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Robert deV. Frierson
Secretary
Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue, NW
Washington, DC 20551

April 30, 2013

Subject: Proposed Rule on Enhanced Prudential Standards and Early Remediation Requirements for Foreign Banking Organizations and Foreign Nonbank Financial Companies; Docket No. R−1438; RIN 7100 AD 86

Ladies and Gentlemen:

Please find enclosed the Oliver Wyman study, *Enhanced Prudential Standards for Foreign Banking Organizations: An Impact Assessment.*

We thank the Board of Governors for their consideration of our findings and recommendations.

Sincerely,

Oliver Wyman | Financial Services

OLIVER WYMAN

ENHANCED PRUDENTIAL STANDARDS FOR FOREIGN BANKING ORGANIZATIONS

AN IMPACT ASSESSMENT

APRIL 30, 2013

MARSH & McLENNAN COMPANIES

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Background and purpose of this study

On December 14, 2012, the Federal Reserve formally proposed new structural requirements and enhanced prudential standards for Foreign Banking Organizations (FBOs) under Sections 165 and 166 of the Dodd-Frank Act (DFA). This study assesses the potential impact of the proposed rule on the US capital markets, focusing on the requirement to establish a US intermediate holding company (IHC) as the umbrella organization for all US operations conducted outside US branches and agencies. The analysis draws on proprietary data collected from 17 FBOs, 15 of which would be affected by the IHC requirements. In aggregate, the participants in this study hold $3.5 TN in US assets through their US-based subsidiaries and branch and agency networks. By our estimates, this covers 70% of the total US assets of institutions that would be subject to the IHC requirements, and is thus a robust sample from which to draw conclusions about the overall population of FBOs. This dataset presents new insights into the level and nature of FBO participation in the US financial system, previously unavailable in the public domain.

The Federal Reserve's proposal articulates a number of benefits to financial stability that this new approach to FBO regulation is intended to achieve. These potential benefits need to be balanced against the costs of the proposed requirements. Our analysis focuses on the potential costs of the rule for the US capital markets, aiming specifically to quantify the effects on the repo markets. We find that these costs are significant within the scope of our narrow analysis and therefore advise further study, as part of the Federal Reserve's continuing review and assessment of the proposal, to evaluate the full spectrum of costs and benefits to the US financial system.

This report was sponsored by the Institute of International Bankers (IIB) and supported by data, interviews, and other information provided by a number of institutions affected by the proposed rule. All findings and recommendations below are solely our own.

1. Executive Summary

The Federal Reserve's proposed structural requirements and enhanced prudential standards for Foreign Banking Organizations (FBOs) would, if adopted, mark a significant change in the way FBOs are regulated in the United States. At the core of the proposal are two requirements:

1. Mandatory creation of an intermediate holding company (IHC) to hold all US bank and non-bank operations, except for branches and agencies
2. Application of US prudential regulations on capital, leverage, and liquidity to each consolidated IHC, with modified requirements for branch and agency networks

The proposed rule would apply prudential requirements developed for, and applicable to, domestic bank holding companies (BHCs) on a consolidated, group-level basis, to the US operations of FBOs conducted outside of their branches and agencies. These operations, held within newly mandated IHCs, would be regulated as though they were top-tier consolidated banking organizations, despite being part of global banking groups that are already subject to consolidated supervision in their home countries.

FBOs play a significant role in the US financial system. Any effective US regulatory regime for FBOs therefore needs to address the potential systemic risks posed by these institutions (or ensure that these risks are addressed by other regulations). The Federal Reserve's proposal is clearly aimed at this important policy objective. However, regulators are also faced with the challenge of balancing the benefits of regulatory reform with its costs. The proposed rule will create frictions for FBOs, the customers they serve, and the broader market.

In this study, we aim to measure these frictions and costs in one specific area – the impact of the proposed rule on the strength and competitiveness of the US capital markets, and in particular the repo markets. Our findings are supported by proprietary data from 17 FBOs that are active in the US capital markets, including 9 of the 12 that conduct primary dealer activities, offering a new perspective on the role played by these institutions in the US today.

Our summary findings are as follows:

- **While representing a significant share of the US capital markets in aggregate, FBOs operate under a spectrum of different business models, legal structures, and strategies.** The structure and scale of FBOs active in the US vary enormously. By association, the systemic risk posed by individual firms covered by the regulation also varies greatly; the activities of some FBOs covered by the proposed rule are very unlikely to pose meaningful systemic risks at all. And for nearly all FBO

subsidiaries, well-capitalized parents, coupled with strong home country regulation, help to mitigate potential risks to the US financial system.

- **FBOs play a critical role in the US capital markets across at least three dimensions – direct lending, capital raising, and market making.** Five of the top ten broker-dealers in the US market are FBO subsidiaries, in part because these institutions provide access to a global network of investors. FBO branches and agencies alone have accounted for as much as 21% of commercial and industrial (C&I) loans outstanding in the US markets since 2000, and share of total loans outstanding has tended to peak in periods of stress or recession. FBOs directly support nearly 40% of debt origination and 30% of equity origination for private and public institutions in the US today. And perhaps most critically for the efficient function of the US capital markets, FBOs account for more than 25% of primary dealer trading activity across US government and agency securities. 12 of the 21 primary dealers registered by the Federal Reserve are owned by FBOs.[1]
- **The proposed rule will likely result in significant capacity withdrawals from the US capital markets.** The proposed rule will introduce new costs and new constraints for all large FBOs active in the US capital markets. We expect US broker-dealer oriented businesses covered by the IHC requirements to be most affected, but the effects will extend to diversified commercial banking businesses as well. The natural, and economically rational, response to these new costs and new constraints will likely be capacity withdrawals from US markets.
- **Capacity withdrawals may translate to negative implications for participants in the US capital markets and broader economy.** We expect capacity withdrawals across direct lending, capital raising, and market making. The most acute effects are likely to be felt in market making and liquidity provision. FBOs execute at least 25% of the primary dealer trading volume in the US government and agency securities; they may be forced to reduce their roles as principal intermediaries in these markets as a result of the constraints imposed by the new rule.
- **We estimate that the proposed rule could lead FBOs to withdraw approximately $330 BN of capacity from US repo markets, representing over 10% of this market.**[2] FBOs currently provide 20-30% of the capacity and a significant share of the market making intermediation in the repo market.

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[1] There are currently 21 primary dealers registered with the New York Fed; of this total, 14 are headquartered outside the United States and 12 are regulated as FBOs (http://www.newyorkfed.org/markets/pridealers_current.html)

[2] Based on overall repo market size estimates by Adam Copeland, Isaac Davis, Eric LeSueur, and Antoine Martin. "Mapping and Sizing the U.S. Repo Market." (June 2012). Available at http://libertystreeteconomics.newyorkfed.org/2012/06/mapping-and-sizing-the-us-repo-market.html

These businesses will come under acute pressure from the proposed leverage requirements, leading to significant capacity withdrawals among the largest FBOs. US repo markets serve as the nexus that links major US securities markets and the US dollar money markets – a capacity reduction on this scale would have cascading effects on the liquidity of every other US financial market.

- **Beyond its direct effects on US capital markets, the proposed rule has the potential to introduce additional systemic risk to the US financial system.** We see potential for the proposed rule to introduce systemic risk in the following ways: (a) further concentrating capital markets activity among domestic and less-regulated financial institutions; (b) reducing the level of capital, funding, and liquidity freely accessible to FBOs and their parent institutions; (c) increasing the risk intensity of the balance sheet as FBOs shift into higher yielding businesses; and (d) reducing diversity in the business models, operating structure, and size of regulated FBOs, leading to a less resilient financial system.

2. Profile of FBOs operating in the US

The current population of FBOs in the US is a structurally diverse group. These institutions have organized their operations to optimize capital and liquidity management at a consolidated level, while supporting a wide range of financial activities through US-based bank and non-bank subsidiaries as well as branch and agency networks. The diversity of individual operating structures, backed by group-level support, has allowed FBOs to serve a variety of functions in the US capital markets. Effective prudential regulation for FBOs should appropriately reflect this diversity of operating models.

Diversity of business and operating models

In aggregate, FBOs maintain a large and important presence across nearly all activities in the US financial system. Individually, these institutions conduct a broad range of activities under diverse business models, legal and management structures, and footprint sizes.

Nearly all FBOs operating in the US house some portion of their assets in branches and agencies, which account for over 35% of total FBO assets in the US.[3] The proposed rule will extend certain prudential standards to branches and agencies of the largest FBOs, particularly requirements to hold a liquidity buffer (sufficient to meet 30 days of stressed cash flow needs, of which a 14-day buffer must be held locally in the US) and report results from home country stress tests to the Fed.

However, the proposed rule focuses more intently on the US operations of covered FBOs that operate within US commercial bank, broker-dealer, or other subsidiaries. All such FBO subsidiaries would need to be transferred into a new holding company structure or IHC. The IHC would then be subject to effectively all of the major prudential and operational requirements of a US BHC on a standalone basis.

This set of IHC requirements will result in major changes in the scope of FBO operations in the US, because:

- The IHC requirements are extensive, touching on all of the core economic dynamics and operational requirements of the associated businesses
- For many FBO subsidiaries, the IHC requirements are substantially different in structure and purpose from the regulatory regimes that these institutions have been operating under, notably the existing SEC capital adequacy framework for broker-dealers

[3] Federal Reserve, SNL Financial, proprietary firm data (2012)

- The proposed rule will transplant requirements that were designed and have evolved to apply to a consolidated global banking group, to a new and artificial subset of businesses and legal entities within a global banking group

Given the significance of this proposed rule and its potentially disruptive effects on covered firms as well as the markets they serve, we focus our analysis on FBOs, and specifically on US subsidiary operations, that will be affected by the IHC requirements. We have collected proprietary information from 15 of the 25 FBOs whose US operations will likely be affected by these requirements. This information includes balance sheet size and composition for major US subsidiaries, as well as the legal, financial, and management relationships among US subsidiaries and the rest of the FBO group. We combine this proprietary data with available public sources to assess the range of different business and structural profiles used by FBOs today.

Below, we categorize FBOs that would be affected by the IHC requirement into three broad groups, based on the size, structure, and business activities of their largest US subsidiaries.

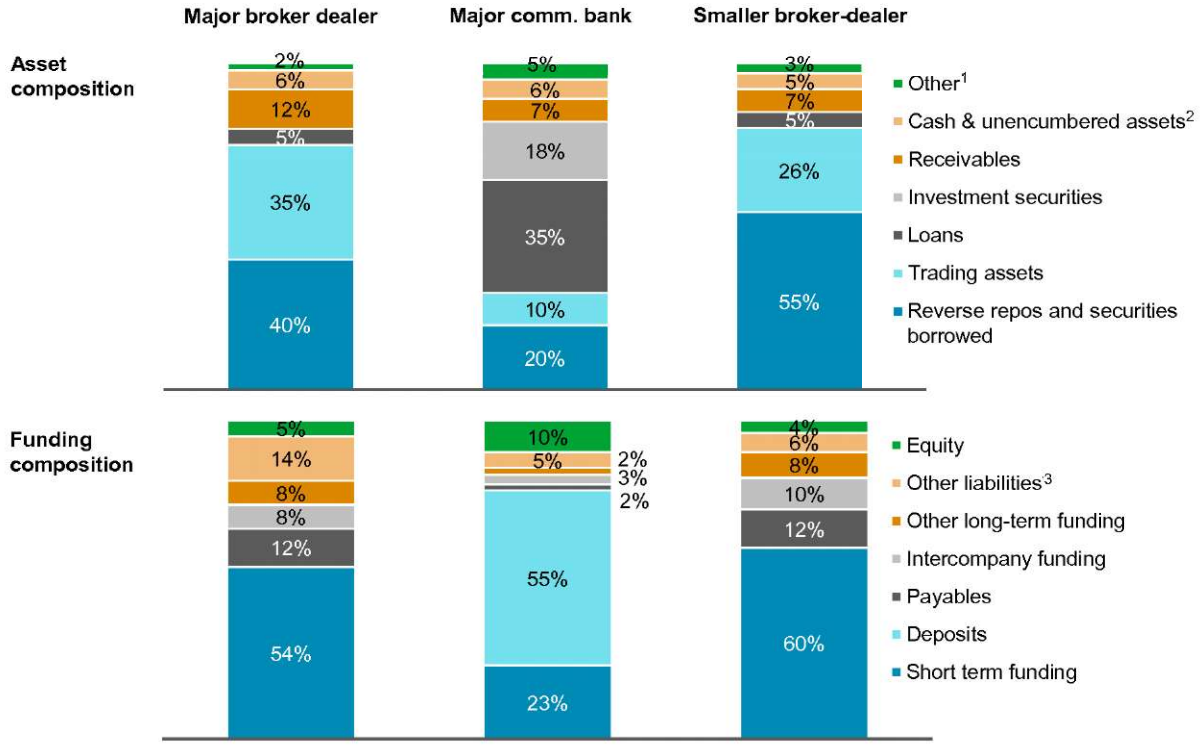
Exhibit 1: Range of FBO profiles affected by the IHC requirement

	Major broker-dealers	Major diversified commercial banking organizations	Smaller broker-dealers
Description	• Total US non-branch and agency assets of >$50 BN • >80% of these assets housed in broker-dealer subsidiaries • SEC is primary regulator	• Total US non-branch and agency assets generally >$50 BN • Large proportion of assets housed in banking subsidiaries (50-100% of assets for most institutions) • Already regulated by the FRB and/or other US banking regulatory agencies	• Total US non-branch and agency assets of $10-$50 BN • Majority of these assets are in broker-dealer subsidiaries (in most cases, 100% are in broker-dealer subsidiaries) • SEC is primary regulator
Primary business lines	• Large capital markets operations, focused on securities origination and trading • All are primary dealers in US government debt • May have smaller banking subsidiaries for retail deposit-taking and lending • Conduct some wholesale banking and lending activities out of branches and agencies	• Large banking operations, encompassing retail and wholesale deposit taking and lending • Most have a broker-dealer subsidiary conducting capital markets operations • May or may not be a primary dealer of US government debt	• Diverse range of smaller capital markets operations, primarily serving as access points to the US markets for their global client base • Most do not have banking subsidiaries • Some wholesale banking activity conducted out of branches and agencies
Typical legal and management structures	• May or may not have broker-dealer subsidiaries consolidated under a holding company structure • Capital and funding is generally managed on a consolidated basis	• Banking subsidiaries may already be consolidated under a bank holding company • In many cases banking subsidiaries are the product of acquisitions and continue to be managed separately from a capital and funding perspective	• May or may not have broker-dealer subsidiaries consolidated under a holding company structure • Capital and funding is generally managed on a consolidated basis
Number of FBOs corresponding to this profile	6	10	9
Total US assets (average)[1] among corresponding FBOs	1,645 BN (275 BN)	1,600 BN (160 BN)	215 BN (25 BN)

1. Excludes branch and agency assets
Sources: Proprietary firm data, Federal Reserve, Oliver Wyman analysis

For each of these groups, we develop a stylized illustration of one firm to serve as a baseline for assessing the effects of the IHC requirement and associated prudential standards. While closely based on public and proprietary data regarding the major FBO subsidiaries, the stylized illustrations shown here do not correspond to any particular FBO's US profile. Instead, each reflects the typical features found among firms in that category. Each stylized example firm is shown below using a pro forma consolidated view across relevant US subsidiaries subject to the IHC requirements; the branch and agency network is excluded.

Exhibit 2: Stylized example firms – pro forma consolidated view



Assets	$300 BN	$200 BN	$30 BN
Net revenue	6.6	5.6	0.5
Operating costs	4.6	3.9	0.4
Tax costs	0.7	0.6	0.04
Net income	1.3	1.1	0.07
ROE	10.7%	7.8%	7.6%
Leverage[4]	4.0%	7.0%	3.0%

1. Premises & equipment, deferred tax assets, goodwill
2. Cash, cash equivalents and liquid securities not held as collateral
3. Collateral obligations and short inventory
4. Tier 1 capital/total assets
Note: Excludes branch and agency assets
Sources: Proprietary firm data, Oliver Wyman analysis

The differences in size, asset mix, and liability profile among the stylized example firms reflect the wide range of FBO profiles in the US today. A large commercial bank, for example, with stable deposit funding and long-term loans has a very different asset/liability profile from an institution more dependent on short-term funding sources and a less liquid asset base. As such, individual FBOs pose varying levels of potential systemic risk to the US financial system.

Further, potential systemic risk is mitigated by the level and quality of parent and home country support for each FBO. Many of the institutions covered by the proposed rule can rely on the strength of their

parents' capital and liquidity position, afforded by the diversification of their business activities and geographic presence, to support individual subsidiaries through periods of stress. Strong home country regulation and supervision also play an important role in creating well-capitalized and funded parent companies.

For example, Swiss prudential standards are defined to be more stringent than the requirements of any other major financial market. Swiss regulators have consciously added a "finish" to Basel 3 capital requirements – Swiss banks are required to carry a risk-based tier 1 capital ratio of 10% vs. the 7% base requirement under the global accord. Swiss regulators have also moved to implement broader requirements like the Basel 3 leverage ratio on an accelerated track. For at least a subset of FBOs, home country prudential standards will exceed US requirements applied on a consolidated basis. These measures clearly mitigate the level of systemic risk these institutions pose to the US financial system.

Contributions to US capital markets

Together, FBOs covered by the proposed rule account for nearly $3.5 TN in assets in US-based subsidiaries, and an additional $1.5 TN in branch and agency networks.[4] With some of the largest commercial banking and broker-dealer operations in the US today, these institutions serve a broad range of clients across the full spectrum of capital markets activities. FBOs have contributed to the strength and competitiveness of the US markets along several fronts:

- FBOs' sizable contributions to direct lending, capital raising and, market making in the US provide the capacity and liquidity for issuers to efficiently access capital and investors to participate in a range of investment options
- FBOs provide a global distribution network for US capital and securities and serve as an access point to global liquidity pools, making US markets more globally integrated and competitive
- FBOs bring important countercyclical benefits to US markets, stepping in with capital and liquidity in periods of economic stress
- Additionally, FBOs offer direct benefits to the US economy, in the form of investments, as well as employment, compensation, and individual and corporate tax receipts.

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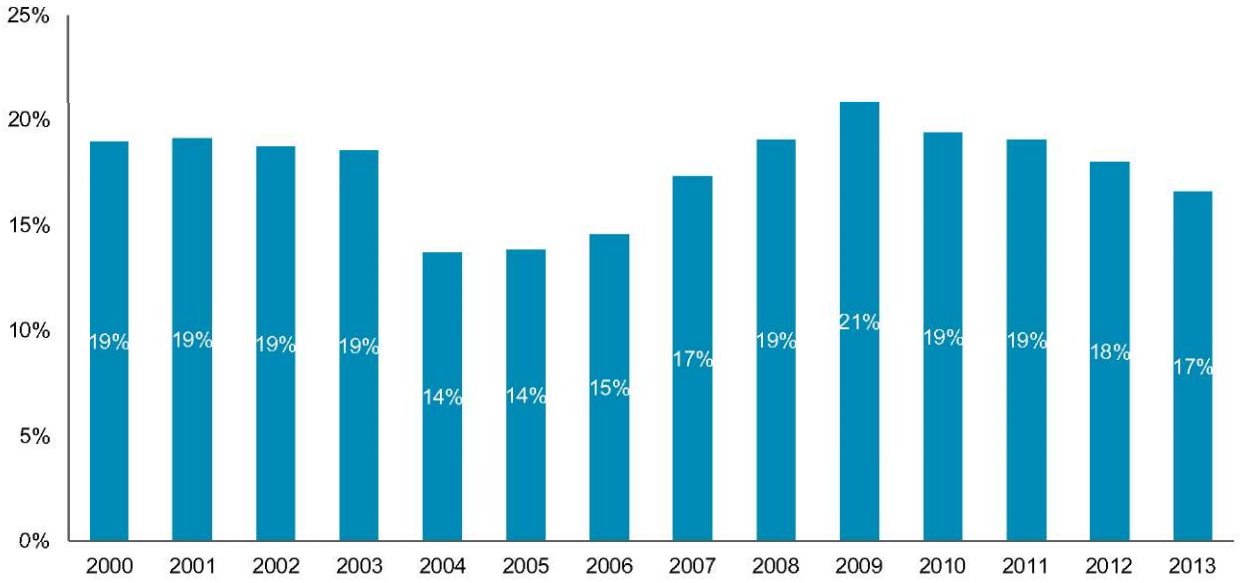
[4] Federal Reserve, SNL Financial, proprietary firm data (2012)

1. Direct lending

FBOs directly contribute to the growth of the US economy by extending credit to businesses in the US, providing these institutions with essential working capital and the ability to finance larger capital expenditures that contribute to their growth. FBOs, through their branch and agency networks alone, have accounted for as much as 21% of commercial & industrial (C&I) loans outstanding since 2000. This share is even higher when considering the loans originated by the US subsidiaries of these institutions. FBOs provide important counter-cyclical benefits to this sector – FBO share of total C&I loans outstanding reached peak values of 19-21% in 2001 and again in 2008-09, as these institutions stepped in to provide critical support during downturns.

Exhibit 3: C&I loans outstanding
FBO branch and agency share of C&I loans outstanding[1]



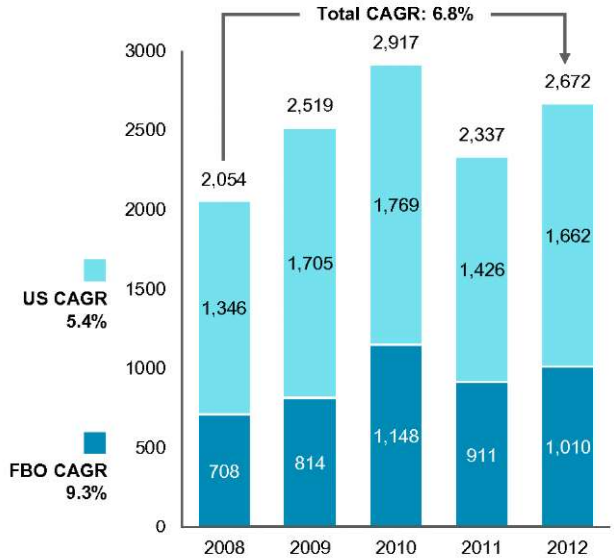
1. FBO share includes US branches and agencies of foreign banks as well as Edge Act and agreement corporations; data represents share of loans outstanding on January 1 of each year
Source: Federal Reserve Board, Statistical Release H.8

2. Capital raising

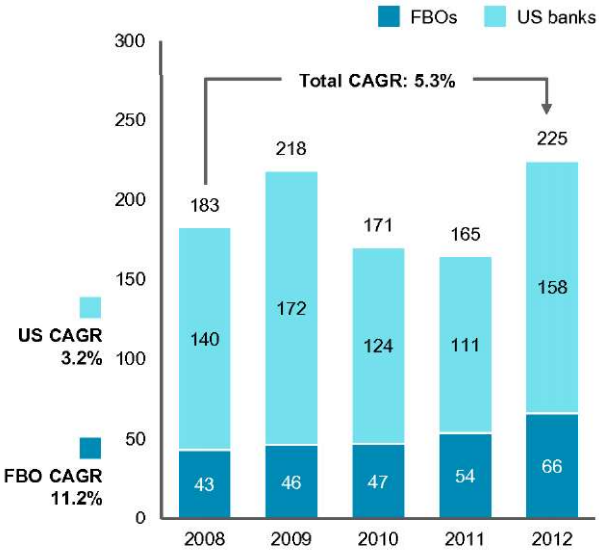
FBOs are also important contributors to capital formation in the US. Today, five of the ten largest broker-dealers in the US are FBO subsidiaries. For public (state, municipal, and agency) and private issuers, these institutions provide important underwriting services for debt and equity securities. Broker-dealers play an essential role in these transactions by (a) assessing investor demand for new offerings to set pricing and other terms and (b) stepping in to purchase securities if investor demand falls short of expectations.

Exhibit 4: Capital formation
FBO share of equity and debt origination, $BN[1]

US debt origination[1]
Allocated share of issued shares, $BN



US equity origination
Allocated share of issued shares, $BN



FBO share by issuance type

Corporate IG	34%	32%	35%	35%	37%
Corporate HY	34%	32%	39%	40%	41%
US Agencies	42%	38%	48%	47%	45%
ABS (incl. MBS)	42%	39%	45%	44%	44%
US Munis	16%	13%	14%	12%	13%
Total	34%	32%	39%	39%	38%

Total	24%	21%	28%	33%	29%

1. Includes corporate investment-grade, corporate high-yield, US Agency, Asset backed-securities (incl. MBS) and municipal bonds
Source: Dealogic, ThomsonOne, Oliver Wyman analysis

In 2012, US government and agency issuers raised over $1 TN through bond issuances. Corporations also raised an estimated $1.2 TN in the US through a mix of debt and equity origination.[5] FBOs were at the center of this capital formation activity, supporting over 40% of debt and nearly 30% of equity origination in the US. FBOs supported a similar share of syndicated lending activity (33%), another important source of financing and capital for corporations.[6]

3. Market making

Finally, FBOs are important providers of market making capacity and liquidity in US markets. Market makers stand ready to transact in a wide range of asset classes by directly matching buyers and sellers, or acting as counterparties to a transaction when buy and sell orders cannot be matched. This function creates liquidity for different securities with a range of positive implications for market participants, including lower transaction costs for savers and lower funding costs for businesses.

FBOs make markets for a variety of corporate and government securities, and are particularly instrumental in providing liquidity in the US government and agency debt markets. 12 of the 21 primary dealers in US Treasuries are part of FBOs[7]; these institutions purchase Treasury securities at auction and redistribute them to a global network of buyers in their home jurisdictions and across all major financial centers. Deep and liquid Treasury markets allow the US government to raise capital inexpensively and market participants to access safe assets that can be used as collateral or investment.

Proprietary data collected from 9 of the 12 FBO primary dealers offers a unique perspective on the level of FBO participation in the Treasury and agency debt markets. This subset accounted for 24-40% of the total primary dealer trading activity of US government and agency securities in 2012, with particularly strong share in US government (32%) and agency MBS securities (40%). The liquidity provided by FBOs is essential to the efficient function of the markets that supply the majority of funding to the US government and American homeowners.

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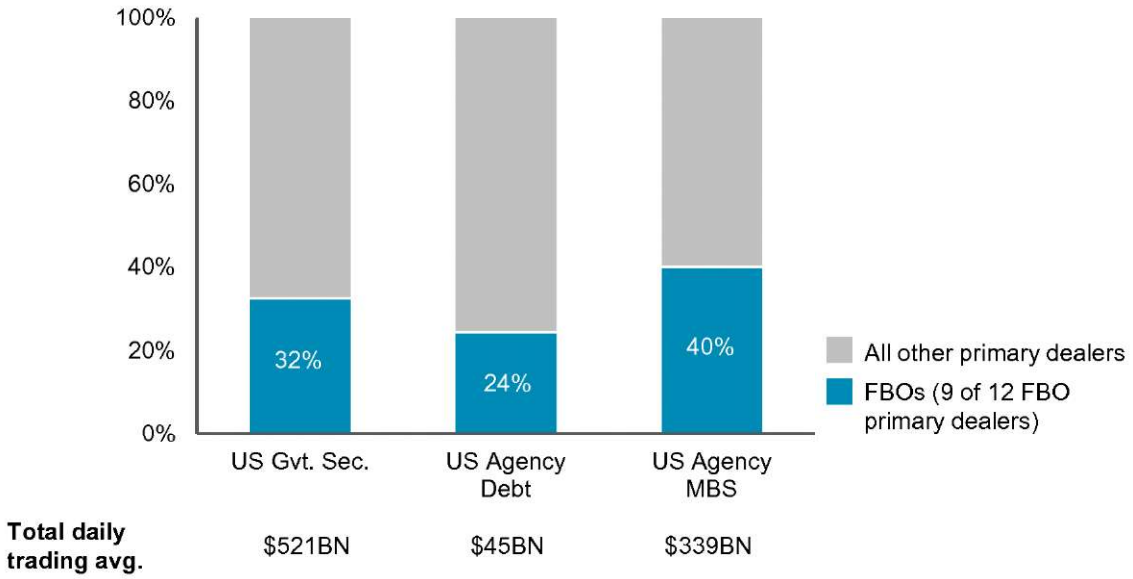
[5] Dealogic (2012), Oliver Wyman analysis

[6] Dealogic (2012), Oliver Wyman analysis

[7] Two additional primary dealers are foreign-owned, but are not banking organizations

Exhibit 5: Trading activity of government and agency securities
FBO share of transactions, % of daily trading average (2012)



Source: Proprietary firm data, FRBNY, Oliver Wyman analysis

Primary dealers are also actively involved in lending out (and borrowing) government securities, by participating in repurchase agreements (repos) with the Federal Reserve and other market participants. Dealer subsidiaries of FBOs facilitate all of the key interactions that take place in repo markets:

1. Making a market for other financial institutions seeking financing in the blind, brokered GCF (General Collateral Finance) market for Treasury and Agency securities
2. Accepting cash from tri-party repo market investors in return for securities provided as collateral
3. Accepting cash from bilateral repo market investors in return for securities provided as collateral
4. Making a market for other financial institutions seeking specific securities or counterparties in the bilateral repo market
5. Financing (providing cash secured by) the assets of clients and other market participants[8]

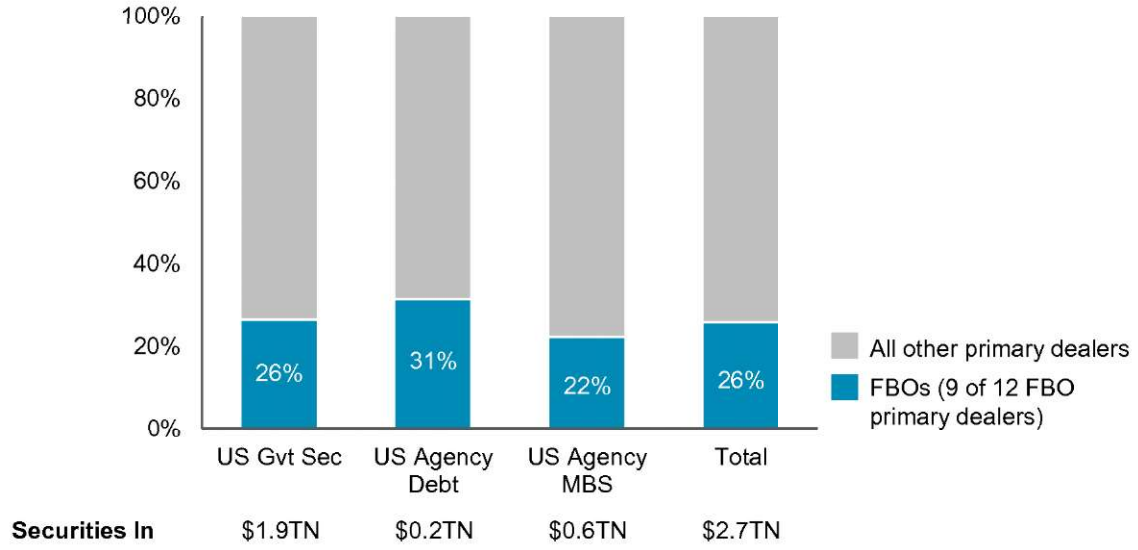
Repos are a key policy tool for US regulators, who use the market to buy or sell Treasuries, in part to control the level of reserves in the system. For the full spectrum of financial market participants, repos

[8] Adam Copeland, Isaac Davis, Eric LeSueur, and Antoine Martin. "Mapping and Sizing the U.S. Repo Market." (June 2012). Available at http://libertystreeteconomics.newyorkfed.org/2012/06/mapping-and-sizing-the-us-repo-market.html

represent a critical source of financing and liquidity, as well as an outlet for short-term cash investment to enhance returns. In addition to using the repo market to manage their own inventory and financing, dealers serve as the primary counterparties for all of these market participants. And FBOs play a particularly important role. The FBOs participating in our survey account for at least 25% of reverse repos and securities borrowed among primary dealers; this share is even larger when accounting for the full set of 12 FBO primary dealers (our data set includes only 9 FBOs). Again, the liquidity provided by FBOs is essential to the efficient function of the market that serves as the structural backbone of the US capital markets and broader financial system.

Exhibit 6: Repo financing

FBO share of reverse repos and borrowed securities, average gross inventory (2012)[1]



1. Gross figures, includes reverse repos and securities borrowed (from the perspective of dealers)
Source: Proprietary firm data, FRBNY, Oliver Wyman analysis

3. Implications for FBOs

The proposed rule will have profound effects on the way FBOs operate in the US, and will also come at a substantial cost to covered institutions. The broader issue is the effect that the rule, in its current form, will have on the strength and efficiency of the US financial system.

Our assessment of broader macroeconomic effects begins with firm-level impacts. The discussion below focuses on (a) the major costs faced by covered institutions and implications for three representative groups of FBOs operating in the US today and (b) potential response strategies to the proposed rule, as illustrated by the three stylized example firms. In the following chapter, we translate these firm-level responses into market-wide implications.

Potential costs of the proposed rule

For covered institutions, the proposed rule will effectively create a regulatory ring-fence around US subsidiaries through the imposition of an IHC and an array of requirements applied at the IHC level. This will result in heightened costs as institutions prepare to meet new standards, or at least meet them for the first time within the IHC structure on a standalone basis. Below, we list the major effects of the IHC requirements, as well as the assumptions we use to estimate the combined economic impact on IHC-affected subsidiaries:

- **Leverage and capital adequacy:** An important economic cost for FBOs will be higher capital requirements, driving lower returns on equity *ceteris paribus*. FBOs subject to the IHC requirement will be required to hold separate capital for their US subsidiary, and calculate risk-weighted asset (RWA) and total leverage exposure on a standalone basis, missing out on group-level diversification, hedging, and netting benefits. The application of the Comprehensive Capital Analysis and Review (CCAR) stress testing and capital planning process to IHCs with $50 BN or more in total assets, is likely to raise the effective capital standard and may greatly limit firms' discretion in moving capital out of US operations. These IHCs will need to target a leverage ratio of at least 7% within the IHC to comply with CCAR, consistent with levels held by US BHCs in the most recent CCAR exercise.[9] We assume that smaller IHCs, those not subject to CCAR stress testing, will need to target a leverage ratio closer to 5%. We focus on the leverage ratio instead of risk-based capital ratios because risk-

[9] See CCAR 2013 results: http://www.federalreserve.gov/newsevents/press/bcreg/ccar-2013-results-20130314.pdf

weighted assets (RWA) are not generally available for subsidiaries. Additionally, the binding capital constraint for those IHCs that include substantial repo books is likely to be the leverage ratio.

- **Liquidity and funding:** FBOs will also be required to hold separate liquidity buffers for their IHC (as well as their branch and agency networks). IHCs and branches would be prohibited from using funding flows from other parts of the corporate group to offset short-term external, third party obligations. Requirements will oblige FBOs to hold a larger stock of low-yielding liquid assets and secure longer-term US funding, placing further pressure on returns. To proxy these effects, we assume that IHCs will need to hold at least 10% of their assets in liquid securities, and that at least 30% of non-highly-liquid assets will need to be supported by stable, long-term funding or deposits.

  Liquidity requirements for individual FBOs under the proposed rule would be a function of firm-specific stress testing and supervisory discretion, and cannot be precisely estimated. Our assumption that at least 10% of total IHC assets will need to be held in cash and unencumbered liquid assets is intended as a floor, and we would expect that liquidity requirements for individual firms could be higher. For comparison, large US BHCs have in aggregate held more than 20% of their balance sheet in liquid assets since 2009.[10] We also assume that each IHC will need to fund a portion of its balance sheet with relatively stable liabilities such as deposits or long-term debt. The proposed rule does not articulate specific funding ratio minimums, but effective minimums for each IHC would be driven by the combination of the planned US implementation of the Net Stable Funding Ratio (NSFR) included in Basel 3, potential IHC-level long-term debt or loss absorbency requirements that have been discussed by Fed policymakers, and the trade-off between use of short-term funding and consequent increases in the required level of liquid assets. We assume that at least 30% of less liquid assets (assets other than cash, unencumbered assets, and reverse repos) will need to be funded by longer-term liabilities (deposits plus long-term funding). This is consistent with 2012 balance sheets of large US BHCs.[11]

  Due to the unclear impacts on funding cost of the proposed rule, we assume that, for each major category of liability, the funding costs per dollar of borrowing remains unchanged for the FBO subsidiaries. Overall IHC funding costs do change as a result of shifts in liability mix.

- **Operational costs:** Many FBOs will face the challenge of forming and operating a new, separately capitalized legal entity with independent management capabilities. This will involve restructuring legal entities across the organization and, in parallel, restructuring transaction booking, trade flows, and

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[10] FSOC 2013 Annual Report, Consolidated Liquidity Ratio for Top 50 BHCs

[11] Firm-level and aggregate data available from Federal Reserve's National Information Center at http://www.ffiec.gov/nicpubweb/nicweb/NicHome.aspx

intra-group funding mechanisms (a process that is already underway for many firms, but one that will be complicated by this new challenge). It will also require a realignment of centralized management structures, particularly for capital markets institutions that are currently run on a global basis. Incremental operational costs will be driven by the need for new US-based risk management and regulatory compliance infrastructure. For large IHCs, a full range of processes, tools, and resources will need to be deployed to manage the requirements of CCAR. Risk and Finance functions will need to adapt to the standards of their new "home regulator," developing US-compliant risk and liquidity management tools, and potentially seeking approval for new models from the Federal Reserve. We estimate that this will amount to one-time costs of $100-250MM and annual ongoing costs of $25-50MM per institution; components of these estimates are provided below. The legal re-organization of affected firms will also have (potentially significant) implications on tax costs. However, due to the variability of these costs on a per-firm basis, we have conservatively excluded these from our analysis.

Exhibit 7: Drivers of incremental operational costs

	One-off costs ($100-250MM)	On-going costs ($25-50MM per year)
IHC set-up	• Creation and registration of new IHC legal entity • Integration of IHC into legal entity framework	n.a.
Governance	• Integration of subsidiaries into a single IHC governance structure and definition of reporting lines • Establishment of US Risk Committee • Establishment of US CRO function	• On-going support of IHC CRO function: – Addition of new FTEs – On-going integration into global framework
Finance infrastructure	• Setup and integration of management information systems (MIS) • Setup and integration of accounting systems, including sub-ledger, general ledger, and financial reporting systems • Restructuring of trade flows and booking models	• Addition of new FTEs
Risk infrastructure	• De-centralization/extension of key risk management tools to the IHC (including management of liquidity, counterparty credit, credit and market risk) • Re-development of Basel capital models for Federal Reserve approval • Establishment CCAR/ stress-testing capabilities	• Addition of new FTEs • Participation in yearly CCAR stress-testing exercise • Refinement and on-going update of CCAR/stress-testing models • Migration to US Basel 3 modeling (phased-in)
Reporting and compliance	• Establishment of IHC processes to comply with Fed reporting requirements • Upgrade and integration of IHC policies, procedures and systems to ensure Fed compliance • Migration/translation to GAAP accounting standards (where required)	• Submission of annual, quarterly and monthly reports to the Fed (GAAP accounting) • Establishment and oversight of monthly liquidity stress testing process for IHC and branch network • Maintenance and upgrade of reporting infrastructure

Source: Oliver Wyman analysis

Estimated impact on FBOs

In many respects, the proposed rule adapts group-level prudential standards developed for US BHCs and applies similar regulations at the IHC level, albeit without permitting an IHC to rely on consolidated group level support (in contrast to US-based BHCs). FBOs that currently operate large commercial banking business in the US, and already fall under the remit of the Federal Reserve's BHC regulations, will generally be further along in implementation. Some of these institutions already have holding company structures (for their banking operations) that can be repurposed to meet the IHC requirement. A few have already started preparing for CCAR and capital planning requirements, as well as establishing a reporting infrastructure to meet Federal Reserve requirements. For broker-dealer oriented businesses of FBOs, on the other hand, the proposed requirements represent a fundamental restructuring of the regulatory regime.

Below, we employ our stylized example institutions within each group to assess the level of impact for different types of IHCs.

Exhibit 8: Drivers of impact on covered IHCs

Drivers of impact	Target (implied change from current)		
	Major broker dealer	Major comm. bank	Smaller broker-dealer
Leverage and capital adequacy			
• For largest IHCs required to comply with CCAR, target leverage ratio[1] of 7% • For smaller IHCs, target ratio of 5% to achieve standards generally accepted by regulators • Institutions may achieve adequate capital levels through equity injections alone or a mix of equity injections and balance sheet reduction	7% (+3%)	7% (+0%)	5% (+2%)
Funding and liquidity			
• For all covered IHCs, required increase in holdings of cash and unencumbered assets[2] as a proportion of total assets to 10%, as a proxy for the rule's liquidity buffer (30-day buffer held in IHC)	10% (+4%)	10% (+4%)	10% (+5%)
• For all covered IHCs, required increase in ratio of long-term funding or deposits to non-liquid assets to 30%[3]	30% (+2%)	30% (0%)	30% (0%)
Operational costs[4]			
• One-off costs of compliance, including legal entity, risk infrastructure, and governance set-up • Fewer costs for commercial banks who already have some of these structures in place • Still fewer costs for smaller institutions who have fewer requirements (e.g. no CCAR participation)	$250MM	$150MM	$100MM
• Ongoing costs of compliance, including regulatory reporting and refinements to stress testing capabilities	$50MM	$50MM	$25MM

1. Tier 1 capital/total assets
2. Cash, cash equivalents, and liquid securities not held as collateral
3. Ratio of longer-term liabilities (deposits plus long-term funding) over non-liquid assets (assets other than cash, unencumbered assets, and reverse repos)
4. Operational costs do not include tax implications of restructuring legal entities due to limited data availability and variability of costs on an individual firm basis; such costs could also have a significant impact on the overall costs of compliance

Source: Oliver Wyman analysis

Covered FBOs will need to make important strategic decisions on the scale and scope of their US businesses in light of these requirements. Notably, many institutions will be forced to strike a balance between downsizing their US operations and injecting more capital in order to meet proposed IHC capital requirements. We use several response scenarios to reflect the potential impact of these strategies.

In each of the response scenarios, we assume a cap on balance sheet reductions of 50% for reverse repo and securities borrowed assets and 25% for revenue generating assets in general. Given its return

profile and balance sheet intensity, repo would be the natural business to wind down first. However, repo assets serve a variety of purposes for investment banking businesses, including covering short positions for trading desks, transforming collateral for margin requirements, financing core clients and financing other counterparties in the open market. Based on proprietary data provided by US and foreign banks, we estimate reductions in excess of 50% would begin to limit the repo business' ability to serve its core functions for the bank and place severe constraints on all trading activities. The 25% cap on reductions in all revenue generating assets is more intuitive – banks with sizeable operations in the US today would be unable to sacrifice more than 25% of existing revenues and remain even marginally profitable. We assume any remaining shortfall on the leverage ratio would be made up with capital injections.

We use our stylized firm examples as a basis to assess ROE impacts and potential changes to the US businesses of FBOs, given both regulatory requirements and strategic responses.

Exhibit 9: Projected ROE under the proposed rule

	Response scenarios	Pro forma ROE		
		Major broker dealer	Major commercial bank	Smaller broker-dealer
	Baseline assessment	**10.7%**	**7.8%**	**7.6%**
A	IHCs satisfy heightened capital requirements through equity injections alone, by raising additional capital in the US or injecting capital from parent companies.	**5.4%**	**7.0%** *(Minimal impact, a large proportion of US operations already meet proposed capital standards)*	**3.0%**
B	IHCs choose to achieve required capital levels through a mix of balance sheet reduction and equity injections. Balance sheet reduction occurs by reducing only reverse repo and collateralized financing assets, until asset reduction equals the lesser of (a) 25% of total revenue-generating assets[1] or (b) 50% of current reverse repo and collateralized financing assets. Equity injections fulfill the remaining capital requirements.	**6.4%**		**3.3%**
C	IHCs choose to achieve required capital levels through a mix of balance sheet reduction and equity injections. All revenue-generating assets are reduced by up to 25%. Equity injections fulfill remaining capital requirements.	**2.8%**		**-0.2%**

1. Revenue generating assets include trading assets, reverse repos and collateralized financing agreements, and loans
Source: Oliver Wyman analysis

Impact on major broker-dealers

Effects of the proposed rule will be felt most acutely by FBOs with major broker-dealers; however, we expect the size and strategic importance of their US businesses will ensure their continued presence in the US. The key question instead is whether, and to what extent, the proposed rule will motivate reductions in their US presence. In all three response scenarios, we project a sizable reduction in ROE. Based on our analysis, the economically rational option for an FBO in this group is a modest capital injection to the IHC and a significant reduction in balance sheet, focused on low yield repo positions. This strategy reduces total ROE impact by 100 bps vs. adding capital alone, and 360 bps vs. a balance sheet reduction that downsizes all revenue-generating assets, including higher yield trading assets.

The economic, strategic, and tactical costs of holding trapped capital, including the reduced flexibility to shift capital and funding to other parts of the institution, is likely to increase the incentives for IHC balance sheet reduction. In our stylized example, the pro forma reduction in total balance sheet is ~20%, or $60BN, concentrated solely in repos and securities lending.

Impact on major diversified commercial banking organizations

Impact on diversified commercial banking organizations is muted somewhat because most already have sufficient local-entity US capital to meet the expected IHC standards, and face relatively lower incremental operational costs. These institutions generally own large insured depository institutions in the US with ready access to retail deposits. Our analysis of the stylized diversified commercial banking firm indicates that the size, business mix, and economics stay relatively stable for firms in this group in response to the proposed rule.

Impact on smaller broker-dealers

Like their larger counterparts, the economics of smaller FBO-owned broker-dealers will be substantially eroded by the proposed rule. Unlike larger FBO dealers, these institutions may not have the scale to absorb these costs and maintain a sizable US presence. In our model, the stylized firm experiences substantial impacts on ROE across all response scenarios, producing negative returns in one scenario. A reduction in repo and securities lending assets, coupled with equity injections, once again emerges as the best mitigating strategy.

However, firms within this group pursue a diverse range of business activities, making it difficult to extrapolate these findings to the full set of affected institutions. Ultimately, we expect that some of these institutions will choose to maintain their US subsidiaries in order to continue serving high-priority clients that are important sources of revenue to the global franchise. Some that are close to the proposal's

minimum asset thresholds would likely reduce total assets to avoid the strictest requirements. Institutions that were previously seeking to grow their presence in the US (e.g. above the $10BN or $50BN thresholds, may now seriously reconsider this strategy).

4. Implications for US capital markets

The proposed changes to the regulation of FBOs' US operations will inevitably affect not just FBOs, but also their customers, their counterparties, and the US financial system as a whole. The stated strategy of the Federal Reserve is to impose requirements "which increase in stringency with the level of systemic risk posed by…the US operations of the company [and which] provide incentives for large foreign banking organizations to reduce the riskiness of their US operations."[12] However, the one-size-fits-all application of IHC requirements to a diverse set of FBOs, as well as the special constraints placed on the US balance sheet of these institutions could result in significant unintended consequences. We highlight two broad categories of effects below:

- **Capacity withdrawal** – The proposed rules will create strong incentives for many FBOs to withdraw capacity from US capital markets, limiting access to capital and risk management services for individuals, businesses, and public sector institutions.
- **Increased systemic risk** – We see potential for the proposed rule to introduce systemic risk in the following ways: (a) further concentrating capital markets activity among domestic and less-regulated financial institutions; (b) reducing the level of capital, funding, and liquidity freely accessible to FBOs and their parent institutions; (c) increasing the risk intensity of the balance sheet as FBOs shift into higher yielding businesses; and (d) reducing diversity in the business models, operating structure, and size of regulated FBOs, leading to a less resilient financial system.

Capacity withdrawal

In a balance-sheet-constrained environment, FBOs are likely to reduce the full breadth and depth of activities that they presently conduct in the US. While it is possible that FBOs may seek to transfer some of the activity currently conducted by US subsidiaries to their relatively less-impacted US branches, the Fed has already expressed its intent to closely monitor any such movements.[13] Accordingly, we do not believe such transfers would significantly alter the conclusions of our analysis.

In principle, domestic institutions could step in to replace capacity withdrawn by FBOs, but the sizable market share that FBOs currently hold across capital markets activities suggests that this would require significant balance sheet growth on the part of these substitutes. Regulatory constraints, operational

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[12] 77 FR 76628 (December 28, 2012)

[13] Federal Reserve, Transcript of Open Board Meeting, December 14, 2012
http://www.federalreserve.gov/mediacenter/files/open-board-meeting-transcript-20121214.pdf

costs, and practical economic considerations will also constrain domestic firms' expansion, resulting in net reductions in US market activity. Without the capacity and liquidity that FBOs provide, market participants could be impacted in significant ways:

1. **Direct lending:** FBOs, mainly through their branch and agency networks, represent a significant share of the direct corporate lending activity to US businesses each year (as illustrated in exhibit 3 above). The general requirements of the new rules, but especially the effective liquidity buffer for the branch and agency network, is likely to place some constraint on the origination of these long-dated assets by FBOs. Any reduction in loan origination by FBOs would drain capacity from the direct lending market for US businesses – FBOs have represented at least 14% of loans outstanding in this market since 2000. This would have obvious knock-on effects, including higher borrowing costs and reduced capital investment, without significant increases in the level of activity from other players in the market.
2. **Capital raising:** FBOs also play a critical role in the pricing, liquidity provision, and direct support for underwriting of debt and equity securities in the US market. The new rules may place direct and indirect limits on these activities, through higher operating costs for these businesses (direct effect) and reduced activity in closely related businesses like market making (indirect effect). Again, this may make it more difficult for private and public issuers to raise capital and generally increase the cost of funding. Issuers will have access to a smaller distribution network of potential investors without the wide global reach of FBOs.
3. **Market making:** Conditions that allow for agency market making, where two market participants can trade directly without the commitment of a dealer intermediary, are relatively uncommon. Most markets are too fragmented or illiquid to 'match' orders in real time. As an example, the corporate bond market is highly fragmented based on the credit quality of issuers, the maturity of the instrument, the currency in which the security is issued, and a variety of other factors specific to the instrument. There are roughly 37,000 unique corporate bonds outstanding in the US market alone. To make a market in these securities, dealers must frequently take a principal position for some period of time. In a balance-sheet-constrained environment where the largest FBO dealers are unable to do so, there could be substantial negative effects on market participants including: higher funding and debt costs for businesses; reduced willingness of investors to provide capital to businesses because of greater difficulties in exiting those investments; and higher trading costs (and consequently lower returns) over time for investors.

A particularly interesting effect from a policy perspective, and one which our analysis indicates is likely, is capacity withdrawal in FBOs' market-making activity for repos. While not as well understood as trading in traditional securities, repo markets have evolved to become the structural

backbone for the US financial markets. As the nexus that links major US securities markets and the US dollar money markets, repo markets support and enhance both *trading liquidity* and the overall efficiency of capital markets, and *balance sheet liquidity*, the ability of institutions to manage cash needs and safely and economically invest excess cash.

As perhaps the most institutional of all US financial markets, changes in the structure and efficiency of repo markets can have cascading effects on every other US financial market and consequently on US households and businesses, the ultimate beneficiaries of the US financial system. Large dealers, including the subsidiaries of FBOs that will be most affected by the proposed IHC requirements, are the participants at the core of the repo markets. The most likely response to the new rules would be to significantly reduce their presence, and in particular, curtail their activity as repo market makers.

By acting as repo intermediaries, large dealer FBOs help other market participants access liquidity and securities, but this activity is relatively low-margin and balance-sheet intensive. For our stylized major dealer firm with $300 BN in assets, a 50% reduction in the balance sheet allocated to repo trading and securities lending activity corresponds to about $60 BN of capacity being withdrawn from repo markets. Extrapolating this figure to all 6 major broker-dealers, with an average balance sheet of $275 BN, we estimate that about $330 BN of capacity could be withdrawn, representing over 10% of the total size of this market.[14]

The reduced reliance of FBOs on short-term wholesale financing, including repo and commercial paper funding, is a stated objective of the proposed rule. But because of the central importance of the repo market to all US financial markets, and because of the FBO dealers' major presence in that market, this reduction in repo activity may come with a range of unpredictable and unintended consequences:

1. **Reduced liquidity across major asset classes due to reduction in dealer inventory capacity:** Dealers use repo markets as an outlet and risk management tool for their inventory of longer-term assets. Repos effectively allow dealers to perform maturity transformation, using overnight (or otherwise short-term) repos to trade securities in exchange for financing. The liquidity provided to dealers' balance sheets in this way allows them to hold larger inventories of equities, corporate bonds, and other asset classes. Reduced dealer presence in the US, specifically in the repo markets, will likely result in significant reductions in liquidity across many other US markets as dealers' trading inventory capacity is reduced.

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[14] Adam Copeland, Isaac Davis, Eric LeSueur, and Antoine Martin. "Mapping and Sizing the U.S. Repo Market." (June 2012). Available at http://libertystreeteconomics.newyorkfed.org/2012/06/mapping-and-sizing-the-us-repo-market.html

2. **Reduced access to financing for smaller dealers:** The largest dealers make markets for other financial institutions in the blind, brokered, GCF market. Specifically, large dealers use their standing as counterparties able to face off directly with major money market fund investors to pass through collateral from smaller dealers. Thus for smaller dealers in particular, reduced repo activity by some of these intermediaries may limit their access to liquidity and financing.
3. **Potential impact on collateral availability for derivatives transactions:** Repo markets also play an important role in collateral transformation. With heightened collateral requirements, particularly in the OTC derivatives markets, the demand for high quality collateral (such as Treasuries) is expected to rise. Here too, dealers play an important role by providing financing to investors and accommodating inventory of client assets. We estimate that regulatory requirements on central counterparty (CCP) clearing and margin could increase demand for collateral by ~$1.5 TN in the next 5-7 years, implying a substantial shortfall against existing collateral stock.[15] Reduced repo capacity on the part of FBO dealers will further exacerbate this collateral shortfall.
4. **Large-scale shift from repo investments to bank deposits, with implications for the structure of US banking system:** Money market funds (MMFs) and other money market investors use repos as an economic, safe, and highly liquid investment vehicle. A significant reduction in the repo market will almost certainly involve shifting such investments to the best available substitutes, including large institutional deposits at banks. For example, MMFs are required to hold a minimum percentage of assets in highly liquid securities; specifically, 30% in securities that can be converted to cash within one week and 10% within one day.[16] Large-scale additional deposits at banks of funds previously invested in repos would only exacerbate the aggregate mismatch between deposits and lending levels in the US banking system.

Increased systemic risk

The largest FBOs operating in the US today have reached a size and level of interconnectedness with the US financial system to warrant careful consideration of the potential systemic risks they pose. At the same time, as the Federal Reserve notes in the proposed rules, FBOs operating in the US "have brought competitive and countercyclical benefits to US markets."[17] Regulations aimed at curbing systemic risks

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[15] Oliver Wyman analysis

[16] SEC, http://www.sec.gov/news/press/2010/2010-14.htm

[17] 77 FR 76628 (December 28, 2012)

could not only diminish these benefits, but also drive activity to less transparent and less regulated parts of the financial system.

We see potential for the proposal to introduce additional systemic risk in the following ways:

- **Activity concentration among domestic institutions**: Capacity withdrawal by the largest FBOs could merely result in risk transfer to other, potentially less regulated or more concentrated corners of the financial system. To the extent large domestic banking organizations fill the gaps left by FBOs, these institutions would become even larger. If the gap is in part filled by shadow banking institutions, which are among the least regulated entities of the financial system, threats to US financial stability could increase. The net result would be higher concentrations of risk among participants in the US financial system without the countercyclical benefits that FBOs offer.

  This point is particularly well illustrated in the case of repo markets. Capacity withdrawal by FBOs (as discussed above) may in part be filled by other institutions, which could increase the level of systemic risk in US financial markets. As FBOs pull back from the repo market, the likely candidates to replace them are:

  - **Other primary dealers:** 9 of the 21 primary dealers in US Treasury securities are domestic institutions or foreign non-banks that are not covered by the proposed rule. These institutions could expand their balance sheets (within the constraints of leverage limits imposed on domestic institutions) to accommodate the Federal Reserve in conducting monetary policy, leading to a further concentration of risk amongst a smaller group of dealers.
  - **Less regulated entities:** Hedge funds, money market funds, and other non-bank financial institutions are already key players in the repo market. These participants may further expand their activities, concentrating the repo market in some of the least regulated parts of the financial industry.
  - **New counterparties:** As it did after the crisis, the Fed may choose to expand its counterparties to repo transactions to include additional domestic institutions. Such firms may not have the operations and systems capabilities to manage collateral and margin requirements associated with repo transactions, and will turn to the tri-party repo market for these services. This would further concentrate operations in the repo market with the two clearing banks.
- **Reduced support for FBOs:** Standalone requirements for capital and liquidity at the IHC level could have the unintended consequence of reducing the resources available to the US operations of FBOs. Capital and funding that are effectively “trapped” in the US would increase economic costs and reduce flexibility for FBOs. FBOs will likely respond by holding no more than the expected market

minimum requirements in the US; for well-capitalized and well-funded institutions, the proposed rule may therefore drive an outflow of resources from their US operations.

- **Increased risk-intensity due to leverage ratio constraints:** As illustrated in our analysis of the effects of, and response to, the proposed requirements for FBOs, the application of a leverage ratio requirement at the IHC level will drive balance sheet reductions for many institutions. Drawing down low-yielding, low-risk assets like repos preserves the economics of the business more effectively than adding capital to meet leverage ratio requirements. However, this strategy has the implicit effect of shifting lower-risk activities out of the IHC and increasing the risk-intensity of the remaining US business.
- **Structural homogeneity of regulated institutions:** The Fed is proposing a rule to cover a diverse population of institutions – FBOs that today conduct a mix of bank and non-banking activity, out of various legal structures including branches, agencies, and subsidiaries, serving clients in the US and abroad with a wide range of needs. The proposal creates substantial incentives that will serve to homogenize business models by discouraging non-banking activities, expanding the scope of institutions covered by specific capital adequacy frameworks such as CCAR, incentivizing FBOs to reduce the size of subsidiaries (and therefore of activities that are permitted only out of functionally regulated subsidiaries), and imposing costs that may make it uneconomical for institutions to maintain their global operations and distribution network. By duplicating prudential frameworks, policymakers risk re-casting a diverse group of financial institutions into the same mold. And, a financial system composed of firms that have the same operating models, serve the same markets, hold the same types of assets, and have the same risk exposures is more prone to contagion that can destabilize the entire system.

These unintended consequences could significantly undermine the intended financial stability benefits of the proposed rule.

5. Conclusion

In departing from the longstanding policy stance on consolidated supervision of banking institutions, the Federal Reserve is imposing significant business and operational changes on FBOs. Implementing the proposed requirements for capital and leverage, liquidity and funding, as well as operational and legal structure at the IHC level, will introduce substantial new costs for FBOs' US operations. Our analysis draws on proprietary data from most of the FBOs affected by the IHC requirement to assess the economic impact of the proposed requirements across three stylized firms, which collectively portray a representative cross-section of the diverse US business models for FBOs affected by the IHC requirement.

The analysis shows that the proposed rule, in its current form, will make it too costly for FBOs to merely add capital and liquidity to support the activities they are conducting in the US today, and in fact will create strong incentives to reduce some of this activity. This may have powerful effects on the US financial system and economy, given the importance of FBO subsidiaries across the full set of capital markets activities. Capacity withdrawals by FBOs across direct lending, capital raising, and market making will curtail liquidity in US capital markets and make it more expensive for businesses to raise capital and for all market participants to transact. We estimate that one of the largest impacts will be on US repo markets, as FBOs may reduce their activity as intermediaries in these markets. Because of the central role played by repo markets, a substantial reduction in intermediation and market-making capacity would have knock-on effects on virtually all US market participants, as US financial markets became less efficient.

The proposal also introduces the potential for additional systemic risk. Withdrawals of capacity by FBOs would invite further concentration of critical capital markets activities among fewer firms, and may also shift market activity to less regulated, and less easily monitored, parts of the US financial system. It would also increase the scope and force of incentives for firms to shape their business to fit specific regulatory constraints, such as CCAR-driven capital requirements. This would decrease the overall diversity, and thus resiliency, of the US financial ecosystem.

Given the proposal's importance to FBOs operating in the US, and therefore to the overall US financial system, we believe that additional quantitative evaluations of the proposed approach will help more fully assess its implications. While our study focuses on the impact on the US capital markets, the proposed rule could have a much broader scope of effects, including knock-on effects beyond the US. For such a major regulatory change, the Federal Reserve should consider an extended implementation period, giving time for markets and firms to adjust, and for policymakers to monitor and fine-tune requirements as appropriate. Finally, the Federal Reserve should carefully consider how best to tailor regulatory

requirements to the diverse population of FBOs active in the US today – and to maintain such diversity in the future.

Appendix: Impact assessment results

Exhibit 10: Baseline and model results for stylized major broker-dealer example

Asset Composition ($BN)

	Baseline	Capital injection only	Capital injection and reduction of repo assets	Capital injection and balance asset reduction
ROE	**10.7%**	**5.4%**	**6.4%**	**2.8%**
Required change in equity from current levels	-	+66%	+35%	+35%
Gross Revenue	9.2	9.2	8.6	7.5
Funding Costs	2.6	2.7	2.2	2.1
Net Revenue	**6.6**	**6.5**	**6.4**	**5.4**
Operating Costs	4.6	4.7	4.7	4.7
Tax Costs	0.7	0.6	0.6	0.3
Net Income	**1.3**	**1.2**	**1.1**	**0.5**
Leverage Ratio[3]	4%	7%	7%	7%
Longer-term liabilities / less liquid assets	28%	30%	30%	34%
Cash & unencumbered assets/ Total assets	6%	10%	10%	10%

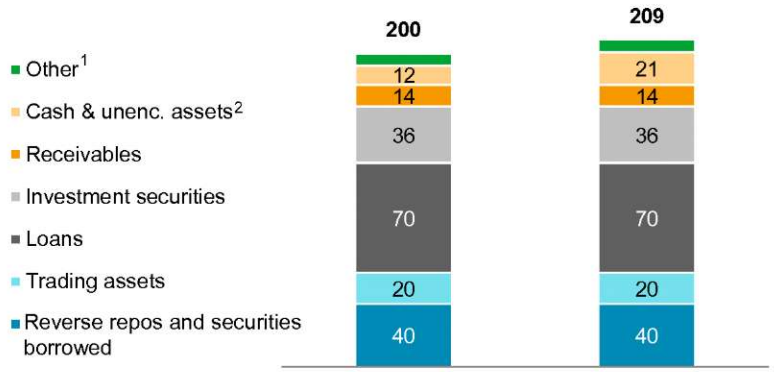
1. Premises & equipment, deferred tax assets, goodwill
2. Cash, cash equivalents and liquid securities not held as collateral
3. Tier 1 capital/total assets

Note: All amounts in $BN, unless otherwise indicated

Source: Oliver Wyman analysis

Exhibit 11: Baseline and model results for stylized major diversified commercial bank example

Asset Composition ($BN)



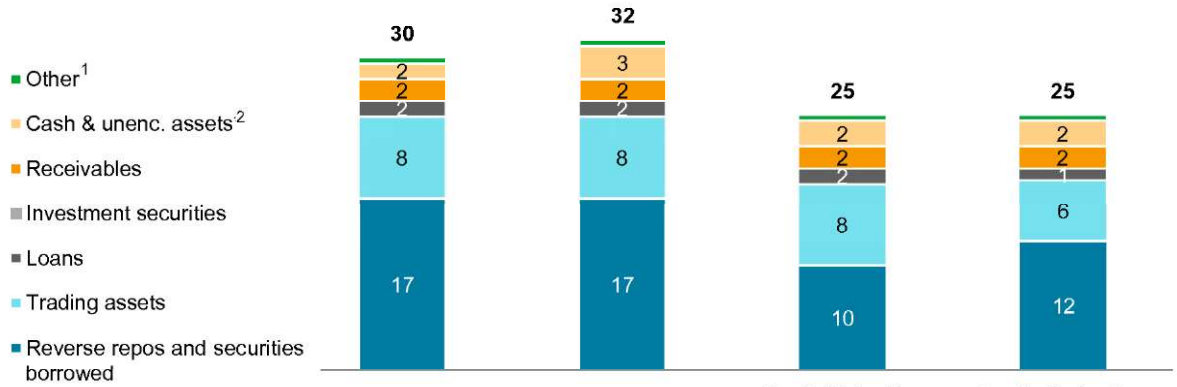
	Baseline	Capital injection only
ROE	**7.8%**	**7.0%**
Required change in equity from current levels	-	+3%
Gross Revenue	6.3	6.3
Funding Costs	0.7	0.7
Net Revenue	**5.6**	**5.5**
Operating Costs	3.9	4.0
Tax Costs	0.6	0.5
Net Income	**1.1**	**1.0**
Leverage Ratio[3]	7%	7%
Longer-term liabilities / less liquid assets	81%	81%
Cash & unencumbered assets/ Total assets	6%	10%

1. Premises & equipment, deferred tax assets, goodwill
2. Cash, cash equivalents and liquid securities not held as collateral
3. Tier 1 capital/total assets

Note: All amounts in $BN, unless otherwise indicated
Source: Oliver Wyman analysis

Exhibit 12: Baseline and model results for stylized smaller broker-dealer example

Asset Composition ($BN)



	Baseline	Capital injection only	Capital injection and reduction of repo assets	Capital injection and balance asset reduction
ROE	**7.6%**	**3.0%**	**3.3%**	**-0.2%**
Required change in equity from current levels	-	+57%	+27%	+27%
Gross Revenue	0.83	0.83	0.76	0.69
Funding Costs	0.30	0.31	0.25	0.25
Net Revenue	**0.53**	**0.52**	**0.51**	**0.44**
Operating Costs	0.42	0.45	0.45	0.45
Tax Costs	0.04	0.03	0.02	(0.00)
Net Income	**0.07**	**0.05**	**0.04**	**(0.00)**
Leverage Ratio[3]	3%	5%	5%	5%
Longer-term liabilities / less liquid assets	45%	45%	45%	56%
Cash & unencumbered assets/ Total assets	5%	10%	10%	10%

1. Premises & equipment, deferred tax assets, goodwill
2. Cash, cash equivalents and liquid securities not held as collateral
3. Tier 1 capital / total assets

Note: All amounts in $BN, unless otherwise indicated
Source: Oliver Wyman analysis

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