The Global Financial Crisis
Causes, Consequences, and Lessons

Bhanupong

Lecture 8

Course Syllabus
Lecture 8 : The Global Financial Crisis

- We examine the development of the Global Financial Crisis (GFC) in 2008 and discuss its impact of the Thai economy.
- The V-shaped recovery in Asia and Thailand provide valuable lessons for Thailand.
- We raise the question whether Thailand is heading for the Minsky moment

Keywords

1. Global financial crisis in 2008
2. Impact on Thailand
3. Recovery in Asia
4. Lessons learned
5. Minsky moment
6. The shape of things to come

1. The global financial crisis

- What triggered the financial crisis?
- Mortgage lenders started to fail in early 2007 as ***homeowners defaulted*** on risky loans, and ***Bear Stearns*** was forced to bail out two of its ***hedge funds*** in June 2007.
- The **suspension of trading** by *BNP Paribas*, a ***French*** bank, in three funds linked to American mortgage-backed securities.
- Short-term interest rates, and volatility, soared as banks struggled to get liquidity; the turmoil soon contributed to the collapse of ***Northern Rock***, a ***British*** mortgage lender.

Hedge Funds

- An investing group usually in the form of a limited partnership that employs speculative techniques in the hope of obtaining large capital gains.
- Hedge funds face less regulation than mutual funds and other investment vehicles.
- Hedge Funds such as ***Long term Capital Management*** and Quantum Funds of George Soros were blame for the AFC.

Mahathir vs. Hedge Funds

- Dr Mahathir, the then (and now) Malaysian Prime Minister, in one of the statements published in the Wall Street Journal on September 23, 1997 remarked.
- “Whole region can be bankrupted by just a few people whose only objective is to enrich themselves and their rich clients....”


When doubts set in
Volatility index (VIX), percentage points
35
30
25
20
15
10
5
0
J F M A M J J A S O N D
2007
Source: Thomson Reuters

Timeline of the crisis

- March 16, 2007

  Bear Stearns (an investment bank) was bought by JPMorgan Chase & Co. in a deal orchestrated by and backed up by the US government following a ***sharp decline in shares*** and a collapse in confidence in the company.

- July 11, 2007

  Federal regulators seized **IndyMac Bank** after it succumbed to the pressures of ***tighter credit, tumbling home prices*** and rising ***foreclosures***.

  IndyMac is the largest thrift ever to fail in the U.S.

The crisis took some years in the making

September 7, 2007

In a bid to stabilize the nation's troubled housing market, the US government seized control of **Fannie Mae** and **Freddie Mac**

These two publicly traded companies together hold or guarantee about ***half the mortgage loans*** in USA.

Lehman Brothers Debacle

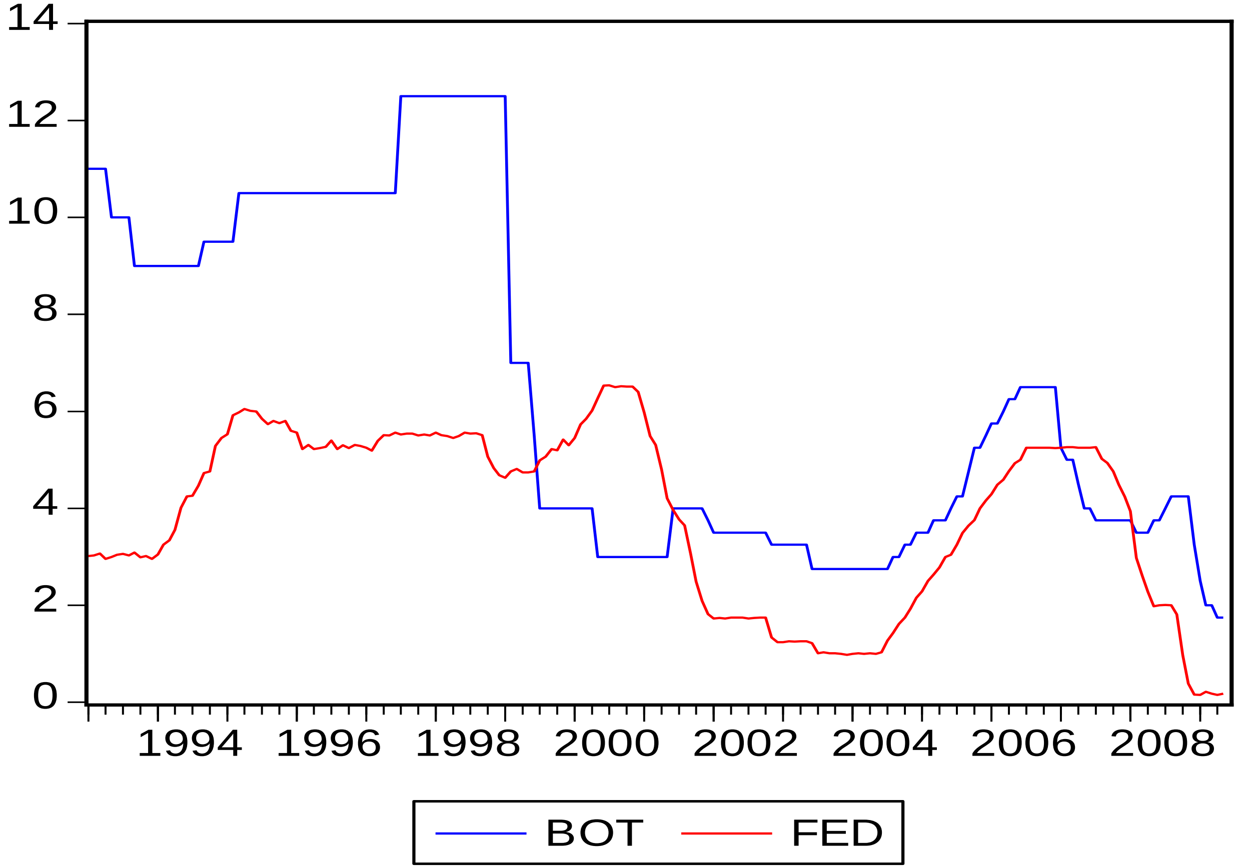
September 15, 2008: Lehman Brothers filed for bankruptcy

- Lehman Brothers International (LBIE), the London subsidiary of Lehman Brothers Holdings, New York—closed for business, leaving 839,000 failed transactions totaling billions of dollars hanging in the air.
- PricewaterhouseCoopers (PWC), the administrator, had managed to pay claims of around $13 billion but wanted the American parent to settle up to **$100 billion** more.

The long period of low interest rates is dangerous

- In 2002, the Fed decided to lower interest rates to spur US economy which was experiencing a ***mild recession*** as a result of the bursting of the dot.com bubble and the terrorist attack in 2001
- Cheap credit and lax lending policies encouraged consumers to purchase new homes and take out additional mortgage loans for personal consumption like buying a new car or going on vacation.

The Fed Monetary easing began in 2002
Notice the interest rate differential



How the ***subprime*** mortgage market was created

- Banks provided loans even to borrowers who had **questionable ability** to repay such loans.
- Thus, the **subprime** mortgage market was created.
- Subprime mortgage loans carry ***adjustable mortgage rates*** where borrowers initially pay interest ***below*** the market rate for a pre-determined period and pay ***market rates*** for the rest of the period of the mortgage.

Securitization

- The aggressive expansion of the subprime market in years 2003-2005 was fueled by **securitization**.
- It is the process of taking an illiquid asset, or group of assets, and through ***financial engineering***, transforming them into a security.

Collateralized Debt Obligations (CDOs)

- A typical example of securitization is a mortgage-backed security, which is a type of asset-backed security that is secured by a collection of mortgages.
- Investment banks, such as ***Bear Sterns*** came up with CDO's **(Collateralized Debt Obligations)** which are sophisticated financial tools that ***repackage*** individual loans into a product that can be sold on the secondary market.

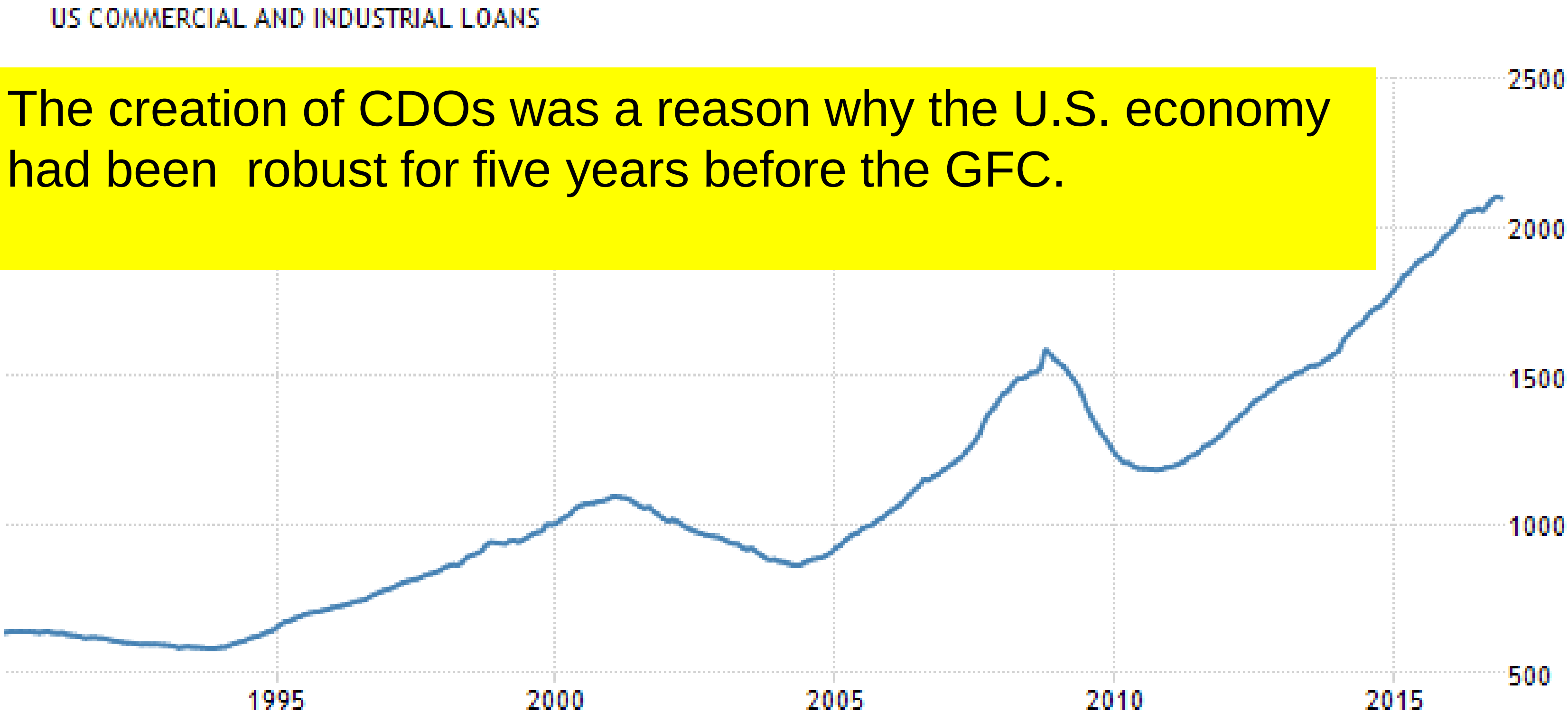
In financial laboratories, there are financial engineering processes

- These sophisticated financial packages consist of **auto loans, credit card debt, or corporate debt.**
- They are called collateralized because they have some types of collateral behind them.
- CDOs are in effect a financial WMD (Weapon of Mass Destruction)

CDOs create market liquidity

- CDOs were created to provide ***more liquidity*** in the economy.
- It allows banks and corporations to sell off debt, which frees up more capital to invest or loan.
- However, the **downside** of CDOs is that it allows the originators of the loans to avoid having to collect on them when they become due, since the loans are now owned by other investors.

US Commercial and industrial loans
(billion USD)



The creation of CDOs was a reason why the U.S. economy had been robust for five years before the GFC.

Why do we need discipline?

- This ability to create liquidity ***make banks less disciplined*** in adhering to strict lending standards.
- Another downside risk is that they are so complex that often the buyers aren't really sure what they are buying.
- They often rely on their trust of the bank selling the CDOs without doing enough research to be sure the package is really worth the price.

Buyers beware

- CDOs became widely popular (thus contributing further to the expansion of mortgage loans) among investors who were attracted by their high return.
- Some Thai banks did not buy a lot of CDOs because they did not understand CDOs complexity.

How to create trust in CDOs

- The opaqueness and complexity of CDOs can cause a market panic if something happens to make sellers lose their trust in the product.
- This makes the CDOs difficult to resell.
- This difficulty helped cause the 2007 banking liquidity crisis.
- The financial engineers must come up with a new product to make CDOs sell: CDS

Credit Default Swap (CDS)

- CDS is an insurance policy against a bond default, a financial instrument for swapping the risk of debt default in CDOs.
- The widespread availability of CDS written by issuers, primarily AIG, enhanced CDO's appeal.

The buyer of CDS

- Credit default swaps may be used for emerging market bonds, mortgage backed securities, corporate bonds and local government bonds.
- The buyer of a credit default swap pays a ***premium*** for effectively insuring against a debt default.
- The buyer of CDS would receive a lump sum payment if the debt instrument is defaulted.

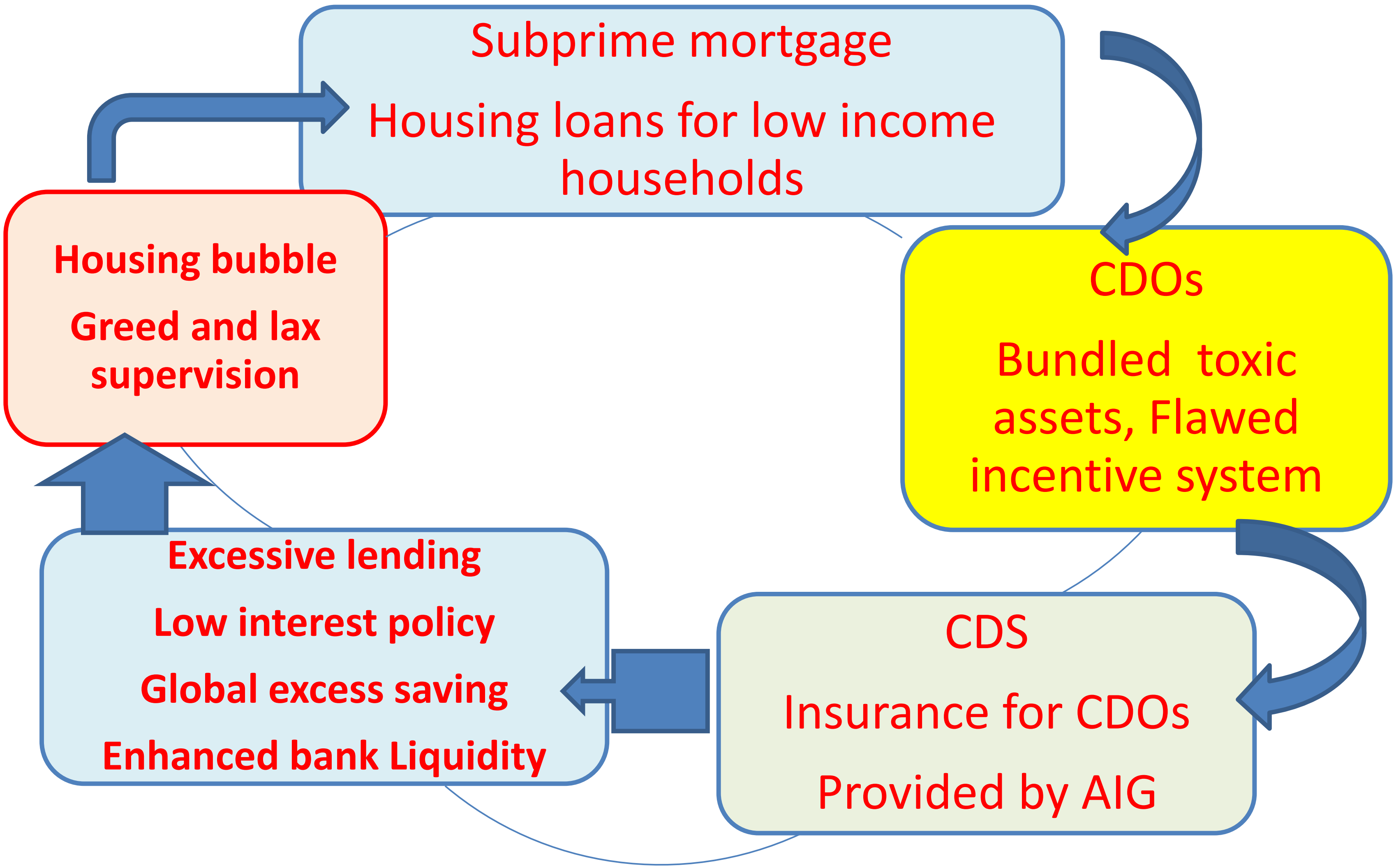
The biggest seller of CDS: AIG

- The seller (AIG) of a credit default swap *receives monthly payments* from the buyer.
- If the debt instrument defaults, AIG has to pay the agreed amount to the buyer of the credit default swap.
- AIG wrote more than ***$2.7 trillion*** in derivatives contracts.
- Investors used CDS to hedge against bonds going bad.

Triple A rating?

- Banks bought the swaps, reassured by AIG's AAA debt rating to manipulate capital requirements.
- When the bonds AIG insured against started to tank and the issuer's own rating was cut, it all came crushing down.
- AIG had *$300 billion in potential CDS losses*.
- Yet AIG had book value of only $50 billion. If AIG has to pay out on those contracts, it will go bankrupt six times over.

A perfect recipe for the financial crisis



Causes of the financial crisis: Imports or homemade?

(1) a U.S. monetary policy that remained expansionary for too long after the 2002 recession, or

(2) Excess saving outside the United States that drove down global interest rates to levels that fueled the speculation.

- While both of these hypotheses could serve to explain the consequent bubble in U.S. asset prices, they do not provide an immediate explanation as to why defaults in a relatively **small** portion of the credit markets (sub-prime mortgages) had such catastrophic system-wide consequences.

Who is to blame?

- Buyers of the mortgage-backed securities in the secondary market also failed to accurately evaluate the quality of the underlying assets and to understand the risks involved.
- The complexity and lack of transparency of the instruments contributed to the problem.
- Similar mistakes were made by the rating agencies (Standard & Poors, Moody)

Many factors contributing to the crisis

- A low level of global interest rates may have helped create the conditions for the asset price boom in housing markets and the speculative excesses.
- The promotion of new financial innovations without a rigorous effort to evaluate their implications for systemic risk,
- However, ***the flawed incentives and regulatory structure*** within the United States were far more fundamental.

The U.S. distorted incentive system

- Low real interest rates were a global phenomenon, and a large number of European economies experienced housing price increases of greater magnitude than the United States.
- But the distorted incentives of the private securitized mortgage market were largely American.
- It is difficult to explain the crisis in terms of macroeconomic conditions without reference to the ***microeconomic distortions*** in the U.S. financial system.

Microeconomic distortions

- Years of unregulated and risky deals exposed AIG to catastrophic losses.
- The system paid high returns to risky behavior of executives, but there is no penalty when things went wrong.
- AIG paid $165 million in retention bonuses to executives to the same people who helped created the mess, which cost the U.S tax payers $170 billion—and counting.

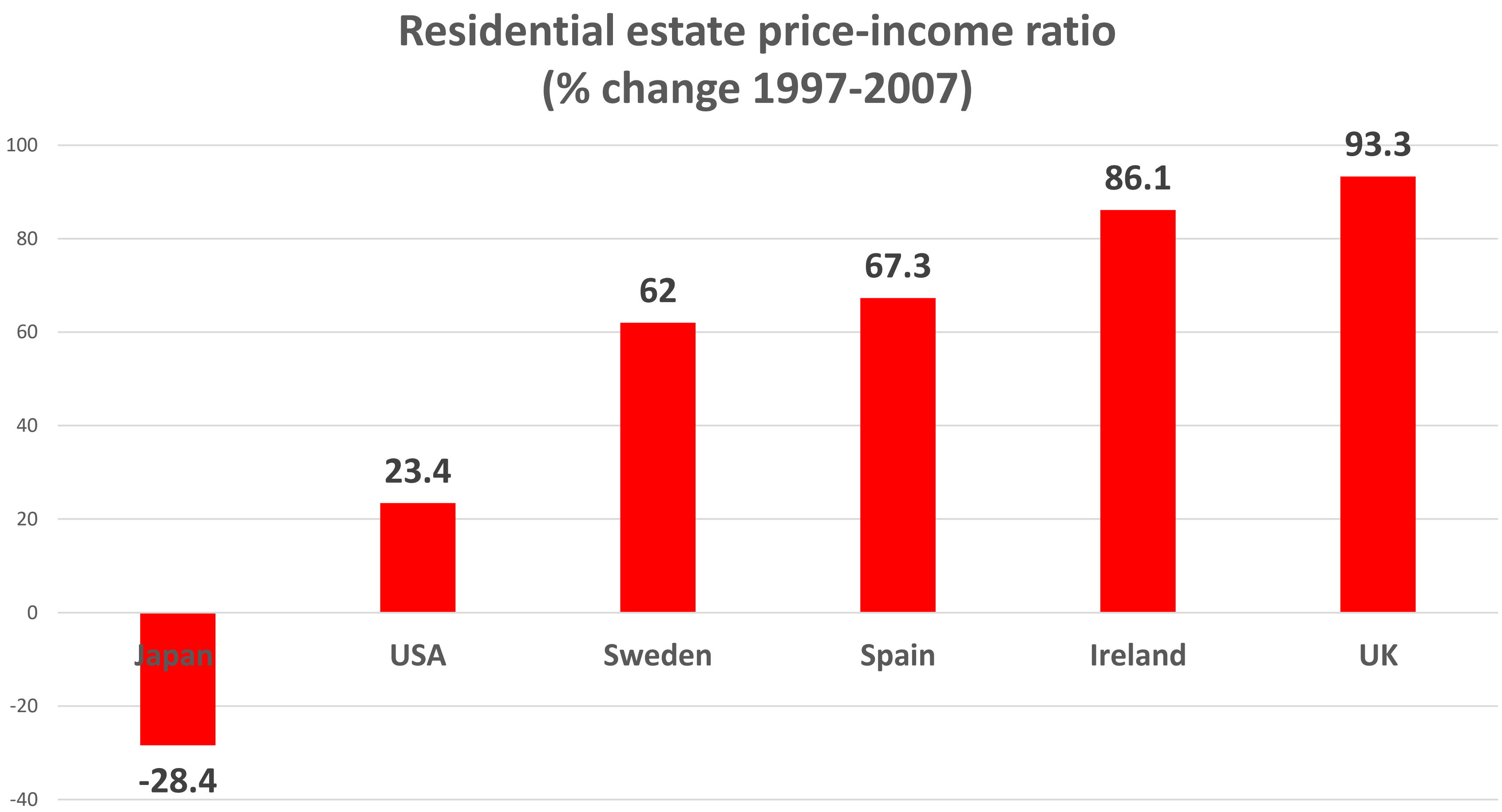
Too big to fail

- In the case of Thailand, *“Ministry of Finance cannot allow banks to go bankrupt”* said Permanent Secretary of the Ministry of Finance (September 2007)
- This results in moral hazard behavior, encouraging excessive taking activities.
- Finance companies and banks were willing to offer property loans.

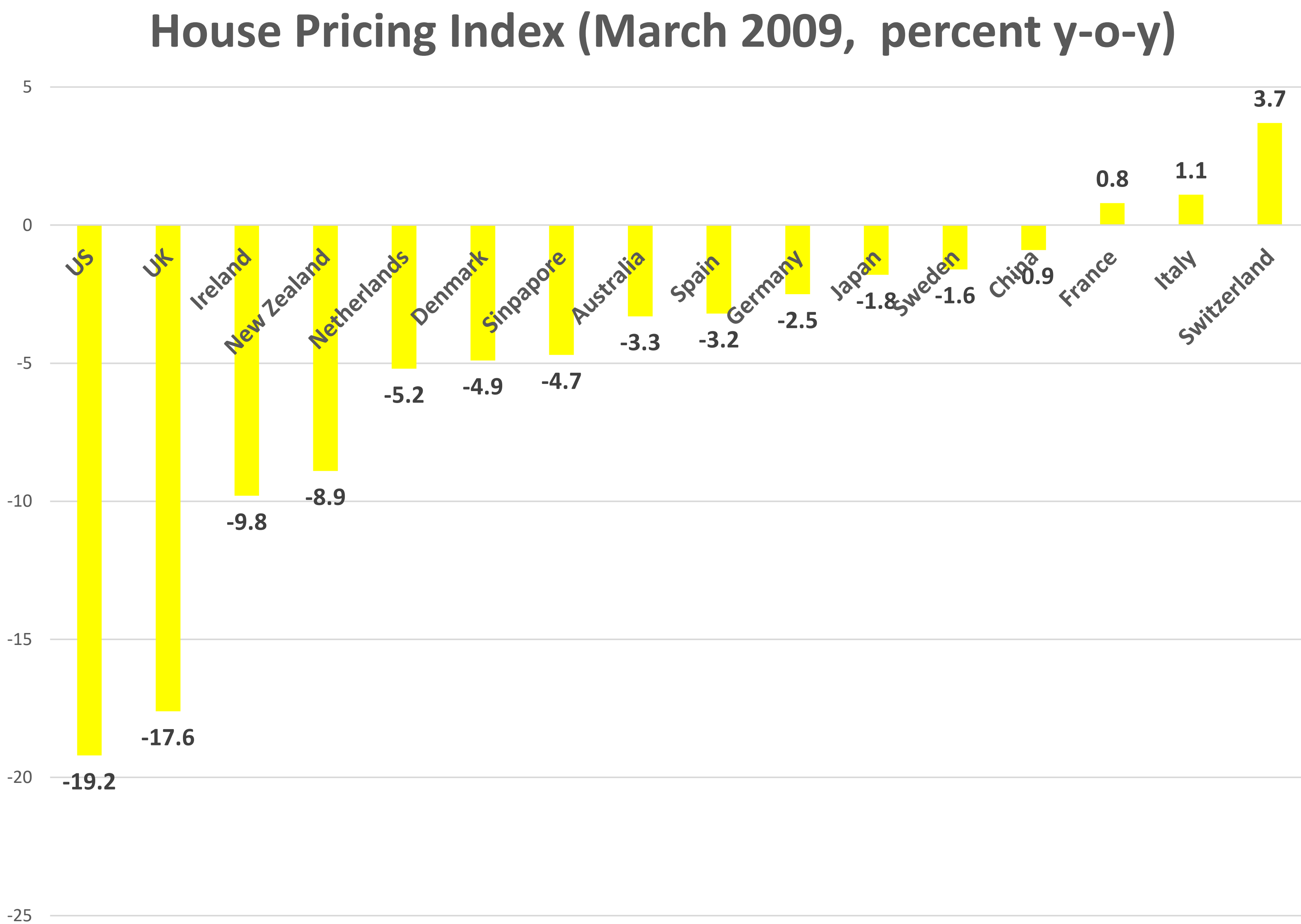
House price bubbles and the financial panic

- The housing price bubble burst in mid-2006 and both housing prices and housing starts began a long period of contraction.
- With declining home prices, borrowers were unable to refinance their loans and default rates soared.

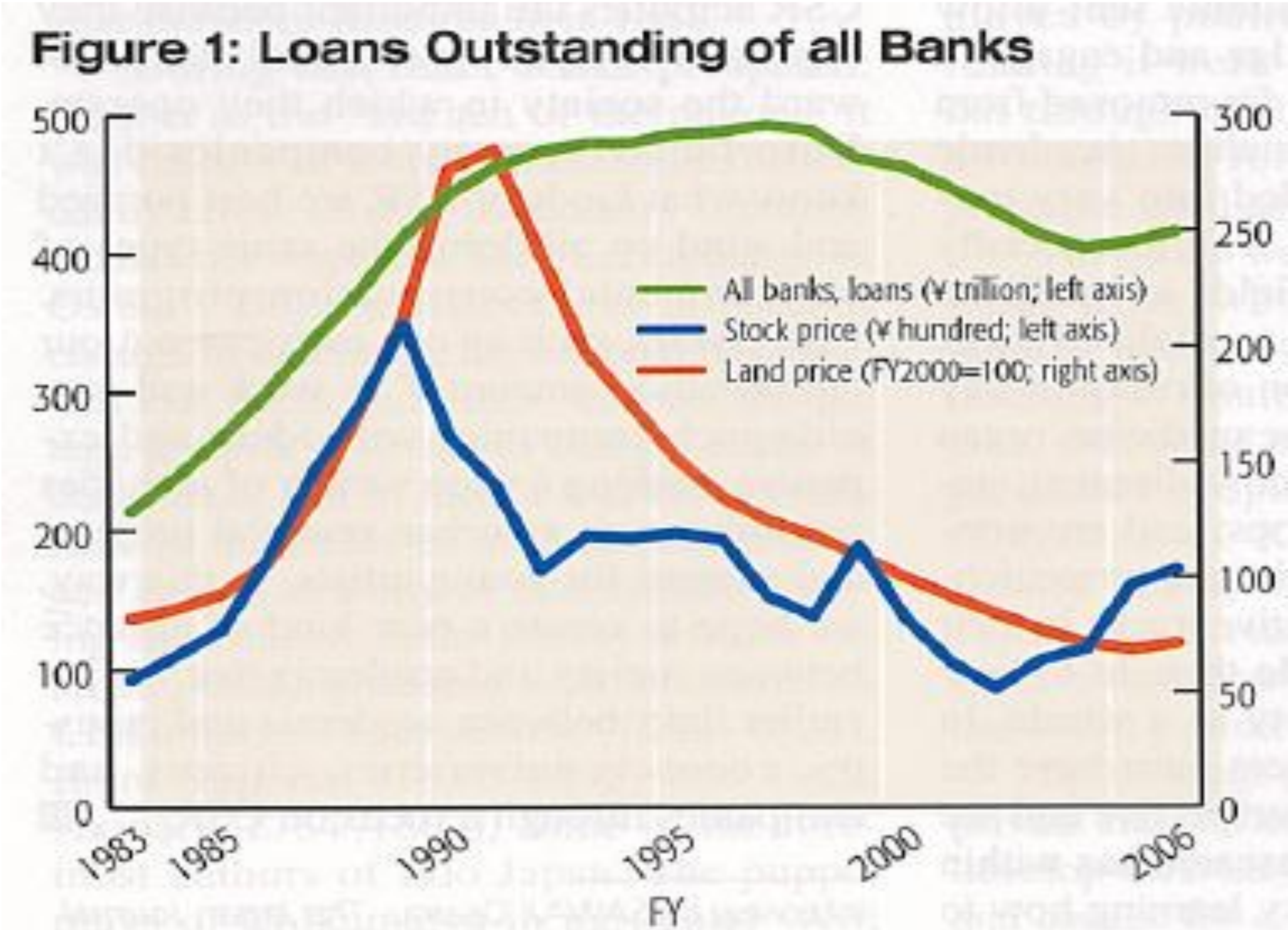
The housing boom a decade before the crash



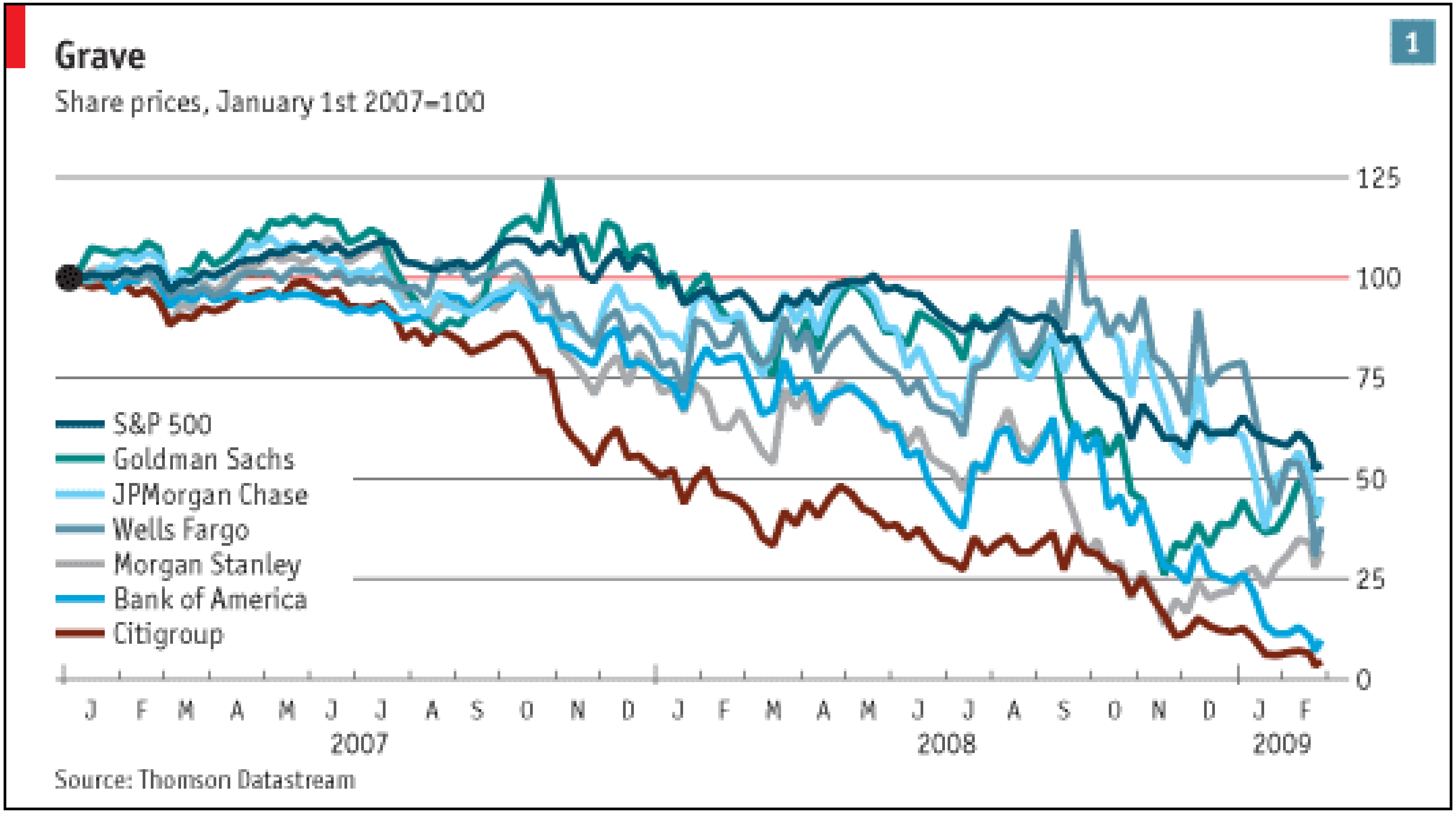
Minsky Moment



Bank credit led the booms in land and stock prices in Japan



Stock market crash in the US



2. Impact of GFC on Thailand

- The impact of US financial crisis and the ensuing economic recession on Thailand is evident
- **Negative economic growth**: According to Thailand's Finance Ministry, the Thai economy contracted by as much as 3% in 2009 if no additional stimulus was implemented.
- **Lower exports**: The US is Thailand's number one export market accounting for a total 18% of total exports. With the US economy in recession, demand for Thai products declined.

Shrinking world trade

Impact on Thai Commercial banks

- Although the US financial crisis has led to a world wide recession and also affected other financial markets elsewhere, Thailand's financial sector remained stable.
- Thai banks have **minimal** exposure to the US ***toxic assets*** (in the form of CDO's).

What you don’t know may not hurt you

- Some banks like Bangkok Bank, BankThai , Krung Thai Bank and Bank of Ayudhya purchased CDO’s in the amounts of US$101 million , US$ 260 million, US$160 million and US$ 85 million respectively.
- US banks have limited presence in Thailand where only Citibank and JP Morgan Chase have full branch operations.
- These foreign banks have less than one percent share of total bank loans in Thailand in 2007.

Collapse of manufacturing output

Manufacturing Production Index (MPI)

In 2009, there were 1.5 million unemployed (2.5%) rising from 1.5% in 2008.

3. The V-shaped recovery in Asia

- Big differences within Asia over in terms of growth in the aftermath of the GFC.
- ***China, India and Indonesia*** were among **the few** economies in the world that continued to expand throughout the global downturn (though China's virtually stalled and entered a new normal growth).
- But the ***smaller, more open Asian economies were badly hit.***
- Between September and March 2009 real GDP fell by an average annualized rate of 13% in Hong Kong, Malaysia, South Korea, Singapore, Taiwan and Thailand.

On the rebound

Aug 13th 2009

From The Economist print edition

A decade after the GFC

Monetary policy challenge

- How to sustain a robust recovery without blowing up the bubbles?
- How did China succeed?
- There are growing concerns that a flood of liquidity is fuelling asset-price bubbles, which could destabilize economies when they burst.
- That is why the Fed is thinking about ***normalization of the interest rate*** policy.

Hyman Philip Minsky

- Hyman Minsky wrote in 1974,
- “The financial system swings between robustness and fragility and these swings are an integral part of the process that generates business cycles”
- The term **Minsky Moment** was coined by Paul McCulley in 1998, to describe the 1998 Russian financial crisis.

Hyman Minsky (1919 – 1996)

- “Bankers, traders, and other financiers periodically played the role of arsonists, setting the entire economy ablaze”.
- Minsky opposed the deregulation that characterized the 1980s.
- Applying Minsky’s theory of financial instability to the subprime mortgage crisis.

5. Hyman Minsky

Long periods of economic stability trick people into taking on more risk, borrow excessively and overpay for assets

Five stages in Minsky model

1. Displacement: investors are excited about significant change in economic policy, an invention such as internet, oil discovery, digital technology, fintech, digital finance, and robotics.

2. Boom: investors borrow excessively for expected high returns (Tulip mania)

The South Sea Bubble: Law of gravity

THE great Sir Isaac Newton may have revolutionised our knowledge of the world but he still had his blind spots. He was sucked into the great mania of his day, the South Sea Bubble (pictured) and lost a lot of money. "I can calculate the motion of heavenly bodies but not the madness of people," he ruefully reflected. In retrospect, he should have pondered the popular saying that was used to define his law of gravity: "What goes up, must come down."

Euphoria stage: People are still buying

- In the euphoria stage, people buy because others are buying and because they anticipate being able to sell quickly at a higher price.
- For a while this trend is self-reinforcing.
- At some stage, doubts set in
- Some people decide to take their profits while they can.

From euphoria to profit taking

3. *Euphoria*: excessive lending and credit extension to ever more untrustworthy borrowers and the creation of many types of financial instruments.

4. *Profit taking*: smart traders start to cash in their profits at the top of the market.

(5) The final stage: Panic

1. **Uncertainty occurs;**
2. **Property & stock prices fall;**
3. **Liquidity in financial markets drops;**
4. **Value of securities sinks sharply,**
5. **Purchasing power disappears,**
6. **Unemployment rises.**
7. **Then came Ponzi borrowers**

Charles Ponzi

- The "Ponzi borrower" (named for Charles Ponzi) borrows based on the belief that the **appreciation of the value of the asset** *will be sufficient to refinance the debt*
- Only the appreciating asset value can keep the Ponzi borrower afloat.
- During the panic stage, many people become *Ponzi* borrowers

Ponzi borrowers

- They are the borrowers who can repay neither the interest nor the original debt.
- They rely entirely on rising asset prices to allow them to keep on refinancing their debt.
- *They borrow more in order to pay old debts.*
- Substituting new debts for old debts.

What are the benefits of investing or trading in Bitcoin?

1. Bitcoin is an alternative asset, comparable to gold. It's independent of public authorities and its value is determined by nothing more than supply and demand.

2. Furthermore, its finite supply coupled with increasing acceptability as a means of payment suggests its value will rise over time.

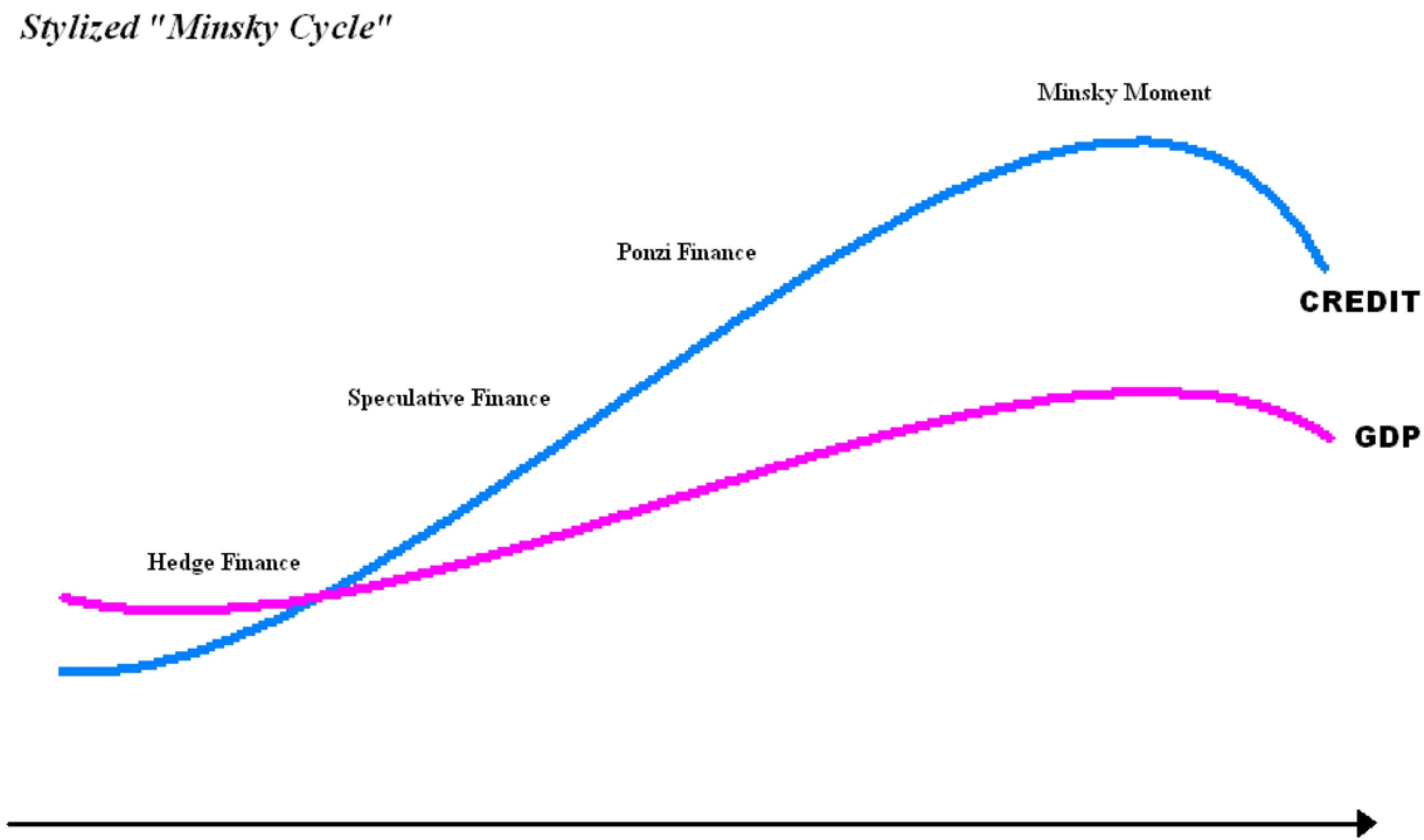
3. For traders, the volatility of Bitcoin against the dollar opens up opportunities for profitable trading – for those with strong nerves.

September 30, 2013
$120

Minsky Moment

- All 5 stages eventually lead to **Minsky moment** - the time when ‘**over-indebted investors**’ are forced to sell their securities even the good ones in order to pay off the mountains of debt they took on to acquire those investments, resulting in sharp declines in financial markets, lack of liquidity and a call for government’s help
- This is exactly what happened to the U.S. economy during the sub-prime crisis

A **Minsky moment** is a sudden major collapse of asset values which is part of the credit cycle or business cycle. Such moments occur because long periods of prosperity and increasing value of investments lead to increasing speculation using borrowed money



Source: MSIM Global Multi Asset Team analysis

Formula and Calculation for Sharpe Ratio

$$Sharpe\ Ratio = \frac{R_p - R_f}{\sigma_p}$$

where:

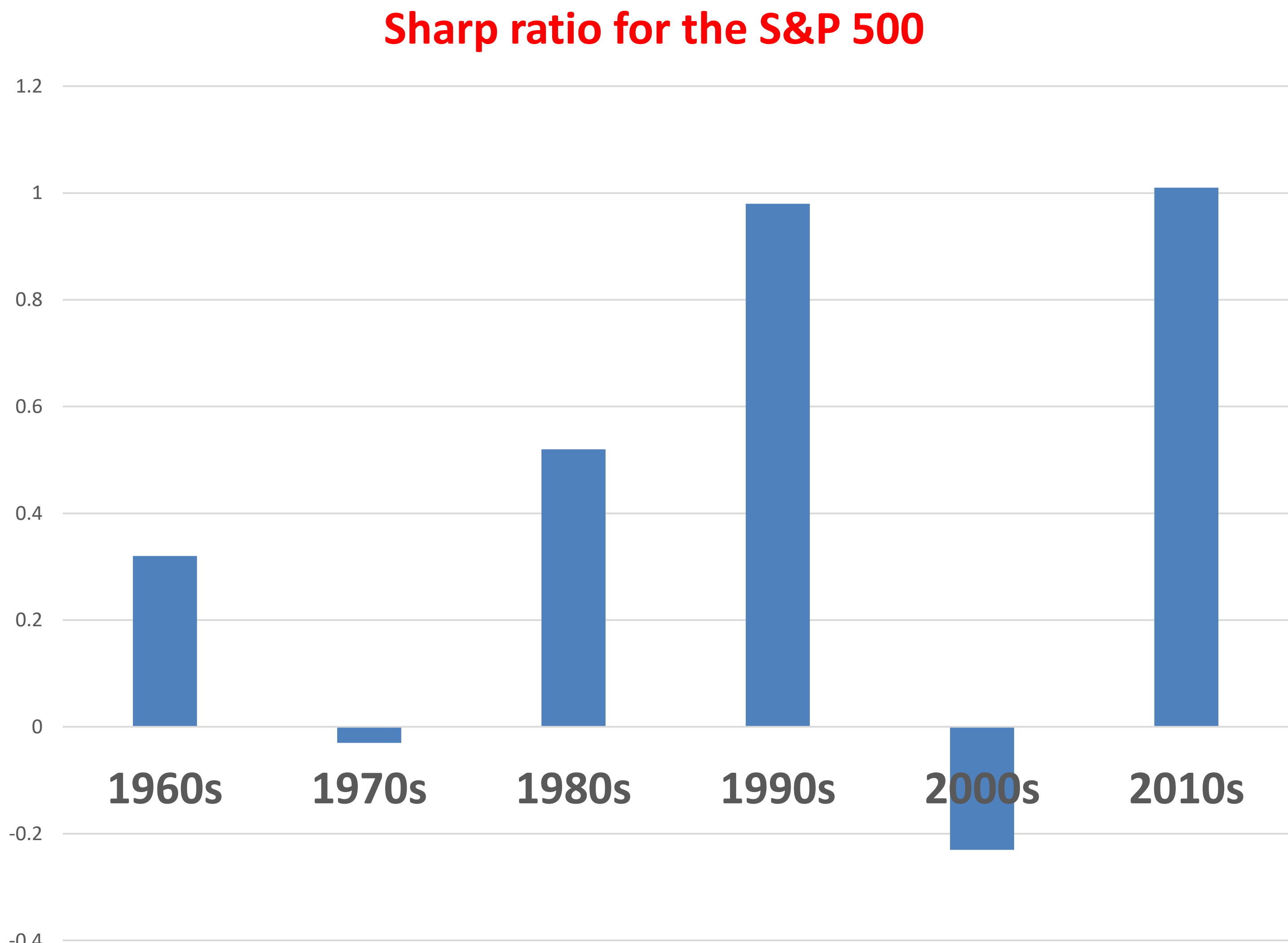
R_p = return of portfolio

R_f = risk-free rate

σ_p = standard deviation of the portfolio's excess return

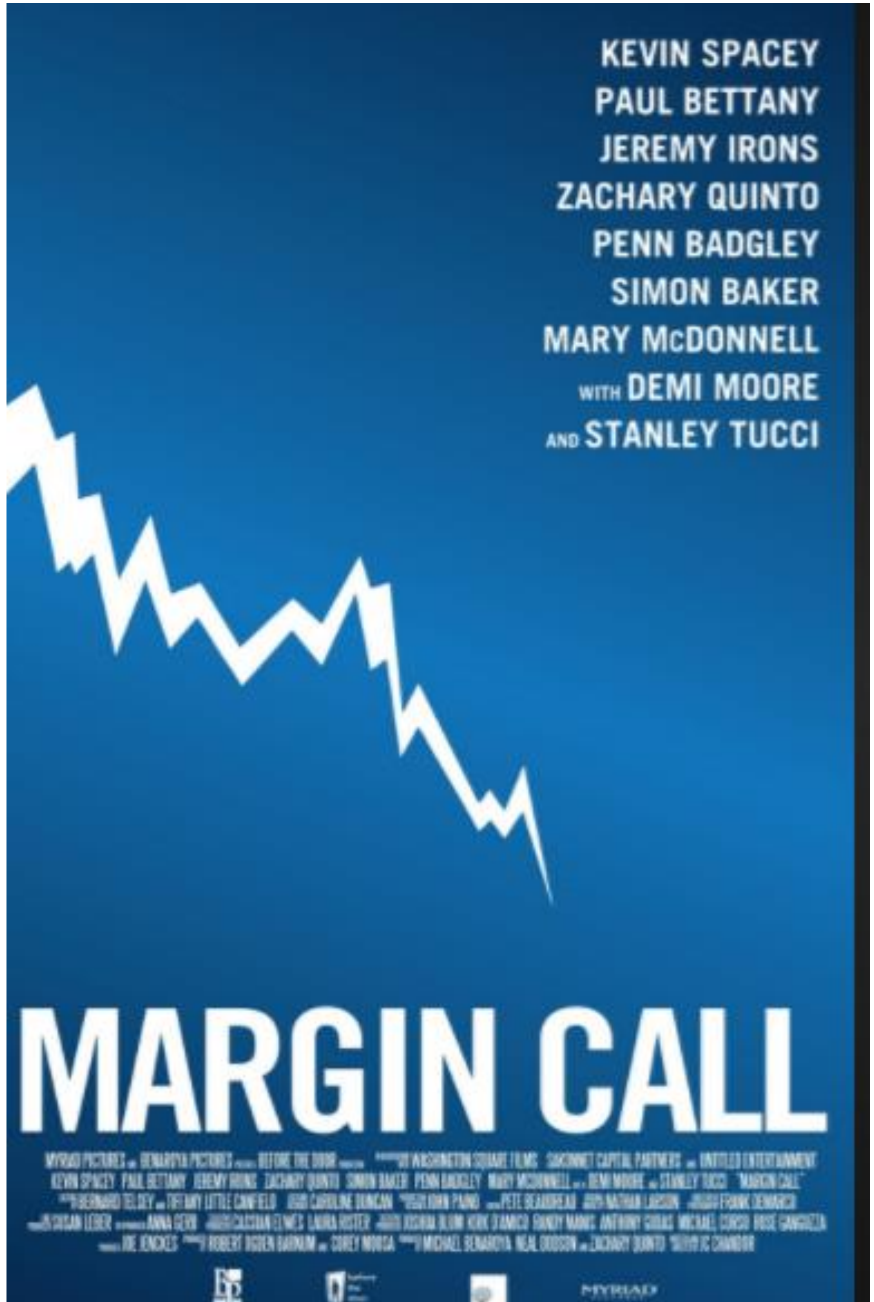
The Sharpe ratio is calculated by subtracting the risk-free rate from the return of the portfolio and dividing that result by the standard deviation of the portfolio's excess return.

Celebrating the Longest, Calmest Bull Market Ever
Should we be aggressive when things look the darkest?



Movies to watch

- Margin calls (2011)
- An entangling thriller involving the key players at an investment firm during one perilous 24-hour period in the early stages of the 2008 financial crisis.


KEVIN SPACEY
PAUL BETTANY
JEREMY IRONS
ZACHARY QUINTO
PENN BADGLEY
SIMON BAKER
MARY McDONNELL
WITH DEMI MOORE
AND STANLEY TUCCI
MARGIN CALL


OSCARS 2016
By MEKADO MURPHY
3:52
Anatomy of a Scene | ‘The Big Short’

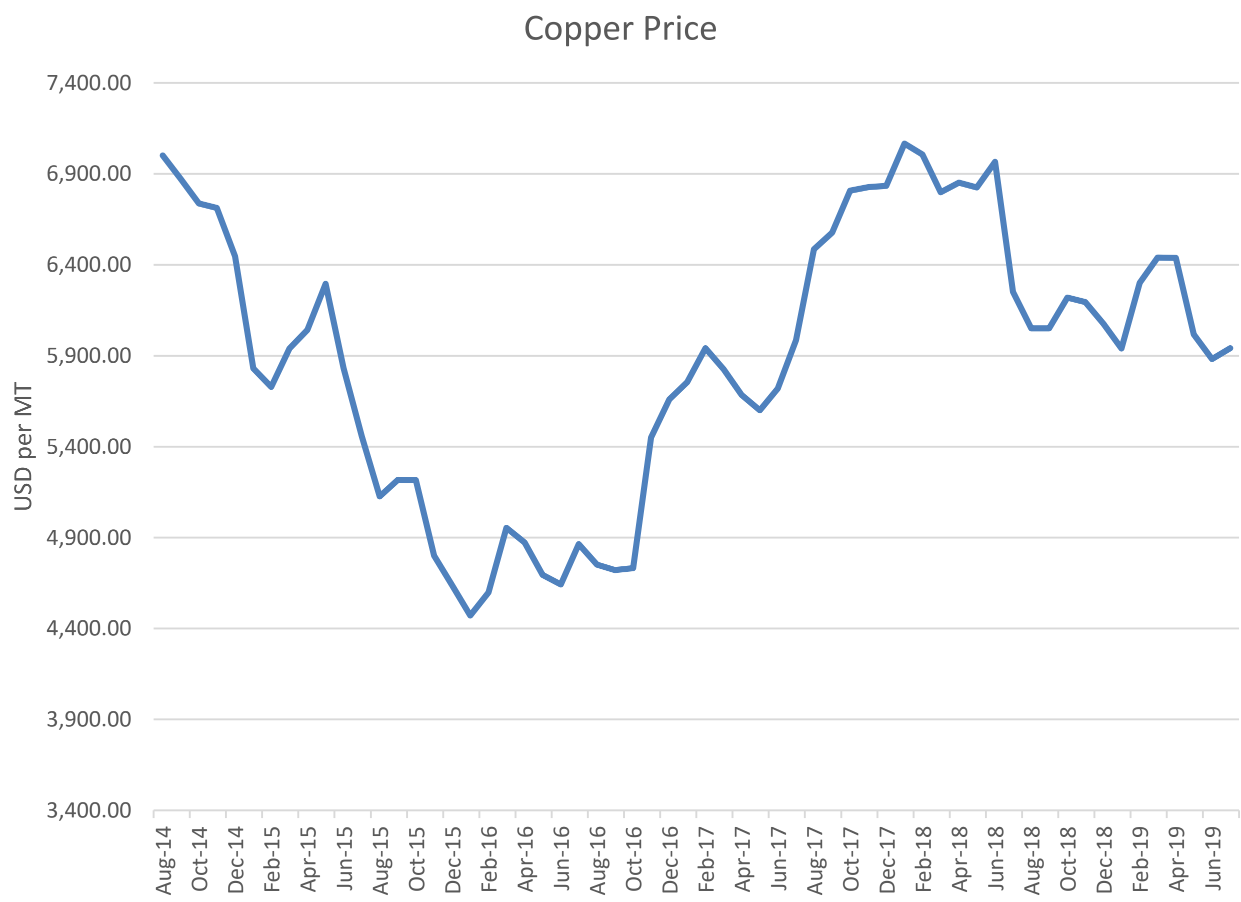
The big short (2015)

- Four denizens in the world of high-finance predict the credit and housing bubble collapse of the mid-2000s, and decide to take on the big banks for their greed and lack of foresight.
- Mini-seminars on the finer points of credit-default swaps and collateralized debt obligations.
- The story swerves and swings from executive suites and conference rooms to hectic Manhattan streets and desolate Florida subdivisions.

Short selling

- Short selling is the sale of a security (or commodity) that is not owned by the seller or that the seller has borrowed.
- Short selling is motivated by the belief that a security's price will decline, enabling it to be bought at a lower price to make a profit.
- Short selling may be prompted by speculation.

When will short selling of copper make profit?



Conclusions

- Although the 1997 and 2009 crises are different, some Asian countries were able to rebound in a V-shaped recovery.
- Asian countries have learned their lessons well from the 1997 financial meltdown.
- The global financial crisis in 2009 affected Thailand indirectly through export shortfall.
- Fiscal policies can be an effective means of influencing government popularity, but its sustainability is in question.

Review questions

- “Both financial crises in Thailand and the US stemmed from similar causes.” State whether you agree or disagree with the statement. Give brief reasons.
- Will Thailand soon experience the Minsky moment?