

# Risk Management Homework 5

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1)

### **Credit Risk**

Morgan Stanley may seek to mitigate credit risk from its lending and derivatives transactions in multiple ways. At the transaction level, it seeks to mitigate risk through management of key risk elements such as size, tenor, seniority and collateral. The Company actively hedges its lending and derivatives exposure through various financial instruments which may include single name, portfolio and structured credit derivatives. Additionally, Morgan Stanley may sell, assign or sub-participate funded loans and lending commitments to other financial institutions in the primary and secondary loan market. With regards to derivatives trading activities, the Company might enter netting agreements and collateral arrangements with counterparties. These agreements provide the Company with the ability to offset a counterparty's rights and obligations, request additional collateral when necessary or liquidate the collateral in the event of counterparty default.

As of November 30, 2008, Morgan Stanley followed Basel II capital requirements with a ratio of total capital to risk-weighted assets ("RWAs") of 26.8%. The Company seeks to maintain a ratio of Tier 1 capital to RWAs of at least 6%. This ratio as of November 30, 2008 was 17.9%. The risk capital calculations will evolve over time as the Company enhances its risk management methodology and incorporates improvements in modeling techniques while maintaining compliance with the regulatory requirements and interpretations.

Credit RWAs are determined using either an Internal Ratings-based ("IRB") Approach, which reflects the Company's internal estimate of a borrower or counterparty's credit worthiness, or a Standardized Approach. A Standardized Approach is used for certain asset categories, including receivables (e.g., fees, interest and other), premises, equipment and software costs, and other assets where a fixed percentage is applied to the fair value of the assets. Credit capital charges related to certain loans, OTC derivative receivable exposures and security financing transactions are computed using an IRB Approach. Within the IRB Approach, future potential credit exposure resulting from derivative receivables is estimated using an internal model and is the most significant contributor to total Credit RWAs. The risk-reducing effect of hedges related to loan and counterparty exposures is excluded from capital calculations.

## **Operational Risk**

Operational risk capital charges are designed to account for the risk of losses due to inadequate or failed internal processes, people and systems, or external events and consider legal risk. RWAs for operational risk are currently calculated under the Basic Indicator Approach in accordance with Basel II. The Company holds capital equal to the average net revenues over the previous three years using a fixed percentage.

The Company maintains an information security program that coordinates the management of information security risks and satisfies regulatory requirements. Information security procedures are designed to protect the Company's information assets against unauthorized disclosure, modification or misuse. These procedures cover a broad range of areas, including: application system entitlement; data protection; internet and intranet access, communications and usage; and mobile and portable information usage. The Company has also established policies, procedures and technologies to protect its computer and other assets from unauthorized access. The Company utilizes the services of external vendors in connection with the Company's ongoing operations. These may include, for example, outsourced processing and support functions and consulting and other professional services. The Company manages its exposures to the quality of these services through a variety of means, including service level and other contractual agreements, service and quality reviews, and ongoing monitoring of the vendors' performance.

## **Market Risk**

Market risk is monitored through various measures: statistically (using VaR and related analytical measures); by measures of position sensitivity; and through routine stress testing and scenario analyses conducted by the Market Risk Department in collaboration with the business units. The material risks identified by these processes are summarized in reports produced by the Market Risk Department that are circulated to and discussed with senior management. The Company uses the statistical technique known as VaR as one of the tools used to measure, monitor and review the market risk exposures of its trading portfolios. The Market Risk Department calculates and distributes daily VaR-based risk measures to various levels of management.

2)

### **Basel I**

- 1) Morgan Stanley can perform securitization and offload the risk out of the balance sheet. This means that more risk than the accepted level can be taken.
- 2) Investing in all OECD countries had same risk weighted capital exposures. As there was no focus on collateral or guarantees, investing in a country like United States or a country like Greece had the same risk-weighted capital on balance sheet, even though the latter had more risk.
- 3) As Operational risk wasn't part of Basel I, banks could have very complicated internal processes, which in turn meant they took more risk.
- 4) As all calculations are based on book value measures and as accounting practices vary across different parts of the world, business activities can be moved to countries where the accounting standards will assist in taking risks.

## **Basel II**

- 1) As Basel II doesn't have any specific requirements for amount of debt which can be taken, the company can take lot more leverage. This means the company doesn't need to have very liquid assets as capital, which allows it to take more liquidity risk.
- 2) The capital measure isn't very clear, which allows the company to introduce complex assets which aren't liquid enough as core capital in Basel II.
- 3) Use internal models for capital requirements calculation, as there are significant reductions of capital requirements for banks utilizing internal models, which are in turn not correlated with their ability to withstand systemic crises. These internal models over-estimated their capacity to properly assess risks.
- 4) As there was a huge reliance on rating agencies, steps to make sure better rating is provided by external agencies were enough to be able to take higher risk.
- 5) As VaR models are used, there is very less emphasis on tail risk. This means higher tail risk can be taken, if we can make sure the VaR requirements are matched.

## **Interview Questions**

- 1) A positive gamma has a favorable impact on the option value, which in turn reduces the VaR of the option. So, if we use delta approach, we over-estimate the value of VaR.
- 2) The Basel II required banks to increase their capital requirements when risks rise, which in turn meant that their lending ability reduced precisely when capital was scarce, which in turn aggravated the financial crisis. Also, Basel II came a bit too late, with changes to regulation to securitization, which was part of the foundation of the financial crisis.
- 3) The Dodd Frank act was introduced in 2009 aimed to transform the United States financial regulatory system, which in turn covered these points
  - a. Consolidation of regulatory bodies
  - b. Increased transparency of derivatives trading
  - c. Reforms for consumer protection
  - d. Measures for standardizing international standards on improved accounting practices
  - e. Tighter regulation on credit rating agencies.

There has been a push to re-write the Dodd Frank, as it puts a lot of regulation on running businesses. There has been a push to remove ban on proprietary trading by banks, reducing heightened oversight on national's largest financial institutions and reducing the capital requirements put forward by the original act.