



Portfolio Management: Royal Bank of Canada Case Study

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Royal Bank of Canada

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Agenda

I. Introduction

II. Development of Portfolio Management at Royal Bank

The evolution of credit portfolio management at RBC.

- Stage 1
- Stage 2
- Stage 3

III. RBC: Market Measures of Success

Performance through the downturn.

- Net Income
- Equity
- Funding
- Credit Default Swaps

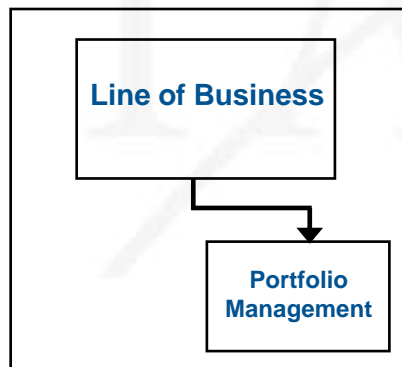
IV. Evolution and Summary Remarks

I. Introduction: Organization of Portfolio Management at RBC

RBC's loan portfolio management now has elements of all three models of credit portfolio management but this has evolved over time.

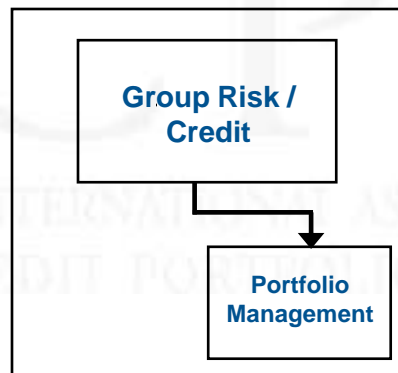
Stage 1

Execution/
Business Analytics



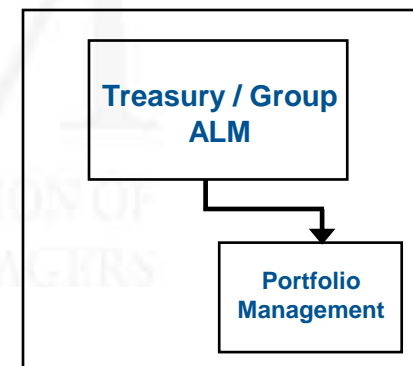
Stage 2

Policy/Rating/
Model Calibration



Stage 3

Liquidity/
Counterparty



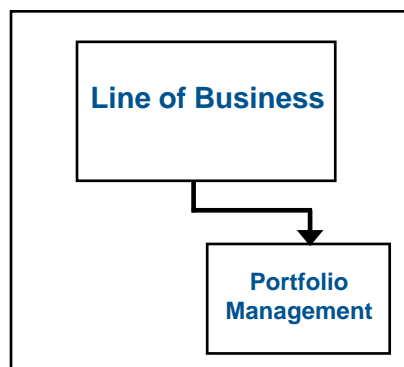
II. Development of Portfolio Management at Royal Bank

The evolution of credit portfolio management at RBC.

- Stage 1
- Stage 2
- Stage 3



Development of Portfolio Management at Royal Bank – Stage 1



Stage 1

Line of Business Driven

Early 1990s

- Industry Specialization (creation of RBC's IPMA Group)
- Limit Structure
- Risk Assessment – Ratings Fungibility
- Governance Framework for Exceptions, Single Name Exposure
- Credit Strategies
- Risk Metrics (KMV) and Risk/Return Discipline

External Events and Impact

- 1992 Collapse of real estate.
- \$1.9 billion of loan losses (\$2.5 billion in 2011 dollars) in real estate.

Actions:

- Creation of Portfolio Management Group.
- Establish fungible ratings and new 21 notch scale.
- Industry Specialization including formation of Industry Analytics Team ("IPMA").
- Limits: Single Name, Industry.
- Risk/Return: Beta testing of KMV; Formation of RAROC metrics; capital on discrete risk.

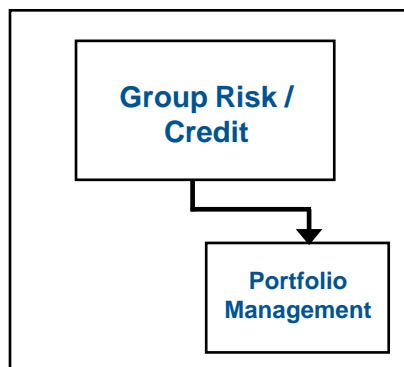
Result:

- Material reduction in Single Name Exposures.

Provision for Credit Losses

- 1992: PCL is 1.99% of total loans and 19.2% of Net Income
- 1995: PCL of \$576MM equating to 0.5% of Total Loans and 30.1% of Net Income

Development of Portfolio Management at Royal Bank – Stage 2



Stage 2

Risk Management Partnership

Late 1990s/Early 2000s

- IPMA folded into Risk Management
- “Early” Portfolio/Basket Trades / FASB 133 Accounting Credit Default Swaps – market risk mitigation
- Early Warning
- Data Management
- Private-side Model/ Accrual Loan Portfolio

External Events and Impact

- Emerging Markets/ LTCM Crisis.
- Dot.com Bubble Bursts.

Actions:

- Partnership with Risk Management for credit portfolio management initiatives including the movement of Industry Specialized Analytics group (“IPMA”) to risk management.
- Wholesale lending moves to Capital Markets.
- Integration of Loan application and booking systems with complete back-end MIS.
- Hedging of discrete risk via CDS and “early” basket trades.

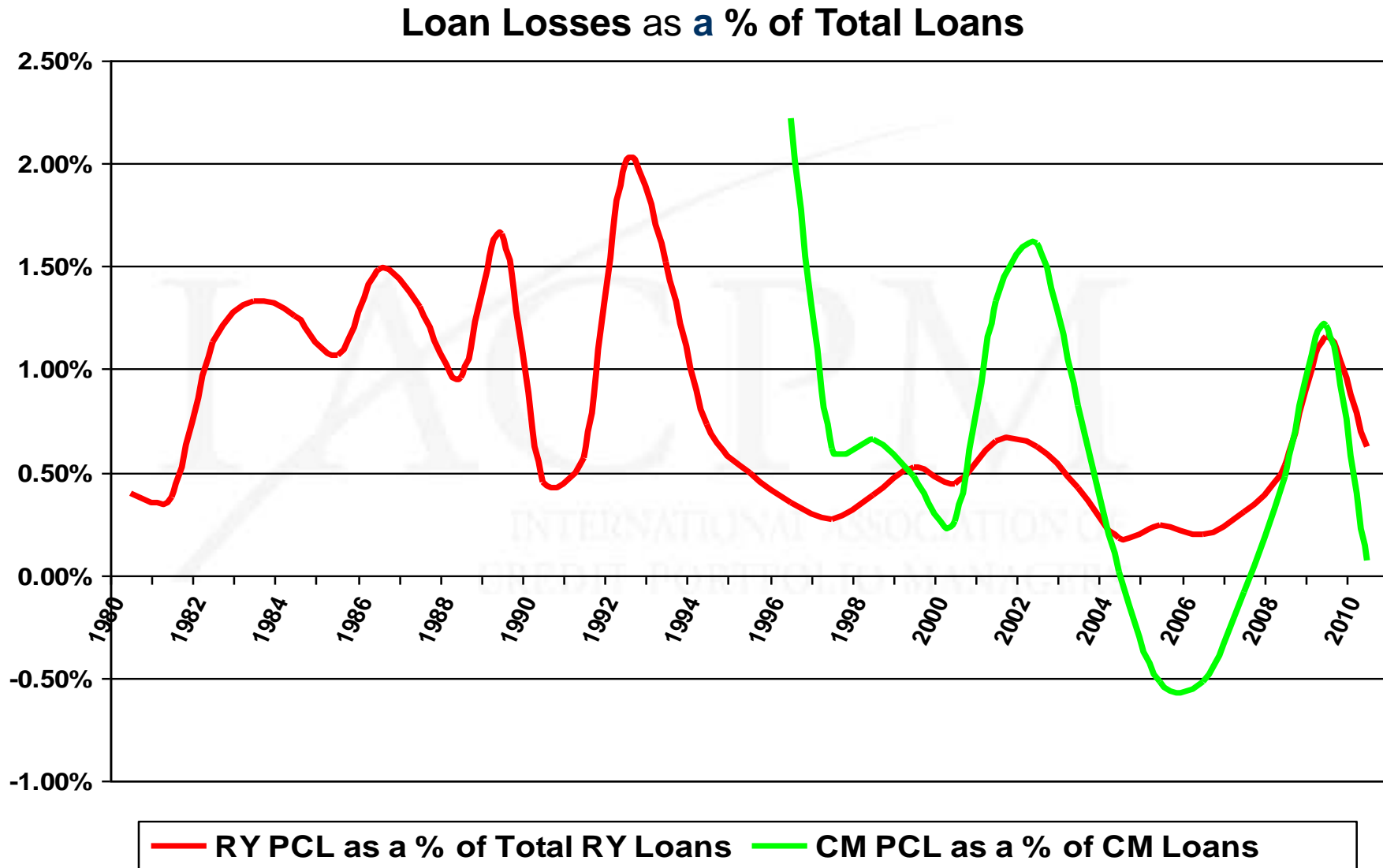
Result:

- Material de-marketing of sub-optimal loans, MTM hedge book, front-end origination to optimize, accrual accounting.

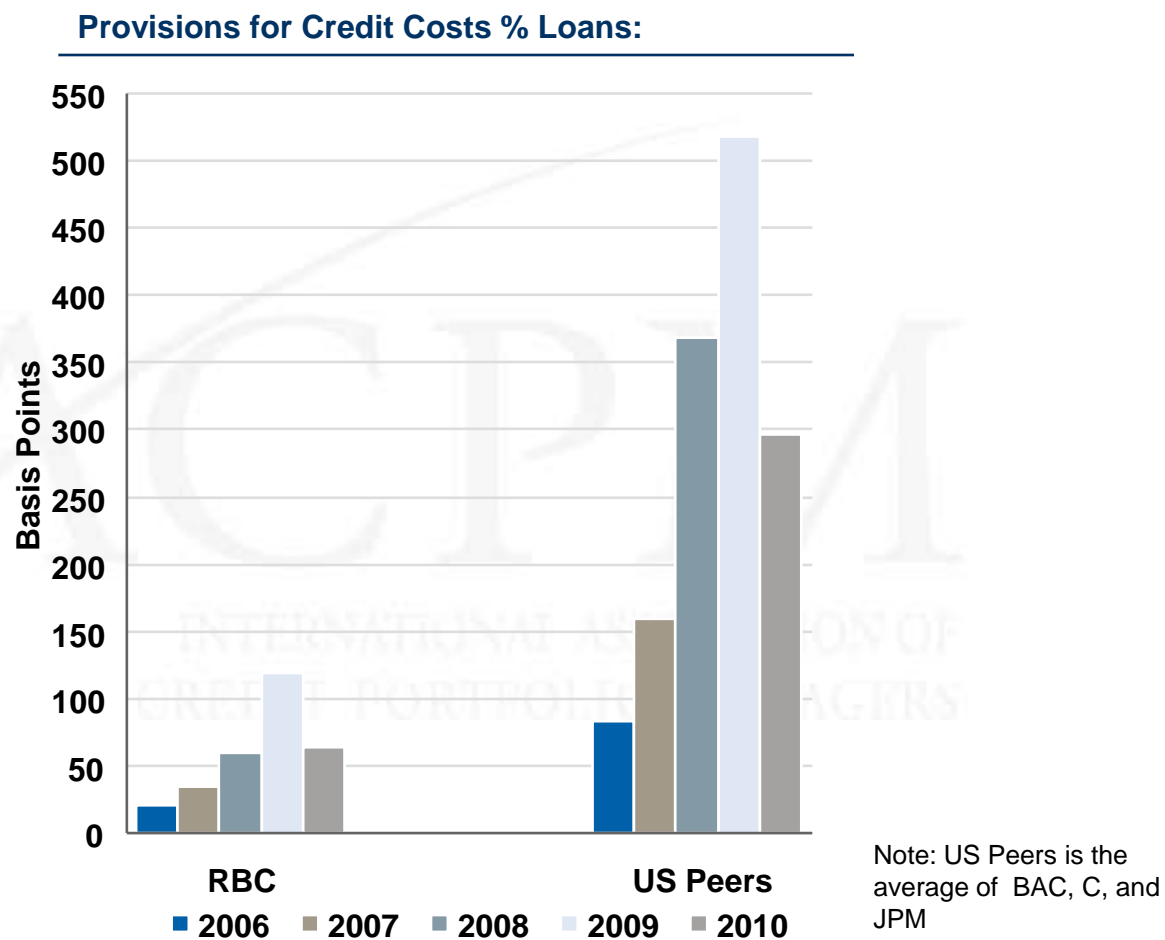
Provision for Credit Losses

- 1999: PCL of 0.52% of total loans or 88.4% of Net Income.
- 2001: PCL \$1.2 billion or 0.65% of Total Loans, 46.4% of Net Income.

Loan Loss Provision History: Pattern of Lessening Intensity



Historical Comparison of Loan Loss Provisions



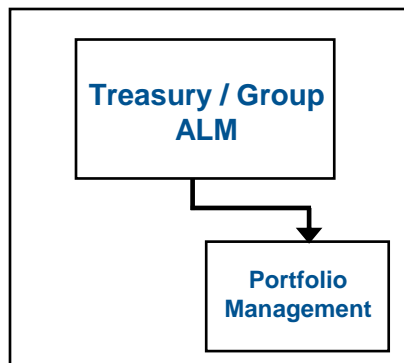
Provisions are materially lower than those of US peers.

Critical Aspects of Loan Portfolio Management

- Limit management.
- Industry Specialization in risk management and in mending.
- Risk/Return measurement.
- Discrete risk management/fungibility, at least in wholesale banking.
- Management Information Systems (“MIS”).
- Division of origination/risk management/monitoring.
- Strong front end decision-making.
- Strong centralized portfolio monitoring/measurement.
- Appropriate performance metrics for lenders.
- Risk Distribution (syndication) ability.

Without each of these, lending will be perilous resulting in less control and impact at the enterprise level.

Development of Portfolio Management at Royal Bank – Stage 3



Stage 3

Integrated/Firm Perspective

Mid 2000s - current

- Funding and Liquidity Management
- Counterparty Risk: strategy, risk profiles, central clearing
- Analytics: models, stress scenario
- Idiosyncratic Credit Views: Triage, Weak/Leveraged Review
- Regulatory Impact: Derivatives, Structured Credit, Capital

External Events and Impact

- Financial Crisis of 2007/08.

Actions:

- Partnership with funding and liquidity management
- Counterparty Risk: assessment of 'who', limits, active management.
- Analytics refined given enhanced data transparency, requirements for scenario/stress testing and tools (eg. Bondscore, Stress testing).
- Regulatory assessment and impact: Basel II, Basel III.

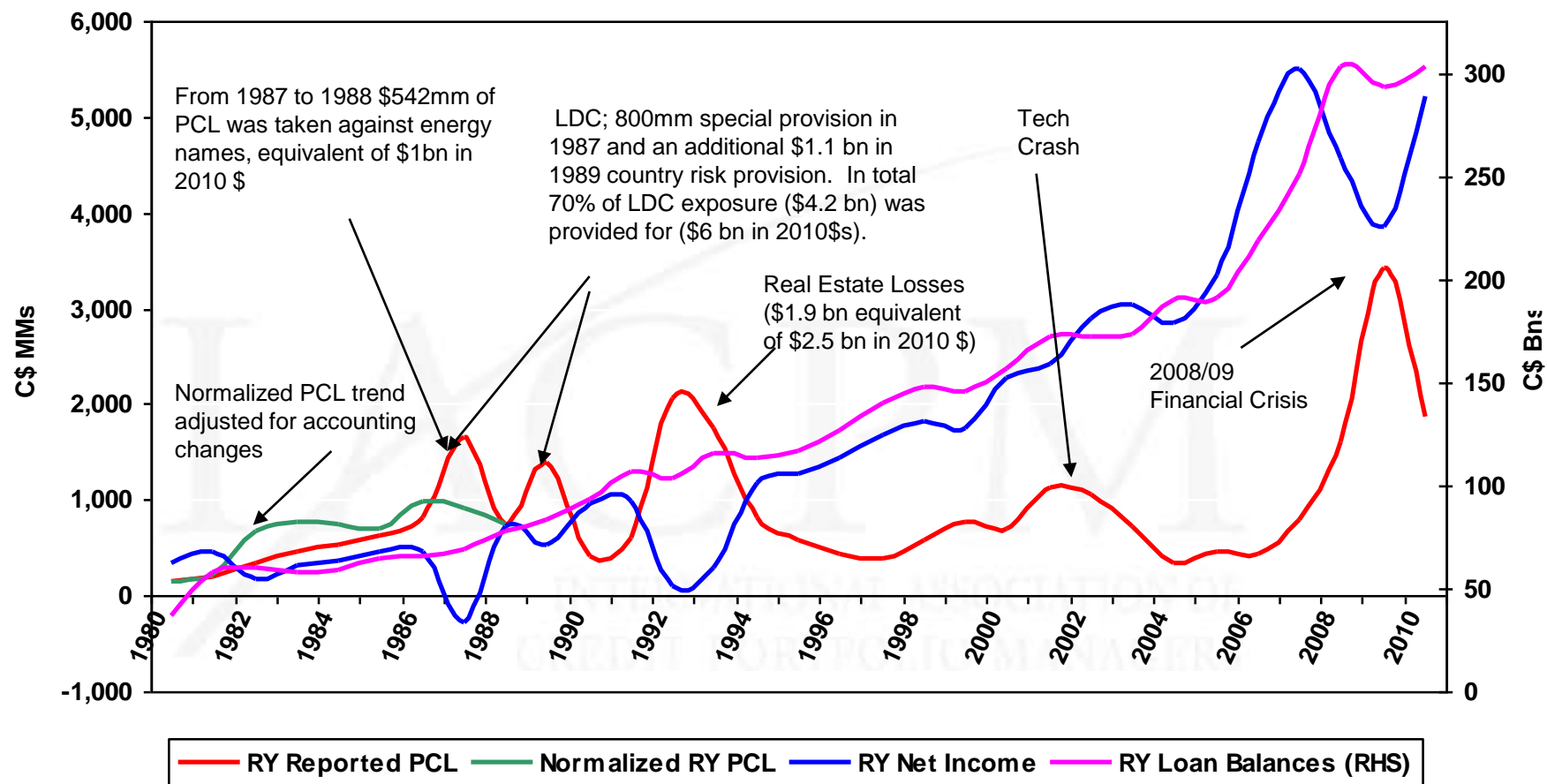
Result:

- More measured hedge activity however gains on discrete hedges; revived centralized origination process ("Com Com"), holistic view of credit portfolio management across ALM, trading platform (counterparty/CVA) and formation of Derivatives PM.
- Strong co-ordination between Business, Risk Management and Treasury in funding and liquidity management.

Provision for Credit Losses

- 2008: \$187mm of CM PCL equating to 0.4% of Total Loans or 15.7% of CM Net Income.
- 2009: \$477mm of CM PCL equating to 1.2% of Total Loans or 26.5% of CM Net Income.

RBC Historical Loan Balances, Net Income and PCL



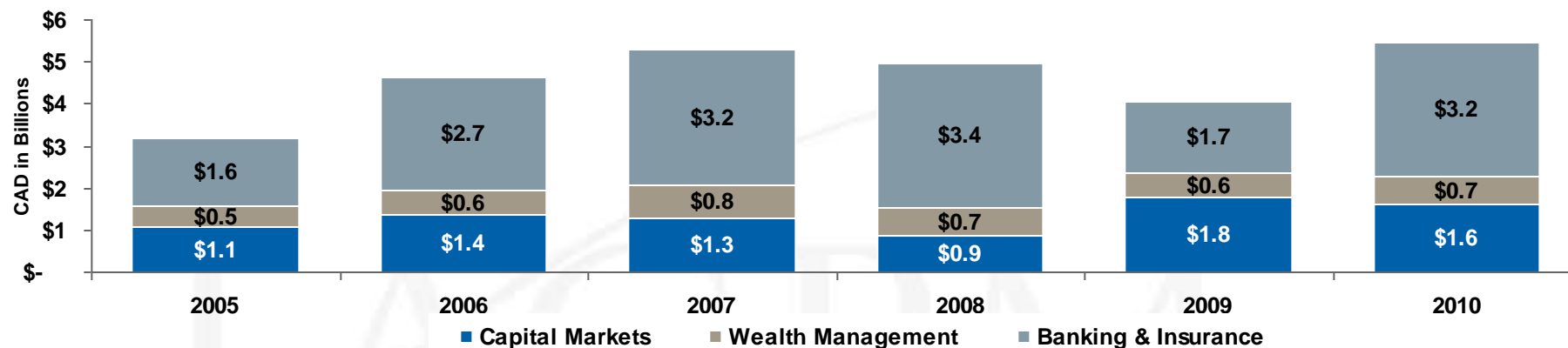
Losses taken in wholesale lending, up to and including those of 1992/3, had a huge impact on the results of the Bank as a whole.

Critical Elements of Enterprise-wide Portfolio Management

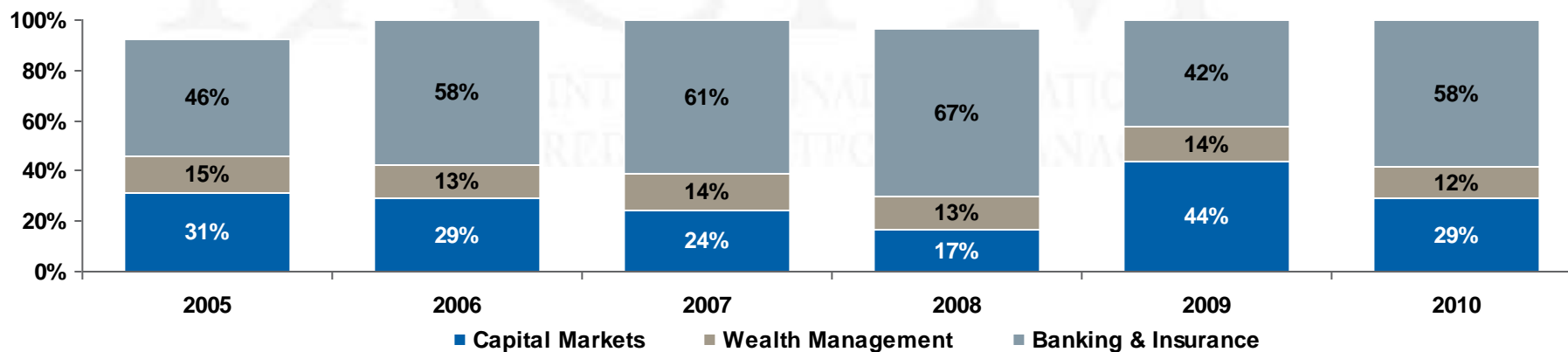
- Cannot afford to have one business, whose earnings are more subject to volatility/loss, in a position to create a net loss for the bank as a whole, thus:
 - Need to grow a portfolio of businesses, with differing risk characteristics and revenue/funding contributions.
 - Need to balance the mix of businesses to provide for sustainable lower risk revenues as well as growth businesses and those that will provide a more or less stable funding base.
 - Need to make determinations about building vs acquiring new businesses and, along with this, understand implications for systems, integration and managerial expertise.

RBC's Business Mix: Resiliency Through Diversification

Segment Net Income: Absolute CAD

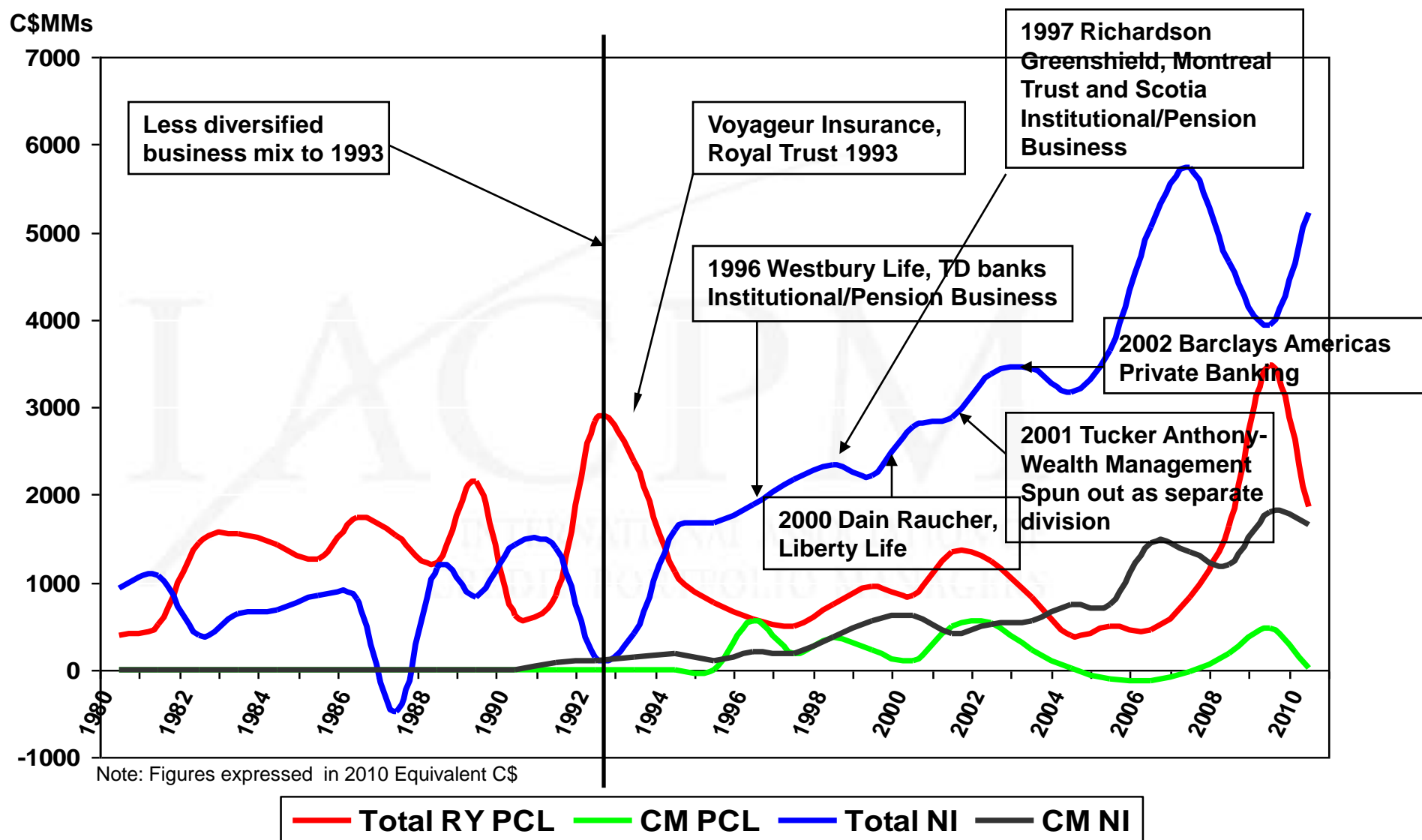


Segment Net Income: As a % of Total



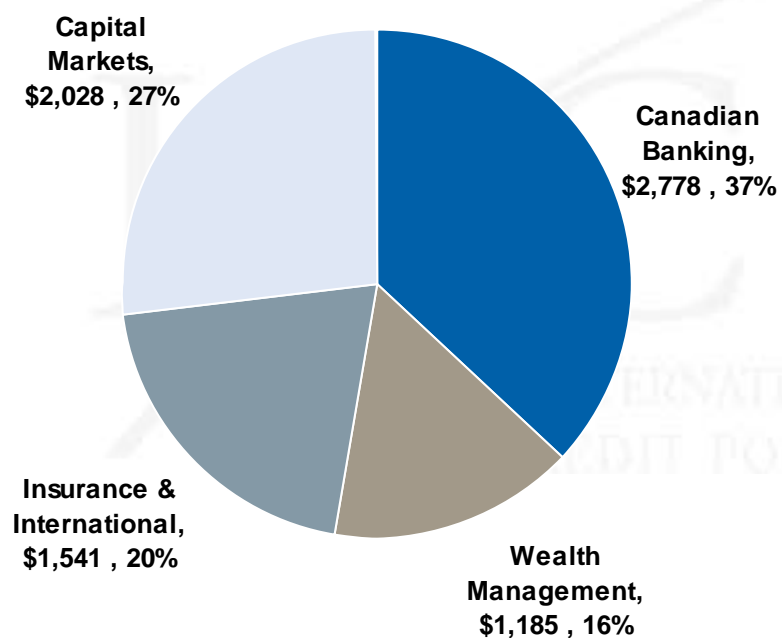
Well-run capital markets businesses can offset bank loan cyclicalities, and vice versa.

Business Diversification, Historical Loan Loss Provisions and Net Income



Recent Results: RBC 1Q11 Financial Highlights

Revenue by Business Segment – Revenue Basis (C\$MM)



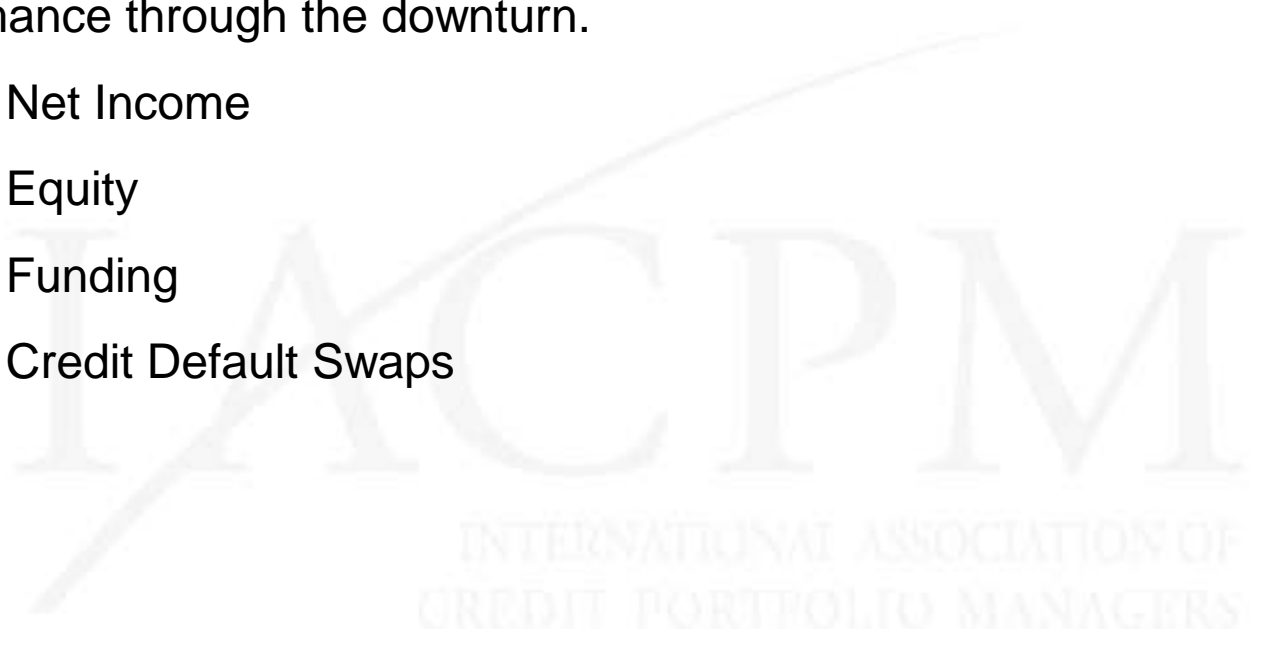
Year-over-Year Results (C\$ millions)

C\$ millions	1Q10	1Q11	% Change
Canadian Banking	\$2,638	\$2,778	5.3%
Wealth Management	\$1,054	\$1,185	12.4%
Insurance & International	\$1,930	\$1,541	-20.2%
Capital Markets	\$1,840	\$2,028	10.2%
Total Segment Revenue ⁽¹⁾	\$7,462	\$7,532	0.9%
Firm-wide Net Income	\$1,433	\$1,774	24%

III. RBC: Market Measures of Success

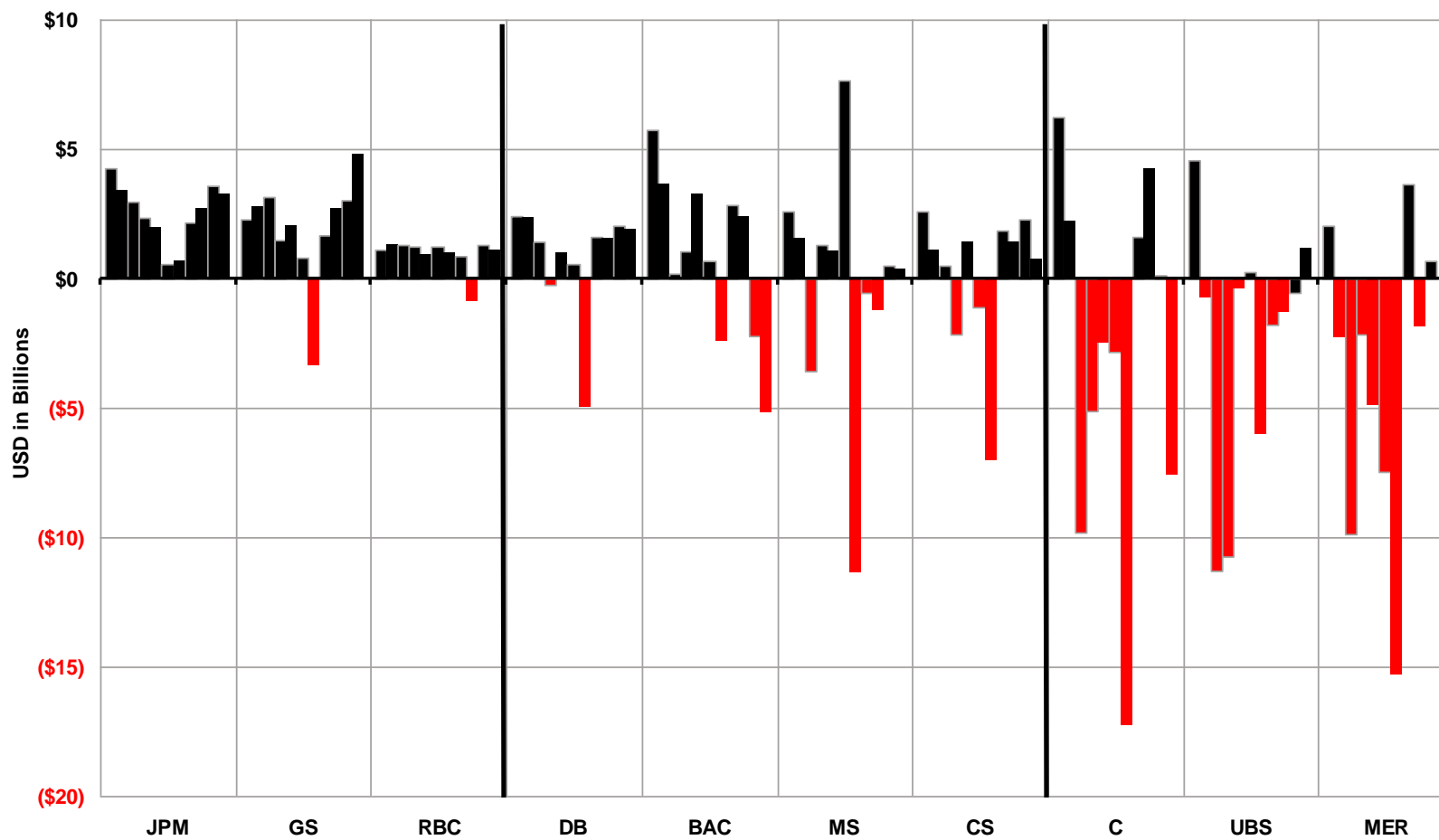
Performance through the downturn.

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- Equity
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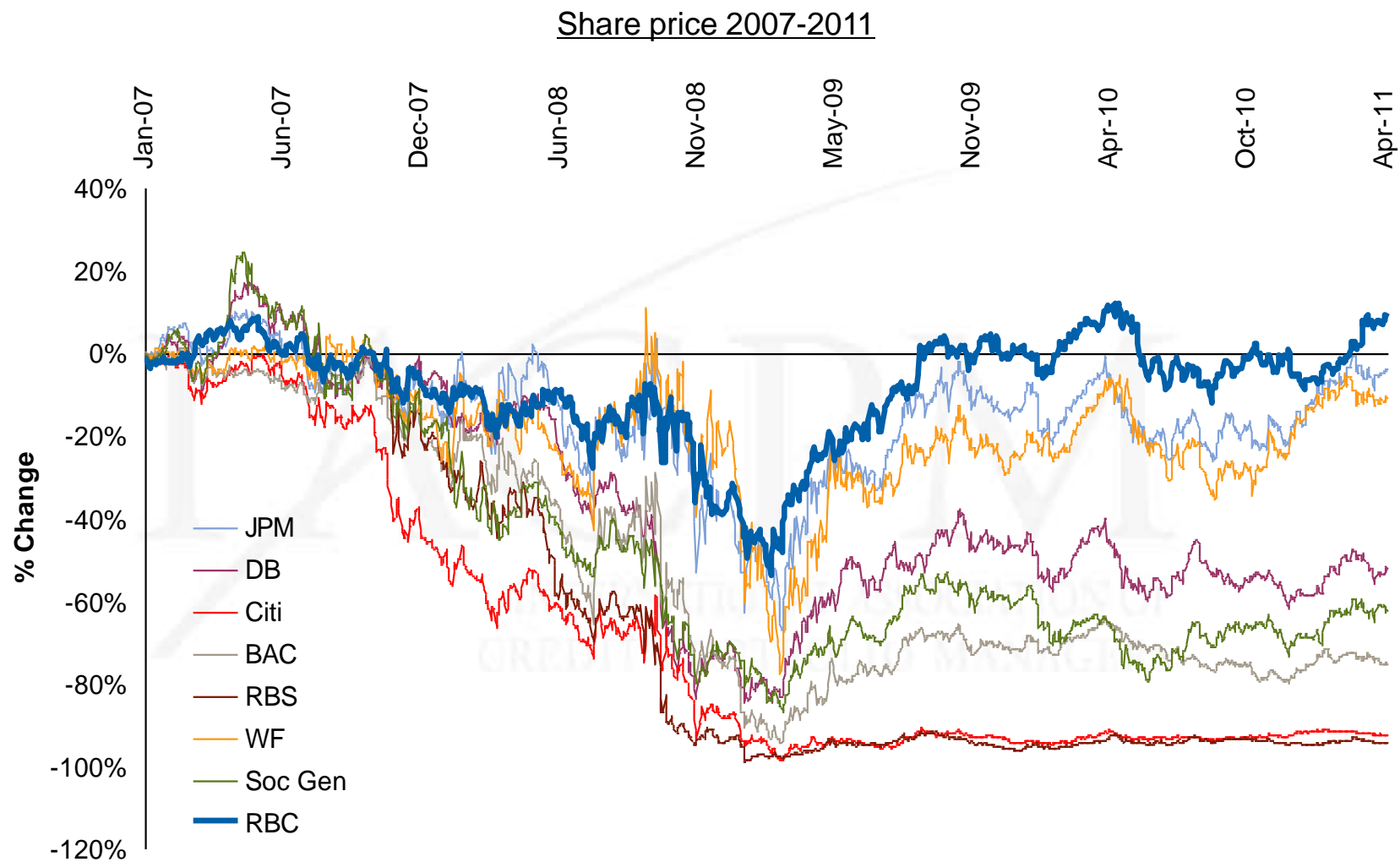


Comparative Through the Cycle Performance

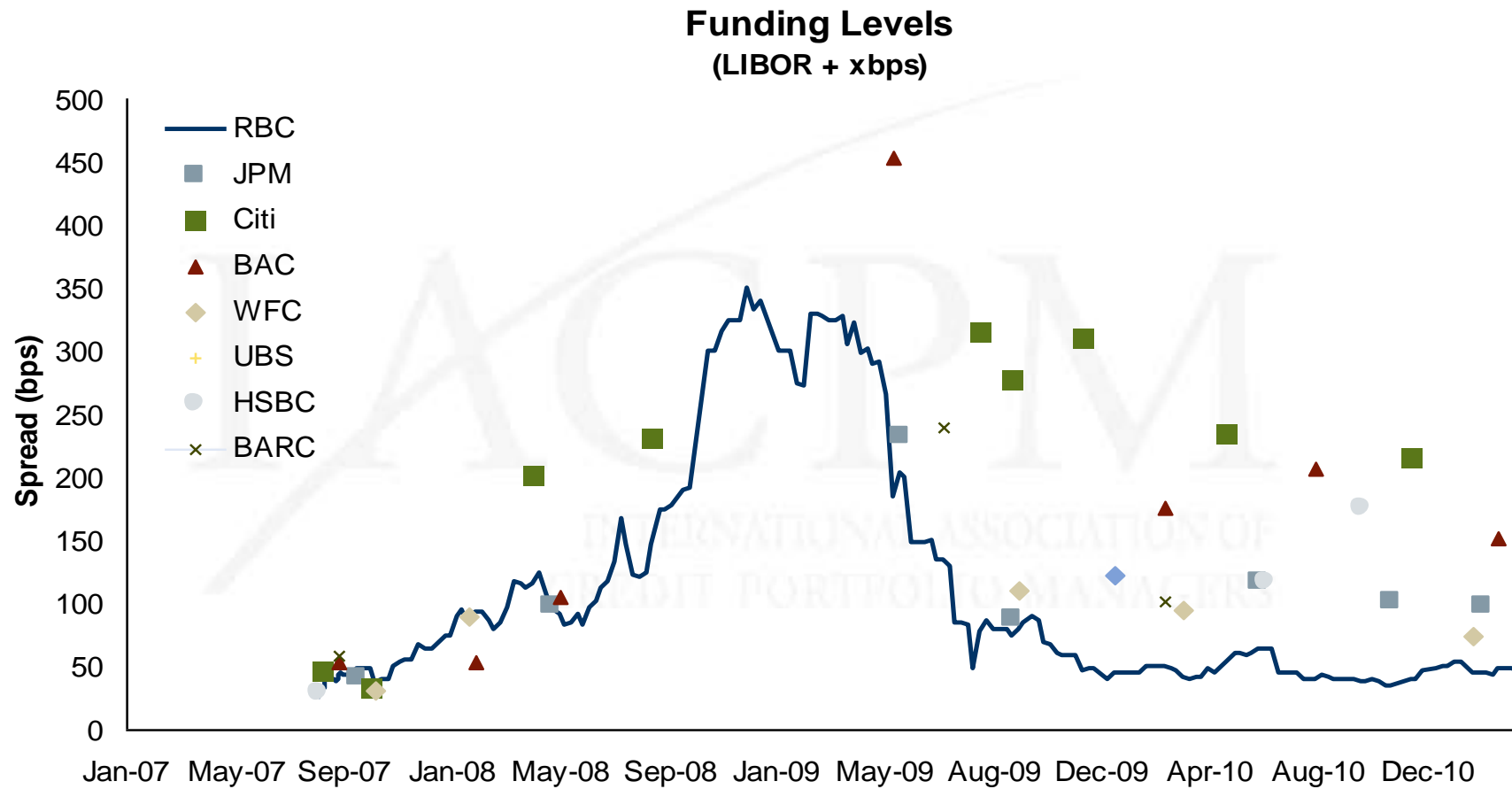
Quarterly Net Income 2007-2009



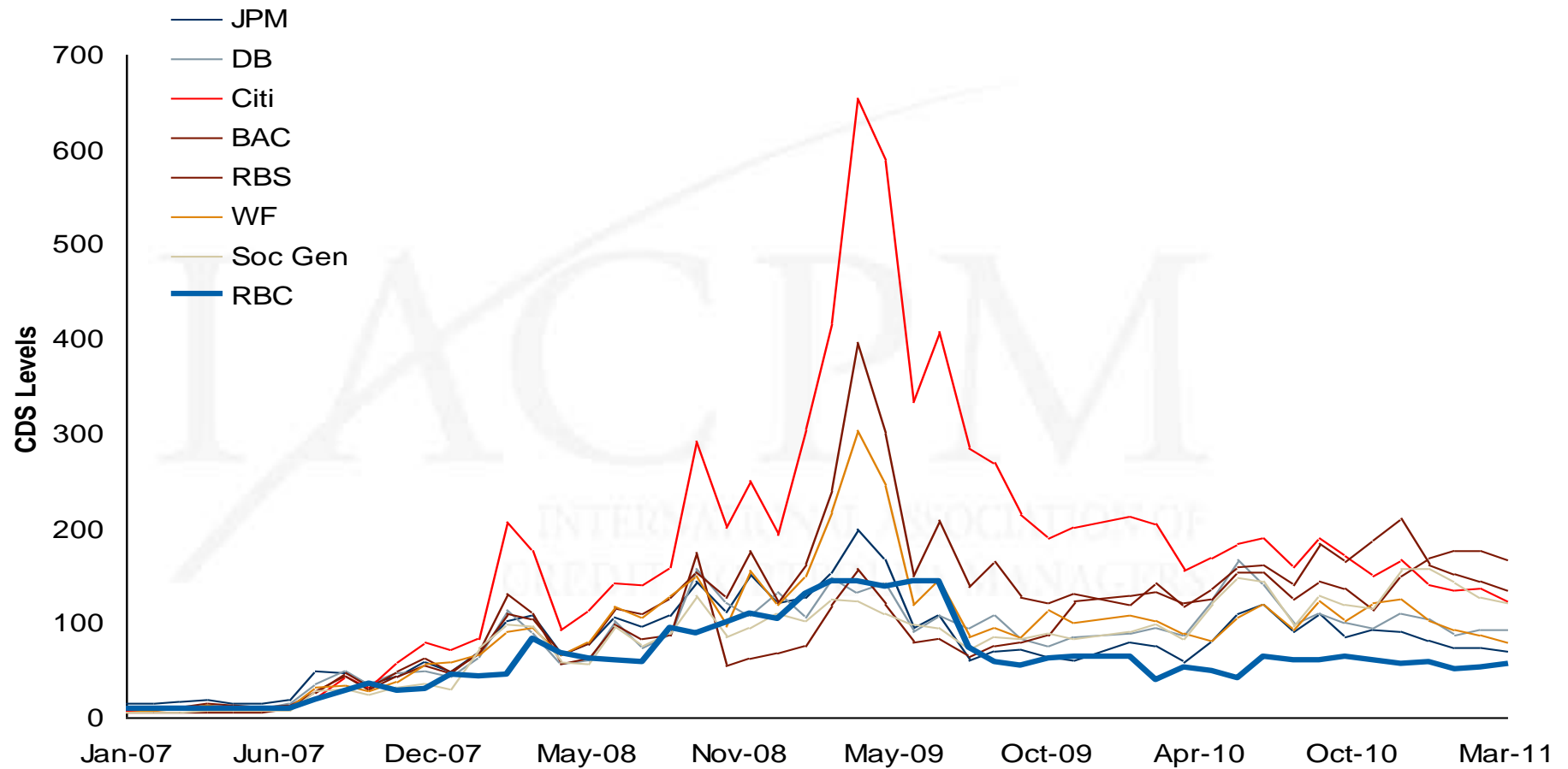
Relative Share Price Performance



Historical Bond Funding Levels: Relative Performance

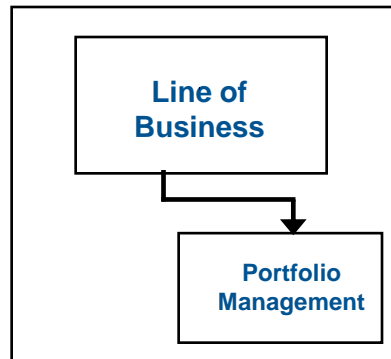


Historical Credit Default Swap Levels

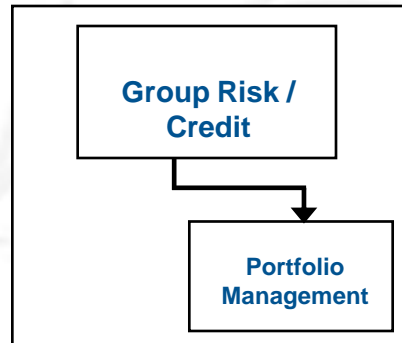


IV. Evolution of an Integrated Approach to CPM

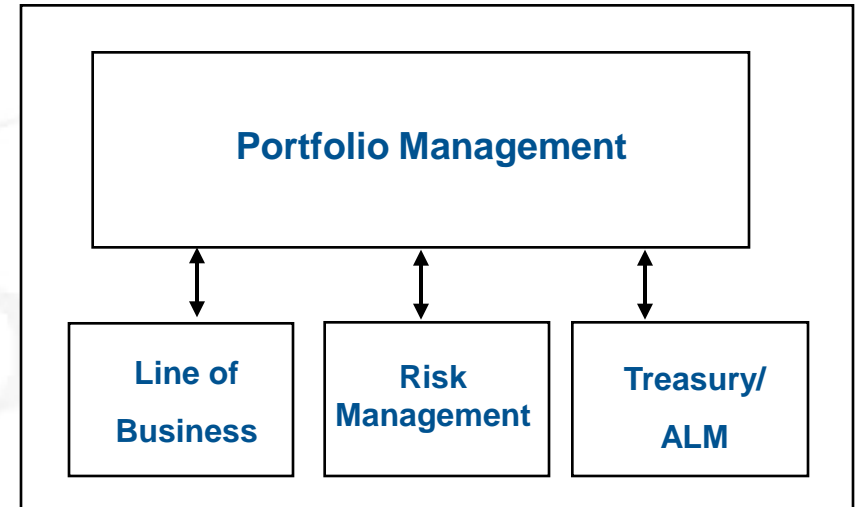
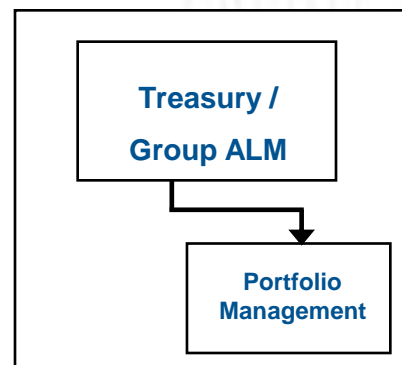
Stage 1
Line of Business
Initiated



Stage 2
Risk Management
Partnership



Stage 3
Treasury/Trading
Book/Analytics



It is critical to have an integrated approach to Credit Portfolio Management with a firm-wide perspective.

A Few Summary Remarks

Potential challenges/limitations:

- Establishing fungible risk ratings institution-wide - more challenging with size.
- Calculating expected return calculations is challenging due to
 - Cyclicalities;
 - Market pricing variability, and/or
 - Regulation.
- Implementing a Management Information System (including outstanding loans, authorized exposures, loan margins and ratings) is more challenging with size/complexity of the institution.

If these hold true, then it would seem that the following aspects of Portfolio Management are those that really need to be focused on:

- Limit setting for single names, industries and geographies.
- Specialization of relationship management and risk management by industry.
- Decision-making on larger single name loans.
- Monitoring/early warning systems to allow for earliest possible negotiation with larger clients and/or pull back from weakening market segments.
- Diversification of business activity: determining appropriate mix of lines of business to manage the aggregate income stream, growth prospects and funding advantages.

RBC's Presence in China
加拿大皇家银行在中国的发展



RBC Capabilities in China

加拿大皇家银行在中国的业务

Entities 机构	Principals 负责人	Business Scope 业务范围
RBC Beijing Branch 加拿大皇家银行北京分行	Mike Chen 陈林龙 MD, Country Head 董事总经理,中国区负责人	<ul style="list-style-type: none"> Global Financial Institutions (GFI) 全球金融机构 Trade Finance 贸易融资 Personal Banking 个人银行 Capital Markets 资本市场
RBC Life Insurance Beijing Rep Office 加皇人寿保险北京代表处	Oliver Lu 鲁峰 Chief Rep 首席代表	<ul style="list-style-type: none"> Relationship Management 客户联系 Market Research 市场调研 Liaison 联络
RBC Investment Services (Asia) Ltd. Beijing Rep Office 加皇投资理财北京代表处	Patrick Li 李晋原 Acting Chief Rep 代理首席代表	<ul style="list-style-type: none"> Relationship Management 客户联系 Market Research 市场调研 Liaison 联络
Minsheng Royal Fund Management Co., Ltd. 民生加银基金管理有限公司	Chairman 董事长	<ul style="list-style-type: none"> Mutual Fund Management 基金管理 Launch & Establish Public Fund 公募基金发行和成立
JV- Minsheng Bank (60%) & RBC (30%) & three Gorges Finance Company (10%), Located in Shenzhen 合资-民生银行(60%),加拿大皇家银行(30%),三峡财务(10%),注册地深圳		

RBC Beijing Branch Business Profiles

加拿大皇家银行北京分行

Legal name 机构名称:

Royal Bank of Canada Beijing Branch
加拿大皇家银行北京分行

Establish time 成立时间:

Feb 28, 2006 . 2006 年 2月28日

Management 管理层:

Mike Chen, Managing Director, China Country Head
陈林龙, 行长, 中国区负责人



Main business activities 主要业务活动:

1. **GFI (Global Financial Institutions)** :corresponding banking & relationship management for Financial Institutions.

GFI (全球金融机构): 金融机构业务合作和联系

2. **Trade Finance:** collection, confirmation, refinancing, discounting, etc.

贸易融资: 托收, 确认, 再融资, 贴现等

3. **Personal Banking:** Chinese Immigration, visa students and HNW referrals to Canada.

个人银行: 向中国新移民, 留学生和高端客户推荐加皇

4. **Debt Capital Markets** : origination and relationship Management

债券资本市场: 组织和客户联系

5. **Supporting:** provide on the ground function supports to other local RBC legal entities

支持: 为加皇本地其他机构提供支持

RBC Insurance Rep Office Business Profiles

加拿大皇家银行人寿保险保险公司北京代表处

Legal name 机构名称:

RBC Life Insurance Company Beijing Rep Office
加拿大皇家银行人寿保险保险公司北京代表处

Establish time 成立时间:

July 11, 2006. 2006年7月11日

Management 管理层:

Oliver Lu, Chief Representative. 鲁锋, 首席代表



Main business activities 主要业务活动:

1. Explore reinsurance opportunities in Mainland China and in Hong Kong.
在中国大陆和香港地区开发再保险业务
2. Explore referral business opportunities - help Chinese immigrants, Visa students and travellers to Canada with needs for the insurance and other RBC products.
帮助新移民, 留学生和游客推荐加皇之保险和其它产品
3. Conduct market research and collect industry intelligence with focus.
进行市场调查, 收集行业信息和关注焦点
4. Brand building and relationship building.
品牌建设和关系建立
5. Continue to build knowledge and familiarity of RBC and RBC Insurance, including building teamwork with RBC Reinsurance colleagues in Canada.
建立加皇, 加皇保险和加皇再保险之间的团队合作

RBC IWM Rep Office Business Profiles

加皇投资理财有限公司(证券业务)北京代表处

Legal name 机构名称:

RBC Investment Services (Asia) Ltd Beijing
Representative Office
加皇投资理财有限公司(证券业务)北京代表处

Establish time 成立时间:

Aug 17, 2007. 2007 年8月17日

Management 管理层:

Patrick Li, Chief Representative, 李晋原, 首席代表

Main business activities 主要业务活动:

1. Responsible for communicate in securities business regarding of headquarters.
负责与总部在证券业务开展的沟通
2. Communicate with china security regulator representing our headquarters.
负责总部与中国监管机构的沟通
3. Research of China securities market.
进行中国证券市场研究
4. Refer the high net worth clients to RBC overseas branches.
向富裕客户介绍加皇海外业务

