

# Sizing Up “The Elephant in the Room” Regulatory Paradigm Shift & The Impact on Fixed Income Trading

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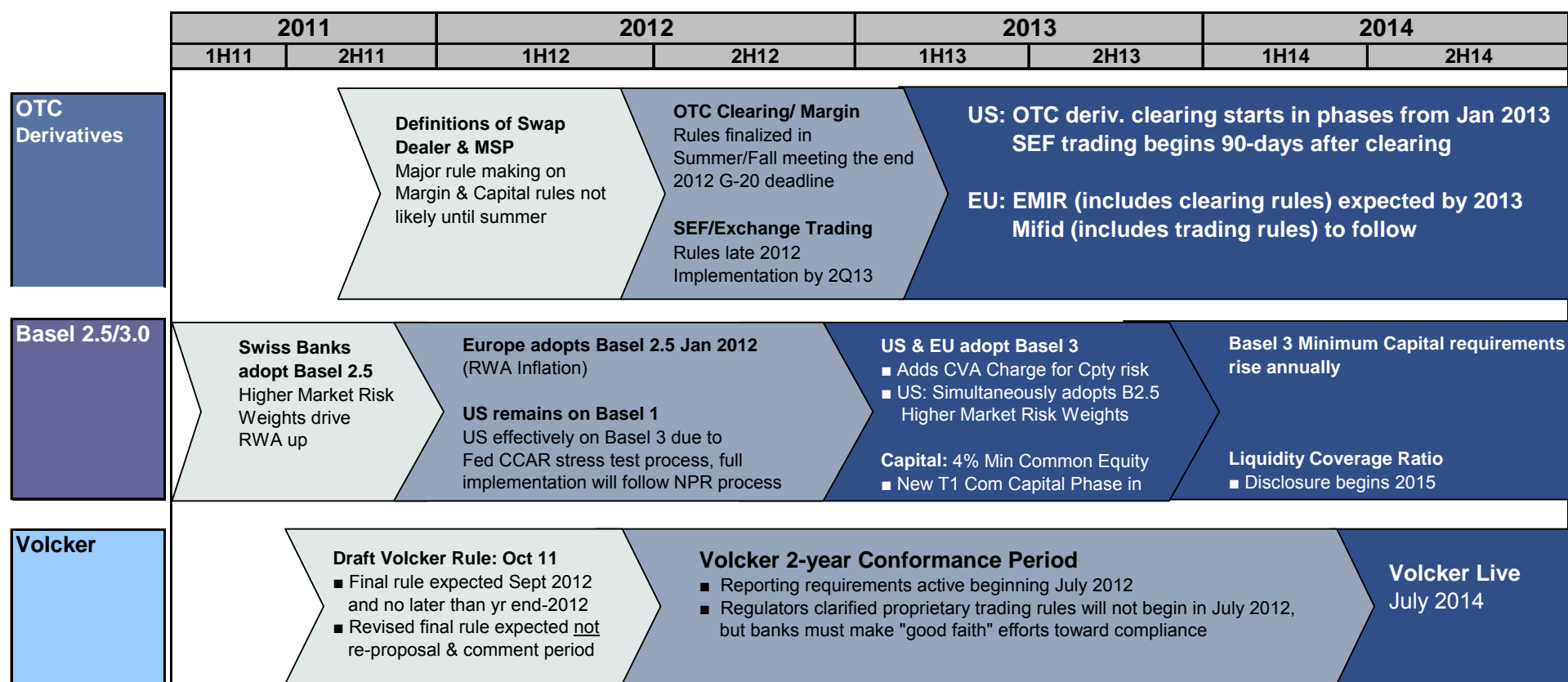
# Key Points

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- **The Elephant in the Room:** Regulatory reform is a significant issue that will impact Fixed Income trading returns...but is not being fully discussed by bank mgmt w/ investors due to uncertain rules.
- **Reforms are coming soon** – OTC Clearing & Basel 3 likely in early-2013
- **Revenue will be hurt** – Our analysis of regulatory reform points to 15-20% revenue loss globally over 3yrs, taken from a cyclically higher “normal” revenue base
- **Current revenues are cyclically low** – 2011 FICC revenues were cyclically depressed by 20-25% due to low volumes & 2H11 trading losses
- **Near-term returns likely weak** - Assuming no near-term cyclical/macro revenue bounce, FICC returns likely to be 5-9% for next 3 years
- **Long-term FICC returns better** – L/T returns of 10-12% but require comp cost reduction, capacity exits, and further RWA mitigation
- **Scale & corporate connectivity wins** – We see scale players JPM, DB and Barclays best positioned to earn ~15% returns in the “new world”

# Regulatory Timeline Approaching in 2013

- Mandatory OTC clearing expected live in US by early 2013 & OTC; SEF trading to follow as soon as 2Q13
- Europe may follow US on clearing in early 2013 but likely lags longer on OTC exchange trading
- Basel 3 rules likely live for US & Europe early 2013
- Volcker prop-trading rules begin July 2014 – but “good faith efforts” expected to begin in July 2012 or when final rules are known



## Why look at FICC? It's a Substantial Portion of Top Bank Revenues

<b><u>Core FICC as % of Revenues</u></b>			
	<b>2009</b>	<b>2010</b>	<b>2011</b>
Goldman Sachs	57%	34%	30%
Deutsche Bank	41%	37%	25%
Barclays	42%	27%	24%
RBS	35%	18%	18%
Morgan Stanley	38%	23%	16%
JP Morgan	18%	15%	15%
Credit Suisse	32%	22%	15%
UBS	13%	15%	15%
BNP	20%	12%	12%
Soc Gen	18%	9%	9%
BofA/ML	13%	11%	9%
Credit Agricole	14%	8%	8%
HSBC	13%	8%	7%
<b>Average</b>	<b>27%</b>	<b>19%</b>	<b>16%</b>

# First We Identified All Products & Sizes of Each FICC Business...

## Currencies

Est FX Global Rev Pool	
G10 Currencies	60%
G10 Spot	35%
G10 Forward/Swap	15%
G10 Options	10%
EM/Local Market Currencies	40%
EM Spot	25%
EM Forward/Swap	10%
EM Options	5%
Total	100%

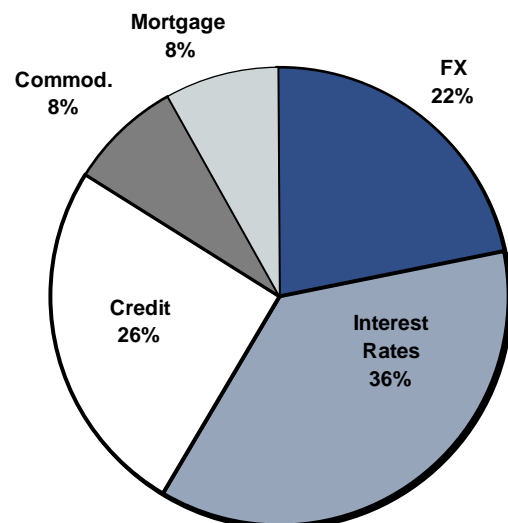
## Rates

Est Global Rates Rev Pool	
G10 Rates	74%
Interest rate derivatives	47%
Swaps	25%
Options/Exotic	11%
Cross-FX Swaps	11%
US Treasuries	14%
Agency Debt	3%
Sovereigns	10%
Emerging Markets Rates	23%
EM Derivatives	13%
EM Cash Bonds	10%
Municipal Bonds	3%
Total	100%

## Credit

Est Global Credit Rev Pool	
Investment Grade	35%
IG Cash bonds	20%
IG CDS	15%
High Yield	20%
HY Cash bonds	15%
HY CDS	5%
Distressed	15%
Structured Credit	20%
CDOs (Trading & Correlation)	11%
CLOs (Origin. & Correlation)	6%
Total Return Products	3%
Emerging Markets	10%
Total	100%

## Total FICC Revenues



## Mortgages

Est Mortgage Rev Pool	
Non-Agency RMBS	30%
Agency Mortgage	18%
Pass Through	14%
ARM	4%
ABX & Derivatives	5%
RMBS CDO	14%
CMO's	15%
CMBS /Cons. & Other ABS	9%
Non-US Mortgage	9%
Total	100%

## Commodities

Est Global Commodity Rev Pool	
Crude Oil & Refined Products	35%
Power and Gas	25%
Metals - Base & Precious	20%
Investor Products (ETFs/Funds)	10%
Niche Businesses / Agriculture	10%
Total	100%

# ...And Translated Into Affected Revenues by Product & Regulation

FICC Pool	Currencies	22%	Rates	36%	Credit	26%	Commodities	8%	Mortgage	8%	100%
OTC Derivatives CLEARED		3%		23%		17%		23%		4%	15%
	Non-Deliverable Fwds	3%	Linear Swaps Clearable	23%	IG CDS clearable (est 90%)	14%	Trading w/ Investors (cleared)	11%	ABX & Derivatives	4%	
					HY CDS clearable (est 75%)	4%	Investor Prods / Index (cleared)	11%			
OTC Derivatives UNCLEARED		37%		38%		11%		58%		1%	29%
	Options	15%	Cross FX Swaps	10%	CDS IG uncleared	2%	Trading w/ Investors (uncleared)	4%	CDS on RMBS	1%	
	Plain Vanilla Swaps	11%	Interest Rate Options	10%	CDS HY uncleared	1%	Investor Products / Idx (uncleared)	4%			
	Deliverable Forwards	11%	Exotic /EM Rates Derivs	10%	Structured - Total Return Swaps	3%	Short-dated Corporate Flow	15%			
			Linear Swaps Unclearable	8%	Structured Credit Correlation	5%	Long-dated Corporate Flow	5%			
							Structured w/ End Users	30%			
Total OTC		40%		60%		28%		80%		5%	45%
HIGH CVA BASEL 3.0 Portion of Uncleared Derivatives		9%		9%		9%		22%		0%	9%
	Long-Dated Forwards/Swap	6%	Long-dated Cross-FX	3%	Long-dated CDS uncleared	1%	Long-dated Trading w/ Investors	1%			
	Long-Dated Options	4%	Long-dated Options	3%	Structured - Total Return Swaps	3%	Long-dated Inv Prod / Index	1%			
			Long-dated Exotic/EM Rates	3%	Structured Credit Correlation	5%	Long-dated Corporate Flow	5%			
			Long Linear Swaps (uncleared)	2%			Structured w/ End Users Long-dated	15%			
Basel 2.5 Significant impact		0%		0%		25%		0%		55%	11%
					HY Cash bonds	15%			Non-Agency RMBS	30%	
					Secondary CDO Trading	10%			RMBS CDO	14%	
									CMBS /Cons. ABS	2%	
									Non-US Mortgage	9%	
Basel 2.5 & 3.0		9%		9%		34%		22%		55%	20%
Volcker Rule		40%		82%		95%		90%		82%	77%
	G10 Forward/Swap	15%	Interest rate derivs	47%	IG Cash bonds	20%	OTC w/ Non-Exempt Clients	30%	Non-Agency RMBS	30%	
	G10 Options	10%	EM Derivatives	13%	IG CDS	15%	OTC w/ Corporate Clients	50%	CMO's	15%	
	EM Forward/Swap	10%	Sovereigns	10%	HY Cash bonds	15%	Futures	10%	RMBS CDO	14%	
	EM Options	5%	EM Cash Bonds	10%	HY CDS	5%			CMBS/Cons. ABS	9%	
			Municipal Bonds	2%	Distressed	10%			Non-US Mortgage	9%	
					Structured Credit	20%			ABX & Derivatives	5%	
					Emerging Markets	10%					

# Regulatory Impact by Business Line

	Global fees "Normal" Pre-Reg	% of Rev	Reg Impact	Est Reg Hit	Global fees "Normal" Post-Reg	Regulatory Impacts
<b>FX</b>	~\$33 bil	22%	LOW	-7%	~\$30 bil	<ul style="list-style-type: none"> <li>■ OTC - Impact small. Swaps, deliverable fwds and options appear exempt/unable to clear. Only non-deliverable fwds (~3% revs) will clear. Options will require margin, but will not clear</li> <li>■ Basel 3 - Uncleared options and long-dated swaps get higher capital &amp; CVA charges</li> <li>■ Volcker - Spot FX is exempt. Some revenue impact possible but few inventory exposures</li> </ul>
<b>Interest Rates</b>	~\$55 bil	36%	MED	-17%	~\$45 bil	<ul style="list-style-type: none"> <li>■ OTC - Some impact as many trades will be standardized, cleared &amp; exchange/SEF traded with increased transparency hurting spreads - though plain vanilla is a smaller revenue source</li> <li>■ Basel 3 - Capital treatment of long-dated un-cleared trades hits Rates most heavily, with higher revenue trades like cross-currency swaps with clearing-exempt corporates affected</li> <li>■ Volcker - Only Treasuries, Agencies and some Municipals exempt. Sovereigns could be added. Given few non-exempt inventories, we see Rates at lower risk vs other products from Volcker</li> </ul>
<b>Credit</b>	~\$38 bil	26%	HIGH	-19%	~\$30 bil	<ul style="list-style-type: none"> <li>■ Volcker - Harsh Volcker is biggest risk to Credit given business is based on holding inventories and principal market making</li> <li>■ OTC - Exchange trading will impact CDS Index &amp; index constituent single-names first. SEF's likely to result in bid/ask compression but may be ill-suited for trading illiquid single-name CDS</li> <li>■ Basel 2.5 - RWA inflation for securitizations and correlation trading significantly lowers returns on capital and most players will exit or significantly reduce foot-prints</li> </ul>
<b>Commod.</b>	~\$12 bil	8%	HIGH	-20%	~\$9 bil	<ul style="list-style-type: none"> <li>■ Strict Volcker rule could hurt revenues given principal position taking &amp; liquidity limitations to hedging</li> <li>■ Commodity Position limits may crimp trading volumes &amp; growth of "Investor products" (index funds)</li> <li>■ Basel 3 - CVA charges may hurt revenues from more valuable, long-dated hedges for corporate end-users who will be exempt from posting margin</li> </ul>
<b>Mortgages</b>	~\$12 bil	8%	MED	-15%	~\$10 bil	<ul style="list-style-type: none"> <li>■ Basel 2.5 - High capital charges for low-rated securitizations will keep inventories very lean, but business is already operating at significantly reduced volumes</li> <li>■ Volcker - Strict interpretation will impact inventory-based trading model</li> <li>■ QRM / Risk Retention - rules will shape the size of the future non-agency mortgage pool</li> <li>■ OTC reform impact small - Only ~5% of revenues from Index trading (ABX, CMBX etc.)</li> </ul>
<b>Total</b>	<b>\$150 bil</b>	<b>100%</b>		<b>-15 to 20%</b>	<b>\$120-130 bil</b>	

## 4 Main Regulatory Impacts → 15-20% Revenue Impact

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### 1) Clearing & Exchange Trading of OTC derivatives → 200 bps of revenue impact

- Margin & Netting
- Impact of Trading on new regulated venues (SEFs & OTFs)
- Bid/Ask Compression vs Volume Growth

### 2) Un-Cleared OTC Derivative Trades → ~500 bps hit

- Likely very onerous initial margin (10-day 99% VAR)
- Impact of Basel 3 CVA charges

### 3) Basel 2.5 Trading RWA → Relatively minimal revenue hit, Big capital impact

- Significantly increases RWA
- All businesses impacted, but Credit & Mortgage securitization the most impacted

### 4) Volcker Rule → ~800 bps hit – mostly Credit & Mortgage

- Biggest swing factor
- Affects US firms globally & foreign firm interactions with US clients



# Making the Sausage: Regulatory Impacts to Affected Revenues

- Our 15-20% impact is based on product-level “hits” to affected revenues
- Lots of uncertainties... But estimates incorporate what we know about differently affected businesses

Rates is the biggest revenue pool so impacts here will be larger drivers of overall impact

	% of FICC Revenues	% Revenue Affected by Various Regulations				
		OTC Affected		Total OTC	Volcker	Basel 2.5
		Cleared Derivative	Uncleared Derivative			
FX	22%	3%	37%	40%	40%	0%
Interest Rates	36%	23%	38%	60%	82%	0%
Credit	26%	17%	11%	28%	95%	25%
Commod.	8%	23%	58%	80%	90%	0%
Mortgages	8%	4%	1%	5%	82%	55%
<b>Total</b>	<b>100%</b>	<b>15%</b>	<b>29%</b>	<b>45%</b>	<b>77%</b>	<b>11%</b>

FX is only mildly affected by OTC clearing

Assumed Revenue Hits % to Affected Revenues						
	Cleared OTC	Uncleared Derivative	Total OTC	Volcker	Basel 2.5	Total Regulatory Hit %
FX	-15%	-9%	-9%	-8%	0%	-7%
Interest Rates	-15%	-20%	-18%	-8%	0%	-17%
Credit	-15%	-17%	-16%	-15%	-3%	-19%
Commod.	-15%	-16%	-15%	-8%	0%	-20%
Mortgages	-15%	-5%	-13%	-15%	-3%	-15%

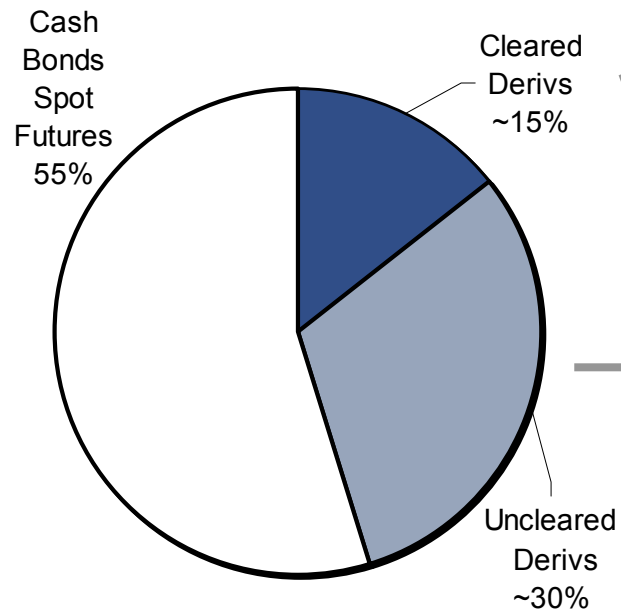
Credit has very few exemptions from Volcker and may see a larger Volcker impact

Weighted Hit By Category						
	Cleared OTC	Uncleared Derivative	Total OTC	Volcker	Basel 2.5	Weighted Total
FX	-0.1%	-0.7%	-0.8%	-0.7%	0.0%	-2%
Interest Rates	-1.2%	-2.7%	-4.0%	-2.4%	0.0%	-6%
Credit	-0.7%	-0.5%	-1.1%	-3.6%	-0.2%	-5%
Commodities	-0.3%	-0.7%	-1.0%	-0.6%	0.0%	-2%
Mortgages	0.0%	0.0%	-0.1%	-1.0%	-0.1%	-1%
<b>Total</b>	<b>-2.3%</b>	<b>-4.6%</b>	<b>-7.0%</b>	<b>-8.3%</b>	<b>-0.3%</b>	<b>-16%</b>

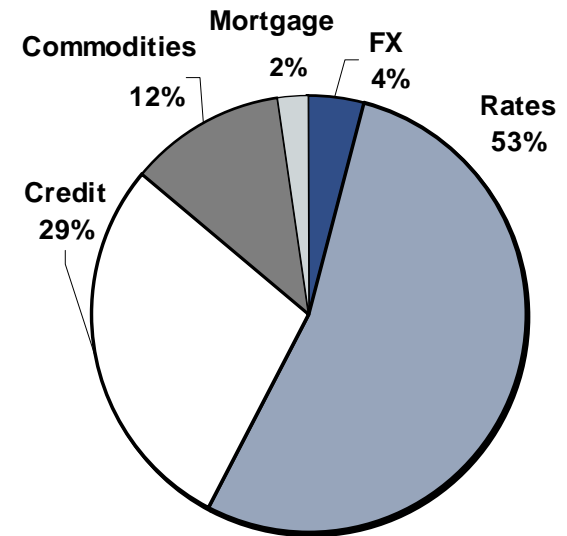
# Sizing Up the Impacted Derivative Revenue Pools

- 55 % of FICC revenues come from cash bonds, loans, spot FX, spot commodities and futures
- 45% of revenues from OTC Derivatives
  - 15% of revenues from Clearable
  - 30% of revenues from Un-Clearable

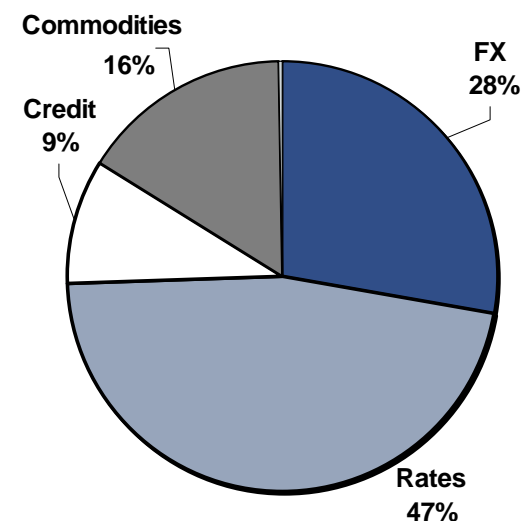
Total “Normal” FICC Revenues ~ \$150 Bil



Cleared OTC Revs ~\$23 Bil



Uncleared OTC Revs ~\$45 Bil



# OTC Derivative Clearing

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- Current system-wide OTC collateral is \$3.7 trillion
- ISDA & OCC estimate that could increase by \$1-2 trillion over the next several years
- Collateral efficiency will be a major change to the market
- Significant portion of collateral today is variation margin rather than initial margin

## OTC Derivative Collateralization

	Average % Credit Risk Collateralized
Hedge Funds	178%
Banks / Brokers	89%
Mutual/Pension Funds	76%
Insurers	66%
GSEs	53%
Non-Fin. Corporates	43%
Commodities / Energy	37%
Sovereign Govt	14%
Regional Govt	10%
Supranationals	0%
<b>All OTC</b>	<b>72%</b>

Source: ISDA

# Initial Margin from Clearing Will Most Impact Top Investor clients

- Few Clients Clear OTC Derivatives and Initial Margins for OTC are little to none for top buy-side clients, and increase for smaller higher-credit-risk clients (hedge funds)
- Example: \$100m plain vanilla 10 yr pay-fix interest rate swap, with a top credit quality investor client
- Today: No Initial Margin required
- Future: New Margin under mandatory clearing = 5.4% or \$5.4 mil margin upfront
- Margin requirements vary by underlying asset class and term, with higher risk assets and longer dated trades most impacted

*Initial Margin as a percentage of notional for a \$100 mil, 10 year pay-fix interest rate swap*

	Current IM		Post-Dodd Frank Adoption	
	Cleared	Not-Cleared	LCH Cleared	Not-Cleared
<b>Dealer to Dealer</b>	5.4%	0%	5.4%	7.6%
<b>Investor Client</b>				
Top Credit quality	NA	0%	5.4%	7.6%
Lower Credit quality	NA	5.4%	5.4%	7.6%
<b>Corporate End User Client</b>	NA	0%	5.4%	High Basel 3 charge

Source: Citi

# Exchange Trading Historical Impacts to Bid/Ask & Volumes

- Historically bid/asks compress overtime but volume rises significantly
- In 5 examples we found bid/ask fell ~77% on average vs nearly 375% increase in volume

	Round Trip Cost		%	Volumes / Turnover		%	Change Period
	Pre-Electronic	Electronic		Pre-Electronic	Electronic		
Corporate Bonds	~0.25%	~0.09%	-64%	98 bil/day	184 bil/day	88%	2001-2005
Treasuries	2.4 bps	0.5 bps	-79%	187 bil/day	498 bil/day	167%	1999-2004
Equities (long-term linked series)			-87%			526%	1980-2012
Equities (Exch. Listed)	1.17%	0.21%	-82%	0.35 turns/yr	1.0 turns/yr	186%	1980-2001
Equities (S&P500 stocks)	11 bps	8 bps	-26%	\$45 bil/day	\$99 bil/ day	119%	2003-2012
Equity Options	2.5 vol pts	0.5 vol pts	-80%	508 mil contracts	4.6 bil contracts	806%	1999-2011
Spot FX	3-5 pips	1 pip	-75%	394 bil/day	1,490 bil/day	278%	1992-2010
<b>Average</b>			<b>-77%</b>			<b>373%</b>	

Source: Citi, Federal Reserve, SIFMA, CIRA estimates and various academic studies

# Lots of Uncertainties Remain Regarding Impact of Exchange Trading

- **How much volumes will be forced to exchanges or “Swap Execution Facilities?”**

## What will market structures look like?

- “Request for Quote” vs “Central Limit Order Book” style venues
  - Markets with larger trade sizes and/or infrequent trading lean more toward RFQ
- CLOBs could drive more bid/ask compression, but may have trouble gaining liquidity
  - Dealers & clients may not want to post large resting quotes on CLOBs

## US uncertainties

- US “Block Trade” rules
  - Determine what trades will be exempt and can trade via bi-lateral voice versus what must be traded on an exchange/SEF
- Will trading protocols on new SEF venues be very strict?
  - CFTC 5-RFQ minimum proposed vs SEC 1 RFQ

## European uncertainties

- What will be the format for European “Organized Trading Facilities?”
- Will European OTF’s limit bank use of own capital
- Will single-dealer platforms be allowed in Europe? Can these electronic platforms use pricing engines & technology to populate prices on 3<sup>rd</sup> party owned-SEFs

# Un-Cleared Trades – Impacted by Basel 3 CVA

There will be a large pool of un-cleared trades because:

- 1) Corporate end-users will be exempt
- 2) Products like FX swaps, forwards & options and interest rate options & exotics will not clear
- 3) Bespoke & structured products will not clear

- Example: Single-A rated client, 10-year duration. EUR received fixed IRS.
- Estimated capital required goes from an “indexed” 1.0 to 6.3x under Basel 1 to Basel 3 assuming trade remains un-cleared.

- Spread required assuming 10% ROE
- Basel 1 pricing between roughly 2-25 bps
- New Basel 3 pricing 25-130 basis points

## Hypothetical Capital Required for a Interest Rate Swap from Basel 1 to Basel 3

	Basel 1	Basel 2	Basel 3
Unsecured	1.0	6.3	78.0
Hedged			6.3
Cleared w/ Margin			0.1 to 0.2

Source: Citi

## Cross-Currency Swap pricing under Basel 3.0 (bps)

Tenor	Client Credit Rating	
	A	BBB
5-Year	28	43
10-Year	53	74
30-Year	113	130

Source: Citi

# Un-Cleared Trades – Impacted by Potentially High Initial Margin

1. **More margin for un-cleared** - US initial margin proposed for un-cleared = 10-day VAR with 99% confidence interval vs 5-day 99% VAR proposed for cleared trades ends up requiring 40-50% more collateral for un-cleared vs cleared.
2. **Netting limits for cleared** - Plus new potential restrictions on netting of cleared trades within asset classes

## Cross Asset Class Netting on Cleared Derivatives

### Initial proposal prohibits Inter-Asset Class Netting (e.g Rates vs CDS)

Proposed rule: ■ Netting allowed only within 4 broad categories: 1) Rates & FX, 2) Credit, 3) Equities, 4) Commodities

Industry view: ■ Cross-risk category hedges are common and netting / diversification benefits should be permitted

### Netting across regulatory frameworks may not be recognized

Proposed rule: ■ CFTC & SEC share oversight of products, with some conflicts - e.g. CFTC oversees credit index trades, SEC oversees single-name CDS

Industry view: ■ Without resolution, credit markets will be significantly impacted as hedging single-name CDS using index trades will not benefit from margin netting

## Cross-CCP Netting

### Netting Cleared trades between different CCPs ("interoperability") not likely allowed

Proposed rule: ■ No cross-CCP netting of derivatives

Industry view: ■ Generally agrees, interoperability of CCPs viewed as potentially causing systemic risks.  
■ Investors are likely to consolidate CCP relationships to permit most effective margin netting

## Cleared vs Uncleared Netting

### Netting benefit from Un-Cleared & Cleared may limited by very high Un-Cleared initial margin minimums

Proposed rule: ■ Potentially very high stand-alone initial margin requirements for un-cleared trades (99% 10-day VAR) will reduce banks' ability to take portfolio view on risk and margin

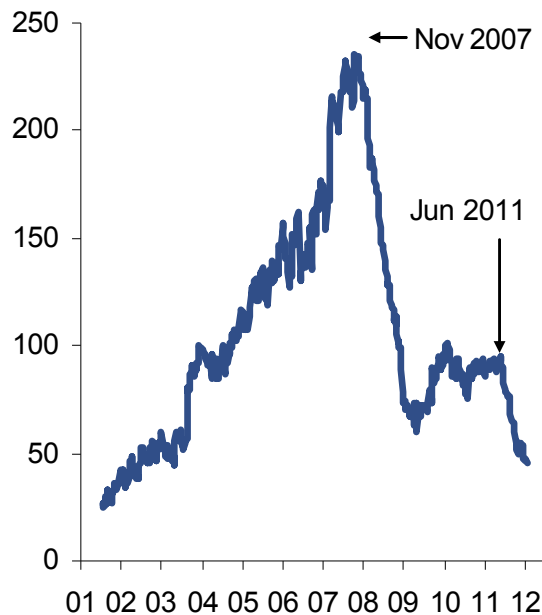
Industry view: ■ Industry wants regulators to allow a portfolio view so once minimum CCP margin is met, margin held by the bank on un-cleared products reflects the total portfolio risks across cleared, un-cleared and cash products  
■ Hedging and risk reduction across cleared, un-cleared and cash products as a portfolio is common (e.g. swaps with caps & floors, CDS positions with bonds)  
■ Margin offset sought where bank claims on any risk offsetting trades are legally enforceable



# Volcker

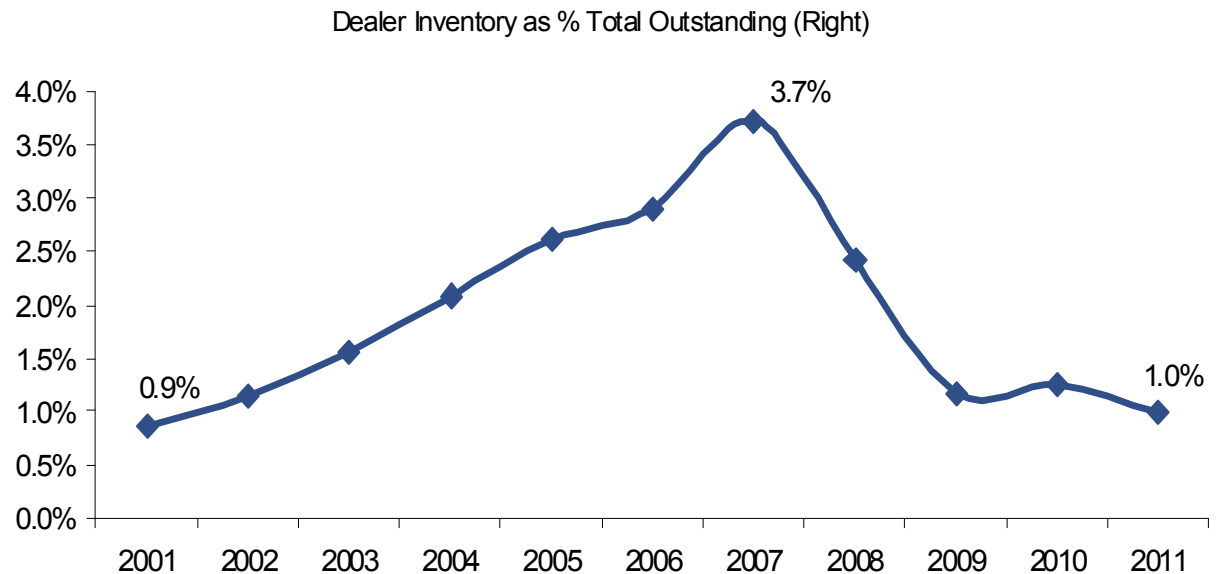
- A lot of impact from former carry trades have already been unwound
- While drops look big, current inventories appear roughly in line with historical levels vs. bond market outstandings

**US Dealer corporate bond and non-agency MBS inventories have fallen back to 2003 levels**



Source: Federal Reserve, SIFMA and CIRA

**Dealer bond inventories are now about inline with historical levels relative to total bonds outstanding**



# Volcker – 2 Key Issues Among Many

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## 1) How will permissible Market Making Activity language be written?

- “The purchase, sale, acquisition, or disposition of securities...in connection with underwriting or market-making-related activities, to the extent that any such activities ...are designed not to exceed the reasonably expected near term demands of clients...” (Dodd-Frank Act)
- Versus stronger language in the proposed Volcker rule requiring “clear, demonstrable trading interest of clients.” (Volcker rule proposal)

## 2) To what extent will Portfolio Hedging be Allowed?

- “Risk-mitigating hedging activities in connection with and related to individual or aggregated positions, contracts, or other holdings of a banking entity that are designed to reduce the specific risks to the banking entity in connection with and related to such positions, contracts, or other holdings.” (Dodd-Frank Act)
- The draft rule also notes portfolio hedging “slightly” in advance of expected risks and on a dynamic basis are permitted. A hedge must be “demonstrably risk-reducing ...[and banks must] be prepared to identify the specific position or portfolio ... being hedged and demonstrate that the hedging transaction is risk-reducing in the aggregate.” (Volcker rule proposal)

## Volcker – JPM & Portfolio Hedging

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**JPM's Volcker comment letter objected to the rule using an example of nearly an identical trade that has been widely reported to have led to losses in the CIO portfolio. We reproduce the relevant portion from page 56-57 of the letter below. The following discusses a hedging strategy and which JPM seemed to imply had been used effectively throughout the crisis.**

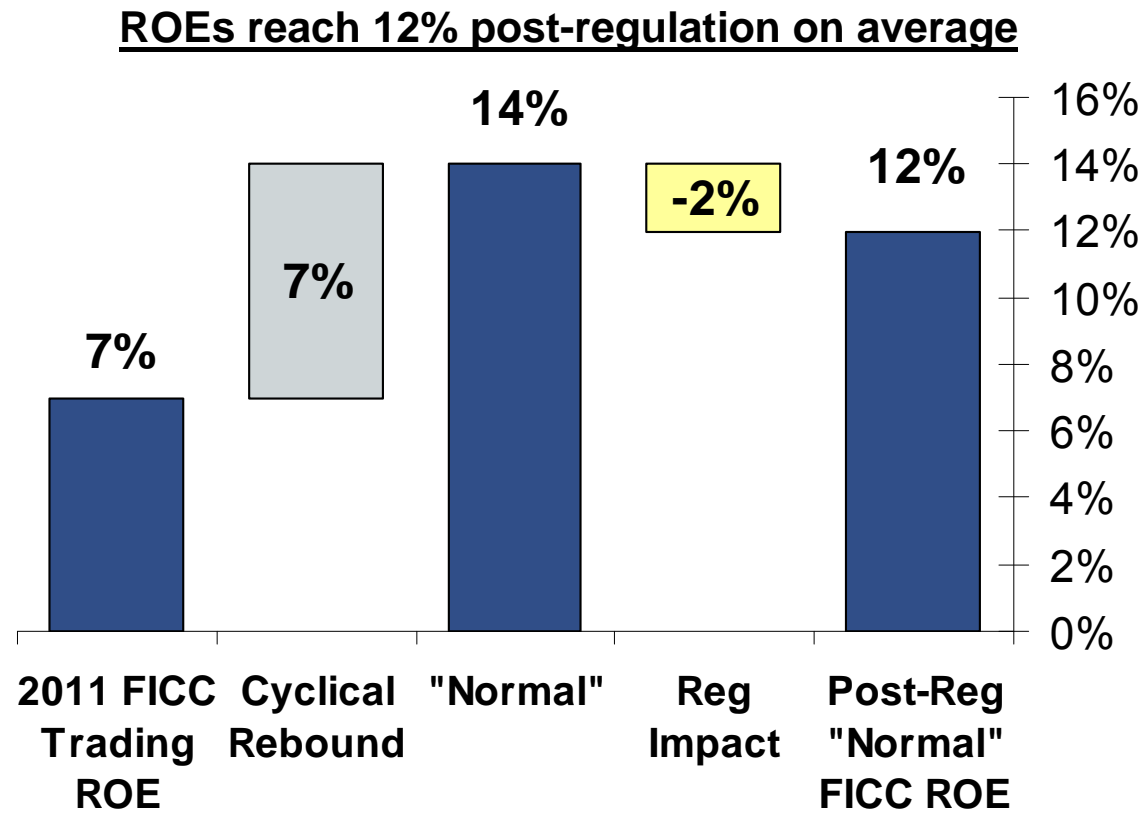
“To protect [JPM] against credit losses that, based on its analysis, the Firm perceived were possible to occur in the near term, the Firm's ALM team used credit derivatives to purchase protection on high yield CDS indices with short term maturities and to sell protection on high yield credit CDS indices with longer-term maturities—in effect, taking a high yield curve flattening position in the credit derivatives market.

This strategy resulted in [JPM] recognizing some gains as near term default risks increased. The gains recognized on these derivatives strategies offset in part the losses that occurred on credit assets held by the Firm.

Under the proposed rule, this activity could have been deemed prohibited proprietary trading. The derivatives used in the hedging strategy were booked in the market risk capital trading account and may not have qualified as hedging because: (1) the actions taken were forward-looking and anticipatory; (2) the Firm's purchases of the credit derivatives may not have been deemed “reasonably correlated” with the underlying risk, as different instruments were used to effect the hedging strategy than the assets giving rise to the risk; and (3) the gains realized upon the unwind of the hedges could have been determined to be larger than the countervailing risks.”

# Regulatory Reform Impact on FICC Returns

- 2011 year FICC ROEs were 7%
- Regulatory Impact likely a 200 bps drag on ROE
- Long-term ROEs are expected to be 10-12% range



# FICC Return Methodology

1) Estimate 2011 & Normal FICC revenue pools & normal market shares

2) Extrapolate I-Bank segment comp & non-comp expenses to FICC

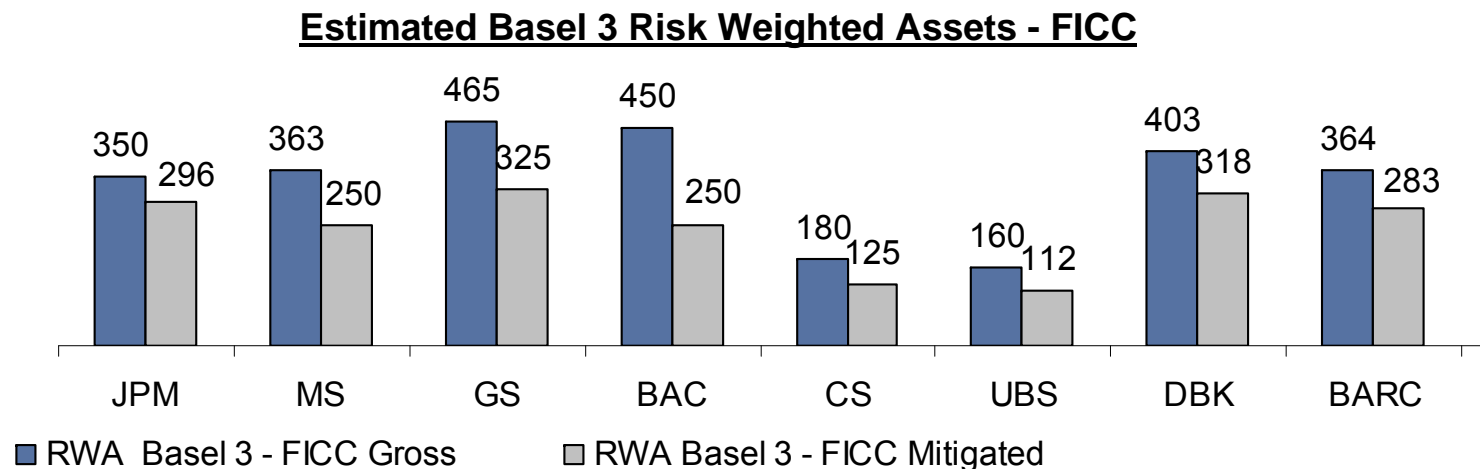
Estimated “normal” comp ratios of 36-38% give some earnings leverage

Assume 40% of I-Bank division non-comp cost allocated to FICC

3) Calculate estimated after-tax FICC net income

4) Estimate Basel 3 RWA allocated to FICC

5) Allocate capital against RWA based on expected “G-SIFI-ness” (9.0-10.0%)



# How to Estimate Basel 3 FICC RWA?

---

- **JPM as an example**
  - Discloses 4Q11 total I-Bank RWA of \$467 billion under Basel 3 at its 2012 Investor Day
  - We assume 75% is FICC-related and remainder is Equities
  - Estimated Gross FICC RWA = \$350 billion
  - Disclosed expected 4Q12 I-Bank RWA of \$413 billion – or \$54 billion of mitigation
  - Mitigation described as reductions in “legacy assets, adjustment to our internal risk controls, and advances in our modeling”
  - We assume 100% of anticipated mitigation benefit is in FICC
  - Given management mitigation assumes benefits from modeling we give JPM no incremental assumed RWA mitigation

# How to Estimate Basel 3 FICC RWA?

- Goldman as an example

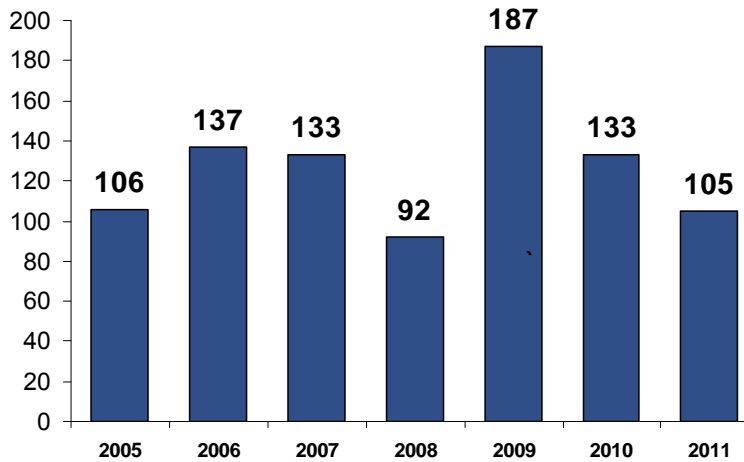
- Disclosed total pro forma Basel 3 RWA of \$774 billion as of 4Q11
- GS breakdown gives RWA allocation for Principal Investments, Market Risk, Operational Risk & Credit Risk but not by product or for the Trading Operations alone
- We exclude all \$96 billion attributed to Principal Investments, exclude 20% of RWA for Operational Risk (assuming 80% is trading related), and exclude 30% of Other credit risk (assuming 70% is trading related) = which gives us \$620 billion of total gross investment banking RWA
- We then assume 75% is FICC related
- Equals \$465 billion of gross Basel 3 RWA
- GS also has guided to \$89 billion of *passive* RWA mitigation
- We assume all mitigation is FICC related
- Leaving passively mitigated FICC RWA at ~\$375 billion
- Given GS does not include benefits from RWA modeling in its mitigation estimate – we add on another \$50 billion
- Equals ~\$325 bil estimated net mitigated FICC RWA for GS

GS – Basel 3 RWA disclosure

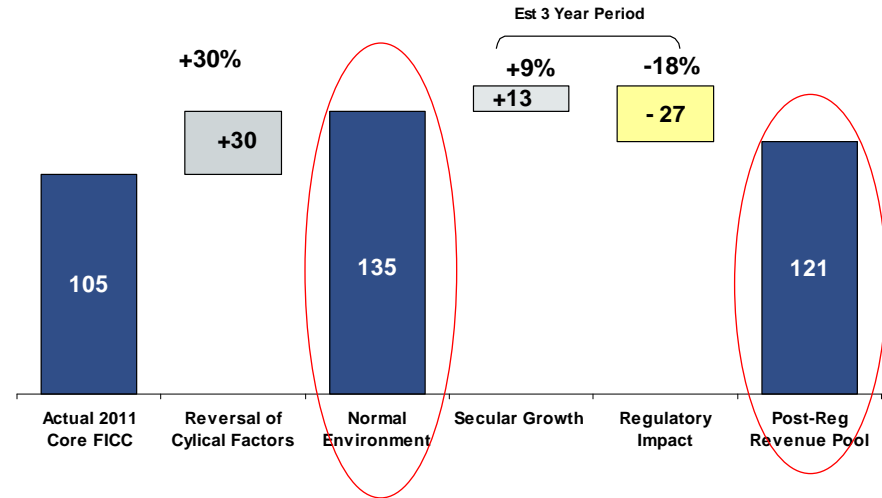


# We Estimate Normal FICC Revenues of \$135 billion

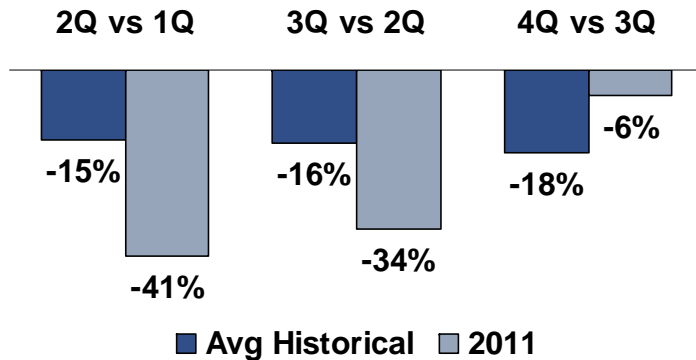
**Historic Core global FICC Revenue Pool (in \$billions)**



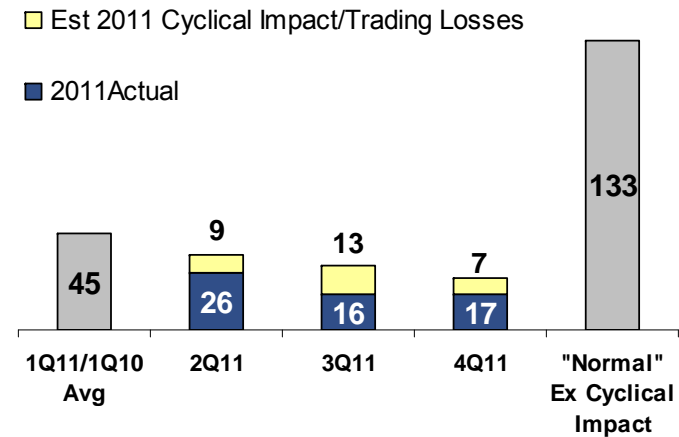
**Estimated Change in global FICC Revenue Pool (in \$billions)**



**FICC Seasonality 2002-2010**



**We see ~\$135 billion in normal revenues prior to regulatory reform**





# Top Players Continue to Gain Market Share....

## Global Core Fixed Income Trading Revenue Market Share 2006-2011

<b>Core FICC</b>	<b>2006</b>	<b>2007</b>	<b>1H08</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
JP Morgan	9.3%	9.1%	8.1%	10.1%	11.4%	14.1%
Deutsche Bank	8.2%	9.7%	11.7%	8.4%	10.4%	11.0%
Barclays	10.2%	14.6%	14.9%	11.0%	10.1%	9.4%
Goldman Sachs	9.6%	11.5%	12.2%	13.8%	10.4%	8.2%
BofA	9.9%	9.9%	8.8%	9.0%	9.7%	8.0%
BNP	2.7%	3.5%	3.6%	6.1%	5.5%	6.0%
RBS	10.8%	9.7%	5.4%	7.3%	6.1%	6.0%
Morgan Stanley	6.8%	6.6%	5.9%	4.7%	5.7%	6.0%
UBS	4.8%	2.4%	1.5%	1.5%	3.7%	4.7%
HSBC	3.6%	3.2%	4.7%	4.7%	4.6%	4.5%
Credit Suisse	5.6%	5.3%	4.1%	5.2%	5.1%	4.3%
Nomura	3.5%	2.7%	2.7%	1.5%	2.2%	3.0%
Soc Gen	2.1%	1.9%	2.9%	2.8%	2.5%	2.6%
Credit Agricole	2.3%	2.0%	1.5%	1.8%	1.6%	1.7%

# 2011 FICC ROEs

- Returns on fully-loaded Basel 3 basis
- FICC ROEs averaged 7% in 2011, driven by cyclical weakness (low volumes & 2H11 trading losses)
- ROEs ranged from 3-16%, with weakest players in the 3-6% range

## 2011 FICC Returns

2011 (US\$ bil)	JPM	MS	GS	BAC	CS	UBS	DBK	BARC	Total	Avg
<b>FICC Revenues Core</b>	<b>14.8</b>	<b>6.3</b>	<b>8.6</b>	<b>8.4</b>	<b>5.5</b>	<b>5.1</b>	<b>11.5</b>	<b>10.1</b>	<b>70</b>	
<i>Revenues/Mitigated FICC RWA</i>	5.0%	2.2%	2.3%	3.3%	4.4%	4.5%	3.6%	3.6%	3.6%	3.6%
FICC Comp	5.2	2.9	3.7	4.0	3.0	2.9	5.2	4.6	31	
<i>Comp Ratio</i>	35%	46%	42%	48%	55%	57%	45%	45%	45%	47%
FICC Non-Comp	2.7	2.2	2.9	2.7	2.0	1.3	1.9	1.6	17	2.2
FICC Pretax Income	6.9	1.2	2.0	1.6	0.5	0.9	4.4	4.0	21.5	
<i>Tax rate</i>	35%	35%	35%	35%	25%	25%	31%	25%	32%	
Tax	(2.4)	(0.4)	(0.7)	(0.6)	(0.1)	(0.2)	(1.4)	(1.0)	(6.8)	
<b>FICC Net Income</b>	<b>4.5</b>	<b>0.8</b>	<b>1.3</b>	<b>1.0</b>	<b>0.3</b>	<b>0.7</b>	<b>3.0</b>	<b>3.0</b>	<b>14.7</b>	
Tier 1 Common Minimum (Basel 3 est)	9.5%	9.0%	9.0%	9.0%	10.0%	10.0%	10.0%	10.0%	9.5%	10%
<u>Basel 3 Pro Forma FICC RWAs</u>										
Gross FICC RWA	350	363	465	450	180	160	403	364	2,735	
Est Mitigated FICC RWA	296	289	376	250	125	112	318	283	2,049	
<i>% Mitigation</i>	-15%	-20%	-19%	-44%	-31%	-30%	-21%	-22%	-25%	-25%
<b>Basel 3 ROTE - FICC (Mitigated)</b>	<b>16%</b>	<b>3%</b>	<b>4%</b>	<b>5%</b>	<b>3%</b>	<b>6%</b>	<b>10%</b>	<b>11%</b>	<b>7%</b>	<b>7%</b>

# “Normalized” Returns – Post-Regulatory Environment

- Post-regulatory reform ROEs average ~12%
- This is the result of a 15-20% hit to revenues from regulatory reform impacts
- The best firms globally generate ROEs in the 14-16% range









































Normal FICC Returns - Post-Regulatory Reform Impact

Post Regulatory (US \$ bil)	JPM	MS	GS	BAC	CS	UBS	DBK	BARC	Top 8	Avg
2011 FICC Revs	14.8	6.3	8.6	8.4	5.5	5.1	11.5	10.1	70	
Normal FICC Revs Pre-Regulation	19.9	9.6	15.5	12.5	7.4	5.9	17.0	15.5	103	
Est Reg Impact	-20%	-20%	-20%	-20%	-15%	-15%	-15%	-15%	-18%	-18%
<b>Normal FICC Revs Post Regulation</b>	<b>15.9</b>	<b>7.7</b>	<b>12.4</b>	<b>10.0</b>	<b>6.3</b>	<b>5.0</b>	<b>14.4</b>	<b>13.2</b>	<b>85</b>	
Est Post Reg Market Share	13.1%	6.3%	10.2%	8.2%	5.2%	4.1%	11.8%	10.8%	69.8%	
Revenues to Mitigated FICC RWA	5.4%	3.1%	3.8%	4.0%	5.0%	4.5%	4.5%	4.7%		4.4%
FICC Comp	5.7	2.9	4.6	3.8	2.4	1.9	5.3	4.9	32	
Comp Ratio	36%	38%	37%	38%	38%	38%	37%	37%	37%	37%
FICC Non-Comp	3.1	2.5	3.4	3.1	2.3	1.5	2.2	1.8	20	
FICC Pretax Income	7.1	2.2	4.4	3.1	1.6	1.6	6.9	6.5	33	
Tax rate	35%	35%	35%	35%	35%	35%	35%	35%	35%	
Tax	(2.5)	(0.8)	(1.6)	(1.1)	(0.5)	(0.6)	(2.4)	(2.3)	(12)	
<b>FICC Net Income</b>	<b>4.6</b>	<b>1.4</b>	<b>2.9</b>	<b>2.0</b>	<b>1.0</b>	<b>1.0</b>	<b>4.5</b>	<b>4.2</b>	<b>22</b>	
Tier 1 Common Minimum	9.5%	9.0%	9.0%	9.0%	10.0%	10.0%	10.0%	10.0%	9.5%	10%
<u>Basel 3 Pro Forma FICC RWAs</u>										
Est Mitigated FICC RWA (1)	296	250	325	250	125	112	318	283	1,959	
% Mitigation	-15%	-31%	-30%	-44%	-31%	-30%	-21%	-22%	-28%	-28%
<b>Basel 3 ROTE - FICC (Mitigated)</b>	<b>16%</b>	<b>6%</b>	<b>10%</b>	<b>9%</b>	<b>8%</b>	<b>9%</b>	<b>14%</b>	<b>15%</b>	<b>12%</b>	11%

(1) Note for GS & MS we estimate an incremental \$40 billion and \$50 billion of active/RWA modeling mitigation benefits, respectively.

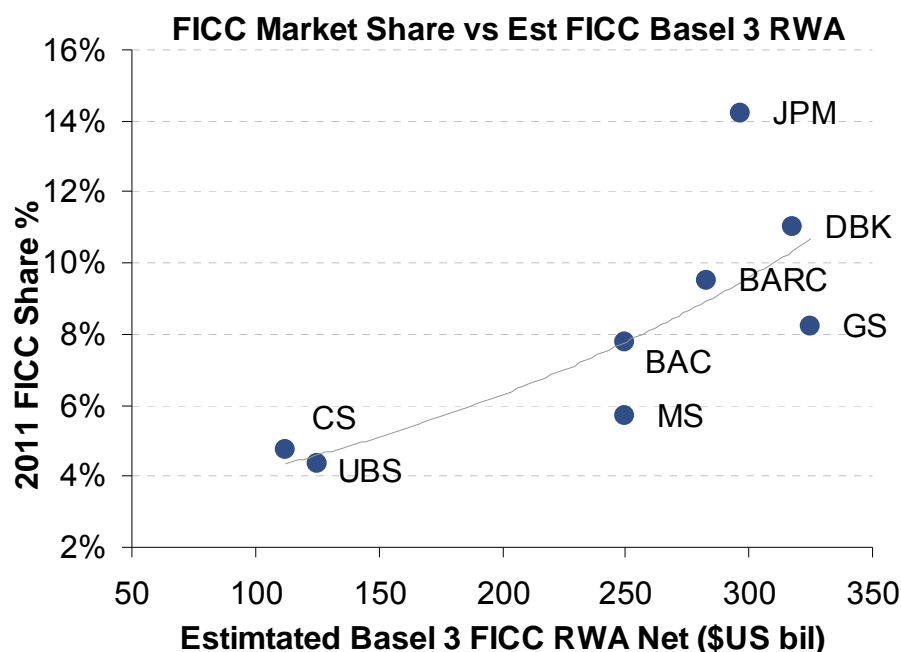
# Sources of Competitive Advantage

- Electronic execution and technology leadership will be sources of competitive advantage in a highly regulated world
- Firms with the ability to streamline processing, leverage flow/increase capacity, and enhance their risk architecture will be best-positioned
- This is not just a function of building out existing connectivity, but getting ahead of regulatory reform

Competitive	BAC	GS	JPM	MS	BARC	DB	CS	UBS
Electronic Execution / Technology								
Clearing & Collateral Mgmt Platform								
Franchise Presence (Depth & Mix)								
Emerging Markets								
Corporate Connectivity								

## ....And Higher Market Share Drives Greater RWA Usage

- RWA efficiency will be a significant factor for optimizing fixed income trading returns, and success so far varies widely.
- Players with relatively high-flow oriented businesses (JPM, BARC, DB) rank relatively well on unit of RWA per unit of fixed income trading market share
- JPM seems to be generating much more revenue and revenue share than its RWA levels would seem to predict



**FICC Market Share Summary**

	Est		
	2010	2011	Normal
JPM	11.4%	14.1%	13.5%
DBK	10.4%	11.0%	11.5%
BARC	10.1%	9.7%	10.5%
GS	10.4%	8.2%	10.5%
BAC	9.7%	8.0%	8.5%
MS	5.7%	6.0%	6.5%
CS	5.1%	5.2%	5.0%
UBS	3.7%	4.8%	4.0%
Top 8	66.3%	66.9%	70.0%
Top 4	42.3%	42.9%	46.0%

# Disclosures

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## **Barclays PLC (BARC.L; £3.25; 1)**

### Valuation

We set our target price at 325p based on a two-stage dividend discount approach combined with a capital-adjusted warranted-equity valuation to calculate a terminal value. This target price represents 0.9x 2012E TBV per share, and a 2012E P/E of 11x, a small premium to the sector average.

### Risks

Barclays has exposure to higher-risk banking activities, such as derivatives, but this is offset by its lower-risk banking activities such as the UK mortgage market. There are several risks that could cause the share price to deviate significantly from our target price, including the risks of adverse regulatory changes, a significant UK economic double-dip recession, or a renewed bout of Eurozone sovereign concerns. If the impact of these risk factors is more/less negative than we anticipate, then the share price might fail to reach/rise above our target price.

## **Deutsche Bank (DBKGn.DE; €29.09; 2)**

### Valuation

We have a €39 price target for Deutsche Bank shares based on our warranted equity valuation (WEV) methodology, taking an average of the value derived from using stated and tangible financials. We use a cost of equity of CIB operations of 13% to reflect the impact of funding pressures to the business model. Our key assumptions are highlighted as follows: a sustainable tangible RoE of 11%, a cost of equity of 11%, a capital shortfall of 5bn and a 2012E TBVPS of €43.3

### Risks

The key risks to our investment thesis on Deutsche Bank are: (1) the size of provisions related to the reclassified leveraged finance and commercial real estate assets, which are dependent on the macro scenario; (2) the realised level of organic capital generation over the coming quarters or additional regulatory requirements, which will determine any need to raise capital; (3) the pace of the turnaround in the asset & wealth management operation; and (4) the resilience of capital market revenues. If any of these risk factors has a greater downside impact than we anticipate, the share price will likely have difficulty attaining our target price. Conversely, if the impact of any of these upside risks is greater than we anticipate, the stock could exceed our target price.

# Disclosures

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## JP Morgan Chase & Co (JPM; US\$33.15; 1)

### Valuation

Our \$45 target price is derived from our discounted residual income model, which values an enterprise based on its discounted excess returns over its cost of equity. The key input to the model is a CAPM derived cost of equity of approximately 14%. We also incorporate an estimate long-term ROTE of 16%, which reflects normalized long-term returns on JPM's unique business mix. We assume a circa 3% long-term growth rate.

### Risks

Key risks to JP Morgan are largely due its exposure to the U.S. consumer and expectation of further consumer weakness, as well as its sizable exposure to high risk/high growth market-sensitive businesses, offset by a very strong capital position and excellent management team. These risks, however, are partially mitigated by a relatively diversified business model and a strong retail and commercial franchise. JP Morgan also has relatively large investment banking and consumer credit exposure. If economic growth is meaningfully below our expectations, volumes may be lower than we expect and credit costs may be higher. Other risks include a prolonged decline in U.S. capital markets activity and asset valuations.

### Company-specific negative risks:

*Severe slowdown in investment banking and capital markets; Significant credit costs due to a prolonged and deep economic recession; An expensive/poorly executed acquisition — Although we view JP Morgan as a disciplined acquirer, possible pursuit of a new acquisition target at a rich price is also a risk.; Geopolitical risks given JP Morgan's international exposures.*

If the impact on the company from any of these factors proves to be greater/less than we anticipate, it may prevent the stock from achieving our target price or could cause our target price to be materially outperformed.

# Disclosures

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A member of the household of Keith Horowitz, CFA, Analyst, holds a long position in the securities of JP Morgan Chase & Co.

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# Appendix A-1

## Analyst Certification

The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this report.

## IMPORTANT DISCLOSURES

### Barclays PLC (BARC.L)

#### Ratings and Target Price History

#### Fundamental Research

Analyst: Andrew Coombs

Covered since July 6 2011



Date	Rating	Target Price	Closing Price
1 12-Jan-10	*1M	*4.13	3.17
2 15-Feb-10	1M	*4.20	2.75
3 20-Apr-10	1M	*4.70	3.73
4 30-Jul-10	1M	*4.42	3.33
5 9-Sep-10	*2M	*3.50	3.23
6 8-Dec-10	2M	*2.54	2.64

\* Indicates change

Date	Rating	Target Price	Closing Price
7 23-Feb-11	2M	*3.38	3.19
8 13-May-11	*1M	*3.24	2.74
9 6-Jul-11	1M	*3.10	2.50
10 21-Sep-11	1M	*2.90	1.53
11 7-Oct-11	Stock rating system changed		
12 8-Oct-11	*1	2.90	1.85

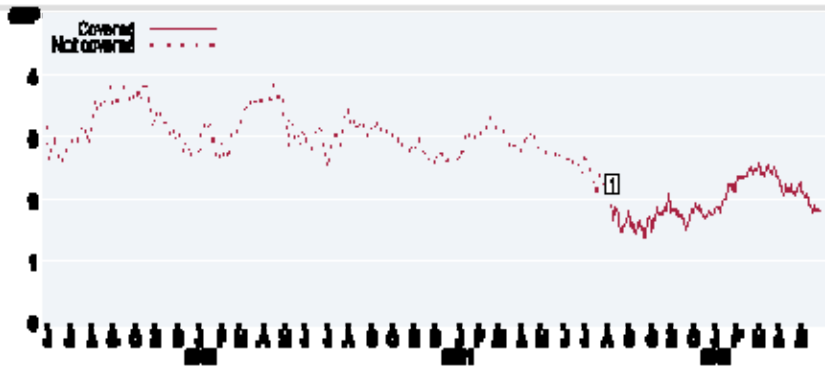
Date	Rating	Target Price	Closing Price
13 12-Oct-11	1	*2.25	1.87
14 1-Nov-11	1	*2.30	1.77
15 10-Jan-12	1	*2.46	1.88
16 7-Feb-12	1	*2.75	2.37
17 16-Feb-12	1	*3.00	2.42
18 30-Apr-12	1	*3.25	2.18

Rating/target price changes above reflect Eastern Standard Time

**Barclays PLC (BARC.L)**  
**Rating and Target Price History**  
 Best Ideas Research  
 Relative Call (9 Months)  
 Analyst: Andrew Gosselin  
 Created date: July 9 2011

	Date	Rating	Target Price	Current Price
(1)	9-Aug-11	Hold	120.00	120.00

\* Initial ratings

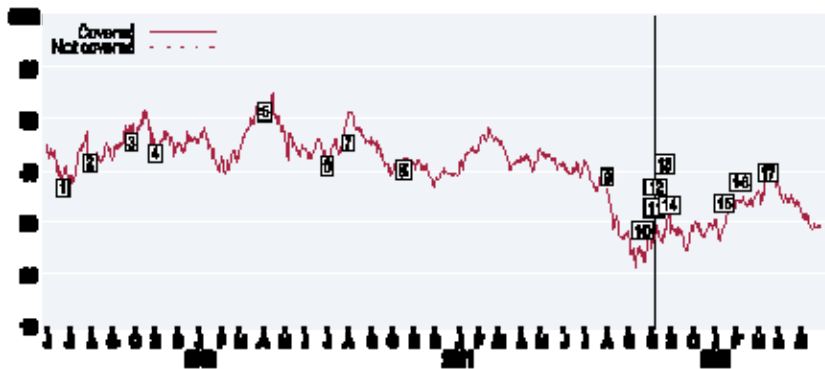


Rating and target price changes since introduction Standard Time

**Deutsche Bank (DBK02n.DE)**  
**Rating and Target Price History**  
 Fundamental Research  
 Analyst: Klaus Lohnd  
 Created date: December 8 2010

	Date	Rating	Target Price	Current Price
(1)	10-Jan-08	Hold	100.00	90.00
(2)	10-Jul-08	Hold	100.00	90.00
(3)	10-Sep-08	Hold	100.00	90.00
(4)	10-Nov-08	Hold	100.00	90.00
(5)	10-Dec-08	Hold	100.00	90.00
(6)	10-Jan-09	Hold	100.00	90.00

\* Initial ratings



Rating and target price changes since introduction Standard Time

	Date	Rating	Target Price	Current Price
(7)	10-Sep-09	Hold	100.00	90.00
(8)	10-Oct-09	Hold	100.00	90.00
(9)	10-Nov-09	Hold	100.00	90.00
(10)	10-Dec-09	Hold	100.00	90.00
(11)	10-Jan-10	Hold	100.00	90.00
(12)	10-Feb-10	Hold	100.00	90.00
(13)	10-Mar-10	Hold	100.00	90.00
(14)	10-Apr-10	Hold	100.00	90.00
(15)	10-May-10	Hold	100.00	90.00
(16)	10-Jun-10	Hold	100.00	90.00
(17)	10-Jul-10	Hold	100.00	90.00
(18)	10-Aug-10	Hold	100.00	90.00
(19)	10-Sep-10	Hold	100.00	90.00
(20)	10-Oct-10	Hold	100.00	90.00
(21)	10-Nov-10	Hold	100.00	90.00
(22)	10-Dec-10	Hold	100.00	90.00
(23)	10-Jan-11	Hold	100.00	90.00
(24)	10-Feb-11	Hold	100.00	90.00
(25)	10-Mar-11	Hold	100.00	90.00
(26)	10-Apr-11	Hold	100.00	90.00
(27)	10-May-11	Hold	100.00	90.00
(28)	10-Jun-11	Hold	100.00	90.00
(29)	10-Jul-11	Hold	100.00	90.00
(30)	10-Aug-11	Hold	100.00	90.00
(31)	10-Sep-11	Hold	100.00	90.00
(32)	10-Oct-11	Hold	100.00	90.00
(33)	10-Nov-11	Hold	100.00	90.00
(34)	10-Dec-11	Hold	100.00	90.00
(35)	10-Jan-12	Hold	100.00	90.00
(36)	10-Feb-12	Hold	100.00	90.00
(37)	10-Mar-12	Hold	100.00	90.00
(38)	10-Apr-12	Hold	100.00	90.00
(39)	10-May-12	Hold	100.00	90.00
(40)	10-Jun-12	Hold	100.00	90.00
(41)	10-Jul-12	Hold	100.00	90.00
(42)	10-Aug-12	Hold	100.00	90.00
(43)	10-Sep-12	Hold	100.00	90.00
(44)	10-Oct-12	Hold	100.00	90.00
(45)	10-Nov-12	Hold	100.00	90.00
(46)	10-Dec-12	Hold	100.00	90.00
(47)	10-Jan-13	Hold	100.00	90.00
(48)	10-Feb-13	Hold	100.00	90.00
(49)	10-Mar-13	Hold	100.00	90.00
(50)	10-Apr-13	Hold	100.00	90.00
(51)	10-May-13	Hold	100.00	90.00
(52)	10-Jun-13	Hold	100.00	90.00
(53)	10-Jul-13	Hold	100.00	90.00
(54)	10-Aug-13	Hold	100.00	90.00
(55)	10-Sep-13	Hold	100.00	90.00
(56)	10-Oct-13	Hold	100.00	90.00
(57)	10-Nov-13	Hold	100.00	90.00
(58)	10-Dec-13	Hold	100.00	90.00
(59)	10-Jan-14	Hold	100.00	90.00
(60)	10-Feb-14	Hold	100.00	90.00
(61)	10-Mar-14	Hold	100.00	90.00
(62)	10-Apr-14	Hold	100.00	90.00
(63)	10-May-14	Hold	100.00	90.00
(64)	10-Jun-14	Hold	100.00	90.00
(65)	10-Jul-14	Hold	100.00	90.00
(66)	10-Aug-14	Hold	100.00	90.00
(67)	10-Sep-14	Hold	100.00	90.00
(68)	10-Oct-14	Hold	100.00	90.00
(69)	10-Nov-14	Hold	100.00	90.00
(70)	10-Dec-14	Hold	100.00	90.00
(71)	10-Jan-15	Hold	100.00	90.00
(72)	10-Feb-15	Hold	100.00	90.00
(73)	10-Mar-15	Hold	100.00	90.00
(74)	10-Apr-15	Hold	100.00	90.00
(75)	10-May-15	Hold	100.00	90.00
(76)	10-Jun-15	Hold	100.00	90.00
(77)	10-Jul-15	Hold	100.00	90.00
(78)	10-Aug-15	Hold	100.00	90.00
(79)	10-Sep-15	Hold	100.00	90.00
(80)	10-Oct-15	Hold	100.00	90.00
(81)	10-Nov-15	Hold	100.00	90.00
(82)	10-Dec-15	Hold	100.00	90.00
(83)	10-Jan-16	Hold	100.00	90.00
(84)	10-Feb-16	Hold	100.00	90.00
(85)	10-Mar-16	Hold	100.00	90.00
(86)	10-Apr-16	Hold	100.00	90.00
(87)	10-May-16	Hold	100.00	90.00
(88)	10-Jun-16	Hold	100.00	90.00
(89)	10-Jul-16	Hold	100.00	90.00
(90)	10-Aug-16	Hold	100.00	90.00
(91)	10-Sep-16	Hold	100.00	90.00
(92)	10-Oct-16	Hold	100.00	90.00
(93)	10-Nov-16	Hold	100.00	90.00
(94)	10-Dec-16	Hold	100.00	90.00
(95)	10-Jan-17	Hold	100.00	90.00
(96)	10-Feb-17	Hold	100.00	90.00
(97)	10-Mar-17	Hold	100.00	90.00
(98)	10-Apr-17	Hold	100.00	90.00
(99)	10-May-17	Hold	100.00	90.00
(100)	10-Jun-17	Hold	100.00	90.00
(101)	10-Jul-17	Hold	100.00	90.00
(102)	10-Aug-17	Hold	100.00	90.00
(103)	10-Sep-17	Hold	100.00	90.00
(104)	10-Oct-17	Hold	100.00	90.00
(105)	10-Nov-17	Hold	100.00	90.00
(106)	10-Dec-17	Hold	100.00	90.00
(107)	10-Jan-18	Hold	100.00	90.00
(108)	10-Feb-18	Hold	100.00	90.00
(109)	10-Mar-18	Hold	100.00	90.00
(110)	10-Apr-18	Hold	100.00	90.00
(111)	10-May-18	Hold	100.00	90.00
(112)	10-Jun-18	Hold	100.00	90.00
(113)	10-Jul-18	Hold	100.00	90.00
(114)	10-Aug-18	Hold	100.00	90.00
(115)	10-Sep-18	Hold	100.00	90.00
(116)	10-Oct-18	Hold	100.00	90.00
(117)	10-Nov-18	Hold	100.00	90.00
(118)	10-Dec-18	Hold	100.00	90.00
(119)	10-Jan-19	Hold	100.00	90.00
(120)	10-Feb-19	Hold	100.00	90.00
(121)	10-Mar-19	Hold	100.00	90.00
(122)	10-Apr-19	Hold	100.00	90.00
(123)	10-May-19	Hold	100.00	90.00
(124)	10-Jun-19	Hold	100.00	90.00
(125)	10-Jul-19	Hold	100.00	90.00
(126)	10-Aug-19	Hold	100.00	90.00
(127)	10-Sep-19	Hold	100.00	90.00
(128)	10-Oct-19	Hold	100.00	90.00
(129)	10-Nov-19	Hold	100.00	90.00
(130)	10-Dec-19	Hold	100.00	90.00
(131)	10-Jan-20	Hold	100.00	90.00
(132)	10-Feb-20	Hold	100.00	90.00
(133)	10-Mar-20	Hold	100.00	90.00
(134)	10-Apr-20	Hold	100.00	90.00
(135)	10-May-20	Hold	100.00	90.00
(136)	10-Jun-20	Hold	100.00	90.00
(137)	10-Jul-20	Hold	100.00	90.00
(138)	10-Aug-20	Hold	100.00	90.00
(139)	10-Sep-20	Hold	100.00	90.00
(140)	10-Oct-20	Hold	100.00	90.00
(141)	10-Nov-20	Hold	100.00	90.00
(142)	10-Dec-20	Hold	100.00	90.00
(143)	10-Jan-21	Hold	100.00	90.00
(144)	10-Feb-21	Hold	100.00	90.00
(145)	10-Mar-21	Hold	100.00	90.00
(146)	10-Apr-21	Hold	100.00	90.00
(147)	10-May-21	Hold	100.00	90.00
(148)	10-Jun-21	Hold	100.00	90.00
(149)	10-Jul-21	Hold	100.00	90.00
(150)	10-Aug-21	Hold	100.00	90.00
(151)	10-Sep-21	Hold	100.00	90.00
(152)	10-Oct-21	Hold	100.00	90.00
(153)	10-Nov-21	Hold	100.00	90.00
(154)	10-Dec-21	Hold	100.00	90.00
(155)	10-Jan-22	Hold	100.00	90.00
(156)	10-Feb-22	Hold	100.00	90.00
(157)	10-Mar-22	Hold	100.00	90.00
(158)	10-Apr-22	Hold	100.00	90.00
(159)	10-May-22	Hold	100.00	90.00
(160)	10-Jun-22	Hold	100.00	90.00
(161)	10-Jul-22	Hold	100.00	90.00
(162)	10-Aug-22	Hold	100.00	90.00
(163)	10-Sep-22	Hold	100.00	90.00
(164)	10-Oct-22	Hold	100.00	90.00
(165)	10-Nov-22	Hold	100.00	90.00
(166)	10-Dec-22	Hold	100.00	90.00
(167)	10-Jan-23	Hold	100.00	90.00
(168)	10-Feb-23	Hold	100.00	90.00
(169)	10-Mar-23	Hold	100.00	90.00
(170)	10-Apr-23	Hold	100.00	90.00
(171)	10-May-23	Hold	100.00	90.00
(172)	10-Jun-23	Hold	100.00	90.00
(173)	10-Jul-23	Hold	100.00	90.00
(174)	10-Aug-23	Hold	100.00	90.00
(175)	10-Sep-23	Hold	100.00	90.00
(176)	10-Oct-23	Hold	100.00	90.00
(177)	10-Nov-23	Hold	100.00	90.00
(178)	10-Dec-23	Hold	100.00	90.00
(179)	10-Jan-24	Hold	100.00	90.00
(180)	10-Feb-24	Hold	100.00	90.00
(181)	10-Mar-24	Hold	100.00	90.00
(182)	10-Apr-24	Hold	100.00	90.00
(183)	10-May-24	Hold	100.00	90.00
(184)	10-Jun-24	Hold	100.00	90.00
(185)	10-Jul-24	Hold	100.00	90.00
(186)	10-Aug-24	Hold	100.00	90.00
(187)	10-Sep-24	Hold	100.00	90.00
(188)	10-Oct-24	Hold	100.00	90.00
(189)	10-Nov-24	Hold	100.00	90.00
(190)	10-Dec-24	Hold	100.00	90.00
(191)	10-Jan-25	Hold	100.00	90.00
(192)	10-Feb-25	Hold	100.00	90.00
(193)	10-Mar-25	Hold	100.00	90.00
(194)	10-Apr-25	Hold	100.00	90.00
(195)	10-May-25	Hold	100.00	90.00
(196)	10-Jun-25	Hold	100.00	90.00
(197)	10-Jul-25	Hold	100.00	90.00
(198)	10-Aug-25	Hold	100.00	90.00
(199)	10-Sep-25	Hold	100.00	90.00
(200)	10-Oct-25	Hold	100.00	90.00
(201)	10-Nov-25	Hold	100.00	90.00
(202)	10-Dec-25	Hold	100.00	90.00
(203)	10-Jan-26	Hold	100.00	90.00
(204)	10-Feb-26	Hold	100.00	90.00
(205)	10-Mar-26	Hold	100.00	90.00
(206)	10-Apr-26	Hold	100.00	90.00
(207)	10-May-26	Hold	100.00	90.00
(208)	10-Jun-26	Hold	100.00	90.00
(209)	10-Jul-26	Hold	100.00	90.00
(210)	10-Aug-26	Hold	100.00	90.00
(211)	10-Sep-26	Hold	100.00	90.00
(212)	10-Oct-26	Hold	100.00	90.00
(213)	10-Nov-26	Hold	100.00	90.00
(214)	10-Dec-26	Hold	100.00	90.00
(215)	10-Jan-27	Hold	100.00	90.00
(216)	10-Feb-27	Hold	100.00	90.00
(217)	10-Mar-27	Hold	100.00	90.00
(218)	10-Apr-27	Hold	100.00	90.00
(219)	10-May-27	Hold	100.00	90.00
(220)	10-Jun-27	Hold	100.00	90.00
(221)	10-Jul-27	Hold	100.00	90.00
(222)	10-Aug-27	Hold	100.00	90.00
(223)	10-Sep-27	Hold	100.00	90.00
(224)	10-Oct-27	Hold	100.00	90.00
(225)	10-Nov-27	Hold	100.00	90.00
(226)	10-Dec-27	Hold	100.00	90.00
(227)	10-Jan-28	Hold	100.00	90.00
(228)	10-Feb-28	Hold	100.00	90.00
(229)	10-Mar-28	Hold	100.00	90.00
(230)	10-Apr-28	Hold	100.00	90.00
(231)	10-May-28	Hold	100.00	90.00
(232)	10-Jun-28	Hold	100.00	90.00
(233)	10-Jul-28	Hold	100.00	90.00
(234)	10-Aug-28	Hold	100.00	90.00
(235)	10-Sep-28	Hold	100.00	90.00
(236)	10-Oct-28	Hold	100.00	90.00
(237)	10-Nov-28	Hold	100.00	90.00
(238)	10-Dec-28	Hold	100.00	90.00
(239)	10-Jan-29	Hold	100.00	90.00
(240)	10-Feb-29	Hold	100.00	90.00
(241)	10-Mar-29	Hold	100.00	90.00
(242)	10-Apr-29	Hold	100.00	90.00
(243)	10-May-29	Hold	100.00	90.00
(244)	10-Jun-29	Hold	100.00	90.00
(245)	10-Jul-29	Hold	100.00	90.00
(246)	10-Aug-29	Hold	100.00	90.00
(247)	10-Sep-29	Hold	100.00	90.00
(248)	10-Oct-29	Hold	100.00	90.00
(249)	10-Nov-29	Hold	100.00	90.00
(250)	10-Dec-29	Hold	100.00	90.00
(251)	10-Jan-30	Hold	100.00	90.00
(252)	10-Feb-30	Hold	100.00	90.00
(253)	10-Mar-30	Hold	100.00	90.00
(254)	10-Apr-30	Hold	100.00	90.00
(255)	10-May-30	Hold	100.00	90.00

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The chart displays the percentage of time the U.S. dollar is covered by the IMF from 1990 to 2003. The Y-axis represents the percentage, ranging from 0 to 100. The X-axis shows the years from 1990 to 2003. The 'Covered' line (solid) is consistently high, near 100%. The 'Not covered' line (dashed) fluctuates between approximately 20% and 80%.

Year	Covered (%)	Not covered (%)
1990	100	60
1991	100	50
1992	100	60
1993	100	70
1994	100	60
1995	100	70
1996	100	60
1997	100	70
1998	100	80
1999	100	60
2000	100	50
2001	100	60
2002	100	70
2003	100	60

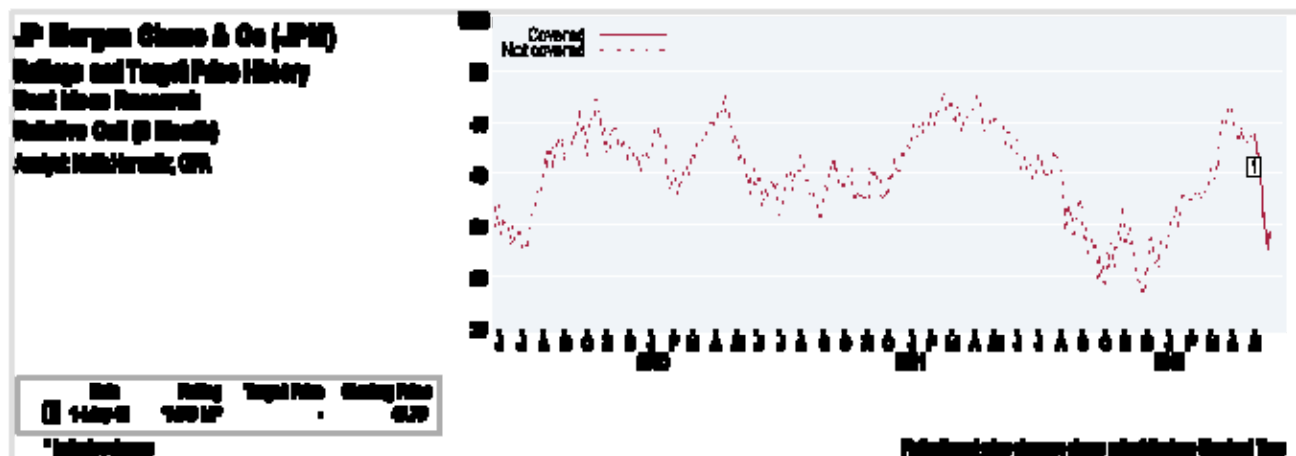
**Advanced Health Insurance, CPA**

Legend:  
 Covered (solid red line)  
 Not covered (dashed red line)

Year	Covered (Persons)	Not covered (Persons)
1980	~25,000	~25,000
1981	~35,000	~35,000
1982	~45,000	~45,000
1983	~55,000	~55,000
1984	~65,000	~65,000
1985	~75,000	~75,000
1986	~65,000	~65,000
1987	~55,000	~55,000
1988	~45,000	~45,000
1989	~35,000	~35,000
1990	~25,000	~25,000

	Date	Rating	Target Price	Current Price
1	05-04-11	1	75.00	61.00
2	07-06-09	1	75.00	61.00
3	08-16-09	1	75.00	61.00
4	09-16-09	1	75.00	61.00
5	11-09-09	1	75.00	61.00

**Polymers that change shape when heated**—**Worked Example**



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*Data current as of 31 Mar 2012*

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*% of companies in each rating category that are investment banking clients*

12 Month Rating			Relative Rating		
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52%	37%	11%	10%	79%	10%
44%	42%	40%	47%	42%	43%

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