



**XXVI ANNUAL CONFERENCE OF THE  
REGIONAL PROGRAMME OF MONETARY STUDIES**

**THE LINKAGES BETWEEN BANKING SYSTEM  
AND REAL DEVELOPMENT**

**Mr. William Armstrong  
Inter-American Development Bank**

**JAMAICA CONFERENCE CENTRE**

**KINGSTON, JAMAICA, W.I.**



**November 23 - 26, 1994**

## THE LINKAGES BETWEEN BANKING SYSTEM AND REAL DEVELOPMENT

### I INTRODUCTION

In the developing world there is a great deal of concern, rightly so, about the process of transforming savings into investment. We look around and see poverty and unemployment at the same time we see people with good ideas they cannot get financing for or companies with expansion plans that the banks will not support. The coexistence of underdevelopment and an abundance of good ideas and expansion projects is jarring and upsetting and causes us to look for "solutions" that will increase the amount of investment.

Many of these solutions involve the banking system in one way or another. A typical progression is for a country to examine its banking laws to see if they can be amended to make credit flow more easily, to close certain government banks that are wasting resources and perhaps replace them with new ones, to change regulations in order to create incentives to lend to certain sectors, to create special programs for small and microbusinesses, or to request second-tier lines of credit from official institutions in order to increase the supply of medium savings available for investment. All of these programs can yield positive results if they are carefully designed and implemented and my organization, the Inter-American Development Bank, is a leader in this area. Since all of these interventions involve the banking system, it is important for us to have a clear understanding of the nature of banking systems, and particularly, the risks that are imbedded in them. With this understanding, we can design and implement better programs and avoid some of the problems that may arise from expecting too much from our banking systems.

What is the role of a banking system in promoting development or, put another way, what are the links between the banking sector and real investment? Ask this question and the answer that is often given is that the banking system should provide credit to industry, or that the system should channel savings into investment, or some other version of this response. Seldom will the answer be that the banking system should provide a safe way for people to save. The focus is almost always on the lending side of the banks' activities. There are several reasons for this. The first one is something that might be called the Willy Sutton factor. Willy Sutton was a famous and for a while, successful bank robber in the 1940s. When the law finally caught up with him, he was arrested and put on trial. The evidence was clear and he was convicted and sentenced to jail. After the trial he was pursued by the press who asked him why he had robbed the banks. Willy was surprised to be asked such a stupid question and gave his famous reply-- "Because that's where the money is."

This sort of thinking contributes to our lopsided view that places

a higher value on the lending activity of banks than on the banks' role in providing a place to save. Banks are, in Willy's words, "where the money is" and this pot of funds is a tempting one, to be encouraged to fund whatever sector happens to be currently in favor. Other factors contribute to this overemphasis on lending or credit as a solution to the problems of underdevelopment. One such contributing factor is that lending and risk taking are the interesting activities of banking--they are "where the action is". These activities receive the most attention in business school, in the press and, because of the high level of skills that are required to assess and price risks, the best trained people are often attracted to this side of the business. The much more prosaic business of offering and managing checking and savings accounts receives very little of our attention, even though providing people with a place to save is fundamental to the bank and to society as a whole. The danger of this lopsided view is that it can lead us to expect too much from the banking system, or cause us to focus on the wrong things.

There are some important reasons for examining the evidence more closely before proscribing credit for all of society's ills. Firstly, studies show that many things are more important than cheap or abundant credit in contributing to increased economic growth and development. The important things tend to be better systems of transport, less governmental bureaucracy, and a more predictable judicial system. Interestingly, improvements in primary education seem to correlate more strongly with increased economic growth than almost anything else. Another reason is that with open capital markets, where capital can flow from one country to another in a matter of seconds to make a high earning investment or to back a good idea, the potential supply of capital is increased dramatically. This is particularly true for larger projects, say projects requiring total investment greater than \$200,000. However, by far the most important reason to be wary about credit as a solution to economic problems is that the other side of credit is debt. The evidence is clear from the country level to the micro level that debt is a two-edged sword. It was, after all, not too long ago that too much debt caused a whole decade of development to be lost in Latin America.

## II THREE WAYS TO LOOK AT THE RISKS OF BANKING

To get a better feel for the appropriate role for a banking system to take in transforming savings into investment, this paper looks at the risks of banking from three different angles. The first angle looks at the mathematics of risks and leverage. This will help us to understand how robust or alternatively, how fragile, a banking system is. The second angle is an experiential one. Here we will look at the balance sheet of a mature banking system that is in good financial health, with strong earnings and capitalization. This will be done to see how much risk this relatively open system is prepared to take. The final angle

a higher value on the lending activity of banks than on the banks' role in providing a place to save. Banks are, in Willy's words, "where the money is" and this pot of funds is a tempting one, to be encouraged to fund whatever sector happens to be currently in favor. Other factors contribute to this overemphasis on lending or credit as a solution to the problems of underdevelopment. One such contributing factor is that lending and risk taking are the interesting activities of banking--they are "where the action is". These activities receive the most attention in business school, in the press and, because of the high level of skills that are required to assess and price risks, the best trained people are often attracted to this side of the business. The much more prosaic business of offering and managing checking and savings accounts receives very little of our attention, even though providing people with a place to save is fundamental to the bank and to society as a whole. The danger of this lopsided view is that it can lead us to expect too much from the banking system, or cause us to focus on the wrong things.

There are some important reasons for examining the evidence more closely before proscribing credit for all of society's ills. Firstly, studies show that many things are more important than cheap or abundant credit in contributing to increased economic growth and development. The important things tend to be better systems of transport, less governmental bureaucracy, and a more predictable judicial system. Interestingly, improvements in primary education seem to correlate more strongly with increased economic growth than almost anything else. Another reason is that with open capital markets, where capital can flow from one country to another in a matter of seconds to make a high earning investment or to back a good idea, the potential supply of capital is increased dramatically. This is particularly true for larger projects, say projects requiring total investment greater than \$200,000. However, by far the most important reason to be wary about credit as a solution to economic problems is that the other side of credit is debt. The evidence is clear from the country level to the micro level that debt is a two-edged sword. It was, after all, not too long ago that too much debt caused a whole decade of development to be lost in Latin America.

## II THREE WAYS TO LOOK AT THE RISKS OF BANKING

To get a better feel for the appropriate role for a banking system to take in transforming savings into investment, this paper looks at the risks of banking from three different angles. The first angle looks at the mathematics of risks and leverage. This will help us to understand how robust or alternatively, how fragile, a banking system is. The second angle is an experiential one. Here we will look at the balance sheet of a mature banking system that is in good financial health, with strong earnings and capitalization. This will be done to see how much risk this relatively open system is prepared to take. The final angle

concerns the consequences of failure. If the price of failure is low, then policy makers may feel justified to encourage banks to take more risks in order to develop the country more rapidly. Alternatively, if the price is too high, then it may be necessary to live with slower growth in order to preserve macroeconomic stability, and ultimately to enjoy the fruits of development.

#### A. THE MATHEMATICS OF RISK AND LEVERAGE

A banking license gives a bank the right to take deposits from the public and creates a link of confidence between depositors and the bank. In some countries, these deposits, or part of them, are insured, and depositors are thereby relieved of the burden of making judgements about a bank's solvency. Even in the absence of deposit insurance, depositors often assume that the government will make good on the deposits if the bank should fail, and so they quite willingly give their savings over to the banks even when there is no deposit insurance. Banks are thus able to gear themselves up quite highly. In fact, if a bank has a retail deposit base (these tend to be tolerant of solvency problems, since the depositors often lack the skills to analyze a bank) and a forgiving auditor that is willing to permit non-performing loans to be presented as performing ones, the bank owners can operate the institution without putting much of their own capital at risk.

Put another way, banks use other peoples' money. The cushion of capital is small. The standards set by the Bale Committee on Bank Capitalization require only one dollar of capital to support twelve dollars of risk assets. If as little as one twelfth of the bank's assets need to be written off, then the bank goes bust. Obviously the assets must be of reasonably high quality in order to ensure that this does not occur.

This leverage is a very important factor in making investors interested in banks. At the above capitalization ratio of twelve to one, the owners of the bank earn profits on twelve dollars, while only putting one dollar of their own funds at risk. If the institution earns a net spread of two percent, then the owners enjoy a 24% return on capital. Banking spreads in Latin America and the Caribbean are high enough to make returns at close to these levels a reality for a well-managed bank that is careful about the risks it accepts. For this reason, and others, a banking license is a valuable asset.

In addition to its cushion of capital, a bank and, by extension, a bank's depositors and shareholders are protected by the margins that the bank charges. If a bank's margins on risk lending are only sufficient to cover its administrative costs, then the mathematics of risk set out above hold, that is, if as little as one-twelfth of a bank's assets are bad, the bank goes bust. However, if a bank prices risk correctly, it has an additional cushion, since the earnings on good assets will help to cover the

write-offs of bad loans and hopefully leave something for the shareholders. Note, however, how the protection that high margins provide to depositors is different than that which the shareholders enjoy. While high margins for high risk loans provides a capital-like cushion that benefits the depositors in some sense by making bankruptcy less likely than it would have been in the absence of good margins, the upside potential of having taken these risks is only enjoyed by the shareholders. The depositors have a share in the risks but not in the returns.

To get a feel for the dynamics of the interplay between lending margins, capital and loan losses, consider the situation in which one out of twelve dollars worth of assets goes bad and has to be written off or provisioned. If the system is this risky, then the margin on the good loans must be at least 9% to break even. In other words, if the other eleven dollars worth of assets earn a margin of 9.09%, then the dollar that was lost to bad debts is covered by these earnings. ie  $\$11 \times .0909 = \$1.00$ . If the bank has one dollar of capital backing twelve dollars of risk assets, if the margin is a little more than 9%, and if only one in twelve assets goes bad, then the system is in some sort of equilibrium, maintaining its required level of capital, while breaking even.

However, not all loans mature in a year. If the average loan period is, say, two years, and one in twelve needs to be completely written off (or two in twelve need to be half written off), then the margin required to cover loan losses is only 4.35%. In this case, all of the assets in year one post earnings and eleven out of the twelve make money in the second year, and these earnings are sufficient to fund the loss that results from the bad loan. In algebraic terms:

$$\$12x + \$11x = \$1, \text{ so}$$

$$x = 1/23, \text{ or } 4.35\%$$

This is the margin required to compensate for loan losses only. To this must be added the bank's cost of funds, a margin to cover administrative costs and one for profits. Looked at in these simple terms, it is not hard to understand why lending margins in many developing countries are so high.

What are the actual risks? The statistics on this are difficult to come by. In the U.S., over the past ten years xxx... In Latin America, from experience, I would guess that one-twelfth of a bank's loans ultimately going bad is about right, as an average over all of the countries there. In the Caribbean, banking crisis have been infrequent, which is a sign that the systems are probably safer, that is, the banks are probably more careful about the risks they accept.

Clearly, a bank or a banking system that has only one dollar of

capital backing twelve dollars of risk assets is very fragile. Because of this, one would expect, and policy-makers should require, banks to be very careful about the risks they take on. Furthermore, the bank must price the risk correctly in order to avoid decapitalization.

#### B. A SYSTEM IN EQUILIBRIUM

Having established that the mathematics of risk are unforgiving, one might ask how a mature and sophisticated banking system, such as might exist in a developed country, handles these risks. Are big banks in highly developed countries able to measure and control these risks in such a way that they are able to engage in much of what might be called "developmental lending" that is, lending to help finance plant and equipment of new ventures, or expansions of existing ventures? To try to understand this, we will take a look at the U.S. banking system. The U.S. is a good example to use because it is big, it is close by, it has a healthy banking sector unburdened by special problems that might distort the analysis, and it has lots of statistics that make this kind of analysis relatively easy.

The U.S. system is a fairly open one, and it is very competitive. The banks in it have a great deal of latitude regarding the risks that they take. Within reasonable limits, they can position themselves anywhere they want on the risk spectrum. They can decide to adopt a conservative stance, making very secure loans at low margins or they can take on more risks in the hope of making higher returns. The discipline on the system is imposed by the slim cushion of capital. By taking more risks, a bank can increase returns, but only at the expense of increased volatility of earnings. If volatility is increased too much, then sooner or later the mathematics of risk and leverage described above will extract their pound of flesh, and losses large enough to cause a run or otherwise break the bank will occur.

It is instructive to see what the U.S. banks do with all this liberty. If we find that they take advantage of their freedom by making large numbers of high-earning industrial loans to finance new projects, then we will want to look further to see how the banks manage these risks so successfully. On the other hand, if U.S. banks take few risks, even though they (i) operate in an environment of stability that does not impart much external volatility to loan values; (ii) enjoy a well developed system of property rights that enables them to put a great deal of trust in their ability to seize collateral, if need be; and (iii) are able to command the services of the best trained and brightest people to help them evaluate these risks, then the conclusion must be that the business is so inherently risky, that banks cannot take them without running an unacceptably high risk of insolvency.

The chart shows the balance sheet of the U.S. commercial banking

system as at June 30, 1994. The system has liquidity, defined as cash, deposits and easily marketable securities of 29% of the total assets of the system. These assets are very safe ones, which makes them appropriate for the bank's primary source of liquidity. The loan portfolio itself is next, with 60% of the total assets. Three smaller categories follow--securities held in the banks' trading portfolio, the banking systems' investment in premises and equipment, and "other assets". All of these total only about 10% of total assets. Thus, we see that the system is made up of basically two major categories of assets-liquidity and loans.

By examining the breakdown of the loan portfolio, one can develop a feel for the degree to which banks in the U.S. are taking risks and promoting development. The portfolio breaks down into several major categories. Firstly, one sees that the system generates an enormous volume of financing that is backed by real estate. Many of these loans are mortgage loans that are used by people of many walks of life to purchase their homes. These are high quality, low-risk bank assets backed by the guaranty of the title to the house.

The second big class of loans are working capital loans to companies. Almost all of these loans are also backed by collateral. Typically, the security will be inventory or accounts receivable. How safe are these loans? They are usually very low-risk loans because the bank can seize and sell the inventory, or take over the receivables.

The next big class of loans are unsecured loans to individuals to finance consumption. Here naturally, the banks are taking big risks, because the loans are unsecured. Since the banks have no collateral for these loans, the only way they can cover themselves for the risks is to charge a margin that covers not only the high processing costs associated with a portfolio consisting of a large number of relatively small transactions, but also covers the bad debts of customers who do not pay. This margin is, on average, about 12% over the cost of funds in the U.S. This is high enough to more than compensate for the non-payments, and as a result of these high spreads, credit card portfolios seldom cause serious problems for the banks that have them.

Lastly, we consider term loans to companies--loans for the plant and equipment that is at the heart of the enterprise and that gives rise to employment and development in general. You may be surprised to see that there is no category for these loans. Actually, there are some term loans to industrial or service companies buried in the "Commercial and Industrial" category, but they are not even 10% of the category's total. Essentially, banks do not make unsecured term loans and, in fact, make few secured term loans. In short, in the most developed country in the world, banks do not lend to promote development. The banks avoid these risks even though they earn a higher spread on these assets than on



almost any other kind of loan or investment. Furthermore, the processing costs per dollar lent are small, since the size of the individual transactions is usually quite large. Naturally, if these loans earn higher margins and generate low costs, there can only be one reason why there are not more of them. That is because they are too risky to be done by an organization that is as highly geared as a commercial bank.

### C. THE CONSEQUENCES OF FAILURE

What happens when a bank fails? The consequences of this for society are more serious than the first order effects of the direct cost of the failure. For example, the fear generated by the publicity surrounding the failure creates costs for society. Savers may pull their funds from good and bad banks alike, bidding up deposit rates, putting pressure on the exchange rate and reducing the amount of investible savings. Other banks take note, and become more cautious in their risk-taking, ie they make fewer loans. And promoters of new projects rethink their plans, in order to factor in the cost of investing in a country that has a banking system that is now seen to be unsound. In extreme cases, there is a systemic collapse and the costs to society are catastrophic. These events are the equivalent of a financial hurricane--they require years of rebuilding just to get back to the level of development that existed before the storm. We found this out in the United States with the savings and loan crisis, the hurricane has just hit Venezuela for the second time in ten years, and Chile had one twelve years ago. In fact, some analysts contend that all of the enormous growth that Chile has enjoyed over the last decade, has only brought that country back to the where it was, in terms of per capita GNP, before the collapse of the banking system.

Are these consequences softened when the government, or a deposit guaranty fund bails out the depositors? The answer is unfortunately no. The society's savings are still lost. When there is no guaranty fund, or when the government uses up all of the deposit guaranty funds assets and has to dip into the national treasury, it must get these funds from somewhere. There are, in fact, only two ways to fund the rescue--increase taxes or cut back on government services. Either way, it is almost always the little man that bears the brunt of the burden. Even if only the guaranty fund's assets are used to repay the deposits, the fund must then be replenished. This is done through special taxes to the banks, which pass the cost on to depositors in the form of lower interest rates, or to borrowers in the form of higher rates.

### III CONCLUSION

This paper has looked at the risks inherent in banking from three different points of view. The conclusions that are drawn are consistent throughout--that the business of banking is inherently

very risky, and probably much more so than is commonly thought.

An examination of the mathematics of banking risk has shown that banks cannot do much of what is normally considered developmental lending without risking a run or collapse. The examination of a mature system in equilibrium has demonstrated that this particular system does not take on the level of risks that it is normally presumed to take on, because it considers the risks to be too great. And finally, a discussion of the consequences of bank failures suggests that no amount of temporary growth can compensate for the devastating effects of bank failures on society as a whole.

To some, this picture may seem excessively grim. In reality though, it only reflects one of the facts of life, that development is a slow process that is the result of getting hundreds of little things right, not something that can be jump-started by forcing more credit through the banking system.

Who is going to finance development if one accepts the limits on the ability of the banking system to fund development? There are several answers to that question. The first is that the capital markets will finance part of it. These markets are still developing in the Caribbean, and may not yet be financing much development. However, they are growing and can contribute much more to growth provided they are regulated in a way that is not too heavy-handed but at the same time provides investors with enough confidence to trust the market with some of their savings.

The second part of the answer is that individuals will invest, or groups of individuals will, or for big investments, companies or the owners of companies will. This less formal pooling of funds actually accounts for most of investment in developing countries and, in fact, accounts for much of the investment in developed countries, as well. The shops and petrol stations, the grocery stores and restaurants, the dry cleaner and the small manufacturer almost never go through a formal process of borrowing money or issuing shares to get started. Where do they get the money to get started? As often as not, by drawing down on their savings in the bank. Only by making sure that the banks are solid, secure and a safe place to save, can society promote this natural process.

What then are the linkages between the banking system and the real investment? They are two. Banks increase the amount of savings available for investment by providing economic agents with a safe place to save. And banks make loans, but not the kind of high risk loans that many would have them make in the name of promoting development. Rather they make short-term loans secured by easily realizable collateral. These then are the links between banking and development. Don't kill the goose that laid the golden egg by expecting too much.

BALANCE SHEET OF THE U.S. BANKING SYSTEM  
as at June 30, 1994  
in \$s millions

	ASSETS	PCT
Cash and clearing accounts	\$190,242	4.9%
Interest-bearing deposits	82,869	2.1
Marketable securities	<u>840,534</u>	<u>21.7</u>
TOTAL LIQUIDITY	1,113,645	28.8
Net loans and leases	2,310,109	59.7
Assets in trading accts	228,144	5.9
Premises and fixed assets	70,329	1.8
Other assets	<u>148,672</u>	<u>3.8</u>
TOTAL ASSETS	\$3,870,899	100.0%

LIABILITIES AND NET WORTH

LIABILITIES

Domestic deposits	\$2,371,449	61.3%
Foreign deposits	<u>377,305</u>	<u>9.7</u>
TOTAL DEPOSITS	2,748,754	71.0
Borrowings from other banks	292,507	7.6
Due to U.S. Treasury	38,494	1.0
Trading Liabilities	151,768	3.9
Other borrowed money	190,068	4.9
Bankers acceptances liab	13,524	0.3
Other liabilities	95,017	2.5
Subordinated debt	<u>37,264</u>	<u>1.0</u>
TOTAL OTHER LIABILITIES	818,642	21.1

NET WORTH

Preferred stock	1,321	0.0
Common stock	164,423	4.2
Retained Earnings	<u>137,759</u>	<u>3.6</u>
TOTAL NET WORTH	303,503	7.8
TOTAL LIABS & NET WORTH	<u>\$3,870,899</u>	100.0%

CONSOLIDATED LOANS AND LEASES  
All FDIC Insured Commercial Banks  
June 30, 1994

		PCT
SECURED BY REAL ESTATE		
1 to 4 families	\$526,747	22.8%
commercial	272,960	11.8%
apartment houses	30,496	1.3%
construction loans	62,157	2.7%
farmland	21,916	0.9%
other real estate	<u>23,989</u>	<u>1.0%</u>
TOTAL REAL ESTATE	938,265	40.6%
COMMERCIAL & INDUSTRIAL	562,288	24.3%
CONSUMER		
credit card	159,031	6.9%
auto and other	<u>277,676</u>	<u>12.0%</u>
TOTAL CONSUMER	436,707	18.9%
LOANS TO BANKS	193,958	8.4%
OTHER KINDS OF LOANS		
agricultural	39,581	1.7%
leases	39,337	1.7%
state and natl govts	36,278	1.6%
broker loans	22,540	1.0%
banker's acceptance	13,476	0.6%
other	<u>79,925</u>	<u>3.5%</u>
TOTAL OTHER LOANS	<u>231,137</u>	10.0%
TOTAL LOANS	2,362,355	102.3%
less provisions	<u>52,246</u>	<u>2.3%</u>
NET LOANS	\$2,310,109	100.0%