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The Anatomy of the Ship Mortgage Crisis and Regulative Instruments

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PhD

Mort Gage (Death Pledge)
Amortize a debt, Kill a debt

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Financial Meltdown

Keyword • Insolvency

- an individual or a firm is unable to meet their **financial obligations**
- liabilities, debt finance, borrowed funds
- The worst way of imposing pessimism: Somebody is insolvent!
  - Powerful than any other factor: news, forecasts, etc.

- Before crisis
  - Many experts somewhat tell about the fragility, increasing risks (no impact)
  - Many experts enjoy boom market, they keep silent (still no impact)
  - Bankers enjoy boom market, Politicians enjoy boom market…. (still nothing)
  - Euphoria is like an outbreak: Boom Epidemic. It spreads easily to every single heart ❤
  - Imagine the day your salary is paid (expires rapidly!)
  - Emotional Bubble supported with asset bubbles (shopping incentive)
- Someday, somebody turns to be insolvent

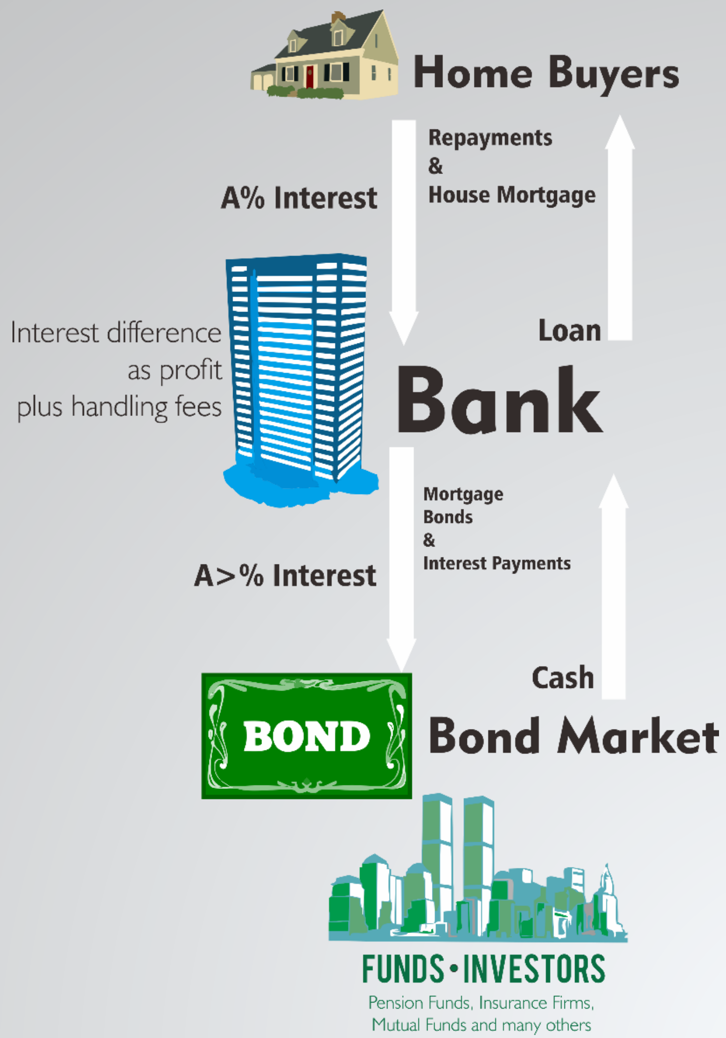
Financial Meltdown

- **Someday, somebody turns to be insolvent**
  - As long as you pay your bills, nobody complains
  - Everyday your fragility develops (No Signal, No Warning)
  - When you are insolvent, that is more than an individual's or a firm's matter
  - Bad news even more rapidly spread (Fear Epidemic)

  - The collapse of Lehman Brothers is only an example in the history of financial crisis.

Story of Subprime Mortgage Crisis

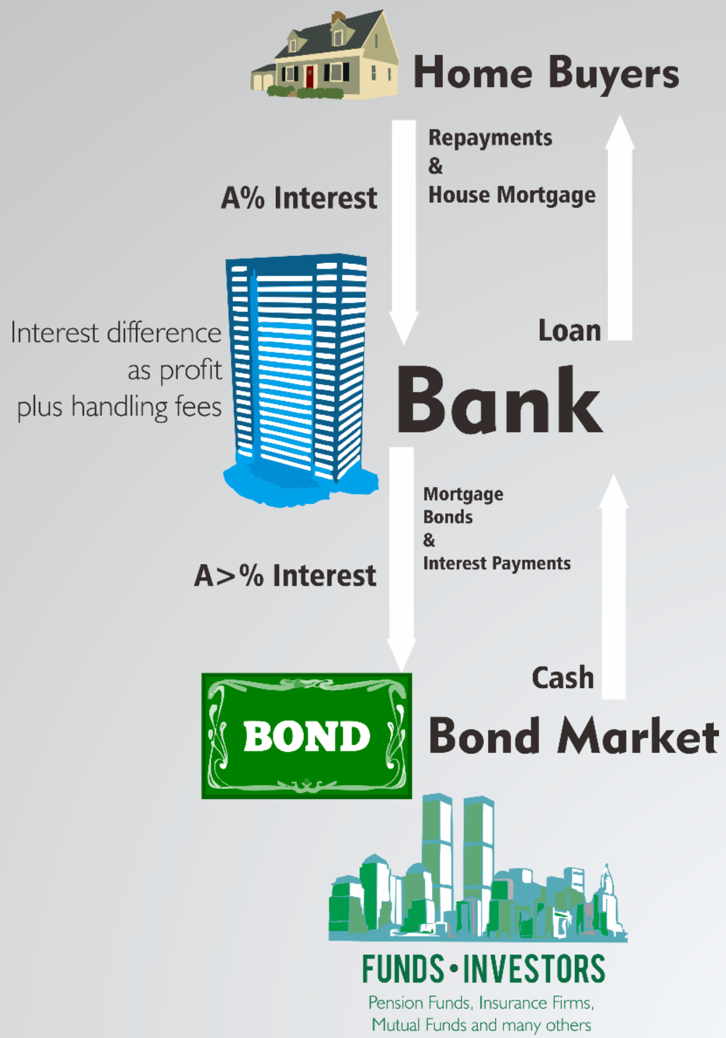
- **What is subprime mortgage?**
  - Home Mortgages (Risk)
  - Securing risks – Security Bonds
  - Mortgage-backed bonds
- **What If there is a strong demand for bonds?**
  - More bonds need more house mortgages!
  - Or more bonds mean more capacity for lending (Cash In)
- **Then, we need some extraordinary people to lend**
  - Financial Engineering: Subprime Mortgage
  - Subprime? These loans are characterized by *higher interest rates*, *poor quality collateral*, and *less favorable terms in order to compensate for higher credit risk (usually Low Income)*
  - Poor creditworthiness is rewarded
  - Toxic Assets (Toxic Subprime Mortgages)
  - Toxic asset is a popular term for certain financial assets whose *value has fallen significantly* and for which there is no longer a functioning market, so that such *assets cannot be sold at a price satisfactory to the holder*.



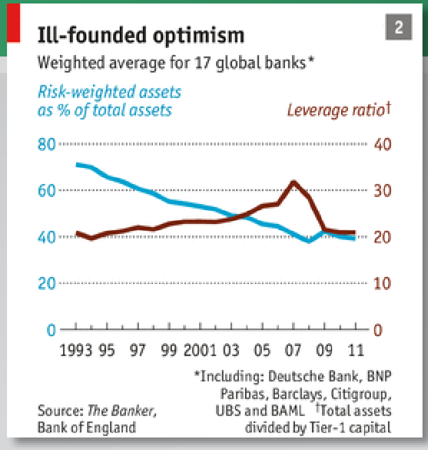
Story of Subprime Mortgage Crisis

- **Subprime mortgage**
  - Mispricing of credits
  - Easily gamed risk assessment methods (e.g. Value at Risk)

- **The story is not finished yet!**
  - Credit Default Swap – Credit Default 'Insurance'
  - *$450bn of CDO were sold by (insured by) AIG between 2005-2007 – INSURED CREDIT! Bankers ease with this security.*
  - When people are insolvent, bankers foreclose and seize asset (houses). Additional supply for House market!!!
  - *Prices go down*
  - *Creditworthy (Honest) Borrowers question: Why they should pay for their loan when value of their house dramatically declines.*

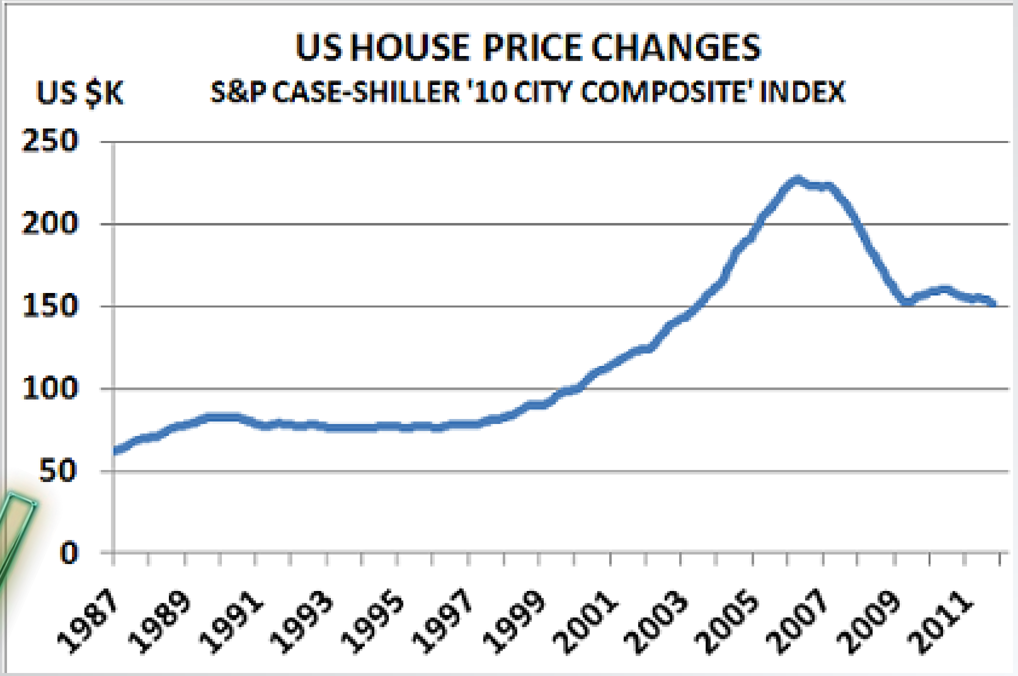


Story of Subprime Mortgage Crisis



- **Leverage**
  - How percent of asset will be financed by lender?
  - Debt-to-Asset (House Price) ratio
  - **D/A=L**
- **Leverage of Borrower (Loan)**
  - **D/A=L**
  - What If A (House Prices) rises? L goes down, then we have a spurious capacity of financing more and increase D!
  - **What If A declines later?**
- **Leverage of Lender (Banks)**
  - **Tier 1 Capital (Liquid Capital)/ Consolidated Assets (assets, liabilities, Mortgages, etc.)=L**
  - **BASEL Accords say minimum 5% L.**
  - **Again,** What If A (House Prices) rises? What happens to the existing portfolio?
- **A=House Prices** **Mark-to-market valuation**

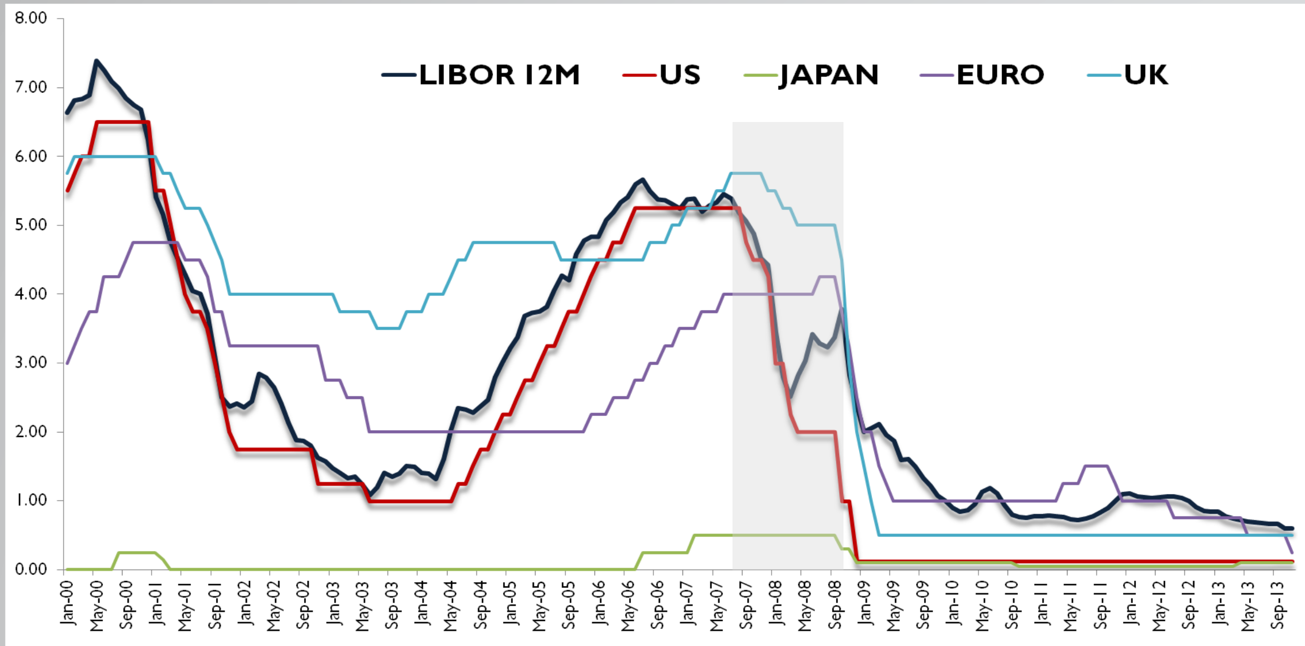
Rationalization of Leverage-Sin



Story of Subprime Mortgage Crisis

- **Interest Rate**
  - Broadly defined by central banks
  - What If interest rate is reduced?
- **Interest Rate (Major Lender)**
  - Treasury Bonds do not pay much
  - There is no better way than lending much more
- **Interest Rate (Lender)**
  - Cheaper fund (syndications)
  - Cheap Money to inject customers
- **Interest Rate (Borrower)**
  - Cheap Finance
  - Expand business when it is still cheaper

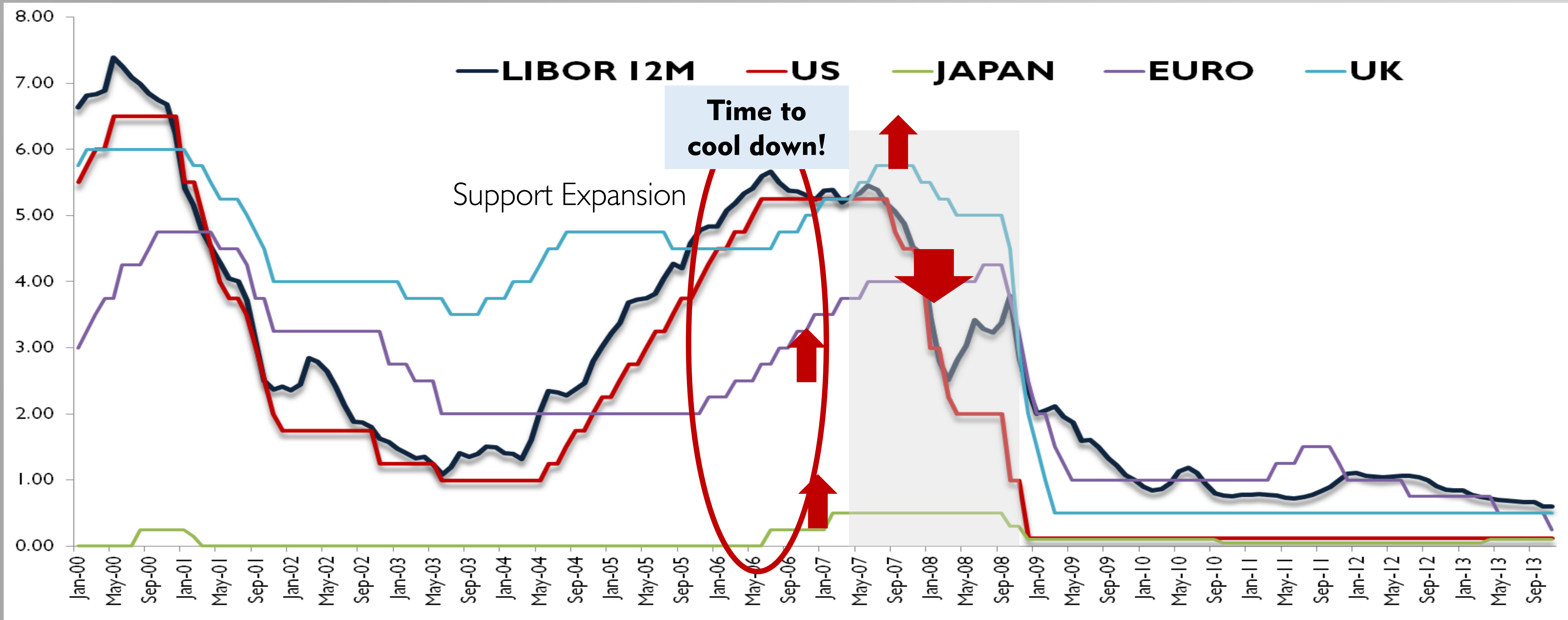
More!



Same factors somewhat influenced previous financial crises with a different blend.

Story of Subprime Mortgage Crisis

Hindsight? Closer Look: US FED in opposite direction of world

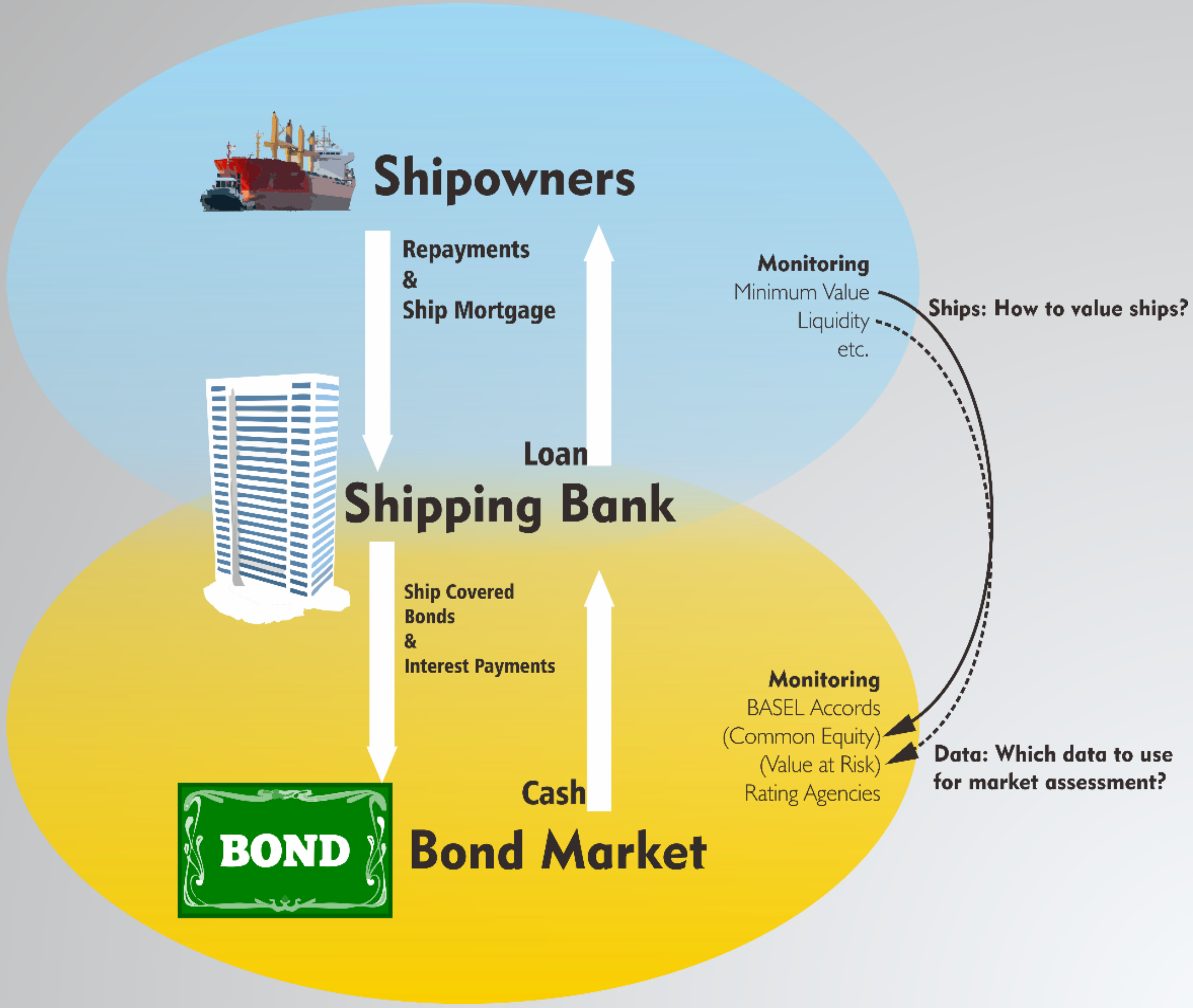


Another Story: Ship Mortgage Crisis

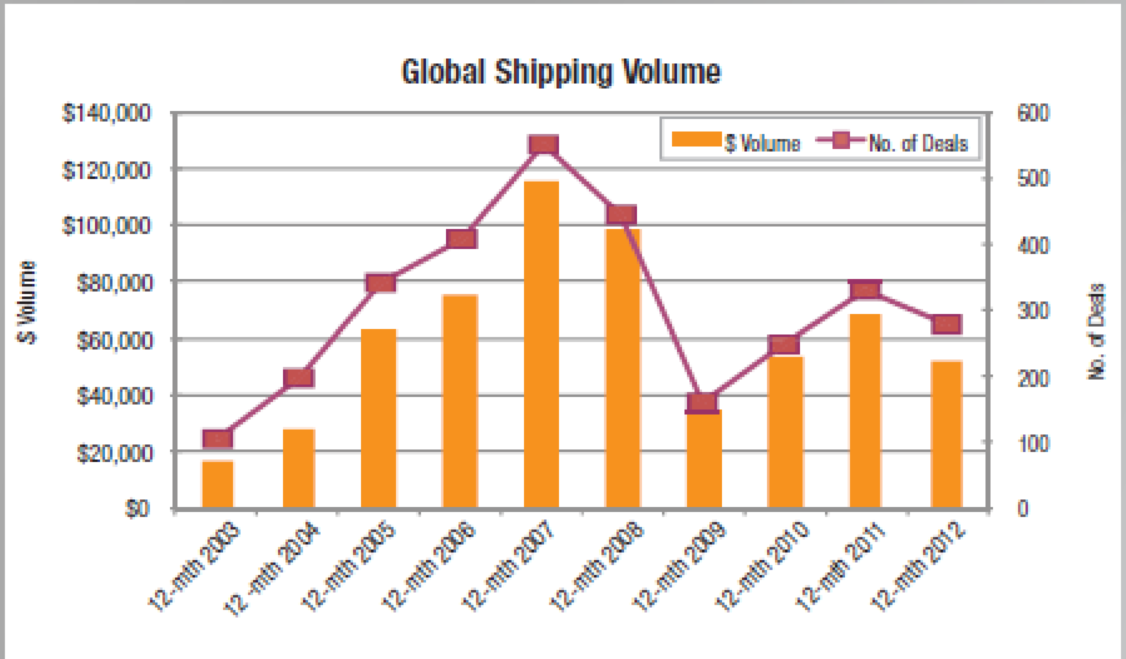
- **Similar mechanism for Ship Finance**
- **Ship Covered Bonds**
- **Cheap Money (Interest Rate Reduction)**

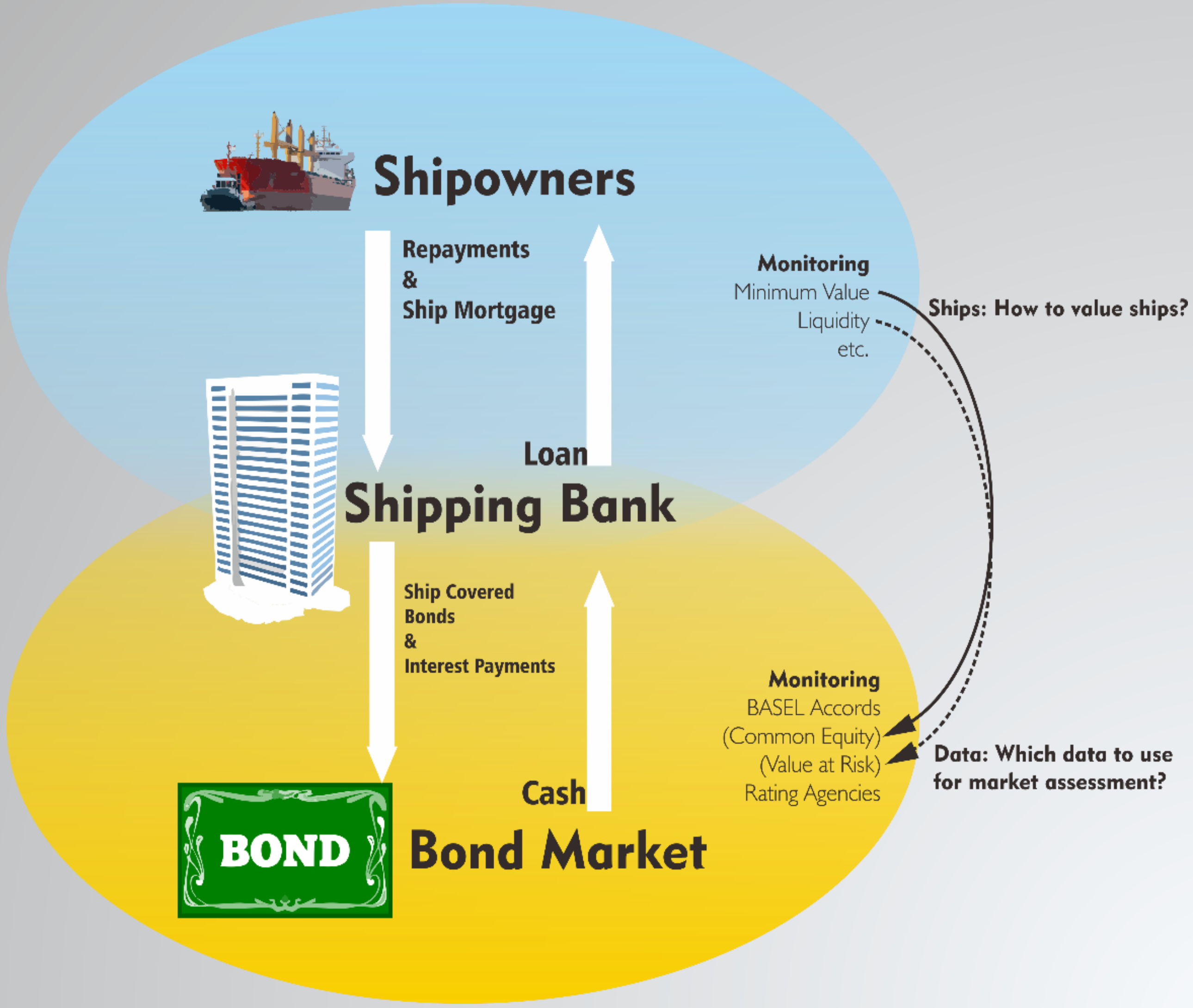
- **Cheaper and lax funding trend also sparked shipping finance. Philippe Louis-Dreyfus tells its impact as follows (Larocco, 2012):**

  "Banks put pressure on the shipowners to accept money almost for free, and sometimes offering 100 percent financing with no equity at all. So, banks have played the very awkward, if not the perverse, role in proposing cheap money to shipowners who not only didn't deserve it, but didn't really even want it."



Another Story: Ship Mortgage Crisis

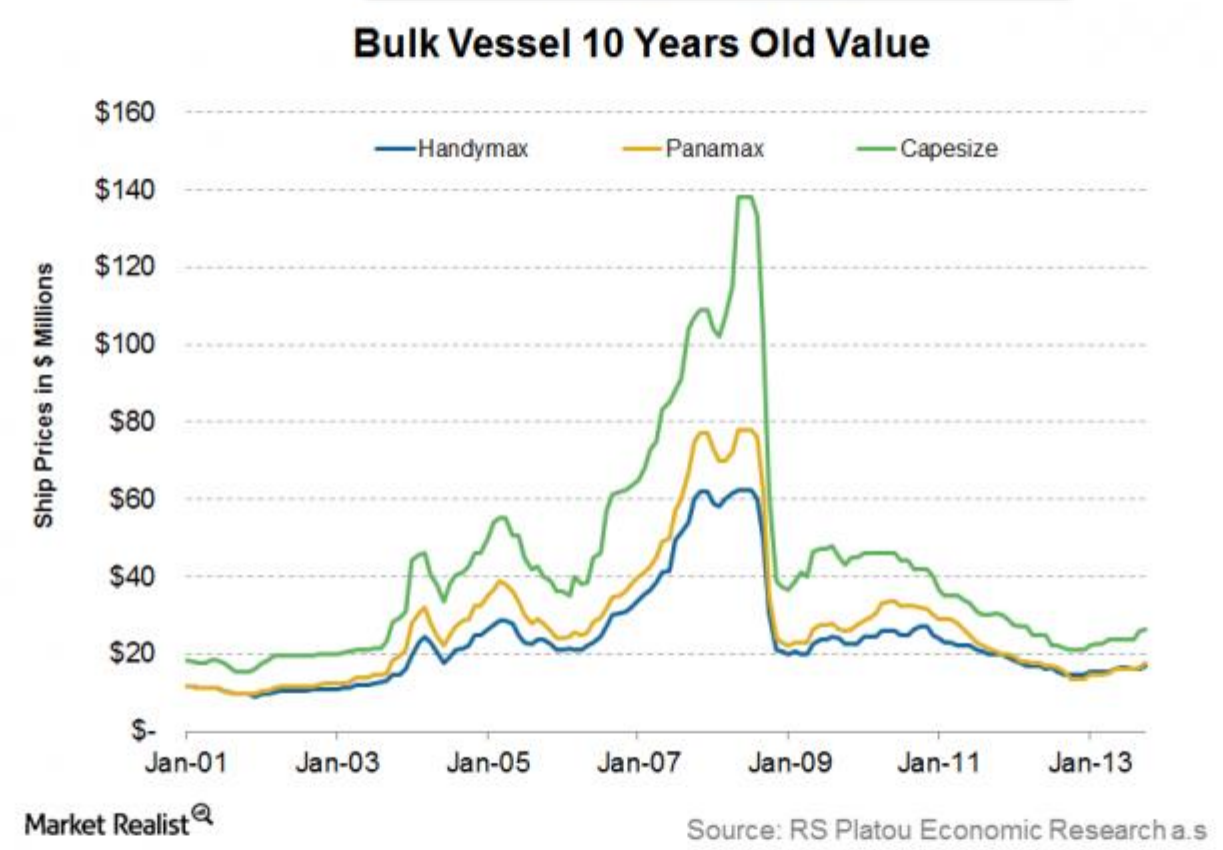




Another Story: Ship Mortgage Crisis

- **Leverage**
  - How percent of asset will be financed by lender?
  - Debt-to-Asset (**Vessel Price**) ratio
  - **D/A=L**
- **Leverage of Borrower (Loan)**
  - **D/A=L**
  - What If A (Vessel Prices) rises? L goes down, then we have a spurious capacity of financing more and increase D!
  - **What If A declines later?**
- **Leverage of Lender (Banks)**
  - **Tier 1 Capital (Liquid Capital)/ Consolidated Assets (assets, liabilities, Mortgages, etc.)=L**
  - **BASEL Accords say minimum 5% L.**
  - **Again,** What If A (Vessel Prices) rises? What happens to the existing portfolio?
- **A=Ship Prices** ~~Mark-to-market valuation?~~

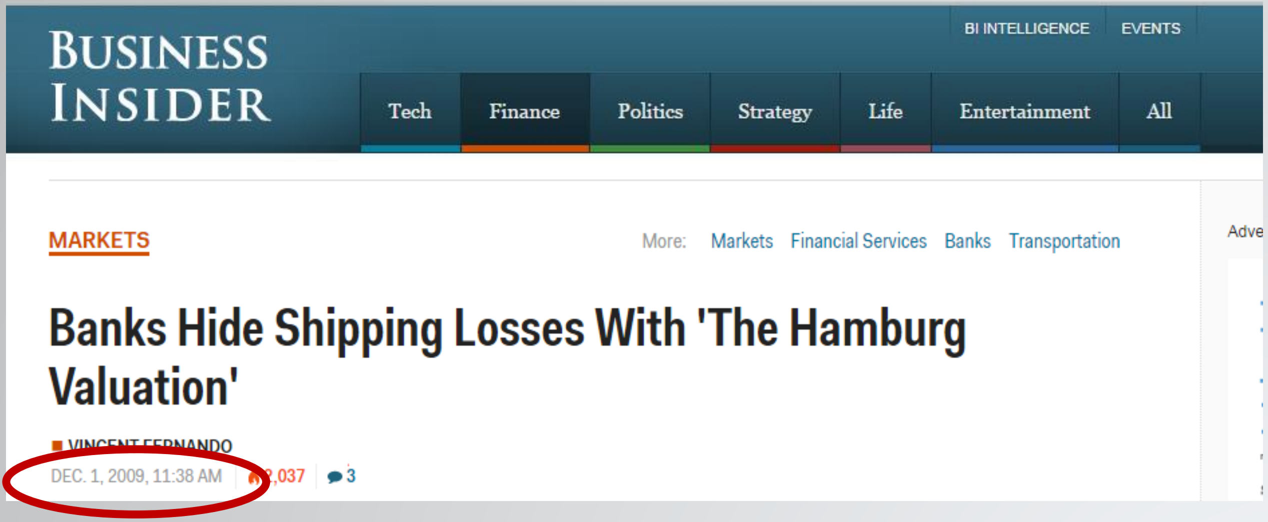
Rationalization of Leverage-Sin



Another Story: Ship Mortgage Crisis

- **A=Ship Prices**
- **Mark-to-Model valuation**
- **Easily Gamed Ship Valuation Methods**
- **DCF for Ship Valuation is illusory! (Bulut and Duru, 2014)**

Rationalization of Leverage-Sin



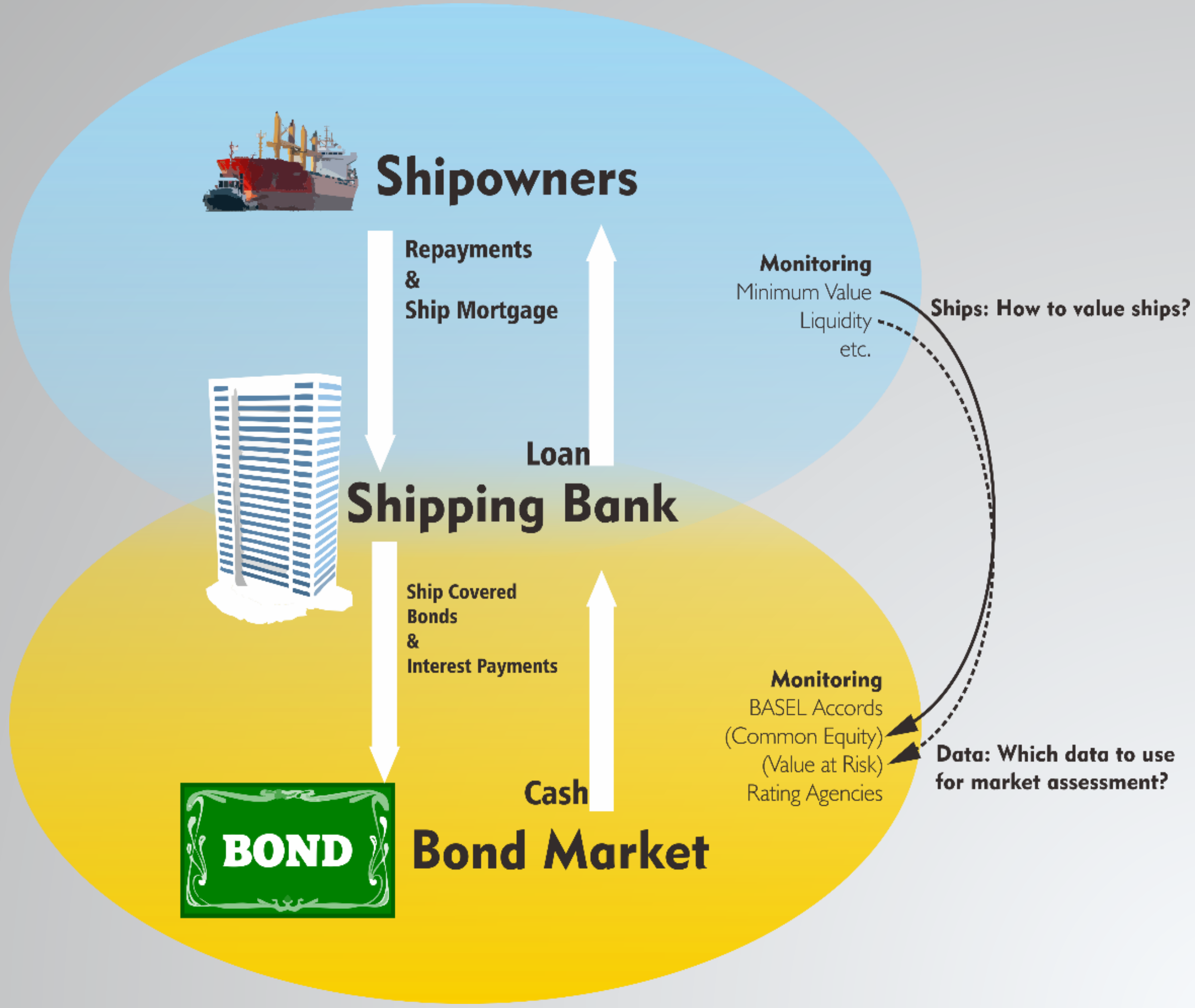
Bulut E. and Duru O. (2014). Retrospective Data Size Setting for Financial Ship Valuation: The Market Price vs. Asset Valuation Paradox and the Long Term Asset Valuation. The Conference of International Association of Maritime Economists, Norfolk VA.

Another Story: Ship Mortgage Crisis

- **On October 5th 2012, a credit rating institution, Moody's, posted the following announcement:**

"Moody's Investors Service has today placed on review **for downgrade** the Aa1 ratings assigned to the public-sector Pfandbriefe (public-sector covered bonds) and the Baa1 ratings assigned to the ship Pfandbriefe (**ship covered bonds**) issued by HSH Nordbank AG (HSH or the issuer), which are governed by the German Pfandbrief Act. On 16 December 2011, **both covered bonds were downgraded** to Aa1 and Baa1 respectively.

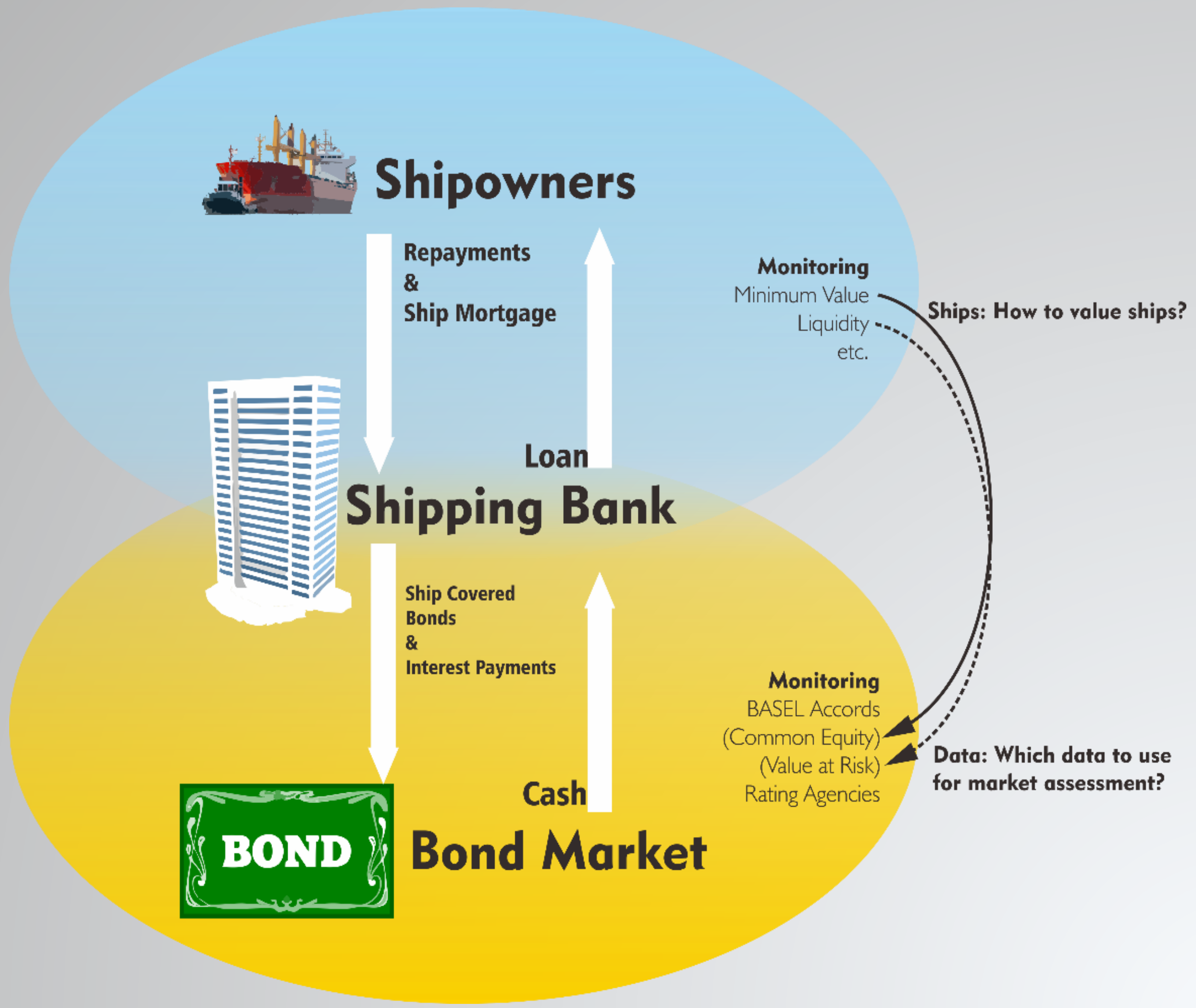
The ratings of HSH's mortgage Pfandbriefe, which are currently on review for downgrade, are not affected by this rating announcement."



Another Story: Ship Mortgage Crisis

- **International Monetary Fund (IMF) reviewed the German banking industry (IMF Country Report No. 14/216; 21st July 2014) and indicated that**

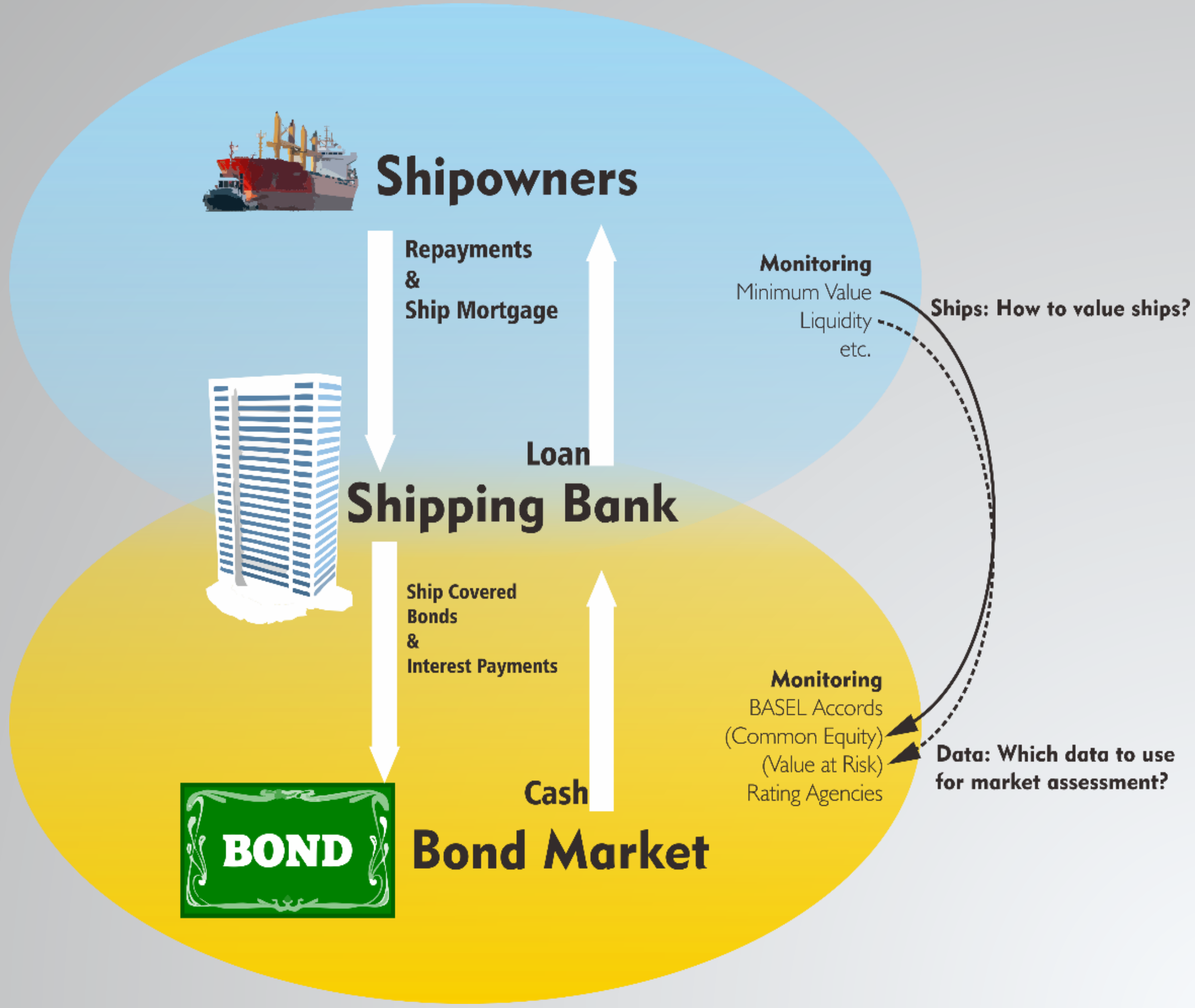
"While work on the ECB's Comprehensive Assessment was still ongoing, the authorities were confident German banks were generally well positioned for the exercise. They noted the continuous and significant improvement in banks' capital ratios over the past several years, **but agreed that shipping loans could be a source of further impairments**"



Another Story: Ship Mortgage Crisis

In the ship mortgage crisis, ship covered bonds (ship mortgaged-backed bonds) played a multiplier role. HSVS saved:

- Shipping portfolio from massive default which may have ignited further and deeper credit crunch in the shipping industry (very low ship prices, undesirable foreclosures etc.)
- Ship covered bonds from insolvency indirectly.



Counter Measures

- **Initial Assessment is critical and monitoring is complicated**
- **The initial leverage must be based on long-term average ship prices**
- **The long term median price of a ship can be used as the maximum limit of leverage as a value (maximum fund raised)**
- **There is no valuation method which works properly for monitoring**
- According to the asset prices of the last 25 years, the median of annual downward changes (excluding upward changes) is 20% for the same asset (5-year old Handymax dry bulker) (maximum 53% in 2009). For several assets (different ship size or age), the median downward change is between 17% and 26%. That also gives us another boundary for leverage for a single ship without additional collaterals.
- **A leverage of ship loan should not exceed 80% (100%-20%=80%) in any period of the shipping markets.**

Regulative Instruments

- **The dynamic maximum leverage value** by the long term median asset price
- **The static maximum leverage ratio of 80%** based on the average historical volatilities.

in addition to BASEL Accords

Q&A

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