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Treasury, liquidity risk, and cash management

WHITE PAPER
FINANCIAL
RISK MANAGEMENT
IN TREASURY

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Introduction

A recent SunGard AvantGard study reveals how treasury professionals manage financial risk, from current areas of concern to anticipated challenges.

Financial risk management has become a priority in recent years. Tumultuous economic conditions have created new challenges in treasury and the headlines often feature the fallout of failed financial risk policies. Having a strategy in place to deal with risk is of utmost importance to today's treasury professionals, and companies are re-evaluating their framework for measuring and monitoring financial risk.

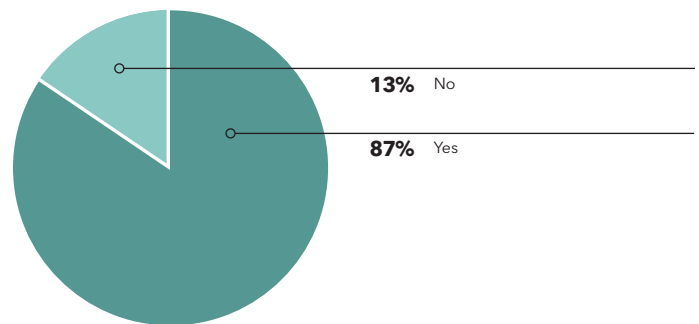
SunGard AvantGard conducted a study of 222 treasury professionals in the second quarter of 2012 to better understand how corporations are addressing various aspects of financial risk. The study included respondents from around the world spanning a broad range of industry and revenue classifications, with over 62 percent of respondents from companies with more than \$1 billion in revenue (see appendix for a complete breakdown).

Mitigating financial risk: Is there an effective framework in place?

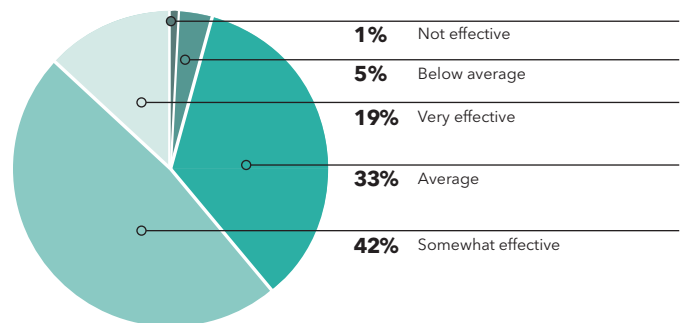
The first step in managing risk is to identify areas that expose the company to potential risk. Once a company has a handle on the scope of exposure, it can begin to create a risk management framework.

Of the companies surveyed, 86.9 percent said that they have an established framework in place for mitigating financial risk. Furthermore, 60.4 percent of respondents felt their organizations were above average at identifying financial risk exposure, identifying their companies as somewhat to very effective.

Do you have a risk framework established within your organization for mitigating financial risk?



How effective are you at identifying financial risk exposure across your organization?



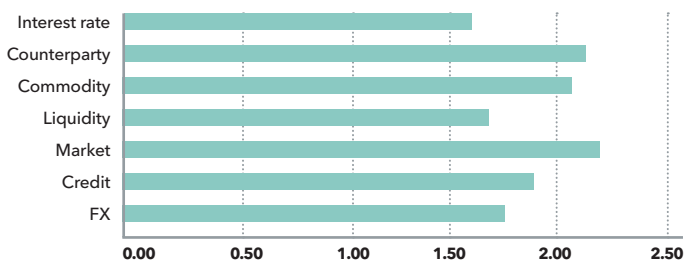
Identifying and defining risk

Without a solid grasp on areas of risk exposure, it is challenging for companies to design effective risk reduction strategies. Uncertainty surrounding risk exposure makes it difficult for corporate treasurers to make informed decisions and reduce potential losses, making identifying and measuring risk crucial to a company's survival.

The SunGard AvantGard study identified seven types of risk: commodity, counterparty, credit, currency/FX, interest rate, liquidity, and market risk. Respondents identified market risk as the most difficult to measure, followed by counterparty and commodity risk. Interest rate risk was identified as the easiest to quantify.

How difficult is it for your organization to measure these areas of financial risk?

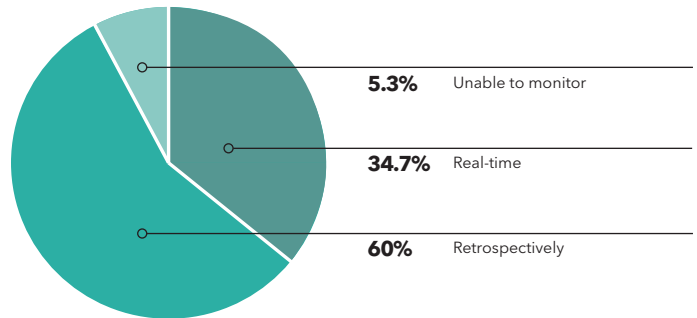
(1 = not difficult; 2 = somewhat difficult; 3 = difficult; 4 = very difficult)



Market risk

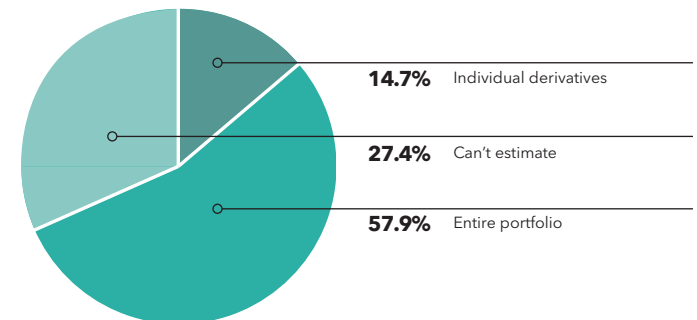
Given the tumultuous markets of the past few years, it is not surprising that financial professionals identified market risk as the most difficult area of risk to quantify. A possible contributing factor is that most respondents view their positions retrospectively rather than in real time. Sixty percent stated that they viewed their positions retrospectively, while 34.7 percent of respondents monitor market positions in real time and 5.3 percent are unable to monitor positions.

Do you monitor exposure in real time or do you view your positions retrospectively?



When estimating the effect of major market events, 57.9 percent of respondents view the effect on their entire portfolio, while 14.7 percent focus on individual derivatives. Over a quarter of respondents - 27.4 percent - stated that they cannot estimate the effect of major market events on their companies' portfolios.

How do you estimate the effect of major market events?



The inability to monitor markets and portfolios in real time could inhibit the ability to measure the effects of market risk and potentially undermine the ability to identify future exposure.

Counterparty risk

Counterparty risk was identified as the second most difficult measurement. A significant majority of respondents (65.4 percent) utilize credit ratings as the main criteria to measure the viability of a potential business partner. The next most utilized measurement is capital structure, with 12.1 percent of respondents using measurements like debt-to-equity ratio. Credit default swaps (CDS) spreads, which are a way of looking at the price of insurance against nonpayment, are used as a measurement by 10.4 percent of respondents. Other responses included country or region risk (six percent), industry risk (3.8 percent) and the Bank Stress Test score (2.2 percent). About ten percent stated that they use a combination of methods in determining counterparty risk.

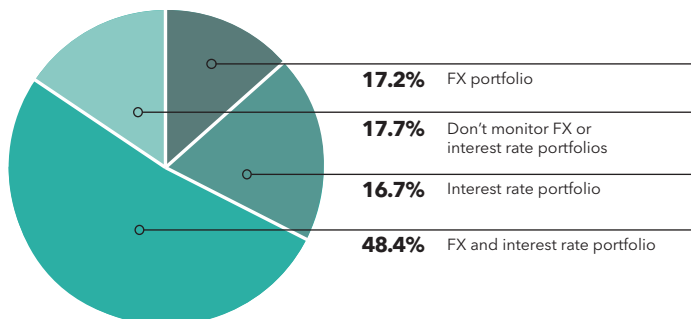
What kind of criteria do you use to measure whether a counterpart is a viable business partner?

Capital structure	10.8%
Credit rating	58.3%
Bank stress test score	2.0%
Country / region risk	5.4%
Industry risk	3.4%
Equity price	0.0%
CDS spreads	9.3%
Other	10.8%

Foreign exchange and interest rates

Interest rate risk was identified as the simplest form of risk to measure. Close to eighteen percent of companies do not monitor how interest rate changes affect the values of foreign exchange (FX) or interest rate portfolios.

Are you currently monitoring how changes in market rates affect the value of your:



Risk measurement methods

A majority of respondents utilize mark-to-market revaluation as the primary risk measurement to support decision-making. This practice of valuing an investment at its current market value was encouraged by the Sarbanes-Oxley Act, which implemented stricter accounting standards in 2002. However, as the validity of mark-to-market has more recently been called into question, firms may be moving towards additional measures to avoid future regulatory complications.

A sensitivity analysis, used by 44.1 percent of respondents, views the potential effects of a deviation in any variable, such as an increase in tax or interest rates. Other measures utilized by respondents include Value at Risk (28.3 percent), Cash Flow at Risk (27.6 percent), yield curve shift (23 percent), and duration or modified duration (17.8 percent).

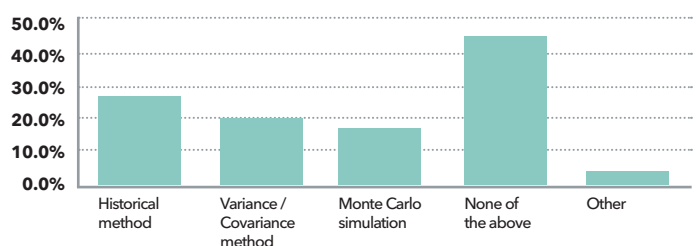
What risk analysis measures are you using to support risk management decisions?

Mark-to-market revaluation	58.6%
Sensitivity analysis	44.1%
Value at risk (VaR)	28.3%
Cash flow at risk (CFaR)	27.6%
Yield curve shift	23.0%
Duration / modified duration	17.8%
Other	3.9%

Value at Risk (VaR)

The VaR method was the preferred measure of market risk under Basel II, although this method has come under scrutiny lately due to its inherent weakness of potentially underestimating the risk of extreme market events. Of the treasury professionals using the VaR method, 27.4 percent use the historical method of calculation which utilizes data to show the probability of a best and worst case scenario occurring based on past occurrences. Twenty percent use the variance/covariance method which assumes normal distributions of stock returns, while 17.4 percent use the Monte Carlo simulation, developing models for future returns and running hypothetical trials. A number of respondents (44.7 percent) chose "None of the Above," indicating that they may use a combination of methods or that they are instead using other methods such as those mentioned above, including mark-to-market revaluation or sensitivity analysis.

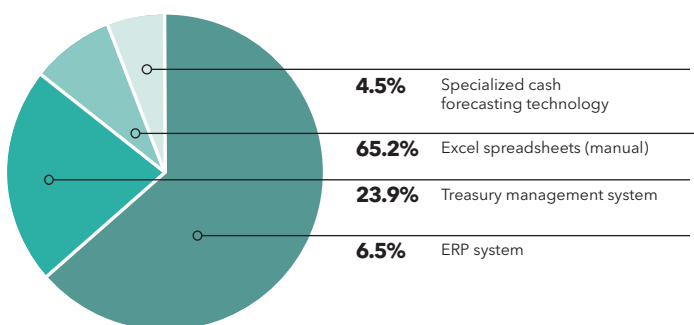
What method of value at risk (VaR) do you currently use to measure the risk of your portfolio?



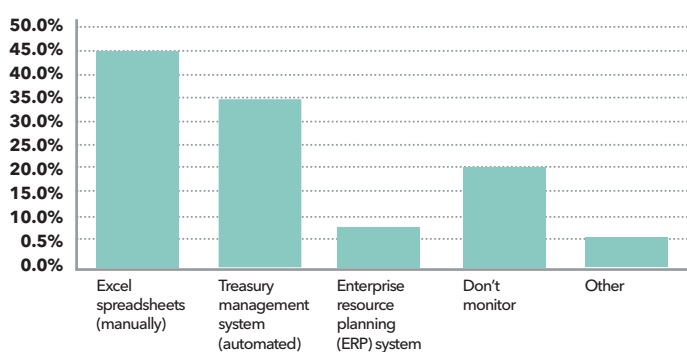
The difficulty of measuring and monitoring risk

Once a method of risk measurement is established, a monitoring system must be put into place. In looking at the methods used by financial professionals to manage risk, it is apparent that technology used for monitoring may be an area for improvement. Manual spreadsheets are used to perform short-term cash forecasting by 65.2 percent of respondents, while 45.3 percent use manual spreadsheets to monitor counterparty/trading limits prior to executing a derivatives trade. Treasury Management Systems (TMS), which can help increase efficiency and control, are also used by a significant portion of treasury professionals. Almost 24 percent use TMS in cash management forecasting, while 34.2 percent use TMS to monitor counterparty/trading limits. Enterprise Resource Planning (ERP) systems are less widely used for these purposes.

What technology tools/solutions are used to perform short-term cash forecasting?



How do you monitor counterparty/trading limits prior to executing a derivatives trade?



The prevalence of manual data entry for monitoring, in combination with the previously mentioned tendency to view positions in retrospect rather than real time (see "Market Risk"), give some indication of areas where treasury departments may be facing technological challenges that could impede their ability to monitor positions for potential exposure. The use of spreadsheets for risk measurement and monitoring, while widely prevalent, can introduce an element of operational risk into the system and open the door to user error. Corporations using a TMS can not only reduce operational risk, but also increase accuracy and efficiency by managing risk across the organization rather than on a piecemeal basis.

Effectiveness of risk management strategies

Overall, only 6.3 percent of respondents felt their risk management systems were below average (see "Mitigating Financial Risk"). While the study turned up some indications that there may be room for improvement, the overall sense among treasurers was that their systems were satisfactory.

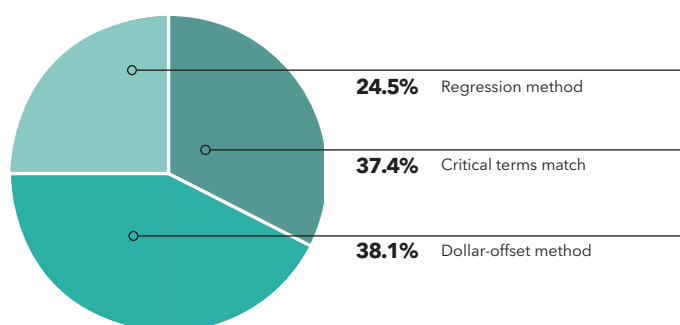
When asked specifically how they felt regarding the reliability of their cash forecast as a support basis for either foreign exchange hedging or investment, most treasurers indicated some degree of reliability:

How reliable is your cash forecast as a support basis for your FX hedging programs and/or investment/debt programs?

85% to 100% reliable	37.4%
70% to 84% reliable	35.5%
55% to 69% reliable	20.0%
Below 55% reliable	7.1%

Measuring the effectiveness of hedging strategies is a required compliance practice under global accounting standards. Several measurements can be used to determine the level of effectiveness of hedging. When asked how they monitor the effectiveness of hedging programs, 38.1 percent of corporate treasurers identified the dollar-offset method as most frequently used. The critical terms match was almost as frequently employed, with 37.4 percent of respondents utilizing this method. The regression method was used least often, but still utilized by 24.5 percent of financial professionals. In the write-in area, some respondents indicated either that they do not hedge or that their business was naturally hedged.

How do you monitor the effectiveness of your hedging program(s)?

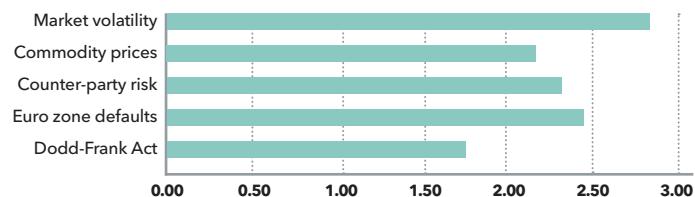


Looking forward: challenges ahead

Given the concern made obvious in the study regarding market risk, it is not surprising that treasurers identified market volatility their greatest concern in the coming two years. The next greatest concern was eurozone defaults, followed by counterparty risk, commodity prices, and the Dodd-Frank Act.

How challenging are the following for your organization in the next 12-24 months?

(1 = not a challenge; 2 = somewhat challenging; 3 = challenging; 4 = very challenging)



In short, accurate risk measurement enables effective risk management. Companies are increasingly aware of the need to measure risk and monitor areas of exposure and are taking steps to ensure the security and integrity of risk reporting tools. Going forward, technology issues may surface. The use of spreadsheets in risk management actually exposes a company to risk from user error, from simple mis-keying to accidental circular references that can invalidate an entire spreadsheet. Headlines highlighting the importance of spreadsheet risk management are rampant: "Spreadsheet links play a role in the AIB/Allfirst \$691 million currency trading fraud," "TransAlta says spreadsheet error costs it \$24 million," "Share price drops by a third, CEO resigns due to spreadsheet error." In fact, heightened awareness has already led to the inclusion of references to spreadsheet management in Sarbanes-Oxley, Basel III, and other global regulatory recommendations. While spreadsheets offer flexibility that is attractive to users, a TMS is more rigid and strict by nature to allow for control and auditability. Additionally, a web-based TMS has the capability to aggregate data from users across the globe, rather than the flat file format of a spreadsheet.

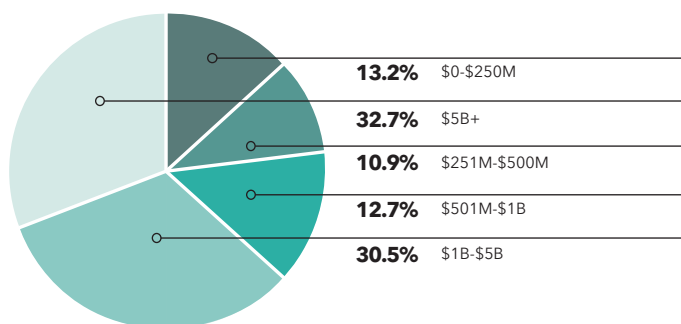
Technology issues related to implementing manual processes without the benefit of a real-time view may also surface. Having a real-time view enables better liquidity management. Without real-time access to accounts and view of markets, companies are lacking a key element to risk management.

With the growing acceptance of cloud-based TMS technology, more companies are choosing to reduce their technical involvement in operating a TMS by essentially outsourcing the infrastructure requirements. This enables quicker upgrades and updates if and when regulatory changes occur.

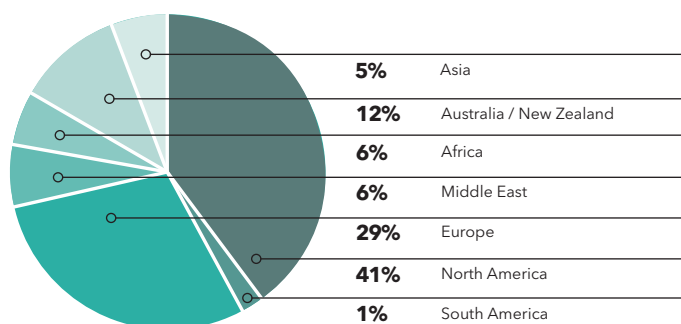
The key for corporate treasurers is to understand the importance of identifying and managing risk and the widespread effects mismanagement can have on the company. Investments in technology are an ongoing concern and should be carried out thoroughly and effectively.

Appendix: respondent profile

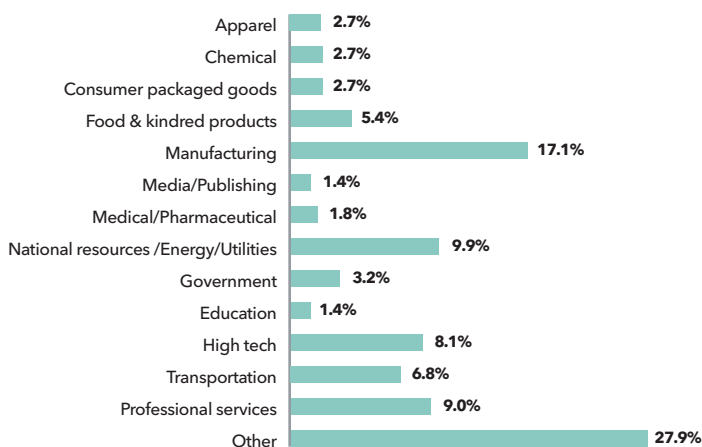
Average annual revenue



Location



Industry classification



About SunGard's AvantGard

The AvantGard solution suite includes credit risk modeling, collections management, treasury risk analysis, cash management, payments system integration, and payments execution delivered directly to corporations or via banking partners. AvantGard solutions help consolidate data from multiple in-house systems, drive workflow and provide connectivity to a broad range of trading partners including banks, SWIFT, credit data providers, FX platforms, money markets, and market data. The technology is supported by a full range of services, including managed cloud services, treasury operations management, SWIFT administration, managed bank connectivity, bank on-boarding, and vendor enrollment, and is delivered by a team of domain experts.

About SunGard

SunGard is one of the world's leading software and technology services companies. SunGard has more than 17,000 employees and serves approximately 25,000 customers in more than 70 countries. SunGard provides software and processing solutions for financial services, education and the public sector. SunGard also provides disaster recovery services, managed IT services, information availability consulting services and business continuity management software. With annual revenue of about \$4.5 billion, SunGard is the largest privately held software and services company and is ranked 480 on the Fortune 500. Look for us wherever the mission is critical.

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