Analysis of 12 CFR Part 44

The Office of the Comptroller of the Currency (OCC), Board of Governors of the Federal Reserve (Board), Federal Deposit Insurance Corporation (FDIC), and the U.S. Securities and Exchange Commission (SEC) (collectively, the Agencies) issued a final rule to implement section 619 of the Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd–Frank). Section 619 contains certain prohibitions and restrictions on the ability of a banking entity to engage in proprietary trading and have certain interests in, or relationships with, a hedge fund or private equity fund ("covered fund") (the final rule).[1] The final rule adopts the proposed rule, published November 7, 2011, with modifications and changes to address concerns raised in public comments the Agencies received.

We assessed whether the rule is a "major rule" under the Congressional Review Act (CRA). Our review also considers whether, for purposes Unfunded Mandates Reform Act of 1995 (UMRA), the mandates imposed by the rule may result in expenditures of $100 million or more annually by state, local, and tribal governments or by the private sector. As required by the Regulatory Flexibility Act (RFA), we also assessed the impact of the rule to determine if it will have a significant economic impact on a substantial number of small entities.

I. Summary

Because we estimate the costs associated with the final rule range from $412 million to $4.3 billion, we believe the rule is a "major rule" under the CRA.[2] Our estimate does not capture some costs that are quantifiable but difficult to estimate, such as indirect costs due to decreased market liquidity and the impact this decrease in liquidity may have on the market value of some assets and the cost to corporations of issuing debt. Additionally, certain benefits of the regulation can be difficult to quantify including the value of enhanced economic stability and benefits associated with reduced risk. Because we estimate that banks' UMRA expenditures would exceed $100 million in at least one year, the overall cost of the final rule will exceed the thresholds for a "significant regulatory action."[3] We also believe that the final rule will not have a significant economic impact on a substantial number of small OCC-supervised entities. We conclude the final rule will not have a significant economic impact on a substantial number of small OCC-regulated entities. We estimate there are a 46 OCC-supervised banking entities (referred to as banks) that will be

[1] The Commodity Futures Trading Commission separately issued a substantively similar final rule implementing section 619 of Dodd–Frank.

[2] The range of our cost estimate primarily reflects the uncertainty of the final rule's impact on the market value of banks' investments in impermissible covered funds. A decrease in demand may follow the imposition of the restriction on banks holding collateralized debt obligation (CDO) and collateralized loan obligation (CLO)assets, and we estimate the market value of this impact between zero and $3.6 billion. Other costs of the final rule include costs associated with compliance and reporting requirements, which we estimate at between $402 million and $541 million; costs associated with estimated capital deductions related to covered funds, which we estimate at between $147 million and $165 million; and additional costs to the OCC related to supervision, which we estimate at $10 million.

[3] Our estimate of UMRA expenditures includes a one-time loss on impermissible covered funds. We estimate that average annual compliance-related expenditures will not exceed $550 million per year.

required to (i) report metrics, (ii) establish an enhanced compliance program, or (iii) establish a core compliance program.

II. Statutory requirement: Section 619 of the Dodd–Frank Act

Section 619 contains two key prohibitions. It prohibits

- a banking entity from engaging in proprietary trading and
- a banking entity from acquiring or retaining any equity, partnership or other ownership interest in or sponsoring a "hedge fund or private equity fund" (otherwise known throughout this document as "covered funds").

The term banking entity includes the following OCC-regulated institutions: national banks (other than certain uninsured trust companies), federal branches or agencies of foreign banks, federal savings associations (FSA), and their respective subsidiaries.[4]

Section 619 defines proprietary trading as engaging as a principal for the trading account of the banking entity in any transaction to purchase or sell (or otherwise acquire or dispose of) any security, any derivative, any contract of sale of any commodity for future delivery, any option on any such security, derivative or contract, or any other security or financial instrument that the Agencies may determine. Section 619 defines a trading account as any account used for acquiring or taking positions in financial instruments principally for the purpose of selling in the near term (or otherwise with the intent to resell in order to profit from short-term price movements) and any such other accounts as determined by the Agencies.

Section 619 defines covered funds broadly to cover any issuer that would be an investment company, but for section 3(c)(1) (i.e., funds with 100 or fewer investors) or section 3(c)(7) (i.e., funds with certain qualified investors) of the Investment Company Act or such similar funds as determined by the Agencies.

Permitted activity exceptions

A banking entity may not engage in an activity that falls under the proprietary trading or covered fund prohibition unless the activity qualifies as a permitted activity under one of the statutory exceptions. The exceptions are

1. trading in U.S. government, U.S. agency, state, municipal, or government-sponsored enterprise (GSE) obligations;
2. underwriting;
3. market making;
4. risk-mitigating hedging;
5. trading on behalf of customers;
6. investments in Small Business Investment Companies (SBIC), investments designed to promote public welfare, and other historic tax credit investments;
7. trading by an insurance company for its general account;
8. organizing and offering a private fund for trust, fiduciary, and investment advisory

[4] The definition also includes any other insured depository institutions (IDI), companies that control an IDI, any foreign bank that owns or operates a branch, agency or commercial lending company in the United States, and any affiliates or subsidiaries of a banking entity.

clients;

9. trading by foreign banking organizations solely outside the United States;
10. investments by a foreign banking organization in a hedge or private equity fund solely outside the United States; and
11. any other activity determined by the Agencies, by rule, to promote and protect safety and soundness of the banking entity and the financial stability of the United States.

Additional restrictions and limitations on permitted activities

Permitted activities under section 619 are subject to additional statutory limitations and restrictions.

First, the activities may not involve or result in a material conflict of interest, a material exposure to high-risk assets or high-risk trading strategies, a threat to the safety and soundness of the banking entity, or a threat to the financial stability of the United States. The statute requires that a material conflict of interest and a high-risk asset or trading strategy be defined by rule.

Second, the Agencies have the discretion to adopt additional capital requirements and quantitative limitations as appropriate to protect the safety and soundness of banking entities engaged in permitted activities. Specifically, the statute mandates that the Agencies require a banking entity to deduct from its assets and tangible equity the aggregate amount of all outstanding investments, including retained earnings, in a covered fund that the banking entity organizes and offers under section 619.

Third, a banking entity that is an investment manager, investment adviser, or sponsor of an investment fund or that organizes and offers a covered fund is prohibited from entering into any transaction with a covered fund that qualifies as a covered transaction under section 23A of the Federal Reserve Act. A covered transaction is defined to include any loan, extension of credit, guarantee, or letter of credit.

Effective date (statute)

The effective date established in the statute was July 21, 2012. The statute provides an additional two-year conformance period during which a banking entity may wind down, sell, or otherwise conform its activities, investments, and relationships to the requirements of section 619. This additional conformance period ends July 21, 2014.[5] The Board has extended the conformance period by an additional year until July 21, 2015.[6]

[5] The Board implemented the conformance period provisions in 12 CFR 225.1 (February 14, 2011).

[6] The statute gives the Board authority to extend the conformance by three one-year periods. See the preamble to the final rule at page 9.

The Board's statement of policy regarding conformance

In guidance, the Board stated that "under the Conformance Rule, all proprietary trading activity conducted by each banking entity must conform to the prohibitions and requirements of section 13 of the Bank Holding Company (BHC) Act and any final implementing rules by no later than the end of the conformance period. Similarly, all activities, investments and transactions with or involving a covered fund ... must conform to section 13 of the BHC Act and final implementing rules by no later than the end of the relevant conformance period. During the conformance period, every banking entity that engages in an activity or holds an investment covered by section 13 is expected to engage in good-faith efforts ... which will result in the conformance of all of its activities and investments to the requirements of section 13 of the BHC Act by no later than the end of the conformance period."[7]

Need for regulatory action

Section 619 directs the Agencies to issue implementing rules taking into consideration the findings of a study issued by the Financial Stability Oversight Council (FSOC) on January 18, 2011.[8] The federal banking agencies must jointly adopt rules to implement section 619 for IDIs. The statute also requires the federal banking agencies, the SEC, and the U.S. Commodity Futures Trading Commission (CFTC) to consult and coordinate and to issue comparable rules, to the extent possible, that provide for consistent application and implementation.

III. Final rule

The final rule has three major components. It

1. prohibits proprietary trading by banking entities;
2. prohibits banking entities from acquiring or retaining an ownership interest in, sponsoring, or having certain relationships with covered funds; and
3. requires certain banking entities to establish comprehensive programmatic compliance and data reporting regimes.

The statute expressly authorizes the Agencies to impose additional restrictions and limitations on all activities that qualify for one of the 11 permitted activity exceptions. The final rule does so by expanding the statutory definition of trading account and by imposing robust requirements on permitted activities.

Scope and jurisdictional issues

Section 13(b)(2) of the BHC Act provides rulemaking authority to the federal banking agencies with respect to IDIs; to the Board for companies that control IDIs, foreign banks treated as bank holding companies under the International Banking Act, and certain

[7] See 77 FR 33950 (June 8, 2012).

[8] See FSOC "Study & Recommendations on Prohibitions on Proprietary Trading & Certain Relationships with Hedge Funds and Private Equity Funds" (January 2011).

subsidiaries of the aforementioned entities; and to the SEC and the CFTC with respect to entities for which they are the primary financial regulatory agency (PFRA).[9]

Proprietary trading

Proprietary trading framework

The final rule prohibits a banking entity from engaging in proprietary trading. The final rule defines proprietary trading, consistent with the proposed rule, as engaging as a principal for the trading account of the banking entity in any purchase or sale of one or more financial instruments (i.e., any security, derivative, commodity future, or option on any such instrument). A financial instrument does not include a loan (i.e., any loan, lease, extension of credit, or secured or unsecured receivable that is not a security or a derivative), spot foreign exchange or currency,[10] or a spot commodity.

Trading account is defined in section 3(b)(1) of the rule and implements the statutory prohibition by covering certain transactions that have short-term trading intent. Specifically, it covers the purchase and sale of financial instruments for the purpose of short-term resale, benefiting from actual or expected short-term price movements, realizing short-term arbitrage profits, or hedging one or more positions described in this sentence.

For IDIs (or holding companies) that calculate risk-based capital ratios under the market risk capital rule, the final rule's definition of *trading account* is linked to the definition of *covered position* in the market risk capital rule by including the purchase or sale of "financial instruments that are both market risk capital rule covered positions and trading positions (or hedges of other market risk capital rule covered positions)." [11]

Section (b)(1)(iii) covers the purchase or sale of financial instruments for any purpose if "the banking entity:

(A) is licensed or registered, or is required to be licensed or registered, to engage in the business of a dealer, swap dealer, or security-based swap dealer, to the extent the instrument is purchased or sold in connection with the activities that require the banking entity to be licensed or registered; or

[9] Section 2(12)(A) of Dodd–Frank, in relevant part, defines PFRA as the appropriate federal banking agency, with respect to institutions described in section 3(q) of the Federal Deposit Insurance Act, except to the extent that an institution is or the activities of an institution are otherwise described in subparagraph (B), (C), (D), or (E). Under paragraphs (B)(xiii) and (C)(viii), the SEC and CFTC are the PFRA, respectively, for any securities-based swap dealer or swap dealer "with respect to the swap activities of the person that require such person to be registered under that Act."

[10] The rule defines as derivatives all forwards and swaps in foreign exchange, but not spot foreign exchange.

[11] In general, covered positions are trading positions, or hedges of other covered positions, and a foreign exchange or commodity position regardless of whether the position is a trading asset or trading liability. See the market risk rule's definitions for *covered position* and *trading position* (which is incorporated into the market risk rule's definition of covered position) and the requirement to be "able to hedge the material risk elements in a two-way market."

(B) is engaged in the business of a dealer, swap dealer, or security-based swap dealer outside of the United States, to the extent the instrument is purchased or sold in connection with the activities of such business."

The final rule also presumes that if a banking entity holds a financial instrument for less than 60 days (or substantially transfers the risk of the instrument within 60 days), the instrument falls within the trading account unless the entity can demonstrate otherwise. The final rule adopts these provisions essentially as proposed.

The purchase or sale of financial instruments for some specific purposes are excluded from proprietary trading (see section 3(d)). Exclusions include repos and reverse repos, securities lending, and liquidity management if the securities are highly liquid, limited to an amount that is "consistent with the banking entity's near-term funding needs," and meet a series of other requirements listed in section (d)(3) (i) – (vi).

Underwriting and market-making exemptions

The general prohibition on proprietary trading does not apply to permitted activities described in subsection 4 – 6. Section 4(a) contains the underwriting exemption and section 4(b) contains the market-making exemption.

The final rule implements the statutory requirement that a banking entity be permitted to engage in underwriting and market-making related activities to the extent that such activities are designed not to exceed the reasonably expected near-term demands of clients, customers, or counterparties (RENTD). The final rule generally provides that the amount and types of the financial instruments (or, in the context of underwriting, securities) in a trading desk's underwriting position or market-maker inventory, as the case may be, are designed not to exceed RENTD. A banking entity must consider various factors in determining RENTD and must adopt a compliance program—consisting of policies and procedures, internal controls, analysis, and independent testing—that is reasonably designed to ensure compliance.

Overall, the final rule implements the underwriting exemption in a manner intended to reflect the range of securities offerings that an underwriter may help facilitate on behalf of an issuer or selling security holder and the types of activities an underwriter may undertake in connection with a distribution of securities.

The final rule implements the market-making exemption with key modifications to address commenters' concerns that the proposed approach was too restrictive, particularly with respect to less liquid markets. The final rule defines client, customer, or counterparty for purposes of satisfying the RENTD requirement. Under the final rule, a banking entity may not treat another banking entity as a client, customer, or counterparty to satisfy RENTD if the second banking entity has trading assets and liabilities of $50 billion or more, unless the banking entity documents why the second entity should be treated as a client, customer, or counterparty or the trade is conducted anonymously on an exchange or similar trading facility that permits trading on behalf of a broad range of market participants.

Risk-mitigating hedging

Section 5 describes permitted risk-mitigating hedging. The final rule provides a hedging exemption intended to permit hedging activities that are risk-mitigating and to limit potential abuse of the hedging exemption while not unduly constraining the important risk-management function served by a banking entity's hedging activities. The final rule is also

intended to ensure that any banking entity relying on the hedging exemption has in place appropriate internal control processes to support its compliance with the terms of the exemption."[12] The final rule imposes enhanced compliance requirements—similar to (but more rigorous than) those set forth in the proposed enhanced compliance plan. Among other things, a banking entity's policies and procedures must address escalation procedures, supervision, and governance related to hedging activities. They must also include position and aging limits.

Permissible hedging

Among the requirements in section 5, the following is required under section 5(b)(2)(ii) and (iii) for a hedge to be permissible:

"At the inception of the hedging activity, including, without limitation, any adjustments to the hedging activity, is designed to reduce or otherwise significantly mitigate and demonstrably reduces or otherwise significantly mitigates one or more specific, identifiable risks, including market risk, counterparty or other credit risk, currency or foreign exchange risk, interest rate risk, commodity price risk, basis risk, or similar risks, arising in connection with and related to identified positions, contracts, or other holdings of the banking entity, based upon the facts and circumstances of the identified underlying and hedging positions, contracts or other holdings and the risks and liquidity thereof;

Does not give rise, at the inception of the hedge, to any significant new or additional risk that is not itself hedged contemporaneously in accordance with this section."

Impermissible hedging

Under the final rule, a banking entity is not permitted to rely on the risk-mitigating hedging exemption to hedge risks that are not specifically identified risks, such as hedges to reduce risks associated with a banking entity's assets and/or liabilities generally or hedges to replace an income stream. The preamble to the final rule provides—

The "hedging activity cannot be designed to: reduce risks associated with the banking entity's assets and/or liabilities generally, general market movements or broad economic conditions; profit in the case of a general economic downturn; counterbalance revenue declines generally; or otherwise arbitrage market imbalances unrelated to the risks resulting from the positions lawfully held by the banking entity."[13]

[12] See the preamble of the final rule at page 324. The risk mitigation standard replaces the reasonable correlation standard of the proposed rule, but a bank will still need to continue to consider correlation as one of several factors in determining whether a hedge satisfies the risk mitigation standard. See §5(b)(1)(iii).

[13] See preamble at page 346.

Trading in domestic government obligations[14]

Under section 6, the prohibition on proprietary trading does not apply to the purchase or sale of

I. an obligation of, or issued or guaranteed by, the United States;

II. an obligation, participation, or other instrument of, or issued or guaranteed by, an agency of the United States, the Government National Mortgage Association, the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation, a Federal Home Loan Bank, the Federal Agricultural Mortgage Corporation or a Farm Credit System institution chartered under and subject to the provisions of the Farm Credit Act of 1971 (12 USC 2001 et seq.);

III. an obligation of any state or any political subdivision thereof, including any municipal security; or

IV. an obligation of the FDIC, or any entity formed by or on behalf of the FDIC for purpose of facilitating the disposal of assets acquired or held by the FDIC in its corporate capacity or as conservator or receiver under the Federal Deposit Insurance Act or Title II of the Dodd–Frank Wall Street Reform and Consumer Protection Act.

Covered funds activities and investments

In the final rule, the Agencies have joined the definitions of hedge fund and private equity fund into a single definition of covered fund and have defined this term as any issuer that would be an investment company as defined in the Investment Company Act but for subsection 3(c)(1) or 3(c)(7) of that Act with a number of express exclusions and additions. The final rule prohibits a banking entity, as principal, from acquiring or retaining an equity, partnership, or other ownership interest[15] in, or acting as a sponsor[16] to, a covered fund, unless otherwise permitted under the rule.

To qualify for an exemption under subsection 3(c)(1) or 3(c)(7) of the 1940 Act, an issuer must not make a public offering of its securities, and its securities must be held by no more than 100 persons or exclusively by persons that are qualified purchasers as defined in section 2(a)(51) of the Act.

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[14] The Agencies are relying on their exemptive authority under section 13(d)(1)(J) of the BHC Act to permit some trading in foreign government obligations.

[15] The final rule defines ownership interest as any equity, partnership, or other similar interest in a covered fund that exhibits certain features or characteristics, such as having the right to participate in the selection or removal of a managing member of the covered fund or having the right to receive a share of the income, gains, or profits of the covered fund. A restricted profit interest, subject to certain conditions, does not qualify as an ownership interest under the final rule.

[16] The final rule defines sponsor to mean serving as general partner, managing member, trustee, or commodity pool operator of a covered fund; selecting or controlling a majority of directors, trustees, or management of the fund; or sharing with a covered fund the same name or a variation of the same name. While the proposed rule defined trustee to exclude a directed trustee, the final rule has been clarified to exclude from the definition of trustee: (i) a trustee that does not exercise investment discretion over the covered fund and (ii) a trustee that is subject to certain fiduciary standards imposed under foreign law.

The statute provides that nothing in it "shall be construed to limit or restrict the ability of a banking entity ... to sell or securitize loans." The final rule implements this statutory rule of construction by excluding certain loan securitizations from the definition of covered fund. This exclusion generally covers any issuer of asset-backed securities if the underlying assets are limited to loans, certain servicing assets, and certain interest rate and foreign exchange derivatives used for hedging purposes. The final rule also excludes other vehicles that satisfy the requirements of the loan securitization exclusion and certain other requirements under the final rule: qualifying asset-backed commercial paper conduits, certain titling trusts used to hold vehicle titles and master-feeder structures used in credit card securitizations, and certain foreign issuers of covered bonds.[17]

De minimis investments

A banking entity may invest in a covered fund that it organizes and offers either in connection with establishing the fund or as a de minimis investment. By the end of one year after the date of establishment of the fund, a banking entity is required to comply with de minimis investment limits that restrict its investment in any one fund to 3 percent of either the value or the number of ownership interests in the covered fund (calculated on a quarterly basis). In addition, a banking entity must limit its total aggregate investments in all covered funds to 3 percent of its tier 1 capital. Moreover, it must deduct any investments in covered funds from its tier 1 capital. The final rule does not require a banking entity to include the pro rata share of any ownership interest held by any entity that is not controlled by the banking entity as would have been required under the proposal.

Limitations on relationships with a covered fund

The final rule implements the Super 23A prohibition and 23B limitations essentially as proposed.[18] The final rule prohibits a banking entity with a specified relationship with a covered fund and its affiliates (e.g., the banking entity serves, directly or indirectly, as the investment manager, investment adviser, or sponsor to the covered fund or organizes and offers the covered fund for its trust, fiduciary, and investment advisory customers) from entering into any transaction with the covered fund, or any other covered fund that is controlled by such fund, that would be a covered transaction under section 23A of the Federal Reserve Act.[19] This prohibition is more restrictive than the usual affiliate transaction

[17] Given the statutory mandate, the final rule does not exclude any securitization vehicles that do not satisfy the requirements of a loan securitization because they also hold impermissible non-loan assets, such as collateralized loan obligations, credit funds, pass-through real estate investment trusts, corporate debt repackaging vehicles, issuers of insurance-linked notes, and foreign issuers of asset-backed securities. These vehicles would need to rely on the exemption for organizing and offering a covered fund under section 11 of the final rule, including applicable investment limits and affiliate transaction restrictions.

[18] The Act generally prohibits a banking entity that, directly or indirectly, serves as investment manager, investment adviser, or sponsor to a covered fund (or that organizes and offers a covered fund) from entering into a transaction with a covered fund that would be a covered transaction as defined in section 23A of the Federal Reserve Act. Section 23B generally requires that transactions be on market terms or on terms at least as favorable to the banking entity as a comparable transaction by a banking entity and an unaffiliated third party.

[19] The final rule adopts the statutory definition of a covered transaction, which generally includes: (i) a loan or extension of credit; (ii) a purchase of or an investment in securities; (iii) a purchase of assets (with some exceptions for purchases of real and personal property exempted by the Board); (iv) the acceptance of securities

prohibition under section 23A, which only imposes quantitative and qualitative limitations on covered transactions. In addition, the final rule clarifies that exemptions from the statutory limits under section 23A, as implemented by the Board in its Regulation W, do not apply to Super 23A.

Compliance program requirements

The final rule imposes reporting and recordkeeping requirements on large banking entities engaging in permitted market making, underwriting, risk-mitigating hedging, and trading in certain government obligations. The final rule adopts seven of the 17 proposed metrics, with some clarifying changes and modifications. These metrics are

1. risk and position limits and usage;
2. risk factor sensitivities;
3. value-at-risk (VaR) and stress VaR;
4. somprehensive profit and loss Aattribution;
5. inventory risk turnover;
6. inventory aging; and,
7. customer facing trade ratio.

The final rule also imposes a certification requirement on the chief executive officer (CEO) of every banking entity that is subject to the enhanced compliance program. Specifically, the final rule requires the CEO to annually attest in writing to the appropriate supervisory agency that the banking entity has in place processes to establish, maintain, enforce, review, test, and modify the enhanced compliance program in a manner reasonably designed to achieve compliance.

The final rule imposes compliance and reporting requirements tailored to the size of a banking entity in accordance with the thresholds shown in table 1.

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or other debt obligations issued as collateral security for a loan or extension of credit to any person or company; (v) the issuance of a guarantee, acceptance, or letter of credit, including an endorsement or standby letter of credit; (vi) a transaction involving the borrowing or lending of securities; and (v) a derivative transaction.

Table 1: Compliance and reporting requirements

Metrics reporting requirements – appendix A
A banking entity must report quantitative metrics under appendix A if it has trading assets and liabilities (excluding trading assets and liabilities from U.S. government and agency obligations) the average gross sum of which (on a worldwide consolidated basis) over the previous four quarters, as measured as of the last day of each quarter, equals or exceeds the following thresholds: • $50 billion beginning on June 30, 2014; • $25 billion beginning on April 30, 2016; and • $10 billion beginning on December 31, 2016.
Compliance program requirements
Enhanced compliance program – section_.20(c) and appendix B
A banking entity must establish an enhanced compliance program under appendix B if the banking entity • engages in proprietary trading and is required to report metrics pursuant to appendix A; • has reported total consolidated assets, as of the previous calendar year-end, of $50 billion or more; or • is notified in writing by its relevant supervisory Agency that it must comply with appendix B.
Core compliance program – section_.20(b)
A banking entity must establish a core compliance program under section_.20(b) if the banking entity • engages in proprietary trading or covered fund activities and investments; and • has total consolidated assets over $10 billion but under $50 billion.
Simplified compliance program for banks with modest activities – section_.20(f)(2)
A banking entity must include references to the requirements of section 13 of the BHC Act and subpart D of the final rule in its existing compliance policies and procedures, and update such policies and procedures as appropriate given the activities, size, scope, and complexity of the banking entity, if the banking entity • engages in proprietary trading or covered fund activities and investments; and • has total consolidated assets of $10 billion or less as reported on December 31 of the previous two calendar years.
No compliance program for banks with no covered activities – section_.20(f)(1)
A banking entity that does not engage in proprietary trading or covered fund activities and investments (other than permitted trading in domestic government obligations under §_.6(a) of the final rule) satisfies the compliance program requirements if it establishes the core compliance program prior to becoming engaged in such activities or making such investments.

IV. Estimated costs and benefits of the final rule

Direct costs of complying with mandates

Banks' expenditures: Primarily associated with proprietary trading and compliance

We estimate there are approximately 46 OCC-supervised banking entities (referred to as banks) that will be required to (i) report metrics, (ii) establish an enhanced compliance program, or (iii) establish a core compliance program.[20] The third row of table 2 shows the

[20] Under section 20(e)(1) banks that have more than $10 billion in assets are required to maintain documentation of the exclusions or exemptions they relied on for unregistered funds that the bank has determined are not covered funds. With the exception of two banks (the excluded banks), section 20(e) compliance costs are included in the estimate of banks' expenditures shown in table 2. One of the excluded banks is a member of a bank holding company that will be required to comply with the appendix B-enhanced compliance requirements. Because appendix B requirements incorporate the section 20(e) requirements for the holding company and its affiliates, we believe the costs associated with the section 20(e) documentation requirements for this banking entity should be captured by the Board. The second excluded bank reported having one CIF. See the second footnote for table 3, which explains why we include 3 percent of tier 1 capital for all OCC-supervised banks.

estimated annual compliance related expenditures for these 46 banks. The first row of table 2 shows that the estimated compliance expenditures for seven banks account for the majority of compliance-related expenditures. Approximately 88 percent of estimated 2014 expenditures are related to satisfying the RENTD requirement under the market making and underwriting exemptions. Compliance costs associated with RENTD are based on our estimate of the number of trading desks.[21] We use the number of trading desks because banks' compliance program requirements include reasonably designed written policies and procedures, internal controls, analysis, and independent testing regarding the limits for each trading desk, including factors used to determine the RENTDs of clients, customers, or counterparties and levels of exposures to relevant risk factors arising from the trading desk's financial exposure.

Table 2: Estimated annual compliance costs (in millions of dollars)[22]

	Number of trading desks	2014	2015	2016	2017
Seven large market-making banks	1,100	$402	$365	$365	$365
39 other banks	491	$0	$176	$167	$161
Annual cost	1,591	$402	$541	$532	$526

We assume one full time equivalent (FTE) per trading desk will be required to comply with the estimation part of the RENTD associated compliance requirements.[23] An additional 0.25 FTEs will be required to comply with the testing and validation part of the RENTD associated compliance requirements. The estimated annual cost of an FTE for RENTD compliance is $257,875 per year.[24] Thus, 2014 RENTD-related costs are $283.7 million for estimation (1,100 trading desks x $257,875) and $70.9 million for testing and validation (1,100 FTEs x 0.25 x $257,875). The next two largest components of estimated 2014 compliance costs are the set-up costs for reporting metrics ($17.7 million) and costs

[21] Our estimate is based on 200 trading desks per U.S. banking entity whose lead bank reported second-quarter 2013 total assets greater than $1 trillion. Our cost estimate for the number of trading desks for the largest OCC-supervised banks is based on a reference in a comment letter. See Bank of America at page 8.

[22] All costs are in 2014 dollars.

[23] The FTEs per trading desk estimate for RENTD-related compliance was provided by the Market Risk Analysis Division staff of the OCC's Economics Department. We assume banks achieve some economies of scale by combining the activities associated with some mandates (e.g., the reporting requirements) across multiple trading desks.

[24] To estimate the cost of labor, we generally use the 90th percentile amount reported by the U.S. Bureau of Labor Statistics (BLS) for one or more occupations. For this rule, we reviewed the BLS May 2012 estimates for wages by industry and occupation and found that the BLS did not report a dollar amount for 90th percentile wages for economists and statisticians in North American Industry Classification System (NAICS) 523100 (Securities and commodity contracts intermediation and brokerage) and BLS did not report for economists in 522100 (depository credit intermediation). In its report, the BLS noted that the 90th percentile was equal to or greater than $90.00 per hour. The hourly wage used in our estimate for 2014 is $95.37 ($198,365 per year) or 106 percent of the minimum possible BLS wage for the 90th percentile in 2012 (i.e., $90). To determine the cost of an FTE, we add 30 percent to cover private sector benefits ($198,365 + $59,510 = $257,875).

associated with establishing policies and procedures at the trading desk level ($11 million).

The remaining $18.7 million includes costs for data collection,[25] an enhanced compliance program,[26] and renaming covered funds.

Banks' expenditure: Costs associated with a covered fund

As noted in section III of this document, the final rule prohibits a banking entity, as principal, from acquiring or retaining an equity, partnership, or other ownership interest in, or acting as a sponsor to, a covered fund, unless otherwise permitted under the rule. In general, a banking entity may make investments in a covered fund it organizes or offers if the investment does not exceed 3 percent of the total ownership interests of such a covered fund.[27] In addition, a bank must limit its total aggregate investments in all covered funds to 3 percent of its tier 1 capital, and it must deduct its investment in the covered fund from tier 1 capital.

The third row of table 3 includes our estimate of the upper bound of the cost of additional capital for banks' investments in covered funds. For 2014, the cost of additional capital is approximately $147.2 million ($26.1 billion x 0.06 (average cost of capital) x 0.094 (median marginal tax savings)).[28] The lower bound of the estimate is that there would be no cost if no banks made investments subject to the limit.

Table 3: Additional capital for permissible investments in covered funds

	2014	2017
Tier 1 capital (billions)[29]	$870	$974
Three percent: maximum aggregated investments in covered funds (billions)	$26.1	$29.22
Upper bound of cost of additional capital (millions)	**$147.2**	**$164.8**

In addition to the cost of capital for covered funds that banks may retain, subject to the 3 percent limit (permissible covered funds), there are some covered funds that banks may have to sell (impermissible covered funds), thereby reducing the demand for those

[25] Because some banking entities have to report metrics on June 30, 2014, that have a 90-day reporting period, banks required to report metrics will have approximately 90 days after the final rule is released to ensure they have adequate systems and data storage to capture and process the data they will need to comply with the reporting and recordkeeping requirements. Bank commenters noted that that there would be systems costs.

[26] See appendix B of the rule for the enhanced compliance requirements. The enhanced compliance cost estimate includes training.

[27] Under the final rule, a bank may retain a larger interest in a covered fund to comply with risk retention requirements.

[28] See the *Impact Assessment for Basel III Final Rule* (March 31, 2013).

[29] The 2014 amount is the aggregate tier 1 capital reported by OCC-supervised banks on third-quarter 2013 call reports. The 2017 amount is our estimate of the aggregate tier 1 capital that well-capitalized OCC-supervised banks will be required to hold on January 1, 2018. Our estimate is based on analysis done for other regulations. See the *Impact Assessment for Basel III Final Rule* (March 31, 2013) and the *Impact Assessment for the Proposed Supplementary Leverage Ratio* (July 8, 2013).

investments.[30] We assessed the impact of that decline by using research by Ellul, et al. (2011), which suggests that issuers' corporate bond prices drop roughly 11 percent following downgrades in issuers' credit ratings from investment grades to speculative grades. The authors show that bond prices drop following the downgrades because of the decrease in demand for these issuers' bonds from regulated insurance companies that face regulatory restrictions in holding speculative grade bonds.[31] Because the decrease in bond prices found by Ellul, et al. (2011) occurred after bond rating downgrades, it is reasonable to assume that the drop in prices they observed was due to both increased default risk and lower demand for the bonds.[32] Because we are interested only in the decline associated with a lower demand, we also looked to research conducted by Longstaff, Mithal, and Neis (2005),[33] who find that default risk explains 50 percent of the AAa/Aa corporate bond yield/Treasury yield spread. Combining the findings of these two pieces of research, we estimate that the decline in the market value of banks' investments in impermissible covered funds could drop by up to 5.5 percent.

The OCC's costs

We estimate that additional costs to the OCC associated with the supervision of banks' compliance with the final rule will not have a material impact on the OCC's budget. Costs are not likely to exceed $10 million, which is less than 1.0 percent of the agency's funding for fiscal year 2014.

Table 4: Summary of the OCC's cost estimate (in millions)

Description	Annual costs	
	Lower bound	Upper bound
Banks' compliance expenditures[34]	$402	$541
Haircut (5.5 percent) on impermissible covered funds[35]	$0	$3,630

[30] Asset-backed securities that do not fall within the final rule's exemption for loan securitizations are subject to the general prohibition against ownership of covered fund interests. CDOs typically comprise pools of mortgage-backed securities, not loans, and accordingly will not qualify for the loan securitization exemption. CLOs mainly comprise pools of commercial loans but often include an additional portion of longer-term debt securities in the pool. Because of the inclusion of these debt securities, which are not loans, in the CLO structure, we expect CLOs typically will not qualify for the loan securitization exemption.

[31] Ellul, Andrew, C. Jotikashira, C. Lundblad, "Regulatory Pressure and Fire Sales in the Corporate Bond Market," *Journal of Financial Economics*, 101, 3 (September 2011).

[32] Ellul, et al. show that after 35 weeks the price drop is reversed because other market participants step in and purchase the excess supply of bonds. CDO and CLO assets held by banking entities are relatively illiquid compared with the assets considered by Ellul et al. To estimate the upper bound of costs associated with the requirement, we make the conservative assumption that reductions in fair value would not reverse over time.

[33] Longstaff, Francis, Sanjay Mithal, Eric Neis, "Corporate Yield Spreads: Default Risk or Liquidity? New Evidence from the Credit Default Swap Market," *The Journal of Finance*, 60, 5 (October 2005).

[34] See table 2.

[35] This one-time cost is based on banks' holdings of structured financial products (impermissible covered funds) valued at approximately $66 billion x 5.5 percent.

Description	Annual costs	
	Lower bound	Upper bound
Cost of additional capital	$0	$165
OCC compliance costs	$10	$10
Total estimated costs	**$412**	**$4,346**

Non-monetized costs

Costs associated with the exclusion of interdealer trading from RENTD

Interdealer markets allow customers to access a larger pool of liquidity than any single dealer could provide. Because wholesale trade is essential to major financial markets, interdealer trade is an integral part of market design and is prominent in both equity and fixed income markets.[36] Thus, disruptions to interdealer trading could have widespread market implications. Under the final rule, transactions on a national securities exchange or other anonymous trading facilities that permit trading on behalf of a broad range of market participants may be included in RENTD. However, banks may not include interdealer trading in RENTD because, under the final rule, transactions between a bank and another market-maker do not constitute "customer" demand.[37]

We identify two important costs to not including interdealer trading in RENTD.[38]

First, not allowing interdealer trading in estimates of RENTD will prohibit banks from holding inventory for what has historically been a sizeable fraction of liquidity and trading volume in financial markets. For example, comprehensive studies have shown that interdealer trading constitutes the majority of trading in foreign exchange markets and a sizeable fraction of trading in stock markets. Therefore, we expect that there could be a large decrease in liquidity in these markets if banking entities subject to the rule are unable to hold inventories of securities in anticipation of these trades.[39] In addition, some research has

[36]For example, interdealer trading on the London Stock Exchange constitutes some 40 percent of trading volume. In the market for U.S. Treasuries, two-thirds of the transactions are handled by interdealer brokerage firms, while the remaining one-third is done via direct interactions between the primary dealers. In the U.S. foreign exchange market, interdealer trading far exceeds public trades, accounting for about 85 percent of the volume. See Viswanathan, S. and James Wang, "Inter-Dealer Trading in Financial Markets," *Journal of Business*, vol. 77, no. 4 (2004).

[37] The general exclusion of interdealer trading from RENTD only applies to banking entities that have trading assets and liabilities greater than $50 billion.

[38] To avoid the costs we identify, the rule may encourage banks to move permissible trading volume from bilateral transactions into exchanges, dark pools, or other alternative trading systems. By not directly transacting with other market-makers, banks should be able to include this indirect interdealer trading volume in their forecasts of RENTD. "More than a third of U.S. stocks are now traded through dark pools, most of which are run by banks and brokers and often have lower fees than exchanges." See McCrank, John, *Reuters* (October 1, 2013).

[39] Empirical research by Reiss and Werner (1997) helps to illustrate the difficulty of differentiating between inventory control and proprietary trading. The authors examine dealer inventory cycles in the London Stock

shown that historically, interdealer trading often represents a larger fraction of trading volume during periods of unusually high trading volume. This could imply that liquidity and trading volume could be impeded at times when demand for liquidity is at its highest if inventories based solely on estimates of RENTD are quickly exhausted because RENTD estimates do not account for the substantial demand from interdealer trading. In order to clear large positions or provide the same levels of liquidity through customers' trade, large interdealer trades would have to be broken down into a larger number of individual customer trades, which could slow trading and increase uncertainty about the prices at which trades can be executed. For example, Reiss and Werner (2004) found that "rapid sequences of direct quote-based trades *in the same direction by the same dealer* are associated with significantly larger price impacts than single trades."[40]

A second cost is that banks may be limited in using interdealer trading as a form of inventory risk sharing.[41] In their market making activities, banks have historically accepted large inventories of stocks (i.e., blocks) for short time periods to execute large customer trades. Interdealer trading allows several banking entities to quickly reallocate inventories among

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Exchange and find that some market makers use interdealer trade to take positions in anticipation of price appreciation and others take positions in advance of customer trade (prepositioning). Prepositioning occurs because market makers do not have to automatically execute large customer trades, allowing the market maker and customer to negotiate both the price and timing of the trade. In many instances, the market maker grants the customer price improvement if the market maker is willing to cede the timing of the trade to the market maker. In return, the market maker usually guarantees the customer a ("protected") price based on current market conditions. This practice thus allows the market maker to "work" the order while holding out to the customer the possibility of price improvement. If market makers are made to immediately execute large customer trades to meet regulatory requirements, the price improvements offered to customers in this case would be lost. See Reiss, P., and Werner, I., "Does Risk Sharing Motivate Inter-Dealer Trading?" *Journal of Finance* 53: 1657–1703 (1998).

[40] See Reiss, Peter and Ingrid Werner, "Anonymity, Adverse Selection, and the Sorting of Interdealer Trades," *The Review of Financial Studies* (2004).

[41] Inventory control models (e.g., Amihud and Mendelson, 1980; Ho and Stoll, 1981) focus on how risk-averse dealers adjust prices to control their inventory of an asset. The empirical evidence in Hansch, Naik, and Viswanathan (1998), Naik and Yadav (1997), and Reiss and Werner (1999) suggests that the layoff of large orders (risk sharing) is an important reason that interdealer trading occurs on the London Stock Exchange. Additionally, Bjonnes and Rime (2003) find evidence of dealer risk sharing in the foreign exchange market. Information-based models (e.g., Kyle, 1985; Glosten and Milgrom, 1985; Admati and Pfleiderer, 1988) consider learning and adverse-selection problems when some market participants have private information. See Amihud, Y. and Mendelson, H, "Dealership Market: Market Making with Inventory," *Journal of Financial Economics*, 8, 31.53 (1980); Ho T. and Stoll H.R., "Optimal Dealer Pricing Under Transactions and Return Uncertainty," *Journal of Financial Economics*, 9, 47.73, (1981); Hansch, O., Naik, N., and Viswanathan, S., "Do Inventories Matter in Dealership Markets? Evidence from the London Stock Exchange," *Journal of Finance* 53: 1623–1656, (1998); Geir Hoidal Bjonnes & Dagfinn Rime, "Dealer Behavior and Trading Systems in Foreign Exchange Markets," Working Paper 2003/10, *Norges Bank* (2003); Naik, N. and P. Yadav, "Risk Sharing Among Dealers: Evidence on Inter-Dealer Trading in the London Stock Exchange," working paper, *London Business School* (1997); Kyle A.S., "Continuous Auctions and Insider Trading," *Econometrica*, 53(6), 1315.1335 (1985); Glosten, L.R. and Milgrom, P.R., "Bid, Ask and Transaction Prices in a Specialist Market With Heterogeneously Informed Traders," *Journal of Financial Economics*, 14(1), 71.100, (1985); Admati, A.R. and Pfleiderer, P., "A Theory of Intraday Patterns: Volume and Price Variability," *Review of Financial Studies*, 1(1), 3.40, (1988).

themselves to reduce the risks associated with these large blocks of equities. If banks cannot quickly adjust their RENTD to accommodate the risk sharing demand or needs of other market-makers, however, then banks may be forced to individually hold greater customer demand inventory, which increases banks' cost of hedging or increase exposure to risks.[42]

Decreased liquidity

Research by Hasbrouck (2009) points out that decreased liquidity would likely be associated with increased bid-ask spread transaction costs for stock market investors. Hasbrouck finds significant correlation between estimates of bid-ask spread transaction costs and several measures of stock market liquidity.[43] The results in Hasbrouck's study imply that a one-standard deviation decrease in liquidity would result in a 10-percent increase in bid-ask spread transaction costs paid by stock market investors.[44]

Migration of risk

In general, implementation of the final rule may cause some financial activity to migrate to unregulated firms or to firms that are subject to less regulation than banking entities. Implementation of the rule may also cause a migration of risk within banks. For example, given the limitations on other types of trading activity being imposed by the final rule, it could result in a migration of risk within the government-sponsored agency category. This migration could result in a change in the composition of the banks' portfolio of government agency securities. For example, despite the fact that some agency collateralized mortgage obligation (CMO) tranche types, such as interest only (IO), inverse IOs (IIO) and Z tranches, have increased risk of fluctuations in market value, the general prohibition on proprietary trading does not apply to any financial instrument that is issued or guaranteed by an entity listed in section 6(a)(2) of the final rule (e.g., Fannie Mae or Freddie Mac).[45]

Reduce banks' ability to manage risk

In the preamble, the Agencies note that "in contrast to certain commenters' requests, [they decided] not to expand [the] liquidity management provision to broadly allow asset-liability management, earnings management, or scenario hedging"[46] and, as we noted in section II of

[42] As we noted in section III of this document, under the final rule, a banking entity may not treat another banking entity as a client, customer, or counterparty to satisfy RENTD if the second banking entity has trading assets and liabilities over a $50 billion threshold unless the banking entity documents why the second entity should be treated as a client, customer, or counterparty.

[43] Correlation estimates using different measures of stock market liquidity range from 0.5 to 0.6.

[44] Hasbrouck, Joel, "Trading Costs and Returns for U.S. Equities: Estimating Effective Costs from Daily Data," *Journal of Finance*, 64(3) at pages 1445-1477 (June 2009).

[45] The final tranche of a CMO often takes the form of a Z-bond. Because holders of these securities do not receive cash until the earlier tranches are paid in full, periodic interest accruals are added to the initial face amount of the bond. In a changing interest rate environment, the value of the Z-bond tends to be more volatile than other tranches. Additionally, IOs may be used for hedging because their market value moves in the opposite direction from most other mortgage and fixed-income securities.

[46] See preamble at page 66.

this document, replacing an income stream is not permitted under the hedging exemption. Because banks use a variety of hedging techniques—that would generally not be permissible under the rule—to manage banks' exposure to risks, restrictions in the final rule could reduce banks' options or tools available to manage risk. For example, the fact that scenario hedges may show significant correlation only on large movements in prices or macroeconomic conditions may be precisely what makes the hedges especially valuable to banks as risk-management tools.

Non-monetized benefits

Benefits associated with metrics reporting

There are several overall benefits of the reporting and record keeping requirements of the final rule. One benefit is that regulators will be able to better understand the breadth and types of covered trading activities that banks engage in and the risks associated with these covered trading activities. Another benefit is that banks will be able to monitor their covered trading activities and identify those that should receive further management review. In addition, regulators will be able to evaluate whether covered trading activities that are permissible trading under various exemptions (i.e., underwriting and market making-related activity, risk-mitigating hedging, or trading in certain government obligations) may be impermissible because they " result, directly or indirectly, in a material exposure to a high-risk asset or high-risk trading strategy."[47] Finally, regulators will be able to monitor covered trading activities offsite to aid in planning onsite risk-based examinations.

There are distinct benefits to each of the metrics that banks are required to report.

- Risk factor sensitivities provide regulators information on how sensitive banks' risks are to different economic and financial variables, such as commodity prices, interest rates, and exchange rates.
- Individual VaR and SVaR measures provide regulators with an overall summary of risk for each bank's trading portfolio. Taken together with information on the VaR that banks calculate for the market risk rule, users of the information can to assess how each overall trading desk contributes to the overall VaR.
- Risk and position limits will provide benefits by allowing users to combine this information with risk factor sensitivities and VaR measures to assess how well banks are managing risks and the extent that the desk limits (or risk limits) are a binding constraint on traders' activities.
- Comprehensive profit and loss attribution reports for each trading desk will help regulators assess whether fluctuations in profit are typically due to existing positions, new positions, or other factors. Reports for new or existing positions will benefit regulators by providing information as to whether market-making revenues for new positions are large relative to the risks that banks bear in holding securities in their portfolio to facilitate market-making activities.
- The inventory aging metrics will help regulators assess whether banks are holding excess stocks of securities for market-making activities, and the customer facing trade

[47] See section 7(a)(2).

ratio will give insights into the relative importance of banks' market-making activities as a source of trading volume under covered trading activities relative to other trading activities (*i.e.*, risk-mitigating hedging).

Reduce conflicts of interest

As Paul Volcker noted "[w]hen the bank itself is a 'customer,' i.e., it is trading for its own account, it almost inevitably find itself, consciously or inadvertently, acting at cross purposes to the interests of an unrelated commercial customer of a bank."[48] By generally prohibiting the purchase or sale of certain financial instruments principally for the purpose of profiting from short-term price movements, section 619 and the final rule should eliminate some conflicts of interest. Additionally, banking entities subject to the final rule may have an advantage over firms that are not subject to the rule because bank customers and counterparties may prefer to enter into transactions with firms that are not be able to profit from their knowledge of customers' trades.

Protect and improve core banking services

By embracing "the spirit of the Glass-Steagall Act's separation of 'commercial' from 'investment' banking… [the Volcker Rule restores] a protective barrier around our critical financial infrastructure."[49] Mr. Volcker noted that "curbing the proprietary interests of commercial banks is in the interest of fair and open competition as well as protecting the provision of essential financial services. Recurrent pressures, volatility, and uncertainties are inherent in our market-oriented, profit-seeking financial system. By appropriately defining the business of commercial banks, and by providing for the complementary resolution authority to deal with an impending failure of very large capital market institutions, we can go a long way toward promoting the combination of competition, innovation, and underlying stability that we seek."[50]

Improve safety and soundness

In a floor statement, U.S. Senator Jeff Merkley indicated that section 619 "will tamp down on the risk to the system arising from firms competing to obtain greater and greater returns by increasing the size, leverage, and riskiness of their trades."[51]

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[48] See statement of Mr. Volcker before the Committee on Banking, Housing, and Urban Affairs of the U.S. Senate (February 2, 2010) at page 4.

[49] See statement U.S. Senator Jeff Merkley at S5894.

[50] See Volcker statement at page 5.

[51] See statement of Sen. Merkley describing the rationale behind subsections 619, 620, and 621 of Dodd–Frank, 156 Congressional Record at S5894 (July 15, 2010). Also see subsections 7(a)(2) and (3) of the final rule. Under section 7, transactions may be deemed impermissible if they would result, "directly or indirectly, in a material exposure by the banking entity to a high-risk asset or a high-risk trading strategy;" or "[p]ose a threat to the safety and soundness of the banking entity or to the financial stability of the United States." For banks required to establish enhanced compliance programs, section 7(a)(2) will be implemented by requiring these banks to describe how the banking entity monitors for and prohibits potential or actual material exposure to high-risk assets or high-risk trading strategies presented by each trading desk.

In its comment letter, Americans for Financial Reform noted that if "[i]mplemented properly, the Volcker Rule should act as a powerful complement to improved capital rules … [because] [g]iven unlimited freedom to expand the scale and complexity of their trading book activities, banks have historically been able to arbitrage book capital rules by creating instruments that showed little variance in value during 'normal' market conditions but had enormous concealed tail risks in stressed market conditions."[52]

Recent research has shown that trading activity increases the riskiness of a BHC, particularly during economic downturns. Using data from the first quarter of 2000 to the second quarter of 2012, King, et al. (2013) reviewed the impact of trading assets on a bank's overall risk and profitability.[53] They found that BHCs with the greatest exposure to trading were riskier and less profitable than BHCs with no trading assets.[54]

Reduce systemic risk

The restriction of trading book activities to bona fide market making, underwriting, and risk-mitigating hedging should result in restricting the total securities inventory at systemically important banks, which in turn should limit the potential losses of these systemically important banks in a stressed market, and this should add to the resiliency of the financial system. Chow et al. observed that restricting "the scope of a regulated bank's business activities could, [from] a financial stability perspective … limit contagion within and across firms."[55]

In its comment letter, Americans for Financial Reform notes that:

"[The] relationship between the Volcker Rule and systemic risk is easier to see once the statutory scope of the proprietary trading and fund investment bank is understood. Section 619 bans principal trading from trading accounts, and then permits particular activities only on the condition that they do not create systemic risk. Furthermore, it strongly limits bank relationships with off-balance sheet entities that include both hedge and private equity funds and the various intermediaries and conduits used in securitization."[56]

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[52] See Americans for Financial Reform at page 6.

[53] King, Michael R., Nadia Massoud, and Keke Song, "How Does Bank Trading Activity Affect Performance? An Investigation Before and After the Crisis," *26th Australasian Finance and Banking Conference* (September 17, 2013). Other researchers have concluded that the Volcker rule increases the probability of default. See Chung, Sohhyun and Jussi Keppo "The Impact of Volcker Rule on Bank Profits and Default Probabilities," (December 8, 2012).

[54] King, et al. sorted BHCs into four groups: A control group of banks with no significant trading activity, and terciles of BHCs based on increasing levels of trading activity. See King, et al. at page 6.

[55] Chow, Julian and Jay Surti, "Making Banks Safer: Can Volcker and Vickers Do It?" *IMF Working Paper* (November 2011). The authors also note that banning proprietary trading is likely to amplify risk shifting to the shadow banking sector. For a discussion of the interconnections of shadow banks with other regulated firms and how these connections create systemic risk for the broader financial system, see Adrian, Tobias, Adam B. Ashcraft, and Nicola Cetorelli, "Shadow Bank Monitoring," *Federal Reserve Bank of New York Staff Reports*, no. 638 (September 2013).

[56] See Americans for Financial Reform at page 6.

King, et al. investigate the contribution of trading activities to systemic risk and found "that a higher market share of trading assets increases a BHC's [marginal expected shortfall] MES and increases systemic risk, especially during the financial crisis."[57] These findings are consistent with other existing literature investigating how the share of noninterest income in operating income contributes to either systemic risk or bank failure during a financial crisis. For example, Brunnermeier et al. (2012) found that systemic risk is higher for banks with a higher noninterest income to interest income ratio.[58] After decomposing total noninterest income into two components, trading income and investment banking/venture capital income, the authors found that both components are roughly equally related to ex ante systemic risk.

Other benefits

A recent paper by Back, Li, and Ljungqvist (2013) shows that there may be benefits to a decrease in stock market liquidity due to better corporate governance. They argue that if shareholders find that firms' management are not maximizing firms' profits that shareholders can either "vote with their feet" and sell the shares or become activist shareholders and try to force management to maximize firms' profits. Back et al. show that greater stock market liquidity increases the likelihood that large influential shareholders would choose to sell their shares rather than become activist shareholders, which allows firms' management more leeway to implement non-profit maximizing policies.[59]

Lord Adair Turner, former chairman of the United Kingdom's Financial Services Agency, has suggested that "a pragmatic approach to the economic value of liquid traded markets should replace the axiomatic belief in the value of increased liquidity which characterised the pre-crisis years. Market liquidity delivers economic value up to a point, but not limitlessly. Liquid FX markets play a role in lubricating trade and capital flows, but can overshoot equilibrium values. Equity markets may be reasonably efficient at setting relative prices, but are susceptible to huge aggregate overshoots. Volatility in equity markets, however, is less harmful than volatility in debt markets. Market making can be an economically useful function, but some proprietary trading (e.g. many FX carry trades) perform[s] no useful economic purpose and can generate instability. The ability of regulators to distinguish useful market-making from destabilizing proprietary trading is, however, limited. Conversely, however, it is not nil."[60]

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[57] Ibid. at page 7. King, et al. use systemic risk measures developed by Acharya, Viral, Lasse Pedersen, Thomas Philippon and Matthew Richardson, "Measuring Systemic Risk," (May 2010). Acharya, et al. describe MES as "the average return of each firm during the 5% worst days for the market." Acharya, et al. note "that MES and leverage predict each firm's contribution to a crisis. [In contrast to]…standard measures of firm-level risk, such as VaR, expected loss, or volatility, [which] have almost no explanatory power." Acharya, et al. at page 4.

[58] Brunnermeier, Markus K., Gang Dong, and Darius Palia, "Banks' Noninterest Income and Systemic Risk," Working paper (January 2012).

[59] See Back, Li, and Ljungqvist, "Liquidity and Governance," *NBER* working paper number 19669 (2013).

[60] See Turner, Adair, "What do banks do? Why do credit booms and busts occur and what can public policy do about it?" *The Future of Finance: The LSE Report*, London School of Economics and Political Science (2010). Lord Turner delivered the same message in a CASS Business School speech, "What do banks do, what should they do and what public policies are needed to ensure best results for the real economy?" (March 17, 2010)

Some industry observers have noted that "[p]roprietary trading involves buying and selling purely for speculative reasons that have little to do with a true assessment of a financial position's underlying value. This creates inefficiencies in the market price of such positions. True price discovery is impeded by the hyper-liquidity that is introduced by speculative proprietary traders. This hyper-liquidity, motivated by nothing more than expectations of short-term price movements, creates inefficient subsidies to buyers and sellers in the market."[61]

V. Comparison with baseline

The baseline represents "the way the world would look absent the proposed action."[62] Because Dodd–Frank was enacted over three years ago, we use a post-statute baseline to evaluate the discretionary elements of the final rule. As we noted in section II of this memo, the effective date established in the statute was July 21, 2012. By its terms, the statute provides an additional two-year conformance period during which a banking entity may wind down, sell, or otherwise conform its activities, investments, and relationships to the requirements of section 619. Therefore, we assume that banks have modified some of their activities to comply with the statute's prohibitions.

Although some costs are clearly a result of the final rule, we cannot separate the extent to which other costs are attributable to the statute or the final rule. This is the case with some of the indirect costs, such as decreased liquidity.[63] Thus, if we attribute the indirect costs to the statute, the estimated cost of the final rule above the baseline ranges from $412 million to $4.3 billion.[64]

VI. Comparison with alternatives

When a statute establishes a specific requirement, and an agency is considering a more stringent standard, the agency should examine the benefits and costs of reasonable alternatives. In this section, we consider two alternatives. Because the final rule incorporates different reporting dates for metrics based on the banks' level of trading assets, one alternative we consider is the use of a single reporting date (i.e., July 10, 2015) for metrics reporting. Under this alternative, we estimate that banks' costs for compliance programs would be approximately $584 million in 2015—approximately $44 million more than our estimate for compliance program costs under the final rule.

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[61] See Occupy the SEC at page 48.

[62] See OMB Circular A-4, at page 15.

[63] As we noted in the summary, our cost estimate does not capture some costs that are quantifiable but difficult to estimate, such as decreased liquidity.

[64] Our estimates do not include opportunity cost (i.e., the difference between the rate of return on a prohibited activity and the rate of return on an alternative permissible activity). If we had estimated and included opportunity cost, however, it would be the same under the statute, the final rule and all of the alternatives.

The second alternative we consider includes a more uniform (enhanced) compliance requirement for all banks required to report metrics (i.e., banks that have assets greater than or equal to $10 billion). Under this alternative, we estimate that banks' compliance program costs would be approximately $596 million in 2015—approximately $56 million more than our estimate for compliance program costs under the final rule.

VII. UMRA

UMRA requires federal agencies to assess the effects of federal regulatory actions on state, local, and tribal governments and the private sector. UMRA's Title II generally requires federal agencies to prepare written statements that identify costs and benefits of federal mandates imposed through the rulemaking process that may result in the expenditure of $100 million or more (adjusted annually for inflation) in any one year.[65] Our estimates of banks' compliance-related expenditures range from $402 million to $541 million per year. In addition to these compliance related expenditures, we anticipate that banks' investments in structured financial products that are impermissible covered funds will drop in value. Therefore, we conclude that the final rule will result in private sector costs that exceed the UMRA threshold for a significant rule.[66]

VIII. CRA

The CRA defines a "major rule" as a rule that the Administrator of the Office of Management Budget's Office of Information and Regulatory Affairs (OIRA) finds has resulted in or is likely to result in

1. an annual effect on the economy of $100 million or more;
2. a major increase in costs or prices for consumers, individual industries, federal, state, or local government agencies, or geographic regions; or
3. significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of U.S.-based enterprises to compete with foreign-based enterprises in domestic and export markets.

Unlike the UMRA, the CRA does not explicitly exclude costs required by statute. Our estimates of total annual costs range from $412 million to $4.3 billion. Therefore, we believe the final rule is a major rule under the CRA. Our estimates of total costs, however, do not capture some costs that are quantifiable but difficult to estimate, such as indirect costs due to decreased liquidity.

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[65] Using the gross domestic product (GDP) deflator published by the U.S. Bureau of Economic Analysis, we apply the ratio of the 2012 GDP deflator to the 1995 deflator and multiply by $100 million to arrive at an inflation adjusted UMRA threshold of approximately $141 million.

[66] UMRA refers to obligations imposed by legislation and regulations as "mandates" (either "intergovernmental" or "private sector," depending on the entities affected). The direct cost to affected entities of meeting these obligations are referred to as "mandate costs." Our UMRA estimate excludes costs required by statute (e.g., the cost of additional capital).

IX. RFA

As part of our analysis, we considered whether the final rule has significant small entity effects pursuant to the RFA. Specifically, we consider if it is likely to (a) affect a substantial number of small entities, and (b) if the economic impact on a substantial number of small entities is significant. As of December 31, 2012, the OCC supervised 1,291 small entities.[67]

We conclude the final rule will not have a significant economic impact on a substantial number of small OCC-regulated entities. We designate the impact of total costs on a small bank as significant if the total costs in a single year are greater than 5 percent of total salaries and benefits, or greater than 2.5 percent of total noninterest expense. Based on our cost estimates, the final rule will have a significant economic impact on seven small banks, which is not a substantial number.[68]

[67] We base our estimate of the number of small entities on the U.S. Small Business Association's (SBA) size thresholds for commercial banks and savings institutions, and trust companies, which are $500 million and $35.5 million, respectively. Consistent with 13 CFR 121.103(a), "General Principles of Affiliation," we count the assets of affiliated financial institutions when determining if we should classify a bank we supervise as a small entity. We use December 31, 2012, to determine size because a "financial institution's assets are determined by averaging the assets reported on its four quarterly financial statements for the preceding year." See footnote 8 of the SBA's Table of Size Standards.

[68] We estimate the final rule could affect about 1,211 banks that are small entities based on the SBA general principles of affiliation (13 CFR 121.103(a)) and the size threshold for a small bank.[68] Therefore, we believe the final rule could affect a substantial number of small banks. Although we believe there is almost no impact on the majority of small banks, we tested for significance by including the cost of holding (permissible) covered funds equal to 3 percent of each bank's tier 1 capital and a haircut of 5.5 percent on investments that may be impermissible covered funds. In addition to the cost of capital, for each of the 12 banks with average trading assets over the last four quarters greater than zero, we include $5,000 (per bank) to cover the possibility that they may have some additional compliance costs. The mean cost estimate per small bank is about $7,000. The estimated maximum cost for a single bank is approximately $824,000, of which about $819,000 is related to investments in impermissible covered funds.