FOREIGN EXCHANGE MARKET OVERVIEW

July 19, 2011

Michael K. Hayashida
Executive Director
J.P. Morgan Chase & Co.
Foreign Exchange & Rates Risk Management

J.P.Morgan

EUR FX update

CNY FX update

BRL FX update

FX hedging strategies

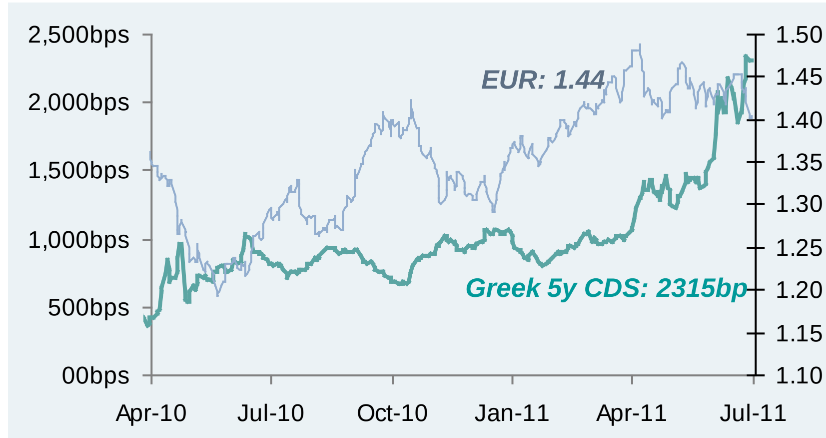
FX exposure management overview

Greek sovereign crisis remains in focus as political defections and social unrest have increased the risk for failed fiscal consolidation

Greece itself may be the key risk to a new bailout package

- Support for additional Greek aid has been premised on the Greek government agreeing to further austerity and privatization measures
  - Germany backed off demands for more private sector involvement by agreeing to a "Vienna-style" debt roll-over
- Two votes on new austerity measures and implementation passed last week, and paved the way for Greece to receive the 5th tranche of support since the original bailout
  - Eurozone officials have said they expect details of a new package to be completed by mid-September
  - Though the French bank plan to rollover Greek debt has gained support, S&P stated that this proposal would constitute a default
- Longer-term, extreme fiscal consolidation in Greece is raising the risk that social unrest will derail IMF-mandated reforms

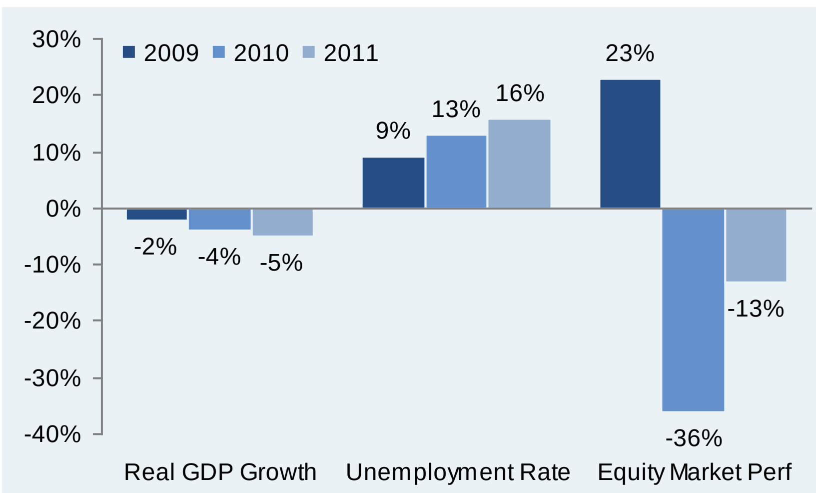
Greek CDS has increased dramatically in the last few weeks



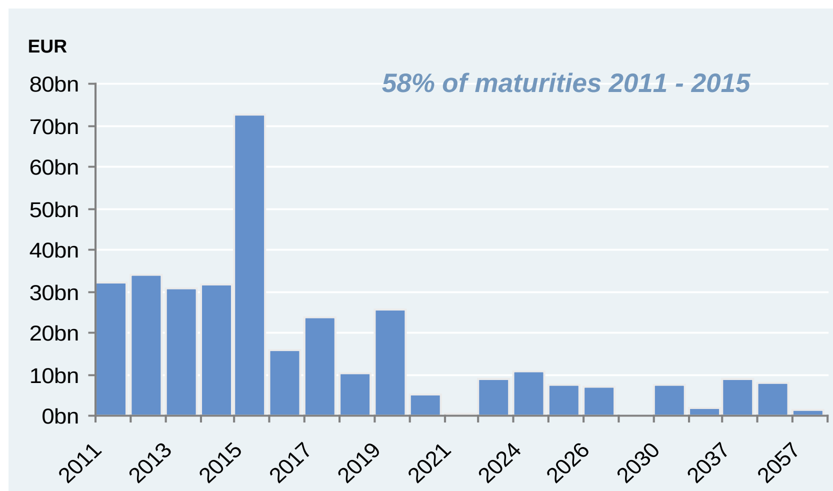
JPM Forecast	Current	3Q'11	4Q'11	1Q'12
EUR	1.40	1.45	1.48	1.48

JPM Forecasts as of 6/24/2011

Extreme fiscal consolidation in Greece is causing pain



Upcoming Greek debt maturity schedule



European Sovereign Debt Crisis Timeline

George Papandreou becomes Greece's prime minister; he admits the Greek economy is in "intensive care"

Fitch downgrades Greece's credit rating to BBB+; Papandreou unveils radical reforms to cut the deficit; Spain announces a plan to save €50bn, including government spending cuts totaling 4% of GDP, public sector pay is to be cut 4%

Eurozone agrees to a €30bn rescue package for Greece; Greek government admits it may need IMF assistance bringing its estimated bailout to €45bn; Anglo Irish reports a loss of €12.7bn, biggest in Irish corporate history

EU and IMF officials hold talks with German leaders; Rumors of a €120bn package calm the markets and Angela Merkel admits that admitting Greece into the Euro may have been a mistake

Protests erupt in Athens as Greeks learn of severe austerity measures; EUR plunges on increasing concern of contagion; Fitch cuts Spain's credit rating in response to record household, corporate, and public debt

Oct 2009 | **Dec 2009** | **Feb 2010** | **Mar 2010** | **Apr 2010** | **May 2010** | **Jun 2010**

Greek national debt has risen to €262bn; at this stage, government expects the 2009 deficit to reach 6% of GDP; Ireland officially hit by deflation, prices falling by 4.4%

Papandreou announces wider austerity measures including a freeze on public sector pay and higher taxes; Germany opposes a bailout of Greece saying the country must sort out its situation on itself; heavy selling of Greek stocks and bonds

Greeks accept austerity measures at the risk of bankruptcy; Markets bid €16bn of government debt but relief is short lived as faith in Greece's ability to service its debt dwindles

As €16bn of debt maturing in May nears, Papandreou officially asks for a bailout; S&P downgrades rating to BB+ (junk status); Politicians warn €45bn won't be enough to alleviate the crisis; S&P cuts Portugal's rating by two notches to A-

IMF, EU and ECB arrive at a bailout package for Greece after days of negotiations; Greece is granted a €110bn aid package and €750bn euro bail-out fund (EFSF) agreed on; Italy approves a € 25bn austerity package aiming to cut deficit to 2.7% of GDP in 2012

European Sovereign Debt Crisis Timeline (cont)

Sep 2010

Moody's cuts Portugal's debt rating by two notches, citing rising debt and weak growth prospects; European banks are given "stress tests," 91 banks tested, seven failed and another 17 barely pass

Another bail-out for Anglo Irish Bank, Allied Irish Banks and Irish Nationwide, final bail-out bill reaches €35bn, inflating the estimated budget deficit close to a staggering 3% of GDP; protests erupt in Rome, Milan, and other Italian cities

Oct 2010

Brian Cowen, the embattled Irish prime minister, confirms for the first time that negotiations are under way with the EU and IMF on a bail-out package to save the ravaged Irish economy; Moody's downgrades Ireland by five-notches

After an emergency Ecofin meeting, detailed funding arrangements for Ireland (including a €85bn loan) and a post-crisis mechanism for sovereign debt restructuring are announced

Dec 2010

Markets remain extremely unstable at the end of 2010 and into 2011 with EUR/USD following an erratic path and mostly trading on headlines; many speculate Europe will soon have to finance Portugal and possibly Spain

Ecofin and Eurogroup meetings in Jan-2011 garner a positive market reaction as speculation mounts that officials are making progress on the expansion or change in the functioning of the EFSF

Jan 2011

Fitch becomes the third rating agency to cut Greek debt to "junk" status after S&P and Moody's.

The EU and IMF approve a new tranche of € 15 billion of bailout funds, while cautioning that Greece's fiscal consolidation could fail unless it accelerates reforms and scales up privatizations in tandem.

Feb 2011

Moody's cuts Greece's credit rating three notches from Ba1 to B1. Greece continues to insist that their existing bailout terms should be changed (i.e. lower rates and longer maturities).

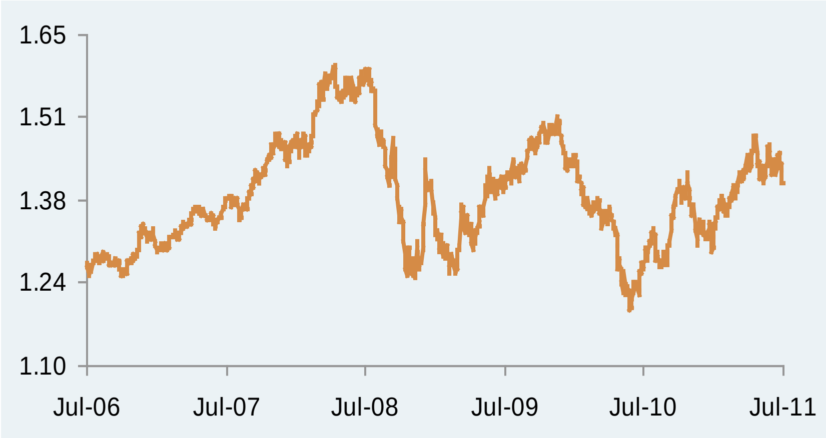
EU leaders cut the lending rate to Greece by 100bp, lengthening their repayment schedule from 3 to 7.5 years. Greece begins its first step in a € 50 billion asset privatization campaign to help the government raise money.

European Sovereign Debt Crisis Timeline (cont)

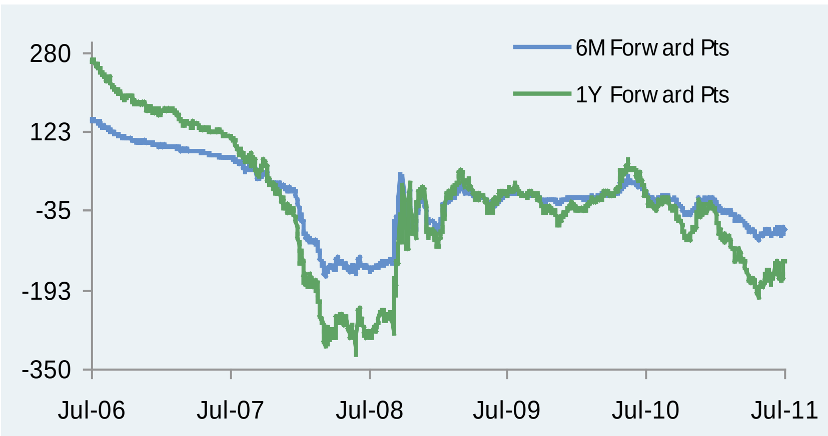
Mar 2011	Apr 2011	May 2011	Jun 2011	Jul 2011	Most Recent
Greece's 2010 budget deficit revised to above 10% of GDP, which is higher than EU/IMF/ECB estimates of 9.6%. The higher number requires further corrective measures in Greece (i.e. more austerity measures).	S&P cuts Greece's credit rating to B, pushing it further into junk territory. The EU and IMF pressure Greece to shore up its finances and determine if the debt-burdened country will get a fifth aid tranche of € 12 billion.	Greece agrees to € 6.48 billion of extra austerity measures for 2011 and savings up to 2015 to cut deficits. Greece becomes the lowest rated sovereign credit in the world after S&P downgrades it to CCC.	Reuters reported European Council President Rompuy called an emergency meeting with top officials to discuss ways to manage contagion effects to Italy. 10-year peripheral spreads widened and spreads in Italy reached a new all-time high.	Italy's parliament approved a € 40 billion deficit-reduction package, giving the final stamp of approval to measures aimed at dispelling recent market fears over the credit-worthiness of Europe's third-largest economy	
Greece presents new five year fiscal and privatization plans (more clarity on the € 50 billion asset sale program) to demonstrate that it can fulfill terms of an EU/IMF bailout and avoid restructuring its debt.	Greece accelerates its plans to sell off € 50 billion of state-held assets, as it tries to secure the next tranche of a € 110 billion EU/IMF bailout to avoid defaulting on its debt.	Merkel & Sarkozy endorse a rollover of Greek debt for its next bailout package. PM Papandreou wins a crucial vote of confidence, paving the way for approval of austerity measures and a second aid package.	The Financial Times reported that European leaders may discuss a new bail-out plan for Greece, which would allow it to default on some of its debt. EUR/USD fell over 1.5% on the news however, has rebounded slightly after 17 euro-area governments pledged to come up with a master plan "shortly" to end the 21-month crisis	Eight banks failed the European Union stress test after regulators claimed they have a combined capital shortfall of € 2.5 billion. Though all banks in Italy, France, Germany, the U.K. and Ireland passed, the results were not regarded as credible given the low standard for passing	

The EUR comes under negative pressure during a recent bout of risk aversion brought on by the fear of Greek contagion

EUR/USD 5-year historical spot



EUR/USD historical 6m and 1y forward points



EUR/USD Update

- **Recent Performance:** EUR has weakened 3.8% since its July 5th high as renewed uncertainty over Greece's debt has weighed on the EUR in recent sessions. Fear of contagion has prompted CDS spreads to widen to near record levels in Spain, Ireland and Italy
- **Rating Downgrades**: Moody's cut both Irelands and Portugal's long-term debt rating due to growing risk that both countries will need additional financing before they can return to the private market to borrow. Moody also cited the likelihood for debt holders to absorb some of the losses as a condition for future rounds of financing
- **Central Bank Outlook:** The ECB raised rates 25bps as expected at their July 7th meeting. ECB President Trichet noted that monetary policy remains accommodative though the increase was "warranted due to upside risk". No mention of strong vigilance removes the possibility for an additional hike in August
- **Greek Restructuring:** Greece estimates that their financing shortfall will approach roughly EUR 170 billion in the next 2 years. Finance Ministers will hold another emergency meeting on July 15th to discuss further steps in putting a Greek solution in place
- **Outlook:** The EUR will remain under negative pressure until a more concrete solution for Greece has been put in place and agreed upon. Additional events on the horizon include the release of the European bank stress test, early speculation is that up to 1/6th of Euro-zone banks being subjected to the stress test could fail

EUR/USD Consensus Forecasts

	3Q11	4Q11	1Q12	2Q12
J.P. Morgan	1.45	1.48	1.48	1.48
Consensus	1.44	1.41	1.41	1.39
High	1.51	1.55	1.55	1.52
Low	1.35	1.30	1.25	1.20

J.P. Morgan Forecasts

	Current	Sep-11	Dec-11	Mar-12	Jun-11
EUR/USD	1.41	1.45	1.48	1.48	1.48
EUR Refi Rate	1.25%	1.50%	1.75%	2.00%	2.00%
US Fed Funds Rate	0.125%	0.125%	0.125%	0.125%	0.125%

EUR FX update

CNY FX update

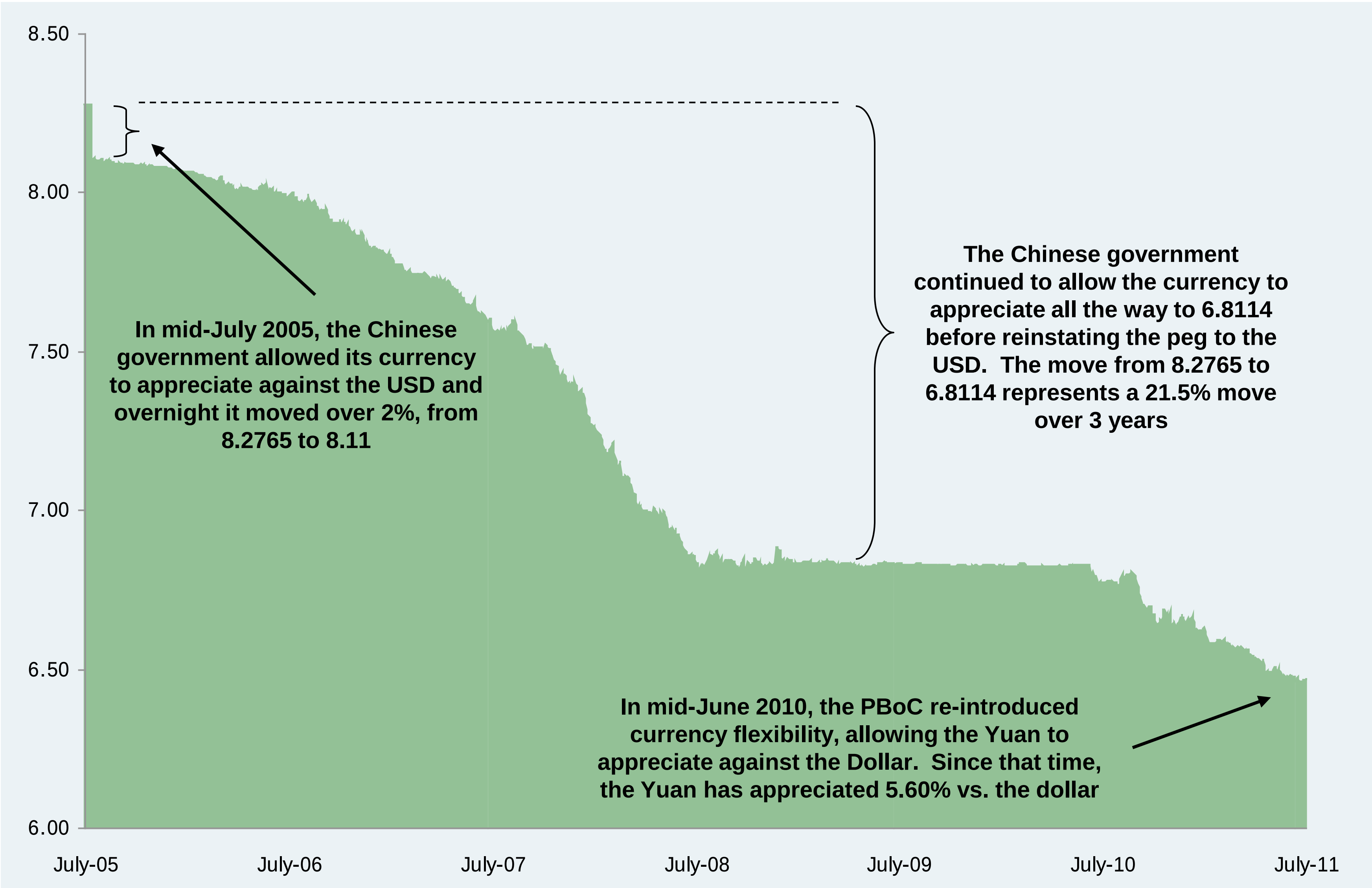
BRL FX update

FX hedging strategies

FX exposure management overview

CNY is poised to appreciate substantially versus USD

USD/CNY Spot



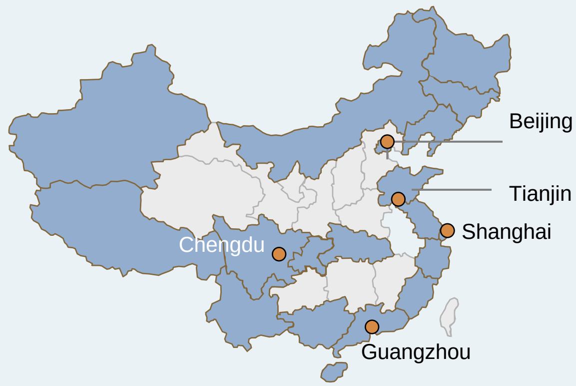
Internationalization of the CNY

Brief History

- On June 19, 2010 the PBoC announced reforms designed to increase CNY exchange rate flexibility. This shift in the PBoC's stance has led to the appreciation of the CNY from 6.83 to 6.48– an appreciation of over 5.60% over the past ten months. With the appreciation of the CNY, there is heightened concern in the corporate sector over its exposure to CNY
- The PBoC also announced further measures to internationalize the CNY (i.e., promote the use of the CNY as a currency for International Settlements) a move towards establishing the CNY as an international reserve currency
- **Key Initiatives include:**
  - Expanding eligible locations **within** China that are allowed to engage in international trade settlements from Shanghai and four cities in Guangdong to 16 provinces and four municipalities
  - Expansion of eligible locations **outside** of China from Hong Kong, Macau and ASEAN (Association of Southeast Asian Nations) to global participants
  - Expanded eligible corporates within China from 400 to **all** corporates within China's 16 provinces and four municipalities. For receipt of exports in RMB, however, the corporates have to be approved by PBoC even though all corporates are automatically approved to pay in CNY for trade related payments. The list of approved corporates currently includes 67,400 companies
- The development of the CNH market is a key element in the internationalization of the Chinese currency.

Hottest Topic in China—Expanded RMB International Trade Settlement Scheme

Geographic coverage of RMB international settlement



- Companies located in the following 20 trial cities/provinces can participate in RMB international settlement, including:
  - **Municipalities:** Beijing, Tianjin, Shanghai & Chongqing
  - **Provinces:** *Inner Mongolia, Liaoning, Jiangsu, Zhejiang, Fujian, Shandong, Hubei, Guangdong, Guangxi, Hainan, Sichuan, Yunnan, Jilin, Heilongjiang, Tibet and Xinjiang*
- No restrictions on corporations outside of China. Any overseas corporation can settle cross border trade in RMB with qualified companies in China

Eligible Transactions (from overseas perspective)

- **Exports to China**
  - Merchandise trade
  - Service trade
  - Other current account transactions
- **Imports from China**
  - Merchandise trade with 67,400 Chinese corporations on the government-approved list
  - Service trade
  - Other current account transactions

RMB Non-Resident Account (NRA)

- **What is a RMB NRA?**
  - Non-resident corporates are allowed to open RMB settlement accounts with a RMB Domestic Settlement Bank in Shanghai to settle valid RMB payments and collections with their counterparties in China.
- In the trial phase, any corporation outside of China can open a RMB NRA with a Domestic Settlement Bank.
- J.P. Morgan can offer the RMB NRA through JPM Shanghai, or alternatively, set-up Offshore DDA and RMB cross border settlement accounts through JPM Hong Kong.

RMB FX Market in HK – CNH Market

Overview

- Offshore RMB deliverable market is starting to develop since June 2010. To distinguish offshore CNY from onshore CNY the offshore market is now termed CNH (CNY in Hong Kong)
- Liquidity is growing with daily transaction volume around USD 100-200mm. Less liquidity in forward market with tenor generally up to 1 year
- FX options, interest rate and cross-currency swap markets for CNH is still under development
- Under the current Clearing Agreement, there are two different rates quoted for offshore deliverable RMB - one for trade purpose and another for general purpose
- Onshore CNY FX rate is used for trade purpose transactions while the CNH rate is used for general purpose
- With the shortage of RMB in HK, CNH rate has been lower (more expensive to buy RMB) than onshore CNY in the spot market, e.g. CNH 6.5330 vs CNY 6.6650 (as of 13 Oct 2010). There is also a brief period in which the two rates are very close.
- In the forward market, currently offshore CNH trades at a premium:

  - *Spot USD/CNH:* ***6.4735***
  - *3-month CNH:* ***6.4730***
  - *6-month CNH:* ***6.4675***
  - *12-month CNH:* ***6.4485***

Under the current environment:

- To sell RMB and buy USD/other currencies on a spot basis – offshore CNH market is better
- To buy RMB and sell USD/other currencies on a spot basis - onshore CNY market is better
- Corporates should understand which market offers the best rates to minimize FX costs

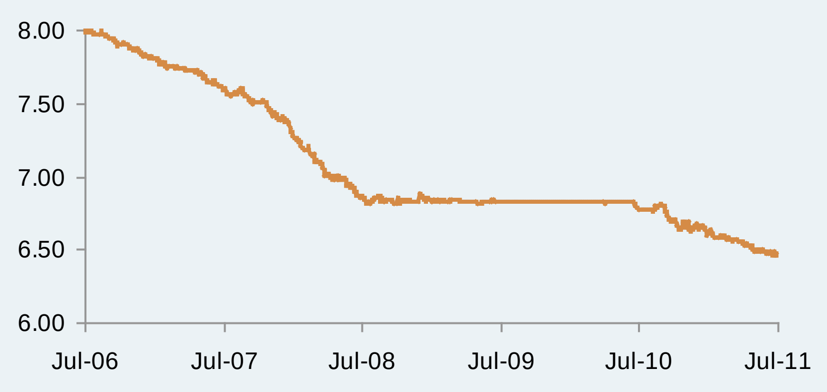
Overview of the three CNY currency markets

	CNY Onshore Deliverable	CNH Offshore Deliverable in HK	CNY Offshore NDF Market
Accessibility /Participants	o *Onshore Mainland counterparties with valid underlying exposures* o *Participants are local corporates, onshore banks and onshore investors*	o *Any offshore entity outside of Mainland China* o *Offshore entities who cannot access onshore CNY markets use this market**	o *Offshore entities outside Mainland China* o *Entities in Mainland China cannot access this market*
Liquidity /Market Drivers	o *USD 12-13 bn daily turnover* o *Driven by supply/demand dynamics as speculative trades prohibited by PBoC*	o *USD 200-300 million turnover per day* o *Driven primarily by speculative flows*	o *USD 10-15 bn daily turnover* o *Driven both by clients looking to hedge as well as speculative flows*
Regulated by	o *Regulated by SAFE. PBoC and other agencies in China*	o *HKMA regulates this market* o *Market is recognized by PBoC, which fully supoorts the development of this market*	o *Unregulated* o *PBoC does not officially recognize this market*
Fixing /Trading Range	o *Market is allowed to trade within +/- 0.5% of 9:30AM PBoC fixing*	o *No CNH fixing*	o *USD Cash settlement against PBoC published 9:30 AM fixing*
Settlement	o *Settlement is usually by physical delivery done through onshore accounts*	o *Settlement accounts are required to access this market*	o *Settlement is done in USD and there is no need to maintain accounts to trade this currency*

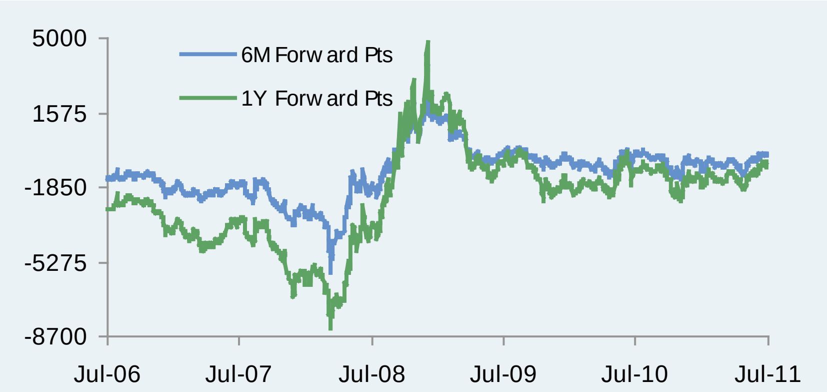
***** *Counterparty must be domiciled outside of China and CNH is transacted and settled in Hong Kong*

We expect continued action by the People's Bank of China to cause CNY to appreciate, ending the year at the 6.30 level

USD/CNY 5-Year Historical Spot



USD/CNY Historical 6M and 1Y Forward Points



USD/CNY Outlook

- **Recent Performance:** The USD/CNY fixings have continued to push lower despite the general unwind in USD/Asia. As a result, spot USD/CNY has printed new lows while the rest of USD/Asia stalls
  - Despite the impressive resilience of spot USD/CNY, USD/CNY forward points have compressed, driven in part by macro concerns surrounding China and the region
- **Monetary Policy:** The People's Bank of China announced on June 14 that the reserve requirement ratio (RRR) for financial institutions' yuan deposits would be increased a further 50bp, effective June 20
  - The latest RRR hike should not come as a surprise, as it comes on the back of a further uptick in CPI inflation to 5.5%oya in May. This is the sixth hike in the RRR in 2011, and follows six 50 bp RRR hikes in 2010.
  - Overall, this latest RRR hike suggests that policymakers remain committed to steady normalization of overall monetary conditions
- **JPM Forecast:** We remain bullish CNY and expect USD/CNY to end 2011 around the 6.30 level

USD/CNY Consensus Forecasts

	3Q11	4Q11	1Q12
J.P. Morgan	**6.35**	**6.30**	**6.20**
Consensus	6.39	6.30	6.23
High	6.48	6.50	6.54
Low	6.20	6.04	5.95

JPMorgan Forecasts

	Current	Sep-11	Dec-11	Mar-12
USD/CNY	6.47	6.35	6.30	6.20
1-Year Working Rate	6.31%	6.81%	6.81%	6.81%
US Fed Funds Target	0.125%	0.125%	0.125%	0.125%

EUR FX update

CNY FX update

BRL FX update

FX hedging strategies

FX exposure management overview

Brazil has emerged as a growth economy in the global scenario

A large country…

- **Population:** 198 million* (World's 5th largest)
- **Area:** 3.3 million miles^2 (World's 5th largest)

… with a strong economy

- **Nominal GDP:** US$2.02 trillion* (2010, World's 7th largest)
- **Nominal GDP per head:** US$ 10,471* (2010)
- **Real GDP growth:** 7.5%** (2010)
- **Inflation:** 5.9% (2010)**
- **Rating:** Upgraded in 2008 and 2009 to BBB- (S&P), BBB- (Fitch), Baa3 (Moody's)
- **Foreign direct investment:** $49 billion (2010)**
- **International Reserves**: $300 billion in 2011
- **One of the world's largest exporter of agro commodities**

*Sources: *IMF; ** J.P Morgan*

Brazil: Economic projections

Overview

- After a sharp and short recession, Brazil's GDP grew at an above-trend pace of 7.5% in 2010 and should decelerate to 4.0% in 2011.
- New government continuing to target higher growth, but inflationary risks are also on the radar.
- President Dilma Rousseff succeeded in her first political challenge, with the approval of no meaningful real gain for the minimum wage.
- The approval of some-long run fiscal reforms may still be some way off, but some proposals (like the creation of a pension system for civil servants) may move forward.
- In the long term, a more stable macro scenario and lower rates should boost private sector investments (with the development of capital markets) and household consumption (with the expansion of credit to consumers).

Brazil: Economic indicators

	Average 2004-08	2009	2010f	2011f	2012f
Real GDP, % change	4.8	-0.6	7.5	4.0	3.8
Consumption[1]	3.5	3.2	5.1	3.8	3.1
Investment[1]	1.9	-3.9	5.0	1.6	1.6
Net trade[1]	-0.6	0.1	-2.5	-1.4	-0.9
Consumer prices, %oya	5.4	4.9	5.0	6.2	5.2
% Dec/Dec	5.3	4.3	5.9	6.0	4.8
Producer prices, %oya	7.1	-0.2	5.7	6.3	5.0
Government balance, % of GDP	-2.7	-3.3	-2.6	-2.1	-1.2
Merchandise trade balance (US$	37.9	25.0	20.3	7.0	-8.4
Exports	142.4	153.5	201.9	226.9	240.6
Imports	104.4	128.5	181.6	219.9	248.9
Current account balance	2.7	-26.5	-48.9	-69.1	-91.2
% of GDP	0.2	-1.7	-2.3	-2.9	-3.7
International reserves, (US$ bn)	112.6	237.4	288.6	303.6	308.6
Total external debt, (US$ bn)	243.7	350.4	372.4	387.4	367.4
Short term[2]	35.2	39.0	41.0	39.0	44.0
Total external debt, % of GDP	20.9	20.6	17.3	15.9	15.4
Total external debt, % of exports	137.3	173.7	153.0	143.1	133.9
Interest payments, % of exports[3]	9.5	9.3	7.4	6.0	5.9

1. Contribution to growth of GDP.
2. Debt with original maturity of less than one year.
3. Exports of goods, services, and net transfers.

Source: J.P. Morgan

Foreign exchange market

Brazilian FX market background

- The BRL has had a dirty floating FX rate since 1999. The Central Bank has the ability to intervene in the market buying or selling USD to provide liquidity, tame volatility, or build reserves.
- The BRL is moving towards becoming convertible:
  - All FX transactions are permitted. Offshore investments by the banking system and institutional investors are still regulated by the CB and the CVM;
  - Exporters are allowed to keep an offshore account, not being obliged to repatriate their export revenues;
- All FX transactions must be done through an authorized financial institution and require registration with the CB
- Since Apr 2006, there is just one FX market in Brazil, used for all FX transactions, foreign currency loans and remittances abroad, unilateral transference of funds, etc.
- The USD/BRL spot exchange rate can be traded in the BM&F exchange or on the domestic OTC market

Main market instruments

- **PTAX rate:** is the fixing rate for USD linked instruments settled onshore and offshore. It is released daily by the CB, it is the average of effective rates of transactions in the interbank FX spot market, weighted by the volume of transactions.
- **Futures:** USD future contracts have as their underlying asset the PTAX and are traded on the BM&F. Liquidity is concentrated in the first future
- **Options:** Call and put options are also traded onshore at the BM&F.
- **Onshore USD rates:** The “Cupom Cambial” is derived as the difference between the effective CDI rate and the PTAX variation in the period; it is a zero coupon US dollar linked future contract. US dollar linked forward rates are also traded on the BM&F (FRA).
- **NDF:** These contracts settle in USD without principal exchange, investors receive the difference between the initial forward rate and the USD/BRL PTAX spot rate at the settlement.
- **Cross Currency swaps:** The most common structure is the USD vs. CDI swap. Swaps are primarily traded as OTC products and transactions are registered at Cetip, although these transactions are also available for registration at BMF.

Foreign exchange market

Requirements for Onshore Transactions

- Payments that are made in Brazil are strictly monitored by the Brazilian Central Bank. Every bank operating in Brazil must present documents to the central bank. The documents required will depend on the nature of the cash remittance. Steps to establish Brazilian Real (BRL) onshore FX transactions with J.P. Morgan are as follows:
- Statutory documentation needs to be completed by your Brazilian subsidiary:

  (a) Certified copy of the minutes of Incorporation

  (b) Certified copy of the By-Laws[1]

  (c) Certified copy of the minutes of the Board Resolution and/or the Board of Directors

  (d) Certified copy of the updated Power of Attorney/Proxy

  (e) Signature cards certified by a Notary Office or reference banks

  [1] registered before the commercial registry
- Trade documentation

  -Each type of FX trade has specific documentation requested by the Central Bank. Depending on the type of trade, J.P. Morgan Brazil will notify you of the documentation needed to complete the transaction
- A credit line must be established between J.P. Morgan Brazil and your Brazilian subsidiary

Frequently Asked Questions

- ***Do I need to have an account with J.P. Morgan Brazil?***

  No
- ***Do I need to have a sponsor from J.P. Morgan Brazil?***

  Yes. Since J.P. Morgan Brazil will have to approve a KYC locally, someone from the local sales desk will be the local sponsor
- ***Do I need to have a CGD (local derivatives contract, Brazilian ISDA equivalent)?***

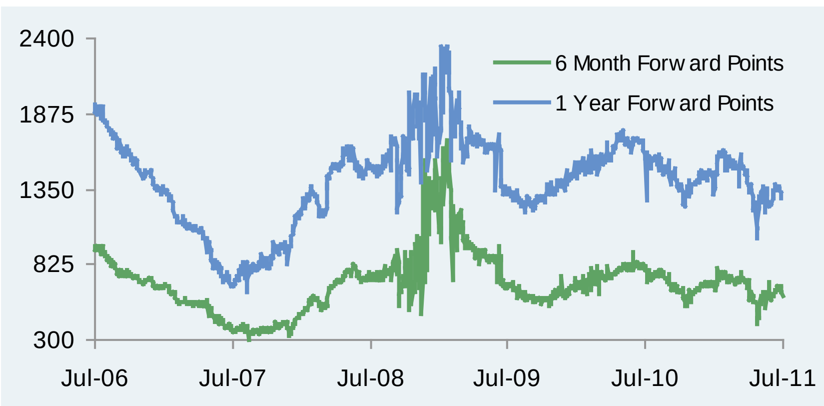
  Maybe. There is no need for a CGD in onshore spot trades, it is required only for onshore derivatives (deliverable option and deliverable forward transactions). Offshore derivatives (non-deliverable options and non-deliverable forwards) will not require a CGD

  A CGD is not required if an offshore derivative is done with an onshore spot transaction

Brazil's economy continues to expand at a rapid pace, but further rate hikes will be needed to tame inflation

USD/BRL 5-Year Historical Spot

USD/BRL Historical 6M and 1Y Forward Points



USD/BRL Outlook

- **Recent Performance:** It is doubtful whether anything can halt BRL strength (+6% YTD, +13% last 12-months): USD/BRL surpassed lows seen in 2008 as investors shrugged off the latest FX intervention measures
- **Country Outlook**: The political environment has become more uncertain, with President Rousseff making her first cabinet reshuffle within just six months of her inauguration
  - Although political noise is heightening, it is doing so without relevant market impact, as economic policy remains on track
- **Central Bank Outlook:** In early June, the COPOM delivered another 25bp hike, lifting the Selic rate to 12.25%
  - J.P. Morgan expects another 25bp rate hike in July
- **Outlook:** Our economists are neutral on USD/BRL: the currency is trading rich to commodities and equities but in line with G10 commodity currencies
  - Strong capital inflows in the pipeline should underpin BRL strength, though FX intervention (amid existing concerns about BRL overvaluation) should prevent significant appreciation

USD/BRL Consensus Forecasts

	3Q11	4Q11	1Q12
J.P. Morgan	**1.58**	**1.60**	**1.62**
Consensus	1.58	1.60	1.62
High	1.65	1.65	1.68
Low	1.50	1.52	1.48

JPMorgan Forecasts

	Current	Sep-11	Dec-11	Mar-12
USD/BRL	1.55	1.58	1.60	1.62
SELIC O/N	12.25%	12.50%	12.50%	12.50%
US Fed Funds Target	0.125%	0.125%	0.125%	0.125%

Forward contracts

Description of forwards

- **Description**
  - A forward contract is a binding agreement between you and a bank to exchange a predetermined amount of one currency for another, at an agreed date in the future, using a rate of exchange determined today, based on current spot levels and interest rate differentials. A window contract allows for added flexibility by allowing you to make or receive payments over a series of dates between two pre-determined dates
- **Advantages**
  - Enables a client to fix the full value of their future EUR/USD payables/receivables upfront
  - Certainty–regardless of where market rates are throughout the life of an executed forward contract, client will be guaranteed a predictable, fixed rate of exchange
  - Convenience for budgetary calculations and revenue forecasting
  - Flexibility–forward contracts can be structured so that dates can be matched exactly with underlying exposures. (Window Forward)
  - Interest rate differentials currently result in forward rates trading at a premium (i.e. more points are added the longer the period of the hedge), resulting in a superior rate than the spot market rate (for receivables)
- **Considerations**
  - Potential opportunity loss if market rates improve beyond a contracted forward rate
  - Firm commitment obligation–contract will have to be settled regardless of whether or not need exists
  - FX credit facility requirement

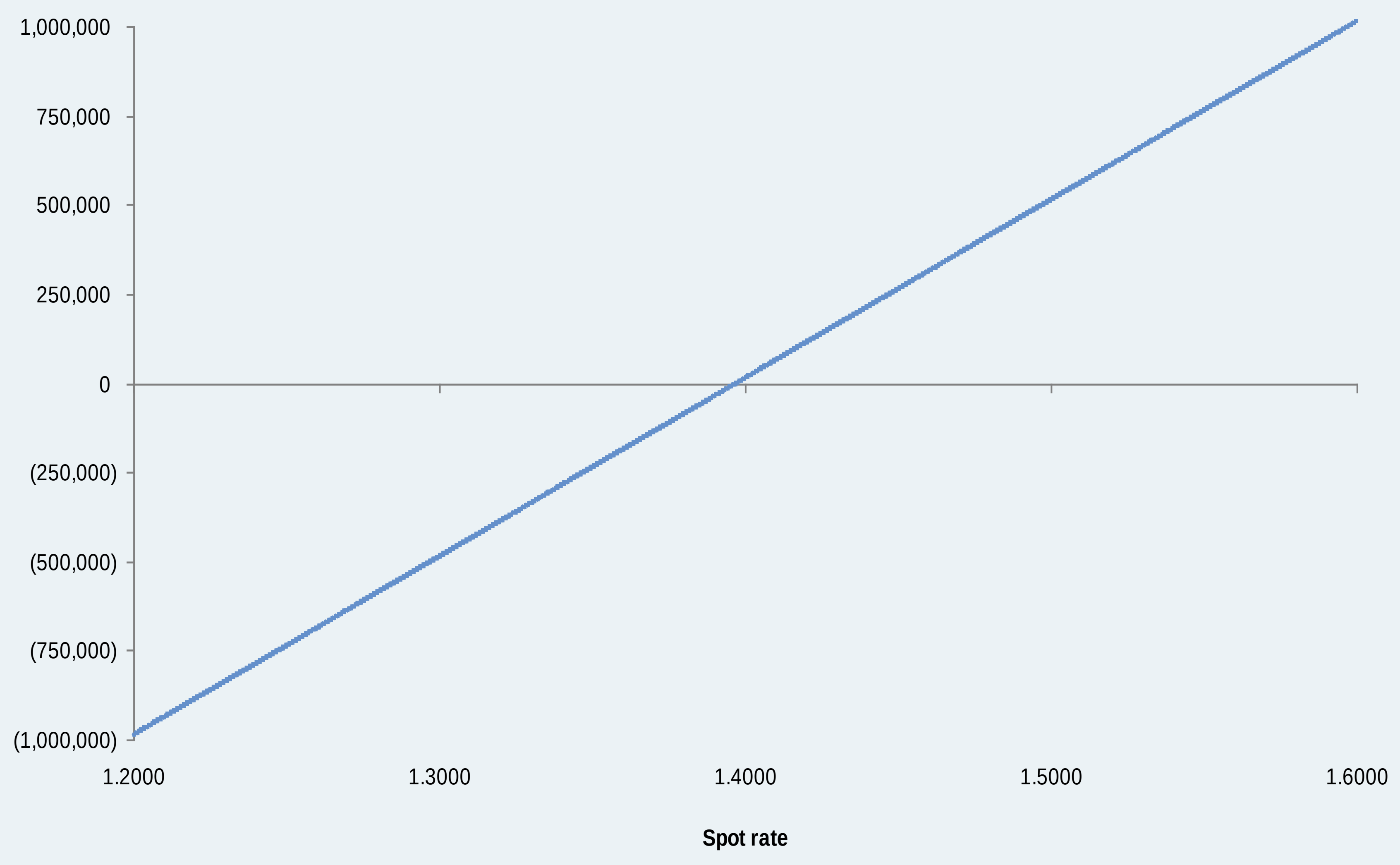
Indicative pricing

- **Example: (based on spot reference of 1.4000)**
  - XYZ has a payable of EUR 5,000,000 to a European supplier on the 30th of every month. XYZ is concerned about a weakening dollar/strengthening EUR and thus enters into a forward contract with JPMorgan. A rate is set now at which XYZ will buy a predetermined amount of EUR (5,000,000) at an agreed future date (August 31st)
  - XYZ's USD checking account will be debited the USD equivalent 2 business days prior to the value date (08/29)–the final date of settlement
  - Based on current interest rate differentials, the EUR/USD shows August 30th forward points at -20. Therefore, the all-in forward rate for this period is 1.4000 + (-.0020) = 1.3980. Regardless of the EUR/USD levels during this period, XYZ is guaranteed of this fixed pricing and, therefore, fixed payables of $6,990,000 USD (5,000,000 * 1.3980) at the time of contract maturity
  - Without this forward hedge, XYZ would have risked paying more should EUR/USD levels become less favorable

Term	Forward points	All-in rate
Spot rate	–	1.4000
3-month	(0.0035)	1.3965
6-month	(0.0070)	1.3930
9-month	(0.0100)	1.3900
12-month	(0.0130)	1.3870

Profit/loss analysis–locking in a 3-month forward - Notional EUR 5,000,000

Forward hedge vs. unhedged position–(US$) gain/(loss)



J.P.Morgan

Vanilla currency option

Description of vanilla currency option

- **Description**
  - A Vanilla Currency Option gives the option holder the right, but not the obligation, to buy or sell a specific amount of currency, at a specific predetermined exchange rate, on or before a specified future date
  - Most common type of currency option. Provides protection against unfavorable currency moves, while allowing the opportunity to benefit from favorable market movements. Limited downside risk; unlimited upside potential
  - A one-time up-front cash premium payment is required
- **Advantages**
  - Provides downside protection (i.e. strike price) while, granting access to an unlimited upside for potential gain
  - Flexible–can be structured so as to allow for exercise at anytime during the life of the option
  - Provides the right, but not the obligation to deal at the specified strike price
  - Premium paid upfront will always be the maximum "cost." Depending upon market rates at any time during the life of the option, the premium paid can potentially be recouped, in whole or in part
  - No FX credit facility is required
  - Lowest risk of all option products
- **Considerations**
  - Upfront cost is the highest of any hedging instrument
  - The "budget rate" (i.e. strike price) is typically specified at a level worse than a conventional forward outright (i.e. "out-of-the-money") in order to keep premium costs at a reasonable level
  - If the option expires worthless and a deliverable (i.e. currency conversion) need disappears, then the premium paid upfront becomes an entirely "sunk" cost that cannot be recouped

Indicative pricing

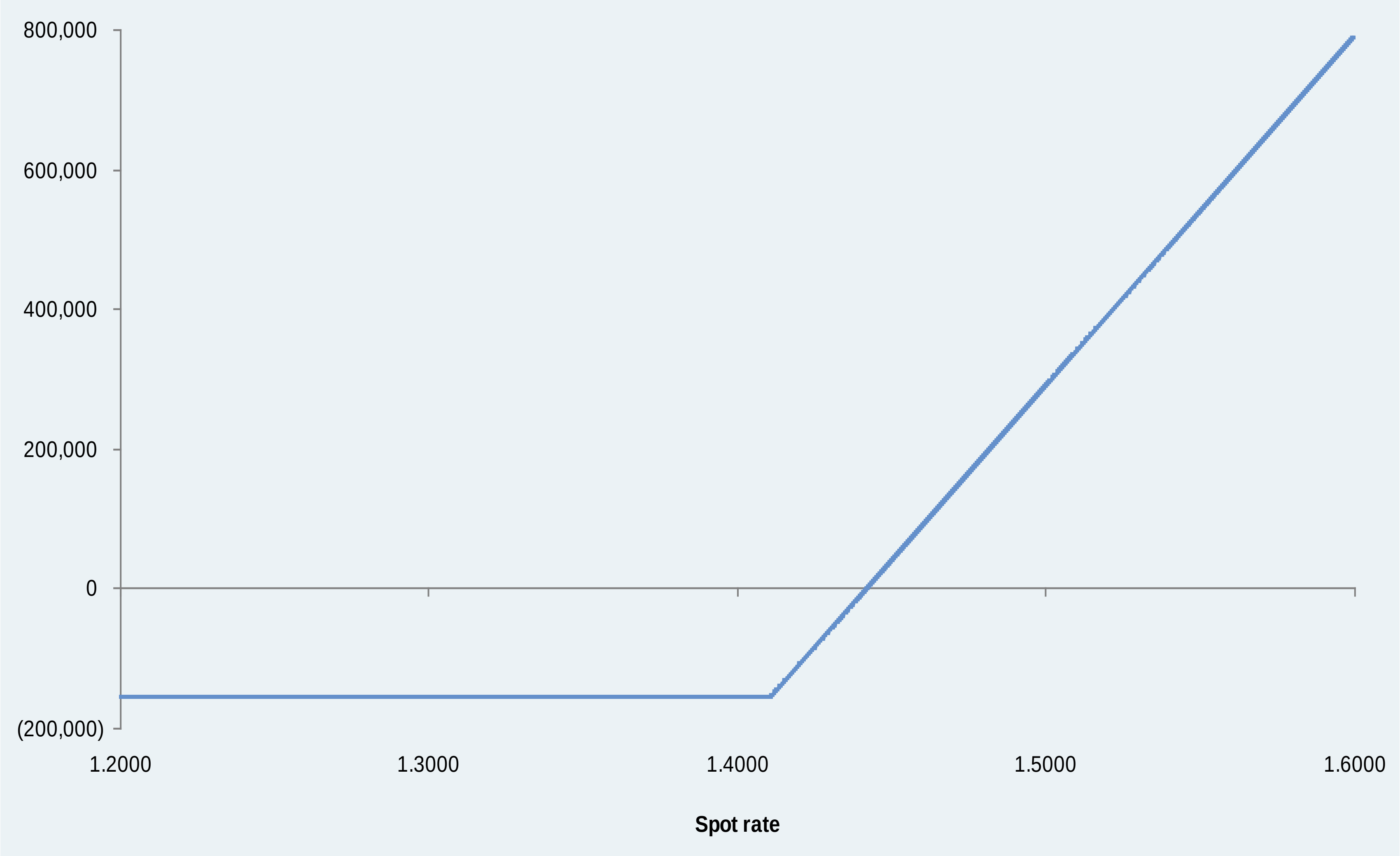
- **Example: (based on spot reference of 1.4000)**
  - XYZ needs to buy €5,000,000 in 3 months time. XYZ determines the worst possible rate (i.e. budget rate) at which it would buy EUR is 1.4105
  - XYZ purchases from JPMorgan a EUR Call / USD Put option with a Strike Price of 1.4105. In exchange for this protection, XYZ pays JPMorgan a premium—due two business days from the actual purchase of the option
- **Scenarios at maturity**
  - **Spot > 1.4105:** XYZ may exercise the option and buy the €5,000,000 at the contracted Strike Price of 1.4105. The benefit of the option is realized at this time
  - **Spot < 1.4105:** XYZ is entitled to ignore the option, which will then expire worthless, and can proceed to deal in the current spot market

Note: There are two different classes of options: **European-style** (exercisable on maturity date only) and **American-style** (exercisable at any time during the life of the option). The above example assumes an "European-style" option exercise

Term	Premium	Strike (1% OTM)	FX forward
3-month	2.20%	1.4105	1.3965
6-month	3.34%	1.4070	1.3930
9-month	4.20%	1.4040	1.3900
12-month	4.93%	1.4010	1.3870

Profit/loss–locking in a vanilla option – Notional EUR 5,000,000

Vanilla option vs. unhedged position–(US$) gain/(loss)



Range forward option

Description of range forward option

- **Description**
  - A combination of two Vanilla Currency Options that synthetically creates a “floor” and a “ceiling”. Also referred to as a “Costless Collar Option”
  - Firm obligation to buy from or sell to a bank a fixed amount of foreign currency on a specific future date within a predetermined “range” of exchange rates at which the contract can be exercised
  - Consists of a simultaneous purchase and sale of put and call option for the same principal amount and maturity, but with different strike prices
- **Advantages**
  - No upfront cost required
  - Provides downside protection (i.e. “floor”) while granting a limited upside potential for gain capped by the “ceiling”
  - The best case scenario is superior to a conventional forward outright rate
- **Considerations**
  - The downside “floor”/“ceiling” rate is worse than a conventional forward contract rate
  - Upside is limited (capped) by the “ceiling”/“floor” rate. Potential opportunity loss if market rates improve beyond the “ceiling”/“floor” rate
  - The “ceiling”/“floor” level becomes a firm obligation (unlike a Plain Vanilla option) in the event that it is breached.
  - Since the “ceiling”/“floor” is created by the sale of a EUR put/call to a bank by client, there is an unlimited “loss” potential, in the event that a deliverable (currency conversion) need disappears
  - Partial exercise of an option is not conventional (i.e. “all or nothing”)
  - FX credit facility required

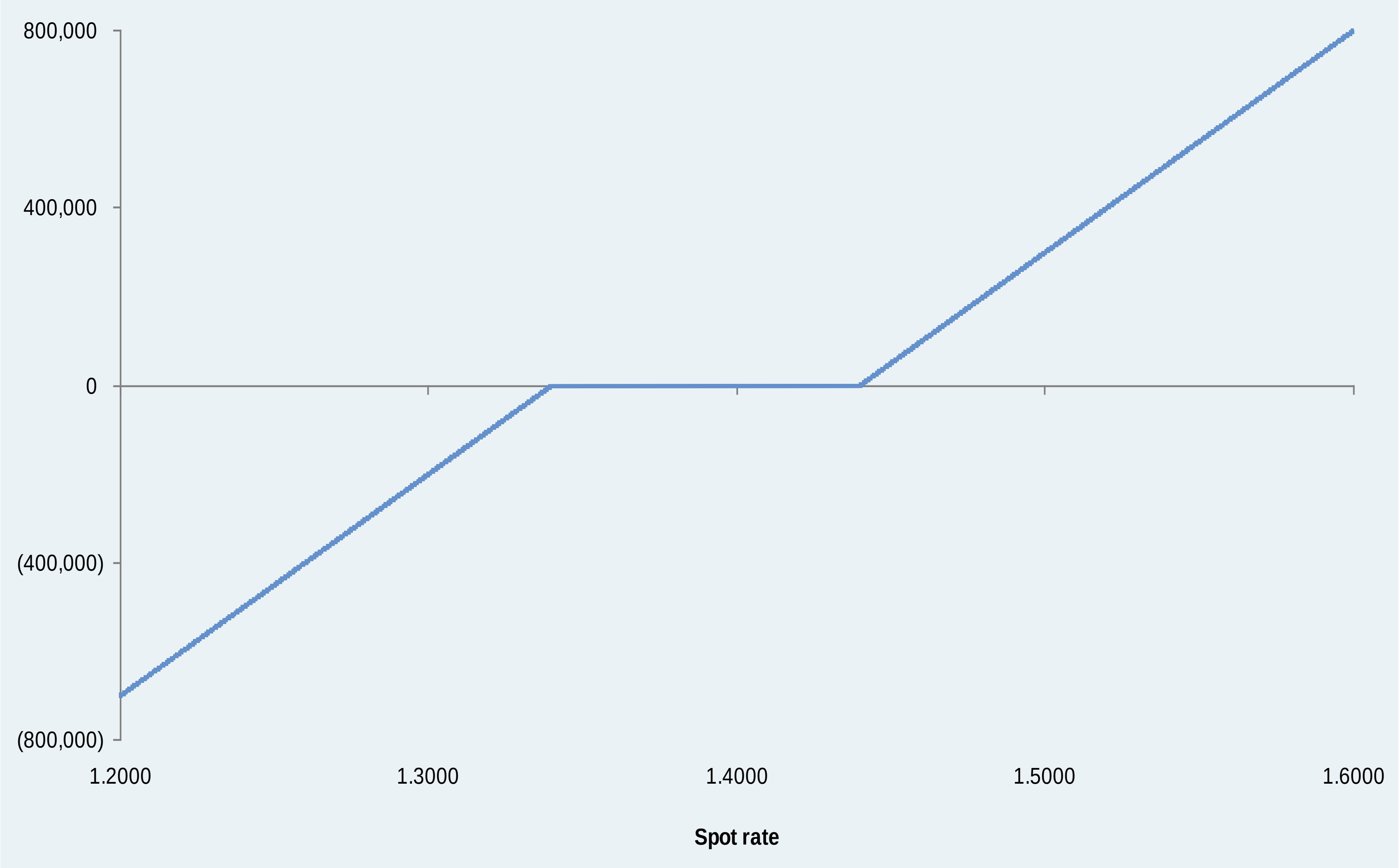
Indicative pricing

- **Example: (based on spot reference of 1.4000)**
  - XYZ needs to hedge a payable of €5,000,000 in 3 month’s time. XYZ purchases a Range Forward Option from a bank with the following parameters
- **Range: 1.4400 / 1.3400**
  - **XYZ buys from JPM:** EUR Call/USD Put at strike price 1.4400. This is the worst possible rate at which XYZ could potentially buy EUR on expiry date
  - **XYZ sells to JPM**: EUR Put/USD Call at strike price 1.3400. This is the best possible rate at which XYZ could potentially buy EUR on expiry
- **Scenarios at maturity**
  - **Spot > 1.4400:** XYZ buys €5,000,000 @ 1.4400
  - **1.4400 < spot < 1.3400:** XYZ buy €5,000,000 at prevailing spot
  - **Spot < 1.3400:** XYZ is obligated to buy €5,000,000 at best rate of 1.3400. (Bank exercises EUR Put option at 1.3400)

Term	Call strike	Put strike	FX forward
3-month	1.4400	1.3400	1.3965
6-month	1.4390	1.3390	1.3930
9-month	1.4360	1.3360	1.3900
12-month	1.4330	1.3330	1.3870

Profit/loss–locking in a range forward option – Notional EUR 5,000,000

Range forward option vs. unhedged position–(US$) gain/(loss)



Hedge tools comparison

Advantages/considerations

	FX forward	Vanilla option	Range forward
Description	Locks-in fixed rate for future delivery	Sets worst case rate	Sets max and min rate
Benefit from favorable rates	No	Yes	Yes
Upfront premium	N/A	Yes	Zero
Remarks	Forward based upon spot +/- forward pts	Unlimited benefit from favorable market moves	Rate benefit limited by min/max rates

Examples of other types of structured FX derivative products

FASB 133 friendly FX contracts

Product	Description
Forward	■ Exchange of currency notionals on a specific date at the difference between spot and the interest rate differential for the
Vanilla option	■ Purchased insurance against currency appreciation (call options) or depreciation (put options)
Collar	■ Protection from currency appreciation or depreciation within a range
Participating forward	■ 100% protection at a given level, the client maintains partial participation in favorable market moves on a percentage of
Forward extra	■ Protection at a "synthetic" forward rate with potential participation in favorable market moves up to a pre-determined trigger, which if breached, will cause any participation to be forfeited
Capped risk forward	■ Protection at a forward rate with participation above/below a risk cap; at inception, the maximum settlement risk of the forward is known (difference between forward and risk cap)
Sliding forward	■ Protection at a forward rate that has fixed and capped protection and participation
Cross currency swap	■ Interest rate swap that creates synthetic debt to match assets and liabilities (fixed, floating, and combinations of FX products as well)

FX exposure management

Terminology

Reporting currency

- Currency in which the parent firm prepares its financial statements

Functional currency

- Primary currency in which an affiliate generates and expends cash
- Usually the local currency in a foreign country unless the country is in a hyperinflationary environment

Non-functional currency

- All other currencies except the functional currency

Non-functional currency transaction exposure

- Non-functional currency accounts receivable, accounts payable, cash, intercompany loans, firm commitments, forecasted or anticipated transactions

Translation exposure

- Consolidation of subsidiary financials into parent company's financials
- Arises from the need to produce consolidated financial statements
- Reflects changes in book value of foreign subsidiaries
- No conversion of currency involved

Currency risk management and shareholder value

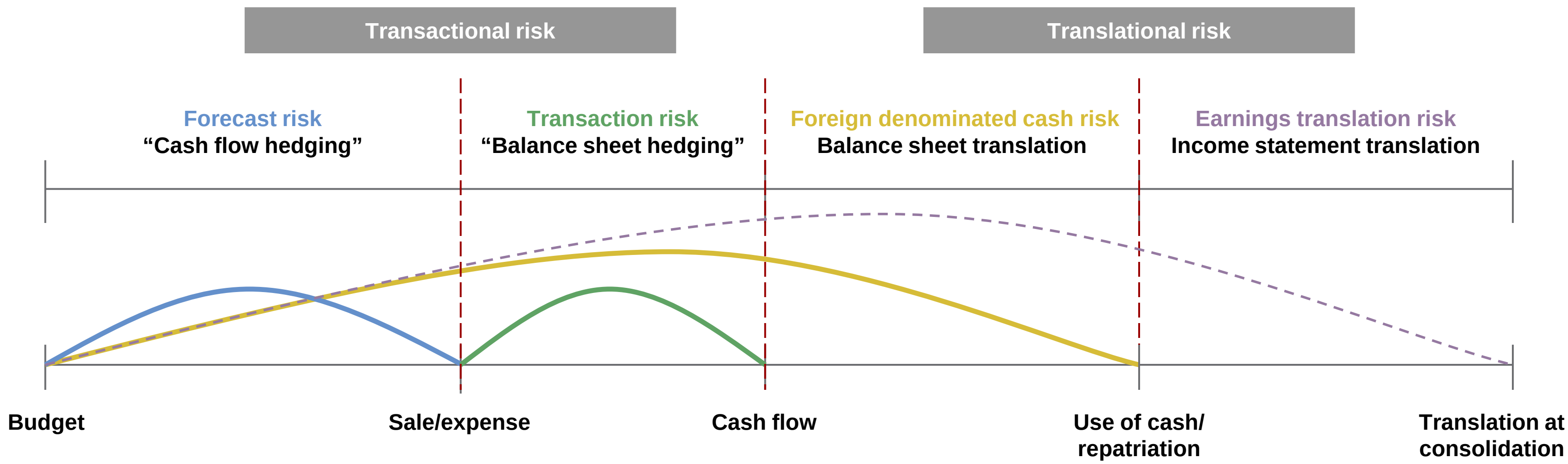
- In establishing a currency risk management program, companies need to identify the risks that they face and articulate their hedging philosophy
  - Companies' hedging philosophy should be directly related to the creation of shareholder value

Currency risk management overview

Objective	Reduce volatility in earnings in USD terms Reduce volatility in cash flows in USD terms
Impact on firm value	Academic, empirical and anecdotal evidence overwhelmingly support that hedging increases firm value The hedging "premium" is on average 5%[1] Hedging premium is both statistically and economically significant
Rationale	Investors in a stock seek exposure to foreign markets, not currencies Lower volatility provides investors greater visibility into performance Predictable cash flows reduce debt cost and increase access to debt markets and financial flexibility Lower volatility increases ability to make value enhancing investments

Source: J.P. Morgan and selected publicly available information
[1] Allayannis & Watson (2001)

Identifying the impact of currency movements on earnings and cash flow



Considerations for implementation

Strategic/long-term	Automatic rolling program	Immediately identifiable exposure	Minimized via forecast program
Earnings and cash risk	**Earnings and cash risk**	**Cash risk**	**Earnings risk**

Description of currency impact

Strategic/long-term	Automatic rolling program	Immediately identifiable exposure	Minimized via forecast program
▪ Impacts operating income, "above the line" ▪ Represents a strategic currency risk ▪ Hedges must get hedge accounting ▪ Tenor of hedges generally 6 months to 5 years ▪ Represents an **economic risk** to shareholders	▪ Impacts earnings "below the line" on the FX G/L line ▪ Non-strategic currency risk ▪ Can be viewed as a point in time (one month at a time) exposure	▪ Impacts ability to make value enhancing use of cash if not USD denominated ▪ To the extent that the functional currency cash is not being used in the local business, companies should protect the USD value of foreign denominated cash via **net investment hedging**	▪ Line by line translation of foreign subsidiary income statement ▪ Impacts earnings above and below the line ▪ **Exposure can be eliminated via strategically designed forecast hedging program** ▪ Represents an economic risk to shareholders

Transactional "balance sheet" hedging (FASB 52)

Overview

- The volatility in earnings introduced by the revaluation of non-functional currency denominated net monetary asset/liability positions into functional currency represents a non-strategic risk to earnings.
  - **The objective of the hedging program to minimize the amount of FX gain or loss reported below operating income, usually in other income**
  - **In other words, the objective is to make the FX G/L line go away**
  - The only type of derivative that will accomplish this objective is a forward or forward based instrument
  - Ideally, 100% of the risk should be hedged
  - Hedge accounting is unnecessary
    - Since the underlying net monetary position is being revalued through earnings, the MTM of the hedge through earnings is the desired accounting
    - The hedges can be executed by the US parent, in the US parent's name
- The Company should consider implementing a 1-month rolling hedging strategy to reduce/eliminate this risk to earnings.
- To the extent the Company is building up overseas cash denominated in a foreign currency that is not being used in the local business (for example, working capital), it should consider protecting the USD value of the foreign denominated cash balance via net investment hedging as described later in this presentation.

Mechanics of a transactional hedging program (FASB 52)

Timeline–hedging transactional exposure (EUR payable on USD books)

- The Company should consider using a one-month "rolling forward" program to hedge its transactional risk

Eliminating the FX G/L line

EUR payable balance (US$) (assumes balance accrued at period end)	400,000	300,000	150,000	200,000	400,000	500,000	350,000	200,000	350,000
Time	T^0	1M	2M	3M	4M	5M	6M	7M	8M
EUR/USD spot	1.2300	1.2800	1.2100	1.2500	1.3300	1.3500	1.2400	1.2100	1.1900
FX G/L on EUR payable	0	(12,703)	13,559	(3,967)	(9,624)	(4,456)	32,855	6,998	2,778
FX G/L on forward to buy EUR, sell USD	0	12,703	(13,559)	3,967	9,624	4,456	(32,855)	(6,998)	(2,778)
Net FX G/L[1]	0	0	0	0	0	0	0	0	0

- The objective of the transactional hedging program is to reduce the FX G/L line to zero
- This can only be achieved by hedging 100% of the expected EUR payable balance using forwards
  - Options do not perfectly offset the revaluation of EUR payable balances because they have a cost and allow for upside participation
- Unless the Company knows its exact payment dates, using a one month rolling program provides the most flexibility with the least amount of trades
  - At the end of each month, the Company hedges its expected EUR payable balance with a 1-month forward to buy EUR sell USD
  - During the month, new payables will be accrued and existing payables will be paid
    - **Company may experience some amount of FX G/L due to timing mismatch and how it accounts for its new AR/AP balances**
    - **FASB 133 hedge accounting is not necessary**

[1] Assumes no forward points for simplicity

J.P.Morgan

FASB 133 guiding principles

- Report all derivatives on the Balance Sheet at fair market value
  - Consistency, completeness, and transparency in financial reporting
- Reflect changes in fair market value of derivatives on P/L in current earnings
  - Unless derivative is designated and qualifies as a hedge
- Provide special accounting to align earnings impact for derivatives qualifying as
  - Cash flow hedge–Offsets variability of hedged item's cash flows and converts variable cash flows to fixed
  - Fair value hedge–Converts fixed cash flows to variable
  - Net investment hedge–Offsets B/S translation adjustment and as outlined in FAS 52
    - Record hedge results in Cumulative Translation Adjustment (CTA) account along with translation adjustment

Three hedge accounting "models"

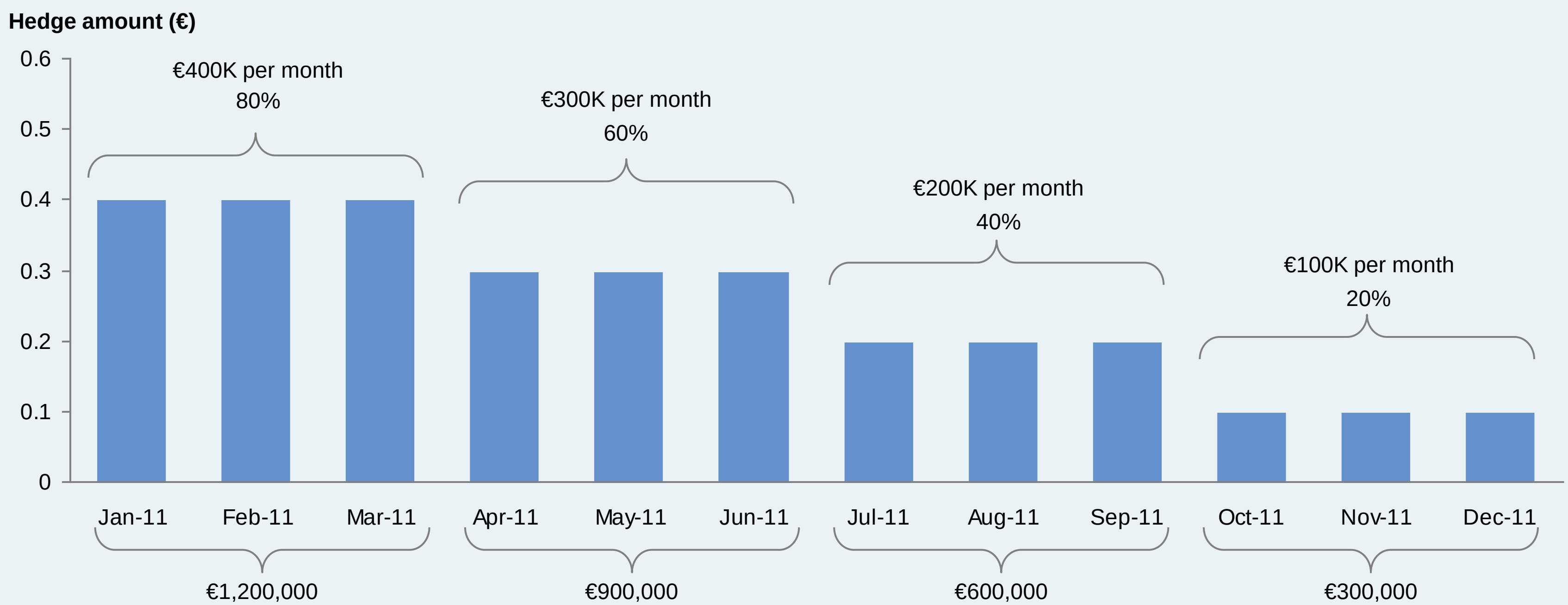
Cash flow	Fair value	Net investment
Offsets variability of hedged item's cash flows (i.e. forecasted transactions or firm commitments[1])	Offsets fair value changes of an existing asset, liability, or firm commitment[1], which can impact earnings	Offsets balance sheet adjustment due to FX rates resulting from net investment in a foreign operation. Fluctuations in exchange rates impact capital of entity with investment
Converts variable cash flows to fixed	Converts fixed cash flows to variable	Outlined in FAS 52 (translation exposure)
Record hedge results in Other Comprehensive Income (OCI), and align P/L impact of hedge results with P/L impact of non-booked hedged items	Record hedge results and change in value of the hedged item in current P/L	Record hedge results and change in value of the hedged item in Other Comprehensive Income (OCI)

[1] Firm commitments can qualify for either fair value or cash flow hedging

Establishing the initial cash flow program by hedging 50% of forecasted exposure

Hedge program structure

- On January 2, 2011, the Company initially establishes monthly hedges to cover its annual forecasted EURO Expenses for 2011 (€6mm)
- The €6mm annual exposure is allocated as €1.5mm per quarter
- Within each quarter, the Company establishes monthly hedges of €500,000 (1.50 mio/3) at a respective quarterly layer of
  - 1Q–80%, 2Q–60%, 3Q–40%, 4Q–20%



- Initial transaction will be to buy EURO
  - 1Q–€1,200,000
  - 2Q–€900,000
  - 3Q–€600,000
  - 4Q–€300,000

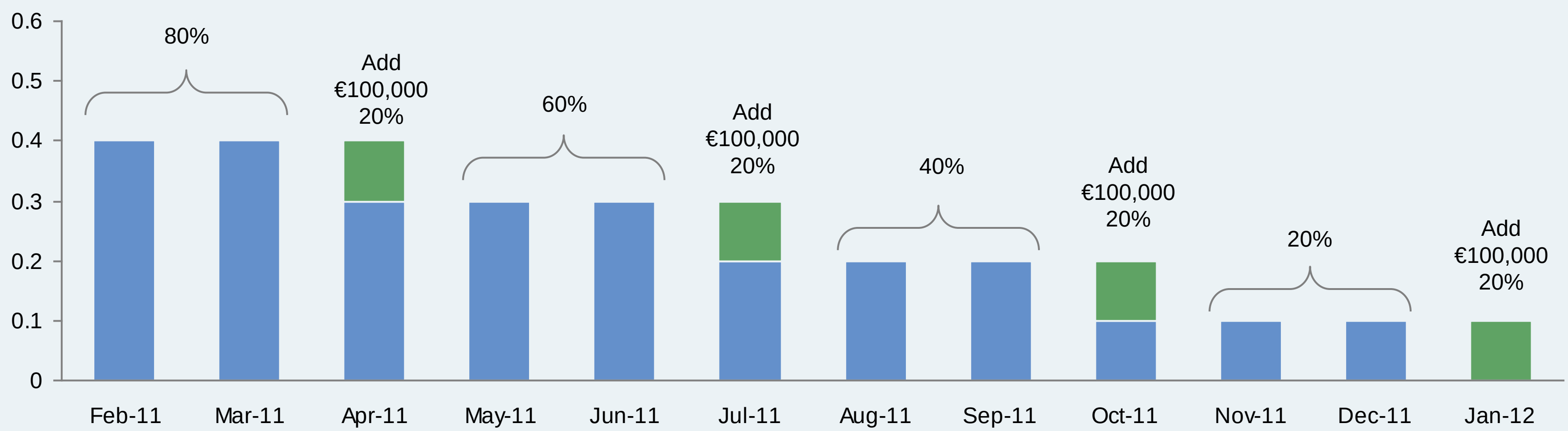
€3,000,000 = 50% initial coverage of the annual forecasted expenses

Rolling and layering: first month rolls off

Hedge program structure

- January 31, 2011 the Company will
  - Unwind the maturing January 2011 forward hedge
  - Adjust the remaining forwards to maintain the quarterly hedge ratios
  - Add a new forward for the 12th month at 20%–January 2012
  - At any point in time, there are always 4 quarters (12 months) of hedges on the books
  - At any point in time, the 80/60/40/20% quarterly hedge ratio is maintained

Hedge amount (€)



- On January 31, 2010, the Company will buy €400,000 to adjust existing forwards and add the new 12th month hedge

Add to April 2011	@ 20%	€100,000
Add to July 2011	@ 20%	€100,000
Add to October 2011	@ 20%	€100,000
Add to January 2012	@ 20%	€100,000
Sum of new hedges		€400,000

Risk management objectives and policy

FX hedge objective is to reduce volatility

- The currency risk management objectives are to :
  - (a) reduce or eliminate volatility in the USD value of the Company's cash and cash flow
  - (b) to reduce volatility in earnings caused by changes in foreign currency exchange

Performance evaluation

- The performance of the hedging program will be evaluated based on the level of reduction of volatility achieved
  - Forecasted exposure: by comparing (a) earnings at the budget [target] rate, (b) earnings at the hedged rate and (c) the unhedged rate
  - Transaction Exposure: by comparing (a) the amount shown on the FX gain or loss line of the Company's consolidated P&L, (b) the amount that would have been shown without hedging, and (c) zero

FX exposure categories

Transactional risk (balance sheet hedging)

- Mandatory hedging of at least [80%] of the known net foreign currency denominated monetary balance sheet receivables or payables by currency by entity
- The Company will not elect to apply hedge accounting on its balance sheet hedges and changes in fair value of the hedges will be recorded immediately in earnings

Balance sheet translation exposure (Net Investment hedging)

- The Company's net investment in its local currency functional foreign subsidiaries may be hedged on a case by case basis, and must be approved by the [Treasurer]:
- Discretionary hedging of up to [100%] of existing or forecasted foreign denominated cash build-up but never exceeding the Company's net investment in the subsidiary where the cash is located

Acquisitions and divestitures

- Hedging decisions will be made on a case-by-case basis, and must be approved by [Treasurer]
- No hedging will be permitted before a letter of intent has been signed by the Company
- Hedges of forecasted acquisitions and divestitures will not qualify for cash flow hedge accounting under FAS 133
- Net investment hedge designation may be considered for divestitures

Forecasted risk

- Forecasted exposures
- Foreign currency denominated third party and intercompany net currency cash flows
- Foreign currency exposures will be reviewed on a rolling basis as the Company budgets and forecasts are updated. Minimum level base hedges will be executed as follows: Current qtr, [50%] of forecast, Current qtr + 1, [40%] of forecast, Current qtr + 2, [30%] of forecast, Current qtr + 3, [20%] of forecast, Current qtr + 4, [10%] of forecast
- Hedges of forecasted revenues/expenses will qualify as cash flow hedges under FAS 133

Risk management internal controls

Counterparty risk

- Foreign exchange transactions may only be conducted with banks that have minimum credit ratings consistent with the Company's Financial Institution Credit Risk Policy
- FX facilities must be established with every financial institution in which foreign currency trades are to be executed
- The credit standings of each institution for which a FX facility has been established shall be reviewed on an annual basis

Confirmation procedure

- After the execution of any foreign exchange transaction the Company–approved foreign exchange trader must approve and transmit written confirmation of the foreign currency type and amount, value date and wire instructions via fax or other electronic means to the financial institution's operations contact
- Some financial institutions may require confirmation of a trade via verbal callback. [Every verbal confirmation will be made with a party other than the person who initiated the trade in question]
- Several days after an authorized person has executed the foreign exchange trade, the financial institution will send back to the Company a trade confirmation, which requires independent review, by someone not employed by Treasury

Authorized execution

- All foreign exchange transactions will be managed by treasury and executed only by those individuals who have been designated as approved traders by the [Treasurer]
- Prior to the execution of a trade, written documentation will be prepared setting forth pertinent information, including the rationale for the trade, currency pair amounts, settlement dates, etc.
- Only the [Treasurer] has the authority to extend and revoke trading privileges as well as appoint individuals authorized to confirm trade confirmations. Treasury will maintain an up-to-date list of approved personnel at all times
- After the execution of a foreign exchange transaction, an authorized individual must approve a written confirmation provided by the financial institution via email, fax or through an automated website

Limits

- All transactions up to [US$25mm] require the approval of the [Treasurer] or other designated individual
- Transactions exceeding [US$25mm] require written approval of the Treasurer and another member of the FX committee

Take-aways

Final Thoughts

- We live in a volatile world
- Globalization in business is rampant
- Changes in exchange rates can have a material impact on business
- Accounting rules are in a constant state of flux, and subject to great interpretation
- Solid FX policy is crucial