

# Managing Currency Mismatch

May 2010

# FX Volatility

# Very High Volatility in Asian Currencies...

## Currency Performance



Source: Bloomberg

# G10 Currencies Not Spared Either...

## Currency Performance



Source: Bloomberg

# USD/HKD Remains within the Band

Regulators Paying more Attention to USD / HKD Mismatch

USD/HKD Exchange Rate

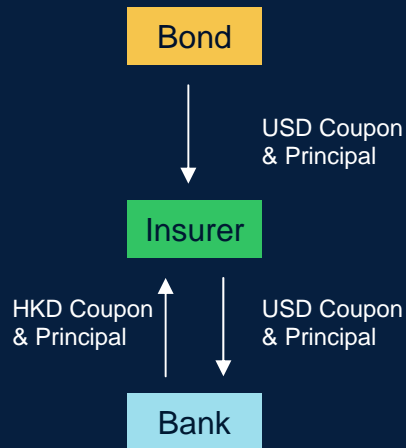


Source: Bloomberg

# Main FX Hedging Strategies

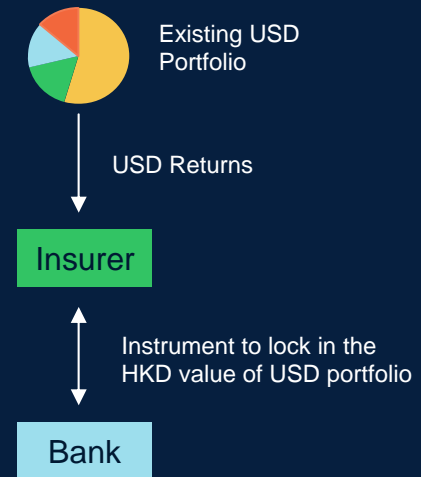
# Two Common Approaches to FX Risk Management

## Individual Investment Basis



- Advantage:
  - Perfect cashflow matching
- Disadvantage:
  - Need to execute with every investment

## Portfolio Basis

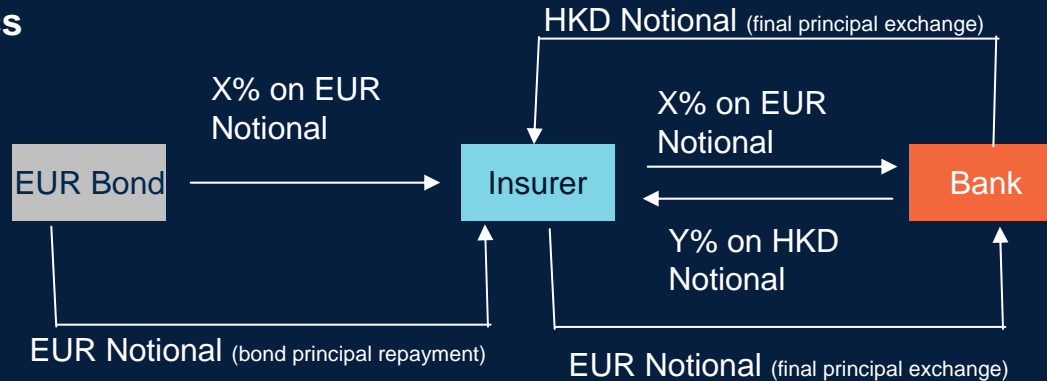


- Advantage:
  - No individual execution
- Disadvantage:
  - Does not match cashflows perfectly

# Individual Investment Basis

## Cross-Currency Swap

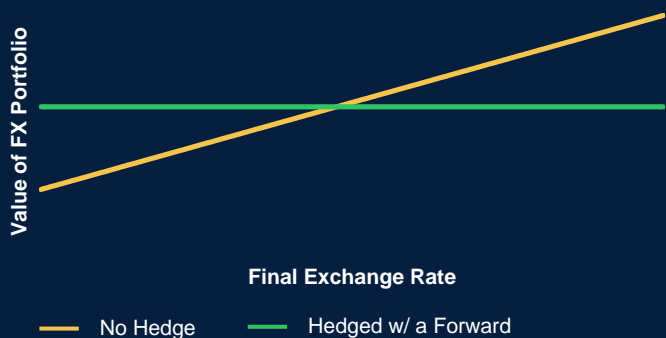
### Mechanics



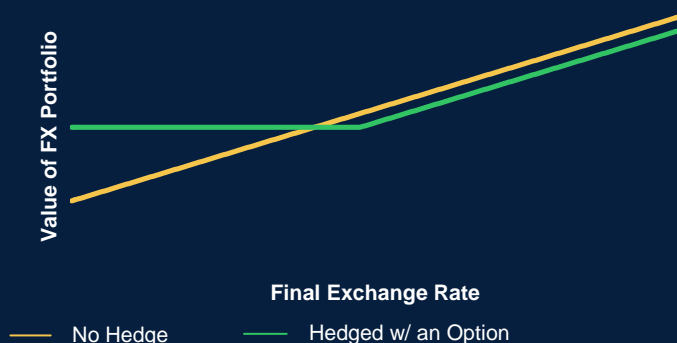
- Coupons and principal perfectly matched
- No FX Risk
- Credit diversification achieved

# Portfolio Hedging: Forwards vs. Options

## Hedging with FX Forwards



## Hedging with FX Options



- Both options and forwards provide downside protection in a scenario where portfolio depreciates
- However, options allow the owner to benefit if portfolio currency appreciates
  - The asymmetrical payoff requires an upfront premium whereas forwards have zero upfront cost
- However, given that policy liabilities are mostly known and fixed, paying an upfront premium to maintain “redundant” upside may not be considered an optimal strategy

# Benefits of Currency Risk Management

# Making Investment Decisions

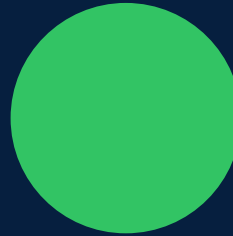
## Separating FX and Investment Decisions

### 2009 Corporate Investment Grade Issuance

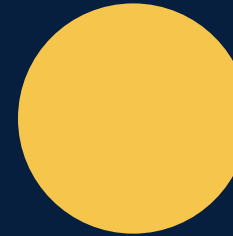
**HKD**  
1.4Bn USD



**USD**  
1080Bn USD



**EUR**  
780Bn USD



Option 1: Buy only  
HKD Bonds

- Advantage:
  - No FX risk
- Disadvantage:
  - Tight pricing
  - Concentration risk
  - Limited liquidity

Option 2: Buy in the International Market and  
Manage FX Risk Separately

- Advantage:
  - Diversification
  - Attractive pricing
  - Liquidity
- Disadvantage:
  - Can't think of any...

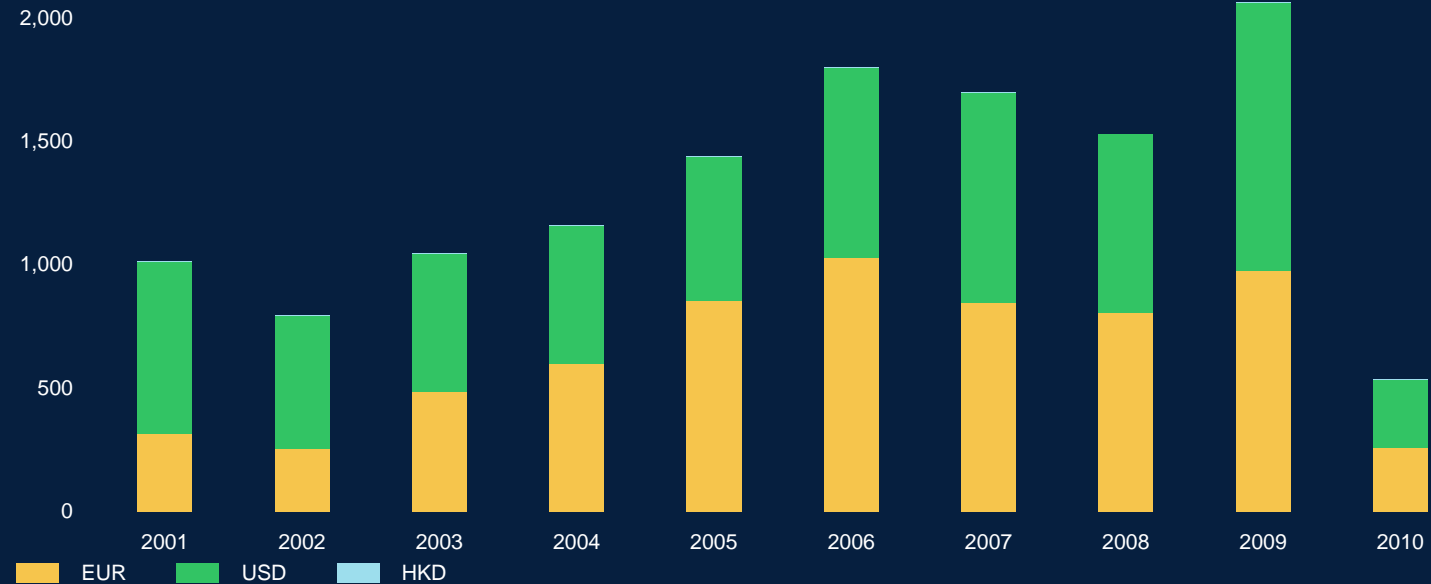
# HKD Fixed Income Assets are Limited

HKD volume cannot be seen on the chart...

## Investment Grade Corporate Issuances

(\$Bn)

2,500



Source: Dealogic (excludes issuances from Government / Supranational entities)


























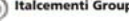
# Recent US Corporate Investment Grade Issuance

## Recent US Corporate Investment Grade Bond Deals(1)

	Issue Date	Issuer	Tenor	Total Deal Size (\$MM)	Tranche Size (\$MM)	Maturity	Ratings		Coupon	Treasury Spread
							Moody's	S&P		
	4/28/2010	Tyco International	5	500	500	10/15/2015	Baa1	A-	3.375%	95
	4/27/2010	NBC Universal	5	4,000	1,000	4/30/2015	Baa2	BBB+	3.650%	128
			10		2,000	4/30/2020			5.150%	148
			30		1,000	4/30/2040			6.400%	183
	4/26/2010	Advance Auto Parts	10	300	300	5/1/2020	Ba1	BBB-	5.750%	200
	4/22/2010	BioMed Realty Trust Inc	10	250	250	4/15/2020	Baa3	BBB-	6.125%	250
	4/21/2010	AngloGold Ashanti Holdings	10	1,000	700	4/15/2020	Baa3	BBB-	5.375%	165
			30		300	4/15/2040			6.500%	200
<b>NORDSTROM</b>	4/20/2010	Nordstrom Inc.	10	500	500	5/1/2020	Baa2	BBB+	4.750%	100
	4/20/2010	Thermo Fisher	5	750	450	5/1/2015	Baa1	A-	3.200%	75
			10		300	5/1/2020			4.700%	90
	4/13/2010	Southern Copper Corporation	10	1,500	400	4/16/2020	Baa2	BBB-	5.375%	163
			30		1,100	4/16/2040			6.750%	213
	4/12/2010	Lowe's Companies	10	1,000	500	4/15/2020	A1	A	4.625%	80
			30		500	4/15/2040			5.800%	110
	4/12/2010	Telefonica Emisiones SAU	3	3,500	1,200	4/26/2013	Baa1	A-	2.582%	95
			5		900	4/27/2015			3.729%	115
			10		1,400	4/27/2020			5.134%	130
	4/8/2010	Worthington Industries Inc	10	150	150	4/15/2020	Baa2	BBB	6.500%	263
	4/8/2010	Avery Dennison	10	250	250	4/15/2020	Baa2	BBB	5.375%	150
	4/8/2010	Boston Properties LP	10	700	700	11/15/2020	Baa2	A-	5.625%	175
	4/7/2010	Valmont Industries	10	300	300	4/20/2020	Ba1	BBB-	6.625%	274

# Recent EUR Investment Grade Issuance

## New Issue Analysis for Selected EUR Issues

Issuer	Rating (Moody's/ S&P)	Pricing Date	Maturity	Notional	Order Book (estimates)	Spread to m/s (bps)	Spread to CDS (bps)	Change of Control
 BOREALIS	-/-	23-Apr-10	7y	€200 MM	€550 MM	260	-	X
 EDF	Aa3 / A+	21-Apr-10	20y	€1.5 Bn	-	95	-	X
 Capgemini	-/-	19-Apr-10	7y	€300 MM	€1.6 Bn	180	-	✓
 celesio	-/-	16-Apr-10	7y	€500 MM	-	180	-	✓
 Red Bull	Baa2 / BBB+	15-Apr-10	8y	€750 MM	€5.7 Bn	105	63	X
 STADA	-/-	14-Apr-10	5y	€350 MM	-	160	-	X
 Telekom	Baa1 / BBB+	13-Apr-10	5y	€500 MM	-	120	54	X
 USF	-/-	09-Apr-10	5y	€100 MM	-	360	-	X
 CEZ GROUP	A2/A-	08-Apr-10	15y	€750 MM	-	122	-	X
 Banco	Baa2/BBB-	08-Apr-10	2.5y	€600 MM	-	145	-34	X
 sanofi aventis	A1/AA-	07-Apr-10	4.5y	€500 MM	-	20	-27	X
 LAFARGE	Baa3/BBB-	07-Apr-10	8y	€500 MM	-	205	-22	✓
 france telecom	A3 / A-	31-Mar-10	10y	€1 Bn	€2.5 Bn	70	5	X
 ASF	Baa1 / BBB+	31-Mar-10	10y	€500 MM	-	88	3	X
 SAP	- / -	31-Mar-10	4y	€500 MM	€4.7 Bn	45	-	X
 SAP	- / -	31-Mar-10	7y	€500 MM	€5.4 Bn	70	-	✓
 Carrefour	A3 / A-	25-Mar-10	10y	€1 Bn	€4.25 Bn	73	-7	X
 PPR	- / BBB-	25-Mar-10	5y	€500 MM	€5.9 Bn	135	9	X
 vivendi	Baa2 / BBB	24-Mar-10	7y	€750 MM	€6.5 Bn	125	14	X
 Intertec	A3 / A-	22-Mar-10	10y	€750 MM	€3.6 Bn	97	12	X
 eutelsat	Baa3 / BBB-	18-Mar-10	7y	€850 MM	-	138	-	✓
 Sun Lee	Baa1 / BBB	18-Mar-10	2y	€300 MM	-	83	58	✓
 MERCK	A3 / BBB+	17-Mar-10	2y	€500 MM	€7 Bn	75	15	X
 MERCK	A3 / BBB+	17-Mar-10	5y	€1.35 Bn	€9.5 Bn	100	21	X
 MERCK	A3 / BBB+	17-Mar-10	10y	€1.35 Bn	€9.5 Bn	125	32	X
 Italcementi Group	Baa2 / BBB-	16-Mar-10	10y	€750 MM	€4.1 Bn	215	-	X

# Recent Sterling Bond Issuance

## New Issue Analysis for Selected GBP Issues

Issuer	Rating (Moody's/S&P)	Pricing Date	Maturity	Notional	Order Book (estimates)	Spread to Gilt (bps) at issue	Spread to m/s (bps) at issue	Change of Control
 Yorkshire Water	Baa3 / BBB+	16-Apr-10	15y / NC7y	£450 MM	-	275	521	X
 DONG Energy	Baa1/A-	26-Mar-10	30y	£500 MM	£2 Bn	118	163	X
	BBB/BBB	25-Mar-10	26y / NC8y	£115 MM	-	310	322	X
 Dallmeier Group	A-/A-	25-Mar-10	20y	£300 MM	-	130	155	X
	A-/A-	25-Mar-10	25y	£100 MM	-	170	-	X
 Network Rail	Aaa/AAA	22-Mar-10	37y	£600 MM	-	23	-	X
 Go-Ahead	Baa3/BBB-	17-Mar-10	6.5y	£200 MM	£1 Bn	215	-	✓
 Western Power Distribution	Baa1/BBB+	16-Mar-10	30y	£200 MM	-	115	-	X
 North Western Gas Network	Baa1/BBB	09-Mar-10	30y	£200 MM	-	110	-	X
 ESB	-	26-Feb-10	10y	£275 MM	-	250	-	✓
 South East Water	Baa2/BBB	04-Feb-10	31y	£130 MM	-	190	-	X
 L&Q Group	Aa2 / AA-	20-Jan-10	30y	£300 MM	£1.1 Bn	115	-	X
 Motability Operations	A2 / A+	14-Jan-10	12y	£400 MM	£500 MM	120	130	X
 National Express	-	07-Jan-10	7y	£350 MM	£1.9 Bn	280	255	✓
 Genesis	A1 / AA-	11-Dec-09	30y	£250 MM	-	170	198	X
 Stagecoach Group	Baa2 / BBB-	10-Dec-09	7y	£400 MM	£1.5 Bn	255	231	X
 IHG	- / BBB-	04-Dec-09	7y	£250 MM	£1.3 Bn	290	258	✓
 BAA	- / A-	01-Dec-09	30y	£235 MM	-	285	-	X
 BAA	- / A-	27-Nov-09	27y	£700 MM	-	270	274	X
 Marks & Spencer	Baa3 / BBB-	25-Nov-09	10y	£400 MM	£2.6 Bn	245	230	✓
 Dallmeier Group	Baa1 / -	26-Nov-09	7y	£200 MM	£300 MM	215	-	X
 Telefonica	Baa1 / A-	24-Nov-09	13y	£650 MM	£1.125 Bn	145	122	X
 SEGRO	-	17-Nov-09	12y	£300 MM	-	300	295	X
 Morgan Stanley	Baa1/BBB+	13-Nov-09	25y	£485 MM	-	185	175	X
 Morgan Stanley	Baa3/BBB-	13-Nov-09	7y	£250 MM	-	325	283	✓

# HKD Private Placement

March 8<sup>th</sup>: HKD Private Placement with 4.33% annual coupon

GRAB GAO		Corp	<b>DES</b>
<b>SECURITY DESCRIPTION</b>		Page 1/ 1	
COM BK AUSTRALIA CBAAU 4.33 03/20		NOT PRICED	
<b>ISSUER INFORMATION</b>		<b>IDENTIFIERS</b>	
Name	COMMONWEALTH BANK AUST	BB Number	EI1803994
Type	Commer Banks Non-US		
Market of Issue	Euro MTN		
<b>SECURITY INFORMATION</b>		<b>RATINGS</b>	
Country	AU	Currency	HKD
Collateral Type	Sr Unsecured	Moody's	Aa1e
Calc Typ	( 348)HONG KONG GOVT BDS	S&P	NA
Maturity	3/16/2020	Composite	NR
Series	EMTN		
NORMAL		<b>ISSUE SIZE</b>	
Coupon	4.33 Fixed	Amt Issued/Outstanding	
ANNUAL	ACT/365	HKD 150,000.00 (M)/	
Announcement Dt	3/ 8/10	HKD 150,000.00 (M)	
Int. Accrual Dt	3/16/10	Min Piece/Increment	
1st Settle Date	3/16/10	1,000,000/ 1,000,000	
1st Coupon Date	3/16/11	Par Amount 1,000,000	
Iss Pr	100.0000	<b>BOOK RUNNER/EXCHANGE</b>	
NO PROSPECTUS		HSBC	
		LONDON	
		66) Send as Attachment	
MOD FOLLOW BUS DAY CNVTN (ADJ): US, EN, HK, AU. PRVT PLCMT.			
<small>                 Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000                  Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2010 Bloomberg Finance L.P.                  6735-1014-3 03-May-10 19:28:28             </small>			

# Yield Pick-Up from USD Bond

March 15<sup>th</sup>: USD Issuance with a USD yield of 5.04%

ISSUER INFORMATION		IDENTIFIERS		1) Additional Sec Info 2) ALLQ 3) Corporate Actions 4) Cds Spreads/RED Info 5) Ratings 6) Custom Notes 7) Identifiers 8) Disclaimer Page 9) Sec. Specific News 10) Involved Parties 11) Issuer Information 12) Pricing Sources 13) Related Securities 14) Issuer Web Page  66) Send as Attachment
Name COMMONWEALTH BANK AUST		Common 049665610		
Type Commer Banks Non-US		ISIN US2027A0EL98		
Market of Issue Priv Placement		CUSIP 2027A0EL9		
SECURITY INFORMATION		RATINGS		
Country AU	Currency USD	Moody's	Aa1	
Collateral Type	Sr Unsecured	S&P	AA	
Calc Typ( 1)	STREET CONVENTION	Composite	AA	
Maturity	3/19/2020 Series 144A			
NORMAL		<b>ISSUE SIZE</b>		
Coupon	5 Fixed	Aggr Amt Iss/Out *		
S/A	30/360	USD 1,000,000.00 (M)/		
Announcement Dt	3/15/10	USD 1,000,000.00 (M)		
Int. Accrual Dt	3/22/10	Min Piece/Increment		
1st Settle Date	3/22/10	2,000.00/ 1,000.00		
1st Coupon Date	9/19/10	Par Amount 1,000.00		
Iss Pr	99.69700	<b>BOOK RUNNER/EXCHANGE</b>		
SPR @ ISS	135.00 vs T 3 5 <sub>8</sub> 02/20	CITI,GS,HSBC		
NO PROSPECTUS	DTC	TRACE		
ISS'D UNDER 144A. SHORT 1ST CPN.				

- On the day of issuance, a USD yield of 5.04% would have swapped into a HKD yield of 4.60%
- This demonstrates that investing in a USD bond and properly managing the FX risk through cross currency swaps can result in a yield pick-up

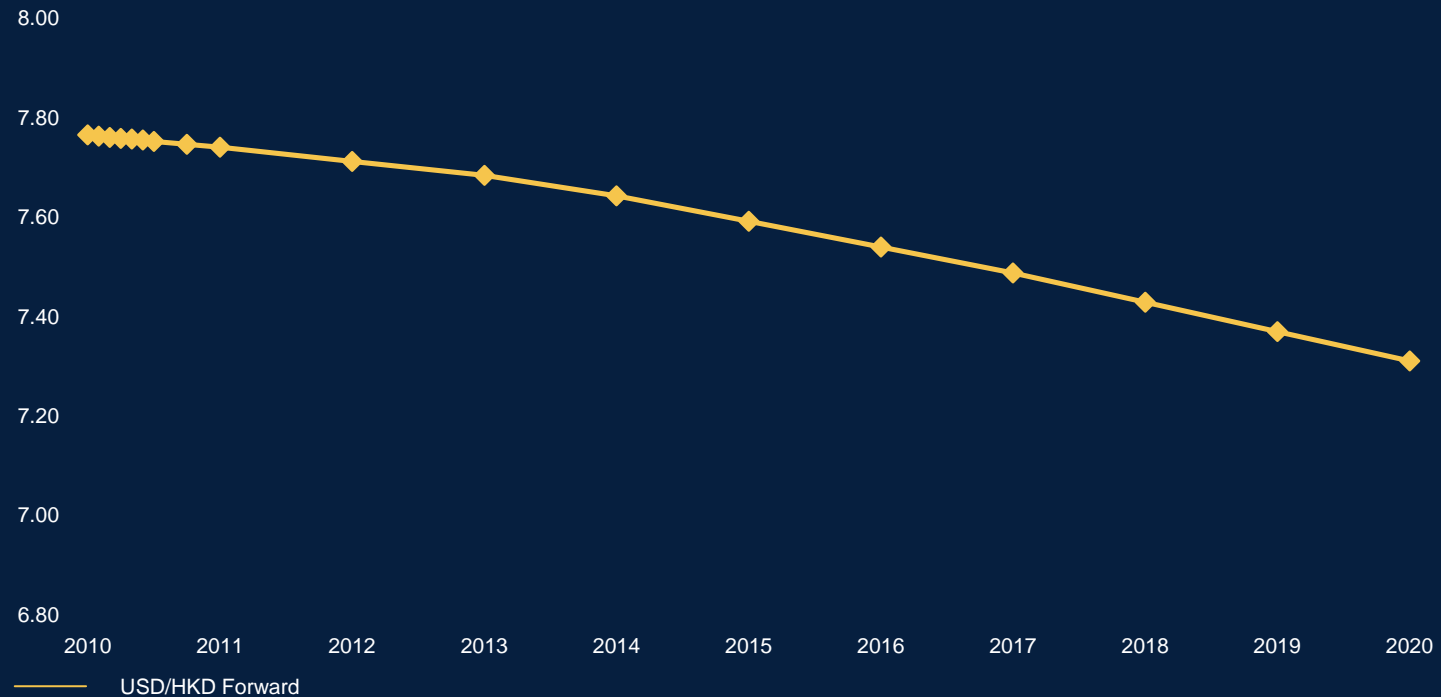
# Choice of FX Hedging Tenor

# How Long to Hedge?

## Looking at the Implied “Cost” of Hedging

### USD/HKD Forward Rate Curve

as at April 29, 2010



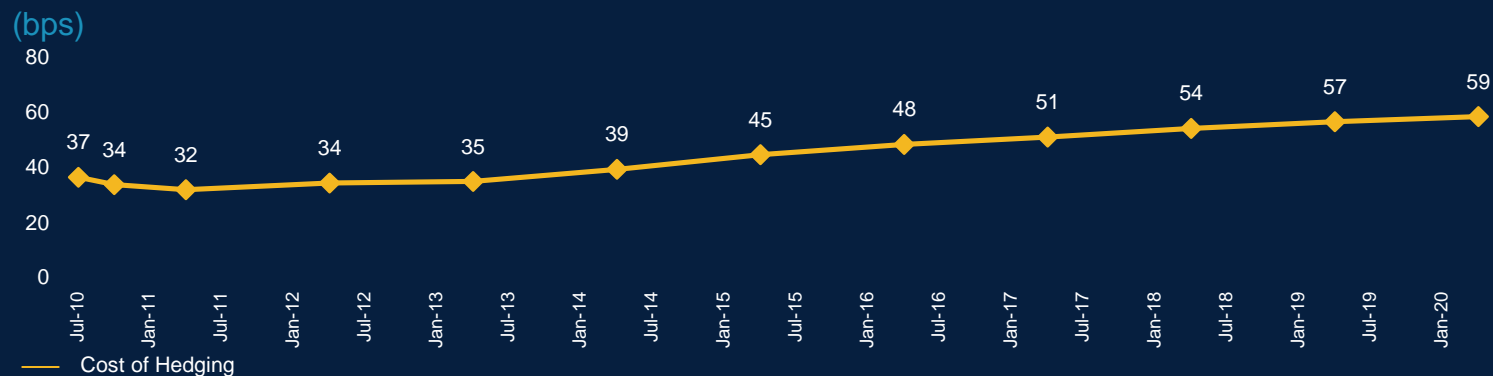
Source: Reuters

# Comparing the Cost of Different Tenors

## Looking at the Implied “Cost” of Hedging

Spot Rate	7.76
10-Year Forward Rate	7.31
Cost	0.45
Cost as a Percentage of Spot Rate	5.8%
Cost Per Year	0.58% (or 58 bps)

## Annualized Cost of Hedging Across the Curve



Source: Morgan Stanley

# Implied Hedging Cost – Looking Back in Time

## Historical Annualised Implied Hedging Cost

based on historical 3-month and 5-year Forward Points

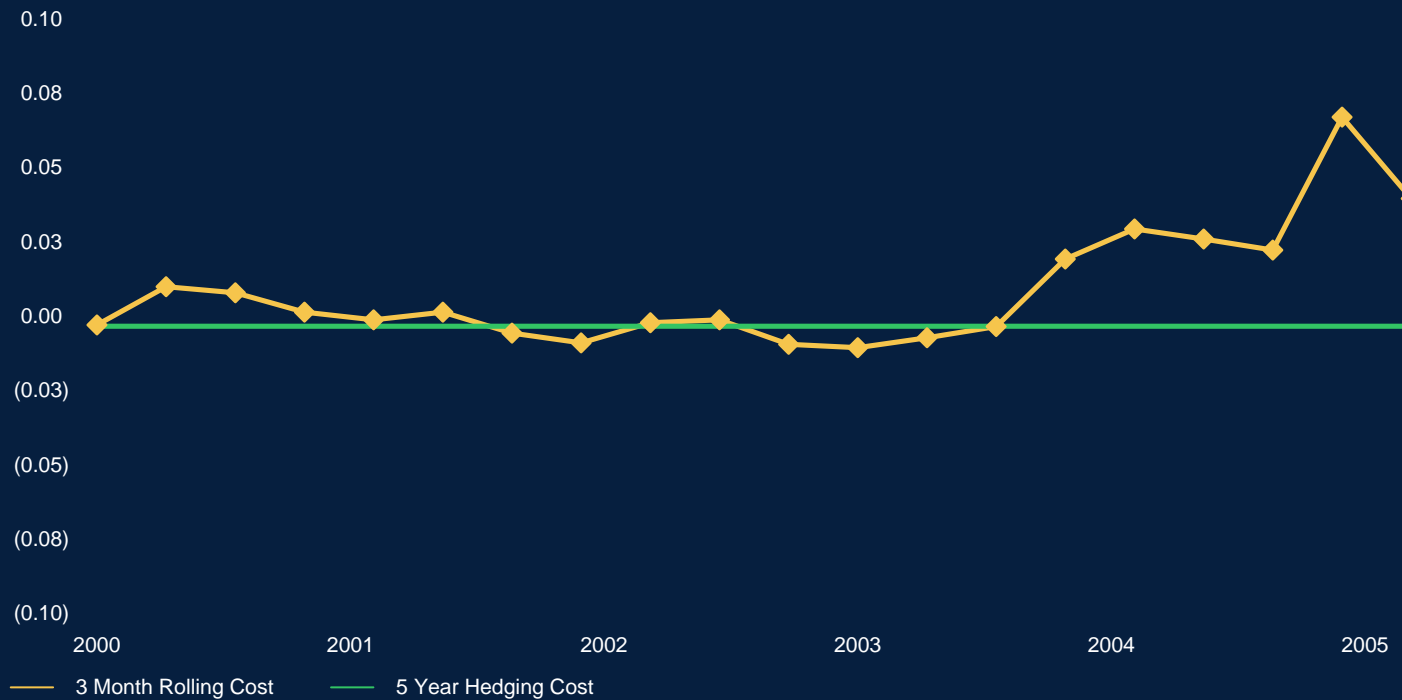


Source: Morgan Stanley

# Implied Hedging Cost – Looking Back in Time

## Strategy Comparison – Starting as of June 2000

Rolling 3-month cost versus Locking in 5 year cost

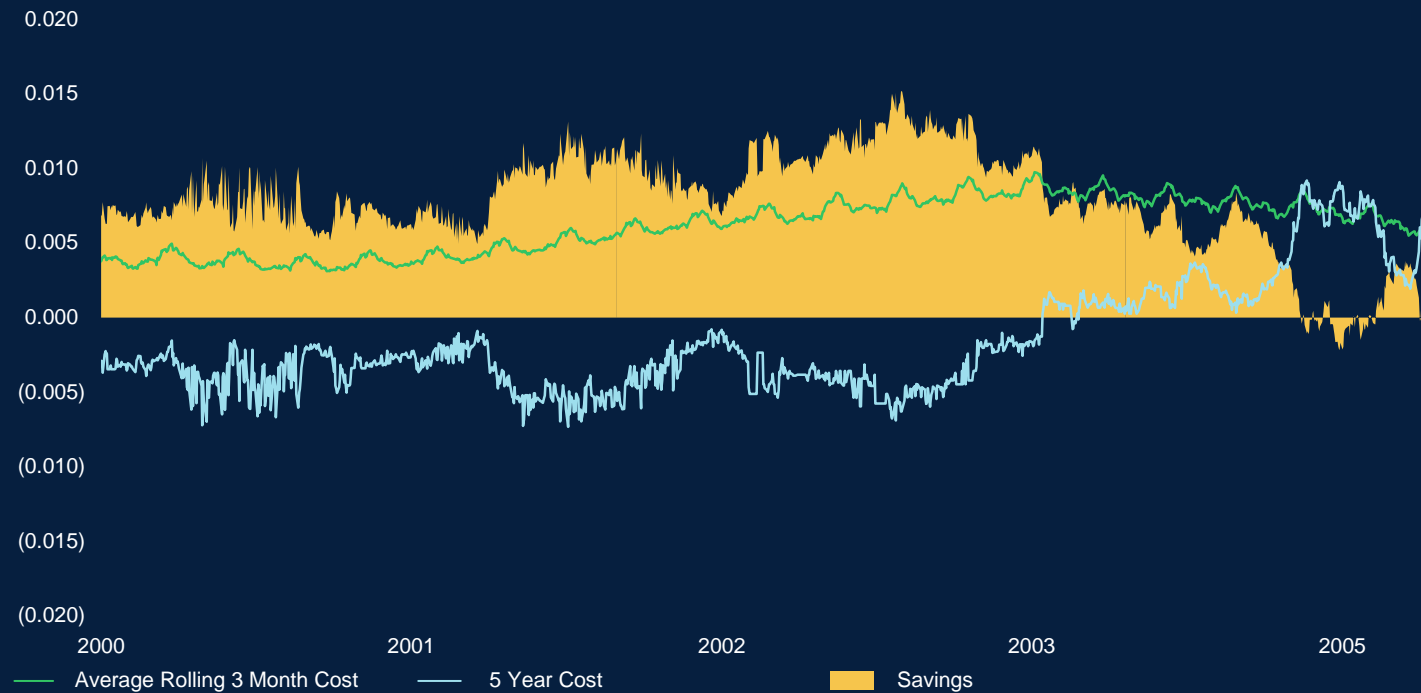


Source: Morgan Stanley

# Savings Benefit of 5-Year Hedge

## Historical Savings Benefit

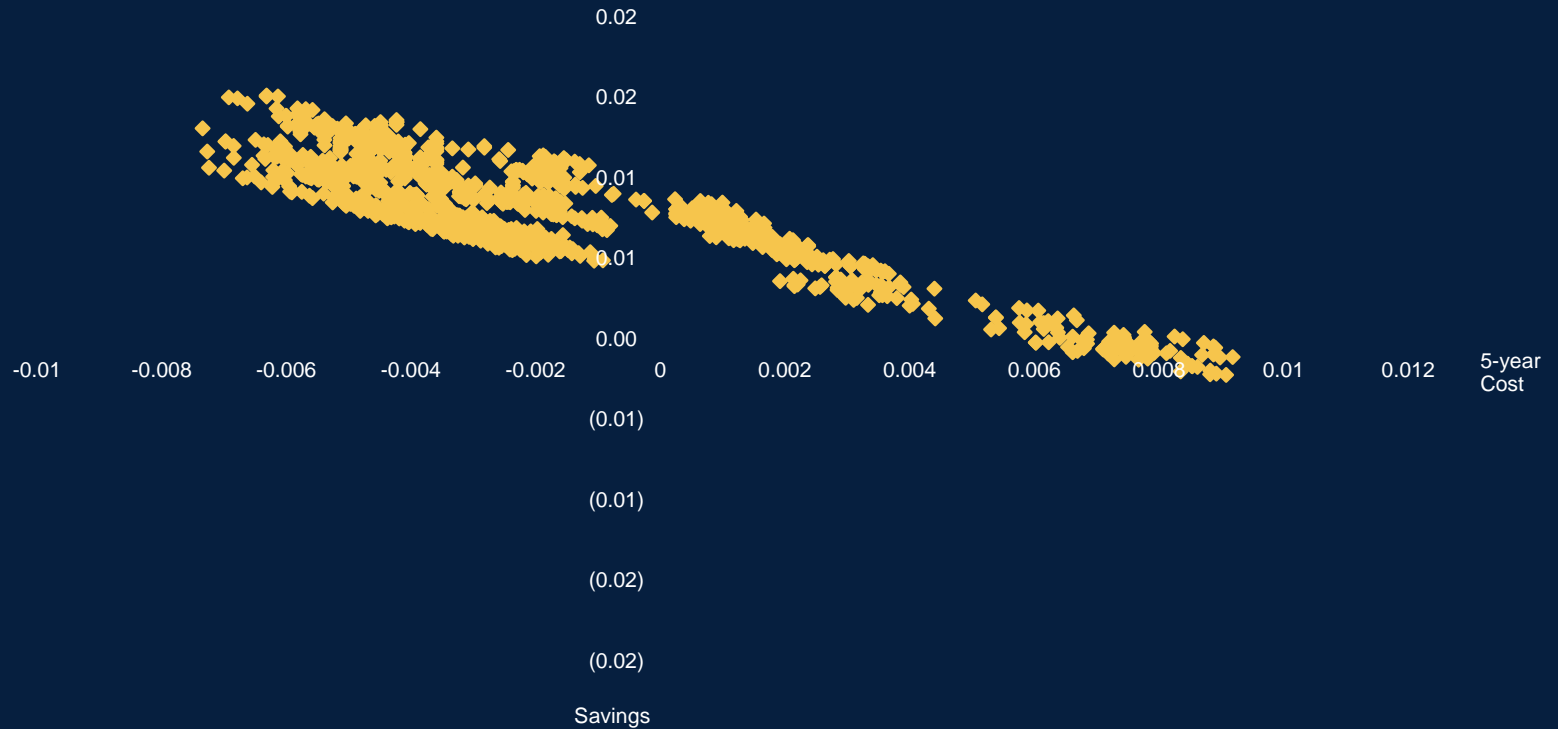
Savings: average 3-month hedging cost – 5-year hedging cost



Source: Morgan Stanley

# When are Savings Realized?

## Correlation Between Savings and 5-year Implied Hedging Cost

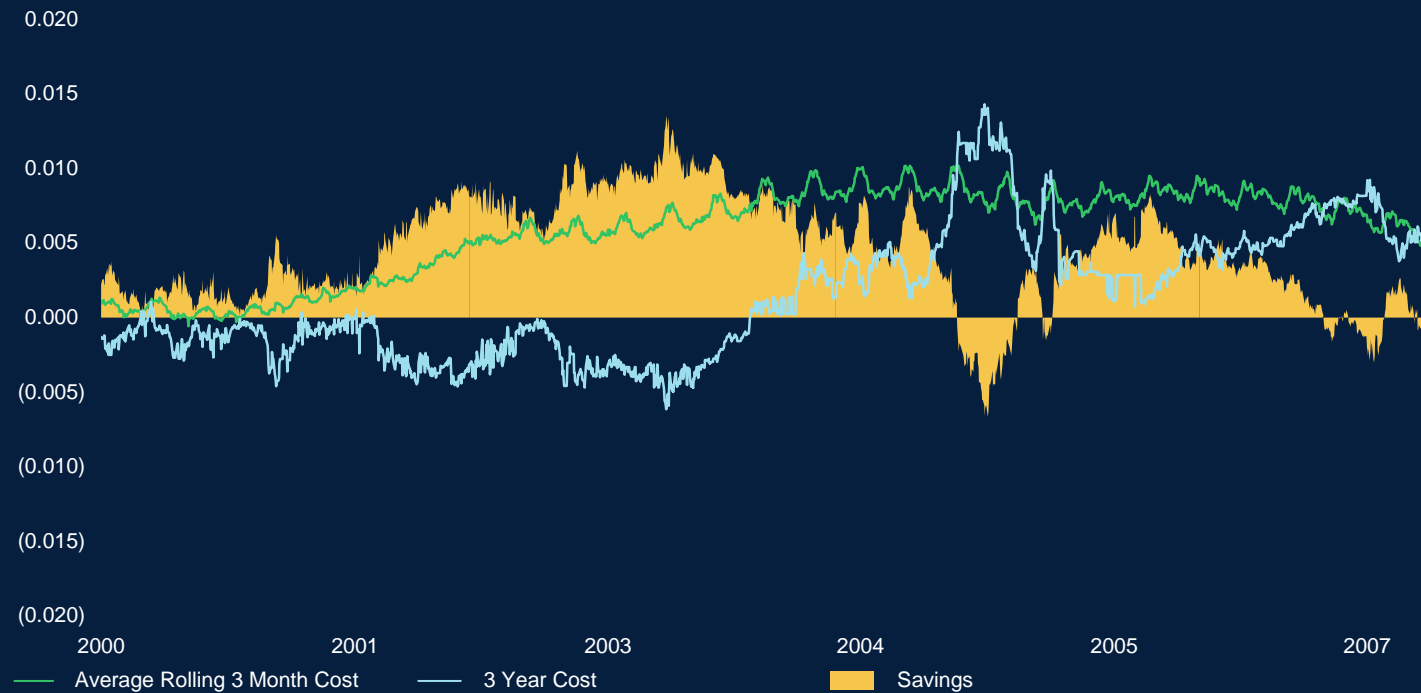


Source: Morgan Stanley

# Savings Benefit of 3-Year Hedge

## Historical Savings Benefit

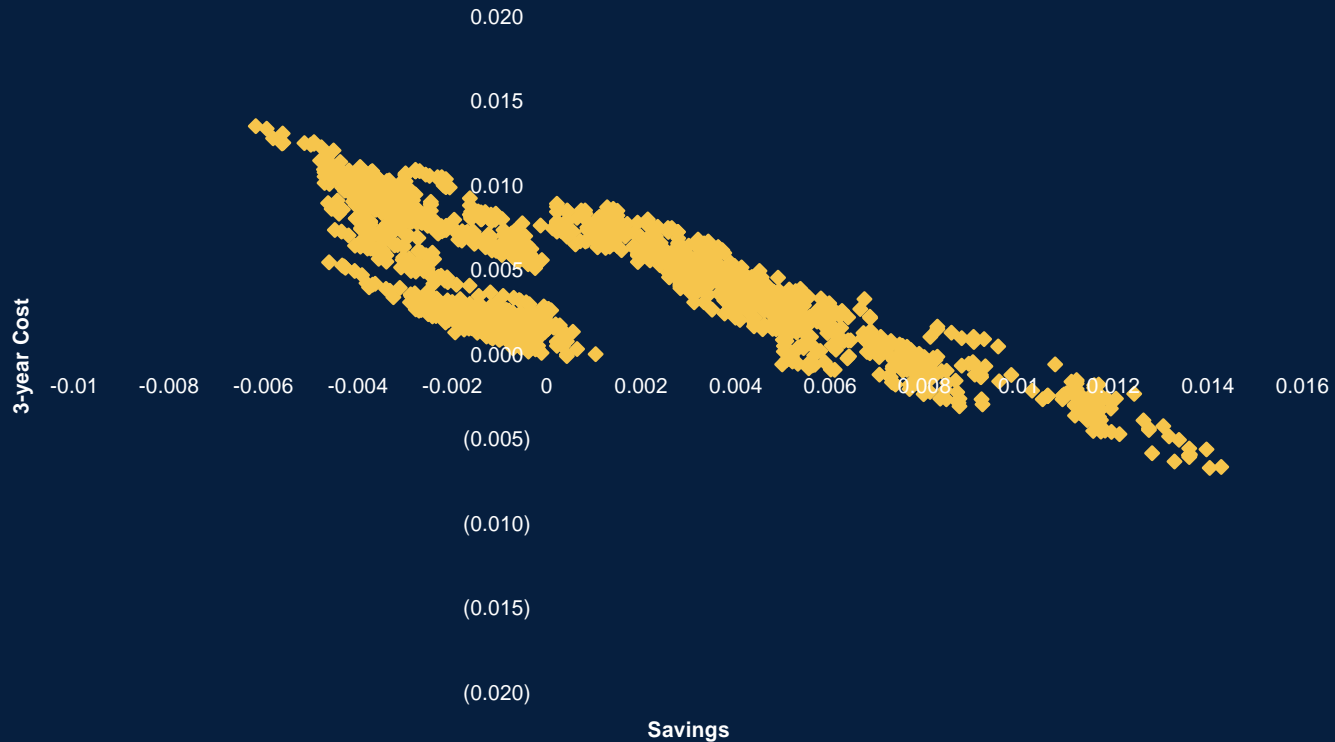
Savings: average 3-month hedging cost – 3-year hedging cost



Source: Morgan Stanley

# When are Savings Realized?

Correlation Between Savings and 3-year Implied Hedging Cost



Source: Morgan Stanley

# Practical Aspects of FX Derivatives

# Practical Aspects of FX Derivatives

## Frequently Asked Questions about FX Derivatives

- Are long dated USD/HKD FX derivatives available?
  - USD/HKD FX derivatives with tenor up-to 15 years are available
- Do FX derivatives expose Insurers to bank's counterparty risks?
  - Minimum counterparty risk due to collateralisation
- Would changes in MTM of FX derivatives cause net P&L Fluctuation?
  - No
- Is it difficult to obtain hedge accounting treatment from auditors?
  - No
- Is it practical to enter into one CCS for each bond?
  - Yes
- Is there a difference between rolling shorted FX forward and using a long dated floating/floating CCS (a basis swap)
  - Yes, a basis swap locks in the current "basis" value

# Common FX Hedging Strategies

## Long Dated USD/HKD FX Derivatives are available

GRAB Curncy **TTSA**  
 200<Go> to view in Launchpad  
 20:20 **Tullett Prebon Information** PAGE 1 / 1

HKD Basis Swaps			
	Pay	Receive	Time
1) 1 Year	-12.000	-2.000	13:32
2) 2 Year	-13.000	-3.000	13:32
3) 3 Year	-13.000	-3.000	13:32
4) 4 Year	-13.000	-3.000	13:32
5) 5 Year	-13.000	-3.000	13:32
6) 7 Year	-11.000	-1.000	13:32
7) 10 Year	-11.000	-1.000	13:32
8) 12 Year	-11.000	-1.000	13:32
9) 15 Year	-11.000	-1.000	13:32

Australia 61 2 9277 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2010 Bloomberg Finance L.P. 6963-163-2 29-Apr-10 20:20:49

GRAB Curncy **IYC**  
 Hit <PAGE> for graph or <MENU> for list of curves.  
**YIELD CURVE - US Dollar Swap Rates** Page 2/2  
 DATE 4/29/10

	DESCRIPTION	PRICE	SRC	UPDATE	YIELD	HEDGED YIELD
3MO	1) LIBOR-USD Fix	M	0.3444	BLP 18:51	0.3444	0.3444
6MO	2) LIBOR-USD Fix	M	0.5272	BLP 18:51	0.5272	0.5272
1YR	3) LIBOR-USD Fix	M	1.0144	BLP 18:51	1.0144	1.0144
2YR	4) USD SWAP SEMI 30/360 2YR	M	1.2265	CMN 20:20	1.2265	1.2265
3YR	5) USD SWAP SEMI 30/360 3YR	M	1.8060	CMN 20:20	1.8060	1.8060
4YR	6) USD SWAP SEMI 30/360 4YR	M	2.3000	CMN 20:20	2.3000	2.3000
5YR	7) USD SWAP SEMI 30/360 5YR	M	2.7080	CMN 20:20	2.7080	2.7080
6YR	8) USD SWAP SEMI 30/360 6YR	M	3.0325	CMN 20:20	3.0325	3.0325
7YR	9) USD SWAP SEMI 30/360 7YR	M	3.2840	CMN 20:20	3.2840	3.2840
8YR	10) USD SWAP SEMI 30/360 8YR	M	3.4790	CMN 20:20	3.4790	3.4790
9YR	11) USD SWAP SEMI 30/360 9YR	M	3.6385	CMN 20:20	3.6385	3.6385
10YR	12) USD SWAP SEMI 30/360 10Y	M	3.7710	CMN 20:20	3.7710	3.7710
15YR	13) USD SWAP SEMI 30/360 15Y	M	4.1705	CMN 20:20	4.1705	4.1705
20YR	14) USD SWAP SEMI 30/360 20Y	M	4.3165	CMN 20:20	4.3165	4.3165
30YR	15) USD SWAP SEMI 30/360 30Y	M	4.4100	CMN 20:20	4.4100	4.4100

To change price source for securities, use <FMPS>.  
 To change price source for swaps, use <XDF>.  
**Yields are based on STANDARD settlement and are Conventional**

Australia 61 2 9277 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2010 Bloomberg Finance L.P. 6963-163-1 29-Apr-10 20:20:41

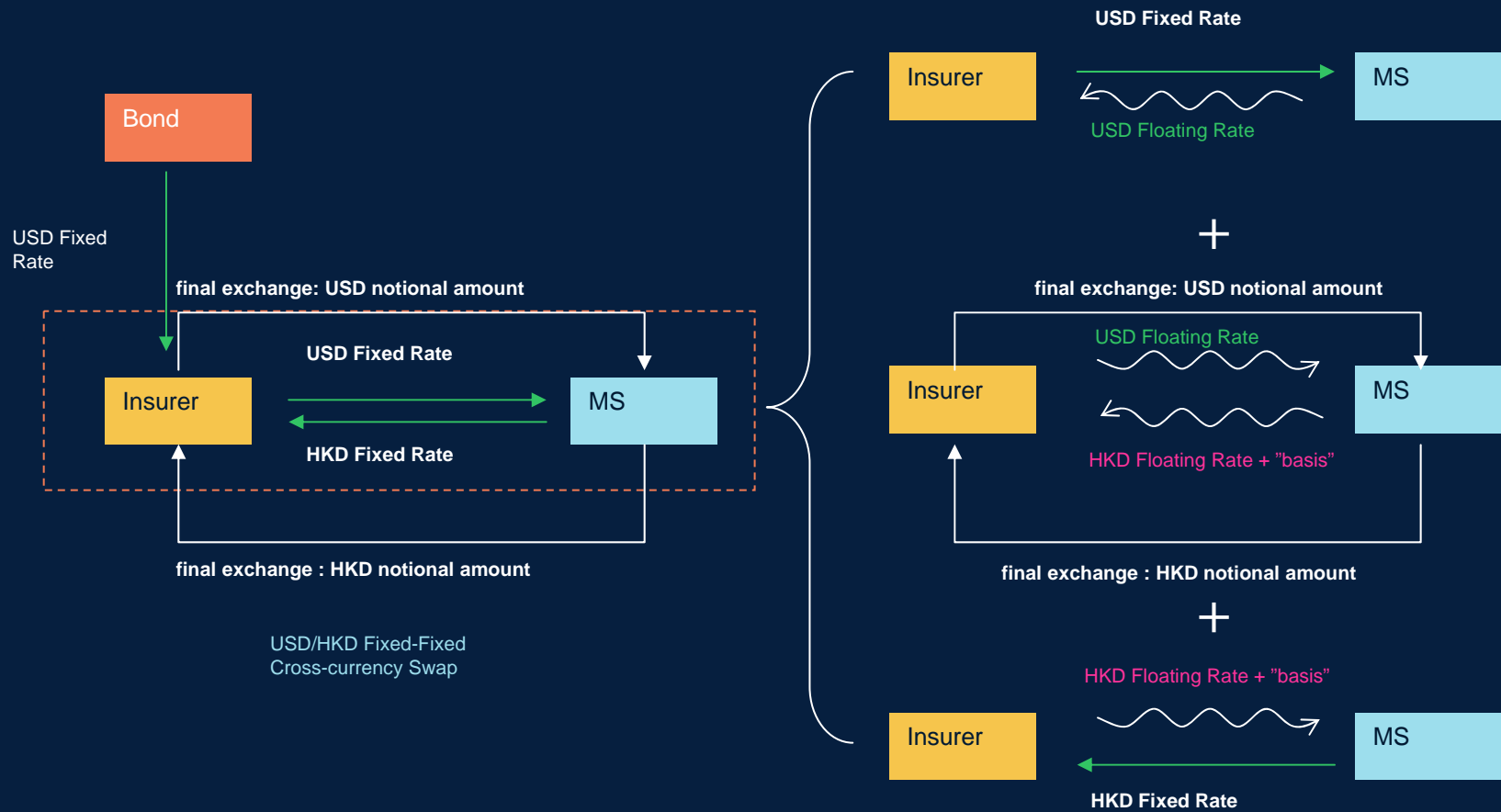
GRAB Index **IYC**  
 Hit <PAGE> for graph or <MENU> for list of curves.  
**YIELD CURVE - HONG KONG SWAP** Page 2/2  
 DATE 4/29/10

	DESCRIPTION	PRICE	SRC	UPDATE	YIELD	HEDGED YIELD
3MO	1) HIBOR Fixings	M	0.1300	11:15	0.1300	0.1300
6MO	2) HIBOR Fixings	M	0.2500	11:15	0.2500	0.2500
1YR	3) HKD SWAP 1Y	M	0.3700	CMN 17:31	0.3700	0.3700
2YR	4) HKD SWAP	2 YR M	0.9300	CMN 17:31	0.9300	0.9300
3YR	5) HKD SWAP	3 YR M	1.5000	CMN 17:48	1.5000	1.5000
4YR	6) HKD SWAP	4 YR M	1.9800	CMN 17:48	1.9800	1.9800
5YR	7) HKD SWAP	5 YR M	2.3700	CMN 17:48	2.3700	2.3700
6YR	8)					
7YR	9) HKD SWAP	7 YR M	2.8800	CMN 17:48	2.8800	2.8800
8YR	10)					
9YR	11)					
10YR	12) HKD SWAP	10YR M	3.3000	CMN 17:48	3.3000	3.3000
15YR	13) HKD SWAP	15YR M	3.4200	CMN 17:48	3.4200	3.4200
20YR	14)					
30YR	15)					

To change price source for securities, use <FMPS>.  
 To change price source for swaps, use <XDF>.  
**Yields are based on STANDARD settlement and are Conventional**

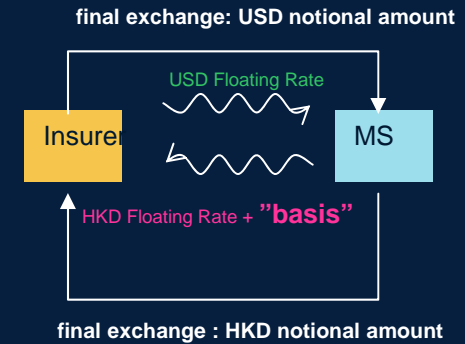
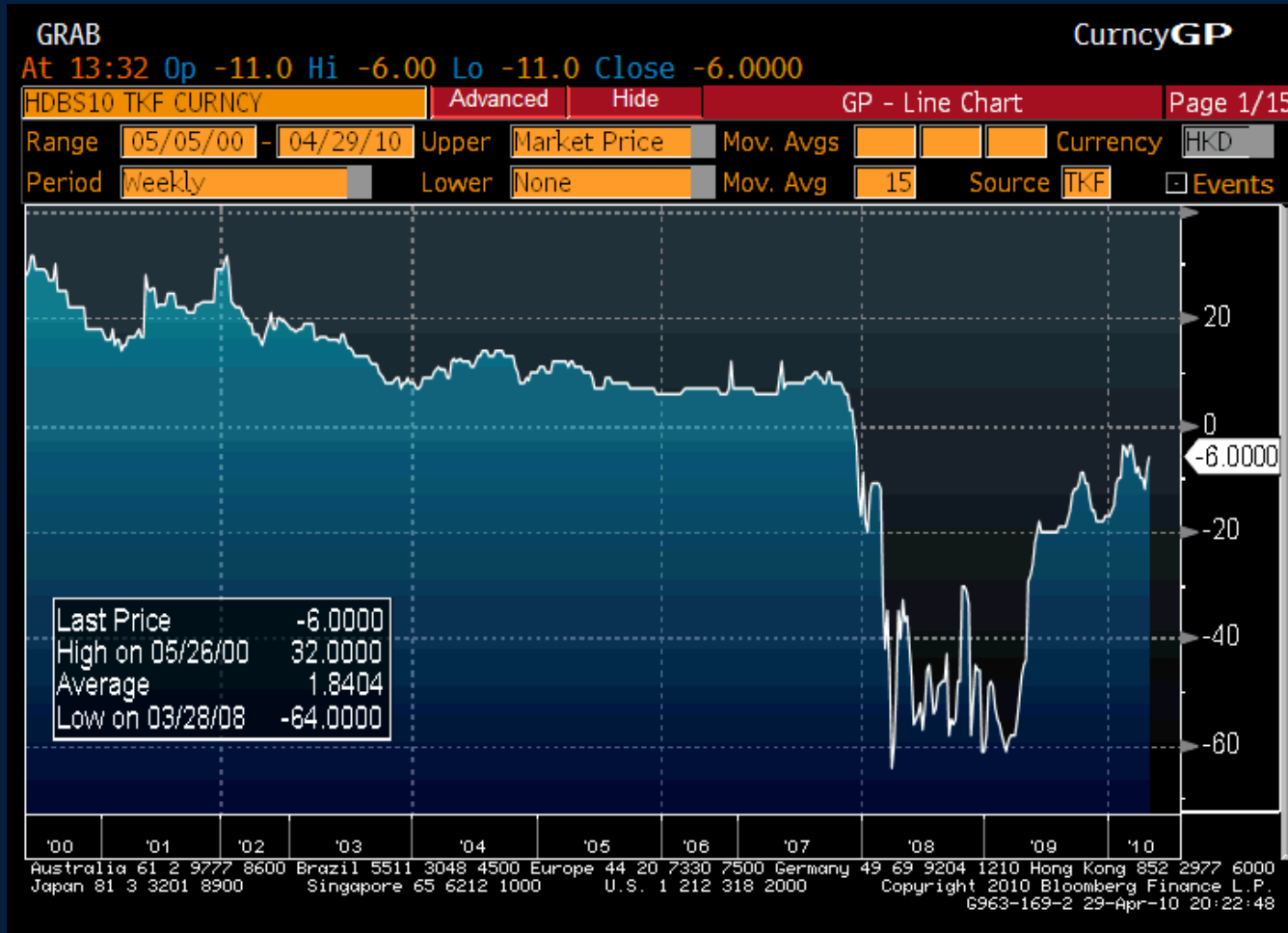
Australia 61 2 9277 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2010 Bloomberg Finance L.P. 6963-163-0 29-Apr-10 20:20:06

# Decomposing a Fixed-Fixed Cross-Currency Swap



# Common FX Hedging Strategies

## the USD/HKD basis



# Accounting Impact of FX Derivatives

## P&L impact of FX derivatives and Foreign Currency Bond due to changes in different market variables

market variables	P&L (holding US bond without FX Derivatives)	Floating/Floating Cross Currency Swap (Basis Swap)	FX Forward or Fixed /Fixed Cross Currency Swap WITHOUT Cashflow Hedge Accounting	FX Forward or Fixed /Fixed Cross Currency Swap WITH Cashflow Hedge Accounting
spot FX	Yes (due to FX translation gain/loss)	Yes	Yes	Yes
HK interest rate	No	No	Yes	No <sup>(1)</sup>
US interest rate	No (unless bond is classified as trading)	No	Yes	No <sup>(1)</sup>
basis	No	Yes	Yes	No <sup>(1)</sup>

(1) Changes in derivatives MTM due to this variable will be deferred in "cashflow hedge reserve" in equity statement

# The USD/HKD Peg

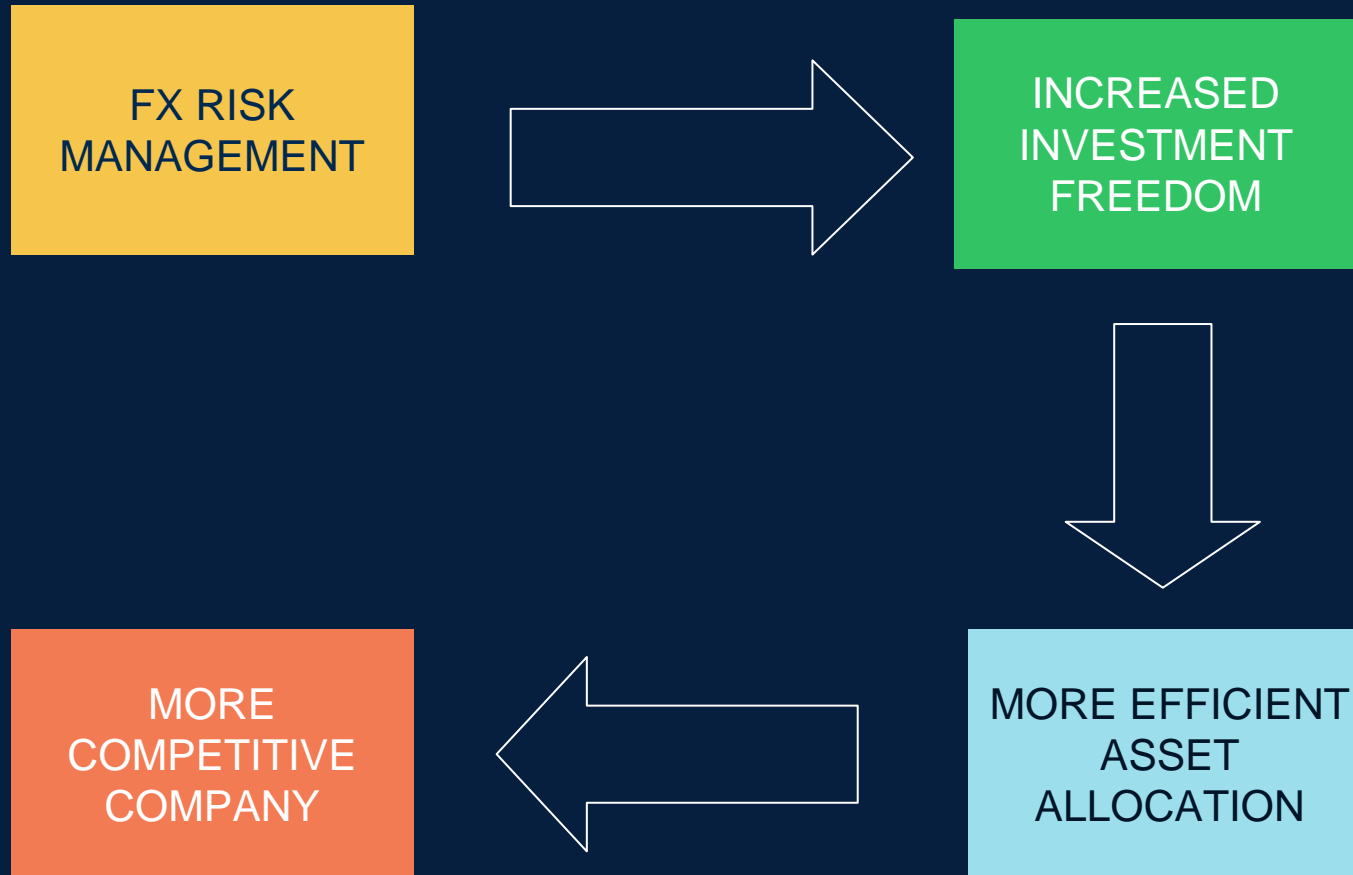
# What can happen to the USD/HKD Peg?

- Some Possible Scenarios
  - Existing Peg remains indefinitely
  - Convertibility Band Widened
  - Peg realignment
  - Unpeg and HKD becomes a free floating currency
  - Unpeg from USD and repeg to CNY

# Conclusion

# Risk Management is about more than Risk Reduction

## OTHER BENEFIT OF RISK MANAGEMENT



Thank you!

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