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THE FINANCIAL EFFECTS OF DIFFERENT LEVELS OF INFLATION  
ON THE PROFITS OF ALL LISTED COMMERCIAL BANKS  
IN THAILAND

BY

VIWAT LIMSAKDAKUL

Two Bachelors of Business Administration  
Assumption Business Administration College  
Bangkok, Thailand  
Marketing, 1976  
Finance and Banking, 1978

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ABSTRACT

Name: Viwat Limsakdakul Date of Degree: May, 1980  
Institution: Oklahoma State University  
Location: Stillwater, Oklahoma  
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Scope and Method of Study: A study was designed to determine the effects of different levels of inflation on three major financial aspects of all nine listed commercial banks in Thailand in 1978. Those three investigated aspects are: (1) reported net-of-tax profits; (2) the incidence of bank's income tax; and (3) dividend cover. The basic data for this analysis were obtained from the published reports of the 9 commercial banks listed on the Securities exchange of Thailand during the entire 1970 - 1978 period. To test the impacts of different levels of inflation, three years are selected. The year 1970 is selected for the year experienced low inflation rate, the year 1978 for a moderate rate of inflation and the year 1974 for a high inflation-rate year. The procedure used for the adjustment of net income followed essentially the ideas tentatively recommended by the AICPA in APB Statement No.3 and the ASSC in the Provisional Statement of Standard Accounting Practice No.7. Three major items (revenues and expenses from operations, depreciation, and monetary holding gains) involved in the adjustment procedure, by using the consumer price index as a basis for the rate of general price change.

Findings and Conclusions: Adjusted incomes of sampled banks tend to be less than nominal earnings, even if monetary gain are included; and that a substantial portion of adjusted profits in a inflationary period is the result of monetary holding gains. It is also clear that tax charges and dividend appropriations are sometimes not covered by adjusted incomes, even when monetary gains are included. Moreover, when there is covered, the proportions of profit taken in tax charges and distributions are generally far higher than is suggested by the conventional historic cost figures.

ADVISIER'S APPROVAL



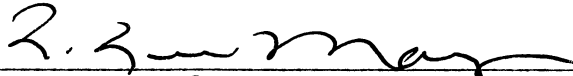
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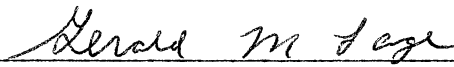
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Report Adviser



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Director of Graduate Studies



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Department Head of Economics and Finance

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" This is dedicated to the one I love."

## CHAPTER I

### PROBLEM DEFINITION

#### Introduction

The middle 1970's were marked by unprecedented levels of inflation in nearly all countries. As a result, influential persons attack the traditional financial statements as "unrealistic", "misleading", "useless", and so on. Suggestions for change led to regulatory actions that departed from the historical cost measures which had almost exclusively dominated financial reporting throughout the century. However, this departure was not generally accepted by most practitioners.

There seem to have been two factors that might explain this reluctance. First, most users of financial information on financial statements are accustomed to one way of interpreting the existing financial concept and, in turn, are unwilling to change to a newer unfamiliar concept. Secondly, while the rate of inflation is relatively low, it is accepted that an adjustment of the historical cost figures on financial statements is not appropriate because the added expenses and inaccuracies of adjusting for inflation are greater than the benefits.

But increasing rates of inflation in recent years have led to a realization of the impact of inflation on financial statements, and it appears that some form of accounting for inflation on financial



statements will be widely adopted in the near future. The support for this movement is the need to combat with the slowly increasing double-digit inflation rate for a more meaningful value of the financial statement.

#### Significance of the Study

As perceived from the above, along with the fact that a few topics in accounting and finance have been subjected to as much research and discussion as the issue of the effect of inflation on business-entity profits, I am personally interested in this problem and have decided to make further study upon it. The expansion of this general problem, however, extends beyond the scope of present financial reporting. Indeed, it influences many facets of decision-making in the business community, including the behaviour of investors, bargaining procedures with employees, and government tax policy. It does so because financial reports are frequently used as a basis for business decisions, tax assessments, dividend policies, profit sharing agreements, and evaluation of business performance.

#### Scope of the Study

Financial institutions, especially commercial banks, play a key role in any economy. Their success or failure indicates a fluctuation of the economy movement. The strength of a financial system can be measured in terms of price stability in economy. The less price fluctuation, the better the financial system, and the better

the economy. On the other hand, the result becomes opposite when a financial system weakens. For the benefits of the economy and of my personal knowledge, this study will take into consideration the importance of one particular financial institution -- the commercial bank. This means that commercial banks will be used as sources of data for determining the effect of inflation on the profit performance.

The aim of the present study is to examine some of the effects of using nominal money figures as yardsticks for the measurement of the profitability of commercial banks. In this study, I have used the financial data of all listed commercial banks in the Securities Exchange of Thailand. It is my belief that the Thai case may serve as an interesting situation or even as a general model, as the Thai economy has in fact experienced continuous and varying rates of inflation(31). In most cases, however, historical cost accounting methods have still been used.

#### Research Objectives

All in all, the main purpose of this study is to determine the financial effects of different levels of inflation upon the following major financial aspects of the sampled individual commercial bank:

- (a) Reported after-tax profits,
- (b) The incidence of corporate income tax,
- (c) Dividend cover.

Another objective of this study is to give the individual a better understanding of the adjustment process involved in correcting figures reported in financial statements.

It should be noted here that, in discussing the effects of inflation upon a commercial bank's profit, the expectation of this study is to be able to derive some plausible generalization in regard to obtaining the actual profit reporting for all concerned parties of that particular bank, and, also, in regard to an acceptance of accounting for inflation in the near future.

#### Organization of the Study

This study will begin with a review of literature concerned with the effect of inflation upon the profit of business entities and of commercial banks. This material is presented in Chapter 2. Chapter 3 of the study will discuss the methodology utilized in an analysis of the impact of inflation on the sampled Thai commercial banks. Included in this section will be the data collection, the data adjustment methodology, and the data analysis methodology. In the fourth chapter of the paper will be an analysis of the findings, and the fifth chapter will be concerned with the conclusion.

## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

This chapter will first cover the literature to date that has centered on the effects of inflation on the performance of the business-entity, as well as the behavior of the market during periods of inflation.

The second portion of this chapter will emphasize the impact of inflation on the operations of the financial institutions, especially on the commercial banks. Since there is no research-based study on this area, the discussion and opinion from various articles will be presented instead.

#### Inflation

Inflation, whether it be anticipated or unanticipated, is defined as 'a substantial, sustained increase in the general level of prices(]5). Or one may define inflation in the simplest way as a loss in the purchasing power of money. No matter what definition is chose, both has the merit of emphasizing the fact that inflation is essentially a monetary phenomenon. Economists believe that the whole inflationary

mechanism is primarily or exclusively monetary, in particular that the main or only cause of inflation is too rapid a growth in the supply of money.

Effects of Inflation on Earnings  
(general business-entity emphasis)

The effects of inflation on the business-entity have been discussed, studied, and analyzed for many years. But there is little in common on specifying clearly how it affects on the nominal or real earnings of business enterprise. Some authors have agreed that inflation affects on the business-entity's profit, but they still have difference in details or the degree of impact. In contrast, some authors have argued that earnings grow in real terms because of inflation. Attempts to justify this proposition have concerned with various grounds.

Price Increases

Some economists, in the past, believe that the nominal value of a business entity's earnings is not tremendously affected by the rate of inflation if business entities are able to compensate for increased costs due to inflation supply by raising their prices. This proposition is not quite seemed to be true in most cases, because a high inflation rate may lead to price controls by government regulations which work to the disadvantage of business-entities, or because uncertainty about the future inflation rate probably increases with the current rate. This greater uncertainty may cause problems in

planning and in negotiation of loans and wage agreements, thereby increasing the business-entity's difficulties. Thus we can see that business-entities are not always able to maintain the real value of their earnings as the rate of inflation rises. If inflation reduces earnings, this will be reflected in lower real values for stock prices. This argument, based on price increases, does not seem to be a very substantial one. In fact, it is less frequently proposed than others.

#### Debtor/Creditor Hypothesis

Another approach of studies was advanced by Keynes(27, 28) and Fisher(19). They introduced the well-known debtor-creditor hypothesis or net monetary position hypothesis which focused on that during periods of inflation, debtors will gain while creditors will lose. The terms "debtor" and "creditor" are defined in terms of net monetary assets less the sum of all of its monetary liabilities. The business-entity that has its assets which are independent to price changes(e.g., cash, time deposits, and bonds) exceeded to its corresponding liabilities(e.g., loans, bonds outstanding, and accounts payable) are classified as a net monetary debtor. Otherwise, it is a net monetary creditor. Under this approach, they assumed that debt payments remain constant; this means that when prices are generally rising, the debtors still obligates to pay fixed amounts of dollars in interest and repayment principal. By the present value concept, this demonstrates that lenders(creditors) are losing their real monetary value of money because they are not being compensated for the increase in price levels. Eventhough the creditors can offset this

phenomenon by renegotiation of interest rates, the redistributive effects, from creditors to debtors, still exist in case of unexpected inflation or/and of long term debt contract.

These early views illustrate that the business-entities are not debtors and do gain from inflation. In other words, if a business-entity has an outstanding debt at all, its earnings value is predicted to increase in real terms during periods of inflation. Nevertheless, several studies have revealed in consistent results in studying the effects of inflation on business entities(5, 6, 9, ]7, ]6, 8, ]], 24, 29, 30,35, 33).

In a study by Kessel(29), results confirmed the validity of the debtor/creditor hypothesis for explaining the redistribution of wealth during inflation. Unfortunately, other studies have shown conflicting evidence on the actual gains, measured by the change in equity values, made by business-entities during periods of inflation. This would point that all business-entities are not net debtors on that inflation affects individual business-entities in differently specific ways.

Bach and Ando(5), Bach and Stephenson(6), Broussalian(9), DeAlessi(]6, ]7), and Kessel and Alchalian(30) are those who further such studies. As early as ]957, Bach and Ando(5) reported that debtor/creditor status was not a main factor in determining the inflation gain or loss of business-entities during the three period covered in their study -- ]939-]946, ]945-]949, and ]949-]952. Also, Kessel(29) claimed that perhap Keynes and Fisher may have overestimated the

the frequency of net debtor business-entities, thus giving their conclusion invalid empirical assumptions. In fact, studies by DeAlessi (16, 17) for the post war periods (1945-1946) have shown that the business sector is a net lender (creditor). But, according to recent surveys of business-entities by Okun and Teeters (35), the corporate sector seems to have returned to being net borrower (debtor) in the last few years. Similar findings were also reached by Budd and Seiders (36). As recently as 1974, Bach and Stephenson (6) have reported that business sector has become an even major net debtor over all economic sectors sampled.

No matter which business entities are net debtors or not creditors, these authors have tended in common on one fact -- that the value of the firm's equity will be influenced by its net monetary position during periods of inflation. If they are net debtors, they will benefit; if they are net creditors, they will suffer losses or at least they will not benefit to the same extent as net debtors. However; this hypothesis doesn't tell us anything about the degree to which net debtors will gain and net creditors will lose.

In addition to the Keynes and Fisher of debtor/creditor hypothesis, DeAlessi (16, 17) and Bradford (8) reported a study that focuses on the degree of gain or loss associated with a given degree of unanticipated inflation. They found that the degree of a business-entity's net debtor/creditor position is a critical variable in determining the degree of gain or loss associated with any given degree of unanticipated



inflation. DeAlessi(17) later concludes that redistribution effect from creditors to debtors occurs according to the degree that individuals fail to anticipate correctly the increase in the general price level which actually exists.

Hong(24) goes so far as to suggest that, if business-entities have a portfolio of debt, each of which carries on different expected inflation rate, it is hard to make any general conclusions about gains or losses from being a net debtor. The ingredient of net debt which underanticipated the current inflation rate offers a gain for the business-entity while the ingredient which overanticipated the current rate offers a loss. Hong proposes that with changing expectations overtime the average affect of expectations in various periods is to reduce net debtor gains or losses due to inflation. In fact, if expectations are rational in the sense of Muth(33), the net effect over the long run should be zero; therefore, we would not expect an overall wealth transfer due to net monetary position alone.

Up to this point, the debtor/creditor position alone is not an adequate, sole predictor of business-entity performance during periods of anticipated inflation. There are other meaningful influence factors that should be considered before coming up with the prediction of the effect of inflation on the performance of business entities.

#### Wage-lag Hypothesis

Another approach for reasoning the effect of inflation on the business performance can stem from the wage-lag or lead-lag hypothesis.

This hypothesis assumes that inflation causes wages to lag behind prices, and this "lag", in turn, redistributes income from employees to employers. This approach to the effect of inflation on the business performance are quite different to the early views of debtor/ creditor hypothesis, notably the views of E. J. Hamilton(22, 23), E. M. Bernstein and I. G. Patel(7), and Chandler(13). They basically state that real wages decrease in periods of inflation because money wages are insensitive to price increases. Therefore, if the costs of business entities do not increase as fast as the prices of the final products, inflation will result in added gains for business-entities. This hypothesis has been tested in a number of studies, but conclusions are inconsistent.

Kessel and Alchain(30) examined the relationship between price and wages under the inflationary period. They confronted the testing procedures used by some of the earlier authors. They explain that a decrease in real wages may also be a result of market force movement such as the relative of labor and capital, the pattern of final demands in the economy and the quality of the labor force. In addition, increases in the general price level can be produced by changes in the real stock of goods, e.g., by flooding, plagues, wars, and tornado, even with a fixed money stock.

Kessel and Alchian proceeded to run their own tests. Results of their study didn't support the wage-lag hypothesis. However, they admit that their results may not be valid either because of the length

of the sample time period and the nonrandom sample. Despite the limitation, Kessel and Alchian admit to, in their own study, recent studies have also failed to find support the existence of a wage-lag, e.g., Cargill(14), and Budd and Seiders(11).

#### Inventory Levels and Valuation Methods

The next approach of reasoning is the inventory levels and valuation methods. This proposition suggests that business-entities gain during periods of inflation because they carry inventories.

Hong(24) has proposed that the type of inventory accounting system employed by a business-entity will have an impact on earnings and, hence, on after-tax income. Hong explains that any inventory effects would be nonexistent if every business-entity reported all costs at current prices. In practice, though, business entities use some historical accounting system such that the cost of goods sold are reportedly understated. Consequently, profits are overstated, the business-entity's tax liability increases, and the government receive such beneficial effects.

Since the magnitude of reported costs depends on the accounting method used for tax purposes, we would find that the understatement of inventory cost is largest for FIFO, smaller for moving-average costing, and least for LIFO(25).

In conclusion for this approach, it is reasonable to say that the type of inventory valuation method employed by a business-entity

for accounting purposes will result in differential effects due to inflation. However, this approach is argued by Kessel(29), Oudet(36) and others.

#### Depreciation Position

Most researches on the effect of inflation on the business-entity's earning have focused on the net monetary position of the business-entity. These studies have tended to overlook the depreciation position of the firm. It has been well documented in the accounting literature that the effect of inflation on the earning of the business-entity also includes its depreciation position, e.g., Gramham(21), Brown(10), Edwards and Bell(18), Research Division, AICPA(37), Vatter(38) and Horngren(25).

In determining the effects of inflation on the value of any business-entity, one must consider the firm's specific depreciation position. Tax depreciation is a deductible expense in determining the business-entity's corporate income tax liability, and this liability is a cash outflow. Since tax depreciation influences cash costs, it also influences net cash flows. This means that depreciation is one of important factor in defining return to equity owners.

Depreciation charges, which decrease the taxable portion of return on equity and increase the nontaxable portion, are fixed in monetary terms. The effect of inflation, given the rigidity of tax depreciation charges in nominal terms, is to decrease the real tax depreciation shield of taxable income. Given that gross returns to

equity increase depending upon how fast and by what percent prices are rising, the lower real tax depreciation shield results in a low real net return on equity.

In an influential research paper, William Bradford developed a model about the effects of inflation on the value of the business-entity which incorporates both the net monetary position and the depreciation position of a business-entity. In Bradford's model, the cash costs and the receipts of the business-entity are considered to increase in proportion to the inflation, but the depreciation charge does not increase in proportion to the inflation, but the depreciation charge does not increase, so that total expenses increase in a smaller proportion and taxable income in a larger proportion than inflation. Therefore, the cash flow to stockholders will not increase in proportion to the inflation. Ignoring the net debtor/creditor status, Bradford also suggests that the full protection of the stockholders against inflation would be achieved if the tax depreciation charge were increased in the same proportion as the general price level.

In considering both monetary and depreciation position that, during periods illuminated by inflation, business-entities with higher net monetary assets (debtors) gain more, and business-entities with higher depreciation positions lose more than their counterparts [Nichols(34); Motley(32)].

### Inflation's Impact on the Financial Institution

There has not been sufficient recognition that the strength of any financial system was built on a remarkable record of price stability in any country. But now the tide of inflation that has been rising for almost a decade is undermining the system. It is not an exaggeration to say that double-digit inflation will damage a financial system, if not destroy it.

A very high rate of inflation such as now exists produces a big increase in the total money volume of demand for both short-term and long-term funds. This is simply because at highly inflated prices it costs much more to finance inventories and accounts receivable and to satisfy other short-term financing requirements. It also costs a great deal more to finance new industrial plants and equipment, commercial construction, housing, and public improvements.

Moreover, inflation and the expectation of it also lead to an increased demand for credit because they encourage speculative uses of funds and greater risk taking by borrowers. The growth of real estate investment trusts is a prime example of the stimulation of risk-taking in an inflationary period. In addition, business borrowers are especially encouraged to borrow on a long-term basis if they expect a high rate of inflation to persist, since they anticipate borrowing comparatively dear money values and repaying cheaper money values. Due to the fact that interest payments are deductible for tax purposes, with a 30 per cent corporate income tax rate, the cost of any given rise in long-term rates is cut by 30%.

Inflation and Bank Operation

In such an environment that has a great deal of uncertainty about the precise pattern and extent of any future inflation, bankers would have to confront significant challenges to some of their traditional methods of operation. The problems that would be raised for bank earnings, liquidity, and solvency would put pressure on the banks to innovate and on the regulatory authorities to remove some of the present constraints on bank operations.

One consequence of inflation challenges the banks' position in such traditional strong-holds as the demand deposit market for small depositors or the passbook savings market. Severe inflation and the associated high rates of interest stimulate the introduction of substitutes by nonbank suppliers. An elimination of deposit rate controls would permit banks to meet this competition more effectively. In addition, it would permit them to meet the other challenges of an inflationary environment in more innovative ways, such as offering indexed deposits(20).

Inflation also threatens the banks' position in the market for large certificates of deposit(CD's), but not for competitive reasons. It has become more risky for banks to rely excessively on liability management techniques in general, and on large CD's in particular, as a source of funds to protect bank liquidity under inflationary conditions. This is partly because the public's confidence in banks has declined, which has made banks more susceptible to a liquidity crisis in a period of uncertainty.

Inflation also increases the risk of a price-cost squeeze for banks which use the traditional fixed-rate framework in connection with maturity intermediation(26). This is due to a bias which leads to an underestimation of future inflation rates. Banks can sometimes avoid the risk of such a price-cost squeeze by matching maturities of assets and liabilities and thereby avoid the necessity of making inflation-rate forecasts. However, a policy of matching maturities may be unnecessarily restrictive or dangerously permissive for some important liabilities. Even when it can prevent a price cost squeeze, a policy of matching maturities entails severe social costs and destroys the long-run position of banks in the financial hierarchy.

#### Inflation and Bank's Profit

Some bankers believed that the profits of banks calculated in accordance with the inflation accounting method would be little changed from historic profits, and that the depreciation charge would be somewhat higher. However, the overall effect is not likely to reduce profits by a considerable percentage. Another group of bankers disagreed with this belief(4). A particular objection of the latter group is that the system will lead to a serious undr/overstatement of the profits of institutions by the historical cost method.

Central to the practice of banking is the need for 'free-capital' -- a margin of capital resources over and above those committed to the infrastructure of the business itself. The need



for 'free-capital' arises to cover unexpected losses resulting from business risks and generally to generate confidence of customers and potential customers. The adequacy of the margin size of 'free-capital' can't be demonstrated by adhering to a uniform measure sight across the whole banking area; it has to be assessed against the risk -- inherent in the various asset categories and also against the general liquidity structure of a bank's balance sheet.

As with other businesses, inflationary factors increase the monetary expression of a given level of real banking business. Hence in an inflationary situation the commercial bank is required by the essential nature of banking to finance increasing amounts of monetary assets with capital funds to support an unchanged level of real activity. The appropriate source of such accretions to capital funds for this purpose is through retentions; hence, the traditional practice by banks of maintaining high dividend cover. An adjustment on operating expenses, before striking the pretax profit for the year, to compensate for the erosion of the 'free-capital' ratio caused by inflation would be analogous to the proposed 'cost of goods sold' adjustment in an industrial or commercial company.

In summary, therefore, the bank's case is based upon prudential requirements involving the obligation to finance a proportion of monetary assets with 'free-capital', and it should depend on the acceptance of adjustments for monetary items. A general price-level profit concept is sought to provide a more realistic indication of profitability in the main profits and loss account across the corporate sector(4).

## CHAPTER III

### METHODOLOGY

#### Introduction

This chapter will discuss the methodology employed in analyzing the effect of inflation on the profit of the sampled commercial banks. Elements included in this chapter are the data collection and the methods of data adjustment and analysis.

In order to accomplish the research objective of providing the individual with a better understanding of how inflation affects the profit of our sampled group in Thailand, it is necessary to mention here that each different economy has its own unique characteristic in detail, e.g., accounting system, bank system, tax regulation, currency value, and others. However, they still have the same general practice. For a better understanding, this study has provided necessary information and facts about those sampled banks which might be needed in the appendix section. Included in the appendix section are the addresses and histories of the sampled banks.

#### Data Collection

The basic data for this analysis were obtained from the published

reports of the nine commercial banks listed on the Securities Exchange of Thailand during the entire 1970-1978 period. Financial statements (Balance Sheet and Income Statement) are these basic data. In addition, a few data are provided by the personnel of the Securities Exchange of Thailand, the Ministry of Commerce, and the Bank of Thailand.

The reasons should be noted here why these 9 banks were selected for this study. Four reasons will explain this. First, commercial banks are considered to be the most secure financial institutions in Thailand, and they play a dominant role in Thai economy, so eyes are kept upon by any interested party who participates in Thai economy. Secondly, because the number of their shares trading in the security market count for more than half of the total volumes on the counter, their financial reports are very important to the investors. Thirdly, this study emphasizes on the public business-entity that is listed in the security market. Finally, there are only nine commercial banks currently listed in the Securities Exchange of Thailand(12).

For the analysis, the years 1970, 1974, and 1978 have been selected for the following reasons:

Thailand suffered from significant inflation during the period of 1970-1978. As measured by the Consumer Price Index, it took eight years for the Index to use its base of 100 in 1970 to 187.0 in 1978, a compound rate of approximately 10% per annum(see Table 1). The year 1970 experienced the first and lowest rate of inflation(0.9%) during the 1970s; 1978 faced a very moderate rate of 8.8%; 1974 was the year

that had the highest inflation rate, a 2-digit percentage rate of 23.3 (31). On an overall worldwide basis, Thailand's price experience has been one of comparative stability or only modest inflation.

#### The Method of Data Adjustment and Analysis

The procedure used for the adjustment of net income followed essentially the ideas tentatively recommended by the AICPA in APB Statement No. 3(1) and the ASSC in the Provisional Statement of Standard Accounting Practice No. 7(2). The data were obtained from the banks' published annual financial statements. It should be noted that information regarding the exact age of depreciable assets was not available, which might have refined the results.

The adjustment procedure involved three major items: Expenses from operations, depreciation, and monetary holding gains.

In order to arrive at the 'adjusted income statement were restated in term of the purchasing power of the Thai baht (the Thai monetary unit) at the end of the relevant year. Operating income (e.g., interest on loans and discounts, interest and dividend on government securities and other investments, fees received, and others) and operating expenses (e.g., interest paid, salary, wage and welfare, taxes, and others) were assumed to have occurred evenly throughout the year and were multiplied by the ratio of the end-of-year index to the average annual index. Because the nature of a commercial bank is to

provide service, not to sell goods, inventory item adjustment will be left out from this study.

To compensate the depreciation adjusted price level changes, we first calculated the average age of depreciable assets by dividing the total accumulated depreciation at a year's end by the depreciation charge for the year, thus assuming that the banks used the straight line depreciation method. The annual depreciation charges were then adjusted by a factor appropriate to the average age of the depreciable assets. In this case, the ratio of index at the end of the current year to index for the year (average) of acquisition of assets is used. The method of adjustment was similar to that used by Stickler and Hutchins(3). As mentioned before, the data on the exact age of depreciable assets are not completely available, so estimations are applied to the adjustment in many cases.

The selection of the appropriate price index for adjusting the income data is discussed extensively in the literature -- see, for example, the AICPA's Accounting Research Study No. 6(37). The Consumer Price Index is used in this study because it is widely accepted as an index measuring changes in the general price level, and because it agreed rather closely with the Thai G.N.P. Implicit Price Deflator for the period studied.

Gains or losses on monetary items arise from the fact that the amounts are fixed in monetary terms while the purchasing power of the monetary unit changes over time. During a sustained period of inflation, a positive net monetary asset position will produce a

holding loss, while the opposite is true if the net position is negative. Of course, this ignores the fact that under inflationary conditions lenders(depositors) whose securities(deposit accounts) are not index-linked almost certainly demand higher interest rates to help offset the expected erosion of their claims. This will naturally lower 'operating profits'. No adjustment for this factor has been made in this study, and this should be kept in mind when interpreting the results in Table 2.

To calculate the gains or losses on monetary net assets, all items in the balance sheet must first be classified as monetary or non-monetary. Monetary assets include cash receivable due from banks, loans, overdraft, investment, and securities held which are not index-linked. Monetary liabilities include all obligations which are not linked either to the general price index or to a foreign currency. Index-linked securities and equities are not considered as monetary items, and the former were stated at current values in this study.

The net monetary liability position thus equals the aggregate monetary liabilities minus monetary assets as defined above. To compute the net monetary liability position for the year, the beginning and ending balance of net monetary position are weighed. The result, if positive, will show the average borrowing position of the commercial bank during the given year, and when multiplied by the rate of price change for the year it yielded the net monetary gain.

TABLE I

## Thailand's Rate of Inflation

Year	Consumer Price Index	Rate of Inflation
1970*	100.0	0.9 (1)
1971	102.0	2.0
1972	106.0	3.9
1973	118.4	11.7
1974	146.0	23.3 (2)
1975	152.0	4.1
1976	158.1	4.0
1977	171.8	8.6
1978	187.0	8.8 (3)

Source: Monthly International Financial Statistics.

\* = base

- (1) = Lowest rate
- (2) = Highest rate
- (3) = Moderate rate  
(compound annual rate)

## CHAPTER IV

### ANALYSIS AND FINDINGS

The first stage of the adjustment procedure involved a restatement of the reported (nominal) income--- taken after tax but before dividends. The second step called for the calculation of the monetary gains, and by adding the two together, we obtained the fully adjusted net income data. It should be noted that the figures in Table 4 are presented as a percentage of reported net incomes after tax, while Table 2 and 3 illustrate the before-and-after tax income and the dividend payout respectively.

#### Adjusted incomes

Table 4 shows the results of the calculations for the year 1970, 1974 and 1978. In 1970, adjusted incomes before monetary gains are smaller than reported incomes for all the 9 banks. In all cases, there are no banks reported losses. The median bank shows an adjusted income equal to 63 per cent of its reported income.

For the year 1978, the adjusted figures before monetary gains show a little bit downward trend from the year 1970. Still, no banks report losses. The median for all banks is 63 per cent of reported



TABLE II

Reported Income and Income Tax  
(million of Bath)

Bank	Annual Reported Income Before Taxes			Income Taxes			Annual Reported Income After Taxes		
	1970	1974	1978	1970	1974	1978	1970	1974	1978
1	137	674	1200	31	208	375	107	466	826
2	8	18	54	-	4	15	-	16	40
3	34	82	139	3	19	28	31	63	111
4	37	161	292	4	65	79	33	96	213
5	19	18	49	1	2	14	17	16	34
6	41	81	169	7	19	44	35	62	125
7	41	65	80	7	15	22	34	50	58
8	28	41	37	2	9	11	26	32	26
9	6	14	24	-	-	7	-	-	17

- = Not available.

TABLE III

Dividend Payout  
(baht)

Bank	Annual Dividend Paid		
	1970	1974	1978
1	70,000,000	190,000,000	322,800,000
2	2,865,000	892,458	3,450,000
3	18,000,000	45,000,000	81,000,000
4	10,250,000	36,000,000	117,500,000
5	4,000,000	5,000,000	7,250,000
6	7,755,000	24,000,000	59,375,000
7	4,000,000	3,500,000	2,250,000
8	6,795,000	10,000,000	38,500,000
9	2,160,000	3,600,000	10,800,000

TABLE IV  
Adjusted Income  
as a Percentage of Reported Income After Tax

Bank	Exclusive of Monetary Gains			Monetary Gain			Including Monetary Gains		
	1970	1974	1978	1970	1974	1978	1970	1974	1978
1	77	45	60	2	64	48	79	109	108
2	-	-17	66	-	74	29	-	57	95
3	71	36	45	4	47	31	75	83	76
4	54	33	50	1	45	29	55	78	79
5	59	41	63	4	65	23	63	106	86
6	63	64	72	3	41	19	66	105	91
7	46	-4	36	1	73	31	47	69	67
8	75	25	62	4	62	11	79	87	73
9	-	-	59	-	-	11	-	-	72
Median	63	33	63	3	62-64	29	66	83-87	79

- = Not available.

liabilities. This might explain the cause of this incidence.

In 1978, the picture improves better. After taking account of monetary holding gains, one bank has an adjusted income greater than his reported profits, with a 108 per cent. The median firm shows an adjusted profit figure of 79 per cent of its reported income.

Finally, in 1974, the effect of including the monetary holding gains is even more striking, three of the 9 banks achieve adjusted incomes greater than their reported incomes, with a median of 83.9 per cent. The remaining 5 still have positive adjusted incomes less than their reported profits.

#### Incidence of Taxation on Income

Income tax on business firms in Thailand, including commercial banks, is assessed as a progressive rate on profit, and Table 5 shows the incidence of the present tax laws on adjusted incomes before tax. In 1970, 7 banks reported profits and charged tax in their incomes, but when measured against adjusted incomes, five of the 7 were suffering effective tax rates of more than 50 per cent.

In 1978, all 9 banks charged tax in their accounts. With monetary gains included, 3 of these banks were suffering effective tax rate on adjusted income including monetary gains was higher than the percentage of reported incomes.

In 1974, of 8 banks charging tax, two show negative 'operating' incomes on an adjusted basis. With monetary gains included, these two banks still show losses. Not any banks had monetary gains large

TABLE V

## The Incidence of Taxation

Bank	Taxes as % of Reported Income Before Taxes			Taxes as % of Adjusted Income Before Taxes and Monetary Gains			Taxes as % of Adjusted Income Before Taxes Monetary Gains		
	1970	1974	1978	1970	1974	1978	1970	1974	1978
1	23	31	31	32	37	36	35	34	38
2	-	18	28	-	26	34	-	28	40
3	8	23	20	38	33	25	39	36	29
4	11	40	27	19	-d-	29	18	-d-	35
5	5	18	29	16	28	35	22	33	33
6	16	23	26	40	34	27	36	39	30
7	16	23	28	25	-d-	33	38	-d-	37
8	8	22	30	33	27	39	40	31	40
9	-	-	29	-	-	40	-	-	44
Median	11	23	28	32	27	33	36	32	37

- = Not available.

d = Tax charge not covered by adjusted income.

income, the same as the median in 1970.

For 1974, with inflation at the rate of 23.3 per cent following 2-digit percentage rates in the previous year, the drop in adjusted incomes is significantly sharp. Two of the 9 banks have negative adjusted incomes before monetary gains. The median adjusted income is 33 per cent of the reported income.

As might be expected, while inflation tends to have an adverse effect on adjusted 'operating' income, it has the opposite influence on monetary gains where a bank is in a net borrowing position. This is clearly shown by the second group of data.

In 1970, all banks have monetary gains, ranging from 1 to 4 per cent of reported incomes and the median entity has a gain of 3 per cent.

As the rate of inflation rose, the 1978 figures show a substantial rise in monetary gains. This record monetary gains ranging from 11 per cent to 48 per cent of reported incomes. The median bank has a monetary holding gain of 29 per cent.

The 1974 figures reflect a further substantial rise in such gains. All banks have monetary gains ranging from 41 per cent to 74 per cent of reported incomes, and the median monetary gain in 1974 is between 62-64 per cent.

Two interesting facts can conclude from this second group of data. One is that no banks report loss on a monetary holding position; as much as of an industrial or corporate business. Because a bank, by his nature, is a financial institution that performs as a money-transferer, he inevitably holds a large position of assets in a form of monetary item, but at the same time, he also obligates a great amount of

enough to reduce the incidence of tax.

#### Dividend Cover

Dividends are usually declared out of nominal income after taxes. Table 6 shows the incidence of inflation on the dividend payout ratio in terms of reported and adjusted incomes. In 1970, all 7 banks (for another 2 banks, data not available) declared dividends. The median payment was about 30 per cent of reported income with ranging from 12 to 65 per cent. When 'operating' income is adjusted, the payment ratio rises significantly: of the 7 banks one declared dividends in excess of their adjusted incomes, and the median payout ratio was 45 per cent. However, when monetary gains are included, the pictures improve slightly and the median for the dividend declaring banks were 56 per cent of adjusted income.

The 1978 pictures show a change from 1968. Of the 8 dividend declaring banks, three reduced the payout ratio. When 'operating' income is adjusted, the payout ratio increased significantly for six banks, while one bank has no increase in payout ratio, and the rest bank declared dividend even though on an adjusted basis, he was suffering a loss. With monetary gains included in adjusted incomes, the payout ratio was lower than on unadjusted reported income in the case of one bank, while the ratio was higher for the other 6 banks. However, one bank was still suffering a loss on adjusted and monetary-included basis.

In 1974, all 8 banks (data not available in one bank) still

TABLE VI

## The Dividend Payout Ratio

Bank	As a % of Reported Income After Taxes			As a % of Adjusted Income Excluding Monetary Gains			As a % of Adjusted Income Including Monetary Gains		
	1970	1974	1978	1970	1974	1978	1970	1974	1978
1	65	41	39	102	59	55	138	64	67
2	-	6	8	-	18	23	-	20	26
3	58	145	74	64	-d-	80	73	36	73
4	30	38	55	45	49	66	56	57	69
5	24	31	21	39	57	32	40	49	35
6	23	39	47	52	48	58	38	61	44
7	12	8	3	36	26	11	56	33	19
8	31	31	150	41	61	-d-	49	54	-d-
9	-	-	65	-	-	87	-	-	93
Median of Banks Declaring Dividends	30-31	38	55	45	49	55	56	54	44

- = Not available

d = Dividends declared not covered by adjusted income.



declared dividends, but two of them sharply cut their payout ratios. When 'operating profits are adjusted, seven banks are still in a position where dividends do not exceed their adjusted incomes, and one bank showed a loss. With monetary gains included, the pictures change slightly. Two banks showed adjusted incomes including monetary gains lower than excluding monetary gains. Also, no banks do not cover dividend with their adjusted income.

## CHAPTER V

## SUMMARY AND CONCLUSIONS

Based upon literature discussed in the preceeding chapter, one can conclude that there are many factors to be taken into consideration before making any predictions about the effect of inflation on the profits of business-entities. We can make some reasonably safe assertions, for instance, if we know something about the net monetary and depreciation positions of a business-entity.

Specifically in bank business, the results of the analysis of the 9 sampled banks listed in Securities Exchange of Thailand probably provide a reasonably accurate overall picture of the effects of inflation on the profit that reported in financial statements although the annual reports of the banks do not reveal all relevant facts required for the adjusted process. In general, it appears that adjusted incomes tend to be less than nominal earnings, even if monetary gain are included; and that substantial portion of adjusted profits in an inflationary period is the result of monetary holding gains. It is also clear that tax charges and dividend appropriations are sometimes not covered by adjusted incomes, even when monetary gains are included. Moreover, when there is covered, the proportions of profit taken in

tax charges and distributions are generally far higher than is suggested by the conventional historical cost figures.

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APPENDIX

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 APPENDIX I
 

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 Names and Addresses  
 of the Sampled Banks

Name	Address
1. Bangkok Bank Limited	9 Suapa Road Bangkok, Thailand
2. Bangkok Metropolitan Bank Ltd.	2 Chalermketr 4 Street Bangkok2, Thailand
3. Bank of Ayudhya Limited	550 Plourchit Road Bangkok 5, Thailand
4. Bank of Asia & Industry Ltd.	601 Charour Krung Road Bangkok 1, Thailand
5. Lamthong Bank Limited	289 Suriwong Road Bangkok, Thailand
6. Siam Commercial Bank Limited	1060 Petchaburi Road Bangkok 4, Thailand
7. Thai Danu Bank Limited	393 Silom Road Bangkok 5, Thailand
8. Thai Farmers Bank Limited	142 Silom Road Bangkok 5, Thailand
9. The Union Bank of Bangkok Ltd.	624 Yaovarach Road Sumpanthawong, Bangkok, Thailand



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APPENDIX II

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## Brief Stories of The Sampled Banks

1. Bangkok Bank Limited

Bangkok Bank was founded in December, 1944, with an initial capital of Baht 4,000,000. This had grown through successive rights offerings and public offerings to Baht 1,450,000,000 (US\$ 71,430,000) in 1977. The bank is Southeast Asia's largest commercial bank. At year-end, 1977, the bank had 34.7% of the total assets of all commercial banks in the Kingdom. Also, the bank is Thailand's first, and until recently only international bank. In 1977 there are a total of twelve overseas branches, the first of which was established in Hong Kong in 1954.

2. Bangkok Metropolitan Bank Limited

Bangkok Metropolitan Bank Ltd. is the sixth largest commercial bank in Thailand. The bank was registered in August, 1950, with a paid-up capital of Baht 10,000,000. At year end 1977, the total capital fund of the bank stood at Baht 405,394,300, equivalent to US\$19,970,000.

3. Bank of Ayudhya Limited

Bank of Ayudhya Ltd. was founded in 1945 with an initial capital of Baht 1,000,000. The capital fund of the bank is Baht 859,187,674 (equivalent to US\$42,324,515) in 1977. The Bank of Ayudhya is the fourth largest commercial bank in Thailand. At year end 1977 it had a 5.5% share of the market as measured by total resources of all commercial banks.

4. Siam Commercial Bank Ltd.

Siam Commercial Bank Ltd. is the oldest locally registered commercial bank, having been founded in 1906. Originally the bank was organized in the form of a "Book Club" by H.R.H. Prince Mahitsararajharuthai, a brother of King Chulalongkorn, in 1904, but later was designated as a commercial bank.

The original capital of the bank was Baht 3,000,000, where it remained until 1971. At the beginning of 1978, the bank's paid-up capital was boosted to Baht 125,000,000. The bank had 5.4% of the total resources of the all commercial banks in Thailand at the end of 1977, making it the fifth largest bank in the Kingdom by this measure.

5. Thai Danu Bank Limited

The Thai Danu bank Ltd. was founded on April 8, 1978 making it the 11th local bank to be organized. At year end 1977 the Thai Danu Bank was ranked 15th among local banks and 18th among all commercial banks in Thailand by total assets. The bank has an approximately 1.1% share of the market by this measure.

The initial capital of the bank was Baht 10,000,000. This had been built up by a number of right offerings and combined rights offering and public offering in late 1975.

6. Thai Farmers Bank Limited

Thai Farmers Bank Ltd. was organized in June, 1945 as the eighth Thai registered commercial bank. Initially the bank had paid-in capital of Baht 5,000,000. At year end 1978 Thai Farmers Bank had paid-in capital of Baht 352,400,000 and total capital funds of Baht 1,150,465,297 (equivalent to US\$ 56,673,167).

Thai Farmers Bank is the third largest commercial bank in the Kingdom at year-end 1977, with 9.57% of the total resources of all such banks in Thailand. The bank's share of the market, as measured by the total resources of all commercial banks, has been increasing steadily.

For the remaining three banks, Bank of Asia, Lamthong Bank and The Union Bank of Bangkok, the data are not available on hand at the time of study.

Source: Securities Exchange of Thailand Handbook 1978-1979  
by Business Information and Research Co. Ltd.

VITA

Vivat Limsakdakul

Candidate for the Degree of  
Master of Business Administration

Report THE FINANCIAL EFFECTS OF DEFFERENT LEVELS OF  
INFLATION ON THE PROFITS OF ALL LISTED COMMERCIAL  
BANKS IN THAILAND.

Major Field: Business Administration

Biographical:

Personal Data: Born in Chiengmai, Thailand, May 11, 1954,  
the son of Vanit and Anit Limsakdakul.

Education: Graduated from Monfort College, Chiengmai,  
Thailand, March, 1972; received two Bachelors of Business  
Administration Degree from Assumption Business Administra-  
tion College, Bangkok, Thailand, with the first degree in  
Marketing in November, 1976 and the another in Finance and  
Banking in November, 1978; completed the requirements for  
the Master of Business Administration degree at Oklahoma  
State University in May, 1980.

Professional Experience: Statistician in Sales Department of  
the General Motors(Thailand) Limited, from January to  
October, 1977.