Center for Advanced Research in Finance, Tokyo University
"Financial System Research Forum"

Securities Lending Explained

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Barclays Global Investors Japan Limited

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Scientific investment management

BARCLAYS GLOBAL INVESTORS

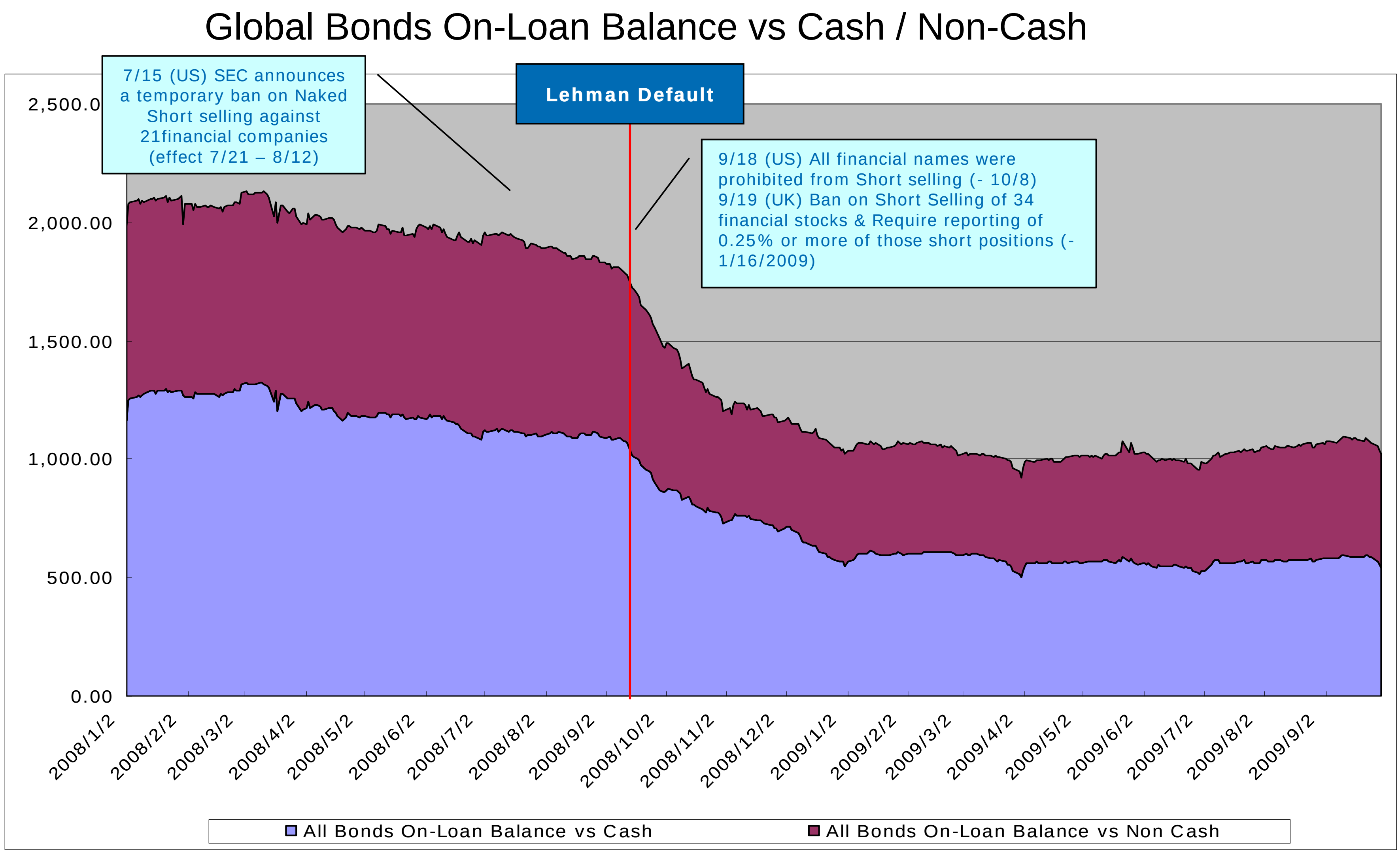
Agenda

- Market Overview
- Market Mechanism
- Appendix

Market Overview

Market Overview

Global Market Size and Collateral Types (1)

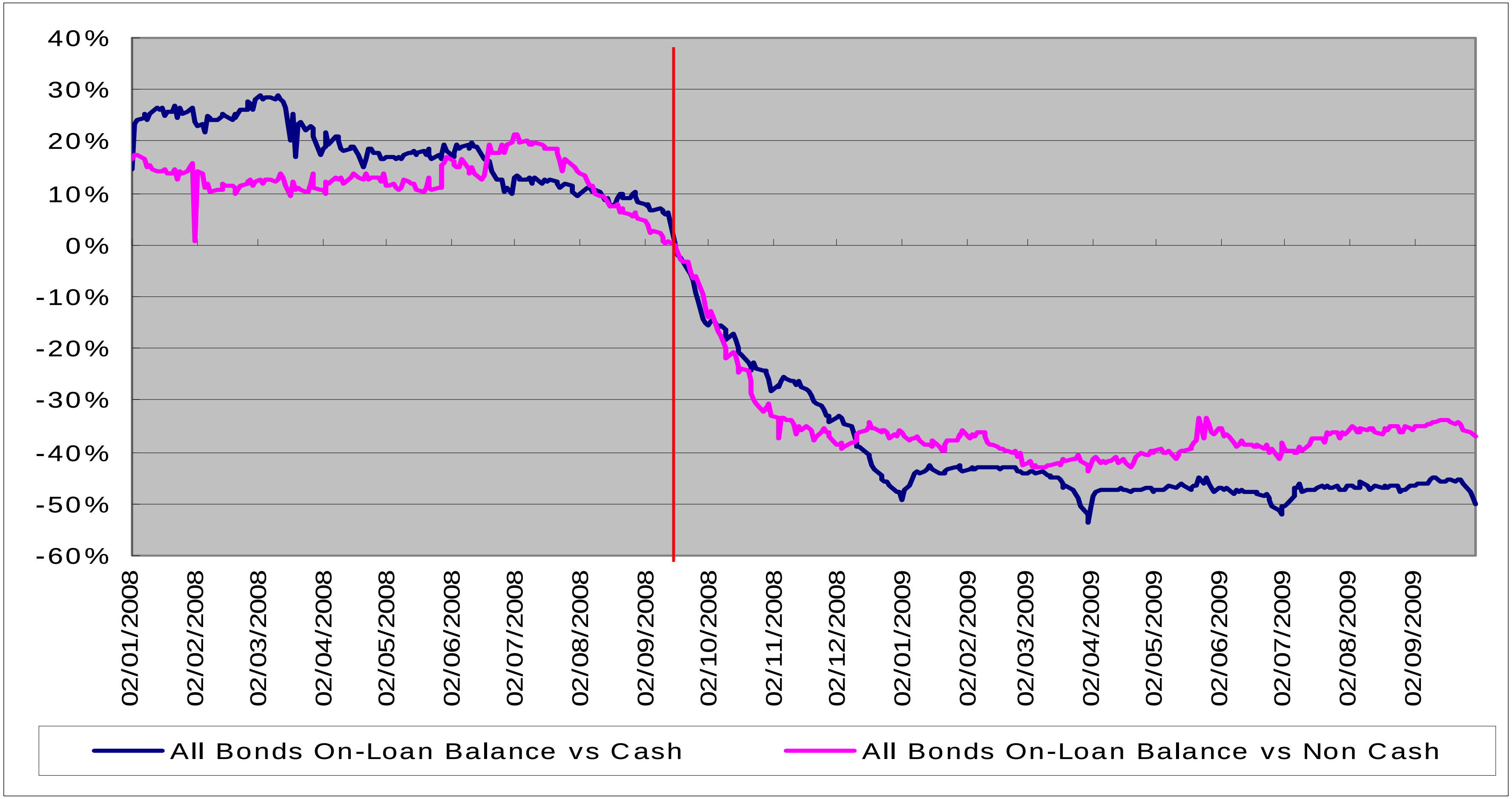


 Data Source: Performance Explorer, information on www.performanceexplorer.com (01/01/2008 – 09/30/2009).

Market Overview

Global Market Size and Collateral Types (2)

Changes in Global Bonds On-Loan Balance vs Cash / Non-Cash



*Market movement is discounted in the on-loan % movement shown by WGBI

Data Source: Performance Explorer, information on www.performanceexplorer.com (01/01/2008 – 09/30/2009).

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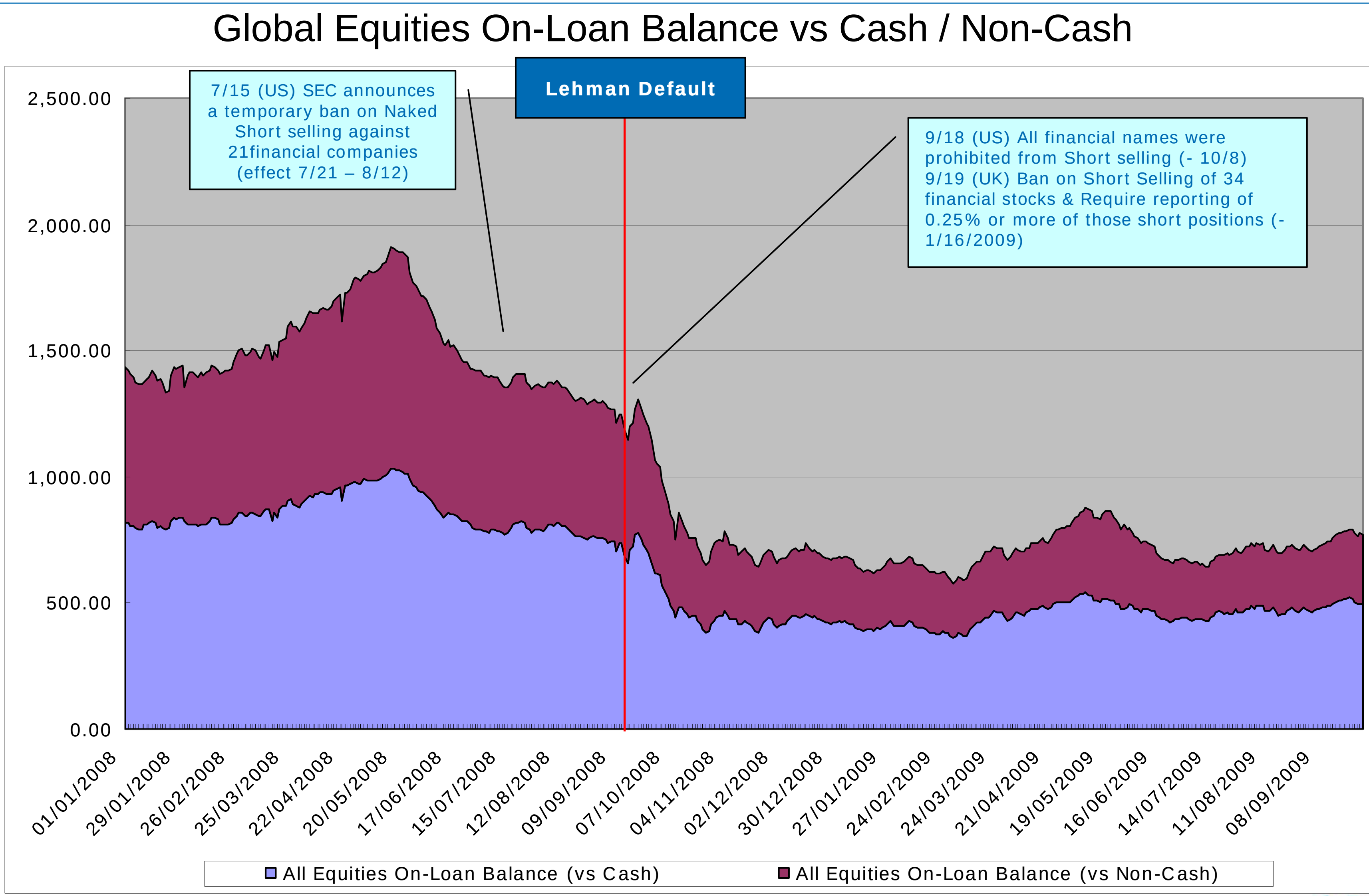
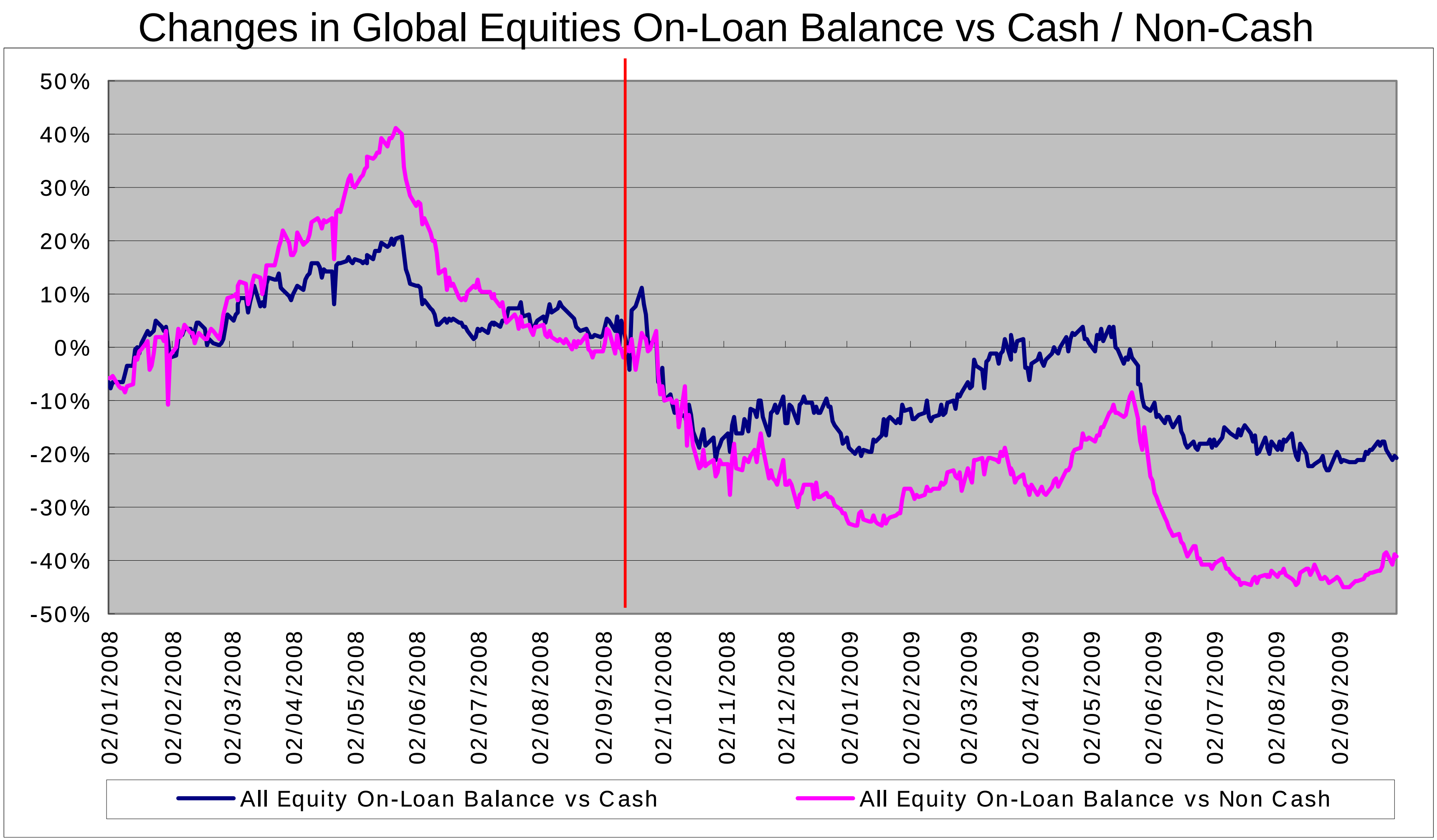
Market Overview
Global Market Size and Collateral Types (3)



Data Source: Performance Explorer, information on www.performanceexplorer.com (01/01/2008 – 09/30/2009).

Market Overview

Global Market Size and Collateral Types (4)

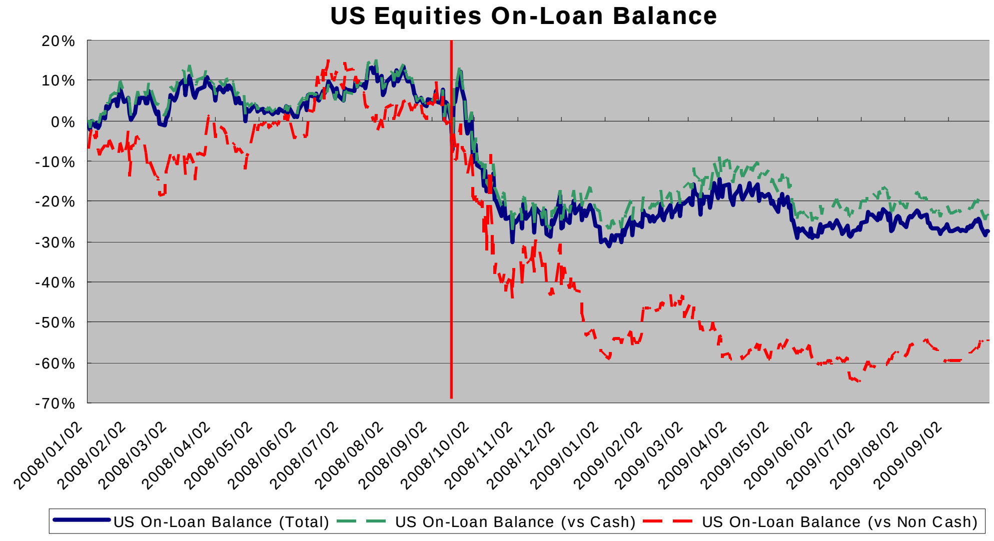


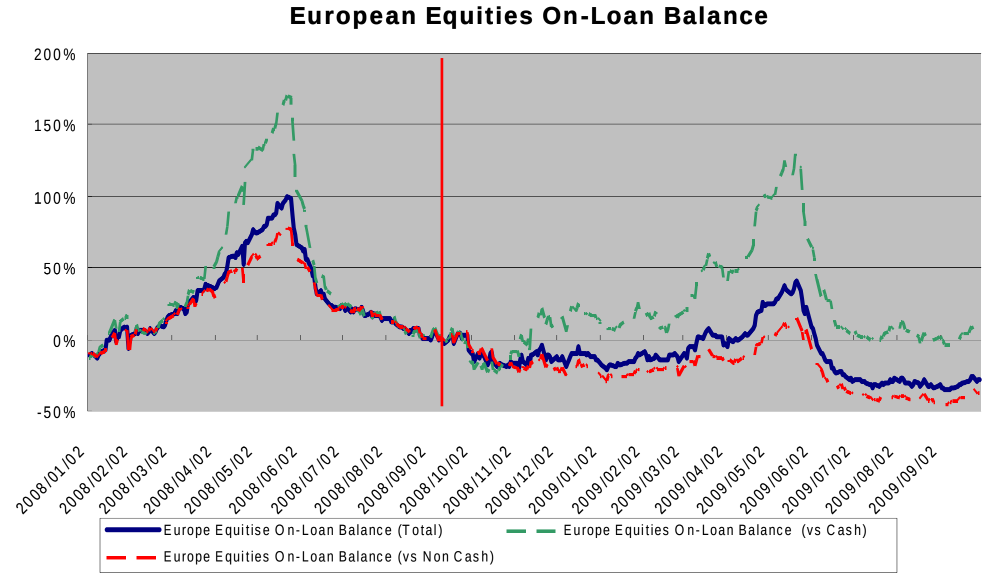
*Market movement is discounted in the on-loan % movement shown by MSCI World Index

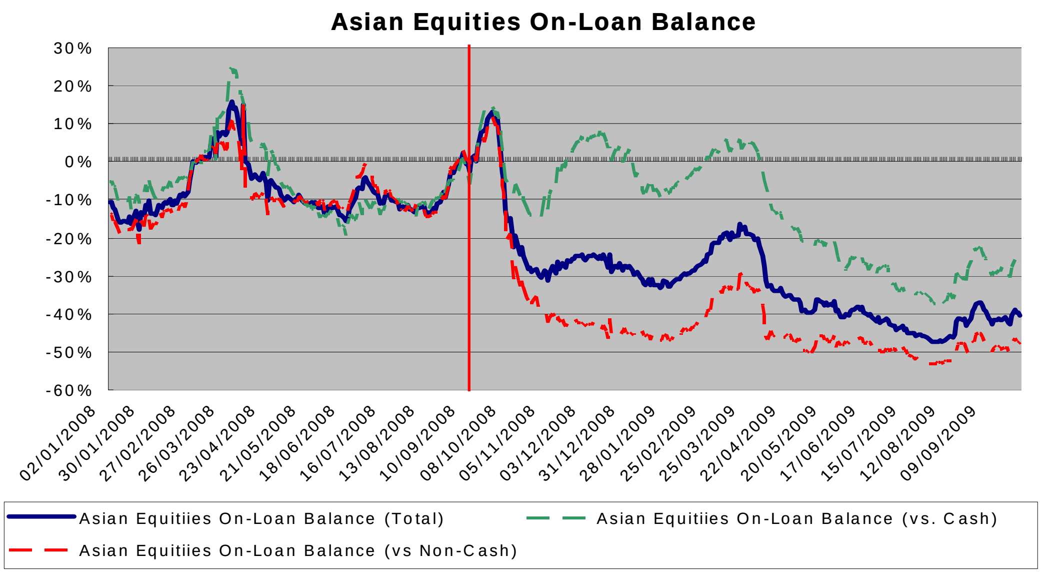
Data Source: Performance Explorer, information on www.performanceexplorer.com (01/01/2008 – 09/30/2009).

Market Overview

Global Market Size and Collateral Types (5)







***Market movement is discounted in the on-loan % movement shown. Indices used are; MSCI US Index, MSCI Europe Index and MSCI Asia Pacific Index, respectively.**

Data Source: Bloomberg for index data, and Performance Explorer for on-loan data, information available on www.performanceexplorer.com (01/01/2008 – 09/30/2009).

BARCLAYS GLOBAL INVESTORS

Market Overview

Global Market Size and Collateral Types (6)

- After Lehman Default

  - Equities: On-loan balance declined sharply for both cash and non-cash collateral to -20%. Observed dispersion in the on-loan balance movement from November 2008 to June 2009 due to seasonal demand in Europe, and currently on-loan balance cash collateral is at -20% and non-cash collateral at -40%.

  - Bonds: On-loan balance declined together sharply for both cash and non-cash collateral to -40% for non-cash collateral and -50% for cash collateral towards the End 2008, and since then the on-loan balance remained at around the same level to date.

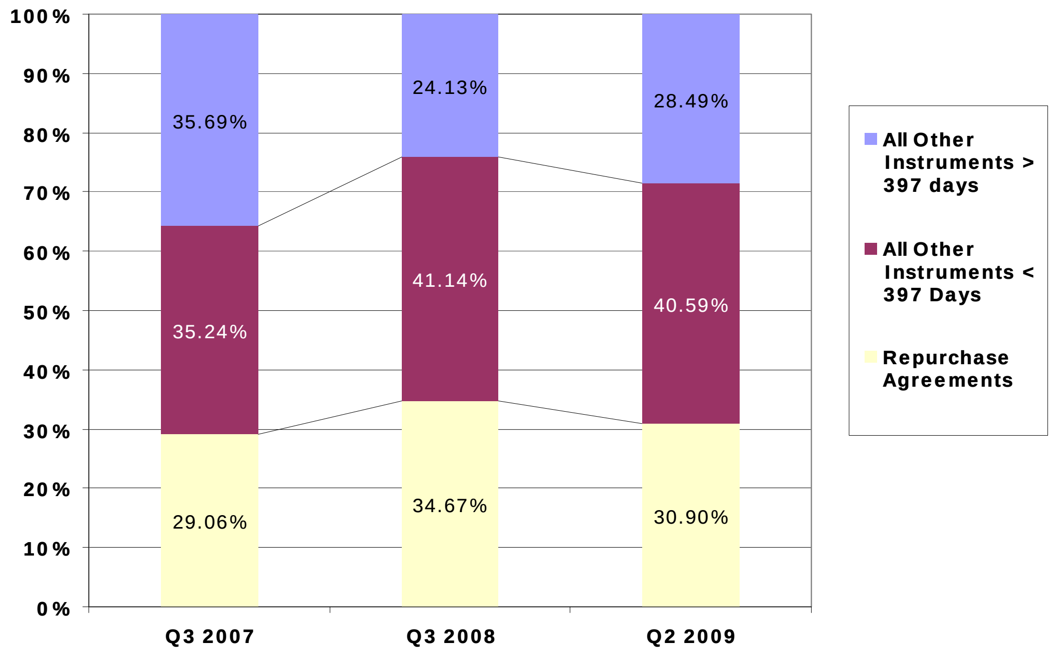
BARCLAYS GLOBAL INVESTORS

Market Overview

Cash Collateral Breakdown (1)

- **Q3 2007 Cash managers start to focus on improving liquidity**
- **We see “Instruments > 397 days” at lower concentrations in Q3 2008 & Q2 2009**
- **“Instruments < 397 days” and REPO have higher concentrations Q3 2008 & Q2 2009**

Credit Tiering



	Q3 2007	Q3 2008	Q2 2009
Interest Rate Sensitivity			
Asset/Liability “GAP” *1	16.47 days	15.57 days	17.53 days
WAM (to next reset) *2	23.79 days	21.00 days	23.04 days
Liquidity			
WAM (to final maturity) *3	190.84 days	178.22 days	190.62 days
Credit Tiering	**% of Port.**	**% of Port.**	**% of Port.**
Repurchase Agreements (REPO)*4	**29.06%**	**34.67%**	**30.90%**
A1(+) and P1	27.43%	34.38%	30.53%
Split Rated A1(+) or P1	1.02%	0.25%	0.02%
A2 and P2 (or lower)	0.49%	0.00%	0.00%
Unrated	0.12%	0.04%	0.35%
All Other Instruments < 397 Days	**35.24%**	**41.14%**	**40.59%**
A1 and P1 (Specifically Rated)	32.3%	37.31%	35.40%
2(a)7 Eligible*5	2.84%	3.12%	4.82%
A2 and P2 (Specifically Rated)	0.10%	0.71%	0.37%
All Other Instruments > 397 days	**35.69%**	**24.13%**	**28.49%**
AAA	18.19%	13.03%	16.39%
AA	12.04%	6.44%	4.97%
A/Investment Grade	5.26%	4.21%	6.01%
Non-Investment Grade	0.20%	0.45%	1.12%
TOTAL	**100%**	**100%**	**100%**

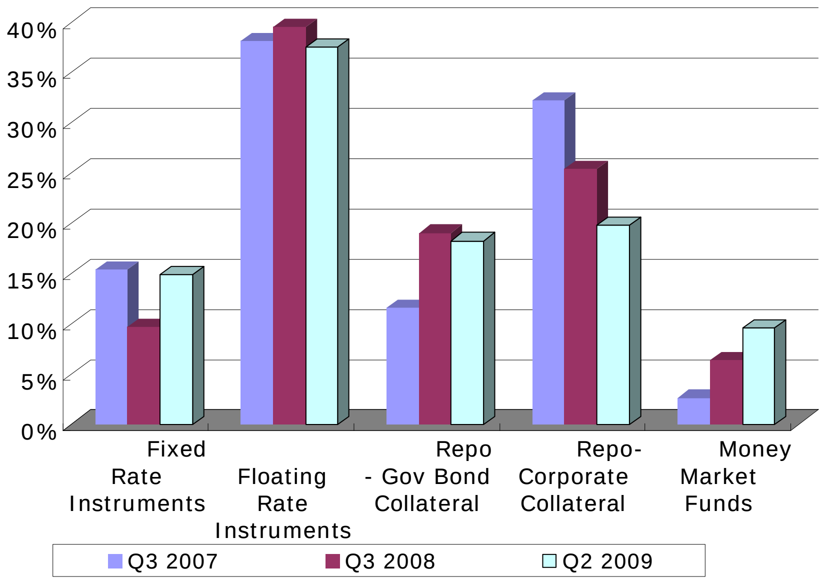
* See Page 12 for notes and definitions

Source: Risk Management Association Web site, RMA Securities Lending Quarterly Aggregate Composite

Market Overview

Cash Collateral Breakdown (2)

- **From Q3 '07 to Q2 '09, cash portfolios aimed to reduce Credit Risk**
  - **Total ABS reduced**
  - **Commercial Paper increased - Generally shorter dated and higher quality**
- **REPO Collateral shifted form Corporate to US Treasuries, improving liquidity/credit quality in the event of a failure**
- **By default, interest rate exposure decreased, as a side effect of credit reduction, most likely not as an explicit goal**



	Q3 2007	Q3 2008	Q2 2009
Fixed Rate Instruments	**15.41%**	**9.68%**	**14.86%**
Commercial Paper (ex. Asset Backed Paper)*6	3.58%	2.98%	6.14%
Asset Backed Securities	11.34%	4.73%	2.52%
Funding Agreements	0.09%	0.02%	0.02%
Other Corporates (ex. Repo Collateral)	0.40%	1.95%	6.18%
Floating Rate Instruments	38.16%	39.49%	37.53%
Commercial Paper (ex. Asset Backed Paper)*6	0.67%	0.15%	0.34%
Asset Backed Securities	13.16%	10.53%	13.16%
Funding Agreements	0.60%	3.21%	0.17%
Other Corporates (ex. Repo Collateral)	23.73%	25.6%	23.86%
Repurchase Agreements (REPO)			
Gov Collateral	11.59%	19.05%	18.25%
U.S. Treasuries	0.50%	1.61%	3.46%
U.S. Government Agencies	11.09%	17.44%	14.79%
Corporate Collateral	32.22%	25.37%	19.81%
Investment Grade (A or Better)	16.09%	9.52%	6.67%
Non-Investment Grade	0.92%	1.84%	1.52%
Equities	0.79%	1.13%	2.58%
Whole Loans	0.37%	0.73%	0.15%
Time Deposits	5.17%	4.18%	3.65%
Certificates of Deposit	7.23%	7.7%	5.04%
Other Bank Deposits	1.65%	0.27%	0.20%
Money Market Funds	2.62%	6.37%	9.56%
Money Market Funds	2.27%	4.67%	7.23%
Other Vehicles	0.35%	1.7%	2.33%
TOTAL	**100%**	**100%**	**100%**

* See Page 12 for notes and definitions

Source: Risk Management Association Web site, RMA Securities Lending Quarterly Aggregate Composite

Market Overview

Cash Collateral Breakdown (3)

- **RMA Survey reflects data provided by mostly major lenders:**

(e.g. 2Q 2009 data provider include: Bank of New York Mellon Corp, BGI, Brown Brothers Harriman & Co, Citibank NA, Comerica Bank, Frost Bank, Goldman Sachs Agency Lending, JPMorgan Chase Bank NA, M&I Global Securities Lending, Northern Trust Company, PNC Global Investment Servicing, State Street Bank & Trust Co, Union Bank National Association, US Bank National Association, Vanguard Group, Wachovia Global Securities Lending, Wells Fargo Institutional Investments)

NOTES AND DEFINITIONS

*1 Measures exposure to changes in interest rates at the end of the reporting period. Defined as the difference (measured in days) between the average interest rate reset on investment portfolio assets and the average rebate rate reset on cash loans. Matched term loans have a gap of zero (0). Open loans assume a one day rebate reset (most conservative approach). Includes all cash collateral investment portfolios and all loans collateralized with cash, except where the cash collateral is turned over to clients.

*2 Utilizes next reset date for floating rate instruments that reset to a market rate of interest; fixed rate obligations including step-up and step-down notes utilizes legal final maturity.

*3 Utilizes final maturity of all instruments.

*4 The applicable credit rating looks at the short term rating for the dealer, failing that, defaults to the short term rating for the parent of the instrument.

*5 Not specifically rated by S&P and Moody's, includes split rated instruments (ie. A1/P2).

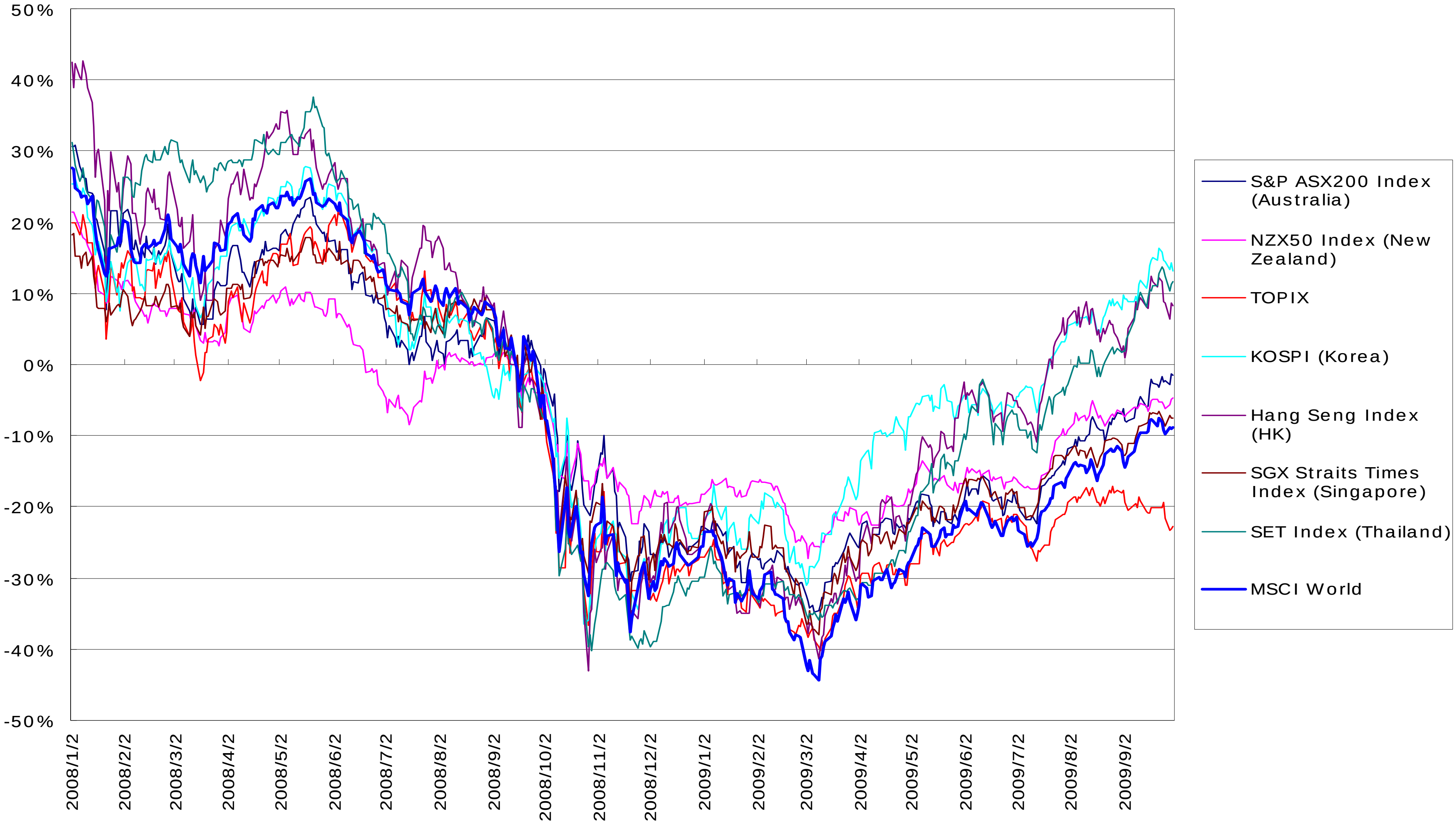
*6 All asset backed paper is included in "Asset Backed Securities".

Market Overview

Cash Collateral Breakdown (4)

- Q3 2007 - Cash managers aim to improve liquidity and start to reduce exposure to longer dated assets
  - Concentrations in long dated assets greater than 397 days decrease over the next year. This is most likely due to new cash being invested into shorter dated assets and REPO. Coupons and principal payments would also follow a similar reinvestment pattern.
- H2 2008 – The global equity markets dropped, reducing cash collateral balances
  - Between Q3 2008 and Q2 2009 the MSCI World Index loses over 23% in market value. Since most cash collateral accounts are trued up daily, we see a significant reduction in available liquidity in these funds.
- Q2 2009 – Reduced balances may on the surface make it appear that concentrations in less liquid asset classes increased vs. Q3 2008

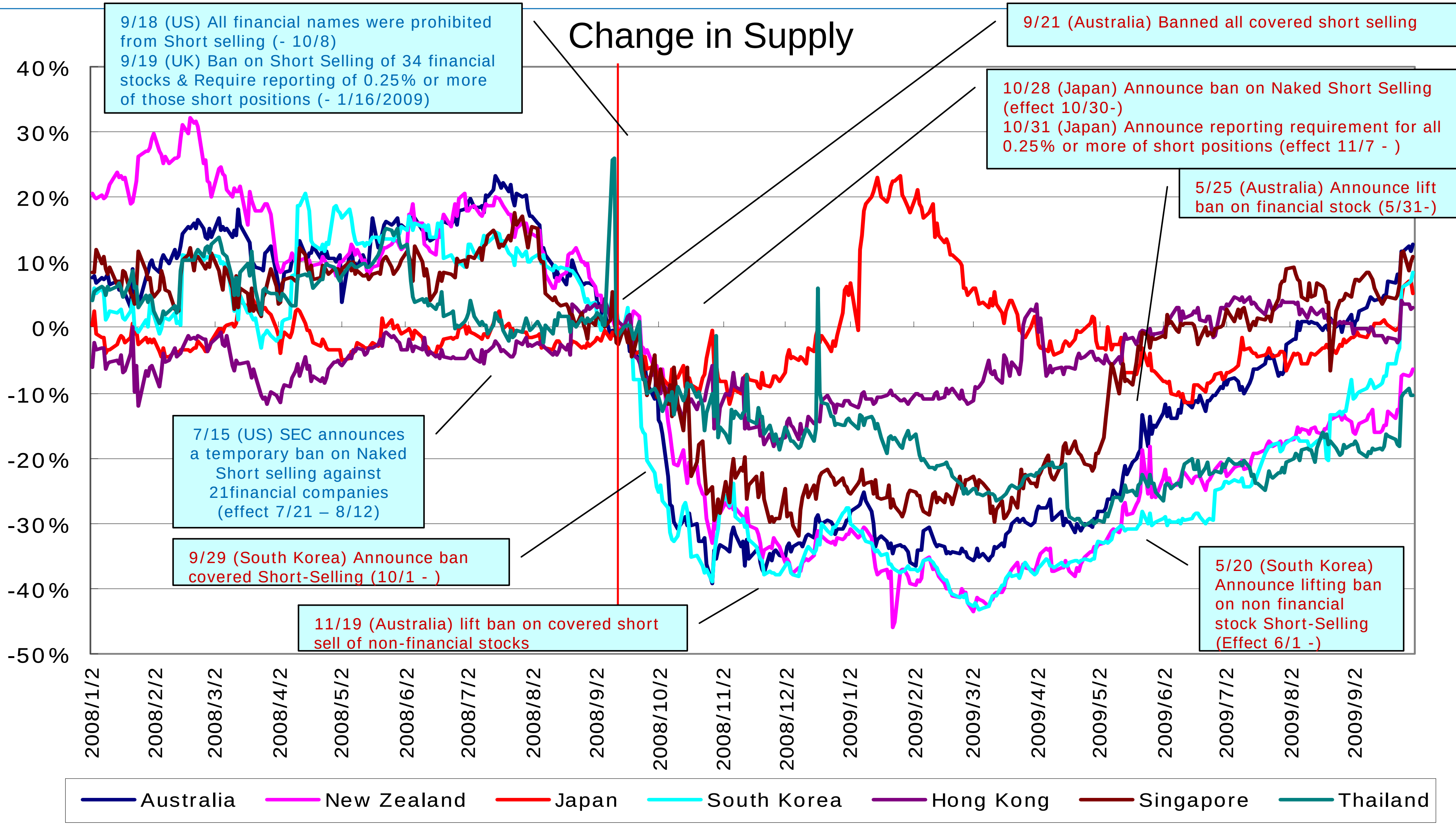
Market Overview
Asian Region: Change in Stock Indices



Data Source: Bloomberg for Index data (01/01/2008 – 09/30/2009).

Market Overview

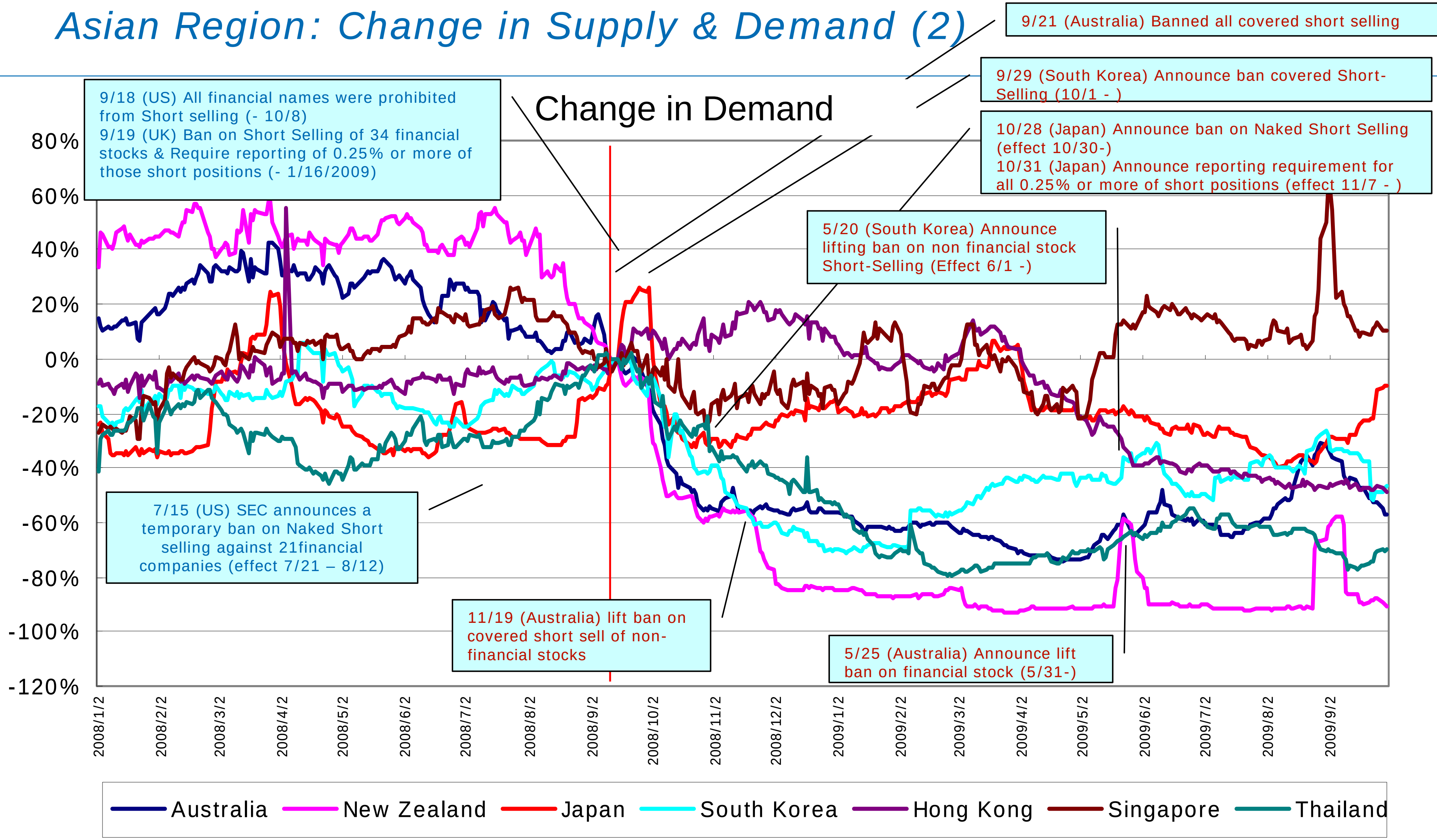
Asian Region: Change in Supply & Demand (1)



*Index movement is considered in the Supply data. Indices used are; AU: ASX200, NZ: NZX50, JP: TOPIX, SK: KOSPI, HK: HSI, SG: SGX, TH: SET.
Data Source: Bloomberg for Index data, and
Performance Explorer for On-loan data, information avaialble on www.performanceexplorer.com (01/01/2008 – 09/30/2009).

Market Overview

Asian Region: Change in Supply & Demand (2)



*Index movement is considered in the Demand data. Indices used are; AU: ASX200, NZ: NZX50, JP: TOPIX, SK: KOSPI, HK: HSI, SG: SGX, TH: SET.
Data Source: Bloomberg for Index data, and
Performance Explorer for On-loan data, information avaialble on www.performanceexplorer.com (01/01/2008 – 09/30/2009).

Market Overview

Asian Region: Change in Supply & Demand (3)

- After Lehman default through End-2008,
  - Impact to countries which implemented less or no strict restrictions on short selling such as Japan and HK were limited and changes in supply and demand were relatively balanced with about 10 – 20% decline in supply and demand
  - Impact to countries which implemented strict restrictions such as ban on all short selling (i.e. Australia and South Korea) were large. Decrease in demand was much more than the decline in supply (about 60% decline in demand against about 30-40% decline in supply)
- In 2009, overall stock markets started to pick up reflected in the changes in supply. However, the recovery in demand is not keeping up with the pace of recovery in supply

Market Mechanism

Market Mechanism
Participants

	Lender		Borrower	
	Beneficial Owner	**Intermediary**		**Ultimate Borrower**
Market Participants	• Pension Funds • Insurances	• Trust Banks • Global Custodians • Agent Lenders	• Prime Broker • Other Securities Firms	• Hedge Funds • Prop Desks • Alternative Portfolios (130/30)
Reason to lend or borrow	• Maximizing revenue on portfolio			▪ Avoidance of settlement failure ▪ Short Sale Options, CBs hedging futures positions —long-short strategies —other arbitrage

Source: Pan Asia Securities Lending Association

Market Mechanism
General Terms

- Borrower generally provides collateral and pays a borrowing fee and any distributions incurred to the lender
  - Loan is generally marked to market daily and collateral adjusted accordingly
  - Borrower return equivalent economic value of any distributions incurred during the loan – i.e., manufactured dividends, stock splits, and any other corporate actions
- Securities title transfers from the lender to the borrower unencumbered and regained upon return of loan
  - Lender gives up right to the proxy voting
  - Lender may recall securities at any time, allowing shares to be returned within normal market settlement cycle
- Intermediaries are often used in order to match the needs of end users and beneficial owners
  - Due diligence, credit review
  - Collateral management
  - Contract negotiations, documentations

Source: Pan Asia Securities Lending Association

Market Mechanism
Regulatory Requirements

US	UK	Japan
U.S. Securities and Exchange Commission (SEC) – includes naked short sell, reporting requirements, Up-tick rule, collateral requirements, lending limits, affiliate restrictions	Financial Services Authority (FSA) – includes naked short sell*, reporting requirements, agent lender disclosure**	Financial Services Agency (FSA) – naked short sell, reporting requirements, Up-tick rule
The U.S. Department of Labor (DOL) for ERISA funds – includes reporting requirements, collateral requirements, affiliate restrictions, borrower restrictions	Council of the European Economic Community (EEC) - UCITS Regulation (collateral for collective investment)	Japan Securities Dealers Association (JSDA) – Reporting Requirement

* Currently not in effect

** the FSA will require agent-lender disclosure in the UK from 1 January, 2010 onwards

Source: created by BGI based on various information source

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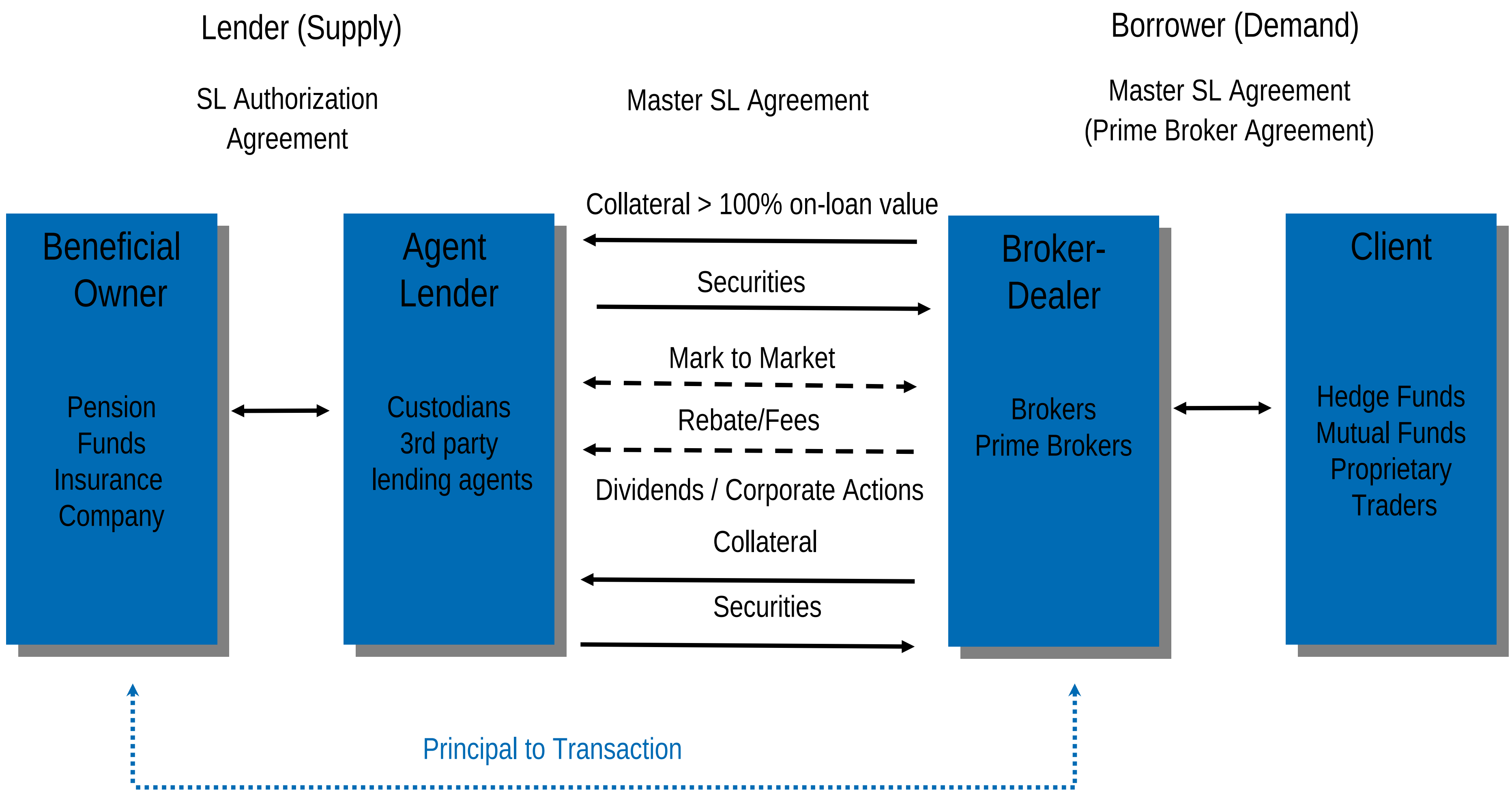
Market Mechanism
Demand for Borrowing

- The reasons for borrowing vary
  - To complete a settlement obligation to the market
  - To hedge arbitrage positions
  - To cover short strategies

Individual Stocks	CB / Warrant Arbitrage	Risk Arbitrage
Option Hedge	Sector Arbitrage	Long / Short Programs
Index Arbitrage	ADR / GDR Arbitrage	Fail Coverage

Source: Pan Asia Securities Lending Association

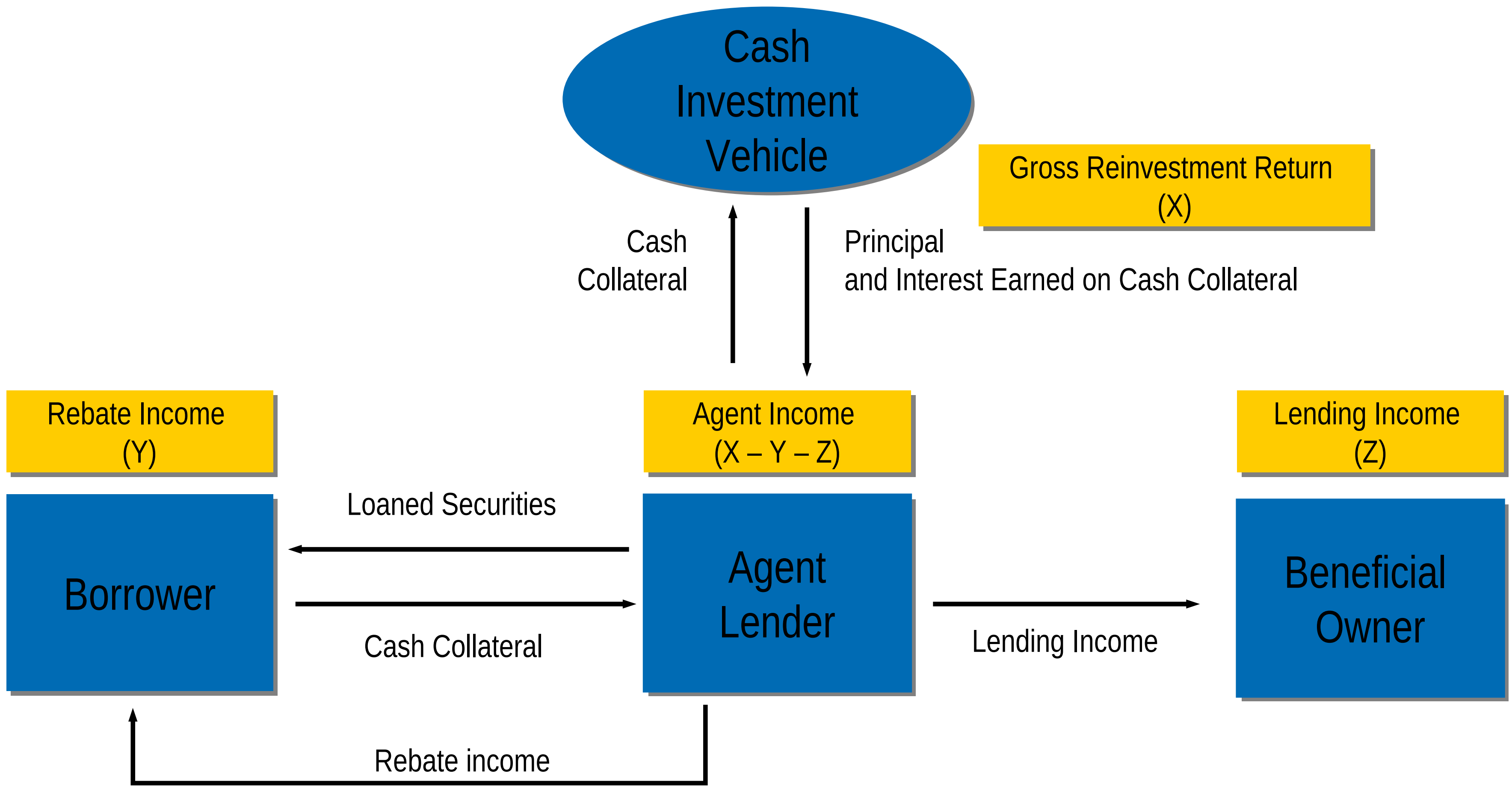
Market Mechanism
Transaction Flows



Source: Pan Asia Securities Lending Association

Market Mechanism

Transaction Flows: Cash Collateral



Source: Pan Asia Securities Lending Association

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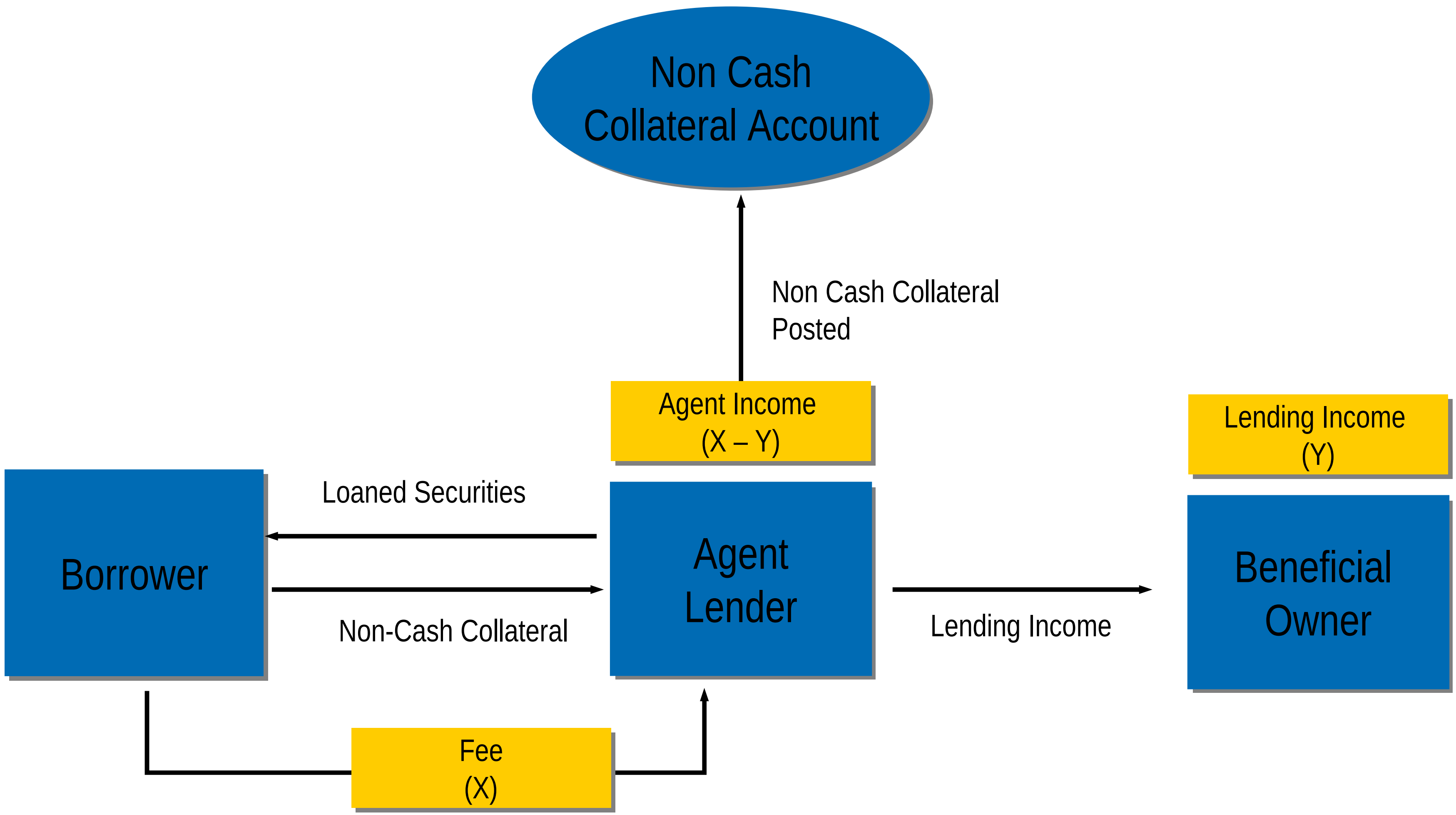
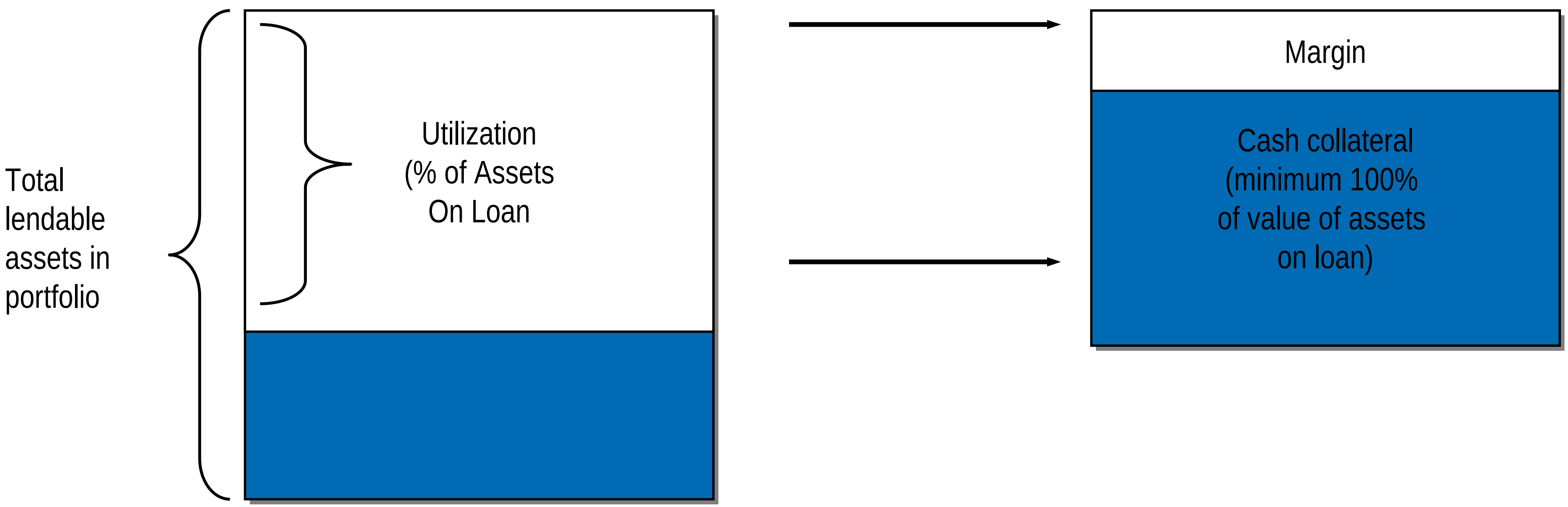
Market Mechanism
Transaction Flows: Non-Cash Collateral



Source: Pan Asia Securities Lending Association

Market Mechanism
Revenue Component: Utilization

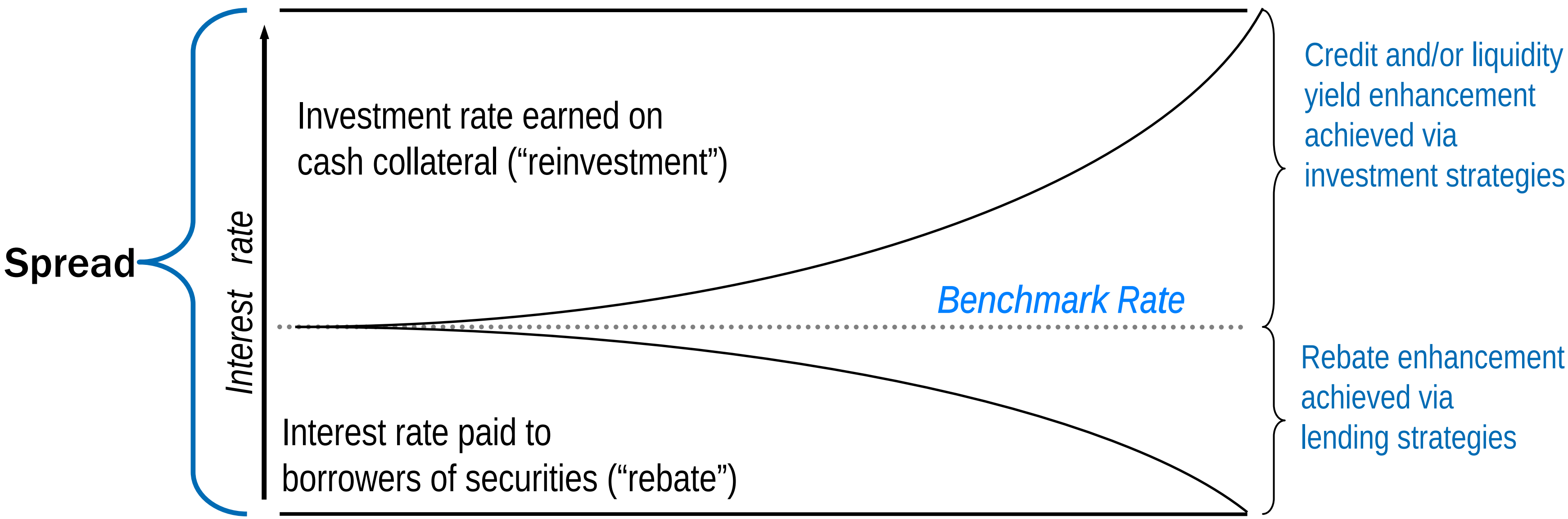
- Utilization is the percentage of assets on loan
  - Describes how much of the portfolio is on loan.
  - The cash held as collateral for outstanding loans earns income equal to the spread between investment rate received and rebate rate paid.



Source: Pan Asia Securities Lending Association

Market Mechanism
Revenue Component: Spread

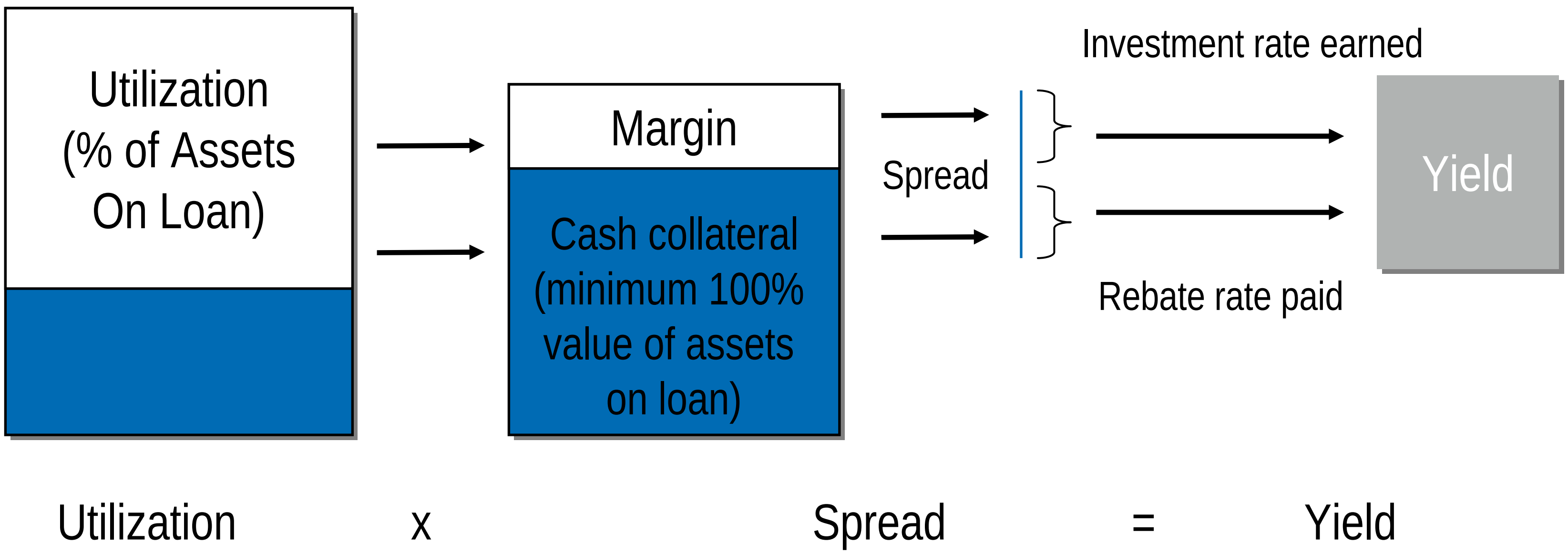
- Spread is the sum of:
  - Rebate enhancement, based on the value of the particular securities lent, plus Yield enhancement, based on the maturity and/or credit quality of investments



Source: Pan Asia Securities Lending Association

Market Mechanism
Revenue Component: Yield

- Yield is the incremental return to the entire lendable portfolio.
  - This return can be enhanced by any combination of lending more assets, earning a higher investment return, or paying lower rates to borrowers.



Source: Pan Asia Securities Lending Association

Market Mechanism
Risks (1)

Reinvestment Risk

Market Risk

Counterparty Risk

Securities Lending is a low risk activity but risk must be managed

Macro Risks

Regulatory Risk

Operational Risks
Corporate Actions
Failed Settlements

Know your customer
Know your market

Source: Pan Asia Securities Lending Association

Market Mechanism

Risks (2)

- **Counterparty Risk**
  - Counterparty’s inability to fulfill obligations under the contract
  - Need for proper due diligence and appropriate credit limits
- **Collateral Risk**
  - Total value of lent securities exceed total value of collateral at the time of counterparty default
    - Need for daily marked to market
    - Need for proper management of collateral
- **Reinvestment Risk**
  - Invested vehicle may downgrade or default
- **Operational Risk**
  - Settlement fail risk
  - Corporate Action notification
  - Need for established operational process

Source: Pan Asia Securities Lending Association

Market Mechanism

Risks: Managing Risks

Over Collateralization
Loans are generally over collateralized
•102% for US securities
•105% for non-US securities

Daily Mark-to-Market
Ensures that collateral received from borrowers is maintained at their specified collateral level, reflecting daily moves in security prices

Extensive Legal Review
• Default trigger
- Credit rating
• Liabilities
- Repurchase of securities
- Fees, dividends, and corporate actions

Borrower Default Procedure
Confirm documented procedure is in place for
• Collateral unwind
• Repurchase of securities
• Reclaim process

Source: Pan Asia Securities Lending Association

Appendix

Appendix (1)
Short Selling Restrictions

	US	UK	Japan
Short Sell Restriction	- Ban on naked short sell whose borrowed stocks were not confirmed (2008/7/21 -) - All Financial names were prohibited from short sell (2008/9/18 – 10/8) - If not settled until the opening of the trade session on the following day of SD, the same name cannot be short sold unless stocks are borrowed in principle（2008/9/18―）	Ban on short sell of 34 Financial names（2008/9/18―2009/1/16）	- Naked short selling (short selling in which stocks are not borrowed at the time of selling) is prohibited (2008/10/30 -)
Short Sell related Price Restriction	Abolished ban on short sell at the most recent traded price or lower (2007/07)	n/a	- "uptick rule requirement" which prohibits, in principle, short selling at prices no higher than the latest market price (2002/3-)
Short Sell related Reporting/ Disclosure Rules	Require Institutional Investors with more than 100 mil USD in AUM to report short sell positions as of previous weekend on the 1st business day of the week (no disclosure to general audience)	For stocks prohibited short sell, short position of 0.25% or more shall be reported (2008/9/23 – 2009/1/16)	- the exchanges to make daily announcements on their aggregate price of short selling regarding all securities and aggregate price of short selling by sector (2008/10/14 -) -Holders of a short position of 0.25% or more of outstanding issued stocks are required to report to exchanges through securities firms. Exchanges are required to publicly disclose such information (2008/11/7 -)

Source: Article from Securities Analysts Journal February 2009, and information available on web sites of US SEC, UK FSA and Japan FSA

Appendix (2)

Short Selling Restrictions: What regulators are saying…

- “The FSA believes that the benefits of short selling such as price efficiency and liquidity, normally outweigh the disadvantages and proposes that there should be no direct restrictions on short selling. However, the FSA sees advantages in having enhanced transparency of short selling and so proposes that disclosure requirements for significant short positions should be introduced for all UK listed stocks.”

Source: FSA (UK) website

- Kathleen Casey, Chairman of the IOSCO(International Organization of Securities Commissions), said:

  "IOSCO believes that the adoption of these four principles by securities regulators will contribute to the development of a more consistent global approach to the regulation of short selling. The principles strike a balance between maintaining the benefits that short selling contributes to the functioning of markets while ensuring that regulators have the necessary tools to counteract the abusive use of short selling."

日本のFSAの、IOSCOに対する考え

2.IOSCOでは、証券監督に関する原則・指針等の国際的なルールの策定等が行われており、金融庁および証券取引等監視委員会は、我が国における証券当局として、こうしたIOSCOの活動に積極的に貢献しています。(http://www.fsa.go.jp/inter/ios/ios_menu.html)

＊ 我が国のIOSCOへの参加
金融庁が、2000年7月の発足と同時に、それまでの金融監督庁（準会員）および大蔵省（金融企画局）（普通会員）の加盟地位を承継し、我が国からの普通会員となっています。(http://www.fsa.go.jp/inter/ios/iosco_01.html)

Source: FSA (Japan) website

Appendix (3)
Short Selling Restrictions: What academics are saying…

- Challenging short sale restriction
- **Bris, Goetzmann, and Zhu(2004)** observed those countries without short sale restrictions or short sale related restrictions tend to have more efficient pricing in the stock market
- **Bai, Chang, and Wang(2006)** observed that market regulations such as short sale restrictions make prices more volatile
- **Chang, Cheng, and Yu(2006)** observed HK stock market exhibit less positive skewness when short-sales restrictions were lifted
- **Saffi and Sigurdsson(2007)** observed that short sale restrictions lower the price efficiency through empirical analysis using lending data
- **Uno, Umeno, Muroi (2009)** observed higher lending liquidity translates to higher trading volume, higher bid/ask depth and lower bid/ask spread

- Supporting short sale restriction or seen no impact on price efficiency from such restriction
- **Diether, Lee, and Werner(2005)** observed that there's no definitive relationship between short sale and pricing efficiencies

Appendix (4)

Short Selling Restrictions: What academics are saying…

<References>

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Appendix (5)

Industry Associations

Industry Association	Description
RMA **(The Risk Management Association)**	A not-for profit association (headquartered in US), whose sole purpose is to advance the use of sound risk principles in the financial services industry. RMA promotes an enterprise approach to risk management that focuses on credit risk, market risk and operational risk. Currently has about 3000 banks and non-bank financial institution participants.
ISLA **(International Securities Lending Association)**	A trade association (incorporated in UK) which represents the common interests of participants in the securities lending industry with over 90 institutions including banks, insurance companies, asset managers, investment banks, and etc. ISLA works closely with European regulators and contributed to development of market practices and the industry-standard lending agreements, etc.
PASLA **(Pan-Asian Securities Lending Association)**	Similar association (incorporated in HK) as ISLA but with focus in the business of borrowing and/or lending securities of Asian markets. At present, PASLA has 54 member firms in the industry.

Source: Created by BGI based on information from respective Associations' website

バークレイズ・グローバル・インベスターズ株式会社

金融商品取引業者 関東財務局長（金商）第375号【第一種金融商品取引業 第二種金融商品取引業 投資運用業 投資助言・代理業】
加入協会：日本証券業協会 日本証券投資顧問業協会 投資信託協会

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