COMMERCIAL ACCOUNT ANALYSIS IN BANKING: A COMPARISON OF THE PROCEDURES OF SELECTED UNITED STATES AND CANADIAN BANKS

by

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We accept this thesis as conforming to the required standard.

THE UNIVERSITY OF BRITISH COLUMBIA

May, 1973
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ABSTRACT

Banks offer a wide range and variety of services to their commercial customers. Periodically, they analyse the services being utilized by a customer and subsequently enter into negotiations with that customer on the compensation to be provided for services rendered.

As a preliminary to the major objective of this study, an argument is presented on the analysis approach that should be utilized by banks to determine compensation requirements and to negotiate these with the customer. The major, study objective is to determine, assess and compare the commercial account analysis procedures of selected United States and Canadian banks.

While banks provide a wide range and variety of services to their commercial customers, this study argues that these services are linked by various quantitative and qualitative factors. As such, an all-inclusive analysis or valuation approach should be utilized to determine compensation requirements (a total customer relationship analysis), rather than one which separates the customer into a number of service categories or areas with compensation requirements being determined for each service area separately (a service area analysis).

It is also argued that an integral part of the analysis process is profit computation over the total customer relationship.

Based upon a literature search, it was determined that certain United States banks utilize an analysis procedure that computes profit over the total customer relationship. Their procedures (profitability analysis) are outlined and the strengths and weaknesses of the procedures are discussed.
As only minimal published information was located on the analysis procedures of Canadian banks, research took the form of personal interviews with senior officers of six banks. It was determined that the Canadian banks utilize separate service area analyses and that in no instance is customer profitability computed, either by service area or over the total customer relationship. Rather, the analysis procedures focus attention on the revenues received vis-à-vis the revenues that should have been collected. While a service area approach is utilized, subjective valuations of total customer relationship profitability do occur, under certain circumstances, which may decrease the compensation requirements for that service area by virtue of the value of the total customer relationship.

Canadian bank analysis procedures are extensively outlined as, to the best of the writer's knowledge, this is the first study and documentation of them outside of the Canadian banking system. The procedures are compared to those of the United States banks and the possible reasons for the differences are discussed. Strengths and weaknesses of Canadian procedures are outlined in relation to those of the United States banks.

The study concludes that the Canadian banks could benefit from adoption of a total customer relationship approach to the analysis of their commercial customers.
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CHAPTER I

INTRODUCTION

1.1 The Customer Relationship in Banking

Banks offer a wide range and variety of services to their commercial customers. These services may be categorized into three major service areas: (1) credit provision - the lending of funds to credit worthy borrowers; (2) demand deposit (or current) account management - provision of the medium for the customer to meet all of his normal payment needs, and (3) what is defined as other financial services - all other bank services that may be utilized by commercial customers. These three basic divisions of bank services outline the elements of a customer relationship in banking - the entire range of services utilized by any one individual commercial customer.

1.2 Customer Valuation

Periodically, banks enter into negotiations with their commercial customers. The purpose of these negotiations is determination of the compensation to be received by the bank for services provided to the customer. A crucial problem is the approach to customer valuation that should be utilized by the bank to determine compensation requirements and to negotiate these with the customer. Specifically, there are two, possible, alternative approaches: (1) the bank could value all services

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2Those customers of a bank, whether corporations, partnerships or sole-proprietorships, engaged in a business of a commercial or industrial nature (see p.5).
provided to a commercial customer as a composite package - a customer relationship valuation. This implies the negotiation of compensation trade-offs between service areas within the customer relationship to reach an overall revenue goal, as the philosophy is not one of discrete services but of a package; (2) alternatively, each service area could be valued, and negotiated upon, separately. Of course, the final choice between these alternative approaches to customer valuation depends on whether the customers view themselves as utilizers of a package of bank services or as utilizers of three distinct and separate services.

1.3 Purpose of Thesis

The purpose of this thesis is to determine, assess and compare the methods by which selected United States and Canadian banks analyse or value their commercial customers. Since selected United States banks have the more highly formalized model they will be treated first; Canadian procedures will be discussed second.

1.4 A Detailed Description of Thesis Format

Chapter II presents and discusses background information necessary to an understanding of the study. The nature of a commercial customer is first outlined. This is followed by a description of the services performed by banks for them. Included is a discussion on the associated forms of revenues and costs which will enter the model that is subsequently generated. An argument for valuing a commercial customer under the composite package, or customer relationship approach is next presented. Lastly, the concept of a customer relationship is
discussed in relation to the customer relationship model of Hodgman¹.

Chapter III traces the development of, and discusses the profitability analysis model of selected United States banks, concluding with a presentation of the strengths and weaknesses of the model². Chapter IV then outlines the commercial account analysis procedures of selected Canadian banks.

Chapter V compares the commercial account analysis procedures of the selected United States and Canadian banks and comments on the reasons for the more sophisticated approach in the United States. The strengths and weaknesses of Canadian procedures relative to the profitability analysis model are then outlined.

Lastly, study conclusions are presented in conjunction with suggestions for future research.

1.5 Assumptions and Exclusions

1.5.1 Data Considerations

Only bank data pertinent to the analysis of the customer relationship is considered in this study. That is, the costs and revenues generated by customer usage of bank services. Excluded, therefore, is the subject of credit analysis, i.e. the analysis of a customer's financial statements as the basis to determining credit worthiness and the interest rate on the loan. However, to present a well rounded view of a bank's dealings with its commercial customers

¹Hodgman, Commercial Bank Loan and Investment Policy, Chapter 10.

²Weaknesses are merely identified. See, Improvement to the Profitability Analysis Model, p.4.
and as knowledge of the credit analysis is necessary background information to the study, this subject is accorded short discussion.

1.5.2 Cost Accounting and Data Collection

It will be apparent in subsequent discussion that sophisticated cost accounting and data generation systems are required. This aspect of commercial account analysis is not discussed, as focus is on the concepts employed in the analysis process, i.e., a customer relationship or service area approach, and the benefits the procedures yield to the bank, not on cost accounting or data generation techniques.

1.5.3 Improvement to the Profitability Analysis Model

The profitability analysis model of selected United States banks, while a highly developed system relative to Canadian procedures, is not without its faults. As study focus is on the benefits yielded by the model, not its shortcomings, no attempt is made to extend or improve model development. However, those areas of the model that warrant attention are presented in the discussion in Chapter IV and again in Conclusions and Suggestions for Future Research at the end of Chapter V.
CHAPTER II

COMMERCIAL CUSTOMERS, BANK SERVICES

AND

THE CONCEPT OF A CUSTOMER RELATIONSHIP

This chapter presents and discusses background information necessary to an understanding of the study. In addition to providing a description of commercial customers and the services performed by banks for them, it introduces a major study theme - the concept of a customer relationship.

The term commercial customer is first explained. Discussion then turns to identification of bank services utilized by commercial customers. This includes isolation of the varied forms of associated revenues and costs which will enter the model that is subsequently generated. However, no attempt is made to discuss costing procedures and philosophies, since such a discourse is not contained within the scope of this study. An argument for valuing a commercial customer under the composite package or customer relationship approach is next presented.

Lastly, the concept of a customer relationship is discussed in conjunction with Hodgman's customer relationship model¹.

2.1 Commercial Customers

The term commercial customer refers to the customers of a

¹Hodgman, Commercial Bank Loan and Investment Policy, Chapter 10.
bank, whether corporations, partnerships or sole-proprietorships, engaged in a business of a commercial or industrial nature. It is widely defined to include both primary and secondary industry, construction contractors, utilities, wholesalers and retailers, and commercial activity in general. It does not include farmers and grain dealers, investment dealers and stockbrokers, and all levels of government. The specific or specialized form of industry and commerce is irrelevant to the general concept.

Limited aggregate data is available on this class of bank customer in both the United States and Canada and relates only to loans in Canada, and loans and demand deposits in the United States. Even with limited data, however, their importance is apparent. For example, in December 1971, loans to commercial customers accounted for approximately 48 and 37 per cent of the total loan portfolios of the Canadian and United States banking systems respectively, while demand deposits of commercial customers in the United States accounted for approximately 45 per cent of the total of this deposit category.

1For a complete listing of the various forms of business included in the definition, see: Bank of Canada Review (Business Loans), and Federal Reserve Bulletin, Financial and Business Statistics, (Commercial and Industrial Loans).


2.2 Bank Services Provided to Commercial Customers\textsuperscript{1,2}

Bank services provided to commercial customers may be segregated into three major areas: (1) credit provision - the lending of funds to credit worthy borrowers, (2) demand deposit (or current) account management which provides the customer with a medium to meet all of his normal payment needs, and (3) what will be defined as other financial services - all other bank services that may be utilized by the customer e.g. time deposits, foreign remittances and safekeeping of securities. Each of these service areas are discussed in turn below. As previously mentioned, the costs and revenues associated with each service area are identified, but no attempt is made to discuss costing procedures or philosophies.

2.2.1 Credit Provision

Banks make loans on the basis of the credit worthiness of borrowers. This is determined, in part, by the character of the borrower and his financial capacity to undertake and service the borrowings he has applied for. The loan will naturally vary in terms and in amounts according to the needs and circumstances of the particular borrower.

\textsuperscript{1}Discussion throughout refers to both the United States and Canada unless otherwise noted.

\textsuperscript{2}Primary Canadian sources were: J.A. Galbraith, Canadian Banking (Toronto, Ontario: The Ryerson Press, 1970) A.B. Jamieson, Chartered Banking in Canada (Toronto, Ontario: The Ryerson Press, 1962). Information on the American banking system was primarily obtained from various periodic publications e.g. The Journal of Commercial Bank Lending.
2.2.1.1 Types of Loans

Two major types of loans are utilized by commercial customers - the short-term operating or seasonal loan and the term loan.

The operating loan is self-liquidating, in that the assets purchased with the proceeds are expected to generate sufficient cash flows to repay the loan in less than one year, and is made under a line of credit. This 'line' is a statement of willingness made by the bank to the customer, after review and analysis of his request, to lend up to a specified maximum amount for stipulated purposes. Under normal circumstances the 'line' is extended for a period of one year and renegotiated annually thereafter.

Interest rates on operating loans are set in relation to, and vary with changes in, the prime lending rate - the rate applied to the best or least risky loans of the bank. Higher risk loans incur a risk premium which is added to the prime rate, the size of the premium being dependent upon the amount of perceived risk. In bank terminology, the loan is priced at 'prime plus'.

Term loans, or more precisely intermediate term loans, refer to a class of loans made for periods in excess of one year and, normally, less than six years. In contrast to operating loans they are not self-liquidating as the funds are borrowed for capital expenditure purposes and are repaid according to an installment schedule over the term of the loan; also, they generally attract a higher interest rate than that on a short-term loan to the same borrower. The rate is set in one of two ways; either a fixed rate effective for the life of the loan is established at the outset, or a variable rate is set at 'prime
plus' subject to annual review, and adjusted in keeping with changes in the prime rate.

Term loans are utilized to a significantly greater extent in the United States banking system than in Canada\(^1\). For the former, term loans accounted for 39 per cent of all business loans outstanding in November 1971\(^2\), while for Canada the equivalent percentage, in December 1970, was approximately 13 per cent\(^3\).

2.2.1.2 Loan Revenues

In Canada, the interest rate applied on the loan generally represents the total effective cost of the loan to the customer, or revenue to the bank. This, however, is not the case in the United States where widespread use is made of compensating loan balance requirements, i.e. the customer may be quoted a contract rate of interest on a loan, or offered the alternative of a lower contract rate but with the stipulation he maintain a specified level of balances. For example, a bank may agree to grant a loan for $20,000 at a 7 1/2\% contract rate of interest. It may also offer the customer the alternative of a 6\% contract rate but with the stipulation that $5,000 be maintained on

\(^1\)The Canadian banks were restricted to a 6 per cent interest rate ceiling until 1967. Due to this low return they did not enter into term lending in any appreciable manner until after the ceiling was lifted. (Information obtained while interviewing bank officials on the account analysis methodology of Canadian chartered banks. See Chapter IV).

\(^2\)This applies only to the 'large commercial banks'. These banks, however, account for approximately 70 per cent of all loans to commercial customers. Federal Reserve Bulletin, Financial and Business Statistics, December 1971, p.A31.

\(^3\)This refers to term loans authorized in excess of $1 million only. Other data is not available. Factbook, Chartered Banks of Canada 1971, Canadian Bankers' Association.
deposit. In this case, the customer would borrow $25,000 and leave $5,000 on deposit, which raises the effective borrowing rate to 7 1/2%.

Subsidiary forms of loan revenues, for both United States and Canadian banks, are stand-by and commitment fees. In neither country, however, does their usage appear to be frequent. A stand-by fee, for making a line of credit available to a borrower, is levied as compensation to the bank for holding the funds available. Commitment fees, on the other hand, are sometimes collected on term loans if the total amount of the loan agreement is not utilized at one time and a protracted drawdown is involved. In both cases, and in both countries, the charge is typically one quarter to one half of one per cent of the unused portion of the credit.

2.2.1.3 Loan Costs

In setting interest rates on advances, banks must provide for coverage of all lending costs and provide a risk adjusted required rate of return on the investment of their shareholders from this aspect of a bank's business. These costs are briefly outlined below.

Firstly, and most importantly, there are the costs of the funds, i.e. the cost of gathering and servicing the deposit liabilities that permit loans to be made (the financial intermediation function of banking). The total cost, in addition to the interest paid on time deposit accounts and the like, includes salaries of clerical and management staff, equipment rentals, and rent and depreciation on building space associated with deposit accounts. Secondly, there are the costs directly associated with the lending function eg. salary
costs incurred in determining credit worthiness, lending the funds, receiving capital and interest repayments and, in general, supervising the advance. Thirdly, and lastly, there are the costs of losses in the ordinary course of business; for banking, default on capital repayment of the loan. In this regard, we saw on page 8 that banks attempt to make provision for this cost through a risk adjustment of the interest rate on specific advances.  

2.2.2 The Demand Deposit Account

A demand deposit account is carried by all forms of commercial customers and its primary role in modern cash management is to carry on transactions. It may also serve, to a limited extent, as a liquid asset reserve. In both Canada and the United States the account is non-interest bearing.

2.2.2.1 Demand Deposit Account Services

The most widely used and recognized services of the demand deposit account are: (1) the chequing service, where the bank will honour all cheques issued by the customer up to balance maintained in the account, and (2) the depositing service, where the bank collects all funds owed to the customer on cheques and other items that he deposits. However, depending upon the nature of a customer's business other services may reach significant volumes e.g. in the case of customers with a branch office system the bank may be called upon to

---

1 No attempt has been made to ascertain if the banks are risk averse or if they are merely equating expected returns.

2 The demand deposit account of commercial customers in Canada is referred to as a **Current Account**.
transmit a large volume of fund transfers, or for a cash business customer, provision and receipt of significant volumes of coin and currency. These services, and others of a minor nature such as cheque certification\(^1\) and issuance of stop payments\(^2\), will subsequently be referred to as **Routine Services** and are classified as being properly part of demand deposit services as distinguished from **Other Financial Services** (the third category of commercial customer services - see page 14).

### 2.2.2.2 Demand Deposit Account Revenues

The bank collects revenues for provision of the demand deposit account and routine services to the customer in two ways: (1) indirectly, by the investment of funds held on deposit in the loans and investments of the bank - the financial intermediation function of banking discussed, in part, in the Credit Provision section (see page 10), (2) the levying of charges, on a per item basis, for routine services utilized by the customer. (In Canada, currently 20 cents per cheque issued and deposit made.) These routine service revenues may be collected directly by the bank by means of a monthly charge to the customer's account, or the customer may be offered the alternative of maintaining funds on deposit which yield the equivalent of service charges due. (This balance requirement is distinct from the compensating balance stipulation that is employed in credit provision - see page 9.)

\(^1\)Where the bank guarantees payment of a cheque issued by a customer.

\(^2\)Where the customer issues a directive, to the bank, not to pay a particular cheque that he has issued.
2.2.2.3 Demand Deposit Account Costs

Banks incur three forms of costs in the operation of a demand deposit account. The first and most obvious of these is the physical cost of providing routine services to the customer e.g. processing deposits and collecting cheques. The other two, however, cash reserves and float, are associated with the level of funds held on deposit and take the form of opportunity - vis-à-vis out of pocket - costs, as they result in a reduction of the funds in the account that the bank can use for investment purposes.

Section 72 of the Bank Act stipulates that all banks in Canada must maintain cash reserves amounting to 12 per cent of their Canadian dollar demand deposits in either Bank of Canada notes or balances with the Bank of Canada. Both of these assets are non-yielding and, therefore, reduce the amount of demand deposit balances that the banks have available for investment in earning assets by 12 per cent. Similar provisions apply to the United States banks.

Float arises when banks give immediate credit to customers for cheques and other items deposited to their demand deposit accounts.

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1 An Act Respecting Banks and Banking (Ottawa, Ontario: Queen's Printer, 1967).

2 Cash reserve requirements for United States banks can be considerably more complicated than the simple application of 12 per cent depending, among other things, upon the level of deposits of a particular bank and whether or not it is a member of the Federal Reserve System. For a concise explanation of cash reserve requirements in the United States see: The Federal Reserve System: Purposes and Functions, (Board of Governors of the Federal Reserve System, 1963).

3 e.g. drafts and money orders.
The bank, however, then has to collect these deposited funds from the cheque issuers. If the collection period is one day or more, the volume of funds to be collected - float - must be deducted from the customer's account balance to give the actual figure the bank has available for investment purposes.

2.2.3 Other Financial Services

The remaining services that may be utilized by commercial customers are briefly discussed below. These are: time deposits, foreign exchange, and special services.

2.2.3.1 Time Deposits

This form of deposit, unlike the demand deposit, is not subject to chequing, is interest bearing, and is issued for a fixed term; the term depending upon the amount of funds the customer wishes to invest and his desire as regards term. In addition, time deposits are usually redeemable, normally at a penalty rate, but are non-transferable and non-negotiable.

The bank derives revenue from investment of the deposit funds in the loans and investments of the bank (financial intermediation) with the great majority of costs being incurred through interest payment to the customer. Also, as was the case with demand deposits, cash reserves must be maintained. In Canada this is 4% of the amount of the deposits outstanding. Similar provisions apply to United States banks.

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1As with demand deposits, the cash reserve requirement varies with the level of deposits held and whether the bank is a Federal Reserve member. See footnote 2 page 13.
2.2.3.2 Foreign Exchange

As was the case with domestic currency, banks offer loans, time deposits and demand deposits in foreign currencies. In terms of revenues and costs these foreign currency deposits and loans require no additional discussion to what has already been presented for domestic deposits and loans.

In addition to the above, banks provide the important function of financing international trade through the issuance of commercial letters of credit. For this service a commission is collected, usually on a sliding percentage scale depending upon the size of the credit. Also, payment instruments in foreign currencies are available to customers, e.g. drafts and money orders. For these services banks collect a straight fee per instrument sold in addition to making a small commission on the difference between the buying and selling rates on the foreign currency.

2.2.3.3 Special Services

Apart from the principal services provided to customers in the way of deposit accounts and the granting of loans, banks also provide a variety of special services some of which are set out below. For such services the banks usually collect some form of commission, fee or rental. These services are: (1) issuance of domestic payment instruments such as drafts and money orders, (2) collection of matured bonds and coupons, (3) safekeeping of securities and/or provision of safety deposit box facilities, (4) buying and selling of stocks and bonds, (5) night

\[ \text{In contrast to Canadian dollar deposits there are no legal cash reserve requirements against foreign currency liabilities. Banks, therefore, utilize their own judgement in this matter. This is also true for United States banks. Starrs, Catherine J., A Guide to the Bank of Canada's Weekly Financial Statistics, The Canadian Banker, September-October 1968.} \]
depository facility, and (6) payroll plans, whereby the customer gives the bank one cheque to cover the complete payroll, together with a list of employees, and the bank distributes the funds.

2.3 The Customer Relationship

As can be imagined, not all customers are equally profitable as each customer utilizes a different package of bank services, thereby contributing in varying ways and amounts to bank revenues and costs. The bank is usually in a position to negotiate, within limits, the configuration of the composite package by varying the methods in which it can collect revenues e.g. compensating loan balances for an interest rate reduction, and equivalent value demand balances in lieu of service charges for routine services.

The varying levels of customer profitability and the varying methods by which the bank can negotiate and collect revenues raises the following consideration relevant to a banker entering into price negotiations. What is the proper approach toward valuation of a commercial customer? i.e. should each service area be considered independently of the others or should a composite picture be taken? The composite picture pertains to the concept of a customer relationship in banking and the following discussion of An Analysis Approach for Commercial Customers forms the basis, or theme, for the remainder of this study. In particular, it serves as an introduction to subsequent discussion on Hodgman's customer relationship model\(^1\) and to the expansion of this model in Chapter III.

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\(^1\)Hodgman, Commercial Bank Loan and Investment Policy, Chapter 10.
An Analysis Approach for Commercial Customers

Banks should analyse their commercial customers on the basis of the customers' total business with the bank (the total customer relationship) and not on a separate service area basis. Moreover, the analysis should provide a composite profit picture of the customer as its end result.

Banking services provided to commercial customers are not totally separated services; rather, they are linked in varying ways: (1) interdependency of the loan and demand deposit account, (2) customer convenience, bank attitude, and service quality, and (3) customer negotiation strategy and customer loss. These factors, which are discussed below, dictate the performance of a total customer relationship analysis rather than separate service area analyses.

2.3.1.1 Interdependency of the Loan and Demand Deposit Account

It has already been discussed that loan terms may be negotiated with the requirement of compensating demand deposit account balances. In such a situation, the demand deposit account and loan are inseparable. However, whether or not compensating loan balances are part of loan terms, the demand deposit account and the loan are strongly linked, as the former is the medium through which the customer receives loan proceeds, spends these proceeds and deposits funds generated by the loan (routine services), and meets his periodic needs.

\[ \text{See page 9.} \]
capital and interest repayments. Thus, the loan and demand deposit account should be viewed as one integrated banking service and analysed as such, rather than as two separate services.

2.3.1.2 Customer Convenience, Bank Attitude and Service Quality

An implicit assumption in the above discussion, and one that is maintained throughout this study, is that the customer will maintain his demand deposit account at the bank where he borrows. In fact, it is assumed that the commercial customer will deal with only one bank for all of his banking needs.

It is clearly true that the customer will maintain his loan and demand deposit account at the same bank in the situation of compensating loan balances and highly probable even if there are no compensating balance stipulations, as the demand deposit account is the medium through which loan proceeds are spent and repaid. (See above discussion.) However, if there is not a strong incentive for a customer to deal in total at one bank, a package analysis is not warranted and each service area would most likely be separately analysed. In this instance, a customer would utilize a particular bank service only if it was competitively priced.

Three factors dictate that customers will normally conduct all of their banking needs at one bank. These are: customer convenience, bank attitude, and service quality.

It is more convenient for the customer to satisfy all of his banking needs at one location rather than at several. An analogy is the relative convenience afforded a consumer purchasing all of
his food supplies and sundry housing needs at the local supermarket, rather than at the butcher, hardware store, baker, tobacconist, et cetera. It is also more convenient for the customer from an accounting standpoint, as was inferred before, in that the bank can efficiently transact the customer's total banking needs and at the same time save him time and money\(^1\).

A customer maintaining his business at a number of banks is also liable to detract from the bank's attitude toward him, which may affect any requests he may have to make of the bank e.g. application for increased borrowing facilities. Indeed, in the case of a potential customer applying for a loan it is usually a requirement of receiving the loan that the total business be obtained from the customer's present bankers\(^2\).

Viewing this from the opposite viewpoint, a customer who maintains his total business at one bank is more likely to find his banker accommodating and responsive to his needs than the customer

\(^1\) e.g. Upon one directive, and at no cost, the bank will make periodic loan and interest payments for the customer, and debit his account for other recurring items e.g. special service fees (see page 15). The alternative is for the customer to conduct his own accounting system which will involve him in expenditure of time and money e.g. if the demand deposit account is held at a bank other than the lending bank, the customer would have to take a bank cheque for the loan proceeds and deposit it at the bank which holds his demand deposit account (for which he will be charged). He would also have to make the loan repayments himself, or instruct the bank of deposit to do so, for which service he would be charged a fee.

\(^2\) Information obtained while interviewing bank officials on the account analysis methodology of Canadian chartered banks. See Chapter IV.
who does not. In particular, by doing so, the banker obtains an intimate knowledge of the customer and his business, which is a factor of extreme importance in negotiating loan terms (not necessarily the interest rate). 

2.3.1.3 Customer Negotiation Strategy and Customer Loss

It has been argued above that there are strong incentives for customers to transact their total business at one bank and that bank services are linked in varying degrees by quantitative and qualitative factors. As such, it is a reasonable expectation that negotiations on any one service area, based upon an analysis of that service area alone (e.g. routine service prices based upon an analysis of the demand deposit account only), may be countered by customer pressure to consider aspects of the relationship other than that being negotiated upon. Such a potential situation warrants that the banker must consider not just the individual service area in his negotiations with the customer, but the total relationship. This is perhaps best illustrated by the situation of the bank refusing to consider aspects of the relationship other than that being negotiated upon. Such refusal might lead the customer to approach

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1See, for example, Hodgman, Commercial Bank Loan and Investment Policy, p.97. Hodgman's interviews revealed that important criteria in assessing the desirability of meeting a loan request from a particular customer included: his deposit record, the existence or prospect of a long term customer relationship, and the existence of various other financial services.
another bank and the loss, following from previous argument, would not be that one service but the entire relationship.

2.4 The Form of Analysis

Having argued that the analysis of commercial customers should be on a total relationship basis, the actual form of analysis procedures is the final question to be answered. It is the opinion of the writer that the only manner in which commercial customers should be analysed must be that which provides the banks with knowledge of the total profit or loss being generated by any particular customer. This particular viewpoint is held as there are three basic questions that a bank must have answers to, if it is to deal with the customer in an objective and rational manner.

1. Is the relationship profitable or is it costing the bank money?
2. What is the level of the relationship's profit contribution or loss?
3. What level of profit is deemed acceptable for the relationship?

Given the answers to these questions, the bank is in a position to formulate an objective, flexible, pricing and negotiation strategy for the customer; a topic which is expanded upon in the following pages, after discussion of Hodgman's customer relationship model, and again in a more detailed manner in Chapter III.

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1Ibid., Chapter 10.
2.5 **Hodgman's Customer Relationship Model**

To the best of the writer's knowledge, the first published reference to a *customer relationship* was made by Hodgman in 1963. He defined it as follows:

"The customer relationship into which a bank enters with a typical demand deposit holder, especially a business firm, has many aspects. Foremost among these are: (1) the deposit itself with attendant costs and benefits to the bank, (2) an implied and often explicit obligation by the bank to make loans to the customer on terms and in amounts which vary with particular circumstances, and (3) the provision by the bank of various other financial services---".

This definition does not include the entire range of bank services that might be utilized by a customer, as discussed on pages 7 to 16, but restricts attention to the foremost elements of a relationship. This is not to say that Hodgman overlooked certain aspects of a relationship that might exist i.e. time deposits and foreign currency loans and deposits. Rather, the definition excluded such items for purposes of simplicity in the construction of his customer relationship model. For the purposes of this study, the term *customer relationship* refers to the entire range of bank services utilized by any one individual customer.

The model, which is presented in Table II-1, was constructed under very simplifying assumptions; however, the conclusions reached make worthwhile contributions to this study and provide a strong foundation for the presentation and discussion of the *profitability* analysis models of selected United States banks in Chapter III.
Under Hodgman's assumptions, the customer analysis takes place under static certainty: (1) the bank is in full and certain possession of the relevant information required to assess the balance of costs and benefits associated with a particular customer account, and (2) present and future are identical.

The end result of the model is the derivation of the net revenue obtained from the ith customer, $P_i$ (see definitions Table II-1). Hodgman's basic conclusion was that banks will have a strong incentive to compete among themselves for customers showing a rate of return per loan dollar invested, i.e. $P_i/L_j$, $L_j$ denoting the jth size loan to the ith customer, in excess of the market interest rate $r$ available on loans to non-depositors or on open market securities.

The channels for inter-bank competition, according to Hodgman, rest in those variables of the net earnings equation that banks have some degree of discretion or control over and include: the contract rate of interest $c_{ij}$ pertaining to the jth size loan to the ith customer, and the charges made for routine and special services $S_i(d_i)$. For example, a bank may compete with any or all of the following: reduction of the contract rate of interest; provision of additional routine and special services at zero or reduced cost, and elimination or reduction of charges on routine and special services presently provided. Hodgman is implicitly saying, therefore, that banks have prices pertaining to each service they offer, but in competitive situations for high return customers these prices can be utilized as negotiation variables to obtain or retain a customer.
TABLE II-I

HODGMAN'S CUSTOMER RELATIONSHIP MODEL

\[ P_i = r_d i (1-R) + c_{i j} L_{i j} + \left[ S_i(d_i) - F_i(d_i) \right] - p d_i, \]

where \( P_i \) = net earnings on the customer relationship.

\( d_i \) = demand deposit on the \( i \) th customer, net of loan proceeds.

\( R \) = legal cash reserves on demand deposits.

\( (1-R) \) = proportion of demand deposits which can be used to acquire earning assets.\(^1\)

\( r \) = market rate of interest on loans and investments which do not involve a deposit relationship. This rate is net of loan and investment costs and is risk adjusted.

\( L_{i j} \) = \( j \) th size loan to the \( i \) th customer.

\( c_{i j} \) = contract rate of interest charged on the \( j \) th size loan to the \( i \) th customer, net of all loan costs.\(^2\)

\( S_i(d_i) \) = charges to the customer for services, routine and special, under the assumption that these are equal to some function of balance size.

\( F_i(d_i) \) = cost to the bank for services, routine and special, again under the assumption that this is equal to some function of balance size.

\( p^d \) = rate of interest on demand deposits.\(^4\)

\( i \) = subscript denoting the \( i \) th customer.

\( j \) = subscript denoting the size of the loan to the \( i \) th customer.

\(^1\) Hodgman makes no provision for "float", therefore the investible balance \( d_i(1-R) \) is overstated. (See page 13).

\(^2\) Hodgman states "— net of costs of loan administration". It is assumed he means all costs, including the cost of funds.

\(^3\) See pages 12 and 15 where these terms are explained.

\(^4\) Subsequently dropped from consideration as demand deposits are non-interest bearing.
and, hence, to maximize bank profits per loan dollar invested. That is, failure to obtain or retain a high profit customer by not offering price concessions can lead to a decline in bank profits.

Hodgman's approach and conclusions, however, need not be restricted to identification of, and negotiations with, high profit customers, as these can be expanded to include all commercial customers e.g., identification of low profit customers with negotiations being directed to attainment of an acceptable or normal profit level. The expansion of Hodgman's model to a formal, workable technique along these lines will be fully taken up in Chapter III - The Customer Relationship Model of Selected United States Banks.

To conclude the present chapter, Hodgman's approach to commercial account analysis, together with its strengths and weaknesses, is summarized below.

2.5.1 A Summary of the Hodgman Model

Hodgman agrees with the total valuation approach to commercial account analysis - a customer relationship analysis - with prices for each service, e.g., the loan rate, not necessarily being independently set, but intimately related to the value of the total relationship to the bank. This provides the bank with the following benefits:

1. Knowledge of the total profit or loss level on any commercial customer.

1See page 26, where the weaknesses of the Hodgman model are discussed.
2. Knowledge of why the account is in a particular profit or loss situation e.g. in the case of a low profit account the reason might be: a loan paying too low a rate; a troublesome loan which involves a greater than normal expenditure of management time and effort; special services for which the bank is not being adequately compensated, or some combination of these and other factors.

3. Knowledge of the profit or loss, plus the reasons for the situation, provides the bank with the data to formulate an appropriate, flexible, negotiation strategy e.g. for the low profit account discussed in 2 above this might be: an increased loan rate; additional demand or time balances; increased special service fees, or some combination of these to move the account to an "acceptable" profit level.

The approach also has some weaknesses:-

1. What is a 'high' or 'low' profit customer? This must be identified relative to an "acceptable or normal" profit level - a profit level that covers all costs including a return on equity capital. Hodgman's model does not cover this important point.

2. The model was constructed under a very simplifying assumption - static certainty. Can the dynamics of the customer relationship be captured?

3. Lastly, and most importantly, can the model be operationalized? And, if it can, what are the costs of operationalization vis-à-vis benefits? i.e. the model is only of use if the costs of its introduction and usage are exceeded by the returns and benefits it generates.

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1 It is obvious that the Hodgman approach to commercial account analysis could be applied to all commercial customers. It is just as obvious that the technique would afford no net benefit to the bank for "small" commercial customers e.g. the corner grocery store. Concern will therefore reside with "larger" commercial customers, where the opportunity may exist for the bank to receive a net benefit.
CHAPTER III

PROFITABILITY ANALYSIS

THE CUSTOMER RELATIONSHIP MODEL OF
SELECTED UNITED STATES BANKS

Chapter II introduced the concept of a customer relationship. This was illustrated by means of the Hodgman model and a brief discussion presented the strengths and weaknesses of that model. The most serious weaknesses were the static certainty assumption and the underlying question of whether or not the model could be operationalized.

The purpose of this chapter is to trace the development of the customer relationship analysis of Hodgman into the operational profitability analysis model of selected United States banks. These banks, to the best of the writer's knowledge, were the innovators of this approach to commercial account analysis.

The chapter commences with a statement of model objectives. A brief discussion is then presented on the growing importance of this approach to commercial account analysis in United States banking. Basic model structure is next outlined. This includes an illustration of the model's final output, as utilized by account managers in determining pricing and negotiation strategies. The chapter concludes with a discussion on the strengths and weaknesses of the model. No attempt is made, however, to extend or improve model development.

1The bank officer who has responsibility for the entire relationship i.e. administration, price setting, and negotiations.
inasmuch as this would be out of the scope of the study\textsuperscript{1}.

It will be apparent in subsequent discussion that a sophisticated cost accounting and data generation system is necessary to provide the inputs and calculations as required by the model. This aspect of profitability analysis is not discussed as focus is on the model and the benefits it yields to the bank, not on the generation of inputs.

3.1 Profitability Analysis Model Objectives

The profitability analysis model has two basic objectives: (1) measurement of the profit (loss) earned by the bank over the entire relationship with a commercial customer for some historical time period, (e.g. three or six months), and (2) determination of the profit that should be earned on the relationship\textsuperscript{2}. This will subsequently be referred to as the profit goal.

The model then relates relationship profit to the profit goal, from which appropriate negotiation and pricing strategies are formulated.

3.2 Profitability Analysis Model Development

The profitability analysis approach to the analysis of commercial customers, which commenced with Hodgman's theoretical customer

\textsuperscript{1}Model weaknesses are, however, accorded a short discussion and are further identified as possible topics for future research in Chapter V.

\textsuperscript{2}Thereby meeting a criticism of the Hodgman model - the need for an acceptable or normal profit level.
relationship in 1963, appears to have received wide recognition and
gained a strong foothold in United States banking.

To the best of the writer's knowledge, the first operational
profitability analysis model was introduced by the Philadelphia
National Bank (P.N.B.) in 1965\(^1\). This apparently represented the
first formalized attempt by a bank to determine the profit (loss)
earned on a total customer relationship. Previous methods apparently
never completely integrated returns and costs in separate service
areas and, therefore, did not yield a total profit picture as the
final analysis result:

"The profitability analysis system ... is a
new method \([\text{for analysing commercial customers}]\).
Traditional systems of analyses are concerned
primarily with the deposit relationship ... Also,
these systems sometimes use prices for services
which vary from actual cost."\(^2\)

Since the P.N.B.'s introduction of the profitability analysis
model in 1965, it would appear that the worth of this approach to
commercial account analysis has been well recognized by the banking
community:

"In the writer's opinion, there are possibly fifty
banks in the country \(\text{[United States]}\) which are now
using or working on profitability analysis and
possibly the same number seriously considering the
technique."\(^3\)

\(^1\)The Philadelphia National Bank, Profitability Analysis of
Commercial Customers (unpublished manuscript, July 1965).

\(^2\)Ibid., Page 5. This quote depicts the current situation
of commercial account analysis in Canada. See Chapter IV.

\(^3\)John F. Falkenberg "Profitability Analysis: A Marketing
Tool - Part 1", The Journal of Commercial Bank Lending. February 1970,
page 7.
In particular, the P.N.B. profitability analysis procedures were followed by the First National City Bank and the Seattle First National Bank in 1967\(^1\).

While the methodology and procedures of all banks utilizing the profitability analysis model are broadly similar, the P.N.B. system is described in this chapter inasmuch as more detailed information is available on its configuration.

3.3 The Profitability Analysis Model of the Philadelphia National Bank

3.3.1 Types of Customers

In the context of loan and deposit balances, there are three basic types of commercial customers: (1) the non-borrower - a pure deposit relationship; (2) the net borrower - a borrowing customer whose loan balance exceeds that of his deposit balance, and (3) the net depositor - a borrowing customer whose deposit balance exceeds that of his loan balance. As the focus and major use of the profitability analysis model is on the borrowing customer, the following discussion assumes a net borrower throughout. Procedural modifications for the non-borrower and net depositor are small. These are outlined at the conclusion of discussion on the net borrower.

3.3.2 The Basic Analysis Process

The profitability analysis process is separated into two steps: (1) a source and application of funds, and (2) a profit (loss) calculation.

The source and application of funds determines the sources of financing for the customer's loan - the customer's own net deposit balances, pool funds, and bank equity capital - and therefore the raw data for computation of the cost of funds; a needed input to the second step. Profit or loss is next calculated - the revenues and expenses associated with the entire relationship, including the cost of funds required for loan finance. The cost of bank equity capital is the profit goal for the account. (See page 37.)

The following illustrative analysis, which will be used throughout, describes the profitability analysis procedure for the A.B.C. Company Ltd., (a net borrower), supported by the presentation in Tables III-1 and III-11 overleaf. These tables illustrate the final output of a profitability analysis in the form that would be supplied to an account manager and from which he would determine appropriate negotiation and pricing strategies.

1 Customer deposit balances minus cash reserves and float. See page 13 for an explanation of these terms; also, why they must be deducted from the customer's deposit balance.

2 Net depositor customers' deposit balances in excess of their loans are assumed to flow into a pool of funds which is available for loan support or finance for net borrowers.

3 Also supplied to account managers are support schedules which detail the volume, revenue, and cost composition of routine and special services by individual service e.g. cheques issued.
**TABLE III-1**

PROFITABILITY ANALYSIS

OF

A.B.C. COMPANY LTD.

JANUARY 1, 1972 to DECEMBER 31, 1972

SOURCE AND APPLICATION OF FUNDS

<table>
<thead>
<tr>
<th>Application of Funds</th>
<th>Source of Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average loan</td>
<td>Equity Capital</td>
</tr>
<tr>
<td>$1,000,000</td>
<td>$150,000</td>
</tr>
<tr>
<td>Customer Deposits</td>
<td></td>
</tr>
<tr>
<td>(debt)</td>
<td></td>
</tr>
<tr>
<td>Average ledger balance</td>
<td>$750,000</td>
</tr>
<tr>
<td>Less:</td>
<td></td>
</tr>
<tr>
<td>Float</td>
<td>$195,000</td>
</tr>
<tr>
<td>Cash</td>
<td>$250,000</td>
</tr>
<tr>
<td>Reserves</td>
<td>55,000</td>
</tr>
<tr>
<td>Average investible balance</td>
<td>$500,000</td>
</tr>
<tr>
<td>Deficiency from pool funds</td>
<td>350,000</td>
</tr>
<tr>
<td>Total application</td>
<td>Total sources</td>
</tr>
<tr>
<td>$1,000,000</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

1Commentary on this table may be found on pages 34 to 36.
TABLE III-11

PROFITABILITY ANALYSIS

OF

A.B.C. COMPANY LTD.

JANUARY 1, 1972 to DECEMBER 31, 1972

PROFITABILITY ANALYSIS SUMMARY

<table>
<thead>
<tr>
<th>Income</th>
<th>Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan interest ($1,000,000 @ 5 1/2%)</td>
<td>Loan cost $10,000</td>
</tr>
<tr>
<td></td>
<td>Routine services 15,000</td>
</tr>
<tr>
<td>Routine service charges 5,000</td>
<td>Pool funds ($350,000 @ 5%) 17,500</td>
</tr>
<tr>
<td>Special service charges 2,000</td>
<td>Special services 3,750</td>
</tr>
<tr>
<td></td>
<td>Desired profit on equity capital ($150,000 @ 20%) 30,000</td>
</tr>
<tr>
<td></td>
<td>Deficiency (14,250)</td>
</tr>
<tr>
<td>$'62,000</td>
<td>$'62,000</td>
</tr>
</tbody>
</table>

Commentary on this table may be found on pages 36 to 37. The P.N.B. do not present their profitability analysis summary as illustrated above. They calculate actual profit ($15,750), relate this to the desired profit level ($30,000), then compute a profitability index:-

\[
\text{Profitability Index} = \frac{\text{Actual Profit}}{\text{Desired Profit}} \times 100 = \frac{15,750}{30,000} \times 100 = 52.5
\]

The profit goal is that which will yield an index of 100 i.e. $14,250 in additional revenues. As desired profit corresponds to the shareholders' desired rate of return, (see page 37) it should more properly be included as a charge against revenues, as indicated, rather than as utilized by the P.N.B.
3.3.2.1 Source and Application of Funds

The analysis period having been selected by the bank, the commencement point is calculation of the customer's average loan balance for that period. In the case of the A.B.C. Company Ltd., this is one million dollars. The loan is then assumed to be financed by: (1) bank equity capital, (2) the average investible deposit balances of the customer being analyzed, and (3) pool funds, if required.

Equity capital is allocated to the loan under the assumption that its purpose is to protect depositors against any risk of loss arising from the loan and investment portfolio. It is allocated at a percentage rate which depends upon the risk class of the loan i.e. the higher the risk in the loan the greater will be the capital allocated per loan dollar. In the case of the A.B.C. Company, the allocation rate is assumed to be fifteen cents per loan dollar.

The allocation procedure utilized by the P.N.B. is as follows:

1. Divide the loan and investment portfolio into broadly defined risk categories, e.g. short term U.S. Government securities, long term U.S. Government securities, commercial loans, personal installment loans, federally guaranteed mortgage loans, et cetera.

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1This technique is directly comparable to capital structure theory i.e. the greater the business risk faced by a corporation, the greater its investments will be financed by equity and the less by debt. Debt, as it pertains to banking, refers to customer deposits.
2. Assign a basic value of one (1) to the category of loan or investment with the lowest risk, e.g. short term U.S. Government securities. Every other category would then be assigned a risk factor relative to this base, e.g. commercial loans may be rated three (3) i.e. three times the risk of short-term U.S. Government securities; personal installment loans, four (4), et cetera. Then equity capital, less a 100% allocation to fixed assets such as buildings and equipment, is applied or allocated on a weighted average basis as follows:-

Let \( x\% = \frac{\text{Equity Capital}}{(1 \times \text{U.S. Gov. secs.}) + (3 \times \text{comm. loans}) + (4 \times \text{personal loans})} \times 100 \)

The percentage allocation of capital to commercial loans would then be \( 3x\% \).

3. After having obtained the general allocation of capital to the commercial loan category, this allocation is refined by classifying the different degrees of risk within the commercial loan portfolio itself, e.g. unsecured and secured loans under a 'line of credit'; two, three and four year term loans, et cetera.

The second source of finance resides in the average deposit balances of the customer being analysed, under the assumption that the customer's deposit balances should offset his loan. However, cash reserves and float must first be deducted from the average balance to arrive at the actual balance that the bank has available for loan support or finance - the investible balance.

The third and final source of finance is pool funds. With regard to the A.B.C. Company Ltd., as equity capital plus average

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1 A second approach, which is also utilized by the P.N.B., involves merely saying, for instance, that 5% of equity capital will cover the market risk in U.S. securities, 15% the credit risk in commercial loans, 20% the credit risk in personal loans, et cetera.

2 Theoretically, then, the customer's deposit balances flow into the pool and are immediately withdrawn. However, the cost attached to these deposits is correctly set at the actual cost incurred by the bank with respect to that particular customer, not the pool funds cost. See page 36 - Cost of Funds.

3 See page 13 where the reasons for cash reserve and float deduction are explained.
investible customer deposits falls short of the loan amount by
$350,000, this deficiency is drawn from pool funds.

3.3.2.2 Profitability Analysis Summary

The profitability analysis summary is simply an historical
statement of earnings and expenses for an individual customer
relationship.

The customer is first allowed credit for all income
generated for the bank in the analysis period. As illustrated, the
A.B.C. Company Ltd. is allowed credit for loan interest and service
charges paid. The customer is then charged with all costs incurred
by the bank on his behalf. For the A.B.C. Company Ltd. these were:
(1) Loan cost - the costs associated with the analysis of the loan
request (credit analysis), receiving capital and interest repayments
and, in general, supervising the loan account; (2) Special services -
the cost associated with the issuing of drafts, money orders, et cetera,
and (3) Cost of funds - the costs associated with the financing of the
customer's loan. This is comprised of three separate costs. Firstly,
there are the costs of the customer's own deposit balances. In the

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1See pages 9 to 16, where discussion on the revenues and
costs associated with service provision to commercial customers is
presented.

2Loan interest is the realized, not the expected return.

3Had the A.B.C. Company Ltd. been a net depositor (see page 30),
credit would have been allowed for revenues emanating from investment
of deposit funds supplied to the pool, less investment and servicing
costs.
case of the A.B.C. Company Ltd., this was the cost of providing routine services to the customer. Secondly, there is the cost of pool funds supplied and, lastly, the cost of bank equity capital allocated to the loan. This latter cost is calculated by applying the bank's desired rate of return on total bank equity capital, at book value, to the portion of equity capital allocated to the loan - in financial theory terms, the shareholders' desired rate of return. As equity capital is allocated according to the risk in a particular loan (see page 34) and as the same desired rate of return is required on all allocated capital, the effect is to add extra costs to the more risky loans.

With the A.B.C. Company Ltd., the desired rate of return on allocated equity capital was assumed to be 20 per cent on $150,000, or $30,000. This resulted in a deficiency of $14,250 or a profitability index of 52.5.

3.3.3 The Non-Borrower and Net Borrower

The procedures outlined in the preceeding pages for analysis

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1It should be noted that banks also collect service charges for providing routine services (see page 12). This is illustrated in Table III-11. A more correct procedure would be to net these costs and service charges to give the "true" cost of customer deposit balances.

2The cost of maintaining the deposit pool pro-rated to the amount of pool funds supplied. Pool fund-cost is comprised mainly of interest and administrative expenses. In Table III-11 this was assumed to be 5 per cent.

3It should be noted that the P.N.B. computes the desired rate of return on the book value of the equity and not on the market value, as is common usage. See, for example, J.C. Van-Horne, Financial Management and Policy (Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1971).

4See Table III-11 and footnote.
of the net borrowing customer are utilized, with minor addition, for analysis of the non-borrower and net depositor. These minor additions are described below.

3.3.3.1 The Non-Borrower

In the Source and Application of Funds statement, equity capital is allocated to the customer's investible deposit balance at that rate which corresponds to the average risk of the bank's total loan and investment portfolio. In the Profitability Analysis Summary, the customer is allowed credit for his investible deposit balance plus allocated capital at the bank's average gross earnings rate on loans and investments, and is charged with the cost of lending and investing his funds.

3.3.3.2 The Net Depositor

This type of customer represents an amalgamation of the procedures already outlined for the net borrower and non-borrower, in that he has both a loan, plus "excess" deposit balances which are supplied to the pool. Equity capital is first allocated to the loan as described for the A.B.C. Company Ltd. earlier in the chapter; however, as the customer has deposit balances in excess of that required to finance the remainder of his loan, these are supplied to the pool and the process described above for the non-borrower is applied to these "excess" funds.

3.4 Situational Usage of the Profitability Analysis Model

A profitability analysis, as presented on the preceding

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1This customer's total investible balance flows into the deposit pool, from where it is drawn to finance the loans of net borrowing customers and bank investments.
pages, is prepared for account managers in three major situations which lead, or could lead, to price negotiations with a customer on any or all aspects of his business transactions with the bank. Two of these situations relate to present customers of a bank and one to potential, as outlined below. Discussion on the merits and weaknesses of profitability analysis follows.

3.4.1 Present Customer Usage

A profitability analysis is prepared for the account manager at the time of the annual credit review, i.e. line of credit, etcetera, whether this is a renewal, or application for new or increased facilities. In this situation, it is utilized for the assistance it provides the account manager in negotiating credit and other terms with the customer, e.g. the customer may be pressing for a 'prime rate' on his loan, but the profitability analysis shows that a rate of prime plus one per cent would be necessary to meet the profit goal.

An historical profitability analysis is also periodically prepared at the request of the account manager for the purpose of ensuring that the account is performing in a satisfactory manner, i.e. a monitoring procedure to ensure profit goals are being met. Based upon the results, the account manager would decide whether and what action was necessary. It is interesting to note in this regard that the First National City Bank, whose analysis procedure is totally computerized, provides its account managers with a profitability analysis

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The bank officer who has responsibility for the entire relationship i.e. administration, price setting and negotiations.
of all relationships they manage on a quarterly basis\textsuperscript{1}.

3.4.2 Potential Customer Usage

Little information on this topic was contained in the literature, as the major usage of the model is an historical analysis of present customers. Only one reference to the analysis of potential customers was noted:

"With advance knowledge of the essential ingredients of a prospective deal, we are able to develop a projected index\textsuperscript{2} which sets forth the profit potential of a proposed relationship. The index, therefore, can serve as a guide in determining how aggressively we seek a piece of new business".\textsuperscript{3}

3.5 Model Strengths and Weaknesses

Having outlined the model and stated the situations in which it is utilized, it is now appropriate to present the strengths and weaknesses of this approach to commercial account analysis. The discussion will serve as an input for comparing United States bank procedures to those of Canadian banks in Chapters IV and V. Possible, major, model weaknesses will be treated first.

3.5.1 Model Weaknesses

Three, possible, major, model weaknesses exist. These are:

\begin{enumerate}
\item See Table III-11.
\item Dyer and Heilshorn, Profit Analysis for Loans, p.45 (Philadelphia National Bank).
\end{enumerate}
(1) the usage of historical rather than projected customer relationship data; (2) capital allocation as an approach to risk adjustment, and (3) duplication of income, expense and capital allocations.

3.5.1.1 Historical Data

Projected, not historical data should be employed since price negotiations are taking place for a future time period. The ability to forecast the variables is potentially very difficult. It should be realized, however, that both the profitability analysis model and the computer are relatively recent introductions to banking; the latter being a practical necessity for projections and until recently was being primarily utilized for administrative rather than research and analysis purposes. As banks turn more towards the latter use of computers, we may expect, in the writer's opinion, to see such projections take place. Indeed steps are already being made in this direction.

"A system like C.I.S.\(^1\) can also be helpful in determining the opportunity value of keeping a customer relationship during the foreseeable future. This can be accomplished simply by using a forecasted long-term cost of pool funds together with projected levels of business for the customer and then calculating the pre-tax earnings in future years. We have performed this operation several times by letting the computer do the work for us. In this way, C.I.S. has become a tactical planning tool for the account manager.\(^2\)

3.5.1.2 Capital Allocation as an Approach to Risk Adjustment

In Chapter II, adjustment of the interest rate to account for risk differentials between loans was briefly discussed i.e. the higher the risk the greater would be the interest rate. In this chapter, the process of goal setting based upon a risk allocation of equity capital

\(^1\)Customer Information Systems. The name of the computerized profitability analysis system of the First National City Bank.

\(^2\)Else, Account Profitability, p.8. (First National City Bank).
was discussed i.e. the greater the risk in any particular class of advance, the greater will be the capital allocated and, hence, the greater the profit goal. If interest rates are being risk adjusted in a consistent manner and capital is being allocated on a risk class basis, it seems to the writer that a duplication is taking place. This matter, however, is not clear cut and the solution would appear to reside in risk adjustment of rates in a consistent manner, as evidenced in the following quote:

"Most of us say we adjust interest rates according to risk, but considering the wide quality range of customers borrowing at prime, there is serious doubt that we are paid for many of the risks we are assuming."  

3.5.1.3 Duplication of Income, Expense and Capital Allocations

In profitability analysis, income is allocated both to borrowers and to depositors. Hence, except to the extent that a borrower's own deposit balance is used to finance his own loan, income is allocated twice. The same is true of expenses e.g. in the case of a pure depositor, the cost of maintaining these deposit balances is charged first to the depositor then to the borrower who uses them (cost of pool funds). Capital is also allocated twice in that total equity capital is first consumed by the loans and investments of the bank, then it is "allocated" to deposit balances (see page 38).

A potential weakness of profitability analysis then, is that the sum of all income, expense and profits of commercial customers, as

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1Dyer and Heilshorn, Profit Analysis, p. 47 (First National City Bank). It is not clear, nor has any attempt been made to ascertain, if the risk adjustment merely equates expected returns or if a risk premium has been built in.

2See Philadelphia National Bank, Profitability Analysis, Chapter XII where the P.N.B. attempt to defend this duplication of income, expense and capital allocations.
well as the sum of capital allocations, will be more than that for the bank as a whole.

3.5.2 Model Strengths

The major strength of the profitability analysis approach is that it accounts for the total relationship in a systematic manner and one which yields results in a directly usable form. Based upon this notion, the discussion that follows has its origin in comments and inferences made by various bank officers when outlining the profitability analysis procedures of their companies.

3.5.2.1 Consistency and Subsidization

Profitability analysis is a technique that provides for all commercial customers being analysed in the same manner and by the consistent application of the same set of rules. This reduces, therefore, the non-objective decisions that might otherwise be made and accords the customer a fair, objective analysis of his business.

The results of the analysis provide the basis for each relationship "paying its own way" or "pulling its own weight", which reduces the possibility that profitable relationships may be subsidizing low profit or loss relationships. In this sense, it is fair to all customers.

The word reduce was underlined as it has been suggested that banks frequently seek large prestige customers, at the expense of profit, assuming that growth in size equals growth in profitability.

\[\text{\underline{This is best illustrated if it is assumed that a bank only has commercial customers.}}\]

\[\text{\underline{2See, for example, Paul S. Nadler, "Three Profit Areas You Can Explore", Banking, April 1970, p.77.}}\]
This fact is well recognized, however, should a bank have such sub-goals, profitability analysis provides an unambiguous measurement of the opportunity cost of pursuing these, which cost might not have previously been fully realized. The following quote illustrates both the subsidization argument and the banks' possible lack of awareness of the costs of pursuing size or prestige customers.

"When the profit formula [profitability analysis] is applied to the commercial loans [relationships] in a bank, it produces surprising results. Many customers formerly thought to be highly profitable will show disappointing index figures [profits] while many other customers formerly thought to be marginal producers will show very good results."

3.5.2.2 Preparation for Negotiations

Profitability analysis prepares the account manager for negotiations with his customers, in both the general and specific sense.

First, and in the general, the procedure brings together all facets of the relationship in a logical and detailed manner. This provides a valuable contribution to the account manager's understanding of his customer - a necessary input to negotiations and of particular importance in a complex situation.

In the specific sense, the procedure answers two very basic questions - what were earnings and how much do we wish to earn? Thus, in addition to knowledge of the absolute position of the account, the

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1 Philadelphia National Bank, Profitability Analysis, p.32.
account manager is provided with overall direction for his negotiations. This, when coupled with the detailed composition of the account profit (loss), places the account manager in a position to recognize sources of weakness and to prepare rational or objective courses of action. Sources of weaknesses could be, for example, unusual activity or high float in relation to deposit balances, non-deposit services for which the bank is not being compensated, or a loan paying too low a rate. Appropriate courses of action might be: a request for additional deposit balances or fees, a higher interest rate, or possibly some combination thereof. Undoubtedly, the bank will wish to improve relationship performance through the delinquent area(s); however, with the knowledge that profitability analysis supplies, the bank is in a position to provide the customer with alternatives should he desire this, or if he is known to be particularly averse to certain forms of compensation.

To illustrate the above, reference is made to the analysis of the A.B.C. Company Ltd. (Tables III-1 and III-11) which showed a profit deficiency of $14,250. An obvious source of weakness is that the customer is not paying his way in the Routine and Special Services area - a combined deficiency of $11,750. A second source of weakness is the large amount of float being generated - $195,000 - which has

1See footnote 3, page 31.

2Assuming that the bank at least wishes to cover costs.
severely eroded the customer's deposit. Also, cost of funds plus loan cost exceeds loan interest received by $17,500, indicating that the current interest rate should be adjusted upwards.\(^1\)

The bank has a number of alternatives to raise the required $14,250 and meet its profit goal for the A.B.C. Company Ltd.:

1. Additional fees of $11,750 plus a 1/4\% adjustment of the interest rate.
2. An interest rate adjustment only - 1 1/2\%.
3. Additional free deposit balances of $285,000.\(^2\)
4. Some combination of fees, interest rate and deposit balances.

3.5.2.3 **Overly Profitable Customers**

The above discussion concerned itself mainly with recognizing profit goal deficit accounts and improving their performance; however, the majority of comments made refer to all customers, whether profit deficient or overly profitable. (This latter type of customer was partially discussed in Chapter II (pages 23 to 25).) With overly profitable customers, the account manager is in a position to strengthen bank/customer association by one of three methods: price reduction on present services accorded the customer, expenditure of additional time and effort in servicing the account, or a combination of both. As regards the second alternative, this could include making the customer aware of additional services he might be able to use and

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\(^1\) Loan interest received during the year totalled $55,000 while cost of funds (routine services, pool funds, and desired profit) plus loan cost totalled $72,500.

\(^2\) Avoidance of pool fund costs of $14,250: $285,000 @ 5\%. 

extending these at zero or reduced cost. In any event, irrespective of which course of action is taken, it can only serve to strengthen the bank/customer relationship and can only be undertaken in an objective manner if the profit level and profit goal are first known.

3.5.2.4 Selective Selling and Performance Evaluation

The uses of the profitability analysis model extend beyond the analysing of individual customer relationships into the areas of selective selling and account manager performance evaluations; the latter is accomplished by periodically measuring how well the account manager is performing relative to improving the position of his deficit customers.

The use of the model in selective selling, or concentration of marketing efforts on high profit level prospects, is evidenced in the following quote:-

"C.I.S.\textsuperscript{1} has become a strategic tool too. By consolidating future years' \textsuperscript{[forecasted]} pre-tax earnings for corporate account analyses into industry groupings, it is possible to assess the opportunity value of maintaining a strong share of market in each industry.\textsuperscript{2}"

3.6 Summary of Model Strengths and Weaknesses

The strengths of the profitability analysis model, in terms of both the account manager and the bank, may be summarized as follows: (1) provision of an intimate knowledge of the account, (2) knowledge of both absolute profit and a profit goal, (3) knowledge of all areas

\textsuperscript{1}Customer Information System - the computerized profitability analysis system of the First National City Bank.

\textsuperscript{2}Else, Account Profitability, p.9.
that require corrective action, (4) knowledge of those customers who are overly profitable and who should be accorded additional service, (5) flexibility in corrective action, (6) account manager performance evaluation, and (7) selective selling.

The weaknesses of the model may be summarized as follows:-(1) projected not historical data should be utilized; however, it was noted that research is being undertaken in this area, (2) the capital allocation procedure may possibly be a duplication of risk adjustment, (3) duplication of income, expense and capital allocations, and (4) the procedure will be expensive to install and utilize; therefore, the costs and benefits it incurs and provides should be closely evaluated. This topic is discussed below.

3.7 Model Costs and Benefits

The question of the dollar costs of performing profitability analyses or installing such a system, relative to the returns received, must be answered. Concern here is not with intangible benefits such as a greater understanding of customers or knowing their profit level relative to a goal, but translating these into tangible dollar income. From the two quotes presented below, particularly the latter, it would appear that the returns greatly exceed the costs of their generation.

"The value of a profitability analysis system to a bank is the opportunity cost of the low profit loans \[\text{relationships}\]. It is the writer's opinion that the cost of a profitability analysis system will be much less for most banks than the opportunity cost of its low profit loans \[\text{relationships}\]."\textsuperscript{1}

\textsuperscript{1}Falkenberg, Profitability Analysis, Part II, p.23.
"The Customer Information System which produces our account profitability reports, is one of the few fully automated systems of its type in the United States and it has the highly unusual distinction of having paid for itself within the first year of operation. In fact, we think the return on our investment within the past year has been approximately double our development costs!"

3.8 Conclusion

Many benefits have been cited for the profitability analysis model. While the model is obviously of great assistance to banks in the analysis of their commercial customers and in subsequent negotiations, it is not a panacea. It merely identifies what the profit is on an account, and what courses of action might be open to a bank. Attainment of the objectives set out by the model are not met by the model, but by the skill and judgement of the bank's negotiator. This is aptly illustrated in the following:-

"Sound pricing decisions are based not only on profitability analysis but on a number of factors which we may never be able to quantify - competition, value to the customer, potential profitability levels, past profitability levels, and short and long term account relationship considerations, to name a few. In other words, regardless of the degree of statistical sophistication, judgement must prevail. A profitability analysis system, at best, is just one of these tools."^2

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1 Else, Account Profitability, p.1. (First National City Bank)
2 Dyer and Heilshorn, Profit Analysis for Loans, p.52 (First National City Bank).
CHAPTER IV

THE COMMERCIAL ACCOUNT ANALYSIS PROCEDURES
OF THE
CANADIAN CHARTERED BANKS

In contrast to the commercial account analysis procedures of selected United States banks, information pertaining to those of the Canadian chartered banks is generally unavailable in the literature. As a result, the major objective of the research was to determine the procedures by which selected Canadian chartered banks handle their customer relationships. The particular objectives were to determine whether the banks: (1) utilized a formal total relationship analysis, such as that discussed for the United States banks in Chapter III, or (2) approached the analysis by viewing the customer relationship as three separate service areas, possibly with weak overlaps or linkages occurring between the three areas that might affect the negotiation approach or pricing decisions.

The chapter commences by outlining the rationale for the research procedure and approach. A detailed description of the analysis procedures utilised by the Canadian banks is presented next; included is a discussion on the extent to which the chartered banks

1Of course, information on the majority of United States banks i.e. those which do not utilize a formal profitability analysis model, is equally as sparse; therefore, the research methodology developed herein for determining Canadian banks' analysis procedures is relevant for studying the bulk of the United States banking system.
capture the essence of a customer relationship in their negotiation approach and pricing decisions. Lastly, current trends in Canadian bank analysis procedures are briefly outlined.

It will be noted in subsequent discussion that a significant portion of this chapter is devoted to demand deposit account analysis. There are two reasons for this emphasis: (1) it is the method of commercial account analysis for Canadian banks (excepting credit analysis which is not a concern of this study - see page 3) and it has not, to the best of the writer's knowledge, been previously studied outside of the Canadian banking system, (2) the data collection needs for performance of a profitability analysis are very largely demand deposit account based.

4.1 Research Methodology

With the exception of credit analysis procedures, apparently only three minor sources exist on the commercial account analysis procedures of Canadian chartered banks. Based upon this limited material, plus preliminary interviews with senior officials at the corporate offices of two banks in Montreal, a formal questionnaire
was constructed\(^1\). This questionnaire was designed for use in subsequent detailed interviews with the bulk of Canadian banks. These latter interviews were conducted between March 16 and 23, 1972 with senior bank officials at the banks' western region or corporate head offices. A total of six banks participated. With the exception of the Bank of Montreal and the Bank of Nova Scotia, anonymity was requested.

The questionnaire was not given to the respondent banks for completion; instead, it was designed to be retained and utilized by the interviewer to ensure that a predetermined sequence of questions was maintained and that no questions were omitted. Major points were recorded during the interview. These formed the basis for a written post-interview elaboration on the topics discussed.

4.1.1 Questionnaire Structure

The limited literature available on account analysis procedures, plus the preliminary interviews conducted in Montreal, provided a strong indication of the analysis approach utilized - three separate service areas with weak overlaps that might affect negotiation or pricing decisions. This information provided the base from which to construct the questionnaire. It comprises three major sections (see Appendix A).

Section I

Section I was designed to provide the interviewer with a broad overview of analysis procedures employed by the specific bank under study and the basis upon which to proceed to the specific

\(^1\)See Appendix A.
questions that followed.

Section II

This section was divided into three sub-sections, each of which corresponded to one of the three service areas of banking i.e. the credit, the demand deposit account and other financial services. Each sub-section was designed to first ascertain the actual analysis procedures employed in that area, then to probe whether or not areas other than the particular one being discussed affected pricing decisions or the negotiation approach, e.g. do demand deposit account balances affect the interest rate on the loan?

Section III

Lastly, Section III was designed to obtain bank opinions on the analysis procedures employed by the United States banks as discussed in Chapter III.

4.1.2 Interviewee Response

Although varying degrees of co-operation and assistance were provided, each bank was generally helpful and answered all questions in as reasonable a manner as could be expected. The written post-interview elaboration of the topics discussed revealed a number of points that required clarification. These points were discussed with the banks in follow-up interviews conducted during the weeks of June 5 and 12, 1972.

1See page 52.
4.2 The Analysis Procedures of the Canadian
Chartered Banks - General

The Canadian chartered banks do not perform a formal total relationship analysis; rather, they conduct separate analysis and negotiations on the demand deposit and loan accounts. The other financial services area is not analysed. In no instance do the banks know the profit on individual customers, either by service area or over the total relationship. Rather, their procedures provide for the calculation of gross revenues in the credit and other financial service areas of the relationship, while for the demand deposit account analysis revenue surplus or deficit, with respect to the revenues that should have been collected, is calculated. Thus, two major differences exist between the profitability analysis model of selected United States banks and the Canadian bank procedures described in this chapter: (1) the United States banks compute the costs of providing services to commercial customers, the Canadian banks do not, and (2) the United States banks perform a total relationship analysis of their commercial customers while the Canadian banks utilize a service area approach.

This segmented rather than total customer analysis approach reflects the stated opinion of all bankers interviewed - each service area is separate and distinct from the other service areas and negotiation

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1Excepting credit analysis on foreign currency loans. See page 70.
and pricing decisions in each area should be made on that basis. Such a philosophy, with minor exception, strictly holds true for negotiations on the loan interest rate; however, the existence of an elementary customer relationship analysis is clearly evident (under certain circumstances) in pricing negotiations on the demand deposit account and other financial services.

By virtue of the service area approach to commercial account analysis by the Canadian banks, the description of their analysis procedures is separated into: (1) the analysis of the demand deposit account; (2) the credit analysis, and (3) other financial services.

4.3 The Analysis of the Demand Deposit Account

The description commences with an overview of the analysis approach. It then turns to an in-depth presentation of the analysis process. This includes a representative sample of the form utilized for data collection and analysis and the presentation of a hypothetical demand deposit account analysis. The description concludes with a discussion on how the results of the demand deposit account analysis may be modified during negotiations by virtue of the value of the total relationship.

1Like the United States banks discussed in Chapter III, one person only has responsibility for the entire customer - the branch manager, or in a large branch or head office an account manager. However, unlike the United States banks who analyse and negotiate on all aspects of the relationship at one time, the Canadian banks analyse and negotiate each service area separately, as stated above.
4.3.1 Data Inclusions and the Data Collection Period

The analysis includes only data which arise from and are directly related to the operation of a demand deposit account i.e. the demand deposit balance itself, float, and routine services. Data emanating from the loan and other financial services areas of the relationship are excluded. An analysis, or data collection period of one month is considered as being representative of normal activity and balances.

4.3.2 Analysis Frequency

The frequency with which the demand deposit account is analysed varies between banks. Three banks analyse all demand deposit accounts meeting certain criteria once per year; another performs the analysis every second year provided that an annual analysis does not appear warranted, and the remaining two banks perform "periodic analyses".

4.3.3 Criteria for Selection of the Demand Deposit Account for Analysis

The criteria utilized by the banks to determine whether or not activity volumes and balances are reasonably representative. If he decides they are not, data would be collected over a longer period, say three months, and averaged. Two banks average the deposit balance over a one year period.

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1 The final tabulation and analysis of data is manual, but for those banks with computer installations in the metropolitan areas the majority of raw data inputs are obtained from computer printouts.

2 The account manager examines the account for the analysis month and subjectively decides whether or not activity volumes and balances are reasonably representative. If he decides they are not, data would be collected over a longer period, say three months, and averaged. Two banks average the deposit balance over a one year period.

3 Clarification of the word 'periodic' was pursued with no definitive result. It is therefore interpreted as meaning irregular, as subjective criteria are the determining analyses factors (see page 57).
not demand deposit accounts require analysis also varies. For those four banks that have a set annual frequency, two tie their analyses to the credit review date; one analyzes the account if the average ledger balance exceeds a certain level and another does so if the monthly dollar throughput\(^1\) exceeds a certain level. With the majority of credit reviews occurring annually and as the average balance and throughput levels are "relatively low", it can be expected that all of the accounts with which this study is concerned will be analysed or reviewed annually. Each of these four banks also utilize secondary selection criteria and reviews will also occur if the account: (1) is not paying standard service charges\(^2\); (2) involves greater than normal supervision\(^3\), or (3) has "high" activity\(^4\).

For the remaining two banks, where an irregular analysis or review is conducted, there is only one set down account selection criterion. This is: all accounts not paying standard service charges. Subjective selection criteria were the major determinants. These are: (1) a "high" level of dollar throughput; (2) "high" average balances or activity levels, and (3) accounts involving greater than normal supervision.

\(^1\)The total dollar value of cheques debited, or deposits credited, to the account.

\(^2\)20 cents per cheque issued and deposit made.

\(^3\)e.g. an account that is frequently overdrawn and, therefore, demanding upon management time.

\(^4\)a "large" volume of cheques issued on, or deposited to, the account.
4.3.4 The Analysis Procedure

There are two distinct steps to the analysis of the demand deposit account: (1) **Routine Services** - computation of the extent to which revenues exceed or fall short of what the customer should have paid the bank for routine services provided during the analysis period; (2) **Balances** - computation and valuation of the demand deposit account balance. The results of these two analysis steps lead to the calculation of additional service charges or balances required for the account to operate in a satisfactory manner (or computation of the excess revenues received or balances held).

The analysis procedure is discussed below in relation to a representative sample of the form utilized by the banks for data collection and analysis purposes (Table IV-1).

4.3.4.1 **Routine Services**

This aspect of the analysis determines the extent to which the customer has over or under paid the bank for routine services provided. This is depicted on Line 14 of the analysis form - Revenue Surplus or Deficit (not profit or loss - costs do not enter into the calculation). Calculation of the revenue surplus or deficit is comprised of two steps; the revenues due for the period (Lines 1-9) and the revenues actually received (Lines 10-14).

The volumes of all major routine services are calculated and multiplied by the prices\(^1\) at which they are sold to the customer;

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\(^1\)Prices appear to be uniform for all banks and are set according to a long standing price agreement between all chartered banks (see page 70). The individuals interviewed did not know whether a profit mark-up was included in the price but suggested the price was probably below "cost". Price concessions may be granted for large volume accounts. This was a negotiation item in three cases and an automatic application in the other three.
### TABLE IV-1
**ANALYSIS OF DEMAND DEPOSIT ACCOUNT**

**A.B.C. COMPANY LTD.**

**Month of February 1973**

<table>
<thead>
<tr>
<th>WORK DONE</th>
<th>Amount Charged</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deposits received and credited to the account $</td>
<td></td>
</tr>
<tr>
<td>No. at 20¢ each</td>
<td></td>
</tr>
<tr>
<td>2. Items deposited cleared to other banks or other branches: No. at 06¢ each</td>
<td></td>
</tr>
<tr>
<td>3. Currency deposited $ at 95¢ per $M</td>
<td></td>
</tr>
<tr>
<td>4. Coin deposited $ at $1.80 per $C</td>
<td></td>
</tr>
<tr>
<td>5. Cheques issued and debited to the account</td>
<td></td>
</tr>
<tr>
<td>No. at 20¢ each</td>
<td></td>
</tr>
</tbody>
</table>

6. 

7. 

8. 

9. Total charge for work done $  

10. REVENUES COLLECTED  

   Amount Due $  

11. Service charges collected $  

12. Total Revenue Collected $  

13. Revenue Surplus or Deficit $  

14. Revenue Surplus or Deficit $  

---

1 The amount charged is revenue due for work done in the period, i.e., charges for the services listed on lines 1-5 are at the price charged to the customer, not bank cost. Lines 6, 7, and 8 include other routine services of substantial volume, again at price not cost, e.g., stop payments, telegraphic transfers. These lines may also include non-priced services, e.g., daily balance advice to the customer, which are charged at direct cost plus mark-up.

2 The actual revenues collected by the bank from providing the services listed on lines 1-8; thus line 14 depicts not profit or loss, but as stated - Revenue Surplus or Deficit.
### TABLE IV-1 (Cont'd)

#### AVERAGE DAILY AMOUNT IN FLOAT

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Total value of cheques debited</td>
<td>$</td>
</tr>
<tr>
<td>16</td>
<td>Total value of transfer of customer funds (remittances received from other branches)</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Net value of items in float (line 15 minus line 16)</td>
<td>$</td>
</tr>
<tr>
<td>18</td>
<td>Average daily amount in float</td>
<td>$</td>
</tr>
</tbody>
</table>

#### ADDITIONAL BALANCES REQUIRED

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Average daily credit balance</td>
<td>$</td>
</tr>
<tr>
<td>20</td>
<td>Net average daily balance after allowing for average daily amount in float (line 19 minus line 18)</td>
<td>$</td>
</tr>
<tr>
<td>21</td>
<td>Average daily balance in lieu of revenue surplus or deficit from line 14</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Additional average daily credit balance required (or surplus)</td>
<td>$</td>
</tr>
</tbody>
</table>

#### ADDITIONAL SERVICE CHARGES REQUIRED

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Revenue surplus or deficit from line 14</td>
<td>$</td>
</tr>
<tr>
<td>24</td>
<td>Value of net average daily balance</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Additional monthly service charge required</td>
<td>$</td>
</tr>
</tbody>
</table>

---

1 Debit float.

2 Credit float.

3 Reduction of the total monthly float (line 17) to a daily basis. The factor was not provided.

4 The average daily balance (debit or credit) that yields the equivalent of the revenue surplus or deficit on line 14 (see page 64).

5 Value to the bank, in revenues, of the net average daily balance on line 20. (See page 63)
yielding the revenues that should have been collected by the bank during the analysis month. This is illustrated on lines 1 - 5; the services detailed therein are standard inclusions for all banks. Lines 6, 7 and 8 are utilized in the same manner as lines 1 - 5 and include other routine services that reach "substantial volume". Services that may be included are usually mail and telegraphic transfers, coin and currency supplied, stop payments and certified cheques.

In addition to the priced services included in lines 6, 7 and 8, additional non-priced service inclusions may be made. In these instances, price takes the form of direct cost plus mark-up if the account is demanding upon management time by way of requests, discussions and special services. Inclusions of this nature are totally subjective and are included by means of a process

1 With two exceptions, all banks provide for routine service inclusions as illustrated in Table IV-1. The exceptions are the omitting of Deposits Received and Credited (Line 1) and Items Cleared (Line 2). The rationale provided for this divergence from the norm was that depositing costs should not be for the account of the depositor as they are a cost of gathering and maintaining deposit balances. They should, therefore, be allocated to that area - a cost of funds. One of the two banks that utilizes this procedure is in the process of changing its philosophy and will be including the two items mentioned above in its analysis.

2 Two banks make explicit provision for these items; the other four include them on a subjective basis only i.e. if the account manager was of the opinion that the volume was substantially greater than would normally be expected for that type of account.

3 e.g. daily advice to the customer of his account balance.

4 Galbraith, Canadian Banking, p.101. This was also verified in interview discussions.
identical to that outlined for priced services of substantial volume (see page 61).

The actual revenues received by the bank for the services discussed above, are entered in lines 10 - 13. These are related to the revenues due (Line 9) and revenue surplus or deficit is computed on line 14. The usage of this figure in computing the acceptability, or otherwise, of the demand deposit account is discussed below after the analysis of demand deposit balances is completed.

4.3.4.2 Balances

Lines 15 - 18 compute the average daily amount of float\(^1\) generated by the customer. The float figure is then subtracted from (added to) the average daily credit balance in the account (Line 19) which results in the investible balance available to the bank\(^2\). This is indicated on line 20.

4.3.4.3 Additional Service Charges or Balances Required

The banks calculate the additional remuneration due from the customer by two equivalent methods - **additional service charges** or **demand deposit balances required**. The customer is given the alternative

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\(^1\)See page 13 where this term is explained. All six banks utilize an average float factor for the majority of their commercial accounts. For high volume accounts, where the bank has reason to believe the average factor to be inaccurate or where the bank is encountering negotiation difficulties with a customer, a float costing study may be undertaken. One bank automatically conducts a float study if the monthly dollar throughput exceeds $1,000,000.

\(^2\)Reserves are not provided for as a balance deduction; therefore, the investible balance is overstated. See page 13 and footnote 1 page 63.
of paying the service charge requirement or depositing additional demand balances.

The service charge requirements for operating the account are computed as follows: (1) the "investible" balance on line 20 of the analysis form is converted to its revenue equivalent to the bank (Line 24). If the investible balance is credit, it is converted at a rate based upon or related to the cost of short term funds; if debit, it is converted at the customer's borrowing rate, (2) this revenue equivalent is then added to, or subtracted from the revenue surplus or deficit (Lines 14 and 23). The result of this process is the additional service charges required by the bank from the customer to operate the account, or the surplus revenues received (Line 25).

To illustrate the foregoing discussion, the following situation is assumed: (1) an investible balance of $1,000 (2) a revenue deficit of $45 per month and (3) a conversion rate of 3 per cent per

---

1 All six banks indicated they utilize conversion rates below the interest cost of obtaining short term funds. The conversion rates were not provided. The lower than market price valuation of the demand balances is a long standing practice, the reason for which is not clearly understood by the bankers. One apparent reason, however, is to provide for the reserve deduction to the "investible" balance on line 20 i.e. the "investible" balance is not investible in that a deduction for cash reserves is not made, so the conversion rate is adjusted downwards to correctly reflect the value of the funds to the bank. Four banks change their rates "infrequently" i.e. rates do not change with market changes in the price of short term money. For the remaining two banks, one tied the conversion rate to the prime lending rate (less x%) while the other tied it to a bank deposit instrument (less x%).

2 This is a variable rate which changes as the customers borrowing rate changes e.g. the prime lending rate.
annum. The corresponding lines of the analysis form are indicated in parenthesis.

Revenue deficit (Line 23) $(45.00) per month
Value of net balance available to bank (Line 24) 2.50 per month
Additional monthly service charge required (Line 25) $(42.50) per month

The banks negotiation goal, in this case, would be to obtain an additional $42.50 per month from the customer.

The equivalent demand deposit balance requirement is calculated in a similar manner. The revenue surplus or deficit on line 14 of the analysis form is converted to its demand balance equivalent (Line 21) i.e. what balance is required to yield the result indicated on line 14. This equivalent balance is then added to, or subtracted from, the investible balance (Line 20) resulting in the additional daily credit balance to be maintained by the customer, or the surplus (Line 22). Utilizing the data provided above, calculation of additional demand deposit balance requirements would be made as follows:-

Net balance available to bank (Line 20) $1,000
Average daily balance in lieu of revenue deficit (Line 21) (18,000)
Additional average daily credit balance required (Line 22) $(17,000)

$1,000 at 3 per cent per annum is equivalent to $2.50 per month.

Four banks convert revenue surplusses and deficits to equivalent demand deposit balances at the short term cost of money rate discussed above. The remaining two banks convert revenue surplusses at that rate, but convert revenue deficits at the customers borrowing rate.

$18,000 at 3 per cent is equivalent to $45 per month in revenues.
The banks negotiation goal, in this case would be the deposit of an additional $17,000; the equivalent of, and alternative to, the additional service charge goal of $42.50 per month.

4.3.5 Modification of Analysis Result by Other Service Areas of the Customer Relationship

With one exception, specific instructions to account managers regarding the data that should be collected from other areas of the customer relationship do not exist. The remaining banks, however, have an unwritten practice as follows: the greater the volume of business in the other areas of the relationship and/or the greater the possibility of encountering negotiation difficulties, the greater the data detail that will be collected. In the extreme case - a large volume of other business and negotiation problems are expected - the data to be collected would take the following form: (1) deposit balances at interest as at the date of completion of the demand deposit analysis; (2) loan revenues for the past month or year and (3) brief comments on other financial services. These comments may range from an indication of volumes to detailing revenues received over the past month or year.

---

1 The situation of a service charge or balance deficit is assumed. In the case of a customer that has an analysis result of zero to a "small" excess, the bank will do nothing as it is satisfied with account performance. At some subjective level this "small" excess becomes "large", at which point the bank might approach the customer with a view to reducing service charges or suggesting that some portion of the balance be transferred to time deposits.

2 The instructions for this one exception are the same as for the unwritten practice discussed above.

3 All data are gross i.e. in no case are both costs and revenues obtained to ascertain net income.
This data does not alter the banks objective for the demand deposit account i.e. in the hypothetical analysis outlined on pp. 63-65, the objective was either $42.50 per month in additional revenues or $17,000 in additional demand balances. Irrespective of the value of other business this objective does not change. The negotiation approach, however, may be modified in keeping with the 'value' of other business as customers are prone to bring this into demand deposit account negotiations; hence, the reason for the banks collecting the data indicated above.

The customer with very little other business presents no problem for the bank - the analysis objective must be met within a reasonable period of time (usually one year) otherwise the bank no longer wishes the account. The customer with a great deal of other business, which has 'high value' to the bank, presents an entirely different situation. This is a situation where the bank, if it totally adhered to its service area philosophy, could lose not the demand deposit account but the total customer relationship. In such situations the banks negotiate cautiously and if there is little customer resistance they will push for the analysis objective being met within the year; however, if customer pressure is strong, the banks are prepared to negotiate over a period of years, or even to a figure less than that indicated by the analysis.

---

1 A bank term for a subjective evaluation of the profitability of other areas of the relationship.

2 See page 20.
What is vividly illustrated in the above is the banks' acute awareness of a total customer relationship and the performance of a crude and elementary defensive total customer relationship analysis. This is illustrated in both cases - a strong negotiation approach on the customer with very little other business, as the bank knows it can only lose little more than the demand deposit account, and a weak approach on the "valuable" customer as the bank knows it may lose much more than the demand deposit account.

A very serious weakness in the foregoing is the manner in which the banks calculate "value". Their valuation concept equates customer size with his profitability. This is a dangerous assumption, as opinions on customer profitability are an entirely unsound basis upon which to base pricing and negotiation decisions - as the Philadelphia National Bank discovered:

"When the profit formula [profitability analysis] is applied to the commercial loans [relationships] in a bank, it provides surprising results. Many customers formerly thought (my underline) to be highly profitable will show disappointing index figures [profits] while many other customers thought to be marginal producers will show very good results." ²

4.4 The Credit Analysis

The credit analysis, part and parcel of the lending function,

¹Data collected from other service areas to supplement the demand deposit analysis indicates volume, balances and revenues i.e. it is gross not net data. As such it indicates the size of the customer.

²Philadelphia National Bank, Profitability Analysis, page 32.
consists of an analysis of the customer's financial statements to
determine the financial adequacy of that customer to undertake and
service the borrowings he has applied for. It also includes
consideration of other factors such as: (1) the adequacy of collateral
provided; (2) the character of the borrower; (3) "loose or tight"
money conditions; (4) the purpose of the loan and the industry in
which the customer is involved, and (5) competitive factors.
Consideration and analysis of these and other factors determine
whether or not the bank will agree to the customers request; plus
the interest rate to be negotiated upon. This interest rate, as was
fully discussed on page 8, will normally be set in relation to the
prime lending rate; its level being dependent upon the amount of
perceived risk in the advance.

As has already been indicated, the details of the credit
analysis are not a specific consideration of the study; what is
important, however, is the interrelationship of other service areas
in the customer relationship with the credit based interest rate.

4.4.1 Modification of the Credit Based Interest Rate
by Other Service Areas of the Customer Relationship

The credit analysis is supplemented in a manner similar to
that of the demand deposit analysis. Supplements are: (1) a recent
demand deposit analysis; (2) time deposit balances, if of importance,
and (3) gross revenues or volume details on other financial services,
again, if of importance. This information is not normally utilized
to modify the credit based interest rate, but merely to gain a broader view of the account. Interest rate modification may occur only: (1) under extreme customer pressure to consider other areas of his relationship and only if these other areas are "extremely profitable"\(^1\) to the bank, or (2) if the customer is not "paying his way" in the rest of the relationship and attempts by the bank to remedy the situation have not been successful. All of the banks interviewed stated that, with minor exception: (1) the customer does not bring into credit negotiations other aspects of the relationship, and (2) interest rate modifications are a very infrequent occurrence. Thus, for pricing and negotiation decisions in the lending area of Canadian banking consideration of the total relationship is almost non-existent\(^2\).

4.4.2 Risk Adjustment of the Interest Rate

All Canadian bankers that were interviewed strongly stated that they could properly evaluate risk on any particular loan and make an appropriate risk adjustment to the prime lending rate\(^3\). However, a prominent United States bank has stated:

"Most of us say we adjust interest rates according to risk, but considering the wide quality range of customers borrowing at prime, there is serious doubt we are being paid for many of the risks we are assuming."\(^4\)

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\(^1\)See pages 66-67.

\(^2\)A possible reason for the sharp separation of the loan account from the total relationship is outlined in Chapter V (see pp.81-82).

\(^3\)As previously stated, no attempt was made to determine if the Canadian banks are risk averse or merely equate expected returns.

\(^4\)Dyer and Heilshorn, Profit Analysis, page 47 (First National City Bank).
This statement infers to the writer that, contrary to the remarks made by Canadian bankers, the Canadian banks may not have the expertise they thought they possessed. If so, the risk adjusted capital allocation process discussed in Chapter III may merit their study.

4.5 Other Financial Services

As illustrated on pages 14 to 16 this area of a customer relationship consists of: (1) Canadian dollar time deposits; (2) foreign currency loans and deposits; (3) other foreign exchange business of an activity nature e.g. drafts, money orders, and cheques and deposits associated with a foreign currency demand account, and (4) special services e.g. drafts, safekeeping and night depository facilities.

With the exception of the credit analysis on foreign currency loans, analyses of this area of a customer relationship are not performed. Categories three and four, however - Other Foreign Exchange Business and Special Services - present an interesting situation as there has been a long standing price agreement between all chartered banks on the minimum charges that will be applied in compensation for these services¹. The agreement appears to cover all activity areas of a customer relationship (including routine services) with the exception of services peculiar to any one individual bank e.g. computerized corporate services.

¹The banks are not covered by the Combines Investigation Act and price agreements are prohibited only on the rate of interest on advances or deposits. This was introduced into the Bank Act of 1967; section 138.
4.5.1 Price Modifications by Other Service Areas of the Customer Relationship

For categories one and two - time deposits and foreign currency loans - the modification link was extremely weak and quite definitely less so than that discussed in the credit section on page 68. Rates are set by the interplay of market forces and only in very rare circumstances\(^1\), particularly in international business, would consideration be given to paying a marginally superior deposit rate or charging a marginally lower lending rate.

Foreign exchange activity business and special services, however, present an entirely different case. It has already been pointed out that there is a long standing price agreement between banks on this aspect of their business. The research conducted for this study indicates that, until recently, agreement prices were being charged and strictly adhered to. However, it would appear that the agreement is in the process of breaking down in the area of inter-bank competition for large "profitable" customers, as agreement prices are being shaded or dropped in order to attract or retain the total business of these customers\(^2\). This is a further indication of the existence of a crude and elementary customer relationship in Canadian bank account analysis procedures. What the banks are doing, in effect, is subjectively valuing the \textit{total} relationship and based

\(^1\)Cited were very large and prestigious customers.

\(^2\)Three banks indicated that they are prepared to shade or drop agreement prices in the circumstances outlined; while the remaining three stated that the prices were strictly adhered to in all circumstances.
upon that valuation are prepared to lose revenues in one service area in order to make an overall gain i.e. gain a customer from a competitor or retain a customer who has been approached by a competitor. Again, valuation or profit as used here is the banks' subjective interpretation of what is a profitable customer. 

4.6 Trends and Views toward Profitability Analysis

The interviews conducted for this study indicated that customer pressure on banks to consider other aspects of the customer relationship while negotiating on the demand deposit account is strong and increasing. Furthermore, all banks agreed that the data collected on the total relationship for demand deposit account negotiations was insufficient upon which to base a sound decision, especially when negotiating with a "high value" customer. The banks also agreed that the manner in which they based decisions to shade or drop special service prices was entirely subjective and required substantial improvement.

Given the analysis procedures of the Canadian banks and the problems that they are currently experiencing, each bank was asked their opinion of the profitability analysis model. In concept, all banks were receptive to the profitability analysis approach in that

1The subjectivity of this valuation process was criticized on page 67 for the demand deposit account. The statements made there apply equally as well here.

2There is no indication of like trends in loan interest rate negotiations. As was stated on page 69, "... for pricing and negotiating decisions in the lending area of Canadian banking consideration of the total relationship is almost non-existent."
it would substantially improve their knowledge of customers in both physical\(^1\) and profit (loss) terms and, thus, the objectivity of their decision making\(^2\). In particular, they were of the opinion it would solve their current problems. While agreeing in concept and looking to development of their commercial account analysis procedures in the direction of the profitability analysis model, they did not foresee any significant advances in this direction until a higher degree of computerization was achieved i.e. data collection was the major problem and further development of their computer facilities would be required to effectively and efficiently perform a profitability analysis\(^3\). Nevertheless, two banks have recently taken steps of an experimental nature to improve their analysis and negotiation procedures. The latter is a distinct step towards the performance of a profitability analysis.

4.6.1. Bank 1

This bank utilizes a standard analysis format which differs very little from an amalgamation of the demand deposit account analysis and the information that is appended on other aspects of the customer

\(^1\) e.g. volume and range of services utilized.

\(^2\) This applies only to the demand deposit account and other financial services. No attribute was accorded the model for improving loan pricing.

\(^3\) The reasons why the profitability analysis system developed in the United States, rather than Canada, are explained in Chapter V.
relationship. It consists of the following:

1. A demand deposit analysis, as previously described, but including a float costing study rather than the application of a standard float factor.
2. A detailed analysis of all fund transfers.
3. Special service revenues for the past year or month.
4. A list of all services utilized.

As can be seen, the procedure introduces no new concepts or ideas to the analysis process, apart from a formalization of the collection of certain data which was before appended to the demand deposit analysis plus a float costing study.

4.6.2 Bank 2

In contrast to Bank 1, the approach of this bank to account analysis does introduce new concepts and procedures to Canadian account analysis procedures and is akin to the profitability analysis models of the United States banks. It was introduced only "very recently" due to "the incomplete knowledge of the total relationship in both physical and profit and loss terms" and "the inadequate preparation for negotiations with the customer supplied by the conventional methods of analysis". The procedure is "very limited in operation and utilized where the need presents itself for a more detailed understanding of the account and only on the largest customers of the bank". It is "very crude and unsophisticated" and in this

1To assist the customer in his money management.

2Quotes are statements made by the bank officers interviewed. As previously stated (see page 52) anonymity is preserved.
context consists of the gathering of all costs and revenues from the entire relationship, including loan revenues and costs; however, is utilized for pricing and negotiating on non-loan services only.

Bank 2 would not discuss their methodology further than what has been outlined above. They did add, however, that the procedure has substantially improved the objectivity of their decision making and that they were looking to further development of the system in the direction of the profitability analysis models of the United States banks.

4.7 Summary

This chapter presented the commercial account analysis procedures of the Canadian chartered banks. The major features are summarized below:

1. The Canadian banks essentially view their customers as consisting of three separate service areas i.e. the loan, the demand deposit account and other financial services.

2. In no instance do the banks know the profit on individual customers, either by service area or over the total relationship.

3. The loan is analysed in isolation of the remainder of the customer relationship and the interest rate is set on that basis. It is an infrequent occurrence for a customer to bring other aspects of his relationship with the bank into negotiations on the interest rate.\(^1\)

\(^1\) The reason for this clear separation of the credit from the customer relationship is explored on page 81 "Compensating Loan Balances".
4. The banks would like to follow a similar isolation procedure for the demand deposit account; however, this approach is not always accepted by customers who frequently and successfully bring other aspects of the customer relationship into demand deposit account negotiations. It was noted that the banks perform an elementary defensive total customer relationship analysis for demand deposit account negotiations.

5. Criticism was directed towards the subjectivity of total relationship valuation in demand deposit negotiations and in shading and dropping prices on other financial services. All banks agreed that decisions were subjectively based and that improvement was required. To this end two banks have recently introduced new procedures on an experimental basis, one of which is a clear movement in the direction of a profitability analysis.

6. All banks agreed in concept with the profitability analysis model and were of the opinion it would improve the objectivity of their decision making (except loan pricing - see page 73); however, they did not foresee any significant advances in this area until a higher degree of computerization was achieved.
CHAPTER V

UNITED STATES AND CANADIAN BANKS' COMMERCIAL ACCOUNT ANALYSIS PROCEDURES

A COMPARISON AND SUMMARY

Chapters III and IV outlined the commercial account analysis procedures of selected United States and Canadian banks respectively. With regard to the former, the advantages of a total customer relationship analysis (profitability analysis) were discussed in some depth. This chapter commences by summarizing the essential differences between the two sets of procedures with discussion subsequently turning to the reasons why these differences may exist. The limitations of Canadian procedures, with regard to the strengths of the profitability analysis model, are then presented. The chapter closes with study conclusions and suggestions for future research.

5.1 Procedural Differences

The major differences between the United States and Canadian banks' commercial account analysis procedures may be summarized as follows:1

5.1.1 Philosophy

The Canadian banks view their customers as essentially

1The recently introduced procedures of the two banks discussed on pages 73 to 75 are not included here as they are of an experimental nature and therefore do not represent the normal analyses procedures of Canadian banks.
consisting of three separate service areas, i.e. the lending function, the demand deposit account, and other financial services. The selected United States banks\(^1\), on the other hand, view their customers not as utilizers of three separate services but as utilizers of a package of bank services made up of the loan, the demand deposit account and other financial services - the customer relationship\(^2\).

5.1.2 Analyses Conducted

Following from their basic philosophies on customers, the United States banks systematically account for all aspects of the customer relationship in one analysis. The Canadian banks conduct separate credit and demand deposit account analyses, while the other financial services area is not analysed\(^3\).

5.1.3 Analyses Results

The procedures employed by the United States banks result in the profit generated by a customer relationship and the profit a bank wishes to earn on that relationship. For the Canadian banks, neither profit nor a profit goal is known either by service area or over the total relationship. Indeed, an amalgamation of the data

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\(^1\) It should be kept in mind that comments on the commercial account analysis procedures of United States banks are not generalizations, but specific references to selected banks.

\(^2\) As argued in Chapter II, the "correct" method of approaching the analysis of a commercial customer is on a total relationship basis, not by separate service areas.

\(^3\) See footnote 2 above.
generated by the Canadian banks from the three service areas does not even approach a profit picture for the individual customer: (1) for the loan account, gross revenues only are known. No attempt is made to ascertain the cost of the individual loan; (2) for the demand deposit account, routine service prices are utilized rather than costs, cash reserve deductions are not made from account balances and balances are undervalued; (3) for other financial services, again there is no cost data and gross revenues on special services and foreign currency loans may be computed. In addition, deposit account balances, (if held) are not valued.

In short there are considerable differences between an amalgamation of the loan, demand deposit account and other financial services, and a profitability analysis. However, there are also similarities. From a pure data collection standpoint, the demand deposit analysis is the heart of a profitability analysis (see page 51). Further, it would be but a small step for the Canadian banks in their demand deposit account analysis to: (1) factor in routine service costs in place of prices; (2) include cash reserves as a deduction from account balances, and (3) change their balance valuation procedure. By doing this they would achieve, with small effort, a large step in the direction of performing a profitability analysis. Thus, the differences discussed above are not as great as they first seemed.

1 See page 65.

2 See pp. 58, 62 (footnote 2), and 63 (footnote 1).

3 See page 65.
5.1.4 Service Area Overlaps and Negotiations with Customers

For the United States banks' procedures, all service areas overlap in the sense that all are included in the profit computation. In negotiations, it cannot be said that the bank is indifferent to the manner of compensation as it will centre its attention on revenue delinquent or overly profitable service areas. However, the banks can and do provide customers with revenue alternatives should they or the bank desire this, or if customers are known to be averse to certain forms of compensation.

For Canadian bank procedures, each service area is analysed in isolation and there are no overlaps. In negotiations, the interest rate on the loan is normally negotiated on the basis of the credit analysis alone. While the bank wishes to utilize the same procedure for the demand deposit account it was noted, in the event that other service areas of the relationship are brought to bear by the customer, the bank does consider the total relationship in negotiations. It was also noted that the other financial services area might have prices shaded or dropped by the bank by virtue of the "value" of other business.

5.2 Reasons for Procedural Differences

Four possible reasons can be combined to explain the different approaches to the analysis of commercial customers by United States and Canadian banks. These are: (1) extensive use of compensating loan balance requirements in the United States; (2) a higher degree of computerization in the United States; (3) different banking system structures, and (4) the relatively recent innovation of profitability analysis.

5.2.1 Compensating Loan Balances¹

The use of compensating loan balances creates a direct link between the credit and other service areas in a customer relationship. This, in itself, may necessitate the performance of a total relationship analysis rather than separate service area analyses. For instance, in negotiating a loan the bank may request compensating demand deposit balances; thus, the loan is linked to the demand deposit account. In turn, the creation of, or increase in the demand deposit account balance implies the issuance of cheques and the depositing of funds, i.e. the normal activities associated with a demand deposit account. Thus, demand deposit account activity is linked to the loan. A situation such as this implies an analysis that includes at least the loan and the demand deposit account with its associated activities.

¹See page 9, where this term is fully explained.
It was seen in the analysis procedures of the Canadian chartered banks that loan terms were negotiated in almost total isolation of the remainder of the customer relationship, while in the United States the loan analysis was an integral part of the total customer analysis. As compensating loan balances are, for all practical purposes, almost non-existent in Canada while extensive use is made of the technique in the United States\(^1\), it is entirely possible that this is the major reason for the procedural differences between the two banking systems.

5.2.2 Computerization

Due to the amount of data to be collected for the performance of a profitability analysis, a computerized system is preferable to a manual system from both a time and cost standpoint. The United States banks, by and large, computerized their operations at an earlier date than their Canadian counterparts and at the present time a number have achieved computerization of all bank services\(^2\). No bank in Canada has achieved such a level of computerization and most are basically restricted to a computerized demand deposit accounting system. As total computerization allows the rapid performance of a customer relationship analysis, while a manual preparation is relatively costly and time consuming, this may well be one further reason why

\(^1\)See page 9.

\(^2\)See, for example: Else, *Account Profitability* (First National City Bank).
profitability analysis has not, as yet, been adopted by Canadian banks\(^1\).

5.2.3 Banking System Differences

and

The Competitive Environment

Canada and the United States possess two relatively different banking systems - branch banking in Canada and unit banking in the United States\(^2\). The unit banking system of the United States will be one reason why computerization developed earlier and faster than in Canada - the complexity and cost of converting a unit bank, or one with a few branches relative to a Canadian bank, will be less. However, the major point to be made is that the United States system, by virtue of its overwhelmingly greater number of banks (see footnote 2 below), is relatively more competitive than Canada's. Simply stated, the existence of a more competitive banking system is more likely to foster innovation than a less competitive banking system. It is in this statement that another reason for the account analysis procedure

\(^1\)To further substantiate this point, it was stated on page 72 that the Canadian banks were self-critical of the manner in which they based decisions on the "value" of a customer. It was also stated by the banks that a substantial improvement in data collection was necessary to improve the objectivity of their decision making, but a limiting factor was the current level of their computerization.

\(^2\)The situation is relative, not absolute. While there are many banks in the United States without branches there are also many banks with branches, e.g. the P.N.B. and First National City Bank have been discussed in this study; the former has 15 branches and the latter 204, World Bank Directory (Nashville, Tennessee: R.L. Polk and Co.; March, 1972). There are, however, only ten banks in Canada, while there are in excess of thirteen thousand in the United States.
5.2.4 A New System

The profitability analysis system is a relatively recent innovation of the United States banking system (P.N.B. 1965). As such, sufficient time has not lapsed for the procedure to be widely utilized by United States banks, far less adopted by the Canadian banking system.

5.3. Canadian Bank Procedure Strengths and Weaknesses Relative to the Profitability Analysis Model

5.3.1 Procedure Strengths

The profitability analysis model involves the collection and compilation of a considerable volume of data, with the resultant necessity for a sophisticated cost accounting and data generation system. Canadian procedures, on the other hand, involve the collection of relatively little data due to the simplicity of their account analysis procedures. *Ease of performance*, therefore, is a "strength", and the only strength, accorded the commercial account analysis procedures of the Canadian chartered banks.

5.3.2 Procedure Weaknesses

It was argued in Chapter II, and illustrated in that Chapter and Chapter III, that the "correct" manner of commercial account analysis is *profit computation* over the *total relationship*. The major reasons
presented for this stance were:

1. The three service areas of banking are not separated but are linked in varying degrees by quantitative and qualitative factors.

2. Profit or loss knowledge over the total relationship is a necessary basis to objective pricing and negotiation decisions.

3. For all commercial customers, profit or loss knowledge provides valuable information to the bank for marketing direction, based on the relative profitability of various classes of customers.

A total relationship analysis and profit knowledge are not features of Canadian procedures, thus, following from the above, these are the major criticisms raised on the commercial account analysis procedures of Canadian chartered banks.

The reasons for the Canadian banks non-usage of a profitability analysis system were explored earlier in this chapter. Thus, the remaining question must be whether or not they could now adopt and reap the benefits from the procedure at its present stage of development.

Many individual and specific criticisms could be raised, but each is related to, or included in the lack of profit knowledge criticism, e.g. (1) the total relationship should be analysed and negotiated upon at one time and not in a segmented manner by service area (see page 54); (2) routine services should be costed into the demand deposit analysis at cost, not price (see page 58); (3) cash reserves should be deducted from the demand deposit account balance prior to its valuation (see page 62); (4) "proper" valuation rates should be applied to the demand deposit account balance (see page 63); (5) loan costs should be known (see page 65); (6) other financial services costs and revenues should be known (see page 65).
5.4 Conclusions and Suggestions for Future Research

Given the benefits accorded by the profitability analysis model\(^1\) and, more specifically, the current subjective valuation decisions that the Canadian banks are making in the demand deposit account and other financial services areas, it is concluded that they could benefit from adoption of a profitability analysis system in place of their current procedures. The benefits accorded would be further enhanced if research were conducted into the potential problem areas of the profitability analysis model outlined in Chapter III\(^2\).

Acceptance and implementation of a profitability analysis system are not considered to be major obstacles\(^3\), as: (1) from a

\[\text{\underline{\text{Reference}}\:\text{\underline{1}}\:}\text{See Chapter III pp.43-47 where an extended discussion is presented on the strengths of the profitability analysis model.}\]

\[\text{\underline{\text{Reference}}\:\text{\underline{2}}\:}\text{See Chapter III, pp.40-43. As regards capital allocation possibly being a duplication of risk adjustment, it is pointed out that major United States banks have used the capital allocation technique for a number of years, e.g. Philadelphia National Bank, Bank of America, First National City Bank and Seattle First National Bank. Attention is also drawn to pp.69-70 - Risk Adjustment of the Interest Rate. A possible alternative to capital allocation, which is also used in practice, is inclusion of credit risk as an expense. See, Falkenberg: Profitability Analysis, Parts I and II. This article also presents arguments against the capital allocation process. As regards duplication of income, expense and capital allocations see, Philadelphia National Bank, Profitability Analysis, Chapter XII, where the Philadelphia National Bank defend this duplication.}\]

\[\text{\underline{\text{Reference}}\:\text{\underline{3}}\:}\text{It is assumed that the Canadian banks possess a cost accounting system capable of supporting profitability analysis. As one bank is performing profitability analysis on an experimental basis (see page 74), it would appear that the expertise exists. Cost accounting was not discussed in the thesis (see page 4). It is obvious, however, that a sophisticated system is required.}\]
conceptual viewpoint the procedure is already partially accepted¹, and (2) from a data collection standpoint, the procedure is well under way as the demand deposit account analysis provides a large portion of the required data². While the profitability analysis procedure can be performed manually (see page 74), a needed basis to efficient performance is a higher degree of computerization than that currently possessed by the Canadian banks. As this aspect of Canadian banking operations is fast progressing, the efficient performance of profitability analysis should shortly be procedurally possible.

Should the Canadian banks decide to move further in the direction of profitability analysis, there is no reason to believe that their experience will be any different from that of the United States banks. To the extent that the analysis is logical and complete, greater customer knowledge, improved negotiation strength, greater objectivity and flexibility of pricing decisions and improved marketing knowledge will result. Each of these will contribute to improved bank profits.

¹The value of a profitability analysis system to a bank is the opportunity cost of the low profit loans [relationships]. It is the writer's opinion that the cost of a profitability analysis system will be much less for most banks than the opportunity cost of its low profit loans [relationships].³

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¹See pp.72-73. The credit area of Canadian banking did not accord any benefit to profitability analysis. See, however, pp.69-70 - "Risk Adjustment of the Interest Rate."

²See pp.51: and 79.

³Falkenberg, Profitability Analysis, Part II, p.23.
"The Customer Information System which produces our account profitability reports, is one of the few fully automated systems of its type in the United States and it has the highly unusual distinction of having paid for itself within the first year of operation. In fact, we think the return on our investment within the past year has been approximately double our development costs."

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1Else, Account Profitability, page 1. (First National City Bank)
SELECTED READINGS AND SOURCES

Books and Pamphlets


Articles

, Journal of Commercial Bank Lending, many issues.


Studies


Thesis


Official Publications

________, An Act Respecting Banks and Banking, (The Bank Act), Ottawa, Queen's Printer, 1967.


________, Bank of Canada Review, assorted issues.


Unpublished Speeches

Unpublished Reports

APPENDIX A

INTERVIEW QUESTIONNAIRE

Study of Canadian Bank Commercial Account Analysis Procedures

Bank and Interviewee ____________________________ Date __________

1. An Overview

1. **Analysis Performed**
   
   a) The credit?
   
   b) The demand deposit account?
   
   c) Other financial services?

2. **Other Financial Services**
   
   a) Fixed prices for all customers for all services and not subject to negotiation?
   
   b) 'Fixed' but subject to modification with individual customers in negotiations?
   
   c) Freely negotiable with each customer?

3. **Combined**
   
   a) Are the credit and current account analyses performed at the same time?
   
   b) Do you negotiate on all customer business at one time?

4. **Profitability Analysis**
   
   a) Are you aware of the research that is being conducted in this area, and the systems that are being used, by major U.S. banks?
   
   b) Are you researching this area yourselves?
   
   c) Where or what are you aiming for in account analysis?
   
   d) Do you think the profitability analysis model is practical?
II. Service Area Analysis

A. Credit Analysis

1. Assume a customer with only a loan, no other services. How is the interest rate set?

2. Now assume a 'normal' customer with a multitude of services e.g. demand deposit and related services, time deposits, other services. How do you set the interest rate now?

3. Does your customer view the manner in which you set the interest rate in the same way?

4. Only been talking about the interest rate. Is this the only way in which you receive compensation?

5. Do you prefer the interest rate only? Why?

6. For what future period do you negotiate?

7. What are the most contentious issues raised by your customers in negotiations?

8. What do you think are the strengths and weaknesses of your credit analysis system and where would you like to see it improved?

B. Demand Deposit Analysis

1. Account Selection, Analysis Timing and Analysis Period
   a) Bases for account selection for analysis?
   b) Period of data collection (analysis period)?
   c) Do results of analysis determine when account will be analysed in the future? Is this also the period for which you negotiate prices?

2. Balances - Deductions, Valuation and Float
   a) What data is collected?
   b) How are balances valued?
   c) How is float measured?

3. Activity
   a) What activities are included?
   b) What activities are not included?
3. **Activity** (cont'd)
   
   c) Are costs or prices used as costs?
   
   d) Do you allow volume discounts?
   
   e) Does the analysis provide for conversion of fees to balances and vice-versa?

4. **Goals**
   
   a) Does the analysis give you a profit/loss on the demand deposit function?
   
   b) Do you have a profit goal for demand deposit analysis?
   
   c) What do you do if a substantial surplus is indicated?

5. **Negotiations**
   
   a) Do you negotiate solely (in isolation) on the basis of the results of the demand deposit analysis?
   
   b) What are the most contentious issues or points raised by customers during negotiations on the demand deposit analysis?
   
   c) What do you think are the strengths and weaknesses of the demand deposit analysis system and where would you like to see it improved?

C. **Other Financial Services**

1. Are prices non-negotiable and subject solely to a fixed price schedule?
   
   a) Pricing basis?
   
   b) What detail is carried to the credit and demand deposit analyses?
   
   c) What effect does this have on negotiations and price setting in these areas?

2. Do you have a fixed price schedule for all other services but subject to modification with individual customers in negotiations?
   
   a) What negotiations?
   
   b) What are the factors that determine price modifications?
3. Are prices freely negotiable with each customer?
   a) When are they negotiated?
   b) What are the factors that determine price?

III. The Profitability Analysis Model

1. What is your opinion of the profitability analysis model, including its strengths and weaknesses and where it could help you in your job of analysing and negotiating with commercial customers?