

**CORPORATE STRATEGY FOR MEXICAN BANKS
AND MARKET CONTESTABILITY THEORY: A REVIEW***

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1 INTRODUCTION

Corporate strategy means establishing criteria by which a firm chooses the market segment it will serve, that is, where and how the firm will compete (Grant, 1991:36). Basically, there are two alternative philosophies to design strategic criteria for commercial banks or any other type of firm (Mason, 1979: 111-6). The first is a forecasting effort, in which the bank establishes its competitive potential, and then the managers develop this course of action as much as the environment allows. This first approach considers growth opportunities internally determined.

According to the second philosophy, the bank's managers recognize the available types of growth opportunities then pursue them. This approach considers that growth opportunities are basically external to banks. This is also the criteria assumed by most economic analysis.

In view that this essay reviews the most significant theoretical and empirical contributions in economics analysis, to assess the changes regulation-policy causes on commercial banks' strategies, it is further assumed that all relevant growth opportunities to banks are externally driven, that is, successful regulation policy creates a positive excess demand for the services of financial intermediaries.

On the other hand, the reader will find that policy-makers change banks' legal framework based on macroeconomic variables, trying to increase banks' technical efficiency. In turn, these decisions do not necessarily imply a unique stimulus for banks and, hence, the development of diverse strategic responses.

The discussion claims those differences in technical efficiency result in unequal market shares. Claim sustained through the Structure-Conduct-Performance paradigm (SCP): an approach concerned not with firms' characteristics but with the features that condition industry behavior. Three basic hypotheses constitute SCP and the discussion centers in one of them or that known as the *full structuralist* hypothesis. Its main elements and two of the proposals embedded in it will be illustrated: segmentation analysis (strategic groups) and Market Contestability Theory (CMT). Strategic groups are disregarded as a short-run approach, unsuitable for markets in disequilibrium. The analysis of the Mexican case explains how CMT is adequate to devise international banks' corporate strategy.

The essay also presents an account of how CMT handles above normal prices, due to entry barriers or entry costs. How it's unconcerned with questions of market share or the suitability of the number of competitors. How CMT focuses on strategic interactions of firms, available technology, financial characteristics and product demand features. The essay also illustrates the importance of entry deterrence and inter-industry mobility to CMT. A partial conclusion is that adequate empirical assessment is a mayor problem for CMT. One of the most important criticisms, to this respect, points out that absence of correlation between prices and market power only falsifies perfect contestability. While, at the same time, little can be said about the sources of the imperfection.

The essay also reviews the most recent studies that analyze the Mexican banking system. It demonstrates how the discussion of that industry's structure progressed in terms of banks' price performance (as measured by financial margins, commission income and profitability). However, these studies deal improperly with the relevant elements concerning entry deterrence. Two specific and very important unresolved problems are establishing the efficiency of policy reform to a) speed entry and b) encourage market growth.

In brief, section 2 begins the discussion by introducing a small model of financial intermediation and economic development. This approach underlines the link between financial services' demand and economic growth. The discussion centers around the model's microeconomic characteristics, with the purpose of illustrating the dynamics of the industry's contestability when the market grows. Section 3 reviews the some theoretical alternatives (within Economics) to build banks' corporate strategy. Section 4 details the characteristics of Contestable Markets Theory. Section 5 illustrates the current state of the later theory in the case of the Mexican banking system. Section 6 summarizes the areas most needed of attention. It recommends that the ideal empirical transfer function should allow the assessment of financial statements through panel-data estimation. However, the size of the Mexican market hampers the success of any econometric study of long-term behavior. A research design using case-studies based on contingency theory (that is, financial options) serves that goal better.

2 FRAME OF REFERENCE

This section argues how policy makers base their decisions to instrument regulation policy of financial markets on macroeconomic phenomena while trying to modify microeconomic behavior. First, a demand side, one period, closed economy approach

shows how financial intermediation dissuades consumption decisions and aggregate economic growth. This feature suggests that banking is costly to society.

The second part of the discussion presents a formal macroeconomic, supply side approach to illustrate how the social costs of financial intermediation have been dealt with in literature. The conclusion is that the instruments of regulation policy in financial markets seek, *ceteris paribus*, the stimulus of long-term economic growth through greater technical efficiency in banking.

For the first approach, assume a typical agent facing the decision between consuming a basket of goods today (c_1) or tomorrow (c_2). In this world production is costless so consumption and investment are simultaneous. For example, if the basket is made up of wheat, corn and barley, deciding how much to farm equals the amounts of bread, "tortillas" and beer to be produced. Let's call "r" the rate of intertemporal consumption or that used to discount c_2 , because total consumption (C) is the sum of c_1 plus the present value of c_2 . Note that "r" is a real rate since there is certainty and barter (no money). We can further define a preference curve (U) or those combinations of c_1 and $c_2/(1+r)$ that give the agent the same level of satisfaction. See figure 1. The drawing assumes the preference map is dense so agents' decisions are set by their budget constraint i.e. income is equal to the value of today's consumption (p_1*c_1) plus the present value of tomorrow's ($p_2*c_2/1+r$). Point E shows the equilibrium in consumption or those amounts of goods where today's consumption equals the present value of tomorrow's.

[Insert figure 1]

When there is no longer a typical agent, some people will prefer to consume or invest more today than tomorrow ($E-c_1 < 0$). Under this condition, long run (steady state) equilibrium occurs if savers (those who prefer tomorrow's consumption) supply the resources needed by consumers and investors.

Another assumption that could be relaxed is that of certainty. Asymmetric information brings about the need for an intermediary that assures savers that their loans will be serviced. This service-oriented agent, called bank, can also help to cope with inflation by introducing in "r" the general and sustained growth of prices. Then when banks raise rate "r", which now considers both default-risk and inflation, the decision between consumption and investment is no longer costless because investment decisions are at risk of not producing returns that pay-off loans. Without an

intermediary no-one borrows and all production is consumed in the same period (autarky point E).

Note how in this simple world the relationships between investors/consumers, savers and banks have a direct link with economic development, because risk (production shocks or asymmetric information) hamper savers' willingness to lend and increase available goods for production. In literature, those contributions that deal with these relationships are known as "financial intermediation and growth models". Some compendia are Gertler (1988), Hellwig (1991), Pagano (1993) and Bhattacharya-Thakor (1993).

The remaining arguments demonstrate how together the models of Pagano (1993) and Hannan (1991b) achieve a simple -yet elegant- understanding of the supply-side process of endogenous growth with financial intermediation. In this model the presence of banks reduces the amount of available savings. At the same time, society needs banks because they allow the diversification of depositors' investment portfolio (Hellwig, 1991:42; and Vives, 1991:9,11). This model illustrates how greater technical efficiency in financial intermediation stimulates economic growth.

Pagano's (1993:614) model establishes the potential elements through which financial intermediation influences development. This proposal assumes a closed economy where aggregate production is a lineal function of the capital stock (the AK model),

$$Y_t = AK_t \tag{1}$$

This algorithm of endogenous growth is a reduced form of assuming perfect competition and external economies. In this reduced form each firm has a technology characterized by constant returns to scale. In this world, productivity is an increasing function of the capital stock. Alternatively, assuming that the capital stock represents the sum of physical and human investments achieves the same result.

For the sake of simplicity, constant demographic growth is assumed. Only one good is produced. The consumption/investment decision is, again, costless but the good depreciates at a rate δ . Then, aggregate investment (I) is

$$I_t = K_{t+1} - (1 - \delta)K_t \tag{2}$$

Total savings (X_t) should be equal to aggregate investment in order to reach capital market equilibrium. However, allowing $(1-\Theta)$ resources to be used by the process of financial intermediation sets the equilibrium of the capital market to

$$\Theta X_t = I_t \quad (3)$$

Now, the aggregate rate of growth of production can be obtained from equation 1

$$g_{t+1} = Y_{t+1} / Y_t - 1 = K_{t+1} / K_t - 1 \quad (4)$$

where, after omitting the sub-indexes, representing the rate of private savings (X/Y) by s and substituting the capital market equilibrium condition (equation 3), the rate of growth for long-run equilibrium for Pagano's (1993) model is

$$g = A (I/Y) - \delta = A\Theta s - \delta \quad (5)$$

Equation 5 shows how the financial system influences the rate of growth through the proportion of saving dedicated to investment, marginal productivity of capital (A) or the rate s .

[Insert figure 2]

For Pagano's (1993) model greater technical efficiency in banking will spur growth. This is possible thanks to two conditions. First, all financial products are vehicles to allocate savings into productive investment. Second, only under perfect competition will $(1-\Theta)$ represent the minimum cost of financial intermediation. The removal of classical assumptions brings inefficiencies such as management effectiveness, market power, taxation, regulation, et cetera. In brief, the model suggests that the degree of bank's technical efficiency influences the economy's rate of growth significantly. To that effect Pagano (1993:617-8) notes the ambiguity of available empirical results.

Pagano (1993) follows the Gurley-Shaw (1960) approach to financial intermediation. This strand claims that banks exist because direct trade of loanable funds cannot achieve financial economies (i.e. individuals show little diversification). The increase in transaction costs means that the presence of financial intermediaries (i.e. $1-\Theta$) is compensated by diversified loan portfolios (financial economies). This viewpoint, then, argues that financial intermediation chiefly performs a liquidity function for the economy (See further Mullineux, 1993 for a discussion of J.M. Keynes' money demand and financial innovation).

A different approach to justify the existence and effects of intermediaries is taken by Jensen-Macklin (1976) or Diamond (1984). For them agents exist to reduce moral hazard and asymmetric information (see also Leland-Pyle, 1977). This is possible thanks to economies of scale in supervision and by aligning incentives. These contributions highlight the credit-allocation features of banking.

Both stances defend that banking will reduce social welfare but at the same time, and contrary to McKinnon's (1973) or Fama's (1980) positions, both approaches sustain that financial intermediation is a necessary condition for development. Both viewpoints consider financial intermediation exists even after assuming perfect competition in all markets. Therefore, the lesson from this discussion is not the neutrality of banking for economic growth, but whether its benefits are greater than its social costs.

Once the social cost of financial intermediation is justified, the debate turns to the explanation of what will happen when the economy grows. Gurley-Shaw (1960) argue that the financial system will become more efficient. Banks have an incentive to reduce costs as new and more specialized institutions develop. The latter process is called "financial deepening" and explains why industrialized economies have "mature" financial markets or because the disposition of agents to spend more resources in finance related activities.

Taking the arguments of Jensen-Mackling-Diamond to the extreme, they result in only one financial intermediary: one big universal bank, capable of supplying all services. This is so because diminishing transaction costs and market failures impinge an ever smaller distance between intermediary and client. Institutions replace the "invisible hand" when markets fail. This approach builds on the assumption that the financial markets are not perfect; hence, the need for intermediaries.

As mentioned, the empirical studies of both propositions concern themselves with estimating the macroeconomic consequences of financial intermediation (an interesting example is Obstfeld, 1994). Therefore, this debate will continue as long as there is no method to estimate social welfare losses satisfactorily. Even more, while a fair way to determine the demand for banking services remains unavailable (see Cohen-Levin, 1989:1079-82).

On the other hand, the type of model under discussion improves the analysis of microeconomic phenomena (banks' strategies). This is in line with various theories that

assess the effects of banks' efficiency through capital markets. One of such approximations is Hannan (1991b). By joining Hannan (1991b) and Pagano (1993) a design denominated PH results. The PH model claims to trace the macroeconomic consequences of microeconomic behavior. Specifically, Hannan's (1991b) results under Pagano's (1993) macroeconomic assumptions suggest that the technical efficiency of financial intermediaries has direct and immediate consequences on the long-term rate of growth of the economy (see also Batiz, 1994).

Hannan (1991b) aims at testing two hypotheses under the Structure-Conduct-Performance (SCP) paradigm: the full structuralist (named "structure-efficiency" or "relative efficiency") versus the classical hypothesis (called "performance-structure"). For this approach both hypotheses are not mutually exclusive: it is an empirical question which one will dominate the industry; even though the non-industry character dominates some segment.

The following section develops SCP and its full implications with great detail. Meanwhile let us review Hannan's model further. For Hannan (1991b) a commercial bank receives deposits. Along with the bank's capital, the latter will be distributed through several investment possibilities. The resulting return to the portfolio's investment will be

$$\pi = \sum((r_l - c_l)L_n) + (r_s - c_s)S - \sum((r_d - c_d)D_m) - C \quad (6)$$

where

- r_i Interest rate.
- c_i Variable non-interest cost per monetary unit.
- L_n Amount of n th category of loanable funds .
- S Total amount of other securities.
- D_m Amount of the m th category of deposits.
- C Fixed costs.

By adding the costs of the w banks that make up the financial system, equation 2 is redefined as

$$\Theta \equiv 1 - (\sum (c_{lw} + c_{sw}(1+S_w) + c_{dw} + C_w) / Y) \quad (7)$$

Equation (7) achieves the relationship between the efficiency of the financial intermediaries and the distribution of available investment funds through the economy.

Taken together equations (6) and (7) portrait financial agents as those capable of achieving diversified portfolios from credits and deposits with different maturities, that is, financial economies of scale. Under the Gurley-Shaw (1960) approach this feature (socially) justifies the increased distance between borrowers and suppliers of loanable funds.

The PH design also makes it possible to foresee, at micro and macro levels, the effect of introducing different types of imperfections. For example, equation (7) shows that a bank subsidy, that increases government debt (S_w) by equal amount, might have non or even negative effects on economic growth. Note, however, that even though equation (6) allows it the current specification does not envision spatial diversification.

The mayor problem for a direct empirical assessment of equation (7) is that banks only publish aggregate information of their transactions (accounting reports). Even more, Neven (1990) points out the risks of using banking prices (deregulated interest rates) as proxy for market activity. Banks' financial margins (prices) answer to differences in scale economies, price discrimination across products and management inefficiencies. Actually, one conclusion shared by Neven (1990) and Vives (1991) is that banks, especially retail banks, do not compete in price but in service quality (Cournot competition). Moreover that deposit insurance schemes (or equivalent government intervention) diminish the incentives to meet consumer needs at provision costs (allocative efficiency). Therefore, it is the task of the next section to illustrate alternative roads to approach the relationship in equation (7). Also, it will illustrate in greater detail how this question is embedded in the debate of concentration vs. technical efficiency in banking.

In the mean time, the current section has demonstrated that regulators build policy upon macroeconomic phenomena (equation 2) trying to affect microeconomic behavior (equation 7). Even more, under the traditional assumptions of neo-classical economics successful regulation policy will result in lower levels of equation (7) by increasing the efficiency of incumbents, by introducing new (more efficient) players or through both. Effective regulation policy, then, produces an incentive to enter financial markets (external growth opportunities to banks). The whole discussion between the above mentioned SCP-hypotheses is whether regime changes produce the desired effect on agents strategic behavior.

3 COMPETING HYPOTHESES

The literature compendium of Bhattacharya-Thakor (1993:5,41-2) states that one of the unsettled questions in contemporary banking theory is understanding the system's optimal design (structure). However adequate the claim may be, this study lacks a survey of the literature dealing with the effects of concentration in banking (idem, p.41). The surveys of Gilbert (1984), Geroski (1988) or Schmalensee (1989) review the question of concentration in greater depth and, in principle, come to the same conclusion. In particular, how must the policy maker establish an adequate degree of concentration to achieve a dual goal: to incentive competition and rivalry between banks while not increasing the risk of a "bank run". The puzzle's solution is further hampered because any equilibrium in the banking system is, necessarily, a second best solution: depositors are not investors, therefore, they need to be protected (Schmalensee, 1982:26; Neven, 1990:163; Solís-Trigueros, 1991:98; Vives, 1991:16; Gavito-Sánchez-Trigueros, 1992:227-30; among others). This subject marks the very fragile boundary between the micro and macro-economic analysis of banking. It also implies that the usual policy option regarding a bank merger is a move *towards* perfect competition, not all the way *to* perfect competition.

The design of an optimal banking structure dates back to 1960 when, by a ruling of the Supreme Court, US government agencies had to consider the anti-trust effects of mergers in banking. Two major theoretical approaches developed: oligopolistic models and the structure-conduct-performance paradigm (SCP). See figure 3. In this debate, oligopolistic models consist of algorithms that deal with the analysis of rivals, their expectations and probable behavior. The most noteworthy contributions are Game Theory and Spatial Competition models. An example of the former is Matues-Vives (1994). However, Spatial Competition analysis seems to be a more popular approach. Examples of the latter are Besanko-Thakor (1992); Fuenteslsaz-Salas (1992a,b) and Matues-Padilla (1993). However, Grant (1991:63) claims that, in terms of strategic planning, Game Theory solutions have *not developed either the generality or the sophistication to enable realistic modeling*. At the same time, the solutions of Spatial Competition models indicate that their relative importance is dealing with very specific microeconomic problems, but not with multi-product and/or time-varying specifications (even though some current contributions like Besanko-Thakor, 1992 or Matutes-Padilla, 1994; attempt to break-away from this criticism).

[Insert figure 3]

Bain's structuralist hypothesis finds itself on the other side of the debate. The "classical" assumption of SCP, originally proposed by Bain (1951), holds that the

sources of market inefficiency (both allocative and technical) are likely to appear in highly concentrated structures. Therefore, industries with a "good" performance (low inefficiency or prices equal to economic costs) will be those with a "great" number of firms. SCP simplifies the anti-trust authorities' job by limiting it to examine industries with "few" players. However, the empirical findings of the latter theory did not manage to deliver the expected results. They became an incentive for the development of other theories and, thus, increased the anti-trust policy debate to a multi-theoretical-position party of contributors.

On the other hand, the SCP paradigm turned researchers' attention away from firms' internal factors and towards stable and exogenous market features. It's thought that this features condition industry members' behavior (see Geroski, 1988 or Schmalensee, 1989). Three alternative approaches blossomed from Bain's original proposal. The first is called *critical concentration level* hypothesis. It focuses on the concentration degree where average profits are above normal economic profits.

The second or *appropriate concentration measure* hypothesis attempts to find a suitable index for anti-trust intervention. However, there is little evidence to suggest a linear association between profits (performance) and concentration (Gilbert, 1984:635).

The third approach or *full structuralist* hypothesis recognizes that market structure is a complex and multi-dimensional phenomenon, inadequately described by concentration indexes. The *full structuralist* hypothesis claims that the use of such measures is problematic to assess performance because concentration indexes are defined in terms of current output. Even more, the *full structuralist* hypothesis considers that concentration and performance are simultaneously determined.

Banks' corporate strategy must disregard the first two hypotheses, because their theoretical formulations ignore the effects of regulation. On the contrary, the *full structuralist* hypothesis does consider it. This approach also holds that the constitutive elements of market structure are interdependent and that, in the short-term, industries can benefit from lesser concentration. It also allows the analysis to include special features of banking such as deposit insurance or lender of last resort, that is, schemes that prevent full technical efficiency (see further Baltensberger-Dermine, 1987:70; Neven, 1990:159-64; Vives, 1991:18; Gavito-Sánchez-Trigueros, 1992:230-1; Grifell-Prior-Salas, 1992:5; among others).

This essay, then, reviews in greater detail two proposals based on the *full structuralist* hypothesis. These are segmentation analysis and Contestable Markets Theory (CMT). The purpose is to assess which framework is best suited to design banks' corporate strategy.

Porter's (1980:134-5) segmentation analysis (i.e. strategic groups) has plenty of value to describe competition amongst participants. This approach is chiefly worried with establishing how and by which means positions of dominance are achieved. Studies based on this methodology have been applied to banking to assess the competitive process during a major policy change.

For instance, a first attempt to detect strategic groups in international banking in light of the Single European Market (between 1988 and 1991) is the study of García Pont-Lessard (1994) which, by the way, follows the methodology of Nohria-García Pont (1991).

However, up to now Porter (1980:135) and his followers have not given a full account of how strategic groups are formed. The analysis also lacks a mechanism to estimate the duration of any arrangement. Other criticism to this approach concerns itself with the assumption of an endogenous and time invariant market structure (Grant, 1991:62,70). Furthermore, most of its data sources are not, and will never be, accessible (let alone public). For example, García Pont-Lessard (1994:10,22) remarks over the difficulties of information gathering: *Given that our coverage was limited to English-speaking sources, and that, particularly in the financial sector, not all linkages are made public, it is quite difficult to know whether all the established linkages are included in the data set.*

Even more, the strategic-group approach is inconsistent with empirical findings regarding new establishments in growing markets (see Porter, 1980:134 vs. Schmalensee, 1989:997). Perhaps this inconsistency rises because it is a short-run approach and it sticks to the classical SCP hypothesis as the main determinant of performance (as suggested in Porter, 1980:138).

In brief, segmentation analysis is not suitable for markets in disequilibrium. Such is the case of banking after successful regulation policy. Nonetheless, this approach seems adequate for relatively stable industries.

4 THE THEORY OF CONTESTABLE MARKETS

A theoretical alternative to segmentation analysis, based on the *full structuralist* hypothesis, is an approach centered on the structural barriers that enable a profitable position to be persistently maintained. As mentioned above, the theory chosen is that of Contestable Markets (CMT). This theory places the burden of regulation performance on the possibility of entry. It overcomes the problems of designing simplified approaches when dealing with second-best solutions. Also, it considers that today's firms are multi-product establishments and that industry structure is determined explicitly, endogenously, and simultaneously with the pricing, output, and other decisions of the constituent firms. Moreover, it allows a multi-period analysis of structure and gives a lot of importance to the presence of economies of scale and of scope (see Baumol, 1982:3; Schmalensee, 1989:27; Gilbert, 1984:628; and Geroski, 1988:185).

The CMT method proceeds in two steps (Baumol, 1982 or Baumol-Willig, 1986). First, it determines the most efficient industry structure for the production of an output vector. This by establishing the cost function of a typical firm (minimum efficient scale), and then calculating how many similar establishments will be necessary to produce a given output. The second step investigates which market pressures will lead towards such efficient structure.

From CMT's viewpoint, the design of banks' corporate strategy evaluates the effectiveness of policy changes in two steps. First, an assessment of potential (external) growth opportunities and, second, a capital budgeting exercise that determines the optimal size of the new establishment and/or bank asset growth.

On the other hand, when compared with segmentation analysis CMT offers a straightforward estimation of market entry and its exogenous determinants. Contrary to other SCP hypotheses, CMT rejects applying concentration measures across industries (inter-industry studies). CMT recognizes that the association between concentration and performance (market power or monopoly rents) is subject to ambiguities. Also that such inconsistency is, for empirical assessment purposes, further aggravated by the use of pools of average profits. Finally, CMT favors analyzing what is happening within an industry i.e. how monopoly rents are distributed among incumbents (intra-industry analysis).

CMT synthesizes a series of contributions that allow competitive equilibria through small numbers of firms (Baumol-Panzar-Willig, 1982). This notion is contrary to that orthodox economic theory, which holds that such equilibrium is achieved because firms

maximize prices, each producer is relatively small, transaction costs and asymmetric information are non-existent. CMT argues that the traditional reasoning does not necessarily hold at all times. This is demonstrated by assuming that decision makers do exist and by focusing on the nature and characteristics of the decisions taken (corporate strategy). Specifically, on how firms' interactions affect the ease of entry and exit. For example, CMT is based on the notion that when structural barriers to enter a market (formerly dominated by a monopolistic arrangement) are removed, a new establishment will be built as long as the current price offers profitable opportunities (for instance see Gilbert-Newberry, 1992). This means that entrants make their decisions based on the pre-entry market price, hoping incumbents react slow enough to allow their investment recuperation (or exit the market without loss). These claims imply that prices are influenced by the expectations of incumbents and potential entrants. Therefore, incumbents must set prices at competitive levels in order to deter entry. In this way, CMT is a theory describing the process of competition where orthodoxy deals with its outcome. Even more, it is a theory focused on the relative level of prices and on the existence of profitable opportunities. Hence, ideally suited for corporate strategy.

The key concept for CMT is the "threat of entry": prices are sustainable only if it is financially impossible for entrants to profit after covering the cost of entry. Therefore, it no longer matters how many firms there are in a market. At the extreme, when entry and exit are costless perfectly contestable markets reach the same results as markets under perfect competition. However, perfectly contestable markets are an ideal state and the degree of contestability is defined by the "amount" of entry deterrence.

A very interesting example of how to study entry deterrence is found in the Mexican banking system because after several years of protection it has been recently opened to foreign competition. Initially entrance was subject to a percentage of market growth and limited ownership of incumbents. Eventually, restrictions were lifted but, as mentioned above, this is not sufficient to assure the market is contestable. Therefore, from this point on the discussion will center on entry deterrence and illustrate the concepts through the case of the Mexican banking system.

The notion of entry deterrence rests upon two basic concepts:

1. **ENTRY COSTS** .- Potential entrants face costs greater than those incurred by an incumbent. Some examples are "sunk" (irrecoverable) costs, technology,

economies of scale, economies of scope, or financial power. Figure 4 shows the case for Mexican banking.

[Insert figure 4]

2. **ENTRY BARRIERS** .- An impediment to the flow of resources into the industry. They arise as a result of socially excessive protection of incumbent firms. Therefore, this theory assumes that collusive arrangements can only be sustained through regulation. Otherwise, in the absence of social protection (or entry costs) monopoly power would be eroded by entry. Note that following Porter (1980:134-5) or Grant (1991:79) this analysis would be applied to segments of the same industry (more detail in Porter, 1979). See figure 5 for an illustration.

[Insert figure 5]

These two concepts are the basis for CMT's policy suggestions and regulation policy assessment. For example, because banks compete mostly in service quality and not in price, a common measure of structure and performance-quality is the number of persons per branch (Neven, 1990:161-3). In the case of the Mexican system, some consider that the over-all branch web is small but, at the same time, high when controlling for the number of banks (Solís-Trigueros, 1991:94). For others, the growing number of branches built after re-privatization is justified in terms of international standards: 18,000 vs. 4,100 persons per branch, respectively, in Mexico and Europe (Gavito-Trigueros, 1994:205). To establish if the branch web is a barrier to entry in retail banking the most successful approaches have been models of Spatial Competition (some worthy examples are Matues-Padilla, 1994; Besanko-Thakor, 1992; Fuenteslsaz-Salas,1992a,b). However, the reader will remember this algorithms have been disregarded to establish long-term corporate strategy in banking. At the same time, recent developments in technology (telephone-banking, for example) have effectively turned branch networks from entry barrier to sunk-strategic costs or a burden for incumbent banks (see further Neven 1990:168 and Dermine 1991:33).

On the other hand, for CMT rational government intervention aims at impinging competitive prices in industries where monopoly power is present, just as if competitive pressures were available. To achieve such behavior regulation is redesigned to produce an effective threat of entry. In order to have a successful measure CMT recommends the policy maker to reduce entry barriers and/or costs. From this point on, CMT opens the debate regarding which, intervention or market

forces, will be more effective to reduce price abnormalities. Government intervention is proven unnecessary when the existing barriers or costs are sufficiently low or diminishing at an adequate speed, even though a market might be characterized by one firm! In terms of corporate strategy, this means that CMT's approach provides a guide for selecting those industries where profitable opportunities exist even though many firms are present, regulation policy has not proven effective or the speed of adjustment is too low. For the case of international banking strategy, recent events in Mexico provide an incentive to entry if the before mentioned conditions have been met. It is the task of the in coming section to provide such assessment while, at the same time, illustrate some of the most common techniques to determine an industry's contestability.

In sum, this section briefly explains how CMT handles above normal prices, due to entry barriers or entry costs. How it is not primarily concerned with questions of market share or competitor number suitability. How CMT focuses on strategic interactions of firms, available technology, financial characteristics and product demand features. The following section shows, for financial services, how CMT considers entry deterrence and inter-industry mobility. In the following section we will apply the concepts discussed so far to the case of the Mexican banking system.

5 STUDIES OF MEXICAN BANKING EFFICIENCY

5.1 DEVELOPMENTS IN MEXICAN BANKING (1988-1994)

This section presents the major changes in the competitive environment of Mexican banks as a preface to the empirical discussion. Throughout it, the terms banking, banking industry, financial system, etc. refer to the situation faced by Mexican commercial banks, one of the several intermediaries serving the Mexican economy (for detail see Solís-Trigueros, 1991:91).

Our history of that industry begins in the last decade. During the 1980's the Mexican government required funds that forced the private sector out of the domestic credit market. This stimulated the growth of an informal financial market which undermined the usefulness of monetary policy as a tool of economic management (EIU,1993). Thus, in October 1988 authorities began a regulation policy program to increase banks' efficiency and allow them to compete with other intermediaries (mainly with stock brokers). These measures also complemented a broad economic reform (that sought to reduce the role of the state in the economy) and a stabilization program (which pursued lower inflation and higher per capita income).

The financial reform process had four stages. It tried to correct the uneven development of intermediaries and to increase banks' human and physical capital. Among other features, the program included central bank independence and regulation of monetary aggregates through open market operations; complete freedom for interest rate formulation; the replacement of the regulatory framework, which included Constitutional amendments; the creation of rules for agents to engage in "universal banking" and the removal of all direct controls over credit. Also, the financial restructuring of some, and the sale of all commercial banks to private investors; and last but not least, a market liberalization schedule as part of a free trade agreement with the US and Canada (Nafta).

In Mexico there were 50 private banks in 1982. After the nationalization they merged until 18 were left. During this period Citibank and Banco Obrero (the labor union bank) remained the only private commercial banks. In other sources you might find authors claiming up to 64 banks being nationalized. This is so because the Presidential Decree, of December 1 of 1982, also included those financial intermediaries that were owned by the Mexican government. The reason being that President Lopez Portillo's bold action modified the Constitution and created a new legal figure (know as *Sociedad Nacional de Crédito*). Between June of 1991 and July of 1992 commercial banks returned to private hands (for an event-study analysis see Alcérreca-Theerathorn, 1994b). Simultaneously to privatization, 23 "financial groups" were created. This type of agent consists of at least 3 financial intermediaries. Of the mentioned number, by the end of 1993, 16 had a bank, 6 a stock broker and 1 neither.

In 1993 "financial groups" controlled 97% of the whole financial system's total resources, 94% of total deposits and 92% of total securities in custody. In average each participated in 6 of the 9 possible intermediation activities - only 2 in all of them. However, since the end of 1993 the number of firms has dramatically increased. At the beginning of 1994, there were 2 petitions for "financial group" awaiting approval, 9 new bank permits issued and 4 on hold. During the Summer foreign firms followed the procedures to fill up to 30.0% of the market. This was the last step in the official process of regulation policy of the Mexican banking system. A process which began, as above mentioned, in 1988 (see Ortíz Martínez, 1992, 1993; or EIU 1993).

As a result of Nafta's negotiations, the ceiling for individual foreign ownership was set respectively to 1.5% and 4.0% of banks and stock brokers total industry equity capital.

In October 1994 authorizations were granted, so foreigners opened 5 financial groups, 18 banks, 16 stock broker houses, and 12 insurance companies (O'Donoghue-Barbará de Parres-Birnholz, 1994:19 and Fraser, 1994). This arrangement was expected to last until the year 2004, with gradual adjustments according to market growth (as measured by incumbents' equity capital). See figure 6. However, in January of 1995 the Mexican government allowed foreign ownership to be up to 100% of banks' equity capital.

In May 1995, Grupo Probursa (one of the two financial groups with presence in all types of business) became the first Mexican subsidiary of a foreign financial institution. The Spanish Banco Bilbao Vizcaya gained control of 70% of the equity capital after the Mexican bank was severely damaged the local currency devaluation and bad debts.

[Insert Figure 6]

The forthcoming changes in the market structure of the Mexican banking system will obey to the fact that, for the first time in its history, banks face stiff competition from home and abroad. Under these conditions, what have Mexican banks done? How have they responded to foreign threat? It is the subject of the rest of this essay to take a closer look at these issues and offer an approach for dealing effectively with them.

In summary, it has been implicitly claimed that three elements (structure, behavior, performance) are the basis for corporate strategy. These concepts were used to analyze the Mexican banking system's recent performance. The following section discusses the approaches to evaluate them. In general, the studies argue that the phenomena currently observed in Mexico resemble the change in the legal environment of the European Community (1985-1992) or the USA (1978-1981). Succinctly, these studies try to interpret the European Process from a Mexican perspective, in order to provide the basis for Nafta's negotiation and to estimate the agreement's benefits. However, little to nothing is said regarding regulation policy effectiveness or about the speed of adjustment to long-term equilibrium, that is, about the contestability of the Mexican banking system.

5.2 PRE-NAFTA STUDIES

In 1987, 34% of banks' capital was floated in the Mexican Bolsa. Initially, the stock could only be purchased by domestic agents. In May 2 of 1990, then President Salinas announced the government's plans to sell its stake in commercial banks (for an event-

study analysis see Alcérreca-Theerathorn, 1994a). The first reaction was for analysts to assess the impact of six full years of government control (details in Banamex, 1990 or Chávez, 1988).

Solís-Trigueros (1991) is the first thorough study of Mexican banking that addresses the question of direct foreign competition. Its main results, using data from 1989, are shown in figure 7 and table 1. The study's purpose is to describe the industry's structure. It includes comparative measures of profitability, costs and their main components. Solís-Trigueros (1991) claims that the legal framework is the only barrier for entry and mobility.

[Insert figure 7, table 1]

This study includes participants' assessments: managers of 15 of the 18 commercial banks were interviewed. However, no details are given regarding the research design of the interview process. The results of the latter are reproduced in table 2 and are an attempt to confirm the categories in Solís-Trigueros' (1991) statistical analysis: import of services, foreign direct investment, services where locals seem to have a competitive advantage, infrastructure and personnel quality.

[Insert table 2]

Besides the interview, Solís-Trigueros (1991) contribution is estimating banking performance through the Herfindal-Hirschman index (HHI). The latter is defined as the sum of the squares of incumbents' market share (for an account of the trade-offs between concentration measures see Davies, 1988). Implicit in this approach is the perception that the maximum level of efficiency is achieved when the market is "full" i.e. there is no room for further entry. Even more, that this perfect competition is only reached by a "great" number of firms. In other words, a single producer (monopoly) or consumer (monopsony) is considered the most inefficient (greatest social cost producing) form for market structure. Actually, by using HHI and through their arguments Solís-Trigueros (1991:95) describe the classical hypothesis of SCP.

On the other hand, a second set of contributions are the studies edited by Federico Rubli and Benito Solís (González, 1992; Monte, 1992; Morales-Galicia, 1992a,b; Morales-Martínez, 1992; and Rubli, 1992). When published, Nafta was half way through the negotiations. The studies pay special attention to the European experience concerning the integration of financial system. Specifically, the Spanish experience is

claimed to be a good reference to discuss Nafta's effects: *The Spanish experience in financial opening to foreign banks shows some characteristics that could be useful when analyzing the form and convenience of the Mexican financial system's opening to such competitors* (Montes, 1992:284).

These studies attempt to describe Europe's financial integration. They also include a discussion of the Free Trade Agreement between the US and Canada (Morales-Galicia,1992a). More than analyzing the effects of the Single Market, they try to envision where the process' benefits and cost will arise. However, a guiding principle is that the transformation of the European market (and hence, the North American) should be assessed through the theory of contestable markets (CMT). These studies consider that Mexican financial markets were at the time potentially contestable markets. However, and regardless of the effectiveness of regulation policy, sunk costs may prevent a significant change banking competitiveness.

As for its purpose of evaluating the European experience, these offer little but descriptive evidence compared to the thorough analysis of Neven (1990) and Vives (1991) or the accounts of participants' expectations in Hawawini-Rajendra (1990), Bryan (1993) and Pacitti (1994), among others.

5.3 NAFTA-RELATED STUDIES

The studies in these sub-section assess Nafta's negotiation on financial services. The first considered is Gavito-Sánchez-Trigueros (1992), which builds upon Solís-Trigueros (1991). Its purpose is identifying where and how Mexican banks can benefit from the agreement. This is done in two steps: a) depicting the relative efficiency and structure of the banking system (the study's results are reproduced in table 3); and b) offering alternative policies that would ensure greater efficiency in the industry. It draws four very important conclusions:

1. The structural characteristics, shown in table 3, suggest that commercial banks' prices are relatively high. Such prices are measured by financial margin and commissions (p. 224).
2. Accounting practices (especially regarding off-balance-sheet transactions) and lines of business do not allow a thorough comparison between the banking industries in the three countries (pp.224, 226).

3. The Mexican financial system is highly concentrated. The creation of financial groups could make things worse. *If this situation does not necessarily create an uncompetitive market structure, it does help collusive arrangements* (p. 229).
4. The best possible agreement would allow a gradual opening program which, in turn, ought to incentive speedy reorganization, learning, and investment processes by acting as a threat of future competition (pp. 234,45).

[Insert table 3]

Points 3 and 4 suggest that Gavito-Sánchez-Trigueros (1992) support CMT. As mentioned, it's methodology proceeds in two steps. First, establishing the cost function of a typical firm (minimum efficient scale, MES) and then calculating how many similar establishments will produce the competitive output.

The second step, investigates which market pressures will lead towards such efficient structure. In this sense, Gavito-Sánchez-Trigueros (1992:229) use an estimate of American depository institutions to claim that the capital requirement to enter the Mexican market is about 2.5 times the industry's MES. However, the difficulties in making direct comparisons between Mexican and American banks have already been noted in point 2 above. Therefore, the Mexican MES must be estimated. A feasible research design is based on the efficiency of Spain's building societies (cajas de ahorro) as suggested by Grifell-Prior-Salas (1992): A hypothetical production function is built by combining the most efficient firms. Then, inefficiency is estimated as the (orthogonal) distance of specific firms (or group of establishments) from the efficiency frontier. This approach also allows to test such distance for the average branch size and average deposit.

The study of Grifell-Prior-Salas (1992) claims that technical and allocative efficiency are more important to determine a bank's behavior than economies of scale or scope. There are at least two limits regarding this procedure. First, one explicitly stated by the authors. The study recognizes that in a multi-dimensional space "distance" is a relative concept, subject to the researcher's specification. But, second, it does not take into account that the efficiency frontier is defined in terms of the incumbent firms. That is, it cannot be modified to accommodate alternative industry arrangements (i.e. price or production vectors).

For example, a research design under this approach should recognize the differences in geographical extension and line of business of Mexican banks. Otherwise, it would be liable of applying the right solution to the wrong question (see further Billinton 1983; or Morris, 1984 on the spatial problems of policy implementation for multi-regional banks in the US).

In brief, the MES of the Mexican banking system must be estimated. Once available can be used to estimate how big a barrier are capital requirements. Note, however, that this approach cannot consider production functions different from the ones used by incumbents when, as mentioned above, technological change has been a key feature for banking in recent years.

On the other hand, by examining Nafta's final draft (see Ortíz, 1993 or Serra, 1993) the reader will observe that Gavito-Sánchez-Trigueros' (1992) point 4 is very similar to the actual agreement. Indeed, Gavito-Trigueros (1994) claim that even though Nafta's conditions are in the expected direction, the measures' "degree of liberalization" is disappointing. The study supports its thesis by examining three aspects of the Mexican banking system: financial deepening, the transformation of saving in investment, and the costs of the latter process. However, the study takes the stand of classical SCP in discussion of the second element: *Several performance measurements are used to analyze the efficiency of a banking system, other indexes such as the degree of concentration or monopoly power may also be used, since they reflect the system's efficiency. In the case of the Mexican banks several authors (Chávez 1983 [sic] and Sánchez 1993) have established that there is a high degree of concentration and certain [amount of] monopoly power therefore the present study will focus to the performance of indexes obtained from the profit and loss statements* (p. 195, ellipsis not in original).

[Insert table 4 and 5]

The study's results, highlighted in tables 4 and 5, present the above mentioned indexes comparing different countries and their development through time (1988 to 1992). The authors acknowledge the analysis is limited because of differences in accounting practices, line of business mixture, legal frameworks, capital requirements and cross-subsidies. In any case, it concludes that the Mexican banking system is less competitive than its closest and most relevant counterparts, that its operation costs and financial margins should decrease to become more competitive and, above all, to offer better

services to consumers and the productive sector (see further Gavito-Trigueros, 1994:205-6 or Negrete-Cornejo, 1993).

Based on the American S&L debacle Gavito-Trigueros (1994:223) claim that the Mexican adjustment process will take around 3 years for banks to reach international standards. Therefore, this study answers with factual information the key question for CMT. One method to address this thoroughly is devised by Schaffer (1993). This study claims to have calculated, in previous contributions, the time required for the US and Canadian industries to recover equilibrium after their respective regulation policy programs (in the early 1980's). Note that, according to Schmalensee (1989:997), entry speed assessment should consider both local and foreign firms. Also, that empirical evidence suggests foreign firms usually take greater advantage of market growth.

Schaffer (1993) estimates a market power index aided by a two stage least square regression (of accounting information). The resulting parameters measure the degree by which the average establishment's marginal income deviates from the demand schedule i.e. the presence of above normal economic profits or the major incentives for entry.

Schaffer (1993) is one of the types of CMT-oriented study on the analysis of accounting information or stocks' rate of return (other examples are Geroski-Masson-Shaanan, 1987; Goldberg, 1993; Molyneux et al., 1994; Dickens-Philipatos,1994). Most of these research specimens estimate the kindness of either an index (Panzar-Russel's H or market power, for example) or a break in the regression's slope (whose sign or expected change falsifies a contestability based hypothesis). Schaffer (1993) belongs to this second group, because it tries to test an index's change in slope.

In general, both groups of studies use time series and cross-sectional studies, performed over single (local) or multiple banking industries (international). However, none was found to be employing panel-data techniques or explicitly addressing the questions of markets in disequilibrium. It is worth noting that these studies have been criticized for using unfit information to measure industry specifications.

In summary, the research reviewed in this section details the Mexican banking system. Empirical evidence is reproduced in order to show that the discussion of the industry's structure has been made in terms of banks' prices performance (as measured by financial margins, commission income and profitability). These studies also prove useful to enlighten the theoretical approaches previously discussed, as well as the

suitability of these theories to act as a framework for banks' corporate strategy. However, relevant elements concerning entry are not properly dealt with. Specially, the efficiency of policy reform against the speed of entry or market growth. To the endeavor of finding a suitable approach, the discussion now turns.

6 TOPICS FOR FUTURE RESEARCH

6.1 SUMMARY

This paper argues that CMT is an adequate approach to build the corporate strategy of Mexican banks, because it deals directly with the questions roused regarding regulation policy of financial services. With the concept of entry deterrence in mind, the essay also discusses those areas that most urgently need to be addressed to assess the contestability of the Mexican banking system. Succinctly they were:

1. Strategic Groups (Networks).
2. Branch web density.
3. Minimum Efficient Scale.
4. Analysis of accounting data and stock price's returns.
5. Market growth.

The essay also argued that the last two points are the most urgent concepts to be addressed to cover the immediate necessities of Mexican banks' corporate strategy. What follows is, then, a research proposal to cover this necessity. This proposal presents a model that envisions market growth and complies with the requirements previously discussed.

A type of study missing in the literature concerning the Mexican case and the international discussion, is a model that approaches market entry without losing sight of the macroeconomic effects of financial intermediation. A rough draft of such a model is the frame of reference of this essay (the PH model). It still lacks a precise transfer function (that is, empirical form). The PH model recognizes many aspects of today's financial intermediation like the ability to test classical SCP or out-performing some credit-rationing models (see Bhattacharya-Thakor, 1993; Hannan, 1991b; and

Bátiz, 1994b). In the present state, this model envisions market growth of commercial banking closely tied to that of the economy.

An empirical panel-data model inspired in Schaffer (1993), which considers individual accounting information as suggested by equation (7), will out-perform other techniques and CMT-based studies. This because that specification will allow measurements of long-term trends, in markets in disequilibrium and "free" of multicollinearity. However, this approach has several draw-backs. The most important is that of market size, for example, there are 18 institutions in Mexico, 15 in Spain and 9 in the UK. The lack of degrees of freedom made the study likelier to succeed in an environment similar to that of the US (where there are many more participants or regulation policy was further away in time). A second crucial feature was, as has been argued along this essay, that structure-conduct-performance relationships in banking are multidimensional and simultaneously determined.

Therefore, this essay claims that CMT and banks' corporate strategy will improved by considering the concept of *threat of entry* (or the state where prices are sustainable only if it is financially impossible for entrants to profit after covering the cost of entry) as a contingent claim of incumbents over the growth of the market. Call this new concept *entry options*: new entry will take place when potential entrants consider this state (or slide or the industry pie) a call option priced in- or at-the money. The result of entry deterrence will be pricing the option out-of-the money, while effective regulation policy will increase the option's short term volatility.

However, the current problem to operationalise *entry options* is that there is not an unequivocal relationship between financial services' quantities and prices or equity capital (because of economies of scope). Furthermore, bank's capital does not respond to a single interest rate but to a compound rate based on a portfolio of loans, deposits and non-interest income. Industry wide applications of *entry options* require, therefore, non-public information.

Nonetheless, if that information was available or a proxy found a bank (or a set of banks) could be modeled as an option-portfolio where non-interest income will be represented by calls, loans as "bull spreads" and deposit protection as a protective put. Then, the portfolio of potential banking services (that is, those external growth opportunities created by effective regulation policy) could be priced, for example, as a barrier option approaching or distancing the level of government intervention. This "exotic" option would be sold by regulators to incumbents and potential entrants or traded between the last two.

In summary, this section demonstrated that the character of today's banking industry is producing bundles of services. The actual values of the latter are established simultaneously with decisions regarding structure, performance and the possibility of foreign entry. Furthermore, as a conclusion to the review the essay proposed a multiple case-study of international banks' strategies and behavior after regulation policy to produce a working framework to implement *entry options*.

6.2 CODA

Finally, a word of auto-criticism and about long-term research. The reader will note that this essay has 4 basic assumptions. First, the discussion supposes that the economic role of commercial banks has not changed in the last 15 years. Second, that during that same period technological change and, in practice, innovations in telecommunications have had secondary importance in shaping the banking industry. Third, that there are no systemic effects in banking other than "bank runs" (that is, they are no longer needed for the control of the money supply). Fourth, that most financial intermediation services are delivered through banks because these firms are superior forms to manage information asymmetries and production shocks.

The second basic assumption will play a very important role in the design of banks corporate strategy during the 1990s. Indeed, together with regulation policy innovations in telecommunications reflect the change in the economic role of commercial banks. Succinctly, they have produced not only participants with different cost structures, but also allowed effective competitive pressures from non-bank and non-financial intermediaries as well as turned commercial banks from intermediaries to providers of financial information.

This phenomena, in turn, has created a need to design dynamic frameworks that enable bank managers greater control of the destiny of their firm. Managers will achieve this control, primarily, through the development of internal resources (such as managerial skills, innovation and firm specific assets).

It is expected that applications of capital budgeting schemes based on Option Pricing Theory (such as *entry options*), which emphasize the time dependence of growth opportunities as well as accommodate the interaction between internal and external opportunities, will provide some answers.

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ABSTRACT

The aim of this essay is to select the best framework to assess the effect regulation policy has on banks' corporate strategy. The review of competing hypothesis finds Contestable Market Theory the most suitable vehicle to perform that assessment. The Mexican case illustrates empirical applications. The paper's contribution is pointing out the areas most needed of attention. Succinctly these are, first, unsolved questions regarding the application of SCP's hypothesis in banking studies. Second, forthcoming empirical research should establish the gains in banks' efficiency after successful regulation policy. This second problem, it's suggested, could be approach through panel data analysis. However, both Contestable Market Theory and banks' strategy could dramatically improve by incorporating recent developments in Option Pricing Theory.

INDEX

1	INTRODUCTION	1
2	FRAME OF REFERENCE	2
3	COMPETING HYPOTHESES.....	9
4	THE THEORY OF CONTESTABLE MARKETS	12
5	STUDIES OF MEXICAN BANKING EFFICIENCY	15
5.1	DEVELOPMENTS IN MEXICAN BANKING (1988-1994). 15	
5.2	PRE-NAFTA STUDIES.....	18
5.3	NAFTA-RELATED STUDIES	19
6	TOPICS FOR FUTURE RESEARCH.....	23
6.1	SUMMARY.....	23
6.2	CODA.....	25
7	REFERENCES	26