%	5.8625%	5.8259%	5.7869%	5.7456%	5.7021%	5.6564%	5.6088%	5.5592%	5.5077%	5.4545%	5.3996%	5.3432%	5.2852%	5.2259%	5.1652%
6.2357%	6.2025%	6.1667%	6.1282%	6.0872%	6.0437%	5.9979%	5.9499%	5.8998%	5.8476%	5.7935%	5.7375%	5.6798%	5.6204%	5.5595%	5.4970%	5.4332%
6.5592%	6.5244%	6.4867%	6.4462%	6.4030%	6.3573%	6.3092%	6.2587%	6.2059%	6.1510%	6.0941%	6.0352%	5.9745%	5.9120%	5.8479%	5.7823%	5.7151%
6.8995%	6.8629%	6.8232%	6.7806%	6.7353%	6.6872%	6.6365%	6.5834%	6.5279%	6.4702%	6.4103%	6.3484%	6.2845%	6.2188%	6.1514%	6.0823%	6.0117%
7.2575%	7.2190%	7.1773%	7.1325%	7.0847%	7.0342%	6.9809%	6.9250%	6.8666%	6.8059%	6.7429%	6.6778%	6.6106%	6.5415%	6.4705%	6.3979%	6.3236%
7.6341%	7.5935%	7.5497%	7.5025%	7.4523%	7.3991%	7.3431%	7.2843%	7.2229%	7.1590%	7.0928%	7.0243%	6.9536%	6.8809%	6.8063%	6.7298%	6.6517%
8.0302%	7.9875%	7.9414%	7.8918%	7.8390%	7.7830%	7.7241%	7.6622%	7.5977%	7.5305%	7.4608%	7.3887%	7.3144%	7.2379%	7.1594%	7.0790%	6.9968%
8.4469%	8.4020%	8.3534%	8.3013%	8.2457%	8.1869%	8.1248%	8.0598%	7.9919%	7.9212%	7.8479%	7.7721%	7.6939%	7.6134%	7.5309%	7.4463%	7.3599%
8.8851%	8.8379%	8.7868%	8.7320%	8.6736%	8.6117%	8.5464%	8.4780%	8.4066%	8.3322%	8.2551%	8.1753%	8.0931%	8.0085%	7.9216%	7.8327%	7.7418%
	9.2965%	9.2428%	9.1851%	9.1236%	9.0585%	8.9898%	8.9179%	8.8427%	8.7645%	8.6834%	8.5995%	8.5130%	8.4240%	8.3327%	8.2391%	8.1434%
		9.7223%	9.6617%	9.5970%	9.5285%	9.4563%	9.3806%	9.3015%	9.2193%	9.1340%	9.0457%	8.9547%	8.8611%	8.7650%	8.6666%	8.5660%
			10.1630%	10.0949%	10.0229%	9.9469%	9.8673%	9.7842%	9.6976%	9.6079%	9.5151%	9.4193%	9.3208%	9.2198%	9.1163%	9.0104%
				10.6187%	10.5429%	10.4630%	10.3793%	10.2918%	10.2008%	10.1064%	10.0088%	9.9080%	9.8045%	9.6982%	9.5893%	9.4779%
					11.0900%	11.0059%	10.9178%	10.8258%	10.7301%	10.6308%	10.5281%	10.4221%	10.3132%	10.2014%	10.0868%	9.9697%
						11.5770%	11.4843%	11.3875%	11.2868%	11.1824%	11.0744%	10.9629%	10.8483%	10.7307%	10.6102%	10.4870%
							12.0802%	11.9784%	11.8725%	11.7626%	11.6490%	11.5317%	11.4112%	11.2874%	11.1607%	11.0311%
								12.5999%	12.4885%	12.3729%	12.2534%	12.1301%	12.0033%	11.8731%	11.7398%	11.6035%
									13.1365%	13.0149%	12.8892%	12.7594%	12.6261%	12.4891%	12.3489%	12.2056%
										13.6902%	13.5579%	13.4215%	13.2812%	13.1372%	12.9897%	12.8389%
											14.2614%	14.1179%	13.9703%	13.8188%	13.6636%	13.5050%
												14.8504%	14.6951%	14.5358%	14.3726%	14.2057%
													15.4576%	15.2900%	15.1183%	14.9428%
														16.0833%	15.9028%	15.7181%
															16.7279%	16.5337%
																17.3916%

15-Jun-19	15-Jul-19	15-Aug-19	15-Sep-19	15-Oct-19	15-Nov-19	15-Dec-19	15-Jan-20	15-Feb-20	15-Mar-20	15-Apr-20	15-May-20	15-Jun-20	15-Jul-20	15-Aug-20	15-Sep-20	15-Oct-20
t = 7	t = 7.08	t = 7.17	t = 7.25	t = 7.33	t = 7.42	t = 7.5	t = 7.58	t = 7.67	t = 7.75	t = 7.83	t = 7.92	t = 8	t = 8.08	t = 8.17	t = 8.25	t = 8.33
0.2714%	0.3059%	0.3622%	0.4157%	0.4665%	0.5147%	0.5884%	0.5164%	0.5575%	0.5964%	0.6332%	0.6680%	0.7244%	0.6683%	0.6973%	0.7246%	0.7503%
0.2855%	0.3218%	0.3810%	0.4372%	0.4907%	0.5414%	0.6189%	0.5432%	0.5864%	0.6273%	0.6661%	0.7027%	0.7620%	0.7030%	0.7335%	0.7622%	0.7893%
0.3003%	0.3385%	0.4007%	0.4599%	0.5161%	0.5695%	0.6510%	0.5713%	0.6168%	0.6599%	0.7006%	0.7392%	0.8015%	0.7395%	0.7716%	0.8018%	0.8302%
0.3159%	0.3561%	0.4215%	0.4838%	0.5429%	0.5991%	0.6848%	0.6010%	0.6488%	0.6941%	0.7370%	0.7775%	0.8431%	0.7779%	0.8116%	0.8434%	0.8733%
0.3323%	0.3745%	0.4434%	0.5089%	0.5711%	0.6301%	0.7203%	0.6322%	0.6825%	0.7302%	0.7752%	0.8179%	0.8869%	0.8182%	0.8537%	0.8872%	0.9186%
0.3496%	0.3940%	0.4664%	0.5353%	0.6007%	0.6628%	0.7577%	0.6650%	0.7179%	0.7680%	0.8155%	0.8603%	0.9329%	0.8607%	0.8980%	0.9332%	0.9663%
0.3677%	0.4144%	0.4906%	0.5631%	0.6319%	0.6972%	0.7970%	0.6995%	0.7552%	0.8079%	0.8578%	0.9049%	0.9813%	0.9053%	0.9446%	0.9816%	1.0164%
0.3868%	0.4359%	0.5161%	0.5923%	0.6647%	0.7334%	0.8384%	0.7358%	0.7943%	0.8498%	0.9023%	0.9519%	1.0322%	0.9523%	0.9936%	1.0325%	1.0691%
0.4068%	0.4585%	0.5428%	0.6230%	0.6992%	0.7715%	0.8819%	0.7739%	0.8356%	0.8939%	0.9491%	1.0013%	1.0858%	1.0017%	1.0452%	1.0861%	1.1246%
0.4279%	0.4823%	0.5710%	0.6553%	0.7354%	0.8115%	0.9277%	0.8141%	0.8789%	0.9403%	0.9983%	1.0532%	1.1421%	1.0537%	1.0994%	1.1425%	1.1830%
0.4501%	0.5073%	0.6006%	0.6893%	0.7736%	0.8536%	0.9758%	0.8563%	0.9245%	0.9891%	1.0501%	1.1079%	1.2014%	1.1084%	1.1565%	1.2018%	1.2443%
0.4735%	0.5337%	0.6318%	0.7251%	0.8137%	0.8979%	1.0264%	0.9008%	0.9725%	1.0404%	1.1046%	1.1654%	1.2637%	1.1659%	1.2165%	1.2641%	1.3089%
0.4981%	0.5613%	0.6646%	0.7627%	0.8560%	0.9445%	1.0797%	0.9475%	1.0229%	1.0944%	1.1619%	1.2258%	1.3293%	1.2264%	1.2796%	1.3297%	1.3768%
0.5239%	0.5905%	0.6991%	0.8023%	0.9004%	0.9935%	1.1357%	0.9967%	1.0760%	1.1512%	1.2222%	1.2894%	1.3982%	1.2900%	1.3460%	1.3987%	1.4482%
0.5511%	0.6211%	0.7353%	0.8439%	0.9471%	1.0450%	1.1946%	1.0484%	1.1318%	1.2109%	1.2857%	1.3563%	1.4708%	1.3569%	1.4158%	1.4713%	1.5234%
0.5797%	0.6533%	0.7735%	0.8877%	0.9962%	1.0993%	1.2566%	1.1028%	1.1906%	1.2737%	1.3524%	1.4267%	1.5471%	1.4273%	1.4893%	1.5476%	1.6024%
0.6098%	0.6872%	0.8136%	0.9338%	1.0479%	1.1563%	1.3218%	1.1600%	1.2523%	1.3398%	1.4225%	1.5007%	1.6274%	1.5014%	1.5665%	1.6279%	1.6856%
0.6414%	0.7229%	0.8558%	0.9822%	1.1023%	1.2163%	1.3904%	1.2202%	1.3173%	1.4093%	1.4963%	1.5786%	1.7118%	1.5793%	1.6478%	1.7124%	1.7730%
0.6747%	0.7604%	0.9003%	1.0332%	1.1595%	1.2794%	1.4625%	1.2835%	1.3857%	1.4824%	1.5740%	1.6605%	1.8006%	1.6612%	1.7333%	1.8012%	1.8650%
0.7097%	0.7999%	0.9470%	1.0868%	1.2197%	1.3458%	1.5384%	1.3501%	1.4576%	1.5594%	1.6556%	1.7467%	1.8941%	1.7474%	1.8233%	1.8947%	1.9618%
0.7465%	0.8414%	0.9961%	1.1432%	1.2829%	1.4156%	1.6182%	1.4201%	1.5332%	1.6403%	1.7416%	1.8373%	1.9923%	1.8381%	1.9179%	1.9930%	2.0636%
0.7853%	0.8850%	1.0478%	1.2025%	1.3495%	1.4890%	1.7022%	1.4938%	1.6128%	1.7254%	1.8319%	1.9326%	2.0957%	1.9335%	2.0174%	2.0964%	2.1707%
0.8260%	0.9309%	1.1021%	1.2649%	1.4195%	1.5663%	1.7905%	1.5713%	1.6964%	1.8149%	1.9270%	2.0329%	2.2044%	2.0338%	2.1221%	2.2052%	2.2833%
0.8689%	0.9792%	1.1593%	1.3305%	1.4932%	1.6476%	1.8834%	1.6529%	1.7845%	1.9091%	2.0269%	2.1384%	2.3188%	2.1393%	2.2322%	2.3196%	2.4018%
0.9139%	1.0300%	1.2195%	1.3996%	1.5707%	1.7331%	1.9811%	1.7386%	1.8770%	2.0081%	2.1321%	2.2493%	2.4391%	2.2503%	2.3480%	2.4399%	2.5264%
0.9614%	1.0835%	1.2828%	1.4722%	1.6522%	1.8230%	2.0839%	1.8288%	1.9744%	2.1123%	2.2427%	2.3660%	2.5657%	2.3671%	2.4698%	2.5665%	2.6575%
1.0112%	1.1397%	1.3493%	1.5486%	1.7379%	1.9176%	2.1921%	1.9237%	2.0769%	2.2219%	2.3591%	2.4888%	2.6988%	2.4899%	2.5979%	2.6997%	2.7953%
1.0637%	1.1988%	1.4193%	1.6289%	1.8280%	2.0171%	2.3058%	2.0235%	2.1846%	2.3372%	2.4815%	2.6179%	2.8388%	2.6191%	2.7327%	2.8398%	2.9404%
1.1189%	1.2611%	1.4930%	1.7134%	1.9229%	2.1217%	2.4254%	2.1285%	2.2980%	2.4585%	2.6103%	2.7538%	2.9861%	2.7550%	2.8745%	2.9871%	3.0930%
1.1770%	1.3265%	1.5704%	1.8023%	2.0227%	2.2318%	2.5513%	2.2390%	2.4172%	2.5860%	2.7457%	2.8966%	3.1411%	2.8979%	3.0237%	3.1421%	3.2534%
1.2380%	1.3953%	1.6519%	1.8959%	2.1276%	2.3476%	2.6837%	2.3551%	2.5426%	2.7202%	2.8882%	3.0469%	3.3041%	3.0483%	3.1806%	3.3051%	3.4222%
1.3023%	1.4677%	1.7376%	1.9942%	2.2380%	2.4694%	2.8229%	2.4773%	2.6746%	2.8613%	3.0380%	3.2050%	3.4755%	3.2064%	3.3456%	3.4766%	3.5998%
1.3698%	1.5439%	1.8278%	2.0977%	2.3541%	2.5976%	2.9694%	2.6059%	2.8134%	3.0098%	3.1957%	3.3713%	3.6558%	3.3728%	3.5192%	3.6570%	3.7866%
1.4409%	1.6240%	1.9226%	2.2065%	2.4763%	2.7323%	3.1234%	2.7411%	2.9593%	3.1660%	3.3615%	3.5462%	3.8455%	3.5478%	3.7018%	3.8468%	3.9831%
1.5157%	1.7082%	2.0224%	2.3210%	2.6048%	2.8741%	3.2855%	2.8833%	3.1129%	3.3302%	3.5359%	3.7302%	4.0450%	3.7319%	3.8939%	4.0464%	4.1897%
1.5943%	1.7969%	2.1273%	2.4415%	2.7399%	3.0232%	3.4560%	3.0329%	3.2744%	3.5030%	3.7193%	3.9238%	4.2549%	3.9255%	4.0959%	4.2563%	4.4071%
1.6770%	1.8901%	2.2377%	2.5681%	2.8821%	3.1801%	3.6353%	3.1903%	3.4443%	3.6848%	3.9123%	4.1274%	4.4757%	4.1292%	4.3084%	4.4771%	4.6358%
1.7640%	1.9882%	2.3538%	2.7014%	3.0316%	3.3451%	3.8239%	3.3558%	3.6230%	3.8760%	4.1153%	4.3415%	4.7079%	4.3435%	4.5320%	4.7094%	4.8763%
1.8556%	2.0913%	2.4759%	2.8416%	3.1889%	3.5187%	4.0223%	3.5299%	3.8110%	4.0771%	4.3289%	4.5668%	4.9522%	4.5688%	4.7671%	4.9538%	5.1293%
1.9519%	2.1998%	2.6044%	2.9890%	3.3544%	3.7012%	4.2310%	3.7131%	4.0087%	4.2886%	4.5535%	4.8038%	5.2091%	4.8059%	5.0145%	5.2108%	5.3955%
2.0531%	2.3140%	2.7395%	3.1441%	3.5284%	3.8933%	4.4506%	3.9057%	4.2167%	4.5112%	4.7897%	5.0530%	5.4794%	5.0552%	5.2746%	5.4812%	5.6754%
2.1597%	2.4340%	2.8817%	3.3072%	3.7115%	4.0953%	4.6815%	4.1084%	4.4355%	4.7452%	5.0382%	5.3152%	5.7637%	5.3175%	5.5483%	5.7656%	5.9699%
2.2717%	2.5603%	3.0312%	3.4788%	3.9041%	4.3078%	4.9244%	4.3216%	4.6656%	4.9914%	5.2997%	5.5910%	6.0628%	5.5934%	5.8362%	6.0648%	6.2796%
2.3896%	2.6932%	3.1885%	3.6593%	4.1066%	4.5313%	5.1799%	4.5458%	4.9077%	5.2504%	5.5746%	5.8811%	6.3774%	5.8837%	6.1390%	6.3794%	6.6055%
2.5136%	2.8329%	3.3539%	3.8492%	4.3197%	4.7664%	5.4487%	4.7817%	5.1624%	5.5228%	5.8639%	6.1862%	6.7083%	6.1889%	6.4575%	6.7104%	6.9482%
2.6440%	2.9799%	3.5279%	4.0489%	4.5438%	5.0137%	5.7314%	5.0298%	5.4302%	5.8094%	6.1681%	6.5072%	7.0563%	6.5101%	6.7926%	7.0586%	7.3087%
2.7812%	3.1345%	3.7110%	4.2590%	4.7796%	5.2738%	6.0287%	5.2907%	5.7120%	6.1108%	6.4882%	6.8448%	7.4224%	6.8478%	7.1450%	7.4249%	7.6879%
2.9255%	3.2971%	3.9035%	4.4800%	5.0276%	5.5475%	6.3415%	5.5653%	6.0083%	6.4279%	6.8248%	7.2000%	7.8076%	7.2031%	7.5158%	7.8101%	8.0868%
3.0773%	3.4682%	4.1061%	4.7124%	5.2885%	5.8353%	6.6706%	5.8540%	6.3201%	6.7614%	7.1789%	7.5735%	8.2127%	7.5769%	7.9057%	8.2153%	8.5064%
3.2369%	3.6482%	4.3191%	4.9569%	5.5629%	6.1381%	7.0167%	6.1578%	6.6480%	7.1122%	7.5514%	7.9665%	8.6388%	7.9700%	8.3159%	8.6416%	8.9478%
3.4049%	3.8375%	4.5432%	5.2141%	5.8515%	6.4566%	7.3808%	6.4773%	6.9930%	7.4813%	7.9432%	8.3799%	9.0870%	8.3836%	8.7474%	9.0900%	9.4121%
3.5816%	4.0366%	4.7789%	5.4847%	6.1551%	6.7916%	7.7637%	6.8133%	7.3558%	7.8694%	8.3554%	8.8147%	9.5585%	8.8185%	9.2013%	9.5616%	9.9004%
3.7674%	4.2460%	5.0269%	5.7692%	6.4745%	7.1440%	8.1666%	7.1669%	7.7375%	8.2777%	8.7889%	9.2720%	10.0545%	9.2761%	9.6787%	10.0577%	10.4141%
3.9629%	4.4663%	5.2877%	6.0686%	6.8104%	7.5146%	8.5903%	7.5387%	8.1389%	8.7072%	9.2449%	9.7531%	10.5762%	9.7574%	10.1809%	10.5796%	10.9545%
4.1685%	4.6981%	5.5621%	6.3835%	7.1638%	7.9045%	9.0360%	7.9299%	8.5612%	9.1590%	9.7246%	10.2592%	11.1249%	10.2637%	10.7091%	11.1285%	11.5228%
4.3848%	4.9418%	5.8507%	6.7147%	7.5355%	8.3147%	9.5048%	8.3413%	9.0054%	9.6343%	10.2292%	10.7915%	11.7021%	10.7962%	11.2648%	11.7060%	12.1207%
4.6123%	5.1982%	6.1542%	7.0631%	7.9265%	8.7461%	9.9980%	8.7741%	9.4727%	10.1341%	10.7599%	11.3514%	12.3093%	11.3564%	11.8493%	12.3133%	12.7496%
4.8516%	5.4680%	6.4736%	7.4295%	8.3377%	9.1999%	10.5168%	9.2294%	9.9642%	10.6600%	11.3182%	11.9404%	12.9480%	11.9456%	12.4641%	12.9522%	13.4111%
5.1033%	5.7517%	6.8095%	7.8150%	8.7703%	9.6772%	11.0624%	9.7082%	10.4812%	11.2131%	11.9055%	12.5599%	13.6198%	12.5654%	13.1108%	13.6243%	14.1070%
5.3681%	6.0501%	7.1628%	8.2205%	9.2254%	10.1793%	11.6364%	10.2120%	11.0250%	11.7949%	12.5232%	13.2116%	14.3265%	13.2174%	13.7911%	14.3312%	14.8389%
5.6466%	6.3640%	7.5344%	8.6470%	9.7041%	10.7075%	12.2402%	10.7418%	11.5971%	12.4068%	13.1730%	13.8971%	15.0698%	13.9032%	14.5066%	15.0748%	15.6089%
5.9396%	6.6942%	7.9254%	9.0957%	10.2076%	11.2631%	12.8753%	11.2992%	12.1988%	13.0506%	13.8565%	14.6182%	15.8518%	14.6246%	15.2593%	15.8569%	16.4188%
6.2478%	7.0416%	8.3366%	9.5676%	10.7372%	11.8475%	13.5433%	11.8854%	12.8317%	13.7277%	14.5755%	15.3766%	16.6742%	15.3834%	16.0511%	16.6797%	17.2707%
6.5720%	7.4069%	8.7691%	10.0641%	11.2943%	12.4622%	14.2461%	12.5021%	13.4975%	14.4400%	15.3317%	16.1745%	17.5394%	16.1816%	16.8839%	17.5451%	18.1668%
6.9130%	7.7912%	9.2241%	10.5863%	11.8803%	13.1088%	14.9852%	13.1508%	14.1978%	15.1892%	16.1272%	17.0137%	18.4495%	17.0212%	17.7599%	18.4555%	19.1094%
7.2717%	8.1955%	9.7027%	11.1355%	12.4968%	13.7890%	15.7628%	13.8332%	14.9345%	15.9774%	16.9640%	17.8965%	19.4067%	17.9044%	18.6814%	19.4131%	20.1009%
7.6490%	8.6207%	10.2062%	11.7133%	13.1452%	14.5044%	16.5806%	14.5509%	15.7094%	16.8064%	17.8442%	18.8250%	20.4137%	18.8333%	19.6507%	20.4203%	21.1438%
8.0458%	9.0680%	10.7357%	12.3211%	13.8272%	15.2570%	17.4409%	15.3059%	16.5245%	17.6784%	18.7701%	19.8018%	21.4728%	19.8105%	20.6703%	21.4798%	22.2409%
8.4633%	9.5385%	11.2927%	12.9604%	14.5447%	16.0486%	18.3459%	16.1001%	17.3819%	18.5956%	19.7440%	20.8292%	22.5870%	20.8384%	21.7428%	22.5944%	23.3949%
8.9024%	10.0334%	11.8787%	13.6328%	15.2993%	16.8813%	19.2978%	16.9354%	18.2838%	19.5605%	20.7684%	21.9100%	23.7589%	21.9196%	22.8710%	23.7667%	24.6088%
9.3644%	10.5540%	12.4950%	14.3402%	16.0932%	17.7573%	20.2990%	17.8142%	19.2325%	20.5754%	21.8460%	23.0468%	24.9917%	23.0570%	24.0577%	24.9998%	25.8856%
9.8502%	11.1016%	13.1433%	15.0842%	16.9282%	18.6786%	21.3523%	18.7385%	20.2304%	21.6430%	22.9795%	24.2426%	26.2884%	24.2533%	25.3059%	26.2970%	27.2287%
10.3613%	11.6777%	13.8253%	15.8669%	17.8065%	19.6478%	22.4602%	19.7107%	21.2800%	22.7660%	24.1718%	25.5005%	27.6524%	25.5117%	26.6190%	27.6614%	28.6415%
10.8989%	12.2836%	14.5426%	16.6902%	18.7304%	20.6672%	23.6255%	20.7334%	22.3842%	23.9472%	25.4260%	26.8236%	29.0872%	26.8354%	28.0001%	29.0967%	30.1276%
11.4644%	12.9209%	15.2972%	17.5562%	19.7023%	21.7396%	24.8514%	21.8092%	23.5456%	25.1897%	26.7452%	28.2154%	30.5964%	28.2278%	29.4529%	30.6064%	31.6908%
12.0593%	13.5913%	16.0909%	18.4671%	20.7245%	22.8675%	26.1408%	22.9408%	24.7673%	26.4967%	28.1329%	29.6793%	32.1839%	29.6924%	30.9811%	32.1944%	33.3351%
12.6850%	14.2965%	16.9258%	19.4253%	21.7998%	24.0540%	27.4972%	24.1311%	26.0524%	27.8715%	29.5927%	31.2193%	33.8538%	31.2330%	32.5886%	33.8649%	35.0648%
13.3432%	15.0383%	17.8040%	20.4332%	22.9310%	25.3021%	28.9239%	25.3832%	27.4041%	29.3177%	31.1281%	32.8391%	35.6104%	32.8536%	34.2795%	35.6220%	36.8841%
14.0355%	15.8186%	18.7278%	21.4934%	24.1208%	26.6149%	30.4246%	26.7002%	28.8260%	30.8388%	32.7432%	34.5430%	37.4581%	34.5582%	36.0581%	37.4703%	38.7979%
14.7637%	16.6394%	19.6995%	22.6086%	25.3723%	27.9959%	32.0032%	28.0856%	30.3217%	32.4390%	34.4421%	36.3353%	39.4016%	36.3513%	37.9291%	39.4145%	40.8110%
15.5298%	17.5027%	20.7216%	23.7816%	26.6888%	29.4485%	33.6638%	29.5428%	31.8949%	34.1221%	36.2292%	38.2206%	41.4460%	38.2375%	39.8970%	41.4595%	42.9285%
16.3355%	18.4109%	21.7968%	25.0156%	28.0735%	30.9764%	35.4104%	31.0757%	33.5498%	35.8925%	38.1090%	40.2038%	43.5965%	40.2215%	41.9671%	43.6107%	45.1559%
17.1831%	19.3661%	22.9277%	26.3135%	29.5302%	32.5837%	37.2477%	32.6881%	35.2906%	37.7549%	40.0863%	42.2898%	45.8585%	42.3084%	44.1447%	45.8735%	47.4988%
18.0747%	20.3710%	24.1174%	27.6788%	31.0624%	34.2743%	39.1804%	34.3842%	37.1217%	39.7138%	42.1662%	44.4840%	48.2380%	44.5036%	46.4351%	48.2537%	49.9634%
	21.4279%	25.3687%	29.1150%	32.6741%	36.0527%	41.2133%	36.1682%	39.0478%	41.7744%	44.3541%	46.7921%	50.7408%	46.8127%	48.8445%	50.7574%	52.5558%
		26.6850%	30.6257%	34.3694%	37.9233%	43.3517%	38.0448%	41.0738%	43.9419%	46.6554%	49.2200%	53.3736%	49.2417%	51.3788%	53.3910%	55.2827%
			32.2147%	36.1527%	39.8910%	45.6010%	40.0188%	43.2050%	46.2219%	49.0762%	51.7738%	56.1429%	51.7966%	54.0447%	56.1612%	58.1511%
				38.0285%	41.9608%	47.9671%	42.0953%	45.4467%	48.6202%	51.6226%	54.4601%	59.0560%	54.4841%	56.8488%	59.0752%	61.1683%
					44.1380%	50.4559%	44.2794%	47.8048%	51.1429%	54.3011%	57.2859%	62.1201%	57.3111%	59.7985%	62.1404%	64.3421%
						53.0739%	46.5769%	50.2852%	53.7965%	57.1185%	60.2582%	65.3433%	60.2848%	62.9012%	65.3646%	67.6806%
							48.9936%	52.8943%	56.5878%	60.0822%	63.3848%	68.7337%	63.4127%	66.1649%	68.7561%	71.1922%
								55.6388%	59.5239%	63.1996%	66.6736%	72.3000%	66.7029%	69.5980%	72.3236%	74.8861%
									62.6124%	66.4788%	70.1330%	76.0514%	70.1639%	73.2091%	76.0762%	78.7717%
										69.9281%	73.7719%	79.9974%	73.8044%	77.0076%	80.0235%	82.8588%
											77.5996%	84.1482%	77.6338%	81.0033%	84.1756%	87.1580%
												88.5143%	81.6619%	85.2062%	88.5431%	91.6803%
													85.8991%	89.6272%	93.1373%	96.4373%
														94.2776%	97.9698%	101.4410%
															103.0531%	106.7044%
																112.2409%

15-Nov-20	15-Dec-20	15-Jan-21	15-Feb-21	15-Mar-21	15-Apr-21	15-May-21	15-Jun-21	15-Jul-21	15-Aug-21	15-Sep-21	15-Oct-21	15-Nov-21	15-Dec-21	15-Jan-22	15-Feb-22	15-Mar-22
t = 8.42	t = 8.5	t = 8.58	t = 8.67	t = 8.75	t = 8.83	t = 8.92	t = 9	t = 9.08	t = 9.17	t = 9.25	t = 9.33	t = 9.42	t = 9.5	t = 9.58	t = 9.67	t = 9.75
0.7744%	0.8165%	0.7730%	0.7924%	0.8105%	0.8273%	0.8430%	0.8734%	0.8396%	0.8515%	0.8623%	0.8723%	0.8813%	0.9023%	0.8760%	0.8820%	0.8873%
0.8146%	0.8589%	0.8131%	0.8335%	0.8525%	0.8703%	0.8867%	0.9187%	0.8831%	0.8956%	0.9071%	0.9175%	0.9270%	0.9491%	0.9215%	0.9278%	0.9334%
0.8569%	0.9035%	0.8552%	0.8767%	0.8968%	0.9154%	0.9327%	0.9664%	0.9290%	0.9421%	0.9541%	0.9651%	0.9751%	0.9983%	0.9693%	0.9759%	0.9818%
0.9013%	0.9503%	0.8996%	0.9222%	0.9433%	0.9629%	0.9811%	1.0165%	0.9772%	0.9910%	1.0037%	1.0152%	1.0257%	1.0501%	1.0196%	1.0266%	1.0327%
0.9481%	0.9996%	0.9463%	0.9701%	0.9922%	1.0129%	1.0320%	1.0693%	1.0279%	1.0424%	1.0557%	1.0679%	1.0789%	1.1046%	1.0725%	1.0798%	1.0863%
0.9973%	1.0515%	0.9954%	1.0204%	1.0437%	1.0654%	1.0856%	1.1247%	1.0812%	1.0965%	1.1105%	1.1233%	1.1349%	1.1619%	1.1281%	1.1359%	1.1427%
1.0490%	1.1061%	1.0470%	1.0733%	1.0979%	1.1207%	1.1419%	1.1831%	1.1373%	1.1534%	1.1681%	1.1816%	1.1938%	1.2222%	1.1866%	1.1948%	1.2020%
1.1035%	1.1635%	1.1014%	1.1290%	1.1548%	1.1788%	1.2011%	1.2445%	1.1963%	1.2132%	1.2287%	1.2429%	1.2557%	1.2856%	1.2482%	1.2568%	1.2643%
1.1607%	1.2238%	1.1585%	1.1876%	1.2148%	1.2400%	1.2635%	1.3091%	1.2584%	1.2762%	1.2925%	1.3074%	1.3209%	1.3523%	1.3130%	1.3220%	1.3299%
1.2210%	1.2873%	1.2186%	1.2492%	1.2778%	1.3044%	1.3290%	1.3770%	1.3237%	1.3424%	1.3596%	1.3752%	1.3894%	1.4225%	1.3811%	1.3906%	1.3989%
1.2843%	1.3541%	1.2819%	1.3141%	1.3441%	1.3720%	1.3980%	1.4484%	1.3923%	1.4120%	1.4301%	1.4466%	1.4615%	1.4963%	1.4528%	1.4627%	1.4715%
1.3509%	1.4244%	1.3484%	1.3822%	1.4138%	1.4432%	1.4705%	1.5236%	1.4646%	1.4853%	1.5043%	1.5216%	1.5374%	1.5740%	1.5281%	1.5386%	1.5479%
1.4210%	1.4983%	1.4183%	1.4540%	1.4872%	1.5181%	1.5468%	1.6026%	1.5406%	1.5624%	1.5823%	1.6006%	1.6171%	1.6556%	1.6074%	1.6185%	1.6282%
1.4948%	1.5760%	1.4919%	1.5294%	1.5643%	1.5969%	1.6271%	1.6858%	1.6205%	1.6434%	1.6645%	1.6836%	1.7010%	1.7415%	1.6908%	1.7025%	1.7127%
1.5723%	1.6578%	1.5693%	1.6088%	1.6455%	1.6797%	1.7115%	1.7733%	1.7046%	1.7287%	1.7508%	1.7710%	1.7893%	1.8319%	1.7786%	1.7908%	1.8015%
1.6539%	1.7438%	1.6508%	1.6922%	1.7309%	1.7669%	1.8003%	1.8653%	1.7930%	1.8184%	1.8417%	1.8629%	1.8821%	1.9269%	1.8708%	1.8837%	1.8950%
1.7397%	1.8343%	1.7364%	1.7800%	1.8207%	1.8586%	1.8937%	1.9620%	1.8861%	1.9128%	1.9372%	1.9595%	1.9798%	2.0269%	1.9679%	1.9814%	1.9933%
1.8300%	1.9295%	1.8265%	1.8724%	1.9152%	1.9550%	1.9920%	2.0638%	1.9839%	2.0120%	2.0377%	2.0612%	2.0825%	2.1321%	2.0700%	2.0843%	2.0968%
1.9249%	2.0296%	1.9213%	1.9695%	2.0145%	2.0564%	2.0953%	2.1709%	2.0869%	2.1164%	2.1435%	2.1682%	2.1906%	2.2427%	2.1774%	2.1924%	2.2055%
2.0248%	2.1349%	2.0210%	2.0717%	2.1191%	2.1631%	2.2040%	2.2836%	2.1951%	2.2262%	2.2547%	2.2807%	2.3042%	2.3591%	2.2904%	2.3062%	2.3200%
2.1299%	2.2457%	2.1258%	2.1792%	2.2290%	2.2754%	2.3184%	2.4021%	2.3090%	2.3417%	2.3717%	2.3990%	2.4238%	2.4815%	2.4092%	2.4258%	2.4404%
2.2404%	2.3622%	2.2361%	2.2923%	2.3447%	2.3934%	2.4387%	2.5267%	2.4289%	2.4632%	2.4947%	2.5235%	2.5496%	2.6102%	2.5342%	2.5517%	2.5670%
2.3566%	2.4848%	2.3522%	2.4112%	2.4663%	2.5176%	2.5652%	2.6578%	2.5549%	2.5910%	2.6242%	2.6544%	2.6818%	2.7457%	2.6657%	2.6841%	2.7002%
2.4789%	2.6137%	2.4742%	2.5363%	2.5943%	2.6482%	2.6983%	2.7957%	2.6874%	2.7255%	2.7603%	2.7921%	2.8210%	2.8881%	2.8040%	2.8233%	2.8403%
2.6075%	2.7493%	2.6026%	2.6679%	2.7289%	2.7856%	2.8383%	2.9408%	2.8269%	2.8669%	2.9035%	2.9370%	2.9674%	3.0380%	2.9495%	2.9698%	2.9876%
2.7428%	2.8919%	2.7376%	2.8064%	2.8705%	2.9302%	2.9856%	3.0933%	2.9736%	3.0156%	3.0542%	3.0894%	3.1213%	3.1956%	3.1026%	3.1239%	3.1427%
2.8851%	3.0420%	2.8797%	2.9520%	3.0194%	3.0822%	3.1405%	3.2538%	3.1278%	3.1721%	3.2127%	3.2497%	3.2833%	3.3614%	3.2636%	3.2860%	3.3057%
3.0348%	3.1998%	3.0291%	3.1052%	3.1761%	3.2421%	3.3034%	3.4227%	3.2901%	3.3367%	3.3793%	3.4183%	3.4536%	3.5358%	3.4329%	3.4565%	3.4772%
3.1923%	3.3659%	3.1862%	3.2663%	3.3409%	3.4104%	3.4748%	3.6003%	3.4608%	3.5098%	3.5547%	3.5956%	3.6328%	3.7193%	3.6110%	3.6359%	3.6577%
3.3579%	3.5405%	3.3516%	3.4357%	3.5142%	3.5873%	3.6551%	3.7871%	3.6404%	3.6919%	3.7391%	3.7822%	3.8213%	3.9123%	3.7984%	3.8245%	3.8474%
3.5322%	3.7242%	3.5255%	3.6140%	3.6966%	3.7734%	3.8448%	3.9836%	3.8293%	3.8835%	3.9331%	3.9785%	4.0196%	4.1153%	3.9955%	4.0229%	4.0471%
3.7154%	3.9174%	3.7084%	3.8015%	3.8884%	3.9692%	4.0443%	4.1902%	4.0280%	4.0850%	4.1372%	4.1849%	4.2282%	4.3288%	4.2028%	4.2317%	4.2571%
3.9082%	4.1207%	3.9008%	3.9988%	4.0901%	4.1752%	4.2541%	4.4077%	4.2370%	4.2969%	4.3519%	4.4020%	4.4475%	4.5534%	4.4208%	4.4512%	4.4779%
4.1110%	4.3345%	4.1032%	4.2062%	4.3024%	4.3918%	4.4748%	4.6364%	4.4568%	4.5199%	4.5777%	4.6304%	4.6783%	4.7897%	4.6502%	4.6822%	4.7103%
4.3243%	4.5594%	4.3161%	4.4245%	4.5256%	4.6197%	4.7070%	4.8769%	4.6881%	4.7544%	4.8152%	4.8707%	4.9211%	5.0382%	4.8915%	4.9251%	4.9547%
4.5487%	4.7960%	4.5400%	4.6541%	4.7604%	4.8594%	4.9513%	5.1300%	4.9313%	5.0011%	5.0650%	5.1234%	5.1764%	5.2996%	5.1453%	5.1807%	5.2118%
4.7847%	5.0448%	4.7756%	4.8955%	5.0074%	5.1115%	5.2082%	5.3961%	5.1872%	5.2606%	5.3278%	5.3892%	5.4450%	5.5746%	5.4123%	5.4495%	5.4822%
5.0330%	5.3066%	5.0234%	5.1496%	5.2672%	5.3767%	5.4784%	5.6761%	5.4563%	5.5335%	5.6043%	5.6689%	5.7275%	5.8638%	5.6931%	5.7322%	5.7666%
5.2941%	5.5819%	5.2840%	5.4167%	5.5405%	5.6557%	5.7626%	5.9706%	5.7394%	5.8206%	5.8951%	5.9630%	6.0247%	6.1681%	5.9885%	6.0297%	6.0658%
5.5688%	5.8715%	5.5582%	5.6978%	5.8280%	5.9492%	6.0616%	6.2804%	6.0372%	6.1227%	6.2009%	6.2724%	6.3373%	6.4881%	6.2992%	6.3425%	6.3806%
5.8577%	6.1762%	5.8466%	5.9934%	6.1304%	6.2578%	6.3762%	6.6063%	6.3505%	6.4403%	6.5227%	6.5978%	6.6661%	6.8247%	6.6260%	6.6716%	6.7116%
6.1617%	6.4966%	6.1500%	6.3044%	6.4485%	6.5825%	6.7070%	6.9491%	6.6800%	6.7745%	6.8611%	6.9402%	7.0120%	7.1788%	6.9698%	7.0178%	7.0599%
6.4814%	6.8337%	6.4690%	6.6315%	6.7831%	6.9241%	7.0550%	7.3096%	7.0266%	7.1260%	7.2171%	7.3003%	7.3758%	7.5513%	7.3315%	7.3819%	7.4262%
6.8177%	7.1883%	6.8047%	6.9756%	7.1350%	7.2833%	7.4210%	7.6889%	7.3912%	7.4957%	7.5916%	7.6791%	7.7585%	7.9431%	7.7119%	7.7649%	7.8115%
7.1714%	7.5613%	7.1578%	7.3375%	7.5052%	7.6612%	7.8061%	8.0878%	7.7747%	7.8847%	7.9855%	8.0775%	8.1610%	8.3553%	8.1120%	8.1678%	8.2168%
7.5435%	7.9536%	7.5292%	7.7183%	7.8946%	8.0588%	8.2111%	8.5075%	8.1781%	8.2938%	8.3998%	8.4966%	8.5845%	8.7888%	8.5329%	8.5916%	8.6431%
7.9349%	8.3663%	7.9198%	8.1187%	8.3042%	8.4769%	8.6372%	8.9489%	8.6024%	8.7241%	8.8356%	8.9375%	9.0299%	9.2448%	8.9756%	9.0374%	9.0916%
8.3466%	8.8004%	8.3307%	8.5400%	8.7351%	8.9167%	9.0853%	9.4132%	9.0487%	9.1768%	9.2941%	9.4012%	9.4984%	9.7245%	9.4413%	9.5063%	9.5633%
8.7797%	9.2570%	8.7630%	8.9831%	9.1884%	9.3794%	9.5567%	9.9017%	9.5182%	9.6529%	9.7763%	9.8890%	9.9912%	10.2290%	9.9312%	9.9996%	10.0595%
9.2352%	9.7373%	9.2177%	9.4492%	9.6651%	9.8660%	10.0526%	10.4154%	10.0121%	10.1538%	10.2836%	10.4021%	10.5097%	10.7598%	10.4465%	10.5184%	10.5815%
9.7144%	10.2425%	9.6959%	9.9395%	10.1666%	10.3779%	10.5742%	10.9558%	10.5316%	10.6806%	10.8172%	10.9418%	11.0550%	11.3181%	10.9885%	11.0642%	11.1305%
10.2184%	10.7740%	10.1990%	10.4552%	10.6941%	10.9164%	11.1228%	11.5243%	11.0780%	11.2348%	11.3784%	11.5095%	11.6286%	11.9053%	11.5587%	11.6382%	11.7080%
10.7486%	11.3330%	10.7282%	10.9977%	11.2490%	11.4828%	11.6999%	12.1222%	11.6528%	11.8177%	11.9688%	12.1067%	12.2319%	12.5230%	12.1584%	12.2421%	12.3155%
11.3063%	11.9210%	11.2849%	11.5683%	11.8326%	12.0786%	12.3070%	12.7512%	12.2574%	12.4309%	12.5898%	12.7349%	12.8666%	13.1728%	12.7893%	12.8773%	12.9545%
11.8930%	12.5396%	11.8704%	12.1685%	12.4466%	12.7053%	12.9456%	13.4128%	12.8934%	13.0759%	13.2430%	13.3956%	13.5342%	13.8563%	13.4529%	13.5454%	13.6266%
12.5101%	13.1902%	12.4863%	12.7999%	13.0924%	13.3646%	13.6173%	14.1088%	13.5624%	13.7543%	13.9302%	14.0907%	14.2364%	14.5753%	14.1509%	14.2483%	14.3337%
13.1592%	13.8746%	13.1342%	13.4640%	13.7717%	14.0580%	14.3238%	14.8408%	14.2661%	14.4680%	14.6530%	14.8218%	14.9751%	15.3315%	14.8851%	14.9875%	15.0774%
13.8419%	14.5945%	13.8156%	14.1626%	14.4862%	14.7874%	15.0670%	15.6108%	15.0063%	15.2187%	15.4132%	15.5908%	15.7521%	16.1270%	15.6574%	15.7652%	15.8597%
14.5601%	15.3517%	14.5325%	14.8975%	15.2379%	15.5547%	15.8488%	16.4208%	15.7849%	16.0083%	16.2130%	16.3998%	16.5694%	16.9638%	16.4698%	16.5832%	16.6826%
15.3156%	16.1483%	15.2865%	15.6704%	16.0285%	16.3617%	16.6711%	17.2728%	16.6040%	16.8389%	17.0542%	17.2507%	17.4291%	17.8439%	17.3244%	17.4436%	17.5482%
16.1103%	16.9861%	16.0797%	16.4835%	16.8602%	17.2107%	17.5361%	18.1691%	17.4655%	17.7126%	17.9391%	18.1458%	18.3335%	18.7698%	18.2233%	18.3487%	18.4587%
16.9462%	17.8675%	16.9140%	17.3388%	17.7350%	18.1037%	18.4460%	19.1118%	18.3717%	18.6316%	18.8699%	19.0873%	19.2847%	19.7437%	19.1688%	19.3007%	19.4165%
17.8255%	18.7945%	17.7916%	18.2384%	18.6552%	19.0430%	19.4031%	20.1034%	19.3249%	19.5984%	19.8489%	20.0777%	20.2853%	20.7681%	20.1634%	20.3022%	20.4239%
18.7503%	19.7697%	18.7147%	19.1847%	19.6231%	20.0311%	20.4098%	21.1465%	20.3276%	20.6153%	20.8788%	21.1194%	21.3378%	21.8457%	21.2096%	21.3556%	21.4836%
19.7232%	20.7955%	19.6857%	20.1802%	20.6413%	21.0704%	21.4688%	22.2437%	21.3823%	21.6849%	21.9622%	22.2152%	22.4450%	22.9792%	22.3101%	22.4636%	22.5983%
20.7466%	21.8745%	20.7072%	21.2272%	21.7123%	22.1637%	22.5827%	23.3978%	22.4918%	22.8100%	23.1017%	23.3679%	23.6096%	24.1715%	23.4677%	23.6292%	23.7709%
21.8230%	23.0095%	21.7816%	22.3286%	22.8389%	23.3137%	23.7545%	24.6119%	23.6588%	23.9936%	24.3003%	24.5803%	24.8346%	25.4256%	24.6853%	24.8552%	25.0042%
22.9554%	24.2033%	22.9117%	23.4872%	24.0239%	24.5233%	24.9870%	25.8889%	24.8864%	25.2385%	25.5612%	25.8557%	26.1231%	26.7449%	25.9662%	26.1449%	26.3016%
24.1464%	25.4592%	24.1005%	24.7058%	25.2704%	25.7957%	26.2835%	27.2322%	26.1776%	26.5480%	26.8875%	27.1973%	27.4786%	28.1326%	27.3135%	27.5014%	27.6663%
25.3993%	26.7801%	25.3510%	25.9877%	26.5816%	27.1342%	27.6472%	28.6451%	27.5359%	27.9255%	28.2825%	28.6084%	28.9043%	29.5922%	28.7306%	28.9283%	29.1018%
26.7172%	28.1697%	26.6664%	27.3361%	27.9608%	28.5421%	29.0817%	30.1314%	28.9646%	29.3744%	29.7500%	30.0928%	30.4040%	31.1277%	30.2214%	30.4293%	30.6118%
28.1034%	29.6313%	28.0500%	28.7545%	29.4115%	30.0230%	30.5907%	31.6948%	30.4675%	30.8986%	31.2936%	31.6542%	31.9816%	32.7428%	31.7894%	32.0082%	32.2001%
29.5616%	31.1687%	29.5054%	30.2465%	30.9376%	31.5808%	32.1779%	33.3393%	32.0483%	32.5018%	32.9173%	33.2966%	33.6410%	34.4417%	33.4389%	33.6690%	33.8708%
31.0954%	32.7859%	31.0363%	31.8158%	32.5428%	33.2194%	33.8475%	35.0692%	33.7112%	34.1882%	34.6253%	35.0243%	35.3865%	36.2287%	35.1739%	35.4159%	35.6282%
32.7088%	34.4871%	32.6467%	33.4666%	34.2313%	34.9430%	35.6037%	36.8888%	35.4603%	35.9620%	36.4218%	36.8415%	37.2226%	38.1085%	36.9989%	37.2535%	37.4769%
34.4060%	36.2765%	34.3406%	35.2031%	36.0075%	36.7561%	37.4510%	38.8028%	37.3002%	37.8280%	38.3116%	38.7531%	39.1539%	40.0858%	38.9186%	39.1864%	39.4214%
36.1912%	38.1587%	36.1224%	37.0296%	37.8758%	38.6632%	39.3942%	40.8161%	39.2355%	39.7907%	40.2995%	40.7638%	41.1854%	42.1657%	40.9380%	41.2197%	41.4668%
38.0690%	40.1386%	37.9966%	38.9509%	39.8410%	40.6693%	41.4382%	42.9339%	41.2713%	41.8553%	42.3904%	42.8789%	43.3224%	44.3535%	43.0621%	43.3584%	43.6183%
40.0442%	42.2213%	39.9681%	40.9720%	41.9082%	42.7794%	43.5883%	45.1616%	43.4127%	44.0270%	44.5899%	45.1037%	45.5702%	46.6548%	45.2964%	45.6081%	45.8815%
42.1220%	44.4119%	42.0419%	43.0978%	44.0826%	44.9991%	45.8499%	47.5048%	45.6652%	46.3114%	46.9035%	47.4440%	47.9347%	49.0755%	47.6467%	47.9745%	48.2621%
44.3075%	46.7163%	44.2233%	45.3340%	46.3699%	47.3339%	48.2289%	49.9697%	48.0346%	48.7143%	49.3372%	49.9057%	50.4218%	51.6219%	50.1189%	50.4637%	50.7663%
46.6064%	49.1402%	46.5179%	47.6862%	48.7758%	49.7899%	50.7313%	52.5624%	50.5270%	51.2419%	51.8971%	52.4951%	53.0380%	54.3003%	52.7193%	53.0821%	53.4003%
49.0247%	51.6899%	48.9315%	50.1605%	51.3066%	52.3733%	53.3635%	55.2896%	53.1486%	53.9007%	54.5898%	55.2188%	55.7899%	57.1177%	55.4547%	55.8363%	56.1711%
51.5684%	54.3719%	51.4704%	52.7631%	53.9687%	55.0907%	56.1324%	58.1584%	55.9063%	56.6973%	57.4223%	58.0839%	58.6846%	60.0814%	58.3321%	58.7334%	59.0856%
54.2440%	57.1931%	54.1410%	55.5008%	56.7690%	57.9492%	59.0448%	61.1760%	58.8070%	59.6391%	60.4017%	61.0977%	61.7296%	63.1987%	61.3587%	61.7809%	62.1513%
57.0586%	60.1606%	56.9501%	58.3805%	59.7145%	60.9559%	62.1085%	64.3502%	61.8583%	62.7336%	63.5357%	64.2678%	64.9325%	66.4779%	64.5423%	64.9865%	65.3761%
60.0191%	63.2821%	59.9050%	61.4096%	62.8128%	64.1187%	65.3310%	67.6891%	65.0679%	65.9886%	66.8323%	67.6024%	68.3016%	69.9272%	67.8912%	68.3583%	68.7682%
63.1333%	66.5655%	63.0133%	64.5959%	66.0719%	67.4456%	68.7208%	71.2012%	68.4440%	69.4125%	70.3000%	71.1100%	71.8455%	73.5554%	71.4138%	71.9052%	72.3363%
66.4090%	70.0194%	66.2828%	67.9475%	69.5002%	70.9451%	72.2864%	74.8956%	71.9953%	73.0140%	73.9475%	74.7996%	75.5732%	77.3719%	75.1192%	75.6361%	76.0895%
69.8547%	73.6524%	69.7219%	71.4731%	73.1062%	74.6261%	76.0371%	78.7816%	75.7309%	76.8024%	77.7844%	78.6807%	79.4944%	81.3864%	79.0168%	79.5605%	80.0375%
73.4792%	77.4739%	73.3395%	75.1815%	76.8994%	78.4982%	79.9824%	82.8693%	79.6602%	80.7874%	81.8203%	82.7631%	83.6191%	85.6093%	83.1167%	83.6886%	84.1904%
77.2917%	81.4937%	77.1448%	79.0824%	80.8894%	82.5711%	84.1323%	87.1690%	83.7935%	84.9791%	86.0657%	87.0574%	87.9577%	90.0512%	87.4293%	88.0309%	88.5587%
81.3021%	85.7221%	81.1476%	83.1857%	85.0865%	86.8554%	88.4976%	91.6919%	88.1412%	89.3884%	90.5313%	91.5744%	92.5215%	94.7236%	91.9656%	92.5985%	93.1536%
85.5205%	90.1699%	85.3580%	87.5018%	89.5013%	91.3620%	93.0894%	96.4494%	92.7145%	94.0264%	95.2286%	96.3259%	97.3221%	99.6384%	96.7374%	97.4030%	97.9870%
89.9579%	94.8485%	89.7869%	92.0420%	94.1452%	96.1024%	97.9195%	101.4538%	97.5251%	98.9051%	100.1696%	101.3239%	102.3718%	104.8083%	101.7567%	102.4569%	103.0712%
94.6254%	99.7698%	94.4456%	96.8177%	99.0300%	101.0888%	103.0001%	106.7178%	102.5853%	104.0368%	105.3670%	106.5812%	107.6834%	110.2464%	107.0365%	107.7730%	108.4191%
99.5352%	104.9465%	99.3460%	101.8412%	104.1683%	106.3339%	108.3444%	112.2550%	107.9080%	109.4349%	110.8341%	112.1112%	113.2707%	115.9666%	112.5902%	113.3649%	114.0446%
104.6996%	110.3917%	104.5007%	107.1253%	109.5731%	111.8512%	113.9660%	118.0795%	113.5070%	115.1131%	116.5848%	117.9282%	119.1479%	121.9837%	118.4320%	119.2470%	119.9619%
110.1321%	116.1195%	109.9228%	112.6836%	115.2585%	117.6547%	119.8792%	124.2061%	119.3964%	121.0858%	122.6340%	124.0471%	125.3300%	128.3129%	124.5770%	125.4342%	126.1862%
115.8464%	122.1445%	115.6263%	118.5303%	121.2388%	123.7593%	126.0993%	130.6507%	125.5914%	127.3685%	128.9970%	130.4834%	131.8329%	134.9706%	131.0408%	131.9425%	132.7335%
121.8572%	128.4821%	121.6257%	124.6804%	127.5294%	130.1807%	132.6421%	137.4297%	132.1078%	133.9771%	135.6901%	137.2537%	138.6732%	141.9737%	137.8400%	138.7885%	139.6206%
	135.1485%	127.9363%	131.1496%	134.1464%	136.9353%	139.5243%	144.5604%	138.9624%	140.9287%	142.7305%	144.3752%	145.8684%	149.3401%	144.9920%	145.9897%	146.8649%
		134.5744%	137.9544%	141.1067%	144.0403%	146.7637%	152.0610%	146.1726%	148.2409%	150.1363%	151.8663%	153.4369%	157.0888%	152.5150%	153.5645%	154.4852%
			145.1123%	148.4282%	151.5140%	154.3787%	159.9509%	153.7569%	155.9326%	157.9262%	159.7460%	161.3981%	165.2395%	160.4284%	161.5324%	162.5008%
				156.1295%	159.3755%	162.3888%	168.2501%	161.7348%	164.0233%	166.1204%	168.0346%	169.7725%	173.8131%	168.7524%	169.9136%	170.9323%
					167.6448%	170.8145%	176.9799%	170.1266%	172.5338%	174.7398%	176.7533%	178.5813%	182.8316%	177.5083%	178.7298%	179.8013%
						179.6774%	186.1627%	178.9538%	181.4859%	183.8063%	185.9243%	187.8472%	192.3180%	186.7185%	188.0034%	189.1305%
							195.8220%	188.2390%	190.9025%	193.3433%	195.5712%	197.5938%	202.2966%	196.4066%	197.7581%	198.9438%
								198.0060%	200.8077%	203.3751%	205.7186%	207.8462%	212.7930%	206.5974%	208.0190%	209.2662%
									211.2268%	213.9275%	216.3925%	218.6305%	223.8340%	217.3169%	218.8123%	220.1242%
										225.0273%	227.6203%	229.9744%	235.4479%	228.5926%	230.1656%	231.5456%
											239.4306%	241.9069%	247.6644%	240.4534%	242.1080%	243.5595%
												254.4585%	260.5147%	252.9296%	254.6700%	256.1969%
													274.0318%	266.0531%	267.8839%	269.4899%
														279.8576%	281.7833%	283.4727%
															296.4039%	298.1810%
																313.6524%

15-Apr-22	15-May-22	15-Jun-22
t = 9.83	t = 9.92	t = 10
0.8919%	0.8958%	0.8253%
0.9382%	0.9423%	0.8682%
0.9869%	0.9912%	0.9132%
1.0381%	1.0426%	0.9606%
1.0919%	1.0967%	1.0104%
1.1486%	1.1536%	1.0629%
1.2082%	1.2135%	1.1180%
1.2709%	1.2764%	1.1760%
1.3368%	1.3426%	1.2370%
1.4062%	1.4123%	1.3012%
1.4791%	1.4856%	1.3687%
1.5559%	1.5627%	1.4398%
1.6366%	1.6438%	1.5145%
1.7215%	1.7290%	1.5930%
1.8108%	1.8188%	1.6757%
1.9048%	1.9131%	1.7626%
2.0036%	2.0124%	1.8541%
2.1076%	2.1168%	1.9503%
2.2169%	2.2266%	2.0515%
2.3320%	2.3422%	2.1579%
2.4530%	2.4637%	2.2699%
2.5802%	2.5915%	2.3877%
2.7141%	2.7260%	2.5116%
2.8549%	2.8674%	2.6419%
3.0031%	3.0162%	2.7790%
3.1589%	3.1727%	2.9231%
3.3228%	3.3373%	3.0748%
3.4952%	3.5105%	3.2344%
3.6765%	3.6926%	3.4022%
3.8673%	3.8842%	3.5787%
4.0680%	4.0858%	3.7644%
4.2790%	4.2978%	3.9597%
4.5011%	4.5207%	4.1651%
4.7346%	4.7553%	4.3813%
4.9803%	5.0020%	4.6086%
5.2387%	5.2616%	4.8477%
5.5105%	5.5346%	5.0992%
5.7964%	5.8218%	5.3638%
6.0971%	6.1238%	5.6421%
6.4135%	6.4416%	5.9349%
6.7463%	6.7758%	6.2428%
7.0963%	7.1274%	6.5667%
7.4645%	7.4972%	6.9074%
7.8518%	7.8862%	7.2658%
8.2592%	8.2953%	7.6428%
8.6877%	8.7258%	8.0394%
9.1385%	9.1785%	8.4565%
9.6127%	9.6547%	8.8953%
10.1114%	10.1557%	9.3569%
10.6361%	10.6826%	9.8423%
11.1880%	11.2369%	10.3530%
11.7685%	11.8199%	10.8902%
12.3791%	12.4332%	11.4553%
13.0214%	13.0783%	12.0496%
13.6970%	13.7569%	12.6748%
14.4077%	14.4707%	13.3325%
15.1552%	15.2216%	14.0242%
15.9416%	16.0113%	14.7519%
16.7687%	16.8421%	15.5173%
17.6388%	17.7160%	16.3225%
18.5540%	18.6352%	17.1694%
19.5167%	19.6021%	18.0602%
20.5293%	20.6192%	18.9973%
21.5945%	21.6890%	19.9830%
22.7150%	22.8144%	21.0198%
23.8936%	23.9981%	22.1105%
25.1333%	25.2433%	23.2577%
26.4374%	26.5531%	24.4644%
27.8091%	27.9308%	25.7338%
29.2520%	29.3800%	27.0690%
30.7698%	30.9044%	28.4735%
32.3663%	32.5079%	29.9509%
34.0457%	34.1947%	31.5049%
35.8122%	35.9689%	33.1396%
37.6703%	37.8352%	34.8591%
39.6249%	39.7983%	36.6678%
41.6809%	41.8633%	38.5704%
43.8435%	44.0354%	40.5716%
46.1184%	46.3202%	42.6767%
48.5113%	48.7236%	44.8910%
51.0284%	51.2517%	47.2203%
53.6760%	53.9109%	49.6703%
56.4611%	56.7081%	52.2475%
59.3906%	59.6505%	54.9585%
62.4722%	62.7455%	57.8100%
65.7136%	66.0011%	60.8096%
69.1232%	69.4257%	63.9647%
72.7098%	73.0279%	67.2836%
76.4824%	76.8170%	70.7747%
80.4508%	80.8028%	74.4469%
84.6250%	84.9953%	78.3097%
89.0159%	89.4054%	82.3729%
93.6346%	94.0443%	86.6469%
98.4929%	98.9239%	91.1426%
103.6033%	104.0566%	95.8717%
108.9789%	109.4557%	100.8461%
114.6334%	115.1349%	106.0786%
120.5812%	121.1088%	111.5826%
126.8377%	127.3927%	117.3722%
133.4188%	134.0026%	123.4621%
140.3414%	140.9555%	129.8681%
147.6232%	148.2691%	136.6065%
155.2828%	155.9622%	143.6944%
163.3398%	164.0545%	151.1502%
171.8148%	172.5666%	158.9928%
180.7296%	181.5204%	167.2423%
190.1070%	190.9388%	175.9198%
199.9709%	200.8459%	185.0476%
210.3466%	211.2670%	194.6490%
221.2607%	222.2288%	204.7486%
232.7410%	233.7594%	215.3722%
244.8170%	245.8882%	226.5470%
257.5196%	258.6464%	238.3016%
270.8813%	272.0665%	250.6661%
284.9363%	286.1830%	263.6722%
299.7205%	301.0319%	277.3531%
315.2718%	316.6513%	291.7439%
331.6300%	333.0811%	306.8813%
	350.3633%	322.8042%
		339.5532%

APPENDIX I: FINAL BOND VALUATION MODELS FOR DETERMINING OAS

I1. 2021 USD NOTES FINAL VALUATION MODEL

Refer to following pages.

I1. 2018 EURO NOTES FINAL VALUATION MODEL

Refer to following pages.

I1. 2021 NOTES FINAL VALUATION MODEL

Refer to following pages.

I1. 2021 NOTES FINAL VALUATION MODEL

Refer to following pages.

Final 2021 notes valuation

date	15-Apr-11	15-May-11	15-Jun-11	15-Jul-11	15-Aug-11	15-Sep-11	15-Oct-11	15-Nov-11	15-Dec-11	15-Jan-12	15-Feb-12	15-Mar-12	15-Apr-12	15-May-12	15-Jun-12
Final valuation model 2021 USD notes				**OAS included:**	**329.3329 bps**										
	t = 0.08	t = 0.17	t = 0.25	t = 0.33	t = 0.42	t = 0.5	t = 0.58	t = 0.67	t = 0.75	t = 0.83	t = 0.92	t = 1	t = 1.08	t = 1.17	t = 1.25
Callable value															
Cash flows	-	-	-	-	-	-	3.3125	-	-	-	-	-	3.3125	-	-
j = 1	100.00002	100.75568	101.51054	102.26465	103.01784	103.76975	101.20745	101.94588	102.68212	103.41648	104.14946	104.88179	102.30185	103.02513	103.74943
j = 2	-	99.79821	100.56408	101.32939	102.09400	102.85754	100.30709	101.05760	101.80617	102.55316	103.29913	104.04485	101.47877	102.21640	102.95562
j = 3	-	-	99.59066	100.36703	101.14287	101.91784	99.37900	100.14130	100.90187	101.66112	102.41966	103.17830	100.62556	101.37698	102.13051
j = 4	-	-	-	99.37773	100.16468	100.95092	98.42354	99.19741	99.96976	100.74099	101.51177	102.28297	99.74316	100.50789	101.27521
j = 5	-	-	-	-	99.15955	99.95696	97.44090	98.22622	99.01017	99.79320	100.57599	101.35947	98.83228	99.60996	100.39066
j = 6	-	-	-	-	-	98.93604	96.43120	97.22787	98.02331	98.81800	99.61265	100.40823	97.89344	98.68382	99.47759
j = 7	-	-	-	-	-	-	95.39450	96.20244	97.00928	97.81553	98.62194	99.42951	96.92697	97.72987	98.53651
j = 8	-	-	-	-	-	-	-	95.14995	95.96813	96.78587	97.60396	98.42342	95.93305	96.74836	97.56774
j = 9	-	-	-	-	-	-	-	-	94.89987	95.72903	96.55873	97.39003	94.91176	95.73941	96.57145
j = 10	-	-	-	-	-	-	-	-	-	94.64504	95.48628	96.32935	93.86312	94.70306	95.54771
j = 11	-	-	-	-	-	-	-	-	-	-	94.38661	95.24138	92.78714	93.63931	94.49653
j = 12	-	-	-	-	-	-	-	-	-	-	-	94.12617	91.68383	92.54817	93.41790
j = 13	-	-	-	-	-	-	-	-	-	-	-	-	90.55322	91.42965	92.31183
j = 14	-	-	-	-	-	-	-	-	-	-	-	-	-	90.28382	91.17835
j = 15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90.01754
j = 16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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j = 32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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j = 41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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j = 52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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j = 60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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j = 66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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j = 75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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j = 77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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j = 84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
j = 120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

15-Jul-12	15-Aug-12	15-Sep-12	15-Oct-12	15-Nov-12	15-Dec-12	15-Jan-13	15-Feb-13	15-Mar-13	15-Apr-13	15-May-13	15-Jun-13	15-Jul-13	15-Aug-13	15-Sep-13	15-Oct-13
t = 1.33	t = 1.42	t = 1.5	t = 1.58	t = 1.67	t = 1.75	t = 1.83	t = 1.92	t = 2	t = 2.08	t = 2.17	t = 2.25	t = 2.33	t = 2.42	t = 2.5	t = 2.58
-	-	-	3.3125	-	-	-	-	-	3.3125	-	-	-	-	-	3.3125
104.47459	105.20033	105.92626	103.33938	104.05266	104.76424	105.47339	106.17936	106.88135	104.26601	104.94559	105.61930	106.28705	106.94877	107.60446	104.94162
103.69629	104.43815	105.18080	102.61124	103.34234	104.07226	104.80025	105.52547	106.24705	103.65156	104.35102	105.04469	105.73238	106.41399	107.08945	104.44625
102.88605	103.64337	104.40208	101.84920	102.59749	103.34519	104.09153	104.83562	105.57653	103.00076	103.72011	104.43390	105.14186	105.84379	106.53955	103.91656
102.04505	102.81721	103.59134	101.05447	101.81927	102.58409	103.34813	104.11051	104.87025	102.31381	103.05278	103.78657	104.51482	105.23727	105.95369	103.35141
101.17434	101.96082	102.74981	100.22833	101.00898	101.79023	102.57129	103.35127	104.12919	101.59147	102.34955	103.10291	103.85119	104.59404	105.33116	102.74982
100.27475	101.07516	101.87854	99.37194	100.16787	100.96493	101.76234	102.55923	103.35461	100.83492	101.61141	102.38373	103.15149	103.91431	104.67185	102.11132
99.34692	100.16097	100.97839	98.48628	99.29703	100.10938	100.92257	101.73574	102.54792	100.04553	100.83971	101.63025	102.41678	103.19892	103.97632	101.43616
98.39124	99.21873	100.04998	97.57209	98.39734	99.22459	100.05311	100.88205	101.71044	99.22473	100.03590	100.84392	101.64846	102.44916	103.24569	100.72522
97.40794	98.24878	99.09371	96.62987	97.46939	98.31129	99.15482	99.99915	100.84331	98.37377	99.20134	100.02621	100.84805	101.66656	102.48143	99.97986
96.39714	97.25125	98.10980	95.65991	96.51359	97.36997	98.22832	99.08779	99.94742	97.49368	98.33722	99.17840	100.01696	100.85262	101.68511	99.20168
95.35886	96.22621	97.09833	94.66235	95.53013	96.40092	97.27398	98.14845	99.02337	96.58520	97.44440	98.30154	99.15638	100.00868	100.85820	98.39224
94.29309	95.17365	96.05933	93.63723	94.51908	95.40425	96.29197	97.18139	98.07152	95.64879	96.52349	97.39637	98.26721	99.13578	100.00191	97.55290
93.19983	94.09356	94.99276	92.58454	93.48045	94.37999	95.28238	96.18673	97.09204	94.68472	95.57484	96.46335	97.35002	98.23468	99.11714	96.68474
92.07908	92.98592	93.89861	91.50424	92.41420	93.32810	94.24516	95.16446	96.08497	93.69306	94.59859	95.50269	96.40515	97.30579	98.20445	95.78849
90.93090	91.85077	92.77689	90.39633	91.32030	92.24856	93.18028	94.11454	95.05027	92.67380	93.59476	94.51447	95.43273	96.34935	97.26417	94.86456
89.75541	90.68819	91.62764	89.26082	90.19874	91.14132	92.08770	93.03691	93.98788	91.62688	92.56330	93.49867	94.43276	95.36538	96.29639	93.91315
-	89.49831	90.45097	88.09778	89.04957	90.00640	90.96739	91.93154	92.89774	90.55223	91.50414	92.45519	93.40516	94.35385	95.30110	92.93428
-	-	89.24704	86.90734	87.87288	88.84386	89.81938	90.79842	91.77982	89.44980	90.41719	91.38395	92.34983	93.31464	94.27820	91.92788
-	-	-	85.68971	86.66883	87.65382	88.64377	89.63761	90.63415	88.31957	89.30242	90.28488	91.26670	92.24767	93.22759	90.89383
-	-	-	-	85.43765	86.43648	87.44069	88.44920	89.46078	87.16158	88.15983	89.15796	90.15571	91.15284	92.14916	89.83201
-	-	-	-	-	85.19208	86.21037	87.23339	88.25988	85.97593	86.98949	88.00322	89.01684	90.03012	91.04284	88.74233
-	-	-	-	-	-	84.95311	85.99042	87.03163	84.76278	85.79151	86.82073	87.85015	88.87951	89.90860	87.62474
-	-	-	-	-	-	-	84.72063	85.77632	83.52238	84.56609	85.61065	86.65574	87.70109	88.74648	86.47922
-	-	-	-	-	-	-	-	84.49433	82.25504	83.31351	84.37321	85.43380	86.49500	87.55658	85.30583
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15-Nov-13	15-Dec-13	15-Jan-14	15-Feb-14	15-Mar-14	15-Apr-14	15-May-14	15-Jun-14	15-Jul-14	15-Aug-14	15-Sep-14	15-Oct-14	15-Nov-14	15-Dec-14	15-Jan-15	15-Feb-15
t = 2.67	t = 2.75	t = 2.83	t = 2.92	t = 3	t = 3.08	t = 3.17	t = 3.25	t = 3.33	t = 3.42	t = 3.5	t = 3.58	t = 3.67	t = 3.75	t = 3.83	t = 3.92
-	-	-	-	-	3.3125	-	-	-	-	-	3.3125	-	-	-	-
105.57294	106.19827	106.81761	107.43089	108.03798	105.32617	105.90769	106.48183	107.04789	107.60508	108.15263	105.37733	105.89087	106.39331	106.88481	107.36602
105.09694	105.74156	106.38018	107.01287	107.63967	104.94807	105.55039	106.14629	106.73523	107.31657	107.88952	105.14072	105.68134	106.21100	106.72906	107.23523
104.58718	105.25154	105.90975	106.56189	107.20811	104.53603	105.15800	105.77406	106.38393	106.98721	107.58335	104.85917	105.42571	105.98260	106.52884	107.06344
104.04255	104.72732	105.40575	106.07792	106.74394	104.09149	104.73287	105.36838	105.99796	106.62144	107.23858	104.53647	105.12630	105.70810	106.28094	106.84375
103.46187	104.16760	104.86694	105.55986	106.24644	103.61429	104.27556	104.93073	105.57983	106.22283	106.85968	104.17776	104.78841	105.39217	105.98850	106.57662
102.84435	103.57129	104.29197	105.00627	105.71416	103.10316	103.78517	104.46080	105.13001	105.79284	106.44930	103.78692	104.41707	105.04077	105.65783	106.26788
102.18987	102.93789	103.67998	104.41595	105.14564	102.55647	103.26006	103.95707	104.64739	105.33096	106.00778	103.36538	104.01503	104.65807	105.29454	105.92437
101.49900	102.26764	103.03084	103.78834	104.53991	101.97289	102.69859	103.41774	104.13009	104.83546	105.53374	102.91239	103.58242	104.24540	104.90141	105.55054
100.77296	101.56149	102.34517	103.12371	103.89684	101.35183	102.09974	102.84136	103.57632	104.30431	105.02508	102.42594	103.11759	103.80171	104.47833	105.14752
100.01327	100.82087	101.62423	102.42306	103.21711	100.69359	101.46335	102.22730	102.98498	103.73595	104.47983	101.90380	102.61819	103.32473	104.02333	104.71396
99.22158	100.04746	100.86966	101.68793	102.50204	99.99924	100.79016	101.57588	102.35590	103.12971	103.89682	101.34428	102.08207	102.81200	103.53379	104.24726
98.39939	99.24287	100.08315	100.92005	101.75337	99.27040	100.08159	100.88826	101.68989	102.48594	103.27588	100.74668	101.50799	102.26170	103.00741	103.74475
97.54796	98.40852	99.26628	100.12111	100.97286	98.50888	99.33945	100.16614	100.98846	101.80589	102.61788	100.11140	100.89579	101.67311	102.44284	103.20449
96.66816	97.54546	98.42029	99.29254	100.16213	97.71644	98.56560	99.41144	100.25352	101.09136	101.92445	99.43977	100.24641	101.04666	101.83995	102.62570
95.76057	96.65444	97.54608	98.43544	99.32245	96.89456	97.76169	98.62597	99.48700	100.34437	101.19760	98.73371	99.56159	100.38379	101.19976	102.00890
94.82547	95.73585	96.64421	97.55051	98.45472	96.04433	96.92903	97.81125	98.69063	99.56680	100.43935	97.99534	98.84345	99.68656	100.52414	101.35563
93.86295	94.78985	95.71493	96.63814	97.55948	95.16644	96.06850	96.96837	97.86571	98.76020	99.65146	97.22662	98.09412	98.95718	99.81534	100.66808
92.87297	93.81646	94.75831	95.69848	96.63696	94.26127	95.18063	96.09802	97.01313	97.92566	98.83528	96.42912	97.31540	98.19768	99.07556	99.94858
91.85540	92.81557	93.77428	94.73149	95.68720	93.32892	94.26561	95.20054	96.13339	97.06387	97.99167	95.60396	96.50865	97.40968	98.30667	99.19924
90.81014	91.78706	92.76271	93.73707	94.71011	92.36936	93.32348	94.27601	95.22667	96.17513	97.12111	94.75177	95.67474	96.59428	97.51005	98.42170
89.73704	90.73078	91.72346	92.71505	93.70554	91.38244	92.35410	93.32438	94.29295	95.25951	96.22375	93.87285	94.81410	95.75210	96.68654	97.61707
88.63604	89.64661	90.65638	91.66529	92.67332	90.36798	91.35732	92.34546	93.33209	94.31690	95.29955	92.96723	93.92687	94.88341	95.83655	96.78594
87.50709	88.53450	89.56138	90.58765	91.61330	89.32582	90.33293	91.33906	92.34391	93.34711	94.34835	92.03477	93.01296	93.98820	94.96018	95.92855
86.35020	87.39442	88.43839	89.48205	90.52536	88.25581	89.28077	90.30501	91.32818	92.34993	93.36992	91.07528	92.07219	93.06632	94.05732	95.04485
85.16547	86.22641	87.28743	88.34845	89.40943	87.15785	88.20070	89.24312	90.28472	91.32515	92.36403	90.08850	91.10431	92.11752	93.12775	94.13465
83.95302	85.03057	86.10855	87.18687	88.26549	86.03187	87.09264	88.15327	89.21338	90.27259	91.33049	89.07421	90.10908	91.14154	92.17121	93.19770
82.71310	83.80708	84.90188	85.99740	87.09358	84.87790	85.95655	87.03541	88.11406	89.19209	90.26911	88.03220	89.08627	90.13815	91.18743	92.23372
81.44599	82.55619	83.66763	84.78019	85.89382	83.69598	84.79245	85.88950	86.98668	88.08358	89.17978	86.96233	88.03569	89.10711	90.17616	91.24243
80.15208	81.27823	82.40607	83.53548	84.66639	82.48626	83.60044	84.71559	85.83126	86.94702	88.06240	85.86447	86.95719	88.04825	89.13720	90.22360
78.83184	79.97361	81.11756	82.26357	83.41155	81.24894	82.38067	83.51380	84.64787	85.78242	86.91698	84.73857	85.85068	86.96143	88.07036	89.17702
77.48583	78.64284	79.80256	80.96485	82.12962	79.98432	81.13338	82.28431	83.43664	84.58988	85.74354	83.58463	84.71610	85.84657	86.97554	88.10254
76.11469	77.28650	78.46159	79.63980	80.82105	78.69275	79.85887	81.02738	82.19778	83.36955	84.54220	82.40271	83.55349	84.70365	85.85267	87.00005
-	75.90529	77.09528	78.28900	79.48633	77.37470	78.55756	79.74335	80.93157	82.12168	83.31315	81.19295	82.36292	83.53270	84.70174	85.86951
-	-	75.70437	76.91310	78.12608	76.03071	77.22991	78.43265	79.63839	80.84657	82.05664	79.95555	81.14455	82.33382	83.52280	84.71092
-	-	-	75.51288	76.74099	74.66141	75.87652	77.09580	78.31869	79.54461	80.77301	78.69079	79.89861	81.10721	82.31598	83.52436
-	-	-	-	75.33187	73.26755	74.49805	75.73340	76.97301	78.21631	79.46268	77.39904	78.62541	79.85310	81.08149	82.30997
-	-	-	-	-	71.84997	73.09528	74.34616	75.60200	76.86222	78.12618	76.08076	77.32534	78.57183	79.81958	81.06798
-	-	-	-	-	-	71.66908	72.93488	74.20641	75.48303	76.76411	74.73649	75.99888	77.26381	78.53063	79.79867
-	-	-	-	-	-	-	71.50050	72.78707	74.07951	75.37717	73.36687	74.64659	75.92955	77.21507	78.50244
-	-	-	-	-	-	-	-	71.34493	72.65254	73.96617	71.97263	73.26916	74.56966	75.87343	77.17974
-	-	-	-	-	-	-	-	-	71.20311	72.53203	70.55462	71.86734	73.18483	74.50634	75.83114
-	-	-	-	-	-	-	-	-	-	71.07577	69.11378	70.44202	71.77586	73.11454	74.45730
-	-	-	-	-	-	-	-	-	-	-	67.65118	68.99417	70.34365	71.69885	73.05896
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-	-	-	-	-	-	-	-	-	-	-	-	-	67.41371	68.79966	70.19238
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15-Mar-15	15-Apr-15	15-May-15	15-Jun-15	15-Jul-15	15-Aug-15	15-Sep-15	15-Oct-15	15-Nov-15	15-Dec-15	15-Jan-16	15-Feb-16	15-Mar-16	15-Apr-16	15-May-16	15-Jun-16
t = 4	t = 4.08	t = 4.17	t = 4.25	t = 4.33	t = 4.42	t = 4.5	t = 4.58	t = 4.67	t = 4.75	t = 4.83	t = 4.92	t = 5	t = 5.08	t = 5.17	t = 5.25
													106.63	103.87	104.42
-	3.3125	-	-	-	-	-	3.3125	-	-	-	-	-	3.3125	-	-
107.83802	104.98982	105.43528	105.87640	106.31449	106.75043	107.18457	104.30448	104.72236	105.13842	105.55261	105.96487	106.37514	103.47089	103.86508	104.41717
107.72968	104.90064	105.36143	105.81431	106.26126	106.70408	107.14413	104.26960	104.69280	105.11407	105.53337	105.95063	106.36581	103.46633	103.86508	104.41717
107.58564	104.78255	105.26620	105.73811	106.19986	106.65357	107.10155	104.23330	104.66202	105.08872	105.51334	105.93581	106.35608	103.46159	103.86508	104.41717
107.39534	104.62207	105.13469	105.63351	106.11868	106.59124	107.05314	104.19453	104.62998	105.06233	105.49248	105.92038	106.34596	103.45666	103.86508	104.41717
107.15553	104.41152	104.95476	105.48488	106.00067	106.50143	106.98725	104.14695	104.59468	105.03485	105.47077	105.90432	106.33542	103.45152	103.86508	104.41717
106.87038	104.15202	104.72309	105.28344	105.83150	106.36557	106.88409	104.07352	104.54534	105.00236	105.44816	105.88759	106.32444	103.44617	103.86508	104.41717
106.54742	103.85085	104.44529	105.03134	105.60788	106.17344	106.72619	103.95152	104.45860	104.94710	105.41682	105.87017	106.31301	103.44059	103.86508	104.41717
106.19285	103.51583	104.13034	104.73769	105.33739	105.92869	106.51046	103.76863	104.31218	104.83997	105.34897	105.83637	106.30111	103.43479	103.86508	104.41717
105.80941	103.15162	103.78500	104.41140	105.03076	105.64287	106.24734	103.53097	104.10358	104.66531	105.21390	105.74608	106.25726	103.42874	103.86508	104.41717
105.39667	102.75906	103.41183	104.05715	104.69517	105.32598	105.94958	103.25334	103.84762	104.43376	105.01091	105.57777	106.13241	103.35927	103.86508	104.40867
104.95231	102.33643	103.01001	103.67541	104.33283	104.98247	105.62450	102.94659	103.55922	104.16445	104.76204	105.35155	105.93234	103.19103	103.73819	104.27376
104.47345	101.88083	102.57687	103.26406	103.94249	104.61231	105.27376	102.61458	103.24521	103.86822	104.48369	105.09158	105.69166	102.97099	103.54029	104.09986
103.95762	101.38936	102.10927	102.81989	103.52114	104.21302	104.89566	102.25676	102.90656	103.54796	104.18124	104.80663	105.42427	102.72167	103.30985	103.88983
103.40337	100.85993	101.60454	102.33977	103.06535	103.78107	104.48687	101.87029	102.54120	103.20271	103.85511	104.49875	105.13395	102.44851	103.05364	103.65105
102.81060	100.29176	101.06116	101.82148	102.57225	103.31308	104.04367	101.45133	102.14549	102.82931	103.50298	104.16676	104.82102	102.15363	102.77580	103.38976
102.18043	99.68542	100.47904	101.26418	102.04024	102.80667	103.56297	100.99624	101.71538	102.42359	103.12082	103.80716	104.48280	101.83558	102.47649	103.10807
101.51485	99.04257	99.85941	100.66853	101.46927	102.26101	103.04310	100.50248	101.24757	101.98160	102.70427	103.41538	104.11491	101.49046	102.15265	102.80417
100.81625	98.36556	99.20443	100.03635	100.86070	101.67682	102.48404	99.96919	100.74028	101.50066	102.24978	102.98721	103.71263	101.11335	101.79949	102.47375
100.08695	97.65685	98.51661	99.37013	100.21682	101.05609	101.88728	99.39722	100.19356	100.97988	101.75549	102.51978	103.27216	100.69968	101.41191	102.11150
99.32885	96.91860	97.79838	98.67245	99.54033	100.40147	101.25530	98.78870	99.60904	100.42021	101.22150	102.01217	102.79153	100.24641	100.98587	101.71251
98.54335	96.15251	97.05170	97.94559	98.83374	99.71569	100.59096	98.14649	98.98941	99.82401	100.64961	101.46549	102.27092	99.75263	100.51927	101.27352
97.73126	95.35966	96.27797	97.19123	98.09908	99.00110	99.89689	97.47346	98.33770	99.19432	100.04274	100.88230	101.71232	99.21957	100.01238	100.79361
96.89298	94.54063	95.47798	96.41046	97.33773	98.25943	99.17516	96.77204	97.65666	98.53417	99.40409	100.26587	101.11890	98.65004	99.46741	100.27420
96.02856	93.69561	94.65209	95.60383	96.55049	97.49172	98.42717	96.04398	96.94841	97.84608	98.73655	99.61938	100.49407	98.04756	98.88780	99.71837
95.13786	92.82453	93.80033	94.77149	95.73766	96.69851	97.65367	95.29031	96.21434	97.13179	98.04229	98.94543	99.84082	97.41550	98.27717	99.12990
94.22064	91.92716	92.92252	93.91333	94.89924	95.87989	96.85493	94.51152	95.45517	96.39233	97.32266	98.24580	99.16138	96.75651	97.63866	98.51232
93.27661	91.00323	92.01839	93.02910	94.03500	95.03572	96.03089	93.70766	94.67112	95.62813	96.57836	97.52146	98.45708	96.07237	96.97451	97.86839
92.30549	90.05244	91.08762	92.11849	93.14466	94.16573	95.18132	92.87856	93.86209	94.83921	95.80956	96.77279	97.72856	95.36403	96.28603	97.19987
91.30701	89.07450	90.12993	91.18119	92.22789	93.26959	94.30590	92.02392	93.02783	94.02535	95.01612	95.99978	96.97596	94.63182	95.57382	96.50766
90.28093	88.06914	89.14501	90.21689	91.28435	92.34696	93.40428	91.14339	92.16798	93.18623	94.19775	95.20217	96.19909	93.87567	94.83794	95.79202
89.22707	87.03615	88.13261	89.22530	90.31375	91.39750	92.47610	90.23660	91.28217	92.32147	93.35408	94.37960	95.39763	93.09528	94.07818	95.05284
88.14528	85.97534	87.09253	88.20618	89.31581	90.42092	91.52105	89.30321	90.37004	91.43069	92.48471	93.53169	94.57119	92.29030	93.29419	94.28980
87.03547	84.88659	86.02459	87.15933	88.29029	89.41695	90.53882	88.34289	89.43124	90.51352	91.58927	92.65803	93.71935	91.46029	92.48556	93.50251
85.89762	83.76983	84.92869	86.08459	87.23700	88.38537	89.52917	87.35537	88.46545	89.56962	90.66738	91.75824	92.84171	90.60485	91.65185	92.69053
84.73174	82.62503	83.80475	84.98187	86.15581	87.32600	88.49188	86.34039	87.47241	88.59869	89.71872	90.83195	91.93790	89.72357	90.79264	91.85341
83.53793	81.45225	82.65279	83.85111	85.04662	86.23870	87.42678	85.29774	86.45187	87.60046	88.74297	89.87885	91.00756	88.81608	89.90755	90.99076
82.31636	80.25159	81.47285	82.69233	83.90939	85.12341	86.33374	84.22728	85.40363	86.57469	87.73989	88.89864	90.05037	87.88202	88.99619	90.10218
81.06726	79.02323	80.26508	81.50561	82.74417	83.98009	85.21272	83.12890	84.32754	85.52120	86.70924	87.89105	89.06604	86.92109	88.05823	89.18728
79.79097	77.76745	79.02967	80.29110	81.55104	82.80881	84.06370	82.00254	83.22352	84.43984	85.65085	86.85589	88.05431	85.93300	87.09335	88.24574
78.48787	76.48458	77.76691	79.04901	80.33017	81.60966	82.88675	80.84822	82.09153	83.33055	84.56459	85.79297	87.01500	84.91751	86.10127	87.27725
77.15847	75.17506	76.47715	77.77965	79.08180	80.38283	81.68199	79.66600	80.93158	82.19328	83.45039	84.70218	85.94793	83.87443	85.08177	86.28154
75.80334	73.83939	75.16086	76.48341	77.80625	79.12859	80.44962	78.45604	79.74376	81.02808	82.30824	83.58346	84.85299	82.80359	84.03465	85.25838
74.42318	72.47819	73.81857	75.16076	76.50393	77.84726	79.18992	77.21856	78.52824	79.83505	81.13817	82.43681	83.73015	81.70492	82.95977	84.20759
73.01878	71.09218	72.45092	73.81226	75.17534	76.53929	77.90325	75.95384	77.28525	78.61436	79.94032	81.26228	82.57940	80.57836	81.85704	83.12904
71.59101	69.68217	71.05865	72.43858	73.82105	75.20518	76.59005	74.66227	76.01510	77.36626	78.71486	80.06001	81.40082	79.42393	80.72643	82.02264
70.14088	68.24907	69.64260	71.04047	72.44177	73.84555	75.25088	73.34431	74.71819	76.09108	77.46206	78.83019	80.19456	78.24172	79.56797	80.88836
68.66949	66.79392	68.20372	69.61882	71.03827	72.46111	73.88636	72.00053	73.39500	74.78924	76.18227	77.57312	78.96081	77.03189	78.38176	79.72626
67.17808	65.31786	66.74306	68.17458	69.61145	71.05266	72.49722	70.63158	72.04611	73.46123	74.87591	76.28914	77.69989	75.79466	77.16795	78.53643
-	63.82214	65.26179	66.70884	68.16230	69.62114	71.08430	69.23822	70.67221	72.10766	73.54351	74.97870	76.41217	74.53034	75.92679	77.31905
-	-	63.76120	65.22282	66.69196	68.16756	69.64854	67.82131	69.27406	70.72922	72.18569	73.64235	75.09810	73.23933	74.65860	76.07438
-	-	-	63.71781	65.20163	66.69307	68.19100	66.38182	67.85256	69.32672	70.80316	72.28073	73.75826	71.92210	73.36379	74.80274
-	-	-	-	63.69267	65.19892	66.71285	64.92082	66.40868	67.90105	69.39674	70.89455	72.39329	70.57923	72.04286	73.50455
-	-	-	-	-	63.68648	65.21537	63.43951	64.94354	66.45323	67.96736	69.48468	71.00394	69.21139	70.69638	72.18033
-	-	-	-	-	-	63.69995	61.93920	63.45835	64.98439	66.51605	68.05204	69.59108	67.81935	69.32505	70.83067
-	-	-	-	-	-	-	60.42132	61.95445	63.49576	65.04395	66.59770	68.15566	66.40398	67.92965	69.45628
-	-	-	-	-	-	-	-	60.43328	61.98871	63.55234	65.12283	66.69878	64.96628	66.51108	68.05796
-	-	-	-	-	-	-	-	-	60.46470	62.04259	63.62870	65.22160	63.50735	65.07034	66.63661
-	-	-	-	-	-	-	-	-	-	60.51620	62.11673	63.72545	62.02838	63.60854	65.19326
-	-	-	-	-	-	-	-	-	-	-	60.58842	62.21175	60.53071	62.12691	63.72904
-	-	-	-	-	-	-	-	-	-	-	-	60.68203	59.01578	60.62680	62.24519
-	-	-	-	-	-	-	-	-	-	-	-	-	57.48516	59.10966	60.74308
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15-Jul-16	15-Aug-16	15-Sep-16	15-Oct-16	15-Nov-16	15-Dec-16	15-Jan-17	15-Feb-17	15-Mar-17	15-Apr-17	15-May-17	15-Jun-17	15-Jul-17	15-Aug-17	15-Sep-17	15-Oct-17
t = 5.33	t = 5.42	t = 5.5	t = 5.58	t = 5.67	t = 5.75	t = 5.83	t = 5.92	t = 6	t = 6.08	t = 6.17	t = 6.25	t = 6.33	t = 6.42	t = 6.5	t = 6.58
104.97	105.52	106.07	106.63	103.87	104.42	104.97	105.52	106.07	105.52	102.76	103.31	103.86	104.42	104.97	105.52
-	-	-	3.3125	-	-	-	-	-	3.3125	-	-	-	-	-	3.3125
104.96925	105.52133	106.07342	103.34252	103.74069	104.13666	104.53047	104.92214	105.31169	102.38667	102.76008	103.31217	103.86425	104.41633	104.96842	102.38945
104.96925	105.52133	106.07342	103.31266	103.71546	104.11595	104.51415	104.91010	105.30382	102.38286	102.76008	103.31217	103.86425	104.41633	104.96842	102.36946
104.96925	105.52133	106.07342	103.28157	103.68919	104.09438	104.49716	104.89757	105.29563	102.37888	102.76008	103.31217	103.86425	104.41633	104.96842	102.34413
104.96925	105.52133	106.07342	103.24920	103.66184	104.07192	104.47947	104.88452	105.28710	102.37474	102.76008	103.31217	103.86425	104.41633	104.96842	102.31775
104.96925	105.52133	106.07342	103.21551	103.63337	104.04854	104.46105	104.87093	105.27821	102.37043	102.76008	103.31217	103.86425	104.41633	104.96842	102.29028
104.96925	105.52133	106.05366	103.18043	103.60373	104.02420	104.44187	104.85678	105.26896	102.36594	102.76008	103.31217	103.86425	104.41633	104.96842	102.26169
104.96925	105.52133	106.01118	103.14391	103.57286	103.99885	104.42190	104.84205	105.25933	102.36127	102.76008	103.31217	103.86425	104.41633	104.96842	102.23192
104.96925	105.51207	105.96696	103.10589	103.54073	103.97246	104.40111	104.82671	105.24929	102.35640	102.76008	103.31217	103.86425	104.41633	104.96842	102.20092
104.96925	105.45741	105.92054	103.06632	103.50728	103.94499	104.37946	104.81074	105.23885	102.35133	102.76008	103.31217	103.86425	104.41633	104.96842	102.16865
104.90660	105.39290	105.86898	103.02434	103.47246	103.91639	104.35692	104.79410	105.22797	102.34606	102.76008	103.31217	103.86425	104.41633	104.96842	102.13506
104.79680	105.30663	105.80323	102.97492	103.43465	103.88661	104.33345	104.77679	105.21664	102.34056	102.76008	103.31217	103.86425	104.41633	104.96842	102.10009
104.64859	105.18522	105.70848	102.90494	103.38534	103.85248	104.30902	104.75875	105.20485	102.33484	102.76008	103.31217	103.86425	104.41633	104.93279	102.06368
104.46097	105.02233	105.57262	102.79776	103.30674	103.80007	104.27730	104.73998	105.19256	102.32887	102.76008	103.31217	103.86425	104.41633	104.88864	102.02578
104.24068	104.82224	105.39510	102.64575	103.18320	103.70764	104.21666	104.70782	105.17978	102.32267	102.76008	103.31217	103.86425	104.38249	104.84268	101.98633
103.99584	104.59426	105.18502	102.45539	103.01506	103.56547	104.10506	104.63148	105.14112	102.31620	102.76008	103.31217	103.85350	104.32689	104.79470	101.94526
103.73087	104.34538	104.95200	102.23851	102.81500	103.38397	103.94503	104.49748	105.04013	102.25858	102.76008	103.28594	103.78012	104.26563	104.74342	101.90222
103.44558	104.07748	104.70048	102.00262	102.59413	103.17820	103.75497	104.32438	104.88618	102.12743	102.65784	103.17915	103.69082	104.19257	104.68457	101.85503
103.13654	103.78836	104.42983	101.74912	102.35640	102.95544	103.54672	104.13059	104.70720	101.96398	102.51069	103.04938	103.57937	104.09985	104.61012	101.79728
102.79854	103.47329	104.13622	101.47538	102.10071	102.71637	103.32308	103.92152	104.51223	101.78310	102.34410	102.89800	103.44445	103.98284	104.51231	101.71932
102.42610	103.12657	103.81404	101.17634	101.82290	102.45808	103.08264	103.69739	104.30314	101.58811	102.16247	102.72974	103.29011	103.84352	104.38960	101.61516
102.01485	102.74290	103.45740	100.84581	101.51695	102.17515	102.82098	103.45515	104.07850	101.37943	101.96811	102.54870	103.12186	103.68806	104.24754	101.48777
101.56262	102.31879	103.06159	100.47811	101.17647	101.86092	102.53163	103.18899	103.83363	101.15384	101.75957	102.35545	102.94244	103.52139	104.09300	101.34529
101.06973	101.85333	102.62429	100.06948	100.79640	101.50922	102.20767	102.89172	103.56154	100.90510	101.53182	102.14653	102.75025	103.34407	103.92900	101.19345
100.53870	101.34813	102.14598	99.61903	100.37429	101.11603	101.84364	102.55666	103.25478	100.62548	101.27739	101.91530	102.53996	103.15238	103.75369	101.03256
99.97321	100.80658	101.62943	99.12859	99.91075	100.68045	101.43694	102.17948	102.90740	100.30770	100.98820	101.65341	102.30359	102.93932	103.56147	100.85865
99.37715	100.23276	101.07868	98.60191	99.40889	100.20462	100.98835	101.75929	102.51663	99.94709	100.65775	101.35294	102.03234	102.69587	103.34385	100.66441
98.75378	99.63038	100.49786	98.04337	98.87312	99.69265	100.50135	101.29854	102.08346	99.54278	100.28309	101.00879	101.71909	102.41337	103.09124	100.44015
98.10535	99.00226	99.89035	97.45688	98.30783	99.14926	99.98076	100.80181	101.61182	99.09760	99.86545	100.62012	101.36068	102.08619	102.79579	100.17628
97.43316	98.35015	99.25843	96.84533	97.71652	98.57859	99.43126	100.27420	101.10698	98.61663	99.40929	100.19024	100.95865	101.71360	102.45409	99.86660
96.73772	97.67488	98.60334	96.21043	97.10147	97.98354	98.85646	99.72001	100.57392	98.10538	98.92038	99.72479	100.51804	101.29940	102.06803	99.51044
96.01906	96.97668	97.92553	95.55295	96.46385	97.36580	98.25863	99.14221	100.01635	97.56837	98.40400	99.22973	100.04520	100.84995	101.64339	99.11230
95.27693	96.25537	97.22496	94.87304	95.80407	96.72605	97.63887	98.54239	99.43650	97.00854	97.86396	98.70976	99.54575	100.37166	101.18716	98.67931
94.51093	95.51061	96.50136	94.17050	95.12201	96.06439	96.99749	97.92119	98.83538	96.42744	97.30242	98.16782	99.02353	99.86940	100.70526	98.21838
93.72064	94.74197	95.75430	93.44494	94.41737	95.38055	96.33433	97.27860	98.21322	95.82558	96.72029	97.60533	98.48061	99.34606	100.20156	97.73450
92.90562	93.94901	94.98335	92.69593	93.68970	94.67413	95.64905	96.61433	97.56982	95.20290	96.11771	97.02270	97.91780	98.80293	99.67801	97.23049
92.06543	93.13127	94.18804	91.92300	92.93855	93.94467	94.94120	95.92795	96.90479	94.55908	95.49444	96.41982	97.33514	98.24032	99.13528	96.70747
91.19965	92.28833	93.36793	91.12569	92.16343	93.19170	94.21028	95.21900	96.21767	93.89365	94.85005	95.79631	96.73234	97.65804	98.57333	96.16565
90.30790	91.41977	92.52258	90.30355	91.36391	92.41474	93.45583	94.48697	95.50797	93.20615	94.18407	95.15172	96.10896	97.05569	97.99182	95.60478
89.38981	90.52520	91.65159	89.45616	90.53952	91.61334	92.67737	93.73139	94.77519	92.49606	93.49600	94.48553	95.46450	96.43280	97.39031	95.02443
88.44504	89.60427	90.75458	88.58312	89.68984	90.78704	91.87445	92.95179	94.01885	91.76290	92.78534	93.79726	94.79847	95.78886	96.76828	94.42413
87.47330	88.65664	89.83118	87.68403	88.81448	89.93544	91.04661	92.14772	93.23849	91.00619	92.05161	93.08639	94.11036	95.12336	96.12524	93.80336
86.47432	87.68203	88.88107	86.75855	87.91304	89.05812	90.19345	91.31872	92.43365	90.22547	91.29431	92.35245	93.39968	94.43580	95.46066	93.16161
85.44788	86.68016	87.90396	85.80636	86.98519	88.15471	89.31455	90.46439	91.60389	89.42027	90.51299	91.59495	92.66592	93.72569	94.77406	92.49838
84.39380	85.65082	86.89960	84.82717	86.03060	87.22486	88.40956	89.58432	90.74879	88.59016	89.70719	90.81342	91.90862	92.99253	94.06494	91.81316
83.31196	84.59385	85.86778	83.82074	85.04900	86.26826	87.47812	88.67814	89.86797	87.73473	88.87647	90.00742	91.12730	92.23584	93.33280	91.10545
82.20228	83.50912	84.80833	82.78686	84.04013	85.28464	86.51992	87.74553	88.96104	86.85358	88.02042	89.17650	90.32151	91.45515	92.57716	90.37478
81.06475	82.39658	83.72115	81.72537	83.00381	84.27375	85.53469	86.78615	88.02768	85.94635	87.13865	88.32026	89.49082	90.65003	91.79756	89.62066
79.89941	81.25621	82.60617	80.63617	81.93987	83.23540	84.52220	85.79976	87.06758	85.01270	86.23079	87.43830	88.63483	89.82003	90.99356	88.84262
78.70638	80.08806	81.46340	79.51921	80.84822	82.16943	83.48224	84.78610	86.08047	84.05234	85.29652	86.53026	87.75313	88.96474	90.16471	88.04022
77.48586	78.89228	80.29289	78.37450	79.72882	81.07576	82.41469	83.74500	85.06612	83.06499	84.33552	85.59580	86.84536	88.08377	89.31061	87.21302
76.23809	77.66904	79.09480	77.20210	78.58168	79.95435	81.31945	82.67632	84.02434	82.05043	83.34754	84.63464	85.91120	87.17676	88.43087	86.36062
74.96343	76.41863	77.86932	76.00218	77.40687	78.80522	80.19648	81.57997	82.95501	81.00848	82.33236	83.64649	84.95034	86.24338	87.52513	85.48262
73.66231	75.14140	76.61673	74.77493	76.20456	77.62845	79.04582	80.45592	81.85805	79.93900	81.28978	82.63115	83.96253	85.28333	86.59305	84.57867
72.33524	73.83780	75.33741	73.52066	74.97496	76.42420	77.86754	79.30420	80.73341	78.84193	80.21969	81.58844	82.94753	84.29636	85.63434	83.64844
70.98285	72.50836	74.03181	72.23975	73.71838	75.19270	76.66183	78.12492	79.58115	77.71724	79.12201	80.51822	81.90518	83.28223	84.64874	82.69162
69.60585	71.15370	72.70048	70.93265	72.43520	73.93426	75.42891	76.91823	78.40137	76.56496	77.99671	79.42042	80.83534	82.24077	83.63602	81.70796
68.20506	69.77457	71.34405	69.59993	71.12589	72.64928	74.16910	75.68439	77.19423	75.38522	76.84385	78.29503	79.73795	81.17186	82.59602	80.69723
66.78140	68.37178	69.96327	68.24224	69.79103	71.33823	72.88280	74.42371	75.95999	74.17818	75.66353	77.14209	78.61299	80.07543	81.52860	79.65927
65.33590	66.94627	68.55898	66.86034	68.43128	70.00170	71.57050	73.13661	74.69898	72.94410	74.45593	75.96170	77.46050	78.95145	80.43370	78.59394
63.86971	65.49911	67.13214	65.45508	67.04740	68.64036	70.23279	71.82358	73.41161	71.68331	73.22131	74.75406	76.28060	77.79998	79.31129	77.50118
62.38410	64.03144	65.68381	64.02742	65.64026	67.25497	68.87035	70.48521	72.09839	70.39624	71.96000	73.51942	75.07346	76.62112	78.16143	76.38096
60.88044	62.54454	64.21516	62.57846	64.21083	65.84642	67.48395	69.12219	70.75990	69.08339	70.67244	72.25813	73.83936	75.41507	76.98423	75.23333
59.36022	61.03982	62.72749	61.10937	62.76021	64.41569	66.07449	67.73530	69.39685	67.74537	69.35912	70.97059	72.57863	74.18208	75.77987	74.05842
57.82507	59.51877	61.22221	59.62147	61.28960	62.96388	64.64296	66.32545	68.01003	66.38287	68.02066	69.65734	71.29169	72.92250	74.54861	72.85639
-	57.98304	59.70085	58.11617	59.80031	61.49221	63.19046	64.89364	66.60035	64.99670	66.65776	68.31898	69.97906	71.63675	73.29080	71.62751
-	-	58.16504	56.59502	58.29378	60.00200	61.71823	63.44098	65.16882	63.58777	65.27122	66.95621	68.64136	70.32534	72.00686	70.37213
-	-	-	55.05968	56.77156	58.49470	60.22759	61.96871	63.71655	62.15710	63.86197	65.56984	67.27928	68.98889	70.69730	69.09066
-	-	-	-	55.23532	56.97187	58.72000	60.47816	62.24479	60.70582	62.43102	64.16079	65.89364	67.62811	69.36274	67.78362
-	-	-	-	-	55.43518	57.19704	58.97081	60.75489	59.23517	60.97950	62.73008	64.48536	66.24380	68.00388	66.45162
-	-	-	-	-	-	55.66039	57.44824	59.24833	57.74651	59.50866	61.27885	63.05546	64.83688	66.62154	65.09537
-	-	-	-	-	-	-	55.91213	57.72669	56.24133	58.01988	59.80835	61.60507	63.40839	65.21663	63.71567
-	-	-	-	-	-	-	-	56.19168	54.72122	56.51462	58.31995	60.13546	61.95944	63.79018	62.31345
-	-	-	-	-	-	-	-	-	53.18789	54.99450	56.81512	58.64799	60.49131	62.34331	60.88972
-	-	-	-	-	-	-	-	-	-	53.46122	55.29548	57.14414	59.00536	60.87730	59.44562
-	-	-	-	-	-	-	-	-	-	-	53.76275	55.62552	57.50307	59.39350	57.98240
-	-	-	-	-	-	-	-	-	-	-	-	54.09386	55.98605	57.89339	56.50143
-	-	-	-	-	-	-	-	-	-	-	-	-	54.45602	56.37859	55.00419
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15-Nov-17	15-Dec-17	15-Jan-18	15-Feb-18	15-Mar-18	15-Apr-18	15-May-18	15-Jun-18	15-Jul-18	15-Aug-18	15-Sep-18	15-Oct-18	15-Nov-18	15-Dec-18	15-Jan-19	15-Feb-19
t = 6.67	t = 6.75	t = 6.83	t = 6.92	t = 7	t = 7.08	t = 7.17	t = 7.25	t = 7.33	t = 7.42	t = 7.5	t = 7.58	t = 7.67	t = 7.75	t = 7.83	t = 7.92
102.76	103.31	103.86	104.42	104.97	104.42	101.66	102.21	102.76	103.31	103.86	104.42	101.66	102.21	102.76	103.31
-	-	-	-	-	3.3125	-	-	-	-	-	3.3125	-	-	-	-
102.76008	103.14186	103.51300	103.88227	104.24971	101.30287	101.65608	102.20817	102.76025	103.31233	103.86442	101.31080	101.65608	102.13475	102.48565	102.83513
102.74828	103.12503	103.49976	103.87251	104.24333	101.29976	101.65608	102.20817	102.76025	103.31233	103.86442	101.30802	101.65608	102.12130	102.47508	102.82735
102.72690	103.10750	103.48597	103.86235	104.23668	101.29653	101.65608	102.20817	102.76025	103.31233	103.86442	101.30513	101.65608	102.10729	102.46407	102.81924
102.70465	103.08925	103.47161	103.85176	104.22976	101.29316	101.65608	102.20817	102.76025	103.31233	103.86442	101.30212	101.65608	102.09270	102.45260	102.81081
102.68147	103.07025	103.45666	103.84074	104.22256	101.28965	101.65608	102.20817	102.76025	103.31233	103.86442	101.29898	101.65608	102.07751	102.44066	102.80202
102.65735	103.05046	103.44109	103.82927	104.21505	101.28600	101.65608	102.20817	102.76025	103.31233	103.86442	101.29571	101.65608	102.06170	102.42823	102.79287
102.63223	103.02986	103.42488	103.81732	104.20724	101.28219	101.65608	102.20817	102.76025	103.31233	103.86442	101.29036	101.65608	102.04523	102.41528	102.78334
102.60607	103.00842	103.40800	103.80488	104.19910	101.27823	101.65608	102.20817	102.76025	103.31233	103.86442	101.27402	101.65218	102.02808	102.40180	102.77341
102.57884	102.98608	103.39042	103.79192	104.19063	101.27411	101.65608	102.20817	102.76025	103.31233	103.86442	101.24817	101.63038	102.01023	102.38777	102.76308
102.55050	102.96283	103.37212	103.77843	104.18181	101.26981	101.65608	102.20817	102.76025	103.31233	103.86442	101.22126	101.60770	101.99164	102.37315	102.75232
102.52098	102.93862	103.35307	103.76438	104.17262	101.26534	101.65608	102.20817	102.76025	103.31233	103.86442	101.19324	101.58407	101.97228	102.35793	102.74111
102.49025	102.91342	103.33323	103.74976	104.16305	101.26068	101.65608	102.20817	102.76025	103.31233	103.86442	101.16407	101.55948	101.95212	102.34209	102.72945
102.45826	102.88718	103.31258	103.73453	104.15309	101.25583	101.65608	102.20817	102.76025	103.31233	103.86442	101.13370	101.53387	101.93114	102.32559	102.71730
102.42496	102.85985	103.29107	103.71867	104.14272	101.25078	101.65608	102.20817	102.76025	103.31233	103.86442	101.10208	101.50721	101.90929	102.30841	102.70465
102.39029	102.83141	103.26868	103.70216	104.13191	101.24551	101.65608	102.20817	102.76025	103.31233	103.86442	101.06917	101.47945	101.88654	102.29052	102.69147
102.35420	102.80180	103.24536	103.68496	104.12067	101.24004	101.65608	102.20817	102.76025	103.31233	103.86442	101.03490	101.45055	101.86285	102.27189	102.67776
102.31605	102.77097	103.22109	103.66706	104.10895	101.23433	101.65608	102.20817	102.76025	103.31233	103.86442	100.99923	101.42047	101.83819	102.25250	102.66347
102.27212	102.73771	103.19582	103.64842	104.09676	101.22839	101.65608	102.20817	102.76025	103.31233	103.83022	100.96209	101.38915	101.81252	102.23230	102.64860
102.21326	102.69579	103.16718	103.62902	104.08406	101.22220	101.65608	102.20817	102.76025	103.31233	103.78515	100.92343	101.35654	101.78579	102.21128	102.63312
102.12927	102.63306	103.12502	103.60413	104.07084	101.21576	101.65608	102.20817	102.76025	103.27640	103.73823	100.88319	101.32259	101.75795	102.18939	102.61699
102.01833	102.54121	103.05513	103.55812	104.04766	101.20905	101.65608	102.20817	102.74678	103.22043	103.68940	100.84130	101.28725	101.72898	102.16660	102.60021
101.88823	102.42487	102.95503	103.47806	103.99257	101.18317	101.65608	102.19461	102.68089	103.16217	103.63857	100.79769	101.25046	101.69882	102.14287	102.58273
101.74755	102.29512	102.83651	103.37194	103.90155	101.11293	101.61812	102.11788	102.61232	103.10154	103.58566	100.75230	101.21216	101.66741	102.11816	102.56452
101.59921	102.15813	102.71005	103.25547	103.79470	101.01543	101.52956	102.03803	102.54095	103.03844	103.53060	100.70505	101.17229	101.63472	102.09244	102.54557
101.44099	102.01358	102.57759	103.13399	103.68346	100.91398	101.43742	101.95495	102.46669	102.97276	103.47328	100.65587	101.13079	101.60068	102.06566	102.52584
101.26712	101.85738	102.43657	103.00609	103.56718	100.80829	101.34154	101.86850	102.38942	102.90442	103.41363	100.60468	101.08759	101.56525	102.03778	102.50530
101.06868	101.68204	102.28135	102.86805	103.44370	100.69734	101.24149	101.77851	102.30901	102.83330	103.35155	100.55140	101.04263	101.52837	102.00876	102.48391
100.83516	101.47712	102.10254	102.71229	103.30769	100.57787	101.13567	101.68434	102.22525	102.75929	103.28695	100.49595	100.99582	101.48997	101.97854	102.46164
100.55778	101.23194	101.88855	102.52753	103.14931	100.44240	101.01919	101.58340	102.13710	102.68209	103.21971	100.43823	100.94710	101.45000	101.94708	102.43845
100.23285	100.93957	101.62952	102.30177	102.95570	100.27870	100.88188	101.46850	102.04042	102.59993	103.14937	100.37816	100.89639	101.40840	101.91433	102.41432
99.86274	100.59948	101.32138	102.02717	102.71562	100.07312	100.70937	101.32643	101.92491	102.50630	103.07287	100.31490	100.84361	101.36509	101.88024	102.38918
99.45408	100.21699	100.96712	101.70341	102.42457	99.81673	100.48862	101.14146	101.77434	102.38701	102.98019	100.24319	100.78717	101.32001	101.84475	102.36302
99.01460	99.80013	100.57444	101.33682	102.08637	99.50945	100.21465	100.90316	101.57335	102.22365	102.85288	100.14812	100.71813	101.27006	101.80780	102.33578
98.55049	99.35635	100.15181	100.93651	101.70996	99.15898	99.89235	100.61194	101.31632	102.00377	102.67235	100.00759	100.61547	101.20039	101.76326	102.30742
98.06560	98.89072	99.70573	100.51047	101.30471	98.77566	99.53226	100.27720	101.00966	101.72848	102.43216	99.80628	100.45580	101.08364	101.68742	102.26568
97.56172	98.40589	99.23992	100.06375	100.87730	98.36795	99.14464	99.91074	100.66590	101.40958	102.14102	99.54661	100.23171	100.90009	101.54903	102.17516
97.03937	97.90283	98.75599	99.59882	100.43128	97.94084	98.73628	99.52143	100.29621	101.06046	101.81391	99.24362	99.95544	100.65461	101.33966	102.00848
96.49844	97.38164	98.25431	99.11645	99.96801	97.49650	98.31043	99.11401	99.90728	100.69022	101.46280	98.91242	99.64503	100.36692	101.07753	101.77603
95.93856	96.84200	97.73470	98.61662	99.48773	97.03553	97.86821	98.69034	99.50199	100.30320	101.09401	98.56198	99.31282	100.05356	100.78406	101.50406
95.35926	96.28349	97.19675	98.09899	98.99019	96.55781	97.40971	98.25082	99.08119	99.90089	100.70999	98.19606	98.96450	99.72284	100.47114	101.20938
94.76003	95.70559	96.63998	97.56311	98.47495	96.06296	96.93464	97.79525	98.64486	99.48352	100.31131	97.81581	98.60200	99.37789	100.14357	100.89914
94.14036	95.10781	96.06388	97.00848	97.94155	95.55053	96.44254	97.32323	98.19264	99.05083	99.89786	97.42131	98.22569	99.01951	99.80286	100.57585
93.49974	94.48964	95.46795	96.43459	97.38946	95.02001	95.93294	96.83429	97.72410	98.60240	99.46925	97.01224	97.83538	98.64766	99.44917	100.24003
92.83767	93.85056	94.85168	95.84093	96.81819	94.47090	95.40534	96.32795	97.23874	98.13776	99.02505	96.58817	97.43066	98.26198	99.08225	99.89155
92.15364	93.19006	94.21456	95.22699	96.22723	93.90270	94.85923	95.80369	96.73609	97.65644	98.56478	96.14866	97.01109	97.86207	98.70168	99.53002
91.44716	92.50765	93.55607	94.59226	95.61607	93.31489	94.29411	95.26103	96.21564	97.15793	98.08795	95.69322	96.57621	97.44745	98.30703	99.15503
90.71773	91.80282	92.87572	93.93623	94.98420	92.70698	93.70948	94.69946	95.67689	96.64176	97.59408	95.22139	96.12555	97.01769	97.89786	98.76615
89.96489	91.07510	92.17301	93.25841	94.33111	92.07844	93.10482	94.11846	95.11933	96.10741	97.08268	94.73266	95.65864	96.57230	97.47371	98.36293
89.18816	90.32399	91.44745	92.55829	93.65630	91.42878	92.47962	93.51754	94.54247	95.55438	96.55325	94.22656	95.17498	96.11082	97.03411	97.94492
88.38709	89.54904	90.69856	91.83539	92.95927	90.75750	91.83338	92.89618	93.94580	94.98218	96.00528	93.70258	94.67410	95.63276	96.57860	97.51166
87.56126	88.74979	89.92588	91.08922	92.23954	90.06409	91.16560	92.25387	93.32880	94.39029	95.43828	93.16024	94.15549	95.13764	96.10669	97.06269
86.71025	87.92581	89.12895	90.31933	91.49663	89.34807	90.47578	91.59012	92.69097	93.77820	94.85174	92.59901	93.61867	94.62497	95.61791	96.59752
85.83367	87.07669	88.30735	89.52526	90.73007	88.60896	89.76343	90.90443	92.03180	93.14541	94.24514	92.01841	93.06312	94.09424	95.11176	96.11567
84.93116	86.20204	87.46065	88.70657	89.93940	87.84629	89.02807	90.19631	91.35081	92.49142	93.61800	91.41793	92.48834	93.54496	94.58774	95.61667
84.00238	85.30150	86.58848	87.86285	89.12420	87.05962	88.26923	89.46527	90.64750	91.81574	92.96980	90.79706	91.89384	92.97663	94.04537	95.10001
83.04705	84.37473	85.69045	86.99371	88.28404	86.24850	87.48646	88.71084	89.92139	91.11786	92.30005	90.15530	91.27911	92.38875	93.48414	94.56520
82.06489	83.42143	84.76624	86.09878	87.41854	85.41251	86.67932	87.93258	89.17200	90.39730	91.60825	89.49216	90.64364	91.78080	92.90354	94.01175
81.05569	82.44133	83.81555	85.17773	86.52732	84.55127	85.84739	87.13004	88.39887	89.65360	90.89393	88.80714	89.98693	91.15230	92.30307	93.43915
80.01927	81.43422	82.83810	84.23025	85.61004	83.66440	84.99026	86.30278	87.60157	88.88628	90.15660	88.09975	89.30850	90.50273	91.68224	92.84689
78.95550	80.39992	81.83368	83.25607	84.66641	82.75156	84.10758	85.45043	86.77967	88.09491	89.39580	87.36952	88.60786	89.83160	91.04054	92.23449
77.86430	79.33828	80.80209	82.25496	83.69614	81.81244	83.19898	84.57258	85.93276	87.27906	88.61109	86.61599	87.88452	89.13843	90.37747	91.60143
76.74566	78.24925	79.74322	81.22674	82.69900	80.84677	82.26417	83.66891	85.06045	86.43831	87.80203	85.83871	87.13802	88.42273	89.69255	90.94722
75.59962	77.13279	78.65697	80.17126	81.67482	79.85430	81.30285	82.73908	84.16241	85.57229	86.96821	85.03723	86.36791	87.68404	88.98530	90.27138
74.42629	75.98894	77.54331	79.08846	80.62343	78.83486	80.31478	81.78281	83.23829	84.68062	86.10925	84.21115	85.57374	86.92189	88.25523	89.57341
73.22586	74.81781	76.40230	77.97828	79.54477	77.78829	79.29977	80.79985	82.28781	83.76299	85.22477	83.36007	84.75509	86.13584	87.50189	88.85284
71.99857	73.61958	75.23402	76.84078	78.43878	76.71450	78.25767	79.79000	81.31072	82.81909	84.31443	82.48362	83.91157	85.32547	86.72483	88.10920
70.74476	72.39450	74.03865	75.67603	77.30550	75.61344	77.18837	78.75310	80.30680	81.84866	83.37795	81.58146	83.04280	84.49036	85.92361	87.34205
69.46486	71.14290	72.81644	74.48422	76.14501	74.48515	76.09182	77.68903	79.27588	80.85149	82.41504	80.65328	82.14842	83.63014	85.09783	86.55094
68.15938	69.86520	71.56771	73.26557	74.95748	73.32969	74.96803	76.59775	78.21784	79.82738	81.42548	79.69880	81.22813	82.74445	84.24710	85.73545
66.82891	68.56190	70.29287	72.02041	73.74315	72.14723	73.81708	75.47924	77.13262	78.77622	80.40908	78.71778	80.28162	81.83295	83.37104	84.89519
65.47417	67.23360	68.99242	70.74915	72.50232	70.93800	72.63912	74.33357	76.02021	77.69793	79.36570	77.71003	79.30866	80.89536	82.46932	84.02979
64.09596	65.88100	67.66696	69.45227	71.23538	69.70229	71.43434	73.16087	74.88065	76.59248	78.29525	76.67540	78.30903	79.93140	81.54163	83.13888
62.69518	64.50489	66.31717	68.13036	69.94283	68.44049	70.20306	71.96136	73.71406	75.45992	77.19770	75.61378	77.28257	78.94086	80.58770	82.22217
61.27286	63.10619	64.94385	66.78410	68.62524	67.15308	68.94564	70.73529	72.52065	74.30034	76.07308	74.52513	76.22916	77.92357	79.60729	81.27936
59.83012	61.68589	63.54788	65.41428	67.28328	65.84063	67.66254	69.48305	71.30066	73.11393	74.92148	73.40947	75.14875	76.87938	78.60022	80.31020
58.36822	60.24513	62.13028	64.02177	65.91772	64.50379	66.35432	68.20506	70.05444	71.90093	73.74305	72.26687	74.04133	75.80823	77.56633	79.31448
56.88850	58.78514	60.69216	62.60757	64.52944	63.14333	65.02161	66.90187	68.78243	70.66168	72.53802	71.09747	72.90696	74.71008	76.50553	78.29205
55.39245	57.30728	59.23474	61.17280	63.11943	61.76011	63.66518	65.57411	67.48515	69.39657	71.30672	69.90148	71.74575	73.58499	75.41778	77.24279
53.88167	55.81301	57.75937	59.71866	61.68877	60.35510	62.28586	64.22250	66.16320	68.10613	70.04954	68.67921	70.55791	72.43304	74.30310	76.16664
52.35786	54.30392	56.26752	58.24650	60.23868	58.92940	60.88461	62.84788	64.81729	66.79093	68.76694	67.43103	69.34370	71.25442	73.16156	75.06359
-	52.78173	54.76076	56.75775	58.77048	57.48419	59.46249	61.45118	63.44823	65.45166	67.45951	66.15738	68.10348	70.04936	71.99332	73.93370
-	-	53.24079	55.25401	57.28561	56.02078	58.02070	60.03345	62.05695	64.08912	66.12792	64.85883	66.83767	68.81819	70.79859	72.77710
-	-	-	53.73694	55.78562	54.54060	56.56050	58.59585	60.64447	62.70420	64.77292	63.53602	65.54680	67.56132	69.57767	71.59397
-	-	-	-	54.27220	53.04520	55.08332	57.13964	59.21192	61.29791	63.39540	62.18970	64.23149	66.27925	68.33094	70.38459
-	-	-	-	-	51.53624	53.59069	55.66622	57.76055	59.87134	61.99632	60.82070	62.89246	64.97255	67.05886	69.14931
-	-	-	-	-	-	52.08423	54.17709	56.29172	58.42574	60.57678	59.42997	61.53050	63.64191	65.76199	67.88855
-	-	-	-	-	-	-	52.67387	54.80693	56.96244	59.13798	58.01859	60.14655	62.28812	64.44097	66.60283
-	-	-	-	-	-	-	-	53.30776	55.48290	57.68122	56.58772	58.74163	60.91205	63.09656	65.29278
-	-	-	-	-	-	-	-	-	53.98868	56.20795	55.13864	57.31688	59.51470	61.72959	63.95909
-	-	-	-	-	-	-	-	-	-	54.71969	53.67277	55.87356	58.09717	60.34104	62.60259
-	-	-	-	-	-	-	-	-	-	-	52.19161	54.41302	56.66068	58.93195	61.22417
-	-	-	-	-	-	-	-	-	-	-	-	52.93675	55.20655	57.50350	59.82487
-	-	-	-	-	-	-	-	-	-	-	-	-	53.73623	56.05698	58.40582
-	-	-	-	-	-	-	-	-	-	-	-	-	-	54.59379	56.96825
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55.51354
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15-Mar-19	15-Apr-19	15-May-19	15-Jun-19	15-Jul-19	15-Aug-19	15-Sep-19	15-Oct-19	15-Nov-19	15-Dec-19	15-Jan-20	15-Feb-20	15-Mar-20	15-Apr-20	15-May-20	15-Jun-20
t = 8	t = 8.08	t = 8.17	t = 8.25	t = 8.33	t = 8.42	t = 8.5	t = 8.58	t = 8.67	t = 8.75	t = 8.83	t = 8.92	t = 9	t = 9.08	t = 9.17	t = 9.25
103.86	103.31	100.55	101.10	101.66	102.21	102.76	103.31	100.55	101.10	101.66	102.21	102.76	103.31	100.55	101.10
-	3.3125	-	-	-	-	-	3.3125	-	-	-	-	-	3.3125	-	-
103.18325	100.21756	100.55208	101.10417	101.65625	102.20833	102.76042	100.22372	100.55208	101.10417	101.65625	102.20833	102.76042	100.22904	100.55208	101.10417
103.17817	100.21510	100.55208	101.10417	101.65625	102.20833	102.76042	100.22151	100.55208	101.10417	101.65625	102.20833	102.76042	100.22705	100.55208	101.10417
103.17288	100.21254	100.55208	101.10417	101.65625	102.20833	102.76042	100.21922	100.55208	101.10417	101.65625	102.20833	102.76042	100.22499	100.55208	101.10417
103.16738	100.20988	100.55208	101.10417	101.65625	102.20833	102.76042	100.21683	100.55208	101.10417	101.65625	102.20833	102.76042	100.22284	100.55208	101.10417
103.16164	100.20710	100.55208	101.10417	101.65625	102.20833	102.76042	100.21434	100.55208	101.10417	101.65625	102.20833	102.76042	100.22060	100.55208	101.10417
103.15567	100.20421	100.55208	101.10417	101.65625	102.20833	102.76042	100.21175	100.55208	101.10417	101.65625	102.20833	102.76042	100.21827	100.55208	101.10417
103.14945	100.20120	100.55208	101.10417	101.65625	102.20833	102.76042	100.20906	100.55208	101.10417	101.65625	102.20833	102.76042	100.21584	100.55208	101.10417
103.14298	100.19807	100.55208	101.10417	101.65625	102.20833	102.76042	100.20625	100.55208	101.10417	101.65625	102.20833	102.76042	100.21331	100.55208	101.10417
103.13623	100.19481	100.55208	101.10417	101.65625	102.20833	102.76042	100.20332	100.55208	101.10417	101.65625	102.20833	102.76042	100.21068	100.55208	101.10417
103.12921	100.19141	100.55208	101.10417	101.65625	102.20833	102.76042	100.20027	100.55208	101.10417	101.65625	102.20833	102.76042	100.20794	100.55208	101.10417
103.12190	100.18787	100.55208	101.10417	101.65625	102.20833	102.76042	100.19710	100.55208	101.10417	101.65625	102.20833	102.76042	100.20508	100.55208	101.10417
103.11428	100.18418	100.55208	101.10417	101.65625	102.20833	102.76042	100.19380	100.55208	101.10417	101.65625	102.20833	102.76042	100.20211	100.55208	101.10417
103.10636	100.18034	100.55208	101.10417	101.65625	102.20833	102.76042	100.19036	100.55208	101.10417	101.65625	102.20833	102.76042	100.19901	100.55208	101.10417
103.09810	100.17634	100.55208	101.10417	101.65625	102.20833	102.76042	100.18677	100.55208	101.10417	101.65625	102.20833	102.76042	100.19579	100.55208	101.10417
103.08950	100.17218	100.55208	101.10417	101.65625	102.20833	102.76042	100.18304	100.55208	101.10417	101.65625	102.20833	102.76042	100.19243	100.55208	101.10417
103.08055	100.16785	100.55208	101.10417	101.65625	102.20833	102.76042	100.17916	100.55208	101.10417	101.65625	102.20833	102.76042	100.18893	100.55208	101.10417
103.07122	100.16333	100.55208	101.10417	101.65625	102.20833	102.76042	100.17511	100.55208	101.10417	101.65625	102.20833	102.76042	100.18529	100.55208	101.10417
103.06151	100.15863	100.55208	101.10417	101.65625	102.20833	102.76042	100.17089	100.55208	101.10417	101.65625	102.20833	102.76042	100.18150	100.55208	101.10417
103.05140	100.15373	100.55208	101.10417	101.65625	102.20833	102.76042	100.16651	100.55208	101.10417	101.65625	102.20833	102.76042	100.17755	100.55208	101.10417
103.04088	100.14864	100.55208	101.10417	101.65625	102.20833	102.76042	100.16194	100.55208	101.10417	101.65625	102.20833	102.76042	100.17343	100.55208	101.10417
103.02991	100.14333	100.55208	101.10417	101.65625	102.20833	102.76042	100.15718	100.55208	101.10417	101.65625	102.20833	102.76042	100.16915	100.55208	101.10417
103.01850	100.13780	100.55208	101.10417	101.65625	102.20833	102.76042	100.15222	100.55208	101.10417	101.65625	102.20833	102.76042	100.16469	100.55208	101.10417
103.00661	100.13204	100.55208	101.10417	101.65625	102.20833	102.76042	100.14706	100.55208	101.10417	101.65625	102.20833	102.76042	100.16004	100.55208	101.10417
102.99424	100.12605	100.55208	101.10417	101.65625	102.20833	102.76042	100.14169	100.55208	101.10417	101.65625	102.20833	102.76042	100.15521	100.55208	101.10417
102.98135	100.11980	100.55208	101.10417	101.65625	102.20833	102.76042	100.13609	100.55208	101.10417	101.65625	102.20833	102.76042	100.15017	100.55208	101.10417
102.96793	100.11330	100.55208	101.10417	101.65625	102.20833	102.76042	100.13026	100.55208	101.10417	101.65625	102.20833	102.76042	100.14492	100.55208	101.10417
102.95396	100.10654	100.55208	101.10417	101.65625	102.20833	102.76042	100.12420	100.55208	101.10417	101.65625	102.20833	102.76042	100.13946	100.55208	101.10417
102.93941	100.09949	100.55208	101.10417	101.65625	102.20833	102.76042	100.11788	100.55208	101.10417	101.65625	102.20833	102.76042	100.13377	100.55208	101.10417
102.92427	100.09215	100.55208	101.10417	101.65625	102.20833	102.76042	100.11130	100.55208	101.10417	101.65625	102.20833	102.76042	100.12785	100.55208	101.10417
102.90849	100.08450	100.55208	101.10417	101.65625	102.20833	102.76042	100.10444	100.55208	101.10417	101.65625	102.20833	102.76042	100.12168	100.55208	101.10417
102.89207	100.07655	100.55208	101.10417	101.65625	102.20833	102.76042	100.09731	100.55208	101.10417	101.65625	102.20833	102.76042	100.11526	100.55208	101.10417
102.87497	100.06826	100.55208	101.10417	101.65625	102.20833	102.76042	100.08988	100.55208	101.10417	101.65625	102.20833	102.76042	100.10857	100.55208	101.10417
102.85717	100.05963	100.55208	101.10417	101.65625	102.20833	102.76042	100.08214	100.55208	101.10417	101.65625	102.20833	102.76042	100.10161	100.55208	101.10417
102.83864	100.05064	100.55208	101.10417	101.65625	102.20833	102.76042	100.07409	100.55208	101.10417	101.65625	102.20833	102.76042	100.09435	100.55208	101.10417
102.81934	100.04129	100.55208	101.10417	101.65625	102.20833	102.76042	100.06570	100.55208	101.10417	101.65625	102.20833	102.76042	100.08680	100.55208	101.10417
102.77468	100.03155	100.55208	101.10417	101.65625	102.20833	102.76042	100.05696	100.55208	101.10417	101.65625	102.20833	102.76042	100.07894	100.55208	101.10417
102.65813	99.97202	100.55208	101.10417	101.65625	102.20833	102.76042	100.04787	100.55208	101.10417	101.65625	102.20833	102.76042	100.07075	100.55208	101.10417
102.46114	99.81853	100.45279	101.06591	101.65314	102.20833	102.76042	100.03840	100.55208	101.10417	101.65625	102.20833	102.76042	100.06222	100.55208	101.10417
102.21315	99.59811	100.26468	100.91715	101.55312	102.16914	102.76042	100.02854	100.55208	101.10417	101.65625	102.20833	102.76042	100.05335	100.55208	101.10417
101.93751	99.34287	100.03158	100.70944	101.37553	102.02849	102.66620	99.97307	100.55208	101.10417	101.65625	102.20833	102.76042	100.04410	100.55208	101.10417
101.64466	99.06768	99.77425	100.47103	101.15780	101.83417	102.49945	99.84003	100.46120	101.06597	101.65030	102.20833	102.76042	100.03448	100.55208	101.10417
101.33858	98.77868	99.50187	100.21540	100.91930	101.61359	102.29814	99.66021	100.30603	100.94078	101.56306	102.17069	102.76042	100.02315	100.55208	101.10417
101.02035	98.47776	99.21759	99.94755	100.66778	101.37837	102.07943	99.45851	100.12193	100.77600	101.42039	102.05448	102.67716	99.97406	100.54946	101.10417
100.69000	98.16522	98.92212	99.66886	100.40559	101.13244	101.84956	99.24459	99.92358	100.59348	101.25437	101.90623	102.54891	99.86956	100.47436	101.06772
100.34719	97.84082	98.61534	99.37940	100.13313	100.87668	101.61019	99.02132	99.71574	100.40089	101.07690	101.74392	102.40209	99.73897	100.36117	100.97475
99.99155	97.50420	98.29694	99.07890	99.85021	100.61102	101.36147	98.78921	99.49950	100.20020	100.89148	101.57351	102.24646	99.59799	100.23444	100.86254
99.62264	97.15495	97.96652	98.76699	99.55649	100.33516	101.10314	98.54808	99.27479	99.99159	100.69866	101.39615	102.08425	99.45062	100.10123	100.74324
99.24005	96.79266	97.62368	98.44329	99.25160	100.04875	100.83488	98.29764	99.04135	99.77484	100.49826	101.21178	101.91558	99.29733	99.96256	100.61889
98.84332	96.41689	97.26801	98.10739	98.93515	99.75142	100.55633	98.03754	98.79887	99.54964	100.29002	101.02016	101.74024	99.13795	99.81837	100.48956
98.43201	96.02722	96.89908	97.75889	98.60675	99.44279	100.26714	97.76744	98.54702	99.31570	100.07365	100.82103	101.55800	98.97226	99.66844	100.35507
98.00566	95.62320	96.51647	97.39737	98.26601	99.12249	99.96695	97.48701	98.28547	99.07270	99.84886	100.61410	101.36860	98.80003	99.51256	100.21521
97.56382	95.20437	96.11973	97.02242	97.91251	98.79012	99.65536	97.19587	98.01388	98.82032	99.61534	100.39909	101.17176	98.62101	99.35051	100.06979
97.10600	94.77028	95.70843	96.63358	97.54583	98.44527	99.33200	96.89366	97.73190	98.55822	99.37277	100.17572	100.96721	98.43494	99.18205	99.91859
96.63173	94.32046	95.28209	96.23043	97.16555	98.08753	98.99648	96.58000	97.43916	98.28606	99.12084	99.94366	100.75468	98.24157	99.00694	99.76139
96.14053	93.85444	94.84027	95.81251	96.77122	97.71648	98.64837	96.25450	97.13530	98.00349	98.85922	99.70263	100.53387	98.04062	98.82493	99.59797
95.63191	93.37174	94.38248	95.37936	96.36241	97.33169	98.28728	95.91677	96.81993	97.71015	98.58755	99.45228	100.30449	97.83183	98.63578	99.42809
95.10537	92.87187	93.90826	94.93052	95.93866	96.93272	97.91277	95.56640	96.49267	97.40567	98.30550	99.19230	100.06621	97.61490	98.43920	99.25152
94.56043	92.35435	93.41713	94.46551	95.49950	96.51912	97.52442	95.20297	96.15312	97.08966	98.01269	98.92234	99.81874	97.38953	98.23494	99.06799
93.99657	91.81868	92.90859	93.98386	95.04448	96.09044	97.12179	94.82605	95.80088	96.76175	97.70877	98.64206	99.56173	97.15543	98.02271	98.87726
93.41330	91.26435	92.38215	93.48508	94.57311	95.64622	96.70442	94.43523	95.43551	96.42153	97.39335	98.35109	99.29485	96.91228	97.80222	98.67907
92.81012	90.69089	91.83732	92.96868	94.08492	95.18598	96.27186	94.03005	95.05661	96.06859	97.06604	98.04907	99.01776	96.65975	97.57317	98.47312
92.18653	90.09777	91.27360	92.43418	93.57942	94.70926	95.82365	93.61007	94.66374	95.70252	96.72645	97.73562	98.73011	96.39753	97.33526	98.25915
91.54203	89.48452	90.69049	91.88107	93.05613	94.21556	95.35931	93.17484	94.25645	95.32289	96.37417	97.41036	98.43153	96.12526	97.08816	98.03686
90.87613	88.85063	90.08750	91.30886	92.51454	93.70441	94.87838	92.72388	93.83430	94.92927	96.00879	97.07290	98.12164	95.84260	96.83156	97.80595
90.18835	88.19560	89.46413	90.71705	91.95417	93.17532	94.38037	92.25673	93.39683	94.52122	95.62988	96.72282	97.80007	95.54919	96.56512	97.56612
89.47820	87.51896	88.81988	90.10514	91.37451	92.62778	93.86479	91.77291	92.94358	94.09829	95.23701	96.35971	97.46642	95.24467	96.28849	97.31704
88.74522	86.82021	88.15427	89.47265	90.77508	92.06132	93.33116	91.27195	92.47407	93.66003	94.82974	95.98316	97.12029	94.92865	96.00133	97.05839
87.98894	86.09890	87.46680	88.81907	90.15537	91.47543	92.77899	90.75336	91.98784	93.20596	94.40762	95.59274	96.76128	94.60075	95.70327	96.78983
87.20894	85.35455	86.75701	88.14392	89.51489	90.86961	92.20778	90.21665	91.48440	92.73563	93.97019	95.18800	96.38897	94.26058	95.39394	96.51103
86.40478	84.58673	86.02443	87.44672	88.85316	90.24338	91.61704	89.66134	90.96327	92.24855	93.51701	94.76850	96.00293	93.90772	95.07296	96.22161
85.57606	83.79500	85.26861	86.72700	88.16970	89.59625	91.00627	89.08693	90.42396	91.74425	93.04759	94.33379	95.60273	93.54178	94.73994	95.92123
84.72240	82.97895	84.48910	85.98431	87.46401	88.92773	90.37499	88.49292	89.86598	91.22225	92.56146	93.88341	95.18792	93.16233	94.39448	95.60951
83.84343	82.13819	83.68550	85.21819	86.73566	88.23733	89.72271	87.87884	89.28884	90.68205	92.05816	93.41690	94.75806	92.76894	94.03619	95.28607
82.93883	81.27234	82.85738	84.42822	85.98417	87.52460	89.04895	87.24419	88.69205	90.12317	91.53719	92.93378	94.31269	92.36118	93.66464	94.95052
82.00830	80.38108	82.00439	83.61398	85.20911	86.78908	88.35323	86.58849	88.07513	89.54512	90.99806	92.43358	93.85135	91.93860	93.27940	94.60246
81.05158	79.46409	81.12616	82.77509	84.41007	86.03031	87.63509	85.91127	87.43758	88.94742	90.44031	91.91582	93.37358	91.50075	92.88006	94.24148
80.06845	78.52110	80.22236	81.91118	83.58663	85.24786	86.89408	85.21205	86.77892	88.32956	89.86343	91.38002	92.87890	91.04718	92.46617	93.86718
79.05872	77.55186	79.29272	81.02191	82.73843	84.44134	86.12976	84.49037	86.09869	87.69108	89.26693	90.82568	92.36683	90.57742	92.03729	93.47912
78.02227	76.55618	78.33696	80.10696	81.86510	83.61033	85.34169	83.74580	85.39641	87.03149	88.65035	90.25234	91.83690	90.09101	91.59297	93.07688
76.95901	75.53392	77.35488	79.16607	80.96631	82.75447	84.52949	82.97789	84.67163	86.35032	88.01318	89.65949	91.28862	89.58748	91.13274	92.66002
75.86892	74.48496	76.34629	78.19900	80.04179	81.87343	83.69277	82.18623	83.92391	85.64710	87.35495	89.04667	90.72152	89.06635	90.65615	92.22809
74.75203	73.40925	75.31108	77.20554	79.09125	80.96688	82.83116	81.37042	83.15281	84.92139	86.67520	88.41338	90.13511	88.52714	90.16273	91.78064
73.60844	72.30681	74.24916	76.18556	78.11450	80.03454	81.94434	80.53009	82.35792	84.17273	85.97346	87.75916	89.52891	87.96938	89.65201	91.31722
72.43830	71.17771	73.16052	75.13893	77.11134	79.07618	81.03200	79.66489	81.53885	83.40070	85.24928	87.08353	88.90244	87.39259	89.12351	90.83736
71.24187	70.02208	72.04519	74.06562	76.08164	78.09159	80.09388	78.77450	80.69524	82.60490	84.50222	86.38603	88.25523	86.79629	88.57676	90.34060
70.01946	68.84014	70.90329	72.96563	75.02534	77.08061	79.12975	77.85862	79.82673	81.78493	83.73185	85.66622	87.58681	86.18001	88.01128	89.82647
68.77146	67.63215	69.73497	71.83904	73.94239	76.04312	78.13942	76.91701	78.93301	80.94042	82.93777	84.92364	86.89672	85.54327	87.42660	89.29450
67.49836	66.39850	68.54049	70.68596	72.83283	74.97908	77.12274	75.94945	78.01380	80.07105	82.11959	84.15789	86.18452	84.88561	86.82224	88.74421
66.20074	65.13962	67.32017	69.50662	71.69677	73.88847	76.07963	74.95575	77.06885	79.17649	81.27694	83.36855	85.44975	84.20657	86.19773	88.17514
64.87927	63.85605	66.07441	68.30129	70.53436	72.77134	75.01004	73.93580	76.09795	78.25647	80.40949	82.55524	84.69201	83.50570	85.55260	87.58680
63.53471	62.54842	64.80371	67.07033	69.34584	71.62784	73.91399	72.88951	75.10093	77.31073	79.51693	81.71759	83.91088	82.78256	84.88640	86.97873
62.16794	61.21747	63.50864	65.81418	68.13152	70.45813	72.79155	71.81687	74.07768	76.33909	78.59897	80.85526	83.10598	82.03674	84.19867	86.35045
60.77993	59.86400	62.18989	64.53338	66.89180	69.26250	71.64288	70.71790	73.02812	75.34137	77.65538	79.96794	82.27693	81.26782	83.48897	85.70152
59.37178	58.48897	60.84823	63.22856	65.62716	68.04128	70.46819	69.59270	71.95224	74.31746	76.68595	79.05536	81.42341	80.47541	82.75687	85.03147
57.94467	57.09340	59.48454	61.90043	64.33817	66.79490	69.26776	68.44144	70.85008	73.26730	75.69053	78.11726	80.54508	79.65914	82.00196	84.33985
56.49993	55.67845	58.09981	60.54982	63.02549	65.52387	68.04197	67.26436	69.72176	72.19088	74.66899	77.15345	79.64168	78.81867	81.22383	83.62624
-	54.24538	56.69512	59.17764	61.68989	64.22879	66.79127	66.06176	68.56745	71.08824	73.62128	76.16376	78.71295	77.95368	80.42212	82.89021
-	-	55.27167	57.78494	60.33223	62.91037	65.51620	64.83403	67.38739	69.95951	72.54739	75.14808	77.75869	77.06387	79.59646	82.13135
-	-	-	56.37285	58.95347	61.56940	64.21740	63.58166	66.18191	68.80486	71.44736	74.10633	76.77871	76.14900	78.74652	81.34927
-	-	-	-	57.55468	60.20679	62.89559	62.30521	64.95141	67.62454	70.32132	73.03851	75.77291	75.20884	77.87200	80.54361
-	-	-	-	-	58.82352	61.55160	61.00534	63.69639	66.41889	69.16944	71.94466	74.74120	74.24322	76.97263	79.71401
-	-	-	-	-	-	60.18637	59.68279	62.41742	65.18831	67.99197	70.82489	73.68356	73.25199	76.04817	78.86016
-	-	-	-	-	-	-	58.33844	61.11517	63.93331	66.78925	69.67937	72.60002	72.23507	75.09842	77.98176
-	-	-	-	-	-	-	-	59.79041	62.65446	65.56168	68.50835	71.49069	71.19242	74.12322	77.07856
-	-	-	-	-	-	-	-	-	61.35244	64.30976	67.31215	70.35572	70.12407	73.12246	76.15033
-	-	-	-	-	-	-	-	-	-	63.03407	66.09117	69.19535	69.03008	72.09607	75.19688
-	-	-	-	-	-	-	-	-	-	-	64.84589	68.00988	67.91060	71.04405	74.21806
-	-	-	-	-	-	-	-	-	-	-	-	66.79969	66.76584	69.96644	73.21379
-	-	-	-	-	-	-	-	-	-	-	-	-	65.59608	68.86334	72.18401
-	-	-	-	-	-	-	-	-	-	-	-	-	-	67.73493	71.12873
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70.04801
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

15-Jul-20	15-Aug-20	15-Sep-20	15-Oct-20	15-Nov-20	15-Dec-20	15-Jan-21	15-Feb-21	15-Mar-21	15-Apr-21
t = 9.33	t = 9.42	t = 9.5	t = 9.58	t = 9.67	t = 9.75	t = 9.83	t = 9.92	t = 10	t = 10.08
101.66	102.21	102.76	103.31	100.55	101.10	101.66	102.21	102.76	103.31
-	-	-	3.3125	-	-	-	-	-	103.3125
101.65625	102.20833	102.76042	100.23357	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.23177	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.22990	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.22796	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.22593	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.22382	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.22162	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.21933	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.21695	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.21447	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.21188	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.20919	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.20639	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.20347	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.20042	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.19726	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.19396	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.19053	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.18695	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.18323	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.17935	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.17531	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.17110	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.16672	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.16216	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.15741	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.15247	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.14732	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.14195	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.13637	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.13055	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.12449	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.11819	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.11162	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.10478	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.09766	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.09025	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.08252	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.07448	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.06611	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.05739	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.04832	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.65625	102.20833	102.76042	100.03887	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.64714	102.20833	102.76042	100.02902	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.57939	102.17438	102.75837	100.01647	100.55208	101.10417	101.65625	102.20833	102.76042	-
101.48240	102.09408	102.69750	99.97985	100.54744	101.10417	101.65625	102.20833	102.76042	-
101.37685	102.00222	102.61954	99.91647	100.49991	101.07600	101.64482	102.20636	102.76042	-
101.26650	101.90558	102.53631	99.84637	100.44231	101.03070	101.61173	102.18559	102.75245	-
101.15172	101.80502	102.44966	99.77333	100.38216	100.98316	101.57651	102.16239	102.74099	-
101.03233	101.70042	102.35952	99.69732	100.31957	100.93368	101.53984	102.13823	102.72905	-
100.90816	101.59161	102.26573	99.61824	100.25444	100.88218	101.50166	102.11308	102.71663	-
100.77903	101.47843	102.16817	99.53596	100.18666	100.82858	101.46193	102.08690	102.70369	-
100.64474	101.36071	102.06668	99.45035	100.11612	100.77280	101.42057	102.05964	102.69022	-
100.50511	101.23828	101.96111	99.36129	100.04273	100.71474	101.37752	102.03127	102.67619	-
100.35991	101.11096	101.85130	99.26863	99.96637	100.65433	101.33271	102.00173	102.66159	-
100.20895	100.97855	101.73708	99.17223	99.88691	100.59145	101.28608	101.97098	102.64639	-
100.05201	100.84087	101.61829	99.07196	99.80424	100.52603	101.23754	101.93898	102.63056	-
99.88885	100.69771	101.49474	98.96766	99.71823	100.45794	101.18702	101.90566	102.61408	-
99.71925	100.54886	101.36627	98.85917	99.62875	100.38710	101.13444	101.87097	102.59692	-
99.54297	100.39411	101.23267	98.74633	99.53566	100.31339	101.07972	101.83487	102.57906	-
99.35975	100.23324	101.09375	98.62898	99.43883	100.23669	101.02278	101.79729	102.56046	-
99.16935	100.06601	100.94931	98.50693	99.33810	100.15689	100.96352	101.75818	102.54110	-
98.97149	99.89219	100.79914	98.38001	99.23332	100.07387	100.90185	101.71747	102.52095	-
98.76590	99.71153	100.64302	98.24803	99.12435	99.98750	100.83768	101.67510	102.49996	-
98.55230	99.52379	100.48074	98.11080	99.01101	99.89765	100.77091	101.63100	102.47812	-
98.33040	99.32869	100.31205	97.96812	98.89313	99.80417	100.70143	101.58510	102.45538	-
98.09990	99.12597	100.13672	97.81978	98.77055	99.70695	100.62914	101.53733	102.43171	-
97.86050	98.91536	99.95451	97.66558	98.64308	99.60581	100.55393	101.48762	102.40707	-
97.61188	98.69656	99.76516	97.50528	98.51054	99.50062	100.47568	101.43589	102.38143	-
97.35371	98.46928	99.56840	97.33866	98.37274	99.39122	100.39427	101.38205	102.35473	-
97.08565	98.23322	99.36398	97.16549	98.22946	99.27745	100.30959	101.32603	102.32694	-
96.80737	97.98806	99.15160	96.98553	98.08051	99.15913	100.22149	101.26773	102.29801	-
96.51852	97.73349	98.93098	96.79852	97.92568	99.03609	100.12985	101.20707	102.26790	-
96.21872	97.46917	98.70184	96.60420	97.76474	98.90816	100.03453	101.14396	102.23657	-
95.90762	97.19477	98.46385	96.40232	97.59747	98.77514	99.93539	101.07829	102.20395	-
95.58483	96.90994	98.21672	96.19258	97.42362	98.63685	99.83228	101.00997	102.17001	-
95.24996	96.61432	97.96011	95.97472	97.24297	98.49308	99.72504	100.93889	102.13468	-
94.90262	96.30755	97.69371	95.74845	97.05526	98.34363	99.61352	100.86494	102.09791	-
94.54240	95.98924	97.41716	95.51345	96.86022	98.18828	99.49756	100.78802	102.05965	-
94.16889	95.65903	97.13013	95.26943	96.65761	98.02683	99.37698	100.70799	102.01983	-
93.78168	95.31652	96.83225	95.01607	96.44713	97.85903	99.25161	100.62476	101.97840	-
93.38032	94.96130	96.52316	94.75304	96.22851	97.68466	99.12127	100.53818	101.93528	-
92.96439	94.59298	96.20249	94.48001	96.00147	97.50347	98.98576	100.44813	101.89042	-
92.53344	94.21113	95.86986	94.19663	95.76569	97.31522	98.84491	100.35448	101.84373	-
92.08703	93.81534	95.52488	93.90257	95.52089	97.11965	98.69849	100.25708	101.79516	-
91.62470	93.40517	95.16714	93.59746	95.26673	96.91650	98.54632	100.15580	101.74462	-
91.14600	92.98018	94.79624	93.28092	95.00290	96.70549	98.38817	100.05049	101.69204	-
90.65045	92.53994	94.41177	92.95260	94.72906	96.48634	98.22382	99.94098	101.63734	-
90.13760	92.08400	94.01332	92.61210	94.44488	96.25877	98.05306	99.82713	101.58044	-
89.60697	91.61190	93.60044	92.25903	94.15001	96.02248	97.87563	99.70876	101.52124	-
89.05811	91.12319	93.17271	91.89299	93.84409	95.77716	97.69130	99.58571	101.45966	-
88.49052	90.61740	92.72968	91.51358	93.52676	95.52251	97.49983	99.45780	101.39561	-
87.90376	90.09407	92.27092	91.12039	93.19764	95.25820	97.30095	99.32486	101.32899	-
87.29735	89.55274	91.79598	90.71299	92.85636	94.98390	97.09440	99.18668	101.25970	-
86.67082	88.99294	91.30440	90.29097	92.50252	94.69929	96.87990	99.04308	101.18764	-
86.02373	88.41422	90.79573	89.85389	92.13573	94.40401	96.65719	98.89386	101.11271	-
85.35561	87.81609	90.26951	89.40131	91.75560	94.09771	96.42598	98.73882	101.03478	-
84.66604	87.19812	89.72528	88.93280	91.36171	93.78004	96.18596	98.57773	100.95375	-
83.95458	86.55985	89.16259	88.44791	90.95365	93.45062	95.93684	98.41039	100.86950	-
83.22080	85.90082	88.58098	87.94620	90.53099	93.10909	95.67830	98.23656	100.78191	-
82.46432	85.22061	87.98000	87.42722	90.09332	92.75505	95.41004	98.05602	100.69085	-
81.68475	84.51878	87.35919	86.89052	89.64021	92.38813	95.13172	97.86852	100.59619	-
80.88171	83.79492	86.71813	86.33567	89.17122	92.00793	94.84302	97.67382	100.49779	-
80.05487	83.04863	86.05637	85.76220	88.68591	91.61404	94.54358	97.47167	100.39552	-
79.20392	82.27953	85.37348	85.16968	88.18386	91.20606	94.23308	97.26180	100.28923	-
78.32857	81.48725	84.66906	84.55768	87.66462	90.78359	93.91115	97.04395	100.17877	-
77.42856	80.67146	83.94270	83.92576	87.12775	90.34620	93.57743	96.81785	100.06400	-
76.50367	79.83183	83.19401	83.27350	86.57282	89.89348	93.23155	96.58322	99.94474	-
75.55373	78.96808	82.42264	82.60048	85.99939	89.42500	92.87315	96.33977	99.82085	-
74.57859	78.07996	81.62824	81.90630	85.40703	88.94034	92.50185	96.08720	99.69214	-
73.57816	77.16723	80.81047	81.19058	84.79532	88.43908	92.11725	95.82522	99.55845	-
72.55240	76.22972	79.96906	80.45294	84.16383	87.92080	91.71898	95.55351	99.41960	-
-	75.26728	79.10372	79.69302	83.51216	87.38506	91.30663	95.27177	99.27541	-
-	-	78.21423	78.91050	82.83990	86.83144	90.87981	94.97968	99.12568	-
-	-	-	78.10506	82.14668	86.25953	90.43813	94.67690	98.97023	-
-	-	-	-	81.43210	85.66892	89.98118	94.36311	98.80885	-
-	-	-	-	-	85.05918	89.50855	94.03796	98.64134	-
-	-	-	-	-	-	89.01984	93.70112	98.46748	-
-	-	-	-	-	-	-	93.35224	98.28707	-
-	-	-	-	-	-	-	-	98.09989	-

Final 2018 notes valuation

date	15-Apr-11	15-May-11	15-Jun-11	15-Jul-11	15-Aug-11	15-Sep-11	15-Oct-11	15-Nov-11	15-Dec-11	15-Jan-12
Final valuation model 2018 EUR notes				**OAS included:**	**355.4958 bps**					
	t = 0.08	t = 0.17	t = 0.25	t = 0.33	t = 0.42	t = 0.5	t = 0.58	t = 0.67	t = 0.75	t = 0.83
Callable value										
Cash flows	-	-	-	-	-	-	3.3125	-	-	-
j = 1	100.00000	100.65423	101.32579	102.01621	102.72386	103.44411	100.85704	101.56527	102.26604	102.95818
j = 2	-	100.00852	100.69012	101.39132	102.11045	102.84277	100.26813	100.98872	101.70183	102.40629
j = 3	-	-	100.03414	100.74618	101.47685	102.22127	99.65905	100.39196	101.11735	101.83399
j = 4	-	-	-	100.08067	100.82298	101.57959	99.02988	99.77517	100.51282	101.24161
j = 5	-	-	-	-	100.14868	100.91764	98.38057	99.13833	99.88833	100.62932
j = 6	-	-	-	-	-	100.23517	97.71093	98.48132	99.24381	99.99710
j = 7	-	-	-	-	-	-	97.02069	97.80391	98.57907	99.34482
j = 8	-	-	-	-	-	-	-	97.10580	97.89383	98.67224
j = 9	-	-	-	-	-	-	-	-	97.18777	97.97906
j = 10	-	-	-	-	-	-	-	-	-	97.26492
j = 11	-	-	-	-	-	-	-	-	-	-
j = 12	-	-	-	-	-	-	-	-	-	-
j = 13	-	-	-	-	-	-	-	-	-	-
j = 14	-	-	-	-	-	-	-	-	-	-
j = 15	-	-	-	-	-	-	-	-	-	-
j = 16	-	-	-	-	-	-	-	-	-	-
j = 17	-	-	-	-	-	-	-	-	-	-
j = 18	-	-	-	-	-	-	-	-	-	-
j = 19	-	-	-	-	-	-	-	-	-	-
j = 20	-	-	-	-	-	-	-	-	-	-
j = 21	-	-	-	-	-	-	-	-	-	-
j = 22	-	-	-	-	-	-	-	-	-	-
j = 23	-	-	-	-	-	-	-	-	-	-
j = 24	-	-	-	-	-	-	-	-	-	-
j = 25	-	-	-	-	-	-	-	-	-	-
j = 26	-	-	-	-	-	-	-	-	-	-
j = 27	-	-	-	-	-	-	-	-	-	-
j = 28	-	-	-	-	-	-	-	-	-	-
j = 29	-	-	-	-	-	-	-	-	-	-
j = 30	-	-	-	-	-	-	-	-	-	-
j = 31	-	-	-	-	-	-	-	-	-	-
j = 32	-	-	-	-	-	-	-	-	-	-
j = 33	-	-	-	-	-	-	-	-	-	-
j = 34	-	-	-	-	-	-	-	-	-	-
j = 35	-	-	-	-	-	-	-	-	-	-
j = 36	-	-	-	-	-	-	-	-	-	-
j = 37	-	-	-	-	-	-	-	-	-	-
j = 38	-	-	-	-	-	-	-	-	-	-
j = 39	-	-	-	-	-	-	-	-	-	-
j = 40	-	-	-	-	-	-	-	-	-	-
j = 41	-	-	-	-	-	-	-	-	-	-
j = 42	-	-	-	-	-	-	-	-	-	-
j = 43	-	-	-	-	-	-	-	-	-	-
j = 44	-	-	-	-	-	-	-	-	-	-
j = 45	-	-	-	-	-	-	-	-	-	-
j = 46	-	-	-	-	-	-	-	-	-	-
j = 47	-	-	-	-	-	-	-	-	-	-
j = 48	-	-	-	-	-	-	-	-	-	-
j = 49	-	-	-	-	-	-	-	-	-	-
j = 50	-	-	-	-	-	-	-	-	-	-
j = 51	-	-	-	-	-	-	-	-	-	-
j = 52	-	-	-	-	-	-	-	-	-	-
j = 53	-	-	-	-	-	-	-	-	-	-
j = 54	-	-	-	-	-	-	-	-	-	-
j = 55	-	-	-	-	-	-	-	-	-	-
j = 56	-	-	-	-	-	-	-	-	-	-
j = 57	-	-	-	-	-	-	-	-	-	-
j = 58	-	-	-	-	-	-	-	-	-	-
j = 59	-	-	-	-	-	-	-	-	-	-
j = 60	-	-	-	-	-	-	-	-	-	-
j = 61	-	-	-	-	-	-	-	-	-	-
j = 62	-	-	-	-	-	-	-	-	-	-
j = 63	-	-	-	-	-	-	-	-	-	-
j = 64	-	-	-	-	-	-	-	-	-	-
j = 65	-	-	-	-	-	-	-	-	-	-
j = 66	-	-	-	-	-	-	-	-	-	-
j = 67	-	-	-	-	-	-	-	-	-	-
j = 68	-	-	-	-	-	-	-	-	-	-
j = 69	-	-	-	-	-	-	-	-	-	-
j = 70	-	-	-	-	-	-	-	-	-	-
j = 71	-	-	-	-	-	-	-	-	-	-
j = 72	-	-	-	-	-	-	-	-	-	-
j = 73	-	-	-	-	-	-	-	-	-	-
j = 74	-	-	-	-	-	-	-	-	-	-
j = 75	-	-	-	-	-	-	-	-	-	-
j = 76	-	-	-	-	-	-	-	-	-	-
j = 77	-	-	-	-	-	-	-	-	-	-
j = 78	-	-	-	-	-	-	-	-	-	-
j = 79	-	-	-	-	-	-	-	-	-	-
j = 80	-	-	-	-	-	-	-	-	-	-
j = 81	-	-	-	-	-	-	-	-	-	-
j = 82	-	-	-	-	-	-	-	-	-	-
j = 83	-	-	-	-	-	-	-	-	-	-
j = 84	-	-	-	-	-	-	-	-	-	-

15-Feb-12	15-Mar-12	15-Apr-12	15-May-12	15-Jun-12	15-Jul-12	15-Aug-12	15-Sep-12	15-Oct-12	15-Nov-12	15-Dec-12
t = 0.92	t = 1	t = 1.08	t = 1.17	t = 1.25	t = 1.33	t = 1.42	t = 1.5	t = 1.58	t = 1.67	t = 1.75
-	-	3.3125	-	-	-	-	-	3.3125	-	-
103.64226	104.32046	101.68400	102.34858	103.01582	103.68551	104.35721	105.03030	102.39144	103.05015	103.70725
103.10269	103.79332	101.16953	101.84705	102.52767	103.21119	103.89713	104.58484	101.96093	102.63467	103.30694
102.54254	103.24539	100.63403	101.32422	102.01796	102.71504	103.41500	104.11717	101.50812	102.19686	102.88442
101.96223	102.67716	100.07806	100.78071	101.48731	102.19769	102.91140	103.62775	101.03332	101.73690	102.43963
101.36200	102.08897	99.50204	100.21702	100.93631	101.65978	102.38699	103.11727	100.53718	101.25530	101.97295
100.74193	101.48099	98.90624	99.63351	100.36543	101.10186	101.84242	102.58641	100.02042	100.75280	101.48508
100.10194	100.85320	98.29073	99.03034	99.77490	100.52430	101.27813	102.03574	99.48371	100.23014	100.97679
99.44184	100.20546	97.65541	98.40750	99.16481	99.92725	100.69441	101.46565	98.92752	99.68792	100.44879
98.76133	99.53752	97.00008	97.76483	98.53506	99.31069	100.09132	100.87628	98.35214	99.12652	99.90158
98.06008	98.84906	96.32446	97.10207	97.88543	98.67445	99.46874	100.26762	97.75762	98.54610	99.33544
97.33775	98.13973	95.62818	96.41888	97.21561	98.01826	98.82645	99.63947	97.14384	97.94663	98.75042
-	97.40917	94.91090	95.71492	96.52525	97.34179	98.16413	98.99156	96.51056	97.32790	98.14638
-	-	94.17225	94.98982	95.81398	96.64466	97.48143	98.32354	95.85746	96.68962	97.52308
-	-	-	94.24319	95.08144	95.92651	96.77796	97.63504	95.18416	96.03145	96.88017
-	-	-	-	94.32724	95.18694	96.05335	96.92566	94.49030	95.35300	96.21730
-	-	-	-	-	94.42560	95.30721	96.19504	93.77546	94.65387	95.53405
-	-	-	-	-	-	94.53918	95.44279	93.03928	93.93368	94.83004
-	-	-	-	-	-	-	94.66855	92.28138	93.19205	94.10488
-	-	-	-	-	-	-	-	91.50139	92.42860	93.35819
-	-	-	-	-	-	-	-	-	91.64297	92.58959
-	-	-	-	-	-	-	-	-	-	91.79874
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
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15-Jan-13	15-Feb-13	15-Mar-13	15-Apr-13	15-May-13	15-Jun-13	15-Jul-13	15-Aug-13	15-Sep-13	15-Oct-13	15-Nov-13
t = 1.83	t = 1.92	t = 2	t = 2.08	t = 2.17	t = 2.25	t = 2.33	t = 2.42	t = 2.5	t = 2.58	t = 2.67
-	-	-	3.3125	-	-	-	-	-	3.3125	-
104.36152	105.01165	105.65623	102.98129	103.59618	104.20297	104.80209	105.39407	105.97956	103.24676	103.80764
103.97642	104.64167	105.30117	102.64077	103.26955	103.88968	104.50153	105.10562	105.70257	102.98063	103.55163
103.56937	104.25017	104.92515	102.28005	102.92359	103.55806	104.18374	104.80110	105.41072	102.70081	103.28306
103.14004	103.83650	104.52723	101.89784	102.55673	103.20629	103.84672	104.47840	105.10183	102.40517	102.99990
102.68862	103.40061	104.10706	101.49349	102.16798	102.83305	103.48883	104.13560	104.77380	102.09148	102.69989
102.21571	102.94295	103.66490	101.06699	101.75703	102.43769	103.10906	103.77135	104.42492	101.75776	102.38083
101.72209	102.46427	103.20139	100.61885	101.32416	102.02022	102.70710	103.38497	104.05416	101.40258	102.04094
101.20855	101.96541	102.71741	100.14990	100.87012	101.58123	102.28330	102.97653	103.66122	101.02526	101.67913
100.67572	101.44712	102.21379	99.66102	100.39583	101.12162	101.83849	102.54668	103.24652	100.62592	101.29515
100.12400	100.90992	101.69117	99.15302	99.90218	100.64234	101.37366	102.09641	102.81096	100.20528	100.88947
99.55353	100.35409	101.14998	98.62643	99.38986	100.14423	100.88975	101.62674	102.35562	99.76443	100.46310
98.96429	99.77966	100.59036	98.08153	98.85928	99.62785	100.38749	101.13855	101.88151	99.30447	100.01720
98.35604	99.18651	100.01225	97.51835	98.31059	99.09348	99.86729	100.63241	101.38938	98.82632	99.55283
97.72850	98.57435	99.41543	96.93675	97.74371	98.54113	99.32929	100.10861	100.87964	98.33056	99.07077
97.08130	97.94285	98.79959	96.33643	97.15841	97.97065	98.77341	99.56715	100.35243	97.81747	98.57145
96.41404	97.29163	98.16436	95.71706	96.55438	97.38173	98.19940	99.00784	99.80764	97.28703	98.05498
95.72634	96.62028	97.50934	95.07823	95.93122	96.77402	97.60693	98.43039	99.24501	96.73906	97.52124
95.01779	95.92841	96.83412	94.41955	95.28854	96.14713	96.99560	97.83442	98.66420	96.17324	96.96996
94.28801	95.21562	96.13831	93.74061	94.62592	95.50063	96.36501	97.21953	98.06482	95.58919	96.40079
93.53661	94.48152	95.42150	93.04100	93.94297	94.83412	95.71474	96.58530	97.44645	94.98650	95.81332
92.76324	93.72573	94.68332	92.32034	93.23927	94.14720	95.04439	95.93133	96.80867	94.36475	95.20713
91.96753	92.94789	93.92338	91.57824	92.51444	93.43945	94.35354	95.25719	96.15107	93.72352	94.58180
-	92.14766	93.14134	90.81432	91.76809	92.71050	93.64180	94.56249	95.47323	93.06240	93.93693
-	-	92.33684	90.02824	90.99986	91.95995	92.90878	93.84682	94.77476	92.38098	93.27208
-	-	-	89.21966	90.20940	91.18746	92.15410	93.10980	94.05525	91.67886	92.58685
-	-	-	-	89.39636	90.39266	91.37739	92.35105	93.31433	90.95563	91.88083
-	-	-	-	-	89.57523	90.57833	91.57022	92.55161	90.21093	91.15365
-	-	-	-	-	-	89.75657	90.76696	91.76676	89.44438	90.40491
-	-	-	-	-	-	-	89.94096	90.95942	88.65563	89.63426
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15-Dec-13	15-Jan-14	15-Feb-14	15-Mar-14	15-Apr-14	15-May-14	15-Jun-14	15-Jul-14	15-Aug-14	15-Sep-14	15-Oct-14
t = 2.75	t = 2.83	t = 2.92	t = 3	t = 3.08	t = 3.17	t = 3.25	t = 3.33	t = 3.42	t = 3.5	t = 3.58
-	-	-	-	3.3125	-	-	-	-	-	3.3125
104.36441	104.91792	105.46903	106.01863	103.25513	103.79046	104.32584	104.86099	105.39560	105.92935	103.14937
104.11801	104.68068	105.24059	105.79871	103.04353	103.58691	104.13024	104.67326	105.21569	105.75718	102.98487
103.86009	104.43287	105.00242	105.56978	102.82354	103.37547	103.92718	104.47846	105.02903	105.57857	102.81423
103.58880	104.17285	104.75310	105.33066	102.59419	103.15539	103.71609	104.27613	104.83527	105.39324	102.63719
103.30192	103.89852	104.49074	105.07969	102.35410	102.92553	103.49606	104.06556	104.63387	105.20075	102.45342
102.99714	103.60754	104.21304	104.81474	102.10133	102.68423	103.26569	103.84565	104.42397	105.00047	102.26243
102.67236	103.29761	103.91760	104.53335	101.83352	102.42928	103.02306	103.61473	104.20420	104.79132	102.06341
102.32609	102.96684	103.60221	104.23312	101.54813	102.15816	102.76570	103.37058	103.97261	104.57165	101.85503
101.95766	102.61412	103.26530	103.91206	101.24286	101.86831	102.49097	103.11052	103.72667	104.33918	101.63533
101.56722	102.23921	102.90619	103.56900	100.91604	101.55764	102.19640	102.83187	103.46358	104.09114	101.40170
101.15560	101.84267	102.52510	103.20374	100.56700	101.22492	101.88027	102.53241	103.18073	103.82466	101.15118
100.72397	101.42561	102.12295	102.81693	100.19600	100.87000	101.54186	102.21087	102.87630	103.53741	100.88100
100.27352	100.98927	101.70103	102.40979	99.80410	100.49363	101.18154	101.86712	102.54955	103.22803	100.58920
99.80520	100.53480	101.26059	101.98367	99.39268	100.09713	100.80048	101.50202	102.20096	102.89644	100.27507
99.31962	100.06298	100.80264	101.53977	98.96311	99.68199	100.40020	101.11705	101.83181	102.54364	99.93915
98.81703	99.57425	100.32780	101.07892	98.51642	99.24946	99.98214	100.71381	101.44378	102.17127	99.58292
98.29742	99.06871	99.83631	100.60152	98.05324	98.80039	99.54739	100.29362	101.03842	101.78105	99.20819
97.76057	98.54621	99.32813	100.10768	97.57380	98.33520	99.09658	99.85735	100.61685	101.37436	98.81662
97.20616	98.00648	98.80303	99.59722	97.07803	97.85393	98.62992	99.40538	100.17968	100.95210	98.40937
96.63379	97.44913	98.26067	99.06985	96.56570	97.35642	98.14732	98.93778	99.72712	100.51464	97.98706
96.04306	96.87378	97.70066	98.52519	96.03645	96.84235	97.64852	98.45432	99.25906	100.06199	97.54984
95.43354	96.28000	97.12258	97.96283	95.48988	96.31135	97.13317	97.95470	98.77521	99.59395	97.09759
94.80481	95.66735	96.52601	97.38236	94.92558	95.76299	96.60086	97.43851	98.27521	99.11016	96.63002
94.15644	95.03543	95.91052	96.78334	94.34312	95.19685	96.05116	96.90536	97.75866	98.61025	96.14674
93.48804	94.38381	95.27569	96.16534	93.74207	94.61250	95.48366	96.35480	97.22512	98.09378	95.64736
92.79918	93.71208	94.62110	95.52796	93.12200	94.00952	94.89791	95.78641	96.67418	97.56034	95.13145
92.08946	93.01982	93.94633	94.87076	92.48250	93.38749	94.29351	95.19976	96.10541	97.00951	94.59859
91.35851	92.30665	93.25099	94.19333	91.82314	92.74597	93.67001	94.59444	95.51837	96.44084	94.04835
90.60593	91.57217	92.53467	93.49528	91.14352	92.08456	93.02700	93.97000	94.91264	95.85392	93.48030
89.83137	90.81601	91.79699	92.77620	90.44323	91.40284	92.36406	93.32603	94.28779	95.24832	92.89402
89.03449	90.03781	91.03757	92.03572	89.72189	90.70041	91.68078	92.66211	93.64341	94.62361	92.28907
88.21495	89.23723	90.25607	91.27346	88.97910	89.97687	90.97677	91.97784	92.97908	93.97937	91.66505
87.37244	88.41394	89.45213	90.48907	88.21450	89.23186	90.25162	91.27282	92.29439	93.31520	91.02151
-	87.56763	88.62543	89.68220	87.42774	88.46500	89.50497	90.54665	91.58894	92.63067	90.35806
-	-	87.77568	88.85255	86.61849	87.67594	88.73644	89.79895	90.86235	91.92540	89.67428
-	-	-	87.99980	85.78641	86.86434	87.94568	89.02937	90.11422	91.19898	88.96979
-	-	-	-	84.93123	86.02990	87.13237	88.23754	89.34421	90.45106	88.24417
-	-	-	-	-	85.17231	86.29618	87.42315	88.55196	89.68125	87.49707
-	-	-	-	-	-	85.43683	86.58587	87.73714	88.88922	86.72812
-	-	-	-	-	-	-	85.72543	86.89943	88.07464	85.93697
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15-Nov-14	15-Dec-14	15-Jan-15	15-Feb-15	15-Mar-15	15-Apr-15	15-May-15	15-Jun-15	15-Jul-15	15-Aug-15	15-Sep-15
t = 3.67	t = 3.75	t = 3.83	t = 3.92	t = 4	t = 4.08	t = 4.17	t = 4.25	t = 4.33	t = 4.42	t = 4.5
					106.63	103.87	104.42	104.97	105.52	106.07
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103.66629	104.18127	104.69390	105.20379	105.71053	102.90121	103.38686	103.86879	104.34717	104.82218	105.29400
103.50923	104.03154	104.55141	105.06841	105.58211	102.77960	103.27175	103.76001	104.24459	104.72566	105.20343
103.34629	103.87620	104.40356	104.92792	105.44885	102.65339	103.15227	103.64709	104.13806	104.62538	105.10924
103.17725	103.71504	104.25016	104.78215	105.31056	102.52242	103.02827	103.52990	104.02750	104.52128	105.01146
103.00183	103.54783	104.09101	104.63091	105.16708	102.38652	102.89959	103.40827	103.91274	104.41323	104.90996
102.81967	103.37428	103.92586	104.47399	105.01820	102.24550	102.76606	103.28204	103.79364	104.30108	104.80460
102.63017	103.19393	103.75438	104.31112	104.86370	102.09917	102.62750	103.15105	103.67003	104.18469	104.69524
102.43229	103.00604	103.57601	104.14189	104.70330	101.94729	102.48370	103.01511	103.54176	104.06388	104.58174
102.22443	102.80933	103.38981	103.96563	104.53649	101.78952	102.33442	102.87403	103.40864	103.93852	104.46393
102.00425	102.60182	103.19418	103.78112	104.36241	101.62524	102.17922	102.72750	103.27044	103.80840	104.34167
101.76886	102.38082	102.98676	103.58640	104.17949	101.45331	102.01731	102.57497	103.12681	103.67327	104.21476
101.51521	102.14322	102.76451	103.37867	103.98536	101.27178	101.84720	102.41540	102.97703	103.53268	104.08288
101.24080	101.88604	102.52420	103.15465	103.77683	101.07780	101.66648	102.24688	102.81971	103.38567	103.94545
100.94421	101.60720	102.26314	102.91115	103.55046	100.86786	101.47183	102.06648	102.65243	103.23040	103.80115
100.62541	101.30597	101.97981	102.64593	103.30332	100.63854	101.25955	101.87048	102.47173	103.06388	103.64762
100.28555	100.98301	101.67426	102.35823	103.03381	100.38740	101.02646	101.65515	102.27362	102.88216	103.48123
99.92644	100.63998	101.34781	102.04887	102.74205	100.11368	100.77086	101.41786	102.05461	102.68116	103.29766
99.54995	100.27887	101.00247	101.71972	102.42957	99.81836	100.49293	101.15782	101.81288	102.45799	103.09307
99.15753	99.90145	100.64025	101.37297	102.09860	99.50356	100.19446	100.87621	101.54872	102.21185	102.86548
98.75007	99.50890	100.26267	101.01046	101.75130	99.17166	99.87793	100.57543	101.26418	101.94416	102.61531
98.32793	99.10182	99.87063	100.63343	101.38927	98.82464	99.54567	100.25809	100.96204	101.65764	102.34495
97.89110	98.68035	99.46445	100.24245	101.01338	98.46374	99.19932	99.92628	100.64482	101.35516	102.05751
97.43933	98.24434	99.04409	99.83762	100.62393	98.08949	98.83975	99.58122	100.31418	101.03890	101.75568
96.97229	97.79347	98.60929	99.41876	100.22084	97.70195	98.46719	99.22343	99.97095	100.71008	101.44115
96.48957	97.32736	98.15970	98.98555	99.80383	97.30093	98.08154	98.85290	99.61532	100.36914	101.11469
95.99077	96.84561	97.69492	98.53760	99.37254	96.88608	97.68250	98.46942	99.24715	100.01604	100.77644
95.47545	96.34780	97.21453	98.07452	98.92659	96.45704	97.26972	98.07265	98.86614	99.65053	100.42621
94.94320	95.83351	96.71813	97.59588	98.46555	96.01340	96.84280	97.66220	98.47191	99.27228	100.06369
94.39359	95.30231	96.20528	97.10127	97.98903	95.55474	96.40134	97.23768	98.06409	98.88090	99.68852
93.82618	94.75377	95.67556	96.59027	97.49659	95.08067	95.94494	96.79870	97.64228	98.47602	99.30032
93.24055	94.18747	95.12854	96.06246	96.98783	94.59076	95.47317	96.34484	97.20607	98.05724	98.89872
92.63628	93.60298	94.56381	95.51739	96.46231	94.08459	94.98564	95.87569	96.75508	97.62415	98.48331
92.01294	92.99987	93.98092	94.95466	95.91961	93.56173	94.48190	95.39084	96.28888	97.17636	98.05370
91.37011	92.37772	93.37946	94.37383	95.35930	93.02178	93.96155	94.88987	95.80705	96.71346	97.60949
90.70738	91.73611	92.75899	93.77448	94.78096	92.46428	93.42416	94.37236	95.30919	96.23503	97.15027
90.02434	91.07463	92.11911	93.15618	94.18416	91.88884	92.86930	93.83787	94.79487	95.74065	96.67563
89.32059	90.39286	91.45940	92.51851	93.56848	91.29500	92.29654	93.28600	94.26366	95.22991	96.18514
88.59574	89.69042	90.77944	91.86107	92.93350	90.68237	91.70547	92.71630	93.71515	94.70238	95.67840
87.84942	88.96691	90.07885	91.18344	92.27881	90.05051	91.09566	92.12836	93.14890	94.15764	95.15498
87.08126	88.22194	89.35722	90.48522	91.60399	89.39902	90.46669	91.52176	92.56450	93.59527	94.61446
86.29092	87.45517	88.61419	89.76602	90.90865	88.72748	89.81815	90.89607	91.96152	93.01483	94.05641
85.47806	86.66624	87.84938	89.02547	90.19240	88.03549	89.14962	90.25088	91.33953	92.41591	93.48042
84.64238	85.85482	87.06246	88.26320	89.45486	87.32267	88.46071	89.58578	90.69813	91.79809	92.88605
83.78359	85.02060	86.25308	87.47885	88.69566	86.58864	87.75102	88.90037	90.03691	91.16096	92.27289
-	84.16329	85.42094	86.67211	87.91445	85.83302	87.02018	88.19425	89.35546	90.50409	91.64052
-	-	84.56574	85.84264	87.11090	85.05547	86.26781	87.46705	88.65338	89.82709	90.98854
-	-	-	84.99018	86.28469	84.25565	85.49356	86.71839	87.93030	89.12956	90.31653
-	-	-	-	85.43554	83.43325	84.69710	85.94791	87.18584	88.41112	89.62411
-	-	-	-	-	82.58796	83.87810	85.15528	86.41963	87.67139	88.91087
-	-	-	-	-	-	83.03627	84.34017	85.63135	86.91001	88.17646
-	-	-	-	-	-	-	83.50229	84.82067	86.12664	87.42049
-	-	-	-	-	-	-	-	83.98728	85.32095	86.64264
-	-	-	-	-	-	-	-	-	84.49263	85.84256
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15-Oct-15	15-Nov-15	15-Dec-15	15-Jan-16	15-Feb-16	15-Mar-16	15-Apr-16	15-May-16	15-Jun-16	15-Jul-16	15-Aug-16
t = 4.58	t = 4.67	t = 4.75	t = 4.83	t = 4.92	t = 5	t = 5.08	t = 5.17	t = 5.25	t = 5.33	t = 5.42
106.63	103.87	104.42	104.97	105.52	106.07	104.97	102.21	102.76	103.31	103.86
3.3125	-	-	-	-	-	3.3125	-	-	-	-
102.45028	102.90286	103.35264	103.79950	104.24297	104.68192	101.80135	102.20808	102.67825	103.10388	103.52810
102.36561	102.82399	103.27978	103.73320	104.18447	104.63382	101.76897	102.20209	102.63376	103.06396	103.49266
102.27736	102.74141	103.20274	103.66159	104.11818	104.57275	101.71302	102.15106	102.58755	103.02249	103.45584
102.18575	102.65568	103.12276	103.58724	104.04935	104.50933	101.65492	102.09805	102.53956	102.97941	103.41760
102.09065	102.56667	103.03972	103.51004	103.97788	104.44347	101.59459	102.04300	102.48971	102.93468	103.37788
101.99192	102.47427	102.95351	103.42989	103.90367	104.37509	101.53193	101.98584	102.43794	102.88821	103.33662
101.88944	102.37835	102.86401	103.34668	103.82661	104.30409	101.46687	101.92647	102.38418	102.83996	103.29377
101.78307	102.27878	102.77110	103.26028	103.74661	104.23036	101.39930	101.86482	102.32834	102.78984	103.24927
101.67266	102.17542	102.67464	103.17059	103.66355	104.15381	101.32915	101.80081	102.27036	102.73778	103.20304
101.55806	102.06814	102.57452	103.07748	103.57732	104.07433	101.25631	101.73433	102.21015	102.68373	103.15503
101.43912	101.95679	102.47059	102.98082	103.48779	103.99180	101.18067	101.66530	102.14762	102.62759	103.10517
101.31562	101.84120	102.36270	102.88048	103.39485	103.90613	101.10214	101.59362	102.08268	102.56929	103.05339
101.18719	101.72113	102.25070	102.77633	103.29837	103.81719	101.02061	101.51920	102.01526	102.50874	102.99961
101.05298	101.59607	102.13427	102.66816	103.19821	103.72485	100.93597	101.44193	101.94525	102.44587	102.94376
100.91125	101.46487	102.01272	102.55558	103.09414	103.62898	100.84809	101.36171	101.87255	102.38059	102.88576
100.75898	101.32521	101.88444	102.43760	102.98560	103.52927	100.75681	101.27841	101.79708	102.31280	102.82553
100.59195	101.17332	101.74638	102.31200	102.87117	103.42493	100.66173	101.19184	101.71870	102.24241	102.76298
100.40568	101.00450	101.59404	102.17489	102.74784	103.31389	100.56165	101.10141	101.63716	102.16930	102.69804
100.19697	100.81449	101.42248	102.02113	102.61081	103.19219	100.45367	101.00532	101.55154	102.09308	102.63055
99.96501	100.60109	101.22811	101.84593	102.45457	103.05419	100.33271	100.89955	101.45916	102.01231	102.55991
99.71149	100.36492	101.01010	101.64686	102.27503	102.89443	100.19253	100.77791	101.35466	101.92308	102.48384
99.43954	100.10876	100.77050	101.42474	102.07136	102.71017	100.02844	100.63411	101.23095	101.81853	102.39677
99.15229	99.83609	100.51290	101.18287	101.84608	102.50253	99.83960	100.46497	101.08249	101.69128	102.29052
98.85201	99.54978	100.24072	100.92514	101.60329	102.27541	99.62911	100.27202	100.90847	101.53759	102.15841
98.53987	99.25152	99.95629	100.65458	101.34676	102.03320	99.40175	100.05997	100.71275	101.35956	101.99966
98.21625	98.94201	99.66072	100.37285	101.07881	101.77907	99.16157	99.83373	100.50094	101.16291	101.81925
97.88107	98.62130	99.35430	100.08053	100.80047	101.51459	98.91089	99.59654	100.27736	100.95315	101.62373
97.53405	98.28918	99.03689	99.77764	100.51191	101.24022	98.65057	99.34985	100.04421	100.73352	101.41765
97.17485	97.94535	98.70822	99.46393	100.21298	100.95590	98.38071	99.09397	99.80219	100.50523	101.20297
96.80311	97.58944	98.36794	99.13908	99.90338	100.66137	98.10111	98.82879	99.55129	100.26847	100.98019
96.41845	97.22110	98.01569	98.80274	99.58277	100.35633	97.81147	98.55404	99.29129	100.02306	100.74921
96.02049	96.83993	97.65112	98.45457	99.25082	100.04042	97.51146	98.26941	99.02189	99.76874	100.50981
95.60884	96.44557	97.27384	98.09419	98.90716	99.71332	97.20077	97.97458	98.74278	99.50521	100.26170
95.18310	96.03762	96.88349	97.72124	98.55144	99.37467	96.87904	97.66922	98.45366	99.23218	100.00459
94.74287	95.61568	96.47966	97.33534	98.18330	99.02412	96.54594	97.35301	98.15420	98.94932	99.73819
94.28775	95.17937	96.06198	96.93611	97.80234	98.66130	96.20110	97.02559	97.84407	98.65633	99.46219
93.81732	94.72828	95.63004	96.52315	97.40821	98.28583	95.84418	96.68662	97.52292	98.35288	99.17627
93.33117	94.26199	95.18344	96.09607	97.00050	97.89735	95.47480	96.33574	97.19042	98.03863	98.88012
92.82888	93.78010	94.72177	95.65447	96.57882	97.49547	95.09259	95.97258	96.84622	97.71324	98.57341
92.31004	93.28218	94.24462	95.19794	96.14278	97.07979	94.69716	95.59679	96.48994	97.37637	98.25580
91.77422	92.76782	93.75157	94.72608	95.69198	96.64993	94.28814	95.20797	96.12123	97.02765	97.92696
91.22100	92.23659	93.24222	94.23847	95.22600	96.20547	93.86512	94.80574	95.73971	96.66674	97.58652
90.64995	91.68808	92.71613	93.73469	94.74443	95.74602	93.42772	94.38972	95.34501	96.29325	97.23414
90.06066	91.12186	92.17288	93.21433	94.24685	95.27117	92.97552	93.95952	94.93673	95.90682	96.86945
89.45271	90.53751	91.61206	92.67695	93.73286	94.78050	92.50812	93.51472	94.51448	95.50706	96.49209
88.82567	89.93461	91.03323	92.12215	93.20203	94.27359	92.02512	93.05493	94.07787	95.09358	96.10166
88.17914	89.31274	90.43599	91.54949	92.65393	93.75004	91.52609	92.57973	93.62650	94.66599	95.69779
87.51271	88.67149	89.81991	90.95857	92.08815	93.20940	91.01061	92.08872	93.15996	94.22390	95.28010
86.82598	88.01046	89.18457	90.34895	91.50427	92.65128	90.47828	91.58148	92.67784	93.76689	94.84818
86.11858	87.32923	88.52958	89.72023	90.90187	92.07525	89.92868	91.05759	92.17972	93.29457	94.40164
85.39011	86.62743	87.85453	89.07200	90.28053	91.48088	89.36137	90.51664	91.66519	92.80651	93.94008
84.64021	85.90467	87.15902	88.40384	89.63984	90.86776	88.77595	89.95820	91.13384	92.30232	93.46308
83.86854	85.16059	86.44267	87.71538	88.97940	90.23549	88.17200	89.38186	90.58524	91.78156	92.97023
83.07476	84.39483	85.70511	87.00621	88.29881	89.58366	87.54911	88.78719	90.01897	91.24383	92.46113
82.25855	83.60704	84.94599	86.27598	87.59767	88.91185	86.90686	88.17380	89.43463	90.68871	91.93536
-	82.79692	84.16496	85.52430	86.87563	88.21970	86.24487	87.54126	88.83179	90.11577	91.39249
-	-	83.36169	84.75084	86.13229	87.50680	85.56273	86.88917	88.21004	89.52461	90.83212
-	-	-	83.95527	85.36733	86.77280	84.86006	86.21714	87.56898	88.91481	90.25383
-	-	-	-	84.58039	86.01734	84.13649	85.52477	86.90821	88.28596	89.65720
-	-	-	-	-	85.24007	83.39165	84.81169	86.22732	87.63766	89.04182
-	-	-	-	-	-	82.62520	84.07753	85.52595	86.96951	88.40729
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-	-	-	-	-	-	-	-	84.06024	85.57212	87.07918
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15-Sep-16	15-Oct-16	15-Nov-16	15-Dec-16	15-Jan-17	15-Feb-17	15-Mar-17	15-Apr-17	15-May-17	15-Jun-17	15-Jul-17
t = 5.5	t = 5.58	t = 5.67	t = 5.75	t = 5.83	t = 5.92	t = 6	t = 6.08	t = 6.17	t = 6.25	t = 6.33
104.42	104.97	102.21	102.76	103.31	103.86	104.42	103.31	100.55	101.10	101.66
-	3.3125	-	-	-	-	-	3.3125	-	-	-
103.95088	101.05972	101.46667	101.87217	102.27621	102.67875	103.07979	100.16681	100.55208	101.10417	101.65625
103.91984	101.03298	101.44404	101.85355	102.26151	102.66790	103.07268	100.16336	100.55208	101.10417	101.65625
103.88759	101.00521	101.42052	101.83421	102.24625	102.65662	103.06530	100.15977	100.55208	101.10417	101.65625
103.85409	100.97636	101.39609	101.81411	102.23039	102.64490	103.05762	100.15604	100.55208	101.10417	101.65625
103.81929	100.94639	101.37072	101.79323	102.21391	102.63272	103.04965	100.15217	100.55208	101.10417	101.65625
103.78315	100.91525	101.34436	101.77154	102.19679	102.62007	103.04137	100.14815	100.55208	101.10417	101.65625
103.74560	100.88291	101.31697	101.74901	102.17901	102.60693	103.03276	100.14397	100.55208	101.10417	101.65625
103.70661	100.84932	101.28852	101.72560	102.16053	102.59328	103.02382	100.13962	100.55208	101.10417	101.65625
103.66610	100.81443	101.25897	101.70128	102.14133	102.57909	103.01452	100.13511	100.55208	101.10417	101.65625
103.62403	100.77818	101.22827	101.67602	102.12139	102.56435	103.00487	100.13042	100.55208	101.10417	101.65625
103.58033	100.74054	101.19639	101.64978	102.10067	102.54904	102.99484	100.12555	100.55208	101.10417	101.65625
103.53495	100.70143	101.16326	101.62251	102.07915	102.53313	102.98442	100.12049	100.55208	101.10417	101.65625
103.48781	100.66082	101.12886	101.59420	102.05679	102.51660	102.97359	100.11523	100.55208	101.10417	101.65625
103.43886	100.61863	101.09312	101.56478	102.03356	102.49943	102.96234	100.10976	100.55208	101.10417	101.65625
103.38802	100.57482	101.05600	101.53422	102.00943	102.48159	102.95065	100.10408	100.55208	101.10417	101.65625
103.33522	100.52931	101.01744	101.50248	101.98436	102.46306	102.93851	100.09818	100.55208	101.10417	101.65625
103.28038	100.48205	100.97740	101.46951	101.95832	102.44380	102.92589	100.09205	100.55208	101.10417	101.65625
103.22344	100.43296	100.93580	101.43526	101.93128	102.42380	102.91279	100.08568	100.55208	101.10417	101.65625
103.16430	100.38199	100.89260	101.39968	101.90318	102.40302	102.89917	100.07906	100.55208	101.10417	101.65625
103.10279	100.32905	100.84773	101.36273	101.87399	102.38144	102.88502	100.07219	100.55208	101.10417	101.65625
103.03791	100.27386	100.80113	101.32435	101.84367	102.35901	102.87032	100.06504	100.55208	101.10417	101.65625
102.96604	100.21472	100.75232	101.28449	101.81217	102.33572	102.85505	100.05762	100.55208	101.10417	101.65625
102.87967	100.14611	100.69836	101.24226	101.77946	102.31152	102.83919	100.04991	100.55208	101.10417	101.65625
102.76987	100.05845	100.63112	101.19265	101.74381	102.28638	102.82271	100.04189	100.55208	101.10417	101.65625
102.63214	99.94338	100.53948	101.12434	101.69691	102.25691	102.80559	100.03357	100.55208	101.10417	101.65625
102.46943	99.80023	100.41779	101.02635	101.62431	102.20980	102.78105	100.02492	100.55208	101.10417	101.65625
102.28883	99.63559	100.27034	100.89826	101.51839	102.12935	102.72914	100.00236	100.55208	101.10417	101.65625
102.09642	99.45716	100.10611	100.74917	101.38596	102.01592	102.63826	99.93939	100.52478	101.09796	101.65625
101.89527	99.26949	99.93161	100.58802	101.23851	101.88285	102.52072	99.83916	100.44423	101.04084	101.62745
101.68631	99.07421	99.74952	100.41900	101.08252	101.73994	102.39109	99.72329	100.34271	100.95529	101.56051
101.46961	98.87160	99.56045	100.24329	100.92000	101.59044	102.25449	99.59950	100.23142	100.85673	101.47526
101.24495	98.66151	99.36436	100.06100	100.75132	101.43516	102.11239	99.47038	100.11471	100.75226	101.38290
101.01209	98.44371	99.16103	99.87196	100.57635	101.27406	101.96493	99.33633	99.99346	100.64356	101.28652
100.77074	98.21794	98.95023	99.67593	100.39489	101.10695	101.81195	99.19724	99.86763	100.53074	101.18646
100.52062	97.98392	98.73169	99.47267	100.20671	100.93362	101.65325	99.05293	99.73705	100.41366	101.08260
100.26144	97.74138	98.50515	99.26194	100.01157	100.75386	101.48863	98.90322	99.60157	100.29215	100.97480
99.99289	97.49003	98.27034	99.04347	99.80924	100.56744	101.31789	98.74791	99.46100	100.16606	100.86293
99.71468	97.22958	98.02698	98.81701	99.59947	100.37413	101.14081	98.58680	99.31516	100.03523	100.74682
99.42649	96.95974	97.77480	98.58229	99.38199	100.17369	100.95716	98.41969	99.16387	99.89948	100.62633
99.12800	96.68019	97.51348	98.33902	99.15656	99.96587	100.76672	98.24637	99.00692	99.75863	100.50129
98.81887	96.39062	97.24275	98.08693	98.92291	99.75043	100.56925	98.06663	98.84412	99.61250	100.37155
98.49878	96.09071	96.96228	97.82571	98.68074	99.52710	100.36451	97.88023	98.67526	99.46091	100.23693
98.16737	95.78012	96.67176	97.55508	98.42979	99.29561	100.15225	97.68694	98.50013	99.30365	100.09726
97.82430	95.45853	96.37087	97.27472	98.16977	99.05570	99.93222	97.48654	98.31851	99.14054	99.95235
97.46921	95.12559	96.05928	96.98432	97.90036	98.80708	99.70415	97.27876	98.13018	98.97136	99.80202
97.10174	94.78094	95.73666	96.68355	97.62127	98.54946	99.46777	97.06337	97.93489	98.79590	99.64609
96.72151	94.42423	95.40265	96.37209	97.33218	98.28254	99.22280	96.84010	97.73242	98.61394	99.48433
96.32814	94.05509	95.05691	96.04960	97.03278	98.00603	98.96896	96.60869	97.52251	98.42525	99.31657
95.92126	93.67315	94.69907	95.71574	96.72273	97.71960	98.70595	96.36886	97.30491	98.22961	99.14257
95.50046	93.27804	94.32878	95.37015	96.40169	97.42295	98.43348	96.12034	97.07937	98.02677	98.96214
95.06537	92.86937	93.94566	95.01248	96.06934	97.11575	98.15124	95.86284	96.84561	97.81648	98.77503
94.61557	92.44675	93.54933	94.64236	95.72531	96.79766	97.85891	95.59605	96.60336	97.59850	98.58102
94.15067	92.00979	93.13941	94.25942	95.36924	96.46834	97.55617	95.31969	96.35233	97.37256	98.37988
93.67026	91.55809	92.71551	93.86328	95.00079	96.12745	97.24269	95.03343	96.09225	97.13839	98.17135
93.17392	91.09124	92.27724	93.45356	94.61957	95.77464	96.91814	94.73697	95.82280	96.89573	97.95520
92.66125	90.60884	91.82420	93.02988	94.22521	95.40953	96.58217	94.42998	95.54370	96.64429	97.73115
92.13183	90.11049	91.35598	92.59183	93.81733	95.03177	96.23443	94.11213	95.25462	96.38377	97.49895
91.58524	89.59576	90.87218	92.13903	93.39555	94.64098	95.87457	93.78308	94.95525	96.11389	97.25832
91.02107	89.06424	90.37238	91.67106	92.95946	94.23678	95.50222	93.44248	94.64527	95.83434	97.00898
90.43891	88.51553	89.85619	91.18752	92.50868	93.81879	95.11701	93.08999	94.32433	95.54481	96.75065
89.83834	87.94921	89.32318	90.68801	92.04280	93.38662	94.71857	92.72525	93.99211	95.24498	96.48303
89.21895	87.36487	88.77294	90.17212	91.56142	92.93987	94.30651	92.34788	93.64825	94.93453	96.20583
88.58035	86.76209	88.20507	89.63943	91.06413	92.47815	93.88045	91.95753	93.29241	94.61313	95.91872
87.92214	86.14048	87.61914	89.08952	90.55052	92.00105	93.44001	91.55382	92.92422	94.28043	95.62141
87.24392	85.49963	87.01476	88.52200	90.02019	91.50817	92.98477	91.13636	92.54333	93.93609	95.31357
86.54532	84.83915	86.39151	87.93645	89.47272	90.99910	92.51435	90.70476	92.14935	93.57976	94.99486
-	84.15865	85.74901	87.33246	88.90770	90.47343	92.02835	90.25865	91.74191	93.21108	94.66495
-	-	85.08685	86.70963	88.32473	89.93076	91.52635	89.79762	91.32063	92.82969	94.32351
-	-	-	86.06756	87.72339	89.37068	91.00796	89.32127	90.88512	92.43522	93.97017
-	-	-	-	87.10329	88.79278	90.47277	88.82922	90.43500	92.02729	93.60459
-	-	-	-	-	88.19665	89.92037	88.32104	89.96987	91.60552	93.22640
-	-	-	-	-	-	89.35035	87.79635	89.48934	91.16953	92.83524
-	-	-	-	-	-	-	87.25474	88.99300	90.71892	92.43074
-	-	-	-	-	-	-	-	88.48045	90.25331	92.01252
-	-	-	-	-	-	-	-	-	89.77231	91.58019
-	-	-	-	-	-	-	-	-	-	91.13337
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

15-Aug-17	15-Sep-17	15-Oct-17	15-Nov-17	15-Dec-17	15-Jan-18	15-Feb-18	15-Mar-18	15-Apr-18
t = 6.42	t = 6.5	t = 6.58	t = 6.67	t = 6.75	t = 6.83	t = 6.92	t = 7	t = 7.08
102.21	102.76	103.31	100.55	101.10	101.66	102.21	102.76	103.31
-	-	3.3125	-	-	-	-	-	103.3125
102.20833	102.76042	100.17525	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.17213	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.16888	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.16551	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.16201	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.15837	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.15459	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.15066	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.14658	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.14234	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.13793	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.13335	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.12859	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.12365	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.11851	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.11317	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.10763	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.10187	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.09588	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.08966	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.08320	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.07648	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.06950	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.06226	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.05472	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.04690	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.03877	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20833	102.76042	100.03032	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.20175	102.76042	100.02155	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.15758	102.74518	100.00870	100.55208	101.10417	101.65625	102.20833	102.76042	-
102.08679	102.69102	99.97492	100.54459	101.10417	101.65625	102.20833	102.76042	-
102.00652	102.62301	99.91973	100.50320	101.07933	101.64785	102.20833	102.76042	-
101.92221	102.55052	99.85883	100.45337	101.04045	101.61999	102.19189	102.75609	-
101.83464	102.47517	99.79543	100.40127	100.99937	101.58963	102.17196	102.74628	-
101.74374	102.39695	99.72959	100.34717	100.95670	101.55810	102.15126	102.73609	-
101.64938	102.31573	99.66123	100.29098	100.91239	101.52535	102.12975	102.72550	-
101.55143	102.23142	99.59025	100.23264	100.86637	101.49133	102.10741	102.71450	-
101.44976	102.14389	99.51656	100.17205	100.81857	101.45600	102.08421	102.70307	-
101.34424	102.05304	99.44005	100.10914	100.76894	101.41930	102.06010	102.69120	-
101.23472	101.95872	99.36062	100.04382	100.71739	101.38119	102.03506	102.67887	-
101.12106	101.86082	99.27816	99.97600	100.66387	101.34160	102.00905	102.66606	-
101.00310	101.75921	99.19255	99.90558	100.60828	101.30049	101.98203	102.65275	-
100.88070	101.65375	99.10369	99.83247	100.55056	101.25779	101.95396	102.63892	-
100.75369	101.54430	99.01145	99.75656	100.49063	101.21344	101.92481	102.62455	-
100.62190	101.43071	98.91570	99.67776	100.42840	101.16739	101.89453	102.60963	-
100.48516	101.31283	98.81632	99.59595	100.36378	101.11956	101.86308	102.59413	-
100.34329	101.19051	98.71318	99.51103	100.29669	101.06990	101.83042	102.57802	-
100.19612	101.06358	98.60613	99.42288	100.22703	101.01832	101.79649	102.56129	-
100.04345	100.93189	98.49504	99.33137	100.15471	100.96476	101.76125	102.54392	-
99.88509	100.79525	98.37975	99.23639	100.07963	100.90915	101.72466	102.52586	-
99.72084	100.65350	98.26012	99.13781	100.00169	100.85141	101.68665	102.50711	-
99.55048	100.50644	98.13599	99.03550	99.92077	100.79145	101.64718	102.48763	-
99.37381	100.35390	98.00719	98.92931	99.83678	100.72919	101.60619	102.46740	-
99.19061	100.19567	97.87356	98.81912	99.74959	100.66456	101.56362	102.44638	-
99.00065	100.03157	97.73492	98.70476	99.65909	100.59745	101.51941	102.42456	-
98.80370	99.86137	97.59111	98.58611	99.56516	100.52778	101.47350	102.40188	-
98.59952	99.68487	97.44192	98.46298	99.46767	100.45545	101.42583	102.37833	-
98.38786	99.50186	97.28718	98.33524	99.36649	100.38036	101.37633	102.35387	-
98.16846	99.31209	97.12669	98.20271	99.26148	100.30241	101.32492	102.32846	-
97.94108	99.11535	96.96024	98.06521	99.15252	100.22150	101.27155	102.30208	-
97.70544	98.91140	96.78763	97.92259	99.03944	100.13752	101.21614	102.27467	-
97.46126	98.69998	96.60865	97.77464	98.92212	100.05034	101.15860	102.24621	-
97.20827	98.48085	96.42307	97.62119	98.80038	99.95987	101.09887	102.21665	-
96.94618	98.25375	96.23067	97.46203	98.67408	99.86596	101.03685	102.18595	-
96.67469	98.01841	96.03122	97.29698	98.54305	99.76851	100.97247	102.15407	-
96.39350	97.77457	95.82447	97.12583	98.40712	99.66738	100.90563	102.12097	-
96.10230	97.52193	95.61017	96.94836	98.26613	99.56243	100.83625	102.08659	-
95.80077	97.26021	95.38809	96.76435	98.11988	99.45353	100.76422	102.05089	-
95.48859	96.98913	95.15795	96.57359	97.96819	99.34054	100.68946	102.01381	-
95.16543	96.70838	94.91949	96.37584	97.81088	99.22331	100.61186	101.97532	-
94.83096	96.41764	94.67244	96.17087	97.64775	99.10169	100.53132	101.93535	-
94.48482	96.11662	94.41651	95.95843	97.47859	98.97551	100.44774	101.89385	-
94.12668	95.80498	94.15142	95.73827	97.30321	98.84463	100.36098	101.85076	-
93.75617	95.48240	93.87688	95.51014	97.12137	98.70887	100.27096	101.80603	-
93.37293	95.14855	93.59258	95.27377	96.93287	98.56805	100.17754	101.75958	-
92.97660	94.80308	93.29822	95.02890	96.73748	98.42201	100.08060	101.71136	-
92.56681	94.44565	92.99348	94.77524	96.53496	98.27057	99.98001	101.66131	-
-	94.07591	92.67805	94.51251	96.32508	98.11352	99.87565	101.60934	-
-	-	92.35160	94.24043	96.10758	97.95068	99.76738	101.55540	-
-	-	-	93.95870	95.88223	97.78185	99.65506	101.49941	-
-	-	-	-	95.64875	97.60682	99.53854	101.44129	-
-	-	-	-	-	97.42539	99.41768	101.38097	-
-	-	-	-	-	-	99.29232	101.31837	-
-	-	-	-	-	-	-	101.25339	-

Final 2017 notes valuation

date	15-Jul-12	15-Aug-12	15-Sep-12	15-Oct-12	15-Nov-12	15-Dec-12	15-Jan-13	15-Feb-13	15-Mar-13
Final valuation model 2017 USD notes				**OAS included:**	**704.4836 bps**				
	t = 0.08	t = 0.17	t = 0.25	t = 0.33	t = 0.42	t = 0.5	t = 0.58	t = 0.67	t = 0.75
Callable value									
Cash flows	-	-	-	-	-	-	3.8750	-	-
j = 1	100.00000	100.65369	101.31177	101.97574	102.64570	103.32043	100.12362	100.78047	101.43861
j = 2	-	100.52920	101.18992	101.85666	102.52952	103.20720	100.01335	100.67304	101.33391
j = 3	-	-	101.06195	101.73159	102.40748	103.08827	99.89751	100.56018	101.22392
j = 4	-	-	-	101.60024	102.27931	102.96335	99.77584	100.44164	101.10838
j = 5	-	-	-	-	102.14471	102.83215	99.64805	100.31713	100.98702
j = 6	-	-	-	-	-	102.69438	99.51384	100.18636	100.85956
j = 7	-	-	-	-	-	-	99.37291	100.04903	100.72569
j = 8	-	-	-	-	-	-	-	99.90482	100.58511
j = 9	-	-	-	-	-	-	-	-	100.43750
j = 10	-	-	-	-	-	-	-	-	-
j = 11	-	-	-	-	-	-	-	-	-
j = 12	-	-	-	-	-	-	-	-	-
j = 13	-	-	-	-	-	-	-	-	-
j = 14	-	-	-	-	-	-	-	-	-
j = 15	-	-	-	-	-	-	-	-	-
j = 16	-	-	-	-	-	-	-	-	-
j = 17	-	-	-	-	-	-	-	-	-
j = 18	-	-	-	-	-	-	-	-	-
j = 19	-	-	-	-	-	-	-	-	-
j = 20	-	-	-	-	-	-	-	-	-
j = 21	-	-	-	-	-	-	-	-	-
j = 22	-	-	-	-	-	-	-	-	-
j = 23	-	-	-	-	-	-	-	-	-
j = 24	-	-	-	-	-	-	-	-	-
j = 25	-	-	-	-	-	-	-	-	-
j = 26	-	-	-	-	-	-	-	-	-
j = 27	-	-	-	-	-	-	-	-	-
j = 28	-	-	-	-	-	-	-	-	-
j = 29	-	-	-	-	-	-	-	-	-
j = 30	-	-	-	-	-	-	-	-	-
j = 31	-	-	-	-	-	-	-	-	-
j = 32	-	-	-	-	-	-	-	-	-
j = 33	-	-	-	-	-	-	-	-	-
j = 34	-	-	-	-	-	-	-	-	-
j = 35	-	-	-	-	-	-	-	-	-
j = 36	-	-	-	-	-	-	-	-	-
j = 37	-	-	-	-	-	-	-	-	-
j = 38	-	-	-	-	-	-	-	-	-
j = 39	-	-	-	-	-	-	-	-	-
j = 40	-	-	-	-	-	-	-	-	-
j = 41	-	-	-	-	-	-	-	-	-
j = 42	-	-	-	-	-	-	-	-	-
j = 43	-	-	-	-	-	-	-	-	-
j = 44	-	-	-	-	-	-	-	-	-
j = 45	-	-	-	-	-	-	-	-	-
j = 46	-	-	-	-	-	-	-	-	-
j = 47	-	-	-	-	-	-	-	-	-
j = 48	-	-	-	-	-	-	-	-	-
j = 49	-	-	-	-	-	-	-	-	-
j = 50	-	-	-	-	-	-	-	-	-
j = 51	-	-	-	-	-	-	-	-	-
j = 52	-	-	-	-	-	-	-	-	-
j = 53	-	-	-	-	-	-	-	-	-
j = 54	-	-	-	-	-	-	-	-	-
j = 55	-	-	-	-	-	-	-	-	-
j = 56	-	-	-	-	-	-	-	-	-
j = 57	-	-	-	-	-	-	-	-	-
j = 58	-	-	-	-	-	-	-	-	-
j = 59	-	-	-	-	-	-	-	-	-
j = 60	-	-	-	-	-	-	-	-	-
j = 61	-	-	-	-	-	-	-	-	-

15-Apr-13	15-May-13	15-Jun-13	15-Jul-13	15-Aug-13	15-Sep-13	15-Oct-13	15-Nov-13	15-Dec-13	15-Jan-14	15-Feb-14
t = 0.83	t = 0.92	t = 1	t = 1.08	t = 1.17	t = 1.25	t = 1.33	t = 1.42	t = 1.5	t = 1.58	t = 1.67
-	-	-	3.8750	-	-	-	-	-	3.8750	-
102.09797	102.75879	103.42159	100.21216	100.85815	101.50785	102.16134	102.81865	103.47979	100.26973	100.91500
101.99589	102.65922	103.32445	100.11741	100.76577	101.41786	102.07374	102.73347	103.39704	100.18941	100.83710
101.88864	102.55461	103.22239	100.01786	100.66871	101.32330	101.98170	102.64396	103.31007	100.10501	100.75523
101.77598	102.44471	103.11517	99.91328	100.56674	101.22395	101.88499	102.54991	103.21869	100.01632	100.66920
101.65764	102.32927	103.00254	99.80340	100.45960	101.11956	101.78338	102.45108	103.12268	99.92313	100.57880
101.53334	102.20801	102.88422	99.68798	100.34705	101.00990	101.67662	102.34725	103.02179	99.82520	100.48380
101.40279	102.08064	102.75995	99.56675	100.22883	100.89470	101.56447	102.23817	102.91580	99.72232	100.38399
101.26569	101.94688	102.62942	99.43941	100.10464	100.77370	101.44666	102.12358	102.80445	99.61423	100.27913
101.12172	101.80641	102.49235	99.30567	99.97421	100.64660	101.32291	102.00321	102.68748	99.50068	100.16896
100.97055	101.65891	102.34840	99.16522	99.83723	100.51311	101.19294	101.87677	102.56461	99.38139	100.05322
-	101.50404	102.19725	99.01773	99.69339	100.37292	101.05643	101.74398	102.43555	99.25610	99.93165
-	-	102.03855	98.86288	99.54234	100.22570	100.91308	101.60452	102.30001	99.12450	99.80395
-	-	-	98.70030	99.38375	100.07113	100.76255	101.45807	102.15767	98.98628	99.66983
-	-	-	-	99.21726	99.90884	100.60450	101.30429	102.00819	98.84114	99.52898
-	-	-	-	-	99.73847	100.43857	101.14283	101.85124	98.68873	99.38106
-	-	-	-	-	-	100.26437	100.97332	101.68646	98.52871	99.22575
-	-	-	-	-	-	-	100.79539	101.51348	98.36070	99.06268
-	-	-	-	-	-	-	-	101.33189	98.18434	98.89148
-	-	-	-	-	-	-	-	-	97.99922	98.71177
-	-	-	-	-	-	-	-	-	-	98.52314
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15-Mar-14	15-Apr-14	15-May-14	15-Jun-14	15-Jul-14	15-Aug-14	15-Sep-14	15-Oct-14	15-Nov-14	15-Dec-14	15-Jan-15
t = 1.75	t = 1.83	t = 1.92	t = 2	t = 2.08	t = 2.17	t = 2.25	t = 2.33	t = 2.42	t = 2.5	t = 2.58
-	-	-	-	3.8750	-	-	-	-	-	3.8750
101.56378	102.21597	102.87145	103.53010	100.31676	100.95779	101.60159	102.24821	102.89771	103.55014	100.33056
101.48829	102.14290	102.80078	103.46181	100.25083	100.89414	101.54019	102.18903	102.84072	103.49532	100.27789
101.40896	102.06610	102.72651	103.39004	100.18152	100.82723	101.47564	102.12680	102.78078	103.43764	100.22245
101.32559	101.98539	102.64844	103.31460	100.10868	100.75690	101.40778	102.06138	102.71776	103.37699	100.16415
101.23799	101.90057	102.56640	103.23532	100.03212	100.68298	101.33646	101.99262	102.65152	103.31324	100.10285
101.14593	101.81144	102.48019	103.15200	99.95166	100.60529	101.26150	101.92034	102.58189	103.24622	100.03841
101.04919	101.71778	102.38959	103.06444	99.86711	100.52364	101.18272	101.84438	102.50871	103.17578	99.97068
100.94756	101.61937	102.29439	102.97243	99.77825	100.43784	101.09992	101.76455	102.43180	103.10175	99.89948
100.84078	101.51598	102.19437	102.87575	99.68488	100.34768	101.01291	101.68065	102.35096	103.02394	99.82466
100.72860	101.40735	102.08928	102.77417	99.58677	100.25293	100.92148	101.59248	102.26601	102.94216	99.74602
100.61075	101.29323	101.97887	102.66744	99.48369	100.15338	100.82540	101.49983	102.17674	102.85623	99.66337
100.48696	101.17335	101.86288	102.55532	99.37539	100.04878	100.72446	101.40248	102.08294	102.76592	99.57652
100.35694	101.04742	101.74104	102.43754	99.26162	99.93890	100.61840	101.30019	101.98437	102.67102	99.48526
100.22039	100.91516	101.61306	102.31381	99.14210	99.82345	100.50697	101.19272	101.88081	102.57131	99.38935
100.07698	100.77626	101.47865	102.18386	99.01656	99.70218	100.38991	101.07982	101.77200	102.46655	99.28858
99.92639	100.63039	101.33748	102.04736	98.88469	99.57480	100.26695	100.96121	101.65769	102.35648	99.18271
99.76826	100.47721	101.18924	101.90402	98.74620	99.44101	100.13779	100.83662	101.53761	102.24085	99.07148
99.60225	100.31638	101.03358	101.75350	98.60076	99.30049	100.00213	100.70576	101.41147	102.11939	98.95462
99.42796	100.14753	100.87014	101.59544	98.44803	99.15293	99.85966	100.56831	101.27898	101.99179	98.83187
99.24502	99.97027	100.69855	101.42949	98.28767	98.99798	99.71005	100.42396	101.13983	101.85778	98.70293
99.05300	99.78421	100.51843	101.25528	98.11931	98.83529	99.55295	100.27238	100.99370	101.71703	98.56751
-	99.58893	100.32937	101.07240	97.94256	98.66448	99.38800	100.11322	100.84025	101.56922	98.42528
-	-	100.13095	100.88046	97.75703	98.48517	99.21483	99.94611	100.67912	101.41401	98.27591
-	-	-	100.67901	97.56230	98.29696	99.03305	99.77067	100.50995	101.25103	98.11907
-	-	-	-	97.35794	98.09942	98.84224	99.58651	100.33236	101.07993	97.95439
-	-	-	-	-	97.89211	98.64198	99.39321	100.14593	100.90031	97.78150
-	-	-	-	-	-	98.43183	99.19034	99.95027	100.71176	97.60000
-	-	-	-	-	-	-	98.97746	99.74492	100.51387	97.40949
-	-	-	-	-	-	-	-	99.52944	100.30619	97.20954
-	-	-	-	-	-	-	-	-	100.08827	96.99971
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15-Feb-15	15-Mar-15	15-Apr-15	15-May-15	15-Jun-15	15-Jul-15	15-Aug-15	15-Sep-15	15-Oct-15	15-Nov-15	15-Dec-15
t = 2.67	t = 2.75	t = 2.83	t = 2.92	t = 3	t = 3.08	t = 3.17	t = 3.25	t = 3.33	t = 3.42	t = 3.5
-	-	-	-	-	3.8750	-	-	-	-	-
100.96552	101.60347	102.24448	102.88861	103.53591	100.31145	100.94166	101.57501	102.21147	102.85102	103.49364
100.91495	101.55499	102.19810	102.84434	103.49379	100.27151	100.90391	101.53950	102.17825	102.82015	103.46517
100.86168	101.50389	102.14915	102.79754	103.44915	100.22905	100.86362	101.50143	102.14245	102.78668	103.43410
100.80564	101.45010	102.09759	102.74821	103.40204	100.18416	100.82092	101.46094	102.10421	102.75074	103.40050
100.74672	101.39353	102.04336	102.69629	103.35243	100.13686	100.77587	101.41814	102.06368	102.71249	103.36458
100.68479	101.33407	101.98634	102.64170	103.30025	100.08708	100.72844	101.37305	102.02092	102.67208	103.32651
100.61968	101.27155	101.92640	102.58431	103.24539	100.03475	100.67855	101.32561	101.97592	102.62951	103.28637
100.55124	101.20584	101.86339	102.52398	103.18772	99.97972	100.62611	101.27573	101.92860	102.58473	103.24413
100.47931	101.13678	101.79716	102.46056	103.12710	99.92188	100.57097	101.22329	101.87885	102.53765	103.19971
100.40371	101.06418	101.72754	102.39390	103.06337	99.86108	100.51301	101.16816	101.82654	102.48815	103.15300
100.32425	100.98788	101.65437	102.32383	102.99639	99.79716	100.45208	101.11021	101.77155	102.43611	103.10390
100.24075	100.90769	101.57747	102.25019	102.92598	99.72998	100.38803	101.04929	101.71374	102.38141	103.05228
100.15300	100.82342	101.49665	102.17279	102.85198	99.65936	100.32071	100.98525	101.65298	102.32390	102.99802
100.06079	100.73486	101.41171	102.09144	102.77421	99.58514	100.24995	100.91794	101.58910	102.26344	102.94097
99.96389	100.64180	101.32245	102.00596	102.69247	99.50713	100.17558	100.84719	101.52196	102.19989	102.88100
99.86208	100.54402	101.22865	101.91612	102.60657	99.42515	100.09741	100.77282	101.45138	102.13309	102.81796
99.75512	100.44127	101.13009	101.82172	102.51630	99.33899	100.01526	100.69467	101.37721	102.06288	102.75170
99.64274	100.33333	101.02654	101.72252	102.42144	99.24846	99.92893	100.61253	101.29925	101.98909	102.68205
99.52468	100.21992	100.91774	101.61830	102.32177	99.15332	99.83821	100.52621	101.21731	101.91153	102.60884
99.40066	100.10078	100.80344	101.50880	102.21705	99.05335	99.74288	100.43550	101.13121	101.83001	102.53190
99.27040	99.97563	100.68336	101.39376	102.10702	98.94832	99.64271	100.34018	101.04072	101.74435	102.45104
99.13358	99.84417	100.55722	101.27292	101.99143	98.83797	99.53746	100.24002	100.94564	101.65432	102.36606
98.98989	99.70611	100.42474	101.14597	101.87001	98.72204	99.42688	100.13478	100.84573	101.55972	102.27675
98.83900	99.56111	100.28559	101.01264	101.74245	98.60025	99.31071	100.02422	100.74076	101.46032	102.18291
98.68055	99.40884	100.13945	100.87260	101.60848	98.47232	99.18868	99.90806	100.63047	101.35588	102.08430
98.51418	99.24895	99.98599	100.72553	101.46777	98.33795	99.06049	99.78604	100.51460	101.24615	101.98069
98.33953	99.08108	99.82485	100.57108	101.32000	98.19683	98.92584	99.65786	100.39288	101.13087	101.87183
98.15618	98.90483	99.65567	100.40892	101.16482	98.04862	98.78443	99.52324	100.26502	101.00977	101.75746
97.96373	98.71983	99.47806	100.23866	101.00188	97.89299	98.63592	99.38184	100.13072	100.88256	101.63732
97.76175	98.52564	99.29161	100.05991	100.83081	97.72957	98.47997	99.23334	99.98967	100.74894	101.51111
97.54979	98.32184	99.09591	99.87228	100.65122	97.55800	98.31622	99.07741	99.84154	100.60860	101.37855
97.32739	98.10797	98.89053	99.67535	100.46270	97.37789	98.14430	98.91367	99.68599	100.46121	101.23932
-	97.88356	98.67501	99.46866	100.26483	97.18882	97.96381	98.74177	99.52265	100.30644	101.09309
-	-	98.44887	99.25178	100.05717	96.99037	97.77436	98.56130	99.35116	100.14392	100.93953
-	-	-	99.02422	99.83927	96.78211	97.57551	98.37186	99.17113	99.97329	100.77829
-	-	-	-	99.61063	96.56357	97.36682	98.17302	98.98215	99.79416	100.60900
-	-	-	-	-	96.33428	97.14783	97.96435	98.78379	99.60611	100.43127
-	-	-	-	-	-	96.91807	97.74538	98.57562	99.40874	100.24470
-	-	-	-	-	-	-	97.51563	98.35717	99.20160	100.04886
-	-	-	-	-	-	-	-	98.12797	98.98424	99.84333
-	-	-	-	-	-	-	-	-	98.75617	99.62765
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-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

15-Jan-16	15-Feb-16	15-Mar-16	15-Apr-16	15-May-16	15-Jun-16	15-Jul-16	15-Aug-16	15-Sep-16	15-Oct-16	15-Nov-16
t = 3.58	t = 3.67	t = 3.75	t = 3.83	t = 3.92	t = 4	t = 4.08	t = 4.17	t = 4.25	t = 4.33	t = 4.42
3.8750	-	-	-	-	-	3.8750	-	-	-	-
100.26435	100.88948	101.51759	102.14876	102.78303	103.42049	100.18619	100.80644	101.42989	102.05654	102.68641
100.23828	100.86573	101.49612	102.12945	102.76576	103.40511	100.17259	100.79447	101.41950	102.04771	102.67911
100.20966	100.83957	101.47242	102.10819	102.74687	103.38846	100.15802	100.78178	101.40855	102.03841	102.67143
100.17849	100.81083	101.44620	102.08454	102.72581	103.36997	100.14200	100.76802	101.39685	102.02859	102.66336
100.14494	100.77966	101.41748	102.05836	102.70226	103.34912	100.12389	100.75254	101.38389	102.01794	102.65478
100.10923	100.74629	101.38649	102.02982	102.67626	103.32576	100.10327	100.73472	101.36890	102.00574	102.64520
100.07151	100.71094	101.35351	101.99925	102.64813	103.30014	100.08027	100.71438	101.35137	101.99117	102.63366
100.03179	100.67367	101.31869	101.96686	102.61819	103.27267	100.05529	100.69190	101.33150	101.97405	102.61949
99.99002	100.63446	101.28204	101.93275	102.58660	103.24359	100.02873	100.66778	101.30985	101.95493	102.60301
99.94610	100.59324	101.24349	101.89686	102.55336	103.21298	100.00073	100.64230	101.28687	101.93444	102.58502
99.89992	100.54989	101.20296	101.85913	102.51841	103.18079	99.97128	100.61548	101.26267	101.91283	102.56598
99.85138	100.50432	101.16035	101.81946	102.48166	103.14694	99.94031	100.58729	101.23722	101.89011	102.54595
99.80034	100.45641	101.11554	101.77775	102.44302	103.11135	99.90774	100.55764	101.21046	101.86622	102.52490
99.74668	100.40603	101.06844	101.73389	102.40239	103.07393	99.87350	100.52646	101.18233	101.84109	102.50275
99.69027	100.35308	101.01892	101.68778	102.35967	103.03458	99.83750	100.49368	101.15274	101.81467	102.47947
99.63098	100.29741	100.96685	101.63931	102.31476	102.99321	99.79964	100.45921	101.12162	101.78688	102.45498
99.56864	100.23889	100.91212	101.58834	102.26754	102.94971	99.75984	100.42296	101.08890	101.75766	102.42923
99.50312	100.17737	100.85459	101.53477	102.21790	102.90398	99.71799	100.38485	101.05450	101.72694	102.40215
99.43426	100.11270	100.79410	101.47844	102.16571	102.85590	99.67399	100.34478	101.01833	101.69463	102.37367
99.36187	100.04473	100.73052	101.41923	102.11084	102.80535	99.62773	100.30265	100.98030	101.66066	102.34373
99.28579	99.97329	100.66370	101.35699	102.05317	102.75221	99.57909	100.25835	100.94031	101.62494	102.31224
99.20583	99.89820	100.59345	101.29157	101.99254	102.69634	99.52796	100.21178	100.89826	101.58738	102.27914
99.12180	99.81928	100.51962	101.22280	101.92881	102.63762	99.47421	100.16282	100.85405	101.54790	102.24432
99.03349	99.73634	100.44202	101.15052	101.86182	102.57588	99.41770	100.11134	100.80758	101.50638	102.20772
98.94069	99.64918	100.36047	101.07456	101.79140	102.51099	99.35830	100.05723	100.75871	101.46272	102.16923
98.84318	99.55758	100.27477	100.99471	101.71740	102.44279	99.29586	100.00035	100.70735	101.41683	102.12877
98.74073	99.46133	100.18470	100.91081	101.63961	102.37109	99.23022	99.94055	100.65334	101.36858	102.08622
98.63308	99.36020	100.09006	100.82263	101.55786	102.29575	99.16123	99.87769	100.59657	101.31785	102.04149
98.51998	99.25394	99.99062	100.72996	101.47196	102.21655	99.08872	99.81162	100.53690	101.26452	101.99446
98.40117	99.14231	99.88613	100.63260	101.38168	102.13333	99.01251	99.74217	100.47417	101.20847	101.94502
98.27636	99.02503	99.77635	100.53029	101.28681	102.04587	98.93242	99.66918	100.40823	101.14954	101.89305
98.14527	98.90182	99.66102	100.42280	101.18713	101.95396	98.84824	99.59246	100.33892	101.08759	101.83841
98.00757	98.77241	99.53986	100.30987	101.08239	101.85738	98.75978	99.51183	100.26608	101.02248	101.78097
97.86296	98.63648	99.41259	100.19123	100.97235	101.75591	98.66683	99.42710	100.18952	100.95404	101.72059
97.71110	98.49372	99.27891	100.06660	100.85675	101.64929	98.56916	99.33806	100.10906	100.88210	101.65713
97.55163	98.34380	99.13851	99.93570	100.73531	101.53728	98.46654	99.24449	100.02450	100.80650	101.59042
97.38420	98.18637	98.99106	99.79820	100.60774	101.41960	98.35871	99.14617	99.93564	100.72704	101.52030
97.20842	98.02106	98.83622	99.65380	100.47375	101.29599	98.24544	99.04287	99.84226	100.64353	101.44660
97.02389	97.84751	98.67363	99.50216	100.33302	101.16614	98.12644	98.93434	99.74415	100.55578	101.36915
96.83019	97.66532	98.50292	99.34292	100.18523	101.02976	98.00143	98.82032	99.64106	100.46357	101.28776
96.62690	97.47408	98.32371	99.17573	100.03003	100.88653	97.87013	98.70054	99.53275	100.36668	101.20222
96.41357	97.27335	98.13559	99.00020	99.86707	100.73612	97.73223	98.57472	99.41897	100.26487	101.11233
96.18972	97.06270	97.93814	98.81593	99.69598	100.57817	97.58740	98.44256	99.29943	100.15791	101.01788
-	96.84166	97.73091	98.62252	99.51636	100.41233	97.43531	98.30376	99.17387	100.04554	100.91864
-	-	97.51345	98.41952	99.32781	100.23822	97.27561	98.15799	99.04199	99.92749	100.81437
-	-	-	98.20649	99.12992	100.05545	97.10794	98.00491	98.90348	99.80349	100.70482
-	-	-	-	98.92223	99.86359	96.93190	97.84418	98.75801	99.67324	100.58974
-	-	-	-	-	99.66223	96.74712	97.67542	98.60525	99.53645	100.46885
-	-	-	-	-	-	96.55316	97.49826	98.44486	99.39278	100.34187
-	-	-	-	-	-	-	97.31229	98.27645	99.24192	100.20850
-	-	-	-	-	-	-	-	98.09966	99.08350	100.06843
-	-	-	-	-	-	-	-	-	98.91718	99.92133
-	-	-	-	-	-	-	-	-	-	99.76688
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

15-Dec-16	15-Jan-17	15-Feb-17	15-Mar-17	15-Apr-17	15-May-17	15-Jun-17	15-Jul-17
t = 4.5	t = 4.58	t = 4.67	t = 4.75	t = 4.83	t = 4.92	t = 5	t = 5.08
				101.94	102.58	103.23	103.88
-	3.8750	-	-	-	-	-	103.8750
103.31949	100.08079	100.69657	101.31547	101.93750	102.58333	103.22917	-
103.31371	100.07653	100.69375	101.31407	101.93750	102.58333	103.22917	-
103.30764	100.07204	100.69077	101.31259	101.93750	102.58333	103.22917	-
103.30125	100.06732	100.68765	101.31104	101.93750	102.58333	103.22917	-
103.29454	100.06236	100.68436	101.30940	101.93750	102.58333	103.22917	-
103.28729	100.05714	100.68090	101.30768	101.93750	102.58333	103.22917	-
103.27873	100.05129	100.67726	101.30587	101.93750	102.58333	103.22917	-
103.26773	100.04359	100.67271	101.30397	101.93750	102.58333	103.22917	-
103.25406	100.03303	100.66554	101.30051	101.93750	102.58279	103.22743	-
103.23859	100.02017	100.65541	101.29354	101.93456	102.57848	103.22529	-
103.22210	100.00619	100.64383	101.28434	101.92771	102.57394	103.22304	-
103.20475	99.99148	100.63166	101.27466	101.92050	102.56916	103.22067	-
103.18650	99.97602	100.61885	101.26448	101.91291	102.56414	103.21817	-
103.16731	99.95975	100.60538	101.25377	101.90494	102.55886	103.21555	-
103.14713	99.94265	100.59121	101.24251	101.89655	102.55331	103.21279	-
103.12591	99.92466	100.57631	101.23067	101.88772	102.54746	103.20989	-
103.10359	99.90574	100.56064	101.21821	101.87844	102.54132	103.20684	-
103.08012	99.88584	100.54416	101.20511	101.86868	102.53485	103.20363	-
103.05544	99.86492	100.52683	101.19134	101.85841	102.52805	103.20025	-
103.02948	99.84291	100.50861	101.17685	101.84761	102.52090	103.19670	-
103.00219	99.81977	100.48944	101.16161	101.83626	102.51338	103.19297	-
102.97349	99.79544	100.46928	101.14558	101.82431	102.50547	103.18904	-
102.94332	99.76985	100.44809	101.12872	101.81175	102.49715	103.18491	-
102.91158	99.74294	100.42579	101.11100	101.79854	102.48840	103.18056	-
102.87822	99.71465	100.40235	101.09236	101.78465	102.47920	103.17599	-
102.84313	99.68490	100.37770	101.07275	101.77004	102.46952	103.17118	-
102.80624	99.65361	100.35178	101.05214	101.75467	102.45934	103.16612	-
102.76746	99.62072	100.32452	101.03046	101.73851	102.44863	103.16080	-
102.72668	99.58613	100.29586	101.00766	101.72151	102.43737	103.15521	-
102.68380	99.54976	100.26571	100.98369	101.70364	102.42553	103.14933	-
102.63872	99.51152	100.23402	100.95848	101.68484	102.41307	103.14314	-
102.59133	99.47131	100.20070	100.93197	101.66507	102.39997	103.13663	-
102.54151	99.42904	100.16566	100.90409	101.64428	102.38620	103.12978	-
102.48913	99.38460	100.12882	100.87478	101.62243	102.37171	103.12258	-
102.43407	99.33788	100.09008	100.84396	101.59944	102.35647	103.11501	-
102.37619	99.28876	100.04936	100.81155	101.57527	102.34045	103.10705	-
102.31535	99.23712	100.00654	100.77747	101.54985	102.32360	103.09867	-
102.25140	99.18284	99.96153	100.74165	101.52312	102.30588	103.08986	-
102.18418	99.12578	99.91421	100.70398	101.49501	102.28725	103.08060	-
102.11353	99.06580	99.86446	100.66437	101.46546	102.26765	103.07086	-
102.03928	99.00276	99.81216	100.62273	101.43439	102.24704	103.06061	-
101.96124	98.93649	99.75718	100.57895	101.40172	102.22538	103.04983	-
101.87922	98.86684	99.69939	100.53293	101.36737	102.20259	103.03850	-
101.79304	98.79364	99.63864	100.48455	101.33125	102.17863	103.02658	-
101.70248	98.71671	99.57479	100.43369	101.29328	102.15344	103.01405	-
101.60732	98.63586	99.50768	100.38023	101.25336	102.12695	103.00087	-
101.50734	98.55090	99.43715	100.32403	101.21138	102.09909	102.98701	-
101.40229	98.46162	99.36302	100.26495	101.16726	102.06980	102.97243	-
101.29194	98.36782	99.28512	100.20286	101.12088	102.03901	102.95710	-
101.17601	98.26926	99.20325	100.13760	101.07211	102.00663	102.94098	-
101.05423	98.16571	99.11723	100.06901	101.02086	101.97259	102.92404	-
100.92632	98.05693	99.02684	99.99692	100.96698	101.93681	102.90621	-
100.79198	97.94265	98.93186	99.92116	100.91034	101.89918	102.88747	-
100.65090	97.82261	98.83208	99.84155	100.85082	101.85963	102.86777	-
-	97.69653	98.72724	99.75790	100.78825	101.81805	102.84705	-
-	-	98.61711	99.67000	100.72250	101.77434	102.82526	-
-	-	-	99.57764	100.65339	101.72839	102.80235	-
-	-	-	-	100.58077	101.68009	102.77827	-
-	-	-	-	-	101.62932	102.75295	-
-	-	-	-	-	-	102.72633	-
-	-	-	-	-	-	-	-

Final 2019 notes valuation

date	15-Jul-12	15-Aug-12	15-Sep-12	15-Oct-12	15-Nov-12	15-Dec-12	15-Jan-13	15-Feb-13	15-Mar-13	15-Apr-13
Final valuation model 2019 USD notes				**OAS included:**	**749.6193 bps**					
	t = 0.08	t = 0.17	t = 0.25	t = 0.33	t = 0.42	t = 0.5	t = 0.58	t = 0.67	t = 0.75	t = 0.83
Callable value										
Cash flows	-	-	-	-	-	4.1875	-	-	-	-
j = 1	100.00000	100.74521	101.49475	102.25017	103.01157	99.59025	100.33310	101.07783	101.82385	102.57109
j = 2	-	100.51291	101.26684	102.02674	102.79272	99.37602	100.12344	100.87264	101.62300	102.37445
j = 3	-	-	101.02787	101.79245	102.56322	99.15135	99.90354	100.65742	101.41232	102.16817
j = 4	-	-	-	101.54683	102.32259	98.91577	99.67295	100.43170	101.19135	101.95180
j = 5	-	-	-	-	102.07035	98.66879	99.43117	100.19502	100.95962	101.72487
j = 6	-	-	-	-	-	98.40990	99.17771	99.94688	100.71665	101.48692
j = 7	-	-	-	-	-	-	98.91205	99.68677	100.46193	101.23743
j = 8	-	-	-	-	-	-	-	99.41416	100.19495	100.97591
j = 9	-	-	-	-	-	-	-	-	99.91517	100.70182
j = 10	-	-	-	-	-	-	-	-	-	100.41461
j = 11	-	-	-	-	-	-	-	-	-	-
j = 12	-	-	-	-	-	-	-	-	-	-
j = 13	-	-	-	-	-	-	-	-	-	-
j = 14	-	-	-	-	-	-	-	-	-	-
j = 15	-	-	-	-	-	-	-	-	-	-
j = 16	-	-	-	-	-	-	-	-	-	-
j = 17	-	-	-	-	-	-	-	-	-	-
j = 18	-	-	-	-	-	-	-	-	-	-
j = 19	-	-	-	-	-	-	-	-	-	-
j = 20	-	-	-	-	-	-	-	-	-	-
j = 21	-	-	-	-	-	-	-	-	-	-
j = 22	-	-	-	-	-	-	-	-	-	-
j = 23	-	-	-	-	-	-	-	-	-	-
j = 24	-	-	-	-	-	-	-	-	-	-
j = 25	-	-	-	-	-	-	-	-	-	-
j = 26	-	-	-	-	-	-	-	-	-	-
j = 27	-	-	-	-	-	-	-	-	-	-
j = 28	-	-	-	-	-	-	-	-	-	-
j = 29	-	-	-	-	-	-	-	-	-	-
j = 30	-	-	-	-	-	-	-	-	-	-
j = 31	-	-	-	-	-	-	-	-	-	-
j = 32	-	-	-	-	-	-	-	-	-	-
j = 33	-	-	-	-	-	-	-	-	-	-
j = 34	-	-	-	-	-	-	-	-	-	-
j = 35	-	-	-	-	-	-	-	-	-	-
j = 36	-	-	-	-	-	-	-	-	-	-
j = 37	-	-	-	-	-	-	-	-	-	-
j = 38	-	-	-	-	-	-	-	-	-	-
j = 39	-	-	-	-	-	-	-	-	-	-
j = 40	-	-	-	-	-	-	-	-	-	-
j = 41	-	-	-	-	-	-	-	-	-	-
j = 42	-	-	-	-	-	-	-	-	-	-
j = 43	-	-	-	-	-	-	-	-	-	-
j = 44	-	-	-	-	-	-	-	-	-	-
j = 45	-	-	-	-	-	-	-	-	-	-
j = 46	-	-	-	-	-	-	-	-	-	-
j = 47	-	-	-	-	-	-	-	-	-	-
j = 48	-	-	-	-	-	-	-	-	-	-
j = 49	-	-	-	-	-	-	-	-	-	-
j = 50	-	-	-	-	-	-	-	-	-	-
j = 51	-	-	-	-	-	-	-	-	-	-
j = 52	-	-	-	-	-	-	-	-	-	-
j = 53	-	-	-	-	-	-	-	-	-	-
j = 54	-	-	-	-	-	-	-	-	-	-
j = 55	-	-	-	-	-	-	-	-	-	-
j = 56	-	-	-	-	-	-	-	-	-	-
j = 57	-	-	-	-	-	-	-	-	-	-
j = 58	-	-	-	-	-	-	-	-	-	-
j = 59	-	-	-	-	-	-	-	-	-	-
j = 60	-	-	-	-	-	-	-	-	-	-
j = 61	-	-	-	-	-	-	-	-	-	-
j = 62	-	-	-	-	-	-	-	-	-	-
j = 63	-	-	-	-	-	-	-	-	-	-
j = 64	-	-	-	-	-	-	-	-	-	-
j = 65	-	-	-	-	-	-	-	-	-	-
j = 66	-	-	-	-	-	-	-	-	-	-
j = 67	-	-	-	-	-	-	-	-	-	-
j = 68	-	-	-	-	-	-	-	-	-	-
j = 69	-	-	-	-	-	-	-	-	-	-
j = 70	-	-	-	-	-	-	-	-	-	-
j = 71	-	-	-	-	-	-	-	-	-	-
j = 72	-	-	-	-	-	-	-	-	-	-
j = 73	-	-	-	-	-	-	-	-	-	-
j = 74	-	-	-	-	-	-	-	-	-	-
j = 75	-	-	-	-	-	-	-	-	-	-
j = 76	-	-	-	-	-	-	-	-	-	-
j = 77	-	-	-	-	-	-	-	-	-	-
j = 78	-	-	-	-	-	-	-	-	-	-
j = 79	-	-	-	-	-	-	-	-	-	-
j = 80	-	-	-	-	-	-	-	-	-	-
j = 81	-	-	-	-	-	-	-	-	-	-
j = 82	-	-	-	-	-	-	-	-	-	-
j = 83	-	-	-	-	-	-	-	-	-	-
j = 84	-	-	-	-	-	-	-	-	-	-

15-May-13	15-Jun-13	15-Jul-13	15-Aug-13	15-Sep-13	15-Oct-13	15-Nov-13	15-Dec-13	15-Jan-14	15-Feb-14	15-Mar-14
t = 0.92	t = 1	t = 1.08	t = 1.17	t = 1.25	t = 1.33	t = 1.42	t = 1.5	t = 1.58	t = 1.67	t = 1.75
-	4.1875	-	-	-	-	-	4.1875	-	-	-
103.31981	99.88304	100.60998	101.34039	102.07455	102.81255	103.55444	100.11273	100.83558	101.56208	102.29216
103.12726	99.69447	100.42532	101.15962	101.89766	102.63953	103.38529	99.94744	100.67411	101.40442	102.13830
102.92525	99.49663	100.23156	100.96992	101.71202	102.45794	103.20774	99.77394	100.50461	101.23890	101.97676
102.71334	99.28908	100.02828	100.77089	101.51722	102.26738	103.02142	99.59185	100.32670	101.06516	101.80718
102.49108	99.07137	99.81503	100.56208	101.31285	102.06744	102.82590	99.40076	100.13998	100.88282	101.62918
102.25799	98.84305	99.59137	100.34306	101.09846	101.85768	102.62078	99.20026	99.94406	100.69146	101.44237
102.01360	98.60362	99.35681	100.11334	100.87359	101.63765	102.40558	98.98990	99.73850	100.49068	101.24635
101.75738	98.35259	99.11086	99.87246	100.63776	101.40688	102.17987	98.76925	99.52285	100.28003	101.04067
101.48883	98.08944	98.85302	99.61990	100.39048	101.16488	101.94316	98.53782	99.29665	100.05905	100.82490
101.20738	97.81364	98.58275	99.35514	100.13124	100.91115	101.69494	98.29512	99.05942	99.82727	100.59857
100.91249	97.52463	98.29951	99.07765	99.85949	100.64516	101.43471	98.04065	98.81066	99.58421	100.36119
-	97.22184	98.00272	98.78686	99.57470	100.36637	101.16193	97.77388	98.54985	99.32935	100.11227
-	-	97.69182	98.48220	99.27628	100.07421	100.87604	97.49427	98.27645	99.06217	99.85128
-	-	-	98.16307	98.96366	99.76811	100.57647	97.20124	97.98991	98.78211	99.57770
-	-	-	-	98.63622	99.44746	100.26262	96.89422	97.68965	98.48861	99.29094
-	-	-	-	-	99.11165	99.93390	96.57260	97.37507	98.18108	98.99045
-	-	-	-	-	-	99.58966	96.23576	97.04557	97.85892	98.67563
-	-	-	-	-	-	-	95.88306	96.70051	97.52150	98.34585
-	-	-	-	-	-	-	-	96.33923	97.16818	98.00048
-	-	-	-	-	-	-	-	-	96.79829	97.63888
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15-Apr-14	15-May-14	15-Jun-14	15-Jul-14	15-Aug-14	15-Sep-14	15-Oct-14	15-Nov-14	15-Dec-14	15-Jan-15	15-Feb-15
t = 1.83	t = 1.92	t = 2	t = 2.08	t = 2.17	t = 2.25	t = 2.33	t = 2.42	t = 2.5	t = 2.58	t = 2.67
-	-	4.1875	-	-	-	-	-	4.1875	-	-
103.02575	103.76273	100.31548	101.03186	101.75109	102.47318	103.19817	103.92612	100.46958	101.17661	101.88659
102.87567	103.61640	100.17287	100.89290	101.61573	102.34139	103.06992	103.80140	100.34837	101.05888	101.77236
102.71807	103.46273	100.02308	100.74691	101.47349	102.20285	102.93504	103.67014	100.22072	100.93476	101.65177
102.55262	103.30138	99.86580	100.59359	101.32409	102.05731	102.79331	103.53217	100.08647	100.80415	101.52478
102.37895	103.13200	99.70067	100.43262	101.16721	101.90446	102.64445	103.38724	99.94541	100.66688	101.39126
102.19667	102.95422	99.52734	100.26363	101.00251	101.74398	102.48813	103.23503	99.79726	100.52267	101.25096
102.00538	102.76763	99.34541	100.08625	100.82961	101.57551	102.32402	103.07521	99.64169	100.37124	101.10360
101.80466	102.57183	99.15448	99.90008	100.64814	101.39867	102.15174	102.90744	99.47835	100.21223	100.94887
101.59407	102.36638	98.95414	99.70472	100.45769	101.21307	101.97092	102.73133	99.30689	100.04530	100.78642
101.37315	102.15085	98.74394	99.49973	100.25784	101.01829	101.78114	102.54648	99.12691	99.87007	100.61587
101.14144	101.92475	98.52342	99.28466	100.04815	100.81390	101.58198	102.35249	98.93802	99.68614	100.43685
100.89843	101.68762	98.29212	99.05906	99.82817	100.59946	101.37302	102.14893	98.73979	99.49311	100.24896
100.64362	101.43895	98.04954	98.82243	99.59742	100.37451	101.15379	101.93535	98.53179	99.29055	100.05177
100.37648	101.17822	97.79517	98.57428	99.35541	100.13856	100.92382	101.71129	98.31357	99.07801	99.84486
100.09645	100.90489	97.52848	98.31409	99.10163	99.89111	100.68262	101.47627	98.08465	98.85504	99.62777
99.80298	100.61840	97.24892	98.04131	98.83555	99.63164	100.42969	101.22978	97.84454	98.62115	99.40003
99.49547	100.31817	96.95593	97.75539	98.55661	99.35962	100.16448	100.97131	97.59274	98.37584	99.16115
99.17331	100.00361	96.64891	97.45574	98.26426	99.07447	99.88645	100.70033	97.32871	98.11860	98.91062
98.83589	99.67410	96.32726	97.14178	97.95790	98.77563	99.59504	100.41626	97.05190	97.84888	98.64792
98.48255	99.32899	95.99034	96.81288	97.63693	98.46249	99.28965	100.11853	96.76176	97.56613	98.37249
98.11262	98.96764	95.63752	96.46840	97.30071	98.13443	98.96967	99.80655	96.45768	97.26977	98.08378
97.72543	98.58937	95.26812	96.10769	96.94860	97.79083	98.63449	99.47969	96.13907	96.95921	97.78119
-	98.19348	94.88146	95.73007	96.57992	97.43101	98.28344	99.13732	95.80529	96.63382	97.46412
-	-	94.47684	95.33484	96.19400	97.05431	97.91586	98.77877	95.45570	96.29297	97.13194
-	-	-	94.92129	95.79013	96.66002	97.53106	98.40338	95.08963	95.93600	96.78400
-	-	-	-	95.36758	96.24742	97.12833	98.01044	94.70639	95.56223	96.41963
-	-	-	-	-	95.81580	96.70696	97.59923	94.30527	95.17097	96.03815
-	-	-	-	-	-	96.26619	97.16903	93.88555	94.76149	95.63884
-	-	-	-	-	-	-	96.71907	93.44648	94.33306	95.22099
-	-	-	-	-	-	-	-	92.98730	93.88494	94.78385
-	-	-	-	-	-	-	-	-	93.41633	94.32665
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15-Mar-15	15-Apr-15	15-May-15	15-Jun-15	15-Jul-15	15-Aug-15	15-Sep-15	15-Oct-15	15-Nov-15	15-Dec-15	15-Jan-16
t = 2.75	t = 2.83	t = 2.92	t = 3	t = 3.08	t = 3.17	t = 3.25	t = 3.33	t = 3.42	t = 3.5	t = 3.58
			110.47	106.98	107.68	108.37	109.07	109.77	110.47	106.98
-	-	-	4.1875	-	-	-	-	-	4.1875	-
102.59957	103.31558	104.03466	100.56933	101.26755	101.96870	102.67275	103.37962	104.08928	100.61416	101.30211
102.48888	103.20849	103.93125	100.46969	101.17176	101.87690	102.58507	103.29621	104.01024	100.53961	101.23205
102.37183	103.09501	103.82137	100.36349	101.06928	101.77824	102.49036	103.20560	103.92388	100.45765	101.15457
102.24844	102.97522	103.70520	100.25097	100.96040	101.67307	102.38900	103.10816	103.83050	100.36848	101.06971
102.11863	102.84910	103.58277	100.13222	100.84529	101.56165	102.28131	103.00428	103.73052	100.27252	100.97786
101.98220	102.71650	103.45397	100.00721	100.72401	101.44409	102.16750	102.89424	103.62432	100.17021	100.87948
101.83888	102.57718	103.31861	99.87578	100.59643	101.32036	102.04760	102.77817	103.51210	100.06187	100.77499
101.68838	102.43086	103.17643	99.73771	100.46237	101.19029	101.92150	102.65603	103.39389	99.94761	100.66461
101.53035	102.27721	103.02711	99.59269	100.32156	101.05364	101.78899	102.52764	103.26960	99.82738	100.54837
101.36444	102.11588	102.87033	99.44041	100.17367	100.91012	101.64981	102.39276	103.13899	99.70102	100.42615
101.19027	101.94652	102.70572	99.28052	100.01839	100.75941	101.50364	102.25110	103.00181	99.56828	100.29774
101.00746	101.76874	102.53292	99.11266	99.85535	100.60116	101.35015	102.10233	102.85773	99.42887	100.16286
100.81559	101.58213	102.35154	98.93644	99.68419	100.43502	101.18899	101.94613	102.70644	99.28245	100.02120
100.61424	101.38630	102.16116	98.75148	99.50452	100.26061	101.01980	101.78212	102.54759	99.12871	99.87244
100.40297	101.18079	101.96137	98.55736	99.31594	100.07753	100.84219	101.60994	102.38080	98.96729	99.71624
100.18132	100.96517	101.75172	98.35365	99.11802	99.88537	100.65576	101.42920	102.20571	98.79781	99.55223
99.94880	100.73896	101.53177	98.13990	98.91034	99.68371	100.46009	101.23949	102.02192	98.61989	99.38004
99.70493	100.50167	101.30102	97.91564	98.69243	99.47211	100.25476	101.04039	101.82901	98.43314	99.19929
99.44917	100.25281	101.05899	97.68040	98.46382	99.25010	100.03931	100.83146	101.62657	98.23714	99.00957
99.18101	99.99184	100.80516	97.43366	98.22402	99.01719	99.81326	100.61224	101.41413	98.03145	98.81045
98.89987	99.71822	100.53900	97.17491	97.97251	98.77290	99.57614	100.38225	101.19124	97.81562	98.60150
98.60519	99.43138	100.25995	96.90360	97.70878	98.51670	99.32744	100.14101	100.95742	97.58917	98.38225
98.29637	99.13074	99.96744	96.61917	97.43225	98.24804	99.06662	99.88799	100.71215	97.35163	98.15223
97.97278	98.81569	99.66088	96.32104	97.14238	97.96638	98.79314	99.62265	100.45493	97.10247	97.91094
97.63380	98.48561	99.33964	96.00860	96.83855	97.67113	98.50643	99.34445	100.18520	96.84117	97.65787
97.27877	98.13985	99.00310	95.68124	96.52016	97.36169	98.20591	99.05281	99.90240	96.56718	97.39248
96.90700	97.77775	98.65060	95.33830	96.18659	97.03745	97.89096	98.74713	99.60596	96.27993	97.11420
96.51781	97.39860	98.28146	94.97912	95.83716	96.69775	97.56096	98.42680	99.29527	95.97884	96.82248
96.11047	97.00172	97.89499	94.60302	95.47122	96.34194	97.21526	98.09118	98.96970	95.66329	96.51671
95.68425	96.58637	97.49047	94.20929	95.08806	95.96934	96.85319	97.73961	98.62860	95.33264	96.19626
95.23839	96.15181	97.06716	93.79721	94.68698	95.57923	96.47405	97.37142	98.27133	94.98626	95.86051
94.77213	95.69728	96.62432	93.36603	94.26724	95.17091	96.07713	96.98589	97.89718	94.62345	95.50880
94.28467	95.22198	96.16116	92.91499	93.82808	94.74362	95.66171	96.58232	97.50544	94.24354	95.14043
-	94.72514	95.67691	92.44331	93.36873	94.29661	95.22703	96.15997	97.09540	93.84580	94.75472
-	-	95.17075	91.95019	92.88841	93.82909	94.77232	95.71807	96.66631	93.42950	94.35093
-	-	-	91.43483	92.38632	93.34028	94.29680	95.25585	96.21740	92.99389	93.92833
-	-	-	-	91.86162	92.82935	93.79965	94.77251	95.74787	92.53819	93.48615
-	-	-	-	-	92.29548	93.28008	94.26725	95.25695	92.06162	93.02361
-	-	-	-	-	-	92.73723	93.73923	94.74380	91.56336	92.53992
-	-	-	-	-	-	-	93.18762	94.20759	91.04258	92.03426
-	-	-	-	-	-	-	-	93.64748	90.49846	91.50580
-	-	-	-	-	-	-	-	-	89.93015	90.95370
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15-Feb-16	15-Mar-16	15-Apr-16	15-May-16	15-Jun-16	15-Jul-16	15-Aug-16	15-Sep-16	15-Oct-16	15-Nov-16	15-Dec-16
t = 3.67	t = 3.75	t = 3.83	t = 3.92	t = 4	t = 4.08	t = 4.17	t = 4.25	t = 4.33	t = 4.42	t = 4.5
107.68	108.37	109.07	109.77	108.38	104.89	105.58	106.28	106.98	107.68	108.38
-	-	-	-	4.1875	-	-	-	-	-	4.1875
101.99259	102.68563	103.38130	104.07969	100.59341	101.27041	101.95038	102.63349	103.31988	104.00966	100.51543
101.92703	102.62452	103.32452	104.02705	100.54468	101.22523	101.90845	102.59451	103.28355	103.97576	100.48377
101.85414	102.55630	103.26097	103.96812	100.49023	101.17501	101.86218	102.55186	103.24420	103.93937	100.45005
101.77377	102.48056	103.19000	103.90199	100.42896	101.11847	101.81023	102.50427	103.20067	103.89954	100.41355
101.68618	102.39741	103.11147	103.82826	100.36016	101.05464	101.75139	102.45035	103.15150	103.85487	100.37304
101.59186	102.30729	103.02572	103.74707	100.28374	100.98311	101.68491	102.38904	103.09538	103.80387	100.32697
101.49129	102.21074	102.93331	103.65896	100.20011	100.90409	101.61074	102.31992	103.03151	103.74537	100.27388
101.38481	102.10820	102.83479	103.56453	100.10991	100.81821	101.52936	102.24327	102.95984	103.67893	100.21288
101.27255	101.99992	102.73050	103.46428	100.01375	100.72614	101.44152	102.15983	102.88100	103.60493	100.14401
101.15445	101.88592	102.62059	103.35844	99.91200	100.62843	101.34789	102.07037	102.79583	103.52423	100.06799
101.03034	101.76608	102.50498	103.24705	99.80480	100.52532	101.24888	101.97547	102.70509	103.43771	99.98582
100.89996	101.64016	102.38349	103.12995	99.69206	100.41682	101.14459	101.87537	102.60916	103.34598	99.89831
100.76301	101.50790	102.25586	103.00693	99.57359	100.30278	101.03493	101.77006	102.50817	103.24927	99.80587
100.61920	101.36898	102.12181	102.87770	99.44914	100.18296	100.91971	101.65938	102.40200	103.14756	99.70857
100.46817	101.22310	101.98103	102.74196	99.31842	100.05710	100.79866	101.54310	102.29044	103.04067	99.60630
100.30959	101.06990	101.83318	102.59941	99.18113	99.92490	100.67151	101.42095	102.17324	102.92836	99.49884
100.14309	100.90905	101.67792	102.44972	99.03694	99.78606	100.53796	101.29264	102.05012	102.81038	99.38595
99.96830	100.74017	101.51491	102.29253	98.88552	99.64024	100.39769	101.15787	101.92079	102.68645	99.26735
99.78481	100.56288	101.34377	102.12748	98.72653	99.48712	100.25038	101.01633	101.78496	102.55627	99.14276
99.59223	100.37678	101.16410	101.95421	98.55959	99.32633	100.09570	100.86769	101.64230	102.41954	99.01189
99.39011	100.18145	100.97552	101.77231	98.38434	99.15752	99.93328	100.71160	101.49249	102.27594	98.87444
99.17802	99.97646	100.77759	101.58139	98.20037	98.98030	99.76275	100.54771	101.33517	102.12514	98.73009
98.95548	99.76136	100.56987	101.38101	98.00727	98.79427	99.58373	100.37564	101.17000	101.96678	98.57850
98.72201	99.53567	100.35191	101.17073	97.80461	98.59901	99.39582	100.19501	100.99658	101.80052	98.41932
98.47712	99.29891	100.12324	100.95008	97.59195	98.39409	99.19858	100.00540	100.81453	101.62596	98.25218
98.22027	99.05057	99.88335	100.71860	97.36880	98.17906	98.99159	99.80639	100.62344	101.44272	98.07672
97.95094	98.79012	99.63173	100.47577	97.13470	97.95344	98.77439	99.59754	100.42287	101.25037	97.89252
97.66854	98.51700	99.36785	100.22107	96.88914	97.71674	98.54649	99.37839	100.21240	101.04850	97.69918
97.37250	98.23066	99.09116	99.95398	96.63158	97.46845	98.30742	99.14846	99.99154	100.83665	97.49626
97.06222	97.93050	98.80108	99.67392	96.36150	97.20805	98.05664	98.90725	99.75983	100.61436	97.28331
96.73707	97.61591	98.49700	99.38031	96.07831	96.93499	97.79364	98.65424	99.51675	100.38114	97.05987
96.39641	97.28626	98.17833	99.07256	95.78144	96.64868	97.51785	98.38890	99.26179	100.13649	96.82545
96.03956	96.94090	97.84441	98.75005	95.47027	96.34856	97.22870	98.11067	98.99441	99.87988	96.57954
95.66584	96.57915	97.49459	98.41212	95.14419	96.03399	96.92560	97.81896	98.71403	99.61077	96.32162
95.27455	96.20032	97.12819	98.05811	94.80253	95.70435	96.60792	97.51318	98.42009	99.32860	96.05114
94.86494	95.80368	96.74450	97.68734	94.44464	95.35898	96.27503	97.19271	98.11198	99.03277	95.76752
94.43627	95.38851	96.34281	97.29910	94.06982	94.99721	95.92627	96.85691	97.78907	98.72269	95.47019
93.98778	94.95406	95.92237	96.89266	93.67735	94.61835	95.56095	96.50510	97.45071	98.39771	95.15854
93.51867	94.49953	95.48243	96.46728	93.26651	94.22166	95.17838	96.13660	97.09624	98.05721	94.83193
93.02814	94.02415	95.02219	96.02218	92.83653	93.80641	94.77784	95.75072	96.72497	97.70049	94.48971
92.51538	93.52709	94.54085	95.55658	92.38666	93.37185	94.35857	95.34671	96.33618	97.32688	94.13120
91.97953	93.00753	94.03762	95.06967	91.91608	92.91719	93.91981	94.92384	95.92915	96.93565	93.75572
91.41976	92.46464	93.51164	94.56063	91.42400	92.44164	93.46079	94.48132	95.50312	96.52607	93.36255
90.83520	91.89755	92.96207	94.02863	90.90959	91.94439	92.98069	94.01838	95.05732	96.09739	92.95094
-	91.30540	92.38805	93.47281	90.37201	91.42459	92.47871	93.53421	94.59096	95.64882	92.52015
-	-	91.78872	92.89230	89.81040	90.88141	91.95399	93.02798	94.10323	95.17959	92.06939
-	-	-	92.28625	89.22389	90.31398	91.40569	92.49886	93.59330	94.68886	91.59786
-	-	-	-	88.61161	89.72144	90.83295	91.94598	93.06033	94.17581	91.10475
-	-	-	-	-	89.10289	90.23490	91.36848	92.50345	93.63960	90.58923
-	-	-	-	-	-	89.61064	90.76549	91.92180	93.07936	90.05045
-	-	-	-	-	-	-	90.13611	91.31450	92.49423	89.48754
-	-	-	-	-	-	-	-	90.68066	91.88331	88.89964
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15-Jan-17	15-Feb-17	15-Mar-17	15-Apr-17	15-May-17	15-Jun-17	15-Jul-17	15-Aug-17	15-Sep-17	15-Oct-17	15-Nov-17
t = 4.58	t = 4.67	t = 4.75	t = 4.83	t = 4.92	t = 5	t = 5.08	t = 5.17	t = 5.25	t = 5.33	t = 5.42
104.89	105.58	106.28	106.98	107.68	106.28	102.79	103.49	104.19	104.89	105.58
-	-	-	-	-	4.1875	-	-	-	-	-
101.18500	101.85802	102.53452	103.21452	103.89803	100.39757	101.06091	101.72770	102.39793	103.07161	103.74877
101.15539	101.83039	102.50880	103.19068	103.87604	100.37742	101.04249	101.71101	102.38292	103.05827	103.73707
101.12405	101.80124	102.48173	103.16561	103.85292	100.35622	101.02313	101.69345	102.36714	103.04424	103.72477
101.09046	101.77025	102.45311	103.13918	103.82860	100.33392	101.00276	101.67498	102.35055	103.02949	103.71183
101.05364	101.73672	102.42248	103.11115	103.80292	100.31045	100.98134	101.65556	102.33310	103.01398	103.69822
101.01215	101.69941	102.38891	103.08086	103.77551	100.28560	100.95876	101.63513	102.31474	102.99766	103.68390
100.96432	101.65663	102.35084	103.04706	103.74547	100.25882	100.93474	101.61355	102.29542	102.98050	103.66885
100.90884	101.60673	102.30643	103.00790	103.71116	100.22884	100.90844	101.59039	102.27495	102.96242	103.65302
100.84529	101.54875	102.25421	102.96152	103.67052	100.19366	100.87817	101.56441	102.25261	102.94311	103.63631
100.77413	101.48277	102.19373	102.90684	103.62188	100.15115	100.84160	101.53345	102.22668	102.92148	103.61820
100.69640	101.40969	102.12561	102.84402	103.56474	100.10006	100.79676	101.49500	102.19450	102.89516	103.59702
100.61308	101.33068	102.05107	102.77419	103.49993	100.04067	100.74314	101.44761	102.15371	102.86117	103.56969
100.52480	101.24658	101.97120	102.69865	103.42889	99.97436	100.68181	101.39169	102.10375	102.81773	103.53329
100.43178	101.15781	101.88666	102.61835	103.35285	99.90267	100.61450	101.32901	102.04605	102.76551	103.48719
100.33397	101.06442	101.79764	102.53365	103.27245	99.82655	100.54256	101.26131	101.98271	102.70674	103.43336
100.23119	100.96626	101.70405	102.44457	103.18783	99.74634	100.46660	101.18956	101.91517	102.64342	103.37433
100.12320	100.86312	101.60570	102.35096	103.09889	99.66201	100.38670	101.11404	101.84396	102.57648	103.31162
100.00975	100.75475	101.50236	102.25259	103.00543	99.57338	100.30272	101.03465	101.76909	102.50606	103.24559
99.89056	100.64090	101.39379	102.14923	102.90721	99.48025	100.21447	100.95121	101.69040	102.43205	103.17618
99.76536	100.52130	101.27972	102.04063	102.80402	99.38239	100.12173	100.86352	101.60770	102.35426	103.10323
99.63385	100.39566	101.15990	101.92654	102.69560	99.27957	100.02428	100.77138	101.52078	102.27250	103.02655
99.49572	100.26370	101.03402	101.80669	102.58169	99.17153	99.92188	100.67455	101.42945	102.18659	102.94597
99.35065	100.12509	100.90180	101.68078	102.46203	99.05803	99.81430	100.57282	101.33348	102.09630	102.86128
99.19832	99.97952	100.76293	101.54854	102.33632	98.93879	99.70127	100.46592	101.23263	102.00142	102.77228
99.03835	99.82666	100.61709	101.40964	102.20429	98.81354	99.58253	100.35362	101.12668	101.90172	102.67876
98.87040	99.66614	100.46393	101.26376	102.06561	98.68197	99.45779	100.23563	101.01536	101.79697	102.58049
98.69407	99.49761	100.30311	101.11057	101.91996	98.54378	99.32677	100.11169	100.89840	101.68692	102.47723
98.50897	99.32067	100.13426	100.94971	101.76701	98.39865	99.18916	99.98150	100.77555	101.57129	102.36874
98.31468	99.13493	99.95698	100.78082	101.60641	98.24625	99.04462	99.84476	100.64649	101.44983	102.25476
98.11077	98.93997	99.77089	100.60350	101.43778	98.08621	98.89284	99.70115	100.51094	101.32224	102.13503
97.89678	98.73536	99.57556	100.41737	101.26075	97.91817	98.73346	99.55033	100.36858	101.18822	102.00924
97.67226	98.52064	99.37056	100.22199	101.07490	97.74176	98.56612	99.39195	100.21907	101.04746	101.87713
97.43669	98.29533	99.15543	100.01694	100.87983	97.55657	98.39043	99.22566	100.06206	100.89963	101.73836
97.18959	98.05896	98.92970	99.80176	100.67510	97.36218	98.20599	99.05107	99.89721	100.74440	101.59262
96.93041	97.81101	98.69288	99.57598	100.46026	97.15817	98.01239	98.86779	99.72413	100.58140	101.43958
96.65861	97.55094	98.44446	99.33910	100.23482	96.94407	97.80920	98.67540	99.54242	100.41025	101.27887
96.37363	97.27822	98.18390	99.09062	99.99831	96.71942	97.59597	98.47348	99.35169	100.23058	101.11013
96.07486	96.99226	97.91066	98.83000	99.75021	96.48373	97.37222	98.26157	99.15149	100.04198	100.93298
95.76170	96.69247	97.62416	98.55669	99.48999	96.23649	97.13747	98.03920	98.94140	99.84401	100.74702
95.43352	96.37824	97.32380	98.27011	99.21709	95.97716	96.89121	97.80590	98.72093	99.63625	100.55182
95.08965	96.04894	97.00898	97.96968	98.93095	95.70521	96.63291	97.56116	98.48961	99.41822	100.34695
94.72943	95.70391	96.67906	97.65478	98.63098	95.42005	96.36203	97.30445	98.24694	99.18946	100.13197
94.35215	95.34247	96.33337	97.32477	98.31655	95.12110	96.07799	97.03522	97.99239	98.94947	99.90638
93.95710	94.96391	95.97125	96.97899	97.98703	94.80774	95.78021	96.75290	97.72543	98.69772	99.66971
93.54354	94.56752	95.59198	96.61677	97.64177	94.47935	95.46807	96.45692	97.44549	98.43368	99.42144
93.11069	94.15256	95.19485	96.23740	97.28008	94.13525	95.14094	96.14666	97.15198	98.15680	99.16103
92.65780	93.71827	94.77910	95.84016	96.90127	93.77478	94.79816	95.82149	96.84430	97.86648	98.88795
92.18404	93.26385	94.34399	95.42430	96.50460	93.39724	94.43907	95.48076	96.52182	97.56214	98.60161
91.68861	92.78850	93.88871	94.98906	96.08935	93.00190	94.06295	95.12380	96.18390	97.24315	98.30142
91.17067	92.29142	93.41248	94.53365	95.65473	92.58802	93.66909	94.74990	95.82987	96.90887	97.98677
90.62937	91.77175	92.91446	94.05728	95.19998	92.15484	93.25676	94.35835	95.45903	96.55863	97.65701
90.06384	91.22865	92.39382	93.55911	94.72427	91.70158	92.82518	93.94842	95.07066	96.19174	97.31149
89.47320	90.66124	91.84970	93.03831	94.22681	91.22744	92.37358	93.51934	94.66404	95.80750	96.94954
88.85657	90.06865	91.28123	92.49402	93.70673	90.73159	91.90115	93.07033	94.23841	95.40517	96.57044
88.21305	89.44999	90.68753	91.92537	93.16319	90.21319	91.40708	92.60060	93.79299	94.98401	96.17347
-	88.80436	90.06771	91.33148	92.59531	89.67139	90.89052	92.10932	93.32698	94.54325	95.75789
-	-	89.42088	90.71146	92.00223	89.10533	90.35063	91.59566	92.83957	94.08208	95.32293
-	-	-	90.06440	91.38303	88.51412	89.78652	91.05877	92.32992	93.59970	94.86781
-	-	-	-	90.73683	87.89686	89.19733	90.49777	91.79719	93.09528	94.39172
-	-	-	-	-	87.25267	88.58216	89.91179	91.24051	92.56797	93.89384
-	-	-	-	-	-	87.94011	89.29993	90.65900	92.01692	93.37332
-	-	-	-	-	-	-	88.66130	90.05176	91.44124	92.82931
-	-	-	-	-	-	-	-	89.41791	90.84004	92.26094
-	-	-	-	-	-	-	-	-	90.21243	91.66731
-	-	-	-	-	-	-	-	-	-	91.04755
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

15-Dec-17	15-Jan-18	15-Feb-18	15-Mar-18	15-Apr-18	15-May-18	15-Jun-18	15-Jul-18	15-Aug-18	15-Sep-18	15-Oct-18
t = 5.5	t = 5.58	t = 5.67	t = 5.75	t = 5.83	t = 5.92	t = 6	t = 6.08	t = 6.17	t = 6.25	t = 6.33
106.28	102.79	103.49	104.19	104.89	105.58	104.19	100.70	101.40	102.09	102.79
4.1875	-	-	-	-	-	4.1875	-	-	-	-
100.24192	100.89886	101.55920	102.22296	102.89015	103.56081	100.04746	100.69792	101.39583	102.09375	102.79167
100.23184	100.89031	101.55215	102.21738	102.88602	103.55810	100.04615	100.69792	101.39583	102.09375	102.79167
100.22123	100.88131	101.54473	102.21151	102.88168	103.55526	100.04476	100.69792	101.39583	102.09375	102.79167
100.21007	100.87184	101.53692	102.20534	102.87711	103.55226	100.04331	100.69792	101.39583	102.09375	102.79167
100.19834	100.86188	101.52871	102.19885	102.87230	103.54911	100.04178	100.69792	101.39583	102.09375	102.79167
100.18600	100.85141	101.52008	102.19202	102.86725	103.54579	100.04017	100.69792	101.39583	102.09375	102.79167
100.17302	100.84040	101.51100	102.18484	102.86193	103.54231	100.03848	100.69792	101.39583	102.09375	102.79167
100.15937	100.82882	101.50145	102.17728	102.85634	103.53864	100.03670	100.69792	101.39583	102.09375	102.79167
100.14501	100.81663	101.49140	102.16934	102.85046	103.53478	100.03483	100.69792	101.39583	102.09375	102.79167
100.12979	100.80382	101.48084	102.16098	102.84427	103.53072	100.03286	100.69792	101.39583	102.09375	102.79167
100.11283	100.79011	101.46973	102.15219	102.83776	103.52646	100.03079	100.69792	101.39583	102.09375	102.79167
100.09163	100.77400	101.45756	102.14295	102.83092	103.52197	100.02862	100.69792	101.39583	102.09375	102.79167
100.06254	100.75197	101.44186	102.13226	102.82372	103.51725	100.02633	100.69792	101.39583	102.09375	102.79167
100.02331	100.72021	101.41800	102.11614	102.81420	103.51228	100.02392	100.69792	101.39583	102.09375	102.79167
99.97495	100.67801	101.38294	102.08927	102.79631	103.50313	100.02138	100.69792	101.39583	102.09375	102.79167
99.92040	100.62814	101.33833	102.05084	102.76543	103.48157	100.01081	100.69792	101.39583	102.09375	102.79167
99.86188	100.57372	101.28810	102.00503	102.72451	103.44654	99.98357	100.68200	101.38248	102.08460	102.78750
99.80018	100.51615	101.23460	101.95556	102.67905	103.40507	99.94616	100.64870	101.35372	102.06121	102.77113
99.73531	100.45561	101.17833	101.90348	102.63109	103.36117	99.90624	100.61259	101.32137	102.03261	102.74632
99.66712	100.39197	101.11917	101.84872	102.58066	103.31499	99.86425	100.57457	101.28724	102.00230	102.71975
99.59545	100.32508	101.05698	101.79116	102.52764	103.26645	99.82009	100.53458	101.25135	101.97043	102.69182
99.52012	100.25477	100.99161	101.73065	102.47191	103.21541	99.77367	100.49255	101.21362	101.93691	102.66245
99.44095	100.18087	100.92290	101.66704	102.41332	103.16176	99.72487	100.44835	101.17394	101.90168	102.63157
99.35774	100.10320	100.85067	101.60018	102.35174	103.10536	99.67356	100.40188	101.13223	101.86462	102.59909
99.27030	100.02157	100.77477	101.52990	102.28700	103.04606	99.61962	100.35303	101.08837	101.82567	102.56494
99.17841	99.93578	100.69499	101.45604	102.21895	102.98374	99.56292	100.30167	101.04226	101.78471	102.52903
99.08186	99.84563	100.61114	101.37840	102.14743	102.91822	99.50331	100.24768	100.99378	101.74164	102.49128
98.98040	99.75090	100.52303	101.29681	102.07225	102.84936	99.44065	100.19092	100.94281	101.69636	102.45159
98.87381	99.65136	100.43044	101.21107	101.99324	102.77698	99.37479	100.13125	100.88923	101.64876	102.40985
98.76181	99.54677	100.33315	101.12096	101.91021	102.70091	99.30557	100.06853	100.83291	101.59872	102.36597
98.64416	99.43689	100.23092	101.02628	101.82295	102.62096	99.23280	100.00260	100.77370	101.54610	102.31984
98.52056	99.32144	100.12351	100.92678	101.73125	102.53693	99.15633	99.93331	100.71146	101.49080	102.27133
98.39074	99.20016	100.01067	100.82224	101.63490	102.44863	99.07596	99.86048	100.64604	101.43266	102.22035
98.25437	99.07277	99.89212	100.71241	101.53365	102.35585	98.99149	99.78393	100.57727	101.37154	102.16674
98.11116	98.93896	99.76758	100.59702	101.42728	102.25835	98.90273	99.70348	100.50499	101.30730	102.11039
97.96076	98.79842	99.63677	100.47580	101.31551	102.15590	98.80946	99.61893	100.42903	101.23977	102.05116
97.80283	98.65082	99.49938	100.34847	101.19810	102.04826	98.71145	99.53008	100.34919	101.16880	101.98889
97.63700	98.49583	99.35508	100.21473	101.07476	101.93518	98.60847	99.43672	100.26529	101.09420	101.92345
97.46289	98.33308	99.20354	100.07425	100.94521	101.81639	98.50028	99.33861	100.17712	101.01580	101.85465
97.28012	98.16220	99.04442	99.92673	100.80913	101.69159	98.38661	99.23554	100.08447	100.93341	101.78235
97.08827	97.98281	98.87734	99.77181	100.66621	101.56051	98.26720	99.12724	99.98711	100.84682	101.70636
96.88690	97.79450	98.70192	99.60914	100.51612	101.42284	98.14177	99.01346	99.88482	100.75584	101.62650
96.67558	97.59685	98.51778	99.43835	100.35852	101.27825	98.01002	98.89394	99.77735	100.66023	101.54257
96.45384	97.38941	98.32449	99.25905	100.19303	101.12641	97.87164	98.76839	99.66444	100.55977	101.45437
96.22118	97.17172	98.12162	99.07083	100.01929	100.96697	97.72632	98.63651	99.54583	100.45423	101.36169
95.97712	96.94332	97.90872	98.87327	99.83690	100.79956	97.57370	98.49801	99.42123	100.34334	101.26431
95.72112	96.70370	97.68533	98.66593	99.64545	100.62381	97.41346	98.35255	99.29036	100.22685	101.16200
95.45264	96.45235	97.45095	98.44836	99.44450	100.43931	97.24521	98.19979	99.15290	100.10448	101.05450
95.17111	96.18873	97.20508	98.22007	99.23362	100.24565	97.06858	98.03940	99.00854	99.97595	100.94157
94.87595	95.91228	96.94719	97.98057	99.01234	100.04240	96.88316	97.87100	98.85695	99.84095	100.82293
94.56654	95.62242	96.67672	97.72934	98.78017	99.82910	96.68854	97.69421	98.69777	99.69916	100.69832
94.24228	95.31856	96.39313	97.46585	98.53661	99.60530	96.48429	97.50862	98.53064	99.55027	100.56743
93.90249	95.00007	96.09581	97.18954	98.28115	99.37049	96.26995	97.31383	98.35518	99.39392	100.42996
93.54651	94.66632	95.78415	96.89983	98.01323	99.12418	96.04506	97.10940	98.17100	99.22977	100.28559
93.17364	94.31663	95.45752	96.59613	97.73228	98.86583	95.80912	96.89487	97.97768	99.05742	100.13399
92.78318	93.95033	95.11527	96.27780	97.43774	98.59490	95.56162	96.66978	97.77479	98.87651	99.97481
92.37438	93.56670	94.75672	95.94422	97.12899	98.31082	95.30204	96.43363	97.56187	98.68661	99.80769
91.94648	93.16501	94.38117	95.59471	96.80539	98.01301	95.02983	96.18593	97.33847	98.48730	99.63224
91.49871	92.74452	93.98791	95.22859	96.46632	97.70084	94.74442	95.92613	97.10410	98.27815	99.44807
91.03026	92.30446	93.57619	94.84516	96.11108	97.37369	94.44521	95.65369	96.85825	98.05868	99.25477
90.54033	91.84403	93.14525	94.44368	95.73900	97.03090	94.13160	95.36804	96.60040	97.82844	99.05192
90.02808	91.36242	92.69432	94.02341	95.34935	96.67181	93.80296	95.06859	96.33000	97.58690	98.83905
89.49266	90.85881	92.22258	93.58357	94.94140	96.29570	93.45862	94.75473	96.04648	97.33357	98.61571
88.93319	90.33235	91.72922	93.12338	94.51440	95.90187	93.09792	94.42582	95.74926	97.06790	98.38140
88.34881	89.78218	91.21341	92.64202	94.06756	95.48958	92.72015	94.08122	95.43773	96.78933	98.13564
87.73862	89.20743	90.67428	92.13867	93.60009	95.05806	92.32459	93.72023	95.11127	96.49728	97.87789
-	88.60720	90.11097	91.61248	93.11118	94.60654	91.91052	93.34218	94.76921	96.19117	97.60761
-	-	89.52260	91.06260	92.60000	94.13421	91.47716	92.94633	94.41090	95.87036	97.32423
-	-	-	90.48814	92.06569	93.64026	91.02375	92.53195	94.03563	95.53421	97.02718
-	-	-	-	91.50738	93.12386	90.54947	92.09829	93.64269	95.18207	96.71585
-	-	-	-	-	92.58415	90.05351	91.64455	93.23135	94.81325	96.38960
-	-	-	-	-	-	89.53504	91.16995	92.80086	94.42705	96.04781
-	-	-	-	-	-	-	90.67366	92.35043	94.02273	95.68978
-	-	-	-	-	-	-	-	91.87928	93.59956	95.31485
-	-	-	-	-	-	-	-	-	93.15677	94.92229
-	-	-	-	-	-	-	-	-	-	94.51138
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

15-Nov-18	15-Dec-18	15-Jan-19	15-Feb-19	15-Mar-19	15-Apr-19	15-May-19	15-Jun-19
t = 6.42	t = 6.5	t = 6.58	t = 6.67	t = 6.75	t = 6.83	t = 6.92	t = 7
103.49	104.19	100.70	101.40	102.09	102.79	103.49	104.19
-	4.1875	-	-	-	-	-	104.1875
103.48958	100.04874	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.04749	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.04618	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.04480	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.04335	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.04183	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.04022	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.03853	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.03675	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.03489	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.03292	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.03085	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.02868	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.02639	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.02399	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.02146	100.69792	101.39583	102.09375	102.79167	103.48958	-
103.48958	100.01880	100.69792	101.39583	102.09375	102.79083	103.48780	-
103.48340	100.01030	100.69792	101.39356	102.08812	102.78528	103.48506	-
103.46253	99.99377	100.68645	101.38160	102.07926	102.77944	103.48218	-
103.43964	99.97448	100.67055	101.36903	102.06994	102.77330	103.47914	-
103.41557	99.95419	100.65384	101.35581	102.06013	102.76684	103.47595	-
103.39026	99.93285	100.63626	101.34190	102.04982	102.76004	103.47259	-
103.36364	99.91042	100.61777	101.32728	102.03898	102.75290	103.46906	-
103.33565	99.88682	100.59832	101.31190	102.02757	102.74538	103.46535	-
103.30621	99.86201	100.57787	101.29572	102.01558	102.73748	103.46144	-
103.27526	99.83592	100.55637	101.27871	102.00296	102.72916	103.45733	-
103.24272	99.80848	100.53376	101.26082	101.98970	102.72042	103.45301	-
103.20850	99.77963	100.50997	101.24200	101.97574	102.71122	103.44846	-
103.17252	99.74929	100.48497	101.22222	101.96107	102.70155	103.44368	-
103.13469	99.71739	100.45867	101.20141	101.94564	102.69137	103.43865	-
103.09491	99.68385	100.43102	101.17953	101.92941	102.68068	103.43336	-
103.05309	99.64858	100.40194	101.15652	101.91234	102.66942	103.42780	-
103.00912	99.61150	100.37137	101.13232	101.89439	102.65759	103.42195	-
102.96290	99.57251	100.33922	101.10688	101.87551	102.64514	103.41580	-
102.91430	99.53152	100.30541	101.08012	101.85566	102.63205	103.40932	-
102.86321	99.48842	100.26987	101.05198	101.83478	102.61828	103.40252	-
102.80950	99.44311	100.23250	101.02240	101.81283	102.60381	103.39536	-
102.75304	99.39548	100.19321	100.99129	101.78974	102.58858	103.38783	-
102.69368	99.34540	100.15190	100.95858	101.76547	102.57257	103.37991	-
102.63130	99.29275	100.10847	100.92419	101.73994	102.55573	103.37158	-
102.56572	99.23741	100.06280	100.88803	101.71310	102.53802	103.36282	-
102.49680	99.17924	100.01480	100.85001	101.68487	102.51940	103.35360	-
102.42436	99.11809	99.96434	100.81004	101.65520	102.49982	103.34392	-
102.34822	99.05381	99.91129	100.76801	101.62399	102.47923	103.33373	-
102.26821	98.98625	99.85552	100.72383	101.59118	102.45757	103.32301	-
102.18412	98.91525	99.79690	100.67738	101.55668	102.43480	103.31174	-
102.09576	98.84062	99.73529	100.62855	101.52041	102.41086	103.29989	-
102.00292	98.76220	99.67052	100.57722	101.48228	102.38568	103.28742	-
101.90536	98.67978	99.60245	100.52326	101.44219	102.35921	103.27431	-
101.80286	98.59317	99.53091	100.46654	101.40004	102.33137	103.26053	-
101.69517	98.50217	99.45573	100.40692	101.35573	102.30210	103.24603	-
101.58204	98.40655	99.37671	100.34426	101.30914	102.27133	103.23079	-
101.46320	98.30609	99.29368	100.27840	101.26018	102.23898	103.21476	-
101.33838	98.20054	99.20643	100.20917	101.20870	102.20496	103.19791	-
101.20727	98.08966	99.11475	100.13642	101.15459	102.16920	103.18018	-
101.06957	97.97318	99.01843	100.05997	101.09772	102.13160	103.16154	-
100.92497	97.85083	98.91723	99.97963	101.03794	102.09207	103.14195	-
100.77313	97.72233	98.81091	99.89520	100.97511	102.05052	103.12134	-
100.61370	97.58738	98.69922	99.80650	100.90907	102.00684	103.09968	-
100.44633	97.44565	98.58190	99.71329	100.83968	101.96092	103.07690	-
100.27062	97.29683	98.45868	99.61537	100.76675	101.91265	103.05294	-
100.08619	97.14058	98.32926	99.51250	100.69011	101.86192	103.02776	-
99.89262	96.97654	98.19335	99.40443	100.60958	101.80859	103.00129	-
99.68948	96.80433	98.05063	99.29091	100.52496	101.75254	102.97345	-
99.47633	96.62357	97.90077	99.17168	100.43606	101.69363	102.94419	-
99.25270	96.43386	97.74343	99.04646	100.34265	101.63173	102.91343	-
99.01811	96.23478	97.57826	98.91495	100.24453	101.56667	102.88109	-
98.77206	96.02588	97.40488	98.77685	100.14145	101.49830	102.84709	-
98.51401	95.80672	97.22290	98.63185	100.03317	101.42646	102.81136	-
98.24344	95.57681	97.03192	98.47961	99.91945	101.35098	102.77379	-
97.95978	95.33568	96.83151	98.31979	99.80001	101.27167	102.73431	-
97.66244	95.08279	96.62125	98.15203	99.67458	101.18834	102.69281	-
97.35083	94.81763	96.40067	97.97595	99.54287	101.10081	102.64920	-
97.02431	94.53965	96.16929	97.79116	99.40457	101.00885	102.60336	-
96.68225	94.24826	95.92663	97.59725	99.25938	100.91226	102.55519	-
96.32398	93.94289	95.67217	97.39380	99.10695	100.81080	102.50457	-
95.94882	93.62292	95.40538	97.18037	98.94696	100.70425	102.45137	-
-	93.28773	95.12571	96.95649	98.77903	100.59235	102.39548	-
-	-	94.83260	96.72169	98.60280	100.47484	102.33675	-
-	-	-	96.47548	98.41788	100.35146	102.27504	-
-	-	-	-	98.22387	100.22192	102.21021	-
-	-	-	-	-	100.08594	102.14211	-
-	-	-	-	-	-	102.07058	-
-	-	-	-	-	-	-	-

APPENDIX J: SOURCE DATA FOR HISTORICAL DEFAULT RATES

Source of data extracted from Altman & Kuehne (2013, p. 276):

Table 4: Default Rates and Losses, 1978-3Q 2013 (Dollars in Millions)

Year	Par Value Outstanding[1] ($)	Par Value of Default ($)	Default Rate (%)	Weighted Price After Default ($)	Weighted Coupon (%)	Default Loss (%)[2]
2013 (3Q)	1,392,212	11,744	0.84	55.7	10.19	0.42
2012	1,212,362	19,647	1.62	57.8	8.97	0.76
2011	1,354,649	17,963	1.33	60.3	9.10	0.59
2010	1,221,569	13,809	1.13	46.6	10.59	0.66
2009	1,152,952	123,878	10.74	36.1	8.16	7.30
2008	1,091,000	50,763	4.65	42.5	8.23	2.83
2007	1,075,400	5,473	0.51	66.6	9.64	0.19
2006	993,600	7,559	0.76	65.3	9.33	0.30
2005	1,073,000	36,209	3.37	61.1	8.61	1.46
2004	933,100	11,657	1.25	57.7	10.30	0.59
2003	825,000	38,451	4.66	45.5	9.55	2.76
2002	757,000	96,858	12.79	25.3	9.37	10.15
2001	649,000	63,609	9.80	25.5	9.18	7.76
2000	597,200	30,295	5.07	26.4	8.54	3.95
1999	567,400	23,532	4.15	27.9	10.55	3.21
1998	465,500	7,464	1.60	35.9	9.46	1.10
1997	335,400	4,200	1.25	54.2	11.87	0.65
1996	271,000	3,336	1.23	51.9	8.92	0.65
1995	240,000	4,551	1.90	40.6	11.83	1.24
1994	235,000	3,418	1.45	39.4	10.25	0.96
1993	206,907	2,287	1.11	56.6	12.98	0.56
1992	163,000	5,545	3.40	50.1	12.32	1.91
1991	183,600	18,862	10.27	36.0	11.59	7.16
1990	181,000	18,354	10.14	23.4	12.94	8.42
1989	189,258	8,110	4.29	38.3	13.40	2.93
1988	148,187	3,944	2.66	43.6	11.91	1.66
1987	129,557	7,486	5.78	75.9	12.07	1.74
1986	90,243	3,156	3.50	34.5	10.61	2.48
1985	58,088	992	1.71	45.9	13.69	1.04
1984	40,939	344	0.84	48.6	12.23	0.48
1983	27,492	301	1.09	55.7	10.11	0.54
1982	18,109	577	3.19	38.6	9.61	2.11
1981	17,115	27	0.16	72.0	15.75	0.15
1980	14,935	224	1.50	21.1	8.43	1.25
1979	10,356	20	0.19	31.0	10.63	0.14
1978	8,946	119	1.33	60.0	8.38	0.59
Arithmetic Average 1978-2012			3.44	45.65	10.55	2.29
Weighted Average 1978-2012			3.83			2.54

Note: [1] Excludes defaulted issues. [2] Default loss rate adjusted for fallen angels is 9.3% in 2002, 1.82% in 2003, 0.59% in 2004, 1.56% in 2005, 0.039% in 2006, 0.20% in 2007, 3.42% in 2008, 7.38% in 2009, 0.66% in 2010, 0.58% in 2011, 0.86% in 2012 and 0.41% in the third-quarter 2013.

Source: NYU Salomon Center.

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