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CAPITAL MARKETS

Trends in the Global Capital Markets Industry 2013: Sell-Side Firms

Key emerging trends across sell-side firms and their implications for the global capital markets industry

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1. Highlights

The global economy grew at 2.2% in 2013, a slow pace compared to the previous year growth of 2.3%.[1] There were signs of recovery across the world: a shaky but notable improvement in the Eurozone; an aggressive shift away from deflation in Japan; stable growth in China; and growing momentum in the U.S. and U.K.

Improving outlook, stabilized valuations, and positive sentiment led to strong performance of equity markets worldwide, with significant gains witnessed in the developed markets. Global equity market capitalization grew by 17.0% during 2013 to $59.8 trillion.[2] Rising bond yields and widening credit spreads due to Federal Reserve's decision to begin tapering resulted in higher interest in bonds. Commodities continued to perform poorly due to disappointing growth in emerging markets, as well as reduction in the demand-supply gap.

Overall, 2012 was a difficult year for the global sell-side industry, with total income of the top ten global investment banks falling from $80.4 billion in 2011 to $76.9 billion in 2012. Merger and acquisition (M&A) deal volume decreased by 7.8% in 2012 with $2.23 trillion worth of deals, from $2.42 trillion in 2011. However, total income of the top ten global investment banks increased by 8% to reach $37.5 billion in H1 2013, mainly due to the easing of the economic slowdown.

Increased regulation, large data sets, and new investment strategies are drivers for investment in big data by sell-side firms. Firms invest in big data to improve trading algorithms and also to determine the pricing for high-frequency trading clients. Big data tools help firms to analyze large volumes of data and manage risk on an intraday basis. Bank of America Merrill Lynch and Morgan Stanley are using big data and open-source technologies such as Hadoop to manage petabytes of data.

Reference data management (RDM) has assumed a place of critical significance in the global capital markets sector due to regulatory requirements. Sell-side firms are bolstering their reference data management solutions for better enterprise risk management, reporting, and compliance.

1 Economic Intelligence Unit, March 2014

2 2013 WFE Market Highlights, World Federation of Exchanges, September 2013

2. Introduction

2.1. Global Capital Markets Players[3]

Global capital markets players can be broadly classified into three core categories:

- **Buy-Side Firms:** Private equity, mutual funds, hedge funds, pension funds, unit trusts, and proprietary trading firms
- **Sell-Side Firms:** Investment banks, brokerage houses, and independent analysts
- **Financial Intermediaries:** Stock exchanges, clearing houses, and custodian banks

This paper reviews and summarizes the key trends prevalent across sell-side firms and the implications for these firms and global capital markets.

2.2. Global Capital Markets Performance

2013 turned out to be a year marked by improved global financial conditions and reduced systemic risk on the back of new policy initiatives by the government and central banks. These steps helped in stabilizing the consumer, business, and investor confidence.

Equity markets were given a significant boost in 2013 as the Federal Reserve committed to keep interest rates closer to zero, while announcing its decision to start tapering its quantitative easing program effective January 2014. Equity markets rallied in 2012 due to attractive valuations, tamed global inflation and accommodative monetary policies by many central banks, and broadening recovery.

Global equity market capitalization grew by 17.0% in 2013 (January to December) to reach $59.8 trillion, beating the peak of $51.1 trillion attained in 2010 after the financial crisis of 2008.[4] The World Federation of Exchanges (WFE) also reported that the Americas was the best-performing region, witnessing a growth of 22.0% in market capitalization to $28.3 trillion in 2013 (January to December). This increase was driven by improved investor sentiment, and announcement of the tapering of quantitative easing by the Federal Reserve.

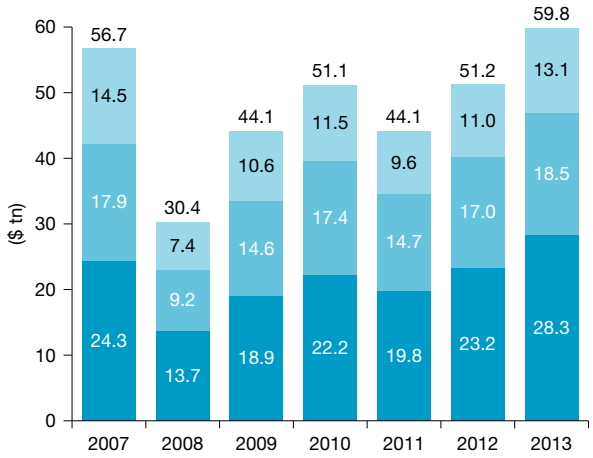
Europe, the Middle East, and Africa (EMEA) was the next best performing region in 2013, according to the WFE, with market capitalization growing by 19.0% to $13.1 trillion. European equity markets rose on account of lower valuations of European stocks compared to U.S. stocks, the control of inflation, and supportive monetary policies by central banks.

Asia-Pacific's equity market capitalization growth was the least among all regions in 2013 (January to December) according to the WFE, growing at 8.8% to $18.5 trillion, which compares with a higher growth of 15.8% witnessed in 2012. Performance of equity markets was particularly stronger in Japan and Taiwan with market capitalization increasing by ~30%. Market capitalization of the emerging economies of Indonesia and India fell due to higher inflation and current account deficit, political instability, and the tapering of stimulus by the Federal Reserve.

3 Wealth management and private banking are covered in a separate paper within our *What You Need to Know series*

4 2013 WFE Market Highlights, World Federation of Exchanges, September 2013

Exhibit 1: Global Equity Market Capitalization ($ trillion), 2007–13



	CAGR 2007-'11	Growth 2011-'12	Growth 2012-'13
Total	**(6.1%)**	**16.0%**	**17.0%**
Europe Middle East & Africa (EMEA)	(9.7%)	14.0%	19.0%
Asia-Pacific	(4.9%)	15.8%	8.8%
Americas	(5.0%)	17.2%	22.0%

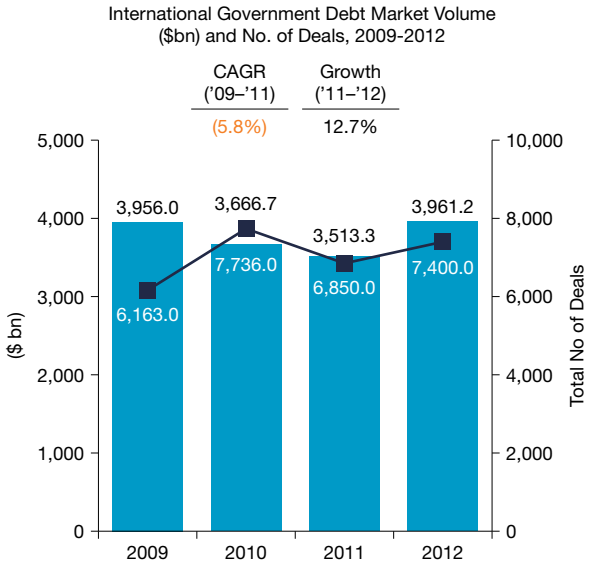
Source: World Federation of Exchanges, 2013

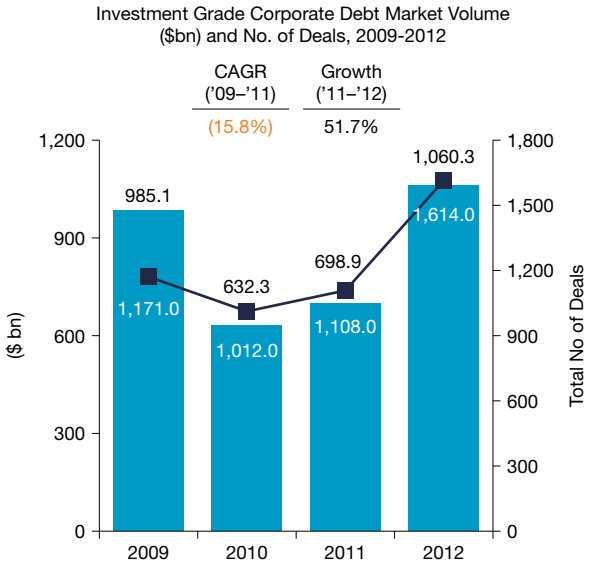
International debt market volumes grew by 12.7% to $3,961.2 billion from 2011 levels primarily due to the lower interest rates prevailing across major economies.[5] Euro-denominated central government debt market volume rose by 26.4% to $107.8 billion from 2011 levels. International debt market volume and Euro-denominated central government debt market volume for the first nine months of 2013 stood at $3,054.3 billion and $149.9 billion, respectively, according to the ICMA third quarter 2013 report. In Europe, the European Central Bank's promise to buy back bonds of troubled nations in the event of a default, the objective of shoring up the banking system, and the intention to address the large budget deficits were some of the reasons for the increase in debt volumes.

The ICMA third quarter 2013 market report also revealed that the volume of high-yield corporate bonds grew 28.7% during 2012 to $355.3 billion from 2011 levels and volumes of investment grade corporate bonds increased by 51.7% to $1,060.3 billion during the same period. International corporate high-yield debt volume and international investment grade corporate bond volume for the first nine months of 2013 stood at $322.4 billion and $812.4 billion, respectively, as per the ICMA report. With the availability of bank financing shrinking due to ongoing deleveraging efforts and tightened regulatory requirements, companies are tapping debt markets for their needs. Increased investor interest for higher yields in the light of a lower interest rate environment and stronger corporate balance sheets has also resulted in higher volumes.

5 International Capital Market Association: Market Data third quarter 2013, International Capital Market Association

Exhibit 2: International Debt and Investment Grade Corporate Debt, Market Volume ($ billion) and Number of Deals, 2009–2012





Source: Market Data 3rd Quarter 2013, International Capital Market Association

Commodity prices strengthened in early 2013 due to improved global economic outlook, but retreated later, going below 2012 levels due to improved supply conditions. Oil prices, after hovering around $105 in Q1 2013 (marked by geopolitical tensions in the Middle East), dropped below $100 in Q2 2013 due to improvement in supply and easing of tension in the Euro region. Metals, which witnessed a price decline in 2012, continued their downfall in 2013 due to an increase in supply and the slowing down of the real estate sector in China. Compared to 2011, commodities fared better in 2012, but continued to struggle due to fluctuating demand from emerging economies.

3. Emerging Trends in Global Capital Markets: Sell-Side

During 2012, the Eurozone crisis impacted securities underwriting and merger activity leading to a relatively lower investment banking fee income for sell-side firms. The top ten global investment banks collectively earned around $76.9 billion[6] during 2012 (down from $80.4 billion during 2011). However, improved economic conditions during the first half of 2013 helped the industry to grow, as total fees collected by the top ten global investment banks increased by 8% to reach $37.5 billion.

M&A business slowed down across the globe during 2012. Overall M&A in value terms stood at $2.23 trillion[7] in 2012 (down 7.8% from $2.42 trillion in 2011). All regions, except Asia-Pacific, experienced a decrease in deals volume in 2012. However, M&A activity started to pick up momentum in the last quarter of 2012, which reported an increase in deals volume across all regions. As the economic conditions improved, corporate buyers and private equity firms took advantage of lower borrowing costs to fund their acquisition activities.

Despite a strong Q4 2012, the first half of 2013 witnessed weak M&A activity due to erosion of investor confidence, financial market volatility, and after-effects of the Euro crisis. Overall M&A in value terms stood at $0.97 trillion in H1 2013 (down 5.3% from $1.02 trillion in H1 2012), according to the Bloomberg H1 2013 M&A rankings. Some of the key emerging trends witnessed in the sell-side industry included[8]:

- Firms are enhancing big data capability for risk management
- Firms are re-evaluating their reference data strategies

Several trends that were covered in 2012 ***Trends in the Global Capital Markets Industry*** are still relevant but are not discussed in detail again in this paper.

Trends in the Global Capital Markets Industry 2012: Sell-Side Firms

Trends in the Global Capital Markets Industry 2012: Buy-Side Firms

Trends in the Global Capital Markets Industry 2012: Financial Intermediary Firms

6 League Tables, *Financial Times*, accessed September 2013

7 Global Legal Advisory Mergers and Acquisitions Rankings H1 2013, Bloomberg, July 2 2013

8 Trends shown are not necessarily comprehensive, but have been highlighted due to their relevance and potential impact on the industry

4. Trend 1: Sell-Side Firms are Investing in Big Data Capability to Enhance Risk Management

Regulations, larger data sets, new investment strategies and silo systems are driving investment in big data by capital markets firms.

4.1. Background and Key Drivers

Lack of data quality and consistency has been one of the key issues faced by capital markets firms. Despite huge spending to create appropriate data sets, firm-wide data analysis continues to be a challenge. This is because each business unit uses its own data set to make calculations. Further, firms' access to new data sources is also increasing. For example, traders have tools to capture insights from particular firms or industry news in real time and make efficient trading decisions. Due to these challenges, while firms need to analyze data in near real time to extract value from it, traditional databases and technologies lack this capability.

The key drivers for increased investment in big data[9] capability are listed below:

- **Increased regulation:** Regulations such as Dodd-Frank, Basel III, the European Market Infrastructure Regulation, and Markets in Financial Instruments Directive are putting pressure on firms to manage risk on an intraday basis. Sell-side firms need to quickly analyze data to provide data summaries to regulatory authorities.
- **Large and diverse data sets:** Firms need to combine massive amounts of information from internal data sources (for example, position and portfolio data), as well as external data sources (for example, pricing data, market data, news feeds). Big data is playing a vital role in storage and analysis of large data volumes.
- **New investment strategies:** The power of big data combined with analytics can help firms to access unstructured data (for example, social media, audio, and video content) to develop new investment algorithms and strategies. Traders can adopt advanced analytics to generate actionable insights from big data, thus increasing returns from their investment portfolios.
- **Integration of silo systems:** One major challenge faced by firms is to extract insights from big data that exists across multiple disparate systems. The presence of data silos impedes decision making and operational performance. Firms need to align these multiple systems to identify, manage, and report different types of risks.

4.2. Analysis

Sell-side firms are leveraging big data for anti-money laundering, know your customer, and enterprise risk management. Advanced risk management systems allow these firms to create new transactions and update existing ones. These systems also perform what-if analysis to understand the immediate impact of portfolios on the risk metrics of the firm. Firms are also using big data infrastructure technologies, such as computing grids, in-memory databases, and cloud-based solutions to incorporate high-speed data into risk management tools. These technologies help sell-side firms to manage large volumes of internal and external data sources.

Financial firms, such as Morgan Stanley, Credit Suisse, and Bank of America have adopted open-source software, such as Hadoop and NoSQL, to manage large database clusters and interpret vast data sets. Using Hadoop, Morgan Stanley has achieved a scalable portfolio analysis solution. This framework helped the bank to overcome the limitations of traditional databases by managing large data volumes. The bank plans to apply Hadoop analysis to customer information, such as customer relationship management (CRM). NoSQL is used to capture unstructured data and provide operational intelligence, whereas Hadoop derives actionable insights for firms. Together, they enable sell-side firms to unlock the power of data and create competitive advantage.

Big data solutions are being optimized to capture, analyze, and visualize large data sets to search for new correlations between assets and across multiple asset classes. Complex-event processing systems detect new patterns, which are being used to identify potential opportunities for traders and analysts.

9 Big data refers to large data sets of both structured and unstructured data that are difficult to process using traditional database management tools and therefore require new platforms to handle such large volumes, velocity, and variety of data

4.3. Implications

Going forward, sell-side firms could leverage advanced analytics to monitor real-time trading activities, reduce regulatory capital requirements, provide improved customer service, better understand their position exposures, and reduce the risk of fraudulent activity.

Specifically, firms could enhance their big data capabilities in the following areas:

- **Risk Management:** Firms can combine analytics with big data to identify rogue trades, frauds, cybercrime, money laundering, and market crashes. Firms can apply a number of analysis techniques to detect suspicious trading patterns. The coupling of in-memory analytics with data visualization products can enhance the level of insight from big data sources. Sentiment analysis is gaining popularity among many firms. These firms can analyze press coverage and content on social media websites to derive trends on products, as well as companies. These trends can be leveraged for risk management analysis.
- **Visualization Tools:** Firms could increase their use of visualization tools to scan large amounts of information, such as infographics and heat maps, to provide graphical representation of complicated data for trading, compliance, and risk management on smartphones and tablets. The visualization tools can help track and analyze large amounts of data in near real time.
- **Customer Relationship Management:** By linking social media data (i.e., customer's demographic profile) into their CRM systems, firms can improve client interactions, as well as marketing and sales activities. Portfolio managers can use CRM data in risk management. They can also analyze client transaction histories to assess risk appetite when managing portfolios and forecasting demand for new offerings.
- **Collateral Management:** Using big data, firms are implementing a centralized approach to collateral management so that the aggregated data can help them to run internal stress tests and develop contingency plans in the face of risk scenarios. Firms can achieve a centralized view of their collateral exposure through big data.
- **Liquidity Management System:** Regulators, such as the Financial Industry Regulatory Authority, expect broker-dealers to adopt strong liquidity risk management practices. Big data can help firms improve their liquidity management system by assessing the risk of transactions in near real time.

5. Trend 2: Sell-Side Firms are Re-evaluating their Reference Data Strategies

Capital markets firms are bolstering their RDM solutions for better enterprise risk management, reporting, and compliance.

5.1. Background and Key Drivers

RDM[10] has become critically significant for sell-side firms, mainly due to the challenging economic environment and increasing regulatory compliance. Currently, sell-side firms are at a lower maturity level of data governance, risk, and compliance requirements and consequently face hurdles in maintaining data quality across multiple silos. In addition, substantial redundancy and data duplication in the area of reference data management has created major challenges for these firms. They need to spend on cleaning a nearly identical set of reference data multiple times. This cleaning is a very labor- and cost-intensive process, as it involves manual fixing of data inconsistencies by data specialists.

As a next step, firms need to identify the gap between existing reference data management and newer best practices.

The key drivers for updating reference data management strategies in capital markets are listed below:

- **Address challenges due to duplication of reference data:** Based on data requirements of different business units, sell-side firms source data from several providers. These business units handle data in silos, which leads to duplicate and redundant data within the firm. In addition to creating challenges during analysis, multiple purchases of the same data results in the waste of both time and money.
- **Mitigate risk of exposure to evolving regulatory requirements:** Regulations such as Dodd-Frank, the Foreign Account Tax Compliance Act, Markets in Financial Instruments Directive 2, the Global Legal Entity Identifier, and the Consumer Protection Act are prompting sell-side firms to extend their reference data management practices.
- **Improve data quality:** Sell-side firms are facing inconsistent and incomplete data issues with existing reference data systems. Different identifiers (CUSIP, ISIN, SEDOL[11], internal identifier) are used by both the front office and back office, thereby creating redundancy within systems.
- **Enhance enterprise risk management capabilities:** RDM has become a strategic priority on the agenda of sell-side firms due to the increased focus on enterprise risk management. Firms need to address the demands for intraday risk updates, risk analytics, and consistent risk information.
- **Increased data volume:** As volumes of internal and external data increase, firms are seeking robust solutions and better integration with the downstream systems for managing risk.

To manage these increasing business demands, sell-side firms need to upgrade their existing reference data systems to make them more agile.

10 RDM refers to data that remains the same throughout the lifecycle of a trade, including legal identifiers, product/instrument data, corporate actions, legal contracts, and book data

11 CUSIP stands for Committee on Uniform Securities Identification Procedures, ISIN stands for International Securities Identification Number, and SEDOL stands for Stock Exchange Daily Official List

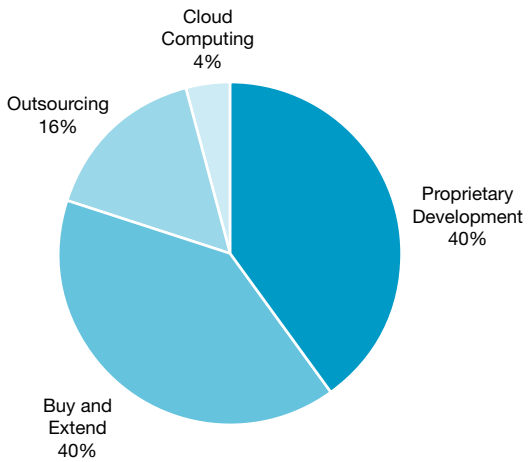
5.2. Analysis

While the automation of RDM started a decade ago, the collapse of big banks at the height of the financial crisis led to the need for specialized systems (benefits of flexibility and multiple data model) for RDM. The modern RDM solutions provide data consistency across applications, reconcile multiple data sources, automate corporate actions and also provide modularized data on terminals for manual checking. This increasing automation in corporate actions results in higher levels of straight through processing. Firms are re-consolidating multiple data sources into a single source so as to build a single view of a customer and explore cross-sell opportunities.

JP Morgan plans to deploy Global Instrument Master across its Corporate and Investment Bank division. This new instrument is a record of reference data on approximately 12 million instruments. The Global Instrument Master will support pre-trade data requirements of applications.

While there are four options (proprietary development, buy and extend, outsourcing, and cloud computing) for implementing RDM systems, sell-side firms are increasingly looking at developing proprietary solutions or buying off the shelf and customizing them to meet their specific requirements. Outsourcing is gaining traction in the RDM space as firms look to lower operational cost and risks. Some sell-side firms are also exploring the option of cloud solutions for reference data management due to operational and implementation cost reductions. Regulations (surrounding transparency and reporting) are likely to be a major driver for uptake of cloud solutions in the future. However, the biggest concern of cloud implementation in RDM is security, especially proprietary data and uncertainty around where data physically resides.

Exhibit 3: Reference Data Management: Implementation Methods (%)



Source: Capgemini Analysis, 2014; Celent: "Reference Data Management: Regulation, Risk, and Remodeling Data Around Legal Entities", Muralidhar Dasar, April 15, 2013

5.3. Implications

Sell-side firms are adopting technologies such as analytics, virtualization, and social media to enhance reference data management capabilities. The firms can deploy analytics to interpret market-related data and devise trading strategies in order to gain competitive advantage. Traders can use visualization approaches, such as dashboards, to make effective decisions. The concept of a virtualization layer eliminates the need for centralizing reference data from multiple sources. The virtualization layer enables data from multiple resources to co-exist as if it is residing on the same server physically, thereby avoiding redundancies and saving infrastructure costs.

Firms need to reinvent their RDM capabilities by adopting an appropriate data management model based on their requirements.

- **Centralized Model:** A shared service organization is responsible for the capture, maintenance, and distribution of reference data. This model is very time consuming and costly. Therefore, this model suits only large firms. This model will allow firms to control the data distribution within the organization.
- **Hybrid Model:** In this model, a specific set of reference data is centrally managed. Apart from central management, some business units manage reference data based on their requirements. This model suits firms that plan to migrate to centralized management of data.

Sell-side firms facing intense pressure on their margins can use these models to manage reference data. This approach would allow the transfer of the data management to specialized utilities, while maintaining the key focus of using data to improve business performance.

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The author would like to thank **Bhushan Joshi, William Sullivan, David Wilson,** and **Amit Jain** for their contributions to this publication.

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