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An Approach to the Regulation of Banking Institutions in a Federal State

AN APPROACH TO THE REGULATION OF BANKING INSTITUTIONS IN A FEDERAL STATE

By JOHN F. CHANT AND JAMES W. DEAN*

I. INTRODUCTION

The dual system of state and federal regulation in the United States has been the subject of continuing controversy and conflict, especially in recent years, as technological developments have reduced the relevance of distinctions arising from the current patterns of regulation.[1] Similarly, in Canada, the division of responsibility for the regulation of banking institutions between federal and provincial authorities has been perceived as an obstacle to legislative reform.[2] Observers have documented the many sources of conflict arising in a dual banking system. Some have suggested approaches to overcome this conflict through harmonization of policies and changes in the division of authority. However, despite the attention directed to the dual banking system, we have little understanding of the way in which the pattern of regulation under a dual system would differ from the pattern that would prevail if a single authority were responsible for regulation.

The purpose of this paper is to suggest an approach through which we can understand the pattern of regulation arising from the interaction of provincial and federal authorities in a federal state. Our approach draws on recent theories developed by Stigler, Posner, Peltzman, and others to understand the actual behaviour and performance of government agents in regulating industry.[3]

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[1] Scott, "The Dual Banking System: A Model of Competition in Regulation," in Edwards, ed., *Issues in Financial Regulation* (New York: McGraw Hill, 1979), and *The Patchwork Quilt: State and Federal Roles in Bank Regulation* (1980), 32 Stan. L. Rev. 687.

[2] Chant, "Comment on the 1977 Bank Act" (1976), 2 *Can. Pub. Pol.* 380; and Economic Council of Canada, *Efficiency and Regulation: A Study of Deposit Institutions* (Ottawa: Min. of Supply and Services, 1976) at 55-57.

[3] Stigler, *The Theory of Economic Regulation* (1971), 2 Bell J. Econ. & Mgmt. Sci. 3; Posner, *Taxation by Regulation* (1971), 2 Bell J. Econ. & Mgmt. Sci. 22; and Peltzman, *Capital Investment in Commercial Banking and its Relationship to Portfolio Regulation*, [1970] J. Pol. Econ. 1.

II. A BACKGROUND TO BANKING LEGISLATION IN CANADA

Banking is in many respects an ideal industry for studying differences in the behaviour of federal and provincial regulators. It is among the most heavily regulated industries in the Canadian economy; major financial institutions are subject to exclusive federal, exclusive provincial, and mixed jurisdiction; and information and analysis with respect to the regulation and operations of financial institutions are readily available. This section will acquaint readers with the main features of Canadian deposit-taking financial institutions and the structure and rationale of the regulations governing them.

A. *Deposit-Taking Financial Institutions in Canada*

The group of financial institutions that are the focus of this paper are often termed "banks and near-banks". (For brevity, we will usually refer to both simply as "banks".) They can be characterized as "deposit-taking" institutions in that, despite a wide range of differences in their lending and investment powers and practices, they depend on deposits as a major source of their funds. Thus finance companies, for example, are excluded from our analysis on the grounds that they cannot raise funds by taking deposits, despite the fact that their loan markets overlap with those of banks and near-banks. Also outside our purview are insurance companies and pension funds, although they are major financial institutions investing in some of the same kinds of assets as do banking institutions.

The relative sizes of these institutions can be seen from Table I, which shows the value of deposit liabilities as at December 31, 1981. The chartered banks, which are federally regulated institutions, are clearly the most important category of deposit-taking institutions by size, accounting for almost two thirds of total deposits. In 1979, the chartered banks operated almost 7,500 branches across the country. The five largest banks account for roughly ninety percent of the deposits and branches within this category.

The other two classes of institutions in Table I are both "near-banks". The trust and mortgage loan companies, many of which operate across the country, have about 1,100 offices and one third the deposits of the chartered banks. The deposits of credit unions and caisses populaires, which are permitted to operate only in their province of registration, are one fifth of the total deposits of the chartered banks. Unlike the banks and trust and loan companies, the credit unions and caisses populaires rarely have branches; in 1979 the 3,680 credit unions in Canada operated only 850 branch offices.

B. *The Structure of Regulation in Canada*

Section 91 of the *Constitution Act, 1867*[4] assigns responsibility for banking and currency matters to the federal government. At the time of Confederation, the chartered banks were the major financial institutions in existence. Since then, however, the near-banks have become significant financial institu-

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[4] 30-31 Vict., c. 3 (U.K.), as am. by the *Constitution Act, 1982*, s. 53, which is Sched. B of the *Canada Act 1982*, c. 11 (U.K.).

TABLE I

DEPOSITS AT CANADIAN FINANCIAL INSTITUTIONS

December 31, 1981

(millions of dollars)

			Percent of deposits
Chartered banks			
Canadian dollar deposits		$168,135	67
Trust and mortgage loan companies			
Deposits, guaranteed investment certificates and debentures		53,109	21
Credit unions and caisses populaires			
Deposits	$27,156		
Shares	2,767		
		29,923	12
Total deposits at Canadian financial institutions		$251,167	

Source: Bank of Canada, *Review*, June 1982, S 38, S 99, and S 97.

tions that are in part under provincial control. A banking system with three types of regulatory jurisdiction has evolved. The chartered banks are under exclusive federal jurisdiction; the credit unions are under exclusive provincial jurisdiction; and trust and mortgage loan companies are regulated under arrangements that can best be described, following Breton and Scott,[5] as a form of concurrent regulation. Details are provided in Table II.

Although the meaning of "banking" has never been defined in legislation,[6] for present purposes we will follow the approach of the *Bank Act*,[7] which states that its provisions apply to institutions (listed in a schedule to the Act) that have acquired a bank charter under the Act. Federal power over

[5] *The Economic Constitution of Federal States* (Toronto: U. of T. Press, 1978) at 85.

[6] Can., *Report of the Royal Commission on Banking and Finance (Porter Report)* (Ottawa: Queen's Printer, 1964) at 114-15.

[7] R.S.C. 1970, c. B-1, as am. by S.C. 1980-81-82, c. 40, s. 4.

TABLE II

Functions and Responsibilities of the Regulators of Deposit Institutions, 1975

	Federally incorporated		Provincially incorporated		
	Chart. banks	Trust & mortg. loan companies	Trust & mortg. loan companies	Credit unions	Caisses populaires
Federal					
Bank of Canada	Lender of last resort; regulator of liquidity				
Inspector General of Banks	Inspector; admin. of Bank Act				
Canada Deposit Insurance Corp. (CDIC)	Insurer of deposits; lender of last resort	Insurer of deposits; lender of last resort	Insurer of deposits (outside Que.); lender of last resort	Lender of last resort	
Superintendent of Insurance		Inspector; admin. of Trust & Loan Act; admin. of Small Loans Act	Admin. of Small Loans Act	Admin. of Small Loans Act	Admin. of Small Loans Act
Min. of Consumer & Corp. Affairs	Admin. of Interest Act	Admin. of Interest Act	Admin. of Interest Act	Admin. of Interest Act	Admin. of Interest Act
Provincial					
Quebec Deposit Insurance Board (QDIB)			Insurer of deposits (in Quebec); lender of last resort		Insurer of deposits; lender of last resort
Registrar of Trust and Loan Companies		Licenser of business in provinces	Inspector; admin. of Trust & Loan Act; licenser of bus. in province		
Ministry of Financial Institutions (Quebec)					Inspector (del. to centrals); admin. of Caisses Populaires Act
Supervisor of Credit Unions				Inspector; admin. of Credit Union Act	
Credit Union Reserve Bd. (some prov. only)				Insurer of deposits; lender of last resort	

Source: Economic Council of Canada, *Efficiency and Regulation: A Study of Deposit Institutions* (Ottawa: Minister of Supply and Services, 1976), 56.

chartered banks is exclusive: they are subject to federal labour legislation; their business powers are defined and limited by the *Bank Act*; and they do not appear to be subject to provincial laws governing consumer credit. Moreover, in contrast to the situation in the United States, the possession of a federal charter enables a Canadian bank to operate throughout the entire country.

At the other extreme are the credit unions, which operate virtually entirely under provincial jurisdiction and are confined to the province of registration.[8] The credit union movement itself is structured, with some variation, in three tiers.[9] At the lowest level is the credit union local, which can range in size from the numerous locals with assets of less than $100,000 each to a few locals with assets of $200 million or more. The next tier consists of the provincial central credit unions which, like the locals, are governed solely by provincial law. At the top tier is the Canada-wide association of credit unions, the Canadian Cooperative Credit Society (CCCS), to which the provincial centrals may adhere. Until recently, the CCCS performed mainly a co-ordinating and liaison role for the provincial centrals. With the creation of the Canadian Payments Association for cheque clearing among financial institutions, the CCCS now may have an expanded role. Nevertheless, the lending and borrowing activities of the locals and the provincial centrals remain a matter of provincial jurisdiction.

The regulation of trust and mortgage loan companies reflects a complex division of jurisdiction between federal and provincial authorities.[10] These companies can be incorporated either federally or provincially.[11] Unlike the banks, trust and mortgage loan companies may not engage in business as financial institutions in every province merely by virtue of federal or provincial incorporation. On the other hand, unlike credit unions, they need not be confined to their province of incorporation. A trust or mortgage loan company can operate in any province in which it gains a licence from the appropriate provincial regulator. Thus the trust and mortgage loan companies can be divided into three groups: (1) federally incorporated companies

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[8] It is interesting to note that Alphonse Desjardins, the founder of the caisses populaires movement, sought federal credit union legislation in 1907 and for a number of years thereafter. The initial Bill, though passed in the House of Commons, was defeated by one vote in the Senate on the basis of an opinion that the legislation was outside federal jurisdiction. See Neufeld, *The Financial System of Canada* (Toronto: Macmillan of Canada, 1972) at 384-85.

[9] In Quebec, a tier of regional caisses separates the local caisses from the provincial centrals.

[10] Hereinafter, for convenience, trust companies and mortgage loan companies will be referred to as trust and mortgage loan companies, and credit unions and caisses populaires will generally be referred to collectively as credit unions. Trust companies are frequently owned by mortgage loan companies, and vice versa, and both carry on business as financial institutions.

[11] Provincial authority over trust companies appears to derive from the interpretation that their trustee activities fall under the property jurisdiction of provincial governments. Their deposit-taking business evolved from trust activities in which guaranteed funds were viewed as pooled trusts. Even today, the trust company equivalents of bank deposits are characterized as guaranteed funds (*viz.*, guaranteed investment certificates). Nevertheless, they are eligible for protection under the Canada Deposit Insurance Corporation.

operating in one or several provinces; (2) provincially incorporated companies operating in several provinces; and (3) provincially incorporated companies restricted to one province.

Legislation governing trust and mortgage loan companies differs from one province to another, so incorporation in one jurisdiction does not assure eligibility to operate in all. The federal and Ontario requirements have typically been the most stringent. Alberta's appear to have been the most lenient.[12] Strict conformity with a host province's requirements for incorporation is not necessarily required for a trust or mortgage loan company incorporated federally, or in another province, to do business in the host province. For example, Royal Trust, when incorporated under a specific Act of the Quebec legislature, exercised powers beyond those granted to companies incorporated in Ontario but it nevertheless was permitted to do business in Ontario.

III. AN APPROACH TO BANKING REGULATION

Traditionally, economists have held that regulation was designed to further the "public interest". More recently, they have turned their attention from the professed intent of regulation, to explain its "purpose in fact". The term "purpose in fact" was used by Posner[13] to distinguish sharply between the reasons ascribed to regulatory laws and decisions by regulators themselves and the reasons, whether or not avowed, that provide a consistent explanation of the actual causes and consequences of regulation. Through this change in emphasis, economists have developed alternatives to the public interest approach that suggest that regulators may be captured by the interests of the regulated, or that governments may use regulation as a substitute for taxation as a means of transferring benefits from one group to another.[14] To express this approach in a generalized formula, the regulators are suppliers of regulation who face a variety of interest groups, whether or not organized as such, each demanding regulation in its own interests.

Our analysis builds upon these recent theoretical developments in two respects. First, we accept the premise that the regulator supplies regulation that balances the demands of competing interest groups so as to maximize the regulator's self-interest. Where there is direct regulation by government, the regulator may be motivated by the government's need for re-election. Where regulatory authority has been delegated to a government bureau or commission, the regulator's self-interest leads to an agent-principal relationship in which the actions of the regulator, while constrained, may not correspond exactly to the interests of the government. The relevant point for analysis, however, is that the regulator as a supplier of regulation responds to the demands of different interest groups at least in some degree in proportion to their ability to contribute to maintenance of the existing political authority.

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[12] See Part V, Section A, *infra*, for an episode illustrating differences that existed between federal and Ontario regulations and those in Alberta.

[13] Posner, *supra* note 3.

[14] Indeed, economists have described this type of regulation as "implicit taxation" in contrast to "explicit" taxation through fiscal devices.

The second element of our approach draws from recent developments in the theory that suggest that regulation has a distribution of costs and benefits over different groups in the economy and that the net benefit of regulation overall can be either negative or positive. As a basis for classifying the impacts of different regulatory measures, we have developed a simply expository device. Consider an industry with two groups of consumers *a* and *b*; two groups of producers, *c* and *d*; and a government *g*. The gains from any policy to any one of these groups can be represented as x ($x \gtrless 0$) and the aggregate gain can be represented by X ($X \gtrless 0$). The effects of any policy can be represented by the expression

$$\{X | x_a, x_b; x_c, x_d; x_g\}.$$

The use of this device suggests immediately a twofold classification of regulation according to the value of X. The first alternative, $X > 0$, corresponds to what can be characterized as public interest regulation. In financial markets, for example, such an outcome would result from regulations that, by classifying institutions by their investment powers, reduce the amount of expense incurred by customers in gathering information. This regulation could also be in the interests of producers of financial services by increasing the demand for their services. Such a policy would be represented as

$$\{X>0 | x_a, x_b, x_c, x_d \geq 0\}.$$

Measures that have an aggregate positive effect need not benefit all parties. A regulation that set minimum capital/asset ratios for financial institutions could benefit only some customers and financial institutions. Customers and financial institutions that were unwilling to give up returns in order to reduce risk might be harmed by such a regulation. In this case the policy would be expressed as

$$\{X>0 | x_a<0, x_b>0; x_c>0, x_d<0\},$$

where customers in x_b are more risk averse than those in x_a.

The second alternative, $X<0$, corresponds more closely to recently developed approaches that view regulation as a device distributing benefits to some groups in the economy at the expense of others. While, traditionally, redistribution was often deemed compatible with $X=0$, economists now recognize that the process of redistribution generates costs through (1) administration of the process, (2) efforts of individuals to qualify for the benefits, and (3) parallel efforts of individuals to avoid the costs of the redistribution. The set of possibilities with $X<0$ includes several cases:

1. $\{X<0 | x_a>0, x_b<0; x_c>0, x_d<0\}$. This case corresponds to Posner's analysis of taxation by regulation.[15] Group *b* consumers are required as a consequence of the regulation to pay more for the output whereas group *a* is subsidized by lower prices. Similarly group *c* producers may find that their costs

[15] Posner, *supra* note 3.

are lowered at the expense of higher costs for group *d*. An example of such regulation would be a ceiling on the proportion of bank assets that could be held in any particular investment such as mortgages. Such a regulation works to the detriment of home owners and to the benefit of other borrowers from banks. It also reduces the profits of banks while reducing competition for near-banks in mortgage markets.

2. $\{X<0|x_a, x_b \leq 0; x_c, x_d > 0\}$. This case corresponds to Stigler's "capture by industry."[16] As in the previous case, overall losses arise from redistribution but the costs are imposed on either or both groups of consumers and the benefits accrue to the producers. In other words, this case corresponds to regulation in the producers' interest. Minimum capital requirements and similar measures that restrict entry by new financial institutions are an example of this type of regulation because they permit higher profits for established institutions at the expense of higher prices for users of financial services.

3. $\{X<0|x_a, x_b; x_c, x_d \leq 0; x_g > 0\}$. Finally, there is the possibility that regulation may reduce the general revenue needs of the government. Case 3 can be distinguished from case 1 because while someone may benefit from the reduced revenue needs of the government, that beneficiary may be neither a customer of financial institutions nor a producer of financial services. The clearest example of case 3 in the regulation of financial institutions is the minimum primary reserve requirements, which force financial institutions to hold more cash than they would have otherwise, thereby providing the government with a conscripted market for interest-free debt.

IV. REGULATION IN A FEDERAL STATE

Our purpose in this section is to develop a theoretical framework to help us understand the *de facto* division of responsibilty for the regulation of financial institutions between two levels of government: a federal level covering an entire country and a provincial level covering only part of the country. Our purpose is quite limited. We do not attempt to explain any original division of powers such as the assignment of banking and currency matters to the federal government under the *British North America* (now *Constitution*) *Act*. Our starting point resembles the situation at Confederation when the federal government was assigned responsibility for regulating a small group of chartered banks that were collectively the dominant financial institutions in the country at that time. Our approach proceeds by exploring the types of regulation that a federal regulator would attempt to apply in such a situation, paying heed to the demands of the various groups having an interest in the content and effects of such regulation. For the financial sector these groups consist of the general public as *users* of financial services, the financial institutions themselves as the *producers* of financial services, and the *government* as a party with an interest in taxing, either explicitly or implicitly, the activity in financial markets.

In this section we first describe the type of regulatory structure that might be reached by such a solitary regulator. We then examine the incentives that

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[16] Stigler, *supra* note 3.

this system of federal regulation creates for provincial regulators to encourage the development of alternative financial institutions under their jurisdiction. Before assessing these incentives we note one of the most important constraints for the regulators of financial institutions: the so-called fungible nature of capital. Perhaps the foremost characteristic of capital markets in comparison with other markets such as the labour market, the market for finished goods, or the market for natural resources, is the ability of the owners of capital to avoid taxation or government regulation by changing the form, location, or ostensible ownership of capital.[17] This characteristic of the stock in trade of financial markets serves as a substantial constraint on attempts by provincial governments to create an alternative framework of regulation to exploit federal regulations for provincial benefit.

We recognize that our approach to the division of responsibility for regulation of financial institutions is to a considerable degree artificial, postulating as it does the prior existence of a federal regulator and the subsequent reaction of a provincial regulator to existing federal regulation. An alternative, though one that lacks historical basis, could start from the prior existence of provincial authorities, examine the types of regulations they would develop, and predict the subsequent response of a federal regulator to the system of provincial regulation. Given its lack of historical veracity, we expect that this approach would be less satisfactory than the present one. Ultimately, the analysis should be conducted in a framework similar to the economists' general equilibrium approach, which recognizes a complex interdependent interaction among market participants. In the case of the interaction of regulators, however, the *sequence* of action and reaction of the participants may be more likely to shape the final outcome than it does in market processes.

A. *The Regulator's Incentives in a Unitary State*

The starting point for our analysis is an examination of incentives facing the regulator of financial institutions in a unitary state. Our approach describes the forces operating on this regulator in terms of the demand for and supply of regulation. Under demand for regulation we consider the lenders and borrowers who, in effect, are users of the services of financial institutions: the financial institutions themselves, which supply financial services; and the government, which views financial activity as a source of command over resources through taxation, whether explicit or implicit. Under supply of regulation we consider the regulator's response to the competing demands, taking into account the constraints imposed by the nature of financial markets and the regulator's own incentives as determined by its role in the government. This framework is very broad, but, as can be readily recognized, it leads to a synthesis of the existing theories of regulation that emphasizes public interest, capture of regulators, and taxation through regulation.

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[17] Recent Canadian experience affords many examples: the *de facto* development of a market in depreciation allowances through the growth of leasing; the use of swapped foreign currency deposits to avoid the Winnipeg agreement limiting the rates paid by the chartered banks; and the use of other imaginative financing arrangements to minimize taxes. In a broader context, the recent changes in American banking and the growth of the Eurodollar market provide further evidence.

1. Demands of Users

Users of financial markets desire an "efficient" market in which lenders can be assured that their funds are allocated to their most productive uses and borrowers can be assured that they obtain their funds from the cheapest source. When this "allocative efficiency" is achieved, the financial markets are operating in a way consistent with maximizing the output of the economy as a whole. Traditionally, economists have judged "efficiency" according to the degree to which resources are free to move among competing uses. Government intervention has been justified by the existence of such sources of so-called market failure as monopoly and externalities. Recently, however, economists have come to recognize that interventionist practices must be evaluated in the light of criteria of actual performance.

The workings of the capital markets create an unusual set of problems for market participants because the transactions involve the separation of exchange over time. In a trivial sense, a financial transaction can be considered as a transfer of value at a point in time: the customer exchanges current value with a financial institution for a promise to pay in the future. In a primitive financial system, the onus is on customers of financial institutions to determine whether the other side of the exchange will be honoured. Potential lenders may refrain from participating in financial markets when the expected costs of obtaining information offset any gain to be expected from lending. Individual costs of obtaining information can be reduced in several ways: centralized information collection and interpretation, contracts between financial institutions and their customers governing the risks to which the investors' funds are subject, and various forms of guarantees and insurance.

Risks in financial markets are not limited to the relationship between a financial institution and its own customers. Failure of one financial institution to meet its obligations to its customers will impose costs on all such institutions by decreasing the confidence of their customers;[18] a resulting outflow of funds may jeopardize the solvency of institutions that did not undertake the same risks as the defaulting institution. Other costs may be incurred because some institutions, to protect themselves against default-prone competitors, may be forced to hold more liquid portfolios than they would otherwise.

The role of financial institutions in providing the money supply leads to a second form of "externality", this time among customers. The usefulness of a medium of exchange derives from its general acceptability. Individuals hold money in the expectation that people with whom they trade also use money. When the supply of money is offered by a variety of different suppliers, the risk exists that the form of the money will not be acceptable because one or more of the suppliers may be unable to convert its money at its established value relative to the money issued by other suppliers.

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[18] This problem is hardly unique to financial markets. People clearly have definite images of used car dealers that may be difficult for an individual dealer to overcome. Still, both sides of a used car transaction, payment and receipt of title, occur simultaneously. While the future performance of the car may be open to doubt, the buyer can perform a mechanical inspection. The parallel to the problems in financial markets would be captured in the performance of car dealers with respect to guarantees.

These arguments suggest a role for three forms of collective action: (1) information collection and interpretation; (2) contracts with financial institutions governing the risks to which the investors' funds may be subject; and (3) insurance against the risks from participating in financial markets. These arguments do not necessarily lead to a case for government intervention. Research now being carried out on the workings of financial systems that have evolved without government intervention indicates that in some cases private parties do carry out centralized information gathering. The point should not be overstated; it illustrates only that it is possible for private arrangements to enforce sound practices on private financial institutions. Whether these private arrangements have served as an adequate substitute for government intervention requires further study.

Although the risks of financial transactions may be minimized effectively through private arrangements, economists have generally held that the soundness of the financial system is best ensured by government intervention. It is argued that any attempt by private arrangements to protect individuals from the risks of financial transactions inevitably shifts these risks just one stage further to the private guarantor. Any guarantor must have the ability to meet his claims by offering a claim that is generally acceptable. Credibility is enhanced when the claim is upheld by government.

Government intervention can and has taken a wide variety of forms. The government can enable users of financial institutions to economize on information costs by establishing standard categories of financial institutions, each with a set of defined powers limiting certain risks facing its customers. In effect, the customer need not negotiate individually, or determine the nature of the contract with each institution. Instead, he chooses the institution with the powers closest to his preferences. In addition, contracts of this nature are enforced largely through bank inspection and the imposition of penalities for violation. Finally, governments have taken on the role of guarantor of certain classes of financial transactions, though sometimes only implicitly.[19]

2. Demands of Producers

The second group demanding regulation is the financial institutions themselves. In many instances, their interests correspond with those of the users and no conflict faces the regulator. It can gain the support of both groups by the same actions.[20] On the other hand, the interests of the producers of financial services may be directly opposed to those of their customers and the regulator is forced to make a choice. Let us consider these possibilities in that order.

Measures to reduce customers' information costs and risks are likely to benefit the financial institutions as well. Transaction costs in any market can

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[19] The Federal Government in Canada provided compensation for up to thirty-five percent of the deposit balances held by individuals with the Home Bank when it failed in 1923. Deposit insurance was not established until 1967.

[20] In terms of our earlier taxonomy, this circumstance would correspond to $\{X>0|x_a, x_b \geq 0, x_c, x_d>0\}$.

be viewed as affecting the demand facing sellers because these costs become part of the price that buyers must pay. Hence, measures that reduce such costs and risks may be welcomed by financial institutions.

For reasons of self-interest, as Stigler and others have pointed out, regulated firms may advocate measures that benefit them at the expense of their customers. Regulations in the interests of the regulated include restrictions on entry and agreements to limit any form of competition that has the potential to dissipate producer profits. In banking, regulations that benefit the producers' interests include high initial capital requirements in order to become incorporated, and ceilings on interest rates paid to depositors.

Some ambiguity exists, however, with respect to the interpretation of capital requirements, because a high invested equity from bank owners may serve to insulate bank depositors from risk. To some extent, the "purpose in fact" of capital requirements can be inferred from their particular form. Capital requirements that establish a minimum ratio of capital to liabilities could be justified on grounds of depositor protection; moreover, they constrain the behaviour of large and small banks alike. In contrast, absolute capital requirements that must be met by a new entrant, as in Canada, are more difficult to justify on grounds of depositor protection; such requirements do not affect large banks and are unrelated to the size of outstanding liabilities.

The theory of regulation in the interests of producers suggests that the strength of producers' pressures for regulation varies from industry to industry according to particular circumstances. Producers' interests are more likely to be reflected where the costs of organization are small and where the benefits of regulation can be readily confined to particular groups. The cost conditions are most likely to be satisfied in an industry with a small number of producers, whereas dissipation of the benefits can be avoided most easily where formal entry into the industry can be limited and where the product in question has few close substitutes.

3. Demand from Government

The final party with an interest in the regulation of financial institutions is the government itself. For the purpose of our analysis, the interests of government in its role as regulator of financial markets can be distinguished from its interests in other capacities. Only the latter aspects are relevant for our discussion of government as a demander of regulation.

The government demands regulation independently of the users and producers in any industry to the extent that it can achieve some goal more cheaply or easily through this means than through others at its disposal. Regulation on behalf of the government can be viewed as a form of taxation, in that resources are transferred from some participants in the regulated industry to the government itself, or to other participants in the regulated industry, or even to parties outside the regulated industry. Government demand for regulation of any industry can be expected to vary with the perceived costs of achieving the desired transfer by other means, such as the use of explicit taxation.

The government's demand for regulation of financial markets can be met in a number of different ways. Regulations that require financial institutions

to hold government debt on favourable terms transfer resources from users of financial markets and suppliers of financial services to the government itself. The minimum cash reserve ratio is the most familiar and undoubtedly the most ubiquitous example of this type of regulation. Compulsory holdings of other types of securities such as home mortgages or loans to small businesses provide a means by which government can tax some users of financial markets to the benefit of others.

4. The Supply of Regulation

In our framework, the regulator supplies regulation in response to the competing demands of users, suppliers, and government itself. A complete theory of regulation requires prior explanation of the objectives of the regulator and the constraints it faces. If we identify the regulator with the political authority, we need some model of political decision-making such as the vote-maximizing model or the median-voter model. If, on the other hand, we view the regulator as a government department or bureau, we need also to adopt a theory that explains the relationship between the political authority and its agents. However, we would be taken well beyond our purpose if we developed these models fully. Instead, we proceed from the assumption that any regulator of financial institutions will formulate a system of regulation that balances the interests of the various demanders of regulation in terms of their contribution to its own goals as a regulator.

B. *The Regulator's Incentives in a Federal State*

Our analysis to this point describes the incentives facing a regulator of financial institutions in a unitary state. As discussed earlier, our model of regulation in a federal state starts from the assumption of a set of regulations established by an existing federal regulator and considers the incentives created by this system of regulation for the provincial authority in designing its regulation. We proceed from our initial model of the regulatory agency in a unitary state to examine the competing demands for regulation at the provincial level. The incentives facing the provincial regulator of financial institutions are distinctly different from those facing the federal regulator. Not only does the provincial regulator have the opportunity to react to federal regulation, he also faces a more limited constituency. Like the federal regulator, he balances the demands of users, producers, and government, but his interest is in regulating in favour of the needs of users, producers, and governments in his jurisdiction relative to those outside. We identify three different sources of differences in incentives for provincial and federal regulators: (1) spill-over of benefits; (2) avoidance of costs; and (3) differential composition of constituency.

In order to analyze the cases where federal and provincial incentives diverge, we can extend our analytical framework by designating users, suppliers, and governments within a province by a p subscript and those within the entire country by an f subscript. Inasmuch as provincial constituents are a subgroup of federal constituents, we also use the subscript n to refer to federal constituents who are not constituents in the province under consideration.

1. Spillover of Benefits

Different incentives exist for federal and provincial regulators when some

of the benefits from any regulation spill over beyond the domain of the provincial regulator. Consider, for example, a regulation directed toward depositor safety that imposes costs on a group of financial institutions. As we have already seen, this regulation has both direct benefits to the customers of that group and indirect benefits to other financial institutions and their customers resulting from the constribution of these safety regulations to the overall stability of the financial system. When considered from the perspective of a federal regulator, such safety regulations could have net benefits represented as

$$\{X_f = X_n + X_p > 0 | x_{an} + x_{ap} > -x_{sp}\}$$

whereas from a provincial standpoint such regulations need not give positive benefits. For example, the same policy when viewed at the provincial level might be represented as

$$\{X_p < 0 | x_{ap} < -x_{sp}\}.$$

Thus the provincial regulator will be less likely than a federal regulator to implement policies that impose costs on financial institutions under its jurisdiction because more of the benefits will "spill-over" to institutions and individuals outside its jurisdiction.

2. Avoidance of Costs

The second case in which incentives differ among regulators at different levels of government can be viewed as almost the inverse of the first. In this case, the federal regulator cannot exclude provincial constituents from the benefits of federal policy. The provincial government then has an incentive to shield its constituents from sharing in the costs of federal regulations while continuing to share in the benefits. Nevertheless, the net benefits as perceived by the federal regulator remain positive.

Such a policy could be presented as

$$\{X_f > 0 | x_{ap} = x_{an} + x_{ap} > 0, x_{sf} < 0\}.$$

Moreover, the requirement that provincial users of federally regulated financial institutions cannot be excluded from the benefits of federal policies as the provincial regulator reacts to federal legislation can be represented by $\frac{\Delta x_a}{\Delta x_{sp}} > -1$, where Δ's represent changes. In other words, the decrease in benefits arising from the provincial government's supply response must be smaller than the decrease in costs to provincial institutions, so that there is a net benefit for provincial constituents from the actions of its regulators.

This "avoidance of costs" must be distinguished from the preceding "spill-over of benefits". The main difference between the two cases arises from the contexts in which they apply. In the "spill-over of benefits" situation we compare the incentives of provincial and federal regulators, each acting in isolation. The incentives for a provincial regulator differ from those of a federal regulator because from its standpoint some of the benefits of its regula-

tion are dissipated beyond its constituency, whereas for the federal regulator they are not. In the case of "avoidance of costs" the provincial regulator reacts to existing federal regulation in ways that maintain the benefits for its constituents while allowing them to avoid the costs.[21] Obviously the ability to react in this way is partly determined by policies chosen by the federal regulator.

3. Composition of Constituencies

The final source of variance between provincial and federal regulations derives from differences in the composition of their constituencies across users and producers and across different groups of users. The provincial regulator, even if it were the only regulator, might choose an entirely different pattern of regulation, subject of course to the constraints imposed by the operation of capital markets. Variations in regulation arising in this way are difficult to predict without knowing in advance the differences between the relevant constituencies. Among the more easily observed factors that would influence the composition of the constituency are whether industry (as a large demander of funds) or financial institutions (as suppliers of financial services) are domestically owned. We expect regulators to be more likely to use regulation to tax groups that are not domestically owned (and hence have a more limited voice) for the benefit of other groups that are more obviously constituents.

V. EVIDENCE FROM THE CANADIAN EXPERIENCE

Up to this point we have described the forces that we expect would influence the nature of the regulations applied to financial institutions by federal and provincial regulators in a federal state. Now we can turn to assessing the degree to which this approach helps in interpreting the actual pattern of regulations governing financial institutions in Canada. We discuss in turn the evidence relating to our hypotheses that (1) provincial regulators are influenced by the spill-over of benefits from their regulation, (2) provincial regulators act to permit their constituents to avoid the costs of federal regulations, and (3) provincial regulations reflect differences between the provincial constituency and the federal constituency.

A. *Spillover of Benefits*

We have argued that provincial regulators may be less willing than their federal counterparts to institute regulations of a particular type because they know that part of the benefit of their regulation will spill over beyond the limits of their constituency. An example is depositor safety regulation. The greater safety of institutions under the provincial regulator's jurisdiction can protect institutions in other jurisdictions from potential "deposit run-offs". Yet a provincial regulator might be less appreciative than a federal regulator of

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[21] It is interesting to consider whether a federal regulator has a corresponding incentive to react in response to existing provincial regulation. The analysis will clearly not be symmetrical. Note that x_p is part of x_f so that the federal regulator needs to be concerned about the constituents of the province. In contrast, x_n is not part of x_p so the provincial regulator is unconcerned with federal constituents who live outside its jurisdiction.

the effects of depositor safety regulation in improving the environment for these other financial institutions, and as a result be less likely to impose costs on financial institutions under its jurisdiction. This proposition is supported by: (1) legislative provisions in various jurisdictions that are directed to safety; and (2) the ability of different institutions to qualify for coverage under deposit insurance.

Consider the initial capital requirements imposed on new financial institutions. In 1969, according to information compiled by Quebec's Study Committee on Financial Institutions,[22] chartered banks were required to have initial capital of at least $1,000,000. In contrast, trust companies incorporated in Ontario were required to have $500,000 capital and those incorporated in Quebec needed only $250,000 capital.[23]

Secondly, consider the borrowing powers granted to trust and mortgage loan companies. Federal and Ontario authorities limit the ratio of trust and mortgage loan company borrowings to their capital and reserves. The control is two-fold: (1) ceilings specified in legislation; and (2) discretion granted to authorities to set the ratios for individual firms within these limits. The comparison is complicated because the federal and Ontario statutes have been revised at different times so that the ceilings applied to the companies have varied depending on the date of observation. Recently, however, the federal and provincial statutes have been substantially the same with respect to borrowing powers. More relevant in practice, then, are the authorities' decisions with respect to individual firms. Table III shows the minimum borrowing ratios for 1971 that were available for federally and provincially incorporated trust and mortgage loan companies operating in Ontario.[24] While the sample is small, it reveals that the provincially incorporated companies generally were permitted to have higher borrowing ratios than federal companies. Moreover, it would appear that larger companies are permitted higher borrowing ratios; since federal companies were on average substantially larger, the difference in discretionary policy is apparently even greater. Finally, the fact that the authorities in Quebec do not impose any borrowing limits on trust and mortgage loan companies incorporated in that province lends further support to our proposition.[25]

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[22] Que., *Report of the Study Committee on Financial Institutions* (Quebec: Province of Quebec, 1969) at 62.

[23] It should be noted that in the United States federally-incorporated banks have historically been subject to higher capital requirements than have other banks. A further test of our hypothesis could be made by examining capital requirements on a state-by-state basis. We would predict that regulators in larger states would be conscious of their ability to capture more of the external effects within their own state and as a result be more willing to impose stringent requirements.

[24] This was the final year in which the authorities published the appropriate data for making the comparison.

[25] Chartered banks are not subject to any explicit minimum capital to asset ratios. Rather, section 175 (1) of the *Bank Act*, *supra* note 7, states that "a bank shall, in relation to its operations, maintain adequate capital. . . ." The absence of any explicit limit does not support our explanation. On the other hand, a set of provincially regulated institutions, credit unions, traditionally have also not been subject to borrowing limits. Recently some provinces have taken steps to introduce such limits.

For further evidence, we may examine the ability of financial institutions to qualify for deposit insurance when the Canada Deposit Insurance Corporation (CDIC) was established in 1967. Membership in the CDIC was made compulsory for all federally incorporated financial institutions. At the same time, a number of provinces enacted parallel legislation requiring all financial institutions under their jurisdiction to become members of the CDIC. The *Canada Deposit Insurance Corporation Act*[26] stipulated that a provincial institution is eligible for insurance if it agrees, in carrying on its business,

> not to exercise powers substantially different from the powers exercisable by a trust company under the *Trust Companies Act* and a loan companies under the *Loan Companies Act*.[27]

Thus the CDIC was required to review the business of provincial companies in order to determine whether they qualified. As it turned out, the government of Alberta in 1967 accepted an Indemnity Agreement with the CDIC on behalf of a number of trust companies incorporated in that province.[28] The point to note is that at least one province was permitting financial institutions to operate under terms different from, and apparently less stringent than, the federal legislation for comparable institutions.

B. *Avoidance of Costs*

Our second argument suggested that provincial regulators would act so as to permit demanders and suppliers of financial services under their jurisdiction to avoid the costs of federal regulation. We illustrate this argument by reference to two federal measures that can be interpreted as devices to tax by means of regulation. The first such measure, the minimum cash and secondary reserve requirements imposed on the chartered banks, can be viewed as an implicit tax on the banks, requiring them to hold federal government debt on favourable terms. The second measure sought to protect Canadian ownership of banking by limiting the degree of foreign ownership in any chartered bank to less than twenty-five percent of the outstanding stock.[29] These measures, and the provincial reactions to them, are considered below.

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[26] *Canada Deposit Insurance Corporation Act*, R.S.C. 1970, c. c-3, s. 16 (b).

[27] In both cases, the reference is to the relevant federal statute.

[28] See various issues of Canada Deposit Insurance Corporation, *Annual Report*. The indemnity agreement was still in effect at the date of the 1979 *Annual Report*. A similar agreement was reached with Ontario to accept institutions under its jurisdiction without prior examination. This indemnity was removed within a year after the companies were examined. See *Annual Reports* for 1967 and 1968.

[29] When this regulation was initially applied in 1968, the one bank that failed to conform was subject to limitations on its business until it came into conformity. After 1980, foreign owned banks were permitted to operate in Canada, subject, however, to more constraints than domestically owned banks.

TABLE III

Maximum Borrowing Powers:
Trust and Mortgage Loan Companies, 1971

	Incorporation	*Assets (millions of C$)*
1. *Twenty times unimpaired capital and reserves*		
National Trust	F	645
Victoria and Gray Trust	P	541
Montreal Trust	P	526
Metropolitan Trust	P	137
Crown Trust	P	129
Royal Trust Mortgage	P	110
Raymor Mortgage	P	102
Jordan Mortgage	P	74
Hamilton Trust	P	20
2. *Eighteen times unimpaired capital and reserves*		
Ontario Trust	P	104
Federal Mortgage	P	18
Country Mortgage	P	11
3. *Fifteen times unimpaired capital and reserves*		
Huron and Erie Mortgage	F	770
Kinross Mortgage	F	310
Canborough Mortgage	P	44
United Trust	P	34
4. *Twelve and one half times unimpaired capital and reserves*		
Canada Permanent Mortgage	F	853
District Trust	P	23
Dominion Trust	P	6
Canada First Mortgage	P	4
5. *Ten times unimpaired capital and reserves*		
Eastern Canada Mortgage	F	207
6. *Eight times unimpaired capital and reserves*		
Credit Foncier Mortgage	P	315
Landmark Mortgage	P	8

F — Federal Incorporation P — Provincial Incorporation

Source: Ontario, Report of the Registrar of Loan and Trust Corporations, Business of 1971, *passim*.

The minimum cash and secondary reserve requirements in federal banking legislation can reasonably be interpreted as attempts to tax the chartered banks and their customers. In fact, the measures are comparable to an explicit tax measure in that the government has less need for revenue from other sources because chartered banks are required to hold federal government securities on favourable terms. As noted earlier, any measures of this sort tax users and producers of bank services to the benefit of taxpayers at large.[30] A provincial authority can permit its constituents to avoid the costs of such a tax and still share in the general benefits of the revenues by sheltering the financial institutions under its jurisdiction from the reserve requirements. The effectiveness of such action depends on the degree to which provincial institutions can provide financial services that are close substitutes to those offered by banks. The federal authorities are subject to pressures from producers of financial services to reduce the tax through reserve requirements, but are less likely to remove these requirements because they, unlike provincial authorities, stand to lose revenues from such a step. It can be predicted that provincial authorities will oppose the imposition of reserve requirements on provincial institutions that benefit the federal government. The provincial regulator then has a number of options: it can substitute another form of reserve requirement that shelters securities of the province; it can take measures that substitute alternative forms of taxation through regulation; or it can set lower costs of regulation for its users and producers of financial services.

The application of cash and secondary reserve requirements to financial institutions has been a major area of dispute between federal and provincial authorities in recent years. In 1964, the federal Royal Commission on Banking and Finance (the Porter Commission)[31] recommended that all deposit-taking institutions be subject to the same set of regulations, including reserve requirements, for reasons of administrative efficiency, equity, and competition. Implementation of these proposals would have required sweeping changes in federal legislation. However, the *Bank Act* revisions of 1967 were confined to narrow issues related to the chartered banks. The federal initiative to apply reserve requirements to provincially-regulated financial institutions was renewed with the proposals of August 1976, which made the acceptance of reserve requirements the *quid pro quo* for membership of near-banks in the Canadian Payments Association.[32] While producer interests have protested strongly, provincial opposition to the extension of reserve requirements has also been persistent and unequivocal. In 1969 the Study Committee on Finan-

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[30] Calculations by the Economic Council of Canada, in *Efficiency and Regulation, supra* note 2, based on the assumption that the banks would voluntarily have held an amount equal to one-half the existing reserves, suggest that the reserve requirements made bank profits 4.3 percentage points per year lower than they would otherwise have been. These calculations were based on the assumption that capital in banking is immobile. If, instead, capital were assumed to be perfectly mobile, the reserve requirements would raise the costs of banking services by the amount by which the Council calculates that profits were reduced.

[31] *Supra* note 6.

[32] Can., *White Paper on the Revision of Canadian Banking Legislation* (Ottawa: Min. of Supply and Services, 1976).

cial Institutions of the Province of Quebec recommended that near-banks should not be required to maintain cash reserves with the Bank of Canada.[33] Likewise, the federal *White Paper* of 1976 was met by vigorous protest from the Quebec and other provincial governments, with much of the protest directed to the proposals regarding reserve requirements. While, as might be expected, the controversy has not settled on the merits of an implicit tax levied by the federal government, it is interesting to note that arguments relating to the necessity of reserve requirements for monetary control and assurance of depositor liquidity have been readily accepted by federal authorities and invariably rejected by their provincial counterparts.

The attitudes of various authorities to the ownership of financial institutions provide a further example of attempts by provincial authorities to relieve their constituents of the costs of federal measures that "tax" through regulation. In 1967, in response to the move by First National City Bank to take over a small, specialized chartered bank,[34] the Canadian government introduced measures that effectively limited the degree of foreign ownership of chartered banks to less than twenty-five percent of outstanding capital. Following the economic analysis of nationalism developed by Breton,[35] this move may be viewed as a measure to protect the interests of Canadian owners at the expense of bank users. In effect, users were denied the benefits of competition between Canadian and foreign-owned banks, while at the same time owners of capital employed in banking were sheltered from competitive pressures arising from the presence of foreign-owned banks. Our analysis suggests that provincial authorities would be less eager to adopt these measures, because identical legislation at the provincial level would protect all Canadain owners of financial institutions regardless of their province of residence. By avoiding parallel measures directed to protect *Canadian* ownership, provincial authorities can provide an outlet by which users of financial institutions under their jurisdiction can avoid the costs of ownership restrictions while their resident bank owners continue to benefit from the federal measures as do residents of other provinces. Provincial authorities concerned with protecting constituents who own financial institutions would be expected to find measures for protecting only their constituents. The Quebec Study Committee on Financial Institutions recognized this point explicitly, stating:

> we cannot see why Quebec should block a foreign group — American, say — from taking control of an institution chartered in Quebec, when an Ontario or Western Canadian group could have access to it. If our aim is to maintain control of financial institutions in Quebec hands, we do not see why a New York group should be treated differently from Toronto or Winnipeg groups. This could be answered by saying that Quebec legislation should be adapted in such a way as to prevent groups outside Quebec — rather than foreign groups — from gaining control of our financial institutions.[36]

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[33] *Supra* note 22, at 183.

[34] We should note that the intended purchase by Citibank was not precedent-setting. The Mercantile Bank, the target, was already foreign-owned. In addition, several foreign banks had operated in earlier times. The last, Barclays, was taken over by the Imperial Bank in 1956. Mercantile, however, would have been the first chartered bank to be owned by Americans.

[35] *The Economics of Nationalism* (1964), 72 J. Pol. Econ. 376.

[36] *Supra* note 22, at 203-204.

The Committee saw difficulties both in practice and in principle in invoking such measures and chose not to limit ownership from outside Quebec. Nevertheless, the Committee seemed well aware that these measures were in the interest of the owners of financial institutions and saw no reason for the Quebec government to act to benefit Canadian owners of financial institutions regardless of their residence. Subsequent governments in Quebec have been attracted to the principle of encouraging Quebec ownership of financial institutions and have taken active (and successful) steps to discourage take-over attempts of Quebec-based institutions by extra-provincial interests.[37] If, as Breton's theory of nationalism posits, such ownership clauses are intended to protect the interests of Canadian owners at the expense of bank users, then these actions are consistent with our theory.

C. *Differential Constituency Effects*

Our final proposition suggested that provincial and federal patterns of regulation for financial institutions would differ as a function of the different constituencies. We would not expect the same balancing of user, producer, and government interests to occur at the provincial as at the federal level. Moreover, provinces differ with respect to the relative political strength of borrowers' and lenders' interests, the nature of borrowers' interests, the importance of producers' interests, and the appeal of regulation as a form of taxation. We could predict differences in the approach taken toward regulation of financial institutions if we had sufficient information about the respective differences in constituency.

The development of the credit union movement provides some limited support for this view. Credit unions (or caisses populaires) operate in every province. The various measures of credit union activity shown in Table IV indicate that the size of the credit union movement varies substantially among the provinces. This can be attributed in part, at least, to differences in the approach taken by the provincial regulators. For example, Ontario continued to require "bonds of association" through common place of employment, religion, or occupation long after such principles were effectively abandoned by authorities in other provinces. The caisse populaire movement in Quebec was always based on the much less restrictive principle of residence within a parish, and even this requirement was loosely enforced.

Several aspects of the regulation of the credit union movement should be noted for present purposes. Provincial regulators, in general, permit credit unions and their customers to escape the costly elements of regulation, such as the primary and secondary reserve requirements borne by the banks. This aspect by itself is consistent with efforts by provincial authorities to allow their constituents to avoid the implicit taxation of the federal government. These

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[37] *The Globe and Mail* (Toronto), Dec. 7, 1978, at B6: "Quebec will take action to block sale of Credit Foncier". *The Financial Post*, Dec. 16, 1978, stated: "Some financial executives think this takeover is a situation that the Quebec government has been seeking. It would give the government an opportunity to put legislation in place without taking on one of the giants, such as Royal Trust. Once legislation is in place giving the government the authority to approve takeovers . . . the legislation would be there for future use."

costs could be avoided through fostering credit institutions with broader investment powers than those possessed by the credit unions. Such an approach has been rejected, however. Credit unions are restricted generally to consumer loans and residential mortgages on the asset side of their portfolio. This restriction is consistent with actions by provincial authorities to establish conditions favouring several groups — household savers and borrowers — by permitting them to avoid the taxation implicit in federal regulation. We would expect authorities to give the credit union movement the greatest encouragement in provinces where the interest of consumers are strongest relative to other users and traditional producers of financial services.

TABLE IV

Measures of Credit Unions and Banks by Province, 1979
(millions of dollars)

	1) Credit Union Assets	2) Bank Liabilities	3) Personal Savings Accounts at Banks	4) Bank Business Loans	5) Bank Assets
Newfoundland	28	1,434	852	515	2,095
Prince Edward Island	33	385	241	131	453
Nova Scotia	202	3,283	1,662	893	3,792
New Brunswick	326	2,124	1,202	756	2,600
Quebec	11,780	27,119	10,570	8,498	29,523
Ontario	4,711	65,780	27,624	17,408	61,020
Manitoba	1,265	5,766	3,118	1,466	6,390
Saskatchewan	2,381	4,638	2,935	763	5,063
Alberta	1,750	15,817	6,440	7,840	20,670
British Columbia	4,196	18,279	9,429	5,980	20,143

Source: Statistics Canada, 61-209, *Credit Unions 1979*, at 28-29; Bank of Canada, *Review*, February 1981, at S46-S49.

Evidence of the relative development of credit unions can be used to test our hypothesis. As a first step, we must determine the relative strengths of different interest groups in the various provinces. To approximate the pressures of business interests, we use a variety of measures of the importance of business loans granted by chartered banks. On the basis of the data according to province, negative and significant relationships were found between measures of the strength of the credit union and these measures of the

pressures of business interests for equations omitting the Atlantic provinces (Table V).[38] While far from definitive, this evidence from the relative strength of the credit union movment is consistent with our hypothesis that differences in the interests of constituents influence the choices taken by provincial regulators.

TABLE V

Rank Correlations Between Credit Union and Banking Activity, 1979.

Credit Union Variable	*Bank Variable*
1) Credit Union Assets per Capita	A) Business Loans per Capita
2) Credit Union Assets to Bank Liabilities	B) Business Loans to Personal Income
3) Credit Union Assets to Personal Saving Deposits Held at Bank	C) Bank Assets per Capita
	D) Bank Assets to Personal Income

Measures		*Rank Correlation Coefficient*	*t Ratio*
Credit Union	*Bank*		
1)	A)	-.57	1.57*
1)	B)	-.68	1.85*
1)	C)	-.57	1.57*
1)	D)	-.23	.92
2)	A)	-.57	1.57*
2)	B)	-.68	1.85*
2)	C)	-.57	1.57*
2)	D)	-.23	.92
3)	A)	-.68	1.85*
3)	B)	-.71	2.04**
3)	C)	-.68	1.85*
3)	D)	-.60	1.50*

Significance levels: t.05 = 2.015 (designated **)
t.10 = 1.476 (designated *)

Note: The "t" ratio measures the statistical significance of the correlation coefficient. A "t" ratio at the .05 significance level denotes a 95% probability that a relation between the variables exists.

[38] Inclusion of the Maritime provinces, either individually or as a group, markedly reduced the significance of the relationship in every case. This finding is rather puzzling because the co-operative movement in English Canada had its beginnings in Nova Scotia.

VI. CONCLUSIONS AND AVENUES FOR FURTHER RESEARCH

In this paper we have outlined an approach designed to explain the divergence of interest between provincial and federal regulators of financial institutions in a federal state, as well as between provinces themselves. Evidence from Canadian experience has to varying degrees upheld our theoretical predictions. Nevertheless, the analysis remains incomplete. For example, we have focused in the present analysis on regulatory situations in which provincial regulators have an incentive to supply regulation that differs from both federal and other provincial regulation. On the other hand, federal and provincial authorities do co-operate in some areas of regulatory concern. We therefore need to extend our model to develop predictions about the circumstances in which such co-operation can be expected. Too little attention was paid to the constraints on differences between policies pursued by federal and provincial regulators. Do wide differences in approach lead to pressures for conformity in regulation and, if so, what determines which regulator will be required to conform to the other?

Finally, the structure of regulation is not unchanging; the pattern of provincial and federal regulation responds to innovations in the financial industry. The jurisdictional pattern also responds to the level and variability of interest rates. For example, the opportunity cost of reserve requirements rises as interest rates rise. The last decade has seen significant growth in the share of banking activity under regulatory jurisdictions with low reserve requirements. In Canada, both near-banks and foreign banks have increased their shares, and the chartered banks have stepped up their international operations, which are generally less regulated than domestic operations. The regulators with declining jurisdictional shares then typically respond by relaxing their regulations; for example, reserve requirements on Canadian chartered banks were lowered in the 1980 *Bank Act*.[39]

Volatile interest rates also encourage financial innovations and changing jurisdictional patterns. New types of "financial futures" instruments have appeared in recent years that allow financial institutions to hedge against adverse interest rates movements. The volume of trading in such instruments has increased dramatically, and some of the trading is for speculative rather than for hedging purposes. Whether, how, and by whom such trading should be regulated are questions being vigorously debated among regulators and academics. Further study may produce a framework for predicting the changes in regulatory patterns that occur in response to such financial market developments.

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[39] *Supra* note 7.