Financial Deregulation and Prudent Regulation: The Case of Mexico during the 1990s

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Abstract: The purpose of this paper is to address the process of financial deregulation and liberalisation of the Mexican banking system during the 1980s and the 1990s. After a review of the theoretical underpinnings of financial repression and liberalisation, the paper provides evidence on the magnitude of financial repression which existed prior to the financial reforms. It is argued that the transition period from financial repression to a more liberal financial market was complemented with the provision of prudent regulation containes in the Credit Institution Act of 1990.

Resumen: El propósito de este estudio es analizar el proceso de desregulación y liberalización financiera en México durante las décadas de los años ochenta y noventa. Después de una revisión de los fundamentos teóricos, tanto de la represión como de la liberalización financiera, el estudio presenta indicadores de la magnitud de la represión financiera que existía antes de las reformas de liberalización. Se arguye que durante el periodo de transición de un sistema financiero reprimido a uno más liberal se complementó con la implementación de una regulación prudencial contenida en el Acta de Instituciones Crediticias de 1990.

The role of the financial market has become one of the most important and debatable issues within the development strategy of the Salinas administration. It is argued that the attainment of a sustainable rate of economic growth will depend directly on the degree of modernisation and development of the financial system.

This modernisation encompasses a much wider definition of it. Not only does it include banking services, but also brokers, insurance,

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and pension services. It is believed that financial services are provided more efficiently by financial conglomerates to take advantage of economies of scale. At the same time, there is an explicit recognition that the recovery and stability of the Mexican economy will depend on the deepening and widening of the domestic financial structure of the economy and a lesser reliance on foreign savings. On this point, Oks (1992) has written that the accumulation of external liabilities which are not backed up by financial flows to service the debt, may increase the risk of the dependence of the Mexican economy on volatile capital inflows. If this is the case, then a sectorial policy towards the domestic financial market will be most desirable.

Ministers and some policy-makers have stated that a higher and sustainable rate of economic growth will demand the increase on the rate of total savings relative to GDP, both public and private. According to government estimates, the attainment of a 6% rate of growth of GDP per annum will need a saving/GDP ratio of at least 25%. (See Aspe, 1990, and National Development Plan Report, 1989-1994.)

Irrespective of how accurate these figures may be, the question which matters most is the choice of the strategy to enhance the saving/GDP ratio while at the same time reducing the growing dependence of the economy on international financing. The present administration has passed a wide range of reforms aimed at encouraging both public and private sector savings.

With regard to the former, the fiscal authorities have introduced tax reforms aiming at a more equitable and efficient tax system by broadening the tax base as well as reducing tax evasion. These steps in conjunction with changes in the composition of government expenditure, privatisation schemes and a more efficient pricing of public utilities, have contributed to a primary surplus and hence to the reduction of the fiscal deficit from 3.5% of GDP in 1990 to 1.3% in 1991. In addition, the reduction in interest payments on external and internal debt have also been a positive influence on this result. (See CEDEAL Report, 1991.)

A fiscal discipline and a continuous commitment to the attainment of a fiscal surplus seem to be part of the government agenda for the decade of the 90s. These reforms should not only be conducive to price stability but also to enhancing public sector savings. (See Ortiz, 1991, and National Development Report, 1989-1994.)

With respect to private sector savings, the government has employed different measures to financially deregulate the market and to

encourage its development and maturity. The government stance with respect to the optimal financial policies, shows a clear rejection of financial repression and the acceptance of financial deregulation in order to enhance the role of a free and more competitive market in the process of intermediation and resource allocation. This means that financial deregulation and liberalisation are becoming the sectoral policies to promote financial deepening and widening and to encourage private sector savings. In this context, the authorities have eliminated interest rates and selective credit controls, as well as reserve requirements, and they are still making substantial progress in the control and reduction of the rate of inflation.

It will be shown in section 2 that the motivating factors for introducing financial deregulation in Mexico have been the dismal performance of the financial market during the nationalisation period and the need to bring Mexico's financial sector up to the international standards of those countries that have successfully deregulated their financial market.

Some scattered evidence will suggest that those countries which did not tax explicitly and implicitly their financial system and offer positive real return on financial assets, showed a higher degree of financial deepening than countries which had repressed their capital markets. At the same time, those economies with a more matured and developed financial market will show a higher rate of economic growth.

Another important feature of the Mexican financial strategy is the acceptance of the fact that a successful financial deregulation will require prudent regulation. This means that the present government has not only taken on board the McKinnon-Shaw hypothesis of financial repression and the acceptance of the static and dynamic gains from financial deregulation, but also prudent regulation as a complement to financial deregulation during the transition period towards the establishment of a free and competitive financial system. This new acceptable principle of complementarity between deregulation and re-regulation is becoming an integral part of the financial strategies by both developed and developing countries. (On the evidence from developed and developing countries see Sheng-Cheng, 1986.)

Section 3 will discuss the different aspects of prudent regulation in Mexico which is embedded in the new Credit Institutions Act and the Financial Conglomerates Act of 1990. It will be argued that although the new banking legislation covers a great deal of the normative aspects regarding the activities and sets very clear norms of prudent

conduct, there are certain aspects that have been overlooked and thus undermine the functional and administrative aspects of the reform. In particular, the small role assigned to information availability, competition, and the implications of compensation funds on moral hazard. Also, the need is stressed for increasing the quality of capital and labour inputs in prudent regulation schemes.

The discussion will be centered on the banking system, although it is important to recognise the increasing role to be played by the stock market and related services. That issue goes beyond the scope of this paper.

Before we proceed to discuss the empirical issues contained in this study, section 1 provides the reader with a general theoretical framework to review the MacKinnon-Shaw hypothesis of financial repression.

1. Financial Repression and Deregulation: A Theoretical Framework

One of the key problems in developing economies has been the excessive financial regulation directly imposed on the financial system which in its extreme form has led to the syndrome known as financial repression. When governments tax and distort their financial market, the economy is said to be financially repressed. (On the hypothesis of financial repression see the pioneer work of McKinnon, 1973, and Shaw, 1973.)

A rudimentary and immature financial system is not only a reflection of the specific characteristics of underdeveloped economies, including a low rate of economic growth and income per capita, gross imbalances in the distribution of income, and substantial information asymmetries, but also and equally important, of misguided government interference in the economy and the financial market.

The degree and form of financial regulation will vary from country to country and from time to time depending on the economic and political objectives on the government agenda. As a general practical principle, the monetary authorities have the responsibility of monetary and banking policy to ensure stable and sound money and to prevent financial instability emanating from liquidity and solvency problems.

However, this general practical principle is even more radical in developing countries as the government has systematically burdened the financial system in order to finance the budget deficit and allocate resources towards privileged sectors.

Usury restrictions on interest rates, high reserve requirements on bank deposits, and compulsory allocations, all of which interact with increasing inflation rates, are part of the government's menu to serve its objective. For instance, an explicit tax on bank deposits in the form of a reserve requirement, and an implicit tax from inflation provide the government with an attractive source of revenue. Similarly, usury restrictions on interest rates and selective credit allocations enable them to direct subsidies which will not be accountable in the government financial accounts.

Therefore, the financial system will become a very effective source of revenue to cover the explicit and implicit government deficit. The evidence from section 2 will indicate that less developed countries tax their financial market heavier than developed economies.

Yet, repressive financial policies will introduce severe static and dynamic losses in the form of resource misallocation and a poor rate of economic growth. So let us now examine the nature of these inefficiencies arising from financial repression by analysing each instrument in turn. We will start by examining the static inefficiencies.

The introduction of usury restrictions on interest rates will generate distortions on savers' and investors' decisions. Consider the following bank profit function and assume perfect competition, no reserve requirements and ignore the return from factor of production of financial services, we thus get:

$$L - D = 0 \tag{1}$$

where L = nominal lending rate
D = nominal deposit rate.

If the authorities set a ceiling on lending rates, then expression (1) will not be satisfied for a given D. To break even, the bank offers a lower deposit rate thus introducing a wedge. Savers will reduce their wealth allocation into financial savings as the yield has been reduced by this form of implicit tax. Similarly, investors' decisions will also be distorted by the implicit subsidy granted by the government and paid by savers. If we add the effect from increasing inflation, and the imposition of a reserve requirement on bank deposits, the distortion is magnified even further. It is clear that this source of tax on savers and

non-interest bearing reserve requirement is another instrument available for government finances. This form of an explicit tax on financial intermediation should also produce inefficiencies.

Expression (2) is a modified bank profit function which, apart from the nominal lending and deposit rates, includes a reserve requirement on bank deposits.

$$L(1 - Kr) - D = 0 \tag{2}$$

where Kr = reserve requirement.

From (2) we see that the introduction of a reserve requirement on bank deposits will produce a wedge between lending and deposit rates to satisfy the condition with zero profit. For instance, as shown by McKinnon (1980), if Kr is half of the total bank deposits then it follows that the deposit rate will be half of the lending rate. Moreover, the effect of inflation may help to enlarge this wedge. Let us write expression (2) in real terms in order to account for the effect from inflation.

$$Li = KrP/(1 - Kr) + Di/(1 - Kr) \tag{3}$$

where $Li = L - P$
$Di = D - P$
P = inflation rate.

If we assume that there is no ceiling on the nominal deposit rate and inflation is fully anticipated so that the real yield from deposits remains constant, then increasing inflation with a given Kr means a greater transfer of resources from bank deposits to the government. In order to pay a constant real rate on bank liabilities, lending rates will need to go up hence widening the wedge between lending and deposit interest rates.

It is clear from the above that the introduction of a reserve requirement interacting with inflation will be an implicit tax on financial intermediation. Its overall effect will be to drive down deposit rates and rising lending rates hence making the wedge even larger. The inflation tax will be borne by depositors and borrowers, the proportion being determined by the elasticities of the demand for credit and the supply of credit. (On this issue see McKinnon, 1980; McKinnon and Mathieson, 1981, and Brock, 1984.)

Controls in interest rates, reserve requirements, and increasing inflation rates also introduce dynamic losses from the reduction in the yield in financial savings and thus a lower flow of loanable funds through the formal banking system. As we will see in section 2, there is evidence that financial intermediation has been smaller for those economies with low or even negative real deposit rates than for those countries which offer positive real yields from financial savings. At the same time, those countries with a positive real return on financial assets and a high rate of financial intermediation also show a relatively high GDP growth rate.

In order to assess the implication of financial repression on economic growth we introduced a modified and shorter version of the Galvis model published in 1977.[1]

Assume that we have an economy with two sectors producing the same homogeneous output but with different technology. Sector A produces output Y_a with backward technology and sector B an output Y_b with modern technology so the production function will be as follows:

$$Y_a = f_a(K_a, L_a) \quad \text{and} \quad Y_b = f_b(K_b, L_b) \tag{4}$$

If $f_a < f_b$ then $R_a \equiv \delta Y_a/\delta K_a < \delta Y_b/\delta K_b \equiv R_b$

where R_a = marginal product of capital in sector A
R_b = marginal product of capital in sector B
f = technology.

Then, the growth of income in the economy is given by expression (5) and (5a):

$$Y = Y_a + Y_b \tag{5}$$

and

$$Y = f_a(K_a, L_a) + f_b(K_b, L_b). \tag{5a}$$

By assuming that output is produced competitively and factors are fully employed, then it follows that by reallocating capital K from sector A to sector B the output/capital ratio will increase.

The process of investment in each sector is technically different

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[1] For a thorough review of the literature and models of financial repression see Fry (1982, 1988).

given the fragmentation of the financial market particularly with respect to the access to bank credit. Sector A is self-finance which in turn is a constant fraction of current income not consumed and money holdings.

$$S_a[(1 - c)Y] = d[M_a(M1 + M2)]/dt + I_a \qquad (6)$$

where S_a = savings in sector A

I_a = investment in sector A

M_a/p = real money holdings

$M1$ = currency

$M2$ = bank deposits

$c = mpc$.

Expression (6) represents the self-finance constraint and it shows McKinnon's complementary hypothesis between capital investment and money. In a cashless society, economic agents will accumulate working balances in the form of physical assets. The introduction of paper money will help to release real resources for more productive uses. In consequence, the accumulation of real balances will be a complement of physical capital accumulation.

In contrast, Shaw (1973) takes money as debt rather than wealth. A financial asset such as currency and/or deposit is cancelled against financial liabilities and hence we are left with only physical assets. The question of complementarity is irrelevant. Instead, Shaw was thinking in terms of a whole financial system rather than a narrow concept of paper money and self-finance. The financial sector provides the economy with an intermediate factor input in the form of a financial service which enters directly in the firm's production function. Although there are interesting differences between the two approaches, the main conclusions and implications are similar. That is, government interference will affect the real yield on money and/or the optimal amount of financial services.

It follows that the investment function for sector A will be given by expression (7).

$$I_a/Y_a = I_a[R_a, (D - P), P] \qquad (7)$$

where $\delta I_a/\delta R_a > 0$

$\delta I_a/\delta(D - P) > 0$

$\delta I_a/\delta P < 0$

$(D - P)$ = real deposit rate.

In contrast, we assume that sector B has access to bank credit so the financing constraint is given by (8).

$$S_b[(1 - c)Y_b] + d[M_b(M1 + M2)/P]/dt + d[M_a(M2)/P]/dt = I_b. \qquad (8)$$

The financing constraint for sector B tells us that investment is equal to its own savings, the accumulation of real balances including both currency and bank deposits, and bank credits which correspond to the bank deposits of sector A. From this proposition the investment function for sector B is given by (9).

$$I_b/Y_b = I_b[R_b, (L - P), (D - P), P] \qquad (9)$$

where $\delta I_b/\delta R_b > 0$

$\delta I_b/\delta(L - P) < 0$

$\delta I_b/\delta(D - P) > 0$

$(L - P)$ = real lending rate.

There are different implications within this model from disequilibrium interest rates as a result of heavy reserve requirements on bank deposits, usury restrictions in interest rates, and increasing inflation rates. For instance, a ceiling in nominal deposit rates with ongoing price inflation determines a low or even negative return from currency holding and bank deposits. Assuming that the demand for bank deposits is interest elastic for sector A, then the demand for bank deposits will fall. Moreover, given that real interest rate is relative price between self-investment and money, then any surplus will be re-invested into the low return sector.

With respect to sector B, the effect of restrictions on the deposit rates of interest will dry up the amount of bank credits available.

In consequence, the model of financial repression predicts two significant results. Firstly, a real deposit rate below equilibrium will reduce the demand for money thus limiting the availability of credit. Secondly, it will reduce the average efficiency of investment and the rate of economic growth from the misallocation of resources.

As we have seen earlier, the same interest rate disequilibrium can be obtained from increasing reserve requirements and the rate of inflation. It is clear that equilibrium interest rates and thus an increasing flow of loanable funds through the organised banking system, should reduce the disparities in investment return and accelerate the rate of economic growth.

The theoretical discussion from this section demonstrates that remedying financial repression is desirable in order to eliminate the substantial static and dynamic inefficiencies in the economy. The removal of interest rate control, reserve requirements, and the reduction of the inflation rate is recommended as a way of ensuring a more robust and mature financial system and from there a higher rate of economic growth. As we will see, the evidence from section 2 will lend support to this assertion.

2. Financial Repression and Deregulation in Mexico

Financial Repression during the 1980s

The monetary and financial authorities in Mexico introduced an unprecedented set of reforms during 1989 aimed at deregulating the financial system.

The new strategy represented a clear departure from the traditional and commonly accepted view of financial intermediation and its role in developing economies. This traditional view specifically meant the acceptance of the subordinated role of the financial market in the process of intermediation, allocation, and growth. In fact, models of development undermined the role of finance and underestimated the economic costs in terms of static and dynamic losses from financial repression.

The new thinking about the role of money and finance in development suggests two valid and important points. Firstly, finance and financial policies may have an important part to play in development. And secondly, the underlying economic conditions and structures such as inflation, credit, and tax policies may affect the conduct and performance of financial markets and the rate of economic growth.

A question which immediately comes to mind is what factors have determined the acceptance of the new approach by the Mexican government. One could follow two lines of enquiry, one being the academic development of models applicable to developing economies whereby money not only becomes a complement for capital accumulation but also rejects the modifications of traditional growth models and the implications for inflationary policies. In this context, the intellectual contribution of the McKinnon-Shaw theory has not only produced fresh alternatives to the traditional literature on growth but they have also identified money and/or financial services as a factor input in the production line and the policies affecting the optimal supply of such factor input. As we have seen in section 1, they have argued throughout their work about the negative effect of the government's involvement in the financial system and the effect on growth.

As Keynes stated in his *General Theory* of 1936, policy-makers, politicians, bureaucrats: "all are unconscious slaves of some defunct economist or academic scribber of a few years back." It also argued that "the gradual encroachment of ideas came not immediately but after a certain interval." This means old ideas always become part of the orthodoxy and are taken on board by politicians and policy-makers. This would seem to be the case in Mexico and some Latin American countries which have introduced financial deregulation as an important part of sectorial policies to enhance the rate of economic growth. However, quite apart from the influence of intellectual contributions made by scholars on the role of finance in economic development, the performance of the Mexican financial market during the nationalisation of the 80s has been, by international standards, a motive force in overhauling financial repression.

The evidence from Mexico during the nationalisation period of 1982-1989, shows the detrimental effects of government interference in the financial market.

Interest rate controls, explicit and implicit taxes on financial intermediation have affected the degree of financial deepening in Mexico measured by the $M3$/GDP ratio as a proxy for intermediation. The data from some selected countries, both developed and developing economies, will show that those countries which present positive interest rates on financial assets and a limited dependence on financial intermediation to finance their government deficits will exhibit a more competitive and mature financial system than those which have induced a less competitive and regulated financial market. According to the evidence, Mexico will clearly fall into the group of those countries who have systematically repressed their banking sectors.

The evidence from table 1 shows the estimates of the $M3$/GDP ratio as a proxy for financial maturity of the Mexican financial market for the 80s and the allocation of credits in both the government (G) and private sector (PS).

The data show that the holdings of broad money $M3$ as a percentage of GDP reached an average of 28% for the decade. In addition, the data also shows that over 50% of bank credits as a percent-

Table 1. Indicators for Financial Intermediation in Mexico

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	Av.
M3/GDP	.30	.32	.32	.28	.28	.26	.26	.27	...	...	.28
Credits PS%Total	.45	.41	.24	.23	.29	.26	.20	.23	.27	...	.28
Credits G%Total	.38	.42	.53	.54	.48	.54	.60	.60	.52	...	.51

Source: IMF, *International Financial Statistics*, various issues.

    M3 = Money plus quasi-money (currency held outside banks + demand deposits + time, savings, foreign currency deposits made by residents).

Table 2. Indicators of Financial Deepening in Selected Countries

M3/GDP	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	Av.
USA	.58	.54	.56	.61	.60	.62	.64	.62	.61	.59	.60
UK	.32	.37	.38	.39	.41	.42	.48	.81	.86	.94	.54
Germany	.54	.54	.55	.56	.56	.57	.59	.60	.60	.60	.57
Korea	.32	.33	.36	.35	.34	.35	.36	.37	.38	.41	.36
Argentina	.28	.29	.26	.29	.30	.21	.25	...	...	...	.26
Chile	.27	.30	.38	.33	.35	.28	...	...	...	...	.32

Source: IMF, *International Financial Statistics*, various issues.

age of the total went to the government and only 28% to the private sector.

    This estimate for the *M3*/GDP ratio for Mexico is rather small if we compare it with rapidly growing and non-inflationary economies.

    Table 2 enables us to compare the performance of Mexico relative to the selected industrial countries and those developing countries that are considered an economic success.[2]

    The average of financial deepening for industrial countries is nearly 60%. In addition, countries such as Korea and Chile, which

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    [2] According to Che-Je and Khatkhate (1989) Korea in East Asia and Chile in South America possess the best comparable records.

Table 3. Real Deposit Rates in Selected Countries and Mexico (percentage)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	Av.
USA	−0.4	5.0	5.7	5.6	5.7	4.2	4.5	3.0	3.5	4.0	4.0
UK	−3.3	−1.1	0.0	1.7	1.2	2.5	3.3	1.0	−0.6	−1.6	0.3
Germany	2.3	3.1	2.0	1.1	2.3	2.1	15.2	1.1	1.8	2.6	3.3
Korea	−7.1	−4.2	0.7	4.4	6.6	7.3	7.0	6.7	2.7	4.0	2.8
Chile	1.7	17.6	34.5	0.5	...	1.1	0.5	5.6	...	...	8.8
Argentina	−10.8	25.6	−14.3	−13.4	−31.6	−19.6	−15.5	12.1	20.5	...	−5.2
Mexico	−4.4	1.2	−9.6	−23.3	−10.4	1.0	−0.8	−15.0	−23.6	13.5	−7.1

Source: IMF, *International Financial Statistics*, various issues.

    The real deposit rate $= [(1 + i)/(1 + \%\text{CPI})] - 1$.

went through financial deregulation, exhibit averages for *M2*/GDP of 36% and 32% respectively.

    Mexico's financial performance is below that of those selected countries and about the same as Argentina's. The question which will follow from the evidence is whether Mexico and Argentina have any factors in common or display any differences to the rest of the sample which may help to explain their financial performance.

    A qualitative answer will be to argue that those countries which tax their financial sector implicitly and explicitly, and control interest rates so that the real yields on quasi-money are very low or even negative, will exhibit a lower financial deepening than those who have a financially unregulated and a lower tax incidence on financial intermediation.

    The evidence from table 3 shows the estimation of real deposit rates for Mexico and the sample group.

    The evidence suggests that those countries which have maintained positive real yields on deposits have also exhibited high *M3*/GDP ratios. In contrast, Mexico and Argentina show on average a negative real deposit rate over the whole decade and a low degree of financial intermediation. In fact, Mexico shows a real yield on quasi-money which is minus 7.1% and a deepening ratio of only 28 percent.

This apparent positive correlation between real deposit rates and financial deepening observed from the estimated data of the sample, is consistent with the findings of other authors working with a much wider group of countries and period of time. (For further evidence see Fry, 1978; Dooley and Mathieson, 1986, and McKinnon, 1988.)

The second factor which might explain the poor performance of the Mexican financial sector is related to the burden of government taxation levied on intermediation. The imposition of high reserve requirements on bank liabilities which is equivalent to an explicit tax on deposits and the inflation tax on reserves and currency holdings, which is equivalent to an explicit tax, may have affected the growth of the financial sector.

In fact, P. Brock (1984) has found evidence suggesting that Latin American countries have higher effective reserve ratios than OECD countries. Furthermore, he estimated that total revenues from inflation tax on currency and reserves as a percentage of GDP were larger in Latin American economies than in OECD economies. In his sample, the Latin American countries have also collected a larger proportion of the inflation tax from depositors and borrowers than from currency holdings for the 70s.

It would not be surprising to find that those countries which levy a heavy taxation on their financial sector will not only exhibit a large wedge between passive and active rates but also the degree of financial deepening will be smaller than those with lower taxes on intermediation. For Brock's sample, countries like Colombia and Brazil hardly reached an $M2$/GDP ratio above 25% for the 70s.

Using Brock's methodology, I have estimated the effective reserve ratios and total revenue from inflation tax for Mexico and the selected countries whose results are summarised and shown in tables 4 and 5.

The effective reserve ratio is estimated from the following expression and shown as a percentage of total bank deposits.

$$Rr = (RM - C)/(M2 - C). \tag{10}$$

Where RM = Reserve Money
  C = Currency Held Outside Banks
  $M2$ = Money plus Quasi-Money.

The evidence presented in the tables supports Brock's conclusions in the sense that the two Latin American countries examined present high effective reserve ratios relative to OECD countries for the data of

Table 4. Effective Reserve Ratios for Mexico and Selected Countries

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	Av.
USA	3.1	2.9	2.6	2.1	2.0	2.2	2.8	2.6	2.5	2.4	2.5
UK	2.8	2.1	1.9	2.2	2.2	2.1	2.0	1.2	1.2	1.2	1.9
Germany	8.7	8.0	7.9	7.5	7.4	7.0	6.8	6.9	6.8	7.2	7.4
Korea	12.9	5.6	7.2	6.0	5.2	4.0	4.4	8.4	10.4	12.7	7.6
Chile	22.7	12.0	4.7	4.8	4.5	...	...	...	...	...	9.7
Argentina	...	...	...	...	6.1	5.0	21.0	10.0	12.0	...	13.5
Mexico	48.0	46.1	61.2	59.6	52.1	39.0	29.4	15.5	...	...	43.8

Source: IMF, *International Financial Statistics*, various issues.

Table 5. Average Revenues from Inflation Tax for 1980-1989 (as percentage of GDP)

	Currency	Reserves	Total Revenue
USA	0.30	0.04	0.34
UK	0.16	0.04	0.20
Germany	0.28	0.05	0.33
Korea	0.52	0.26	0.78
Chile	0.54	−0.24	0.30
Argentina	3.4	2.8	6.2
Mexico	1.5	3.6	5.1

Source: IMF, *International Financial Statistics*, various issues.

the 80s. For instance, Mexico did tax the financial sector heavily while the average effective reserve ratio estimated for the period was 43.8%. This means that more than 43% of total deposits is held as legal reserve and thus the pool of lending resources available to be lent out by banks has been almost halved.

If this is so and according to the theory of financial repression,

the deposit rate should be nearly half the lending rate, *ceteris paribus*. (For an example on this calculation and the discussion of this point see also McKinnon and Mathieson, 1981, and Araya Gómez, 1994.) In fact, my estimates for the *ex post* real lending and deposit rate in Mexico for the 80s was on average –5.1 and –7.1 respectively. This represents nearly 30% of the lending rate.

The data used in the estimation of effective reserve ratios were not adjusted for any interest paid on reserves, so there are implicit biases. Once again, those countries with low effective reserve ratios show a higher $M3$/GDP ratio than those with high reserve requirements. Despite the fact that the sample is rather small, the evidence is consistent with that of Brock's paper.[3]

Although we can establish a negative correlation between reserve ratios and financial deepening particularly in the case of Mexico, a more comprehensive econometric work is necessary to back up this tentative conclusion.

With respect to the inflation tax on currency and reserves, it represents an implicit tax on intermediation paid by borrowers and depositors. The rate of inflation will enlarge the gross spread between lending and deposits rates and it will also undermine the flow of loanable funds through the financial market.

Table 5 contains information on the total revenue tax extracted from intermediation. The revenue from the inflation tax on currency and reserves as a percentage of GDP is estimated by using expression (11) and (11a) as follows:

$$Cs = (C_t - C_{t-1})/\text{GDP} \tag{11}$$

$$Rs = [(RM - C)_t - (RM - C)_{t-1}]/\text{GDP} \tag{11a}$$

where C = Currency Held outside banks
  RM = Reserve Money.

The estimates from table 5 suggest that Mexico severely taxed its financial system relative to OECD countries, Korea and Chile. In fact, the average total revenues from the inflation tax on the Mexican financial system was 5.1% of GDP. In contrast, the OECD had hardly reached 0.4% and in the case of Korea and Chile, the 1% mark.

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[3] Brock (1984) found that Mexico, Brazil, and Colombia had average reserve ratios of approximately 49%, 32%, and 36% respectively for the decade of the 70s.

These figures suggest that the Latin American countries have not reduced their dependence on inflation tax to finance government deficits as compared to the data of the 70s. Even worse, the Mexican average inflation tax during the 80s was above the estimate for the 70s by 0.8%. In addition, the estimates on the revenues from the inflation tax on currency are larger than from the tax on deposits for the selected countries in the sample unlike the case of Mexico which is the opposite. It follows then that those countries which finance their government deficit by taxing explicitly and implicitly will retard the growth of the financial system measured by the $M3$/GDP.

Therefore, it is not surprising to find that Mexico presents a $M3$/GDP ratio as small as 28% given that total revenue from inflation tax is 5.1%, the effective reserve ratio of 43.8% and a real deposit rate of –7.1%. Clearly, the government interference with the working of the financial sector has generated dynamic inefficiencies. The poor performance of the Mexican financial market as compared to industrial and some developing countries, which have a deregulated and lower tax burden on the financial sector, have influenced the rejection of financial repression and the acceptance of the need for financial deregulation. In Mexico it is believed that positive real deposit rates, low effective reserve ratios, and the elimination of inflation tax on intermediation coupled with increasing competition, will be conducive to the maturity and development of the financial system.[4]

Financial Deregulation in Mexico: The Approach for the 1990s

Financial deregulation began in 1989 as controls on lending and deposit interest rates were phased out. In addition, selective credit allocations for specific sectors were eliminated.

Prior to 1989, the Bank of Mexico maintained a very high legal reserve requirement applicable to banks' liabilities as we have seen from the data. At the same time, the legal reserve not only had to be maintained in government bonds but its yield was determined by government financial needs and obligations.

From 1989 until August 1991, the Bank of Mexico replaced the

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[4] Most of this section demonstrates that repressing the financial sector produces an underdeveloped banking system. For a theoretical discussion of financial repression and liberalisation see Araya Gómez (1994).

legal reserve requirement by the so-called "liquidity coefficient." This coefficient was set at 30% of banks' liabilities in domestic currency to be invested in deposits with the Central Bank and/or high liquidity government bonds such as Cetes. Government bonds are now valued at market prices rather than administered interest rates. In September 1991, "the liquidity coefficient" was eliminated on additional bank liabilities. However, banks are obliged to maintain 25% of the daily average of liabilities (excluding bank bonds and subordinated obligations) in government bonds until the maturity date. Soon after that date, the proceeds have to be invested in long-term development bonds (Bondes).

All these steps taken by the authorities to deregulate the financial market should have a positive impact on financial deepening as one should expect from positive real deposit rates, reductions in the spread between lending and borrowing rates, and lower taxation on intermediation. In addition, the continuous progress towards the reduction of inflation from nearly 100% in 1982 to 18.8% in 1991 and an expected rate of just above 10% for 1992, gives evidence of the magnitude of this progress. (On Mexico's performance for 1991 see CEDAL Report.)

With regard to the financial deregulation of banks' liabilities in foreign currency, the authorities have been very cautious as they have followed a gradual approach in the international aspect of deregulation on both fronts: the participation of foreign banks in domestic intermediation and ownership as well as the dollarisation of the economy.

Up until recently, there were no facilities for deposits in foreign currency for the general public, except for those who lived near the border with the USA. They were allowed to have checking accounts with domestic financial intermediaries. However, since June 1991, commercial enterprises are allowed to maintain accounts and deposits in foreign currency independently of their location. According to the new regulation, bank liabilities in foreign currency such as subordinated obligations, sight deposits payable in Mexico and/or abroad by commercial enterprises who operate in Mexico, are subject to a legal reserve which varies according to their maturity. For instance, those liabilities of over 90 days maturity do not have a legal reserve requirement. Liabilities with maturities between 60 and less than 90 days, 15 and less than 60 days, and less than 15 days, are subject to reserves requirements of 20%, 40%, and 50% respectively. The remaining need to be allocated in the form of credits in foreign currency among enterprises able to comply with their obligations in foreign currency. (For a

more extensive discussion on legal reserve requirements for operations in foreign currency, see Martínez Rincón, 1991.)

The Mexican financial authorities have followed a gradual deregulation of financial intermediation in foreign currency, whilst proceeded only after the government had reduced its budget deficits and deregulated and privatised the domestic financial sector. This dynamic of liberalisation was chosen on the grounds that the abrupt opening-up of the financial system would dollarise the economy.

Capital inflows will respond positively to an interest rate differential between domestic and international rates, new and profitable investment opportunities created by outward-looking strategies, and the exchange rate regime. Large and long-run unsustainable capital flows will dollarise the economy, introducing financial fragility and instability as was the case of Mexico in 1982.

In order to give time to their anti-inflationary strategy, to make substantial progress in the convergence of the domestic inflation rate towards the international rate, and to consolidate their domestic financial sector, the authorities have chosen this sequence and timing for the liberalisation and deregulation of the financial sector. However, in February 1992, the Bank of Mexico introduced quantitative limits on banks' liabilities in foreign currency equivalent to 10% of the total liabilities of the last three months. This shows the growing concern about the rapid growth of banks liabilities in foreign currency and the risk of financial instability.

With this modification, the Bank of Mexico had put the brakes on deregulation to prevent vulnerability. However, it could be argued that the growing vulnerability comes from the speculative boom in the Mexican stock market. On this point, the evidence not only shows that capital flows have grown by US$26 billion in the last two years but also that the accumulated real exchange appreciation has increased significantly. Furthermore, in spite of the fact that the international reserves are estimated around US$21 billion, this represents only 25% of total liquid assets at home and abroad and 6.5 times the growing deficit of the current account of the balance of payments.

Therefore, short-term speculative capital inflows are increasing the financial fragility of the financial sector and pushing back the deregulation of the banking sector. The success of financial deregulation in Mexico will depend on the systematic progress on inflation and the timing on the liberalisation of capital flows, especially through the stock markets. But also and equally important for the objective, the im-

plementation of effective supervisory and monitoring procedures to ensure the absence of financial fragility and instability should also be desirable. In the next section, the role and the implementation of prudent regulation in Mexico for the 90s will be discussed.

3. Prudent Regulation in Mexico in the 90s: The Complement

The role of prudent regulation has become more relevant for the success of financial deregulation and liberalisation. In fact, some of the existing evidence points to the fact that some episodes of financial collapse in both developed and developing countries can be explained by the failure or absence of effective supervision and monitoring of the financial sector.[5]

The Mexican authorities have introduced new legislation which enhances the role of prudent regulation as a complement to the financial deregulation which began in 1989. The motivation can be explained by the acceptance of the fact that in a deregulated and more competitive financial market, new risks will appear and financial intermediaries will be more inclined to risk-taking. In addition, the establishment of financial conglomerates and the excessive prices paid for bank assets during the privatisation of financial institutions have introduced the necessity of formulating rules of conduct for financial conglomerates thus preventing imprudent financial strategies. Furthermore, and perhaps even more important, the lessons learned from the excesses by banks and industrial conglomerates and the subsequent financial collapse of 1982, have warned the authorities about the dangers of the absence of prudent legislative measures. This of course does not mean the acceptance of repressive financial regulation but the formulation of a prudent norm of conduct in a free market environment consistent with financial stability.

Under asymmetrical information hazards, the market will fail to internalise risks and promote conservative and prudent behaviour. These problems have not only become more acute as the nature of financial services has changed and globalised, but are also the result

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[5] The Chilean financial collapse in 1982, the failure of the Continental Illinois, and the Savings and Loans Institutions in the US and Johnson Matthey in the UK are examples of asymmetrical information problems and the failure of prudent regulation to avert insolvency. For more details see Araya Gómez (1992).

of inadequate and misguided intervention by the monetary and financial authorities. (On the theory of asymmetrical information problems in financial services see Araya Gómez, 1992.)

The Mexican authorities designed a new legislation which will guide the financial affairs of the newly created financial establishment composed of private financial conglomerates. The new legislation package comprises the derogation of the 1985 State Banking and Credit Act and the introduction of the new Credit Institution Act of 1990 and the Financial Conglomerates Act of the same year.

The new financial legislation contains norms which will be applicable to the functioning, conducts, and obligations of financial intermediaries. These rules can be divided into those aimed at the diversification of risk in banks portfolios and at the provision for risks.

Prudent Regulation and the Diversification of Banks' Portfolios in Mexico

Article 51 of the Credit Institutions Act of 1990 introduces important portfolio restrictions on banks' liabilities and assets. The objective is to induce the financial intermediaries to maintain diversified and less risky portfolios in their balance sheet.

With regard to the liability structure, the banks are not allowed to concentrate their obligations on a single individual and/or industrial conglomerate. The legislation then establishes a certain maximum expressed as a percentage of the bank's total liabilities which in turn will be set according to the bank's penetration index. For instance, for a bank's penetration of 10%, the liability limit is 2.5% of the bank's total liabilities; and for 5% penetration the limit is set at 4 percent.

With regard to asset portfolios, the banks are subject to norms for credit diversification. For a single individual, a bank credit cannot exceed the 10% limit relative to the borrower's net capital and 0.5% of the bank's net capital. Similarly, there are also specific limits applicable to the case when the borrower is a commercial corporation. The limits will be set at 30% and 6% of the borrower and bank net capital respectively.[6]

From a practical point of view, the question of identifying "joint

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[6] The Bank of Mexico will give guidelines on these limits twice a year and the discretion will be granted by the National Banking Commission (CNB).

risks" is a difficult one. With this in mind, the Act of 1990 defines a "joint risk" in cases whereby a member of a group will have financial obligations and/or guarantees which amount to over 50% of the group's net capital, and in cases in which they hold "related portfolios" which represent more than 50% of the net capital of one of them. Also, it considers a related group and hence "joint risk" in those circumstances where the individual's capital is owned by a third party in excess of 50 percent.

According to CNB, by March 1991, there were 355 groups of individuals which were classified as "joint risks" according to the above definition and hence were subject to a close monitoring by CNB.

The legislation permits the CNB to divide economic groups into sub-groups as a result of their activities and related aspects of production which is placed in a different segment of the market. The evidence for Mexico shows that the CNB has fractionated 10 groups out of the 355 into 60 sub-groups comprising a total of 820 enterprises. (On this evidence see Martínez Rincón, 1991.)

Clearly, the diversification criteria of ownership structure based on functional economic relationships have given more flexibility to the definition of "joint risks."

Another important element in the Act of 1990 is the limits imposed on the establishment of "related portfolios." The bank's equity holding of a commercial firm or industry should not exceed 5% of the issuer's capital or the 15% mark if the equity holding is less than 3 years. Also, the bank's equity investment should not be above 5% of its total obligations. Given the discretion of the new legislation, these restrictions enable these limits to be bypassed if the enterprise is undertaking investment in new projects. Multi-banks are allowed to acquire the ownership of a non-bank financial institution as long as it does not form part of the financial group itself. Finally, the extension of bank credit to those individuals directly related to the bank will require the approval of the Bank's management committee. This discretion is applicable to credit which exceeds 0.2% of the bank's net capital for an individual and 1% for an institution. The Act defines those related to the bank if they hold a 1% equity stake in the bank, members of the committee, relatives, and firms which are owned by a relative. In general, this norm seeks to avoid "complacency credits".

On a different point, it could be argued that the authorities should encourage the practice of requesting good quality collateral/guarantees within their credit policies. This may help to improve the quality

and reduce the risk of banks' portfolios, although it may induce moral hazard from relative wealthier borrowers. This implies that banks should not only be advised to request collateral from borrowers, but also to implement and place greater reliance on information from the evaluation of expected returns, project viability and qualitative factors about borrowers. On this matter, the Act of 1990 encourages credit evaluation based preferably on screening devices based on project and borrower evaluation.

The new banking legislation also introduces accounting conventions for asset valuation and the treatment of and provision for bad debts to avoid risky practices.[7] Prior to 1990, the banks' assets were valued in nominal terms and there was discretion on the provision for bad debts. The current legislation not only introduced the classification and assessment of banks' portfolios but also the generation of global provision for bad debts once they are recognised in the assessment. In fact, the CNB allowed a full month after the credit's expiry date as recognition lag for a bad debt and the immediate suspension of interest rate capitalisation.

The classification procedure comprises 8 criteria each of them with a specific marking. The total sum should range between 0 and 100. If the credit's evaluation is closer to 100 then it will be considered a risky credit. Let us examine the mechanism from table 6.

With the information from table 6, a classification of bank credit is constructed which should be done on a quarterly basis by each individual bank. It should include 80% of the total bank's credits and all those which are greater than US$185 thousand dollars.

From table 7, we can rank banks' credits according to the degree of risk and from this ranking set the corresponding percentage for the global reserve. For instance, for a credit given to debtor X and obtaining, according to the evaluation criteria, a total marking of 40, then it will be nearer to the boundary of C rather than B. This credit will be ranked as deficient with a moderate probability of default and it will need a global provision of 20% of its real value.

The compulsory classification and assessment of banks' portfolios and the implementation of effective monitoring and penalties by the

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[7] The evidence from Chile had shown that the rolling over of bad debts and the capitalisation of interest damaged the quality of bank portfolios thus contributing to the financial crisis of 1982-1983. For a thorough account of this experience see Harberger (1985) and Araya Gómez (1990).

Table 6

Criteria	Maximum Score
Payment records	25
Management accounts	19
Financial profile	18
Firm's management	12
Market conditions	10
Collateral's quality	8
Industrial relations	5
Macroeconomic environment	3
Total	100

Source: Martínez Rincón (1991).

Table 7

Rankings		Total Score	% Global Reserve
"A"	High probability of repayment of principal and interest	0	0
"B"	Debtor with transitory repayment problems	25	1
"C"	Deficient. Weak financial structure and service problems	50	20
"D"	High probability of default	75	60
"E"	Insolvent and no-collateral. High probability of total loss	100	100

Source: Martínez Rincón (1991).

regulators, will provide incentives for the application of conservative practices and strategies on portfolios by bankers. However, the effectiveness of this measure will depend on the flow of information available from it and the dissemination of such information among the public. Kareken and Wallace (1978) demonstrated that if the public is well

informed about banks' risks and strategies, then risk averse users will prefer those financial institutions which carry less risk irrespective of the rate of financial return being offered. At the same time, financial institutions will be following and signaling to the public more conservative banking practices and strategies as a competitive strategy.

On this issue, it can be maintained that the new legislation does not state the obligation or need for such information from the classification and assessment of banks' portfolios to become part of the public domain in the clearest and more comprehensible form. In effect, the New Act of 1990 prohibits access to valuable information on banks' liabilities and assets except when it is needed and requested by the Treasury and CNB. Then, the Bank Secrecy clause of the Act protects the interest of honest users but also gives shelter and incentive to bad practices.

The CNB's confidentiality does not allow it to give information to third parties either about the nature of the financial problem faced by banks or the quantity and quality of the financial support given to those in trouble. The Bank of Mexico will be able to provide information to all banks about the name, the sum of money, and number of financial institutions in which a particular debtor has outstanding financial obligations. However, this provision of information will depend on the discretion of the Bank of Mexico.

In my view, this aspect of the Mexican bank legislation represents a major drawback as they prevent the corrections of information failures in the market which affect intermediaries and users, and encourage the operations of illegal financial activities such us laundering drug money. A free market operates well only if it is free of corruption and fraud and such information becomes part of the public domain as a whole.

Therefore, the first drawback of the new bank legislation is the absence of an explicit mechanism to disseminate information among the public and the implicit rejection of the role to be played by competition and information in encouraging conservative and prudent behaviour by intermediaries.

Thus, prudent regulation should aim not only to set and implement prudent norms of conduct but also to provide incentives accordingly. Information and competition will be the best allies to ensure sound and diversified portfolios and will ease the monumental task faced by the regulators promoting a pattern of conduct consistent with financial stability. It follows that the better informed the public is

about the financial situation of intermediaries, the lower the optimal amount of prudent regulation required to ensure financial stability should be.

Internalisation and Provision for Banking Risks in Mexico

The Credit Institutions Act of 1990 had also introduced measures with respect to the provision of deposit insurance and the regime of banks' capitalisation. It is believed that the existence of deposit insurance and an adequate regime for banks' capitalisation will enable the banking community to respond in case of financial difficulties by having access to a special fund constituted for this purpose and to protect users of financial services.

During the period of nationalisation, the Bank of Mexico gave some financial support to those intermediaries which had a solvency problem. This support consisted of advances of returns from accumulated reserves that they maintained with the Bank of Mexico. The Banking and Credit Act of 1985 enforced the implementation of a compulsory fund to provide financial support. A formal committee was set up to organise and manage the fund. It was integrated by the Secretary and Sub-Secretary of Finance, the Director of the Bank of Mexico, and the president of the CNB. Also, there was a sub-committee to control and operate the fund.

The Fonapre (Multi-Banking Institutions Supportive Preventive Fund) was made up by banks' compulsory contributions to support those institutions with financial troubles. The support provided by the fund was to be given in different forms, in particular in terms of deposits, credits, and lending extended to financial institutions, and/or the purchases of equity stakes, banks' assets and liabilities among other things.

The New Act of 1990 provided for the creation of the Banking Protection Saving Fund as a replacement of the Fonapre. This new fund presents some specific characteristics in relation with its functioning, although the objectives are just the same as the old one.

This fund not only aims to provide support to financial institutions but also to give direct protection to investors and users. At the same time, financial support from the fund, unlike the Fonapre, will need to be guaranteed by equity stakes type A, government bonds, and/or any other assets which may be considered as a guarantee. This is very important since the proprietors are acting as guarantors with their own assets of the solvency of the financial institution.

With respect to the annual individual banks' contribution to the fund, it was agreed that it should not exceed $5 or $7 for every $1000 of banks' financial obligations. However, there are two points of concern about the creation of the fund and the individual contributions stated by the New Banking Act.

The first one is related to the banks' contribution to the fund which is determined on a pro rata basis and thus unrelated to individual banks' risk exposures. Economic theory has demonstrated that an insurance policy with a premium uncorrelated with risk will induce moral hazard and will represent a subsidy to risk takers. This means that even if the financial support delivered by the compensation fund is to be guaranteed by the banks' assets, the individual's contribution to the fund unweighted by risks will induce intermediaries to be inclined to risk taking with the subsequent deterioration of their portfolios. In effect, O'Driscoll Jr. and Short (1984) argued that the system of deposit insurance in the US together with the lender to the last resort function of the FED in a more deregulated environment have altered the risk preferences of US financial institutions. Moreover, Clair (1984) found empirical evidence of the effect of improperly priced federal deposit insurance and greater risk taking of US financial institutions.

Secondly, the belief that there is an implicit bailout provision by the Central Bank will encourage less prudent and more risky decisions by both depositor and bankers. This expectation derives from the idea that the fund cannot deal with liquidity and solvency problems by the whole group of banks in the case of contagious panic. Also, the evidence from the financial crisis of 1982 and the nationalisation of the banking system should enhance such an expectation from the public.

In consequence, this paper not only considers desirable the creation of a protection and assistance fund in case of financial distress, but also that the individuals' contributions be determined according to individual bank risk rather than on a pro rata basis. At the same time, the role of prudent regulation needs to be enhanced if there is the expectation of the existence of implicit bailout arrangements by the government.

The new legislation also contains rules with respect to minimum capital requirements so that the degree of capitalisation by every bank enables them to respond to their financial obligations. In addition, there is a regime for the investment of the banks' capital and reserves.

As we compare the role of capital between a commercial firm and a bank, we find that in the former the firm's capital is used for its main commercial activity, whereas banks are intermediaries between savers and investors. In other words, banks perform liability and asset operations. Thus, the role of a bank's capital will act as guarantee of its liabilities and as a signal of its solvency.

The Act of 1990 specifies a minimum capital requirement and a minimum net capital since the volume of banks' operations is increasing. In the past, during the regime of specialised banking, the minimum capital requirements varied according to the nature of the financial institution and the region of location. Whereas today, the capital requirement for a multi-banking structure is set at 0.5% of the total paid-in capital and reserves.

The Act of 1990 establishes as capitalisation requirement an initial minimum net capital of 6% of the sum of assets and liabilities and the attainment of 8% by 1993.[8] These minimum capitalisation requirements are determined according to the assets' risk exposures.

These norms about capitalisation introduce a regime in which the minimum net capital is set according to assets and liabilities weighted by risk unlike the period of specialised banking whereby the minimum net capital was set relative to the banks' liabilities only. At the same time, the new bank legislation on capitalisation is moving towards international standards established by the Basle Agreements of 1986.

The regime of prudent regulation also contains a regime of sanctions in those cases in which the Act is violated. The CNB will impose fines of 1% of the bank capital and reserves in case of non compliance with the banking legislation. Equally important is the introduction of supervision and monitoring procedures, responsibilities which fall on the CNB according to article 125 of the 1990 Act.

The duties and responsibilities of the supervisors are related to the revision of the banks' general balance, checks of the backing information that makes up the accounting statements, financial evaluation of the banking system as a whole, risk analysis, asset valuation, capitalisation and the investment regime for capital and reserves among other things. Therefore, the CNB's officers are responsible for investigating the compliance by financial institutions with the Credit Insti-

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[8] Net capital is defined as paid-in capital+authorised capital and reserves+subordinated obligations with a capital conversion clause-equity investment. As a complement we also include subordinated obligations with no capitalisation clause and reserves for bad debts.

tutions Act. At the same time, the CNB is also responsible for field inspections which are carried out by auditors and inspectors. Such visits can be conducted on a general and/or selective basis and will concentrate on the evaluation of banks portfolios, both assets and liabilities, and the general functioning and operations of intermediaries, including those based in different regions.

It is clear by now that the process of financial deregulation has been accompanied by the implementation of prudent regulation contained in the Credit Institutions Act of 1990. The scope of this new Act is seen to be very wide as it includes not only norms for portfolio diversification and risk provisions but also procedures for the supervision and inspection of financial intermediaries by the CNB. Also, the Credit Institution Act is complemented by the Financial Conglomerates Act of 1990 which introduces norms of conduct and defines the limits of operations and ownership by these conglomerates.

The success of the new bank legislation to ensure financial stability will depend on the effectiveness of the regulators to promote more conservative practices by bankers. On this point, market participants can play a role by forcing agents to follow strategies that are socially beneficial. Thus, the provision of information and competition should also be an important help for the regulators. It is clear, as we have seen earlier, that this partnership needs to be encouraged in Mexican financial legislation.

At the same time, and equally important, a new institutional framework needs to be considered as a part of a modern banking legislation. In fact, the effectiveness of supervision and inspection by CNB inspectors will depend on the quality of factor inputs, both capital and labour, applied to this activity.

In a world in which financial innovation and structural changes are occurring at a rapid pace, regulators will need to ensure the achievement of the highest standards and competence levels of their personnel. This means that it is necessary to recruit motivated and qualified candidates and provide them with updated training programmes of the best quality. At the same time, the implementation of computerised information systems like software and mainframes will be necessary for efficient and effective supervision. This will enable the supervisors to implement and apply a more sophisticated statistical method for early warning signs.

The formation of efficient and well motivated civil servants will also require an incentive structure to prevent them from moving to

the private sector in which the rewards are greater. The development of a civil servant's career, independent of any political cycle and interest, will need to be encouraged in Mexico's modernisation strategies. The new banking legislation does not address such issues and changes or proposals have yet to be made.

A way forward for developing countries will be to establish regulatory responsibilities and to ensure sound standards and less risky strategies by financial institutions in the industry itself. In other words, a proposal of a system of self-regulation within a statutory framework and administered by a body independent of the government and staffed by professionals should be considered as a future institutional regulatory structure. The experience of UK financial regulation is a useful guide.[9]

The present banking legislation in Mexico which rests primarily in government institutions needs to be implemented and decentralised according to the needs and the structural changes which are evident in financial markets. The old regulatory institutional structure is becoming obsolete and relatively expensive. More important, it cannot fulfill its new role as watchdog and promoter of sound and conservative banking practices in a more competitive and unregulated financial market unless decisive steps are taken to introduce a market approach to regulation.

Concluding Comments

The purpose of this paper was to force us to reconsider our understanding of the process and need of financial deregulation and the new role assigned to institutional changes as an additional condition for a successful transition towards a more competitive and unregulated financial market for a developing economy.

The evidence presented in the paper showed us how damaging government regulation can be and how in its extreme form it can lead to financial repression. The static and dynamic inefficiencies of interest control and the implicit and explicit taxation on financial intermedia-

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[9] The UK Financial Service Act of 1986 aimed at the provision of prudent and investment standard, including criminal sanctions and an industry compensation fund. The emphasis was put on the role of self-regulating organisations in charge of monitoring professional conduct among their selected members as well as managing the investor protection fund. (See Seldon, 1988.)

tion made readily acceptable and desirable the introduction of reforms that would lead to financial deregulation.

The theory and the evidence from country studies indicate that the success of financial deregulation not only required a successful stabilisation policy and the correct dynamics of the liberalisation reforms, but also the need for institutional changes to ensure a stable path towards a more competitive and freer financial sector. In this respect, we observe a change in approach with respect to deregulation and regulation as they became complements rather than substitutes.

The case of Mexico is quite relevant since the authorities have taken these views in the implementation of the financial reforms. The financial deregulation which began in 1989 was accompanied by the new Credit Institution Act of 1990 which contained very specific norms of conduct and rules to ensure the observation of prudent practices by financial intermediaries in the new environment. In other words, the transition period from financial repression to the establishment of a more *laissez-faire* financial sector included the provision of prudent regulation by the Mexican authorities.

The revision of the new banking legislation in Mexico suggested some drawbacks in the functioning and operation of the regulator *vis-à-vis* the regulated industry. I already stressed the need to enhance the role of information and to set a more efficient scheme for the provision of deposit insurance.

Although the idea of the modernisation of the institutional structure in Mexico is embedded in the new banking legislation, the concept of modernisation should not only include a new set of incentives but also training schemes to update the old administrative structures and vices inherited from government interference in the financial sector in the past.

There is an implicit belief in the paper that the modernisation of the regulative structure must include steps towards the decentralisation and independence of new regulators from the discretion and influence of the government and politicians. This implies that self-regulating organisations operating in the different segments of the financial system will be an effective and less costly alternative to State regulation.

The role of regulation and the regulator today is not to curtail competition and to distort the irreplaceable allocative mechanism of the markets as it was in the past, but rather to enhance the role of the market and competition in financial affairs along lines which will en-

sure the efficiency and in particular, the stability of the financial sector. However, we should not be blind to the reality that the success of any economic or political reform will depend on the country's institutions. Therefore, reforms should also be introduced in the market for regulation and thus dismantle state monopoly by decentralising and delegating responsibilities to the private sector. This is beyond any doubt the way forward and the future of regulation for the 90s.

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