

The Credit-crunch

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Format

- Summary of events to date
- The sub-prime crisis
- Underlying causes and weaknesses
- Impact of the credit crisis

Chronology of key events

- June/July 2007 – Bear Stearns bails out credit funds which are heavily invested in CDOs
- August 2007 – Bear Stearns holds conference call to reassure investors following critical S&P report, European Central Bank injects €95 billion funds into the money markets to prevent borrowing costs from spiraling
- September 2007 – nationalisation of Northern Rock by the UK Government
- March 2008 – bailout of Bear Stearns by JPMorgan and the Federal Reserve

Black September

- 7 September – US Government seizes control of Fannie Mae and Freddie Mac
- 15 September - Lehman files for bankruptcy with loss of 20,000 – 25,000 jobs, Bank of America buys Merrill Lynch for US\$50 billion
- 16 September - US\$85 billion dollar bailout of AIG by the US Government
- 17 September – Lloyds TSB buys HBOS for £12,000,000
- 18 September – SEC and FSA ban short-selling, Federal Reserve released extra US\$180,000,000 to shore up inter-bank money-markets

Summary

- 3 very large US investment banks bankrupt or swallowed up
- World's largest insurance company saved from bankruptcy by US government
- Fannie Mae and Freddie Mac nationalised – together provide funding for around 75% of new US home mortgages and guarantee 50% of outstanding US home loans, with a value of US\$5 trillion.
- Banks' total losses from sub-prime passed US\$500 billion in August 2008 (Bloomberg, 12 September 2008)
- 113,000 worldwide finance industry job losses as at 19 September 2008 (Bloomberg, 19 September 2008)

The sub-prime crisis



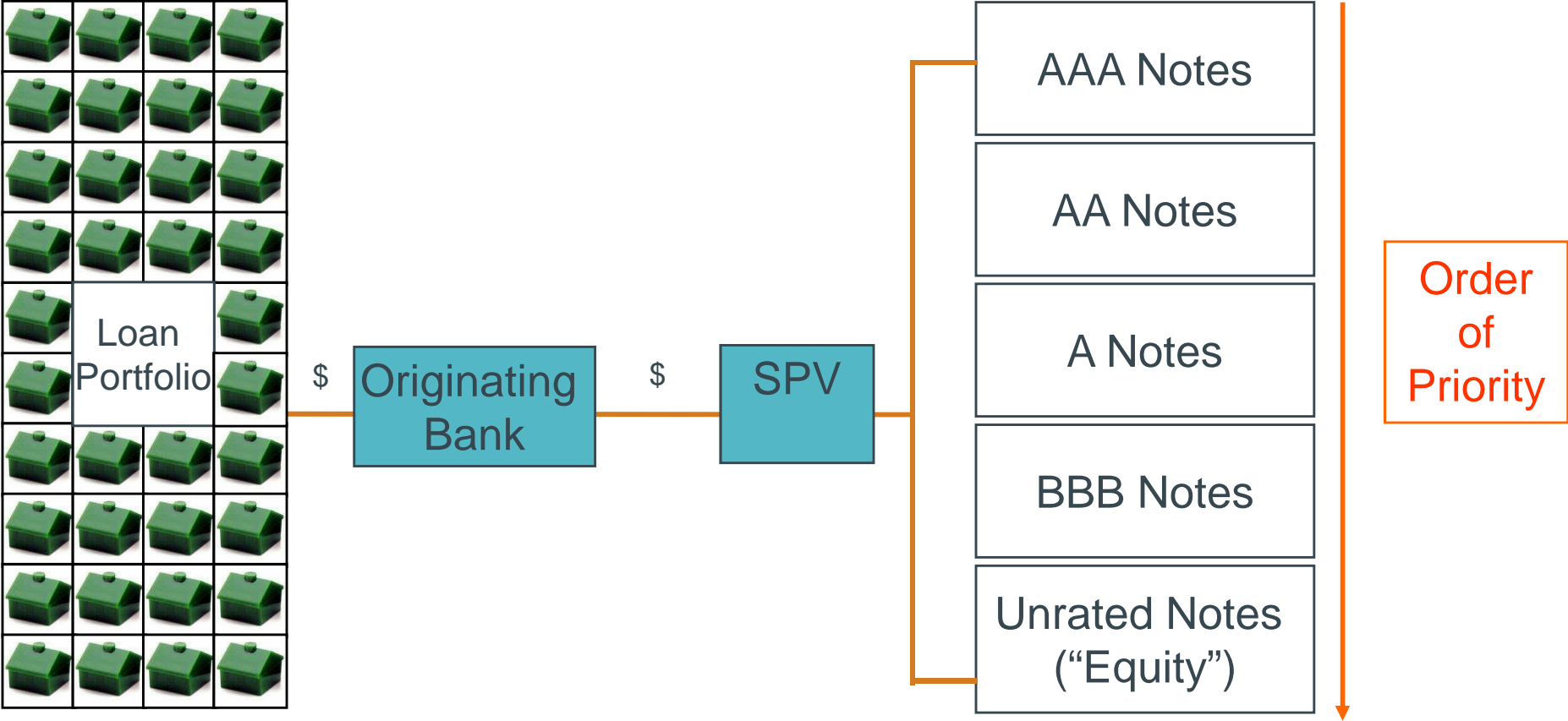
Sub-prime debt

- Crisis originated in US sub-prime home loans in Summer 2007, has spread around the finance sector and the US, Western European economies generally
- Characteristics of “sub-prime” loans
 - A loan that is offered at a rate above prime to individuals who do not qualify for prime rate loans
 - high risk of default and a high rate of interest
 - slim documentation – no need to evidence earnings etc.
 - non-recourse i.e. the lender’s recovery is limited to the value of the property
 - high proportion originated through mortgage brokers
 - 2/28 adjustable rate mortgages (ARMs) i.e. discounted interest rate for initial 2 years of 30 year loan

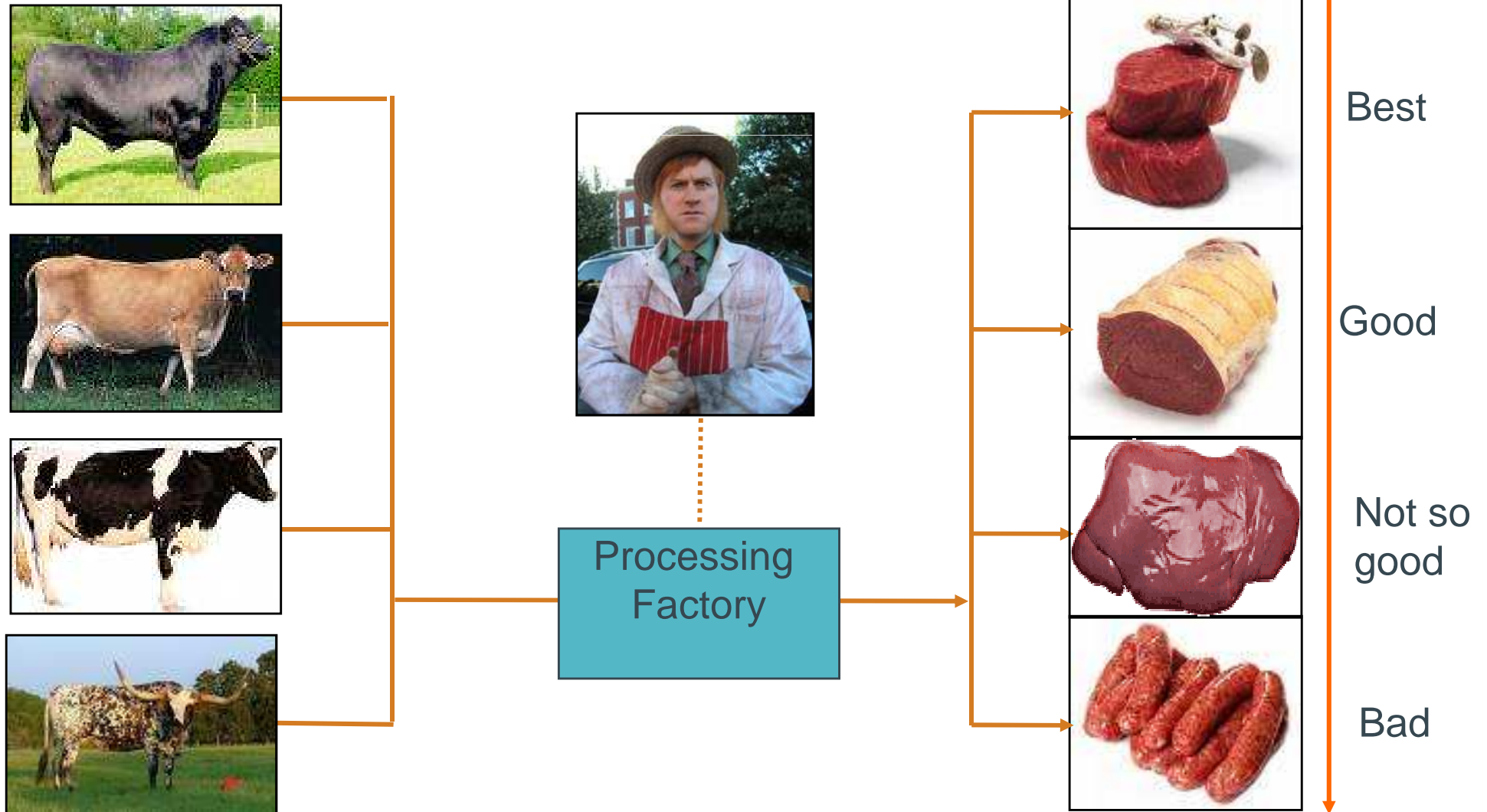
The Role of Securitisation

- Banks can raise funds through taking deposits and borrowing money in the capital markets
- The Basel accords regulate the amount of capital that banks must hold for the credit risk on their books, to ensure that they can meet their liabilities
- Banks use securitisation to raise funds for making new loans and to pass on the credit risk of borrowers defaulting – The “Originate to Distribute” model
- Securitisation bonds (RMBS) are attractive to investors as offer higher yields than straight bonds with the same credit rating

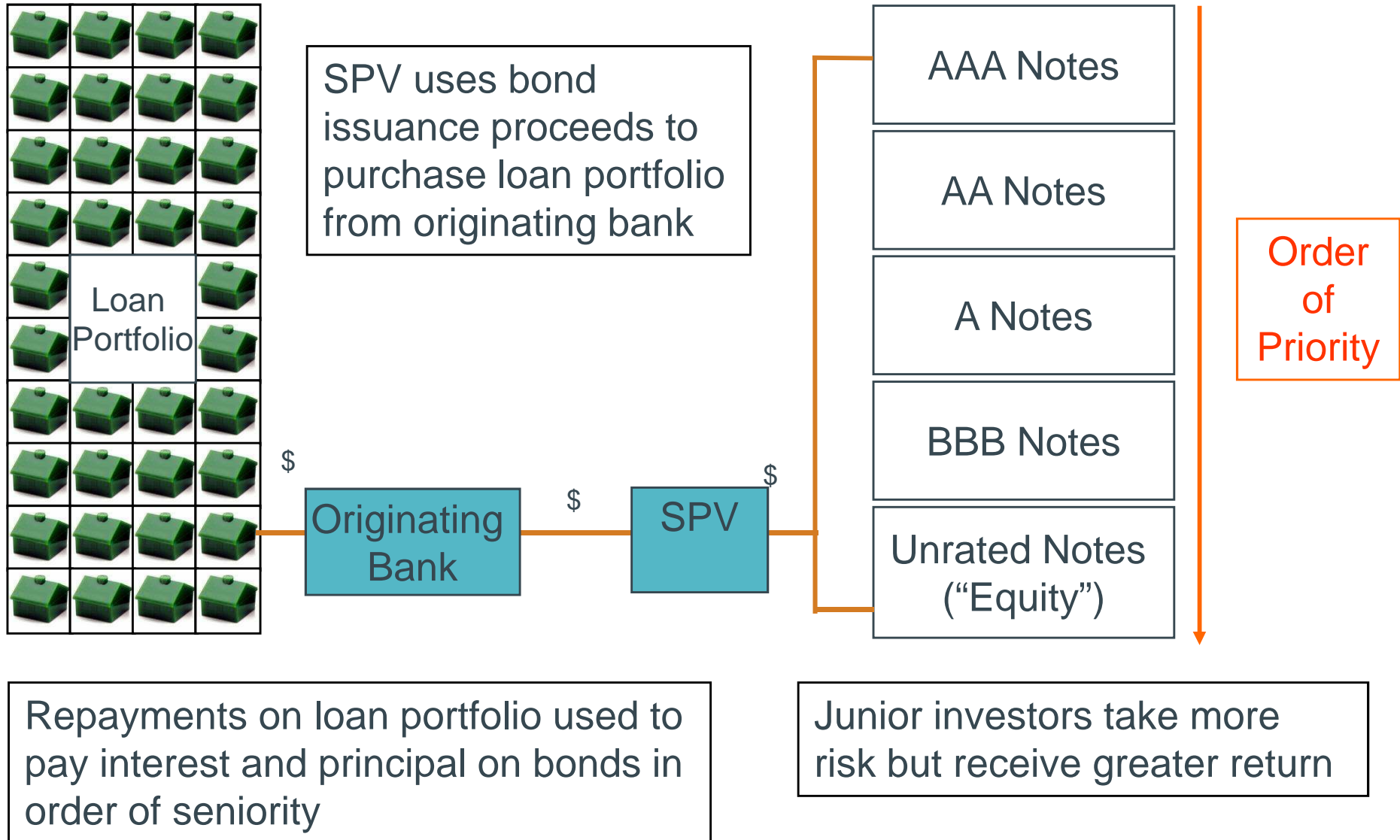
Simplified Securitisation (RMBS) Structure



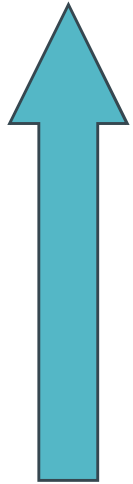
Securitisation – real world analogy



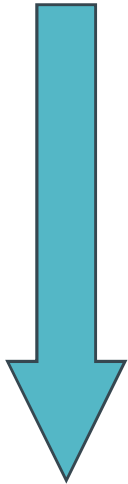
Simplified Securitisation (RMBS) Structure



Bursting of US Real Estate Bubble



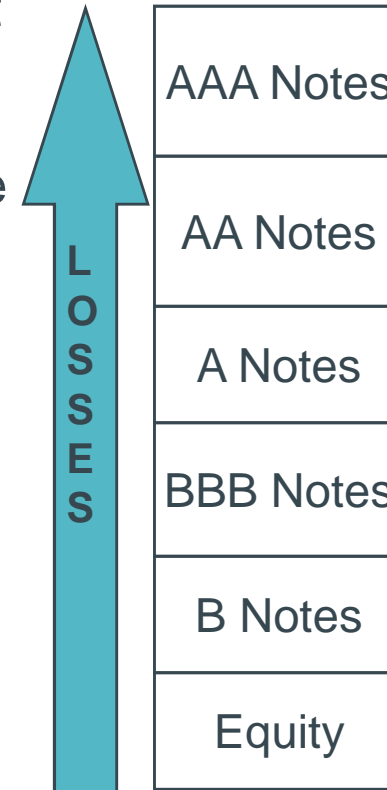
- US real estate bubble, fuelled by easy money and lax lending standards, reliant on ever rising house prices
 - high confidence
 - poor due diligence
 - discount rate mortgages encouraged borrowers to take out larger loans in the expectation of refinancing when the fixed rate period ended



- The bursting of the bubble, led by defaults on sub-prime mortgages, has led to a property crash
 - low confidence
 - higher than expected proportion of defaulted loans
 - falling house prices have made it difficult for borrowers to refinance mortgages, new buyers to enter market
 - snowball effect

The effect of the downturn on RMBS

- Ratings are a rating agency's assessment of the likelihood that interest and principal on the relevant class of notes will be paid in full when due
- In making this assessment rating agencies assume that:
 - X% of the loan portfolio will default
 - there will be Y% recovery on defaulted loans
- Investors have relied on ratings at the expense of their own due diligence
- Losses have been much bigger than expected as:
 - more borrowers than expected are in default
 - house prices have fallen



Lack of Transparency

- It is unclear how successfully credit risk has been spread
 - arranging banks often retained tranches with less investor demand
 - warehousing of ABS prior to issuance of CDOs of ABS
 - banks holding CDOs as collateral for counterparty credit risk
 - use of OTC derivatives e.g. total return swaps to pass credit risk
- Disclosure by financial institutions of losses and exposure has been insufficient
- The market is susceptible to rumours – led to bans on shortselling



Lack of Liquidity in the interbank market

- The Interbank Market
 - banks rely on interbank lending to meet short-term cash requirements
- Liquidity Problems – Bear Stearns/Northern Rock/Lehman...
 - in recent months, banks have been lending to one another far less in the interbank market, due to worries over banks' exposure to subprime debt and CDOs and to maintain capital
 - this has caused cashflow problems
 - when banks run out of cash, they have to seek emergency government borrowing - e.g. Bear Stearns/Northern Rock
- Government support – central banks have injected very large sums into the money markets to maintain liquidity

Underlying Causes and Weaknesses

The image features a dark blue rectangular background on the left side. Overlapping this background and extending to the right are three teal-colored rectangles of varying sizes and positions. One large teal rectangle is positioned in the upper right, another smaller one is below it and to the left, and a third one is to the right of the second one, partially overlapping the large teal rectangle.

The factors that underlie the current crisis include:

- Weaknesses in risk and capital management at banks
- Poor standards of origination of mortgages and underwriting of CDOs
- Insufficient due diligence and over-reliance on credit ratings by CDO investors
- Poor performance of credit rating agencies
- Lack of transparency in market
- Difficulty in valuing CDOs, particularly in the current market
- Misaligned employee incentives at banks and investors
- Over-reliance on monoline rating agencies to support AAA ratings

Weakened Standards of origination and underwriting

- Several factors encouraged lax standards of due diligence of borrowers:
 - Benign economic environment, long period of house price growth
 - Originators and underwriters disincentivised to maintain standards where credit risk is transferred through securitisation
 - Use of mortgage brokers paid by commission, with no interest in borrower's credit quality
 - Investor demand for RMBS, and some bank's reliance on RMBS issuance for funding day-to-day business, required high level of origination of mortgages
 - Sub-prime was a new business, with limited historical data, and new lenders had entered the market increasing competition

Role of the credit rating agencies

- Investors placed excessive reliance on credit ratings
- Multi-notch downgrades raised questions of quality of credit ratings of structured products
- Conflicts of interest – fees paid by issuer/arranger; rating agencies took part in structuring of CDOs to ensure tranches met required ratings
- Competition between rating agencies in high growth, high revenue sector
- Flaw in rating methodologies
 - limited historical data on sub-prime mortgages
 - underestimated correlation
 - Moody's CPDO saga
- Assumption that data provided by originators and structurers was accurate, took no account of weakened underwriting/origination standards

Valuation

- There is a large measure of uncertainty in valuing assets such as CDOs
- Most structured products and derivatives are accounted for at “fair value” i.e. by reference to market prices
- The market for products such as CDOs has become extremely limited, making it very difficult to obtain prices
- Other valuation methods are used when market prices are not available e.g. marking to model
- Prices for CDOs have collapsed, even where there is no evidence that realised losses are likely

Impact of Credit Crisis



Financial Stability Forum (FSF) April 2008 Report

- The members of the Forum are national authorities responsible for financial stability in significant international financial centres, international financial institutions, international regulatory or supervisory bodies, and committees of central bank experts
- Mandate is to assess issues and vulnerabilities affecting the global financial system, and to identify and oversee actions needed to address them.
- proposed action to address weaknesses in five areas:
 - strengthened oversight of capital, liquidity and risk management
 - enhancing transparency and valuation
 - changes in the role and uses of credit ratings
 - strengthening the authorities responsiveness to risks
 - robust arrangements for dealing with stress in the financial system

Credit Ratings (1)

- All the principal rating agents are reviewing their rating methodologies
- The International Organization of Securities Commissions (IOSCO) revised its (voluntary) Code of Conduct Fundamentals for Credit Rating Agencies in May 2008 addressing four key areas: the quality and integrity of the rating process; independence and avoidance of conflicts of interest; responsibilities to issuers and investors and disclosure
- Financial Stability Forum recommendations:
 - CRAs should improve the quality of the rating process and manage conflicts of interest in rating structured products
 - CRAs should differentiate ratings on structured finance from those on bonds
 - CRAs should enhance their review of the quality of the data input and due diligence performed on underlying assets

Credit Ratings (2)

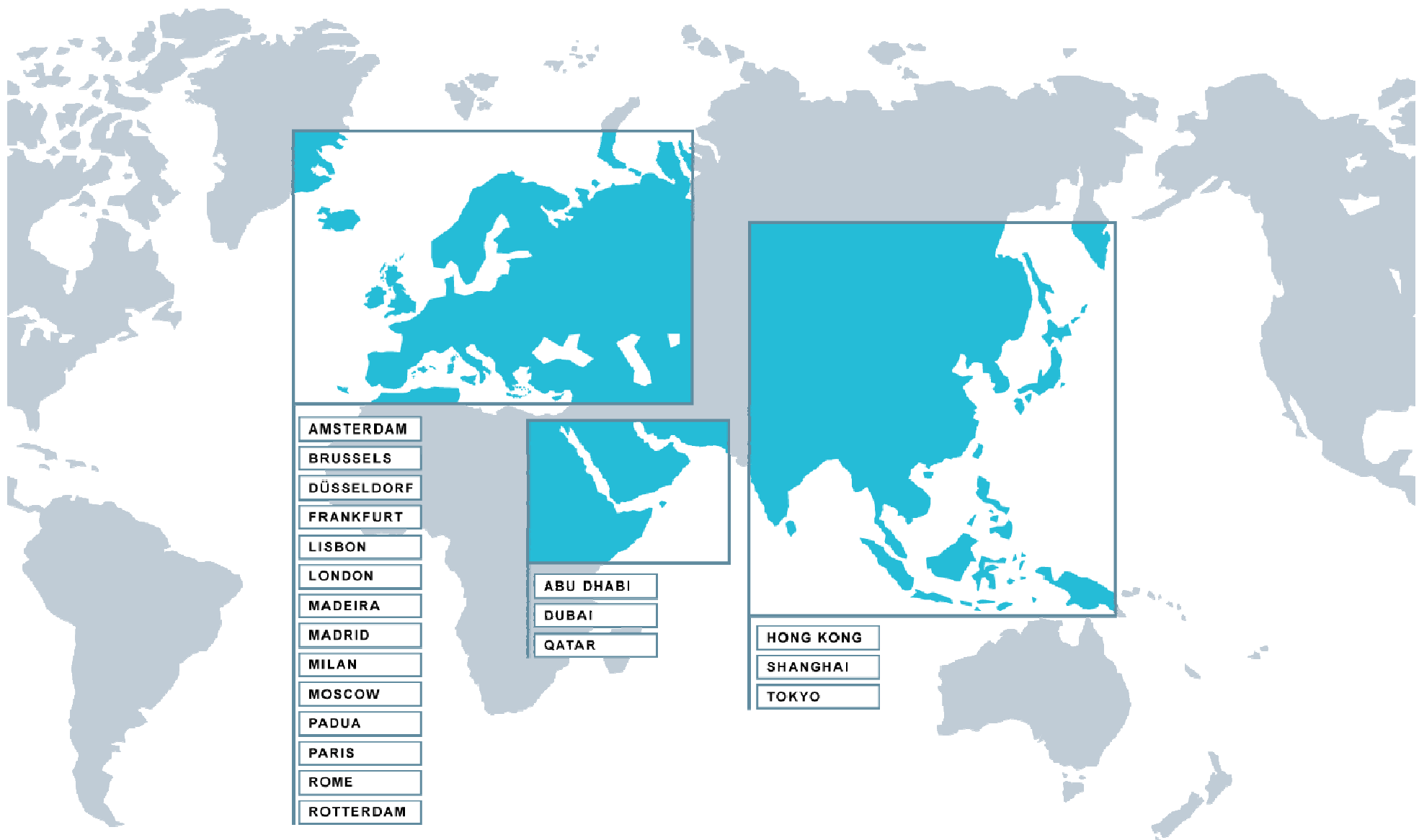
- Securities Industry and Financial Markets Association (SIFMA) published the recommendations of its Credit Rating Agency Task Force on 30 July 2008
 - recommendations focused on enhanced disclosure of rating methodologies, due diligence performed by CRAs, surveillance process and fee structures
 - call for globally coordinated, convergent approach by regulators
 - no limitations on CRA involvement in structuring structured products, but better governance structures to avoid conflicts of interest
 - rejected calls for special structured finance ratings, suffices – cosmetic, expensive, confusing, and not envisaged by investment guidelines
 - CRAs should ensure that structured finance ratings perform consistently with equivalent ratings for other asset classes e.g. corporate bonds
- EU Regulation of Credit Rating Agencies
 - Commission proposes EU wide regulation to replace current self-regulatory regime

Further FSF Recommendations

- Capital Requirements
 - timely implementation of Basle II
 - raising capital requirements for certain structured products
 - continual supervision/updating of Basle II requirements by regulators
- Improving infrastructure for OTC Derivatives
 - cash settlement protocol should be incorporated into standard ISDA documents as soon as possible
 - market participants should automate trade novations and develop long term plan for OTC derivative infrastructure
- Risk disclosure must be strengthened
- IASB must work to strengthen/standardise disclosure standards and valuation methodologies for complex products, including where markets are inactive

Summary

- Socialisation of financial assets/risk
 - nationalisation of Freddie Mac/Fannie Mae in US and Northern Rock in the UK
 - exposure to AIG/Bear Stearns
 - US Government to provide up to US\$700 billion to buy junk assets from investment banks with “significant operations in the US”
 - Increased tax
- Increased regulation
 - increased oversight of capital/risk management
 - enhanced valuation of financial products and disclosure
 - regulation of credit rating agencies (CRAs)
 - more global approach
 - Increased capital requirements
- The end of the independent “broker-dealer” investment bank



- AMSTERDAM
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- LONDON
- MADEIRA
- MADRID
- MILAN
- MOSCOW
- PADUA
- PARIS
- ROME
- ROTTERDAM



- ABU DHABI
- DUBAI
- QATAR



- HONG KONG
- SHANGHAI
- TOKYO

