Efficiency in Financial Regulation and Reform of Supervisory Authorities: A Survey in the APEC Region.

August 2002

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Río Hondo 1, San Angel, C.P. 01000 México, D.F. Tels: 628.4000 exts. 4675, 3748
Fax: 490-4678; E-mail: cueto@itam.mx , atinoco@itam.mx, rtovar@itam.mx

EXECUTIVE SUMMARY

Traditionally, the financial regulation it used to structure itself on the basis of specialized organizations, each one responsible to supervise the intermediaries by the type of activity that was carried out. The current trend is toward an integrated model that reunite in one or two organizations the different functions that previously were responsibility of diverse specialized authorities.

The discussion with respect the advantages and disadvantages of adopting an integrated model of supervision is relatively recent although non new. In spite of the decisions about completely integrate the regulation in the Scandinavian countries was part of an initiated evolutionary process that began at middle of 80´s Unlike what it happened in Denmark, Norway and Sweden, the proposal made by the Wallis Committee to reform the organizational structure of financial regulation in Australia gave rise an intense discussion between government and regulated institutions. As result of this, the Australian government adopted a scheme of twin peaks by mean that the regulation is handle only by two authorities, on that consolidates the prudential regulation and other that consolidate all conduct of business regulation. Some of the most intensive debate with respect to this subject was in the United Kingdom, from the proposal of reform present by the Ministry of Treasure and that finally concluded with the creation of the Financial Services Authority.

The debate between governments, financial intermediaries, and academic have put in clear that the dispersion and duplicity of regulatory jurisdiction, a overlap and often confused normative frame, and the lack of coordination and cooperation among the diverse agencies, are some of the deficiency in the model dispersed of supervision. Some countries are prime cases for a reform of the financial regulation institutional organization in order to encourage the development and efficiency of the financial entities without put in risk the safety and soundness of the financial systems.

From the modern theory of economic regulations it is possible to assess a regulatory regimen by how close is to address the market failures on the market supposed to regulated and how minimal is the social cost it imposed over its regulated entities and the market as a whole. The market failures characteristic in financial markets comes from asymmetric information phenomenal.

The recent evolution in the financial markets, guided by innovation and liberalization, requires a regulator high efficient in a regulatory task intensive in information coordination cross multiple financial product lines inside a highly integrated financial groups in a rising competitive environment.

A regulatory regime of fragmented supervisory authorities increases the risk of regulatory failures therefore not always capable to exploit the economies of scale and scope in a regulatory task intensive in opportune information gathering and processing, also exposed to regulatory forbearance and becoming interest groups by themselves. In fact, becoming each regulator a monopoly over its regulated entities, creating rents by protecting a turf of captive supervisory powers incompatible and unsynchronized with each other. Therefore, incrementing the cost of regulation.

The reform toward a single regulator finds its objectives in obtaining economies of scale and scope in the vertical integration of specific unambiguous regulatory objectives. In a way similar to the integration of successive monopolies in order to avoid double or triple marginalization of monopoly rents over a single processes. Economies in the information gathering and processing are guided to efficient regulation in an independent institutional framework to avoid regulatory failures. The experience in this reform is recent in the cases of Australia, Japan and Korea after the UK and Scandinavian experience.

Considering the cost of regulation as a fixed cost on each domestic financial market. An efficient setting would be a low fixed cost relative to a high sized financial market. The relative performance efficiency between the multiple regulatory agencies model and the single regulator model is empirically an open question, despite of the international spread of the single model in the last decade in more than ten countries. In cases like the United States and Canada the multiple agencies and double layer (at federal and state level) regulatory model does not clearly implies a costly obstacle to its financial markets growth and evolution. However, low income countries with severe underdeveloped financial markets and costly multiple authorities scheme calls for a prime candidates to reform its financial regulatory. Using indicators from supervisory cost and financial activity size, Mexico appears to be the economy with the highest fixed cost in an underdeveloped or small size financial activity relative to the GDP therefore, it means a highly inefficient regulatory organization. Urgent supervisory institutional scheme reform is required according with international benchmarks.

The present paper was elaborated during June and July 2002, under direction of Prof. Ramiro Tovar Landa Ph.D.

1. Supervising Financial Intermediaries: A complex dance between innovation and regulation.

Financial institutions provide payment services and a variety of products that enable the corporate sector and households to cope with economic uncertainties by hedging, pooling, sharing and pricing risks. A stable and efficient financial sector reduces the costs and risk of investment and trade of goods and services. Financial markets provide an important source of information that helps to coordinate the decentralization of decisions within the economy. Rates of returns in financial markets guide households in allocating income between consumption and savings, and in allocating their stock of wealth. Firms rely on financial markets prices to inform their choices among investment projects and to determine how such projects should be financed. Nowadays the financial services are experiencing an era of rapid innovations, characterized by the development of two technologies, data processing and telecommunications, which are at the heart of the financial services and its competitive environment.

The underlying technologies of finance, data processing and telecommunications, have becoming dramatically more powerful and less costly on almost daily basis. These improved technologies have allowed to innovate and improve the management and processing of data, assess risks, and thereby design new products and services, often using convergent services, and mixing traditional products in order to offer on new ones (e.g. banking and insurance) that can better meet the financial demands of individuals and firms. Moreover, these products and services can be offered across wide geographic areas. The securitization of many categories of previously illiquid assets, most notably, real estate mortgages and credit card receivables are good illustrations of these developments.

In the financial markets, as other regulated sectors, inevitably coexist regulation and innovation, a complex and often socially costly relationship. Innovation consists of firms′ developing new products or services and/or new production processes. Often, but not always, the new products are based on new processes; sometimes also new organizations and organizational innovations, are involved. Innovation in products and processes, are not new to the financial services sector. Firms in the various sub-sectors of finance have a long history of new instruments and services and of developing improved "back office" processes to reduce the costs of existing services an to support the offering of new ones.

The appearance of new financial products (e.g. derivatives) has implied new complexity levels with respect to the traditional financial products. Financial product innovation implied greater complexity, and often, their greater leveraging possibilities open new opportunities for risk-taking, their broad utilization involve new informational requirements to individual investors, also the managers of financial intermediaries pose great prudential regulatory concerns (i.e. banks and other depositories, insures companies etc.) because the use of these instruments as part of a deliberate risk-increasing strategy increase.

Markets liberalization policies toward the direction of less restrictions and protectionism, have reinforced these technological improvements, yielding heightened levels of competition throughout the financial services sector. In turn, these greater competitive pressures have forced incumbent to find improved and less costly ways of providing financial services, and deregulation has made it easier for innovations to enter these markets. The users of financial services have more choices and opportunities over wider geographic areas, including the opportunities to make mistakes; the incumbent purveyors of financial services face more competition. Inevitably, this rapid change, urge incumbents to successfully adapt, other will falter, merge or possibly fail, the competitive pressures do rise a set of regulatory concerns because financial failure among the financial intermediaries increase and, therefore, the task of typical financial regulation become more complex. At present time it is difficult to separate market-derived risk from traditional banking risk, at the same time banking and insurance tend to converge.

It seems possible to have an increase in competition coupled with a reduction of insolvency risk via improving diversification, via consolidation, as an outcome of the liberalization process. Size provides the potential of exploiting scale economies from overhead in administrative and back-office operations, information technologies, and in investment-banking type operations related to information gathering and fund management.

Also size may help in archive scope economies, of combining different products lines because increases the relationship value and decreased averaging marketing costs, also such economies exist between commercial and investment banking. Consequently, the distinction between commercial banks, securities firms, insurance companies and other financial institutions has become blurred,

and large diversified financial conglomerates have been created that span the spectrum of financial services and global markets[1].

Traditionally, prudential supervision[2] has focused on assessment of the quality of the bank's balance sheet and loans at a point in time and then determines whether the bank complies with capital requirements and restrictions on assets holdings. Because this kind of prudential supervision is based on regulatory rules, it is referred as a pure regulatory approach based in the one-size-fits-all model. However, the traditional approach is no longer adequate in which financial innovation has produced new markets and instruments that make it easy for banks to make huge beats easily and quickly. In this new financial environment, a bank that is quite healthy at a particular point in time can be driven into failure extremely rapidly from trading losses.

The safety and soundness scrutiny of banks regulators should be strengthened in a period of rapid innovation, market concentration coupled with heightened competitive pressures, may lead to take high risks at the expense of depositors or deposit insurers. New policies toward the safety and soundness regulatory instruments include better ways of measuring capital (i.e. market value accounting framework) and of measuring risk (e.g. financial stress tests). This change in financial environment has resulted in a major shift toward a supervisory forward looking approach where the regulator focus less on compliance with specific regulatory rules and the risk of the financial instruments currently in the bank's portfolio and more on the soundness of the bank's management practices with regard to controlling risk. More recently, emphasis is added to reinforced supervision by disclosure requirements in order to increase transparency and foster market discipline, as well as allowing banks to relay on their own internal models to assess and control risk.

This represents a move from rigid to flexible view of capital requirements[3]. Supervisors will have to assess as efficiently as possible how well banks are

[1] International Monetary Fund, " *International Capital Markets 1999. Annex IV*".
[2] Traditionally prudential supervision has its origin in the impossibility of the users by themselves to judge the safety and soundness of the financial institutions that operates in the market. This impossibility is come loose from the imperfection in the information received by the users, the problems related to the moral hazard and the asymmetric information, as well as the fact that the later behavior of the intermediaries, to the date of hiring or buys, affect the initial value of subscribe contracts and acquired products.
[3] The 1999 New Basel Capital Accord advances three pillars: minimum capital requirements, supervision and market discipline, allowing banks to choose from a menu of approaches to measure risk.

matching their capital to the risk assumed and disclose information on their capital structure, accounting practices, risk exposures and capital adequacy in a timely manner. In summary, capital requirements plus efficient supervision and market discipline are main factors to maintain sound financial system[4].

Regulation also can be a hindrance to innovation, and actual or prospective innovation may be a precursor to subsequent regulation. The social welfare consequences of these complex interactions, and the implications for the development of public policy, are themselves a task to regulators, but an understanding of the processes of innovation and of regulation can clarify the interactions and thus help to structure the public policy debate.

The economic rationale for the regulation of financial intermediaries requires being point out in order to understand the need of an efficient regulation. Financial intermediaries are firms that hold financial assets (e.g. loans, mortgages, bonds, equity securities) and issue liabilities (such as deposits, insurance policies, pension obligations, mutual fund shares, etc.) on themselves thereby intermediating between their liability holders and the ultimate investments to which their liability holders' funds have been allotted. However, this intermediation generates some substantial market failures that a proper regulation can minimize or preclude in order to have the proper market incentive to have and efficient market outcome.

The rationale for regulation in a broad sense is the governmental intervention in the conduct of an array of economic agents in order to be a tool for correcting the shortcomings from market performance. These potential market failures include: a) the exercise of market power (monopoly); b) positive or negative externality effects; c) public goods phenomena; d) pervasive uncertainty; and e) asymmetric information among the parts of marketplace traders. In an ideal setting, regulators would correct and prevent the imperfections of markets at the minimum cost. In financial intermediation, the source of market failures came from the substantial weight of debt in banks' capital structure and the wide dispersion among small investors of this debt. The large amount of debt increases the risk of failure, while the dispersion on small investors limits their ability to monitor the activities of the banks. This implies that the banks have a

[4] Vives, X. "*Competition in the changing world of banking*", Oxford Review of Economic Policy, Vol. 17, No. 4. 2001.

moral-hazard problem that induces them to take too much risk given their limited-liability charters[5].

Further, the social cost of failure of banks is perceived to be large. This social cost includes the cost of financial and economic distress, the former are typically borne by the bank's creditors and shareholders and hence internalized in their decisions. Other costs are negative externalities, such as the loss of informational capital and the destruction of fiduciary role between the public and financial entities, leading to the disruption of the payment system.

The external effects, a typical market failure, come when a solvent bank may be subject to a purely speculative panic, depositors withdrawing the funds and the bank being force to liquidate assets quickly at a high cost due to the excess of supply of assets generates a fall in its price. The systemic risk owing to contagion from the failure of an entity, which may give rise to a strong negative externality both for the financial sector and for the real sector of the economy. Market devices to generate information and to internalize the cost of risk assumption are efficient to reducing the scope of the principal-agent problem[6].

Deposit insurance and the lender of last resort have been put in place precisely to face the potential fragility of the financial system. Those facilities may compound the moral-hazard problem. Fragility, severe moral-hazard problem and failure has been associated with a large social cost, typically of a systemic

[5] A crucial market failure in the financial system is asymmetric information in which one party to a financial contract has substantially less accurate information than the other party. Asymmetric information leads to two basic problems in the financial system: adverse selection and moral hazard. Adverse selection in an asymmetric information problem that occurs before the transaction occurs because lower quality borrowers with high credit risk are the ones who are most willing to take out a loan and pay the highest interest rate. Thus, the parties who are the most likely to produce an undesirable outcome are the most likely to be selected. Moral hazard occurs after the transaction takes place because the lender is subjected to the hazard that the borrower has incentives to engage in activities that are undesirable to the lender, the borrower has incentives to shift into high risk in which the borrower does well if succeeds but the lender bears most of the loss if fails. In banking the moral hazard come from high enforcement cost to the public that make too costly to prevent moral hazard in loans funded with depositors resources even with a fully informed bank.

[6] The systemic effects suppose and deep asymmetric information between the public and the banks. Leaving the system vulnerable to runs, the subordinated debt may be efficient as a risk sharing and/or as an incentive mechanism, because subordinated debt is uninsured debt that is junior to insurance deposits, but senior to equity. When information is growing from the market a run can also be brought on by information regarding bank solvency, and it may have a disciplinary effects on the assumption of risk by financial entities.

nature, such phenomena are the justification of regulation as an answer to these potential and costly market failures. However, the regulation must be right to prevent such a costs and in an efficient, at minimal social cost.

Unfortunately governmental entities and also their regulatory processes, are full of imperfections as difficulties in formulating clear and implementable goals, in establishing incentives for efficiency, in dealing with problems from asymmetric information between regulators and the parties they are supposed to regulate and becoming themselves into interest groups subject to be bias in order to preserve authority and management. The result could well be inefficiencies that are at least as substantial as the market imperfections that the regulatory process was supposed to correct. With imperfections present in the regulatory processes, as well as in the market processes, there are no assurance of purity neither of motives in regulation nor of efficiency in criteria and outcomes. Innovation has become the main engine to impulse the needed reform of inefficient regulatory institutions.

The fundamental policy is how these new instruments should be applied and by which kind of regulator. Nevertheless, bureaucratic rivalry over regulatory turf ought not be allowed to delay the delivery of the benefits and efficiencies of the new instruments. An important impediment to successful prudential supervision of the financial system is the principal-agent problem in which the agent (a set of regulators or supervisors) does not have the same incentives as the principal (the legislative representation) and so act in their own interest rather than in the interest of the principal.

Because of the principal-agent problem, regulators have incentives to do the opposite and engage in regulatory forbearance[7]. Incentives to hide insolvent banks, because poor performance, characterizes "*bureaucratic gambling*" with the objective of minimize political cost for loose supervision in answer to close relationship between political cycles and the regulatory staff. This phenomenon is avoidable limiting the principal-agent problem by making supervisors accountable if they engage in regulatory forbearance. Market based supervision and opening up the actions of bank supervisors to public scrutiny makes regulatory

[7] Regulatory forbearance leaves insolvent entities operating which increases moral hazard incentives to take on excessive risk because an operating but insolvent institution has almost nothing to lose by taking on colossal risk.

forbearance less attractive to them, thereby reducing the principal-agent problem[8].

Supervision of the global financial system still largely fragmented both functionally and geographically, while global financial markets are becoming increasingly integrated. The innovation trend is causing the markets for some financial products and services to widen beyond national boundaries, therefore there are calls for and efforts at international harmonization of financial regulation to improve supervision both across functional lines and borders. These efforts have gone the farthest in banking, followed by securities and then insurance. The gains that come from harmonization of information regulation (e.g. in standardizing accounting framework and reporting requirements) reduce transaction costs of both, the purveyors and users of financial services.

2. Reforming Institutions in Financial Supervision. Toward a Single Financial Regulator.

The current financial environment is leading the innovation on the regulators institutional framework. The traditional model where the supervision is performed over each single category of financial intermediary and assigned to a distinct agency, each intermediary and market has only one supervisory authority as a counterpart is being phase out because fast pace innovation, and the regulation institutions are lagged behind from the market evolution.

Traditional model has been rise, in the presence of entities entitled to perform a convergent financial intermediation activities, to costly distortions in the supervisory activity caused by the enforcement of different dispositions for operations of the same nature that are executed by different entities. The disadvantages of this approach are increasing by the progressive despecialization of the intermediaries, related to the growing integration of both markets and instruments or products, common to the financial conglomerates.

Barth, Caprio and Levine (2001) have demonstrated from a sample of 107 countries, at the end of the 1990's decade, a lack of statistical link between bank performance and official supervision. Specifically, the supervisory power is not related to the claims on the private sector by deposit money banks as a share of GDP or bank efficiency measured by interest margins and overhead cost or the level of non-performing loans. In sum, those features of official core supervision

[8] Mishkin, Frederic S., "*Financial Policies and the Prevention of Financial Crises in Emerging market Countries*", NBER, Working Paper 8087, January 2001.

are not strongly linked to bank development and efficiency[9]. This empirical evidence supports the reform of the regulatory instruments and the reform of the supervisory institutional organization.

At the begin of 2002 a single financial regulators outside the central bank are set in UK (1998), Australia (1998), Denmark (1988), Norway (1986) Sweden (1991), Iceland (2001), Japan (2000), Korea (1998), Hungary (2000), Latvia (2001) and Estonia (2002). Austria, Finland, Germany, Ireland, South Africa and Switzerland are known to be considering the potential merits of a similar move. The trend is clear, fewer central banks are now responsible for banking supervision and new supervisors are been created to regulate a wide variety of financial institutions and services from one agency.

In opposite, countries in which regulatory framework is characterized by the operation of several financial regulators, each intermediary is subject to the regulatory tools of more than one authority with specific assignment of competencies and the result is not necessarily univocal and all-inclusive in practice. Therefore, the way the regulatory instruments are set up to the regulated entities may become a destabilizing factor because different authorities might have overlapping instruments or with objectives potentially in conflict with each other. Therefore the intermediaries may have to justify the same action to a whole set of authorities contemporaneously, even though different reasons, leading to a deficit of efficient controls because the exact areas of supervisions are not clearly identifiable in specific cases.

Competition between supervisors actually induces laxity into regulation performance, especially if financial institutions can choose whom they are supervised by because the intermediaries might be induced to choose their legal status in a way, which is, contingent on the different rules that discipline or supervise different entities, as a strategy in order to save cost of compliance. In fact each supervisory authority become an interest group competing for funding by competing to regulate as a broad set of entities as possible. The incentives generated hinder an efficient risk-based approach to regulation and to resource allocation.

The single-regulator supervisory model is not just based on one control authority with responsibility over all markets and intermediaries. This authority would be concerned with all the objectives of regulation in an efficient framework of

[9] Barth, James R., Caprio, Gerard, and Levine, Ross "*Bank Regulation and Supervision: What Works Best?*" mimeo World Bank, August 2001.

independence and incentives. In the regulatory practice, the centralized supervisory model has typically characterized early stages of financial system development, often in periods when the central bank was the only institution that supervised the activity of financial intermediaries.

In recent times, because fast pace innovation and deregulation, the English brought this model back into being with the creation of the Financial Services Authority[10], leading to a more efficient organization of regulatory activities including a reduction in the costs of regulation itself. In addition, it was considered useful to have just one agency accountable to the Parliament and to the market.

The advantages of the single regulator approach lie mainly in the economies of scale and scope that it produces. A fixed cost and logistical expenses with a unified management structure; and a unified approach to standard setting, authorization and enforcement generate decreasing average cost per supervision operation[11]. Conglomerates and groups operating in a variety of financial activities do not require a proliferation of supervisory units.

The economies of scope come from synergies between the roles of prudential supervisors of different financial activities, there are increasing need for them to co-operate among each other to improve their understanding of the overall financial supervision. This increasing need for co-operation and co-ordination justify the establishment of a single prudential supervision on the grounds of effectiveness in setting standards for regulated firms, the analysis about the status of individual entities and market wide issues and a considerably more effective way to contribute and adopt international co-operation than when the regulatory responsibilities are split between multiple authorities.

The economies of scale and scope from the unified regulator approach generate a cost savings to the regulated entities, particularly with respect to multi-functional groups or conglomerates. The costs of supervision charged to the subjects regulated and/or to the public finances decreases, and there is less

[10] The British merged the pre-existing supervisory authorities, part of the Central Bank staff, the Securities Investment Board, the directorship of the Department of Trade and Industry competent in the insurance field and the Security Regulatory Organizations. However, the single-regulator model was first developed in Scandinavia (Denmark, Norway and Sweden), a decade before.

[11] The experience in the UK is illustrative, the FSA is costing less, in real terms, between 1998 and 2002 than the sum of the predecessors' regulatory bodies and its budget fell in real terms in each of the four years from 1998/99 to 2001/02 (Financial services Authority, 2001).

room for "*regulatory arbitrage*", the social costs of the regulation is abated because a low transaction cost and resources waste in unsynchronized and redundant processes and information collection.

However, the validity of this model depends of a clear definition of regulatory objectives to perform and procure a high degree of efficiency on its internal organization, if the areas of competence and specialization are not well-structured and coordinated will be impossible to exploit the economies from the reform. There is a risk to slow the decision-making process and create excessively bureaucratic agency because the reform toward a single authority is only limited to the merging of a set of pre-existing regulators.

The single authority model has the advantage to implement a clear set of incentives to ensure the minimization of such performance risk. A policy of accountability for its performance against its statutory objectives, for the regulatory regime, for the cost of regulation and for the regulatory failures is easily to set in a single supervisory authority rather than inside a multiple and overlapping regulation regime, where no one internalize the cost of regulatory forbearance and capture.

Other set of risks that can be minimized are: i) a unique regulator might render collusive relations with regulated entities more immediate and direct ("*regulatory capture*"); ii) a single regulator outside the central bank mean information weakness from losing ability to directly exploit informational synergies from banking supervision in the process of monetary policy operations. The potential effect on information flow can be alleviated if there is sufficient and opportune coordination and information sharing between the supervisor and the central bank[12], and iii) effective banking supervision requires independence of political agenda. The independence gains from central banks guarantee the minimization of conflictive objectives or vicious role between lender-of-last-resort and effective supervision[13]. If a single regulator outside the central bank mean loosing independence or starting from scratch before political forces, the reform is meaningless.

[12] In a survey of 123 countries in 1999, 72% of the sample prudential banking supervision is still the responsibility of the central bank (only few cases in the finance ministry as Mexico). At the end of 2001, in a larger sample of 143 countries, 69% of the cases the central bank is still supervising financial intermediaries. Central Banking Publications, 2002.

[13] In Mexico there prudential regulators in and out the Central Bank, with the outside regulators dependent from the Finance or Treasury Ministry.

3. Financial Supervision Reform in the APEC Region.

In the APEC region, there are three countries, which have implemented reforms toward a single financial authority or regulator outside its Central Bank: Australia, Japan and Korea where the Japan and Korea adopted a model similar to the UK[14].

Australia. Since July 1998, it adopted a twin peak model for its regulatory structure reform. The Australian Prudential Regulation Authority (APRA) is an integrated prudential regulator responsible for deposit-taking institutions, life and general insurance, pension funds, and credit associations. The Australian Securities and Investment Commission (ASIC), a conduct of business regulator, setting and enforce standards for the financial market. These standards aim to provide market information and consumer protection and confidence.

Japan. Before 1998, the Ministry of Finance was responsible for the supervising the financial system. Underneath it, the Bank of Japan and the Securities and Exchange Surveillance Commission both played subsidiary roles. In June 1998, from a financial crisis, the Financial Supervisory Agency was separate from the Ministry to become a unitary regulator of all financial institutions. On July 2000, the Financial Services Agency (FSA) was created from the merger of the FSA and the Financial System Planning Bureau from the Ministry. Currently operates as a single regulator with broad powers over the supervision of financial intermediaries and the surveillance of securities transactions.

Korea. At the end of 1990's, the Korea case illustrated the risks from fragmented supervision before a financial crisis. Lax prudential standards and supervisory forbearance were major deficiencies in the banking system. The Bank of Korea supervised commercial banks, but the Ministry of Finance supervised merchant banks. Defects in the soundness of banks were not immediately fix once detected by supervisors, and changes to prudential regulations were made to allow banks to report profits and capital positions that were misleading. Knowledge of such supervisory forbearance, together with less than fully transparent accounting, meant that banks were not encouraged to take speedy action to improve their solvency. On April 1998, the Financial Supervisory Commission was establish as an independent integrated financial

[14] Courtis, Neil and Milne, Alistair "*Annual Survey of Supervisory Developments 2001/2*", Central Banking Publications 2001

supervisor and was create by consolidating four previous financial supervisory authorities.

The rest of the counties in the APEC region have a traditional regulatory framework: multiple regulatory agencies inside and/or outside the central bank and/or the commerce, finance or treasure ministries[15]. Remarkably complex cases are Canada and the United States; both have multiple regulators at federal and state level. The systems are complicated by the fact that many financial institutions can be incorporated at either state (provincial) or federal level, intermediaries incorporated at the federal level may be subjected to further regulation by state level supervisors in areas like standards and consumer protection.

To have an estimation of the economic cost from a scheme of multiple regulators or supervisory entities to the financial systems is an extreme difficult task because there are several sources of inefficiencies in its regulatory performance. The cost associated to such inefficiencies range from overlapping red tape to staff time expenditures, multiple standards and asynchronous supervisory tasks to legal fees, expenses and penalizations across heterogeneous financial intermediaries.

Using an international benchmarking, if the explicit cost of the regulated entities, budget and/or staff, is a fixed cost needed to the daily performance of the financial system. It is possible to assume that a less the magnitude of the fixed cost to running the system and bigger the size of the financial market, more efficient or less costly will be the financial transactions regulation or supervision. In others words, the scale economies will be more ample over the financial markets size[16]. A trend toward a single supervisor lead to economies that generate a resources requirement growth rate less that size growth rate of the financial markets. An efficient scenario should have a high financial market size and a relative low fixed cost of regulation.

Therefore, the indicators should be related to the financial market size and to the regulatory agencies cost (budget and staff) in order to figure out the size of the fixed cost incurred to running the financial system in each domestic market

[15] Only Singapore has the complete regulatory authority over the overall financial system inside its central bank.
[16] When the scale is small, fixed cost per unit of scale is large. As scale increases fixed cost is spread over more unit of output and fixed cost per unit of output falls. The cost curve will be lower if the fixed cost is low and the operations scale is large.

economy. In order to get a measure of the financial transactions size the indicator must be close related to the public holdings of financial assets related to transactions regulated because their association with potential market failures, consistent with the regulation rationale.

Frequently the indicator used is the *Total Financial Assets*, however the central bank assets inclusion made it non-necessarily appropriate to consider it. A prime candidate to the size measure is the *Liquid Liabilities* (currency plus demand and interest-bearing liabilities of banks and non-bank financial intermediaries) this is the broadest available indicator of financial intermediation.

Liquid Liabilities is a typical measure of financial "depth" and thus of the overall size of the financial sector, without distinguished between the financial sectors or between the use of liabilities[17]. By aggregating the liquid liabilities of a broad range of banks and non-banks, *Liquid Liabilities to GDP* is a general indicator of the size of financial intermediaries relative to the size of the economy[18]. Other indicators are partial and not close related to the market failures that justify regulation, *Bank Assets to GDP* provides a measure of the overall size of the banking sector and, by aggregating bank claims on the private sector, *Claims of Deposit Money Banks on Private Sector to GDP* is a general indicator bank activity in the private sector.

From the data about cost and financial development indicators, extreme cases of underdeveloped or undersized financial markets with a high fixed cost of regulation are Mexico and Russia. Therefore, both countries have a relative inefficient financial supervisory organization under international benchmarking. People's Republic of China and Russia are transition countries, evolving from a centrally planned to a market based economy; the institutional infrastructure and their financial markets are still in their genesis (see diagram 1 and 2).

[17] Beck, Thorsten; Demirguc-Kunt, Asli and Levine, Ross "*A new database on financial development and structure*", mimeo World Bank. June 1999.
[18] As Levine (1999) M3 money definition is used when Liquid Liabilities in not available in certain countries.

Financial Regulation Cost and Financial Market Size in selected APEC Countries (2000-01)[19]				
	Regulation Cost Indicators		Financial Market Size	
Country	Budget (Millions USD)	Staff	Liquid Liabilities / GDP	Bank Assets / GDP
Single Regulation Authority				
Australia	97.7	1,644	0.68	0.77
Korea	117.0	1,510	0.76	0.55
Japan	113.0	973	1.95	1.31
Multiple Regulation Authorities				
Canada	101.4	1,592	0.77	0.66
China	N.A.	23,646	1.12	N.A.
Hong Kong	169.5	1,035	2,19	1.49
Malaysia	26.0	631	1.35	0.82
Mexico	**257.8**	**2,372**	**0.25**	**0.24**
Philippines	1.2	1,304	0.60	0.40
Russia	836.6	2,254	0.17	N.A.
Thailand	7.9	884	1.17	0.82
USA	2,223.7	13,871	0.70	0.73

Source: Staff and Budget data from Courtis, Neil Ed. "*How Countries Supervise theirs Banks, Insurers and Securities Market 2002*" and Financial market indicators from IMF, International Financial Indicators 2000 to 2001. For Mexico the international data were complemented from ABM with SHCP (Treasury Ministry) information and regulators data: CONSAR and IPAB Annual Informs, CONDUSEF does not report its staff size.

[19] Selected countries based in a supervisory staff above 500, that is the international average supervisory staff level.

Diagram 1

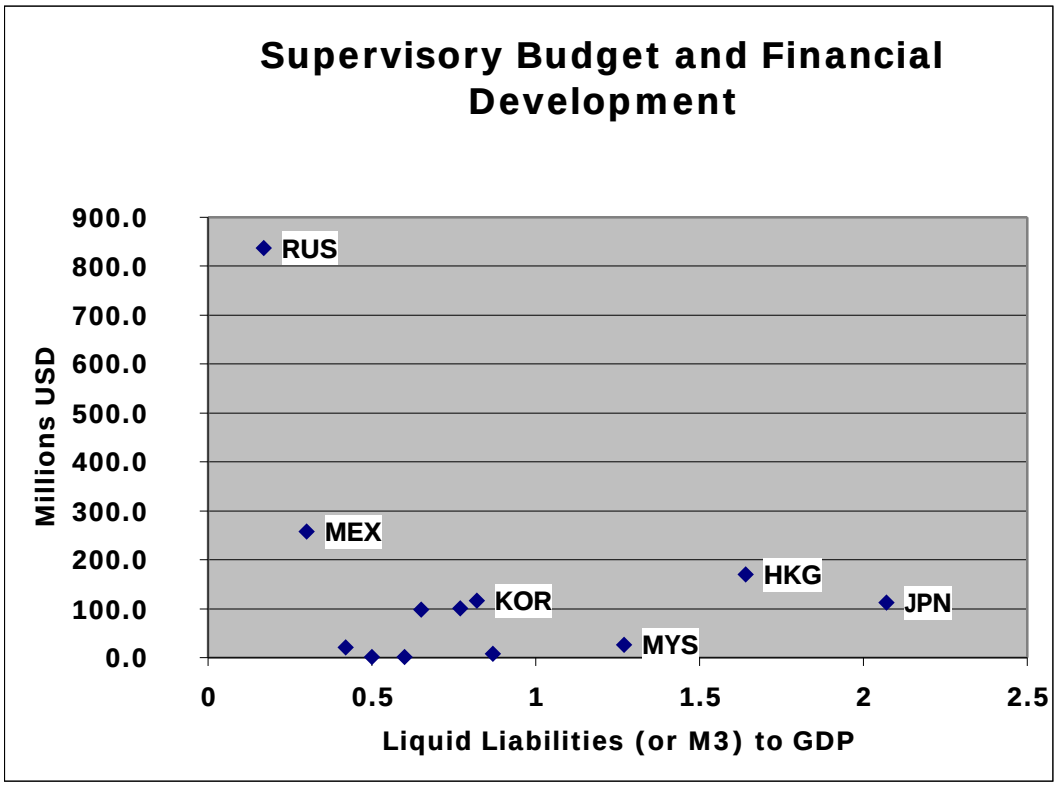
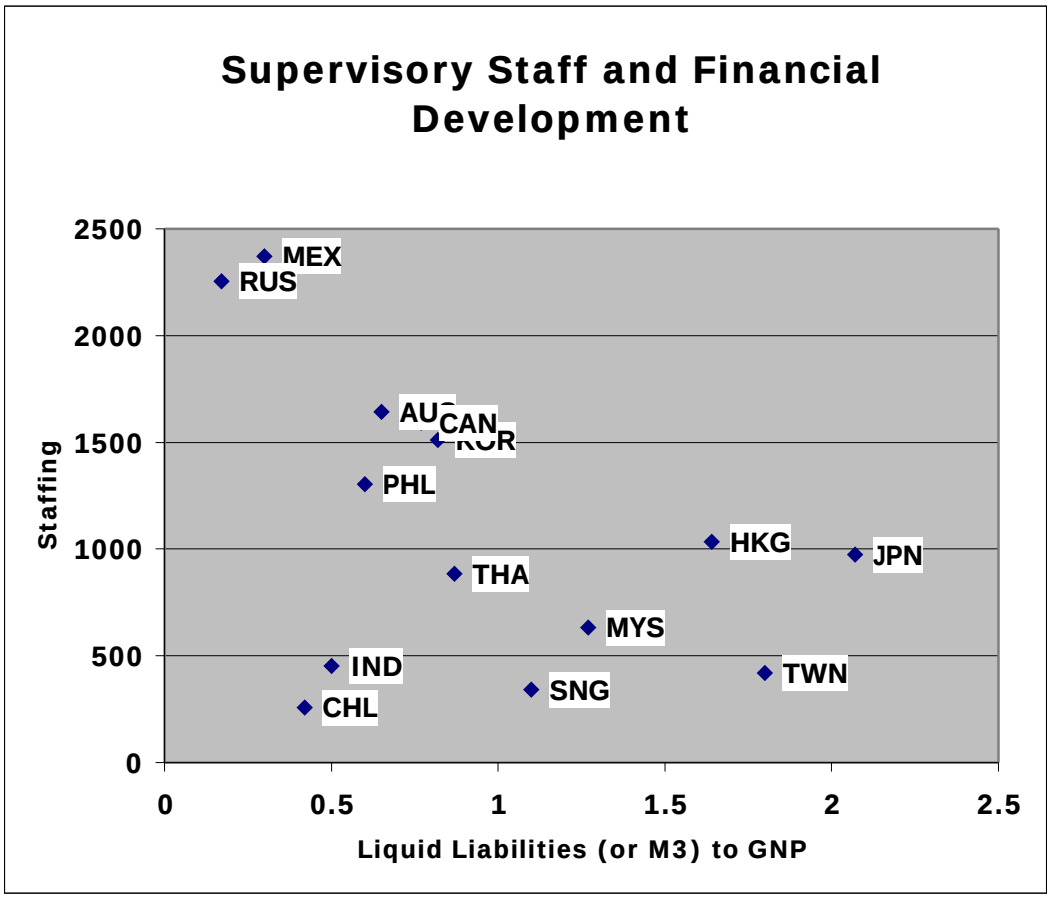

Supervisory Budget and Financial Development
Millions USD
900.0
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
RUS
MEX
KOR
HKG
JPN
MYS
0
0.5
1
1.5
2
2.5
Liquid Liabilities (or M3) to GDP

Diagram 2


Supervisory Staff and Financial Development
Staffing
2500
2000
1500
1000
500
0
0
0.5
1
1.5
2
2.5
Liquid Liabilities (or M3) to GNP
MEX
RUS
AUS
CAN
KOR
PHL
HKG
JPN
THA
MYS
IND
TWN
SNG
CHL

The relative performance efficiency between the multiple regulatory agencies model and the single regulator model is empirically an open question to be address, despite of the international spread of the single model in the last decade in more than ten countries. In cases like the United States and Canada the multiple agencies and double layer (at federal and state level) regulatory model does not clearly implies a costly obstacle to its financial markets growth and evolution. However, low income countries with severe underdeveloped financial markets and costly multiple authorities scheme calls for a prime candidates to reform its financial regulatory approach[20].

In the Mexico case, the indicators calls for an urgent reforms in the very fundamentals of the regulation institutional framework. Mexico combine the lowest financial market size and the more expensive and biggest supervisory staff in the APEC region, excluding the USA and transition economies (People's Republic of China and Russia). As expected from indicators, its regulation institutional framework it highly inefficient. Mexico has a fragmented and overlapping financial supervisory authorities. It is a unique case where there are regulation authorities inside both, Central Bank and Finance or Treasure Ministry, and coexisting with non-independent decentralized supervisory agencies[21].

4. Conclusions and Recommendations

From the modern theory of economic regulations it is possible to assess a regulatory regimen by how close is to address the market failures on the market supposed to regulated and how minimal is the social cost that the regulator impose over its regulated entities and the market as a whole.

The market failures characteristic in financial markets come from asymmetric information phenomenal. The recent evolution in the financial markets, guided by

[20] According with Levine (2001), a severe under developed financial markets are countries with liquid liabilities to GNP ratio under 0.3 since the international mean is 0.6. Low and low to middle income are countries are under $3,000 USD.

[21] In México coexist seven financial regulators: 1) Inside Central Bank (Banco de México), 2) Inside Finance or Treasure Ministry (Subsecretaria de Hacienda y Crédito Público, SHCP), 3) Banking and Securities Regulator (Comisión Nacional Bancaria y de Valores, CNBV), 4) Insurance Regulator (Comisión Nacional de Seguros y Fianzas, CNSF), 5) Financial Consumer Protection Regulator (Comisión Nacional para la Protección y Defensa de los Usuarios de Servicios Financieros, CONDUSEF), 6) Pension Funds Regulator (Comisión Nacional del Sistema de Ahorro para el Retiro, CONSAR, 7) Banking Deposit Insurance (Instituto para la Protección al Ahorro Bancario, IPAB).

innovation and liberalization, requires a regulator high efficient in a regulatory task intensive in information coordination cross multiple financial product lines inside a highly integrated financial groups in a rising competitive environment.

A regulatory regime of fragmented supervisory authorities increase the risk of regulatory failures therefore incapable to exploit the economies of scale and scope in a regulatory task intensive opportune information gathering and processing and exposed to regulatory forbearance and capture becoming interest groups by themselves. In fact becoming each a monopoly over its regulated entities, creating monopoly rents by protecting a turf of captive supervisory powers incompatible and unsynchronized with each other. Therefore, incrementing the regulation cost.

The reform toward a single regulator finds its objectives in obtaining economies of scale and scope in the vertical integration of specific unambiguous regulatory objectives. In a way similar to the integration of successive monopolies in order to avoid double or triple marginalization or monopoly rents over a single processes. Economies in the information gathering and processing are guided to efficient regulation in an independent institutional framework to avoid regulatory failures. The experience in this reform is recent in the cases of Australia, Japan and Korea after the UK and Scandinavian experience.

Considering the cost of regulation as a fixed cost on each domestic financial market. An efficient setting would be a low fixed cost relative to a high sized financial market. Using indicators from supervisory cost and financial activity size, Mexico appears to be the economy with the highest fixed cost in an underdeveloped or small size financial sector relative to the GDP therefore, it means a highly inefficient regulatory organization. Urgent supervisory institutional scheme reform is required according with international benchmarks.