



# Market Intelligence, Market Information and Statistics in Central Banking

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## 1. Introduction: Statistics, Market Information and Irving Fisher



- Irving Fisher
- First Ph.D. in Economics at Yale in 1891
- Laid foundations of macroeconomics and monetary theory:  
*The Theory of Interest*,  
Quantity Theory of Money,  
Fisher Equation, etc.

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# Fisher on Statistics, Market Information and Financial Stability

- Influenced how economic statistics are compiled
  - *The Making of Index Numbers*, Fisher's Ideal Index, etc.
- One of most popular information providers at the times
  - From 1923 to 1936, his own Index Number Institute computed commodity price indices worldwide.
- Failed to recognize at first the significance of the 1929 Crash
  - Predicted, three days before the crash, "*Stock prices have reached what looks like a permanently high plateau,*" and continued to assure investors that a recovery was just around the corner for months after the crash.
- Presented a "debt deflation" theory as an explanation of the Great Depression

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## Basic Message of This Speech

- Reliable macroeconomic statistics are necessary for policy making.
- However, "statistics" are sometimes grossly insufficient to guide economic policy.
- Central bank statisticians should incorporate market intelligence and non-statistical information into their arsenal of statistics.

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# Outline

- Section 2: Economic Information and Policy Making
- Section 3: Lessons from the Past: Necessity of Proactive Market Intelligence
- Section 4: Present Achievement: Best Use of Existing Market Information
- Section 5: Guarding against Future Problems: Shadow Banking and Basic Information Gathering

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## 2. Economic Information and Policy Making

- Contemporary central banking faces two challenges.
  - 1) Central bank independence
    - ➔ Accountability: Evidence-based policy
  - 2) Increasing susceptibility to economic agents' expectations
    - ➔ Communication: With the general public
- “Numbers” or statistics become increasingly important.

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## Knowns and Unknowns in Central Bank Policy

- Three types of economic information

Type 1) Known knowns

- What happened in the past (statistics)

Type 2) known unknowns

- Estimating what is happening (now-cast) and what will happen (forecast) based on past statistics

Type 3) Unknown unknowns

- Previously unknown, but potentially significant factors

¶ *“But there are also unknown unknowns - the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones.”*

- Donald Rumsfeld

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## What does a central bank policy maker want to know when he/she decides on policy?

1. Momentum of activity in the economy and financial markets

- Aggregate demand management

2. Signs of previously unknown, but potentially significant changes in the economy and financial markets

- Financial stability

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# Information about Economic Activities

- We have a rich array of data of either type 1 or 2.
  - Improved comprehensiveness, accuracy, and timeliness
  - Quantitative data: GDP and national accounts, CPI, flow of funds, balance of payments
  - Qualitative data: Business surveys, consumer sentiment surveys
  - Both public and private data providers
  - These are “known knowns” and “known unknowns”.

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# Information about Unknown Unknowns

- Statistics are insufficient to detect unknown unknowns (type 3).
- Deficiency is especially keen in financial information.
- Why?
  - Financial stability as prerequisite for economic stability
  - Stronger negative feedback between financial malaise and aggregate demand factors
  - Rapid changes in financial factors
- Important agenda for policy makers to guard against unknown unknowns (type 3) with timely reporting schemes

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## Central Bank Intelligence: The Key to Guarding against Unknown Unknowns

- Market intelligence
  - Daily transactions with financial institutions provide various kinds of information with respect to market participants, developments in financial products, as well as other “news”.
- Monitoring information and feedback
  - Qualitative or supervisory information can be obtained from regular supervisory dialogue with regulated entities.
- Gauging the extent of biases that may be included in market information

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## 3. Lessons from the Past: Necessity of Proactive Market Intelligence

- Paribas Shock of 2007
  - On July 10, 2007, S&P and Moody's announced negative reviewing of several residential mortgage-backed securities (RMBS).
  - The AAA ratings of asset backed commercial paper (ABCP) backed by these RMBS would also be downgraded.
- It became the precursor of the global financial crisis of 2008.

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## Background

- (a) In the US, money market funds (MMFs) were considered as safe financial assets.
- (b) Why safe? MMFs were only allowed to invest in AAA-rated assets.
- (c) MMFs heavily invested in asset-backed commercial paper (ABCP) issued by the structured investment vehicles (SIVs) created by US and European banks, since these SIVs had AAA-rating.

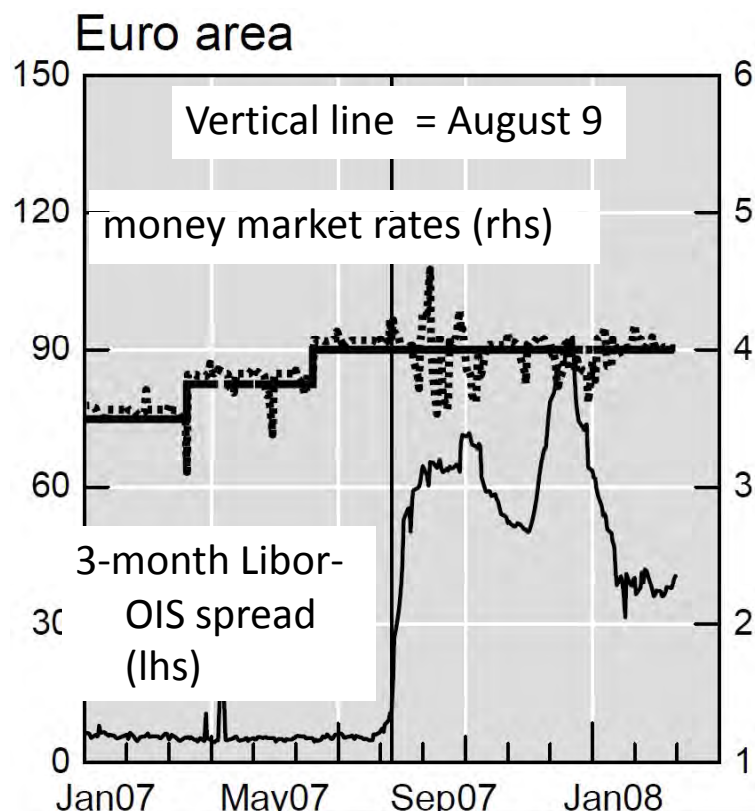
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## Timeline to August 9, 2007

- SIVs, which were created by banks to issue ABCP, suddenly faced difficulties in fund-raising; BNP Paribas moved to freeze its affiliated funds' new applications and redemptions.
- SIVs' parent banks were forced to provide liquidity enhancement.
- Banks suddenly became aware of counterparty risk.
- On August 9, a liquidity crisis actually occurred – the Paribas Shock; many European banks faced liquidity difficulties.

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## Chart 1: Interbank Markets Seize Up

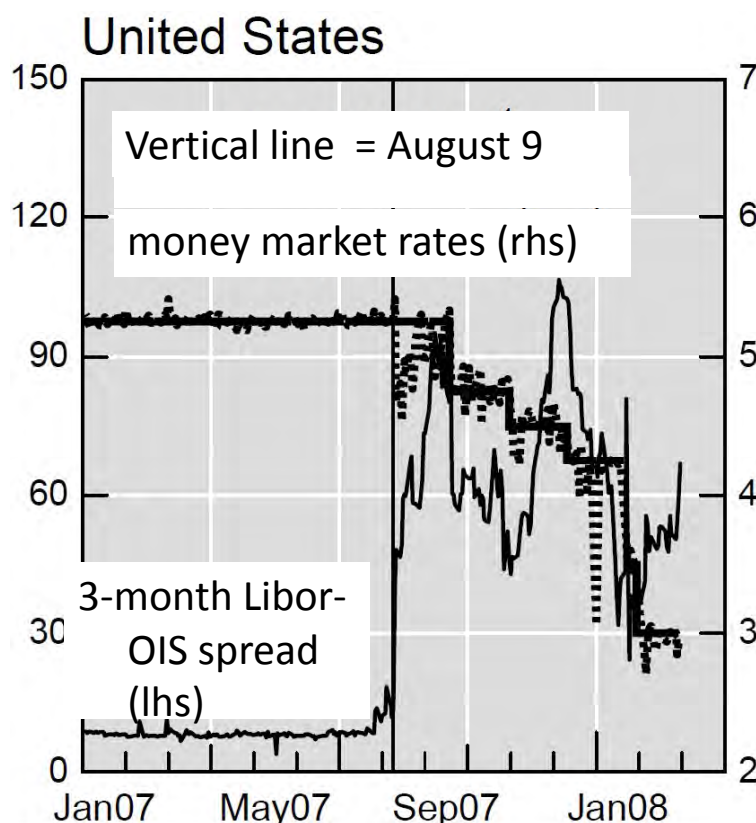


Note: 1 Libor rate minus OIS rates (for the euro area, EONIA swap); in basis points. 2 For United States, effective federal funds rate; for the euro area, EONIA. 3 For the United States, federal funds target rate; for euro area, minimum bid rate in the main refinancing operation.

Sources: Claudio Borio, "The Financial turmoil of 2007-?: a preliminary assessment and some policy considerations", *BIS Working Papers* No 251, p.7. Data sources: Bloomberg; BIS calculations.

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## Chart 2: US Interbank Markets Seize Up



Note: 1 Libor rate minus OIS rates (for the euro area, EONIA swap); in basis points. 2 For United States, effective federal funds rate; for the euro area, EONIA. 3 For the United States, federal funds target rate; for euro area, minimum bid rate in the main refinancing operation.

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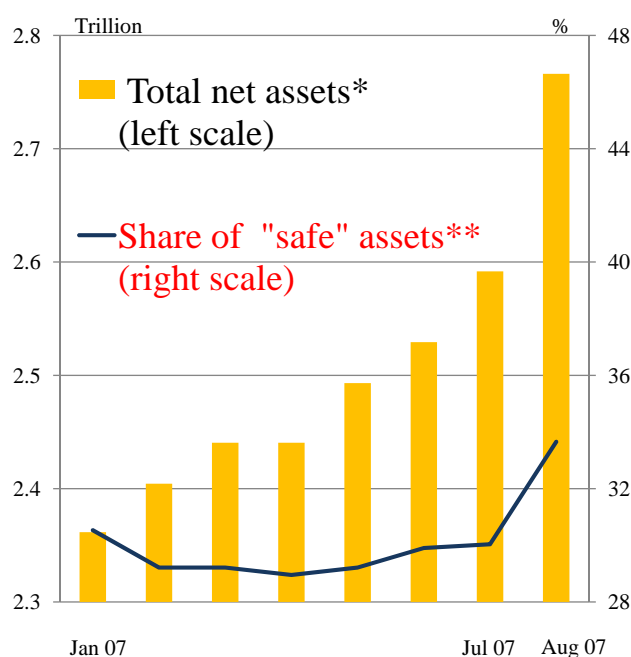


## Lesson: Necessity of Proactive Market Intelligence

- To have prevented this event, policy makers should have known:
  - (1) MMFs' asset positions,
  - (2) Legal constraints on MMFs,
  - (3) Banks' involvement in their SIVs, and
  - (4) Inter-connectedness among banks in the interbank market.
- Existing statistics and routine market intelligence were grossly insufficient to gather the above four pieces of vital information.
- However, there were several signs flagging a possible problem, so that a "proactive" market intelligence unit alarmed by these signs might have detected the problem and could have helped policy makers avoid the disaster.

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### Chart 3: US MMFs in the 1st Half of 2007



Note: \* In trillions of US dollars. \*\* Share of taxable money market mutual funds held as treasury securities, government agencies and repurchase agreements; as a percentage of total assets.

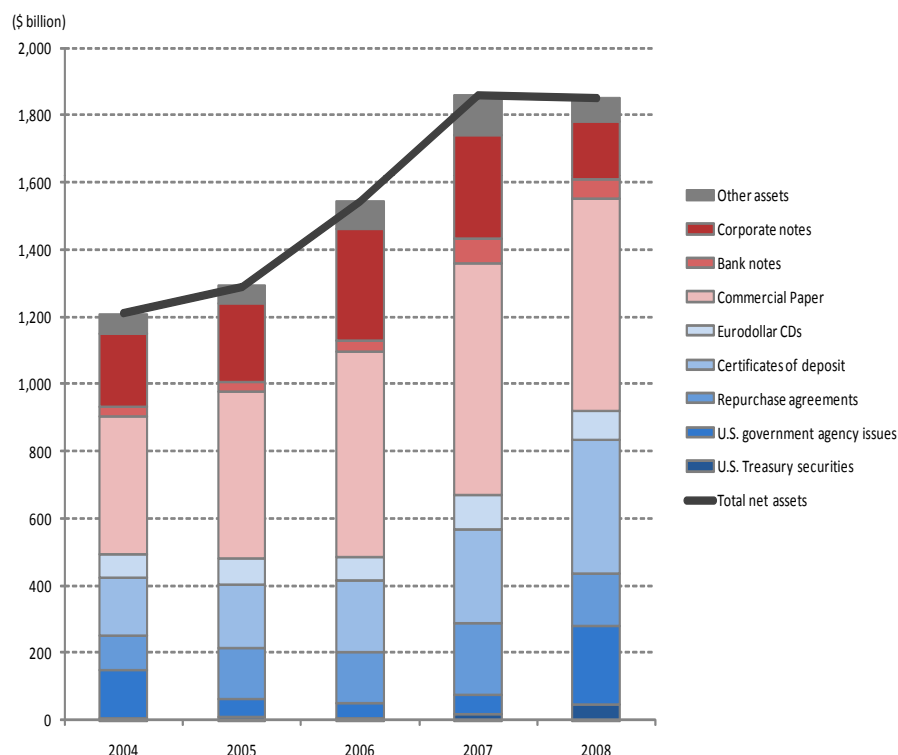
Sources: Ingo Fender and Peter Hordahl, "Overview: a cautious return of risk tolerance", BIS Quarterly Review June 2008, p.15. Data sources: Investment Company Institute.

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### 3. Lessons from the Past: Necessity of Proactive Market Intelligence

## Chart 4: Detailed Data of MMFs

### Assets Composition of Taxable Prime Money Funds



Notes: "Other assets" includes banker's acceptances, municipal securities, and cash reserves. "U.S. Treasury securities" includes U.S. Treasury bills and Other Treasury securities. Data for funds that invest primarily in other mutual funds were excluded from the series. BOJ compiles the graph from original data.

Source: Investment Company Institute, 2012  
Investment Company fact book, p177

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## 4. Present Achievement: Best Use of Existing Market Information

Many countries are preparing property price indexes complying with the global standard.

➤ *Handbook on Residential Property Price Indices*  
[http://epp.eurostat.ec.europa.eu/portal/page/portal/hicp/methodology/owner\\_occupied\\_housing\\_hpi/rppi\\_handbook](http://epp.eurostat.ec.europa.eu/portal/page/portal/hicp/methodology/owner_occupied_housing_hpi/rppi_handbook)

1) Improved accuracy and reliability

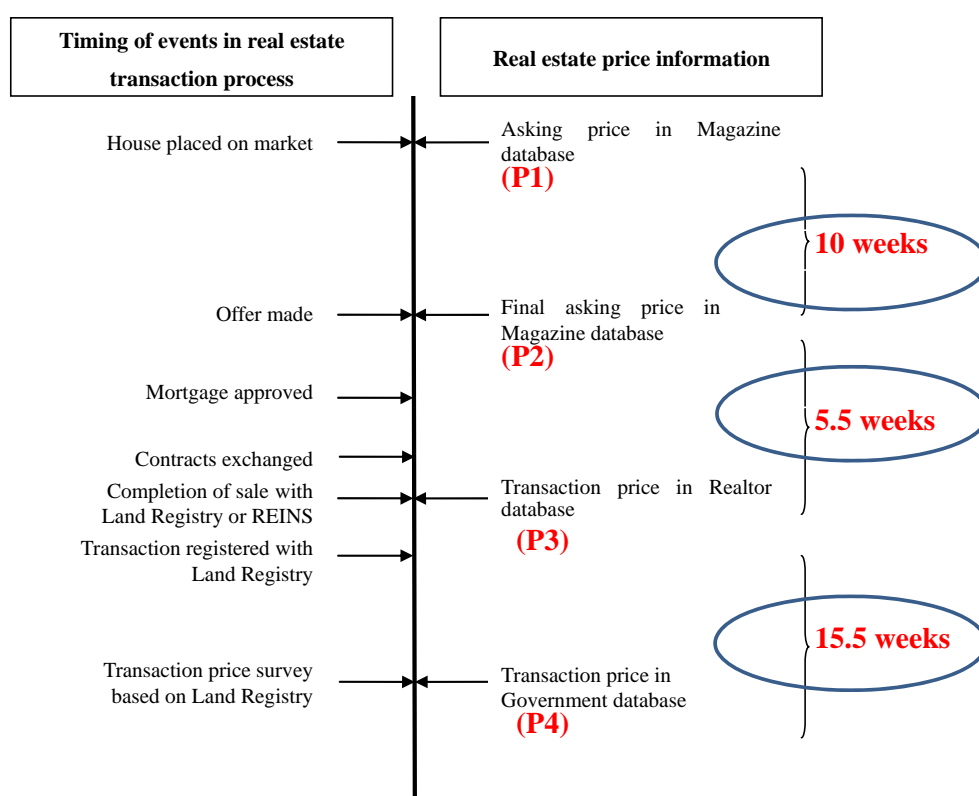
2) Lagging behind market movements

## Issues of Timeliness

- Timeliness: Best Utilization of Market Information
- Nishimura, Shimizu and Watanabe, “House prices at different stages of the buying/selling process,” WP no.69, RCPR, IIER, Hitotsubashi University, 2011. Also, see *Property markets and financial stability*, BIS Papers No. 64, pp.29-38, March 2012.
- Stage of transaction and the corresponding price;
  - (1) asking price at which the property is initially listed **P1**,
  - (2) asking price when an offer is eventually made **P2**,
  - (3) contract price reported by realtor **P3**, and
  - (4) land registry price **P4**.

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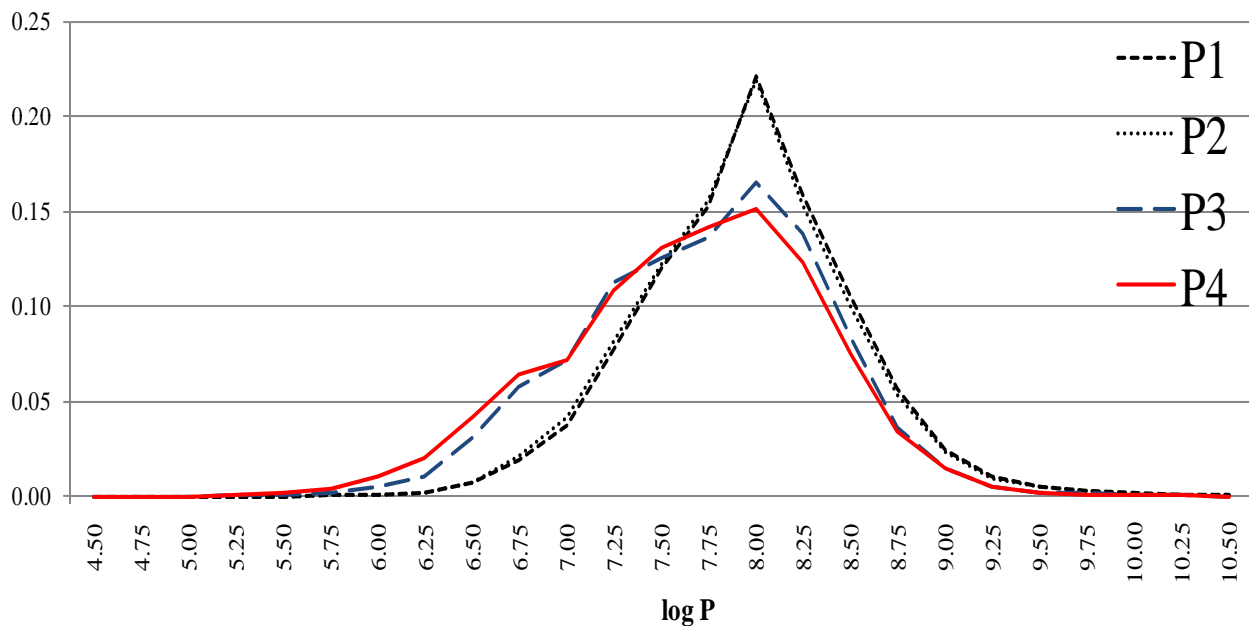
## Chart 5: Timeline of Transactions and Prices



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## Chart 6: Price Distributions

Price densities for P1, P2, P3 and P4



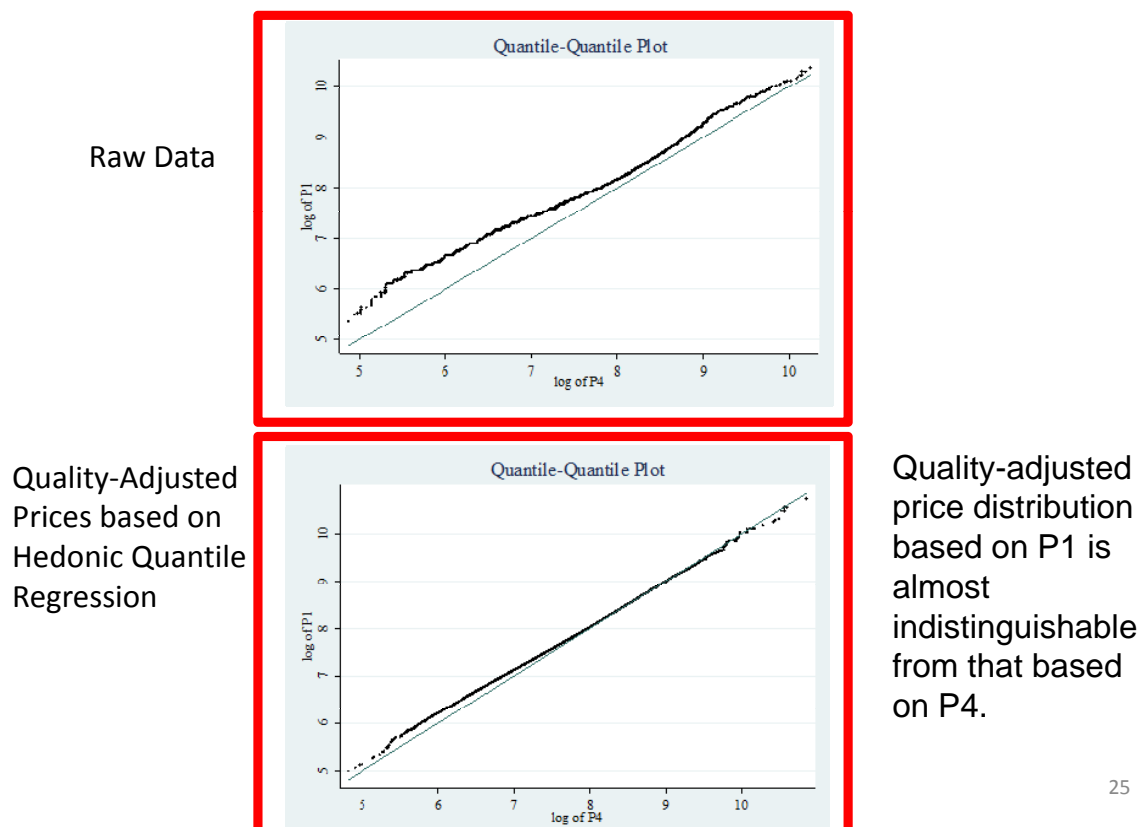
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## Best Use of Market Information

- P1, the initial asking price, is preferable in timeliness, but upward biased.
- P4, price filed at the registry office, is reliable but too late for effective use in policy making.
- However, it is shown that quality-adjusted price indexes (hedonic-quantile method) based on P1 is almost equal to those on P4
- Thus, we can use P1 to “now-cast” P4

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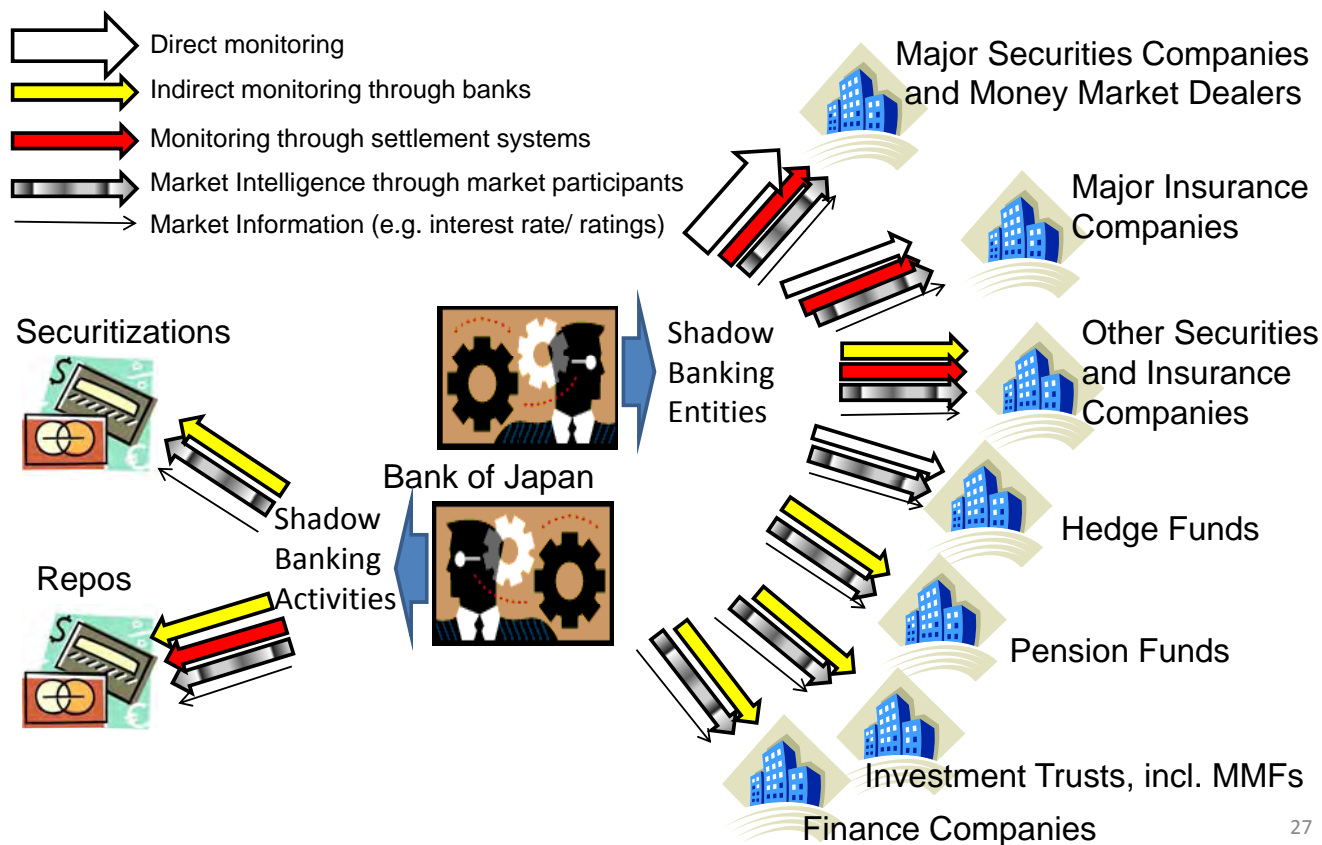
## Chart 7: Quantile-Quantile Plot



## 5. Guarding against Future Problems: Shadow Banking and Basic Market Gathering

- Challenges to monitor modern shadow banking (SB) activities:
  - Innovation and mutation in financial markets in response to changes in market conditions and financial regulations
  - Broad interconnectedness with various financial institutions
- Various sources of market intelligence would be the key for central banks' forward-looking and risk-oriented SB monitoring.

Chart 8: Various Approaches of Market Intelligence



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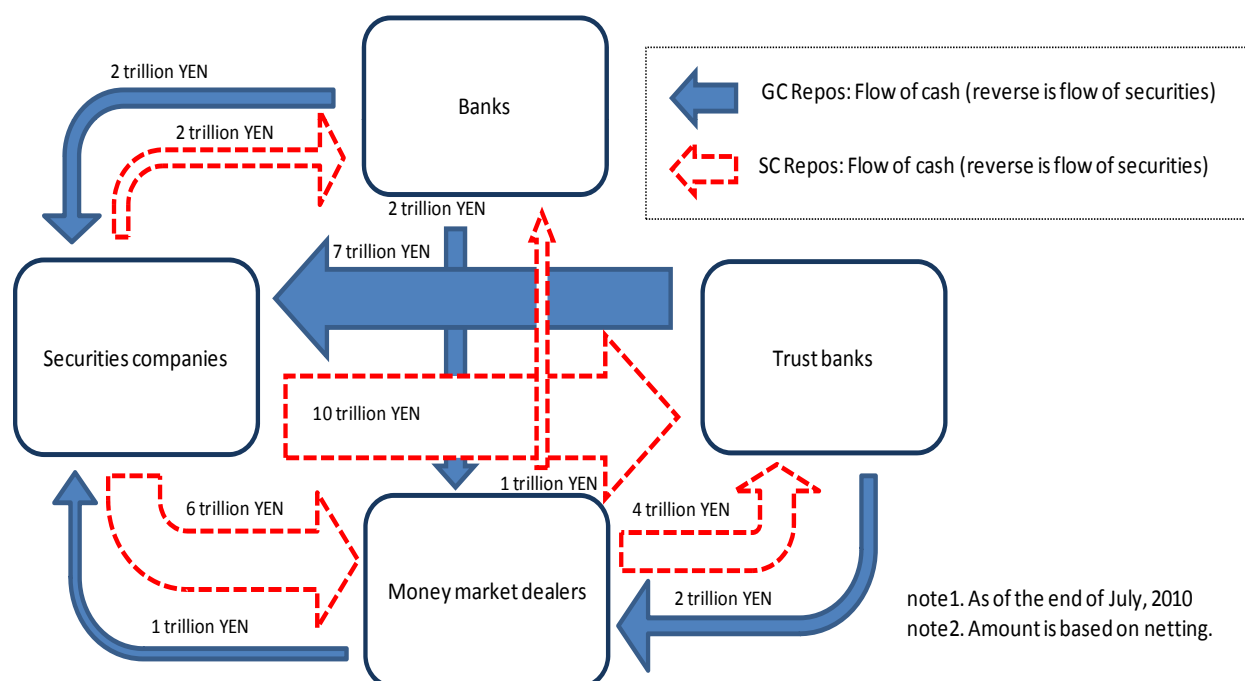
Chart 9: Cross-Checking of Information Gathered

Source of Information	Information through Banks	Market Intelligence through market participants	Market Information (e.g. interest rate/ ratings)	Settlement systems
SB Entities				
Major Securities Companies and Money Market Dealers				
Major Insurance Companies				
Other Securities and Insurance Companies				
Hedge Funds				
Pension Funds				
Investment Trusts incl. MMFs				
Finance Companies				

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## Chart 10: Feedback of Market Intelligence

### Result of “Tokyo Money Market Survey”



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## 6. Concluding Remarks

- Gathering and analyzing market information is of utmost importance and should be proactively utilized alongside economic statistics.
- Central banks have comparative advantage in extracting valuable information from financial markets.
- Central banks' statistics have been noticeably improved by market intelligence.
- Central bank statisticians should be more than good statisticians, maintaining the quality of existing statistics. They should be good sleuths or intelligence agents detecting signs of future developments that may change those statistics, and thus change our world.

*Thank you for your kind attention.*

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