INDUSTRY SYNOPSIS

NAICS 5221
DEPOSITORY CREDIT INTERMEDIATION

I. SCOPE OF STUDY

The Canadian financial system is complex, comprising many different types of private sector financial institutions, including banks, insurance companies, mutual funds, finance companies, and investment banks, all of which are heavily regulated by the government. If an individual wanted to make a loan to a large corporation, for example, they would not go directly to the company and offer a loan. Instead, they would lend to such companies indirectly through *financial intermediaries*, institutions that borrow funds from people who have saved and then use these funds to make loans to others.

This industry synopsis focuses on those financial intermediaries whose primary *source of borrowed funds* is *deposits*. These types of financial intermediaries are sometimes referred to as *deposit-accepting intermediaries*, or *depository credit intermediaries*. Although the difference is slight, this is in contrast to companies such as credit card issuers or sales financing companies, whose primary source of funds is the **money market**[1,2].

A. INDUSTRY DEFINITION

The NAICS 5221 Industry – Depository Credit Intermediation, as defined by the 2007 North American Industrial Classification System (NAICS), is composed of establishments primarily engaged in accepting deposits and lending funds. The principal source of funds for firms in this industry are deposits from individual economic agents (consumers, firms, etc)[3]. Establishments in this industry include chartered banks, trust companies, deposit-accepting mortgage companies, local credit unions, and provincial government savings establishments that channel deposits to governments.

In the literature, financial firms whose primary source of funds is deposits are simply called **banks**. According to Freixas and Rochet (1999), *a bank is an institution whose current operations consist of granting loans and receiving deposits from the public.* In practice, then, included under the NAICS 5221 Industry are the chartered banks, as well as the so-called 'near-banks', which include the trust companies, deposit-accepting mortgage companies, local credit unions, and *caisses populaires*. A description of these various types of firms is given below.

TYPES OF FIRMS INCLUDED UNDER NAICS 5221 – DEPOSITORY CREDIT INTERMEDIATION

This section defines in more detail the types of firms listed in the previous paragraph.

Chartered banks
These depository credit intermediaries raise funds primarily by issuing chequable deposits (deposits on which cheques can be written), savings deposits (deposits that are payable on

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[1] These types of financial intermediaries are classified under NAICS 5222 – Non-Depository Credit Intermediation.
[2] Terms in bold font are explained further in the glossary.
[3] Financial firms whose primary source of funds is *not* deposits are classified under NAICS 5222 – Non-Depository Credit Intermediation.

demand but do not allow their owner to write cheques), and time deposits (deposits with fixed terms to maturity). They then use these funds to make commercial, consumer, and mortgage loans and to buy Canadian government securities and provincial and municipal bonds. There are 73 chartered banks in Canada, and as a group they are the largest financial intermediary and have the most diversified portfolios (collections) of assets. Chartered banks are incorporated establishments constituted under the *Bank Act*.

Trust and mortgage loan companies (TMLs)
Trust and mortgage loan companies are establishments operated under the provisions of the *Trust and Loan Companies Act* (1992) or comparable provincial legislation. Mortgage loan companies accept deposits, which are then transformed mainly into mortgage loans. These depository institutions, numbering 68, obtain funds primarily through chequable and non-chequable savings deposits, term deposits, guaranteed investment certificates (GIC's), and **debentures**. In the past, these institutions were constrained in their activities and mostly made mortgage loans for residential housing. Over time, these restrictions have been loosened so that they can now offer many of the same products offered by the traditional chartered banks, and thus the distinction between these depository institutions and chartered banks has blurred. The primary function of a trust company is to act as a fiduciary, which involves acting as executor, administrator (trustee), and agent for the issuing of stocks and bonds, as well as agent for real estate transactions. In addition, the agent manages real property, investment funds and pension funds, and accepts and administers sinking funds.

Credit unions and caisses populaires (CUCPs)
Credit unions and caisses populaires, numbering about 7, are very small cooperative lending institutions organized around a particular group: union members, employees of a particular firm, and so forth. They acquire funds from deposits and primarily make mortgage and consumer loans. Local credit unions, which are independent establishments, come together to form provincial centrals. The latter accept and invest the surplus funds of member credit unions and act as creditors of last resort. Many credit unions offer similar products as do larger Chartered banks to their personal and small-and-medium-sized (SME) customers, although they do not offer services to corporate and institutional clients, as do the larger Chartered banks.

TYPES OF FIRMS EXCLUDED UNDER NAICS 5221 – DEPOSITORY CREDIT INTERMEDIATION

Any financial intermediary whose primary source of funds is *not* deposits would be excluded from the NAICS 5221 – Depository Credit Intermediation industry. Financial firms whose operations are similar to those firms classified under NAICS 5221, but that do not meet the *deposit-accepting* criterion, and thus are classified under a different NAICS Industry, are given in the table below.

Table x: Types of Firms Excluded under NAICS 5221

NAICS	Industry Title	Examples	NAICS	Industry Title	Examples
52221	Credit Card Issuing	Establishments engaged in providing credit sales services to business entities, such as retailers, and to customers by providing the	52392	Portfolio Management	Establishments engaged in managing the portfolio assets of others on a fee or commission basis. These establishments have the

		funds required in return for payment of the full balance or payment on an installment basis			authority to make investment decisions, with fees usually based on the size and/or overall performance of the portfolio.
52222	Sales Financing	Establishments lend money to consumers and businesses for the purchase of goods, using a contractual sales agreement	5241	Insurance Carriers	Establishments engaged in underwriting annuities and insurance policies, and reinsurance.
52311	Investment Banking/ Securities Dealing	Establishments engaged in acting as principals (investors who buy or sell on their own accounts), generally on a spread basis, in originating, underwriting, and/or distributing issues of securities of businesses, governments and institutions.	5269	Mutual Funds and Other Financial Vehicles	Establishments that provide portfolios of specialized or diversified securities and other investments held on behalf of unit holders, shareholders, or investors.

BREAKDOWN AND DESCRIPTION OF THE NAICS 5221 INDUSTRY

The following table gives a breakdown of the NAICS 5221 – Depository Credit Intermediation industry, along with firms that are included, as well as excluded, form this industry.

Table1: NAICS 5221 – Breakdown

NAICS	Description	Inclusions	Exclusions
NAICS 5221 – Depository Credit Intermediation	Establishments primarily engaged in accepting deposits and lending funds. The principal source of funds for firms in this industry are deposits from individual economic agents (consumers, firms, etc).	Chartered banks; trust companies; deposit-accepting mortgage companies; local credit unions; provincial government savings establishments	Credit card issuing; sales financing; insurance carriers; extending credit or lending funds raised by credit market borrowing, such as by issuing commercial paper; portfolio management; and investment banking and securities dealing.
• NAICS 52211 – Banking	Establishments primarily engaged in accepting deposits and issuing loans.	Chartered banks; trust companies; deposit-accepting mortgage companies.	Local credit unions (they have their own 5-digit NAICS); provincial government savings establishments that channel deposits received to the government rather than lending them to customers; investment banking; and underwriting of insurance.
○ NAICS 522111 – Personal and Commercial Banking	Establishments primarily engaged in accepting deposits from, and issuing loans to, persons or small- and medium-sized businesses.	Chartered banks; trust companies; deposit-accepting mortgage companies.	Local credit unions (they have their own 5-digit NAICS); and provincial government savings establishments that channel deposits received to the government rather than lending them to customers.
○ NAICS 522112 – Corporate and Institutional Banking	Establishments primarily engaged in issuing loans to large businesses, government or other large institutional clients, using funds primarily obtained from related personal and commercial banking establishments.	Chartered banks that serve corporate and institutional clients are included.	Local credit unions (they have their own 5-digit NAICS); provincial government savings establishments that channel deposits received to the government rather than lending them to customers; and investment bankers.
• NAICS 52213 – Local Credit Unions	Establishments of local credit unions and caisses populaires primarily engaged in accepting deposits from, and issuing loans to, members. Local credit unions raise funds from members through the sale of shares and the acceptance of deposits.	Local credit unions.	Central credit unions (they do not accept deposits).
• NAICS 52219 – Other Depository Credit Intermediation	Establishments, not classified to any other industry, primarily engaged in accepting deposits and making loans.	Provincial government savings establishments that channel deposits to the government rather than lending them to customers.	Firms classified under one of the above NAICS categories; or firms whose lending activities are not financed by deposits.

Defining Characteristic of NAICS 5221 relative to other Financial Services Industries is that the primary source of funds for firms in NAICS 5221 is deposits, not the money market

Primary Source of Funds = Deposits	Primary Source of Funds = Money Market

CONCORDANCE WITH OTHER CLASSIFICATION SYSTEMS

Not all countries use NAICS as the basis for their classification of firm to industries. It is useful to understand other classifications and their concordance with NAICS in order to be able to use a Service Producer Price Index (SPPI) to conduct international comparisons. Price indices, however, seek to follow the price movement of products, not the price movement of industries. As industries, including banking, have become less homogenous in their product or commodity offerings, it is also important to understand what products are offered by industries. This leads us to output, or commodity classification systems. We also provide below a concordance between the North American Product Classification System (NAPCS) and the Input-Output Commodity Classification System, used by the Canadian System of National Accounts, for the products/commodities typically produced by firms operating in the NAICS 5221 – Depository Credit Intermediation industry.

Table 2.a) gives the concordance between NAICS 2007 and other Industry classification systems for deposit-accepting intermediaries. Table 2.b) gives the concordance between the North American Product Classification System (NAPCS) 2007 and the Input-Output Commodity Classification (IOCC) System used in the Canadian System of National Accounts. A definition of each classification system listed in the following tables is described in AppendixA.

Table 2.a: NAICS 2007 Concordance with other Industry Classification Systems

NAICS 2007	ISIC Rev. 3	SIC 1980	SNA1993 Sectors	CSNA I-O Industrial Classification
NAICS 5221 – Depository Credit Intermediation	• J-651 Monetary Intermediation	SIC-L-60 Deposit Accepting Intermediaries	• 122 Other Depository Corporations	• 5A01 Monetary Authorities and Depository Credit Intermediation
• NAICS 52211 – Banking	• J-6519 Other Monetary Intermediation	• SIC-L-6021 Chartered Banks • SIC-L-6029 Other Banking Intermediaries (not chartered) • SIC-L-6031 Trust Companies • SIC-L-6091 Deposit Accepting Mortgage Companies	• 12211 Chartered Banks • 12222 Trust Companies, Mortgage and Loan Companies	• 5A0130 Banking and Other Depository Credit Intermediation
○ NAICS 522111 – Personal and Commercial Banking	• J-6519 Other Monetary Intermediation	• SIC-L-6021 Chartered Banks • SIC-L-6029 Other Banking Intermediaries (not chartered) • SIC-L-6031 Trust Companies • SIC-L-6091 Deposit Accepting Mortgage Companies	• 12211 Chartered Banks • 12222 Trust Companies, Mortgage and Loan Companies	• 5A0130 Banking and Other Depository Credit Intermediation
○ NAICS 52212 – Corporate and Institutional Banking	• J-6519 Other Monetary Intermediation	• SIC-L-6021 Chartered Banks • SIC-L-6029 Other Banking Intermediaries (not chartered) • SIC-L-6031 Trust Companies • SIC-L-6091 Deposit Accepting Mortgage Companies	• 12211 Chartered Banks • 12222 Trust Companies, Mortgage and Loan Companies	• 5A0130 Banking and Other Depository Credit Intermediation
• NAICS 52213 – Local Credit Unions	• J-6519 Other Monetary Intermediation	• SIC-L-6041 Local Credit Unions	• 12221 Credit Unions and Caisses Populaires	• 5A0120 Local Credit Unions
• NAICS 52219 – Other Depository Credit Intermediation	• J-6519 Other Monetary Intermediation	• SIC-L-6099 Other Deposit Accepting Intermediaries		• 5A0130 Banking and Other Depository Credit Intermediation

Table 2.b: Concordance of Product Classification Systems

I-O Commodity Classification	NAPCS 2007
• IOCC 55421 Implicit Charges, deposits, Banking and other Depository Credit Intermediation	• 522001.1.1 Deposit account-related products
• IOCC 55422 Implicit Charges, loans, Banking and other Depository Credit Intermediation	• 522002.1.1 Loans, to financial businesses • 522002.1.2 Loans, to non-financial businesses ○ 522002.1.2.1.1 Commercial and industrial mortgages ○ 522002.1.2.1.2 Construction mortgages ○ 522002.1.2.2.5 Lines of credit, to non-financial businesses • 522002.1.3 Loans, to governments • 522002.1.4 Loans, to consumers ○ 522002.1.4.1.1 Residential mortgage loans ○ 522002.1.4.1.2 Home equity loans ○ 522002.1.4.1.4 Vehicle loans, consumer
• IOCC 5551 Paid (explicit) Charges, Banking and other Depository Credit Intermediation	• 522001.1.2 Cash handling and management products • 522001.1.3 Document payment products • 522001.1.4 Foreign currency exchange products, retail
• IOCC 55521 Implicit Charges, deposits, Local Credit Unions	• 522001.1.1 Deposit account-related products
• IOCC 55522 Implicit Charges, loans, Local Credit Unions	• 522002.1.1 Loans, to financial businesses • 522002.1.2 Loans, to non-financial businesses ○ 522002.1.2.1.1 Commercial and industrial mortgages ○ 522002.1.2.1.2 Construction mortgages ○ 522002.1.2.2.5 Lines of credit, to non-financial businesses • 522002.1.3 Loans, to governments • 522002.1.4 Loans, to consumers ○ 522002.1.4.1.1 Residential mortgage loans ○ 522002.1.4.1.2 Home equity loans ○ 522002.1.4.1.4 Vehicle loans, consumer
• IOCC 5553 Paid (explicit) Charges, Credit Unions and Caisses Populaires	• 522001.1.2 Cash handling and management products • 522001.1.3 Document payment products • 522001.1.4 Foreign currency exchange products, retail

PRIMARY OUTPUT

According to the Producer Price Index (PPI) Manual, "financial intermediation can be defined as the provision of services associated with the matching of savers and investors" (Para. L-1, pg. 275). That is, banks function to gather and allocate funds in the economy. Financial intermediaries such as banks transform financial claims in ways that make them more attractive to the ultimate investor. Banks purchase direct claims with one set of characteristics (e.g., term to maturity) from a deficit spending unit (i.e., lender-saver) and transform them into indirect claims with a different set of characteristics, which they then sell to a surplus spending unit (borrower-spender). This transformation process is called *intermediation*. In other words, households and businesses deposit excess cash balances in the form of deposits at banks, who in turn make both household and business loans.

Expanding on the above definition, we examine the two different, but complementary, views to defining bank output. The first approach defines output in terms of the financial services offered by banks, such as liquidity and/or payment services. The second approach defines bank output in terms of the products or commodities it provides, such as its loan and deposit products[4]. As we will see, banks do not sell these financial services directly, but rather sell products that have these financial services embedded and bundled within them. This distinction is important from a price-index perspective, because it is the products that are sold to customers, and thus that exhibit an actual price, and not the services that are bundled across many different and often separately-marketed, products. A chequing account, for example, provides its owner with liquidity services, payment services, and safe-keeping. A mortgage, on the other hand, provides a client with liquidity, a payment system, and risk monitoring. In these cases, it is the chequing account and mortgage, respectively, that are sold in the market and thus that exhibit an actual price, not the services associated with them[5]. The first part of this section describes the broad service categories offered by banks, while the section part describes the principal products offered by banks, which contain within them the financial services described in the first part.

APPROACH 1: SERVICES OFFERED BY DEPOSIT-ACCEPTING INTERMEDIARIES

Using this services-bundled-into-products approach, these services can be classified into four broad categories[6].

Liquidity and payment services

Financial intermediaries provide their customers with *liquidity services*, services that make it easier for customers to conduct transactions. For example, banks provide depositors with chequing accounts that enable them to pay their bills easily. In addition, depositors can earn interest on chequing and savings accounts and yet still convert them into goods and services whenever necessary. Closely linked to these *liquidity* services is the provision of a *payments system,* a network that facilitates the transfer of funds between the bank accounts of economic agents. Payment systems allow individuals to pay bills owing to (many) institutions from their (one) bank, even via online-banking or an ATM, and the bank, through the payment system, will settle the account of the payee as well as the accounts of the (many) payors. This has the advantage of the individual having to only deal with only one financial institution, instead of having to deal with each of their payors on an individual basis. Because of the liquidity offered

[4] These are sometimes referred to as *product* or *service* lines.

[5] The problem is that banks do not price and sell these financial services to customers directly, and thus they are difficult to price. These services are also difficult to price directly because any given financial service is not represented by a single product sold by banks, but is rather spread across many different products. Thus, it is more feasible from a price index perspective to price the products that contain these services, rather than price these services directly.

[6] See Freixas and Rochet, 1999.

through products such as chequing accounts, individuals can access this payment system (make payments, for example) instantaneously and at any time.

Asset transformation

There are three types of asset transformation: convenience of denomination, quality of transformation, and maturity transformation. *Convenience of denomination* means that the bank chooses the unit size (denomination) of its products (deposits and loans) in a way that is convenient for its clients. A typical example is that of small depositors facing large investors willing to borrow indivisible amounts. As Gurley and Shaw (1960) argue, financial intermediaries are justified as providing the missing link between the financial products that firms want to issue and the ones desired by the investors. Banks then simply play the role of intermediaries by collecting the small deposits and investing the proceeds into large loans. *Quality transformation* occurs when by issuing a claim in its own name, a bank is offering better risk-return characteristics than by selling (or securitizing) a portfolio of loans. This may occur when there are indivisibilities in the investment, in which case a small investor cannot diversify its portfolio. Finally, modern banks can be seen as providing the transformation of securities with short maturities, offered to depositors, into the securities with long maturities that borrowers desire. This *maturity transformation* function necessarily implies a risk, since the banks' assets will be illiquid, given the depositors' claims.

Managing risk

Financial institutions can help reduce the exposure of investors to *risk*, that is, the uncertainty about the returns investors will earn on assets. Financial intermediaries do this by creating and selling assets with risk characteristics that people are comfortable with, and the intermediaries then use the funds they acquire by selling these assets to purchase other assets that may have far more risk. Low transaction costs allow financial intermediaries to do risk sharing at low cost, enabling them to earn a profit on the spread between the returns they earn on risky assets and the payments they make on the assets they have sold. We see here how closely linked the functions of risk management and asset transformation are for financial intermediaries. Financial intermediaries also help investors manage risk by allowing them to diversify and thereby lower the amount of risk to which they are exposed. Diversification entails investing in a collection of assets whose returns do not always move together, with the result that overall risk is lower than for individual assets. Low transaction costs allow financial intermediaries to do this by pooling a collection of assets into a new asset and then selling it to individuals.

Monitoring and information processing

It is reasonable to assume that banks have a specific part to play in managing some of the problems resulting from imperfect information on (potential) borrowers. Banks may invest in an information technology that allows them to screen the different demands for loans they are confronted with and to monitor the resulting projects, thus limiting the risk that the borrower may implement a project different from the one agreed upon initially. Because individuals do not possess the resources required to screen out bad credit risks, individuals prefer to lend to borrowers/investors indirectly, through a financial intermediary who specializes in screening good from bad credit risks. In other words, with financial intermediaries in the economy, small savers can provide their funds to the financial markets by lending these funds to a trustworthy intermediary, which in turn lends the funds out either by making loans or by buying securities such as stocks or bonds. Successful financial intermediaries have higher earnings on their investments than small savers because they are better equipped than individuals to screen out good from bad credit risks, thereby reducing losses. In addition, financial intermediaries have high earnings because they develop expertise in monitoring the parties they lend to, thus reducing losses due to moral hazard.

APPROACH 2: PRODUCTS OFFERED BY DEPOSIT-ACCEPTING INTERMEDIARIES[7]

The *products approach* to viewing bank output examines the products that are actually priced and sold by deposit-accepting intermediaries. We examine the products offered from two different perspectives. From the first perspective, we list the products offered by each of the NAICS sub-industries under the NAICS 5221 industry. For reference, the breakdown of th8e NAICS 5221 industry is given in Table x. Of course, because each individual bank offers slightly different specifications of each of the main products offered by firms in this industry, we list here only general product types, as opposed to specific product specification. Under the second approach, we examine the products offered for each sub category of the North American Product Classification System (NAPCS).

PRIMARY PRODUCTS OFFERED, BY NAICS SUB-INDUSTRSY

The following table gives some of the typical products offered by each sub-NAICS industry within the NAICS 5221 – Depository Credit Intermediation Industry. Of course, because each bank offers slightly different products, these are only general product *types* as opposed to specific product specifications.

A detailed description of each of these products is given in Appendix X.

Table x: Products Offered by NAICS Industry

NAICS 5221 – Depository Credit Intermediation	
NAICS 52211 – Banking	
NAICS 522111 – Personal & Commercial Banking	
Personal Banking	
Account Packages and Separately-Priced Deposit Account-Related Products	
• Deposit account service packages - Chequing	• Deposit account service packages - Savings
• Cheque processing	• Bank drafts
• Handling of returned deposit items	• Items returned non-sufficient funds (NSF)
• Stop payments	• Provision of account statements
• Cancelled cheques	• ATM transactions
• Correspondent account products	• Money orders
• Traveller’s cheques	• Foreign currency exchange
• Certified cheques	• Certificates of account balance
• Safety deposit boxes	• Personal cheques
• Interac E-mail money transfer/Interac on-line	• Term (time) deposits
Loan Products	
• Residential mortgage loans	• Home equity loans
• Home improvement loans	• Vehicle loans
• Personal loans	• Overdraft protection
• Line of credit	
Financial Planning Services and Trust Products	
• Registered plans (RRSP’s, RESP’s)	• Guaranteed Investment Certificates (GIC’s)
• Personal trust administration	• Guardian administration
• Personal trust agency products	• Estate products

[7] These product classes are based on the North American Product Classification System (NAPCS). See: http://stds.statcan.ca/english/napcs/napcs_main.asp

• Personal financial planning and advice products	• Personal investment management products
Commercial Banking[8]	
Account Packages and Cash Management Products	
• Account service packages – $US/$CAN	• Account service packages – Other
• New business start-up packages	• Small business banking plans
• Coin and currency counting products	• Night and lobby deposit box products
• Business money market (surplus) accounts	• Electronic document presentation and payment
• Cash management – collection services	• Cash management – electronic reporting services
• Cash management – payment services	• Cash management – payroll services
• Cash management – merchant services	• Foreign exchange products
Loan Products	
• Loans secured by accounts receivable	• Commercial/Industrial mortgages
• Construction mortgages	• Inventory loans
• Term loans	• Installment loans
• Business lines of credit	• Agricultural loans
Financial Planning and Trust Products	
• Trust services	• Financial risk management services
• Group savings plan products	
NAICS 522112 – Corporate & Institutional Banking	
• Cash management services	• Collections services
• Payments services	• Asset-based lending
• Corporate lending	• Trust services
• Correspondent banking	
NAICS 52212 – Local Credit Unions	
• Deposit account service packages – Chequing	• Deposit account service packages – Savings
• Term deposits	• Investment & retirement planning products
• Personal loans	• Business loans
• Agricultural loans	• Lines of credit
• Mortgage loans	• Trust services
• Registered plans (RRSPs, RESPs, etc.)	• Travellers cheques

PRIMARY PRODUCTS OFFERED, BY NAPCS SUB-GROUP

The table below lists various product/service lines offered by firms operating in the NAICS 5221 – Depository Credit Intermediation industry. Instead of listing the various services offered by each sub-NAICS group within the NAICS 5221 – Depository Credit Intermediation industry, the service lines listed below are organized according to the North American Product Classification System (NAPCS)[9].

A description of the individual products is found in Appendix X.

Table x: Product Descriptions based on North American Product Classification System (NAPCS) 2007

Product	Description	Examples
Deposit account-related products	Services related to general-purpose deposit accounts, both demand and time. These services allow accounts to be created or closed, and used to make deposits, withdrawals, transfers, etc. Typical deposit accounts offer a bundle of services, such as cheques, account statements, ATM transactions, etc., provided for a flat fee, usually paid	• Chequing accounts (bundle of services) • Savings accounts (bundle of services) • Stop payments • Providing statements • Charges made for ATM transactions

[8] Many of the products offered by the NAICS 52211 – Depository Credit Intermediation Industry, such as cheque issuing, safety-deposit box services, etc., are also offered to business customers, either through deposit account service packages, or on their own. These individual products are not listed again under the Commercial Heading, in the interest of space.
[9] The North American Product Classification System (NAPCS) can be found at: http://stds.statcan.ca/english/napcs/napcs_io_level2.asp?iowc_code=522002

	monthly. These services may be sold individually or as a package of services.	against regular deposit accounts.
Document payment products	Services that provide documents that can be used as payment instruments, such as money orders, traveller's cheques and letters of credit. Includes services of certifying cheques.	• Certified cheque products • Money orders • Travellers' cheques • Letters of credit
Cash handling and management products	Services that provide specialized deposit account and cash management services to business and government.	• Lock box products • Coin and currency counting products • Night and lobby deposit box products
Foreign currency exchange products	Exchanging the currency of one country for that of another, in small amounts for the convenience of travellers.	• Exchanging one currency for that of another
Loans, to financial businesses	Loans to financial businesses. Includes loans made to banks, trust companies, investment dealers and brokerages, insurance companies, etc.	• Loans to other banks • Loans to trust companies • Loans to investment dealers/brokerages • Loans to insurance companies
Loans, to non-financial businesses	Loans to non-financial businesses. Includes loans to government-owned enterprises.	• Commercial and industrial mortgages • Construction mortgages • Loans secured by accounts receivable • Inventory loans • Working capital loans • Lines of credit, to non-financial businesses
Loans, to governments	Loans to governments and their agencies. Includes loans to foreign governments. Excludes loans to government-owned enterprises.	• Loans to governments
Loans, to consumers	Loans to consumers	• Residential mortgage loans • Home equity loans • Home improvement loans • Vehicle loans • Personal loans, unsecured • Overdraft protection

FINANCIAL INTERMEDIATION SERVICES INDIRECTLY MEASURED (FISIM)

Banks are able to provide services for which they do not charge explicitly by paying or charging different rates of interest to borrowers and lenders. They pay lower rates of interest than would otherwise be the case to those who lend them money and charge higher rates of interest to those who borrow from them. The resulting net revenues of interest are used to defray their expenses and provide an operating surplus, or profit. This scheme of interest rates avoids the need to charge their customers individually for services provided and leads to the pattern of interest rates observed in practice.

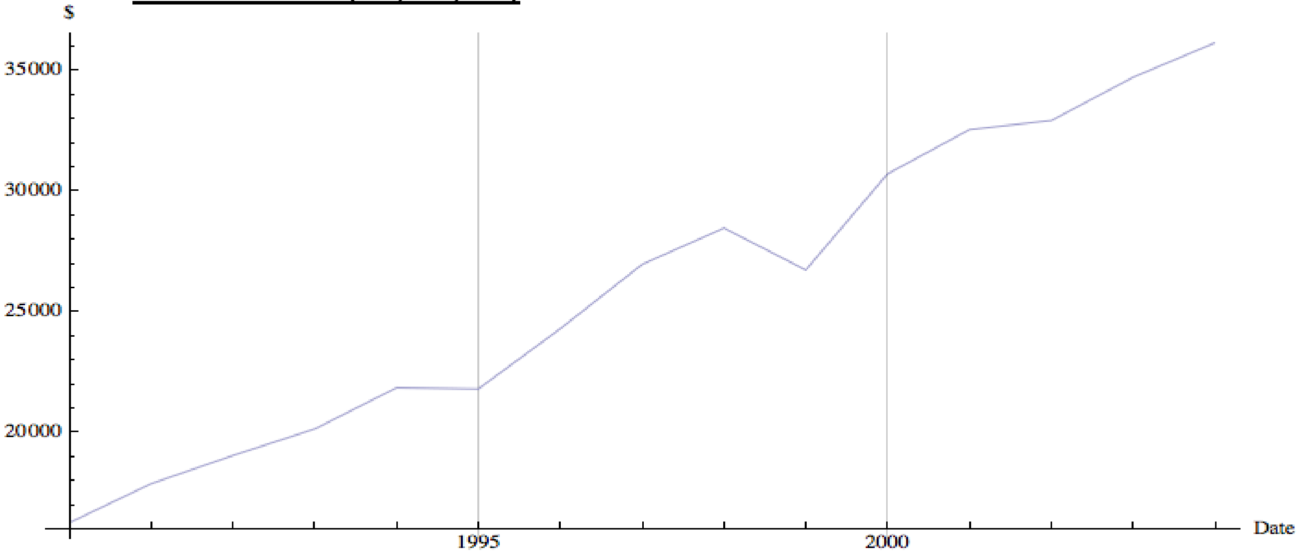
Therefore, these unpriced services are referred to as *financial intermediation services indirectly measured (FISIM).* Interest is only indirectly relevant to measuring unpriced services. One of the primary revenues that a bank receives is interest. They take in money and lend out money and earn interest. The difficulty is allocating the interest earned on loans between the two outputs, the loans and the deposits. Therefore, a reference rate methodology is used to allocate the interest between loans and deposits.

The *reference rate* to be used represents the pure cost of borrowing funds – that is, a rate from which the *risk premium has been eliminated* to the greatest extent possible and which *does not include any intermediation services.* A complete description of the reference rate concept and how it will be used to price products offered by banks will be explained in the forthcoming document entitled 'A Strategy for Compiling a Bank Services Producer Price Index'.

BANK OUTPUT IN THE CANADIAN SYSTEM OF NATIONAL ACCOUNTS (CSNA)

The table below shows the output, in current dollars, of the NAICS 5221 – Depository Credit Intermediation Industry.

Figure x: Gross Domestic Product (GDP), Current Dollars, NAICS 5221- Depository Credit Intermediation (x 1,000,000)



Source: Statistics Canada. Table 379-0023 – Gross Domestic Product (GDP) at basic prices in current dollars, System of National accounts (SNA) benchmark values, by North American Industry Classification System (NAICS), annual (table), CANSIM (database) http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&CANSIMFile=CII\CII_1_E.htm&RootDir=CII/ (accessed: July 28, 2008)

The Canadian System of National Accounts (CSNA) breaks down the output of the NAICS 5221 – Depository Credit Intermediation Industry into three main components:

1. Implicit Charges, Loans	FISIM
2. Implicit Charges, Deposits	FISIM
3. Paid Charges	Non-FISIM

The output of the first two categories (Implicit charges) is measured using the FISIM approach, while the output of the third category (Paid charges) is measured using standard approaches.

The imputation used to calculate the total output of the first two categories is given by the difference between the total property incomes received by the financial institution minus their total interest payable. In other words, the total output of the first two categories (Implicit charges), or total FISIM, is given by:

Total Property Income Receivable[10]
- Total Interest Payable
- Interest Receivable on Investment of Own Funds
= FISIM

[10] Property income receivable excludes dividends, capital gains and trading gains. Property income payable excludes interest on preferred stock treated as other debt. As well, derivative income is excluded.

The total value of FISIM, as calculated above, is then added to the total output of the third category (Paid charges), to arrive at the total output of the NAICS 5221 – Depository Credit Intermediation industry.

B. CONTEXTUAL OVERVIEW

INDUSTRY OVERVIEW

Banks play a key role in Canada's financial system. They operate through an extensive network that includes over 8,000 branches and close to 18,000 automated banking machines (ABMs) across the country. In fact, Canada has the highest number of ABMs per capita in the world and benefits from the highest penetration levels of electronic channels such as debit cards, Internet banking and telephone banking.

As of September 2007, the Canadian banking industry included 22 domestic banks, 24 foreign bank subsidiaries and 26 foreign bank branches. Banks in Canada manage $2.5 trillion in assets, account for over 70 percent of the total assets of the financial services sector, and provided over half of the short-term business credit in Canada. By way of contrast, Canada's GDP in 2006 was approximately $1.1 trillion[11], less than half the assets of Canada's banking sector in the following year (OSFI website, www.osfi-bsif.gc.ca).

In 2006, banks in Canada employed almost one quarter of a million Canadians, providing about one in every fifty Canadian service sector jobs. To give a sense of concentration, the top six Canadian Banks - BMO Financial Group, CIBC, National Bank of Canada, RBC Financial Group, Scotiabank, and TD Bank Financial Group – managed almost $2 trillion in assets, or 80 percent of the industry total. These same six banks allocated over $1 trillion in loans and accepted about $1.3 trillion in deposits. The six major domestic banks also have a significant presence outside of Canada, in areas such as the United States, Latin America, the Caribbean, and Asia, and all six rank among the world's top 150 banks.

Over the past 30 years, Canadian banks adopted many technological innovations, resulting in significant impact on the quality of customer service. 1977 saw the introduction of direct deposits of paycheques; 1986 launched a national Interac ABM network; 1996 introduced web-based loan applications, and one year later, Canadians saw their first full-service virtual bank and the introduction of telephone banking. According to a survey conducted by the Canadian Bankers Association, in 2004 over one-third of Canadians used Automatic Bank Tellers as their primary means of banking, almost a quarter used the Internet as the primary means of conducting the majority of their financial transactions, and four of every ten Canadians did at least some of their banking online. By 2005, Canada had the second highest per capita use of debit cards in the world, second only to Sweden (CBA website).

New technology and the Internet combined with regulatory changes enable competitors to enter the market without investing in the traditional brick and mortar branches. To address these challenges to market share, the major domestic banks continue to make significant investments in technology in order to provide innovate products and services that meet consumer demands and enhance competitiveness. For example, banks expanded their customer base through online banking and e-commerce, both in-

[11] Data from the Canadian Bankers Association website (www.cba.ca) and Statistics Canada (www.statcan.ca).

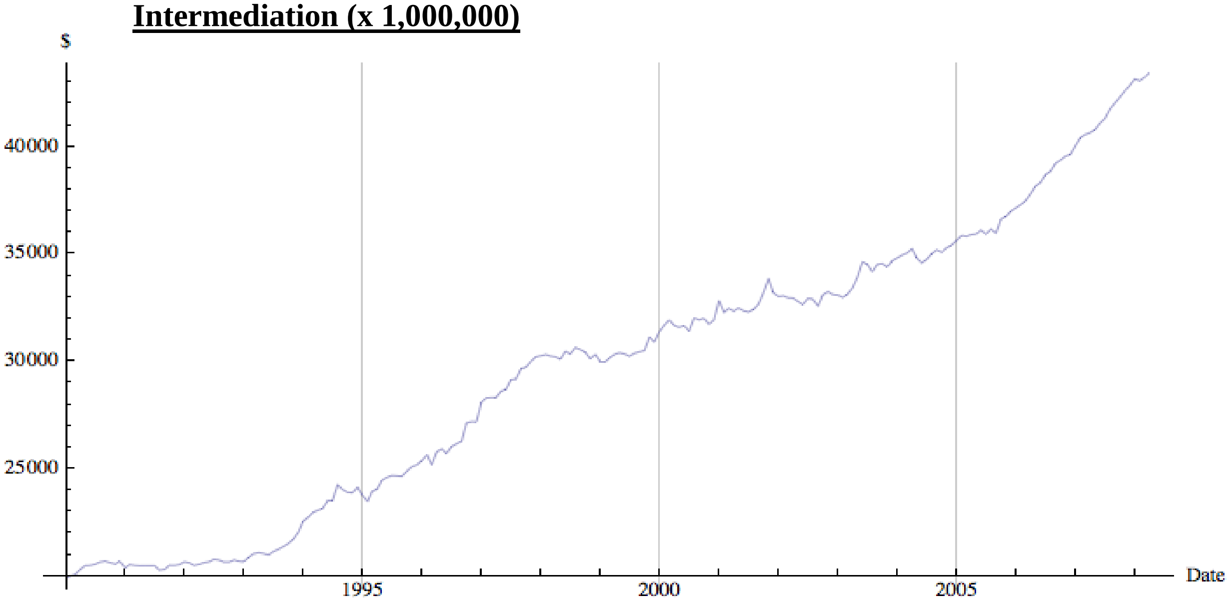
house and through technology-based ventures and acquisitions, targeted growth areas such as wealth management and corporate and investment banking, and entered into alliances with high-technology firms to control information technology and data-processing costs.

As regulatory changes increased the competition faced by traditional banks, they also reduced many of the old barriers prohibiting banks from competing in the business of non-bank financial institutions. Today any Canadian life insurance company may own a bank, and any bank may own an investment dealer or mutual fund company. For Canadian consumers, the growing number of financial services providers and the growth in financial service innovation results in an expanding array of products and services available to suit individual needs. These innovations introduce quality changes in bank services both from added convenience, time savings, and increased hours of access (to ABMs, telephone banking, and internet banking). These quality changes, in turn, increase the difficulty of our task in separating out the pure price effect and developing constant quality SPPIs.

In response to evolving customer needs, growing competition and the changing nature of financial services, banks have diversified their revenue streams. Income from 'fee-based' sources has grown over the last 10 years as a result of expanding activities like wealth management and derivatives and the establishment of investment, trust and insurance subsidiaries. Today, net interest income represents roughly 52% of gross revenues and fee-based income represents 48%. Of total revenues, personal service fees account for only about 4%.

The first figure below shows the value of total output, or Gross Domestic Product (GDP), for the NAICS 5221 – Depository Credit Intermediation industry, while the second figure shows GDP for the NAICS 5221 – Depository Credit Intermediation industry relative to that of the total Canadian economy.

Figure x: Gross Domestic Product (GDP), Constant 2002 Dollars, NAICS 5221- Depository Credit Intermediation (x 1,000,000)



Source: Statistics Canada. Table 379-0027 – Gross Domestic Product (GDP) at basic prices, by North American Industry Classification System (NAICS), monthly (dollars) (table), CANSIM (database).
http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&CANSIMFile=CII\CII_1_E.htm&RootDir=CII/ (accessed: July 24, 2008)

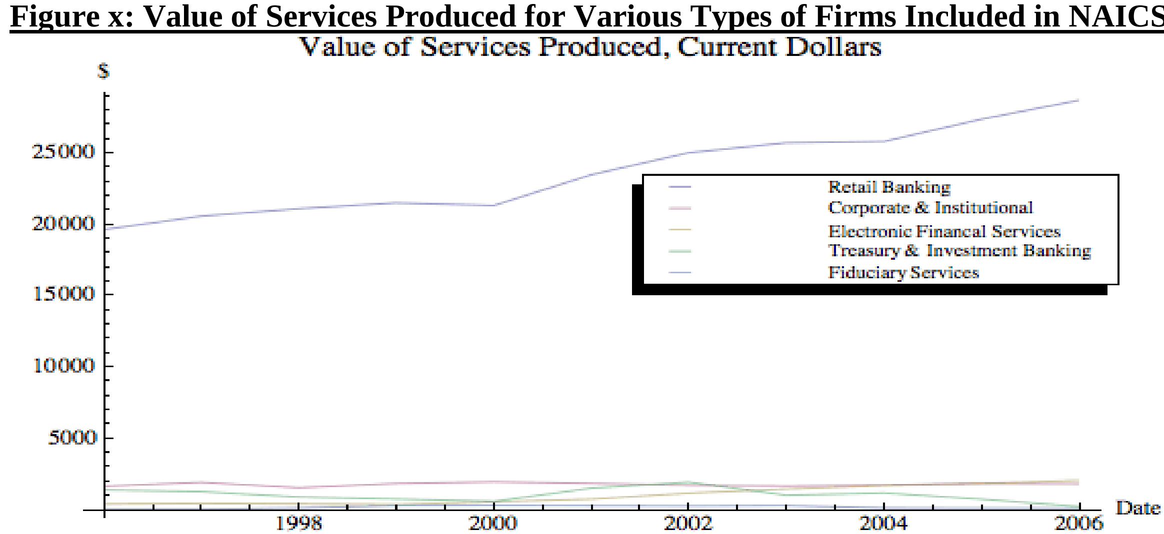
Figure x: Gross Domestic Product (GDP), Constant 2002 Dollars, NAICS 5221 - Depository Credit Intermediation as a Percentage of Total Canadian GDP (x 1,000,000)

Source: Statistic Canada. Table 379-0027 – Gross Domestic Product (GDP) at basic prices, by North American Industry Classification System (NAICS), monthly (dollars) (table), CANSIM (database)
http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&CANSIMFile=CII\CII_1_E.htm&RootDir=CII/ (accessed: July 24, 2008)

In Table 1, we showed the breakdown of the NAICS 5221 – Depository Credit Intermediation Industry and the types of firms that operated in each of the 4, 5, or 6-digit NAICS Industry. We would like to be able to compare the different types of firms operating within the NAICS 5221 – Depository Credit Intermediation, in terms of their levels of output, and types of revenue they most rely on – namely, revenue from interest-sources versus revenue from non-interest sources.

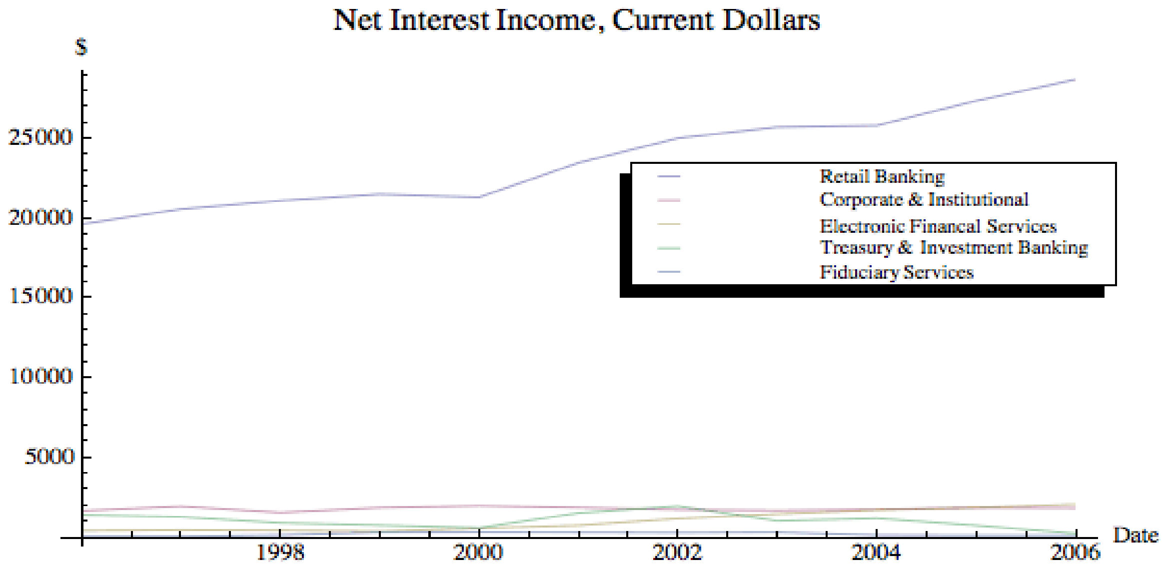
The following tables compare, across time, the various types of firms comprising the NAICS 5221 – Depository Credit Intermediation industsry in terms of three variables: (i) Value of Services Produced; (ii) Net-Interest Income; and (iii) Non-Interest Income.

Figure x: Value of Services Produced for Various Types of Firms Included in NAICS 5221



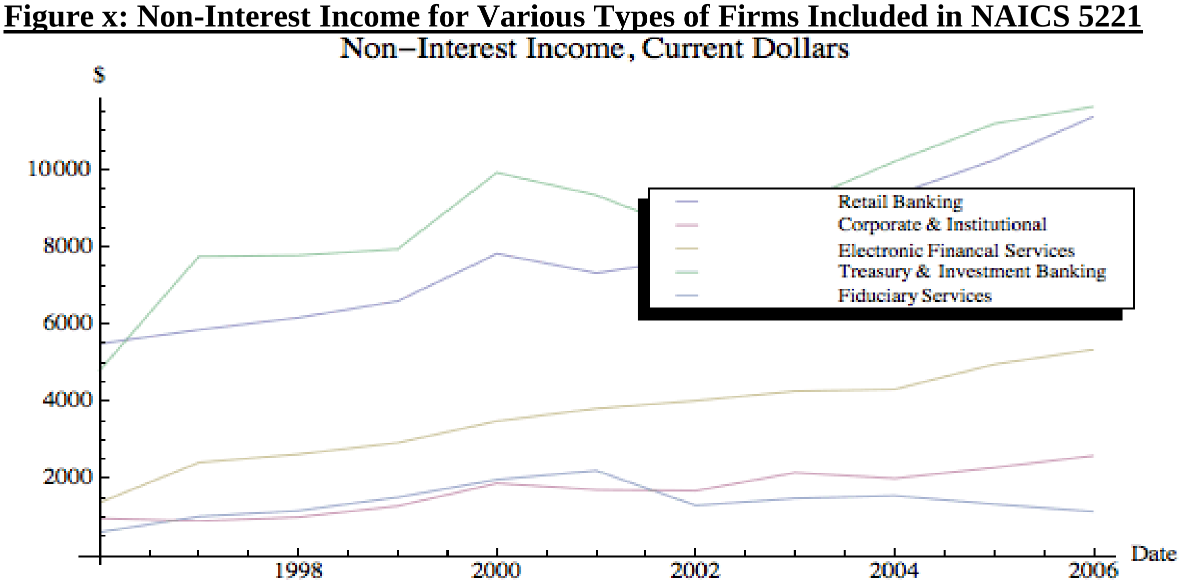
Source: Statistics Canada. CANSIM Table 182-0001 – Survey of deposit-accepting intermediaries: chartered banks, trust companies, caisses populaires and credit unions, annual (dollars); http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E& CANSIMFile=CII\CII_/_E.htm&RootDir=CII/ (accessed: July 17, 2008)

Figure x: Net Interest Income, for Various Types of Firms Included in NAIDS 5221



Source: Statistics Canada. CANSIM Table 182-0001 – Survey of deposit-accepting intermediaries: chartered banks, trust companies, caisses populaires and credit unions, annual (dollars); http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&amp; CANSIMFile=CII\CII_/_E.htm&RootDir=CII/ (accessed: July 17, 2008)

Figure x: Non-Interest Income for Various Types of Firms Included in NAICS 5221

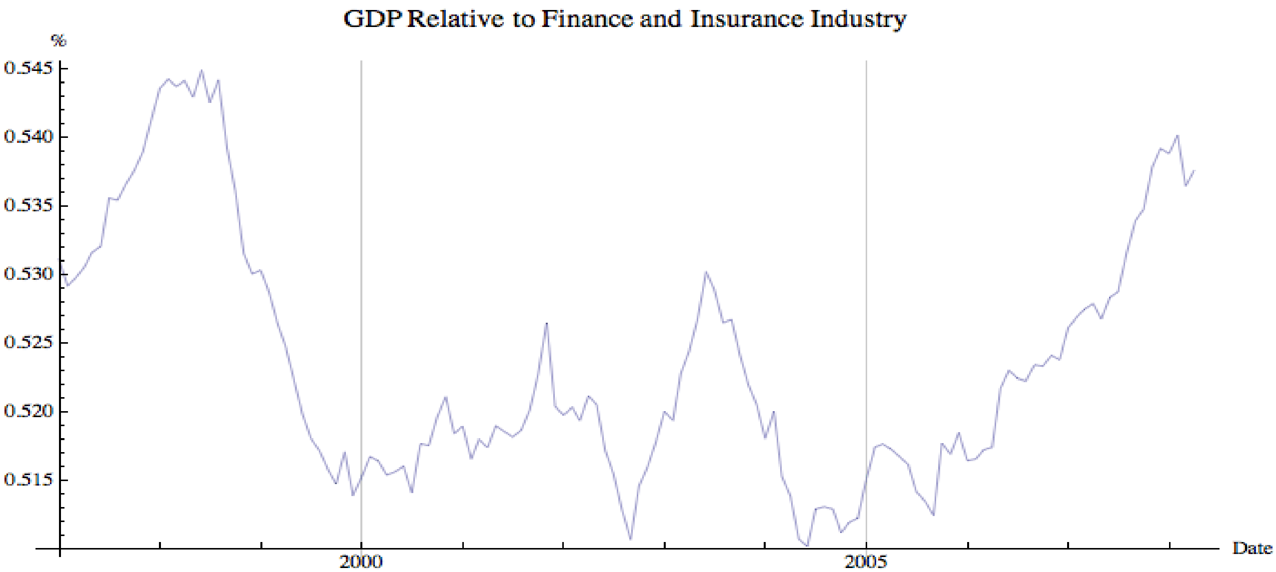


Source: Statistics Canada. CANSIM Table 182-0001 – Survey of deposit-accepting intermediaries: chartered banks, trust companies, caisses populaires and credit unions, annual (dollars); http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&amp; CANSIMFile=CII\CII_/_E.htm&RootDir=CII/ (accessed: July 17, 2008)

SIZE RELATIVE TO FINANCE, INSURANCE, AND REAL ESTATE (FIRE) SECTOR

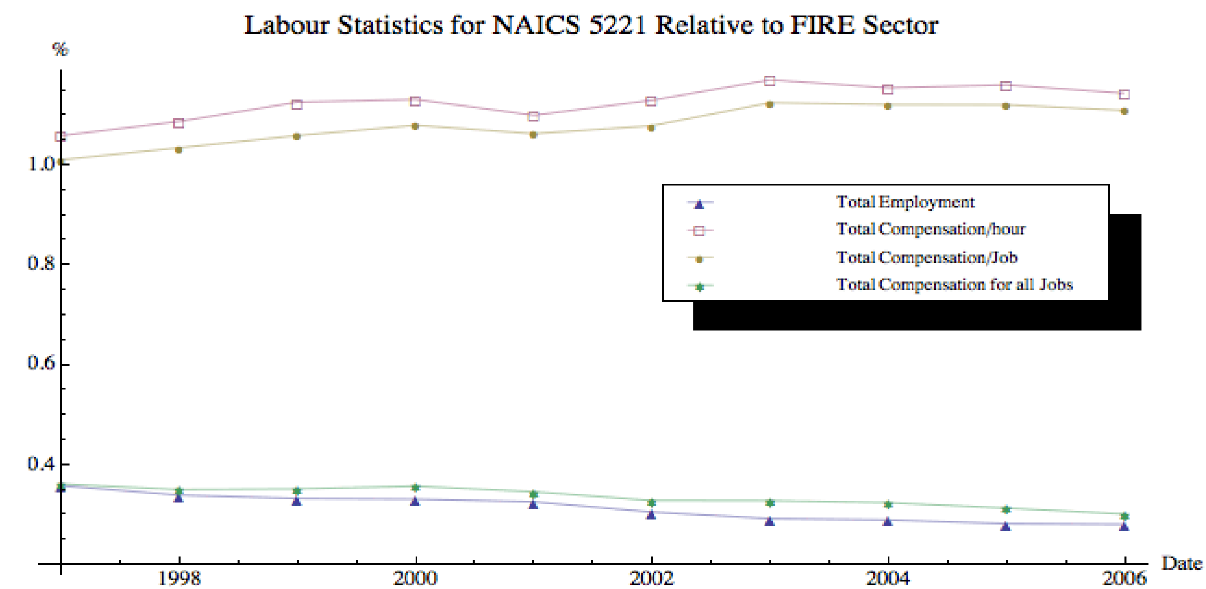
The following tables provide a comparison of the NAICS 5221 – Depository Credit Intermediation industry relative to that entire Finance and Insurance sector, or NAICS 52 – Finance and Insurance.

<u>Figure x: Current Dollar GDP (monthly) of NAICS 5221 Relative to NAICS 52 – Finance & Insurance Industry</u>



Source: Statistics Canada. CANSIM Table 379-0027 – Gross Domestic Product (GDP) at basic prices, by North American Industry Classification System (NAICS), monthly (dollars); http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe? Lang=E&CANSIMFile=C11\C11_1_E.htm&RootDir=C11/ (accessed: July 15, 2008)

<u>Figure x: Various Labour Statistics for NAICS 5221 Relative to NAICS 522 – Finance & Insurance Industry</u>



DATA SOURCES RELEVANT TO THIS INDUSTRY

Bank of Canada-Collected Interest Rate Statistics

These interest rate statistics are for the most part derived from Bank of Canada sources and surveys. The data contain statistics used in the preparation of the Bank of Canada review, mostly made up of data series on activities of financial institutions and financial markets and some general economic and international statistics. This data is published on CANSIM, although data taken from individual firms' financial statements by the Bank of Canada is most likely in aggregated form. The data set contains *monthly*, *weekly*, and *daily* interest rate statistics on various securities such as chartered bank conventional mortgages, Treasury bill auctions, prime commercial paper, and various Bank of Canada policy rates.

Office of the Superintendent of Financial Institutions (OSFI) Data – Confidential

All Canadian banks fill out OSFI reporting forms. Some of the more relevant reporting forms in terms of this synopsis include: A2 – Non-Mortgage Loans Form; C2 – Deposit Liabilities Form; E2 – Mortgage Loans Form; M4 – Balance Sheet Form; and P3 – Income Statement Form. In general, these forms contain detailed information on both the outstanding balances of and interest income accruing to various types of financial instruments/securities, based on the type of form.

Office of the Superintendent of Financial Institutions (OSFI) Data – Public

The OSFI also publishes, on their website[12], both the balance sheets and income statements of the major Canadian Charted banks.

Canadian Banker's Association (CBA) Data

The CBA is the principal industry representative for Canada's Chartered Banks. The CBA publishes statistics on the number of financial transactions for various service delivery channels, such as ABMs, PC/Internet Banking, Telephone Banking, etc.

The CBA also publishes statistics on interest-rate spreads, number of mortgages issued per year, the percentage of residential mortgages in default, etc.

Financial Consumer Agency of Canada (FCAC) Data

The Financial Consumer Agency of Canada (FCAC) publishes data on the cost of various banking services, such as ATM charges, account fees, and credit card charges. This agency also provides consumers with information regarding their rights as consumers of financial services, and information on various financial products & service.

Statistics Canada – Survey of Deposit Accepting Intermediaries (SDAI)

The questionnaire collects data on the following sectors of activity:

- Retail banking
- Corporate and institutional finance
- Electronic financial services

For these activities, data on the following financial and non-financial variables are collected:

- Net interest income
- Non-interest income
- Provision for credit losses
- Average assets

[12] See: www.osfi-bsif.gc.ca

- Average loans
- Average deposits

II. INDUSTRY OVERVIEW

A. NUMBER OF ESTABLISHMENTS AND COMPANIES

Two primary information sources exist on firms operating within the NAICS 5221 Industry. The first one is the *Office of the Superintendent of Financial Institutions (OSFI)*. The OSFI is an agency of the federal government responsible for the regulation of Canada's financial institutions (except credit unions and *caisses populaires*). Two principal data sources are available from the OSFI. The first is the *OSFI Reporting Forms*, which are OSFI's principal source of financial data used to conduct its regulatory and supervisory review process. The second OSFI data source are the monthly balance sheets and quarterly income statements of all domestic banks and foreign bank subsidiaries that OSFI publishes on its website.

The second major source of information is the *Statistics Canada Business Register* (BR). The BR is a central, comprehensive, economy-wide database covering all units engaged in economic production in Canada. The BR covers all resident sectors of the economy, and it records ownership links between legal entities within Canada and those in the rest of the world. The BR also contains detailed information on the employment, revenues, and assets of each operating entity listed in the BR database.

Size information in terms of revenue, total assets, employment, etc., are felt to be most accurately measured from the BR, as opposed to other sources such as OSFI or industry associations such as the CBA. This is because non-BR sources publish data on these variables at the *enterprise* level. This means that revenue earned by these enterprises for activities classified to industries other than the NAICS 5221 Industry, such as the provision of insurance services, will be counted in the revenue, total assets, employment, etc., of these enterprises. In order to obtain information on the revenues attributable only to those activities classified under the NAICS 5221 Industry, it is necessary to have a detailed breakdown of the structure of each firm, and the revenues attributable to each type of activity undertaken by each firm.

From the list of deposit-accepting intermediaries provided on the OSFI website, we list the distribution of the main types of firms within the NAICS 5221 Industry in the following table. The total assets attributable to each type of firm is also given. A complete listing of the firms within this NAICS Industry, taken from the OSFI website, is found in Appendix B.

Table x: Distribution of Number of Enterprises, and Assets, in NAICS 5221 Industry, by Type of Firm

Firm Type	Primary NAICS	Number	Total Assets (millions)	% of Total Assets
Domestic Banks (Schedule I)	522111, 522112	20	1 524 835	77.64
Foreign Banks (Schedule II)	522111, 522112	24	97 340	4.95
Foreign Bank Branches – Full Service (Schedule III)	522111, 522112	29	3 844	0.19
Trust Companies[13]	522111	48	206 976	10.54
Loan Companies	522111	20		
Credit Unions	52213	681	131 000	6.67
Caisses Populaires	52213	914		

Source : The Office of the Superintendent of Financial Institutions Annual Report 2000-2001 and OSFI Web page : http://www.osfi-bsif.gc.ca/osfi/index_e.aspx?DetailID=568

[13] Because many trust companies are owned by domestic banks, the asset figure, in terms of ownership, should in reality be higher for domestic banks and should be lower for trust and loans companies.

B. SIZE AND TYPE OF PRODUCTION BY SIZE

Services in the banking industry depend on size. The larger the bank the more services the bank will provide. For example, demand deposits which are defined as a deposit that is payable on demand or issued with an original maturity of less than seven days are closely associated with consumer transactions. Therefore, demand deposits are relatively more important as a source of funds for smaller consumer-oriented banks, such as credit unions and *caisses populaires.* On the other hand, *certificate of deposits,* and/or *commercial paper,* which are very large unsecured liabilities of commercial banks issued in denominations of $100,000 or more to business firms or individuals are issued by large, well-known commercial banks of only the highest credit standing, such as Canada's Schedule I Chartered banks.

Other services such as Eurodollars and Banker's Acceptances are sources of revenues mainly for large commercial banks.

C. MAJOR SERVICE PROVIDERS AND CONCENTRATION

In general, a *concentrated industry* is one where there are few firms, and each firm maintains a 'high' market share. In this section we make precise the term 'high' by specifying precise measures of concentration.

FOUR-FIRM CONCENTRATION RATIO

The *four-firm concentration ratio* simply sums up the market share of the four largest firms in the industry. We will use Revenue as our measure of market share.

Let s_i denote the percentage of the industry's total revenue[14] attributable to firm *i*. We call s_i the market share of firm *i*. First we order all the firms in the industry so that firm 1 has the largest market share, firm 2 the second largest, and so on. Then, we define the four-firm concentration ratio by

$$I_4 = \sum_{i=1}^{4} s_i$$

Based on revenue data provided by the Office of the Superintendent of Financial Institutions (OSFI), we find that the *four-firm concentration ratio* for this industry is 78.75.

SIX-FIRM CONCENTRATION RATIO

Based on the same revenue data from OSFI, we found the sum of the market share of the largest eight firms in this industry to be 97.29.

It is interesting to note that if we take a seven-firm concentration ratio, we find that the total market share of the largest seven firms increases by only 0.81% over the six-firm concentration ratio. This indicates that 'most' each firm after the sixth largest firm accounts for very little of the total market share.

[14] By Total Revenue, we mean 'Interest Revenue' plus 'Non-Interest Revenue'. Non-interest income include such things as mortgage, standby, commitment, and other loan fees, credit and debit card service fees, etc. Although other sources of income do exist, for example the sale of credit insurance products, 'Interest Revenue' and 'Non-Interest Revenue' at the two largest source of revenue of banks and account of a large portion of banks' revenues.

The Herfindahl-Hirshman index

One problem with the *four-firm concentration ratio* is that it does not take into account the distribution of market share across the top four firms. For example, for in industry with four firms, the four firm concentration ratio will be the same whether the top firm has a market share of 100% or whether each of the four firms have a market share of 25%.

The Herfindahl-Hirshman index, on the other hand, is sensitive to unequal market shares within the top four firms. We define this measure to be the sum of the squares of the firms' market shares. Formally,

$$I_{HH} = \sum_{i=1}^{N} (s_i)^2 \quad .$$

<u>Tablex: Herfindahm-Hirshman Index for NAICS 5221 Industry</u>

Firm	Total Revenue	Market Share (x100)	(Market Share)^2	I_{HH}
1	9 680 265	26.76740	716.49417008	**1839.653865**
2	6 566 365	18.15700	329.67666481	1123.159695
3	6 560 691	18.141310	329.10716336	793.4803031
4	5 679 488	15.704650	246.63604115	464.3758669
5	5 058 538	13.987628	195.65376150	217.7398258
6	1 648 591	4.5586054	20.780883967	22.08606430
7	293 078	0.8104053	0.6567568430	1.305180339
8	170 151	0.4704934	0.2213640948	0.648423496
9	164 522	0.4549284	0.2069598633	0.427059401
10	148 884	0.4116869	0.1694861540	0.220099538
11	61 081	0.1688982	0.0285266284	0.050613384
12	55 254	0.1527857	0.0233434807	0.022086756
13	34 213	0.0946041	0.0089499474	0.013136808
14	20 367	0.0563178	0.0031717014	0.004186861
15	8 913	0.0246458	0.0006074156	0.001015159
16	5 254	0.0145281	0.0002110660	0.000407744
17	3 704	0.0102421	0.0001049011	0.000196678
18	2 563	0.0070870	0.0000502267	0.000091777
19	2 328	0.0064372	0.0000414385	0.000041550
20	121	0.0003345	0.0000001119	0.000000111

Source: Office of the Superintendent of Financial Institutions (OSFI)

By applying the Herfindahl-Hirshman index to the above list of domestic (Schedule I) banks provided by the OSFI (with firm names not provided in order to protect confidentiality), we find the Herfindahl-Hirshman index to be 1,839.65. For comparison purposes, an industry with only four firms in which each firm accounts for 20% of industry revenue would have a Herfindahl-Hirshman index of 2,000.

MAJOR SERVICE PROVIDERS

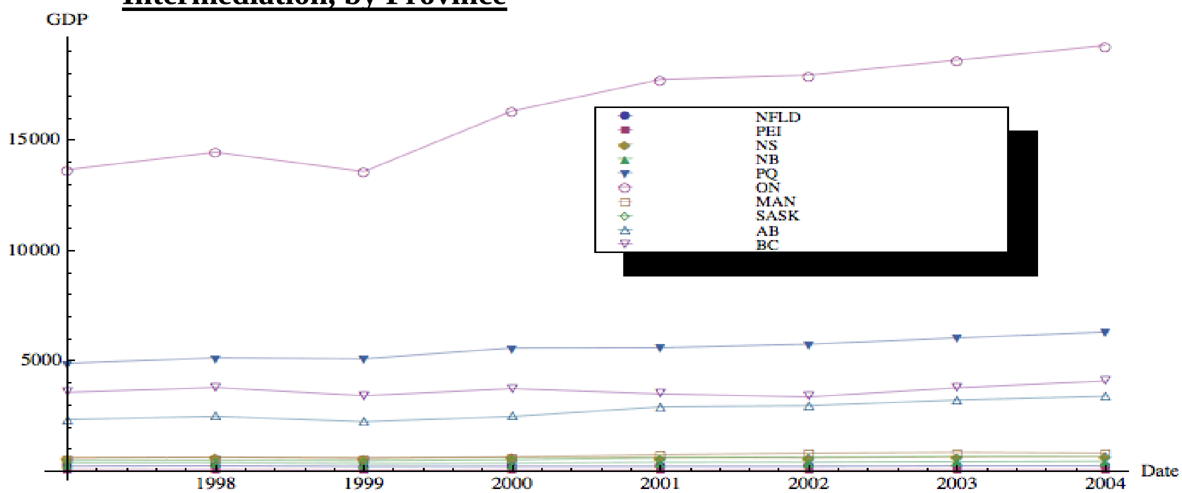
The major service providers in the Canadian Depository Credit Intermediation industry are what are commonly referred to as the 'Big Six' banks. These six banks include: RBC Financial Group; Canadian Imperial Bank of Commerce (CIBC); BMO Financial Group; Scotiabank; TD Bank; and the National Bank of Canada. Together, these six banks own assets of $1.6 Trillion, and account for over 92.12% of all bank assets held by Canada's banks, including subsidiaries of Foreign banks operating in Canada. We already saw in the previous section that the total revenue of the these six banks account for 97.29% of total industry revenue.

Many observers also refer to the 'Big Eight' banks, which are the big six banks plus the Laurentian Bank and the Canadian Western Bank. Together, the Big Eight banks hold assets worth 93.42% of total assets held by Canadian banks, including subsidiaries of Foreign banks operating in Canada.

E. GEOGRAPHIC DISPERSION

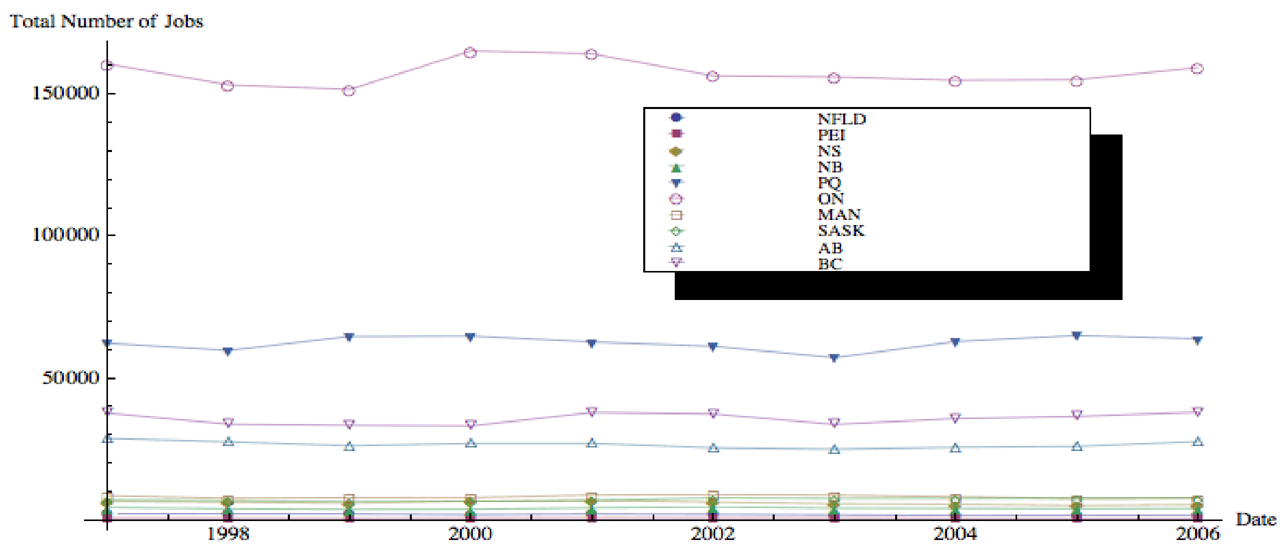
The figures below show various economic measures for NAICS 5221 – Depository Credit Intermediation, by Province.

Figure x: Gross Domestic Product (Current Dollars) of NAICS 5221 – Depository Credit Intermediation, by Province



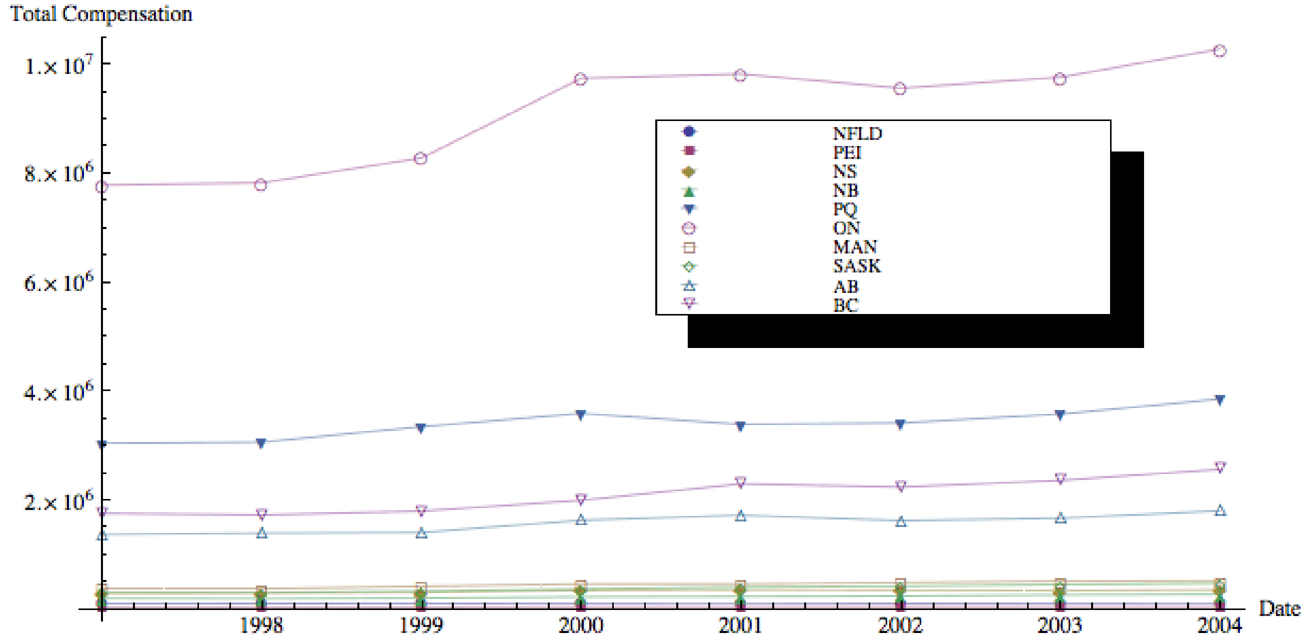
Souorce: Statistics Canada. Table 381-0015 – Provincial Gross Domestic Product (GDP) at basic prices in current dollars, System of National Accounts (SNA) benchmark values, by sector and North American Industry Classification System (NAICS), annual (table), CANSIM (database). http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&CANSIMFile=CII\CII_1_E.htm&RootDir=CII   (accessed: July 22, 2008)

Figure x: Total Number of Jobs in NAICS 5221 – Depository Credit Intermediation, by Province



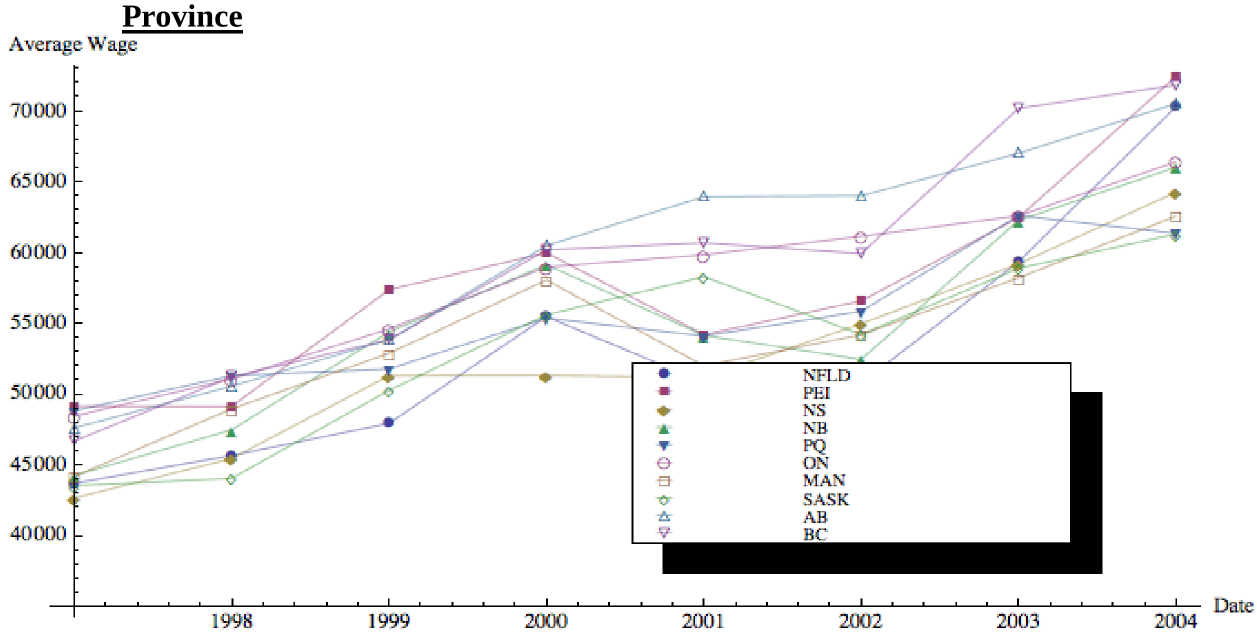
Source: Statistics Canada. Table 383-0010 – Labour statistics consistent with the System of National Accounts, by North American Industry Classification System (NAICS), annual (table), CANSIM (database). http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&CANSIMFile=CII\CII_1_E.htm&RootDir=CII/ (accessed: July 23, 2008).

Figure x: Total Compensation for all Jobs in NAICS 5221 – Depository Credit Intermediation, by Province



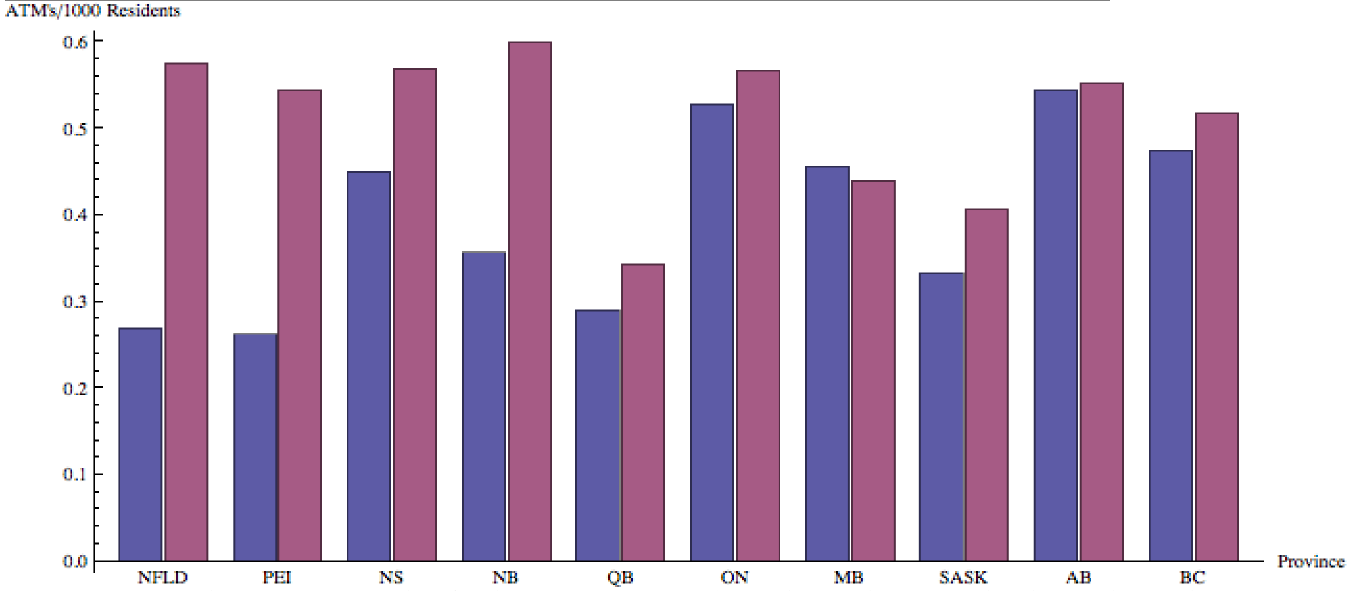
Source: Statistics Canada. Table 383-0010 – Labour statistics consistent with the System of National accounts, by North American Industry Classification System (NAICS), annual (table), CANSIM (database).
http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&CANSIMFile=CII\CII_1_E.htm&RootDir=CII/ (accessed: July 24, 2008)

Figure x: Average Wage For All Jobs in NAICS 5221 – Depository Credit Intermediation, by Province



Source: Statistics Canada. Table 383-0010 – Labour statistics consistent with the System of National Accounts, by North American Industry Classification System (NAICS), annual (table), CANSIM (database).
http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&CANSIMFile=CII\CII_1_E.htm&RootDir=CII/ (accessed: July 24, 2008)

Figure x: Total Number of ATMs per 1,000 Residents, 1995 & 2005, by Province



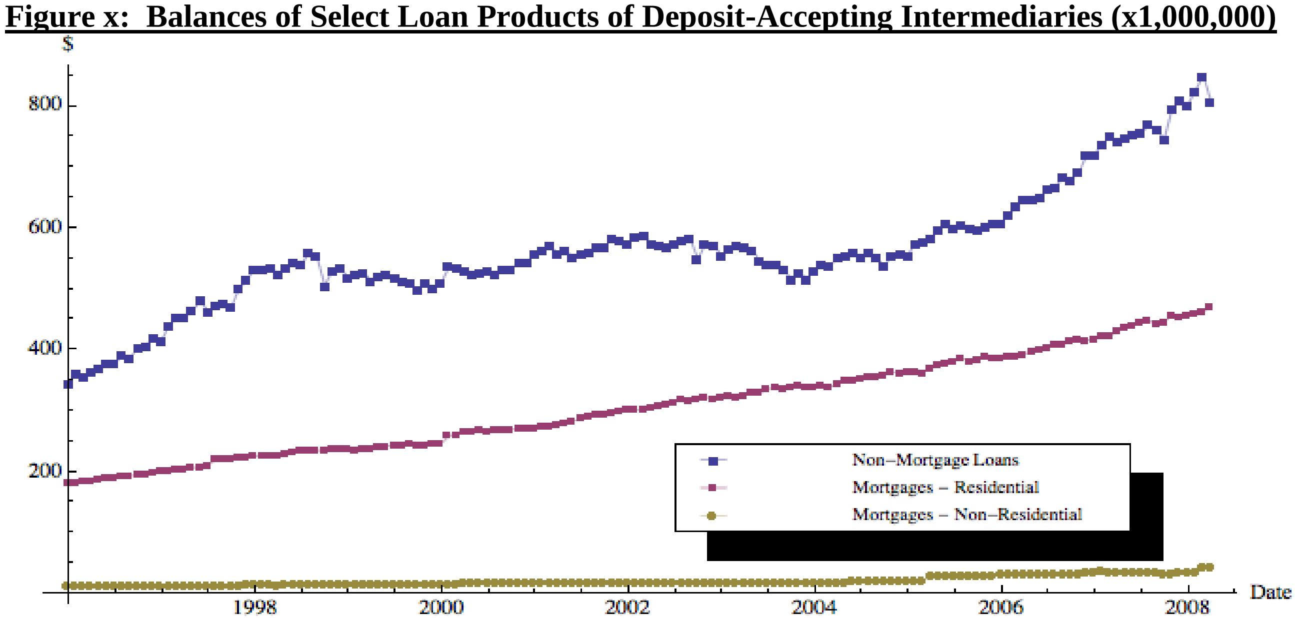
Source: Canadian Bankers Association. Number of Cash Dispensing ABMs. "Taking a Closer Look – Automated Banking Machine Market in Canada." April 2008.
http://www.cba.ca/en/Contents/Stats/fastfacts/080425%20-%20TACL%20-%20ABMs%20Canada%20FINAL%20EN.pdf

III. SERVICE INFOMRATION

INTRODCUTION

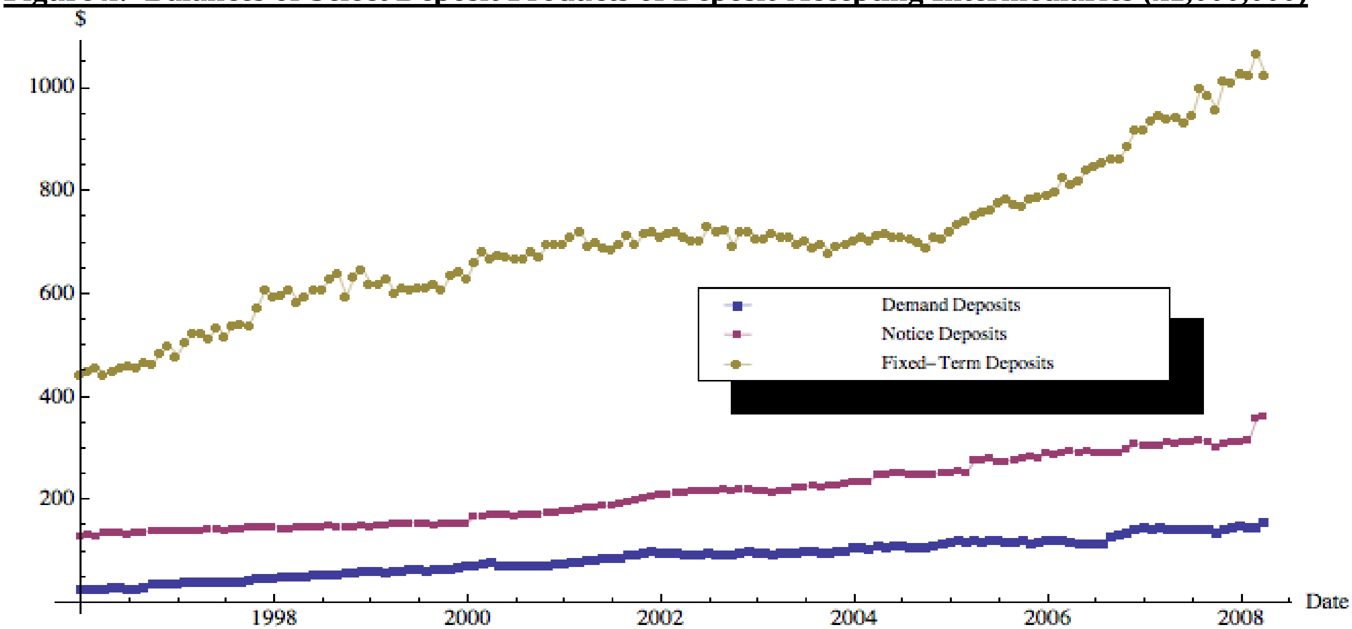
Deposit-accepting intermediaries offer a large variety of products and services. The following figures show trends within the industry with respect to the various products and services offered, and their relative importance over time.

Figure x: Balances of Select Loan Products of Deposit-Accepting Intermediaries (x1,000,000)



Source: Office of the Superintendent of Financial Institutions (OSFI)

Figure x: Balances of Select Deposit Products of Deposit-Accepting Intermediaries (x1,000,000)



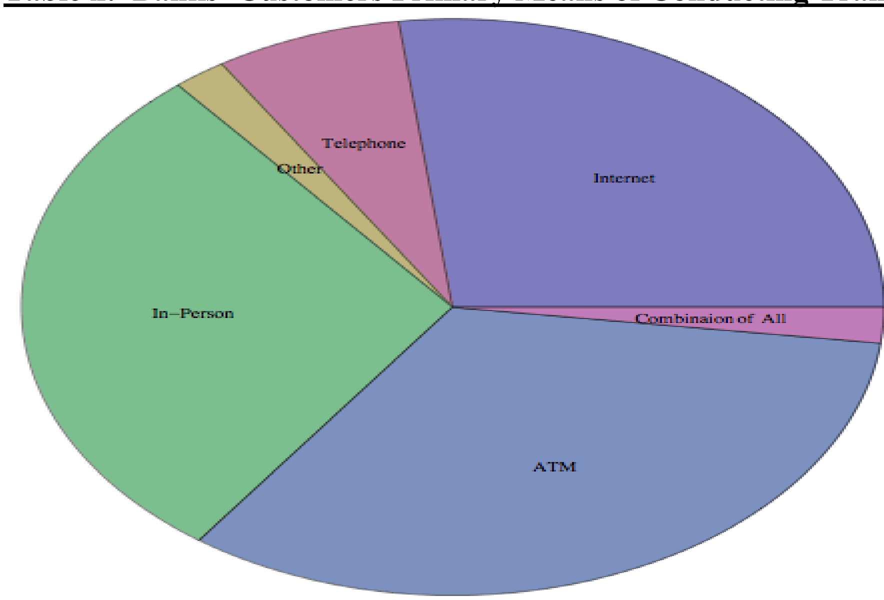
Source: Office of the Superintendent of Financial Institutions (OSFI)

A. SERVICE DELIVERY PROCESS

The most important role of commercial banks is financial intermediation. That is, commercial banks are prepared to assume the risk of agreeing to pay depositors for their excess funds (usually with interest, sometimes with services) and then finding others who are willing to pay amounts in excess of the expenses of the intermediaries for the use of the funds.

To get an idea of how banks deliver their services to customers, the following figure shows the relative importance of the various means the customers access the services provided by banks.

Table x: Banks' Customers Primary Means of Conducting Transactions



Source: Canadian Bankers Association. "Taking a Closer Look – ABM Market in Canada". August 2006.

B. CUSTOM SERVICES

Almost all the primary services such as deposits, loans, trust and off-balance sheet activities tend to be customer service oriented, and are therefore custom in this sense. These services are products specifically produced for a given buyer. In this sense, there are rarely any standardized products in the banking industry.

Services such as deposits and ATM transactions require more than one visit from the customer and these services charge a fee based on the per item transacted. Other services however, require on average just one visit from the customer, and the customer is able to specify the services.

C. SERVICE DESCRIPTORS

In this section, we describe and define the principal service offered by deposit-accepting credit intermediaries.

LOANS

Loans to Financial Businesses
Includes Loans made to banks, trust companies, investment dealers and brokerages, insurance companies, etc.

Business Lines of Credit
An agreement by a lender to lend money to a borrower, subject to specified conditions, such as maximum amount and interest rate. Excludes credit provided by credit cards.

Commercial and Industrial Mortgages
Mortgages secured by commercial and industrial real estate. Includes mortgages on residential properties, such as apartment buildings, for business purposes.

Loans Secured by Assets
Loans secured by specific assets, other than real property, of the borrower. Includes loans secured by accounts receivables, inventory loans, loans secured by negotiable warehouse receipts. Excludes equipment leasing.

Loans to Governments
Loans issued to governments and their agencies. Includes loans to foreign governments. Excludes loans to government-owned enterprises.

Agricultural Loans
These include both short- and long-term loans to farmers to finance their agricultural operations. Short-term agricultural loans are generally seasonal and are made primarily to provide farmers with funds to purchase seed, fertilizer, and livestock. In making these loans, specialized knowledge of farm products is required, and the lending officer usually inspects the applicant's farming operations once per year.

Loans to Corporations (Corporate Lending)
Loans made to (large) corporations.

Personal Loans
Loans to consumers other than residential mortgage loans, home equity loans, and vehicle loans. Can be either secured or unsecured. Includes home improvement loans.

Residential Mortgage Loans
Mortgage loans provided to owner-occupiers, secured by residential real property. Includes adjustable rate mortgages, variable rate mortgages, rollover mortgages, etc.

Home Equity Loans & Lines of Credit
Loans secured by the equity of a borrower's residence, over the value of any outstanding mortgages. Home equity loans may be set up as lines of credit.

Vehicle Loans
Loans to consumers to purchase automobiles and other vehicles or equipment; the vehicle is collateral for the loan. Includes recreational vehicles, except boats.

DEPOSITS

Personal Deposit-Account Service Packages – Demand (Non-Interest)
A bundle of deposit account-related services, such as cheques, account statements, ATM transactions, etc., provided for a flat fee, usually paid monthly. The services included in the package may include non-deposit services, such as travellers' cheques. Characteristics of demand-deposit accounts that are not features of time-deposit accounts, are that cheques can be written on these accounts and early withdrawal penalties do not exist.

Deposit-Account Service Packages – Time (Non-Interest)
A bundle of deposit account-related services, such as cheques, account statements, ATM transactions, etc., provided for a flat fee, usually paid monthly. The services included in the package may include non-deposit services, such as travellers' cheques. Cheques cannot be written on these account packages and in many cases fees are charged if either withdrawals are made before a specified time period or the number of withdrawals made per month is greater than a specified amount.

Business Account Service Packages
Deposit-account services packages targeted to small businesses and commercial clients. These accounts have certain features over-and-above deposit account-service packages sold to consumers, such as free $CAN/$US conversion (for companies selling in international markets), and well as overdraft services to protect businesses from low liquidity situations.

CASH MANAGEMENT PRODUCTS

Wire Transfers
Services to businesses to have funds transferred through interbank payment systems. Excludes payments made by financial institutions themselves for access to payments systems.

Controlled and Delayed Disbursement Products
Services to businesses to manage payments in order to maximize funds available to the business.

Depository Transfer Cheque Products

Services that facilitate transfers of funds from accounts at dispersed locations to a concentration account, by use of pre-printed, unsigned, non-negotiable bank drafts.

Cash Management Concentration Account Products

Services that manage transfers of funds between accounts.

Night and Lobby Deposit Box Products

Services that process mail involving financial transactions - depositing cheques, providing transaction and summary reports, etc.

Account Reconciliation Products

Services that facilitate the reconciliation of customer's accounts.

Correspondent Account Products

Services provided by one bank to another, generally for the second bank's customers requiring services of a type that the first bank does not provide or in a location that the first bank does not operate in.

DOCUMENT PAYMENT PRODUCTS

Cashier's and Certified Cheque Products

Services that provide a cheque with a guarantee of payment from a bank, either because the cheque is drawn on the bank by the bank itself (cashier's cheques) or because a deposit account cheque is certified by the bank, so that the cheque becomes an obligation of the bank, and is paid out of bank funds (certified cheque).

Money Orders

Services that provide money orders, a form of negotiable instrument calling for the payment of money to the named payee.

Travellers' Cheques

Services that provide travellers' cheques, which are negotiable instruments sold in set denominations, in various currencies, paid in advance, with a guarantee of replacement by the issuing institution if lost or stolen.

Letters of Credit

Services that provide documents that guarantee payment of a specific amount of money, by a bank (issuing institution) to a third party, if certain conditions are met.

TRUST SERVICES

The management of property set aside to be used for the benefit of individuals or organizations.

OTHER BANKING SERVICES

Safety Deposit Box Services

The provision of a safe in a bank vault, where consumers store valuables.

Foreign Exchange Services
Exchanging the currency of one country for that of another, in small amounts for the convenience of travellers.

D. SEASONALITY

Certain services provided in the banking industry are seasonal. The seasonality of the industry depends to a larger extent on the Canadian and to some extend on the global economy. For example, products such as loans, money market, and derivative instruments are interest rate sensitive. A lower interest rate will increase demand for loans and decrease the demand for money market instruments. Services such as the off-balance sheet activities, in particular derivatives and financial futures, are influenced by global economic conditions since banks derive revenue based on the spread between countries' interest rates.

Because the bulk of bank profits is derived from net interest income (the interest income received on loans minus the interest expense for borrowed funds), interest rates determine to a large extend how profitable a bank can be. Also, net interest margin (a bank's net interest income divided by its average earnings assets) is a common measure of a bank's ability to squeeze profits from its loans. Net interest margins widen or narrow depending on the direction of interest rates, the mix of funding sources underlying lonas, and the duration, or time period until expiration, on the investment portfolio.

Falling interest rates have a positive effect on banks for several reasons. One is that net interest rate margins can expand, at least in the short term. They can do so because banks are still earning a higher than market yield on loans to customers, while the cost of funds goes down more quickly in response to the new, lower loan rates. Second, declining rates enhance the value of a bank's fixed-rate investment portfolio, since a bond with a higher stated interest rate becomes more valuable as prevailing rates drop.

Non-interest income such as trust income, securities processing, mortgage banking and brokerage income, has become a favourite avenue of revenue growth for banks since this income is not dependent on interest rates.

F. SERVICE SUBSTITUTION

It is anticipated that there will be few items to quality adjust in the commercial banking industry, with most relating to characteristics of the loan or deposit service. These characteristics are the number of accounts in the portfolio and average number of transactions per account.

Because of the constant changes in the industry in terms of efficiency and technology, it is anticipated that services such as deposits, loans, and correspondent banking may change.

Currently, more and more banks are experimenting with Internet banking in which customers can conduct all of their deposit transactions on-line. This Internet service will eliminate certain bundled services that are associated with deposit services. For example, services such as account inquiry, telephone banking, cheque orders, deposit verification, statements, etc., will be eliminated. Banks are hoping to get the majority of their customers to bank on-line.

Services such as loan services that is associated with loans may be eliminated due to better technology in which customers can make loan payments and correspondence concerning their loan via the computer. Also, because of better and more affordable computers, smaller banks may be able to conduct most of their services themselves without relying on larger correspondent banks to perform services for them.

In the future, customers who have deposit accounts plus mortgages and portfolios may receive one statement which explains the activities of all the services instead of one statement per account. This one statement may explain how funds were automatically transferred from the chequing account to pay the mortgage, and how the dividends earned from the portfolio were transferred to the chequing account.

F. QUALITY ADJUSTMENT

Change in quality is a factor that needs to be reflected adequately in any method employed. Quality change within this industry arises mainly from the following:

- Technological innovations that impact convenience/time use, such as internet banking, direct deposits, direct payments, and 24-7 Automated Banking Machines (ABMs);
- Regulatory changes that impact the range of services offered, service bundling, and the thus the corresponding price;

The length of opening hours for bank branches, the proximity of a local branch, the availability of direct access to a full range of services and products, the quality of investment advice and the performance of investment fund managers are some of the features that determine the quality of financial intermediation services.

Although it is very difficult to measure quality change within this industry, and is thus beyond the scope of this paper, the following table shows some technological innovations and regulatory changes that have occurred within the industry that that could have an impact on quality change.

Table x: Quality Change Impacts: Technological Innovations and Regulatory Changes in Banking

Technological Innovations	Regulatory Changes
1977: Direct Deposits of paycheques	1980: Amendments to the Bank Act permits banks to have subsidiaries in areas such as venture capital and mortgage loans. This expands business activities of banks
1985: CIBC links to US (Cirrus) ATM network	1987: Banks permitted to invest in corporate securities; to distribute government bonds; and to conduct brokerage services
1986: National launch of Interac ABM network	1992: Amendments to the Bank Act: permit banks to enter trust business; and to offer in-house activities such as portfolio management and investment advice.
1994: National launch of Interac direct payment	2008: Implementation of Basel II reporting requirements introduce standardized reporting requirements for internationally active banks
1996: Introduction of web-based loan applications	
1997: First nationally chartered full-service virtual bank	
1998: First hand-held portable wireless terminal for debit/credit transactions	
2001: Voice-recognition banking; e-mail	

payments; B to B internet portals	
2004: Cross-border debit	
2005: On-line debit	

IV. MARKET AND TRANSACTION INFORMATION

A. INTERPLANT AND INTRA-INDUSTSRY SALES

CORRESPONDENT BANKING

Though correspondent banking, banks are involved in the sale of bank services to other banks. Correspondent banks usually act as agents for respondent banks in check clearing and collection, purchase of securities, purchase and sale of foreign exchange, and participation in large loans[15]. Correspondent banks also provide electronic data processing for deposit accounts, installment loans, and payrolls.

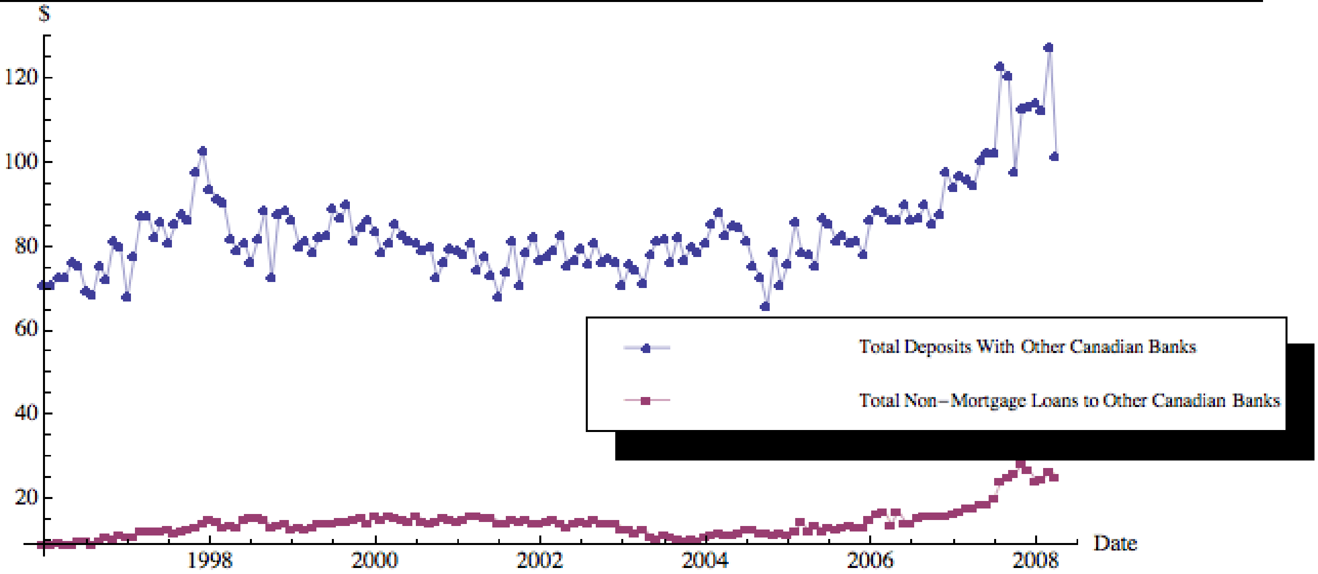
Although correspondent banking is not as prevalent among Canada's large chartered banks as it is among chartered banks in the United States (due to the fact that many chartered banks in the U.S. operate as small rural banks with limited liquidity), correspondent banking is common among Canada's credit unions and *caisses populaires*. In fact, the best example of a correspondent bank in Canada is the *Federal Central Credit Union*, whose main role is to ensure sufficient liquidity for the Canadian local credit unions, and operate the payments/settlement system for the local credit unions. Provincial central credit unions also exist to manage the liquidity of the local credit union system as well as provide deposit insurance services to members of the local credit unions.

INTRA-INDUSTRY BORROWING AND LENDING

Canada's banks regularly make loans to and place deposits with other Canadian banks. The first figure below shows the total amount of deposits of Canada's Schedule I banks that are held in other Canadian banks. The second figure shows the total amount of loans owned by Schedule I banks that are outstanding to other Canadian banks.

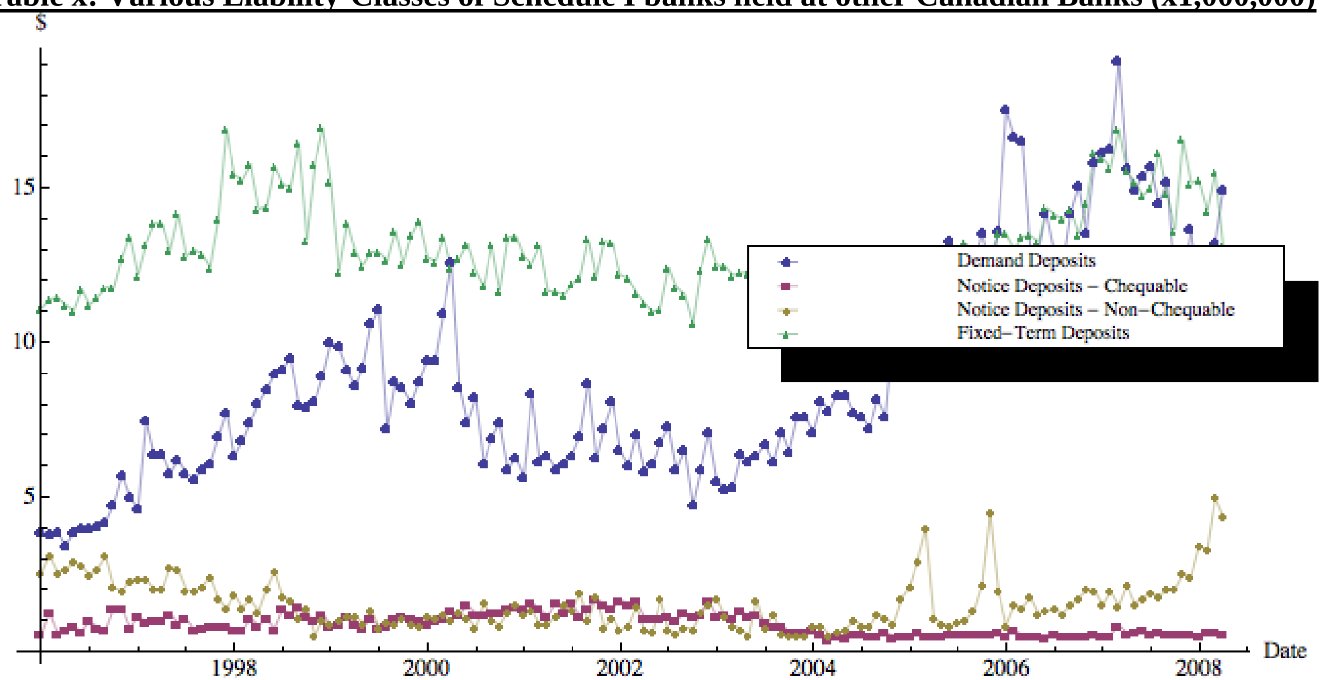
[15] These 'sharing-in-loan' activities are usually called *loan participations* and are classified under the North American Product Classification System (NAPCS) as 'NAPCS-522002.1.2.2.3 – *Loan Participations'*. Loan participations are loans shared through correspondent banking networks, with the aim to diversify the overall risk association with any particular loan.

Table x: Various Asset-Classes of Schedule I banks held at other Canadian Banks (x1,000,000)



Source: Office of the Superintendent of Financial Institutions (OSFI)

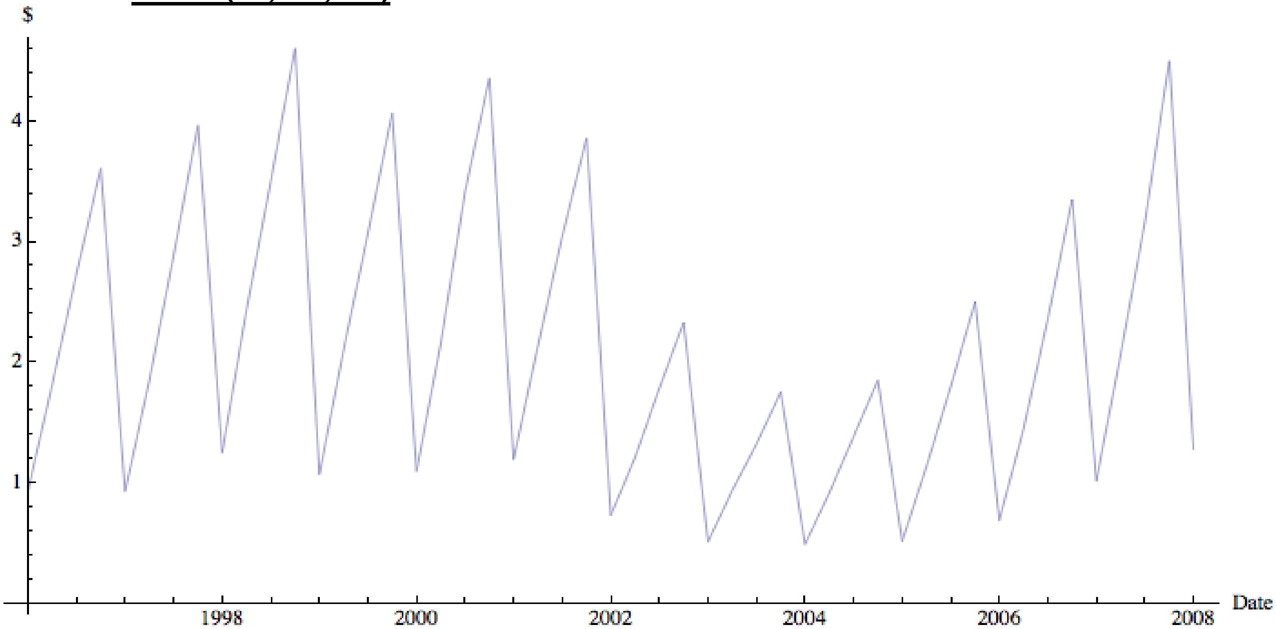
Table x: Various Liability-Classes of Schedule I banks held at other Canadian Banks (x1,000,000)



Source: Office of the Superintendent of Financial Institutions (OSFI)

The figure below shows the total interest income of Schedule I banks earned on deposits held at other Canadian banks.

Table x: Interest Income of Schedule I Banks Earned On Deposits Held at Other Canadian Banks (x1,000,000)



Source: Office of the Superintendent of Financial Institutions (OSFI)

OVERNIGHT LENDING

Between 6pm and 6:30pm each business day, deposit-accepting intermediaries that have a deficit of funds (say, by issuing more loans than their deposit balance allows) have a chance to borrow from other banks that have a surplus of funds. This trading of funds occurs on what is called the *market for overnight funds*. Deposit-accepting intermediaries have an incentive to trade on this market instead of lending/borrowing with the Bank of Canada (Canada's central bank) because they can, for the most part, agree on an interest rate that is better for both lender and borrower than what could be achieved by lending/borrowing with the Bank of Canada[16].

INTER-BANK PAYMENTS SYSTEMS

Canada's deposit accepting intermediaries also borrow from and lend to each other through various payments systems operated by the Canadian Payments Association (CPA). One of these systems is the *Automated Clearing and Settlement System*, introduced in 1984, through which the vast majority of payment items in Canada – more than 17 million on an average business day – are cleared. Clearing means the process of exchanging and reconciling payment items that result in a transfer of funds from one financial institution to another. Settlement means the process of adjusting financial positions of individual financial institutions to reflect the net amounts due to and from them (including interest compensation) as a result of the inter-membership exchange of payment items. The second payments system operated by the CPA is the *Large Value Transfer System* (LVTS), a system to facilitate the transfer of irrevocable payments in Canadian dollars across the country. Through the LVTS, funds can be transferred between participating financial institutions virtually instantaneously, and the money can thus be credited to the recipient's account on a timely basis.

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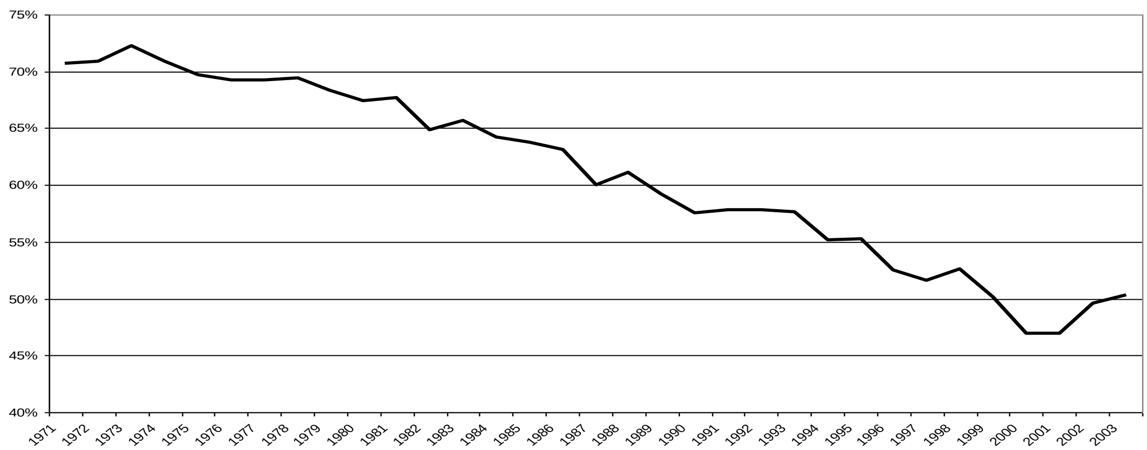
[16] In rare cases where none of the banks will lend to each other, even at high interest rates, because of banks' mutual-low confidence in each other, the central bank will have to step in to lend to the firms with a deficit of funds at the end of the day.

B. PRICE BEHAVIOUR

HISTORICAL OVERVIEW

The following figure, which shows implicit charges as a percentage of bank and credit union output over the period 1971 to 2005, seems to indicate that deposit-accepting intermediaries are steadily substituting the explicit charging for their services in the form of paid fees for implicitly charging in the form of interest charges.

Figure x: Implicit Charges as a Percentage of Bank and Credit Union Output (1971-2005)



As the figure above indicates, the traditional financial intermediation role of banking, whereby banks make loans that are funded by deposits, is no longer as important in our financial system. However, the decline in the market share of banks in total lending and total financial intermediary assets does not necessarily indicate that the banking industry is in decline. Instead, banks appear to be charging for services in different way. For example, non-interest income derived from off-balance-sheet activities, as a share of total banking income, increased from around 7% in 1980 to more than 28% of total bank income today.

Two principle reasons have been suggested for the relative decline in traditional banking activities[17]:

1. *Decline in Cost Advantages in Acquiring Funds (Liabilities)*

Before the 1980s, banks were paying low interest rates on chequable deposits. This worked to the bank's advantage because their major source of funds was chequable deposits. But this cost advantage for banks did not last. The rise in inflation from the late 1960s on led to higher interest rates, which made investors more sensitive to yield differentials on different assets. The result was the so-called disintermediation process, in which people began to take their money out of banks, with their low interest rates on both chequable and time deposits, and began to seek out higher-yielding investments. Also, at the same time, financial innovation led to money market mutual funds, which put the banks at an even further disadvantage because depositors could now obtain deposit-like services while earning high interest on their money market mutual fund accounts.

[17] Mishkin, Frederic S., and Apostolos Serletis (2005). "The Economics of Money, Banking and Financial Markets – 2nd Canadian Edition". Toronto: Pearson Education Canada Inc.

2. *Decline in Income Advantages on Uses of Funds (Assets)*

Improvements in information technology have made it easier for firms to issue securities directly to the public. This has meant that instead of going to banks to finance short-term credit needs, many of the banks' best business customers now find it cheaper to go instead to the commercial paper market for funds. We have also seen that improvements in computer technology have led to securitization, whereby illiquid financial assets such as bank loans and mortgages are transformed into marketable securities. Computers enable other financial institutions to originate loans because they can now accurately evaluate credit risk with statistical methods, while computers have lowered transaction costs, making it possible to bundle these loans and sell them as securities. When default risk can be easily evaluated with computers, banks no longer have an advantage in making loans. Without their former advantages, banks have lost loan business to other financial institutions even though the banks themselves are involved in the process of securitization.

PRICE BEHAVIOUR TODAY

Averaged across all Canadian deposit-accepting intermediaries, service charges (explicit fees) have remained relatively stable since 2000 for those customers who maintain balances of less than $1000, but have fallen significantly for those who keep more than $1000 in their accounts.

Significant changes in pricing behaviour have occurred at some institutions:

- In-branch use, or access to a teller, has generally become cheaper, due to the introduction of low-fee accounts at eight banks[18] and the elimination of the in-branch bill payment handling fee at four banks.
- There have been some new fees and increases in existing fees for electronic or self-serve transactions.

Using another institution's automated banking machine (ABM) is becoming more expensive:

- Various chartered banks have increased their Interac fee from $1.25 to $1.50 per withdrawal at another institution's ABM.
- These same banks have also introduced surcharges for non-clients at off-premise (e.g. retail outlet) ABMs, in addition to account and Interac fees charged by your institution. So, for example, if you are a Bank A customer, and use a Bank B or Bank C machine at a convenience store, the transaction may cost $2.24 or more above the regular transaction cost.

The number of white-label, or privately-owned ABMs has also grown:

- White-label ABMs now represent about a third of all ABMs in Canada.
- When using white-label ABMs, consumers must pay extra fees (referred to as 'convenience fees') on top of Interac fees and other transaction fees they pay their financial institution for completing a transaction. The difference between using their own institution's ABM and a white label ABM can be $2.50 or more per transaction.

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[18] In January 2001, a memorandum of understanding was implemented between the federal government and eight federally regulated financial institutions. The financial institutions agreed to provide a low-fee, basic account with certain minimum features (e.g. offer a debit card, no charge for deposits, some in-branch transactions and a free monthly statement or passbook). In addition, the 'Big-Six' Canadian banks also eliminated handling fees associated with in-branch bill payments.

- As part of a pilot project some white label point-of-sale terminals have also started adding a surcharge to debit card purchases, on top of the regular fees the consumer pays for using the card.

PRICE DESCRIMINATION AND NON-UNIFORM PRICING

In general, banks engage in a combination of *price discrimination* and *non-uniform pricing*, meaning that they charge different prices to different customers for similar products as well as provide different varieties of products to customers' with different tastes, where the prices of these products depend on the nature of the services embedded within the products.

The simplest example of price discrimination is when deposit-accepting intermediaries offer different products, with corresponding different prices, to different classes of customers, such as seniors, students, youth, etc. For example, if we compare a standard deposit account package that includes 20 to 49 basic transactions per month with a Seniors' account offering similar services, we see that only two out of the twenty banks surveyed do not charge a monthly fee for the standard account, whereas 15 out of these same twenty banks do not charge a monthly fee for the Seniors' account. Similarly, only one of the banks charges a monthly fee for its Youth account.

Banks can also price discriminate based on customers' characteristics such as credit history and customer loyalty. In general, customers who have good credit ratings and who are frequent customers of the bank can negotiate better prices on many different types of loans. We will elaborate more on this issue in the section on price-determining characteristics.

C. TYPES OF PRICES

The output of financial intermediation services can be seen as the activities associated with the management of accounts (for ex., deposit accounts), loans, saving and investment instruments, and other service such as the provision of safety-deposit boxes and foreign exchange services. When considering suitable methods for the measurement of prices for financial intermediation services it is sometimes helpful to look at the different possible methods of charging for these products rather than the individual products themselves. This is what we do in this section, where we examine the broad types of charges that may be levied on financial products; in the next section we examine the types of charges that can be levied on broad classes of financial products, in particular loans, deposits, and other types of services.

Different methods of charging can be used over time for the same product. For example, it is possible to offer chequing account services either by direct charges for each individual transaction, by some indirect method that is not directly related to the service provided, or a combination of the two.

In considering the various ways of pricing, or charging for financial services, it is useful to first consider the two main components of the output of deposit-accepting intermediaries.

2. *Financial Intermediation Services Directly Charged-For*

The output of this part of financial intermediary output is typically thought of as the sum of fees and commissions charged. As shown in Figure x, although output attributable to indirect charges is still the largest component by bank output, the importance of fees and commissions is increasing over time. Fees and commissions can take a number of forms, such as:

- A flat fee for a transaction or service. For example, a charge or the provision of a credit/charge card or a handling fee associated directly to a financial transaction;

- A fee based on the value of a transaction stock or flow, i.e., a percentage of the value of a transaction. For example, the fee for the management of an investment fund is likely to be linked directly to the value of the fund whereas the fee charged for the sale of a security is linked to the value of that sale.

- A combination of a flat rate fee and percentage charge. For example, the charge associated with the conversion of one currency into another where the total charge to the customer can be on the basis of a flat rate fee and a percentage of the value of the currency being converted.

2. *Financial Intermediation Services Indirectly Measured (FISIM)*
FISIM can be defined as the value of financial intermediation services that are not charged for explicitly. Financial intermediaries pay lower rates of interest than would otherwise be the case to those who lend them money and charge higher rates of interest to those who borrow from them. Differences between the reference rate, to be defined below, and the effective rate on loans or deposits represent the margin earned by the financial intermediary. We explain below the price associated with both loan and deposit services.

PRICES FOR BROAD PRODUCT CLASSES

Before we begin this section, we will need to define the term *reference rate*.

Definition x: The *reference rate* is the rate that represents the pure cost of borrowing funds – that is, the rate from which the *risk premium* has been eliminated to the greatest extent possible and which does not include any *intermediation services*.

LOANS

The following is a list of some of the most common types of fees, or prices, associated with Loans:

1. *(Implicit) Interest Charges*

As per the previous section, banks generally charge higher rates of interest on their loan products than they would otherwise earn by purchasing a risk-free, or 'safe' investment instrument. Again, this risk-free rate is denoted by the reference rate. In this way, we can think of the interest charge on a loan as being the difference between the interest paid to a bank at the rate charged to the customer less the amount the customer would pay to the bank if he/she was charged at the reference rate.

2. *Administration/Processing/Convenience/Verification Fees*

These are all names for the same type of service charge that may be attached to a loan. Sometimes service charges include the interest charged on the loan.

3. *Collection Fees*

If you are not able to pay back your loan, the lender may place your account in collection. This means that a collection agency will contact you about the debt you own in order to make sure you pay it. Lenders may charge a fee if your debt to them is placed in collection.

4. *Early Repayment Fee*

This is a fee that may be applied if you pay your loan back early, before the due date.

5. *Initial or One-Time Set-Up Fee*

Some lenders will charge you a one-time set of fee, especially if you are a first-time customer.

6. *Loan Repayment Fee/First-Party Cheque-Cashing Fee*

This is a fee that applies when you don't pay the loan in cash on or before the due date. Some lenders may charge you for depositing your postdated personal cheque or processing your direct withdrawal.

7. *Return Fee/Non-Sufficient Funds (NSF) Fee*

If you don't have enough money in your bank account to cover the cheque you gave the lender, or the direct withdrawal you authorized to repay the loan on its due date, you may have to pay the lender a return fee or NSF fee. This fee can range from $25 to $75.

8. *Roll-over Fee/Renewal Fee/Finance Charge/Additional Charge/Extension Fee*

This fee is applied when you don't pay the loan in cash on or before the due date and the original loan is rolled over or extended for another period of time. If you roll your loan over, you will have to pay this extra fee.

DEPOSITS

1. *(Implicit) Interest Charges*

Although we don't think of individuals making interest payments on deposit product in the same way as they do for loan product, we can think of implicit interest charges on deposits as follows. Banks generally pay lower rates of interest on their deposit accounts than customers could earn on an alternative risk-free, or 'safe' investment instrument. Again, this risk-free rate is denoted by the reference rate. In this way, we can think of the interest charge on a deposit product as the difference between the interest an individual could earn by depositing his/her money in a security at the reference rate of interest less the interest actually earned on the deposit account.

2. *Monthly Fees*

A monthly fee is usually a fixed fee paid by the customer for the ongoing service of his/her deposit account. Some account types many have zero monthly fees, while account types that do carry monthly fees may have them waived if the customer maintains a minimum balance throughout the entire month. The services offered for this monthly fee vary by account type, and can include cheque returns, free personalized cheques, stop payments, free money orders and bank drafts, free certified cheques, and free e-mail money transfers.

3. *Extra Transaction Fees*

If a customer carries out more transactions than are included in the deposit account, he/she may have to pay a fixed amount per extra transaction. It is typical for extra fees to be charged for additional bill payments, extra Interac transactions, and additional withdrawals from an ABM. These fees typically range from $0.50/transaction to $1.50/transaction. These fees include charges made for ATM transactions against regular deposit accounts.

4. *Early Withdrawal Fees*

Early withdrawal fees mainly refer to the early withdrawal of funds from a time deposit account.

5. *Non-Sufficient Funds Fees*

Fees charged to a customer if there are insufficient funds in an account to cover a cheque written on the account.

6. *Inactivity Fees*

A fee applied to an account that has seen no transaction activity in a specified period of time.

7. *Other Paid Fees*

Banks charge for other miscellaneous services such as the printing of account statements at ATMs, e-mail money transfers, etc.

OTHER BANKING SERVICES

'Other Banking Services' include those services that are not typically associated with either a deposit account or a loan. Note that some of the services that could be considered in this section are included as a part of the monthly fee associated with deposit accounts, such as bill-payment services or the provision of personal cheques. Instead, we consider 'Other Banking Services' to be those service that are typically provided to customers outside of the traditional deposit-account facility.

1. *Safekeeping Services*

Safety deposit boxes are typically provided for an annual, flat fee.

2. Foreign-Exchange Services

Banks typically sell foreign currency at a rate slightly higher than the posted wholesale rate and buy foreign currency at a rate slightly below the posted wholesale rate. In other words, they buy and sell foreign currency similar to the way a investment dealer trades securities – by implementing a bid-ask spread. For an individual purchasing currency, the difference between the rate the bank will sell 1$ of the currency less the posted wholesale rate can be thought of as the price per dollar for the foreign exchange service. Similarly, for an individual selling currency, the difference between the posted wholesale rate and the amount the bank offers can be thought of as the price per dollar for the foreign exchange service.

3. Other Banking Services with Customizable Prices

Banks offer certain products whose prices are negotiated on an individual-transaction basis. An example is a *standby letter of credit* (SLC), which is a contractual agreement issued by a bank that involves three parties: the bank, the bank's customer, and a beneficiary. In an SLC transaction, the bank acts as a third party in a commercial transaction between the bank's customer and the beneficiary substituting the bank's creditworthiness for that of the customer.

D. TYPES OF BUYERS

It should be kept in mind that almost all individuals and organizations of the Canadian economy employ the services of Canada's banks; however, the following will provide a more specific list of the types of buyers of the services offered by Canada's deposit-accepting intermediaries:

1. *Retail*

Banks depend on individuals for their deposits into transaction accounts. Some banks also target certain individuals to obtain their business such as senior citizens and students.

2. *Small Businesses*

Many small businesses and entrepreneurs rely on banks as a source of funding. Banks also have specialists available to work with only small businesses.

3. *Agricultural Operations*

Canadian banks offer certain types of loans that are tailed specifically to the financing of agricultural operations.

4. *Non-Profit Organizations*

Because of their tax status, many banks provide special accounts for non-profit organizations.

5. *Trusts*

Trust funds and accounts are managed, administered and executed by commercial banks.

6. *Mutual Funds*

Most mutual funds assets are safeguarded in trusts at commercial banks. These banks also act as transfer agents and custodians for the mutual fund.

7. *Savings and Loan Associations*

These banks employ the correspondence services of commercial banks.

8. *Non-bank financial institutions*

These include credit unions, industrial loan associations, financing companies and loans associations who also employ correspondence services.

9. *Government*

Municipal, state and federal government sell their bonds and /or treasury bills through the commercial banking system.

9. *Corporations*

Large corporations such as investment banking firms, brokerages, and multinational corporations employ the services of large, well-established banks. Also certain banks only cater to these large institutional clients. For example, this is the case with firms operating within NAICS 522112 – Corporate and Institutional Banking.

Many banks, or their branches, differentiate between retail, business and corporate clients. In general, the major difference between business clients and corporate clients is the level of account activity. It is presumed that corporate clients have a higher level of account activity.

E. ADJSUTMENTS TO PRICE

Price discounts are common in the commercial banking industry. A common type of discount that is granted is a discount for a customer who has several accounts with a particular bank. For example, some customers have their deposit accounts, their mortgage account, their money market accounts, and their investment portfolio under management by the bank. For having these accounts at the same bank, the bank may waive service fees or any number of feeds for these kinds of customers. For deposits, discounts are given to students and senior citizens for demand deposits. Usually service charge or limitations on the account such as the number of checks written are waived. Discounts are also granted to large corporate clients because of the volume of transactions in their account. The discount granted in this case is usually unlimited check writing and no-charge for additional services associated with corporate chequing accounts.

It is sometimes the case that discounts are granted on loans to institutional clients. In most cases fees are waived for origination, and in the case of real estate, closing costs. For trust operations, banks that perform additional services besides safeguarding assets sometimes waive the fees for those additional services. Some discounts are also given to bank customers who have their portfolio managed by the bank. Discounts are generally in the form of reduced management fees.

F. ADDITIOINAL CHARGES

As a result of rapid technological innovation within the NAICS 5221 – Depository Credit Intermediation industry, banks are continually offering new products to their customers, and are finding new ways to charge for these. Examples of new product offerings within this industry include the introduction of the introduction of the Interac ATM network in 1986, the introduction of Internet banking in the late 1990s, and the asset securitization and investment banking services offered to third-parties and large corporate and institutional clients.

Rapid technological innovation within this industry means that the sample of products chosen in the construction of the Producer Price Index (PPI) for this industry will potentially have to be modified, i.e., include new products and drop obsolete ones, so that the index remains relevant, at a greater frequency than would be the case for industries that exhibit a lower rate of technological innovation.

G. SIZE OF PURCHASE

In the commercial banking industry, service lines such as deposit accounts, no minimum purchase or balance is required. A savings account can be opened with just a few dollars at certain banks. For some chequing accounts no minimum balance is required. This is the case for budget chequing accounts.

For all other service lines, a minimum purchase is required. Individual or retail customers who purchase deposit accounts, money market instruments such as bonds, and other items such as travelers cheques, money orders, etc., at the commercial banks spend the smallest amount on the banks' products. Other clients such as businesses and other institutions spend large amounts at the commercial banks. For service lines such as off-balance sheet banking only large institutional clients with millions to trade can utilize the banks trading services.

H. CONTRACTS

To varying degrees all the services rendered in the commercial banking industry require a contract. For a simplistic service such as a demand deposit, a contractual agreement is reached between the bank and the customer. In this contract the customer agrees to the services the bank will provide for having a demand deposit, services such as ATM policies, overdraft fees, bounce fees, etc. This contract usually terminates once the customer closes the account with the bank.

Services such as loans, loan origination, and loan servicing involve long and extensive contracts specifying the terms and conditions of the loan to the borrower. These contracts usually last the length of the loan. For example, a contract for a mortgage lasts for 30 years if it is a 30-year mortgage.

For other services such as trust operations, correspondent banking, and cash management services, contracts are drawn which dictate the terms and conditions between the bank and the customer. Some of these contracts may have special criteria specified in the contract. For example, a correspondent and a respondent bank may make some special agreement on how the correspondent bank will be compensated.

As an aside, some correspondent banks are paid in kind as oppose to fees. The contract for these services listed above are usually for one year.

V. INDUSTSRY INFORMATION AND PROBLEMS

A. INDUSTRY RELATIONS

Canadian Bankers' Association
www.cba.ca

Interac Association
www.interac.org

Bank of Canada
www.bank-banque-Canada.ca

Office of the Superintendent of Financial Institutions
www.osfi-bsif.ca

Credit Union Central of Canada
www.cucentral.ca

World Council of Credit Unions, Inc.
www.woccu.org

Canadian Payments Association
www.cdnpay.ca

Institute of Canadian Bankers
www.icb.org

Investment Funds Institute of Canada
www.mutfunds.com/ific

Financial Services Commission of Ontario
www.ontarioinsurance.com

Inspecteur général des institutions financières du Quebec
www.igif.gouv.qc.ca

Canada Mortgage and Housing Corporation
www.cmhc-schl.gc.ca

Canada Deposit Insurance Corporation
www.cdic.ca

Industry Canada
www.ic.gc.ca

Department of Finance Canada
www.fin.gc.ca

Financial Consumer Agency of Canada
www.fcac-acfc.gc.ca

Deposit Insurance Corporation of Ontario
www.dico.com

B. CURRENTLY AVAILABLE PRICE INFORMATION

FINANCIAL CONSUMER AGENCY OF CANADA (FCAC)

The FCAC provides price information, in tabular form, for various deposit account types at various Canadian banks. The FCAC does not publish information of the prices of products offered to business, corporate, and institutional clients, nor do they publish the costs associated with loan products or 'other' banking services.

The FCAC provides price information for the following varieties of deposit accounts:

- packages with monthly fees waived if consumers maintain a minimum balance and make fewer than 20 transactions per month – in branch only, or using a mix of self-serve and in-branch services;
- packages with monthly fees waived if consumers maintain a minimum balance and make 20 to 49 transactions per month – in branch only, or using a mix of self-serve and in-branch services;
- packages with monthly fees waived if consumers maintain a minimum balance and make 50 or more transactions per month – in branch only, or using a mix of self-serve and in-branch services;
- packages with monthly fees waived if consumers maintain a minimum balance and make fewer than 20 transactions per month – self serve transactions only or using a mix of self-serve and in-branch services;
- packages with monthly fees waived if consumers maintain a minimum balance and make 20 to 49 transactions per month – self serve transactions only or using a mix of self-serve and in-branch services;
- packages with monthly fees waived if consumers maintain a minimum balance and make 50 or more transactions per month – self serve transactions only or a mix of self-serve and in branch services;
- packages for consumers making fewer than 20 transactions per month – in branch only, or using a mix of self-serve and in-branch services;
- packages for consumers making 20 to 49 transactions per month – in branch only, or using a mix of self-serve and in-branch services;
- packages for consumers making 50 or more transactions per month – in branch only, or using a mix of self-serve and in-branch services;
- packages for consumers making fewer than 20 transactions per month – self serve transactions only or using a mix of self-serve and in-branch services;
- packages for consumers making 20 to 49 transactions per month – self serve transactions only or using a mix of self-serve and in-branch services;
- packages for consumers making 50 or more transactions per month – self serve transactions only or using a mix of self-serve and in-branch services;

- seniors' accounts;
- student accounts; and
- youth accounts.

For each of the above deposit account types, the following price information is available:

- monthly fee;
- minimum monthly balance for monthly fee to be waived;
- maximum number of monthly transaction – in-branch;
- maximum number of monthly transactions – self-serve;
- bill payment handling fees – in-branch;
- bill payment handling fees – self-serve;
- account features available (yes/no):
    - free certified cheques;
    - free money orders and bank drafts;
    - free stop payments;
    - commission-free traveller's cheques (one-signature);
    - free personalized cheques;
    - overdraft protection;
    - cheque returns;
    - discounts on annual rental of safety deposit boxes;
    - free access to ABMs of THE EXCHANGE network or some other ABMs; and
    - e-mail money transfers.

OFFICE OF CONSUEMR AFFAIRS (INDUSTRY CANADA)

The office of consumer affairs, which is affiliated with Industry Canada, publishes an annual *Cost of Banking Guide*, which shows the year-over-year change in the price of the 'cheapest' deposit account package available for each of five different consumer types (depending on the nature of the usage of bank services) for each Canadian bank. The five different consumer types are as follows:

- Minimal Transaction Consumer
- Average Transaction Consumer
- Convenience Consumer
- Connected Consumer
- Prosperous branch consumer

For each of the five consumer types, this report also states the bank that offers the cheapest and most expensive account package for the particular consumer type.

C. LITIGATION AND OTHER COOPERATION PROBLEMS

Because of its close association to the stability of the Canadian economy, the banking industry will always be under close watch by regulators. The operation of the banking system is essential to the economic well-being of a nation. In short, the banking system cannot be subjected to fail.

OSFI

The primary federal regulator of Canadian banks is the Office of the Superintendent of Financial Institutions (OSFI). The OSFI was created to contribute to public confidence in the Canadian financial system, primarily by advancing and administering a regulatory framework that promotes the adoption of policies and procedures designed to control and manage risk. The OSFI analyzes banks' activities by collecting information via the *OSFI reporting forms*. These forms contain information that may aid in the compilation of a Banking Services SPPI, and the various types of forms are listed below:

- C3 – Allowance for Impairment;
- L4 – Average Assets and Liabilities;
- M4 – Balance Sheet;
- G3 – Capital Adequacy;
- M3 – Capital Adequacy – Market Risk;
- C1 – Charge for Impairment;
- C2 – Deposit Liabilities;
- GM/GQ – Geographic Assets & Liabilities Booked in Canada;
- GR – Geographic Assets & Liabilities Booked Outside of Canada;
- E3 – Impaired Assets;
- P3 – Income Statement;
- I3 – Interest Rate Risk;
- N3 – Loans in Arrears;
- E2 – Mortgage Loans;
- A2 – Non-Mortgage Lonas;
- U3 – Pledging and REPOS
- K3 – Quarterly Supplementary Return for Foreign Bank Branches;
- R2 – Regional Distribution of Assets and Liabilities;
- B2 – Securities;
- Y3 – Selected Structured Statistics;

DEPARTMENT OF FINANCE CANADA

Every five years, the Department of Finance Canada engages in a five-year, consultative process with the view to reviewing the current state of financial sector legislation in Canada, and how it can be improved to promote both the competitiveness of the industry as well as the soundness and stability of the sector.

A consultation process leading to the current review of the financial institutions statutes was launched in 2005. In response to that invitation to express their views, a large and representative group of stakeholders provided comments on the 2006 review of the financial sector statutes. Over 50 submissions were received from various stakeholders including industry associations, financial institutions, consumer groups and individual Canadians. Although difficult to quantify, it is worth noting that changes to the legislative framework certainly has implications for service quality. The main highlights of this round of consultation are as follows:

- Reviewing the disclosure provisions of the financial institution statutes;
- Enhancing consumer protection for all forms of electronic transactions;
- Simplifying the foreign bank entry regime;
- Improving the legislative framework for credit unions;
- Improving the regulatory approval regime; and

- Allowing for electronic cheque imaging in order to gain efficiencies in the payment and clearing system.

BANK OF CANADA

Although the Bank of Canada does not directly regulate financial institutions or deal with consumer complaints, as these are the roles of the OSFI, the Bank of Canada is a key player in the promotion of a sound and stable financial system. In this role, the Bank of Canada routinely provides liquidity to financial institutions that are participants in the financial system; that is, it lends them money overnight to facilitate the settlement of payments systems. As the lender of last resort, the Bank also provides emergency liquidity to eligible institutions that face significant funding problems.

The majority of the information collected by the Bank of Canada on Canada's financial institutions is collected through indirect sources, such as the OSFI and Statistics Canada.

BANKING LEGISLATION IN CANADA

This section highlights various legislative reforms pertaining to Canada's financial services sector.

BANK ACT OF 1981

- Created the Canadian Payments Association to operate the national payments system and plan its development;
- Lowered reserve requirements on Canadian dollar deposits;
- Allowed foreign banks to establish subsidiaries in Canada, subject to reciprocal treatment of Canadian banks;
- Extended banks' business powers to include financial leasing, factoring, and data processing.

OFFICE OF THE SUPERINTENDENT OF FINANCIAL INSTITUTIONS ACT (1987)

- Created the OSFI to succeed two separate federal regulatory bodies (the Department of Insurance and the Inspector General of Banks) in the supervision of financial institutions.

BANK ACT OF 1992

- Comprehensive banking law;
- Allowed chartered banks to own trust companies;
- Allowed trust companies to make commercial loans;
- Made provisions for the phasing out of reserve requirements;
- Reset the "sunset" clause from 10 years to 5 years to address the changing Canadian financial services marketplace.

COOPERATIVE CREDIT ASSOCIATIONS ACT (1992)

- Replaced the Cooperative Credit Associations Act of 1952-1953 and set rules for federally chartered credit unions;
- Followed the same format as the Bank Act.

TRUST AND LOAN COMPANIES ACT (1992)

- Set rules for federally incorporated TMLs and provincially incorporated TMLs reporting to the OSFI;
- Required large, formerly closely held TMLs to become 35% widely held;
- Followed the same format as the Bank Act.

BANK ACT REFORM OF 2001

- Set new ownership rules;
- Established a process for reviewing mergers involving large banks;
- Allowed bank financial groups to organize under a holding company structure;
- Allowed non-deposit-taking financial institutions access to the payments and clearing systems.

D. SERVICE IDENTIFICATION PROBLEMS

It is anticipated that services in the banking sector will continuously be changing, especially as internet banking and electronic commerce become more popular.

In order to collect price information, it is expected that certain services such as loans, asset back financing, money market activities and off-balance sheet activities may be misidentified, or will contain characteristics that may not be able to be held constant in order to be repriced over time.

Appendix X

This Appendix provides definitions for the various classifications systems described in Table 2.a) and Table 2.b).

Industry Classification Systems

International Standard Industrial Classification (ISIC) – Revision 3[19]: Is used in classifying data according to the kind of economic activity in the fields of production, employment, gross domestic product and other statistical areas. ISIC is a basic tool for studying economic phenomena, fostering international comparability of data, providing guidance for the development of national classifications and for promoting the development of sound national statistical systems.

Standard Industrial Classification (SIC) – 1980[20]: a system for classifying companies and enterprises according to the activities in which they are engaged. It is used to facilitate the collection, tabulation, presentation and analysis of financial statistics and related data.

Classification of Institutional Units by Sectors – SNA93'[21]: a classification system used in the1993 System of National Accounts (SNA93') that breaks down total economic activity into various sectors, such as financial firms, government, households, etc. This system also separates foreign-owned firms from national-private firms.

Canadian System of National Accounts Input-Output Industry Classification System: the industry classification system used to organize the industry dimension in the Input-Output tables of the Canadian System of National Accounts. This classification system is based on NAICS codes and combinations of NAICS codes, at various levels of the classification hierarchy.

Product Classification Systems

North American Product Classification System (NAPCS) 2007: is a classification system that organizes goods and services throughout the economy in a systematic fashion. NAPCS will be the basis for the product dimension in the Canadian System of National Accounts (CSNA) and in Statistics Canada surveys. Implementation of NAPCS has begun in various survey programs, leading up to implementation in the CSNA for reference year 2007. The reference year for implementation in price indexes is under discussion.

Input-Output Commodity Classification (IOCC) System: is the classification system that organizes the commodity dimension, at the most detailed level (W-level), in the Input-Output tables of the Canadian System of National Accounts.

[19] See: http://esa.un.org/unsd/cr/registry/regcst.asp?Cl=2&Lg=1
[20] See: http://www.statcan.ca/english/Subjects/Standard/sic-c/sicc80-menu.htm
[21] See: http://www.statcan.ca/english/concepts/definitions/economy01.htm

Appendix X

The table below lists the firms operating within the NAICS 5221 Industry. The firms are grouped according to 'firm type', according to the firm types listed in Table x.

Domestic Banks (Schedule I)
The following institutions are regulated under the Bank Act and are authorized to accept deposits, which may be eligible for deposit insurance provided by the Canada Deposit Insurance Corporation.

Bank of Montreal	Bank of Nova Scotia (The)	Bank West	Bridgewater Bank
Canadian Imperial Bank of Commerce	Canadian Tire Bank	Canadian Western Bank	Citizens Bank of Canada
CS Alterna Bank	DirectCash Bank	Dundee Bank of Canada	First Nations Bank of Canada
General Bank of Canada	Laurentian Bank of Canada	Manulife Bank of Canada	National Bank of Canada
Pacific & Western Bank of Canada	President's Choice Bank	Royal Bank of Canada	Toronto-Dominion Bank

Foreign Bank Subsidiaries (Schedule II)
Foreign bank subsidiaries are regulated under the Bank Act and are authorized to accept deposits, which may be eligible for deposit insurance provided by the Canada Deposit Insurance Corporation. Foreign bank subsidiaries are controlled by eligible foreign institutions.

ABN AMRO Bank Canada	AMEX Bank of Canada	Bank of America Canada	Bank of China (Canada)
Bank of East Asia (Canada)	Bank of Tokyo – Mitsubishi	Bank One Canada	BNP Paribas
Citibank Canada	CTC Bank of Canada	Habib Canadian Bank	HSBC Bank Canada
ICICI Bank Canada	ING Bank of Canada	J.P. Morgan Bank Canada	Korea Exchange Bank Canada
MBNA Canada Bank	Mega International	Mizuho Corporate Bank	Societe Generale
State Bank of India	Sumitomo Mitsui Banking	UBS Bank (Canada)	

Foreign Bank Branches – Full Service (Schedule III)
Foreign bank branches are foreign institutions that have been authorized under the Bank Act to do banking business in Canada. These branches may not accept deposits of less than $150,000.

ABN AMRO Bank N.V.	Bank of America	Capital One Bank	Citibank, N.A.
Comerica Bank	Deutsche Bank AG	Dexia Credit Local S.A.	Fifth Third Bank
First Commercial Bank	HSBC Bank USA	JPMorgan Chase Bank	Landsbanki Canada
Maple Bank	Mellon Bank, N.A.	Mizuho Corporate Bank	Northern Trust Co
Rabobank Nederland	Societe Generale	State Street	U.S. Bank National Assn
UBS AG Canada Branch	United Overseas Bank Ltd		

Foreign Bank Branches – Lending (Schedule III)

Allied Irish Banks, p.l.c.	AmTrust Bank	Credit Suisse	Merrill Lynch
National City	Union Bank of California	WestLB AG	

Trust Companies
A trust company is a financial institution that operates under either provincial or federal legislation and conducts activities similar to those of a bank. However, because of its fiduciary role, a trust company can administer estates, trusts, pension plans and agency contracts, which banks are not permitted to administer. The following institutions are regulated under the federal *Trust and Loan Companies Act* and are authorized to accept deposits, which may be eligible for deposit insurance provided by the Canada Deposit Insurance Corporation.

AGF Trust Company	B2B Trust	Bank of Nova Scotia Trust	BMO Trust Company
BNY Trust Company	Caledon Trust Company	Canada Trust Company	Canadian Western Trust
CIBC Mellon Trust Company	CIBC Trust Corporation	Citizen Trust Company	Community Trust Company
Computershare Trust Company	Conentra Trust	Desjardins Trust Inc.	Effort Trust Company (The)
Equitable Trust Company (The)	Equity Transfer & Trust	Fiduciary Trust Company	GE Money Trust Company
General Trust Corporation of Canada	Home Trust Company	Household Trust Company	HSBC Trust Company
Industrial Alliance Trust Inc.	Investors Group Trust Co.	Laurentian Trust of Canada	LBC Trust
Legacy Private Trust	M.R.S. Trust Company	Maple Trust Company	MD Private Trust Company
Montreal Trust Company of Canada	Natcan Trust Company	National Trust Company	Northern Trust Company
Northern Trust Company, Canada	Oak Trust Company	Peace Hills Trust Company	Peoples Trust Company
RBC Dexia Investor Services Trust	ResMor Trust Company	Royal Trust Company (The)	Royal Trust Corporation

Standard Life Trust Company	State Street Trust Company	Sun Life Financial Trust	Trust Co of London Life
Valliant Trust Company			

Loan Companies

A loan company is a financial institution that operates under either provincial or federal legislation and conducts activities similar to those of a bank. The following institutions are regulated under the federal *Trust and Loan Companies Act* and are authorized to accept deposits, which may be eligible for deposit insurance provided by the Canada Deposit Insurance Corporation.

Bank of Montreal Mortgage Co	BLC Mortgage Co	BMO Mortgage Co	CCB Mortgage Investment
CIBC Mortgage Corporation	CIBC Mortgages Inc.	First Data Loan Company	Guardcor Loan Company
HSBC Loan Corporation	HSBC Loan Corporation	Laurentian Bank of Canada Mortgage Corporation	League Savings and Mortgage Company
MCAN Mortgage Corporation	MontroServices Corporation	Royal Bank Mortgage Co	Scotia Mortgage Co
Services Hypothecaires CIBC Inc.	Settlers Savings and Mortgage Corporation	TD Mortgage Corporation	TD Pacific Mortgage Corporation

Appendix X

Bank Draft: A cheque drawn by one bank against funds deposited into its account at another bank, authorizing the second bank to make payment to the individual named in the draft.

Client Trust Account: An account targeted at businesses or organizations that hold funds 'in trust' for clients during their normal course of business. Typical users are lawyers, real estate agents and accountants.

Financial Risk Management Services: Risk management specialists customize solutions for commercial enterprises to reduce risk and advise on market strategy and execution of swaps, options and structured solutions. Reducing unwanted risk can minimize cash flow volatility for businesses, making the business more attractive to lenders and investors. For corporations, financial risk management utilizes the following tools: Interest rate swaps, interest rate caps, interest rate collars, and bankers' acceptances.

Foreign Currency Exchange: Exchanging the currency of one country for that of another, in small amounts for the convenience of travellers.

Foreign Exchange Products (Corporate & Institutional): Products that minimize the risk associated with converting currencies. These products include: Spot contracts, forward contracts, option dated forward contracts, foreign currency options, zero-cost range forwards, and participating forwards.

Home Equity Loans: Loans secured by the equity of a borrower's residence, over the value of any outstanding mortgages, and are usually set up as a line of credit. Home equity loans are usually arranged at the time a customer signs his/her mortgage. The bank sets a fixed amount of borrowing power, ranging from $5,000 to $250,000, that is available to the customer in the next 5 to 10 years. During that time a customer can take a loan any time he/she want, with no additional approval required from the bank.

Home equity loans are accessed in different ways, depending on the lender. Banks may supply cheques credit or debit cards, or attach the line of credit to the customer's chequing account. The customer may pay interest only on the money that he/she actually uses, at a variable rate.

Home Improvement Loans: Loans, either secured by collateral or not, for financing improvements to the borrower's residence.

Letters of Credit: Services that provide documents that guarantee payment of a specific amount of money, by a bank (issuing institution) to a third party, if certain conditions are met.

Overdraft Protection: A service whereby cheques drawn on insufficient funds are not retuned to the presenter, but are paid from funds previously established under a line of credit, or transferred from another account.

Residential Mortgage Loans: Mortgage loans provided to owner-occupiers, secured by residential real property. Includes adjustable rate mortgages, variable rate mortgages, rollover mortgages, etc.

Vehicle Loans (Consumer): Loans to consumer to purchase automobiles and other vehicles or equipment; the vehicle is collateral for the loan.

Appendix X

522001 – Account and Cash Management Products
Money management services, provided to customers by means of deposit accounts, such as chequing, saving and time accounts, and specialized cash management services that enable businesses to handle cash, transfer monies, and in general make and receive payments.

- **522001.1.1 – Deposit account-related products**

Services related to general-purpose deposit accounts, both demand and time. These services allow accounts to be created or closed, and used to make deposits, withdrawals, transfers, etc. These services may be sold individually or as a package of services.

  - **522001.1.1.1 – Account service packages**

A bundle of deposit account-related services, such as cheques, account statements, ATM transactions, etc., provided for a flat fee, usually paid monthly. The services included in the package may include non-deposit services, such as travellers' cheques.

  - **522001.1.1.2 – Separately-priced deposit account products**

Deposit account-related services sold on an individual basis, such as cheque and share draft processing, handling of returned deposit items and non-sufficient funds situations, performing stop payments, providing statements, cancelled cheques and other information items, providing window services. Includes charges made for ATM transactions against regular deposit accounts. Includes charges related to time deposit accounts, such as early withdrawal fees.

    - **522001.1.1.2.1 – Separately-priced demand deposit account products**

Deposit account-related services sold on an individual basis, such as cheque and share draft processing, handling of returned deposit items and non-sufficient funds situations, performing stop payments, providing statements, cancelled cheques and other information items, and providing window services. Includes charges made for ATM transactions against regular deposit accounts.

    - **522001.1.1.2.2 – Separately-priced time deposit account products**

Services related to time deposit accounts. Revenues earned include fees such as early withdrawal penalties.

- **522001.1.2 – Cash handling and management products**

Services that provide specialized deposit account and cash management services to business and government.

  - **522001.1.2.1 – Business account and cash management products**

Services that provides deposit account services to businesses and similar clients, and manage the flow of funds into and out of these accounts. These services expedite collections while controlling disbursements. These services may be sold as individual services, or provided in bundled packages.

    - **522001.1.2.1.1 – Business account and cash management service packages**

A package of account and cash management services provided to business and similar clients, for a flat fee.

    - **522001.1.2.1.2 – Separately-priced business account and cash management products**

Separately-priced account and cash management services provided to business and similar clients.

- **522001.1.2.1.2.1 – Wire transfers**

Services to businesses to have funds transferred through interbank payment systems. Excludes payments made by financial institutions themselves for access to payments systems.

- **522001.1.2.1.2.2 – Controlled and delayed disbursement products**

Services to businesses to manage payments in order to maximize funds available to the business.

- **522001.1.2.1.2.3 – Depository transfer cheque products**

Services that facilitate transfers of funds from accounts at dispersed locations to a concentration account, by use of pre-printed, unsigned, non-negotiable bank drafts.

- **522001.1.2.1.2.4 – Cash management concentration account products**

Services that manage transfers of funds between accounts.

- **522001.1.2.1.2.5 – Lock box products**

Services that process mail involving financial transactions - depositing cheques, providing transaction and summary reports, etc.

- **522001.1.2.1.2.6 – Account reconciliation products**

Services that facilitate the reconciliation of customer's accounts.

- **522001.1.2.1.2.7 – Other separately-priced cash management products**

Separately-priced account and cash management services provided to business and similar clients, not elsewhere specified.

- **522001.1.2.2 – Correspondent account products**

Services provided by one bank to another, generally for the second bank's customers requiring services of a type that the first bank does not provide or in a location that the first bank does not operate in.

- **522001.1.2.3 – Other cash handling and management products**

Services that provide specialized deposit account and cash management services to business and government, not elsewhere specified. Includes coin and currency counting products, night and lobby deposit box products.

- **522001.1.2.3.1 – Coin and currency counting products**

Service to count currency and coins.

- **522001.1.2.3.2 – Night and lobby deposit box products**

Services that enable business account holders to deposit their daily cash and other receipts after normal business hours.

- **522001.1.2.3.3 – All other cash handling and management products**

Services that provide specialized deposit account and cash management services to business and government, other not elsewhere specified.

- **522001.1.3** – **Document payment products**

Services that provide documents that can be used as payment instruments, such as money orders, traveller's cheques and letters of credit. Includes services of certifying cheques.

- **522001.1.3.1 – Cashier's and certified cheque products**

Services that provide a cheque with a guarantee of payment from a bank, either because the cheque is drawn on the bank by the bank itself (cashier's cheques) or because a deposit account cheque is certified by the bank, so that the cheque becomes an obligation of the bank, and is paid out of bank funds (certified cheque).

- **522001.1.3.2 – Money orders**

Services that provide money orders, a form of negotiable instrument calling for the payment of money to the named payee.

- **522001.1.3.3 – Travellers' cheques**

Services that provide travellers' cheques, which are negotiable instruments sold in set denominations, in various currencies, paid in advance, with a guarantee of replacement by the issuing institution if lost or stolen.

- **522001.1.3.4 – Letters of credit**

Services that provide documents that guarantee payment of a specific amount of money, by a bank (issuing institution) to a third party, if certain conditions are met.

- **522001.1.3.5 – Other document payment products**

Services that provide documents that can be used as payment instruments, other than cashier's cheques, certified cheques, money orders, traveller's cheques and letters of credit. Includes cheque cashing services.

- **522001.1.4 – Foreign currency exchange products, retail**

Exchanging the currency of one coutnry for that of another, in small amounts fo the convenience of travellers.

522002 – Loans

Loans represent the direct lending of funds under legal contract, either unsecured or secured by the assets being financed or by other assets, but without the exchange or the use of securities as collateral. Includes interest received, origination and other fees received, and revenue from sales of loans.

- **522002.1.1 – Loans, to financial businesses**

Loans to financial businesses. Includes loans made to banks, trust companies, investment dealers and brokerages, insurance companies, etc. Excludes financing using purchase-repurchase agreements.

- **522002.1.2 – Loans, to non-financial businesses**

Loans to non-financial businesses. Includes loans to government-owned enterprises.

- **522002.1.2.1 – Loans, to non-financial businesses, secured**

Loans to non-financial businesses, that are secured by collateral. Includes government-guaranteed loans to non-financial businesses. Includes loans secured by negotiable warehouse receipts.

- **522002.1.2.1.1 – Commercial and industrial mortgages**

Mortgages secured by commercial and industrial real estate. Includes mortgages on residential properties, such as apartment buildings, for business purposes.

- **522002.1.2.1.2 – Construction mortgages**

Mortgages to finance construction costs during the period of construction, secured by the property being developed. Includes loans to purchase land to be developed for eventual residential use.

- **522002.1.2.1.3 – Asset-based lending**

Loans secured by specific assets, other than real property, of the borrower. Includes loans secured by accounts receivables, inventory loans, loans secured by negotiable warehouse receipts. Excludes equipment leasing.

- **522002.1.2.1.3.1 – Loans secured by accounts receivable**

Loans secured by the accounts receivable of the borrower. Excludes sale of accounts receivables at a discount.

- **522002.1.2.1.3.2 – Inventory loans**

Loans made to finance the purchase of inventory, secured by the inventory. Includes loans secured by negotiable warehouse receipts, and vehicle dealership financing, loans made to vehicle dealerships, for the purchase of display vehicles. Also known as floor planning or wholesale financing.

- **522002.1.2.1.3.3 – Other asset-based lending**

Loans secured by specific assets, other than real property, accounts receivables or inventory, of the borrower. Excludes loans secured by negotiable warehouse receipts, and equipment leasing.

- **522002.1.2.1.4 – Commercial and industrial loans, government, guaranteed**

Loans to commercial and industrial businesses, guaranteed by government agencies.

- **522002.1.2.1.5 – Other securecd loans to non-financial businesses**

Secured loans to non-financial businesses, except commercial and industrial mortgages, construction mortgages, asset-based lending, or government-guaranteed commercial and industrial loans.

- **522002.1.2.2 – Loans, to non-financial businesses, unsecured**

Loans to non-financial businesses, that are not secured by collateral. Includes unsecured lines of credit. Excludes credit granted by credit cards.

- **522002.1.2.2.1 – Working capital loans**

Unsecured loan to finance a business' current assets, such as accounts receivables.

- **522002.1.2.2.2 – Insurnace premium financing, business**

Unsecured laons used to pay insurance premiums.

- **522002.1.2.2.3 – Loan participations**

Lonas shared through correspondent banking networks, in order to diversify risk.

- **522002.1.2.2.4 – Syndicated loans**

Loans shared through a syndicate of lenders, organized through a lead lender.

- **522002.1.2.2.5 – Lines of credit, to non-financial businesses**

An agreement by a lender to lend money to a borrower, subject to specified conditions, such as maximum amount and interest rate. Excludes credit provided by credit cards.

- **522002.1.2.2.6 – Banker’s acceptances**

A draft or bill of exchange, drawn by the borrower for payment on a specified date, and accepted by a bank. Excludes secondary market trading in bankers' acceptances.

- **522002.1.2.2.7 – Other unsecured loans, to non-financial businesses**

Unsecured loans to non-financial businesses, not elsewhere classified.

- **522002.1.3 – Loans, to governments**

Loans to governments and their agencies. Includes loans to foreign governments. Excludes loans to government-owned enterprises.

- **522002.1.4 – Loans, to consumers**

Loans to consumers

- **522002.1.4.1 – Loans, to consumers, secured**

Loans to consumers, that are secured by collateral. Includes government-guaranteed loans to consumers, such as government-guaranteed student loans.

- **522002.1.4.1.1 – Residential mortgage loans**

Mortgage loans provided to owner-occupiers, secured by residential real property. Includes adjustable rate mortgages, variable rate mortgages, rollover mortgages, etc.

- **522002.1.4.1.1.1 – Residential mortgage loans, first**

Mortgage loans provided to owner-occupiers, secured by a primary lien on residential real property. Includes adjustable rate mortgages, variable rate mortgages, rollover mortgages, etc.

- **522002.1.4.1.1.1 – Residential mortgage loans, second and junior**

Mortgage loans provided to owner-occupiers, secured by a secondary or junior lien on residential real property.

- **522002.1.4.1.2 – Home equity loans**

Loans secured by the equity of a borrower's residence, over the value of any outstanding mortgages. Home equity loans may be set up as lines of credit.

- **522002.1.4.1.3 – Home improvement loans, secured**

Loans secured by collateral, for financing improvements to the borrower's residence.

- **522002.1.4.1.4 – Vehicle loans, consumer**

Loans to consumers to purchase automobiles and other vehicles or equipment; the vehicle is collateral for the loan. Includes recreational vehicles, except boats.

- **522002.1.4.1.5 – Other secured loans, to consumers**

Secured loans to consumers, not elsewhere classified.

- **522002.1.4.2 – Loans, to consuemrs, unsecured**

Loans to consumers, that are not secured by collateral. Includes unsecured lines of credit. Excludes credit provided by credit cards.

- **522002.1.4.2.1 – Personal loans, unsecured**

Unsecured loans to consumers, for non-business uses. Includes unsecured home improvement loans.

- **522002.1.4.2.2 – Overdraft protection**

A service whereby cheques drawn on insufficient funds are not returned to the presenter, but are paid from funds previously established under a line of credit, or transferred from another account.

- **522002.1.4.2.3 – Loans, to consumers, unsecured, other**

Loans to consumers, that are not secured by collateral, other than personal loans and overdraft protection. Includes unsecured lines of credit except overdraft protection. Includes insurance premium financing of personal insurance policies. Excludes credit provided by credit cards.

Glossary

Asymmetric Information: The unequal knowledge that each party to a transaction has about the other party.

Banks: Financial institutions that accept money deposits and make loans (such as commercial banks, savings and loan associations, and credit unions).

Deposits: Funds lent to a financial intermediary (liabilities of the intermediary). Depositors include consumers, businesses, governments, etc., and can take the form of demand deposits, time deposits, savings accounts, or certificates of deposit.

Economic Allocative Efficiency: is the market condition whereby resources are allocated among their various possible uses (whether in consumption or in production) that maximizes the net benefit attained through their use. In other words, an allocatively efficient economy uses an optimal mix of intermediate inputs to produce an 'optimal mix' of outputs.

Economies of Scale: The reduction in transaction costs per dollar of transaction as the size (scale) of transaction increase.

Enterprise: According to Statistics Canada's Business Register, an enterprise is the legal/operating entity at the top of the operating structure. There is only one enterprise per operating structure. The enterprise (top of the hierarchy) is associated with a complete set of financial statements. It corresponds to the institutional unit as defined for the System of National Accounts.

Financial Intermediaries: Institutions (such as banks, insurance companies, mutual funds, pension funds, and finance companies) that borrow funds from people who have saved and then make loans to others.

Liquidity Services: Services that make it easier for customers to conduct transactions.

Non-Depository Credit Intermediaries: This industry group comprises establishments, both public (government-sponsored enterprises) and private, primarily engaged in extending credit or lending funds raised by credit market borrowing, such as by issuing commercial paper and other debt instruments, and by borrowing from other financial intermediaries.

Money Market: A financial market in which only short-term debt instruments (generally those with original maturity of less than one year) are traded.

Office of the Superintendent of Financial Institutions (OSFI): The federal agency responsible for the regulation of Canada's deposit-accepting financial institutions and life and property & casualty insurance companies. The mandate of OSFI is to supervise financial institutions to determine whether they are in sound financial condition, and are complying with their governing law and supervisory requirements.

Risk: The degree of uncertainty associated with the return on an asset.

Risk Sharing: Banks create and sell assets with risk characteristics that people are comfortable with, and the banks then use the funds they acquire by selling these assets to purchase other assets that may have far more risk. Also called *asset transformation*.

Source of Funds: The various securities (bonds, commercial paper, banks' own capital) that financial intermediaries issue in order to finance their lending activities. For example, when a financial intermediary issues a loan to a consumer (an asset to the intermediary), the intermediary needs to acquire offsetting liabilities so that its balance sheet balances.

References

Ahn, Sangoon (2001). 'Firm Dynamics and Productivity Growth: A Review of Micro Evidence from OECD Countries,' *OECD Working Paper #23* <http://www.oecd.org/eco/eco/>

Anderson, Richard G., Jones, Barry E., and Travis D. Nesmith (1997). 'Monetary Aggregation Theory and Statistical Index Numbers,' *Federal Reserve Bank of St. Louis Review* (Jan/Feb): pp 31-52 <research.stlouisfed.org/publications/review/97/01/9701ra2.pdf>

Australian Bureau of Statistics (1996). 'FISIM: An Elaboration of Earlier Australian Proposals.' Unpublished paper, presented at Meeting of the Working Party on National Accounts, Luxembourg, June 1996

Barnett, William A. (1980). 'Economic Monetary Aggregates: An Application of Index Number and Aggregation Theory,' *Journal of Econometrics* (14): 11 – 48

Basu, Susanto, Iklaar, Robert, and Christina Wang (2006). 'Measuring the Services of U.S. Commercial Banks,' preliminary draft paper, National Bureau of Economic Research (NBER)

Baumol, William J. (1967). 'Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis,' *American Economic Review* (3): 415-426

Begg, Iain et al (1996). 'Financial Intermediation Services Indirectly Measured: Estimates for France and the U.K. based on the approach adopted in the 1993 SNA,' *Review of Income and Wealth* 42(4): 453-464

Berger, Allen (2003). 'The Economic Effects of Technological Progress: Evidence from the Banking Industry," *Journal of Money, Credit, and Banking* 35

Berger, Allen, and David Humphrey (1992). 'Measurement and Efficiency Issues in Commercial Banking,' *Output and Measurement in the Service Sector.* Studies in Income and Wealth, vol. 56, ed. Zvi Griliches. Chicago: University of Chicago Press

Bradbury, John C. (1998). 'ATM Surcharges and the Expansion of Consumer Choice,' *Briefing Papers (CATO Institute)*

Brand, Horst, and John Duke (1982). 'Productivity in Commercial Banking: Computers spur the advance,' Bureau of Labour Statistics Working Paper.

Brynjolfsson, Erik and Lorin M. Hitt (1998). 'Beyond the Productivity Paradox: Computers are the Catalyst for Bigger Changes," *Communications of the ACM*.

Canadian Bankers Association (1998). 'Helping you Bank - An Introduction to Bank Accounts, Shopping for a Bank Account and Ways of Banking."

Canadian Bankers Association (1997). 'Shopping for a Bank Account.'

Canner, G.B., and R. D. Kurtz (1985). 'Service Charges as a Source of Bank Income and Their Impact on Consumers,' Board of Governors

Caskey, John P., and G. H. Sellon Jr (1994). 'Is the Debit Card Revolution Finally Here?," *Economic Review*, Federal Reserve Bank of Kansas City.

Casu, Barbara and Claudia Girardone (yyyy). 'An Analysis of the Relevance of OBS Items in Explaining Productivity Change in European Banking,' University of Reading Working Paper.

Chant, John F. (1988). 'The Market for Financial Services,' *The Economics of the Financial Sector in Canada*.

Collins, Richard and George Sciadas (1992). ‘Measuring the Output of the banks,’ Industrial Organization and Finance Division, Statistics Canada

Davis, R.G. and Leon Korobow (1987). ‘The Pricing of Consumer Deposit Products - the Non-Rate Dimensions,’ *FRBNY Quarterly Review*, winter

Department of Finance (2002). ‘Canada’s Banks,’ <http:///www.fin.gc.ca/toce/2002/bank_e.html>

Diewert, W.E. (1995a). ‘Functional Form Problems in Modeling Insurance and Gambling,’ *The Geneva Papers on Risk and Insurance Theory* 20, pp 135-150

Diewert, W.E. (1995b). ‘Axiomatic and Economic Approaches to Elementary Price Indexes,’ *Discussion Paper 95-01*, Department of Economics, University of British Columbia

Diewert, W.E. (1993a). ‘The Early History of Price Index Research,’ in *Essays in Index Number Theory*, pp. 33-65, Vol 1, W. E. Diewert and A. O. Nakamura (eds.), North-Holland, Amsterdam

Diewert, W.E. (1985). ‘Transfer Pricing and Economic Efficiency,’ *Multinationals and Transfer Pricing*, pp. 47-81. Alan M. Rugman and Lorraine Eden (eds.), Croom Helm, London

Diewert, W.E. (1983). ‘The Theory of the Cost of Living Index and the Measurement of Welfare Change,’ *Price Level Measurement*, pp. 163-233, W.E. Diewert and C. Montmarquette (eds.), Ottawa: Statistics Canada. Reprinted in *Price Level Measurement*, pp. 79-14, W.E. Diewert (ed.), Amsterdam: North-Holland, 1990

Diewert, W.E. (1980). ‘Aggregation Problems in the Measurement of Capital,’ *The Measurement of Capital*, pp. 433-528, Dan Usher (ed.), University of Chicago Press, Chicago

Diewert, W.E. (1976). ‘Exact and Superlative Index Numbers,’ *Journal of Econometrics* (4): 115-146; reprinted as pp.223-252 in *Essays in Index Number Theory,* Vol I, W.E. Diewert and A.O. Nakamura (eds.), Amsterdam: North-Holland, 1993

Dufey, Gunter (1998). ‘Transformation of Banks and Bank Services (Comments),’ *Journal of Institutional and Theoretical Economics*

Eurostat – OECD (2005). *PPI Methodological Manual*

Fixler, Dennis J., and Marshall Reinsdorf (2006). ‘Computing Real Bank Services,’ *Bureau of Economic Analysis (BEA) Working Paper*

Fixler, Dennis J. et al (2003). ‘Measuring the Services of Commercial Banks in the NIPAs: Changes in Concepts and Methods,’ *Survey of Current Business* (83):33-44

Fixler, Dennis J. (2000). ‘Measuring Bank Output and Prices: A Brief Review of Issues and Strategies,’ Bureau of Labor Statistics (BLS)

Fixler, Dennis J., and Kimberly D. Zieschang (1999). ‘The Productivity of the Banking Sector: Integrating Financial and Production Approaches to Measuring Financial Service Output,’ *Canadian Journal of Economics* (23): 547-69

Fixler, Dennis (1993). ‘Measuring Financial Service Output and Prices in Commercial Banking,’ *Applied Economics* (25): 983-99

Fixler, Dennis J., and Kimberly D. Zieschang (1992). ‘User Costs, Shadow Prices, and the Real Output of Banks,’ in *Output Measurement in the Service Sectors,* Zvi Grilliches (ed.), University of Chicago Press, Chicago

Fixler, Dennis J., and Kimberly D. Zieschang (1991). ‘Measuring the Value of Financial Services in the National Income Accounts,’ *Economic Inquiry*

Freedman, C. (1983). 'Financial Innovation in Canada: Causes and Consequences,' *The American Economic Review.*

Frost, Stephen (2001). 'The Construction of Price Indexes for Deposit and Loan Facilities,' Australian Bureau of Statistics

Hancock, Diana (1985). 'The Financial Firm: Production with Monetary and Nonmonetary goods,' *Journal of Political Economy* 93 (5):859-880

Hausman, J.A. (1997). 'Valuation of New Goods under Perfect and Imperfect Competition,' *The Economics of New Goods*, pp. 209-237, T.F. Bresnahan and R.J. Gordon (eds.), University of Chicago Press, Chicago.

Hidvegi, Istvan (2007). 'Banking Productivity: An Extension of Traditional Theory.' Master's thesis, Jönköp International Business School, February 2007

Howcroft, Barry J. and John C. Lavis (1989). 'Pricing in Retail Banking,' Loughborough University Banking Centre, Midland Bank

Hulten, C.R. (1990). 'The Measurement of Capital,' *Fifty Years of Economic Measurement*, pp. 119-158, in E.R. Berndt and J.D. Triplett (eds.), University of Chicago Press, Chicago

Humphrey, David B. (1991). 'Productivity in Banking and Effects from Deregulation,' *Economic Review*, March/April 1991, pp. 16-28

International Monetary Fund (2004). *Producer Price Index Manual: Theory and Practice.* Washington: IMF

Lloyd, P.J. (1975). 'Substitution Effects and Biases in Nontrue Price Indices,' *American Economic Review* (65): 301-313

Mclean, Dinah (1997). 'Lagging Productivity Growth in the Service Sector: Mismeasurement, Mismanagement or Misinformation?,' *Bank of Canada Working Paper* 97-6

Mitchell, Douglas W. (1988). 'Explicit Interest and Demand Deposit Service Charges,' *Journal of Money, Credit and Banking*

Mitchell, Douglas W. (1979). 'Explicit and Implicit Demand Deposit Interest,' *Journal of Money, Credit and Banking*

Moore, Robert R. (1998). 'Concentration, Technology and Market Power in Banking: Is Distance Dead?' *Financial Industry Studies*, Federal Reserve Bank of Dallas

Moulton, Brent R. (2000). 'Measurement of Banking Services in the U.S. National Income and Product Accounts: Recent Changes and Outstanding Issues'

Organization for Economic Cooperation and Development (2001). 'Financial Intermediation Services Indirectly Measured,' *Joint ECE-OECD-CIS Meeting on National Accounts for CIS countries,* St. Petersburg, May 28-30

Organization for Economic Cooperation and Development (1998), 'Financial Intermediation Services Indirectly Measured,' *Joint OECD/ESCAP Meeting on National Accounts,* Bangkok, May 4-8

Office of the Superintendent of Financial Institutions (1998). *Deposit-Taking Institutions- Reporting Manual*

Office of the Superintendent of Financial Institutions (1998). *Canada's Largest Financial Institutions - Non-interest income items, 11 years history*

Office of the Superintendent of Financial Institutions (1997). *Consolidated Statement of Income*

Oster, Alan and Lawrence Antioch (yyyy) *Measuring Productivity in the Australian Banking Sector*, manuscript, National Australia Bank

Pastor, José M., and Lorenzo Serrano Efficiency (2000). 'Endogenous and Exogenous Credit Risk in the Banking Systems of the Euro Area,' *Universitat de València Working Paper*

Prud'Homme, Marc (1997). 'Bank Services Charges and the CPI,' Statistics Canada

Riggs, Rod (1987). 'Comparing Bank Service Fees Here Can Be Difficult,' The San Diego Union-Tribune

Rouabah, Abdelaziz, and Paolo Guarda (2006). 'Banking Output & Price Indicators from Quarterly Reporting Data,' from the November 2006 Conference *En route vers Lisbonne*

Samanta, G.P., and K. Bhattacharya (2000). 'Prices of Financial Intermediation Services: An Index Based on Spread,' *International Journal of Development Banking* 18(1): 71-76

Sealey, C.W., and James Lindley (1977). 'Inputs, Outputs, and a Theory of Production and Cost at Depository Financial Institutions,' *Journal of Finance* 32(4): 1251-66

Shukla, Rashmi (1993). 'Sources and Methods for Chartered Banks in the CSNA,' National Accounts and Environment Division, Statistics Canada. Call Number: STC6100E

Statistics Netherlands (2000). 'Allocation of FISIM.' Invited Paper submitted by Statistics Netherlands to the CES Joint ECE/Eurostat/OECD Meeting on National Accounts, Geneva, April 2000

Stavins, Joanna (1999). 'Checking Accounts: What do Banks Offer and what do Consumers Value?' *New England Economic Review*

Stigler, G. (1961). 'The Price Statistics of the Federal Government', National Bureau of Economic Research (NBER), New York, Columbia University Press

Tarkka, Juha (1995). 'Approaches to Deposit Pricing: A Study in the Determination of Deposit Interest and Bank Services Charges,' Bank of Finland, studies E:2

Thomas, Terrence J. (1988). 'Background Paper of Financial Service Charges in Canada,' Library of Parliament

Triplett, Jack E. and Barry P. Bosworth (2004). *Productivity in the U.S. Services Sector – New Sources of Economic Growth*. Washington: Brookings Press

Triplett, Jack E., and Mark Prud'Homme (1999). 'Household Consumption of Banking Services in the System of National Accounts and in Consumer Price Indexes,' Statistics Canada

Triplett, Jack E. (1998). 'Concepts of Banking Output: What do Banks do?' *Brooking Workshop on Measuring Banking Output*

Triplett, Jack E. (1992). 'Economic Theory and BEA's Alternative Quantity and Price,' *Survey of Current Business* 72(4): 49-52

Triplett, J.E. (1990). 'Banking Output,' *New Palgrave Dictionary of Money and Finance*, Eatwell et al. (eds.), Macmillan, London, pp. 143-146

Triplett, J.E. (1989). 'Price and Technological Change in a Capital Good: A Survey of Research on Computers,' *Technology and Capital Formation*, pp. 127-213, D.W. Jorgenson and R. Landau (eds.), Cambridge, MA, MIT Press

Voorburg Group on Service Statistics, various papers <http://stds.statcan.ca/english/voorburg/2004-index.htm>

Vosburgh, Richard E. and Trevor A. Watts (1996). 'An exploratory Study of Bank Service Charges.'

Wang, J. Christina, et al (2004). 'A General-Equilibrium Asset-Pricing Approach to the Measurement of Nominal and Real Bank Output,' presented at the *CRIW Conference on Price Index Concepts and Measurement*, Vancouver, Canada, June 28-29. <http://www.ipeer.ca/papers/Wang_Basu_Fernald_Oct_15_2004.pdf>

Wang, J. Christina (2003a). 'Productivity and Economies of Scale in the Production of Bank Service Value Added,' *Federal Reserve Bank of Boston Working Paper* <http://www.bos.frb.org/economic/wp/index.htm>

Wang, J. Christina (2003b). 'Service Output of Bank Holding Companies in the 1990s and the Role of Risk,' *Federal Reserve Bank of Boston working paper* <http://www.bos.frb.orb/economic/wp/index.htm>

Wang, Christina J. (2003c). 'Loanable Funds, Risk and Bank Service Output,' *Federal Reserve Bank of Boston Working Paper* <http://www.bos.frb.org/economic/wp/index.htm>

Wright, Richard (1999). *Where is the Value in Bank Service Fees?* Canadian Bankers Association