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**Thomas Connell
Managing Director
Standard & Poor's**

**FEI Canada
Conference**

**Jasper, Alberta
June 9-11, 2008**

Reflections on the Credit Crunch

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Reflections on the Credit Crunch

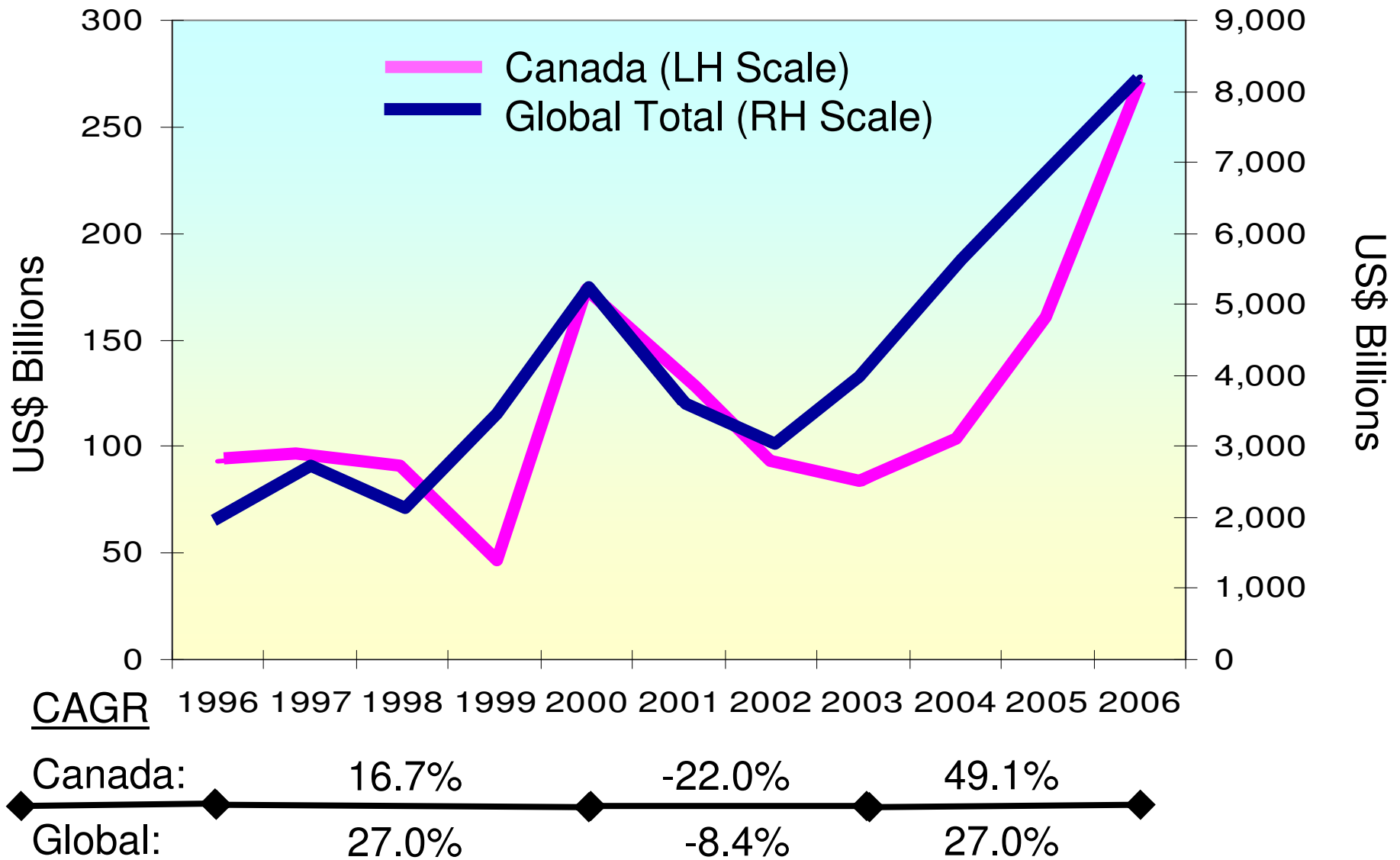
- 1. Global Capital Markets in Transition**
- 2. The Credit Crunch: Aspects and Outcomes**
- 3. Lessons from the Credit Crunch**
- 4. Where to From Here: Current Credit Market Outlook**

Global Capital Markets In Transition

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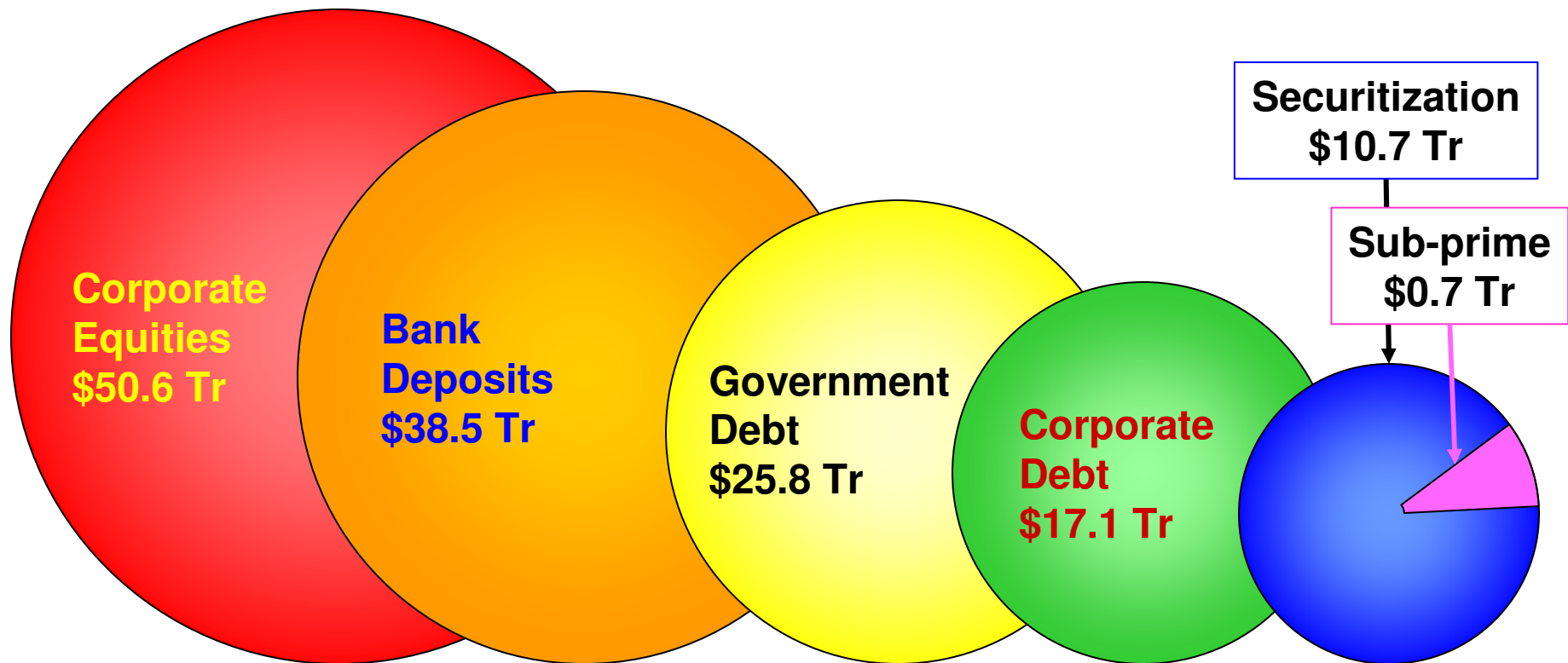
Canadian vs Global Capital Flows



Sources: IMF GFSR April 2008; McKinsey & Co Mapping Global Capital Markets January 2008

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Components of Global Securities Markets – 2006 Year-end

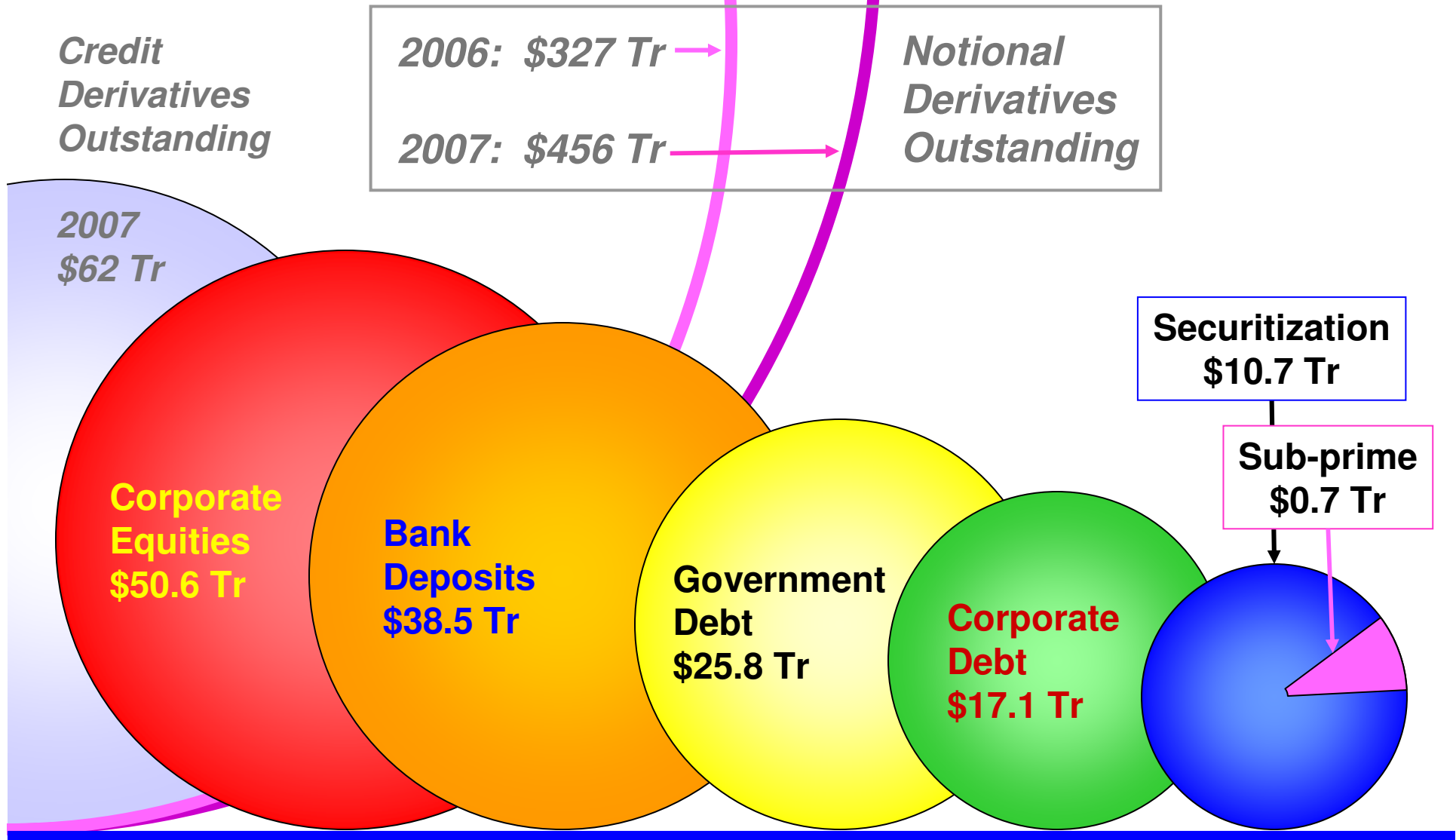


Sources: Bank of England, Financial Stability Report, Oct 2007; ISDA Market Survey
Note: bank deposit number incorporates 2005 and 2006 data

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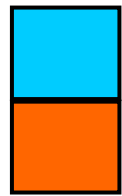
Components of Global Securities Markets – 2006 Year-end



Sources: Bank of England, Financial Stability Report, Oct 2007; ISDA Market Survey
 Note: bank deposit number incorporates 2005 and 2006 data

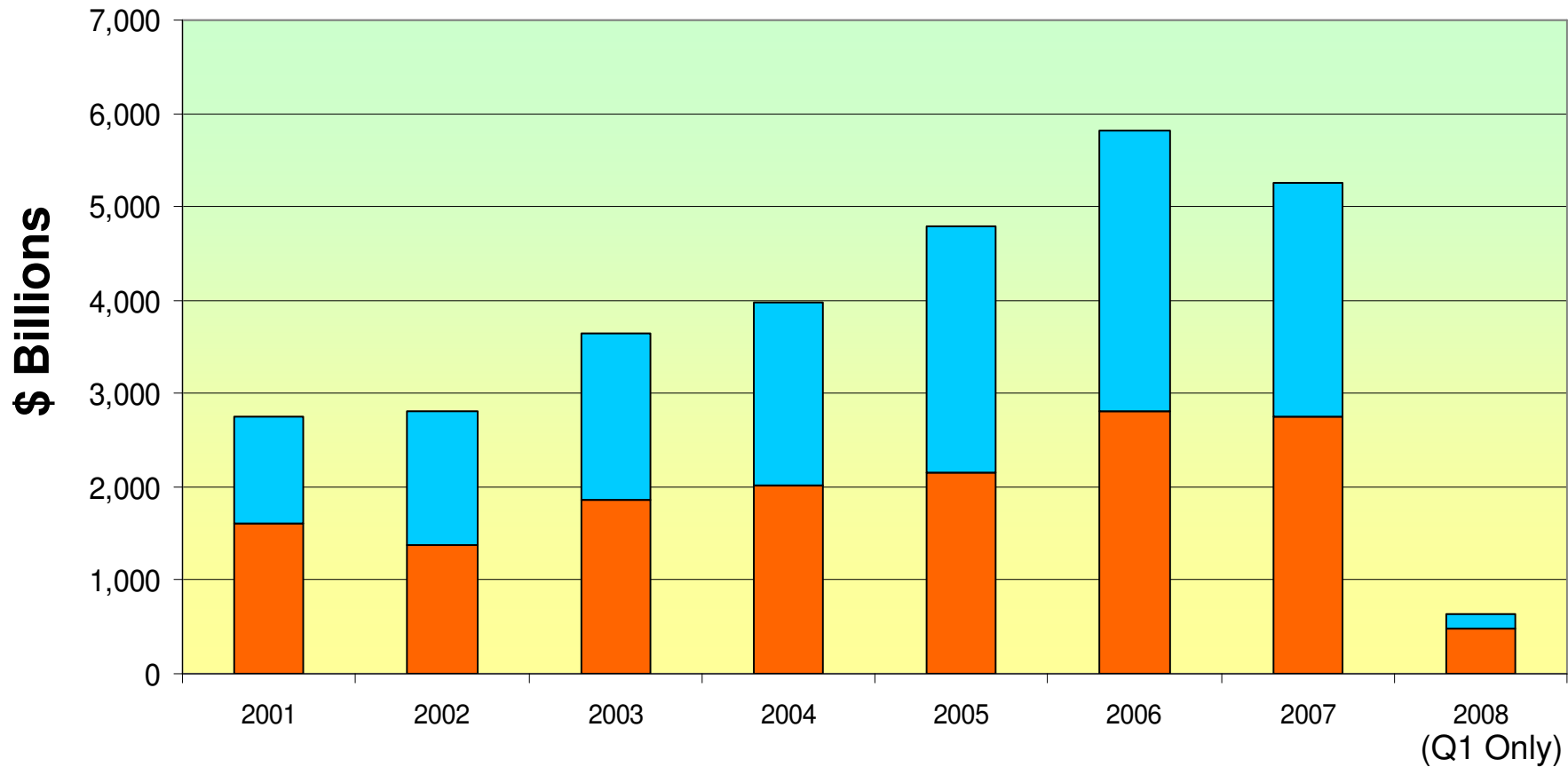
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Global Long-Term Debt Issuance



Asset-Backed and Mortgage-Backed Securities

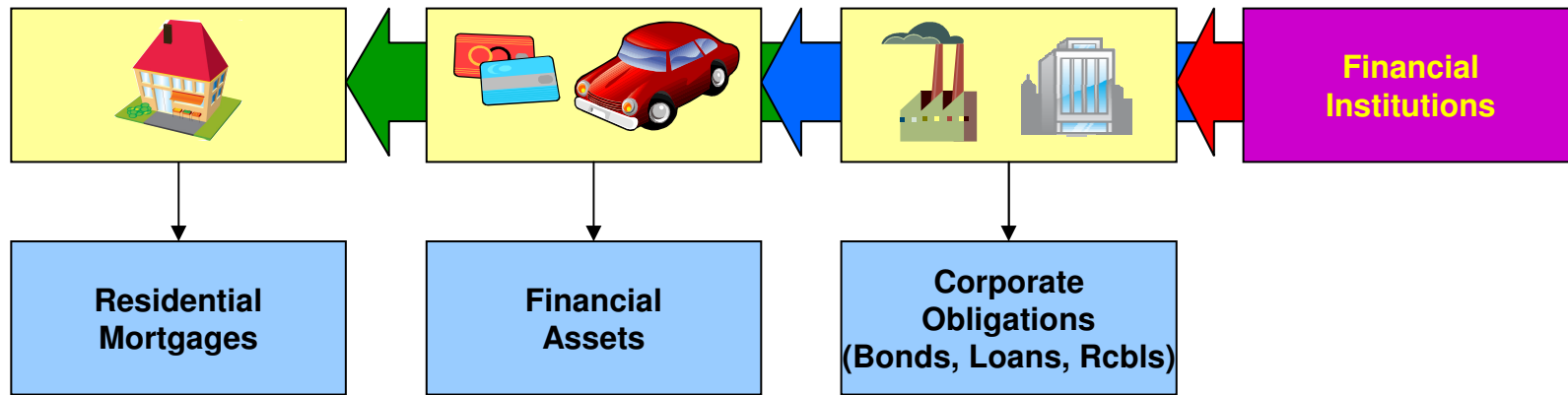
Investment Grade and High Yield Corporate Debt



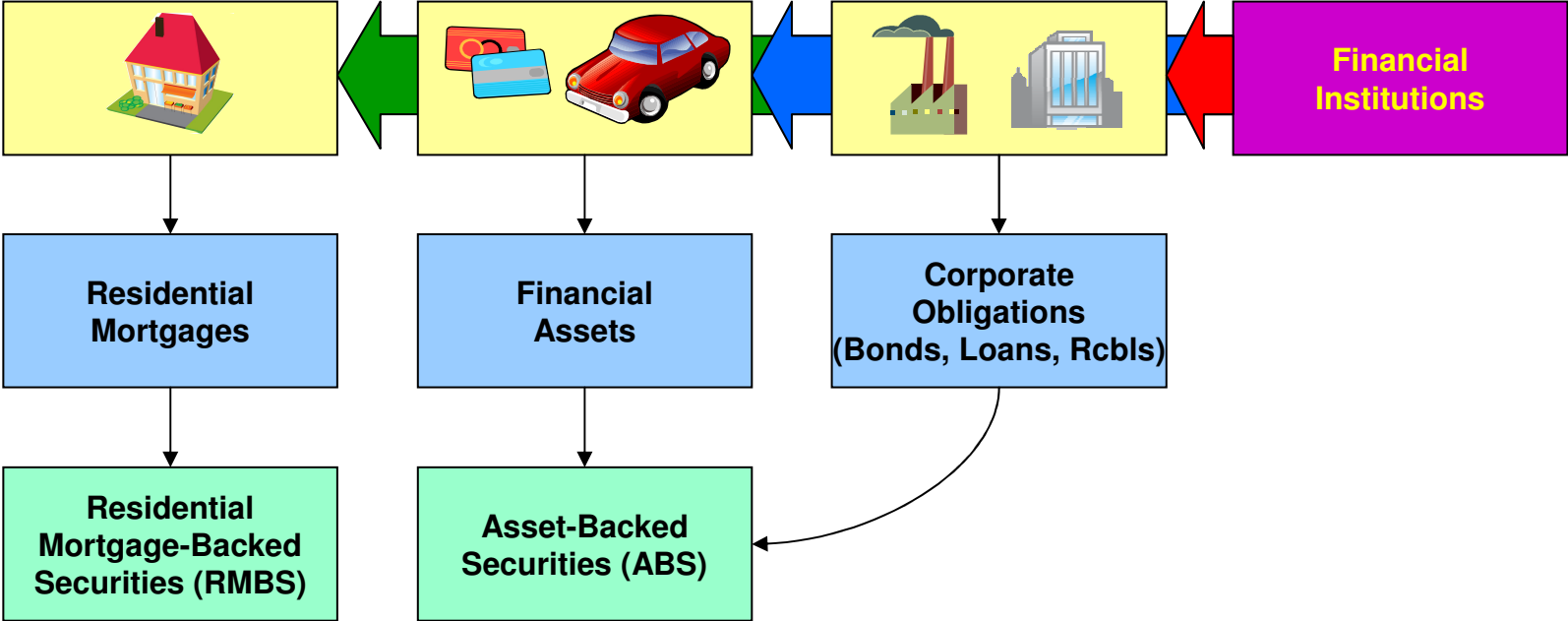
Source: Thomson Financial



Origination and Propagation of Structured Credit Exposures

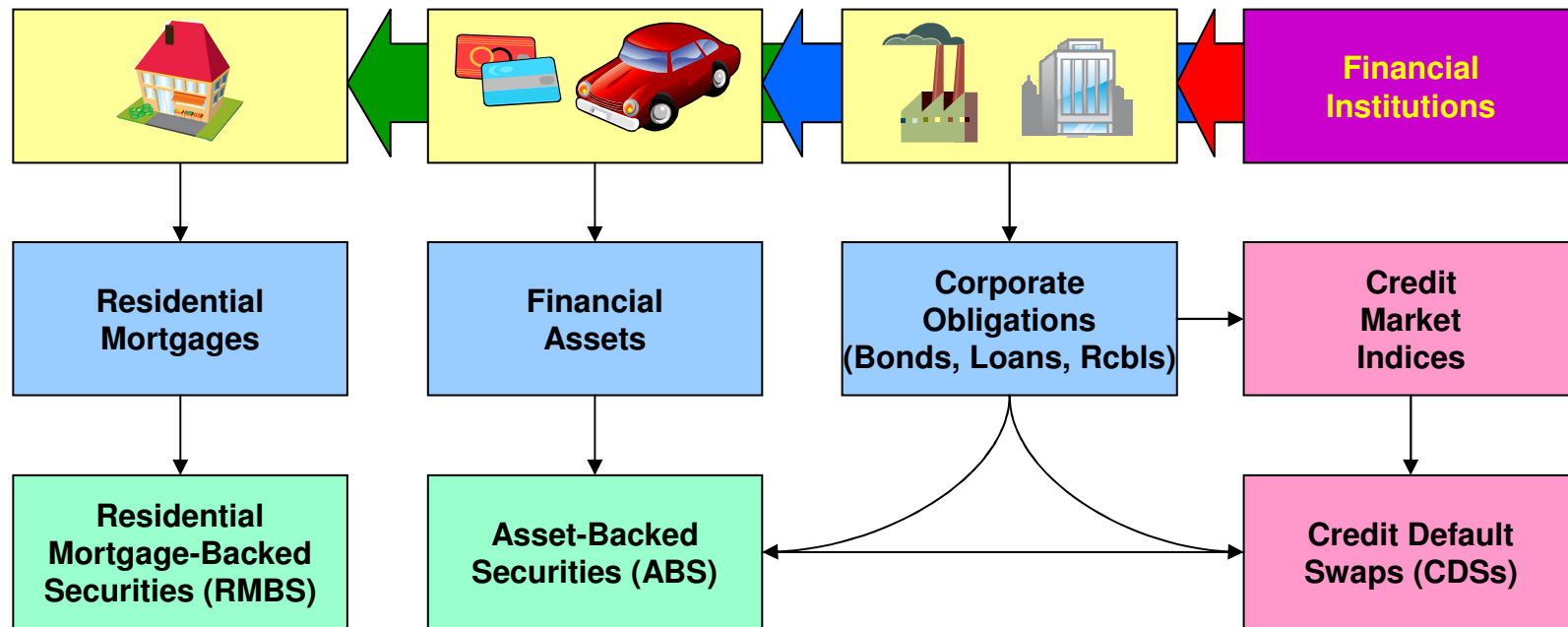


Origination and Propagation of Structured Credit Exposures

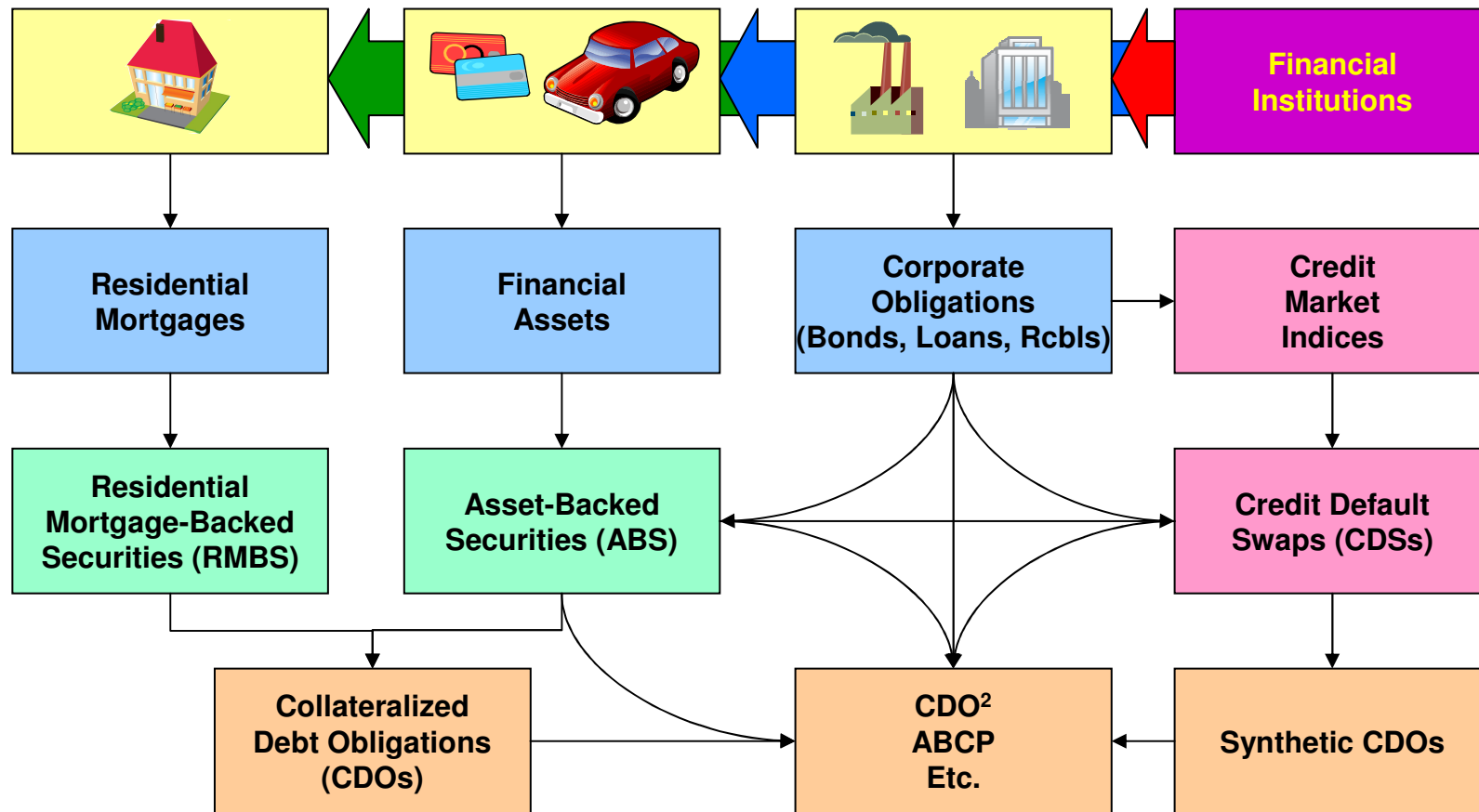


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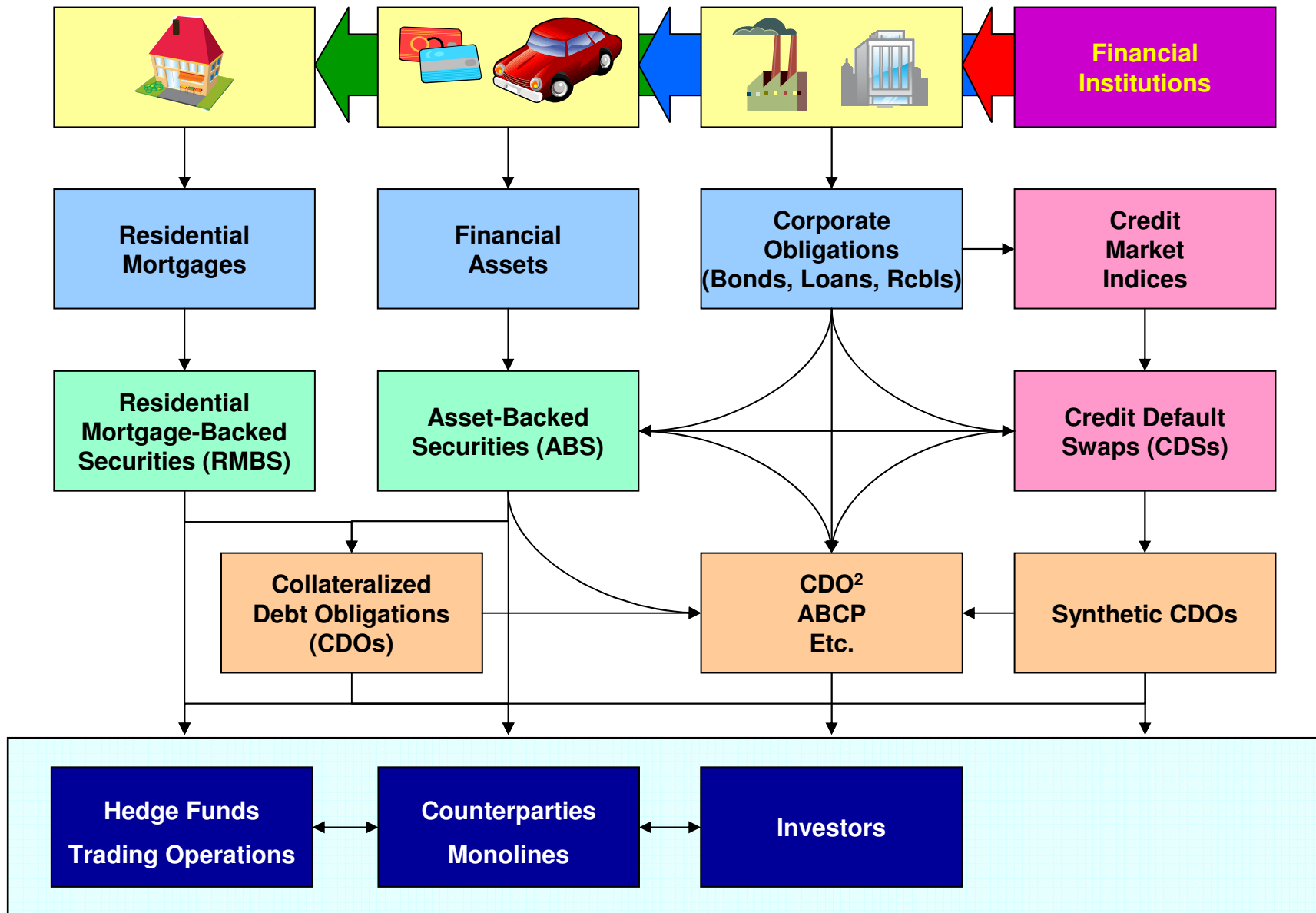
Origination and Propagation of Structured Credit Exposures



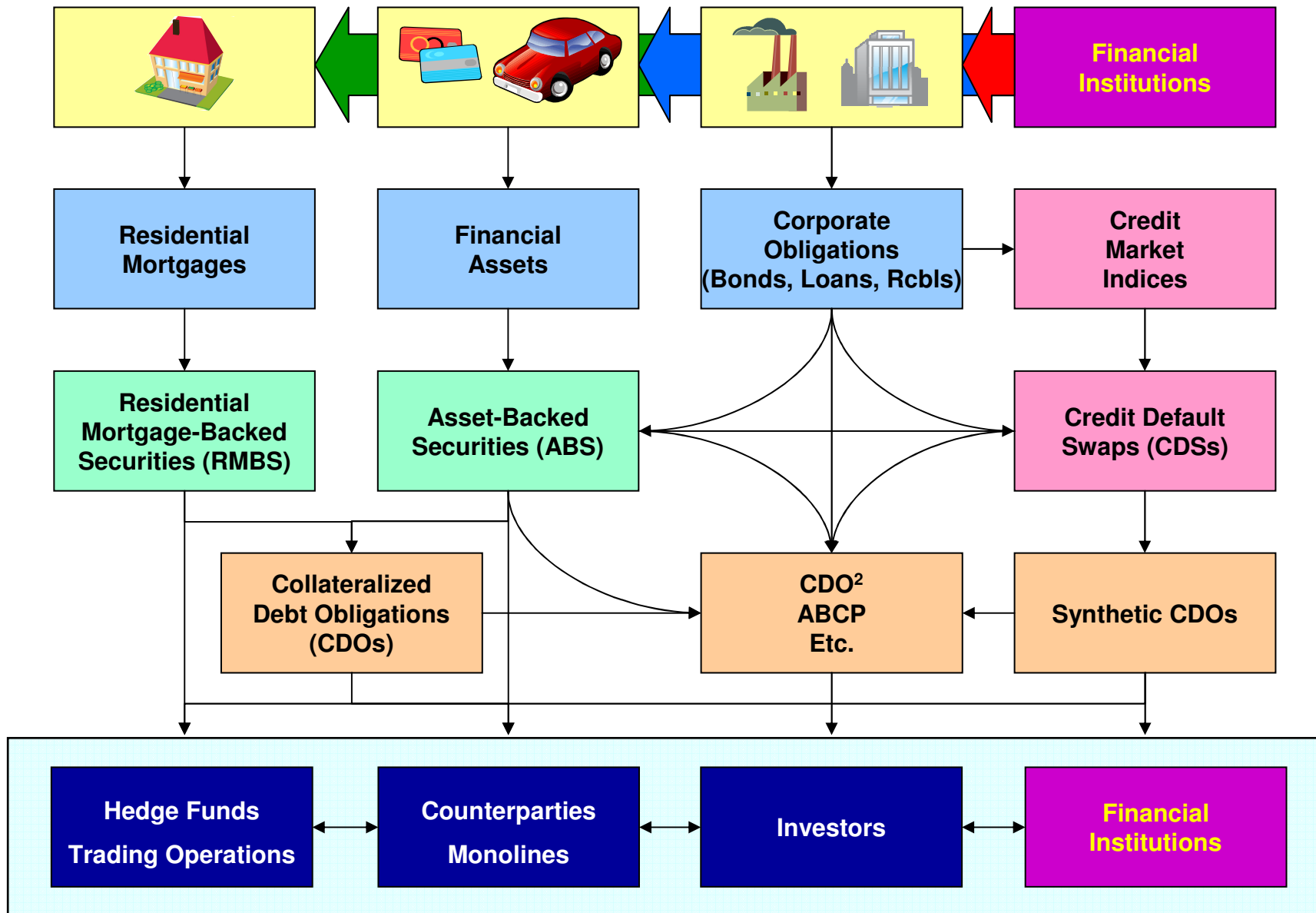
Origination and Propagation of Structured Credit Exposures



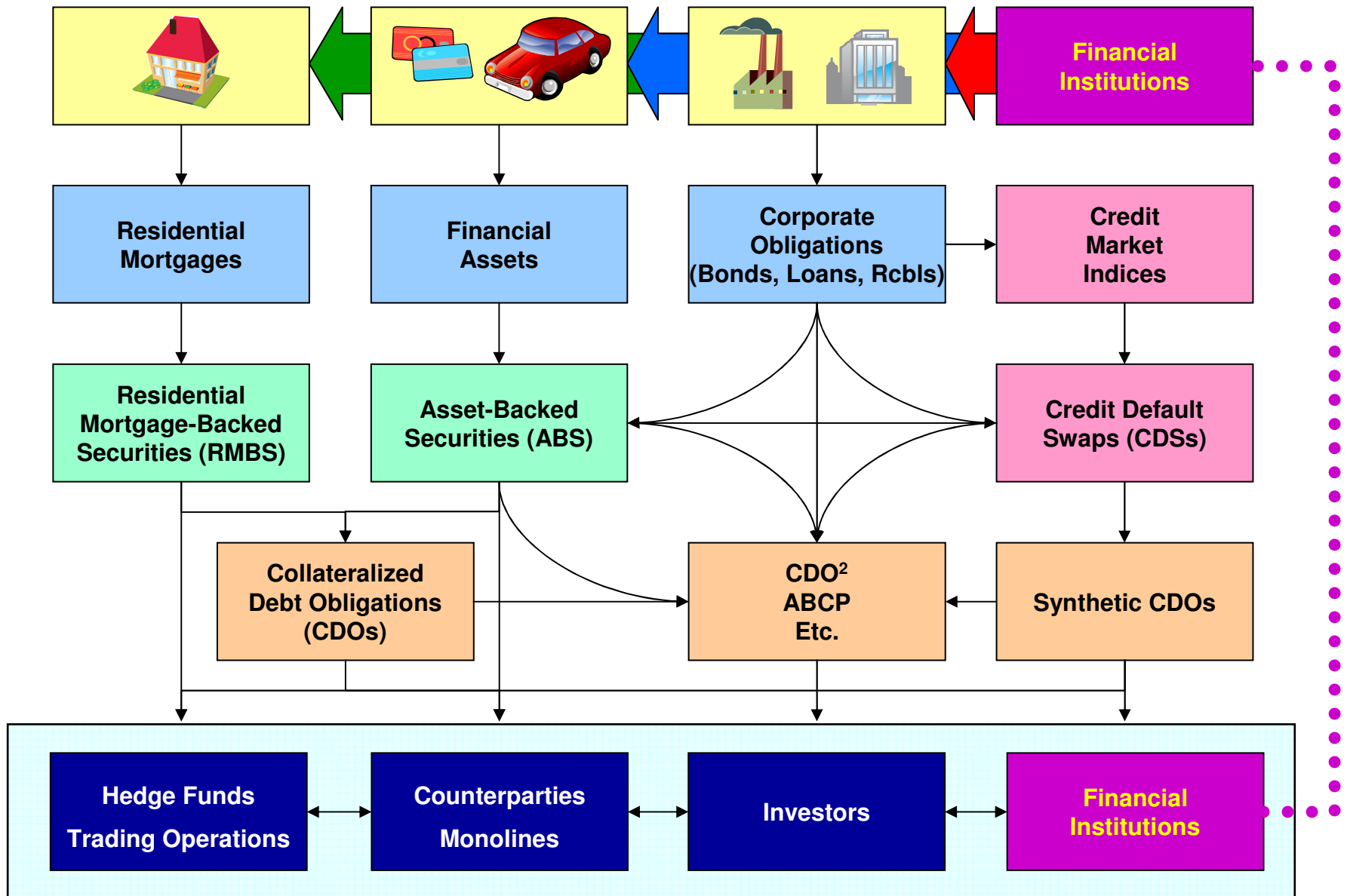
Origination and Propagation of Structured Credit Exposures



Origination and Propagation of Structured Credit Exposures



Origination and Propagation of Structured Credit Exposures



Capital Markets -- Then and Now

THEN

- Buy and hold investors
- Binary credit market
- Domestic orientation
- Long-only
- Basic financial structures
- Traditional banking roles



NOW

- Mark-to-market
- Full credit spectrum
- Globally integrated
- Varying exposures
- Complex financial structures
- Disintermediated banking

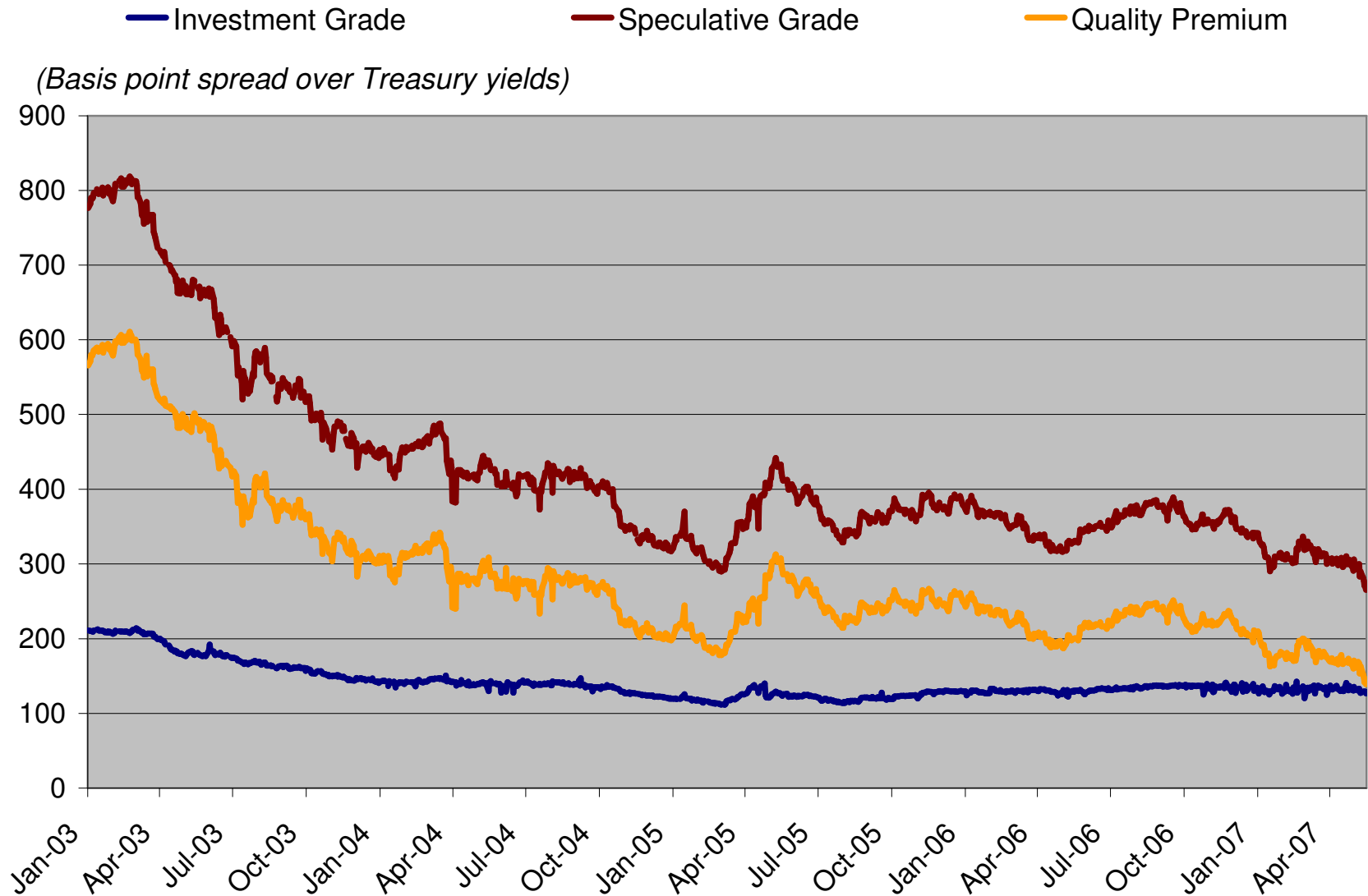


Credit Crunch: Aspects and Outcomes

Global Credit Turmoil: Underlying Performance Drivers

- **Overall environment: expanding market appetite for risk; declining risk spreads (2003 through mid-2007)**
- **2006/2007: sub-prime mortgage securitization performance deterioration and rating actions**
- **Mid-2007: widespread reassessment of risk tolerances, prompted by U.S. sub-prime RMBS performance**
- **Consequential (e.g. mark-to-market) impact on structured credit vehicles and financial intermediaries (banks, hedge funds, bond insurers, etc.)**
- **Canadian market impact: primarily ABCP, and entities with related exposures**

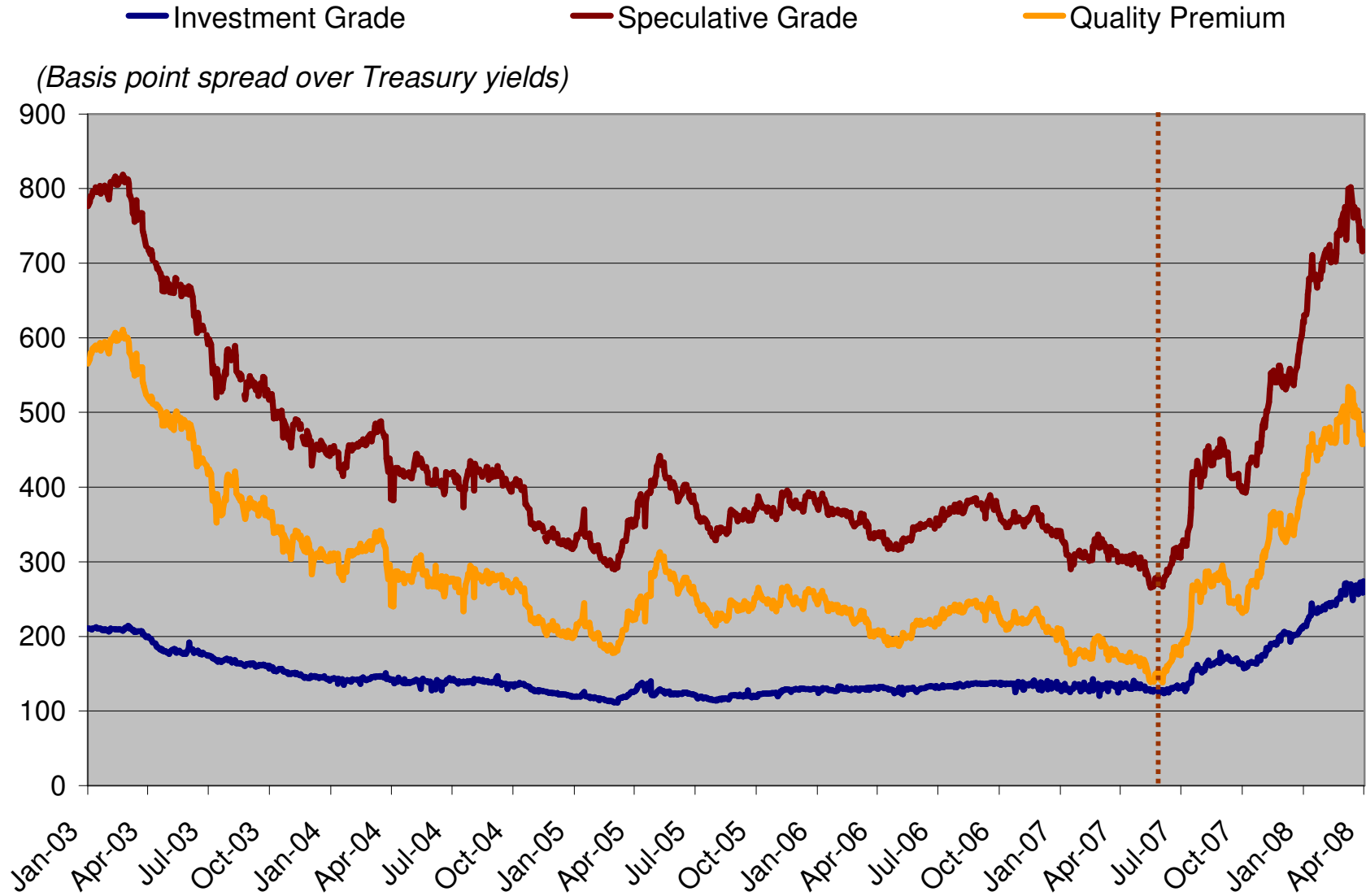
History of Declining Risk Spreads Through Mid-2007 . . .



Source : Standard & Poor's Global Fixed Income Research, Reuters; Data as of Apr. 10, 2008.



Risk Appetite Turned to Risk Aversion in Mid-2007

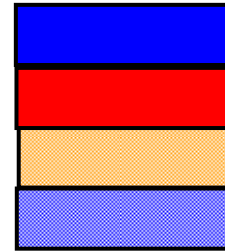


Source : Standard & Poor's Global Fixed Income Research, Reuters; Data as of Apr. 10, 2008.

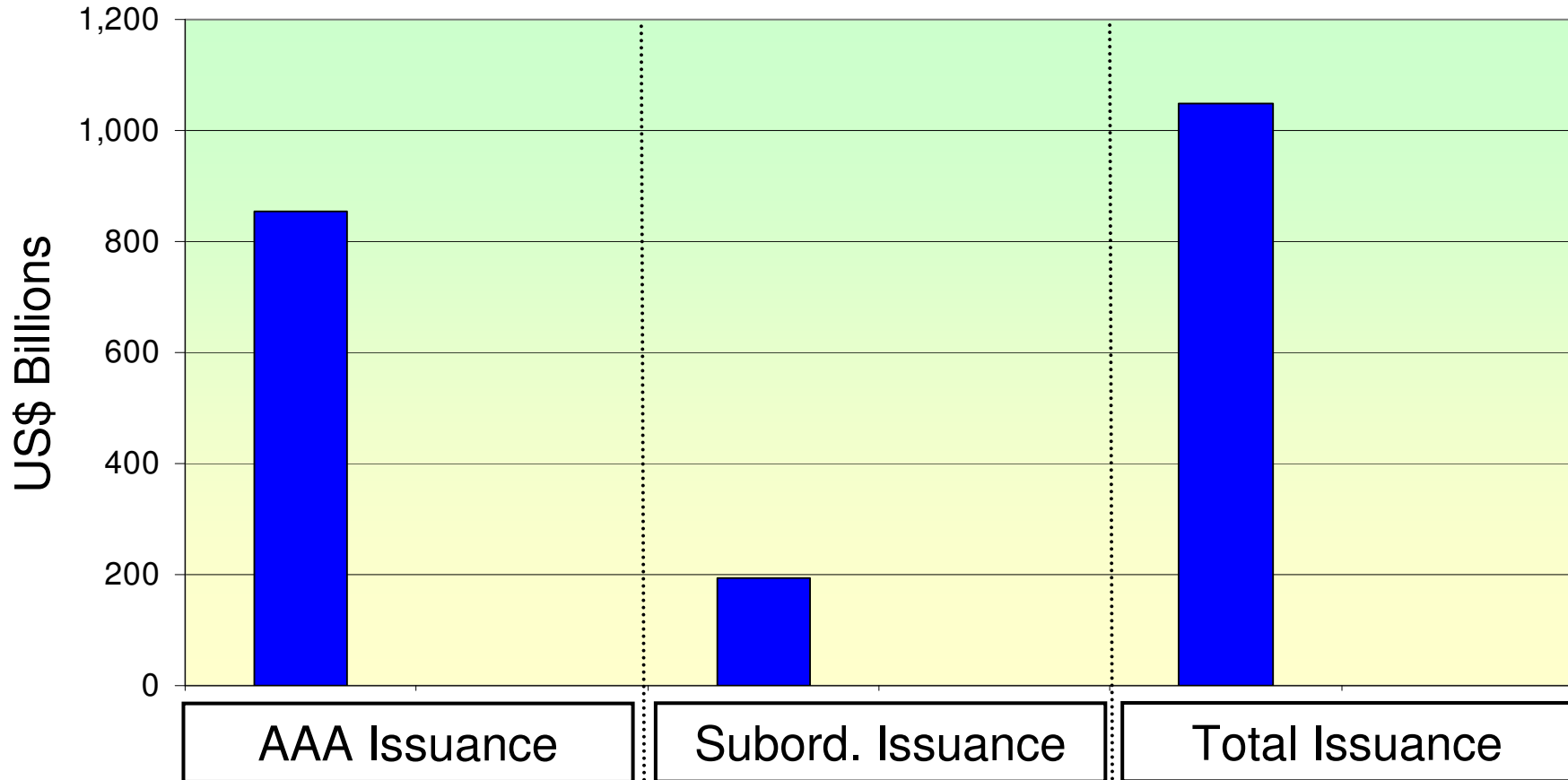


US Subprime RMBS: Original to Current Rating Transitions

For vintages Q1 2005 – Q3 2007



Original Rated Volume
Issue in Default
Rating Downgraded
Rating Maintained

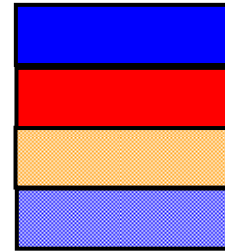


Data current as of 29 May 2008

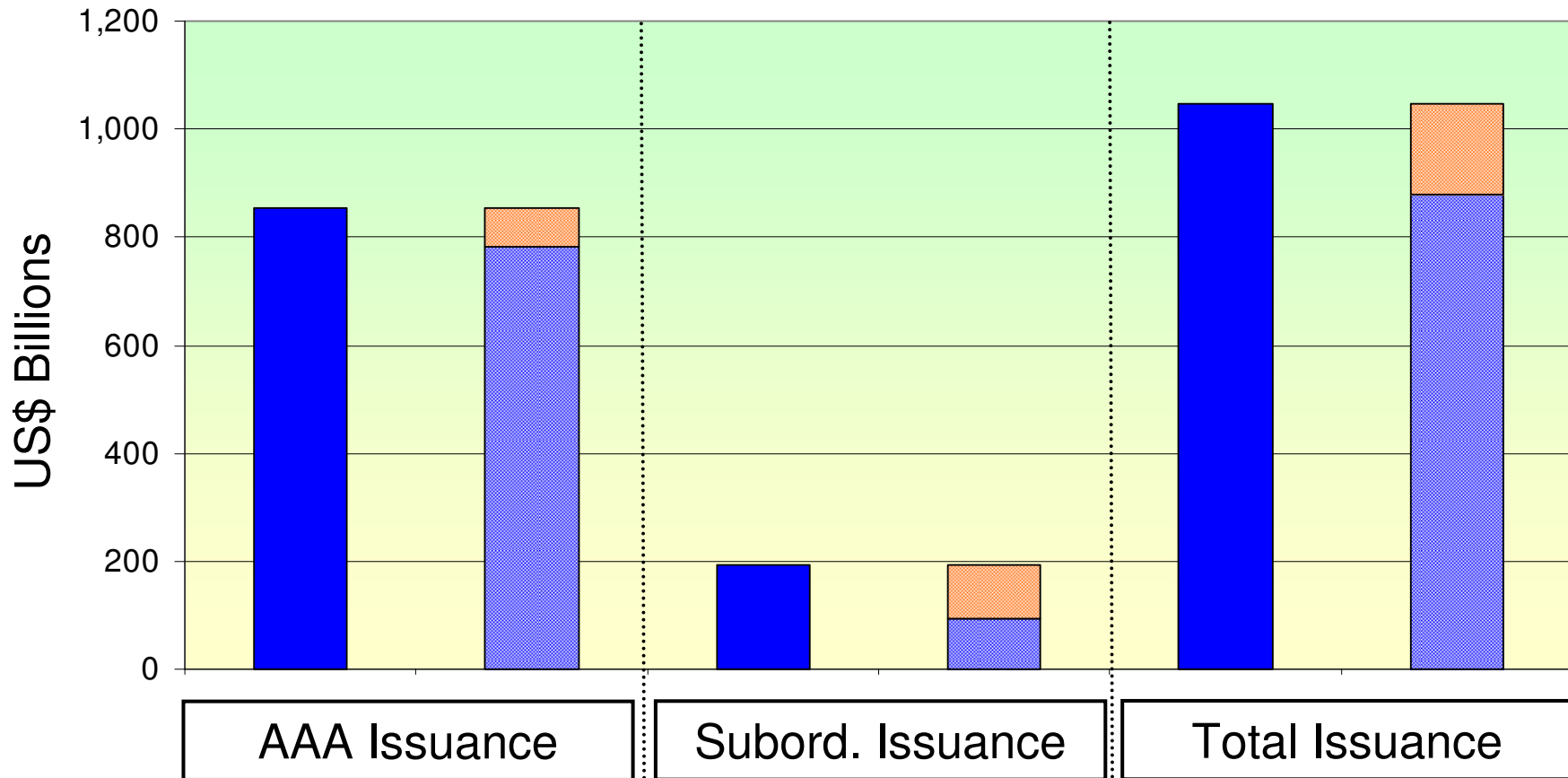


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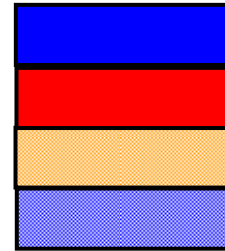


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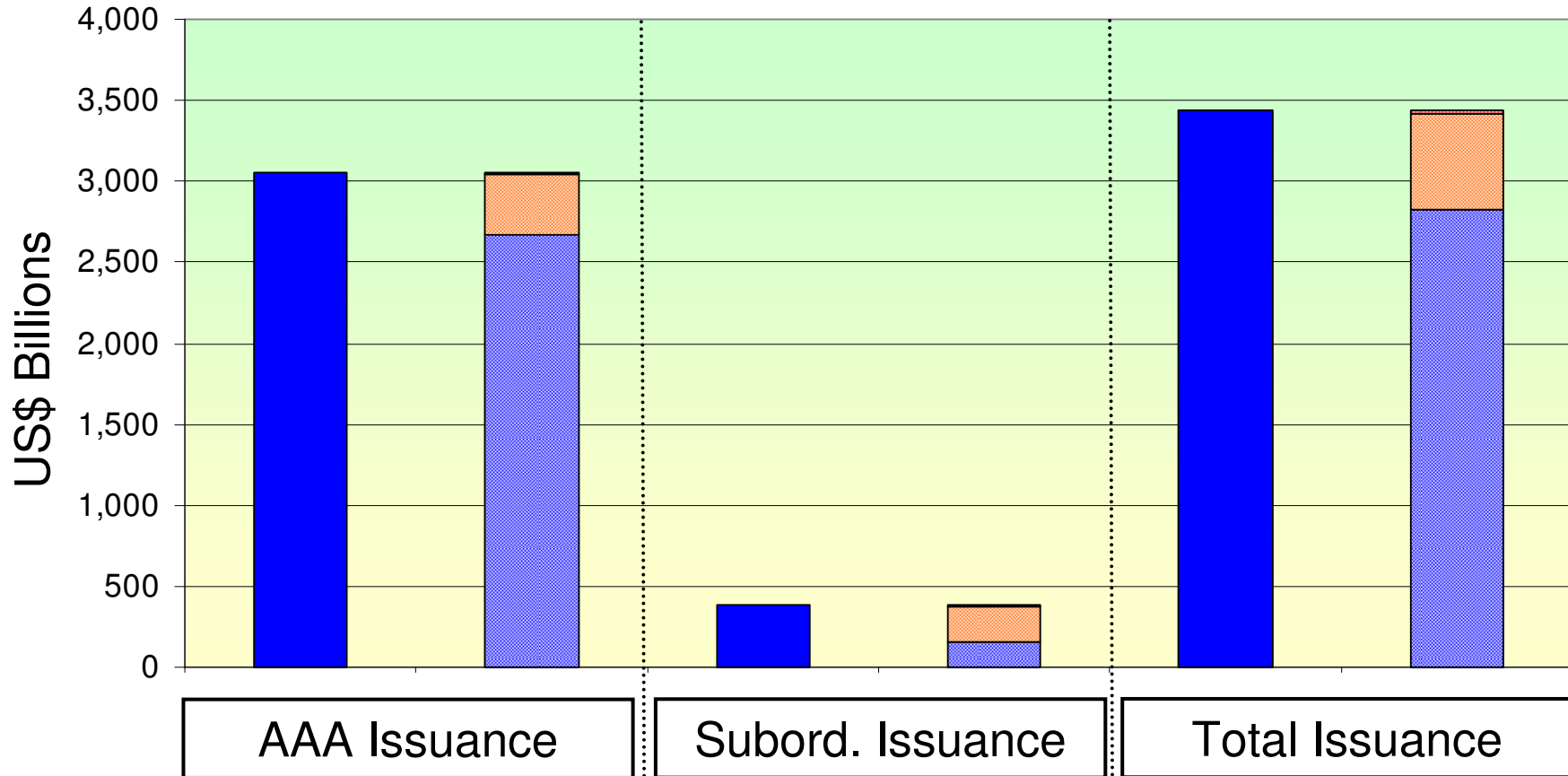


Original to Current Rating Transitions – US Securitization

Includes US RMBS & CDO of ABS and SIV-Lite for vintages Q1 2005 – Q3 2007



Original Rated Volume
Issue in Default
Rating Downgraded
Rating Maintained

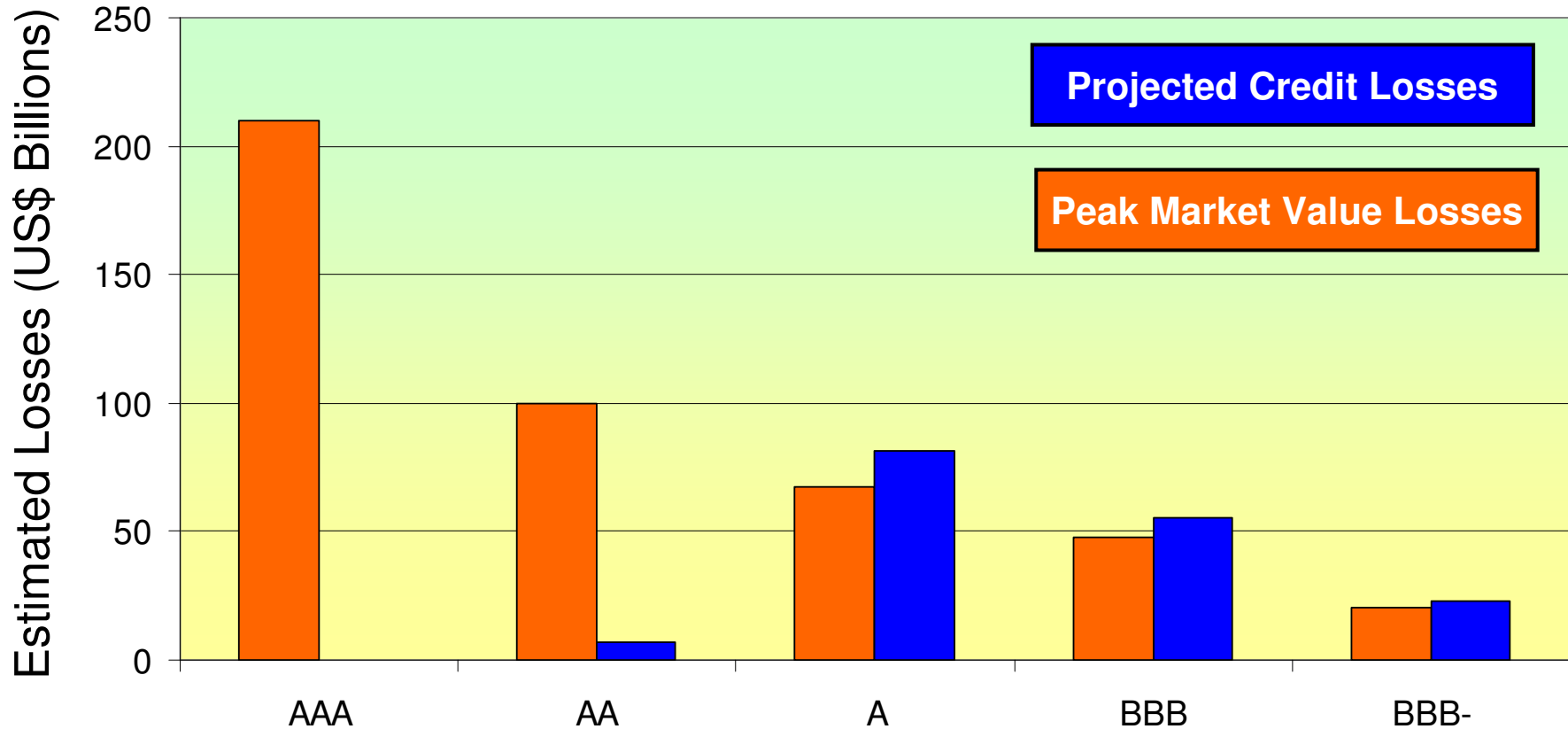


Data current as of 29 May 2008



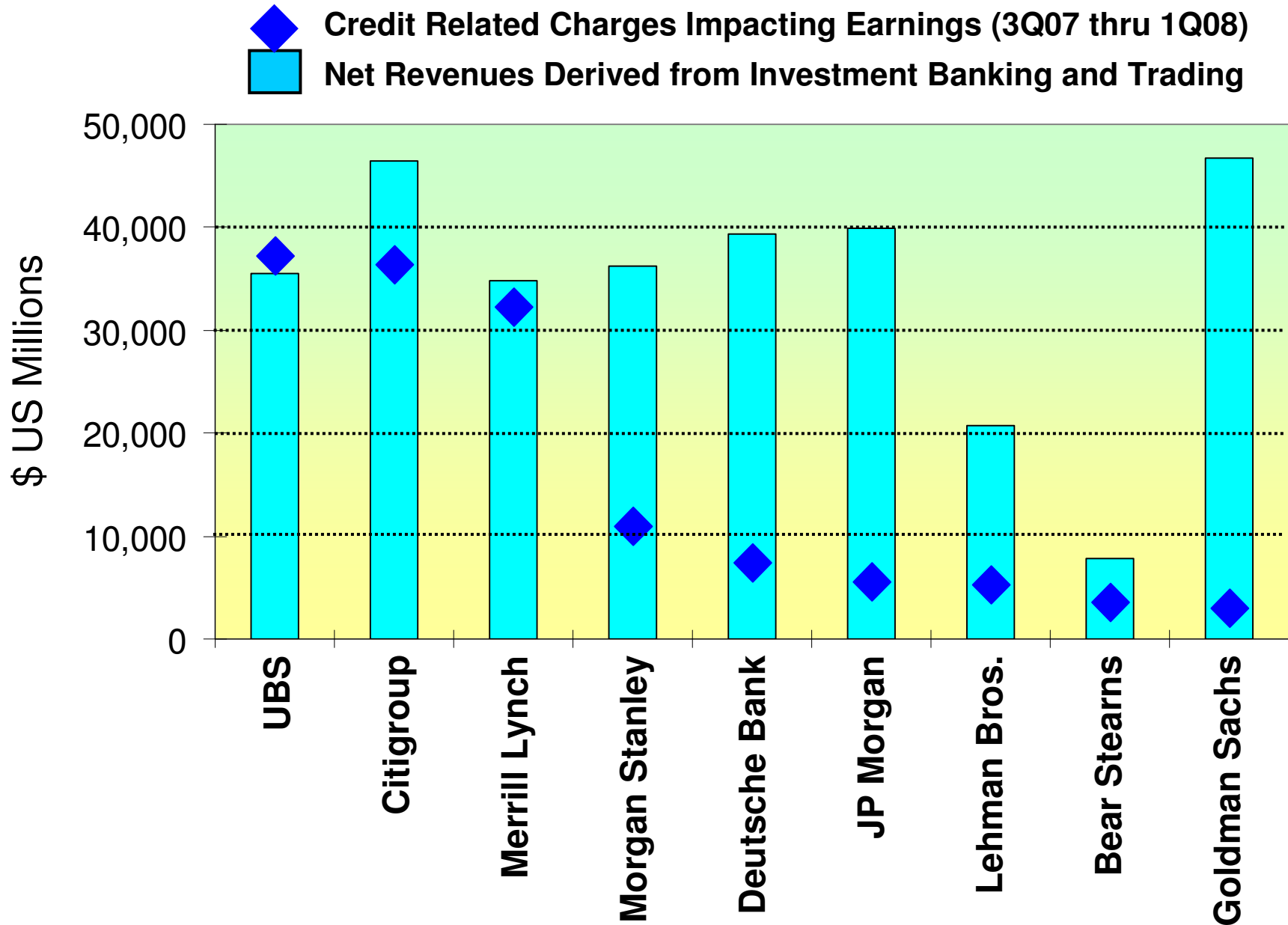
Market versus Credit Losses on US Sub-Prime MBS

Projected cumulative credit losses (2007 to 2013) versus peak market value loss between Jan/07 and Mar/08

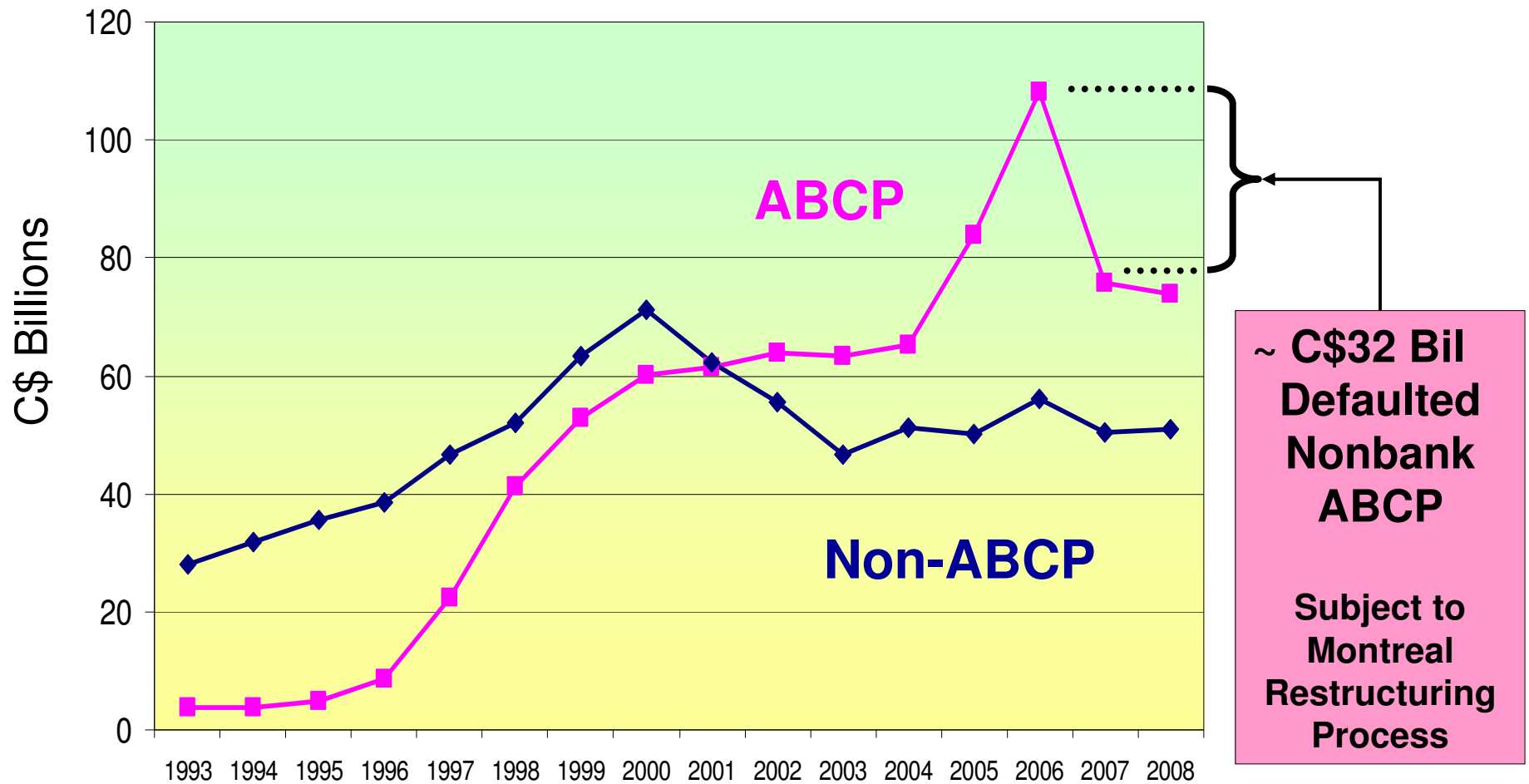


Source: Bank of England Financial Stability Report; Issue No. 23, April 2008

Major Broker/Dealers: Credit Related Charges vs Revenues



Outstanding Commercial Paper – Canada



Source: Bank of Canada

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Lessons from the Credit Crunch

Lessons Learned: Capital Markets Overall

- **Tendencies in “new” financial industry for excessive leverage and risk creation**
- **Challenges of risk management practices in complex, interdependent financial system**
- **Heightened emphasis on transparency**
- **Challenges of liquidity management in global capital markets**
- **Implications of fair value accounting**
- **Role of credit ratings and related analytics versus in-house risk review processes**

Lessons Learned: Credit Rating Agencies

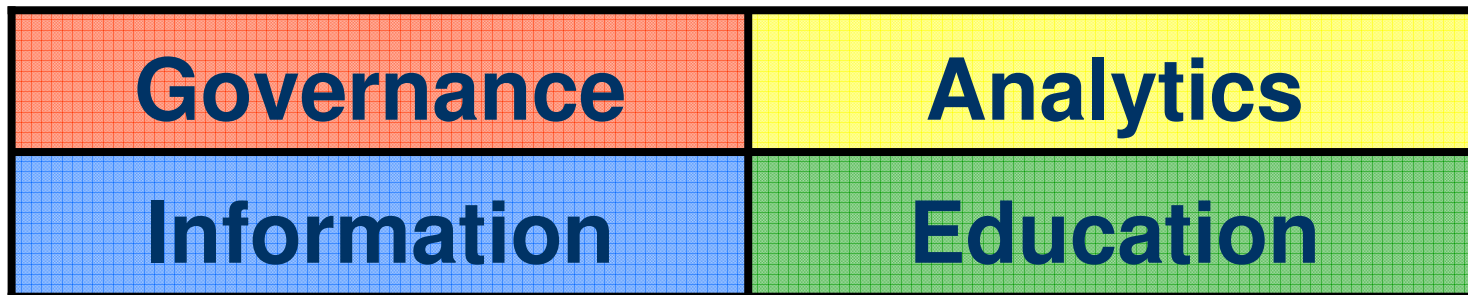
- **Continue to review and, if necessary, revise assumptions and methodologies in light of industry developments and ratings transition/default performance**
- **Clarify differentiation of default risk (addressed by ratings) from other risks (market value, issue liquidity) not addressed in ratings**
- **Examine merits of including a subscript with structured finance ratings to differentiate them from other (e.g. corporate, government) credits**
- **Respond to need for disclosure associated with complex, structured credits**
- **Enhance market confidence in rating agency processes**
- **Work with regulators and other market participants**

Recent S&P Initiatives on Rating Process and Governance

February Announcement

Comprehensive Series of Measures to:

- Enhance independence
- Strengthen the ratings process
- Increase transparency
- Better serve global markets



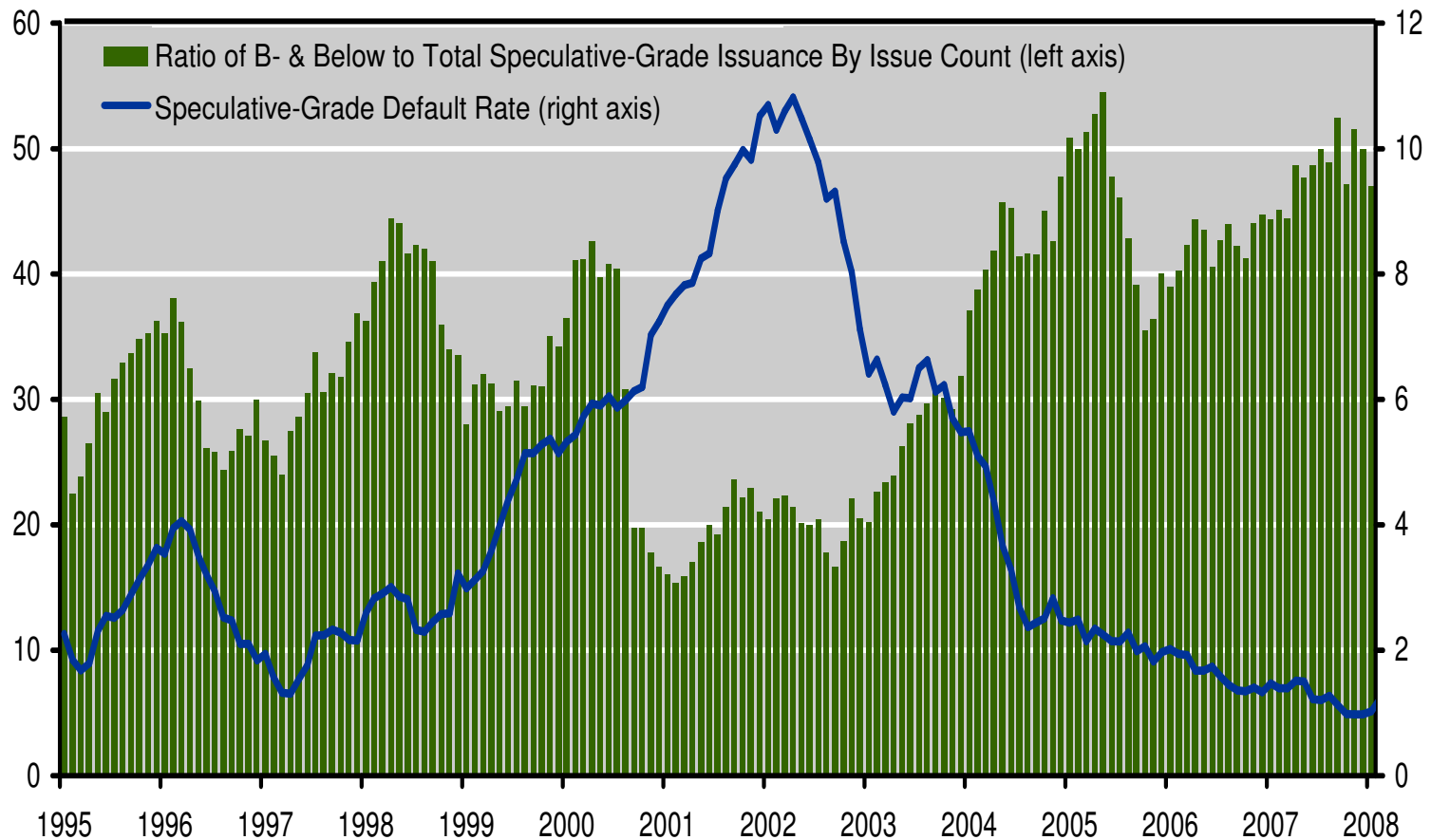
Recent S&P Initiatives on Rating Process and Governance

<p style="text-align: center;"><u>Governance</u></p> <ul style="list-style-type: none">• Establish Ombudsman function• Institute periodic external compliance review• Institute analyst rotations• Establish Risk Oversight group	<p style="text-align: center;"><u>Analytics</u></p> <ul style="list-style-type: none">• Highlight non-default risk factors• Expand surveillance capabilities• Establish model validation and oversight function• Expand analyst training
<p style="text-align: center;"><u>Information</u></p> <ul style="list-style-type: none">• Develop securitization identifier• Enhance scenario analytics• Support expanded disclosure• Scrutinize information quality procedures of issuers	<p style="text-align: center;"><u>Education</u></p> <ul style="list-style-type: none">• Publish credit rating user manual• Establish Advisory Council• Broaden distribution of analysis and opinions• Expand educational outreach

Credit Outlook

Elevated Issuance Of Low-Grade Debt Signals Alert

Share of 'B-' deals and lower to total speculative grade (%)



U.S. 12-month default forecast to rise from 1% up to 4.6% (versus LT average of 4.4%, and recessionary peak >10%).

Speculative grade default rates are reported for a rolling window of the trailing 12 months. Issuance is for the trailing 6 months includes all public and rule 144a issuance of straight, convertible, floating-rate, and medium-term notes issued into the U.S. marketplace by financial and nonfinancial entities. Data as of Feb. 29, 2008.

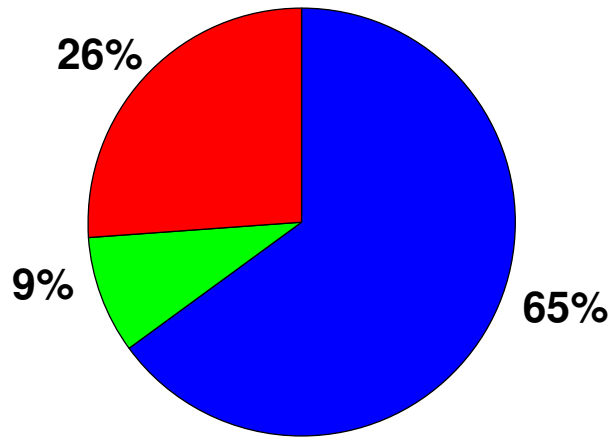
Source: Standard & Poor's Global Fixed Income Research; Standard & Poor's CreditPro®; Thomson Financial.

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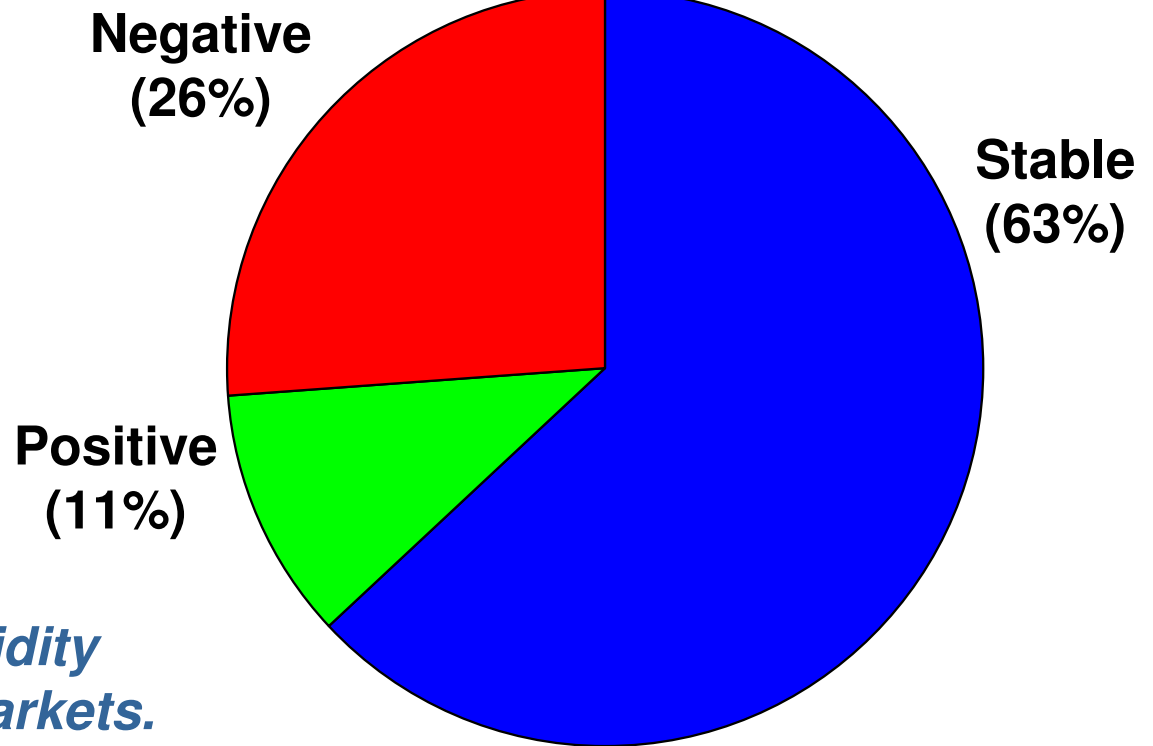
Outlook Distribution Of Canada's Rated Universe

...no significant change in rating outlooks...

As at July 31, 2007



As at May 23, 2008



...following the liquidity disruption in credit markets.

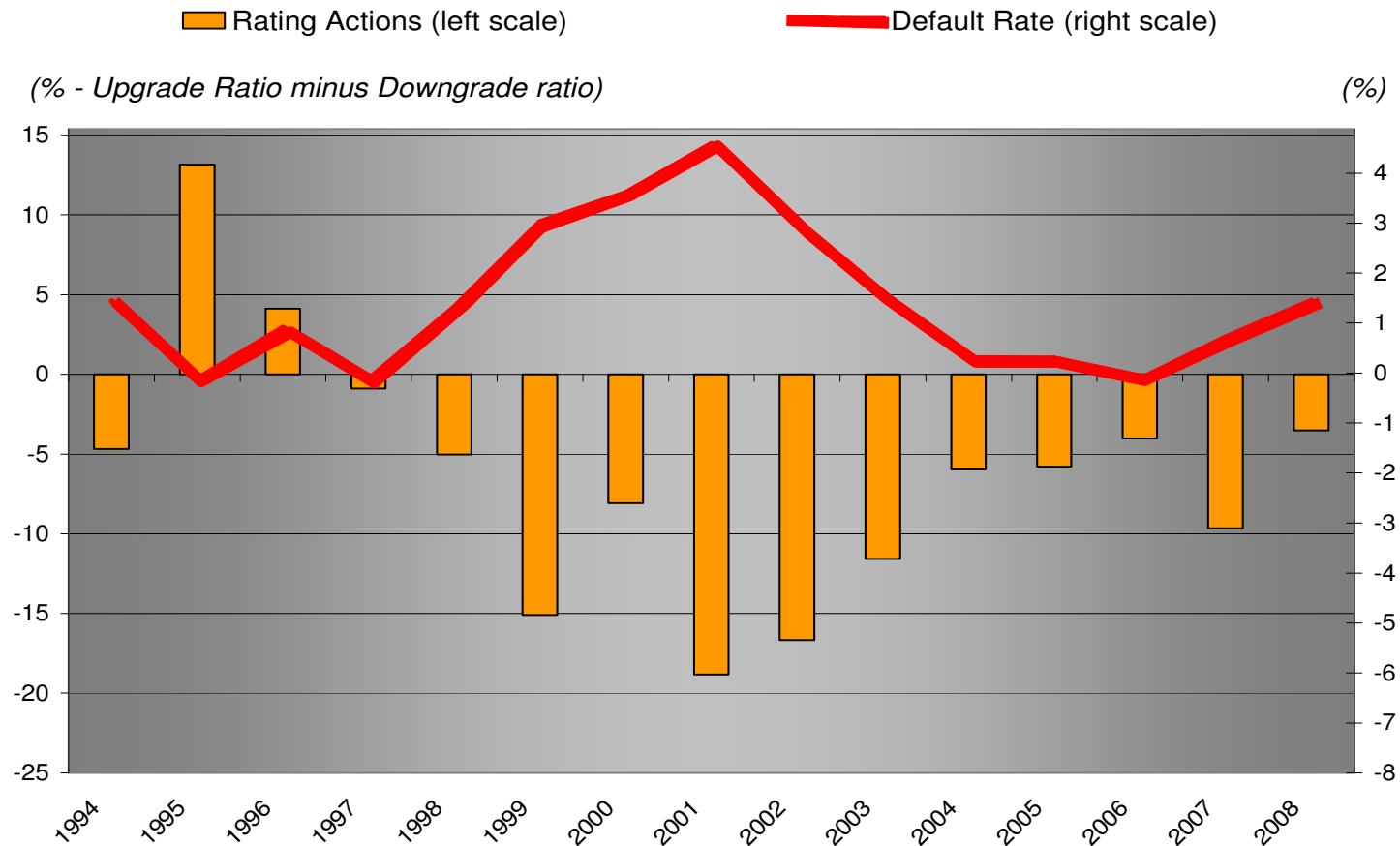
Note: Positive includes positive outlook and CreditWatch Positive listings and Negative includes negative outlooks and CreditWatch Negative listings. The number of companies in the rated universe is based on ratings assigned to companies at the parent level and excludes subsidiary level ratings.

Source: Standard & Poor's Global Fixed Income Research

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Canadian Ratings Migration And Default Trends

Pattern of net downgrades for corporates persists...



...while the default rate trends upwards.

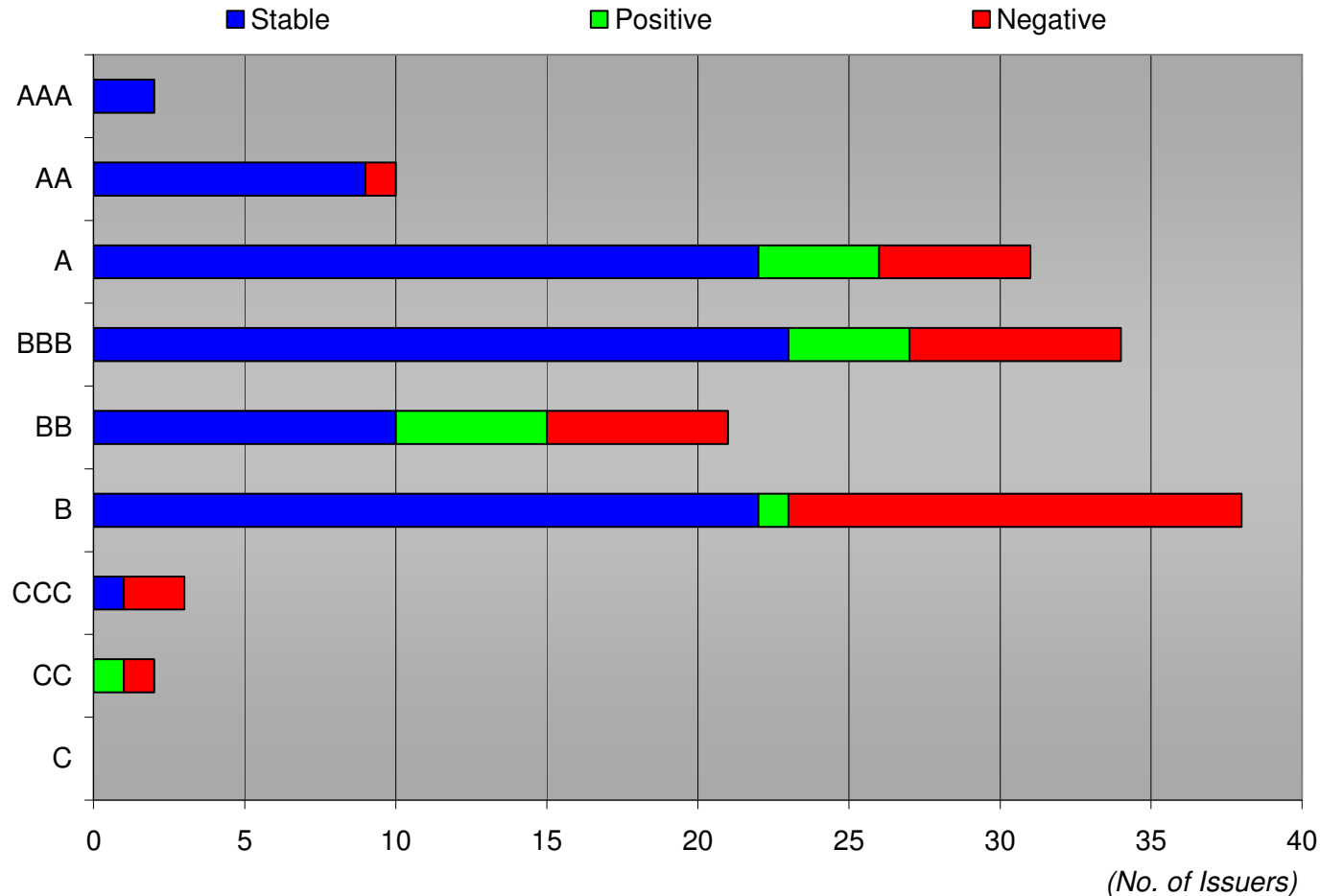
Note: Upgrade (downgrade) ratio is the number of upgrades (downgrades) recorded annually as a percentage of the number of issuers in the rated universe at the start of the year.

Source: Standard & Poor's Global Fixed Income Research, Standard & Poor's CreditPro®



Outlook Distribution By Rating Category

...negative ratings bias prevalent among...



...'B' rated issuers who are typically most vulnerable to default...

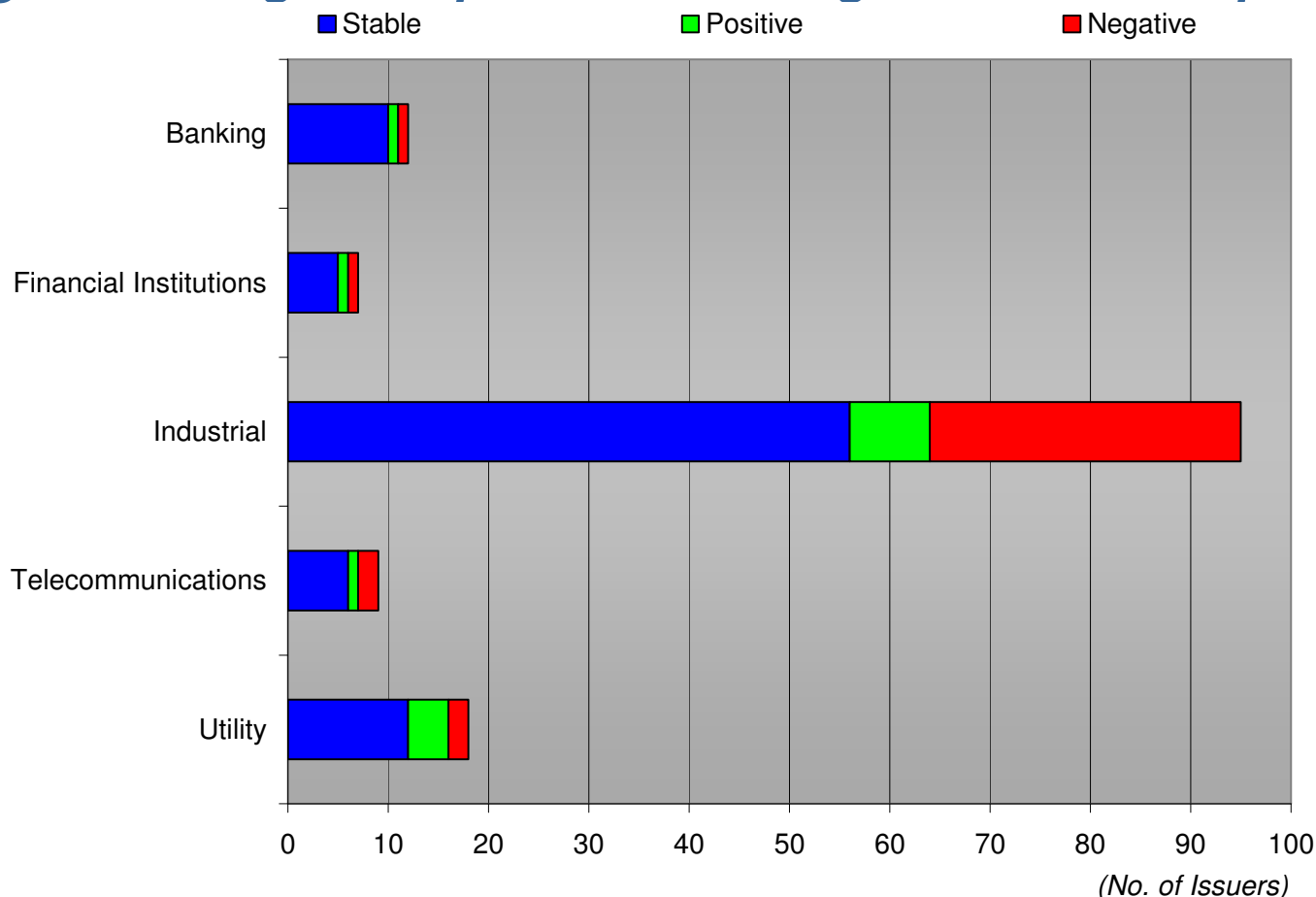
Note: As of May 23, 2008. Positive includes positive outlook and CreditWatch Positive listings and Negative includes negative outlooks and CreditWatch Negative listings. The number of companies in the rated universe is based on ratings assigned to companies at the parent level and excludes subsidiary level ratings.

Source: Standard & Poor's Global Fixed Income Research



Outlook Distribution By Sector

...negative ratings bias prevalent among industrial companies...



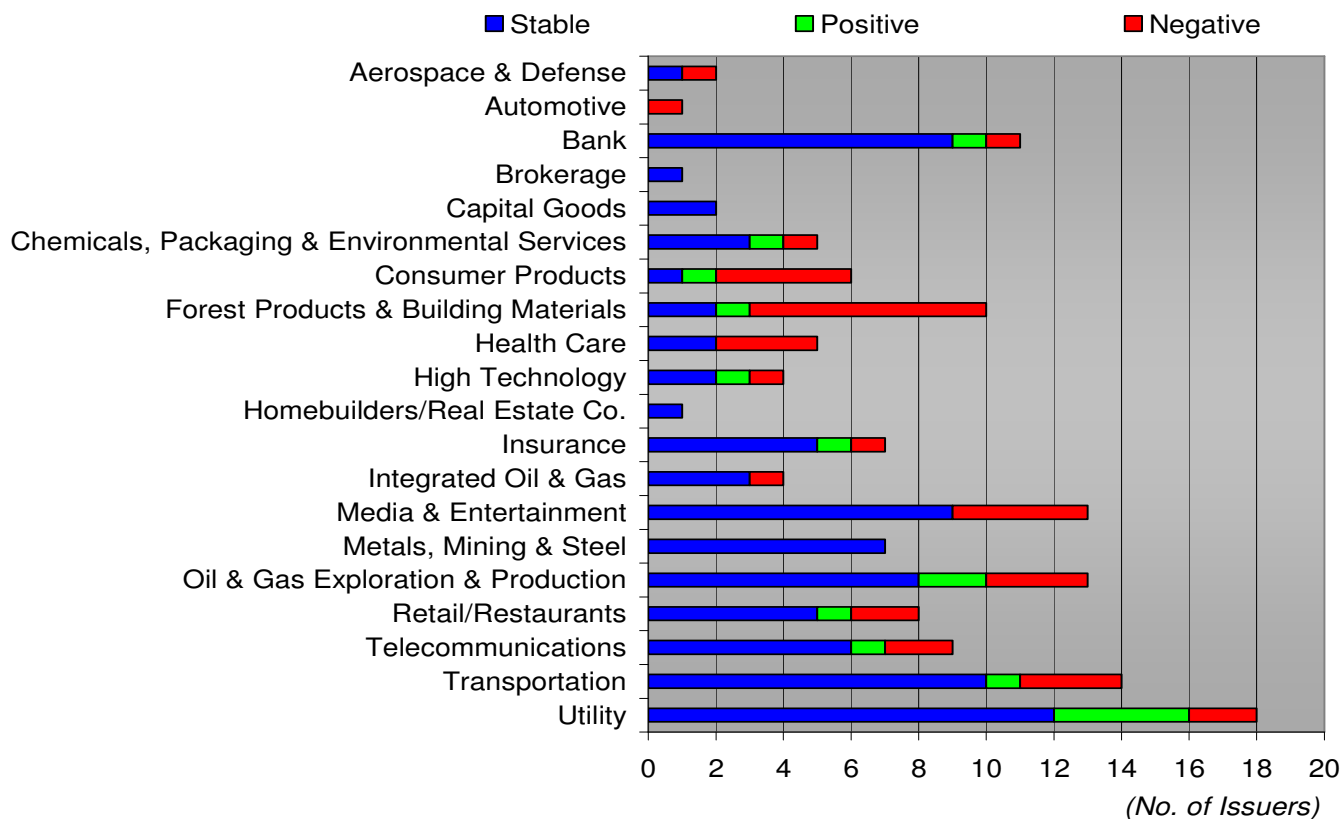
...hit by slowing economy, more restrictive financing conditions...

Note: As of May 23, 2008. Positive includes positive outlook and CreditWatch Positive listings and Negative includes negative outlooks and CreditWatch Negative listings. The number of companies in the rated universe is based on ratings assigned to companies at the parent level and excludes subsidiary level ratings.
 Source: Standard & Poor's Global Fixed Income Research



Canada Outlook Distribution Of All Rated Issuers

...stable or positive outlooks for 74% of the rated universe...



...negative rating pressures persist, more defaults for forest & building products sector...

Note: As of May 23, 2008. The number of companies in the rated universe is based on ratings assigned to companies at the parent level and excludes subsidiary level ratings. Positive includes positive outlook and CreditWatch Positive listings and Negative includes negative outlooks and CreditWatch Negative listings. The number of companies in the rated universe is based on ratings assigned to companies at the parent level and excludes subsidiary level ratings.
Source: Standard & Poor's Global Fixed Income Research

The Canadian Credit Outlook – Market-wide Risks

Risk Factor	Expected or Potential Impact
Strong C\$	Pressure continuing in various manufacturing and consumer product / retail sectors
Exposure to US economy	Direct risk for many industrial sectors and indirect risk for broader portfolio via domestic slowdown
Turbulence in global financial markets	Exposure on selected financial institutions and corporate cash positions; refinancing pressures?
M&A, shareholder-value initiatives	LBO event-risk dampened by increased cost of debt finance; acquisitions to continue at some level
Commodities demand and prices	Metals sectors benefit from strong pricing and tight supply; oil price offsets replacement challenges
Competitive and regulatory pressures	Forest products and printing under stress, telecoms potentially; utilities are mostly well positioned

Just about finished . . .

Key Take-Aways

- **Recent credit turmoil reflects adaptation to the more integrated global capital market that has rapidly embraced complex technical tools**
- **Lessons learned from recent experience will strengthen foundation of global capital markets**
- **Uncertain when turmoil will subside; possibly in transition to more conventional credit downturn**
- **We expect future Canadian credit cycle development will reflect US economy, among other factors**
- **S&P governance and process reforms designed to improve transparency and build greater market confidence in credit ratings coverage**

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