School of Public Policy

UNIVERSITY OF CALGARY

RESEARCH PAPER
Volume 17:20
November 2024

# The Lay of the Land: Prospects for Improving Financial Competitiveness

Mark Huson and Randall Morck

http://dx.doi.org/10.55016/ojs/sppp.v17i1.79993

## TABLE OF CONTENTS

# The Lay of the Land: Prospects for Improving Financial Competitiveness[1]

**Mark Huson and Randall Morck**

## EXECUTIVE SUMMARY

Alberta's financial sector has not grown to match the province's overall rise in economic importance to Canada. From 1997 to 2022, Alberta's population rose from 2.5 to 4.5 million and Alberta's share of GDP rose from 11 per cent in 1997 to 14.9 per cent in 2021. Alberta's financial sector, 14.7 per cent of Canada's in 1997 and 15.3 per cent in 2022, barely budged.

A dynamic and efficient financial sector sustains long-term economic growth by allocating savers' money to the highest value-added capital investments. These are usually innovations — either product innovations (making more or more valuable products from given inputs) or process innovations (making given outputs from less or less costly inputs). Either way, innovation adds to overall wealth by letting firms create more from less, the definition of productivity growth. The more accurately the financial system allocates savers' wealth, the faster standards of living, government tax bases and GDP can rise.

Various national and subnational governments throughout the world have enacted policies aimed at boosting productivity growth by better directing capital to its highest value uses, especially to finance innovation. These policies can be divided into two classes.

The first class of policies are direct government interventions. These are often counterproductive, at best ineffective, and successful only under unique conditions which do not prevail in Alberta.

Government can directly subsidize corporate R&D, industrial policies and business research programs, but has proven bad at picking winners and at keeping politics out of such decisions. Postwar industrial policies financed reconstruction in Europe and Japan, but rebuilding is fundamentally different from sustained long-term productivity growth. Otherwise, government interventions of this sort have near-perfect failure rates.

Some governments seek to boost economic activity by becoming "tax havens" — that is, by attracting businesses' head offices with low tax rates. In general, this requires only a small office, or even just a post office address, in the tax haven. Tax havens are usually microstates with tiny populations, so small tax revenues from each of many notional head offices fund their small governments well. However, the strategy works less well for larger economies, such as Alberta. The largest tax haven, Ireland, boosted its GDP substantially, but only because national income accounting includes in its GDP the global sales of firms notionally headquartered there. Ireland's GDP rose; its standard of living did not. Moreover, international agreements to penalize tax havens heavily are coming into force, and Canada's interprovincial equalization program would likely reallocate any excess tax capacity Alberta gained.

[1] We are grateful for insightful comments from the editors, Jack Mintz and Daniel Wilson, and two referees.

Other governments seek to boost economic activity by “regulatory arbitrage” — that is, adopting laws and regulations that help firms avoid the laws and regulations of other jurisdictions. The U.S. state of Delaware has tailored its financial regulations, tax laws and other laws and regulations to gain revenue from incorporation and other business fees. Delaware lets firms claim the state as the place of their legal incorporation, even though their functional head offices and facilities are elsewhere. One reason firms like Delaware is that its laws can be used to stop corporate takeovers. This can be economically destructive because takeovers can rejuvenate badly governed firms, but the consequences of corporate misgovernance need not affect Delaware. Regulatory arbitrage can induce a “race to the bottom,” in which jurisdictions outbid each other for fees by offering ever laxer laws and regulations. This often ends badly, as when Forbes magazine labelled the BC stock exchange the “scam capital of North America.” Small stock issuers had liked the BCSE’s lax regulations, but investors did not and the failing exchange was folded first into the Alberta Stock Exchange and later into the TSE Venture exchange.

The second class of policies require more effort, patience and wisdom, but often work. These have government focus on its core competences to improve the “lay of the land” to attract productivity-enhancing economic activity. This happens where governments provide public goods and services that people and firms deem worth the taxes.

For example, Delaware has expert economists vet its laws and regulations and vets its judges for their knowledge of economics. Consequently, Delaware courts provide uniquely economically literate resolutions of business disputes. To the extent that this, rather than legal and regulatory laxity, attracts companies, no race to the bottom ensues. Alberta might do likewise.

The two major U.S. high-tech hubs, Silicon Valley and Cambridge, are in California and Massachusetts, respectively — both relatively high tax states. Both hubs centre on elite research universities that provide ongoing supplies of brilliant high-tech entrepreneurs as well as financially and technologically highly skilled employees. Health care, school quality, law and order and other public goods and services figure into people’s decisions about where they study, found businesses and build lives. A growing local population of highly skilled people attracts more businesses seeking skilled employees, and this attracts more skilled employees. An economic law of gravity can take over to make a high-tech hub self-sustaining despite episodes of poor government. Venture capital firms, investment banks and other financial institutions arose to fund emerging high-value-added innovative firms.

Alberta may wish to evaluate legal, regulatory, health care, education and other public policy reforms by how they would improve the lay of the land. Policies that attract and retain innovative firms and the skilled workers they need boost productivity growth, the primary determinant of living standards. Alberta may also wish to review laws, policies, regulations and public-sector bureaucracies periodically and eliminate those that do not enhance the lay of the land.

Government worth the taxes can attract economic activity, and savings, from all over the world to Alberta. Government not worth the taxes, even if the taxes are low, sends economic activity and savings elsewhere. Fortunately, the lay of the land is most affected by things that lie within the traditional core competences of government: law, regulation, education, health care and the efficient provision of public goods and services that firms and people value for tax rates they deem worth paying to be in Alberta.

## POLICY RECOMMENDATIONS:

- The social purpose of the financial system is to entrust people's savings to honest, hardworking and innovative entrepreneurs, whose successes increase the overall productivity of the economy. This is critical because most economic growth in high-income economies is productivity growth, not increased capital, labour or other inputs to production.
- A financial system fulfils this mission best in an economic landscape featuring, among other things, efficient government and high human capital. Efficient government is government taxpayers deem worth the taxes. Economic activity concentrates under efficient government, which need not be the same as minimal government. High human capital means employees who employers deem worth the wages. Again, economic activity concentrates where valuable skills are available, not where wages are lowest. Businesses weigh the costs and benefits of the economic landscape a government shapes, and both sides of the scale matter.
- Laws, regulations and government agencies, including those that supervise the finance sector, provide important social benefits. But they also all tend to accrue new layers atop old ones that become expensive deadweight. We suggest that government may wish to evaluate existing and proposed public policy through this lens — advancing policies that improve the lay of the land and honing away those that do not.

## 1. THE SOCIAL PURPOSE OF A FINANCIAL SYSTEM

Some people conceive of valuable uses for more money than they have; others have more money than they can currently prudently spend. Before banks, stock markets and other financial institutions, townsfolk had to accumulate coins or gems to invest in their shops, forges or saddleries. Investment was kept within families, or close circles of friends. At best, a local guild of blacksmiths might finance a new smithy who did not threaten existing members' trade. Strangers, however honest, innovative or hardworking, had no access to other people's savings. The finance sector arose to cycle savers' funds to honest, innovative and hardworking strangers by ensuring these would pay savers fair returns. The whole of an economy's savings thus became available to all with viable uses for funds beyond their or their families' savings.

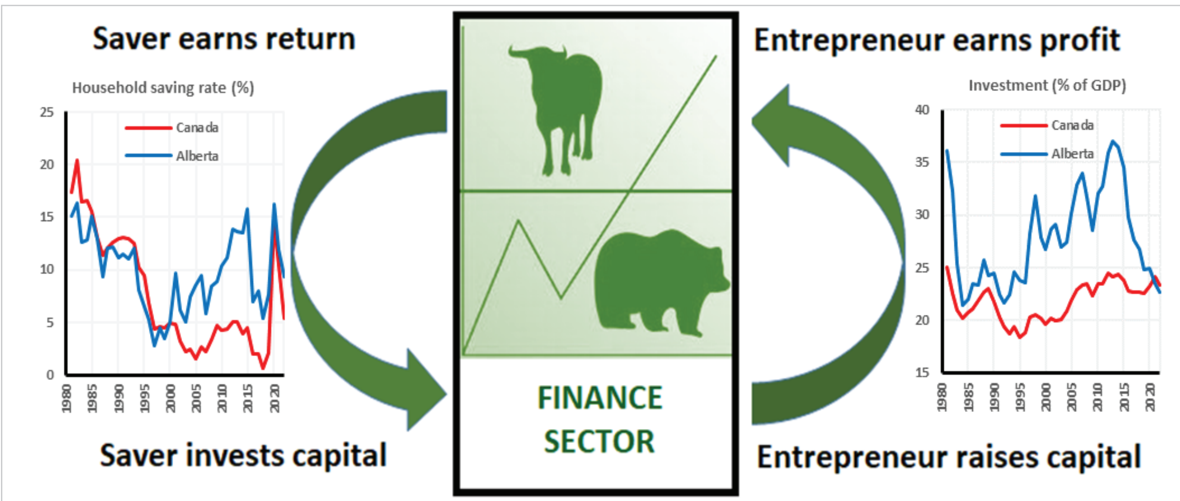
A financial system is said to be more functionally efficient if it does a better job of getting capital to where it creates more new jobs, more wealth and a larger tax base to support public goods and services. A better job means less waste — that is, less capital misallocated to dishonest or incompetent uses — and more capital allocated to productivity growth; that is, to entrepreneurs with creative ideas for productivity-enhancing ventures.

The social purpose of the finance sector is to sustain this circular flow of capital in Figure 1. A more robust and more precise circular flow is a fundamental determinant of economic prosperity (Levine 2005). Financial institutions and markets are intermediaries connecting capital supply (savers with income in excess of their spending plans) with capital demand (entrepreneurs and firms with spending plans in excess of their inczome). Capital supply is money that people, governments and corporations save and invest in bank accounts, stocks, bonds and other financial securities. Capital demand is money that people, corporations and governments raise via borrowing and securities issuances.

Different capital demanders have different spending intentions. Consumers borrow to buy homes, cars and consumer durables. Governments borrow to finance spending beyond their proceeds from taxes and money creation. Corporations borrow and issue stock to finance expansions and new technology investments. Some consumers, government and corporations can default, partially or fully, thereby diminishing or destroying the capital allocated to them. Entrepreneurs borrow and issue securities to found new corporations. Most new corporations fail, but new corporate ventures that create and develop important new technologies can grow rapidly, creating vast new wealth and new jobs.

### Figure 1. The Circular Flow of Capital

The social purpose of the financial sector is to move capital from savers, who have more money than they intend to spend, to entrepreneurs (also home buyers, consumers, etc.), who need more money than they have, and to move income from entrepreneurs' profits to pay savers' returns. A larger (more capital) and more efficient (capital put to more valuable uses) financial sector is associated with higher and more rapidly increasing standards of living across economies.




More efficient financial intermediation better sustains prosperity by better allocating savings to their highest value uses and by better ensuring that riskier capital users pay savers appropriately higher returns. More efficient financial intermediation more accurately screens out lemon borrowers and issuers, who are so highly likely to default that no return they could credibly pay would be adequate.[2]

In theory, individual savers could avoid financial intermediaries' fees and spreads by lending directly — to friends, relatives or strangers via direct-lending websites — and select stocks, bonds and other securities to ensure each provides savers an appropriately higher return for bearing more risk, to achieve adequate diversification and to screen out lemons. This requires each saver to obtain, process and comprehend vast information on many demanders of capital, including many the saver opts to pass by.

A more efficient financial system does all this better and for less. A financial system with a history of diversifying effectively, assessing risks and returns accurately, screening out lemons more efficiently and allocating capital more precisely and rapidly to its highest value uses attracts more savings from nearby and abroad. A higher quality capital allocation by a financial system increases the quantity of capital in its circular flow.

---

[2] On lemons economics, see Akerlof (1970). On capital market shutdowns when these problems become large, see Stiglitz and Weiss (1981). Akerlof and Stiglitz won Nobel Prizes for these lines of work.

This feedback implies a public policy balance: Unduly bureaucratic financial regulations and heavy tax burdens on savers, financial intermediaries or borrowers and securities issuers can impair the circular flow and compromise its quality. So can unduly lax regulation that lets too much of savers' capital leak away into the hands of dishonest, untalented or otherwise unworthy borrowers and securities issuers.

The two graphs in Figure 1 summarize household savings rates and aggregate investment rates for Alberta and Canada. The total amount of money invested in Alberta is not equal to the total amount of money saved by Albertans, nor is the total amount of money invested in Canada equal to the total money saved by Canadians. Capital flows from savers, wherever they are, to investments with higher returns (given the risk levels) wherever they are. If Alberta and Canada get this public policy balance, savings can flow from all over the world to investments here. If they get it wrong, savings can flow from here to investments all over the world. This free movement of capital is important because it forces governments to regulate efficiently — neither too strictly nor too laxly. Before going into all this in more detail, we need to explain why financial regulation matters as much as it does.

## 2. FINANCIAL EFFICIENCY AND SUSTAINED PROSPERITY

A more efficient finance sector sustains prosperity by allocating savers' capital to its highest value-added uses. Undertakings in which capital investments generate more than enough new value — to pay all the bills for inputs, wages for workers, returns to capital providers and taxes — create net wealth for the economy. That net new wealth, called total factor productivity (TFP) growth, is the primary driver of high and rising living standards in developed economies. A large and efficient financial sector is fundamentally important to higher productivity growth and all the public policy options a larger tax base opens.

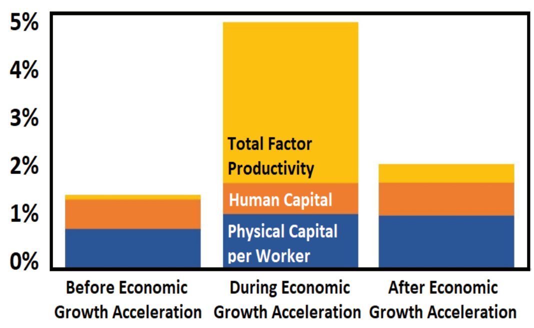
An entire economy's accumulated aggregate TFP growth is called its Solow residual, honouring Nobel laureate Robert Solow who first clarified these issues. Also called multifactor productivity, TFP is closely related to two financial economics concepts: a project's internal rate of return minus its cost of capital, recasts total factor productivity as an excess annual return and its expected net present value expresses its total expected net new wealth creation in current dollars. The essential point is that most of the growth sustaining and increasing living standards in developed economies is genuine new wealth creation.

This new wealth is usually the result of new technology with higher productivity coming into use. This is some mix of process innovation (producing traditional outputs with less or less expensive inputs) or product innovation (producing more valuable outputs with the same old inputs). In situ oil sands extraction is a process innovation that extracts bitumen with less capital, labour and energy inputs than traditional strip mining requires. Smartphones are a product innovation whose production requires silicon, glass, plastic, metals, capital and labour not greatly different from those needed to make conventional mobile phones useful only for phone calls. This connection to innovation means TFP can be thought of as the incorporation of new economically valuable knowledge into production.

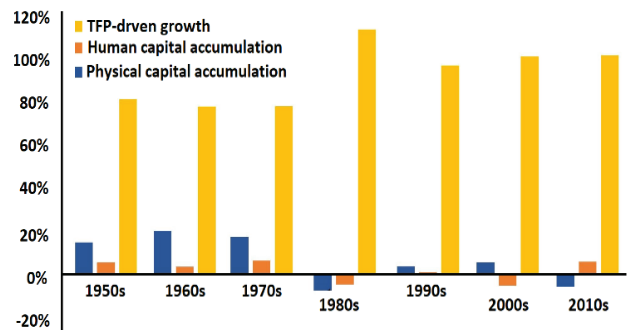
A substantial body of evidence confirms that a more rapidly expanding Solow residual — that is, TFP, rather than factor accumulation (more total capital, employees or inputs, including natural resources) — is pivotal to ongoing prosperity.[3] Figure 2 summarizes the gist of these findings across 142 countries and over many decades. Further evidence, discussed below, links this, in turn, to a large and dynamic financial sector.

### Figure 2. The Components of Economic Growth

**Panel A. Contribution of TFP to Total Economy Growth in 142 Economies over Seven Decades**




**Panel B. Contribution of TFP to Total Growth around Growth Acceleration in the Same Economies**




Source: Koopman and Wacker (2023)

Panel A summarizes findings in more recent work highlighting the importance of TFP during episodes of growth acceleration, when an economy shifts gear from a lower to a higher long-run equilibrium growth rate. Physical capital and human capital (employee skills) increases count for relatively more before the acceleration and again after the economy settles into the higher growth rate steady state. Panel B shows that most economic growth in most decades arises where episodes of high TFP growth accelerate overall economic growth.

Figure 2 has several policy implications. Most important, economic growth, job creation and rising living standards depend primarily on productivity growth. Solow (1956) estimated that TFP growth accounted for around 87.5 per cent of U.S. economic growth between 1909 and 1949, leaving only 12.5 per cent attributable to increases in capital and labour inputs. These years include the 1920s' high-technology boom, when electric and telephone grids, radio, cinema, home electric appliances and many other high TFP new technologies were rolled out. Other studies' results depend on the time window (how large and frequent growth spurts, represented by the middle bar of Panel A, are in the years they study) and on how much productivity growth they interpolate as human capital (worker skill) accumulation. Studies giving full weight to human capital accumulation and covering long time windows with both growth spurts and slow growth periods generally credit TFP growth for 50 to 60 per cent of all economic growth.[4]

By definition, TFP growth is the economy producing more from less — more valuable outputs from the same inputs (product innovation), the same outputs from less costly inputs (process innovation) or both. Economists use the term "technological progress" to cover all of this.

---

[3] For a thorough review of the early work, see Easterly and Levine (2001). A comprehensive recent update is Koopman and Wacker (2023).

[4] Important work in building these conclusions includes Griliches (1969); Jorgenson and Griliches (1967); Daly, Hobijn and Şahin (2013); and Bartelsman, Haltiwanger and Scarpetta (2013). For an overview of the research, see Oliner and Sichel (2000). For a descriptive history, see Brynjolfsson and McAfee (2014).

Technological progress can come from creating and applying new technologies, from cutting wasteful corporate or government red tape whose costs exceed its value, from invigorated competition that erodes entrenched monopolies, from importing good ideas from abroad and from other wellsprings of new ideas. All the above are forms of innovation, and a vast body of research in economics links TFP growth to the pace of innovation, broadly defined. Corporate research-and-development spending is a key form of innovation. In general, government R&D subsidies to corporations do not lift productivity growth.[5] However, governments can spur productivity growth by building and maintaining a productivity-enhancing business environment. Sound patent laws, bankruptcy laws, securities laws, corporate governance laws, competition laws, labour laws, education, health care and other government-run features of the institutional landscape all factor in. Getting the business environment right is not always straightforward. Patent laws can protect innovators but can also empower patent trolls. Bankruptcy law can punish deadbeats and cheats but can also hobble genuine entrepreneurs who fail through pure bad luck. Corporate governance laws can put the best and brightest innovators in charge of corporate assets but can also entrench insiders committed to the status quo. Labour laws, education and health care can foster a dynamic, productive and technologically skilled workforce, but can also lock in rigidities that tie firms to old ways of doing things. Merger laws can oust inept managers but can also allow them to build stifling monopolies. In each case, financial dynamism is fundamental. Efficient capital markets finance corporate R&D, the development of patented technologies to markets, serial entrepreneurs' relaunches after honest failures, the ousting of entrenched corporate managers, and in general put people's talents to their highest value uses.

The theme throughout this research is that successful technological innovation, augmented by ever better-educated workers (human capital accumulation), underlies most economic growth. Economies where new, more productive technologies more rapidly replace older technologies, and where people with more valuable expertise are available, have more rapidly rising living standards.

Large public subsidies to innovative businesses might seem a sound policy, but much work shows that this is not so. Public R&D subsidies tend to be ill-allocated — money flows to the best form fillers, not the most genuinely innovative firms or founders. Private-sector venture capital funds tend to do a better job of allocating money because these funds specialize in narrow scientific fields and use in-house experts with advanced education in those fields to evaluate proposed investments. In contrast, government subsidy programs tend to be broad and run by political appointees or civil servants, not scientists with the highly focused technological expertise necessary to distinguish sound from unsound proposals.[6]

Well-governed public education at all levels is a more attainable public policy. Innovators' firms gravitate towards large concentrations of people with the reading, math and science skills they need. That all major U.S. high-technology hubs grew up around concentrations of science, engineering and financial expertise in the San Francisco area, Boston, North Carolina's research triangle and Austin, Texas, is surely not a coincidence. Many of the most successful startups in the U.S. were created by students at universities in high-tech hubs, or by students who met there and then dropped out to found new high-technology firms.[7] Building concentrations of very smart people with genuinely valuable expertise, universities that are not over-rapacious in claiming ownership of their students' and employees' ideas and highly technologically savvy financing providers are likely to be far more effective than government-administered subsidy programs.

---

5 Lerner (2009) reviews the almost uniformly dismal record of government R&D subsidy programs around the world.

6 Canadian programs along these lines stand out as especially unsuccessful. For an international overview of the failures of such programs, see Lerner (2009).

7 Cross-country studies also link higher levels of education to faster Solow residual growth rates. For a survey of these studies, see Sianesi and Van Reenen (2003).

Panel A shows that labour markets and capital markets are clearly important during steady-state periods when little new productivity-enhancing technology is entering the economy to accelerate growth. This is because more skilled labour (human capital accumulation) and more capital (expansion of existing production processes) do cause economic growth, albeit slow growth.

However, much research also shows that dynamic labour and capital markets play an essential role in supporting the intermittent bursts of TFP growth that contribute most to increased living standards.[8] This is because episodes of growth acceleration require a reallocation of capital and labour away from older lower-productivity uses and into newer high-productivity uses. Rapidly growing new technology firms need skilled workers — young, well-educated labour-force entrants and experienced skilled workers leaving obsolescing firms and sectors.[9] Rapidly growing new technology firms also need to accumulate productive assets quickly — new property, plant and equipment investments and re-tasked existing property, plant and equipment acquired from declining legacy firms.

Capital markets are especially important because most very high-TFP growth new technologies enter the economy in brand new corporations. The companies that brought the internet into widespread economic use — Apple, BlackBerry, Cisco, Google, Microsoft and others — entered the economy as entirely new firms. At the time, established leading computer and software companies — Control Data Corporation, DEC, Fairchild Semiconductor, IBM and others — had scant interest in desktop computers, smartphones or other radically new technology that would erode the values of their existing product lines (large mainframe computers) and the career prospects of executives knowledgeable about large mainframe computers.[10] Top executives at Kodak, a chemical photographic film company, and Xerox, a chemical photocopier company, likewise eschewed investments in digital image technology. These giants once dominated their industries, but Kodak went bankrupt and Xerox and IBM are pale shadows of their former greatness.[11] Top executives sacrificing their firms' futures to preserve technologies they are most fit to manage is called managerial entrenchment and is a major corporate governance problem.[12]

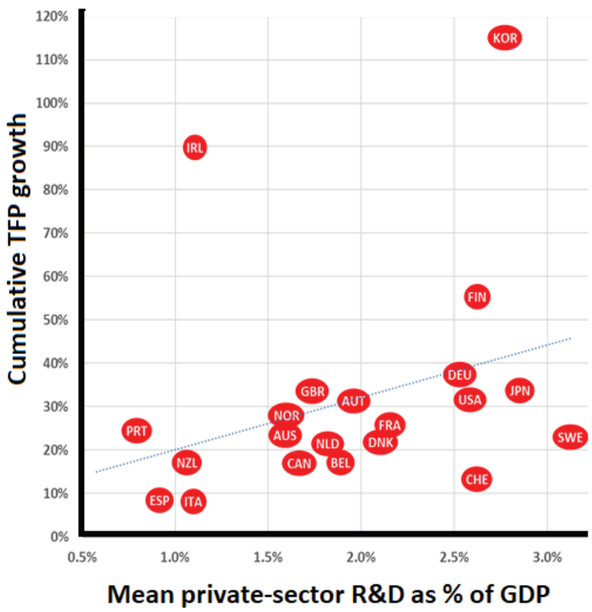
Managerial entrenchment at established firms leaves economies dependent for TFP-driven growth on new technology-savvy people founding entirely new firms that rapidly grow by attracting skilled labour and capital that would otherwise have gone to older firms. Radically new technologies often disrupt large established firms, as when word processing, introduced by new firms such as Corel and Microsoft, destroyed typewriter makers Remington and Smith Corona, and greatly damaged IBM, also a major typewriter company.

---

8 Although the accuracy of capital allocation by the circular flow in Figure 1 is critical, the amount of capital in it also matters. See, among others, King and Levine (1993) and Wurgler (2000).
9 See McMillan, Rodrik and Verduzco-Gallo (2014).
10 On IBM top management responses to these developments, see Betz (1993).
11 On management decisions at Xerox, see Chesbrough (2003). On Kodak, see Lucas and Goh (2009).
12 On managerial entrenchment, see Morck, Shleifer and Vishny (1988).

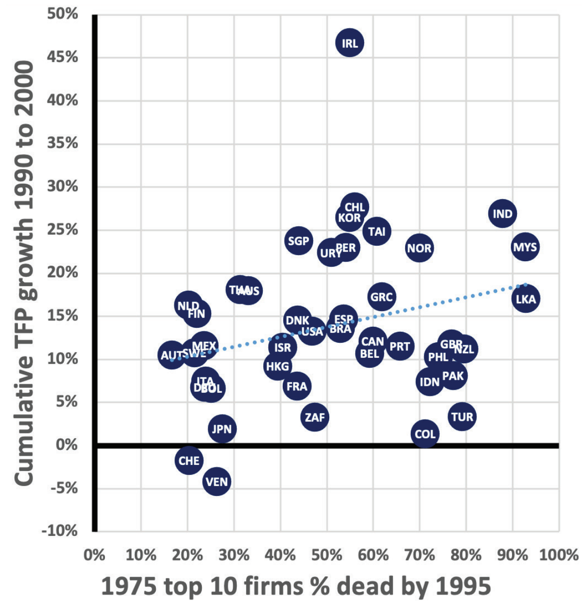
**Figure 3. Private-sector Innovation Drives TFP Growth through a Process of Creative Destruction, in Which Old Leading Firms Fall Away to New Technology Upstart Firms**

**Panel A. Countries with Greater Private-sector R&D Have Higher Cumulative TFP Growth (1985 to 2011)**




Source: R&D is from World Development Indicators database; TFP is constructed from Penn World Tables database.

**Panel B. Countries Whose Large Firms are More Prone to Die Have Higher Cumulative TFP Growth**




Source: Fogel, Morck and Yeung (2008)

Figure 3 thus shows expanding Solow residuals (faster long-term TFP growth) to correlate with greater private-sector R&D spending and with higher death rates of leading corporations.[13] Many others reach similar conclusions and core theories in economics have been adjusted accordingly over recent decades.[14] These changes have important policy implications: government interventions to rescue floundering national champion firms are likely to impede, rather than sustain, long-term prosperity.

Rather than supporting “national champion” firms with subsidies, governments intent on promoting and sustaining long-term prosperity might consider policies to promote private-sector innovation, labour market flexibility, capital market dynamism and the efficient reallocation of inputs to higher productivity sectors and firms.

Two outliers are evident in Figure 3 — South Korea and Ireland — and each is illustrative in a different way. South Korea, poorer than much of sub-Saharan Africa in the 1960s and 1970s, attained first-world living standards by the mid-1990s. Supporters of industrial policy often stress how then-president Park Chung-hee’s authoritarian-state technocrats orchestrated this rise in the 1960s and 1970s; however, most of this growth followed switches to liberal free-market economics and then democracy, in 1981 and 1987 respectively. Consistent with the importance of innovation, stock market-financed high-tech electronics firms feature prominently in this post-1980 growth. The business families that established these firms did obtain subsidies in Park-era industrial

[13] See Fogel, Morck and Yeung (2008).
[14] See Aghion, Antonin and Bunel (2021).

policies, and likely misappropriated some funds, earmarked for the militarily useful heavy and chemicals industries, into consumer electronics and other sectors the planners condemned as frivolous. However, the country's most important high-tech firms, including Samsung Electronics and LG Electronics, were largely stock market-financed. Authoritarian rule perhaps built a more genuine positive legacy by investing heavily in public health and education, though both were also needed to improve the quality of conscripts. South Korea's rise thus reinforces the importance of a general economic landscape amenable to market-financed innovation (Lim and Morck 2024).

The other outlier, Ireland, genuinely grew substantially after its EU ascension in 1973, but posted truly exceptional GDP growth only after reforms that made the country a tax haven — a jurisdiction whose tax laws let multinational firms avoid taxes elsewhere and overall. The reforms, dubbed "leprechaun economics" by Nobel Prize-winning economist Paul Krugman (2016), assigned large official tax credits to firms that "invert" to Ireland — that is, declare their Irish subsidiaries to be their global headquarters — while levying a low effective tax rate on them.[15] This reduced their overall taxes and, under the conventions of national income accounting, reclassified their global sales as part of Irish GDP. Irish GDP per capita shot up to exceptional levels, but Irish household disposable income remained in the middle ranks for EU member states. The policy boosted Ireland's tax revenues but may have been substantially counterproductive in the longer run in that Ireland's GDP-linked transfers from the EU were slashed and that other governments classified Ireland as a tax haven. Potentially even more consequentially, the OECD has launched a global minimum tax initiative, endorsed by Canada and 135 other nations, which lets the country in which a firm is based recover any tax advantage the firm gains from a foreign government's tax rules.[16] If this initiative is broadly accepted, the tax-haven path to prosperity may be narrowed. However, nationalist and pro-business lobbies are unsupportive and new governments can simply enact legislation to opt out of the global minimum tax.

Business corporations can and do rearrange their operations across countries to reduce taxes (Harris, Morck and Slemrod 1993), and some microstates have exploited this successfully.[17] However, such tax havens are cast as parasitic economics that let firms use high-quality public goods and services in efficiently high-tax jurisdictions without paying for them.[18] Increased equalization net transfers and the likely countermeasures by other governments could blunt such a strategy in Alberta, as could effective international minimum tax rules. We revisit these issues in more detail below after further developing the importance of the financial system in financing productivity growth.

---

[15] Krugman coined the term after Apple and several U.S. pharmaceuticals firms designated their Irish subsidiaries their global head offices, boosting Ireland's GDP by 26 per cent in one year. Krugman (2021) subsequently lauded a global "war on leprechauns" to undermine Ireland's strategy.

[16] The initiative is called the Global Anti-Base Erosion Model Rules (Pillar Two), https://www.oecd.org/en/topics/sub-issues/global-minimum-tax/global-anti-base-erosion-model-rules-pillar-two.html.

[17] See, for example, Dharmapala and Hines (2009).

[18] See Slemrod and Wilson (2009).

## 3. FINANCIAL GRAVITY

Finance is footloose. Companies in Alberta can issue shares in Toronto, New York, London or Singapore. Savers in Alberta can have bank accounts elsewhere and can buy the stocks and bonds of firms located in Ontario, the U.S., Japan or South America.

This was not always so. From the 1940s to the 1970s, under the Bretton Woods Agreement, finance had its feet nailed down. Laws and regulations called capital controls limited savers to local banks and domestic stocks and bonds, and limited borrowers to domestic banks and financial markets. This gave local financial institutions monopoly powers to lower interest rates paid to depositors, charge borrowers and securities issuers more and pocket the difference. Widespread criticism of Bretton Woods in the 1970s led to financial globalization and the relatively free flow of capital between countries and subnational jurisdictions. Financial deregulation is usually followed by huge investment booms and productivity increases.[19] Financial openness (welcoming foreign savings and letting local savers save elsewhere) is especially related to productivity growth.[20] Consequently, rather than fight financial globalization, many governments have sought to attract financial intermediation activity away from other jurisdictions by reforming their laws and regulations.

Historically, major financial centres arise out of surrounding economic activity. New York became the U.S.'s major financial centre after completion of the Erie Canal connected U.S. Great Lakes commerce to the Hudson River, which made the city the hub of much of U.S. global trade. Singapore became a global financial centre because, located off the southernmost tip of the East Asian mainland, it is a natural hub for cargo transfers between ships connecting East Asian and European ports. In general, sustained intense economic activity comes first and financial businesses come second in response. London, Amsterdam, Hong Kong and other major financial centres developed along this pattern. Geography does not favour Alberta in this way.

San Francisco and Palo Alto became hubs for venture capital in conjunction with burgeoning economic activity in local high-technology firms. However, this did not make these cities major financial centres in the traditional sense of hosting large securities markets. California venture capital funds generally obtain public equity financing for their successful venture capital-financed startups in New York.

This is because a company, trading in New York, generally has a higher share price than it would command in other stock markets, including those in Canada. This is thought to be because investors view the New York market as more transparent and liquid, and less scandal-prone than other stock markets. Investor demand is consequently higher in New York, so stock prices are higher and entrepreneurs issuing shares get more money per share.

Finance, like information technology, biotechnology and other high-value-added sectors, has a strong tendency towards what economics calls "agglomeration." Financial firms and financial markets tend to agglomerate; that is, to gather where financial activity is already intensive. Consequently, financial intermediation is concentrated in a few financial centres. Global financial centres include New York, London and Singapore. Canada's financial centre is Toronto.

Agglomeration can be likened to an economic gravity that attracts more economic mass to larger existing concentrations of economic mass. Several explanations of agglomeration have been proposed. Competition between local, regional and national governments to provide better public

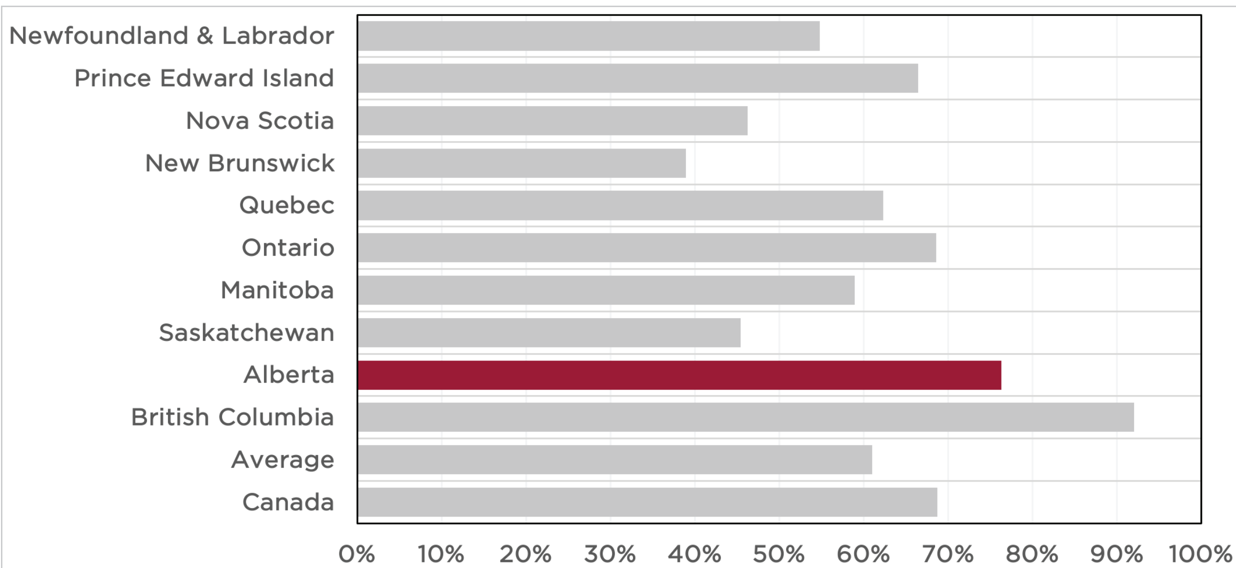
---

[19] For a comprehensive overview, see Henry (2007).
[20] For a recent study, see Gehringer (2014).

goods and services at lower tax rates, a process called "Tiebout competition," can attract economic activity (Tiebout 1956). Proximity might also allow readier communication between people and companies through informal channels. However, much evidence suggests markets for highly skilled employees are primarily responsible.[21] Establishing a new financial firm in New York or a new IT firm in Silicon Valley lets the founder hire highly skilled employees who already live nearby. Staffing a new financial firm or a new IT firm in Calgary or Edmonton with highly qualified employees can require costly incentives to relocate and wage premiums to compensate for the risk of the new firm failing and the highly skilled employees having to move on to find suitable alternative employment.

Investing in the education of talented Albertans and in attracting talented people to Alberta universities is a start towards overcoming economic gravity. However, many top students ultimately move on to financial or high-technology centres elsewhere because more abundant employment alternatives make advancing their careers more straightforward and less costly.

**Figure 4. Financial Sector (excluding leasing) Real Growth 1997 to 2022 By Province**




Source: Statistics Canada Table 36-10-0402-01

Alberta's prospects for becoming a financial hub require becoming a focus of such agglomeration — a centre of financial gravity. Figure 4 shows that, from 1997 to 2022, the years for which Statistics Canada provides comparable data, Alberta's financial sector grew by over 75 per cent in real (inflation-adjusted) dollars. This is faster than any other province except B.C. The equal-weighted average across all provinces and the growth rate for Canada as a whole are provided for comparison. However, this is not the full story.

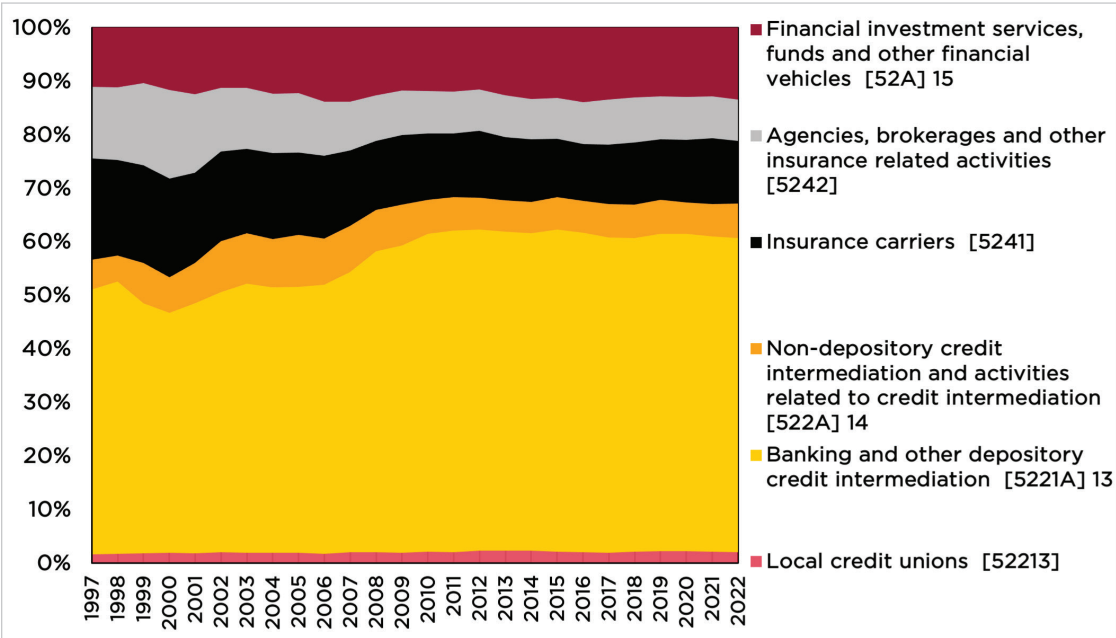
Figure 5 sketches the historical structure of Alberta's financial system from 1997 to 2022. Banking rose from roughly 50 per cent to some 60 per cent of the sector and financial investment services (wealth management, pension funds and investor services) rose from 11 per cent to 13 per cent of the sector. Non-depository credit (lending by non-banks, including payday loan companies) held roughly steady while insurance companies' contributions shrank substantially relative to GDP. Credit unions remain small relative to other categories.

---

[21] See, for example, Gennaioli, La Porta, Lopez-de-Silanes and Shleifer (2013).

Little has changed since Mintz, Wilson and Tingle (2021) provided a comprehensive structural survey and highlighted sensible financial sector policy options. We endorse their suggestions. Rather than duplicate their study, we instead consider how the financial sector affects and is affected by government policies, which for brevity we call the "lay of the land."

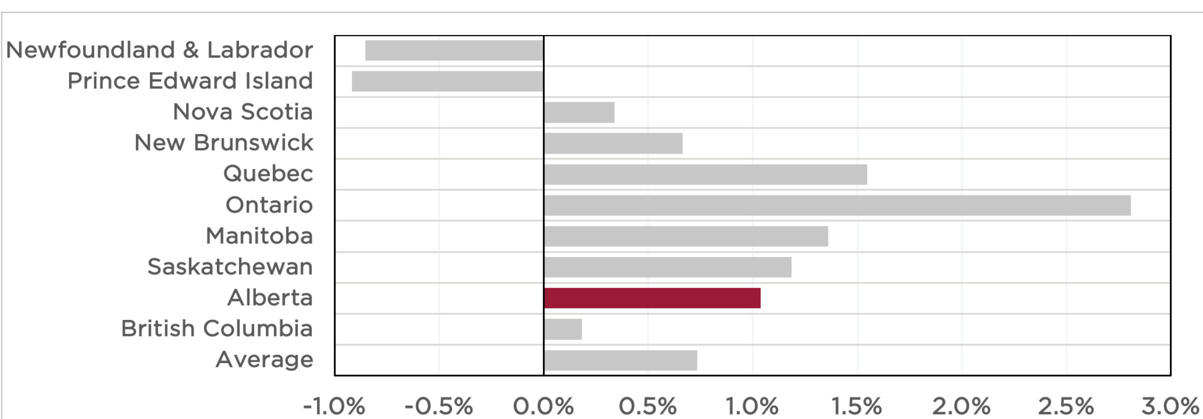
### Figure 5. Composition of the Alberta Financial Sector From 1997 to 2022




Source: Statistics Canada data matrix 52. Numbers in square brackets are Statistics Canada data vector codes.

The real GDP of Alberta and B.C. also grew faster than that of any other province, and the proper measure of the size of the financial sector is relative to GDP. Figure 6 shows that the financial sectors in Alberta and B.C. grew faster than GDP, but with smaller margins than Ontario and Quebec. Alberta's financial sector grew from 14.7 per cent of Canada's in 1997 to 15.3 per cent in 2022. This is a more accurate measure of how important the finance sector is becoming.

### Figure 6. Financial Sector Growth 1998 to 2022 as % of GDP, By Province




Source: Statistics Canada

Figure 7. Alberta's Financial Sector as a Fraction of Canada's Financial Sector

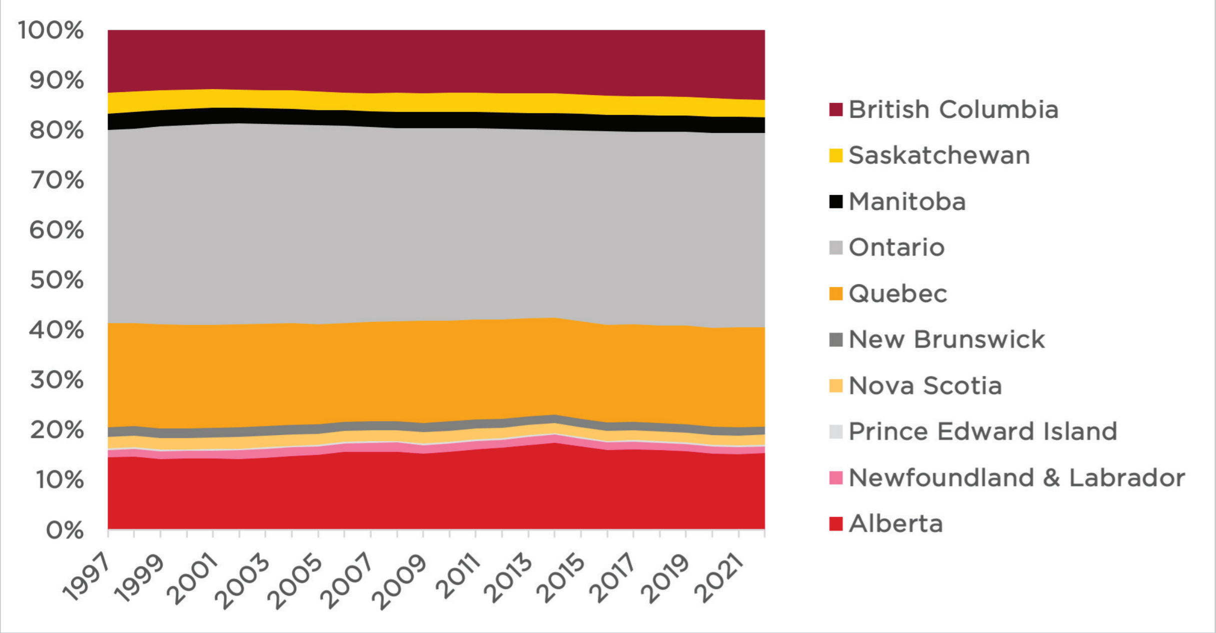
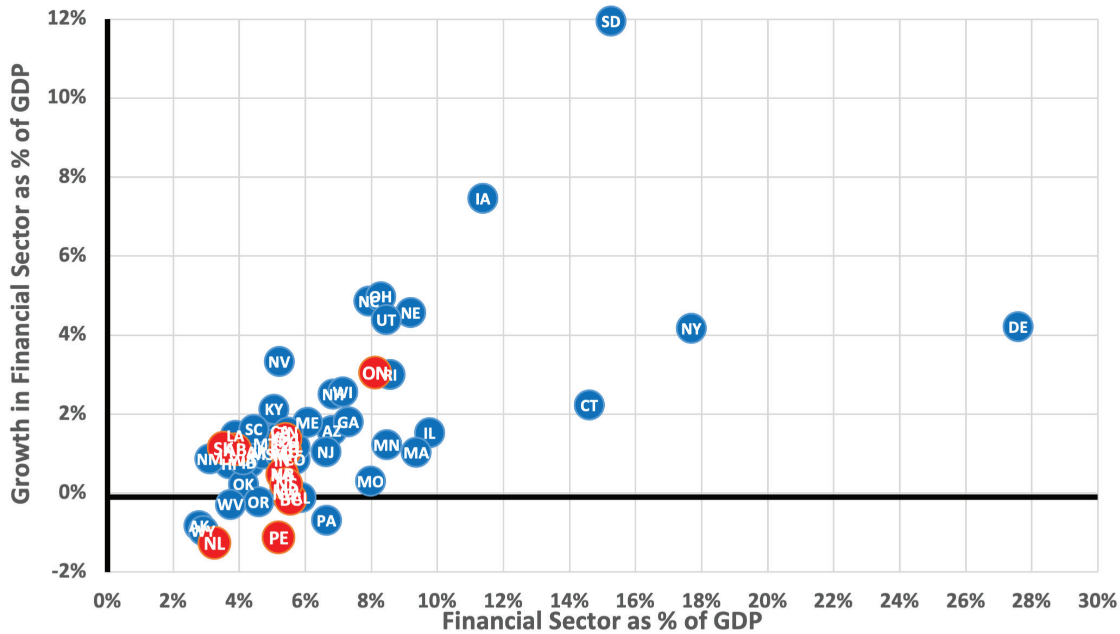



Figure 7 shows that the size of Alberta's financial sector as a fraction of Canada's has not greatly increased in the past quarter-century. From 1997 to 2022, Alberta's population grew from 2.5 million to 4.5 million, and so now accounts for a much larger fraction of Canada's population (9.4 per cent in 1997 and 11.6 per cent in 2021) and GDP (11.0 per cent in 1997 versus 14.9 per cent in 2021).

Figure 8, expanding Figure 6 to include U.S. states as well as Canadian provinces, illustrates agglomeration due to the force of financial gravity. New York and Ontario, the major financial centres of the U.S. and Canada, both host financial sectors growing faster than GDP. The same is true for Delaware, a favoured jurisdiction for legal incorporations, and for Connecticut and Iowa, longstanding insurance agglomeration centres. In general, jurisdictions that have larger financial sectors also have faster growing financial sectors.

Figure 8. Real Financial Sector Growth versus Size of Financial Sector, 1997 to 2021, as % of GDP

U.S. STATES AND CANADIAN PROVINCES




Source: Statistics Canada and U.S. Bureau of Labor Statistics

Nonetheless, financial gravity is not irresistible. Delaware, Iowa, South Dakota and some other states tailored their financial regulations, tax laws and other laws and regulations to make their jurisdictions more attractive to finance. To some extent, this may reflect lobbying by powerful special interests. However, these policy shifts are also justified as necessary to attract financial intermediation to their jurisdictions. Some national governments have taken similar measures.

Alberta might follow this path, too. Assessing the economic costs and benefits of such regulatory strategies requires a brief detour into the economics of government in general and of government regulation of finance in particular.

## 4. DEFYING GRAVITY THROUGH COMPETITIVE GOVERNMENT

Smaller government is not necessarily more competitive. The most competitive government is not the one that charges the lowest tax rate, but the one that provides higher quality public goods and services of the sorts that taxpayers actually want at the best prices (tax rates). African governments typically take 10 per cent of total income, far lower than in Canada or other high-income economies. However, foreign individuals and corporations are not queuing to relocate to Africa. Low-quality laws and regulations, unpredictable and corruption-prone courts and civil servants, unreliable infrastructure and poorly educated and unhealthy local workforces combine to leave the quality and scope of public goods and services on offer insufficient to justify relocating there, despite their very small governments.

The same pattern is evident in the U.S. The lowest state and local combined tax rates in the lower 48 states are in Wyoming (7.50 per cent) and Tennessee (7.60 per cent), yet the U.S.'s financial centre is in New York (15.9 per cent). Its insurance firms concentrate in Connecticut (15.4 per cent), and its high-tech hubs are in California (13.5 per cent) and Massachusetts (11.5 per cent).

None of the latter show signs of widespread preparation to move to Wyoming and Tennessee. Likewise, cross-country data link higher productivity growth to bigger governments only if they provide better education and infrastructure supportive of technological progress.[22] Better quality public goods and services can sometimes be worth higher taxes.[23]

Neither larger nor smaller government is necessarily more competitive. However, government does have an innate propensity to expand and many governments provide goods and services their taxpayers do not actually appear to want. Subsidies to businesses, medical and educational bureaucracies, laws and regulations and other public goods and services can readily expand beyond levels taxpayers find worth the taxes. Governments that provide more or lower quality public goods and services than taxpayers deem worth the taxes lose taxpayers and must finance themselves off shrinking fiscal capacities. Canada's system of equalization transfers, shunting money from provinces with deeper fiscal capacities (tax bases) to provinces with diminished fiscal capacities, may perpetuate the Tiebout uncompetitive government in the latter. The system may thus subsidize government not worth the taxes in net recipient provinces.

The Scully curve associates middling government size with maximal prosperity.[24] Estimates of the optimal government size vary, and optimal government size has increased over the past century. As people grow richer, they deem more and higher quality government services — efficient courts, regulatory agencies, health care, education, infrastructure and poverty alleviation — worth the taxes. Consequently, good government is primarily about offering a portfolio of public goods and services at rates taxpayers are willing to pay.

Competition between governments — the Tiebout competition discussed above — was once thought to occur primarily at the local and regional levels. For example, higher quality municipal government in Calgary than in Edmonton might cause a migration of corporate head offices and high-income taxpayers to Calgary from Edmonton, even if Calgary's property taxes were higher than Edmonton's. The 1990s' Alberta Advantage reforms were rolled out as Tiebout competition-enhancing reforms (though that term was never used) to give Alberta taxpayers, corporations and individuals a government more worth the taxes.

As globalization lowered barriers to international trade, financial flows and migration, Tiebout competition between provinces, states and countries has become a major economic force. Capital is especially footloose and tends to move more readily to more Tiebout-competitive jurisdictions.

The aggregate supply of capital is the total savings of corporations, individuals and governments. The aggregate demand for capital is the total investments of corporations, individuals and governments that is not financed out of their current incomes. Through legislative and regulatory reforms, governments can attract or repel financial intermediaries from their territories.

---

22 For a review of research findings, see Irmen and Kuehnel (2009). For a discussion of policy implications, see Ferleger and Mandle (1992). Of course, simply increasing taxes, all else being equal, impedes innovation; see Mukherjee, Singh and Žaldokas (2017).

23 Other considerations can also matter. Better climates and natural beauty can better retain taxpayers. Larger jurisdictions can benefit from economies of scale in providing public goods but can also allow more institutional deterioration without compromising productivity, at least for a time. This stickiness means that, once capital is fixed in place, public goods and services per dollar of taxes can fall substantially before large-scale taxpayer exodus is evident.

24 The Scully curve finds an intermediate level of taxation optimal for economic prosperity. See Scully (1989). Recent work challenges the stability of the Scully curve and raises various statistical issues about the concept. See Di Matteo and Summerfield (2020).

## 5. DEFYING GRAVITY THROUGH COMPETITIVE REGULATION

On the one hand, politicians needing to be seen to "do something" typically push through "tough" but often clumsy and costly new regulations after each financial crisis.[25] Examples range from the U.K.'s *Bubble Act*,[26] a reaction to the stock market crash of 1720, to the U.S.'s Dodd-Frank bill,[27] a reaction to the 2008 financial crisis. Legislative overreactions lead to subsequent deregulations that pave the way for the next financial bubble in a regulatory cycle. Financial bubbles are a recurring phenomenon in free-market economies and may actually be important to long-run prosperity. Optimal regulation may entail optimizing the bubbles while containing crashes to avoid crises.[28]

Regional and secondary stock exchanges are ready examples of too little regulation. For example, the very lightly regulated Vancouver Stock Exchange — *Forbes* magazine called it the "Scam Capital of the World "— closed amid serial scandals (Queenan 1989). One notable exception is Brazil's Novo Mercado, which subjected issuers to stronger disclosure and corporate governance regulations than prevailed on the country's main stock market. Entrepreneurs found savers would pay more money per share in initial and seasoned stock offerings on the Novo Mercado, which prospered and expanded.[29]

A Bank of Canada study shows Canadian-listed firms to trade at about 90 per cent of the price of U.S. firms of the same size in the same industry, and links this "Canada discount" to Canadian firms' low investment in corporate R&D.[30] Foreign, including Canadian, firms listed in the U.S. and in their home country stock exchanges trade at prices substantially higher than those of otherwise similar firms listed only in their home countries. This U.S. cross-listing premium is surely partly due to cross-listed firms having unquantified intangible assets (perhaps such as being more innovative), but the firms being bound by U.S. laws and regulations as well as those of their own countries are also thought to be important.[31]

Cross-country research offers other suggestions. Strong public disclosure laws (they let savers see problems gathering) work better than regulatory oversight (officials, not savers, are expected to see problems gathering) and subjecting corporate insiders to personal liability in private shareholder lawsuits (judges and juries impose penalties) works better than subjecting them to administrative sanctions (officials impose penalties).[32]

How legal procedures play out may also be important. The world's legal systems are classifiable as common law (British origin) or civil code (French origin). To make judgments, civil code magistrates consult meticulously constructed, lengthy, precise and detailed codes; common law judges supervise juries hearing rival attorneys' arguments about precedents (prior similar cases) and loosely written laws and regulations that often turn on whether the defendant acted as a "reasonable" or "prudent person" would have. Civil codes look much more finely engineered, but common law courts appear to adjudicate complicated business decisions better.[33] This may be because common law judges and juries can convict perpetrators of outrageous misdeeds that, despite fitting nicely through legal loopholes, can be deemed imprudent or unreasonable,

---

25 See Dagher (2018).
26 See Harris (1994).
27 See Coffee (2012).
28 See Morck (2022).
29 On Brazil, see Black, De Carvalho and Sampaio (2014).
30 The discount is confined to firms in high-technology sectors. See Seagal and King (2003).
31 See Doidge, Karolyi and Stulz (2004).
32 On the importance of public disclosure and of private versus public enforcement, see La Porta, Lopez-de-Silanes and Shleifer (2006).
33 See La Porta, Lopez-de-Silanes and Shleifer (2008).

whereas civil code magistrates must honour the loopholes. Mandates to be reasonable and prudent can also let directors call errant CEOs to account more readily.[34] Recent legislative trends towards very long and detailed regulations without reasonable or prudent person standards have made common law court, in the U.S. especially, decidedly more French-style and perhaps less judicially efficient.[35]

In Canada, unlike in the U.S., many listed corporations have controlling shareholders — either wealthy individuals or families or other corporations that, in turn, have controlling shareholders. Long and intertwining chains of Canadian corporations owned and controlled by other Canadian corporations usually lead to a wealthy individual or family as the ultimate controlling shareholder.[36] In many cases, large constellations of listed corporations, called business groups, are controlled through such chains by one individual or wealthy family. Although less pervasive now than a generation ago, such structures are still prominent in Canada.

U.S. regulations, which Canadian regulations often echo, largely govern corporate officers, such as the chief executive officer, chief financial officers, etc., and directors. International comparative research highlights the critical importance in countries such as Canada of numbering ultimate controlling shareholders, perhaps even more than officers and directors, as corporate insiders.[37] This is because business groups facilitate self-dealing. For example, if profits accrue to a listed business group firm, paying them out as higher dividends would see part of the money go to public shareholders. If that firm instead bought overpriced services from another group firm 100 per cent owned by the ultimate controlling shareholder, all that firm's dividends, including all the former firm's profits, go to the ultimate controlling shareholder. This form of self-dealing is called "tunnelling."[38] Business group firms can engage in tunnelling to avoid taxes as well as to avoid sharing dividends with public shareholders.[39]

Regulatory competition within the U.S. may also have lessons for Alberta. Delaware, a small state (pop. one million), stands out in Figure 8 for hosting a large and growing financial sector. This primarily reflects firms using Delaware as their legal state of incorporation, while leaving their head offices and other facilities elsewhere. Delaware incorporation puts a corporation under the laws, regulations and courts of Delaware in many, though not all, disputes. Some two-thirds of all large U.S. firms pay annual franchise fees, some 20 per cent of the state government's revenues, to renew their Delaware legal incorporations. Two explanations are debated.

One explanation of Delaware's allure has Tiebout competition causing a "race to the top" in government quality. Over several decades, Delaware has selected judges for their knowledge of economics so that large corporations have come to rely on Delaware courts for efficient and informed resolutions of business disputes. States whose judges can be confused by complicated business dealings are increasingly disadvantaged. Higher quality judges, court procedures, laws

---

34 See Fogel, Ma and Morck (2021).

35 The U.S. legal system has grown increasingly rules-based (civil code-like), while other common law legal systems, including Canada's, remain principles-based. Thus, the U.S. Justice Department opted not to prosecute bankers after the 2008 financial crisis on the grounds that they had not violated rules. Traditional common law would allow their prosecution for violating the principle that bankers should act as "reasonable" and "prudent" persons, this determination being up to a jury. See Eisinger (2017).

36 These structures existed in the U.S. until eliminated by 1930s tax reforms subjecting intercorporate dividends to a special tax. Listed U.S. corporations are rarely controlled by other corporations. In Canada, where intercorporate dividends are generally untaxed, ownership and control structures are much more complicated and opaque. Statistics Canada's Directory of Intercorporate Ownership periodically describes these structures. For details, see Kandel, Kosenko, Morck and Yafeh (2018).

37 On ultimate controlling shareholder accountability, see Djankov, La Porta, Lopez-de-Silanes and Shleifer (2008).

38 For detailed examples of tunnelling to avoid sharing dividends with public shareholders, see Johnson, La Porta, Lopez-de-Silanes and Shleifer (2000).

39 On tax avoidance by Canadian business groups, see Mintz and Smart (2004).

and regulations can make a jurisdiction worth the taxes. Alberta may wish to consider competence in commerce or economics an important criterion in selecting and promoting judges and to have economics and business experts weigh in on legal and regulatory reforms.

The other explanation has Tiebout competition causing a "race to the bottom." Recall that large firms tend to avoid radical innovation that threatens the value of their existing physical capital and the value of their top managers' knowledge. An active takeover market can cure this. As prolonged adherence to obsolescing technologies erodes established firms' profits, their share prices fall. This essentially puts such companies on sale and, in some cases at least, corporate raiders buy them up, replace their entrenched mangers and either organize profitable, controlled downsizings or (more rarely) force the adoption of new technologies.[40] Either way, the changes are disruptive to executives, workers and communities grown dependent on obsolescing industries and firms. Delaware has also enacted laws that empower top corporate executives to block takeovers in court. The top managers of ill-governed corporations can, by moving their legal incorporation to Delaware, greatly enhance their job security. Alberta might emulate this with laws and regulations impeding corporate takeovers. Examples include legislation permitting binding poison pills, staggered boards, dual class shares and legal challenges against takeovers citing employee welfare, community needs, environment diversity protection and other grounds. As with captive insurance companies, Alberta would need to factor in the countermeasures other governments would employ and the risk of triggering a race to the bottom.

Tiebout competition that sets off a race to the top has positive effects on Delaware (more fee-paying incorporations) and on other jurisdictions (pressure to improve the economic literacy of their judges and the clarity and value of their laws and regulations). Tiebout competition that triggers a race to the bottom has positive effects on Delaware (the fees) but a negative effect on other jurisdictions. One negative effect is that legacy corporations under Delaware law survive longer, delaying the reallocation of workers and capital to new technology firms, slowing growth in TFP and living standards. The other is that other states are tempted to emulate Delaware, exacerbating the first effect.

Both views of Delaware are likely at least partly valid. Both forms of competition pit governments against each other for taxpayers and fee payers. Whether competition between governments is socially constructive or not tends to depend on what the government in question is doing. If Delaware judges were not really highly economically literate, or if highly economically literate judges did not really adjudicate complicated business cases sufficiently better, the race to the top argument is less convincing. If the social stability from preserving the value of old wealth and skills is valued more than economic dynamism, a race to better block takeovers of old technology firms might seem a race to the top.

Latin American economic policy for the past century has prioritized conserving the social order over encouraging dynamism, and largely failed at both.[41] Economic dynamism to create new jobs, an expanding tax base to finance efficient social welfare programs and rising living standards all seem conducive to helping society evolve peaceably.[42]

The core goals of financial regulation are efficiency (more productivity-enhancing ventures get more capital), stability (crashes and panics are rare) and investor protection (people feel safe committing their savings to the system). The latter two are related, in that poor investor

---

40 On the advantages of this approach, see Harris, Morck and Slemrod (1993).
41 See, for example, Edwards (2010).
42 Prosperity does create social stresses, such as inequality, but prosperity also makes all manner of other problems easier to solve. See Deaton (2013).

protection encourages bank runs and market runs on sudden bad news, which destabilize the financial system. Since the 2008 financial crisis, regulators around the world have focused on stability, though perhaps with little real effect. Banking regulation in Canada is federal, with the Office of the Superintendent of Financial Institutions (OSFI) having overarching prudential regulatory power. However, provincial jurisdiction over securities and corporations law might create scope for Alberta to better balance these objectives. A new Texas Stock Exchange (TXSE) proposes to let firms access public equity capital at lower regulatory compliance costs than prevail on Wall Street while committing to robust shareholder rights.[43] Regional stock exchanges in Canada and the U.S. historically raced to the bottom — the Vancouver Stock Exchange earned its notoriety, for example. If the TXSE emulates the Brazilian Novo Mercado, a race to the top in terms of more cost-effective regulation might ensue. Alberta might contemplate a like initiative.

## 6. DEFYING GRAVITY THROUGH COMPETITIVE CAPITAL TAXATION

Lower taxes can attract taxpayers, all else equal. For example, consumers in Lloydminster, a small city straddling the Alberta-Saskatchewan border, sensibly avoided Saskatchewan's sales tax by shopping in Alberta, with no provincial sales tax. Saskatchewan was forced to waive the sales tax on its side to prevent a wholesale movement of commerce to the Alberta side.

Many small nations and dependencies, called "tax havens" generate substantial tax revenues by levying low corporate taxes on foreign corporations' operations within their borders. This need not involve emulating Ireland's leprechaun economics. Most tax havens simply levy lower taxes than other governments to encourage a practice called "transfer pricing." For example, a Canadian firm's domestic subsidiary might sell all its output to the same firm's subsidiary in a tax haven at an artificial rock-bottom price. The Canadian subsidiary appears profitless and untaxable. The tax haven subsidiary then resells the output to buyers everywhere, including Canada, at high prices. The tax-haven subsidiary can also charge other subsidiaries throughout the world fees for intellectual property use, managerial services and the like until all the firm's profits are concentrated in the tax haven.

A web of international bilateral tax treaties arose to counter this by specifying transfer prices corporations must apply to goods being transferred from one subsidiary to another. In response, multinational firms took to establishing captive insurance company subsidiaries in tax havens. The multinational moves goods between subsidiaries and lets tax liabilities accumulate wherever they accumulate, but then instructs its unprofitable subsidiaries to buy no insurance and its profitable subsidiaries to spend all its profits to buy all manner of insurance (at fair market rates, not artificial prices) from the captive insurance company subsidiary. Recent developments limit this tactic.[44] Another strategy is for the low-tax subsidiary to sell services to or collect intellectual property rights fees from other subsidiaries. Either way, all the profit ends up in the tax haven and, even under the tax haven's low tax rate, it can finance substantial fractions of government services if the tax haven's population is very small. The most successful tax havens have populations well below one million.[45]

---

43 See, for example, Driebusch (2024).
44 On the limitations of recent Alberta reforms regarding captive insurance companies, see Dolson (2022).
45 See, for example, Dharmapala and Hines (2009).

Delaware has also followed this route to a limited extent. Delaware-based subsidiaries are exempt from paying taxes on, and thus from reporting, their revenues earned on intangible assets such as patents, management consulting and the like. In other respects, Delaware taxes are not especially low.[46]

South Dakota, another very small state (pop. 900,000), also stands out in Figure 8. The state hosts a financial sector that consists largely of administering trusts. Trusts are legal entities that hold wealth for individuals and corporations and are often used in providing inheritances. The U.S. levies a substantial inheritance tax on large bequests and gifts, but widespread evasion is alleged. Tax authorities try to infer unreported inheritances from taxpayers' reported interest income, capital gains and the like. South Dakota has no income tax, no estate or inheritance taxes, no generation-skipping transfer tax, no gift tax, no capital gains tax, no corporate income tax, no limited liability company tax, no dividend tax and no interest tax, and requires none of these income sources to be reported. South Dakota also has trust and perpetuity laws with strong privacy protection. The state government regularly reforms its laws as suggested by its South Dakota Trust Task, a panel empowered to "review and make recommendations for changing South Dakota's trust administration statutes in order to provide an efficient framework for the administration of trusts." Trust company executives are always prominent members of the panel and the state government reliably accepts their suggestions. Trusts in South Dakota are alleged to intermediate the fortunes of wealthy heirs in the U.S. and abroad.

Alberta tried something along these lines in the mid-20th century. At the time, Canadian provincial governments taxed income from inheritances. Inequality had risen to very high levels in the late 19th century and especially in the Roaring '20s, and voters supported taxing unearned income going to the very wealthy. Alberta began refunding its share of a federally collected inherited income tax in 1967 and, to prevent wealthy individuals and their companies from moving to Alberta, other provinces did likewise. In 1972, the federal government ceased taxing inherited income and switched to taxing capital gains on deceased individuals' estates.[47] However, realization of these capital gains for tax purposes could be deferred for decades and, in one notable case, avoided entirely using family trusts.[48] The fees family trust intermediaries charge are sufficiently high that trusts only make sense for extremely large estates. Consequently, estate taxes in Canada may be substantially regressive: small estates are taxed immediately while large estates end up in trusts. Strategic tax reforms clearly need to incorporate the strategic reactions of other governments.

The global minimum tax initiative, discussed above in connection with Ireland, could blunt the efficacy of tax havens worldwide; however, any major nation opting out could readily set off a similar worldwide race to opt out.

Another reason for skepticism about using tax havens to attract business is clear evidence that any reforms that help corporations hide income from governments are equally good at letting them hide income from shareholders.[49] Corporate transparency (to shareholders) is important to ensuring that corporate insiders allocate capital efficiency — to productivity-increasing ventures rather than to bureaucratic empire building, executive private jets or political lobbying for the CEO's pet causes.

---

46 Tax laws vary substantially across states. Some have no state income tax but substantial sales taxes; others the opposite. Total tax burden measures are the sum of all relevant taxes.

47 See Bird (1978).

48 The family trust exemption to the levying of capital gains taxes on estates at death drew unwelcome attention in 2000. See Tibbetts (2000).

49 See Bennedsen and Zeume (2018).

Whether one deems tax havens to trigger a race to the top or a race to the bottom again depends on whether one views existing taxes as reasonable fees for the public goods and services taxpayers want. The next section considers limits on Alberta's scope for attracting financial sector activity via regulatory or tax competition. Doing this requires a detour into special complexities in financial regulation.

## 7. PITFALLS IN FINANCIAL SECTOR DEREGULATION

Because the circular flow is so central to sustained prosperity, financial firms are, to some degree, essential public utilities. Just as governments bail out ill-governed or unlucky electricity, water or heating companies, they bail out ill-governed or unlucky banks, insurance companies and other financial firms. Not bailing out troubled banks upsets voters and impairs prosperity by damaging the circular flow.[50] The prospect of being bailed out, in turn, can leave bankers and other financial intermediary executives less careful about how they allocate savings entrusted to them. This moral hazard problem is thought to be a major corporate governance problem in banking and other finance firms. Enthusiasm about exciting new ideas, pressure from politicians, social status and other private personal considerations can sway banks and other financial managers towards decisions that, in retrospect, can appear imprudent, or even daft.

Banking is generally a rather unexciting business that connects offsetting social needs. Savers need safe and remunerative ways to store their money and consumers need credit. Sound banking protects depositors by gathering and applying information about potential borrowers to make sure depositors' money is by and large highly likely to be repaid and remunerates depositors by charging modestly higher interest rates to lenders with modestly greater risks of default. Higher returns for higher risks is central to banking and to all finance-sector firms and markets.

The Nobel Prize-winning economist James Tobin taught his students that whenever banking becomes exciting, something is wrong. In the years up to 1929, bankers lent vast sums to stock market investors buying shares in the Roaring '20s' stock market and in the years up to 2007, bankers ran vast sums of money through opaque fixed-income repackaging and credit default-swap mechanisms. In both cases, banker pay shot up, banking became exciting and dynamic and catastrophic banking crises ensued when the stock market and real estate market crashed. Re-stabilizing the economy required extensive government intervention — overt in the U.S. and hidden in Canada.[51] Politicians, swayed by voter enthusiasm for cheap loans, repeatedly deregulate banks and then, when the next financial crisis develops, socialize the costs of bank bailouts; that is, finance the bailouts by raising taxes and/or printing money, which raises inflation.[52] Tough regulation falls away to cheapen credit and the cycle repeats.[53] This co-dependence deeply integrates banking with government, which leads to calls for so-called narrow banking; that is, that banking be regulated like a public utility to ensure ongoing safe and reliable services.[54] Other parts of the finance sector — stock markets, commodity markets,

---

50 The financial historian Ben Bernanke (1983), studying 1930s bank failures, concluded that bailing out failing banks faster and more thoroughly would have greatly shortened the Great Depression.

51 During the Great Depression of the 1930s, waves of bank failures destroyed middle class U.S. savings. In contrast, no Canadian banks failed during that decade. Canadian banks' extensive branch systems and monopoly profit cushions were long thought responsible; however, government archives show that government regulators hid the dire condition of Canadian banks from the public. For details, see Kryzanowski and Roberts (1993). After the 2008 financial crisis, the U.S. undertook costly bank bailouts. Canadian banks were largely insulated from that crisis, perhaps because the Office of the Superintendent of Financial Institutions (OSFI) had limited their participation in the credit repackaging and credit default swaps markets that undid large U.S. and European banks.

52 This political calculus can be worked out explicitly. See Miles, Yang and Marcheggiano (2013).

53 A more politicized civil service can magnify this cycle, and Canada's relatively independent civil service may also contribute to its financial stability. See, for example, Calomiris and Haber (2015).

54 One prominent call of this sort was by the Nobel Prize-winning economist James Tobin (1987). See also Pennacchi

derivatives markets, debt-swap markets, hedge funds, venture capital funds etc. — are, when properly designed, risk tolerant. High risk in these locales can be fenced in, as when stock market crashes in 1987 and 2000 hit stock investors hard but left the overall economy relatively unscathed. High-return undertakings, such as the rollouts of major new technologies — electricity and telephone networks in the 1920s or internet and cellular networks in the 1990s — can require capital vastly greater than any individual or family can provide.

Much financial regulation is designed around places where the public utility and risk-tolerant parts of the finance sector can affect each other. Much lobbying by bankers is designed to break down these fences. G. K. Chesterton, the British philosopher and author of the Father Brown mysteries, advised reformers to avoid taking down a fence before learning why it was put up. Banking regulation tends to be a mishmash of Chesterton's fences and fences seemingly erected only to hold red tape.

Banks' borrowings from their customers (depositors' bank accounts, CDs, GICs, etc.), from other financial institutions (interbank loans) and from debt markets (bonds and other debt securities) are risk intolerant. Banks that cannot repay their depositors and other creditors are insolvent and subject to bankruptcy. Banks' shares are risk tolerant: the boards of banks short of earnings can vote to reduce or skip dividends and shareholders have no recourse. Recent rounds of regulatory reforms have subjected banks to various capital requirements — mandates that at least some minimum fraction of a bank's total balance sheets must be financed by issuing shares rather than by borrowing, whether from their customers, other banks or debt markets.

Because shareholders must accept these risks, banks typically must, on average, pay far higher returns on their shares than on their borrowing. Canadian banks pay their chequing and savings account holders far less than one per cent per year, though large deposits now pay close to two per cent and some GICs pay five per cent. In contrast, Figure 9 Panel A shows their returns on equity (ROE) (an accounting measure of the return they provide their shareholders) in the 10 per cent to 15 per cent range. This leads many bank executives to argue that raising less capital from shareholders and borrowing more from depositors lowers costs to the bank. In fact, this is false because a smaller base of risk-tolerant capital from shareholders makes each share riskier, which makes shareholders require higher returns and further raises ROEs. Some simple arithmetic shows that paying a higher return on a smaller base of equity capital leaves the bank's total costs unchanged. Nonetheless, Figure 9 Panel B shows shareholder capital to account for only 15 per cent to 28 per cent of their total capital. In contrast, typical firms in other industries have shareholder capital in the 50 per cent to 100 per cent range.

One suggested reason for this is that banks' top executive pay is conventionally linked to ROE.[55] This norm appears to have arisen in executive compensation consultant circles. Consequently, higher returns on equity increase top banker pay. All else being equal, a bank with fewer shares outstanding has a higher ROE because its earnings are spread across fewer shares.[56] However, to have fewer shares outstanding, a bank must borrow more to conduct the same business. Banks with larger debts are less financially stable and more apt to need bailouts in sharp economic downturns. This problem — standard bank CEO compensation formulas incentivizing riskier bank financing — has attracted attention at business schools, but bankers and pay consultants reject the criticism for reasons of tradition.

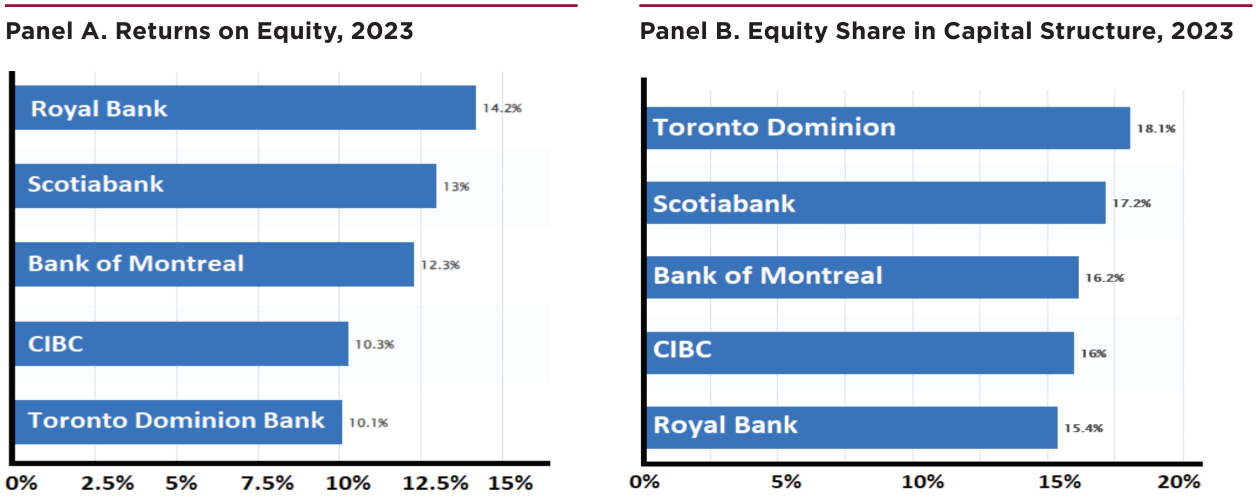
---

(2012). Tobin's proposal anticipates recent work on how Central Bank digital currencies might provide narrow banking; see, for example, Duffie (2019).

55 On this convention and its adverse consequences, see Pennacchi and Santos (2021). The issue was first highlighted by Bebchuk, Cohen and Spamann (2010).

56 Intuitively, high returns on equity correspond to high risk to equity holders. ROE is consequently a measure of risk as well as returns, yet bank compensation committees continue to reward CEOs with higher pay for higher ROEs as if ROE measured performance alone.

Figure 9. Returns on Equity and Capital Structures of Major Canadian Banks




Source: Statistica

This is thought to be a major corporate governance externality problem in banking. Banks' top executives can lever up their current pay but leave their banks excessively fragile. Moral hazard — bank executives expecting government bailouts to save their banks — is thought to exacerbate the problem.

Race-to-the-bottom Tiebout competition in financial regulation very likely contributed substantially to the 2008 global financial crisis. In the U.S. and Europe, investment banks, such as Bear Stearns and Lehman Brothers, sold deposit-taking banks financial engineering — complex and opaque networks of contingency-triggered financial contracts — as surefire risk-eliminating mechanisms. Financial regulators accepted these arguments and let deposit-taking banks lend at unprecedented scale without regard to risk and, free of the costs of defaulting borrowers, to promise depositors and GIC-holders handsome interest. Fees from all this boosted the banks' ROEs and bankers' ROE-linked compensation. Banks' equity capital bases narrowed sharply, falling to small fractions of those in Figure 9. In both the U.S. and Europe, banking became extremely exciting.

Lending risk can be reduced and shifted, but not eliminated. In fact, the banks had concentrated vast risk on the very narrow shoulders of their shareholders. When the fragility intrinsic to very small equity capital bases triggered bankruptcies, the banks relied on bailouts by their national governments. In smaller countries, such as Iceland, the needed bailouts exceeded the country's GDP. To bail out their troubled banks, the national governments issued large amounts of treasury securities, which was readily feasible because the Maastricht Treaty establishing the euro required the European Central Bank to buy euro-zone governments' treasury securities at par. The ensuing global financial crisis caused a major recession and was only resolved by bailouts from the European Central Bank and multilateral financial institutions.

This chain of events illustrates the dangers of regulatory competition in a global capital market. Alberta businesses can freely obtain capital from savings across Canada and abroad. Provincial policies aimed at expanding local banks or financial institutions need not make capital more available to local businesses. Well-governed local financial firms would, in their depositors' interests, allocate capital to higher value and/or less risky uses elsewhere. Indeed, although financial engineering cannot make risk vanish, diversification can reduce risk very effectively.

Lending to more idiosyncratic borrowers who are putting the funds to less correlated uses makes it more likely that one borrower's defaults cancel out others' timely repayments. Banks that diversify inadequately, for example by lending only locally, are more fragile because local problems hit all their borrowers at once. Alberta's GDP is currently C$322.9 billion, or 0.25 per cent of global GDP (US$96.1 trillion converted at US$0.75 per C$). Fully diversified Alberta savers — households, governments and businesses — would have 0.25 per cent of their savings invested in Alberta-based securities and 99.75 per cent invested elsewhere. This, the most basic lesson in financial economics courses, argues that Alberta pension funds, sovereign wealth funds and the like should invest 99.75 per cent of their capital outside Alberta. A similar calculation advises them to invest 97.5 per cent of their capital outside Canada.

However, this ignores the critical information-gathering function of financial institutions in the circular flow of Figure 1. Well-governed financial institutions sometimes prefer to lend locally and issue the securities of local companies whose risks they understand. Better information can let local financial intermediaries set higher interest rates for riskier borrowers and lower share prices for riskier issuers (so their eventual dividends amount to a higher return for shareholders). Local information can also help them screen out lemons more accurately.

The New York Stock Exchange became predominant in the U.S. because the Erie Canal made the city a trans-shipment hub for commerce from the Great Lakes. However, locating head offices near the financial intermediaries there let low-risk borrowers and solid stock issuers make themselves more transparent to those capital providers. This also sorts firms but attracts the best rather than the worst. Only firms that actually are low risk and high potential go out of their way to make it easy for financial intermediaries to gain information about them.

Switzerland, landlocked like Alberta, became a financial centre by keeping taxes low yet providing high-quality laws and regulations, infrastructure, employees, courts and regulators. Switzerland also let depositors set up accounts without disclosing their names. These numbered accounts let persecuted minorities, corrupt politicians, dishonest oligarchs, crime bosses and tax evaders conceal their money, but high-quality public goods and services and well-capitalized banks likely also made Switzerland a European pharmaceuticals hub. Geographic proximity makes gathering and comprehending information about prospective borrowers and securities issues easier for financial intermediaries, and this allows for a more robust and more accurate circular flow of capital in the local economy.

Geographic proximity does confer an information advantage, at least in some situations.[57] More entrepreneurial startups arise in localities closer to financial institutions. More local financial institutions also correlate with faster job transitions from declining to rising sectors. More local financial institutions are especially correlated with more local lending and business activity in rural areas, whereas banks located in financial centres might find information gathering more difficult. However, local financial institutions can also absorb local problems. Financial institutions in localities with less sophisticated (lower education) savers seem especially prone to problems arising simultaneously across businesses to which they provide capital.

Government-run investment funds investing locally are also subject to political pressure to redirect their funds to help politically important regions, firms, families and individuals. These efforts, generally framed as "nation-building" or "industrial policy" initiatives, generally end badly. To "help" mining communities, the Caisse de dépôt et placement du Québec purchased asbestos

---

[57] For an overview of the evidence, see Capello and Nijkamp (2019). On investor sophistication, see Korniotis, Kumar and Page (2020).

mines that private companies were closing as liabilities for asbestos-related health problems were coming into focus. The Quebec sovereign wealth fund lost heavily on the mines and in subsequent lawsuits, including by the miners, for asbestos-related medical problems. To avoid such pressures, to mitigate Dutch disease[58] pressure on its currency and to attain the risk reduction from wide diversification, the Norwegian government's oil fund (Statens Pensjonsfond Utland) is not allowed to invest inside Norway. Even that has not entirely protected the fund from politics, for Norwegian political activists still pressure the fund to boycott foreign firms they deem (or want to be seen deeming) unethical.

Recently, CEOs and investment fund managers have sought to revise their missions as promoting social welfare, rather than allocating people's savings to the best-return investments with the least risk. These mandates include corporate social responsibility (CSR), environmental and social governance (ESG) and diversity and inclusion (DI). Efficient investment — the gathering and analysis of information to assess returns and risks — is difficult and many CEOs and fund managers are unsuccessful at it. Ratings firms assess CSR, ESG and DI on the basis of simple checklists, so increasing one's ratings is much easier. So-called heroic managerialism — a phenomenon that rises and falls away in the history of corporate governance — has also generally not ended well. After the Second World War, heroic corporate governance took hold in the U.S. and CEOs set about doing what they thought was good for America. The Ford Pinto (Ford decided that paying expected lawsuits from dead customers was cheaper than redesigning the car), Cleveland's Cuyahoga River repeatedly catching fire (local firms' highly flammable pollutants) and numerous other such corporate scandals made heroic managerialism (correctly) seem an arrogation of government's proper role in setting social welfare priorities. Real share values collapsed in the 1970s and CEOs and fund managers were panned as unable to do what was good for America or for savers. Activists such as Ralph Nader set about pressing government to legislate limits on what corporations could and could not do as they went about maximizing profits. Evidence is accumulating that current enthusiasm for CSR, ESG and DI is following this arc.[59]

In a series of rulings, the Supreme Court of Canada has promoted corporate governance that benefits all stakeholders — the list of stakeholders typically including (but not limited to) community, environment, society, employees, suppliers, customers, creditors and shareholders. The United States Business Roundtable has recently made a similar, though nonbinding, pronouncement. Compelling business corporations to assign and implement social welfare policies de facto compels governments to outsource their traditional duties to corporations. The Alberta government may wish to reassert the supremacy of the legislature and civil service by emphasizing that long-term net wealth creation is the principal objective of the Alberta corporation and that social policy formulation and implementation is the realm of government. Where the two clash, government can intervene with taxes, laws and regulations to direct corporate CEOs and boards. This reaffirms the Canadian principle of responsible government and also provides CEOs and boards a safe harbour from political gales. Politicized corporate governance exposes corporations seeking the approval of one set of activist lobbies to attacks from opposing political lobbies. Disney, Budweiser and United Airlines provide recent headline news examples of problematically politicized corporate governance.

---

[58] The "Dutch disease" occurs when natural resource booms elevate a country's currency, eroding exports from its other sectors, as North Sea gas did to the Dutch guilder. See Corden and Neary (1982).

[59] See Morck (2024).

## 8. THE ADVANTAGE OF MORE COMPETITIVE GOVERNMENT

Financial firms in the global economy can be headquartered almost anywhere and they create secondary business for lawyers, auditors and other head office-related services. As in Delaware, finance sectors can provide governments with fee and tax income. As in Switzerland, a flush financial sector can capitalize on high-value-added sectors such as pharmaceuticals. However, the regulatory competition prior to the 2008 financial crisis reveals that this strategy can go badly wrong.

Alberta's scope for attracting financial activity with loose bank regulation competition is limited and could be costly. Canadian banks were largely insulated from the crisis because the OSFI declined to let them engage in the financial engineering on which U.S. and European banks relied.[60] Like small European countries, Alberta cannot guarantee all deposits in financial institutions larger than its GDP, or even larger than the government's budget flexibility would allow. Limiting the provincial government's risk exposure means regulating local financial institutions to engage in informed prudent lending, charge higher risk borrowers appropriately higher rates, screen out lemon borrowers and have sufficient capital from risk-tolerant equity investors to absorb such defaults as occur.

Alberta's scope for attracting economic activity with tax-haven strategies is likewise limited. Tax breaks that attract income from elsewhere increase the total income Alberta can tax and, even at lower rates, might be a net boost to provincial tax revenues, at least until other provinces match Alberta.

However, Canada's federal equalization transfer system is based on each province's tax capacity, defined as "the revenues the province could raise if it were to tax at the national average rate." Alberta has more taxable economic activity for its population than have other provinces, and so has more tax capacity, thus contributing net equalization transfers to the federal government to subsidize federal public goods and services in lower tax-capacity provinces. Before attempting to become a tax haven, Alberta's government may wish to obtain legal advice on how tax breaks overtly designed to attract taxpayers from other provinces would artificially increase Alberta's tax capacity and equalization transfers.[61]

Alberta's scope for attracting business incorporations as Delaware does is also limited. The two-thirds of large U.S. firms that are incorporated in Delaware pay franchise fees that constitute 20 per cent of state revenues. Alberta is a much larger economy and Canada has only 10 per cent as many large corporations. Two-thirds of large Canadian firms would be roughly 1/10th that number, or two per cent of Delaware's state government revenues. This admittedly rough calculation ends up as a fraction of one per cent of Alberta's provincial government spending.

Alberta might surpass Delaware by providing anti-takeover protection to firms if they relocated head offices and operational functions to Alberta. However, this sort of Tiebout competition tends to sort firms, rather than attract all firms. The top executives of more ill-governed and troubled firms are attracted by anti-takeover barriers, and a massive relocation to Alberta of such firms from across Canada might be characterized as importing problems.

---

[60] Alberta has its own Alberta Superintendent of Financial Institutions, charged with regulating provincial financial institutions and insuring their deposits. However, historically, central banks alone are capable of bailing out troubled financial institutions in major financial crises because central banks alone can create sufficient money in those conditions. U.S. states in the S&L crisis and EU member states in the 2008 financial crisis could not bail out the financial institutions they regulated and insured without money from higher powers. Regardless of the letter of the regulations, OSFI and the Bank of Canada would almost surely be deeply involved in stabilizing provincial financial institutions in any systemic financial crisis.

[61] The federal government collects taxes and remits equalization transfers to the provinces to equalize the per capita revenues of provincial governments. Although Albertans do not explicitly make equalization payments to other provinces, the net effect of the system is as if they did.

Alberta might pursue a more fundamental race-to-the-top Tiebout competition. Alberta might emulate Delaware in having more economically literate and efficient courts, Switzerland in providing better public goods and services for lower taxes and other jurisdictions that provide government more worth the taxes. Better education and health care can boost the productivity of the province's labour force and its ability to cope with technological change. Better universities more focused on high-technology-related subjects might also be a draw. In part at least, the San Francisco Bay area and Boston became high-technology centres of gravity because both are longstanding centres of elite science, engineering and computer education and research. Multiple competing high-quality universities in both locales attracted highly trained people with the prospect of being able to change jobs without relocating. Students at those universities founded startups that created more local job opportunities for yet more technically skilled people. The small number of startups that succeeded exponentially further deepened the local labour market for highly technically skilled people. In both cases, amassing the concentrations of talent necessary to initiate the high-technology agglomeration took decades. But high-technology hubs arose where only low-tech industry had gone before. All of this would also increase Alberta's tax capacity and net equalization transfers, but the increase in real economic activity — as opposed to taxpayer legal residency — has a prospect of being a net positive for the provincial government as well as the economy.

All the above combine into a common theme: the way to make Alberta prosperous is to boost productivity growth, and the way to do that is to create an overall economic landscape that encourages capital to flow to genuinely productivity-increasing ventures. These are apt to be new firms dependent on the financial system for funding, as government subsidies are proven ineffective in general. Genuinely promising innovative enterprises can usually obtain more advantageous funding and can access better educated labour markets by relocating to existing technology hubs. Government subsidy programs are left funding ventures rejected by private-sector capital providers, and these historically tend to be losers. A long-run strategy for boosting Alberta's productivity growth is for government to refocus on its core competencies — notably law, regulation, education and health care — to sculpt an economic landscape that attracts and retains highly skilled employees, sophisticated financial intermediaries and investment. Alberta's future prosperity would therefore best be served by subjecting all government policies to the requirement that they be worth the taxes.

## REFERENCES


Aghion, Philippe, Céline Antonin, and Simon Bunel. 2021. *The Power of Creative Destruction: Economic Upheaval and the Wealth of Nations*. Cambridge, MA: Harvard University Press.

Akerlof, George. 1970. "The Market for Lemons: Quality Uncertainty and the Market Mechanism." *Quarterly Journal of Economics* 84(3)488. https://link.springer.com/chapter/10.1007/978-1-349-24002-9_9.

Bartelsman, Eric, John Haltiwanger, and Stefano Scarpetta. 2013. "Cross-Country Differences in Productivity: The Role of Allocation & Selection." *American Economic Review*. 103(1): 305–334. https://www.aeaweb.org/articles?id=10.1257/aer.103.1.305.

Bebchuk, Lucian, Alma Cohen, and Holger Spamann. 2010. "The Wages of Failure: Executive Compensation at Bear Stearns and Lehman 2000–2008." *Yale Journal on Regulation* 27: 257. https://openyls.law.yale.edu/bitstream/handle/20.500.13051/8125/11_27YaleJonReg257_2010_.pdf?sequence=2&isAllowed=y.

Bennedsen, Morton, and Stefan Zeume. 2018. "Corporate Tax Havens and Transparency." *Review of Financial Studies* 31(4): 1221–64. https://doi.org/10.1093/rfs/hhx122.

Bernanke, Ben S. 1983. "Non-Monetary Effects of the Financial Crisis in the Propagation of the Great Depression." *American Economic Review* 73.3: 257–276. DOI: 10.3386/w1054.

Betz, Frederick. 1993. *Strategic Technology Management*. New York: McGraw-Hill.

Bird, Richard. 1978. "Canada's Vanishing Death Taxes." *Osgoode Hall Law Journal* 16(1): 133–46. https://doi.org/10.60082/2817-5069.2106. https://digitalcommons.osgoode.yorku.ca/cgi/viewcontent.cgi?article=2106&context=ohlj.

Black, Bernard S., Antonio Gledson De Carvalho, and Joelson Oliveira Sampaio. 2014. "The Evolution of Corporate Governance in Brazil." *Emerging Markets Review* 20: 176–195. https://doi.org/10.1016/j.ememar.2014.04.004.

Brynjolfsson, Erik, and Andrew McAfee. 2014. *The Second Machine Age: Work, Progress & Prosperity in a Time of Brilliant Technologies.* New York: W. W. Norton.

Calomiris, Charles, and Stephen Haber. 2015. *Fragile by Design: The Political Origins of Banking Crises and Scarce Credit*. Princeton: Princeton University Press.

Capello, Roberta, and Peter Nijkamp, eds. 2019. *Handbook of Regional Growth and Development Theories: Revised and Extended*, 2nd edition. Cheltenham, U.K.: Edward Elgar Publishing.

Chesbrough, Henry. 2003. "The Governance and Performance of Xerox's Technology Spin-off Companies." *Research Policy* 32(3): 403–421. https://doi.org/10.1016/S0048-7333(02)00017-3.

Coffee, John C. Jr. 2012. "Political Economy of Dodd-Frank: Why Financial Reform Tends to be Frustrated and Systemic Risk Perpetuated." *Cornell Law Review* 97, 1019. https://scholarship.law.columbia.edu/faculty_scholarship/517.

Corden, W. Max, and J. Peter Neary. 1982. "Booming Sector and De-Industrialization in Small Open Economies." *Economic Journal* 92: 825–48. https://doi.org/10.2307/2232670.

Dagher, J. 2018. "Regulatory Cycles: Revisiting the Political Economy of Financial Crises." Working Paper. International Monetary Fund. https://www.imf.org/en/Publications/WP/Issues/2018/01/15/Regulatory-Cycles-Revisiting-the-Political-Economy-of-Financial-Crises-45562.

Daly, Mary, Bart Hobijn, and Ayşegül Şahin. 2013. "Understanding the Aggregate Labor Market." *Journal of Monetary Economics* 60(2): 183–202.

Deaton, Angus. 2013. *The Great Escape: Health, Wealth, and the Origins of Inequality*. Princeton: Princeton University Press.

Dharmapala, Dhammika, and James R. Hines Jr. 2009. "Which Countries Become Tax Havens?" *Journal of Public Economics* 93(9–10): 1058–1068. https://doi.org/10.1016/j.jpubeco.2009.07.005.

Di Matteo, Livio, and Fraser Summerfield. 2020. "The Shifting Scully Curve: International Evidence from 1871 to 2016." Applied Economics 52(39): 4263–83. DOI: 10.1080/00036846.2020.1733479.

Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer. 2008. "The Law and Economics of Self-dealing." *Journal of Financial Economics* 88(3): 430–465. https://doi.org/10.1016/j.jfineco.2007.02.007.

Doidge, C., G. A. Karolyi, and R. M. Stulz. "Why are Foreign Firms Listed in the U.S. Worth More?" Journal of Financial Economics 71(2)205–38. https://doi.org/10.1016/S0304-405X(03)00183-1.

Dolson, H. Michael. 2022. "Tax Policy Issues Relevant to Captive Insurance Companies in Alberta." School of Public Policy Research Paper 15:28, University of Calgary. September. https://www.policyschool.ca/wp-content/uploads/2022/09/FMK6-Research-TaxPolicyCaptInsur.Dolson.pdf.

Driebusch, Corrie. 2024. "New Texas Stock Exchange Takes Aim at New York's Dominance: The TXSE Has Raised about $120 Million to Take on NYSE and Nasdaq." *Wall Street Journal*. June 4. https://www.wsj.com/finance/regulation/new-texas-stock-exchange-takes-aim-at-new-yorks-dominance-e3b4d9ba.

Duffie, Darrell. 2019. "Digital Currencies and Fast Payment Systems: Disruption is Coming." Keynote Address to the 2019 Asian Monetary Forum, Monetary Authority of Singapore. https://www.darrellduffie.com/uploads/1/4/8/0/148007615/duffiedigitalpaymentsmay2019.pdf.

Easterly, William, and Ross Levine. 2001. "It's Not Factor Accumulation: Stylized Facts and Growth Models." *World Bank Economic Review* 15(2): 177–219. https://openknowledge.worldbank.org/server/api/core/bitstreams/2563c823-7107-52d4-83c6-da3aaf3ab836/content.

Edwards, Sebastian. 2010. *Left Behind: Latin America and the False Promise of Populism*. Chicago: University of Chicago Press.

Eisinger, Jess. 2017. *The Chickenshit Club: Why the Justice Department Fails to Prosecute Executives*. New York: Simon and Schuster.

Ferleger, Louis, and Jary R. Mandle. 1992. *No Pain, No Gain: Taxes, Productivity, and Economic Growth.* Washington, DC: Brookings Institution Press.

Fogel, Kathy, Ma Liping, and Randall Morck. 2021. "Powerful Independent Directors." Financial Management 50.4: 935–983. https://doi.org/10.1111/fima.12365.

Fogel, Kathy, Randall Morck, and Bernard Yeung. 2008. "Big Business Stability and Economic Growth: Is What's Good for General Motors Good for America?" *Journal of Financial Economics* 89(1): 83–108. https://doi.org/10.1016/j.jfineco.2007.06.004.

Gehringer, Agnieszka. 2014. "Financial Liberalization, Financial Development and Productivity Growth: An Overview." *International Journal of Monetary Economics and Finance* 7.1: 40–65. DOI: 10.1504/IJMEF.2014.063841.

Gennaioli, N., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer. 2013. "Human Capital and Regional Development." *Quarterly Journal of Economics* 128(1): 105–164. https://doi.org/10.1093/qje/qjs050.

Griliches, Zvi. 1969. "Capital-Skill Complementarity." *Review of Economics & Statistics* 45(1): 465–468. https://EconPapers.repec.org/RePEc:tpr:restat:v:51:y:1969:i:4:p:465-68.

Harris, David, Randall Morck, and Joel B. Slemrod. 1993. "Income Shifting in U.S. Multinational Corporations." In *Studies in International Taxation*, Joel B. Slemrod, ed. 277–308. Chicago: University of Chicago Press.

Harris, Ron. 1994. "The Bubble Act: Its Passage and its Effects on Business Organization." *The Journal of Economic History* 54.3: 610–627. https://doi.org/10.1017/S0022050700015059.

Henry, Peter Blair. 2007. "Capital Account Liberalization: Theory, Evidence, and Speculation." *Journal of Economic Literature* 45: 887–935. DOI: 10.1257/jel.45.4.88.

Irmen, Andreas, and Johanna Kuehnel. 2009. "Productive Government Expenditure and Economic Growth." *Journal of Economic Surveys* 23(4): 692–733. DOI: 10.1111/j.1467-6419.2009.00576.x.

Johnson, Simon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer. 2000. "Tunneling." *American Economic Review* 90(2): 22–27. DOI: 10.1257/aer.90.2.22.

Jorgenson, Dale, and Zvi Griliches. 1967. "The Explanation of Productivity Change." *Review of Economic Studies* 34(3): 249–283. https://doi.org/10.2307/2296675.

Kandel, Eugene, Konstantin Kosenko, Randall Morck, and Yishay Yafeh. 2018. "The Great Pyramids of America: A Revised History of U.S. Business Groups, Corporate Ownership, and Regulation, 1926–1950." *Strategic Management Journal* 40(5): 781–808. https://doi.org/10.1002/smj.2992.

King, Robert, and Ross Levine. 1993. "Finance and Growth: Schumpeter Might be Right." *Quarterly Journal of Economics* 108(3): 717–737. https://doi.org/10.2307/2118406.

Koopman, Eline, and Konstantin M. Wacker. 2023. "Drivers of Growth Accelerations: What Role for Capital Acumulation?" *World Development* 169, 106297 1–17. https://doi.org/10.1016/j.worlddev.2023.106297.

Korniotis, G. M., A. Kumar, and J. K. Page. 2020. "Investor Sophistication and Asset Prices." *Review of Financial Economics* 38(4): 557–579. https://doi.org/10.1002/rfe.1093.

Krugman, Paul. 2016. "Leprechaun Economics." Twitter (X). July 12. https://x.com/paulkrugman/status/752841032870551552.

———. 2021. "Biden, Yellen and the War on Leprechauns." *New York Times*. April 8. https://www.nytimes.com/2021/04/08/opinion/biden-corporate-taxes.html.

Kryzanowski, Lawrence, and Gordon S. Roberts. 1993. "Canadian Banking Solvency, 1922–1940." *Journal of Money, Credit and Banking* 25(3.1): 361–76. https://doi.org/10.2307/2077768.

La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer. 2006. "What Works in Securities Laws?" *Journal of Finance* 61: 1–32. https://doi.org/10.1111/j.1540-6261.2006.00828.x.

———. 2008. "The Economic Consequences of Legal Origins." *Journal of Economic Literature* 46.2: 285–332. https://www.aeaweb.org/articles?id=10.1257/jel.46.2.285.

Lerner, Josh. 2009. *Boulevard of Broken Dreams: Why Public Efforts to Boost Entrepreneurship and Venture Capital Have Failed — And What to Do About It.* Princeton: Princeton University Press.

Levine, Ross. 2005. "Finance and Growth: Theory and Evidence." In *Handbook of Economic Growth,* vol. 1, part A, Philippe Aghion and Steven N. Durlauf, eds. 865–934. https://doi.org/10.1016/S1574-0684(05)01012-9.

Lim, Won-hyuk, and Randall Morck. 2024. *The Long Shadow of the Big Push: An Economic History of Korea*. Manuscript under revision.

Lucas, Henry Jr., and Jie Mein Goh. 2009. "Disruptive Technology: How Kodak Missed the Digital Photography Revolution." *Journal of Strategic Information Systems* 18(1): 46–55. https://doi.org/10.1016/j.jsis.2009.01.002.

McMillan, M., D. Rodrik, and I. Verduzco-Gallo. 2014. "Globalization, Structural Change, and Productivity Growth, With an Update on Africa." *World Development* 63: 11–32. http://dx.doi.org/10.1016/j.worlddev.2013.10.012.

Miles, David, Jing Yang, and Gilberto Marcheggiano. 2013. "Optimal Bank Capital." *Economic Journal* 123(567): 1–37. https://doi.org/10.1111/j.1468-0297.2012.02521.x.

Mintz, Jack, and Michael Smart. 2004. "Income Shifting, Investment, and Tax Competition: Theory and Evidence From Provincial Taxation in Canada." *Journal of Public Economics* 88(6): 1149–68. https://doi.org/10.1016/S0047-2727(03)00060-4.

Mintz, Jack, Daniel Wilson, and Bryce Tingle. 2021. "Building Alberta's Financial Sector." University of Calgary School of Public Policy Research Papers, 14:3. June 16. http://dx.doi.org/10.2139/ssrn.3868479.

Morck, Randall. 2022. "Kindleberger Cycles: Method in the Madness of Crowds?" *Annual Review of Financial Economics* 14: 563–585. https://doi.org/10.1146/annurev-financial-101821-115140.

———. 2024. "Corporate Governance and the Greater Good." Working Paper. University of Alberta, Alberta School of Business.

Morck, Randall, Andrei Shleifer, and Robert W. Vishny. 1988. "Management Ownership and Market Valuation: An Empirical Analysis." *Journal of Financial Economics* 20(1/2): 293–315. https://doi.org/10.1016/0304-405X(88)90048-7.

Mukherjee, Abhiroop, Manpreet Singh, and Alminas Žaldokas. 2017. "Do Corporate Taxes Hinder Innovation?" *Journal of Financial Economics* 124(1): 195–221. DOI: 10.1016/j.jfineco.2017.01.004.

Oliner, Stephen, and Daniel E. Sichel. 2000. "The Resurgence of Growth in the Late 1990s: Is Information Technology the Story?" *Journal of Economic Perspectives* 14(4): 3–23. https://www.aeaweb.org/articles?id=10.1257/jep.14.4.3.

Pennacchi, George. 2012. "Narrow Banking." *Annual Review of Financial Economics* 4(1): 141–59. https://doi.org/10.1146/annurev-financial-110311-101758.

Pennacchi, George, and João A.C. Santos. 2021. "Why Do Banks Target ROE?" *Journal of Financial Stability* 54, 100856. https://doi.org/10.1016/j.jfs.2021.100856.

Queenan, Joe. 1989. "Scam Capital of the World." *Forbes*. May 19: 132–140. https://scamcouver.wordpress.com/wp-content/uploads/2012/04/scam-capital.pdf.

Scully, Gerald. 1989. "The Size of the State, Economic Growth and the Efficient Utilization of National Resources." Public Choice 63: 149–164.

Seagal, D., and M. King. 2003. "Valuation of Canadian vs. U.S.-Listed Equity: Is There a Discount?" Bank of Canada Working Paper. https://www.bankofcanada.ca/wp-content/uploads/2010/02/wp03-6.pdf.

Sianesi, Barbara, and John Van Reenen. 2003. "The Returns to Education: Macroeconomics." *Journal of Economic Surveys* 17(2): 157–200. https://doi.org/10.1111/1467-6419.00192.

Slemrod, Joel, and John D. Wilson. 2009. "Tax Competition With Parasitic Tax Havens." *Journal of Public Economics* 93.11–12: 1261–1270. https://doi.org/10.1016/j.jpubeco.2009.08.004.

Solow, Robert M. 1956. "A Contribution to the Theory of Economic Growth." *Quarterly Journal of Economics*, vol. 70, no. 1: 65–94. http://links.jstor.org/sici?sici=0033-5533%28195602%2970%3A1%3C65%3AACTTTO%3E2.0.CO%3B2-M.

Stiglitz, Joseph, and Andrew Weiss. 1981. "Credit Rationing in Markets with Imperfect Information." *American Economic Review*, vol. 71, no. 3: 393–410. https://www.jstor.org/stable/1802787.

Tibbetts, Janice. 2000. "Angry Taxpayer Takes on the Bronfmans: Revenue Canada Says $2-Billion Tax Loophole is None of His Business." *Ottawa Citizen*. March 6.

Tiebout, Charles. 1956. "A Pure Theory of Local Expenditures." *Journal of Political Economy* 64(5): 416–24. https://www.journals.uchicago.edu/doi/10.1086/257839.

Tobin, James. 1987. "The Case for Preserving Regulatory Distinctions." Kansas City Fed. https://www.kansascityfed.org/documents/3828/1987-S87TOBIN.pdf.

Wurgler, Jeffrey. 2000. "Financial Markets and the Allocation of Capital." *Journal of Financial Economics* 58.1-2: 187–214. https://doi.org/10.1016/S0304-405X(00)00070-2.

# About the Authors

**Mark R. Huson** is a Professor of Finance and the Dianne and Irving Kipnes Chair in Finance and Development University of Alberta. He is also the Academic Director at Creative Destruction Labs—Rockies.

He has published papers in the *Journal of Financial Economics*, *Journal of Finance*, *Journal of Corporate Finance*, *The Accounting Review*, and *The Journal of Operations Management*. Mark is a founding director of the Financial Research Association. He was on the editorial boards of *Contemporary Accounting Research* (2010-2013), *Canadian Journal of Administrative Sciences* (2012-2013), and served as an Associate Editor of the *Review of Financial Studies* (2013-2016).

Mark's startup experience includes Angel investing as a member the Central Texas Angel Network (CTAN) in Austin. Additionally he sat on the board of Greenspense, a Tel Aviv based start-up and is currently a board director at Pacylex an Edmonton based oncology start-up.

**Randall Morck** is the most cited economist in Canada, his research referenced more than 53,000 times in other researchers' work. From a blue-collar Alberta family, he received a scholarship to attend Yale University where he graduated summa cum laude with BSc in Honors Applied Mathematics and an M.A. in Economics. After earning a PhD in Economics from Harvard, in 1986 he joined the University of Alberta, which appointed him Stephen Jarislowsky Distinguished Professor of Finance. He returns to both his almae matres, most recently as Mackenzie King Visiting Professor at Harvard and as Schoen Visiting Professor at Yale. Prof. Morck is a Research Associate at the National Bureau of Economic Research in Cambridge Massachusetts and Senior Fellow at the Asian Bureau of Finance and Economics Research in Singapore. In 2018, he was awarded a Yangtse-River Professorship, the highest academic honor in China, where he is affiliated with the Wenlan School of Economics. In August 2023, the University of Montreal and HEC Montreal awarded him an honorary doctorate for contributions to corporate governance and other areas of finance research. He has advised governments, central banks, and multilateral institutions on these issues

# About The School of Public Policy

The School of Public Policy has distinguished itself as the leading institution of its kind in Canada, offering a practical, global, and focused approach to the analysis and implementation of public policy across various domains:

1. **Social Policy and Health**
2. **Energy and Environmental Policy**
3. **Fiscal and Economic Policy**
4. **International Policy and Trade**

Our commitment to delivering this unique perspective sets us apart within Canada. The core mission of The School of Public Policy is to bolster Canada's public service, institutions, and economic performance for the betterment of our families, communities, and the nation as a whole. We achieve this by pursuing three key objectives:

- **Building Government Capacity**: We empower public servants through formal training in both degree and non-degree programs. This training equips these individuals, responsible for shaping public policy in Canada, with the practical skills and expertise needed to represent our nation's vital interests, both domestically and internationally.
- **Enhancing Public Policy Discourse**: Beyond government, we foster executive and strategic assessment programs that promote a deeper understanding of effective public policy among those outside the public sector. This effort enables everyday Canadians to make informed decisions regarding the political landscape that will shape their future.
- **Providing a Global Perspective on Public Policy Research**: Through international collaborations, educational initiatives, and community outreach programs, we incorporate global best practices into Canadian public policy. This approach ensures that our decisions benefit the entire populace in the long term, rather than catering to the interests of a select few in the short term.

The School of Public Policy relies on a diverse pool of experts, encompassing industry professionals, practitioners, and academics, to conduct research within their specialized domains. This approach ensures that our research remains highly relevant and directly applicable to real-world challenges. Authors often have personal or professional stakes in their research areas, which is why all Research Papers undergo a rigorous double anonymous peer review process. Following this review, our Scientific Directors conduct a final assessment to uphold the accuracy and validity of the analysis and data presented. This thorough process underscores our commitment to providing credible and actionable insights to inform public policy in Canada.

**The School of Public Policy**
University of Calgary, Downtown Campus
906 8th Avenue S.W., 5th Floor
Calgary, Alberta T2P 1H9
Phone: 403 210 3802

**DISTRIBUTION**

For a full list of publications from The School of Public Policy, please visit www.policyschool.ca/publications

**DISCLAIMER**

The opinions expressed in these publications are the authors' alone and therefore do not necessarily reflect the opinions of the supporters, staff, or boards of The School of Public Policy.

**EDITORIAL PRACTICES STATEMENT**

This manuscript is a double-blind peer-reviewed contribution to the policy conversation that has been assessed by at least two reviewers external to the authorial team.



**ISSN**

ISSN 2560-8312
The School of Public Policy Publications (Print)
ISSN 2560-8320
The School of Public Policy Publications (Online)

**DATE OF ISSUE**

November 2024

**MEDIA INQUIRIES AND INFORMATION**

For media inquiries, please contact Gord Der Stepanian.

Our web site, **www.policyschool.ca**, contains more information about The School's events, publications, and staff.