A publication of PwC's Financial Services Institute (FSI)

The Road to Swap Dealer Registration: Preparing for Swap Dealer Registration Under the Dodd-Frank Act of 2010

Contents

Section 1

Point of view

Point of view

A key provision of Dodd-Frank is compulsory registration of swap dealers; participants must make decisions and start executing now, in order to protect their franchises and limit reputational and regulatory risks.

Transition to registered swap dealer status for participants in the US OTC derivatives markets will require a thorough review of current booking entities and business practices.

This in turn is driving a complex analysis of—and changes to—systems, policies and procedures.

The CFTC has approved final rules for the Swap Dealer registration process, although compliance dates are not yet set. However, there may be insufficient time after issuance of final substantive rules, to effect the necessary changes to bring the business into compliance.

Firms should act on these challenges now, instead of waiting until "regulatory certainty" emerges, to avoid putting their franchises and reputations at risk.

This FS Viewpoint identifies several of the pressing and complex issues that prospective swap dealers will have to confront and resolve in order to become registered and remain in compliance. It also provides insight into how industry participants are dealing with these issues and proposes a framework for response.

Any entity defined as a swap dealer must register with the Commodity Futures Trading Commission (CFTC) or SEC, and possibly both, absent an exemption. A swap dealer is any entity that:

- Holds itself out as a dealer in swaps
- Makes a market as a dealer in swaps
- Regularly enters into swaps with counterparties as an ordinary course of business for its own account, ***or***
- Engages in any activity causing it to be commonly known in the trade as a dealer or market maker in swaps.

Exemptions are provided for *limited* swap dealing activities or certain types of small institutions.

Point of view

Registration requirements will be complex, with multiple registrations potentially required within a single institution.

Multiple regulators have begun finalizing the rules, but many are still subject to change.

US and international swap regulations are largely unfinished and in flux: Multiple regulators are finalizing complex rules in piecemeal fashion and in differing sequences. Staying abreast of regulatory change and organizing with an eye to multiple regulatory possibilities is a critical, resource-intensive task. Early registrants may gain a competitive advantage, so preparation for registration should now be under way.

Despite some rules not being final, banks have begun preparing for registration.

The time frame for registration and compliance will be compressed; firms should already be in process of bringing their future swap dealer entities and businesses into compliance with anticipated regulatory requirements, and fine tune plans when final rules are available.

Multiple registrations may be required for competitive, full-service swap dealers.

A firm dealing in "swaps" registers with the CFTC. A firm dealing in "security-based swaps" (SBS) registers separately with the SEC. Generally, SBS are swaps based on a single security or a narrow index of securities. "Swaps," on the other hand, are all other swap transactions, including those based on interest rates, commodities, broad-based indices or foreign exchange options. A swap would not include exchange traded futures or physically settled forwards.

Multiple entities within a diversified financial institution may be required to register.

Typically, banks and dealers engaged in customer flow business in OTC swaps have attempted to consolidate their principal positions (such as client facing legs and hedges) into a single legal entity (such as a bank or a special purpose bank subsidiary or "swap co".) In reality, diversified financial institutions typically have multiple, sometimes dozens, of "swap cos" scattered across the organization by geography, asset class, and counterparty type. In addition, employees of affiliated entities such as broker-dealers and foreign branch offices typically deal with customers and dealer counterparties on behalf of the swap entities. These agents may need to register as swap dealers. Market participants need to evaluate swap margin and collateral activities, and the legal entities through which these are handled; handling of US client margin for centrally cleared swaps must be through a registered Futures Commission Merchant.

Point of view

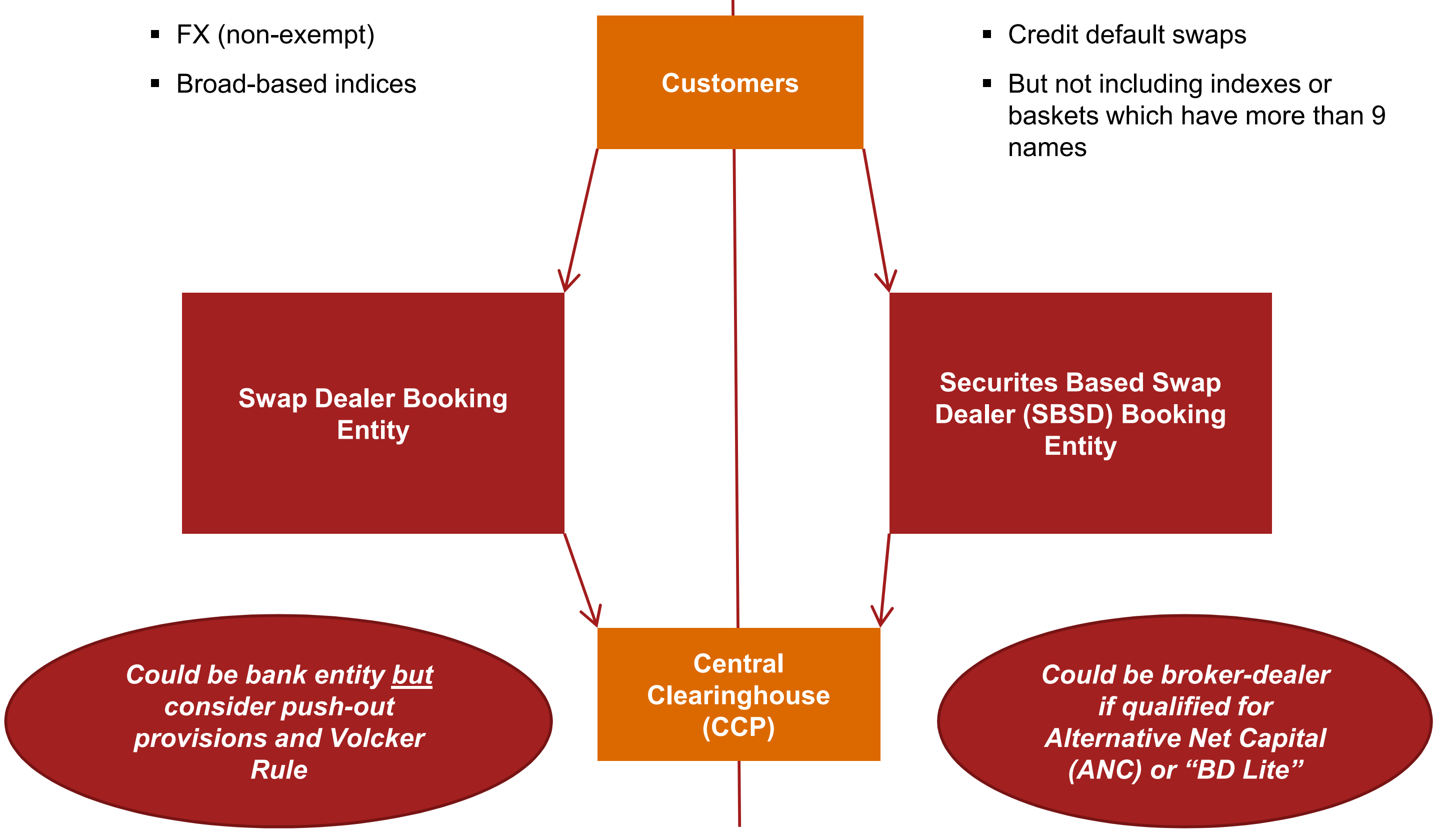
Dealing may require multiple registrations based on lines of business and booking locations.

Swaps, regulated by CFTC, require registration as swap dealer

- Rates
- Commodities
- FX (non-exempt)
- Broad-based indices

Security-based swaps, regulated by SEC, requires registration as securities based swap dealer

- Equity swaps
- Bond swaps
- Credit default swaps
- But not including indexes or baskets which have more than 9 names



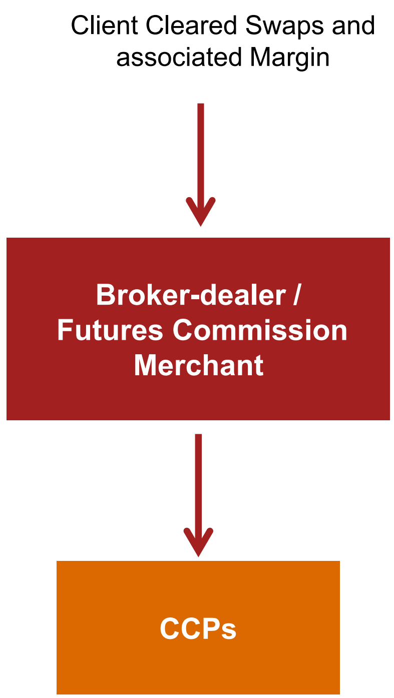
Extraterritorial considerations:

- As proposed, neither the CFTC nor SEC rules exempt offshore affiliates from registration requirements.
- To the extent registered US swap dealers engage in swaps with off-shore affiliates, final rules could require registration of both entities as swap dealers.

Point of view

Clearing of customer swaps will require registration as a Futures Commission Merchant. As regulators finalize the rules, preparation for registration should be underway.

Central Clearing of Customer Swaps must be conducted in a Futures Commission Merchant



- Dodd-Frank stipulates that only a registered Futures Commission Merchant (FCM) may accept client money or property for collateralization of centrally cleared swaps. If a dealer offers swap clearing to its US clients, such activity must be conducted within a registered FCM.
- The FCM can be the same entity as a broker-dealer (and, by extension, could also be an SD and/or SBSD), but need not be any of these.
- Required margin on bilateral (non-cleared) swaps need not be held by a FCM on behalf of the affiliated SD or SBSD entering into margined bilateral swaps.
- Diversified institutions need to evaluate whether they will need multiple memberships to various central counterparties ("CCPs.") Clearing for customers must be conducted in a FCM which is a member of the relevant CCPs, but in some cases the benefits of an additional clearinghouse membership for the primary risk entity (for example, bank), allowing the entity to clear directly without going through the FCM, may outweigh the added costs.

Point of view

Other provisions of Dodd-Frank complicate the analysis for bank holding company swap dealers.

Non-US banking institutions with US swap businesses face special challenges.

The full scope of US regulation with regard to foreign institutions is not clear, and non-US regulators are only in the beginning stages of rule writing. Non-US institutions with US business must consider whether their operations trigger US registration and, if so, the extent to which US regulation may conflict with or overlap coming home country regulation.

Push-out and Volcker create special hurdles for banks.

Bank swap dealers—US and foreign— face unique planning challenges given the Volcker Rule prohibition on proprietary trading and the "push out" prohibiting certain types of swap dealing in banks that receive federal assistance.

Capital compliance may pose significant challenges for existing "swap cos."

Registration may require, concurrent with application, the filing of audited financial statements establishing capital compliance and statements showing the source of the capital and representing that the capital has been contributed—and will continue to be used—for the purpose of operating the business. Institutions with lightly regulated, non-bank subsidiaries may require remediation of financial records in order to produce legal-entity financial statements that satisfy the external audit requirements likely to apply to registrants. It is essential that these entities carefully examine their balance sheets through the filter of capital compliance.

Point of view

Registration and compliance are likely to be a resource-intensive exercise; firms should be moving forward today with needed renovation and documentation.

Our recent interactions with market participants suggest that bringing existing swap entities into compliance with SD/SBSD requirements is likely to present a much greater challenge than simply "filling out the paperwork." Applying to register as a swap dealer is a demanding process and will require a comprehensive review of each entity's organizational structure, current practices and possible compliance gaps. Swap dealer registration applicants will be required to:

- Submit extensive documentation regarding their organizational structure and financial wherewithal to maintain capital and liquidity requirements.
- Establish that they are able to comply with various business conduct, recordkeeping and financial reporting requirements.
- Demonstrate that the IT infrastructure has the ability to process swaps centrally and bilaterally and manage operational disruptions.
- Evaluate and make decisions regarding booking models and margin, credit, and collateral practices.

The first step for any prospective registrant is a comprehensive review of all dealing activities. Dealers should consider:

- Reconfiguration of their legal entity structures or booking models and barriers to change (such as client consents, re-documentation, and novations).
- The types of swaps in which they may be dealing and in what volume.
- Whether, and to what extent, the registrant deals with "Special Entities" such as ERISA plans and municipal governments.
- Construction or enhancement of internal compliance programs, procedures, and swap documentation.
- Investment in changes to infrastructure, IT, and staffing.

Firms that deal in swaps face multiple challenges in the newly regulated US derivatives marketplace. Navigating this complex regulatory and business environment requires analysis, planning, and action amidst uncertainty and change. Final rules requiring registration and compliance of swap dealers are imminent, and while there will likely be some period of provisional registration, potential registrants should be preparing to register now.

Point of view

Financial institutions—banks and non-bank swap dealers—are struggling to design the target state legal entity configuration.

- There will likely be inherent conflicts which cannot be resolved simply. For example:
  - “Ring fencing” US-facing swap activity into US legal entities *could* limit extraterritorial reach of US regulation, but at the cost of loss of netting and increased risk management burden.
  - Client preference to face highly rated bank entity may conflict with the Volcker Rule and push-out of certain swap activities in banks.
  - Legacy swaps may remain exempt from margin and clearing, but subject the swap dealer to adverse capital treatment if unmargined.

- Swap dealer registration appears likely to encompass the entire legal entity applying for the license; registering a bank branch registers the entire bank, absent as-yet-unseen regulatory relief.

- Swap dealer registration will create significant up front and ongoing compliance and capital costs. Diversified financial institutions may need to register multiple SD/SBSD entities, but careful consideration should be given to consolidating activities in order to limit the number of registered dealer entities required.

- Entities that could be registered swap dealers include banks, swap subsidiaries of banks, broker-dealers, and futures commission merchants; in many if not most cases, legal entities may be registered in multiple capacities (for example, B-D + FCM + SD).

- Accordingly, banking entities are facing a number of issues when considering the optimal legal entity configuration.

Point of view

The swap dealer registration process should begin with a thorough assessment of the current state and the key, known requirements of a registered Swap Dealer/SBSD.

Dimensions to assess	Typical issues and challenges requiring analysis and action prior to swap dealer registration
Assess the current book of business and organizational structure to inventory the types of swaps transacted and where those swaps, and their corresponding hedges, are booked.	▪ Inconsistent/“creative” use of booking entities. ▪ Split hedges at legal entity level. ▪ Large volumes of inter-affiliate (“back-to-back”) transactions. ▪ Consolidating/optimizing number of future swap booking entities. ▪ Determining optimal treatment of legacy swap books and legal entities.
Identify **customer preference/requirements** for credit profile of swap counterparties (such as externally issued credit rating, parent guarantee).	▪ Franchise risk if credit rating/market perception not maintained. ▪ Potential adverse impact on netting sets and credit exposure.
Analyze the impact of the Dodd-Frank requirements outside of Title VII, including **"push out" provisions and the Volcker Rule,** on existing and future derivatives dealing.	▪ Potential requirement to exit or migrate prohibited activities/books. ▪ PnL impact of push-out.
Develop detailed estimates of **regulatory and economic capital costs, current liquidity, and contingent funding** required to support ongoing activities, and how the registered entities will be capitalized to meet these requirements.	▪ Considerable time and effort to conduct analysis. ▪ Strategic impact to business of increase in funding/capital costs, double leverage, and “trapped” capital in swap entities. ▪ Potential need for external capital raise.
Consider existing **infrastructure and resources** that can be leveraged in registered entity to meet compliance requirements, and identify lead time and cost to build or buy what is required to close any gaps.	▪ New infrastructure required for real-time capture and reporting of swaps as well as central trading and clearing. ▪ Data quality and governance issues. ▪ Collateral management and margin system remediation. ▪ Documentation of policies, procedures, and controls.

Section 2

Competitive intelligence

Competitive intelligence

Major market participants are struggling with a variety of challenges on the road to swap dealer registration readiness.

Challenges	Global Universal Bank A	Global Universal Bank B	Global Investment Bank C	Global Universal Bank D	Global Universal Bank E
Primary pre-Dodd-Frank swap booking vehicle(s)	▪ Home country bank ▪ Various swap cos ▪ Over 50 US swap entities	▪ Home country bank ▪ Less than 5 US swap entities	▪ US swap cos ▪ US bank ▪ UK broker-dealer ▪ 5-10 US swap entities	▪ US bank ▪ US swap cos ▪ 5-10 US swap entities	▪ Home country bank ▪ US swap cos ▪ Less than 5 US swap entities
Planned legal entity structure (post Dodd-Frank)	Bank SD/SBSD + US B-D (non ANC) ■	Bank SD/SBSD + US B-D (non ANC) ■	Bank SD + ANC B-D ▲	Bank SD + ANC B-D ▲	Bank SD/SBSD + ANC B-D ▲
Capital and liquidity for swap entities (well capitalized, robust stress-tested liquidity and funding plans)	▲	■	■	▲	▲
Risk management (regulator–approved and well controlled models, clean trade data)	▲	▲	▲	■	●
Recordkeeping and reporting (timely, accurate capture and processing of Dodd-Frank required swaps data)	●	▲	▲	▲	▲
Business conduct and supervision (robust supervisory structure, well controlled front-to-back processes)	▲	■	●	■	▲
Financial reporting for swap entities (audited swap entity G/ls, can produce timely regulatory reporting)	●	■	▲	■	▲

Degree of change required for Dodd-Frank compliance: ● On track/already ready ▲ Moderate change required ■ Significant change required

Section 3

A framework for response

A framework for response

Six major challenges exist in preparing to meet Dodd-Frank swap dealer registration requirements and compliance with applicable CFTC and SEC regulations.

Understand the requirements of provisional registration

- Provisional filing will be permitted with the submission of an initial application and rolling submissions to establish compliance with rules as they become final. Dealers choosing to register provisionally will have to dedicate staff to respond quickly to "freshen" the application upon publication of final rules.
- Provisional registration would permit the continuation of current operations, and may enable the provisionally registered to be among the first fully approved registered swaps dealers, but will require a more drawn out, piecemeal application process.

Ultimately, senior management will need to certify, under oath, the ability of each registered swap entity to conform to all regulatory requirements.

Planned legal entity structure

- Determine the optimal configuration of legal entities to be registered as swap dealers and to face US counterparties.

Capital and liquidity for swap entities

- Estimate the capital and liquidity needs of swap entities, and demonstrate the ability to meet regulatory capital requirements under market stress scenarios.

Risk management

- Ensure all risk and valuation models used in the swap business pass regulatory muster.

Recordkeeping & reporting

- Bring systems and data associated with the swap business up to Dodd-Frank requirements.

Business conduct & supervision

- Make sure all key business processes and controls in the swap dealer entities function effectively and are documented; ensure effective supervision of each swap entity.

Financial reporting for swap entities

- Ensure each swap entity can meet regulatory and statutory financial reporting requirements.

A framework for response

Identify the optimal US-facing entity configuration and assess capital, liquidity, and legal requirements.

Designing the US-registered entity configuration will be a balancing act between ring-fencing US regulatory jurisdiction on the one hand, and capital and funding costs on the other.

Rationalize the number of US-customer-facing entities which will need to register. Undertake a careful, top to bottom review of all swap books to identify each legal entity or vehicle with US nexus. It is not atypical for complex institutions to book swaps in dozens of legal entities.

- Identify the entities to be registered - and in what capacity
- Confirm the post-registration booking model
- Consider all clearinghouse-facing entities and future treatment of pre-Dodd Frank legacy swap books
- Review alternatives for registered entity

Select swap dealer entity/entities :

- OpSub(s)
- Bank
- Broker-Dealer (BD)/Futures Commission Merchant (FCM)

Legal permissibility of products and activities in the future state structure

- Novation, amendment or assignment vs. termination and re-booking of swaps to new entity, and re-papering of agreements.
- Creation of new swap could subject transaction to clearing mandate and trigger tax events.
- Unilateral novation or assignment may not be possible.
- Effect on hedging activities and counterparty credit risk management of splitting the overall book among multiple legal entities.
- Loss of netting benefits/breakage of netting sets.
- Uncertain treatment of inter-affiliate ("back-to-back") swaps.

A framework for response

Alternative Net Capital-approved broker-dealers ("ANC broker-dealers") may be favorable vehicles for holding principal swap positions; however this is available only to a limited set of the largest institutions.

- Standard SEC rules have prohibitive capital costs for derivatives booked in registered broker-dealers.
- ANC registration permits the broker-dealer to use Basel-style current exposure/potential exposure method, internal valuation models, and netting of market risk to compute capital charges on swaps. ANC broker-dealers must maintain minimum tentative net capital of $1 billion, net capital of $500 million, but in practice, must maintain $5 billion in tentative net capital (TNC) since this becomes their “early warning level” of net capital.
- Under Appendix E to SEC rule 15c3-1, firms with strong internal risk management practices may use mathematical modelling methods they utilize to manage their own business risk, including value-at-risk (VaR) models and scenario analysis, to compute deductions from net capital for market risks and for credit risks arising from OTC derivatives transactions.
- The requirement to capitalize a U.S. broker-dealer with $5 billion limits the appeal of this option, except where the broker-dealer already maintains at least this level of capital for other reasons.

A framework for response

Banks and dealers without an ANC broker-dealer need to carefully evaluate the alternative structures available.

Generally, booking swaps in non-ANC broker-dealers will result in prohibitive levels of capital charges. However, complex institutions with non-ANC broker-dealers *may* need to register their US broker-dealers as dealers in swaps and SBS, if swap sales, trading, and risk management activities take place through facilities, employees, and officers of an affiliated broker-dealer.

We believe at least two options for swap risk booking structures may exist for institutions unable to obtain ANC broker-dealer status.

Agency Model

- Where a fully qualified ANC broker-dealer is not available, we expect dealers will house swap risk and associated hedges in one or more non-broker-dealer entities (either banks or stand-alone "swap cos") registered as either or both of SD or SBSD.
- These risk entities may or may not have client-facing employees. If an institution has its affiliated broker-dealer act as agent for the legal risk entity(ies), it would appear the broker-dealer may need to register as a SD/SBSD as well as the booking entity.
- The "swap co" registering as SD or SBSD must have an effective program of supervision and compliance, as well as designated qualified control persons including a CCO and CEO.

"BD Lite"

- In 1999, the SEC proposed a scheme to allow OTC derivatives dealers to register with the Commission under a regime commonly referred to as "BD Lite." BD Lite allows OTC derivatives dealer to register as a limited purpose broker dealer and comply with ANC-style capital computations, while requiring tentative net capital of just $100 million and net capital of $20 million, provided they limit their activities to OTC derivatives.
- The BD Lite program attracted relatively few registrations due to a burdensome registration process. However, it remains a viable option for institutions unable to meet the ANC broker-dealer thresholds.
- We expect the SEC's SBSD capital rules could resemble BD Lite requirements.
- A BD Lite could potentially register as both a CFTC Swap Dealer and an SEC Securities-Based Swap Dealer.

Planned legal entity structure

Capital and liquidity

Risk management

Recordkeeping & reporting

Business conduct & supervision

Financial reporting

A framework for response

Prepare a stress-tested capital, liquidity, and funding plan for each swap entity.

Prospective SDs and SBSDs will need to prepare detailed estimates of regulatory and economic capital required to support the planned book of activities in each entity and in aggregate.

Our experience suggests that many, if not most, organizations will struggle with this at some level because the analysis is complex, requires consensus-building and buy-in around the numerous required assumptions, and key rules such as CFTC and SEC swap dealer risk capital charges are not yet finalized.

Nevertheless, prospective swap registrants will need to prepare these analyses in order to demonstrate they can meet or exceed capital and liquidity requirements post-registration, in both normal and stressed market conditions.

Bank-owned swap entities should leverage regulatory capital and stress liquidity analyses done in recent years, including SCAP, ICAAP, and CCAR. The analyses will need to be tailored pro forma to each future swap dealer registrant entity.

The required transition of eligible house and client swaps into central clearinghouses will further complicate the analysis, as clearing creates both benefits and costs in terms of RWA and regulatory risk capital charges. Modeling the effects of central clearing on swap dealer capital has proven challenging.

Likewise, Basel III will further complicate the estimation exercise, as risk capital charges for swaps will vary greatly depending on the use of central clearing, daily margining, and counterparty credit rating. A defensible set of portfolio assumptions needs to be made in order to allow a robust analysis of Basel III effects on capital and funding requirements.

- **Non-trivial exercise even for banks that conducted SCAP, which required significant time and resources.**
- **Interaction between financial planning processes (revenue and cost), stress test estimates, balance sheet, and regulatory capital projections proven to be challenging.**

A framework for response

Review models and other risk management tools and systems to ensure the swap entities can demonstrate effective and approved risk management.

In response to the recent financial crisis, most federal regulators are increasing their scrutiny over, and expectations for, institutions' model risk -management programs to ensure appropriate identification, transparency, and risk management of model risks and limitations. In particular, the OCC and Federal Reserve jointly issued revised supervisory guidance on Model Risk Management in April 2011 that significantly raised the bar for how banks and other federally-supervised institutions should be managing model risk. As with the OCC's prior guidance on model validation issued in 2000, we expect most financial institution regulators– including the SEC–to leverage this guidance in performing their own examinations of model risk management in 2012 and beyond.

Accordingly, prospective swap dealers will need to demonstrate effective operation of the following model risk management activities:

- **Well-controlled Model Development, Implementation, and Use Activities**–formal controls designed and executed by model owners, developers, and users to manage the risks associated with the development, implementation, and on-going use of valuation models – including models obtained from third-party vendors.
- **Independent Identification and Measurement of Model Risk**–formal processes typically implemented within an independent risk management function to periodically test and monitor risks associated with the development, use, and maintenance of valuation models. This includes both independent model validation activities, as well as on-going monitoring of emerging model risks.
- **Model Risk Mitigation and Governance**–formal governance processes by which identified model risk issues are addressed through both appropriate short-term mitigation strategies and longer-term action plans, and where these proposed risk management strategies are escalated and approved, as necessary, by senior management and/or the Board of Directors.

Planned legal entity structure	Capital and liquidity
Risk management	Recordkeeping & reporting
Business conduct & supervision	Financial reporting

A framework for response

Review operational and IT infrastructure for gaps in swap data capture, recordkeeping and reporting capabilities.

Prospective swap dealers will have to ensure that they have the ability to capture and report extensive information required by SEC and CFTC regulations, both with regard to existing (legacy) swaps and future swaps.

Legacy swaps

Swaps dealers must demonstrate that they retain all relevant information including records that should be analyzed for retention and possible future reporting of:

- Transactional information including date, price, and time of execution.
- Identity of clearing house.
- Modifications to the transaction.
- Final confirmation of the transaction.
- Confirm that such information can be reported upon request from the regulator.

Future transactions

Swaps dealers must:

- Confirm or build out data capture capabilities for recordkeeping and regulatory and real-time reporting requirements.
- Implement required changes to systems, processes, people and technology to implement the target state booking model and compliance controls.
- Ensure the ability to adhere to Know-Your-Customer (KYC), position limit management, portfolio reconciliation, information security, business continuity/disaster recovery and documentation requirements.
- Establish connectivity necessary for mandatory clearing and centralized trading of swaps, including new or enhanced connectivity and processing protocols with CCPs and market centers (DCMs and SEFs), as well as third-party service providers (affirmation/confirmation platforms).

A framework for response

Prepare swap entities to meet financial reporting and audit requirements.

Registered SDs and SBSDs may be required, at time of registration and annually thereafter, to file with regulators financial reports audited by an independent accountant. Where existing “swap cos” are part of the business mix, and where these entities did not historically issue audited statutory accounts, firms should be working with their auditors to identify and remediate any issues that would inhibit the auditors from opining on the entity’s financial statements.

Existing registered broker-dealers, FCMs, and banks who plan to register as SDs/SBSDs will want to review with their audit teams the implications of such registrations for their audits. In general, we would expect these registrants to see relatively less incremental impact from swap entity registration.

However, previously lightly regulated “swap cos,” which may not have been required to file audited stand-alone financial reports, may need to assess their readiness to do so going forward. Likewise, if banks are restructuring or merging existing swap cos into other entities, effect on the surviving entities’ financials and audit readiness needs careful evaluation.

Representative issues needing remediation in a swap co might include:

- Roll-forwards of balance sheet accounts (no “hard close”).
- Substantiation, especially of internal/inter-affiliate transactions.
- Independent verification of price marks.
- Establishment of legally separate bank accounts.
- Formalization of intercompany SLAs and transfer pricing, including shared service and tax agreements
- Timely ability to meet monthly, quarterly and annual financial close and reporting calendars—internal and external.

Early identification of any barriers to issuance of timely audited financial reports for each prospective swap registrant is key—issues may require lengthy and cumbersome efforts to remediate to audit standards.

Section 4

How PwC can help

How PwC can help

We are helping swap market participants develop strategic and tactical responses to this market structure change throughout their organizations' operations, from front to back and across support functions.

Regulatory impact assessment	Assessing and prioritizing both the strategic and operational impacts across client's enterprise, including impact to Operations, IT, Treasury, and Risk and Compliance functions.
Target operating model design	Business case and target operating model design for dealing, clearing, and enhanced collateral management offering associated with OTC derivatives flow business for swap dealers.
Capital and margin analysis	Assistance modeling and forecasting the balance sheet impact of centrally cleared OTC swap books, and the margin requirements thereof.
Business architecture design and implementation	Business architecture design and implementation plan to support central clearing of client OTC swaps.
Business strategy and compliance readiness assessments	Readiness assessment that analyzes the organization's business, technology, risk, and legal and compliance preparedness to go to market as a Swap Execution Facility (SEF), FCM, or registered swap dealer.
Trade booking model review and structuring	Legal entity realignment for transition to Dodd-Frank-compliant structure (such as swap dealer/securities based swap dealer registration) and transitional requirements (for example, novations, assignments).
Risk management assessment	Clearing risk management policy and procedures documentation assessment and gap analysis.
Data governance and remediation	Root-cause analysis and remediation of process and system deficiencies leading to quality and timing issues in transaction and reference data sets, to drive better management intelligence as well as to enable compliance with DFA data requirements.
Attestation	AT101 assurance for US OTC Client Clearing business.

How PwC can help
PwC Model Risk Management Services

PwC offers a full range of Advisory services to assist your organization in identifying and managing the complex risks associated with the development, deployment, and maintenance of complex models used for risk management, valuation, and financial/regulatory reporting purposes.

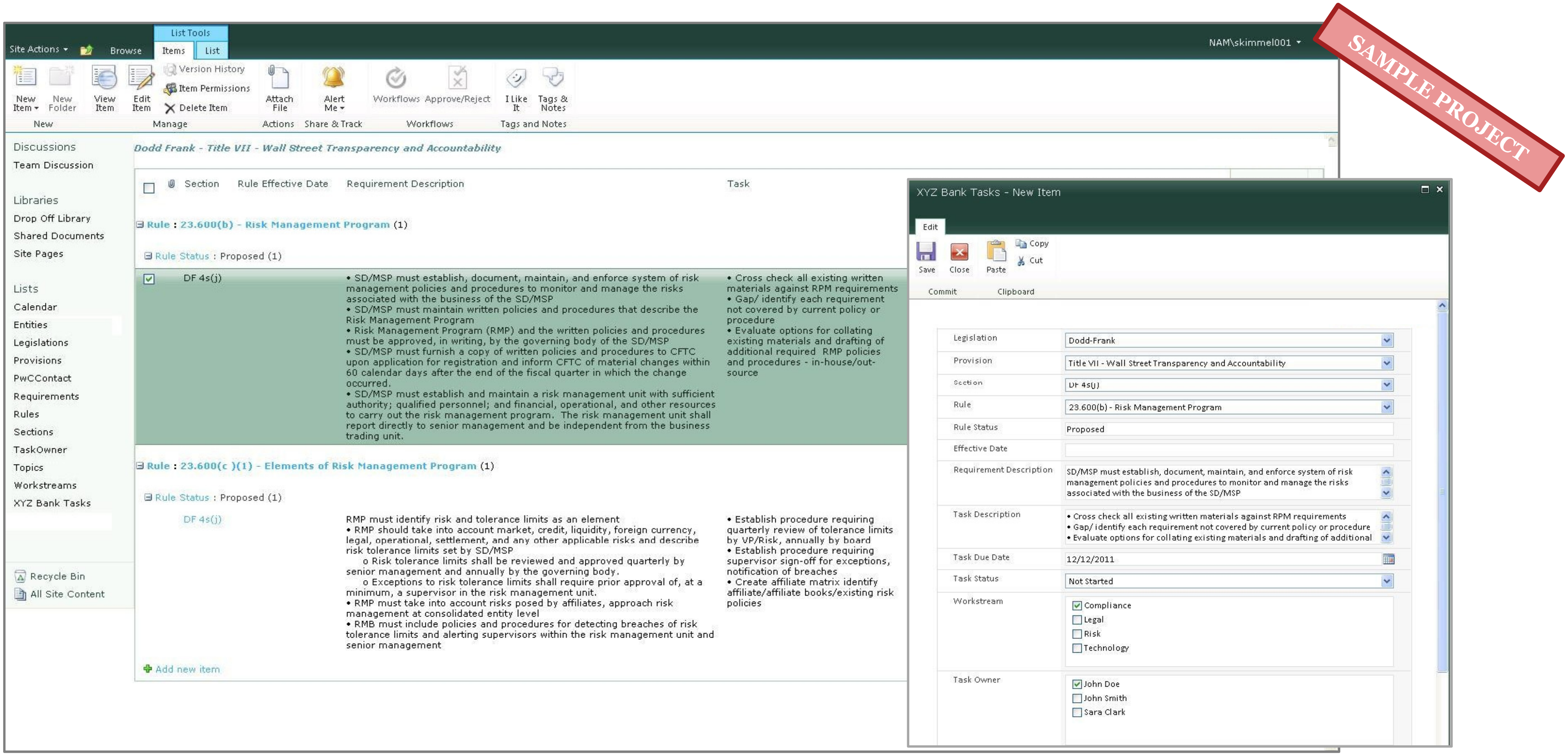
Our services include:

- Assistance with independent model validations for a wide range of model types including:
  - Consumer and commercial credit models , including models used to support Basel II economic capital estimates
  - Discounted expected cash-flow valuation models
  - Financial instrument valuation models, including derivative valuation models
  - Third-party vendor valuation models
- Design and development of model risk management programs consistent with regulatory guidance, including:
  - Organizational design
  - Roles and responsibilities
  - Policies and procedures
  - Governance and oversight processes
  - Resource planning and analysis
- Evaluation of existing model risk management programs for effectiveness and for consistency with regulatory expectations and industry leading practices.

How PwC can help

PwC's approach—Key tools and accelerators

PwC's Regulatory Change Management Tool–designed to help effectively manage the implementation of regulatory mandates. The tool links regulatory requirements to the action plans and owners responsible for implementing the requirements and can be used to understand and manage the costs associated with regulatory reform efforts. The tool is built on a Microsoft® SharePoint platform and can be left with the client to manage regulatory change management projects.



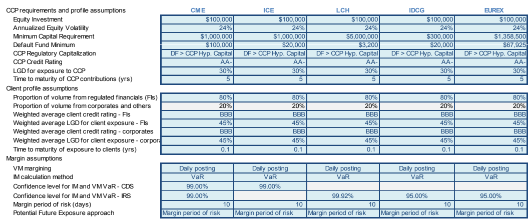
How PwC can help

PwC's approach–Key tools and accelerators

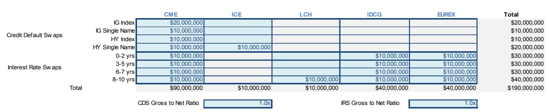
PwC Cleared Derivatives Capital Tool–combines user-defined inputs and assumptions, pre-established calculations, and dashboard outputs.

Inputs

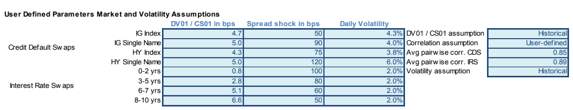
- Clearing Business Parameters and Assumptions

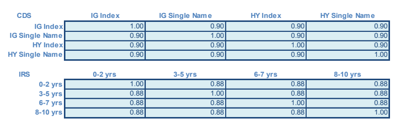


- Portfolio Composition Assumptions

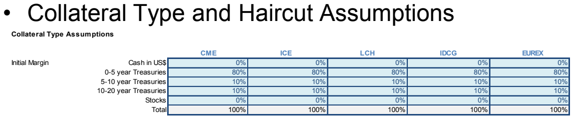


- Market Volatility and Correlation Assumptions

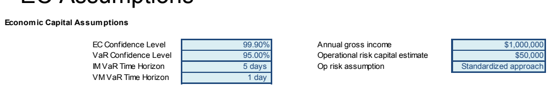




- Collateral Type and Haircut Assumptions

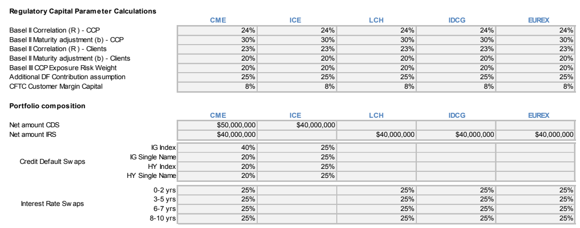


- EC Assumptions

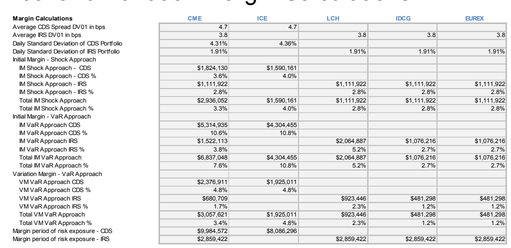


Calculations

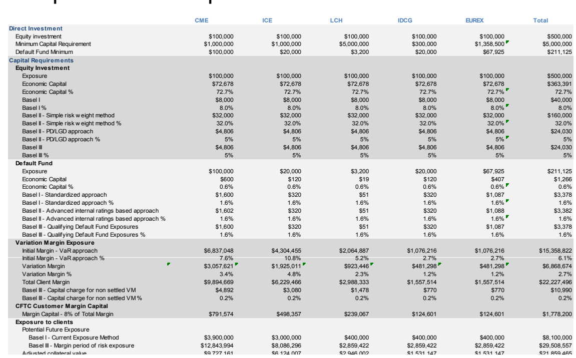
- Regulatory Capital Parameters and Portfolio Mix Calculations



- Initial and Variation Margin Calculations

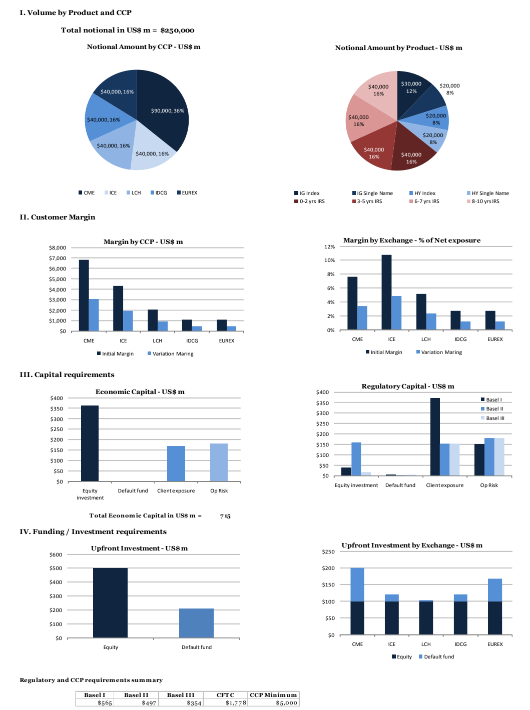


- Exposure and Capital Estimates



Outputs

- Summary Dashboard that includes Notional, Margin, Capital Requirements (CCP, CFTC and Basel I, II, and III), Funding and Balance Sheet Views



- Sensitivity Analysis to changes in key inputs and assumptions
- Linkage to Profitability Model by CCP

How PwC can help

What makes PwC's Financial Services practice distinctive

Integrated global network	PwC's Financial Services practice consists of more than 34,000 industry-dedicated professionals worldwide, including more than 4,500 in the United States. We serve large and multinational banks, insurance companies, investment managers, broker-dealers, hedge funds, and payments organizations. PwC US helps organizations and individuals create the value they're looking for. We're a member of the PwC network of firms with 169,000 people in more than 158 countries. We're committed to delivering quality in assurance, tax and advisory services. Tell us what matters to you and find out more by visiting us at www.pwc.com/us.
Extensive industry experience and resources	PwC serves many of the biggest and most complex financial services companies in the world. We understand from personal experience the wide variety of business issues that affect the industry, and we apply our knowledge to our clients' individual circumstances. Moreover, our large, integrated global network of industry-dedicated resources enables us to apply this knowledge on our clients' behalf whenever and wherever they need it.
Multidisciplinary problem solving	The critical issues financial services companies face today affect their entire business. Addressing these complexities requires both breadth and depth, and PwC service teams include specialists in risk management, compliance, technology, business operations, finance, change and program management, data and business analytics, economics and analysis, internal audit, tax, forensics, and investigations.
Practical insight into critical issues	In addition to working directly with clients, our practice professionals and Financial Services Institute (FSI) regularly produce client surveys, white papers, and points of view on the critical issues that face the industry. These publications—as well as the events we stage—provide clients new intelligence, perspective, and analysis on the trends that affect them.
Focus on relationships	PwC's size, financial stability, and 150-year history all contribute to our long-term view of client relationships. We help clients translate strategy into action by helping them address their challenges in finance, tax, human resources, operations, technology, and risk and compliance.

How PwC can help

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"The Road to Swap Dealer Registration: Preparing for Swap Dealer Registration Under the Dodd-Frank Act of 2010"
PwC FS Viewpoint, January 2012. www.pwc.com/fsi