



cutting through complexity

Valuation aspects of debt securities

XII CIS and Baltic Region
Bond Congress
21-22 May 2015

2007



CASH FLOW STATEMENT

A. OPERATING ACTIVITIES		Direct method
1. Management		
- interest income received (+)		312,092
- dividends and profit (+)		278,334
- net commissions (+/-)		(157,000)
- staff costs (-)		(81,401)
- net premiums collected		59,980
- other insurance revenues and expenses (-)		418,656
- other revenue (+)		(152,897)
- lease and other (-)		(97,156)
- costs recognized on discontinued operations and net of the effect (+/-)		43,829
- other assets		(679)
2. Liquidity generated/absorbed by financial assets		(110,636)
- financial assets held for trading		162,920
- available for sale financial assets		15,949
- loans to customers		(371,513)
- loans to banks or other		454,111
- securities in issue		(992)
- financial liabilities from trading		(394,180)
- other liabilities designated at fair value		251,509
3. Cash generated/absorbed by financial liabilities		(407,345)
- amounts owed to banks or other		187,748
- amounts owed to customers		185,061
- securities in issue		(992)
- financial liabilities from trading		(174,823)
- other liabilities designated at fair value		14,414
Net liquidity generated/absorbed by operating activities		18,525
B. INVESTING ACTIVITIES		
1. Liquidity generated by		
- disposal of investment disposals		3,688
- disposal of investment of financial assets held to maturity		12
- disposal of tangible assets		3,271
- disposal of intangible assets held to maturity		405
- business acquisitions		(81,178)
Net liquidity generated/absorbed by investing activities		(74,168)
C. FUNDING ACTIVITIES		
- own issues/occupations		(947)
- dividend distribution and other		(6,063)
Net liquidity generated/absorbed by funding activities		(77,490)
NET LIQUIDITY GENERATED/ABSORBED DURING THE PERIOD		(50,892)

RECONCILIATION	
Balance sheet items	
Cash and cash equivalents at the beginning of the period	31/3/09
Total net liquidity generated/absorbed during the period	289,723
Cash and cash equivalents: effect of exchange rate differences	(50,892)
Cash and cash equivalents at period end	238,831

Sovereign issuers							
Country	Coupon		Principal		Currency		Embedded options
	Fixed	Floating	Bullet	Amortized	FCU	LCU	
Russia	✓	✓	✓		✓	✓	✓
Kazakhstan	✓	✓	✓		✓	✓	
Ukraine	✓	✓	✓	✓	✓	✓	✓
Azerbaijan	✓		✓		✓	✓	

Corporate issuers							
Country	Coupon		Principal		Currency		Embedded options
	Fixed	Floating	Bullet	Amortized	USD	LCU	
Russia	✓	✓	✓		✓	✓	✓
Kazakhstan	✓	✓	✓		✓	✓	✓
Ukraine	✓		✓		✓	✓	✓
Azerbaijan	✓		✓		✓	✓	



Key challenges in CIS debt market



Absence of public quotes



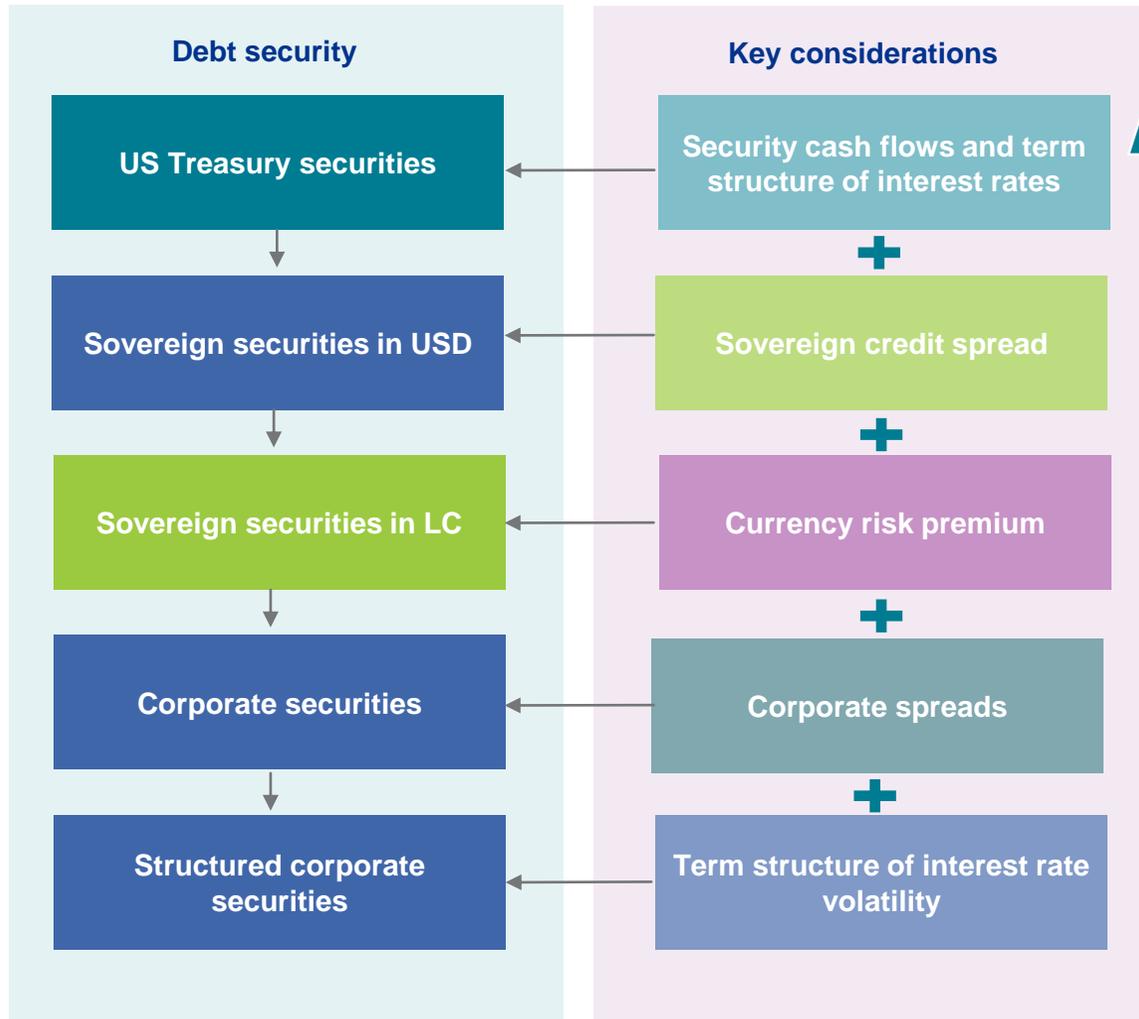
Stale data (out dated quotes, or the same quote for a very long period of time)



Presence of quote, but no trades in security



Absence of volume information

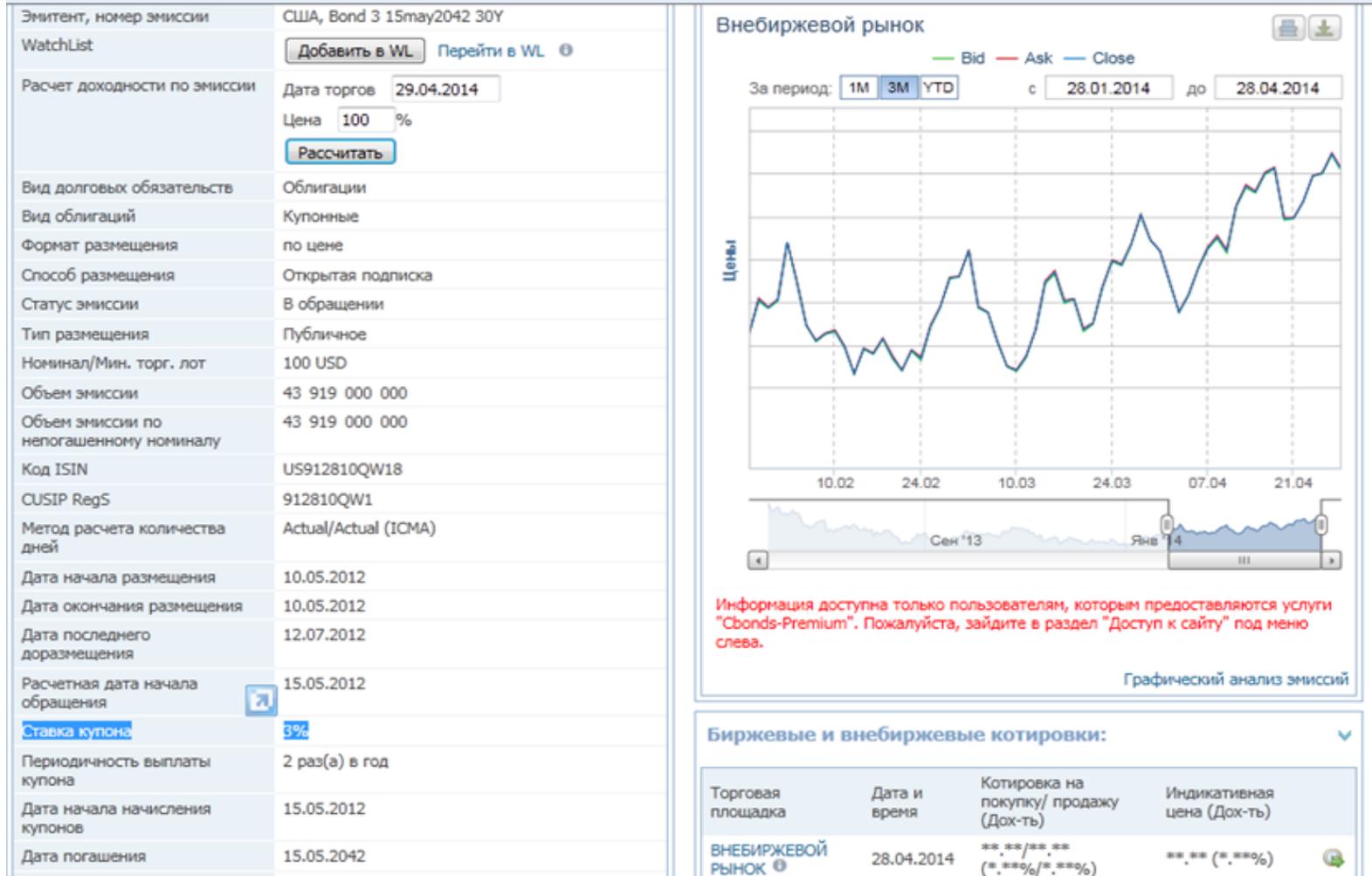


Income approach in case of absence of observable market data

- Analysis of cash flow (promised payments of coupon and principal, maturity)
- Application of arbitrage free pricing concept (term structure of interest rates)
- Incorporating credit risk and currency risk
- Taking into account volatility of interest rates for structured securities

Case study 1

Application of the concept in practice



Source: www.cbonds.ru

Case study 1

Term structure of interest rates (z-curve) for US as at 01/03/2014



Source: Bloomberg, Capital IQ, FRS USA, KPMG analysis

Case study 1

Example valuation of plain vanilla US Tbond

Valuation date		01.mar.14										
U.S. Treasury bond	US912810QW18											
Number of coupon payments per year	times	2										
Calculation basis 1	days in month	30										
Calculation basis 2	days in year	360										
Date of last coupon payment	date	15 may 42										
Date of first coupon payment	date	15 may 12										
Annual coupon rate	%, year	3.0%										
Nominal value of bond	USD	100.00										
Beginning of period	date	15.may.14	15.nov.14	15.may.15	15.nov.15	15.may.16	...	15.may.40	15.nov.40	15.may.41	15.nov.41	15.may.42
Year	year	2014	2014	2015	2015	2016	...	2040	2040	2041	2041	2042
Number of days in the period	days	181	184	181	184	182	...	182	184	181	184	181
Coupon rate	%	1.5%	1.5%	1.5%	1.5%	1.5%	...	1.5%	1.5%	1.5%	1.5%	1.5%
Payments												
Nominal	USD	100.00	-	-	-	-	...	-	-	-	-	100.00
Compensation	USD		0.62	1.50	1.50	1.50	1.50	...	1.50	1.50	1.50	1.50
Total cash flow	USD		0.62	1.50	1.50	1.50	1.50	...	1.50	1.50	1.50	1.50
Bond Yield												
U.S. Risk-Free Rate in USD in nominal / real terms	%		0.1%	0.1%	0.2%	0.3%	0.5%	...	3.8%	3.8%	3.8%	3.8%
Discount period			0.2	0.7	1.2	1.7	2.2	...	26.2	26.7	27.2	27.7
Discount factor			1.000	0.999	0.998	0.994	0.989	...	0.379	0.371	0.362	0.354
Discounted cash flow	USD		0.62	1.50	1.50	1.49	1.48	...	0.57	0.56	0.54	0.53
Estimated value of the bond	USD		89.86									
Bloomberg quota	USD		89.75									

the example of application of DCF model for a U.S. Treasury bond

Source: Bloomberg, Capital IQ, KPMG analysis

Case study 1

Cross check of the results – difference is 0.12% with traded data

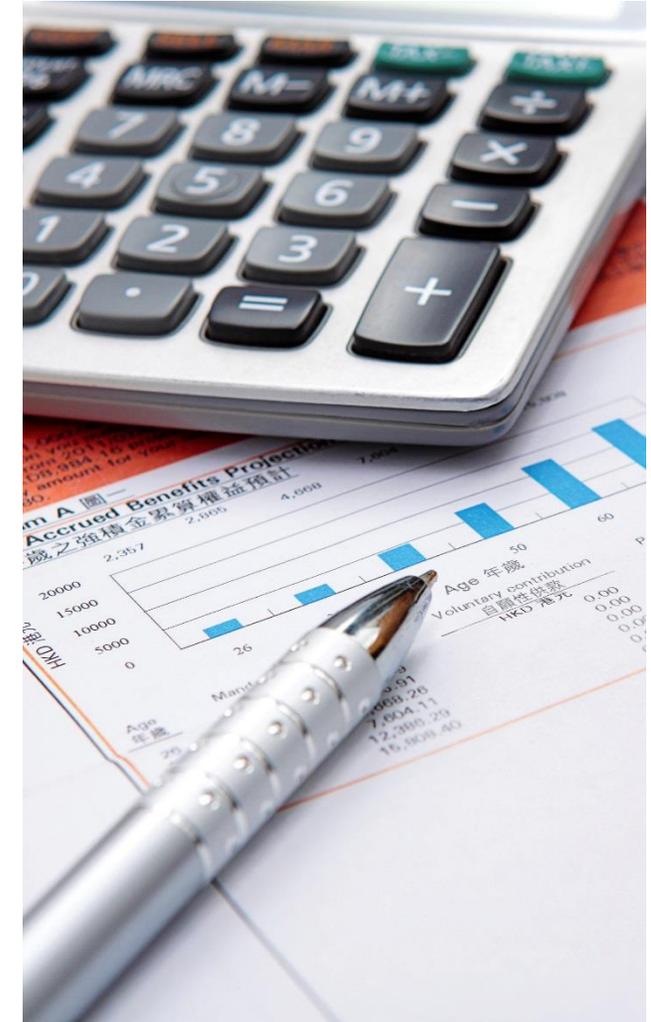


Source: Bloomberg

Case study 2

Corporate fixed coupon bullet callable bond – no closed end solution

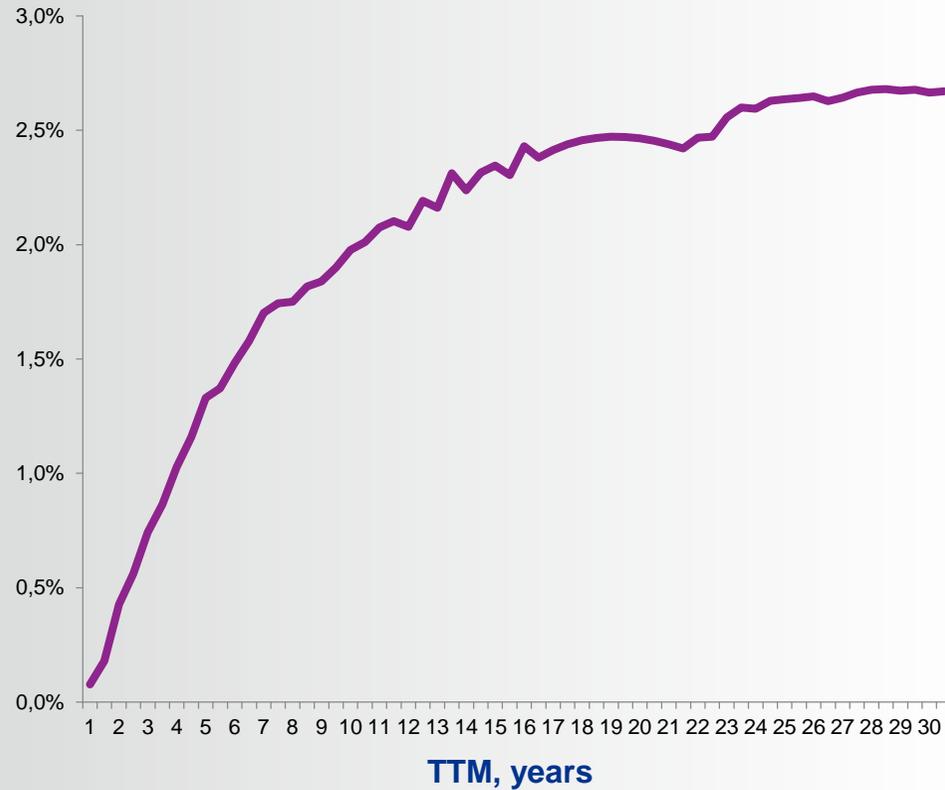
Description of a corporate bond	
Issuer	Construction Materials Producer
Country	Kazakhstan
Currency	KZT
Nominal Value (KZT)	100
Rating	B
Industry	Industrials
Coupon rate	10.0%
TTM, years	5.342
Interest payment	Quarterly
Principal payment	At maturity
Valuation date	15-Apr-15
Maturity date	16-Aug-20
Exercise of call option	16-Apr-07
Date of issuance	16-Apr-07



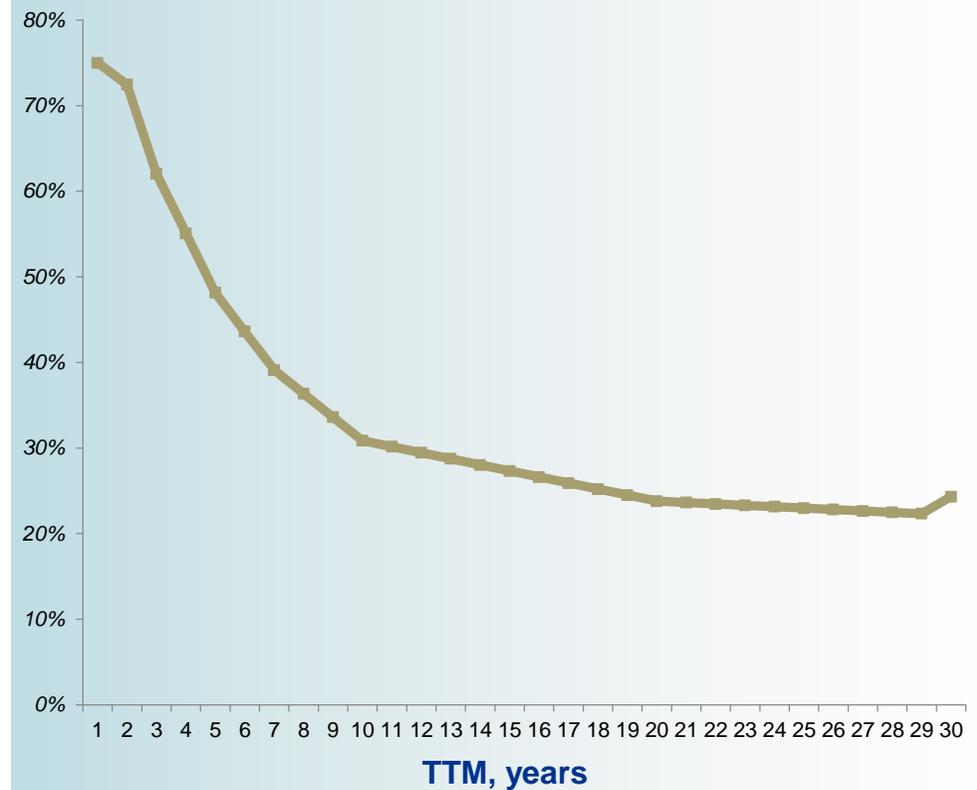
Case study 2

Term structure of interest rate and volatility for US as at 15/04/2015

Term structure of interest rate



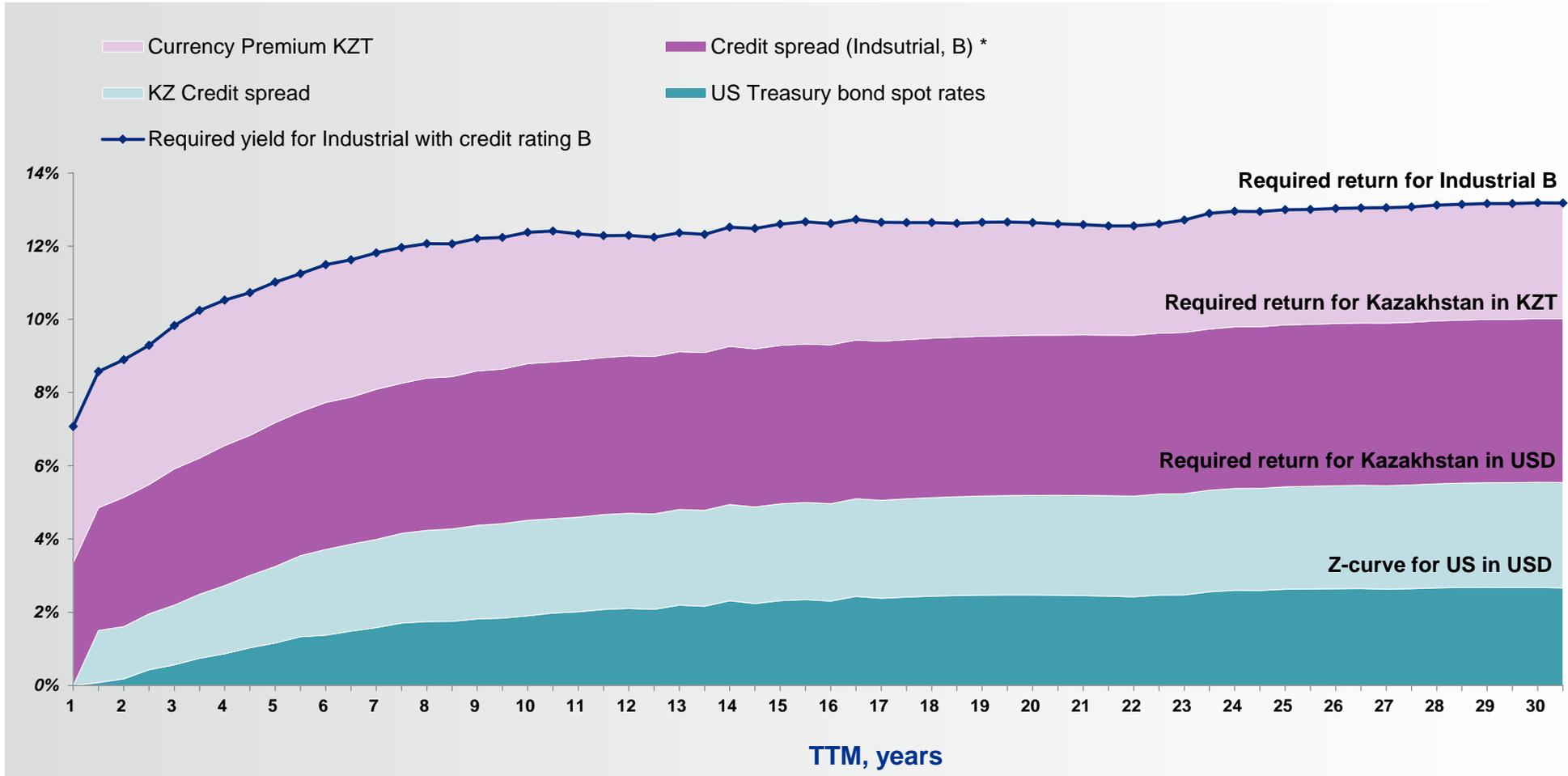
Term structure of interests rate volatilities



Source: Bloomberg, Capital IQ, FRS USA, KPMG analysis

Case study 2

Decomposition of required return for the Issuer



Source: Bloomberg, Capital IQ, EIU, анализ КПМГ

Case study 2

Incorporation of interest rate volatility

Interest rate lattice for Issuer as at 15/04/2015

15-Apr-15	15-Jul-15	15-Oct-15	15-Jan-16	.....	15-Jul-17	15-Oct-17	15-Jan-18	15-Apr-18	.....	15-Apr-20	15-Jul-20
											164.5%
										162.9%	109.9%
										108.9%	74.6%
										73.9%	51.8%
										51.4%	37.1%
									.....	36.8%	27.6%
									.....	27.3%	21.4%
									.....	21.2%	17.4%
									.....	17.3%	14.9%
								45.6%	.....	14.7%	13.2%
							45.2%	30.4%	.....	13.1%	12.1%
						32.0%	28.8%	21.6%	.....	12.0%	11.4%
					24.7%	21.6%	19.9%	16.5%	.....	11.3%	11.0%
					17.6%	16.0%	15.2%	13.6%	.....	10.9%	10.7%
					13.8%	13.0%	12.6%	11.9%	.....	10.6%	10.5%
				.....	11.8%	11.4%	11.2%	11.0%	.....	10.4%	10.4%
				.....	10.7%	10.5%	10.5%	10.4%	.....	10.3%	10.3%
				.....	10.1%	10.1%	10.1%	10.1%	.....	10.2%	10.2%
			10.6%	.....	9.8%	9.8%	9.9%	9.9%	.....	10.2%	10.2%
		9.0%	9.5%	.....	9.6%	9.7%	9.8%	9.8%	.....	10.1%	10.2%
	8.5%	8.8%	9.0%	.....	9.5%	9.6%	9.7%	9.7%	.....	10.1%	10.2%
8.5%	8.5%	8.6%	8.7%	.....	9.4%	9.6%	9.7%	9.7%	.....	10.1%	10.2%

Source: Bloomberg, Capital IQ, KPMG analysis

Case study 2

Elegant way to incorporate callable feature

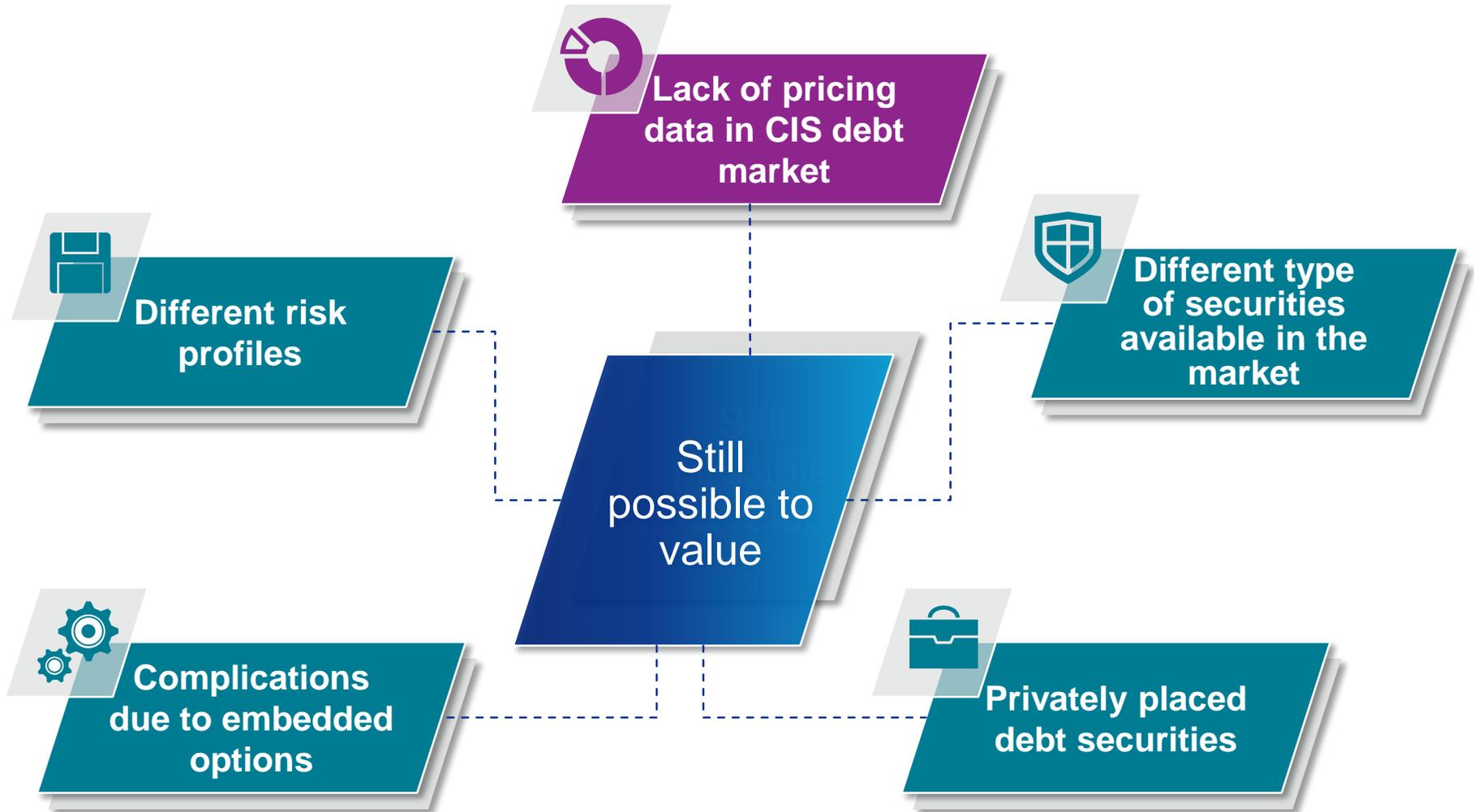
Binomial tree for Issuer as at 15/04/2015

15-Apr-15	15-Jul-15	15-Oct-15	15-Jan-16	.....	15-Oct-17	15-Jan-18	15-Apr-18	15-Jul-18	.....	15-Jul-20	15-Oct-20
											100.00
										73.04	100.00
										80.85	100.00
									.....	86.86	100.00
									.....	91.24	100.00
									.....	94.32	100.00
									.....	96.42	100.00
									.....	97.83	100.00
									.....	98.76	100.00
								55.01	.....	99.38	100.00
							58.85	69.98	.....	99.78	100.00
						62.10	73.26	81.52	.....	100.00	100.00
					66.90	76.26	84.10	89.63	.....	100.00	100.00
					80.17	86.60	91.58	94.96	.....	100.00	100.00
					89.54	93.51	96.39	98.24	.....	100.00	100.00
					95.60	97.77	99.17	99.87	.....	100.00	100.00
				.....	99.06	99.85	100.00	100.00	.....	100.00	100.00
				.....	100.00	100.00	100.00	100.00	.....	100.00	100.00
				.....	100.00	100.00	100.00	100.00	.....	100.00	100.00
			97.36	.....	100.00	100.00	100.00	100.00	.....	100.00	100.00
		99.50	100.00	.....	100.00	100.00	100.00	100.00	.....	100.00	100.00
	100.00	100.00	100.00	.....	100.00	100.00	100.00	100.00	.....	100.00	100.00
100.91	100.00	100.00	100.00	.....	100.00	100.00	100.00	100.00	.....	100.00	100.00

Source: KPMG analysis

Valuation aspects

Takeaways



We would like to thank you for the opportunity to present KPMG services. We are sure that our teams of experts having extensive knowledge in the area of valuation and wide experience in providing advisory services will assist you to cope with the challenges that you may face.

If any questions arise with regard to the content of this document, please, do not hesitate to contact us.



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