



IFC workshop on *“Combining micro and macro statistical data for financial stability analysis. Experiences, opportunities and challenges”*

Warsaw, Poland, 14-15 December 2015

Fluctuations of cross-border portfolio investment  
flows caused by Japan’s mutual funds:  
Fund-level micro data analysis<sup>1</sup>

Naoto Osawa, Bank of Japan

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<sup>1</sup> This paper was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS or the central banks and other institutions represented at the meeting.

# **Fluctuations of Cross-Border Portfolio Investment Flows Caused by Japan's Mutual Funds: Fund-level Micro Data Analysis**

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## **Abstract**

In the highly globalized current financial world, analyzing financial stability issues in one country requires better understanding of portfolio investment inflows from abroad. For example, searching for yield European global banks took a significant risk by heavily investing in MBS in the US, significantly contributing to the boom and bust cycle of US subprime markets, which led to the Global Financial Crisis (GFC). Despite traditionally playing a non-dominant role in cross-border transactions unlike institutional investors such as global banks and life insurance companies, similarly in Japan, searching for yield mutual funds (MFs) of their unique monthly distributing type which paid out a pre-determined amount of distributions regardless of funds performance took a significant risk, inevitably selling their foreign assets to generate cash for distributions following GFC – a built in mechanism of pro-cyclical fire sale. This paper uses individual fund-level micro data to analyze a role Japan's MFs played in fluctuations of cross-border portfolio investment flows since 2000. Contrary to the existing macro data of Balance of Payments statistics, micro data, in addition to solving the third party problem, help to identify and assess the magnitude of the fire sale by providing information on individual funds' transactions such as purchases, redemptions, distributions, and share prices.

Keywords: monthly distributing mutual funds; distributions from the principal; fire sale of assets

\* The author is grateful to colleagues at the Bank of Japan for their comments and suggestions. The views expressed in this paper are those of the author and do not necessarily reflect the views of the Bank of Japan or its staff members.

## **1. Introduction**

Cross-border portfolio investment flows played a significant role in the credit boom and bust cycle, and the subsequent Global Financial Crisis (GFC) during the 2000s. In the highly globalized current financial world, analyzing financial stability issues in one country requires better understanding of portfolio investment inflows from abroad.

For example, according to Shin (2011), European global banks, searching for yield, took a significant risk and channeled portfolio investment flows, funded in the wholesale funding market via MMFs by issuing CDs, CPs and ABCPs in the US, into MBS and other structured products in the US. These cross-border portfolio investment flows, in addition to a traditional intermediation role between savers and borrowers within the US, raised the leverage in the mortgage market in the US, by expanding the balance sheet of European global banks via cross-border transactions. Those cross-border transactions significantly exacerbated the buildup and unwinding of credit and the market collapse, contributing to the boom and bust cycle of US subprime housing loan markets.

### Risk of Cross-Border Portfolio Investment Flows

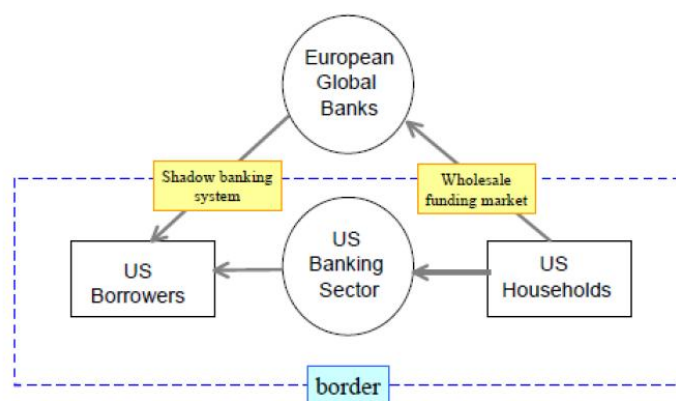


Figure 1. European global banks add intermediation capacity for connecting US savers and borrowers

Source: Shin (2011), Author

The above example of European global banks' risk taking behavior exacerbated by their leveraging reflected a traditionally dominant role played in cross-border portfolio investment flows by institutional investors such as global banks and life insurance companies. While mutual funds (MFs), a traditionally non-dominant player in cross-border transactions, had not typically built up significant financial risks due to no leveraging, investment flows of Japan's MFs on behalf of searching for yield individual investors in the form of cross-border portfolio investment – similarly destabilizing albeit not to the extent of Europe – contributed to fluctuations of securities markets in major advanced and emerging economies. This reflected increasingly popular monthly distributing type of MFs which pay out pre-determined amount of distributions regardless of funds performance. Given the amount of distributions, poor market performance forced MFs to sell their assets to generate cash for distributions – a built in mechanism of pro-cyclical fire sale. In particular, as most assets were

concentrated in foreign securities denominated in foreign currencies, a sharp appreciation of yen in the aftermath of GFC reduced net asset value of MFs, causing a sharp disposition of cross-border portfolio investment flows by MFs and destabilizing foreign securities markets. Although the fire sale has sharply declined following yen's sharp reversal of its course since late 2012, the stock of assets in monthly distributing MFs remains substantially high and rising against the background of the rising elderly population who demand steady monthly distributions, posing a significant risk to securities markets in advanced and emerging market economics going forward.

This paper, by using individual fund-level micro data of disclosed financial statements, analyzes a role Japan's MFs played in fluctuations of cross-border portfolio investment flows since 2000. Using micro data makes it possible to address the following two issues which the existing aggregate-level macro data, ie, Balance of Payments (BOP) statistics, cannot. First, micro data provide information on individual funds' assets which are invested via third locations such as tax haven Cayman Islands, giving an answer to the third party problem where the true asset holder cannot be identified in cross-border statistics. Second, micro data provide information on individual funds' transactions such as purchases, redemptions, distributions, and share prices, assessing how investors behave in relation to market movements (eg, buying shares when prices increase or buying when prices decline). This in turn makes it possible to identify and assess the magnitude of fire sale of assets by MFs which are estimated at 3-4 trillion yen (or 37.5-50 billion US dollars).

The rest of the paper is organized as follows. Section 2 explains limitations of aggregate data for risk analyses, in particular associated with mutual funds, and usefulness of micro data which can address those limitations. Section 3 introduces a unique example of mutual funds in Japan embedded with a financial stability risk and describes how using micro data can quantify the magnitude of fire sale. Section 4 concludes the paper by drawing implications for other East Asian countries.

## **2. Usefulness of Micro Data**

While in recent years cross-border portfolio investment flows have been increasingly playing a significant role in global financial stability, aggregate data – ie, BOP statistics even with its recent upgrade from BPM5 to BPM6 – have not satisfactorily filled data gaps, still posing significant challenges to statisticians and analysts. BOP statistics have mainly two limitations for risk analyses. First, recording only immediate destination countries/regions of cross-border transactions, BOP statistics do not provide information on ultimate holders of assets when transactions are further made via the

immediate location to the third location – the third party problem. For example, most of investment fund shares/units held by the Other Financial Corporations in Japan which include mutual funds are reported in BOP statistics to be invested in tax haven Cayman Island whose share is 55.3% of total assets (see the table below). Contrary to this figure, many MFs in Japan hold their assets through fund of funds whose assets are invested in major advanced and emerging market economies. Second, BOP statistics at the aggregate level do not provide information on individual transactions such as quantities and prices which are useful to analyze investors’ decision-making processes.

### Stocks of Investment Fund Shares/Units by Regions

(end 2014, trillion yen)

| Regions       | Central Bank | General Gov’t | Deposit-taking Corp | Other Financial Corp | Non-financial Corp, HHs | Total |
|---------------|--------------|---------------|---------------------|----------------------|-------------------------|-------|
| USA           | -            | -             | 1.9                 | 8.0                  | 0.2                     | 10.1  |
| Cayman Island | -            | 0.0           | 11.0                | 32.2                 | 2.4                     | 45.7  |
| Luxembourg    | -            | 0.0           | 0.4                 | 8.4                  | 2.8                     | 11.6  |
| Others        | -            | 0.0           | 1.5                 | 9.6                  | 0.9                     | 11.8  |
| Total         | -            | 0.0           | 14.8                | 58.2                 | 6.3                     | 79.2  |

Source: BPM6

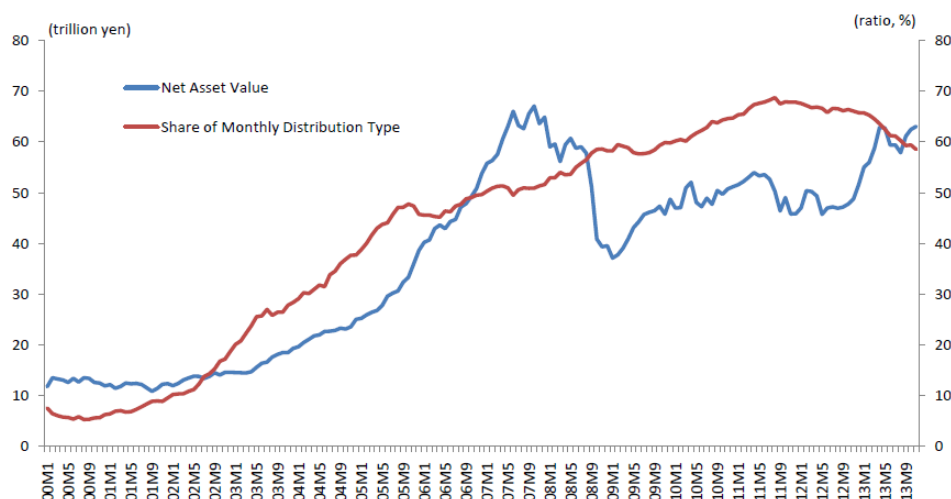
Using micro data makes it possible to address the above two issues. First, micro data provide information on individual funds’ assets with ultimate holders, solving the third party problem. Second, micro data provide information on individual funds’ transactions such as purchases, redemptions, distributions and share prices, assessing how investors behave in relation to market movements – for example, whether investors buy shares when prices increase, ie, pro-cyclical, or whether investors buy shares when prices decline, ie, counter-cyclical. In fact, analyzing micro data reveals that Japan’s MFs investing in foreign securities are largely a monthly distributing type, selling their assets pro-cyclically and posing a financial stability risk as explained in detail in the next section.

### 3. A Unique Type of Mutual Funds in Japan: Monthly Distributing Funds (Background)

There exists a very unique type of MFs in Japan which in recent years have paid out a considerable portion of distributions from the principal, but not from a typical source of

income gains (that is, interest and dividends) and capital gains.<sup>1</sup> This type of fund investment strategy has been commonly observed in increasingly popular monthly distributing MFs whose main characteristics are as follows: 1) their assets are predominantly concentrated in foreign-currency denominated bonds to aim for higher returns under the super-low interest rate environment in Japan's domestic market; and 2) distributions are pre-determined and paid out every month (eg, 1% return per month = 12% return per year). Monthly distributions are perceived by investors as substitutes for interest income generated from bank deposits under high-interest rate environment in the past, especially the 1980s, and thus used as supplements to non-labor income and pension payouts, particularly for the elderly, covering living expenses.<sup>2</sup> This type of MFs has perfectly fulfilled investment needs by the elderly and its assets have naturally been increasing given the fast aging population in Japan. Nonetheless, this type of MFs is intrinsically embedded with a financial stability risk as explained below.

### NAV of Mutual Funds and Share of Monthly Distributing Type



Note: Publicly offered mutual funds.  
Source: Investment Trust Association, Japan

<sup>1</sup> As for terms used in this paper, distributions from income gains refer to investment income that comprises interest (income on debt) and dividends (income on equity) while distributions from capital gains refer to payments distributed from capital gains.

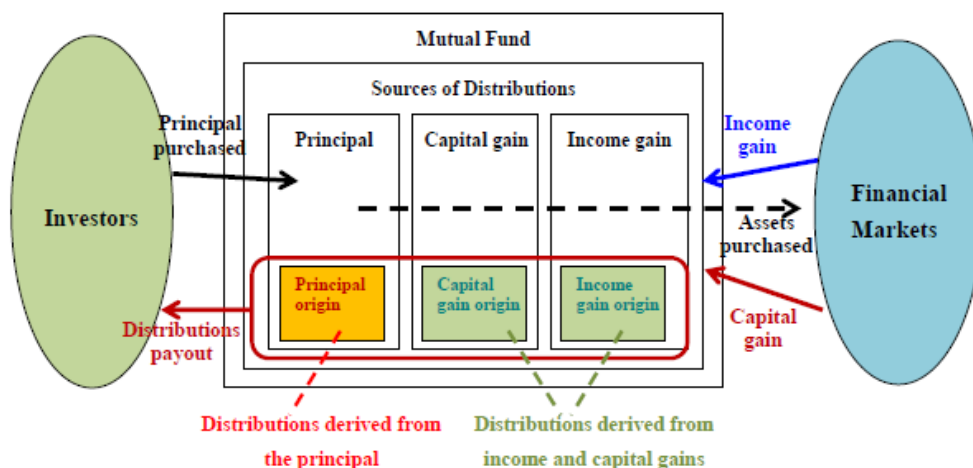
<sup>2</sup> As general observations, the elderly who depend on pension payouts relative to the younger generation prefers monthly distributing MFs more than the younger generation, and the former owns more MFs in asset value than the latter. In tandem with the rapidly aging population in Japan, monthly distribution type MFs have become increasingly popular in society as a whole. In fact, the share of monthly distributing MFs rapidly increased from about 10% of the net asset value of non-MMF MFs in 2000 to about 70% in 2011.

### (Sources of Distributions)

MFs are collective investment schemes that raise funds by issuing shares or units to investors and invest the proceeds predominantly in financial assets and in nonfinancial assets. While many types of MF (e.g., open-end or closed-end, active or passive, global or dedicated) exist, the role of MFs as investment vehicles or conduits is universal across fund types in that MFs raise funds from investors, invest the proceeds mainly in securities, and distribute payments to investors.

The mechanism of distributions from the principal can be understood by noting how MFs can pay out distributions from three different sources in Japan: income gains, capital gains, and (part of) the principal. On one hand, “typical” distributions come from income gains and capital gains, which are generated from financial assets – investment returns flowing into the MF sector from the financial market are offset by distributions flowing out of the MF sector. On the other hand, “peculiar” distributions come from the principal where MFs are required to sell their financial assets to generate proceeds which can be distributed to investors. In this case, while no investment returns are flowing in, the MF sector pays out distributions, depleting the principal.

#### Sources of Distributions

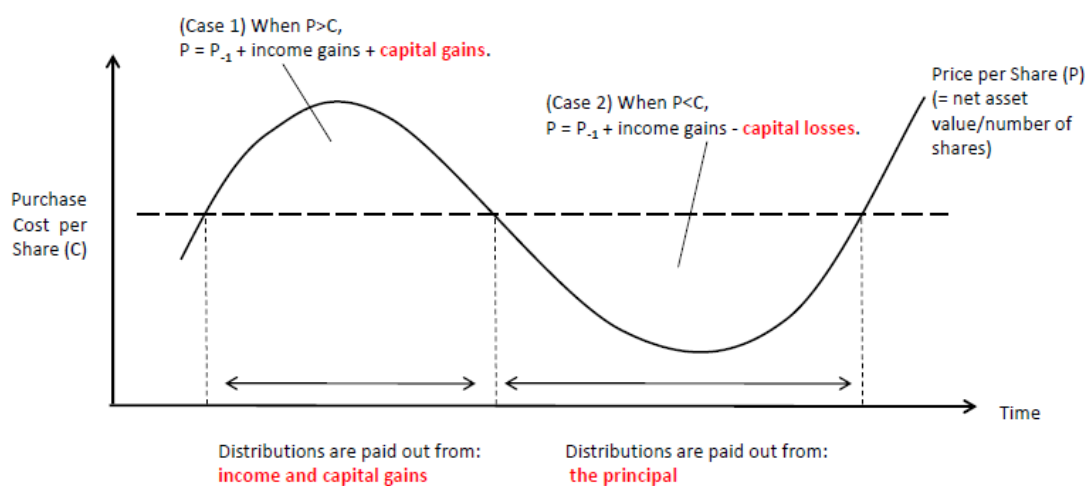


### (Estimation Method of Distributions from the Principal)

Conditions under which distributions from the principal come about, conceptually, depend on the relationship between the price per share (= net asset value/number of shares; hereafter, the share price) and the average purchase cost per share (= principal/number of shares; hereafter, the average cost). The underlying concept is to consider distributions as “typical” in the sense that the MF pays out distributions when

generating “money” (e.g., income gains and capital gains) represented by the case – case 1 in the diagram below – when the share price is above the average cost; and, in contrast, to consider distributions as “peculiar” in a sense that the MF pays out distributions even when losing “money” (e.g., capital losses) represented by the case – case 2 in the diagram below – when the share price is below the average cost.<sup>3,4</sup> If the amount of total distributions which are divided between “typical” and “peculiar” is pre-determined, the less income and capital gains a MF generate (ie, a MF performs poorly in the financial market), the more distributions from the principal are paid out – the larger the share of “peculiar” distributions.

### Concept of Distributions from the Principal (Simplified Illustration)



### (Risk of Monthly Distributing Mutual Funds)

Analyzing micro data reveals that Japan’s MFs investing in foreign securities are largely a monthly distributing funds type which commits to pay out a pre-determined amount of distributions every month irrespective of funds performance. On one hand, as

<sup>3</sup> This estimation method makes use of the average purchase cost at the individual mutual fund level. In fact, it is rather common at the individual investor level which taxable income is determined by the relationship between the share price and the average cost. For example, when investors redeem shares, if the share price is above the average cost, the difference between the proceeds from redemption and the principal (= average purchase cost times number of shares) will be taxed. On the contrary, if the share price is below the average cost, the proceeds from redemption are smaller than the principal, and thus no proceeds will be taxed because investors “lost their money” from the investment.

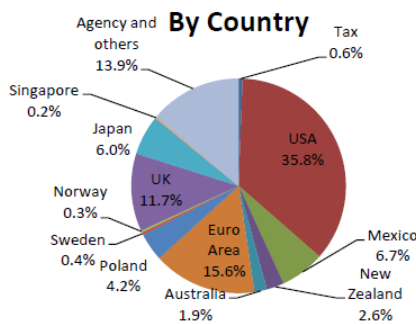
<sup>4</sup> Note that those simplified illustrations do not take into account an impact of distributions payout which reduces the share price by the same magnitude—the share price, calculated as net asset value divided by number of shares, declines after the distribution is paid out. Refer to Osawa (2015) for details.



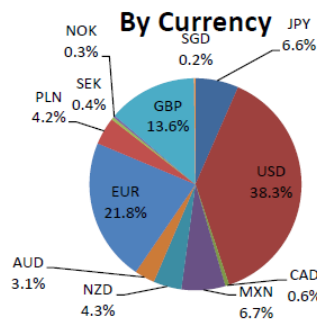
mentioned earlier, this type of MFs would perfectly fulfill investment needs by the elderly whose income gains generated from their financial assets have declined under zero-interest rate environment in Japan. On the other hand, when fund performance deteriorates, fund asset managers are forced to sell assets to generate cash which is used to pay out distributions if income gains and capital gains are not sufficient to cover pre-determined distributions, redistributing the principal to investors (withdrawal of capital). That is, when funds perform poorly, in addition to investors' "intentional" sale of assets, fire sale ("unintentional" sale from an investors' perspective) by fund asset managers to generate cash for distributions operates as an accelerator for cross-border portfolio investment flows fluctuations. In fact, the collapse of low grade securities markets in the US and Europe in 2008, coupled with concurrent Japanese yen's sharp appreciation against US dollar and euro contributing to sharp NAV declines in yen term, triggered the fire sale, resulting in a substantial reversal of Japan's cross-border portfolio investment outflows. Note that as assets for monthly distributing MFs are concentrated in foreign securities (mainly bonds and investment fund shares) denominated in foreign currencies, fire sale assets of monthly distributing MFs which are approximated by distributions from the principal are considered as mostly cross-border portfolio investment (see examples of typical funds for their asset compositions below).

### Disclosed Information on Asset Composition

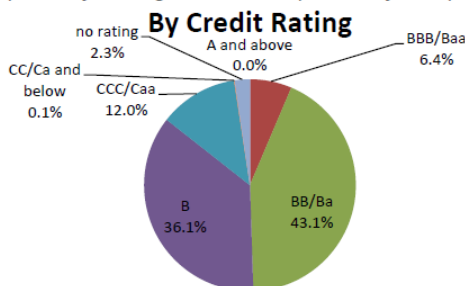
1) Global Sovereign Open (as of Nov 2014)



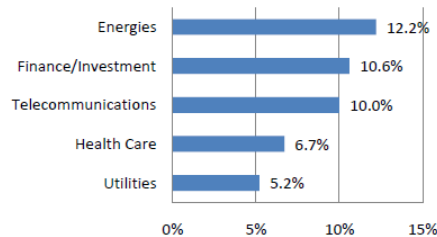
(examples of typical funds)



2) Fidelity US High Yield Fund (as of May 2015)



By Industry

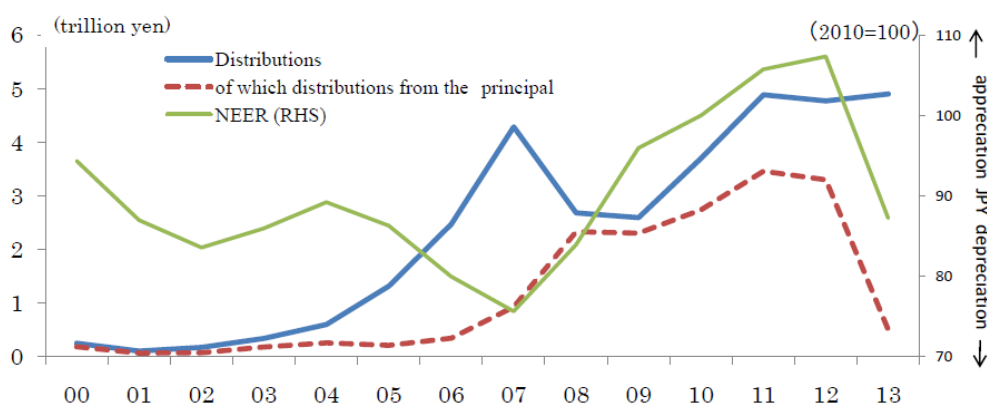


Source: Individual Funds' Financial Statements

### (Estimation of Fire Sale Following GFC)

Analyzing monthly micro data of about 5,000 individual (publicly offered) MFs shows that the magnitude of fire sale is in recent years estimated at 3-4 trillion yen at an annualized rate (or 37.5-50 billion US dollars). Noting that most fire sale assets are denominated in foreign currencies, principally US dollars, analyzing an impact of exchange rate fluctuations also indicates that an appreciation of 10 Japanese yen against US dollar is estimated to increase the fire sale of cross-border portfolio investment flows by about 0.5 trillion yen at an annualized rate (or 6 billion US dollars).<sup>5</sup>

**Fire Sale of Assets and Exchange Rate**



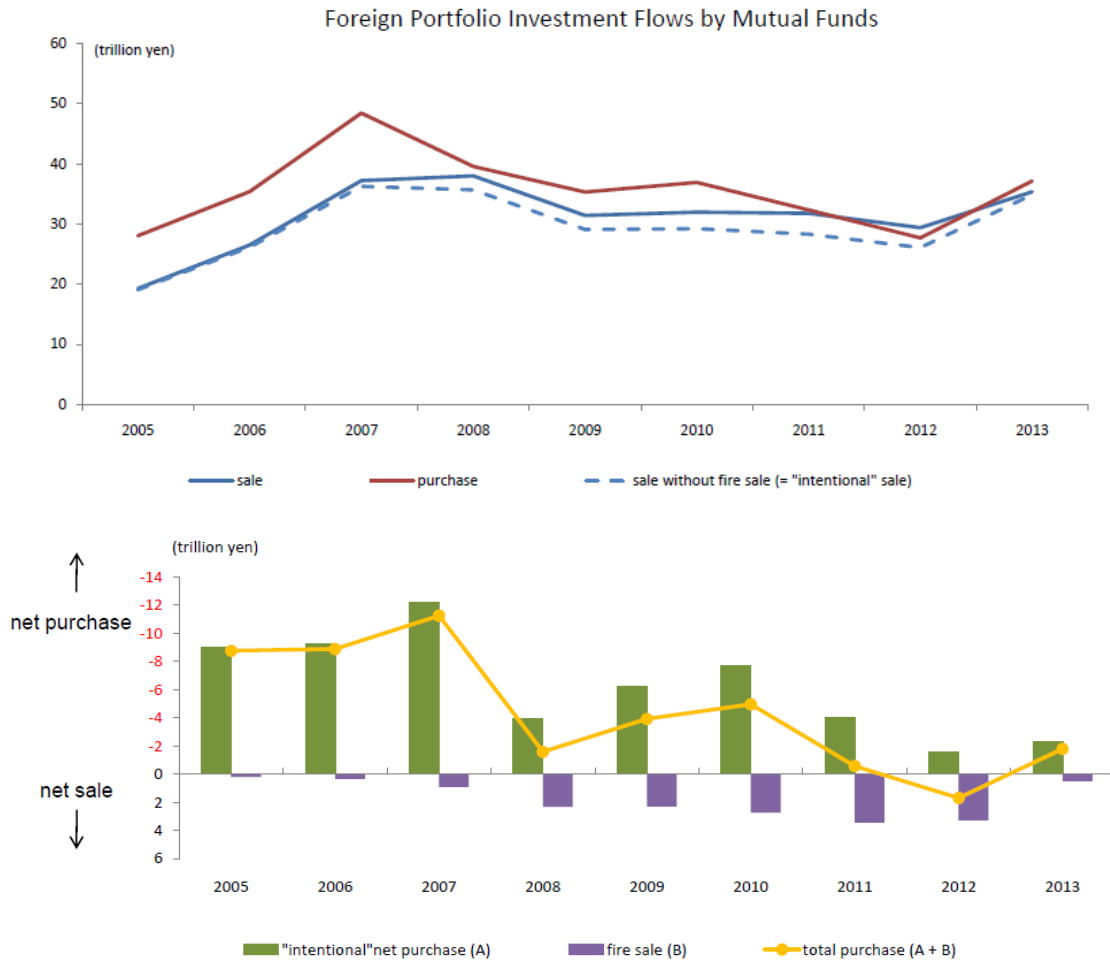
Note: Distributions from the principal are calculated from over 5,000 individual funds and aggregated. NEER = Nominal Effective Exchange Rate. Almost all distributions from the principal come from monthly distributing MFs whose assets are predominantly concentrated in foreign securities denominated in foreign currencies.

Source: Osawa (2015), BIS

With respect to relative size of the fire sale to cross-border portfolio investment flows in BOP statistics, the size of the fire sale is about 10% of sale in level terms – without the fire sale, the level of sale would have been smaller by that amount, making net purchase larger and overseas’ securities markets less volatile. In terms of net purchase/sale, the size of the fire sale is equivalent to “intentional” net purchase (=net purchase without the fire sale, ie, the amount of net purchase that would have been purchased without the fire sale) and sometimes even larger. This increasing role of individual investors via MFs presents a significant change in cross-border portfolio investment flows where institutional investors such as banks and life insurance companies have traditionally played the dominant role.

<sup>5</sup> Those estimates are based on OLS regression results from distributions from the principal as a dependant variable and JPY/USD exchange rate as an independent variable, controlling for equity prices and bond prices.

## Relative Size of Fire Sale to BOP



Note: Negative sign of net purchase indicates net acquisition of foreign assets.  
 Total Portfolio investment (BPM5) = equity + long-term debt securities (including investment fund shares) + short-term debt securities.  
 Total purchase appears as a BOP official statistic.  
 Source: BPM5, Osawa (2015)

## 4. Concluding Remarks

This paper uses micro data for financial stability analyses, presenting a unique example of monthly distributing mutual funds in Japan which pay out a pre-determined amount of distributions regardless of fund performance and thus contain a mechanism of pro-cyclical fire sale of foreign assets although in general no financial stability risk is embedded with mutual funds due to no leveraging. The analysis indicates that the fire sale sharply increased following a sharp appreciation of Japanese yen in the aftermath of the Global Financial Crisis, which significantly reduced net asset value of mutual funds, to generate cash for distributions, destabilizing foreign securities markets.

Going forward, although the fire sale has sharply declined following yen's

sharp reversal of its course since late 2012, the stock of assets in monthly distributing mutual funds remains substantially high and rising against the background of the rising elderly population, posing a significant risk to securities markets in advanced and emerging market economics. In addition, in East Asia besides Japan, this type of monthly distributing funds is widely sold in countries such as South Korea and Taiwan which also experience an aging population, and could potentially increase in other countries which run current account surplus and thus hold foreign financial assets. Since this type of mutual funds could contribute to a wide swing of cross-border portfolio investment flows to the US and Europe in tandem with foreign exchange and securities markets fluctuations, assessing financial stability risks would greatly benefit from individual fund-level micro data of mutual funds.

### **References**

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Shin, Hyun Song (2011), "Global banking glut and loan risk premium," Mundell-Fleming Lecture at the 2011 IMF Annual Research Conference, IMF Economic Review, vol 60, 2012, pp 155-192.



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Central Bank Statistics

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## Fluctuations of cross-border portfolio investment flows caused by Japan's mutual funds: Fund-level micro data analysis<sup>1</sup>

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# **Fluctuations of Cross-Border Portfolio Investment Flows Caused by Japan's Mutual Funds: Fund-level Micro Data Analysis**

Naoto Osawa

Bank of Japan

IFC Workshop, Warsaw, 14-15 December 2015

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# Outline

1. Motivation
2. Usefulness of Micro Data
3. A Unique Example of Mutual Funds in Japan
4. Implications for Other East Asian Countries

# 1. Motivation



# Risk of Cross-Border Portfolio Investment

## Investment

(Example)

- Global Financial Crisis (GFC), transmitted across the Atlantic Ocean via cross-border portfolio investment.

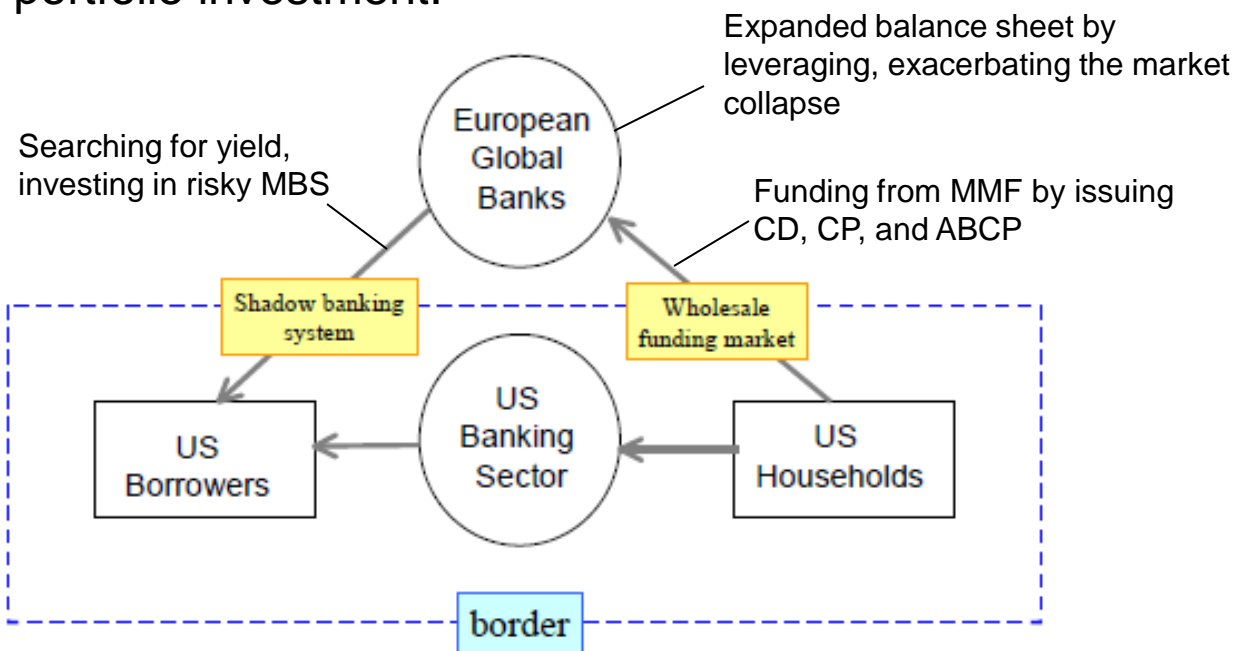


Figure 1. European global banks add intermediation capacity for connecting US savers and borrowers

Source: Shin (2011)

# Build-up of Risks and Unwinding

- Searching for yield risk-taking European global banks invested in MBS and structured products, funded by MMF.
- Withdrawal of MMF by US investors forced European global banks' fire sale of MBS and other risky assets.
- Highly leveraged European global banks, via cross-border portfolio flows, significantly exacerbated the US mortgage market collapse.

## 2. Usefulness of Micro Data

# Limitations of Aggregate Data for Risk Analysis (BOP Statistics)

- Example: **Mutual Funds** (despite no obvious systemic risk embedded without leveraging)
- No information on “true/ultimate” holders of assets (**third party problem**)
- **No information** on individual funds'/investors' transactions
  - Quantities (purchases, redemptions and distributions) vs prices
  - eg, **fire sale of assets**

# Usefulness of Micro Data

- Individual **Mutual Funds'** information disclosed in **financial statements...**
    - On **locations** of assets held => solving third party problem
    - On **quantities and prices** at individual funds' level (albeit not at investors' level)
- => assessing how funds behave in relation to market movements
- => eg, monthly distributing MFs in Japan

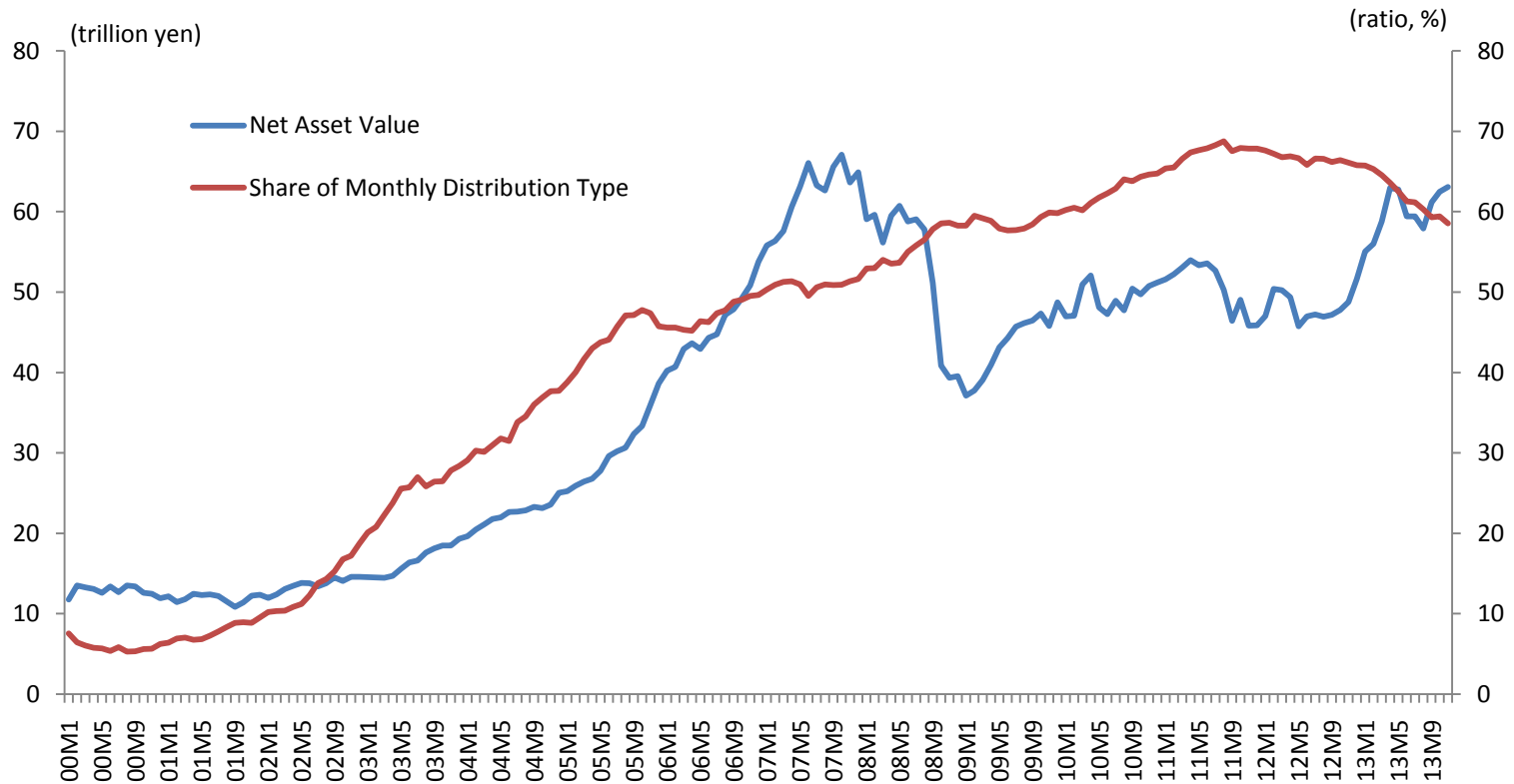
# 3. A Unique Example

# Popular Monthly Distributing MFs in Japan: Background

- Aging population
- Low interest rates
  - Monthly distributions are perceived by investors as substitutes for past high interest income from bank deposits; and thus,
  - Used as a supplement to non-labor income and pension payouts especially for the elderly generation, covering living expenses

# NAV and Share of Monthly Distributing MFs

- Toward mid-2000s, monthly distributing MFs sharply increased, peaking in 2011 with their share close to 70% of net asset value (the latest share is lower at around 50%).



Note: Publicly offered mutual funds.  
 Source: Investment Trust Association, Japan



# Third Party Problem

- Even BPM6 would not solve the third party problem where many mutual funds are registered in the third location, despite more detailed information than BPM5. => However, individual fund-level micro data in financial statements reveal information on locations of assets.

## Stocks of Investment Fund Shares/Units by Regions

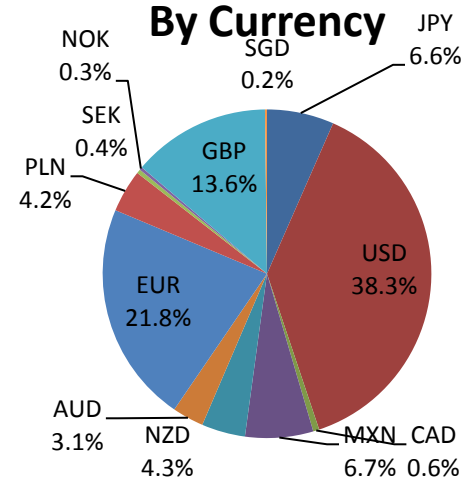
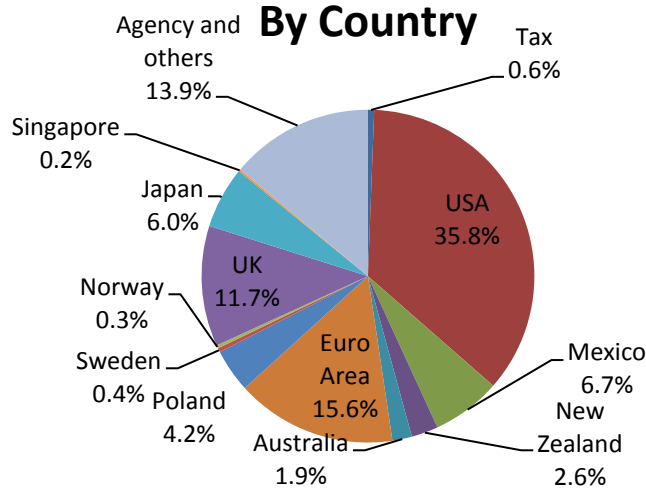
(end 2014, trillion yen)

| Regions       | Central Bank | General Gov't | Deposit-taking Corp | Other Financial Corp | Non-financial Corp, HHs | Total |
|---------------|--------------|---------------|---------------------|----------------------|-------------------------|-------|
| USA           | -            | -             | 1.9                 | 8.0                  | 0.2                     | 10.1  |
| Cayman Island | -            | 0.0           | 11.0                | 32.2                 | 2.4                     | 45.7  |
| Luxembourg    | -            | 0.0           | 0.4                 | 8.4                  | 2.8                     | 11.6  |
| Others        | -            | 0.0           | 1.5                 | 9.6                  | 0.9                     | 11.8  |
| Total         | -            | 0.0           | 14.8                | 58.2                 | 6.3                     | 79.2  |

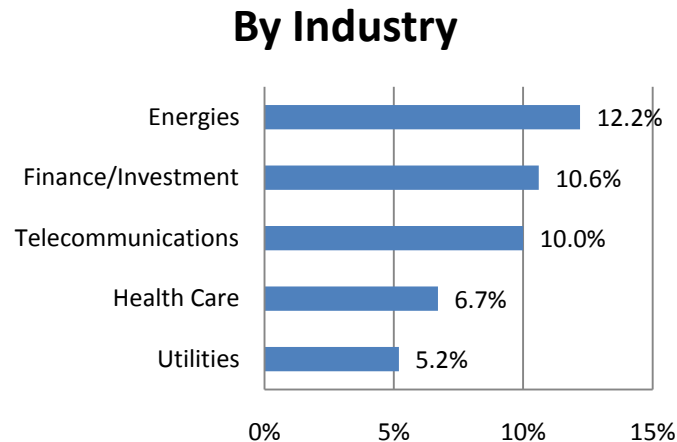
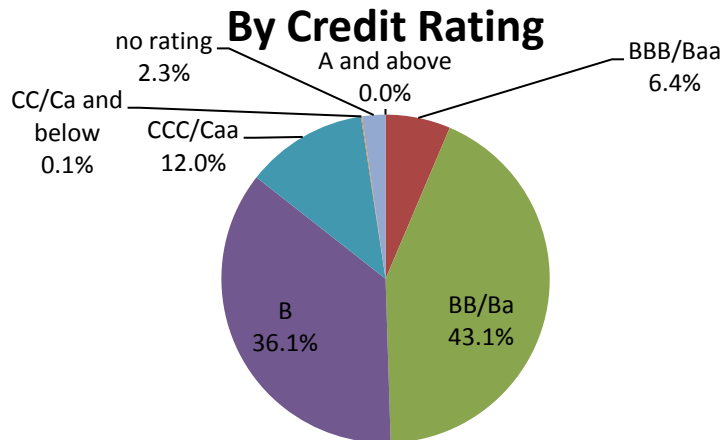
# Disclosed Info: Asset Compositions

## 1) Global Sovereign Open (as of Nov 2014)

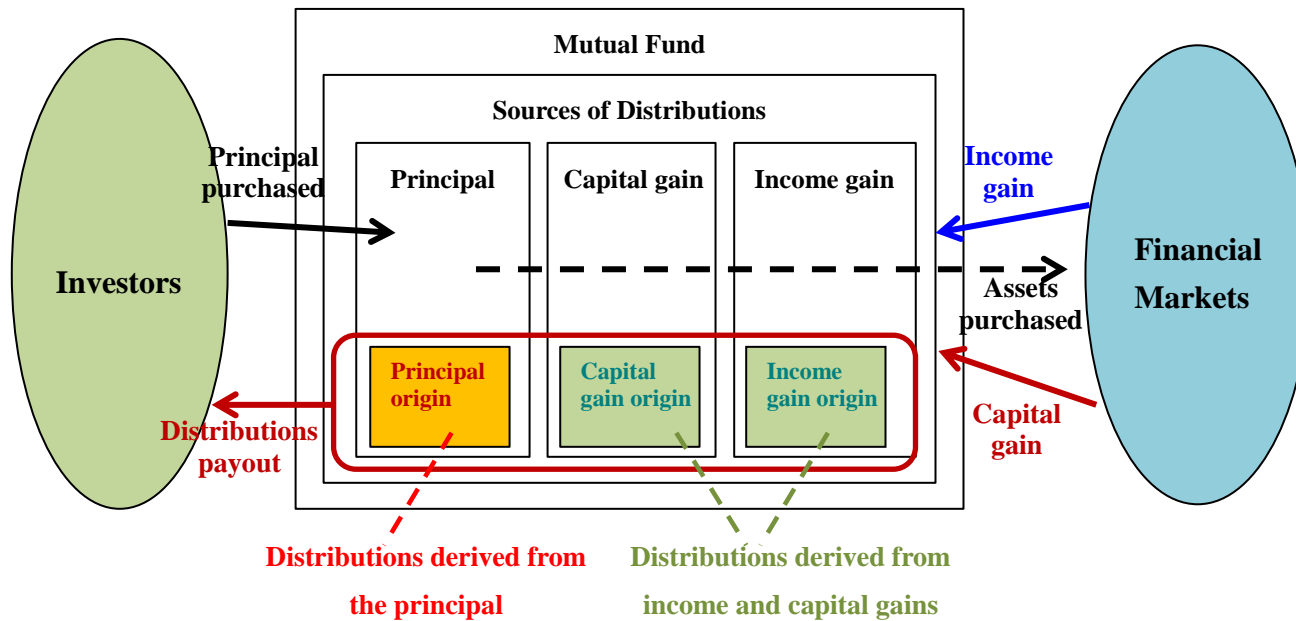
(examples of typical funds)



## 2) Fidelity US High Yield Fund (as of May 2015)

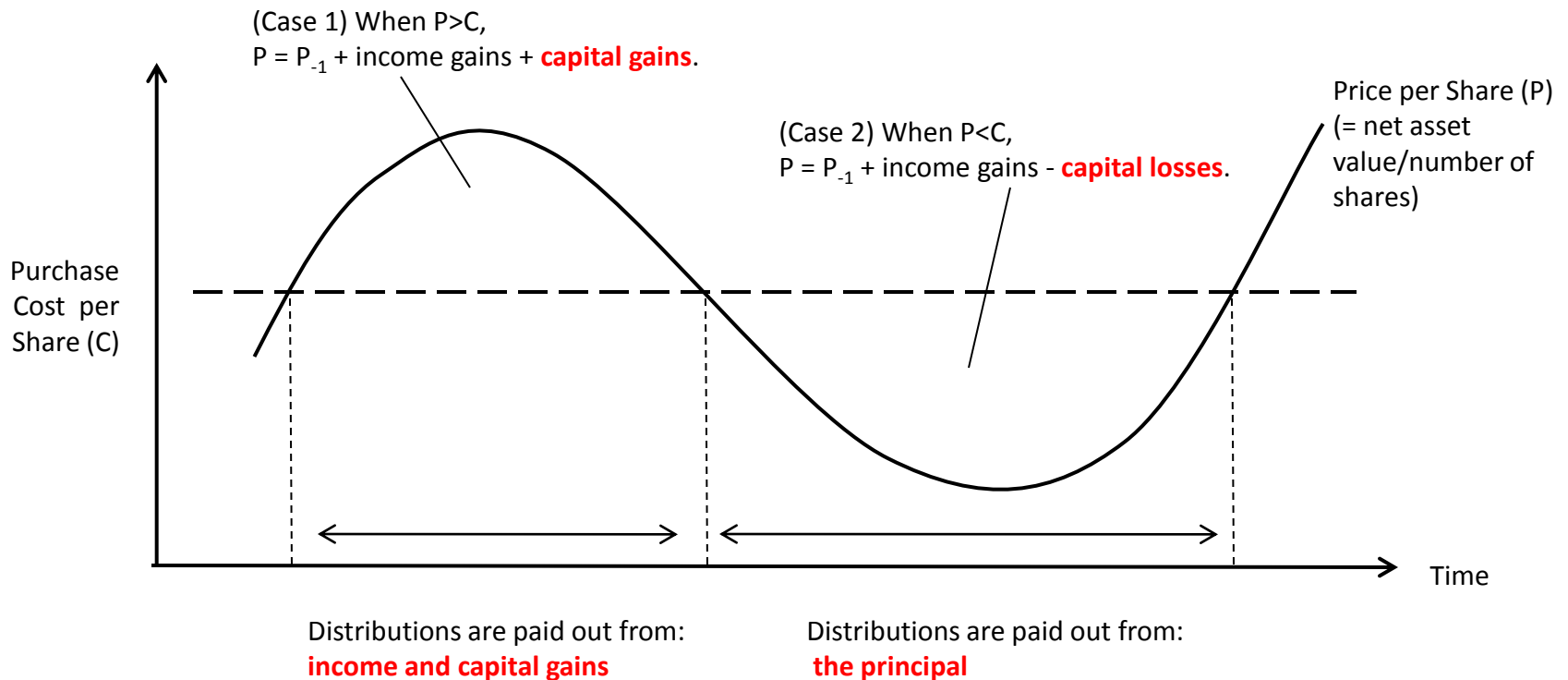


# Sources of Distributions



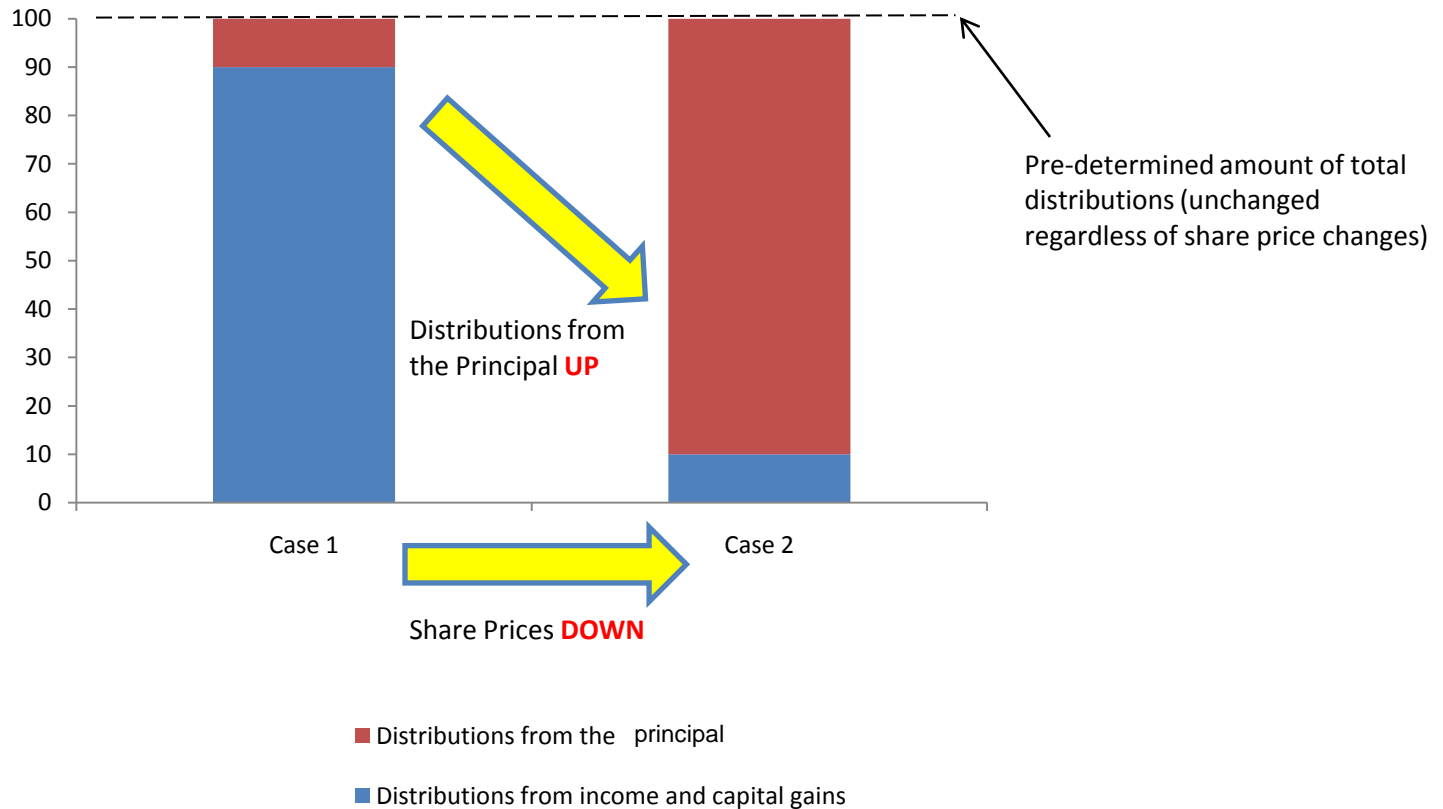
Total Distributions = 1) Distributions from Income and Capital Gains +  
2) Distributions from the Principal

# Concept of Distributions from the Principal (simplified illustration)



**Assets have to be sold to generate cash to finance distributions, given no sufficient income and capital gains!!!**

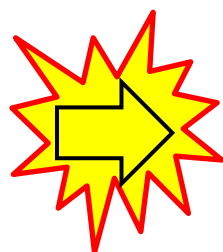
# Rise in Distributions from the Principal (simplified illustration)



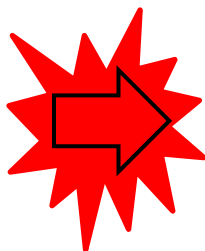
Note: Total Distributions = Distributions from income and capital gains + Distributions from the principal

# Risk of Monthly Distributing MFs

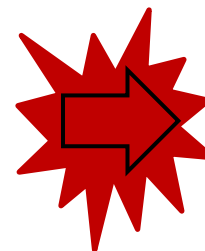
- **Assets** are concentrated in foreign-currency denominated bonds, aiming for higher returns...but, **exposed to FX risk**
- The amount of **monthly distributions** is mostly **predetermined**, regardless of performance



a fall in share prices due to **JPY appreciation** (eg, following GFC)



**fire sale of assets** to generate cash to finance the predetermined amount of distributions

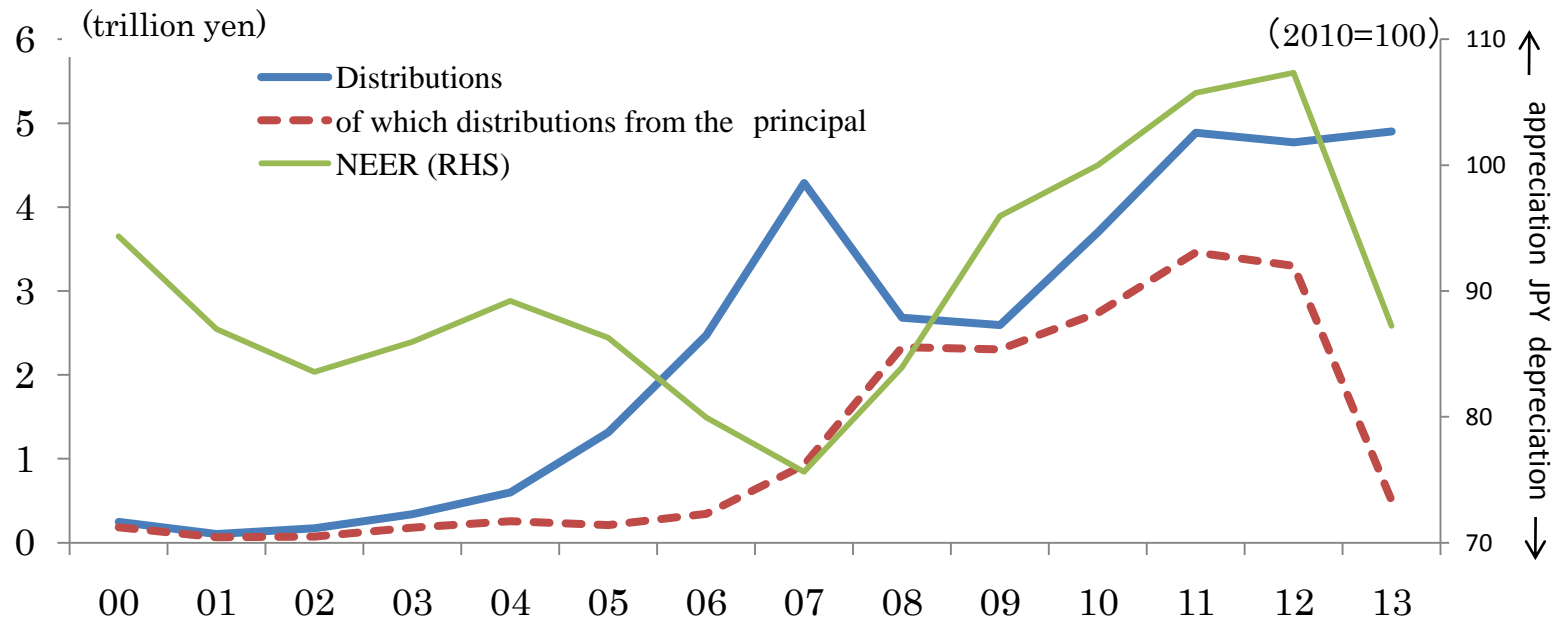


distributions from the **principal** rise, amplifying cross-border portfolio flows

**Built-in Mechanism: pro-cyclical fire sale of assets by MFs**

# Fire Sale of Assets

- Approximation: Distributions from the principal = fire sale of assets
- Maximum of 3-4tr yen (or US\$37.5-US\$50bn), of total distributions of 4-5tr yen
- Fire sale is predominantly affected by FX => 10 JPY/USD appreciation is estimated to raise fire sale by 0.5tr yen (or US\$6bn) per year

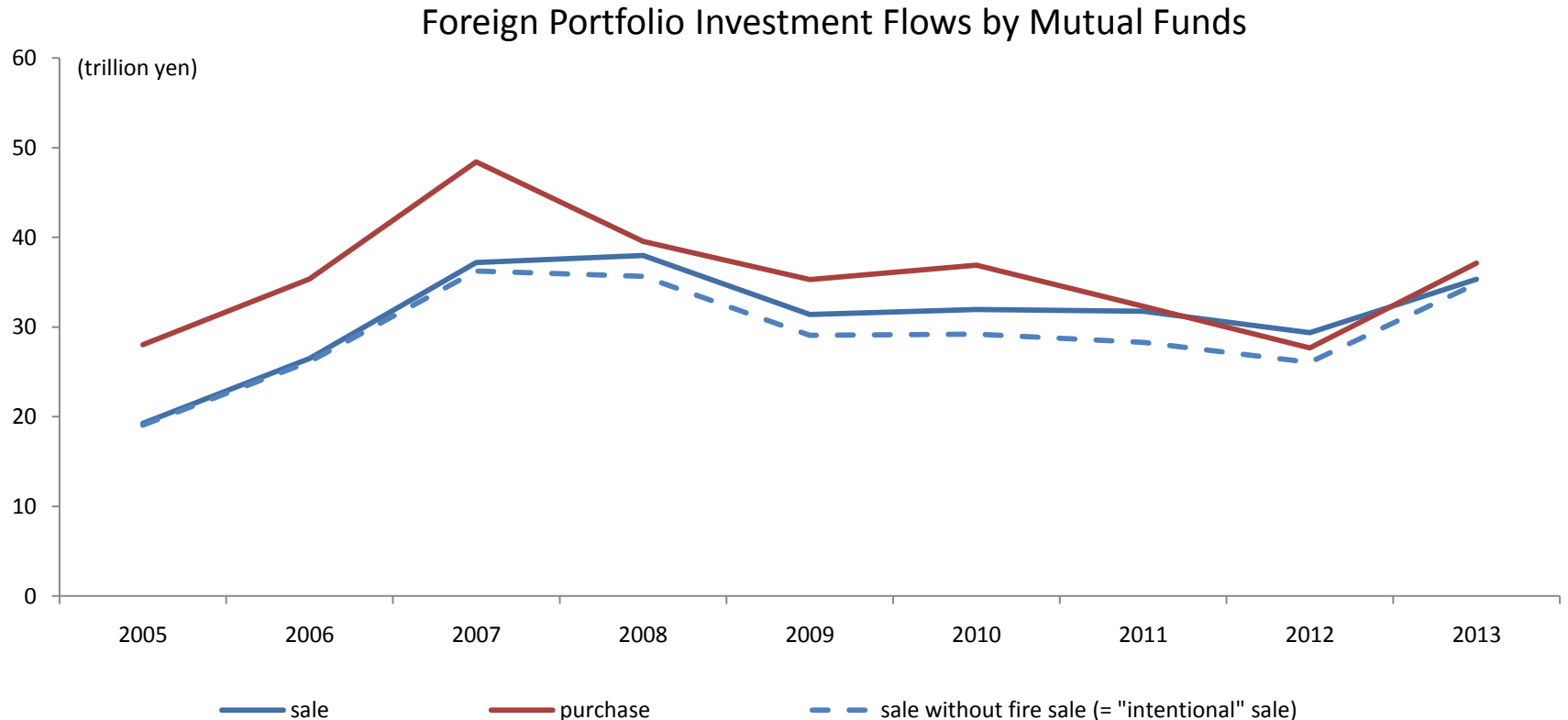


Note: Distributions from the principal are calculated from over 5,000 individual funds and aggregated. NEER = Nominal Effective Exchange Rate. Almost all distributions from the principal come from monthly distributing MFs whose assets are predominantly concentrated in foreign securities denominated in foreign currencies.

Source: Osawa (2015), BIS

# Relative Size of Fire Sale to BOP

- Without fire sale, sale would have been smaller, making net purchase larger and overseas' financial markets less volatile.



Note: Negative sign of net purchase indicates net acquisition of foreign assets.

Foreign Portfolio investment = equity + long-term debt securities (including investment fund shares) + short-term debt securities.

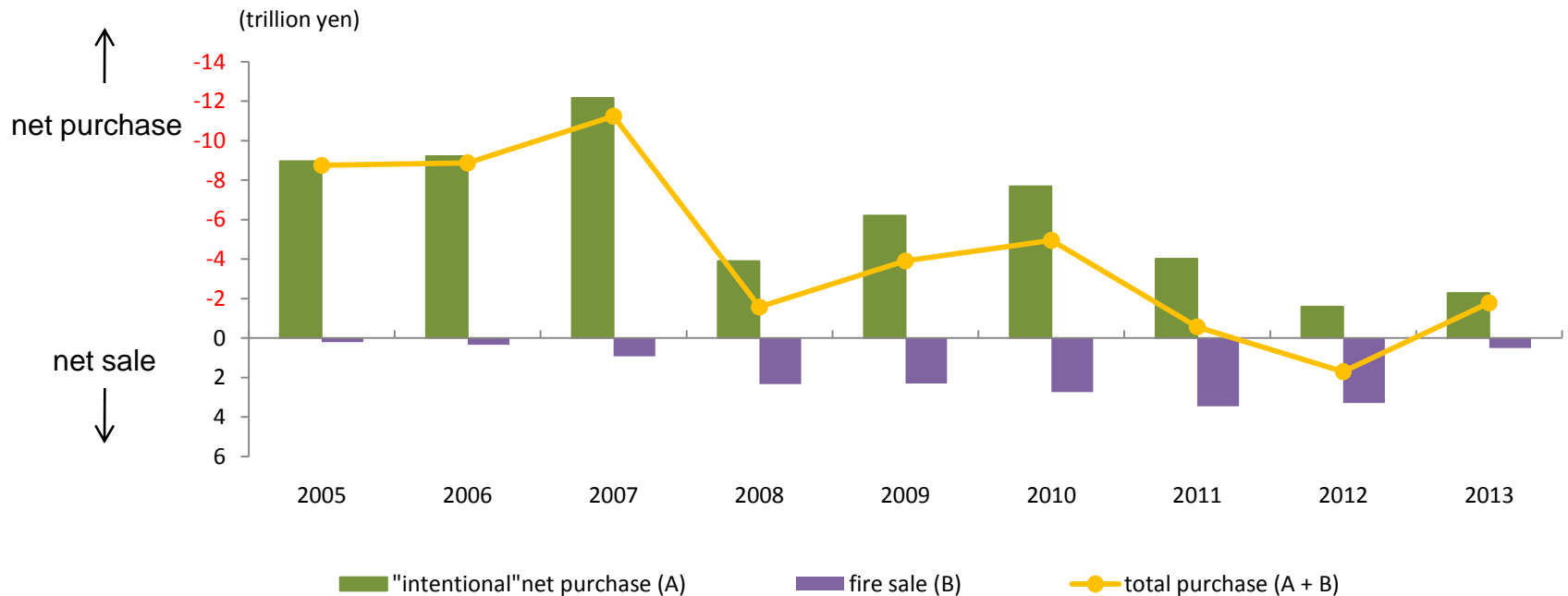
Source: BPM5, Osawa (2015)



# Relative Size of Fire Sale (cont'd)

- Fire sale of 3-4 tr yen is quite large relative to 30 tr yen of total sale, equivalent to and even larger than the size of “intentional” net purchase following GFC.

Foreign Portfolio Investment Flows by Mutual Funds



Note: Negative sign of net purchase indicates net acquisition of foreign assets.

Total Portfolio investment (BPM5) = equity + long-term debt securities (including investment fund shares) + short-term debt securities.

Total purchase appears as a BOP official statistic.

Source: BPM5, Osawa (2015)

# 4. Implications

# Implications for Other East Asian Countries

- Besides Japan, **monthly distributing MFs** exist in **South Korea** and **Taiwan**
  - Low interest rates
  - Large private saving
  - Current account surplus => capital outflows invested largely in **US and Europe**
  - Aging population
- Common characteristics for other EA countries => **large scale volatile cross-border flows** forthcoming?

# Summary

- **Micro data are useful** for identifying mutual funds' (MFs) transactions.
- **MFs** by themselves are generally not embedded with systemic risk (**no leveraging**).
- However, a unique type of **monthly distributing MFs** contains a mechanism of **pro-cyclical fire sale** of foreign assets.
- Increasing this type of MFs in East Asia can be a **financial instability risk to US and Europe**.

# References

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# The End



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