Financial Sector Evolution in the New Regulatory Environment

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Capital and Liquidity Provision

ULTIMATE USER OF CAPITAL (ISSUER-BORROWER)

BANK

INVESTMENT COMPANIES
(CLO-SPV, ETF, Mutual Fund, Hedge Fund, REIT, BDC, PE, VC)

ULTIMATE INVESTORS
payment and settlement

credit provision with maturity transformation

other trading
underwriting
market making
hedging

Volcker boundary of U.S. banking system
Policy changes affecting market structure

- Bank capital and liquidity rules (Basel, CCARs)
- Bank activity limits (Volcker, merchant banking)
- Derivatives market competition, transparency
- Collateral, central clearing, counterparty limits
- Monetary policy (ZLB, LSAP, RRP)
Fraction of U.S. Private Credit Provided by Banks

Data Source: Federal Reserve, BIS, adjusted for breakpoints
Annual Growth Rate of U.S. Private Credit Provided

By non-banks

By banks

Data Source: Federal Reserve, BIS, adjusted for breakpoints
Exhibit 12

Historical and forecast Wholesale industry revenue pools
1993-2016E, $BN

Exhibit 13

Base/ bull/ bear macroeconomic scenarios

<table>
<thead>
<tr>
<th>Economic growth</th>
<th>Base case</th>
<th>Bull case</th>
<th>Bear case</th>
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<tbody>
<tr>
<td>Economic growth</td>
<td>• Continued growth and recovery in US and European economies</td>
<td>• Strong recovery in growth and employment across G10 economies</td>
<td>• Failure of US / European economies to consolidate on green shoots of H2 2013</td>
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<td></td>
<td>• Modest investment and wage growth</td>
<td>• Rising inflation in Eurozone and Japan boosting consumer spending</td>
<td>• Disorderly unwind of taper causes further damage to Rates businesses and across EM</td>
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<td>• Less impressive story in EM as capital outflows continue and political disruption damages growth outlook; but widespread disruption avoided</td>
<td>• Improved outlook for China with easing of fears over debt ratios</td>
<td>• AQR in Eurozone adds pressure to scale of European bank operations</td>
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<td>• Limited impact on real economy for EM from currency volatility and investor flows</td>
<td>• Equity market downturn reverses much of the gains in Equities and IBD</td>
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<td>Regulation</td>
<td>• Rates markets continue to be pressured by OTC reform, but revenue impact bounded</td>
<td>• No new major regulatory shifts</td>
<td>• Remaining regulatory uncertainties fall unfavourably against sector</td>
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<td>• Remaining uncertainties resolved in line with current expectations</td>
<td>• Less painful absorption of remaining regulation with leverage ratios causing only minor disruptions</td>
<td>• Tightening of leverage ratio and capital requirements</td>
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<td>• Investigations into LIBOR / FX disrupting specific markets, but not spreading to wider OTC markets</td>
<td>• Derivative market reforms offset by underlying growth in client demand</td>
<td>• Scrutiny of OTC markets increasing as a result of conduct events (LIBOR / FX investigations)</td>
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2014 revenues

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<tr>
<td>2014 revenues</td>
<td>$230BN</td>
<td>$240BN</td>
<td>$200BN</td>
</tr>
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<td>↓ ~0-5%</td>
<td>↑ 5%</td>
<td>↓ ~10-15%</td>
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Source. Oliver Wyman analysis
Secondary Market Architecture

OTC (dealer as principal)

direct exchange

agency intermediation

asset manager
Hybrid OTC Market Approaches

OTC multilateral trading facilities
(swap execution facility, bond trading platform)
Who handles the bonds?

Data sources. ICI: AUM, bond mutual funds + ETFs. FRBNY: primary dealer daily financing (securities out) of UST + agencies + MBS + corporate bonds (first quarter).
How are REIT assets growing?

Data source: Flow of Funds L127
Larger Business Development Companies

Data source: StreetAuthority
Dealers and Hedge Funds

Data sources. Dealer inventories: FRBNY (March). Fixed income hedge funds AUM (Barclay)
Average daily bond market turnover

Data source: SIFMA
Data Source: Campbell, Li, Im (2014)
BrokerTec: US10YR. TRACE: MBS 30yr FNMA TBA 3%, 3.5%, 4%. CORP 100 most traded IG.
UST10yr: Volume and Volatility

Data sources: CME: UST10yr-VIX. BrokerTec: UST10yr daily volume ($ billions).
Liquidity before and after financial crisis

Liquidity supply $E[L_{ij}] = X_i \gamma_j$:

Price of Liquidity $p_j = \frac{E[X_i \beta_j]}{E[X_i \gamma_j]}$:

- Central dealers affected the most by transparency
- All dealers affected by crisis
Daily Average Volume: Interest Rate Derivatives

Data sources. BIS: OTC Triennial (April), U.S. exchanges Table 23A (March).
Central clearing and trade compression are reducing outstanding derivatives positions.
Risk-weighted assets are limited by available capital $c$. 

RWA: $ax + by \leq c$
The leverage rule could be distortionary, by penalizing safe assets relative to risky assets.
Potential adverse policy implications

2. Ability to safely resolve the failure of new systemic market infrastructure.
3. Uncertainty regarding the efficiency of SEFs/MTFs.
4. Implementation costs (compliance frictions).
5. Atrophied ability of banks to act as shock absorbers?
7. Reaching for yield (distortions and risks).
8. Implications of new monetary tools such as RRP facility for private monitoring efficiency and run risk.
9. New difficulties with international rule harmonization.
Positive policy implications

• Increased financial stability (in most respects).
• Increased ability to compete with large banks and bank affiliates, with associated efficiency benefits.
• Additional effective monetary policy tools.
• Increased market transparency.