Faculty of Law, 
McGill University

REGULATING INNOVATION: 
LAW AND THE CREATIVE DISTRICT

PRELIMINARY REPORT (SSHRC, 2015/2016, ALLISON CHRISTIANS, PIERRE-EMMANUEL MOYSE, INSIGHT DEVELOPMENT GRANT)

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I. EXECUTIVE SUMMARY

A. Progress report

The first stage of the project was completed from September 2014 to June 2015. The research team collected information and analyses regarding the fiscal policies to encourage innovation in Montreal, Israel, and California, and regarding non-compete clauses (NCCs) in Quebec (Canada), Israel, California (USA), and France. The study period covers years 1980 thru 2010. The preliminary findings are presented in this report.

The research team is conducting ongoing research on the fiscal policies to encourage innovation in Silicon Wadi, Israel (June–August, 2015). A team of intellectual property focused researchers conducted a series of interviews examining the impact of NCCs and related contractual practices on the mobility of knowledge were in Montreal during the summer and fall of 2015, and winter 2016. The McGill Ethics Committee approved the project’s interview and survey research programme in the fall of 2014 (see the ethics application package attached). Armed conflicts in Israel starting in the summer of 2014 have forced the principal investigators to delay interviews in Tel Aviv until further notice, and the California interviews are scheduled for summer 2016.

B. Research results

1. Fiscal policy for innovation

In Quebec and California, firms benefit from research and development (R&D) tax credits adopted by legislatures to foster innovation. Israel has not historically used tax incentives to encourage R&D but, rather, has funded projects directly through the Office of the Chief Scientist. This has, however, changed slightly throughout the study period as it has made some changes to venture capital laws and modification to capital gains taxes to encourage foreign investment.

Canada’s flagship tax measure for innovation is the Scientific Research and Experimental Development (SR&ED) Tax Credit. It provides approximately $3.5 billion annually toward the cost of business R&D, both current and capital expenditures—among the most generous in OECD countries. The programme aims to incentivize basic research, applied research, and experimental development in the private sector. Critics, however, cite compliance costs, refundability, and general administration as downfalls of the programme. While more than sixty federal programs support R&D, little federal tax support exists beyond the SR&ED Tax Credit. Since 2009, the Canadian federal government has greatly increased the funds allocated to the National Research Council’s Industrial Research Assistance Program (from $86 million in 2007–08 to $237.3 million in 2010–11), which offers support services to small and medium-sized enterprises (SMEs).

Each of Quebec and California has its own tax incentives at the provincial or state level. Quebec has its own R&D tax credit program, which leads to some rivalry between Canada’s and Quebec’s fiscal policies. Indeed, Quebec innovated with a competitive
SR&ED super-deduction program in 1999, but Canada changed its own SR&ED program shortly thereafter, incidentally nullifying Quebec’s approach. California’s Research and Development Credit, despite having a lower rate than its federal counterpart (the Research and Experimentation Credit), allows firms to file comparatively less gross receipts. This arguably encourages firms to locate in California.

Both Quebec and California apply tax measures aiming to build inter-sector partnerships and cooperation along with human capital. Quebec instated tax credits for R&D salaries and university, public, and research consortium R&D expenditures. Such measures benefit Montreal indirectly, since many public R&D institutions are located in the city. As for the California, the United States’ federal technology transfer measures include “tax credits for industrial payments to universities for the performance of R&D.”¹ This is of particular relevance to the origins of Silicon Valley, in which Stanford University played an essential role in fostering innovation.

Both regions count further tax measures related to encouraging innovation and attracting investment. Quebec’s fiscal policy for innovation went through extensive changes in 1999. The government adopted measures meant to encourage the procurement of technological adaptation services, a tax credit for employees involved in the knowledge-based economy and foreign trainers and experts, an additional credit for R&D expenditures, and a series of other specific items. California’s Accelerated Depreciation of Research and Experimental Costs provision allows taxpayers to deduct qualifying expenditures more rapidly than their economic lives. The Franchise Tax Board believes that this particular credit may facilitate economies of agglomeration, albeit to an unknown extent. In the United States, many states provide tax incentives to encourage the development and use of software. California exempts sales of custom computer software and charges for custom modifications from tax. California also offers other fiscal measures which may encourage a firm to settle in its territory—such as Subchapter S of Chapter 1 of the Internal Revenue Code and Proposition 13—but only a handful of these specifically focus on innovation. A number of the state tax credits discussed above have analogous provisions in United States federal law.

Some tax measures focus on specific geographic areas. Between 2001 and 2003, two incentives specifically encouraged firms to establish themselves in Montreal through salary deductions for job creation (E-Commerce Place and Cité du multimedia de Montréal).² Similarly in California, the now repealed Enterprise Zone Tax Initiative applied only to a small portion of Silicon Valley in downtown San Jose. Employers located in this zone were eligible for a string of tax benefits, such as hiring credits, longer Net Operating Loss carry-forwards, etc. Silicon Valley employees also benefit from unique federal tax measures, such as tax-free meals.

The City of Montreal lacks the municipal powers to play a direct role in influencing innovation fiscal policy. It has enacted some property tax measures to encourage the construction, conversion, or expansion of eligible buildings. Montreal has the second

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² Another project, Carrefour de l’Innovation, although not directly lead by the state, seems to mimic the Cité multimedia initiative.
lowest tax burden among North American metropolitan areas. To attract firms, Montreal showcases its qualified workforce, air and maritime transport facilities, membership in NAFTA, ease of immigration, assistance offered to businesses, low operating costs, low mandatory employment costs, cheap rent and available housing, stable energy supply, stable banking system, and high quality of life.

California is a tax-heavy environment which has the highest corporate taxes and the fourth highest income taxes in the United States. Some analysts argue that California’s heavy tax burden should hinder the development of Silicon Valley. However, accounts of the origins of Silicon Valley underline a synergy among local assets, including Stanford University with its focus on technology supported by the regional economy in Silicon Valley, vast amounts of venture capital, strong antitrust laws, social norms encouraging entrepreneurship, attractive living standards, qualified labour, open land in close proximity to a major city, and other situational, non-fiscal factors.

Although many countries hoping to reproduce the success of Silicon Valley examine its tax regime, this seems to have played a remote role compared to the direct and vast investments that governments made in R&D (in 1984, a Congressional Budget Office report stated that half of R&D in the United States was government funded). In 1999, the investment patterns changed in the information technology sector, with the private sector financing the biggest share of R&D. Even though federal funding has decreased, it retains much influence over the sector by concentrating on long-term basic research, especially for defence purposes. These efforts continue today with measures such as the federal Small Business Innovation Development Act of 1982, which requires government agencies with R&D budgets of $100 million or more to keep a portion of that budget (now 2.5 per cent) to fund R&D in small firms, including some Silicon Valley firms.

The Israeli innovation story from 1980 to 2010 reveals an entirely different approach. It is not one of tax incentives to encourage R&D. Rather, the focus of the Israeli government was direct funding support through grants offered by the Office of the Chief Scientist. The common feature of Israeli laws designed to encourage technological innovation and industrial R&D is that they make capital available for entrepreneurs or make the economic return for investors more attractive. This is especially true for the start-up phase of a project. This is due to the fact that Israel has historically lacked this extremely vital component for a successful technological sector-capital. That said, in the study period, there were some changes to venture capital laws in Israel as well as modifications to capital gains taxes to encourage foreign investment.

The centerpiece of Israel’s legislation supporting and encouraging innovation is the “R&D Law”. Briefly, Israel has supported civilian R&D since the 1960s, with the role of the Office of the Chief Scientist (OCS) becoming incredibly important in the early 1980s. The literature reveals significant turmoil as to what the office’s role and mission ought to be in the early 1980s. However, beginning with the passage of an R&D law in 1985, the role of the Office clearly became to support science-driven R&D in products aimed at export.
2. Non-compete clauses

In all examined jurisdictions, legislators and/or courts formulate the problem of non-compete clauses (NCCs) by opposing employees’ freedoms and free competition on one hand, against the interests of employers on the other. Courts only enforce NCCs that they find reasonable (or “proportionelle” in France). “Reasonable” NCCs are limited—in time, space, and activities—to what is necessary to protect the employers’ legitimate interests.

“Legitimate interests” constitute sensitive information about the firm, such as trade secrets, client lists, and confidential information. With the exception of France, legitimate interests in relevant jurisdictions exclude an employee’s know-how, skills, and experience. In the United States and Israel, legitimate interests may include extraordinary investments to provide special training to contribute to an employee’s reputation, but still exclude the training and experience that an employee acquired in the regular course of her employment.

What makes an NCC reasonable or not rests on a holistic review of its scope and varies on a case-by-case basis. Some courts will invalidate an NCC on the basis of a single, overreaching component; Quebec and French courts, for example, will likely consider an NCC exceeding two years unreasonable in almost all circumstances. As such, authors underline the unpredictability, if not formal ineffectiveness, of NCCs in all jurisdictions.

With reference to the spatial component, Quebec, Canadian, and US courts limit the range of NCCs to the area covered by the employee’s particular activities, as opposed to that of the employer’s business in general. A general trend in case law permits greater restrictions in the highly specialized and global context of “knowledge industries”, and the use of Internet-based business models that extend the range of employees’ activities.

NCCs are weighed differently from one jurisdiction to another. In the United States, the law governing NCCs reflects a spectrum of unfavourable to favourable attitudes that vary from state to state. California and North Dakota have prohibited NCCs in employment contracts. Colorado allows NCCs only for executive and management-level employees. In contrast, Florida and Texas have adopted a more employer-friendly attitude toward NCCs.

In France, NCCs were first considered valid a priori, but were criticized for preventing skilled or talented workers from staying in their fields of predilection. The burden has since shifted to employers. The “legitimate interests” of an employer cover specific know-how in addition to sensitive commercial information, especially if such knowledge was acquired working in a highly specialized and competitive field. French courts formulate limits on the scope of activity in a slightly different manner than in other jurisdictions: “une clause de non-concurrence doit laisser au salarié la possibilité d’exercer normalement l’activité qui lui est propre.” The court should consider how long the employee exercised the restricted activity, and whether it fully encompasses the employees general experience and skills.

In France and Israel, NCCs must provide additional financial compensation for the employee in addition to the compensation she receives from her work. This contrasts with the United States and Canada where employment suffices as consideration for an NCC.

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3 Cass soc, 18 October 1952, (1952) Bull civ No 736.
In Canada, Israel, and the United States, courts can strike down an otherwise reasonable NCC if it is considered contrary to the public interest (for example, creating a monopoly or depriving a region of an essential industry, service, source of wealth, or technology). Israeli law distinguishes itself from that of the other jurisdictions for developing a more explicit and sophisticated account for the role of public interest in the judiciary analysis of NCCs. Under the impulsion of legislation, courts must supplement contract law analysis with constitutional norms and values. As a result, to be considered valid, NCCs must not conflict with public policy, which censors behaviour in contractual relationships in accordance with the core values of Israeli society. In the context of NCCs, “public policy” mainly concerns freedom of contract and protection from competition on one hand, and freedom of occupation and self-realization of employees on the other. The analysis must balance the two sets of values on the basis of the reasonableness of the NCC under analysis, but additionally, the court will make sure that the NCC does not run contrary to the public interest. Therefore, even if a reasonable and proportional NCC protects the legitimate interests of an employer, the court may still invalidate it if freeing the employee from it is consistent with the public interest, for example, if it would foster the development of high-tech industries.

Whether there is an NCC or not, obligations related to confidential information acquired in the course of employment still apply, making NCCs redundant in some cases. However, some argue that NCCs offer more effective protection for such information. Some American states acknowledge the common law doctrine of “inevitable disclosure”, allowing employers to seek and receive an injunction prohibiting a former employee from working for a competitor, even in the absence of an NCC.
II. PROJECT PRESENTATION AND RATIONALE

Regulating Innovation: Law and the Creative District investigates how legal institutions, regulations, and enforcement affect innovation. The project draws on well documented innovative districts and combines two legal disciplines—taxation and intellectual property—to study the law and innovation in a manner that has not yet been attempted. Although the lacuna in legal scholarship with respect to how legal regimes affect innovation can be partially attributed to the relative novelty of the issue, the dearth of research is largely the result of insufficient evidence on which to base theories and policy recommendations. Accordingly, we have conceived of this project primarily in order to provide foundational research—consisting of primary reports and evidence from fieldwork—on which to base future scholarship.

Innovation, for the purposes of this project, is defined as the creation and development of new ideas, products, and methodologies—particularly within the technology industry. The industry’s reliance on intangibles to create value has created a new paradigm for property law, prompting both a worldwide competition for capital and the ability for corporations to essentially opt-out of taxes and legal regimes that are unfavourable to their revenue streams. The state has accordingly responded in an effort to reap the advantages of capital inflow and to concurrently restrict the benefits offered to corporations to those contemplated by the legislature.

We focus on how state regulation affects innovation. From a tax perspective, the state encourages businesses to locate in its jurisdiction by offering lowered tax rates, research and development credits, and tax holidays in the hope of gaining a net benefit from increased employment and consumer spending resulting from a corporation’s presence. We examine whether such incentives are determinative with regard to a corporation’s decision to move to a given jurisdiction and if the anti-abuse measures in place are adequate to control the scope of the incentives. From an intellectual property perspective, the state regulates innovation directly through patent law and indirectly by controlling the dissemination of knowledge and know-how through non-compete covenants. We examine if the current allocation of intellectual property rights and knowledge sharing controls is still relevant today, and if such regulation is conducive to sustained innovation.

The project draws on the resources of the H. Heward Stikeman Chair in Tax Law and the McGill Centre for Intellectual Property Policy to continue a pluralistic, interdisciplinary study of law and innovation. To do so, it investigates the conditions in three innovative districts—Montreal, Silicon Valley, and Tel Aviv’s “Silicon Wadi”—which have been chosen based on the their differing legal regimes as well as their importance in the context of global innovation. The project may investigate conditions in other jurisdictions for comparative purposes.

Our research undertakings consist of an analysis of legal sources, interviews with industry representatives to test the findings of the legal analysis, and a multidisciplinary workshop—which will include management and geography perspectives—to discuss how to interpret the information from both the analysis of legal sources and interviews.
A. Context

During the past decades, the world economy has moved from a mosaic of discrete, state-centric jurisdictions driven by brick-and-mortar establishments, to a global network of interconnected zones with a nexus in the trade and creation of knowledge and information. Concurrently, worker mobility—that is, the willingness and opportunity to travel to different political jurisdictions for employment—has reached unprecedented levels. Yet despite these marked shifts, the legal and regulatory apparatuses concerning the allocation of intellectual property, the sharing of information among industry participants, and the taxation of multinational enterprises have remained largely unchanged and continue to be conceptually grounded in the state and tangible property-centric regimes. Generally, this anachronism has led to economic inefficiencies. More specifically, within the context of innovation, the two areas of law that are most affected by this new global reality are taxation and intellectual property.

1. Taxation and innovation

States increasingly offer innovation companies R&D credits and tax holidays in the hope of gaining a net benefit from increased employment and consumer spending resulting from a corporation’s presence. Although economists have examined the question of whether or not a state has obtained a net benefit from a corporation’s presence, what has not been answered is whether or not such incentives are determinative with respect to a corporation’s decision to move to a given jurisdiction. Through a study of tax incentives, both with respect to how they are conceived and how they operate in practice (i.e., law on the books vs. law in action), this project aims to analyze the impact of such incentives from the perspective of the corporation. Moreover, aggressive international tax avoidance practiced

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6 See Matthias Dischinger & Nadine Riedel, “Corporate Taxes and the Location of Intangible Assets Within Multinational Firms” (2011) 95 J of Public Economics 691.
by multinationals has eroded the tax base.\footnote{See e.g. Edward D Kleinbarg, “Stateless Income” (2011) 11 Florida Tax Rev 699.} These avoidance activities have been scrutinized by academics and are now entering the public discourse via concepts like “paying your fair share.”\footnote{Allison Christians, “How Starbucks Lost its Social License—And Paid £20 Million to Get it Back” (2013) 71 Tax Notes Int’l 637.}

To date, commentators have largely placed the blame for aggressive tax planning on over-resourced corporations, who—due to a business vs. tax collector paradigm—play a cat-and-mouse game with state legislators.\footnote{See Montano Cazebas, “Tax Transparency and the Marketplace: A Pathway to State Sustainability” (2014) 9 J Sustainable Dev L & Pol’y 179.} But others have increasingly questioned the objectivity of this narrative, and have asked whether the problems with the international tax system are really symptoms of a larger governance crisis, exacerbated by an indefatigable pro-business lobby.\footnote{See Allison Christians, “Good Tax Governance and the Problem of Political Influence” in Thomas Pogge (ed), Taxation and Justice (Cambridge: Polity Press, 2014).}

*Regulating Innovation* further studies the relationship between government and lobbyist, with a view to obtaining sufficient evidence by evaluating how such tax policy decisions are made. In sum, with respect to the question of how taxation affects innovation, this project examines the effectiveness of state incentives to attract capital and aims to obtain an objective perspective on whether industry or government is driving current tax policies, and to what extent those policies affect the innovation sector specifically.

### 2. Intellectual property and innovation

The intellectual property regime faces challenges with respect to innovation by trying to balance the benefits of capitalizing and disseminating knowledge (the “open access” model) with enforcing restrictive property rights in an effort to safeguard a company’s economic incentive to develop and create new products and services.\footnote{See Pierre-Emmanuel Moyse, “Distribution des intangibles” in *Série concurrence et innovation*, vol 2 (Montréal: Thémis, 2014).} The legal regime does this both through the attribution of ownership rights in intellectual property and by protecting business interests through NCCs.\footnote{See Yann Joly, “Propriété intellectuelle et modèles de collaboration ouverte” in Pierre-Emmanuel Moyse, ed, Jurisclasseur Propriété Intellectuelle (LexisNexis, 2013); Catherine L Fisk, “Working Knowledge: Trade Secrets, Restrictive Covenants in Employment, and the Rise of Corporate Intellectual Property, 1800–1920” (2001) 52 Hastings LJ 441.} To attract businesses to a particular jurisdiction, states often attribute the ownership of intellectual property to employers (i.e., the company) rather than to employees;\footnote{See Copyright Act, RSC, 1985, c C-42, s 13(3); Steven Cherensky, “A Penny for Their Thoughts: Employee-Inventors, Preinvention Assignment Agreements, Property, and Personhood” (1993) 81 Cal L Rev 595.} however, some academics have argued that this practice detracts from the individual’s incentive to innovate.\footnote{See Richard A Booth, “Give Me Equity or Give Me Death: The Role of Competition and Compensation in the Market for Inventors” (1993) 51 Harv J L & Pub Pol’y 249.} By studying the effects of
ownership attributes, both in scholarship and through interviews with industry representatives, *Regulating Innovation* aims to gather sufficient evidence to analyze the effects of ownership attribution from the perspective of creator-employees.

As a parallel mechanism to protect business interests, states often enforce NCCs, which restrict the ability of employees to share the soft skills, often termed “know-how” that they acquired at a competing firm.\footnote{See Kesan, supra note 19; Ariel Katz, “Copyright Taxation Without Representation” (20 June 2012) *Slaw* (blog), online: <www.slaw.ca/2012/06/20/copyright-taxation-without-representation/>.
} In law, NCCs have generally been seen as merely an employment issue,\footnote{See e.g. Catherine L Fisk, “Removing the ‘Fuel of Interest’ from the ‘Fire of Genius’: Law and the Employee-Inventor, 1830–1930” (1998) 65 U Chicago LR 1127.} but other scholars—often from geography and management perspectives—have made a link between such clauses and intellectual property, which accordingly affects innovation.\footnote{See Jay P Kesan & Carol M Hayes, “The Law and Policy of Non-Compete Clauses in the United States and Their Implications” (2012) Illinois Public Law and Theory Research Paper Series No 11-07; William Van Caenegem, “Inter-Firm Migration of Tacit Knowledge: Law and Policy” (2005) 23 Prometheus 285.} By examining, from a legal, intellectual property perspective how non-compete clauses affect the innovation within a district, this project will create a novel body of research data from which to ground further scholarship. In sum, with respect to the intellectual property perspective, *Regulating Innovation* will examine the current allocations of property rights and restrictions on information sharing, which will not only provide the basis for an analysis of such policies, but will also form a foundation from which we can make forward-looking policy recommendations that take into account the increasing relevance of information sharing and open access.

3. Taxation and intellectual property as means to study innovation

discipline is unrealistic, this project takes a first step in augmenting the analytical horizon by expanding the ambit of research to include both taxation and intellectual property and will further seek input from other perspectives—notably management and geography—during the multidisciplinary workshop held at the end of the research period covered by this project.

B. Methodology

1. Case studies

Our investigation of how legal institutions, regulations, and enforcement affect innovation builds on research and studies regarding three districts that have developed different approaches with respect to encouraging innovation in their jurisdictions; namely, Montreal, Silicon Valley, and Tel Aviv’s “Silicon Wadi”.

Montreal was chosen because its aggressive tax incentives and rigorously enforced NCC regime were developed almost solely for the purpose of attracting innovation to the district. The district bolsters the R&D and film tax credits offered by the federal government with millions of dollars’ worth of provincial and local incentives. Additionally, the district employs many lobbyists to ensure that such federal tax credits, of which the Montreal district is the greatest beneficiary, stay on the books and are expanded to the greatest extent possible. Montreal also has the benefit of having an NCC regime that is arguably the most comprehensive and rigorously enforced in the western hemisphere, and showcases this regime to prospective businesses as a mechanism to deter employee poaching and keep in-house practices confidential. Finally, the applicants are domiciled in Montreal, which allows for in-depth study of the district.

Silicon Valley was chosen because it contrasts Montreal’s landscape in many important ways. First, there are relatively few tax incentives offered directly to Silicon Valley companies, although those businesses do benefit from California’s low state taxes as well as a federal tax regime that allows multinational technology companies to easily move their profits offshore to benefit from a 0 per cent tax rate in fiscal havens. In addition, unlike Montreal, California does not enforce NCCs, and is also experimenting with novel

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25 See Jeff Heinrech, “Marois Basks in Quebec’s World-class Video Game Industry” The Gazette (4 October 2013), online: <www.montrealgazette.com/business/Marois+basks+Quebec+world+class+video+game+industry/8999206/story.html>.
26 See Bich, supra note 23.
27 See Kleinbarg, supra note 11.
allocations with respect to intellectual property whereby the employee-creator will benefit from a partial interest in the profits stemming from her creation.\(^{28}\) These variances, as well as Silicon Valley’s unrivalled presence as an innovation district, make it the benchmark for study on this topic.

Finally, Tel Aviv’s emerging innovative district, colloquially known as “Silicon Wadi”, was chosen because it provides a contrast to the established districts of Montreal and Silicon Valley.\(^{29}\) As an emerging district, Silicon Wadi has used a number of tools to boost its prominence as an innovation district including tax credits, immigration controls, and municipal planning.\(^{30}\)

2. Building a foundation for future research

Regulating Innovation aims first and foremost to gather data and evidence that will form the base for future research and with a methodology inspired by “grounded theory”.\(^{31}\) Drawing on the three districts listed above as focal points, it proposes a tripartite research framework consisting of an initial analysis of existing sources, a verification of those findings via fieldwork interviews, and a final multidisciplinary workshop to discuss the project data.\(^{32}\)

3. Research

The analysis of legal sources set a foundation for the real-world, effects-based investigation that is at the heart of this project. With the help of undergraduate student researchers and graduate assistants, we surveyed the relevant case law, statutes, and other pertinent regulatory documents relating to tax policies for innovation and NCCs in Montreal, Silicon Valley, and Tel Aviv’s Silicon Wadi. From this foundation, we prepared this preliminary

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report, which gives a comprehensive picture of the state of the law, and state our hypotheses concerning how we believe this body of law produces real world effects.\textsuperscript{33}

We will build on the findings of the analysis of legal sources through interviews with industry representatives, employees, and policy makers connected with our three chosen innovation districts. The interviews will be designed to produce qualitative data and the questions will be based on the hypotheses derived from the analysis of legal sources.\textsuperscript{34}

Finally, the multidisciplinary workshop will synthesize the findings of the literature review’s preliminary reports and the evidence from the interviews. In particular, we will focus on the success or failure of the state implemented incentives, and will organize further research based on our findings. The multidisciplinary workshop will be sponsored by McGill’s Centre for Intellectual Property Policy (CIPP), and will include participants from the Faculty of Management and the Department of Geography at McGill University, as well as American and Canadian policy makers and industry representatives.

4. Pedagogical initiatives

In addition to the guidance and mentorship that the project leaders provide to student researchers and assistants (both undergraduate and doctoral), the knowledge from this project has been shared in the following venues:

- Tel Aviv University, Buchmann Faculty of Law
  - Lectures by Pierre-Emmanuel Moyse as a visiting lecturer: The Laws of Innovation (April 2015)
- McGill Faculty of Law
  - Tax Policy seminar: module on tax incentives taught by Allison Christians (fall 2014, fall 2015)
- McGill Desautels Faculty of Management
  - Capstone course co-taught by Pierre-Emmanuel Moyse (winter 2015)

C. Outcomes

The work products from this project will include the creation of an open-access online database to provide a foundation for future research by the project leaders as well as other scholars, the publication of essays and articles that flow from the multidisciplinary workshop, and a storyboard and script outline for a film documentary. The research will also be used in the course of pedagogical initiatives at the McGill Faculty of Law, the McGill Desautels Faculty of Management, and the Tel Aviv University Buchmann Faculty of Law and Recanati Business School. It is our goal not only to provide discrete research


tools to further the study of innovation, but also to grow the community infrastructure from which to further scholarship relating to this multifaceted area.
III. TAXATION AND INNOVATION

The relationship between taxation and innovation cannot be constructed in such a straightforward manner as to assert that the "right" fiscal incentives spur innovation. Canada, and Quebec in particular, boasts one of the most generous fiscal frameworks for innovation in the world, but its private sector tends to invest markedly less in R&D than other OECD countries. In comparison, California has one of the heaviest tax frameworks in the United States, and yet it is widely recognized for the many innovations that emerge from its Silicon Valley. If tax incentives play any role in innovation, they do so in a rich environment of competing incentives and constraints that lead some firms to respond to these incentives while others ignore them or are unable to capitalize on them.

Whenever someone talks about spurring innovation, the subject of tax credits inevitably arises, especially to attract investors to a given jurisdiction. However, the empirical evidence of cause and effect of tax incentives seems inconclusive. Silicon Valley and Silicon Wadi do share one trait at the origin of their success in encouraging innovation, or at least the creation of successful creative districts: in both cases, it seems that social investment, paid for by taxes, spurred innovation. Both districts benefited from important public investments in R&D, with the private sectors capitalizing on the positive externalities created by government efforts, such as trained personnel, basic research, public-private partnerships, and founding technologies.

The incentives that attract capital and firms to a given creative district may differ from the ones that encourage innovation within that district. Taxation constitutes only one factor among a number of reasons why a firm would settle in a given district, including some which law and policymaking can do little to influence, such as enjoyable weather. It seems, however, that creative districts attract firms that want to capitalize on the synergy among the actors that already reside in the district. As one commentator notes, “[a]n attempt to replicate Silicon Valley is unlikely to succeed unless dense networks among actors that promote co-operation and accelerate technology commercialization are developed.”

Therefore, existing and projected tax incentives that aim to develop such synergy among the residents of a district—including firms, government agencies, research institutions, and civil society—constitute a potentially fruitful object of research.

A. Montreal (Quebec)

R&D tax initiatives by the Canadian federal and Quebec provincial governments heavily influenced Montreal’s innovation incentive landscape during the study period. Limited municipal powers muted the fiscal role played directly by the City of Montreal.

Canadian municipalities, such as Montreal, are “said to be the creatures of the provinces because they have no innate powers and enjoy only those delegated to them by the province.”

Montreal’s parent province, Quebec, administers and collects taxes under the Quebec Taxation Act (QTA) through the Quebec Revenue Agency (QRA), akin to the Federal Government’s Income Tax Act (ITA) and Canada Revenue Agency (CRA). As experts note, “although there is a high degree of harmonization between the two laws with respect to the computation of taxable income, the government of Quebec, through the implementation of various fiscal measures, provides Quebec businesses with financial incentives that stimulate the Quebec economy.”

Difficulty arises in using the term “Montreal” over the study period given changes in the City’s form—notably, the amalgamation of twenty-eight municipalities on the Island of Montreal into one City of Montreal in 2001, and the subsequent de-amalgamation of fifteen of these municipalities by the end of 2006. For the purposes of this research, Montreal will be understood to comprise those areas generally subject to the application of An Act Respecting the Communauté Urbaine de Montréal and An Act Respecting the Communauté Métropolitaine de Montréal as in force.

1. Scientific Research and Experimental Development (SR&ED) tax credit

As of 2011, the federal Scientific Research and Experimental Development (SR&ED) Tax Credit provided approximately $3.5 billion annually toward the cost of business research and development in Canada, serving as “the flagship of federal support for business innovation.” Reformed in the early 1980s—and complemented by similar provincial programs established at the time—these tax credit regimes converged to forge a favourable fiscal climate for innovation in Montreal. The evolution of these initiatives—coupled with innovation incentives in areas outside of tax—will be discussed in detail below, broken down by enacting level of government and discussed chronologically by topic. This research is not exhaustive and will include questions for further study. In particular, this research does not address the effectiveness of any measures discussed.

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38 Ibid.
39 For a discussion of the particular governance structure of the municipalities, boroughs, and neighborhoods forming Montreal during these periods, see Jean-Philippe Meloche and François Vaillancourt, “Public Finance in Montréal: In Search of Equity and Efficiency” (2013) 15 IMFG Papers on Municipal Finance and Governance for the Munk School of Global Affairs at the University of Toronto.
40 RSQ, c C-37.2.
41 RSQ, c C-37.01.
a. Federal SR&ED

The importance of scientific research and experimental development (SR&ED) for innovation cannot be understated. As the Library of Parliament explains, “SR&ED activities result in innovation through the creation of new processes and products, improve the quality of existing ones, enhance corporate productivity and reduce operating costs, thereby increasing profitability.” 43 As government tax support for SR&ED activities existed prior to the study period, the major changes made to this regime in 1983 serve as the starting point for this discussion. 44

The federal SR&ED regime offers claimants “cash refunds and/or tax credits for expenditures on eligible research and development work done in Canada.” 45 In general:

Federal government tax incentives for SR&ED target three types of research: basic research, work performed for the advancement of knowledge and science without any practical application in mind; applied research, carried out for the advancement of science, but with a specific application in mind; and experimental development, aimed at achieving technological progress. In experimental development the results of basic and applied research are used to create new products or processes, or to improve those that already exist.

To take advantage of tax incentives for SR&ED, a company must be able to show that it has invested in one of these types of research. Both current and capital expenditures qualify for federal SR&ED tax incentives. Current expenditures include the salaries of research personnel, general SR&ED costs (telephone and electricity, office equipment and so forth), as well as costs, including maintenance costs, associated with facilities and equipment used for SR&ED purposes. Capital expenditures include assets—facilities and equipment but not buildings—used for SR&ED purposes. 46

While the SR&ED program particulars changed over the study period, as of 2014, “[i]t is the largest single source of federal government support for industrial R&D.” 47

i. 1983 overhaul

The 1983 budget focused on economic recovery in the wake of a “recession that has crippled us for over a year,” according to then-Finance Minister Marc Lalonde. 48 Among initiatives that included “$4.6 billion of investment support to accelerate the economic recovery,” the Minister announced he would put forth a consultation paper regarding R&D tax incentives with two proposals:

44 For a review of Federal fiscal SR&ED incentives prior, see ibid.
46 Madore, supra note 43.
47 Ibid.
48 Canada, Department of Finance, Budget in Brief (Ottawa; Finance Canada, 1983).
[To enhance the ability to claim R&D tax incentives, to make them more effective and simpler, and to aid in the financing of R&D companies, particularly smaller companies. The two proposals are: an additional tax credit of 10 percentage points for all R&D expenditure, in place of the current 50-per-cent tax deduction for increased R&D, and a measure to allow R&D companies to transfer the value of R&D tax incentives to outside investors in the form of a 50-per-cent tax credit so as to attract additional capital to finance their growth.49

Ultimately, the incremental allowance was eliminated and tax credits for R&D increased to 20 per cent for general R&D and 35 per cent for expenditures by small businesses.50 In addition, other changes made in 1983 included:

- Partial refundability (20 per cent to 40 per cent) of unused investment tax credits introduced for expenditures made before May 1986;
- three-year carry-back of ITCs introduced, carry-forward extended to seven years;
- Limits on deducibility of ITCs eliminated.51

In addition, 1983 saw the introduction of the Scientific Research Tax Credit. As the Library of Parliament explains:

Companies were able to enter into research contracts on behalf of an outside investor who had acquired shares or debt securities for SR&ED purposes. To offset this move, companies were required to waive their tax incentives, while outside investors qualified for a tax credit of 50% of their investment. This measure also proved to be an excellent tax loophole. It allowed outside investors to turn a quick profit by investing in research, without anything to show that the tax savings thus realized were being poured back into SR&ED activities. As a result of this mechanism, outside investors benefited from more than $1.6 billion in tax relief between 1983 and 1985, the year in which the measure was abolished.52

ii. What qualifies?

Prior to 1985, guidance on what qualified for the SR&ED credit system came in the form of Interpretation Bulletin IT-439, released in 1979.53 Shortly thereafter, Interpretation Bulletin IT-151R2, “Scientific Research and Experimental Development Expenditures” was released.54 Statutory clarity occurred with Budget 1985, which amended the Income Tax Regulations by adding that:

49 Ibid.
51 Ibid.
52 Madore, supra note 43.
"Scientific research and experimental development" means systematic investigation or search carried out in a field of science or technology by means of experiment or analysis, that is to say,

(a) basic research, namely, work undertaken for the advancement of scientific knowledge without a specific practical application in view,

(b) applied research, namely, work undertaken for the advancement of scientific knowledge with a specific practical application in view, or

(c) development, namely, use of the results of basic or applied research for the purpose of creating new, or improving existing, materials, devices, products or processes, and, where such activities are undertaken directly in support of activities described in paragraph (a), (b) or (c), includes activities with respect to engineering or design, operations research, mathematical analysis or computer programming and psychological research, but does not include activities with respect to

(d) market research or sales promotion,

(e) quality control or routine testing of materials, devices or products,

(f) research in the social sciences or the humanities,

(g) prospecting, exploring or drilling for or producing minerals, petroleum or natural gas,

(h) the commercial production of a new or improved material, device or product or the commercial use of a new or improved process,

(i) style changes, or

(j) routine data collection.55

Many changes to this qualifying definition occurred during the study period. These changes are outlined on two Canada Revenue Agency SR&ED websites: “A Brief History of the Guidance on the Eligibility of Work” and “A Brief History of the Definition of SR&ED.”56 Generally speaking, the scope of what qualified expanded as definitions were loosened; however, certain particular expenses became expressly ineligible. For example, in 1985, requirements for SR&ED expenditures “[w]holly attributable to R&D” were relaxed to “all or substantially all attributable;” whereas in 1987 the cost of a building purchase was excluded from SR&ED.57 For a discussion of particular changes prior to 1995, see Kenneth


J. Murray’s “Scientific Research and Experimental Development: A Program in Crisis.” Changes made between 1995 and 2005 are discussed in the 2006 revision of the Library of Parliament’s SR&ED report. Changes from 2006 to 2010 are reviewed in the aforementioned CRA publications that trace the history of the relevant provisions but without any analysis.

iii. Rationale & goals

The 1983 “Budget in Brief” discussion paper by the Department of Finance offered policy principles for SR&ED that Finance Canada noted in 1997 “remain in effect”. The following excerpt from that document provides insight as to the government’s tax strategy in this regard:

As much as possible, tax incentives for research and development should be of immediate benefit to firms. The proposal set out in this paper, together with the other actions announced in the budget, will increase the ability of firms, particularly start-up firms or firms who are high research and development investors, to use the tax incentives now in place for research and development. As a result, the incentives will be more effective.

Tax incentives for research and development should be as simple to understand and comply with and as certain in application as possible.

The goal of research and development policy is not to create research and development solely for its own sake. To be effective, the results of research and development have to be used – to create jobs, to improve productivity and competitiveness, to develop new products that Canadians can sell to other Canadians and to the world. To a large extent, the responsibility for this must rest with the private sector.

Further, “the incentive structure for research and development should continue to contain general measures, such as broad-based tax incentives, that leave day-to-day decisions on R&D projects in the hands of the private sector.” The rhetoric surrounding the program did not appear to change much over the study period, though perhaps became more exaggerated, with a 2010 press release noting: “The Government of Canada is building on its tradition of excellence through the SR&ED program. By investing in research and development, we are creating a stronger economy, future job opportunities, and a better quality of life for all Canadians.”

58 Ibid.
61 Budget in Brief, supra note 48.
63 Jean-Pierre Blackburn, “Scientific Research and Experimental Development: ‘Changes will be made to improve the program, ‘” Remark, 13 January 2010, Canada Revenue Agency.
iv. Snapshot of study period

In 1997, the Technical Committee on Business Taxation submitted a 300 page report to then-Finance Minister Paul Martin proposing various improvements to the business tax regime, including SR&ED. Its overview of SR&ED is worth reproducing here as it provides a snapshot of the program for the bulk of the study period:

Both eligible current and capital SR&ED expenditures may be claimed as an expense for tax purposes as incurred. SR&ED expenditures that are not deducted in a year can be carried forward indefinitely.

There are currently two rates of investment tax credit for SR&ED in Canada: a general rate of 20 percent of eligible spending, and an enhanced rate of 35 percent for certain CCPCs. These credits are claimable as a reduction of current federal income tax, but reduce the allowable deduction for eligible SR&ED spending in the following year. Thus, part of the credit is recaptured for tax purposes by reducing deductible costs.

Investment tax credits may be deducted from federal taxes otherwise payable. Unused tax credits (not claimable in the year they were earned because of insufficient tax) can be carried back three or carried forward 10 years to a tax period where there is sufficient tax to absorb the credit. Generally, up to 40 percent of SR&ED credits for both capital and current spending can be claimed as a direct payment from the government by those taxpayers who are unable, because of inadequate income, to use them to reduce tax. However SR&ED tax credits on current spending that are accrued at the 35 percent rate (the higher rate of credit applicable to small business) are fully refundable. Unincorporated business can also obtain a refund at a rate of 40 percent of unused credits earned in a year.64

Reviews of SR&ED were undertaken by the Auditor General in 1994 and 2000, as well as by Finance Canada in 1997.65 Budget 2010 called for a review of federal R&D support as a whole—including SR&ED—with a concluding report issued in 2011.66 While global surveys praised Canada’s SR&ED regime, critics raise concerns regarding compliance costs, refundability, and general administration.

Beyond the inclusion and exclusion changes noted briefly above, very few structural changes occurred to the program as a whole. As an example of changes later in the study period, Budget 2006 extended the carry-forward period for unused SR&ED tax credits from ten years to twenty years, while increasing the range of prior-year taxable income from $300,000 to $500,000 to the current range of $400,000 to $600,000, over which the enhanced credits for small Canadian-controlled private corporations (CCPCs) are phased

64 Canada, Department of Finance, Report of the Technical Committee on Business Taxation (Ottawa: Department of Finance, 1998).
66 See Independent Panel on Federal Support to R&D, A Call to Action, supra note 42.
out. A full discussion and timeline of such changes can be found in the Library of Parliament’s analysis.67

b. Quebec SR&ED

Though Quebec had R&D support prior to the study period, its 1983 introduction of a complementary regime to the Federal SR&ED credit marks an important turning point:

The Quebec government’s objective was to direct assistance toward the creation of highly skilled jobs associated with a strong R&D sector. This is what led to the 1983 introduction of the refundable tax credit for R&D, based on salaries paid for qualifying jobs, which was subsequently broadened to encompass other activities.68

The basic tax credit works as follows:

The credit calculation gives special emphasis to R&D-oriented small and medium-size businesses. Instead of the basic 20 percent credit rate, a rate of 40 percent is applied to the first $2 million of eligible Quebec R&D salaries, where the corporation’s assets, and those of associated corporations, are less than $25 million. For salaries paid after May 9, 1996, the rate is rolled back at the rate of 4 percentage points for every $5 million in assets between $25 million and $50 million; when assets exceed $50 million, the rate levels off at 20 percent.69

Similarly to the federal program, Quebec’s program evolved over the years. As one analysis explains, “Quebec’s government put emphasis on both human capital and more intense cooperation between businesses, universities and research centres in designing the tax credit.”70 In particular, that analysis identifies four resulting measures:

1) The refundable tax credit for salaries and wages of researchers
   a. Rate depends on enterprise size and assets
   b. Started at 20% in 1983, as of 2003 was 17.5%

2) The refundable tax credit for university research or research carried out by a public research centre or a research consortium
   a. Refundable credit of 35% of the eligible R&D expenditures
   b. 20% credit only if university/public research centre/research consortium not taxpayer affiliated

3) The refundable tax credit for pre-competitive research
   a. Refundable tax credit of 35% of the eligible R&D expenditures incurred in Quebec

67See Madore, supra note 43.
69 Ibid.
b. Cooperative agreement needs to be authorized by the government

4) The dues or contributions paid to a research consortium
   a. A corporation that is a member of a recognized research consortium may claim a refundable tax credit of 35% of its total fees or dues paid to a research consortium to conduct in Quebec R&D related to its activities.  

i. What qualifies?

Quebec’s SR&ED provisions are convoluted, as the QTA and its regulations in these specific provisions were modified many times throughout the study period, leading to the creation of sections numbered, for example, section 230.0.0.4.1. Section 222 of the QTA is the basic deduction:

222. (1) A taxpayer who carries on a business in Canada in a taxation year may deduct in computing the taxpayer's income from the business for the year an amount not exceeding the aggregate of all amounts each of which is an expenditure of a current nature made by the taxpayer in the year or in a preceding taxation year ending after 31 December 1973 on scientific research and experimental development related to a business of the taxpayer and directly undertaken in Canada by or on behalf of the taxpayer, or by way of a payment described in section 222.1, or by way of a payment to be used for scientific research and experimental development carried on in Canada that is related to a business of the taxpayer [...] This section has been modified from its 1972 original text by changes in 1975, 1987, 1988, 1989, 1993, 1996, 1997, and 2000. Changes to its definition of “regulation”—regulations pursuant to s. 225 of the QTA—were modified in 1983, 1985, 1986, 1990, 1996, 1997, and 2009. 

While it appears that no scholarly analysis exists to discuss the changes to the definition over time, it appears that, in general, the changes sought to expand its scope of general application while adding specific exclusions.

One trend of note, however, comes from a 1999 Statistics Canada report: “Since 1988, Quebec has offered a host of tax relief measures for R&D conducted in the province, and has gradually expanded their attractiveness to the private sector.” It is curious why the 1988 date is provided given that the next sentence of the same report is “[o]ne of the tax incentives that is applicable to this study is Quebec’s fully refundable tax credit of 20 per cent of wages paid in Quebec for carrying out R&D”—an initiative dating prior to our study period, though made permanent in 1983.

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71 Ibid.
72 Taxation Act, CQLR, c I-3, s 222.
73 See Regulation respecting the Taxation Act. CQLR c I-3, r 1 (Sectional notes).
75 See ibid.
Depending on how this project progresses, more research may be needed on the specific changes made.

ii. Super-Deduction

As part of a broader set of changes made in 1999 (to be discussed below), Quebec briefly enjoyed a super-deduction for SR&ED. As one report explains:

Introduced in March 1999 and withdrawn a year later, the super-deductions for R&D were an alternative to the refundable SR&ED tax credits. Firms could choose between the refundable tax credit and the super-deduction. Firms with sufficient income were better off choosing super-deductions in order to reduce their eligible business income to zero, and those with an operating loss were better off choosing the refundable tax credits. Firms choosing the super-deductions could reduce substantially their net investment cost because the federal government applied different rules in the treatment of refundable tax credits and super-deductions for R&D. For example, the net cost incurred by an SME for a $100 wage expenditure would be only $9 in the case of super-deductions compared to $27 if a tax credit were claimed. The super-deductions were withdrawn after one fiscal year when the federal government decided to apply the same rules in the treatment of refundable tax credits and super-deductions for R&D.\(^{76}\)

The Library of Parliament’s analysis indicates the federal government’s reaction:

In 2000, the federal government modified the treatment of provincial deductions for SR&ED that exceed the actual amount of the expenditure to ensure that these “super-deductions” are considered as government assistance and, therefore, are excluded from the calculation of eligible expenditures for federal SR&ED tax purposes.\(^{77}\)

c. Federal and Quebec SR&ED overlay

A 2008 guide to business in Quebec provides the following chart that illustrates the interplay between the federal and Quebec tax incentives for R&D:\(^{78}\)

<table>
<thead>
<tr>
<th>Canada</th>
<th></th>
<th>Entity</th>
<th>Nature of Eligible Expenditure</th>
<th>Deductibility in computing the income(2)</th>
<th>ITC Rate up to C$2M</th>
<th>Refund Rate</th>
<th>ITC Rate in excess of C$2M</th>
<th>Refund Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Qualifying CCPCs (1)</td>
<td>Current</td>
<td>Yes</td>
<td>35%</td>
<td>100%</td>
<td>20%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capital</td>
<td></td>
<td></td>
<td>35%</td>
<td>40%</td>
<td>20%</td>
<td>40%</td>
</tr>
</tbody>
</table>

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\(^{76}\) Madore, supra note 43.

\(^{77}\) Ibid.

### Quebec

<table>
<thead>
<tr>
<th>Entity</th>
<th>Nature of Eligible Expenditure</th>
<th>Deductibility in computing the income(2)</th>
<th>TC Rate up to C$3M of Wages paid in Quebec</th>
<th>Refund Rate</th>
<th>TC Rate in excess of C$3M of Wages paid in Quebec</th>
<th>Refund Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualifying CCPCs(3)</td>
<td>Current</td>
<td>Yes</td>
<td>37.50%</td>
<td>100%</td>
<td>17.50%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Corp.</td>
<td>Current</td>
<td>Yes</td>
<td>17.50%</td>
<td>100%</td>
<td>17.50%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract Payments to/for R&amp;D Eligible Entities and Projects (subject to 80% limit)</td>
<td>Research Contract</td>
<td>35%</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Corp.</td>
<td>Current</td>
<td>Yes</td>
<td>20%</td>
<td>Nil</td>
<td>20%</td>
<td>Nil</td>
</tr>
<tr>
<td></td>
<td>Capital</td>
<td></td>
<td>20%</td>
<td>Nil</td>
<td>20%</td>
<td>Nil</td>
</tr>
</tbody>
</table>

(1) Qualifying Canadian-controlled private corporations are those that have a taxable income of not more than C$400,000 on an associated basis. Other rules may apply and reduce the C$2-million expenditure limit on which the 35% credit rate and related 100% refund are applicable.

(2) Within the limits provided in the ITA and the QTA.

(3) In particular, to be eligible for the 37.5% rate in respect of the maximum of C$3-million in salary, the qualifying Canadian-controlled company must have less than C$50-million in assets on an associated basis. For assets between C$50-million and C$75- million, the rate is gradually reduced to 17.5%.

### 2. Federal R&D support beyond SR&ED

The panel conducting the 2011 Review of Federal Support to R&D noted that a variety of government support initiatives existed and “established a government-wide program
database covering 60 programs, delivered by 17 federal entities.”\textsuperscript{79} Importantly, the panel noted that “[t]his exercise is the first of its kind, and is an essential step toward conceptualizing the diversity of federal business R&D programs as an overall portfolio of support.”\textsuperscript{80} While the sixty programs constitute the bulk of federal efforts in this area, the list is not exhaustive. The panel’s categorical breakdown of programs is as follows:

- Direct expenditure: repayable contribution programs
- Direct expenditure: non-repayable grant and contribution programs
- Direct expenditure: procurement programs
- Direct expenditure: federally performed R&D—National Research Council institutes
- Direct expenditure: federally performed R&D—other\textsuperscript{81}

Where SR&ED appears as a single line item that reads “Total indirect expenditure: SR&ED tax credit.”

The research question is whether federal tax measures other than SR&ED exist to help encourage innovation. There is difficulty concluding that they do despite numerous reports speaking of federal “tax incentives” in the plural, but then discussing only SR&ED. Indeed, the conclusion of a 2011 C.D. Howe Institute publication entitled “Improving Federal Tax Support for Business R&D in Canada,” which speaks only to SR&ED, finds:

> The main conclusion, supported by other studies, is that Canada would likely benefit from a more balanced approach, focused on creating a competitive tax environment across the entire innovation value chain, from initial R&D through commercialization to the development and production of new products and services. The current system of tax support is front-end loaded, pushing firms to undertake R&D through one of the world’s most generous tax subsidies.\textsuperscript{82}

A 1997 Finance Canada report entitled “Why and How Governments Support Research and Development” is equally SR&ED-focused. Its summary for the Canadian federal tax support regime is reproduced in part below:

> The federal income tax regime for R&D in Canada consists of income tax deductions and investment tax credits for eligible current and capital expenditures. An eligible taxpayer must be a business performing eligible R&D in Canada. […] There is also certain work that is excluded from the income tax definition of R&D -- generally because it is not considered to be R&D in accordance with the OECD definition.

Eligible current expenditures include: salaries or wages of employees directly engaged in R&D; the cost of materials consumed in R&D; lease costs relating to machinery and equipment used all or substantially all (90 per cent or more) for R&D; expenditures incurred under various types of contracts; and overhead and

\textsuperscript{79} Independent Panel on Federal Support to R&D, \textit{A Call to Action}, supra note 42 at 3-2.
\textsuperscript{80} Ibid.
\textsuperscript{81} Ibid.
\textsuperscript{82} Mark Parsons, \textit{Rewarding Innovation: Improving Federal Tax Support for Business R&D in Canada} (CD Howe Institute, 2011).
administrative costs. Eligible capital expenditures generally consist of expenditures for machinery and equipment that is all or substantially all used or consumed in the prosecution of R&D in Canada. However, not all current and capital expenditures are eligible expenditures. For example, capital expenditures for the acquisition of land or buildings (other than a highly specialized R&D building), and current expenditures for related rental or leasehold payments are not allowable R&D expenditures. Also excluded are expenditures made to acquire rights in, or arising out of, R&D.

Eligible current and capital expenditures are fully deductible; expenditures that are not deducted in a year can be carried forward indefinitely. There are two rates of investment tax credit for R&D: a general rate of 20 per cent and, for certain smaller businesses, an enhanced rate of 35 per cent on up to $2 million of eligible expenditures. Expenditures on new equipment used for both R&D and other purposes may also qualify for an investment tax credit equal to one-half of the normal credit.

Investment tax credits may be used to reduce federal income taxes otherwise payable. Tax credits which are not used in the year they are earned can be carried back three years or carried forward 10 years. In addition, smaller businesses eligible for the enhanced rate of tax credit and unincorporated businesses can obtain a refund of unused credits earned in a year. The general rate of refund is 40 per cent for tax credits earned on both current and capital expenditures. However, a 100 per cent refund is available for tax credits earned on current expenditures at the enhanced rate. Corporations can also assign expected refunds of tax credits to lenders as security for bridge financing for their operations. Such assignments, however, are not binding on the Crown.\(^\text{83}\)

As such, it is hard to conclude that meaningful federal tax support for innovation exists beyond SR&ED.

3. Quebec support beyond SR&ED credits

a. Credits and incentives (1999 changes)

As but one illustration of the difference between federal and provincial tax regimes in Canada, one analysis found that “[i]n 1999, there were 54 tax incentives applicable to corporations doing business in Quebec that had no counterpart in the federal Income Tax Act.”\(^\text{84}\) While not all of these were innovation-specific, Quebec did adopt a more diverse approach to innovation tax policy starting in 1996.\(^\text{85}\)

Of most interest are the sweeping changes and programs announced in Quebec’s 1999 budget, entitled “Quebec Focus on Jobs: Shaping an Innovative Economy,” which included the publication of three documents: “Accelerating Research and Innovation: An Economic Development Strategy for Job Creation”; “An Integrated Fiscal Strategy for the Knowledge-Based Economy: An Economic Development Strategy for Job Creation”; and

\(^{83}\) Department of Finance, supra note 62 [footnotes omitted].

\(^{84}\) See Larin, supra note 68.

\(^{85}\) See ibid.
“Montréal Foreign Trade Zone at Mirabel: An Economic Development Strategy for Job Creation.”

The first two documents, counting 109 and 127 pages respectively (in English), discuss Quebec’s innovation tax policy at length. Bernard Landry, then-Deputy Prime Minister and Minister of State for the Economy and Finance, introduced the documents as part of his budget presentation speech:

In recent years, our government has adopted an array of measures that have placed Québec at the forefront of the development of the knowledge-based economy.

The results obtained until now speak for themselves. Over the past 10 years, half of all the jobs created in Québec are attributable to the advanced-knowledge sectors.

However, these eloquent results must not make us forget that the race to the knowledge-based economy is universal. We can, and must, win it.

For this reason, during his speech at the swearing-in of the new Cabinet, the Prime Minister confirmed his determination to make Québec a world hub of innovation. He assigned to the MNA for Charlesbourg and the Minister responsible for Research, Science and Technology the mandate to promptly define a new Québec scientific research policy.

The Minister has already pinpointed a number of priorities, which he will make public shortly in a paper entitled Accelerating Research and Innovation. […]

Enterprises that set up operations in a [Carrefour de la nouvelle économie] will enjoy tax benefits equivalent to those stipulated in conjunction with the Cité du multimédia. The paper entitled Integrated Fiscal Strategy for the Knowledge-Based Economy spells out in detail the government’s overall approach in this respect.86

The “Accelerating Research and Innovation” document includes as an appendix the specific tax measures under the new “Integrated Fiscal Strategy”:

1. Refundable tax credit for technological adaptation services — Liaison and transfer section
2. Refundable tax credit for technological adaptation services — Business watch section
3. Establishment of the Carrefours de la nouvelle économie
4. Establishment of the Centre national des nouvelles technologies de Québec
5. Tax holiday for foreign trainers (CDTI)
6. Introduction of a super-deduction for R&D
7. Enhanced tax assistance for additional R&D

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8. Tax holiday for foreign R&D experts
9. Extension of the enhancement for accelerated depreciation

The basic features of each is as follows:

Refundable tax credit for technological adaptation services: Liaison and transfer section

A 40 per cent refundable tax credit on the cost of acquiring the liaison and transfer services offered by accredited organizations. SMEs are eligible for 80 per cent of fees on liaison and transfer services, the cost of participating in information and training activities, and the cost of subscribing to liaison and transfer products and services.

Refundable tax credit for technological adaptation services: Business watch section

A 40 per cent refundable tax credit on the cost of purchasing information services offered by accredited business watch centres. SMEs are eligible for 80 per cent of the fees payable for information services, the cost of participating in information and training activities, and the cost of subscribing to information products and services.

Quebec’s Business Watch program was established in 1993 and, as of 1999, was comprised of the following: Centre de veille sur les médias, Centre de veille sur les communications graphiques (Vigicom), Centre de veille de la construction (CeVeC), Centre de veille des équipements de transport terrestre (CVETT), Centre de veille sur les métaux légers (CVML), CEVEIL (Cellule de veille et d’expertise sur les inforoutes et langues), ÉCO RADAR (Réseau de veille concurrentielle en environnement), OBTIQ (Observatoire des technologies de l’information du Québec), Réseau CHIMIE (Réseau d’information stratégique de l’industrie chimique), RVSF (Réseau de veille stratégique bioalimentaire), RISP (Réseau d’information stratégique de plasturgie), Réseau INFO-BOIS (Réseau d’information sur les produits du bois inc.), and Réseau d’information stratégique de la mode et des textiles.

Establishment of the Carrefours de la nouvelle économie

A refundable tax credit equivalent to 40 per cent of the salaries paid to employees involved in the realization of certain activities related to the knowledge-based economy. Financial assistance cannot exceed $15 000 per job per year, and the target clientele is: enterprises in the information and communications technologies, biotechnologies, materials technologies and production technologies sectors, and scientific and technological services.

Establishment of the Centre national des nouvelles technologies de Québec

This is not applicable to our study as it targets Quebec City.

Tax holiday for foreign trainers (CDTI)

Foreign trainers employed by an enterprise in a Centre de développement des technologies de l’information (CDTI) enjoyed a two-year exemption on tax on their salaries prior to 1999 (the 1999 Budget increased this to five years).

**Introduction of a super-deduction for R&D**

As noted above, this was eliminated a year later, but briefly allowed for deduction rates of 230 per cent and 460 per cent that ensured a tax benefit equivalent to that of the refundable 20 per cent and 40 per cent tax credit.

**Enhanced tax assistance for additional R&D**

SMEs that incurred R&D expenses in excess of the baseline established (average R&D spending over the previous three years) benefit from an additional 15 per cent tax credit on excess R&D spending in relation to the baseline or, in the case of the super-deduction, a deduction rate increased by 190 per cent, from 460 per cent to 650 per cent. This was a temporary measure to last five years.

**Tax holiday for foreign R&D experts**

Extension of the tax holiday for foreign researchers in R&D from two to five years, and a broadening of the tax holiday to include foreign experts in the management and financing of innovation, marketing abroad, and the transfer of leading-edge technologies involved in research projects.

**Extension of the enhancement for accelerated depreciation**

Enhancement at the 25 per cent rate of the additional deduction applicable, in particular, to investments related to the acquisition of assets required for manufacturing and processing, certain computer equipment, and intangible assets such as patents, permits and licenses (made retroactive to the start of 1999).

A host of additional measures were adopted with respect to businesses at Mirabel which are beyond the scope of this study.

An additional summary of Quebec business credits, beyond those above, can be found in the above-cited 2001 Guide to Quebec Corporate Tax Incentives, though these appear to be the most clearly tied to innovation and have largely remained in effect since 1999.

*a. i. First Patent Program*

In 2015, the Quebec Government introduced the highly anticipated “First Patent Program” which provides financial assistance to SMEs that can be used for a variety of fees related to establishing its intellectual property rights, including patent applications and related fees. Its goal is to grow the number of Quebec-based SMEs able to defend their intellectual property rights. The program was envisaged in the provincial government’s 2013 report
“National Research and Innovation Policy, 2014–2019: Putting Jobs First: Investing in Research and Innovation is Investing in Québec” It was launched in July 2015.

Under the program, eligible businesses can receive a credit for 50 per cent of fees spent (up to $25 000) on patent applications, consulting with experts, creating an intellectual property protection strategy, and other costs related to acquiring a patent. The program is open to businesses with 250 or fewer employees.

b. Tax holidays

A unique feature worth noting is the tax holiday for foreign researchers mentioned above that was first introduced in April 1987 and made permanent in 1996. As the Quebec government explains:

Experts and researchers may obtain, from the ministère du Revenu du Québec (MRQ), a tax holiday with respect to Québec income tax for a maximum period of 60 months. The following exemption rates have been in force since March 31, 2004:

- 1st and 2nd year - 100%
- 3rd year - 75%
- 4th year - 50%
- 5th year - 25%  

Briefly, foreign researchers must have R&D qualifications whereas foreign experts “must have qualifications in the commercialization of R&D results in at least one of the following: management or financing of innovative activities, foreign marketing, or transfer of technologies.”

Quebec legislated another unique tax holiday in 2012, this one for corporations “dedicated to the commercialization of intellectual property.” Section 10.4 of An Act Respecting the Sectoral Parameters of Certain Fiscal Measures describes eligible businesses:

A business may be recognized as an eligible commercialization business if the Minister is of the opinion that its sole purpose is

(1) the manufacturing and selling of goods more than 50% of whose value is derived from an eligible intellectual property;

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91 Ibid.
92 Ibid.
93 An Act Respecting the Sectoral Parameters of Certain Fiscal Measures, RSQ c P-5.1, Schedule C, s 10.
(2) the manufacturing and selling of goods of which an essential component is an eligible intellectual property; or
(3) the licensing of computer programs each of which is an eligible intellectual property.\(^{94}\)

Section 10.5 outlines property that is “considered to be an eligible intellectual property.”\(^{95}\)

This tax holiday is explicitly intended to encourage research, innovation, and entrepreneurship by helping new businesses to commercialize and to maintain intellectual property in Quebec, especially for universities and public research centres.

Quebec boasts numerous fiscal incentives which explicitly target innovation and attracting industry to Quebec.

c. Support for Montreal

While the fiscal measures in the preceding sections provide incentives for industry to locate in Quebec, nothing specifically provides direct incentives for business to locate in Montreal, with the exception of two very specific credits, one for the Cité du multimédia de Montréal and the other for E-Commerce Place.\(^{96}\) Both tax measures—aimed mostly at giving salary deductions for job creation—were created in 2001 and phased out in 2003, though the Cité as a real estate project remains to this day.

Where the answer may lie is in the qualification for existing tax credits that promote certain public sector institutions. For example, the 1991 tax credit for university research or research carried out by a public research centre or research consortium, allows for a refundable tax credit of 35 per cent of qualified R&D expenditures for taxpayers that enter into a university research contract with an eligible university entity, public research centre, or research consortium in Quebec recognized by the Ministère des Finances du Québec.\(^{97}\) A document prepared by Investissement Québec contains a list of entities that meet the criteria for “eligible university entity, public research centre or research consortium in Quebec” as of 2014—the preponderance of these are in located in Montreal.\(^{98}\)

In some respects, it is a chicken-and-egg question to determine whether innovation occurred in Montreal because there were strong public institutions or whether public institutions were strengthened by the innovation occurring around them. Regardless, it appears that Quebec was rather conscious of this relationship, as exemplified in its aforementioned explicit tax credit for university research contracts.

\(^{94}\) Ibid, s 10.4.
\(^{95}\) Ibid, s. 10.5.
\(^{96}\) See Investissement Québec Publications, “Refundable Tax Credit for E-Commerce Place” and “Cité du multimédia de Montréal (CMM)”.
\(^{97}\) See Revenue Quebec, Tax Assistance for Scientific Research and Experimental Development (Quebec City: Quebec Ministry of Finance, 2008).
4. Montreal (Quebec)

According to its own publicity, business should be attracted to Montreal today by such things as the workforce (highly educated and skilled), linkage through the airports and the port, an expanded direct market through NAFTA, immigration ease and assistance offered to business, low operating costs, low mandatory employment costs, cheap rent and available housing, stable energy supply, a stable banking system, and a high quality of life.99

While its municipal tax role is limited, collectively Montreal currently enjoys the second lowest tax burden among major North American metropolitan areas.100 That said, specific infrastructure supports were created in Montreal through the Cité du multimedia and the E-Commerce Place for which unique provincial tax credits briefly existed.

Beyond these, specific municipal tax incentives have proven difficult to locate. Currently there is an annual subsidy of up to $1 million for five years, corresponding to the increase in the general property tax resulting from the construction, conversion, or expansion of an eligible building.101 Previous budgets, such as that in 2003, allow for items such as “a tax rebate for a period of three years […] corresponding to 10% of tax revenues generated by new buildings.”102

While the City itself recognizes the importance of innovation—a city document from 2005 cites a report entitled “Montréal, ville de savoir” to state that 85 per cent of R&D activities in Quebec occur in Montreal103—the City limits its role to collaborating with business and universities, directly investing where it deems appropriate, and working on enhancing its general attractiveness, including through culture and the arts.104 Perhaps tellingly, the city’s 2005 plan to “[s]timuler le renforcement du savoir, de l’innovation et du dynamisme des grappes industrielles” called for the creation of a “Stratégie métropolitaine d’innovation”.105 That strategy, released in 2007, makes only a passing reference to tax, instead focusing on human capital and the important relationship that the city has with

101 See PRAM-Industry, online <ville.montreal.qc.ca/portal/page?_pageid=9537,122913699&_dad=portal&_schema=PORTAL>.
104 See ibid.
public institutions, like universities, which it hopes will produce innovators in collaboration with ongoing innovation efforts in city businesses.\textsuperscript{106}

\section*{B. Israel}

The Israeli innovation story from 1980 to 2010 is not one of tax incentives to encourage R&D. Rather, the focus of the Israeli government was direct funding support through grants offered by the Office of the Chief Scientist.\textsuperscript{107} The common feature of Israeli laws designed to encourage technological innovation and industrial R&D is that they make capital available for entrepreneurs or make the economic return for investors more attractive. This is especially true for the start-up phase of a project. This is due to the fact that Israel has historically lacked this extremely vital component for a successful technological sector—capital.\textsuperscript{108} That said, in the study period, there were some changes to venture capital laws in Israel as well as modifications to capital gains taxes to encourage foreign investment.\textsuperscript{109} These initiatives and changes will be discussed in turn below.

Given that the literature reviewed did not suggest any major changes to Israeli tax law over the study period, the following overview is based on more recent materials. In general:

The principal taxes in Israel are income tax, capital gains tax, VAT and land appreciation tax. An extensive system of withholding income tax exists for payments of salaries and other types of income. National insurance contributions are payable by both employers and employees. Israel does not impose an excess profits or alternative minimum tax. There are no basic differences in the tax regime applied to different forms of business entities.

Corporate income tax is imposed on the worldwide income of Israeli residents. An Israeli branch of a nonresident company is taxed as though it were a regular resident company with respect to all of its profits derived from, accrued or received in Israel. Nonresidents are taxed only on Israeli-source income.\textsuperscript{110}

As a specific note on Tel Aviv, the city “is privileged to have the highest concentration of high-rate non-residential properties, allowing for low residential rates relatively to property value.”\textsuperscript{111}

\begin{flushleft}
\textsuperscript{106} \textit{Ibid.}
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With respect to the value added tax (VAT), while the available English language literature is limited for the majority of the study period, no discussions related to software, technology, or innovation arose. A current source indicates that there are no VAT exemptions in Israel except for fresh produce.\(^\text{112}\)

### 1. Capital gains changes

With respect to capital gains taxes, two items arise within the study period. The first regards an inflationary component change in the early 1990s. As one review notes:

Capital gains are divided into real and inflationary components. In general, real gains derived before 31 December 2002 are taxed at the regular personal tax rates (30% to 50%). Any capital gains derived after these dates are taxed at a rate of 25% (or 30% if a 10%-or-greater shareholder [material shareholder]). The inflationary component is exempt from tax to the extent it accrued after 31 December 1993, and is taxable at the rate of 10% to the extent it accrued before that date.\(^\text{113}\)

Further changes occurred with the Inflationary Adjustments Law of 2006:

If the seller was a corporate entity subject to the Inflationary Adjustments Law as of 2006, it will continue to be subject to the corporate tax rate on gains derived from the disposal of traded securities purchased before 1 January 2006. The inflationary component of the gain is exempt from tax.\(^\text{114}\)

The second change regards an exemption from capital gains taxes for foreign investors in Israeli securities if they:

[H]ave been resident for at least 10 years preceding the date of acquisition of the securities in a country that has entered into a tax treaty with Israel; They acquire the securities between 1 July 2005 and 31 December 2008. [...] For purposes of the above exemption, if the investor is an entity, at least 75% of all means of control must be held by individuals resident in the treaty country in the 10-year period preceding the acquisition date of the investment. However, for an entity with shares publicly traded on a stock exchange outside Israel, share-holders holding

\(^{112}\) See United States, “2014 Country Commercial Guide for US Companies” (Washington, United States Commercial Service, 2014) As a current note, the United States Government notes that “the VAT is charged on virtually all services and products, including imports, sold in Israel (except fresh fruits and vegetables).”


less than 10% of the shares are deemed to be resident in the treaty country unless proven otherwise.  

The specifics of this most recent change have proven difficult to find, but it appears that the rules were changed in 2009 to encourage foreign investment. As one source explains:

Gains derived from the sale of securities in Israeli or Israeli-related companies purchases on or after 1 January 2009 are also exempt from capital gains tax for nonresidents, regardless of relevant tax treaty stipulations.

The changes to the law in 2009 are unclear in terms of their impact on innovation, but are perhaps relevant to the extent that they bear upon foreign investment in Israel, particularly in companies that are publicly traded. However, after the study period, significant changes occurred on this foreign investment point with the 2011 Capital Investment Encouragement Law.

Returning to the list of tax types, beyond some discussion of investment income relative to the capital gains changes discussed above, no major changes in the income tax regime regarding technology came up in the research.

Three other related policies and programs were developed during the study period in order to encourage innovation: Venture Capital (YOZMA); Tax Incentives; and Capital Markets Tel-Aviv Stock Exchange (TASE) Regulations amendments.

2. Venture Capital funds- “Yozma”

Formed in 1993 by the Israeli government, this program consisted initially of ten venture capital funds backed by the government but also funded by local and foreign private investors. Each Yozma fund had a five year call option on the shares held by the government, allowing private investors to buy out these shares at pre-determined prices. Yozma was extremely successful in attracting foreign venture capital funds to invest in Israeli technology ventures. Currently there are approximately seventy active venture capital funds in Israel, fourteen of which are international funds with offices in Israel. One author describes Yozma’s success: “The Israeli experience shows that, once several


117 See Asnin-Dan, “Foreign Investors” undated, online: <www.asnidan.co.il/AllSites/1560/Assets/201.pdf>.

118 For a brief overview, see Dr Avi Nov Law Office, “Law for the Encouragement of Capital Investments” (May 2010), online: <www.israeltaxlaw.com/PAGE728.asp>.

Yozma funds had high returns, the individual reputation effects spilled-over to the VC industry and high tech cluster as a whole; and this led to not only expansion of existing VCs but also the entry of new VCs.\textsuperscript{120} Thus, the Yozma initiative along with the tax reform mentioned above, especially concerning capital gains tax rated for foreign investors, led to a significant rise in both local and foreign investment in Israeli-led technological innovation during the study period.

3. Tax Incentives

Several developments in Israel’s tax system, since 1985 and throughout the study period, have served to make capital more available for R&D activities.\textsuperscript{121} Below are several examples of the main tax incentives that have been introduced by the Israeli legislator for this purpose:

- The Israeli Law for the Encouragement of Capital Investments provided unique tax rates for companies in Israel with foreign investments.\textsuperscript{122}
- Foreign investors investing in Israeli companies whose shares are traded on recognized stock exchanges outside of Israel may, under certain conditions, benefit from an exemption from Israeli Capital Gains Tax.\textsuperscript{123}
- An additional tax incentive which applies to all individuals, Israelis and foreigners, is known as “Angel’s Law”. It allows individuals investing in private Israeli corporations between January 2011 and December 2015 to deduct their investment from their overall taxable income from all sources. This tax credit is limited to up to NIS 5 million per target company as well as additional conditions that may apply.\textsuperscript{124}

To sum up, some authors have concluded that “[t]he tax system in Israel has been successfully reformed to encourage entrepreneurs to remain in Israel, to declare their income in Israel, to set up their start-up ventures in Israel and to raise capital from local and foreign investors in Israel.”\textsuperscript{125}

\textsuperscript{120} Gil Avnimelech, “VC Policy: YOZMA Program 15-Years Perspective”, (DRUID, 2009), online: <www2.druid.dk/conferences/viewpaper.php?id=5606&cf=32>.


See also Stone, \textit{supra} note 109 at 84–85.

\textsuperscript{121} See Stone, \textit{supra} note 109 at 86–87.

\textsuperscript{122} See Hok le’Edude Hashkaot Hon, “Encouragement of Capital Investments Law,” 5719-1959 SH No 296 (Isr) [Investments Law].

\textsuperscript{123} See Pekudat Mas Hahnasah “Income Tax Ordinance” (New Version), 5721-1961, SH No 2405 (Isr). See especially ss 97(b2)-(b3).


\textsuperscript{125} Stone, \textit{supra} note 109 at 87.
4. Capital Markets- Amending the Tel-Aviv Stock Exchange (TASE) Regulations

Another important change which has encouraged and facilitated technological innovation and growth was introduced by the Israeli Knesset in 2005: “the Tel-Aviv Stock Exchange (“TASE”) regulations were amended to allow research and development companies to carry out initial public offering on the exchange.”126 The amendments provided relief for smaller companies regarding minimum equity requirements, minimum public shareholder requirements, and additional criteria… the company must have invested at least 3 million Mew Israeli Sheqel (“NIS”) in research and development activities in the last three years, and it must have been approved as a research and development company by the Office of the Chief Scientist.”127

Yet, it should be noted here that this option of raising capital for technological and scientific R&D from the public instead of private equity sources has also been controversial.128 Another point to raise at this stage is the central role of the Office of the Chief Scientist. In order to benefit even from the TASE amended regulations the company seeking to be listed must first be approved by the Chief Scientist as a R&D company. The next section will further show the important role the Chief Scientist plays in Israel.

5. The Real Story: Office of the Chief Scientist

The centerpiece of Israel’s legislation supporting and encouraging innovation is the “R&D Law”.129 Briefly, Israel has supported civilian R&D since the 1960s, with the role of the Office of the Chief Scientist (OCS) becoming incredibly important in the early 1980s.130 The literature reveals significant turmoil as to what the office’s role and mission ought to be in the early 1980s. However, beginning with the passage of an R&D law in 1985, the role of the Office clearly became to support science-driven R&D in products aimed at export.131

The main grant program of the OCS has been observed as follows:

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127 Stone supra note 109 at 88.
128 Ibid.
129 See Hok le’Edude Mehkaar U’pituah Be’ta’asyia “Encouragement of Industrial Research and Development Law”, 5744-1984, SH No 1114 (Isr) at 100.
The OCS selects projects to fund based on the viability of their proposals, and funds up to 50% of the budget, to be repaid in royalties if the project is successful […] Thus the OCS sorts projects, similarly to a venture capitalist, and then provides capital. In practice OCS has funded about 70% of proposals received. The subsidy (and possibly the sorting) translates directly into a comparative advantage in R&D.¹³²

In a sense, the OCS acts as a venture capitalist. In that regard, the World Bank concluded that “[f]or example, in Israel, the VC boom in the 1990s would not have been possible without the projects which had been supported by matching grants for 20 years by the Office of the Chief Scientist Program.”¹³³ It should be noted that the 50 per cent rate is for established companies and the 66 per cent rate is for start-ups, though it was unclear if those rates changed over time or when exactly post-1984 they were set. Based on the various years of the sources surveyed, it would appear this has been the case from the early 1990s.

The specifics of this aspect of the OCS investment in R&D can be found in a helpful Israeli government publication dating to 2001 which seems representative of the study period.¹³⁴

a. OSC managed programs

The OCS managed a number of programs during the study period, most of which continue today. A helpful graphic from 2013 demonstrates the variety of R&D supports offered by the OCS.¹³⁵

¹³⁴ See Israel, State of Israel Ministry of Industry and Trade: Office of the Chief Scientist, “Encouragement For Industrial R&D In Israel” (Israel: January 2001) [Israel, Encouragement for Industrial R&D].
If our focus narrows, we should look into each of these programs. For now, we have selected a few that seem to get the most attention in the literature.

i. MAGNET

As the Israeli government currently markets it:

This program supports the formation of consortia comprised of individual firms and academic institutions, in order to jointly develop generic, pre-competitive technologies. The duration of a MAGNET Consortium is 3-5 years. Grants are up to 66% of the approved budget for industry and up to 80% for the academic institution. No royalty payments are mandated.136

The program was first established 1993 (with seemingly the same terms) and, by 1999, eighteen such consortia were operating with a combined budget of $60 million.137

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ii. TNUFA

This is a national pre-seed fund “to assist individual inventors and nascent start-up companies during the earliest stages of their projects.” It offers grants of up to 85 per cent of approved expenses to a maximum of approximately USD 65 000 per project.

iii. Incubators

In the early 1990s, incubators were established “to fund fledgling entrepreneurs and to assist them in developing their ideas into businesses that can be funded by seed venture capitalists. Entrepreneurs whose ideas are approved by [OCS] receive two years of funding and guidance; the second year of funding is conditional on attracting some outside funding.” A recent OCS publication indicated that twenty-three such incubators exist in Israel, carrying out approximately 200 R&D projects at any one time; twelve have been privatized.

iv. Heznek

This targeted seed fund was created in 2002 to encourage investment and to increase the number of new companies. Specifically, “[t]he program invests in startup/seed ventures together with a VC fund (50 per cent and up to $1.1million) in exchange for non-voting rights shares. The investing VC has the option of buying-out the government’s share at any time within the first seven years.”

v. Strings Attached

The grants made by the OCS, however, come with certain conditions. These are mainly set to ensure that the government’s objectives and policies are being promoted. Below are some of the unique features of the OCS’s operation and the terms of its grants. Run by experts: While the OCS is a governmental body operating under the Ministry of Economy (although it was originally was established as a department within the Ministry of Industry,

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139 Ibid.

140 Fontenay, supra note 134 at note 24.


Trade & Labor), it is a purely professional administration run by professional technicians and scientists. It is made up of people who have acquired vast experience in the relevant innovative and technological field. Application examiners are chosen according to their fields and matched appropriately to the applications that fall under their area of expertise.\textsuperscript{144} The administration of the OCS is composed of two branches, the Head of the Administration; and the Research Committee. The Research Committee is comprised of nine members, all of whom hold relevant advanced academic degrees in the relevant technological and scientific fields. The Research Committee not only determines which applications will be accepted for grants but can also determine how to prioritize and allocate funds within the given state budget, pending approval by the Knesset Finance Committee.\textsuperscript{145}

**Grants and Royalties:** In order to obtain a grant, the applicant must demonstrate the novelty and usefulness of the R&D she is about to undertake before the Research Committee. Likewise, the applicant must describe a detailed yearly or multi-year R&D plan including methods of manufacture.\textsuperscript{146} Before making its determination, the Research Committee receives the opinions of professional examiners selected by the Head of the Administration to review the application. The examiner advises the Committee as to whether it should reject or partially or fully accept the “Plan” of the applicant.\textsuperscript{147} A company incorporated in Israel is entitled to receive a grant, and the recipient is expected to develop a new product or a significant improvement to an existing product in Israeli by the work of Israeli residents. Furthermore, the Research Committee gives significant weight and preference to projects that will also lead to the manufacturing of the final product in Israel and where the applicant can show that that product is expected to provide an added value to the Israeli society and market. Nevertheless, the Research Committee has the discretion to allow for an exception to partial development abroad where the applicant has convincingly demonstrated that it is absolutely necessary for the project’s success.\textsuperscript{148} If approved, the applicant is called an “Approved Recipient”. Grants are available for between 20 per cent and 50 per cent of the approved R&D budget. While the Committee mainly looks at the innovativeness, location and expected added value of the expected product, it also considers issues such as economic risk and potential of the product to enter and succeed in the relevant markets.\textsuperscript{149}

Royalties to the government are paid on income from sales of, products developed within the framework of the approved plan, services associated with the product, and “associated products” (products based on the core technologies supported by the OCS but which are

\textsuperscript{144} See Stone \textit{supra} note 109 at 90–91.
\textsuperscript{145} See \textit{ibid} at 92.
\textsuperscript{146} See \textit{ibid} at 93.
\textsuperscript{147} See \textit{ibid} at 94.
\textsuperscript{148} See \textit{ibid} at 94–95.
\textsuperscript{149} See \textit{ibid} at 95–96.
funded by other (non-OCS) sources. The Regulations provide that the royalties are paid based on the sale price recorded in the recipients’ financial records. Royalties are paid at rates between 3 and 5 per cent until the full grant is repaid with interest. Yet, even after the full grant has been repaid, the recipient is still obligated to provide periodic reports to the OCS and may still be restricted in terms of transferring knowledge or manufacturing rights abroad. In addition, there are many other specific methods described in the Regulations regarding how royalty rates should be calculated in cases where the product is part of a larger system and other unique cases. However, if the R&D endeavor is unsuccessful, there is no obligation on the recipient to repay the grant. The obligation arises only from the sales of products under the approved plan. Yet, there are other conditions and restrictions related to receiving the OCS grant as detailed below.

**Periodic reporting:** The recipient must provide the OCS with periodic reporting on the progress of the R&D, sales and royalties, manufacturing, external investments made in the company and any transactions, control changes or licensing agreements made. Likewise, the recipient must also make periodic reports regarding ownership rights on products and know-how developed under the plan. Some of these obligations to report will continue perpetually even after the grant has been re-paid in its entirety. The OCS also retains auditing rights throughout.

**Transfer of Manufacturing:** Since 2002, the Research Committee has the authority to allow the transfer of certain manufacturing activities overseas, but only under special circumstances, namely that the skills or facilities for manufacturing the product simply do not exist in Israel. However, if such a transfer take place, it will lead to an increase in the amount of royalties payable by the recipient.

**Transfer of Technology:** Until its 2005 amendment, the R&D Law prohibited any transfer of know-how outside of Israel. Currently, any transfer of technology which is not the final product developed with OCS funding may not be transferred outside of Israel unless pre-approved by the OCS. Following the change to the R&D Law, recipients can transfer know-how rights overseas if approved by the Research Committee and following a payment of a “redemption fee”. The Statute provides for a calculation of the “redemption fee” which takes into account the royalties already paid and which

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150 See OCS Guideline: Special Applications and Approvals, No 200-05, ver 02, s 3.8, Annex B (Isr) [OCS Guidelines].
152 See ibid, s 6.
153 See Regulations, supra note 153. See also Stone supra note 109 at 96–97.
154 See R&D Law, supra note 131, s 43; Regulations, supra note 153, s 6.
156 See ibid at 99–100.
157 See OCS Guidelines, supra note 152, s 3.6.
determines that the fee cannot be less than the royalties left to be paid.\footnote{158 See R&D Law, supra note 131 at 19B and Takanot le’Edude Mehkar U’pitualah Be’ta’asyia (Haschum Ha’mevravey Le’tashlum Be’ad Ha’avarat Yeda Le’fee Se’eef 19B (b) (1) ve-(2) Le-Hok) “Encouragement of R&D Regulations (Maximum Payment Amounts for Transfer of Know-How Under Section 19B (1) & (2) of the Law)”, 5773-2012 KT 7182, 199.} It is worth noting that in 2012 the Knesset’s Finance Committee approved Ceiling Regulations pursuant to the R&D Law- which set a maximum amount on the redemption fee.\footnote{159 See Stone, supra note 109 at 103–104.} \footnote{160 Ibid at 105.} \footnote{161 Cohen, Chief Scientist, supra note 140 at 286–306.} \footnote{162 Israel, Ministry of Industry, Trade & Labor Office of the Chief Scientist, “R&D Incentive Programs,” (2013), online: <www.moital.gov.il/NR/rdonlyres/A882F88E-0814-4F46-8306-39AC99938701/0/OCSPrograms.pdf> [Israel, R&D Incentive Programs].}

**Licensing Arrangements:** “The R&D Law allows the promulgation of regulations to approve licensing arrangements with respect to OCS Supported Know-How; however, to date, it has not adopted any such regulations. The OCS has taken the position that any license that in essence grants exclusive, irrevocable, and world-wide rights to exploit know-how… will be considered a transfer of ownership and treated as such under Section 19B of the R&D Law, with the related redemption fee.”\footnote{159} Limited licenses to exploit the know-how may be granted upon approval by the OCS, but any developments arising therefrom must be owned by the approved Israeli recipient.

**b. OCS, R&D, and Silicon Wadi**

While there are many OCS programs that may be of interest, it will take more research to track down how each has changed over time and this information may only be useful once we know what sectors are of interest. A useful resource (for future reference) is “The Office of the Chief Scientist and the Financing of High Tech Research and Development, 2000–2010,”\footnote{161} coupled with a recent OCS guide to R&D programs.\footnote{162}

Of note in Silicon Wadi is that, in Israel, there are some regional incentives for certain programs; however, they would appear not to favour Silicon Wadi. While more research would be needed to pin down exact changes, the essential information here, in part based on the most recent OCS guides, is that the “priority areas” in Israel that receive some additional benefit through tax and R&Dare in the North (Galilee) and South (Negev)—and in some cases Jerusalem. These are areas with greater economic hardship and are not near Tel Aviv.

**3. Bilateral programs**

Several programs have been developed in bilateral partnerships with other states and regional organizations, including the United States, Canada, and the European Union.
a. **BIRD**

The Binational Industrial Research and Development Foundation (BIRD) was founded in 1977 by the American and Israeli governments.\(^{163}\) This program contributes up to 50 percent of the cost of joint research between American and Israeli firms where the product will be manufactured in Israel but marketed in the United States. The program was established with a USD 110 million endowment, with equal contributions from both governments, and a growing amount of repayments from successful BIRD-funded projects.\(^{164}\)

b. **CIIRDF**

The Canada-Israel Industrial R&D Foundation (CIIRDF) “was established in 1994 to promote and support collaborative R&D between firms in both countries [Canada and Israel].”\(^{165}\) As the Israeli government explains: “Eligible companies for CIIRDF's funding are firms operating and headquartered in Canada and Israel. At least 30% of the R&D work must be done in either Canada or Israel. CIIRDF's support includes funding of up to 50% of the eligible R&D costs of joint projects."\(^{166}\)

c. **Other**

Similarly to the bilateral programs outlined above, Israel has programs in place with Singapore, Britain, and Korea. Multinational programs also exist with the European Union, such as the Sixth Framework Program for R&D of the European Union (Fp6), and a program called EUREKA. Both of these appear to aim at information sharing and facilitating access to research and researchers. As EURKA describes it: “The Israeli office supports the companies throughout the overall process by finding partners for projects and supplying information about funding, call calendars and procedures.”\(^{167}\) As Israel’s OCS explains:

> EUREKA incorporates 40 national funding schemes of virtually all European countries and the European Union. EUREKA facilitates approximately 400 projects every year, mobilizing EUR 1.5 Billion of public and private funds. As a pan-European network for market-oriented, industrial R&D, EUREKA’s objective is to bring high-quality R&D efforts to the market and to utilize the multiplying effects of cooperation. The Office of the Chief Scientist supports Israeli companies participating in EUREKA projects.\(^{168}\)

\(^{163}\) See Fontenay, *supra* note 134 at 16.

\(^{164}\) See Israel, Encouragement for Industrial R&D, *supra* note 136 at 7.

\(^{165}\) Israel, R&D Incentive Programs, *supra* note 164.

\(^{166}\) Israel, Intellectual Capital, *supra* note 143.


\(^{168}\) Israel, R&D Incentive Programs, *supra* note 164 at 35.
4. Venture capital changes

A recurring theme in the literature was how rapidly the venture capital climate in Israel changed over the study period. Indeed, one study notes: “Until 1985 there was no institutional risk capital in Israel.” From there, the story changes rapidly:

The government created the YOZMA group in 1993 to use public funds to leverage foreign financing, primarily from the United States. This was accompanied by equity guarantees for foreign investors, programmes to link Israeli firms with foreign business angels, and exits of Israeli venture firms on foreign stock exchanges. By 2000, the Israeli venture capital industry had reached the stage whereby the private sector led the public sector in investments.

The government phased out both the YOZMA equity programmes and the equity guarantees in the late 1990s when the success of the pump-priming efforts was evident.

A concurrent effort known as INBAL was also launched:

The Israeli government also created an equity guarantee scheme in 1991, the INBAL Programme, to encourage investment in venture capital. INBAL provided 70% guarantees to investors in local venture capital funds. Even though the INBAL programme was phased out over the years, it helped the formation of around six publicly-traded Israeli venture capital funds, each with USD 15 million to USD 20 million in capital.

For perspective, a 2008 study noted that “the venture capital market in Israel has developed to include over 100 active funds collectively managing over $12 billion.” As the venture capital industry changed, so did the laws regarding venture capital investment (see the above discussion about capital gains).

C. Silicon Valley (California)

1. What is Silicon Valley?

Geographically, the borders of Silicon Valley are difficult to define. Indeed, an initiative to split California into six states that failed to make the ballot this past September sparked plenty of commentary regarding the actual boundaries of the state that would be

169 Fontenay, supra note 134 at 24.
171 Ibid.
172 Getz, supra note 144
Silicon Valley.\textsuperscript{174} Virtually all of the reviewed literature uses the term “Silicon Valley” without geographic description beyond the state level, though some articles name individual cities within Silicon Valley. A handful of articles speak of “Silicon Valley” through other means, such as one piece noting “[t]he San Jose metropolitan statistical area [is] the closest statistical approximation of the Silicon Valley region.”\textsuperscript{175}

This geographic ambiguity creates numerous problems for determining the tax conditions in Silicon Valley over the study period because the relevant tax jurisdictions at a municipal level cannot be definitively defined. Indeed, what might be considered “Silicon Valley” expanded during this period and this expansion continues today.\textsuperscript{176}

A consequence of this ambiguity for tax purposes can be found in the California Enterprise Development Zone program, established in 1984. One such zone was created within San Jose, which boasted that it was the only such zone within Silicon Valley.\textsuperscript{177} To this day, San Jose's website notes its “Enterprise Zone is a 12-square mile area in the heart of Silicon Valley, and businesses located here are eligible for significant tax savings as well as other incentives” that include hiring tax credits, sales and use tax credits, increased business expense deductions, and net operating loss carryovers.\textsuperscript{178} If 12 square miles (31 square kilometres) seems significant, recall that the City of San Jose is 180 square miles (466 square kilometres),\textsuperscript{179} and newspaper articles put the total area of Silicon Valley at 1800 square miles (4662 square kilometres).\textsuperscript{180} Something that will have to be established as this project moves forward is whether we are concerned with policies that impacted less than a one-hundredth of Silicon Valley, significant though those policies may have been for innovation in the impacted area.


\begin{quote}
Silicon Valley is one of those few places in the world whose name has become shorthand for an entire industry. For half a century, this cluster of suburban communities in northern California has produced successive waves of globally significant innovation in electronics and computer technology, and been an incubator
\end{quote}

\begin{flushleft}
\textsuperscript{178} Ibid.
\textsuperscript{180} “Silicon Valley Boom Eludes Many, Drives Income Gap” (6 March 2014) Associated Press. Republished by CNBC, online: <www.cnbc.com/id/101471208/>.\end{flushleft}
for countless entrepreneurial enterprises and a generator of astounding levels of wealth.\textsuperscript{181}

Of course, there are businesses in Silicon Valley beyond the technology realm, and similarly, the business of Silicon Valley extends beyond its borders. An often cited \textit{New York Times} piece entitled “Silicon Valley Shaped by Technology and Traffic” suggests that the shaping of Silicon Valley is not so much informed by the individual municipalities as much as it is by the types of businesses—or “clusters”—found there:

While there are plenty of exceptions, it is generally true that hardware clusters—semiconductors, disk drives and network equipment, for example—are in the South Valley, around San Jose and Santa Clara. The actual manufacturing of hardware, of course, moved to cheaper places years ago. What remains in the Valley is product design and engineering.

Moving farther north in the Valley typically means moving farther away from the guts of the machine and climbing up the tiers of computing—from chips to layers of business and consumer software and then into San Francisco, home to people with online advertising and digital design skills.\textsuperscript{182}

The questions would then become: how did these clusters form? And, by extension, what made Silicon Valley “happen”? The short answer revealed by the research is that taxes had little—if anything—to do with it. Accordingly, after its discussion of taxes, this analysis will briefly discuss the factors that converged to make Silicon Valley what it is today.

\subsection*{2. California’s tax system}

California is a state within the United States. The United States Constitution provides Congress with the authority to tax in article 1 section 8, clause 1: “The Congress shall have power to lay and collect taxes, duties, imposts and excises, to pay the debts and provide for the common defense and general welfare of the United States.” As such, the Federal Government is limited to imposing taxes for these purposes, and states have the power—by virtue of the Tenth Amendment—to impose taxes for other purposes.\textsuperscript{183}

As a 2007 analysis by the California State Legislature notes:

The basic elements of California’s current state tax system were put in place in the late 1920s and early 1930s. Prior to that time, state revenues were raised by an insurance tax, utility tax, and fuel tax. The severe fiscal disruptions that accompanied the depression, however, led to the adoption of both the [personal income tax] and state [sales and use tax].\textsuperscript{184}


\textsuperscript{183} See \textit{United States v Butler}, 297 US 1 (1936) [Butler].

The personal income tax (PIT), the sales and use tax (SUT), the corporation tax (CT), and major motor vehicle-related levies formed 85 per cent of the state’s own source revenue according to a 2007 analysis. That analysis notes that the remaining taxes include “gross premiums insurance tax, alcoholic beverage taxes, cigarette and tobacco taxes, lottery tax, various fuel-related levies, and disability and unemployment insurance taxes.” Two entities at the state level have authority relative to taxes—the State of California Franchise Tax Board is responsible for the administering of the PIT and CP; other taxes are managed by the California State Board of Equalization. Local taxes—i.e. those at the municipal level—include property tax, sales tax, business license tax, and utility users’ taxes.

a. Comparative scope questions and Proposition 13

The California State Legislature’s non-partisan Legislative Analysis Office generally speaks of California’s taxes in comparison to other state-level jurisdictions—similarly, the State’s Franchise Tax Board also compares state tax rates to those in other states. Both entities mention regional differences in local taxes throughout the state, but nothing on its face suggests that the municipalities of Silicon Valley have wildly different tax schemes or rates than elsewhere in California.

Similarly to the Montreal research, the question becomes more difficult for our purposes because the applicable taxes are not set at a level of government that allows for direct inferences to be drawn. That is, in comparing California to other states on questions of state taxes, we can determine why a business might settle in California or innovate there. But, with little variation on the municipal front, it is nearly impossible to tell—by looking at tax alone—why a business puts its office in Palo Alto instead of Los Angeles.

While literature on the relative municipal tax programs and initiatives within Silicon Valley appears scant, it cannot be said that the question of the municipal tax burden is unimportant, even for our limited purposes. This is the case particularly in light of Proposition 13.

Voters adopted California’s Proposition 13 in 1978. As the State Board of Equalization explains:

This amendment to California’s Constitution was the taxpayers’ collective response to dramatic increases in property taxes and a growing state revenue surplus of nearly $5 billion. Proposition 13 rolled back most local real property, or real estate, assessments to 1975 market value levels, limited the property tax rate to 1 percent plus the rate necessary to fund local voter-approved bonded indebtedness, and limited future property tax increases. […]

Under Proposition 13, properties are reassessed to current market value only upon a change in ownership or completion of new construction (called the base year value).

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185 See ibid.
186 Ibid.
187 See ibid.
In addition, Proposition 13 generally limits annual increases in the base year value of real property to no more than 2 percent, except when property changes ownership or undergoes new construction. Essentially, Proposition 13 converted the market value-based property tax system to an acquisition value-based system.\textsuperscript{188}

The impact of Proposition 13 on Silicon Valley is that neighboring buildings might have extremely different property tax assessments. A study by the California Tax Reform Association\textsuperscript{189} illustrates the situation as follows:

For example, Intel sits on 36 acres of centrally-located land taxed at 2 cents/square foot, or $980/acre. IBM pays $202/acre on 200 acres of land. By way of comparison, open land recently bought by Google generates $1.35 in tax per square foot, or $58,000/acre in tax—60 times what Intel pays.

Differences in tax on land of 10, 20 times and even 50 times appear regularly for similarly-situated properties in Silicon Valley. Companies such as IBM, Intel and Hewlett Packard are paying millions of dollars less in taxes than they would on their land each year compared to newer companies such as Adobe, Yahoo and Google.\textsuperscript{190}

The takeaway of this example from the comparative point of view is that, even if we were to delve into the unique municipal property assessment rates across Silicon Valley and how they changed over the study period, we would not know much about the impact on a company’s bottom-line since the actual amount owed is mostly determined by how long the entity has owned the land rather than the entity itself—and, still further difficulties would arise when attempting to separate out leases.\textsuperscript{191} The inference here is that if there is less to pay in land tax, there is more to spend on innovation.

\textit{b. Relevant state tax measures}

Five relevant California tax measures have been identified in the literature: the Research and Development Credit,\textsuperscript{192} the Water’s Edge Election,\textsuperscript{193} the Accelerated Depreciation of Research and Experimental Costs,\textsuperscript{194} the Custom Computer Programs sales tax,\textsuperscript{195} and

\textsuperscript{189}The data for this report is publically sourced.
\textsuperscript{191}See \textit{ibid}. For discussion of some of these issues, including how companies with different properties pay vastly different rates on each, as well as how research institutions lease land for research purposes and may charge a high price for the lease yet enjoy a low property tax rate.
\textsuperscript{193}See \textit{ibid}, §§ 25110–25113.
\textsuperscript{194}See \textit{ibid}, §§ 17201, 24365 (which conform to the federal Internal Revenue Code [26 USC] §§ 59,174).
\textsuperscript{195}See \textit{ibid}, § 995.
Subchapter S Corporations. Each will be discussed briefly below. As mentioned in the previous section, there is also the Enterprise Zone tax initiative, though this only applies to a very small portion of what is considered “Silicon Valley”.

i. Water’s-edge election

Starting in 1986, California law allowed for a “water's-edge election”. In brief:

Unitary multinational corporations are allowed the option of computing the income attributable to California on the basis of a water’s-edge (domestic) combined report, as opposed to a worldwide combined report. Under the water's edge provision, a business may elect to compute its California tax by reference to only the income and factors of a limited number of entities. In general, these entities include United States incorporated entities, the United States activities of foreign incorporated entities, and the activities of various foreign entities that are included in the federal consolidated return.

The basic problem is how to tax multinational businesses within the unitary worldwide business concept. The water's-edge election “was made available in response to perceived compliance and foreign policy concerns associated with worldwide combined reporting.” In one sense, it allows companies to file state taxes in a way that is coextensive with their federal return; however, statutory law defines federal income tax jurisdiction whereas the constitutional limitations exist on state income taxation. As the Franchise Tax Board explains:

As to US incorporated entities, for example, the US government asserts jurisdiction to tax all of their income, regardless of whether its source is within or without the US. (IRC §11.) California, on the other hand, is constrained to tax only income that has its source in this state. […]

The California water's-edge method developed out of controversy and was resolved by means of, what was at times, an intense political debate. The water's-edge rules reflect the specialized interests of the proponents of the legislation, as well as its opponents. Although certain aspects of the water's-edge combination are logical, some aspects are the product of the political process. Regardless, California’s water's-edge

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196 See ibid, §§ 17087.5, 18006, 23800-23813 (which partially conform to the federal Internal Revenue Code [26 USC] §§ 1361–1379).
197 See ibid, §§ 17053.33 17053.34, 17053.45, 17053.46, 17053.47, 17053.7, 17053.74, 17053.75, 17268, 17276.2, 23612.2, 23622.7, 23622.8, 23633, 23634, 23645, 23646.
combined reporting has become a significant filing option for multinationals operating in California.\textsuperscript{201}

Many important changes occurred to this program during the study period, including changes in contract requirements, the term of the election, applicability to dividends, and foreign investment interest offsets.\textsuperscript{202} As the Franchise Tax Board itself acknowledged, “[f]rom nearly everyone's point of view, the 1986 legislation revealed a number of technical problems, as well as substantive problems.”\textsuperscript{203} Reforms over the years had quite different impetuses—the reforms in 1993, for example, were in response to “concerns of the multinationals and threats by the UK to implement its legislation denying tax credits to US shareholders of British companies,” whereas reforms in 1996 were made to simplify foreign dividend deductions.\textsuperscript{204} Ultimately, the program grew rapidly during the study period—from 406 elections in 1988 to 1 130 in 1989, 2 191 in 1992, and 5 714 in 2001.\textsuperscript{205}

As one analysis noted:

> The expected reduction in net income reported by companies electing water’s-edge treatment will be partially offset by a corresponding increase in apportionment factors. Firms will be more likely to elect water’s-edge, however, if doing so will reduce their tax liability.

> Apportionment factors measure the percentage of a corporation’s business attributable to California. Corporations electing water’s-edge will switch from using factors measuring the ratio of business conducted in California to business conducted worldwide to factors measuring the ratio of business conducted in California to business conducted in the United States. Since worldwide property, payroll, and sales must be greater than US property, payroll, and sales, the latter ratio must be greater than the first ratio. Thus, water’s-edge election should raise apportionment factors.\textsuperscript{206}

Put another way, California’s appointment formula involves consideration of property, payroll, and sales. By allowing a company to switch from reporting “Sales in California/Total Sales Everywhere” as its appointment and instead report “California Sales/Sales in the Water’s-Edge Group” we should see higher ratios. As the Franchise Tax Board explains, “[t]he effect of this election is generally to exclude the income and apportionment factors of foreign incorporated entities from the combined report.”\textsuperscript{207}

The State Franchise Board for Tax Year 2010 expected a USD 1 billion revenue loss from the water’s edge election and noted:

> FTB data indicate that multinational corporations of various industry and size elected to file their tax returns on a water’s-edge basis. Large corporations, however, benefit

\textsuperscript{201} Ibid.

\textsuperscript{202} See FTB Water’s Edge, supra note 203, FTB White Paper supra note 204.

\textsuperscript{203} FTB Water’s Edge, supra note 203 at 13.

\textsuperscript{204} Ibid.

\textsuperscript{205} Ibid.


\textsuperscript{207} Ibid [citations omitted].

the most from this program. In 2010, corporations with gross receipts greater than $1 billion accounted for only 14 percent of the water's-edge returns. It is estimated, however, that 88 percent of the water's-edge tax benefit goes to these same corporations.\(^{208}\)

No study was found linking the water’s edge election and innovation, but it is certainly worth considering whether providing an alternative method of calculating income either encouraged innovative companies to settle in California or allowed company finances to be directed towards innovation rather than paying the company’s tax bill. That said, the California model for taxing corporate entities with presence in multiple jurisdictions has been studied considerably,\(^{209}\) has been affirmed by the Supreme Court of the United States on several occasions,\(^{210}\) and continues to be studied by Congress.\(^{211}\)

ii. Accelerated depreciation of research and experimental costs

The provision allows taxpayers to deduct qualifying research and experimental expenditures more rapidly than the economic life of these investments, and was estimated to have cost the state USD 110 million in tax year 2006.\(^{212}\) Specifically, the measure allows for research and experimental expenditures to be deducted currently or amortized over a sixty month period at the election of the taxpayer separately from the R&D tax credit.\(^{213}\)

The Franchise Tax Board noted the benefits of attracting and investing in R&D for the economy, but singled out “economies of agglomeration” as being a benefit of this particular credit:

"Economies of agglomeration is defined as “a reduction in production costs that results when firms in the same or related industries locate near one another.”"

Assume, for example, that the accelerated depreciation of R&D expenditures encourages some pharmaceutical companies to locate their research facilities in an area of California. This location decision, in turn, would encourage the growth of pharmaceutical research support firms (such as material suppliers, pharmaceutical manufacturers, universities doing biological and chemical research, and chemical engineers) in that area. Subsequently, with the growth of the support industries, other


\(^{209}\) See e.g. Luis Dena Osollo, “California's Unitary Method of Allocating Jurisdiction to Tax Income from Multistate (or Nation) Business: International Application and Implications” (1997) 6 Tilburg Foreign L Rev 289.

\(^{210}\) See Barclays Bank PLC v Franchise Tax Bd. of Cal 512 US 298 (1994).

\(^{211}\) See ibid at 325; See also US, Congressional Research Service, “State Corporate Income Taxes: A Description and Analysis” (23 June 2008) RL32297.


pharmaceutical firms will be attracted to the area. There are clearly many agglomeration economies within California (high-technology in Silicon Valley and motion pictures in Hollywood are two obvious examples). However, many factors contribute to the development and growth of agglomeration economies. Because of the complexity of agglomeration economies, the extent to which the accelerated depreciation of R&D expenditures has actually encouraged the development or growth of any agglomeration economies is unknown.214

iii. Custom computer program sales tax exemption

The taxation of software is not a straightforward concept as important questions of tangibility are raised in the calculation of sales tax.215 Since 1982, California law has distinguished between “custom” and “canned” software, and allowed for a tax exemption on the former:

The transfer of custom computer programs, other than a basic operational program, and separate charges for custom modifications to existing prewritten programs are excluded from the definition of "sale." Therefore, these computer programs are not subject to the sales and use taxes.216

According to the State, “[t]his provision was intended to provide an incentive for the development and utilization of computer software.”217 Changes to the program have occurred, and have been fraught with tension between industry and the regulator.218

California is not the only state with unique sales tax on software rules or where the custom/canned distinction is made. A 1984 study noted that, of the forty-four states with sales tax, five defined software as intangible property not subject to sales tax, and of the thirty-nine remaining, twenty distinguished between custom and canned software.219 Definitions vary between states, with some states leaving the terms undefined. There is also debate as to whether the distinction is actually useful.220

214 Ibid.
216 FTB Water’s Edge, supra note 203.
217 Ibid.
iv. S-Corporations

So-called “S-Corporations: have been recognized in American federal tax law since 1958. Major reforms in 1986 “significantly enhanced the benefits of the S corporation election for corporations” and many states opted to recognize S-elections. In 1987, California began recognizing S-Corporations. As one state report explains:

“S corporations” are business entities that receive the limited liability benefits of a corporation, but are taxed like a partnership. That is, their income is “passed through” to shareholders on a pro-rata basis and taxed at each individual’s PIT rate rather than at the regular corporate rate. In 2004, there were more than 268,000 S corporation returns filed in California, generating $739 million in CT revenues. Nearly one-half of all California corporations are S corporations. Regarding their tax treatment, S corporations:

- Pay a reduced corporate income tax rate of 1.5 percent (3.5 percent for financial S corporations)
- Are not subject to the AMT but are subject to the same minimum tax requirements as other corporations.

Most California S corporations are small businesses which also have elected federal Subchapter S corporation status, in that they have no more than 75 shareholders and only one class of stock. However, there also are many very large S corporations in terms of assets, sales, and net income.

An analysis of California corporate tax revenues provides the following useful insight on S-Corporations:

S-corporations are taxed at a rate of 1.5 percent, rather than the 8.84 percent rate for C-corporations. Therefore, any shift of businesses from C-corporation to S-corporation status between 1988 and 2001 will have reduced the ratio of tax liability to [State Net Income] for California corporations. The number of S-corporations in California has grown from 50,964 in 1988 to 193,344 in 2001. As a result, by 2001, 38 percent of all corporations paying taxes in California were S-corporations. Positive SNI of S-corporations grew during these years from 12 percent to 31 percent of total positive SNI.

The exact revenue impact of S-corporations depends on how many S-corporations would still have chosen to be corporations if the S-corporation option were not available (rather than becoming a partnership, a sole proprietorship or an LLC).

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223 See FTB Water’s Edge, supra note 203.
224 See FTB Water’s Edge, supra note 203.
If all S-corporations had been C-corporations, California corporate tax liabilities would have increased by about $2.1 billion in 2001.\textsuperscript{225}

v. Research and development credit

Established in 1987, California’s Research and Development Credit (RDC) “is a tax program that allows taxpayers filing under the CT and, in most cases, the PIT to reduce their tax liabilities to the extent that they engage in particular types of R\&D activities.”\textsuperscript{226}

The following chart explains the RDC’s operation:\textsuperscript{227}

<table>
<thead>
<tr>
<th>Characteristics of California’s RDC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tax Credit Programs</strong></td>
</tr>
<tr>
<td>Research type</td>
</tr>
<tr>
<td>Taxpayer eligibility</td>
</tr>
<tr>
<td>Qualifying spending</td>
</tr>
<tr>
<td>Credit rate</td>
</tr>
<tr>
<td>Research entity</td>
</tr>
<tr>
<td>Special provisions</td>
</tr>
</tbody>
</table>

\textsuperscript{225} FTB Water’s Edge, supra note 203.
\textsuperscript{226} California Legislative Analyst’s Office, “An Overview of California’s Research and Development Tax Credit,” (November 2003), online: <perma.cc/HDG4-G3PT>.
\textsuperscript{227} Ibid.
a Except Subchapter S corporations.
b Base amount is R&D percentage of gross receipts in a base period adjusted for current gross revenues.
c Base-period amount is R&D percentage of gross receipts in a base period.

The particular credit rates for the study period are as follows:

<table>
<thead>
<tr>
<th>Tax Years Beginning</th>
<th>Qualified Research</th>
<th>Basic Research</th>
<th>Alternative Incremental</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 - Current</td>
<td>15%</td>
<td>24%</td>
<td>1.49%, 1.98%, 2.48%</td>
</tr>
<tr>
<td>1999</td>
<td>12%</td>
<td>24%</td>
<td>1.32%, 1.76%, 2.20%</td>
</tr>
<tr>
<td>1998</td>
<td>11%</td>
<td>24%</td>
<td>1.32%, 1.76%, 2.20%</td>
</tr>
<tr>
<td>1997</td>
<td>11%</td>
<td>24%</td>
<td>1.65%, 2.20%, 2.75%</td>
</tr>
<tr>
<td>1987 - 1996</td>
<td>8%</td>
<td>12%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Changes to the RDC program occurred during the study period, as did changes to the federal equivalent credit over the same period. As a result of the non-alignment of the two credits, businesses can receive a larger tax credit from the California RDC than from the federal REC because of the differing definitions of gross receipts, despite the fact that the federal credit rate is larger than California's credit rate. For example, a firm that does all of its R&D research in California, but sells its end product throughout the United States, will have a lower base amount under California's tax credit due to less gross receipts. California's method of calculating base amounts provides an incentive for nationwide firms to locate their R&D facilities in California.

Many of the State tax credits discussed above have analogous provisions in federal law. While a comparison year-by-year, provision-by-provision could be undertaken, it is not clear this would be helpful in determining features or impacts specific to Silicon Valley.

vi. Enterprise Zone Tax Initiative

As noted above, this measure applies only to a small portion of Silicon Valley in downtown San Jose. In this zone, employers were eligible for: hiring credits, longer Net Operating

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229 Ibid.
Loss carry-forwards, a SUT credit, accelerated depreciation, and lender interest deductions.\footnote{230}{See California Legislative Analyst’s Office, “California’s Enterprise Zone Programs,” (9 May 2013).} 

The hiring credit could be applied towards those who work in the Enterprise Zone [EZ], who spend “at least 90% of work time for the qualified employer on activities directly related to the conduct of a trade or business located within the EZ [and performing] at least 50% of the work for the qualified employer within the boundaries of the EZ.”\footnote{231}{Ibid.} As the tax guide for EZ filing explains:

The percentage of wages used to compute the credit depends on the number of years the employee works for the employer in the EZ. The applicable percentage begins at 50% and declines 10% for each year of employment. After the fifth year of employment, no credit can be generated. [...] 

The credit is based on the smaller of the following: The actual hourly rate paid or incurred by the employer for work performed by the employee during the taxable year [or] 150% of the minimum hourly wage established by the Industrial Welfare Commission.\footnote{232}{California Franchise Tax Board, “Enterprise Zone Business Booklet Form FTB 3805Z” (2011).}

With regard to Net Operating Losses (i.e. where expenses exceed income), entities conducting business within an EZ “may elect to carry forward 100% of its NOL for a 15-year period.”\footnote{233}{California Franchise Tax Board, “Internal Procedures Manual: Economic Development Areas Manual,” (Rev November 2007).}

The SUT credit allows corporations to “claim an annual credit equal to the sales or use tax paid or incurred to purchase $20 million of qualified property. Individuals who are S corporation shareholders may claim their allocable share of pass-through credit to the extent the S corporation paid or incurred sales or use tax to purchase $1 million of qualified property.”\footnote{234}{Roskam, State Sales Tax, supra note 223.} As the tax guide notes, qualified property is machinery or machinery parts used to:

- Manufacture, process, fabricate, or otherwise assemble a product
- Produce renewable energy resources
- Control air or water pollution

In addition, qualified property is:

- Data processing and communications equipment including, but not limited to, computers, computer-automated drafting systems, copy machines, telephone systems, and fax machines

\footnote{230}{See California Legislative Analyst’s Office, “California’s Enterprise Zone Programs,” (9 May 2013).}
\footnote{231}{Ibid.}
\footnote{232}{California Franchise Tax Board, “Enterprise Zone Business Booklet Form FTB 3805Z” (2011).}
\footnote{234}{Roskam, State Sales Tax, supra note 223.}
• Motion picture manufacturing equipment central to production and postproduction, including but not limited to, cameras, audio recorders, and digital image and sound processing equipment

The business must use the property exclusively within the boundaries of the EZ. The business must also purchase and place the qualified property in service after the EZ received its designation and before the EZ designation expires. The use tax paid or incurred on purchases of property outside California qualifies for the credit only if property of a comparable quality and price was not available in California at the time it was purchased.235

The Accelerated Depreciation Credit allowed business to treat “40% of qualified property as a business expense in the first year it is placed into service for a maximum deduction of $20,000 per year, whichever is smaller.”236

Finally, the lender interest deduction allowed for the deduction of net interest on business and mortgage loans from commercial or non-commercial sources where the loan was made to a trade or business located solely within the EZ, loan proceeds used only for trade or business activities within the EZ, and where the lender had no ownership interest in the borrower’s trade or business.237

3. Federal innovation policies

A November 2014 report on innovation from the Congressional Budget Office discusses policy options for American federal lawmakers to spur innovation—discussing, in particular, R&D tax credits, patent policy, loans and loan guarantees, regulatory tools, and immigration policy.238 As well, the report stresses the importance of ensuring a highly educated and skilled workforce, and the necessary tax treatment of private investment such as to stimulate innovation. Most of these areas are beyond the focus of this project as they have no direct tax implications. However, a few specific federal initiatives warrant mention.

a. Federal research and experimentation credit

The federal research and experimentation credit (REC) was introduced in 1981 and was set to expire in 1986 before being extended. It was “initially equal to 25 percent of qualified research and experimentation (R&E) expenses in excess of the average R&E expenses over

235 Ibid.
236 News and Views for the California Enterprise Zones, Shafter Enterprise Zone (5 November 2008), online: C&I Tax Consultants <canditax.com/blog/?tag=policy&paged=11>.
the previous three years.”239 The credit has been altered and extended a number of times, but has never been made permanent.

As an example of changes to this program during the study period:

Responding to the vocal critiques by several economists and others, the 1989 legislation changed the definition of the base level of R&D spending to a fixed quantity defined as the average R&D intensity for the five years between 1984 and 1989 times the current year sales. In the case of startups, a special statutory R&D intensity is used, equal to 3 percent. Also in 1989, the effective credit rate was reduced from 20% to about 13.5% by a provision which required the recapture of the expense deduction for R&D expense allowed under section 174 of the Internal Revenue Code.

In 1996, the Small Business Jobs Protection Act added an alternative incremental credit (AIC) for R&D, which was designed to compensate firms with high R&D spending that were denied the credit due to rapidly growing sales; this profile is typical of a high technology startup.240

Curiously, Canada’s Department of Finance studied the American federal R&D credit system and made observations in 1997 that will help in conducting a comparative analysis.241

b. Federal technology transfer

The Stevenson-Wydler Technology Innovation Act of 1980 made it the responsibility of the Federal government to “ensure ‘full use of the results of the Nation’s Federal investment in research and development,’ and mandates that, where appropriate, technology be transferred to state and local governments and the private sector.”242

As a Congressional Research Service report from 2012 explains:

Over the past 30 or more years, the Congress has enacted various laws designed to facilitate cooperative R&D between and among government, industry, and academia. These laws include (but are not limited to) tax credits for industrial payments to universities for the performance of R&D, amendments to the antitrust laws as they

239 Ibid.
241 The relevant section will not be reproduced here owing to its length, but it can be found in Finance Canada’s publication “Why and How Governments Support Research and Development”, online: Department of Finance and Revenue Canada (1998), online: <www.collectionscanada.gc.ca/eppp-archive/100/200/301/finance/other_pubs/html/fedsys/resdev/why3_e.html##us>.
pertain to cooperative research and joint manufacturing, changes to government patent policies, and improved technology transfer from federal laboratories to the private sector. The intent behind these legislative initiatives is to encourage collaborative ventures and thereby reduce the risks and costs associated with R&D as well as permit work to be undertaken that crosses traditional boundaries of expertise and experience leading to the development of new technologies and manufacturing processes for the marketplace.243

The specifics of the Federal technology transfer changed dramatically over time, as documented in the above-cited report. While the relevance to innovation should be facially evident, the particular importance to Silicon Valley is highlighted by the presence of Stanford University. As one report puts it, “[m]any narratives exist regarding the origins of Silicon Valley, some of which diverge or even conflict with each other. However, in virtually every account, Stanford University occupies a central role.”244

c. Specific small business focus

As a corollary initiative to the foregoing, the Small Business Innovation Development Act of 1982:

created Small Business Innovation Research (SBIR) programs within the major federal research and development (R&D) agencies. This effort was intended to increase participation of small innovative companies in federally funded R&D. Government agencies with extramural R&D budgets of $100 million or more are required to set aside a portion of these funds to support research and development in small businesses through the SBIR program.

A set percentage of that agency’s extramural research and development budget — originally at 1.25%, now at 2.5% — is to be used to support mission-related work in small companies. To be eligible to compete in the program, a company must be independently owned and operated; not dominant in the field of research proposed; for profit; the employer of 500 or fewer people; the primary employer of the principal investigator; and at least 51% owned by one or more U.S. citizens or lawfully admitted permanent resident aliens. …

Agency SBIR efforts involve a three-phase activity. In the first phase, awards up to $100,000 (for six months) are provided to evaluate a concept’s scientific or technical merit and feasibility. The project must be of interest to and coincide with the mission of the supporting organization. Projects that demonstrate potential after the initial endeavor may compete for Phase II awards of up to $750,000 (lasting one-two years) to perform the principal R&D. Phase III funding, directed at the commercialization of the product or process, is expected to be generated in the private sector. Federal dollars, but not SBIR funds, may be used if the government perceives that the final

243 Ibid.
technology or technique will meet public needs. P.L. 102-564 directed agencies to weigh commercial potential as an additional factor in evaluating SBIR proposals.\textsuperscript{245}

A comprehensive report on SBIR and STTR (Small Business Technology Transfer)’s impact on Silicon Valley was not located, but examples of Silicon Valley companies benefitting from it were found.\textsuperscript{246}

d. Role and impact of the federal government

A Congressional Budget Office (CBO) report from 1984 explains that “[t]he substantial government subsidies provided for research and development are justified on the grounds that the government should support R&D projects that are socially desirable but that are unlikely to be funded by private firms,”\textsuperscript{247} and that half of R&D in the United States is government funded.

In 1999, a CBO report focused on the information technology sector found that:

Private industry provided the lion’s share of funding for research and development (R&D) in the information technology sector. Funds from venture capital firms ran a distant second, and the federal government contributed the smallest amount. Those sources tend to spend their money on different things, however. Private companies and venture capitalists focus more of their spending on short-term development of products. Venture capital funding also covers such non-R&D expenses as capital investment and marketing. Federal funding, by contrast, is more concentrated in long-term basic research. Consequently, despite its small size, federal funding may have a disproportionately large effect on the direction that information technology takes in the long run.\textsuperscript{248}

For the purposes of our project, it will be important to determine which specific sectors are at issue as the relative importance of federal investment is sector-dependent and changed over time during the study period.

Additionally, much of the innovation investment in the United States at the federal level is for defence purposes.\textsuperscript{249} It may be necessary to consider those Silicon Valley activities with

\begin{footnotes}
\textsuperscript{246} See e.g. SBIR Phase II: Nanostructured Composite Transparent Electrodes for Touch Panels – company in Sunnyvale, (2013), online: SBIR/STTR, <sbir.gov/sbirsearch/detail/683020>.
\end{footnotes}
application in the defence sphere separately, as there are particular federal incentives in this regard.

As a further area of study, employee benefits seemingly unique to Silicon Valley are permitted under federal law. One telling law journal article on this topic is entitled “Five-Star Exclusion: Modern Silicon Valley Companies Are Pushing the Limits of Section 119 by Providing Tax-Free Meals to Employees,” wherein the author ultimately concludes: “If the Silicon Valley companies deserve this type of tax advantage, Congress should specifically create it.”

4. State innovation in the absence of federal efforts

California's investment in innovation cannot be understated—indeed, one author notes: “For many years, states have attempted to provide incentives for technological innovation within their respective states; however, the dollar amounts of those incentive programs have not come close to California's recent investment in research.”

From the literature reviewed, one example of state innovation comes to the forefront—the adoption of Proposition 71 in 2004:

California adopted specific incentives for biotech companies when state-wide Proposition 71 in support of state funding for stem-cell research was approved by voters. While California has had a significant biotech presence since the inception of the industry in the mid-1970’s, the timing of the stem-cell proposition was largely a reflection of idiosyncratic political factors, especially the imposition of constraints on the use of federal funds for stem-cell research by the G.W. Bush administration.

As one analysis notes:

California voters were persuaded to vote for Proposition 71 by arguments that the state would receive a large return on its investment in direct revenue, jobs, and lower healthcare costs through the development and commercialization of new products and services from Proposition 71 research.

Whether these goals have been realized is beyond our scope, but scholars have raised questions about the impact of Proposition 71, particularly from an intellectual property

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250 Austin L Lomax, “Five-Star Exclusion: Modern Silicon Valley Companies Are Pushing the Limits of Section 119 by Providing Tax-Free Meals to Employees” (2014) 71 Wash & Lee L Rev 2077.
251 Ibid at 2113.
perspective regarding state protections in the presence of federal laws surrounding patents arising from public research.\textsuperscript{255}

Various additional state programs exist to invest in very specific types of innovation, such as green technology; \textsuperscript{256} however, the state also leads the nation in foreign direct investment.\textsuperscript{257} Trying to figure out the impact of state or foreign investment on innovation will require looking at specific industries and case studies.

5. \textit{How did Silicon Valley happen?}

Hardly any analysis of Silicon Valley’s historical evolution discusses tax as an important element driving innovation in the region, though it is unclear if a comprehensive study has been undertaken. One article that does mention tax in relation to Silicon Valley’s origins does so only in the context of tax subsidies for suburban home construction that enabled the rise of some Silicon Valley communities in the 1960s.\textsuperscript{258} Tellingly, a recent (2013) law journal article entitled “How Law Made Silicon Valley” mentions taxes only in passing (“Would e-commerce be saddled with multiple tax obligations from the thousands of taxing jurisdictions across the country?”), focusing instead on the relationship between boundary-breaking innovating companies and subsequent efforts by lawmakers to respond to their activities—with a particular focus on free speech law that enabled much of the content available on the internet today.\textsuperscript{259}

The research all points to a few key elements that converged to form Silicon Valley. First was the presence of Stanford University and its focus on technology.\textsuperscript{260} Second—similarly and relatedly—was that “Silicon Valley developed a supportive regional economy in which university efforts could become fertile.”\textsuperscript{261} Third is the incredible amount of venture capital in the region, even prior to the dot-com bubble.\textsuperscript{262} Fourth is the clusters that formed, as mentioned above. As one author notes, “[a]n attempt to replicate Silicon Valley is unlikely to succeed unless dense networks among actors that promote co-operation and accelerate

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{257} See \textit{ibid}.
\item \textsuperscript{258} “Silicon Valley boom eludes many, drives income gap” 6 March 2014. Associated Press. Republished by CNBC online: <http://www.cnbc.com/id/101471208#>.
\item \textsuperscript{259} Chander, \textit{supra} note 28.
\item \textsuperscript{261} H Mayer, “What is the Role of the University in Creating a High-Technology Region?” (2007) 14:3 J of Urban Technology 33. See also Cullen Julie Berry \& Roger H Gordon \textit{How Do Taxes Affect Entrepreneurial Activity?: A Comparison of U.S. and Swedish Law} (Mimeo: UC Santa Barbara, 2006).
\item \textsuperscript{262} See JW Bartlett, “Can Silicon Valley Be Cloned Around the Country...The World? The Metrics” (2006) 1:2 Entrepreneurial Bus. LJ 257 at 258–263.
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technology commercialisation are developed.” Other factors are important as well, such as a significant investment in military research, strong antitrust laws, and conditions or cultural behaviours that encourage the creation of start-ups. Ultimately, it appears that the necessary ingredients for replicating Silicon Valley are human capital and financial capital. In regions whose economies do not center on the “tech industry”, the latter is difficult to find, and some suggest that perhaps the rise of angel investors will turn the tide in the many (thus far unsuccessful) efforts to clone Silicon Valley.

It appears that tax, if anything, discourages businesses from establishing themselves in Silicon Valley today given that California is home to both the worst tax climate for business and the fourth highest income tax in the nation (for 2014, according to the Tax Foundation). Instead, clusters allow for technology “spillover” and a unique mix of competitiveness and collaboration that some studies describe in terms of Silicon Valley “culture”. While this would suggest that those interested in duplicating Silicon Valley should put in place fiscal measures that encourage clusters and spillover, finding specific financial measures within Silicon Valley designed for these ends proves elusive.

As for the origins of Silicon Valley, Margaret O’Mara writes:

Silicon Valley resulted from a combination of powerful local institutions, savvy real estate development choices, immense capital investment by the Cold War military-industrial complex, and the simple good fortune of being on the right side of national economic and demographic trends. The repeated failures of other places to replicate that success - much less seize Silicon Valley's high-tech mantle - attest to the trickiness of getting this formula right.

The lessons of the tech industry's Cold War-era infancy still hold true today. […] You need lots of money that can be spent (somewhat) recklessly. […] You need research institutions with talent, resources, and political clout. […] You need to be a place that attracts talented people and retains the ones you've already got. Silicon Valley grew because it was a place with qualities that attracted people who had the education, economic resources, and social advantages to live anywhere they chose. It was located in an economically booming state in a prosperous nation, within commuting distance of a major city, but with open land available to build suburban houses, research parks, and highways. It has been able to create an environment that allows white-collar high-tech workers to live, work, and network in something of a self-contained bubble. […]

263 J Wonglimpiyarat, supra note 36.
264 See Margaret O’Mara, “We Are Not the ‘Next Silicon Valley’” (18 February 2008), online: Crosscut <crosscut.com/2008/02/we-are-not-next-silicon-valley/> [O’Mara, “We Are Not the ‘Next Silicon Valley’”].
You need to build on existing strengths, not follow the next big thing. This is another one that many Silicon Valley wannabes get wrong. As the eminent urban scholar John Friedmann puts it in his book *The Wealth of Cities*, "cities are not containers." The perpetual pursuit for outside capital - and transplanted ideas and innovations - is a far less productive strategy than building on core competencies. Thirty and 40 years ago, regions around the world were trying to emulate Silicon Valley by building semiconductors; today, nearly as many places are fixated on becoming the next biotech hub or the next capital of nanotechnology. Simple rules of economics dictate that few of these aspirants will meet their goals.

Silicon Valley succeeded not because of the "silicon" but because it was doing something that complemented existing regional strengths. The area had been a hotbed of amateur tinkering with radio technology since the 1910s; faculty and students at Stanford had been working on transistor technology for a generation. […] The fact is, there really never will be another Silicon Valley. As one of the best recent articles on this topic observed, the Valley remains a truly unique ecosystem for technological innovation, with specialized niches and decades-old interpersonal networks. However, it's no longer the only game in town. […]

In this worldwide network, the most vital innovation centers are those that know their own strengths, provide exciting and dynamic environments for people and firms, and have the resources and institutions that provide a home for new and exciting ideas.270

While that passage does not shed light on the tax conditions that allowed Silicon Valley to flourish, it does provide insight as to why the tax conditions may not have been relevant to Silicon Valley and arguably remain irrelevant given that innovation continues despite California’s high taxes. Innovation, while encouraged by tax policy, cannot in and of itself be sparked by tax policy. Far more important to innovation than the money invested or later deducted are the people involved, the educational institutions supporting them, and the clustering of similar businesses in a given sector.

### IV. NON-COMPETE CLAUSES

In all examined jurisdictions, courts prohibit the use of NCCs for the purpose of restricting the mobility of know-how. This observation contradicts the theses of Ronald J. Gilson and Anna L. Saxenian, who both argue that, in the absence of NCCs in California, know-how disseminated widely through enhanced labour mobility, which in turn played a key role in the formation of Silicon Valley.271 The effect of legislation and case law on contractual practices and on labour mobility in creative districts plays a large role in the way NCCs hold weight within and across jurisdictions. Notably, even though NCCs are regulated in the interest of employees and employers, the fact that they appear in contracts can strongly influence the behaviour of employees. Firms have a real interest in controlling the labour market in their sector of activity, notably to control know-how and fluctuations in...

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270 See O’Mara, “We Are Not the ‘Next Silicon Valley’”, *supra* note 269.
compensation. As shown by the recent antitrust procedure and class action against Silicon Valley firms Apple, Intel, Adobe Systems, Google, Intuit, and Pixar, firms may protect this interest through both legal and illegal arrangements.

As a result, legislation applicable to NCCs only plays a symbolic role, and the effect of case law remains limited to particular cases rather than whole industries. Firms can resort to NCCs as an effective mechanism for curtailing employees’ know-how within an industry, even if they risk invalidation, if only to dissuade employees from offering their services to competitors or striking out on their own. The current regulation of NCCs can inadvertently help employers direct such clauses toward such illicit goals of curtailing know-how within an industry. Indeed, courts assess the validity of NCCs on a case-by-case basis, and according to broad principles rather than straightforward and strict guidelines. Even with the knowledge that courts will tend to favour the invalidation of problematic NCCs, employees will likely have a hard time determining with certainty whether their own NCC is valid unless they seek legal counsel or assume litigation costs, and may choose instead to remain within the firm. Finally, even if an employer resorts to an NCC to protect legitimate interests within the limits set out by case law, the NCC can still have a corollary impact on the circulation of know-how.

In recent years, courts in some jurisdictions have slightly adjusted the case law on NCCs following developments in knowledge industries. It may still be too early to predict the extent of these adjustments, but two trends have emerged that could impact the circulation of know-how. First, courts have begun to validate NCCs that impose wider geographic restrictions due to the highly specialized and global nature of employees’ activities in knowledge industries. Conversely, courts in some cases have also recognized that nascent and standing knowledge industries may hold special national interests, economic and otherwise, reserving for themselves the possibility to strike down otherwise valid NCCs on the grounds of public interest.

Finally, the dynamics between knowledge and NCCs could attract more attention from scholarship. As we already mentioned, courts formally prohibit firms from using NCCs as a way of appropriating an employee’s know-how—i.e. implicit knowledge—for themselves. NCCs can only protect the “legitimate interests” of employers, most often articulated as objectified, particular, and proprietary knowledge—i.e. explicit knowledge—such as trade secrets and privileged information. While it is true that knowledge can always have some irreducible implicit component, the explicit and implicit qualities of knowledge are not static: implicit knowledge can, to a degree, become explicit knowledge. For example, Dan L. Burk argues that the process of drafting out the

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specifications of an invention and its use in the hope of securing a patent requires, in most cases, the creators of the invention to make explicit an important portion of what was, until then, implicit knowledge.\textsuperscript{273}

Beyond intellectual property, and specifically with regards to know-how, an employee may develop familiarity with his or her employer’s practices (i.e. contextual know-how) and establish a good relationship with the firm’s clients (i.e. relational know-how). To legally prevent a competitor from benefiting from such knowledge with the use of an NCC, an employer would need to make such know-how as explicit, objective, and particular as possible. With regards to the previous examples, this could mean transforming an intuitive pricing strategy into a specific formula, and reducing personal relationships to a client list. Such a strategy could be implemented at any moment in an employer-employee relationship, from the drafting of the employment contract to eventual litigation over the sensitive knowledge. Making implicit knowledge explicit, and therefore appropriable, potentially constitutes an important strategy for firms to capitalize on the employee’s knowledge; one encouraged by both intellectual property rights and the regulation of NCCs, and deserving of scholarly attention.\textsuperscript{274}

A. Quebec

In Quebec, NCCs in employment contracts are valid, though significant restrictions apply.\textsuperscript{275} This is because, as noted by Nathalie-Anne Béliveau and Sebastien Lebel, “[l]a liberté de travailler et de gagner sa vie sont des valeurs fondamentales véhiculées au sein de notre société. Les clauses de non-concurrence portant atteinte à de telles valeurs, elles ont généralement été envisagées sévèrement par les tribunaux.”\textsuperscript{276} Quebec jurisprudence thus holds that the assessment of NCCs is a process of balancing competing interests—freedom of contract on the one hand, and mobility of labour on the other.\textsuperscript{277}


\textsuperscript{274} More specifically, the case of special training an employee receives in the course of his or her employment, which can be protected by an NCC in some jurisdictions, could prove to be of interest as it appears along the spectrum of implicit and explicit knowledge, rather than belonging squarely with one or the other.

\textsuperscript{275} See Payette v Guay, Inc, 2013 SCC 45, 3 SCR 95 at para 1 (“Restrictive covenants relating to employment and competition have been an integral part of the civil law for many years now... In Quebec, both the courts and the legislature have, after acknowledging the underlying rationale for such covenants, placed limits on them”).


\textsuperscript{277} See 9024-1027 Québec Inc v Drainville, 2008 QCCS 2984 at para 49: “L’étude de la validité d'une stipulation de non-concurrence implique la recherche d'une médiane entre deux grands principes diamétralement opposés soit: La liberté individuelle et le droit que possède chaque personne de gagner sa vie et d'être mobile sur le marché du travail; et la liberté contractuelle et le droit de l'employeur de protéger les intérêts de son entreprise.”
Drawing from a similar line of jurisprudence as Canadian common law, Quebec civil law has enshrined its approach to NCCs in employment contracts in articles 2089 and 2095 of the Civil Code of Quebec:

2089. The parties may stipulate in writing and in express terms that, even after the termination of the contract, the employee may neither compete with his employer nor participate in any capacity whatsoever in an enterprise which would compete with him.

However, the stipulation shall be limited as to time, place and type of employment, to what is necessary for the protection of the legitimate interests of the employer.

The burden of proof that the stipulation is valid is on the employer.

…

2095. An employer may not avail himself of a stipulation of non-competition if he has resiliated the contract without a serious reason or if he has himself given the employee such a reason for resiliating the contract.

Quebec doctrine and jurisprudence have identified several components of this framework. First, the restriction must be in writing. Second, and along similar lines, it must be express. Both components are essential because “[i]l est en effet primordial que le salarié puisse en tout temps connaître le contenu exact de son obligation de non-concurrence.”

Third, as in common law Canadian jurisdictions, the restriction must be limited in time, place, and activity to only that which is necessary. These three features, each of which will be described below, must be assessed in relation to each other. The employer must justify “chacun de ces éléments afin que la clause ne soit pas considérée comme purement arbitraire.” A broad NCC can be reasonable, for example, if it exists in conjunction with extremely limited temporal restrictions and a precisely protected activity, particularly in the context of a knowledge-based industry.


279 Béliveau & Lebel, supra note 281 at 143.

280 Ibid at 139.

281 Note that while the language of reasonability does not appear in article 2089 of the CCQ, it does appear in the jurisprudence that applies it. See e.g. Groupe Soteck Inc v Mihalache, 2013 QCSS 2993 at para 25; Ubisoft Divertissements v Tremblay, 2013 QCSS 2475 at para 40.

282 See Béliveau & Lebel, supra note 281 at 144.

283 Ibid.

While not a hard rule, jurists and judges agree that two years functions as a “durée maximale quasi absolue.” Generally, restrictions of up to one year are not found unreasonable, though judges will look critically at limitations that are either longer than the period of employment or “plus longue que le cycle de vente ou de développement des produits.”

Place. Any geographic restriction in place must be limited to those areas where the business actually engaged the employee’s particular activities (as opposed to anywhere that the business is engaged in general). Quebec judges have refused to enforce NCCs on the grounds that they do not identify a precise area to which the restriction applies. That said, “certains jugements rendus ont effectivement déjà reconnu la validité de clauses de non-concurrence ne comportant aucune limite territoriale.” Furthermore, recent jurisprudence involving NCCs in “knowledge industries” appears to permit larger geographic restrictions due to their highly specialized and global nature.

Activity. Again, courts look unfavourably on clauses that lack precision or restrict more than is necessary. Clauses that restrict “similar” activities and responsibilities, for example, have been struck down, as have clauses that prohibit employment with a competitor no matter the position.

Fourth, the interests that the employer is seeking to protect must be legitimate. Legitimate interests should be specific and demonstrably justifiable. They do not include general knowledge: “Les seuls renseignements pouvant constituer un intérêt légitime à protéger par le biais d’une clause de non-concurrence sont des renseignements dits objectifs et particuliers et non pas les connaissances générales, l'expérience et/ou les habilités qu’a pu acquérir la personne liée à l’engagement par suite de ses relations avec l'entreprise.”

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286 See Tremblay & Laurier, supra note 290 at 7.
288 See Tremblay & Laurier, supra note 290 at 13.
289 See Ikon Solutions de Bureau Inc v Docu-Plus Conseillers en Gestion de Documents Inc, 2009 QCCS 123 (finding that a 100 kilometre radius around “l’île de Montréal” was insufficiently precise since no central point was identified).
290 Tremblay & Laurier, supra note 290 at 18.
291 See ibid at 2.
292 See ibid at 11.
293 Plamondon, supra note 293 at 10.
Fifth, the burden is on the employer to demonstrate that the clause is valid.295 Adding to this, an employer cannot enforce an NCC if they either terminated the employment contract without good cause or gave the employee good cause to do so herself.296

Sixth, since this regime is founded on public order, employers and employees cannot contract out of its restrictions.297 Furthermore, if a clause is invalid, a judge will strike it down in its entirety—they cannot, even if the contract permits them, modify the clause and bring it within the confines of reasonability.298

Finally, both jurisprudence and doctrine have identified additional related factors that may play a role. These include whether the employee was satisfactorily compensated for the restriction; whether the employee had a “rôle-clé” in the business; the size of the business; and the nature of the market in which the business and its competitors are engaged.299 These also include the type of contract in which the NCC was concluded. The 2015 case, Pelletier c. Nantel,300 differentiated between NCCs in employment contracts and contracts of sale of a business, stating that an NCC in a contract of sale of a business must be interpreted less restrictively than one in an employment contract.301 This is because courts are more concerned with restrictions on employment than they are with restrictions on commerce.302

Specifically, as mentioned above, the particular nature of the knowledge industry stands out. In Ubisoft Divertissements v. Tremblay,303 for example, Justice Mongeon granted Ubisoft, a video game company, a preliminary injunction enforcing an NCC that prevented their former employee, Martin Tremblay, from starting work at a competitor. The clause in question barred Tremblay from working anywhere in North America—even in California, where NCCs are unenforceable. In finding this sizable geographic scope reasonable, Justice Mongeon relied on previous jurisprudence from the Quebec Court of Appeal on essentially the same clause.304 It is also worth noting that the clause was enforced even though Tremblay was not involved in the technical production of Ubisoft games. In fact, his managerial, rather than specialized, experience worked against him: “D’abord, Tremblay n’est pas un créateur ou un réalisateur de jeux vidéos. C’est un administrateur et un gestionnaire d’entreprise. Il peut, s’il le veut, fort de son expérience passée et de sa réputation, trouver un emploi dans des secteurs non-concurrentiels à

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295 See Béliveau & Lebel, supra note 281 at 121.
296 See art 2095 CCQ.
297 See Plamondon, supra note 281 at 14.
298 See ibid at 7.
299 Béliveau & Lebel, supra note 281 at 145.
300 Pelletier c Nantel, 2015 QCCQ 6708 (CanLII) at para 25.
301 Ibid.
303 2006 QCCS 2475 [Ubisoft].
304 See Ubi Soft Divertissements Inc v Champagne-Pelland, 2003 CanLII 13559 (QC CA). Interestingly, Tremblay, the respondent in the latter case, was one of the individuals who, in the earlier case, fought successfully to have the clause enforced against his former employees. This was noticed by the court.
Ubisoft.” Because Tremblay could work in another industry quite easily, the clause did not threaten his ability to work at all. Similarly to other jurisdictions, Quebec protects confidential information which may be held by employees separately from the regime governing NCCs. Article 2088 of the Civil Code of Quebec outlines an obligation of loyalty which requires former employees to keep confidential certain information even after they have left an employer. The jurisprudence has identified client lists and information about clients’ preferences as examples of the kinds of confidential information protected by this obligation. There is, however, some debate as to whether this provision is supplementary or of public order. The jurisprudence has discussed the role played by the obligation of loyalty where NCCs do not exist. In Éditions CEC Inc. c. Hough Justice Lefebvre found that, in the absence of an NCC, the inevitable disclosure doctrine (the obligation of loyalty) could not restrain a former employee from working for a competitor. Rather, it could only prevent the former employee from sharing protected information with her new employer. Similarly, in Graphiques Matrox Inc. c. nVidia Corp., the Quebec Superior Court found that the obligation of loyalty could not prevent third party prospective employers from communicating with former employees of the plaintiff company: “The court considered that the non-competition agreement, if it exists and if it is valid, only binds the parties that have signed it and not third parties.” However, there has been some debate as to whether the obligation of loyalty provides enough protection to employers to completely supplant NCCs as this protects only information and not the former employer’s clients or market.

B. Canadian common law provinces

The judicial presumption in Canadian common law is that NCCs are unenforceable. This is because, as the Supreme Court has noted in Elsley v. J.G. Collins, the leading case on

305 Ubisoft, supra note 309 at para 46.
306 Ibid.
308 2008 QCCS 4526 (CanLII) Lefebvre J.
309 Ibid at para 54.
310 [2001] JQ no 3344 [Matrox].
311 Ibid. See also Hughes G Richard, “Non-Competition Clause: Less is Better Than More” (Montreal: ROBIC, 2001) at 2, online: <www.robic.ca/admin/pdf/534/173.11.pdf> for a comment on the decision, focussing on the tension between the obligation of loyalty and the constitutional protection of freedom of speech.
312 Richard, supra note 317 at 2.
313 See generally Bonhomme, supra note 311.
315 [1987] 2 SCR 916, 36 CPR (2d) 65 [Elsley].
the subject of NCCs, “[t]here is an important public interest in discouraging restraints on trade, and maintaining free and open competition unencumbered by the fetters of restrictive covenants.” That said, the Supreme Court has also recognized that “the courts have been disinclined to restrict the right to contract, particularly when that right has been exercised by knowledgeable persons of equal bargaining power.”

As a result, courts will uphold an NCC if it is found to be reasonable. The reasonableness test, first formulated in *Elsley*, assesses the following conditions:

1) *Whether the employer has a legitimate proprietary interest that is entitled to protection*: Legitimate proprietary interests “include trade secrets, connections and confidential information including customer lists and goodwill but do not include skill and knowledge acquired during the course of employment.”

2) *Whether the restraint is excessive in terms of duration, geographic scope, or targeted activity*: If a restraint excludes a former employee from an area that is larger than necessary to protect the employer (for example, covering markets in which the employer does not compete), the clause is excessive in geographic scope. If a restraint lasts too long, the clause is excessive in duration. If a restraint prohibits the employee from engaging in activities unrelated to protecting the employer’s interest, the clause is excessive. In all cases, Canadian courts will not read the clause down to make it reasonable. Note too that the Supreme Court has stated that “for a determination of reasonableness to be made, the terms of the restrictive covenant must be unambiguous.” As a result, any ambiguities in the clause are interpreted *contra proferentem*.

3) *Whether the restraint is against competition generally*: If a non-solicitation or confidentiality clause would achieve the same protection with less restriction on the employee, then the restraint is against competition, rather than for protection, and will not be enforced.

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316 *Ibid* at 923.
317 *Ibid*.
318 Note that, since it was not strictly outlined in *Elsley*, different authors and courts have outlined the test in slightly different ways. This outline is an attempt to synthesize the approaches of the authors, and judgments cited herein.
320 See Dean A Crawford, “Protecting Employers From the Departing Employee: Alternatives to the Use of Restrictive Covenants” (2006) 64 Advocate 79 at 80.
321 See *ibid* where Crawford suggests that “two years is considered the outside limit.”
322 See *ibid*.
324 *Shafron, supra* note 283 at para 27.
326 See *ibid* at 238.
The burden is of demonstrating reasonableness is on the party seeking to enforce the NCC. If they succeed, the court may still declare the clause unenforceable if the opposing party demonstrates that it is contrary to the public interest. A clause is against the public interest if, for example, it results in a monopoly, or “ deprive[s] the nation or a region of an essential industry, an important source of wealth and employment or vital technology.”

Since the reasonableness test for NCCs requires “an overall assessment, of the clause, the agreement within which it is found, and all of the surrounding circumstances,” setting firm parameters on what is or is not reasonable without regard to the particularities of the case, is difficult. For this reason, practitioners writing on the subject are cautious in offering generalities about NCCs and are pessimistic about their chances. Dean Crawford posits that “courts will enforce a non-compete agreement only where the departing employee acquired a close personal connection or influence over the clients or customers of the business such that they inevitably would follow the individual to the competing business.” Lang & Hogg suggest that “[these types of covenants are rarely upheld as the courts find them to constitute a restraint on trade that unnecessarily restricts not only former employees but also third parties who are not subject to any contractual duty.”

Finally, even in the absence of an NCC, departing employees have a duty to their former employers that limits their ability to use confidential information. “The former employee is free to compete with his ex-employer, either directly by operating his own business, or as an employee of another employer, so long as he does not disclose, or make use of, confidential information belonging to the employer.” There is, then, a second layer of automatic protection for employers. Many have noted, though, that the evidentiary burdens involved in demonstrating the use of confidential information are considerably more onerous that the evidentiary burdens involved in demonstrating the violation of an NCC, and so employers continue to prefer NCCs.

C. Israel

In Israel, the enactment of the Basic Law: Freedom of Occupation in 1994, significantly changed the state of the law regarding contractual post-employment restrictions that can

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327 See ibid at 233.
328 Tank Lining Corp v Dunlop Industrial Ltd, (1982) 40 OR (2d) 219, 140 DLR (3d) 659.
329 Ibid citing Elsley, supra note 321 at 924.
330 See e.g. Sutton & Picone, supra note 321 at 15 (“drafting a non-compete clause can be a minefield”), Crawford, supra note 326 at 85 (“the difficulty and unpredictability of enforcement… limit this device’s utility”).
331 Crawford, supra note 326 at 80.
332 Lang & Hogg, supra note 325 at 236.
be imposed by former employers.\textsuperscript{336} Generally, it has infused what was previously a contract law analysis with constitutional norms and values.\textsuperscript{337} The courts have since contrasted the employee’s constitutional right of freedom of occupation against freedom of contract and the fundamental principle of \textit{pacta sunt servanda}. Yet, in assessing whether or not an NCC should be invalidated, Israeli courts also consider questions of freedom of competition; public policy, including economic factors; innovation; and circulation of knowledge and skills in a free market society.\textsuperscript{338}

The starting point for the legal analysis of the lawfulness of an NCC is found in article 30 of the \textit{Contracts (General Part) Law 5733-1973}, which establishes that: “a contract whose execution, content, or purpose are illegal, immoral or against public policy—is void.” The question of whether or not an NCC should be declared lawful and therefore be enforced depends on the court’s determination of what constitutes “public policy” under the circumstances. An NCC which restricts the employee’s freedom of occupation post-employment for purposes other than protecting a “legitimate interest” or is otherwise unreasonable is against public policy and is therefore void.

The leading case on this matter is the landmark ruling of the Israeli High Court of Justice in \textit{AES Systems et al. v. Moshe Sa’ar et al.},\textsuperscript{339} which confirmed the National Labour Court’s approach held in \textit{Promer and Checkpoint Software Technologies Ltd. v. Redguard Ltd.}\textsuperscript{340} The Court’s ruling in \textit{Sa’ar} is considered by many a revolutionary judgment that tipped the scales in a conclusive manner in favour of the employee’s freedom of occupation and the free circulation of knowledge and skills, especially in the IT sector.\textsuperscript{341} Gabriela Shalev, for example, has noted that, since this ruling, most NCCs brought before the former Chief Justice Aharon Barak, who wrote the \textit{Sa’ar} decision and developed the new doctrine, have been invalidated, demonstrating a preference for freedom of occupation over the sanctity of contract.\textsuperscript{342} Due to the great importance of this ruling and the way in which Chief Justice Barak develops and elaborates the legal framework regarding NCCs, it is worth going into some detail.

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\textsuperscript{336} Gabriela Shalev, \textit{Contract Law-General Part: Towards Codification of the Civil Law} [in Hebrew:], at 497–546, and see especially at 530 [Shalev].

\textsuperscript{337} \textit{Ibid.}


\textsuperscript{339} CA 6601/96, HCJ AES Systems et al. v. Moshe Sá’ar et al., PD 54 (3) 850 (given on 28.8.00), [Sa’ar].

\textsuperscript{340} The original ruling is in Hebrew, however an official English translation can be found on the Israeli High Court of Justice website, online: <elyon1.court.gov.il/eng/home/index.html>.

\textsuperscript{341} \textquote{Ofer Ravid, “From Limitation of Occupation to Unlimited Occupation”, (2002), (in Hebrew), at 497–503.}

\textsuperscript{342} Shalev, \textit{supra} note 342, at 522–24.
1. The Sa’ar case: The legitimate interests and proportionality tests

The first appellant, AES Systems, developed independent computer word processing systems. The second appellant, Bamberger Rosenheim Ltd., was the exclusive distributor of the systems in Israel and provided its customers with maintenance and repair services. The first respondent, Moshe Sa’ar, was employed by Bamberger Rosenheim Ltd. as a computer technician and had signed an NCC with his employer restricting him from working in anything related to the marketing and repair of Linear systems. After twenty-eight months, Sa’ar was fired and started his own computer business. He advertised his services as a repair and maintenance technician, including of Linear systems. The newspaper ad that he had published led to a contract with the state-owned Rafael Armament Development Authority, the second respondent. This contract included services for Linear systems previously provided for by the former employer.

The appeal before the Israeli High Court of Justice deals with whether or not the obligation of the respondent not to compete with his former employer is lawful (the District Court found it to be a valid and enforceable contract and ordered Sa’ar to pay damages to the appellant).

In this elaborated and detailed analysis, Chief Justice Barak develops the doctrine of legitimate interests and proportionality to determine the lawfulness of an NCC. He concludes that, in this case, the NCC was not lawful because it violated public policy and was therefore void. Before getting into the analysis itself, it is worth noting that this Israeli High Court of Justice ruling was much anticipated following a previous revolutionary judgment rendered by the National Labour Court a year earlier in Checkpoint. In that case, the National Labour Court adopted a new approach and determined that any contractual restrictions on an employee’s freedom of occupation must be assessed not only under contract law, but the analysis must also be informed by constitutional values and protections. The Israeli High Court of Justice, led by Chief Justice Barak, confirmed this approach.

a. The analytical framework: Determining “public policy” and balancing conflicting interests

i. Determining what “public policy” means under the circumstances

As mentioned above, the starting point for examining whether an NCC is lawful and the notion of public policy is found in section 30 of the Contracts Law:

“Public policy” reflects the fundamental approaches of Israeli society as to the appropriate level of behavior in contractual relationships. It expresses the position of Israeli law as to what is permitted and what is prohibited in contractual relationships…

343 Sa’ar, supra note 345.
344 Checkpoint, supra note 346.
The judge learns about the core values of Israeli society and the approach of Israeli law as to what is permitted and is prohibited from the totality of the law and the regime.\textsuperscript{345}

The court goes on to emphasize that, even though the human rights anchored in Israel’s basic laws apply only to public entities, these core values serve as a primary source which informs what constitutes public policy.\textsuperscript{346}

In the context of clauses that limit freedom of occupation, the court identifies two contradicting sets of values that make up public policy. The first set of values supports granting validity to the contractual agreement:\textsuperscript{347}

\textit{Freedom of contract}. The approach derived from this principle is that contracts must be kept. This is seen as both a private interest and a public interest in safeguarding the security and confidence in the contractual regime.

\textit{Protection from competition}. This interest is also seen as both a private and a public interest. It is, on the one hand, in the employer’s personal interest to protect himself from competition in general from the employee and also from the use of information obtained by the employee during his employment. Likewise, society also has an interest in encouraging employers to invest in their businesses and employees. The Court notes that certain aspects of this interest are anchored in freedom of property itself while others stem from the public interest.

On the other hand, public policy is also informed by a competing set of values and interests that support invalidating NCCs:\textsuperscript{348}

\textit{Freedom of occupation} has a stand-alone status but is also derived from freedom of competition:

\begin{quote}
A first principle that is to be considered is freedom of occupation… It is derived from human dignity, and from freedom of thought and action. The significance of freedom of occupation is, \textit{inter alia}, the freedom of an employee who concluded an employment relationship with his employer to contract with any employer with whom he desires as well as the freedom of the employee to start a business of his own, without being bound by agreements limiting trade. Freedom of occupation is derived from freedom of competition… However, freedom of competition is a public interest that stands on its own.\textsuperscript{349}
\end{quote}

Chief Justice Barak goes on to affirm the National Labour Court’s findings in \textit{Checkpoint} regarding freedom of competition:

\begin{flushleft}
\textsuperscript{345} \textit{Sa’ar, supra} note 345, at para 7.
\textsuperscript{346} See \textit{ibid}.
\textsuperscript{347} See \textit{ibid} at paras 9–10.
\textsuperscript{348} \textit{Ibid} at paras 11–12.
\textsuperscript{349} \textit{Ibid} at para 11.
\end{flushleft}
The Modern market is based on the existence of free competition in the open market and a free economy, inter alia, as to capital and particularly human capital… Society is interested in rapid and free transfer of information in the marketplace.  

**Self-realization and fulfillment of the employee:**

A second interest which is to be considered is the employee himself. His labor is his property, spiritual and physical. It is the basis for his self-realization and fulfillment. His freedom of choice is his life. His capacity to choose an occupation for himself is the source of his existence and his property. His training is the means by which he will be able to compete in the workplace. Keeping him from his work for a specified period of time may remove him entirely from the workforce and bring about the destruction of many years of training… Limiting the mobility of the employee will damage his right to personal fulfillment… This is primarily so in the context of the employment in the field of high-tech. These interests are first and foremost the interests of the employee. But they also constitute the interest of the public. “The good of the public demands that generally, knowledge, rules and professional skills acquired by an employee in his work will be used without limitation, as such use is a blessing to the individual and the public as one”… This is primarily so in the field of high-tech, in which the public as a whole has an interest in their development for the good of society. Indeed the public good justifies recognizing the freedom of the employee to choose for himself employment at will.  

“Public policy” means striking the proper balance between the competing interests. The two pairs of considerations that make up the content of public policy each lead to opposite conclusions. “The normative content that will be given to the concept of ”public policy” constitutes, therefore, the result of the balance between conflicting values, principles and interests.”  

ii. Reasonableness test: Legitimate interests and public good

The balancing exercise is determined by reasonableness:

Israeli case law, in the footsteps of English law, has determined that the criterion for balance between the competing interests is reasonableness. A contractual limitation on the freedom of occupation of the employee will not damage “public policy” if the limitation is reasonable in terms of the interests of the parties and in terms of the public interest.  

The reasonableness of the limitation of freedom of occupation is determined by two primary considerations: the legitimate interests protected by the agreement, and the public
Furthermore, the jurisprudence suggests that the presumption is in favour of freedom of occupation and thus the burden of proving that the covenant protects a legitimate interest and does not undermine the public good rests on the shoulders of the employer seeking to enforce the restrictive covenant. In Sa’ar, Chief Justice Barak emphasizes that these two considerations should not be prioritized, but instead, that the proper balance is found when both are accounted for: “we must not separate between the legitimate interests of the parties… and the public interest. This [determination of “public policy” under the circumstances] is a matter of public interest, which takes account of the totality of the facts including the legitimate interests of the parties.”

b. Qualifying “legitimate interests”: “Proprietary” or “quasi-proprietary”

Not all private interests of the employer or employee will constitute a legitimate interest: “as a rule, the employer’s interest in preventing a former employee from competing with him, without this coming to protect additional interests (beyond the non-competition), such as trade secrets or customer lists, is not a legitimate (nor a “protected”) interest.” In Checkpoint, the National Labour Court emphasized that, absent the involvement of a trade secret, the principle of freedom of occupation should prevail. The Court in Sa’ar reaffirmed this rule. While drawing comparisons to other jurisdictions as well, it found “that as a rule a ‘bare’ agreement not to compete, which does not protect interests of the employer beyond the interest of non-competition ‘for its own sake’ (such as his interests in protecting trade secrets and customer lists) does not shape a ‘legitimate interest’ of the employer, and is subject to be invalidated as being against ‘public policy’.”

While no exhaustive list regarding what constitutes a “legitimate interest” is found in Israeli jurisprudence, in Sa’ar, Chief Justice Barak clarified the legal principles and framework for determining whether an NCC is set up to protect an employer’s legitimate interest or not:

Thus, the reasons I have explained justify a middle ground, according to which in the overall balance freedom of occupation prevails when all that stands against it is the employer’s interest in non-competition, while freedom of contract prevails when alongside it stands a legitimate interest of the employer such as a “proprietary” or “quasi-proprietary” interest of the employer. It is then the case that limiting competition “for its own sake”… does not protect any “legitimate interest” of the

354 See CA 312/74 Cable and Electric Cable Company in Israel Ltd v Martin Christianpalour, IsrSC 29(1) 316 (“the limitation must meet the double condition that it is necessary for the protection of the legitimate interests of the employer from whose workplace the employee has departed and that it is for the good of the public” at 319).
355 See Sa’ar, supra note 345 at para 15. See also CA 155/80 Rav Bariach Ltd v Amgar, IsrSC 35(1) 817 at 825.
356 Sa’ar, supra note 345 at para 16.
357 Ibid at paras 16–17.
358 Checkpoint, supra note 346 at para 14.
359 Sa’ar, supra note 345 at para 18.
employer at all. It goes against the public good and it will be invalidated in the framework of “public policy”.

On the other hand, limitation of competition which is intended to protect the interests of the employer in trade secrets, customer lists, reputation and the like the “legitimate interests” of the employer, and as a rule does not go against public policy.\textsuperscript{360}

Later in the ruling, Chief Justice Barak retreats somewhat from the proprietary language:

The case law recognizes trade secrets and customer lists as legitimate interests of the employer worthy of protection. Occasionally these interests are described as “proprietary rights” of the employer… This list is not comprehensive and is not closed. The “proprietary” language in this context raises difficult questions. In my opinion, it is appropriate to move away from these characterizations. The reasons found at the basis of the law, and not the label given to them, should determine the scope of the “legitimate interests” of the employer.\textsuperscript{361}

However, in contrast to the Israeli High Court of Justice in \textit{Sa’ar}, in \textit{Checkpoint} the National Labor Court framed the legitimate interests framework slightly differently:

Under what conditions will it be possible to enforce a covenant which restricts freedom of occupation? As mentioned above, freedom of occupation and freedom of competition are not absolute principles. Weighing against them are the public’s and employer’s interests which are worthy of protection. Society must protect the employer’s intellectual property, especially against an employee that intends to use it unlawfully. Of course, the primary protection for this is provided for in patent and copyright law. Yet, the legal system also protects the employer’s property through civil actions which seek to prevent or restrict the former employee from revealing trade secrets that belong to the employer. Before the court restricts the occupation of the employee it must consider the following:

\begin{itemize}
\item[a.] Trade Secrets: it is appropriate to limit the freedom of occupation of the employee in order to prevent him from using, unlawfully, a “trade secret” that belongs to the former employer.\textemdash;

\item[b.] Special training: where the employer invested special and out of the ordinary resources in the training of the employee with the employee committing to work for the employer for a certain period of time in exchange. In such a case it is possible to justify limiting the employee’s freedom of occupation for a limited amount of time; in return for the investment the employer made in his training. Yet, clearly, if the employee gained that training in the regular course of his employment or at his own expense and on his own time, then the employer cannot restrict the way in which the employee will later make use of it [the training and skills obtained].

\item[c.] Special compensation in exchange for the occupation restriction: the court must also consider if the employee received any benefit in exchange for his
\end{itemize}

\textsuperscript{360} \textit{Ibid} at para 22.
\textsuperscript{361} \textit{Ibid} at para 24.
committing not to compete with his employer for the limited period of time following the termination of the employment relationship.

d. The duty to act in good faith and trust relations: consideration should be given to the good faith of the employee and possibly also the new employer. The employer-employee relationship is based on trust. The duty of trust an employee has towards his employer entails certain norms of behaviour… An example of a violation of that trust is when the employee communicates with others while he still works for the former employer in order to take away his employer’s business later on…”

The National Labour Court later states that this is not a closed list, and that each determination must be made on a case-by-case basis, according to the specific circumstances. Furthermore, the National Labour Court notes that, even if one or more of these considerations is indeed identified, it does not necessarily follow that the court must enforce the NCC.365

c. Scope of protection: Proportionality test—The limitation is lawful only to the extent necessary to protect the “legitimate interest”

In determining whether the restriction of freedom of occupation is proportional364 and reasonable, the Court looks primarily at three factors: duration, place, and type of activity:

The reasonableness or proportionality test seeks to ensure that the protection of the “legitimate interests” of the employer do not deviate beyond that which is necessary. In this context the extent of the limitation is to be examined in terms of time, place, and type of activity. The question in every case is whether the timeframe, limits, and type of limitation do not deviate beyond that which is reasonable and necessary in order to protect the legitimate interests of the employer.365

362 Checkpoint, supra note 346 at para 15 [translated from Hebrew to English by Avichay Sharon]. It is interesting to note here that factor b is completely absent from the Israeli High Court of Justice’s ruling in Sa’ar. Furthermore, the cCourt there emphasizes that the ordinary training and skills acquired by employees are their means of competing in the workplace and therefore a component of the employee’s freedom of competition. See Sa’ar, supra note 345 at para 12. See also a more recent case, Teatron Hatzafon Mercaz Omanuyot Habama Bet Ha’am lid v Nitza Ben Zvi, C47549-11-10, Haifa District Court, where the court rejected the plaintiff’s claim of having a “legitimate interest” to protect its investment in the training of the defendant. This ruling was also later re-affirmed by the Israeli High Court of Justice in its decision to reject the plaintiff’s motion for leave for appeal (LCA 9071/10).

363 See Checkpoint, supra note 346 at para 17.


365 Sa’ar, supra note 345 at para 26.
The Court goes on to add that a limitation that denies the employee the capacity to work in his field of expertise would not be proportional.\(^{366}\) On the other hand, a mitigating factor to be considered as well is whether or not the employee receives reasonable monetary compensation for the limitation period.\(^{367}\) It is worth noting, however, that in both Sa’ar and Checkpoint, the courts did not indicate what would constitute a proportional time or geographic limitation, but instead left it up to courts to determine what is reasonable on a case-by-case basis.\(^{368}\)

Yet even if the limitation is found to be proportional and reasonable in terms of the employee’s interests, the restrictive covenant might still be invalidated where it is contrary to public interest:

> Alongside the employee interest one must consider the public interest. The public interest may demand invalidation of the limitation on freedom of occupation, which from other perspectives appears proportional. The public interest is expressed, *inter alia*, in the needs of the marketplace, the development of industries and encouragement of competition. This is so in particular in high-tech industries.\(^{369}\)

*d. Remedies*

In Sa’ar, the Court declared the NCC void since the limitation did not protect “legitimate interests” of the appellants but instead, its purpose was to protect their “bare” interest not to compete with their former employee.\(^{370}\) In reaching this conclusion, the Court distinguishes between two situations. Where the limitation of the employee’s freedom of occupation does not serve to protect a “legitimate interest”, it is unlawful and therefore should be declared entirely void. Thus, the court does not have to examine whether it is reasonable or proportional at all.\(^{371}\) However, where the limitation is aimed at protecting a “legitimate interest” of the employer, then the court must assess its proportionality. And, where it is possible, the courts must interpret the clause in such a way that allows the contract to be performed within the boundaries of reasonableness and proportionality. Thus, where necessary, courts may introduce temporal, geographical, or other conditions to the NCC in order to ensure that it does not extend beyond what is necessary for protecting the employer’s “legitimate interest”.\(^{372}\)

\(^{366}\) Ibid.

\(^{367}\) Ibid.

\(^{368}\) Ibid at para 33, Chief Justice Barak finds that it is not necessary to determine whether the eighteen month limitation period was reasonable since the entire covenant violated “public policy” as it did not protect a legitimate interest and therefore was entirely void. See also M Deutsch, *Commercial Torts and Trade Secrets* (in Hebrew) (Israel, Nevo Publishing, 2002), 954, at 605–06.

\(^{369}\) Sa’ar, *supra* note 345 at para 27.

\(^{370}\) Ibid at supra note 345 at para 27.

\(^{371}\) Ibid at para 33.

\(^{372}\) Ibid.
2. Legal developments since Sa’ar and Checkpoint

Sa’ar and Checkpoint remain the binding precedents to date, and courts have applied this legal framework in determining the lawfulness of NCCs. In line with Sa’ar and Checkpoint, courts have treated “bare” or unlimited NCCs as “suspicious”. Thus, as the state of the law in Israel stands, NCCs which protect the employee’s “bare” interest not to compete against a former employer, meaning that they are not connected to a “proprietary” or “quasi-proprietary” interest (namely trade secrets or customer lists), will be invalidated. Likewise, even when the court finds that such a “legitimate interest” is indeed what is being protected by the NCC, it will still have to assess the proportionality and reasonableness of the limitation by considering its duration, geographic boundaries, and the type of activity being restricted.

Furthermore, despite the rapidly evolving technological market, the courts have not expanded the list of “legitimate interests” or relevant considerations in making that determination. In their analysis of NCCs, the Israeli courts continue to consider the four factors listed in Checkpoint as those that must be considered when determining whether or not the NCC protects a “legitimate interest”: trade secrets; special training; remuneration or compensation in exchange for the limitation period; and good faith and trust.

D. California

In the United States, NCCs in the employment context have “long been viewed with suspicion…over the concern that [they] will impair personal freedom to earn a living and have a negative impact, by design, on unfettered competition.” That said, despite this long-standing suspicion, “most states recognize that some enforcement of noncompetes, however limited, is allowable to protect the interests of employers in sharing confidential and proprietary knowledge with their employees.”

The law in this field is still evolving and highly unpredictable. “Despite some agreed-upon basic principles of how restrictive covenants are reviewed by most state courts, there

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375 Norman D Bishara, “Fifty Ways to Leave Your Employer: Relative Enforcement of Covenants Not to Compete, Trends, and Implications for Employee Mobility Policy” (2010) 13 U Pa J Bus L 751 at 756 [Bishara, “Fifty Ways to Leave Your Employer”]. See also John D Ingram, “Covenants Not to Compete” (2002) 26 Akron L Rev 49 at 57: “Two reasons are usually given for this attitude: (1) Employees should be free to make the best possible bargain for his labor, and (2) the public has an interest in maximizing available services.”
nonetheless exists no truly uniform approach across jurisdictions.” This is because state law governs NCCs and “each state has taken a different stance on the enforceability of restrictive covenants. Some states are employer friendly, while others are, clearly, more employee friendly. Some states create express time and geographic constraints, while most hide behind the idea of reasonableness.” Equally importantly, some states have statutory controls over NCCs while others leave courts to balance the competing rights in question. Most notably, two states, California and North Dakota, have prohibited NCCs in the employment context altogether.

Generally, states that will enforce NCCs employ a “reasonableness test”: “a non-compete agreement will be deemed reasonable and, therefore, enforceable, where it simply protects the legitimate interests of the employer, imposes no undue hardship on the employee, and is not injurious to the public.” This test is designed “to balance the rights of the parties to the contract, as well as to consider the policy impact and the public interest.” That said, even though the general outline of the test is constant, “the approach, tools, and principles used by each court [vary] materially within the reasonableness structure.” Additionally, courts often stress the “case-by-case” nature of NCCs, focusing on factual specificity rather than general principles.

Studies of the enforceability of NCCs across the United States suggest that states can be roughly placed along a spectrum. On the one end are NCC-skeptical states like California, North Dakota, or Colorado (which restrict NCC enforceability to contracts involving “[e]xecutive and management personnel and officers and employees who constitute United States towards greater enforcement” and that “the states that do not enforce or have rather weak enforcement are very much in the minority.”

378 Bishara, “Fifty Ways to Leave Your Employer”, supra note 381 at 757.
380 Florida, for example, provides statutory guidance on what a protectable business interest might be, as well as a presumptively reasonable duration (Fla Stat tit 33 § 542.335 (2010)). See also Bishara, “Fifty Ways to Leave Your Employer”, supra note 381 at 759 (“eighteen states, or about 35%, have some sort of legislation discussing noncompetes”).
381 See 7 Cal Bus & Prof Code §16600 (West 2012) (“Every contract by which anyone is restrained from engaging in a lawful profession, trade, or business of any kind is to that extent void”); NDCC § 9-08-06 (2013) (using identical language as in California).
384 Bishara, “Fifty Ways to Leave Your Employer”, supra note 381 at 773.
385 Ibid at 758.
386 See ibid which uses six indicators to evaluate the relative strength of a state’s NCC enforcement: (1) whether a state statute restricts their operation; (2) whether employment alone is sufficient consideration; (3) the burden of proof in determining reasonability; (4) the scope of protectable interests; (5) whether courts may or must modify unreasonable NCCs or must simply invalidate them; and (6) whether the NCC is enforceable if the employer terminated the relationship.
professional staff to executive and management personnel”). On the other end are employer-friendly jurisdictions, like Florida or Texas, which take a more accepting view of what an NCC might restrict and why.

Across the forty-eight states that do enforce NCCs, courts will assess the reasonability of an NCC on the following criteria:

**Consideration.** An NCC is only valid if there is consideration from both sides. Most states hold that employment is sufficient consideration; some even conclude that continued employment suffices if an NCC is signed during the underlying period of employment.

**Protectable Interests of the Employer.** An NCC may only protect a “protectable interest”. What counts as a legitimate, protectable interest varies by state: “legitimate protectable business interests may include investments in training and building the employee’s reputation; confidential and proprietary information, such as customer lists and strategies; and client relationships.” Note that the mere fact that a former employee will be a competitor does not justify an NCC, nor are the general skills, experience, and knowledge acquired by the employee protectable interests. Note too that while all states that permit NCCs consider that “trade secrets” are protectable interests, the definition of that term is not consistent, furthering the unpredictability of NCC enforceability across the country. As John D. Ingram notes, “[t]here is an inherent and inevitable conflict in trying to distinguish between trade secrets and the employee’s developed skills, knowledge, and experience.”

**Reasonable in Scope of Activity, Duration, and Geography:** Beyond identifying a valid interest, “the enforceability of a noncompete agreement is judged according to the rationality, legitimacy, and fairness of the restrictions as evidenced by their duration, territorial scope, and the realm of competitive activity curtailed.”

a. **Limited Geographic Scope:** Across the United States, there is no single standard for what constitutes a reasonable geographic scope. The focus is placed instead on the employees “geographic location of responsibility”—where they worked, where

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387 Colo Rev Stat § 8-2-113(2)(d) (2013). Note that this is a sole exception to “the prima facie equal treatment for all types of employees” in American NCC law. See Norman Bishara, “Covenants Not to Compete in a Knowledge Economy: Balancing Innovation From Employee Mobility against Legal Protection for Human Capital Investment” (2006) 27:2 BJELL 287 at 290.

388 See Bishara, “Fifty Ways to Leave Your Employer”, supra note 381 at 778.

389 See Sill, supra note 385 at 395.

390 Ingram, supra note 381 at 50.


392 Ingram, supra note 381 at 51.

393 See Sill, supra note 385 at 390.

394 Supra note 381 at 57.

395 Amir & Lobel, supra note 383 at 840.

396 See Ingram, supra note 381 at 67.
their contacts are located, and so on.\textsuperscript{397} As a result, American courts have “enforced restrictive covenants without geographic and/or temporal limits where the employer conducts business internationally.”\textsuperscript{398} In the age of the Internet, such contracts are increasingly common, and so what is considered a reasonable limitation across the United States has expanded.\textsuperscript{399}

b. \textit{Limited Duration}: The duration of the clause must be both reasonable and no more restrictive than necessary.\textsuperscript{400} While some states offer rebuttable statutory presumptions on duration,\textsuperscript{401} there is no universal upper or lower limit.\textsuperscript{402} Frequently the duration of the covenant will be understood as reasonable, or as excessive, in the context of the geographic scope of the covenant and the activities it covers.\textsuperscript{403} It must also be understood as rationally connected to the protected interests. If an employee, for example, knew of a customer list that varied year by year, a one-year restriction would offer the needed protection without being overly restrictive.\textsuperscript{404}

c. \textit{Kind of Activity}: “A noncompetition agreement should bar the former employee only from engaging in work or business activities that are the same as or similar to those of his employment with the former employer.”\textsuperscript{405} Along similar lines, it may not, in barring certain activities, prevent the former employee from working in \textit{any} appropriate job.\textsuperscript{406}

\textit{Not Injurious to the Public}. Here, courts will look to whether enforcing an NCC will, even if reasonable in relation to the former employee, unduly burden the public. Florida, for example, prohibits courts from entering an injunction “contrary to the public health, safety, or welfare.”\textsuperscript{407} This could include an NCC with a physician, as it may deprive a community of access to health care.\textsuperscript{408} Similarly, “[p]ublic policy favors making available as many services as possible. If the restriction will deprive the public of desirable services for too long, it will be held to be unreasonable.”\textsuperscript{409}

One additional consideration is whether a state permits either “blue pencil” or more substantive revision. While many states take an “all-or-nothing” approach, refusing to enforce an NCC if it is unreasonable, under “blue pencil” doctrine, a court may enforce \textit{only} the reasonable aspects of an NCC.\textsuperscript{410} Some courts go even further, redrafting terms to

\textsuperscript{397} See Sill, \textit{supra} note 385 at 381.
\textsuperscript{398} Lazar, \textit{supra} note 388 at 201.
\textsuperscript{399} See \textit{National Business Services, Inc v Wright}, 2 F Supp 2d 701 at 708 (ED Pa 1998).
\textsuperscript{400} See Sill, \textit{supra} note 385 at 374.
\textsuperscript{401} See \textit{supra} note 327.
\textsuperscript{402} See Ingram, \textit{supra} note 381 at 70.
\textsuperscript{403} See Sill, \textit{supra} note 385 at 375.
\textsuperscript{404} See \textit{ibid} at 377.
\textsuperscript{405} Ingram, \textit{supra} note 381 at 71.
\textsuperscript{406} See \textit{ibid} at 72.
\textsuperscript{407} Fla Stat tit 33 § 542.33(2)(a) (2010).
\textsuperscript{408} See Sill, \textit{supra} note 385 at 373.
\textsuperscript{409} Ingram, \textit{supra} note 381 at 71.
\textsuperscript{410} See Sill, \textit{supra} note 385 at 365.
make the agreement reasonable.\textsuperscript{411} Several commentators have observed that permitting or requiring a judge to rewrite a clause may encourage employers to draft unreasonable NCCs, recognizing that “there is no risk to the employer who overreaches because courts will not throw out an unreasonable noncompete, but rather will redraft the clause to comport with what the court finds to be reasonable.”\textsuperscript{412}

Finally, we should note that some states have adopted the controversial common law doctrine of inevitable disclosure.\textsuperscript{413} This doctrine posits that, in certain circumstances, a former employee will inevitably use or disclose confidential information in their new employment. It thus permits a former employer to seek and receive an injunction to prohibit the former employee from working, \textit{even in the absence of an NCC}.\textsuperscript{414} As one would expect, states that are hostile to NCCs, like California, find that the doctrine “creates a de facto covenant not to compete.”\textsuperscript{415} There is, however, strong opposition to this doctrine.\textsuperscript{416} Sarah J. Taylor, for example, argues that the “balance [between intellectual property protection and employee mobility] can be achieved by rejecting the inevitable disclosure doctrine and instead relying solely on reasonable non-competition agreements to govern the expectations of the … employer and employee.”\textsuperscript{417}

Even in the absence of NCCs or the inevitable disclosure doctrine, courts can still enforce antitrust violations. In March 2015, Apple Inc. and Google Inc., along with other companies in Silicon Valley, settled a battle with their employees over a “no-poaching” agreement for USD 415 million.\textsuperscript{418} In 2011, approximately 64 000 employees of four Silicon Valley companies, including Apple Inc. and Google Inc. filed a class action lawsuit against their employers in response to an agreement made among the companies not to hire each other’s employees in order to minimize salary costs.\textsuperscript{419} This instance illustrates how the existence or absence of NCCs is not necessarily determinative of the freedom of mobility of employees in a given market.

\begin{itemize}
\item \textsuperscript{411} Ingram, \textit{supra} note 381 at 74.
\item \textsuperscript{412} Bishara & Westermann-Behaylo, “The Law and Ethics of Restrictions on Mobility”, \textit{supra} note 382 at 37.
\item \textsuperscript{414} See Bishara & Westermann-Behaylo, “The Law and Ethics of Restrictions on Mobility”. \textit{supra} note 382 at 22.
\item \textsuperscript{415} Bayer Corp v Roche Molecular Systems, Inc, 72 F Supp 2d 1111 at 1120 (ND Cal 1999).
\item \textsuperscript{416} See e.g. Taylor, \textit{supra} note 419 for an argument as to why one such state, Washington, should abandon the inevitable disclosure doctrine.
\item \textsuperscript{417} Taylor, \textit{supra} note 419.
\item \textsuperscript{419} See Dan Levine, “Apple, Google Agree to Settle Lawsuit Alleging Hiring Conspiracy” \textit{Reuters} (24 April 2014), online: <www.reuters.com/article/2014/04/24/us-apple-google-settlement-idUSBREA3N1Y120140424#mwLQ7yHLCG1eQIsV.97>.
\end{itemize}
E. France

In France, there is almost no legislation that addresses the validity of NCCs in employment contracts. As a result, the responsibility of regulating them has been assigned to the courts.420 Like other jurisdictions, French law has recognized the tension between the employee’s right to work and the protection of business interests inherent in NCCs.421 How they have negotiated this tension, however, has changed over time, and legal professionals often stress the uncertainty of the current regime.422

At first, any NCC was, in principle, valid. It was thus the burden of the ex-employee seeking its annulment to demonstrate how it harmed his or her freedom to work. This approach was heavily criticized as “économiquement incompréhensible” since it made it difficult for skilled or talented workers to remain in the fields for which they were best trained.423 As time passed, courts have become increasingly reticent to uphold NCCs.424 In 1991, the Labour Division of the Cour de Cassation reversed the burden of demonstrating validity, requiring that the employer demonstrate that the NCC protects its legitimate interests.425 On top of this legitimacy criterion, the Court further required that the restriction be *proportional*—that it not unduly harm the employee relative to the employer’s interests.426 And, in its 2002 decision *Barbier c. Société Maine Agri* decision,427 the Cour de Cassation laid out both a more detailed and comprehensive version of these requirements *and* a further stipulation that a valid NCC must include financial compensation for the employee.428

Under current French law, for an NCC in an employment contract to be valid, it must:

*Be in writing.* Since an NCC can have potentially serious effects on the ex-employee, it must be defined and limited in written form.429

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421 See Beckhard-Cardoso, *supra* note 426 at 6.


423 See Auzero & Dockès, *supra* note 426 at 206.


426 See Jean Mouly, *Droit du Travail*, 5th ed (Clamecy: Bréal, 2010) at 47.


428 See *ibid*; Mouly, *supra* note 432 at 47.

429 See Beckhard-Cardoso, *supra* note 426 at 4.
Protect the legitimate interests of the employer. Looking at a review of recent case law on NCCs, it appears that courts generally consider an employer’s legitimate interests to include specific technical know-how, information about clientele and suppliers, and any confidential financial or commercial knowledge.430 Determining whether one of these legitimate interests is at risk often involves an assessment of the ex-employee’s particular job description.431 So, for example, a painter lacks access to any confidential technical or commercial information belonging to the painting company and so cannot be restrained.432 By contrast, a garçon de café can be restrained because of the extensive contacts he developed with his former employer’s clientele during his contract.433 The search for legitimate interests may also involve the position the ex-employee occupied within the company, or even the particular nature of the industry involved.434 For example, a company has a legitimate interest in restricting an engineer working in a highly specialized, small, and competitive field because the knowledge he has acquired would harm the employer if it were available to a competitor.435

Be limited in time and space. Before Barbier, some jurists asserted that only a limitation in time or in space was necessary, but the requirement as currently formulated is cumulative.436 When examining temporal restrictions, courts will rarely permit an NCC to

430 See Arnaud Martinon, “La clause de non-concurrence, vue des cours d’appel”, (2014) 265 Cahiers Sociaux 462. See also Beckhard-Cardoso, supra note 426 at 7 (“La Cour de cassation contrôle étroitement si la clause de non-concurrence présente un caractère indispensable compte tenu du poste occupé par l'ancien salarié, sa qualification professionnelle, son savoir-faire, ses responsabilités, ses connaissances sur le réseau clientèle, sur l'organisation, les méthodes et procédés propres à l'entreprise... qui seraient utilisés au profit du nouvel employeur”).
431 See Auzero & Dockès, supra note 426 at 208.
432 See CA Montpellier 9 mai 2007 n° 06/05925 (discussed in Martinon, supra note 436).
433 See Auzero & Dockès, supra note 426 at 208.
434 See CA Orléans 7 avril 2005 n° 04/03119 (discussed in Martinon, supra note 436), where the ex-employee’s position as commercial director ensured that the clause was legitimate since it ensured some confidential information had been acquired.
435 See CA Toulouse 4 juin 2008 n° 07/01435 (discussed in Martinon, supra note 436) (“Il ressort des documents produits et des débats à l'audience que la société SIEMENS fabrique notamment des IRM et des scanners, que très peu d'entreprises interviennent dans ce secteur extrêmement concurrentiel, et que Monsieur X... a acquis une grande expérience de ces matériels jusqu'à devenir spécialiste niveau 2, c'est à dire confirmé, en IRM.
Dans les mois qui ont précédé sa démission Monsieur X... avait notamment pour missions le lancement et le suivi du produit IRM, sa promotion auprès de la clientèle, la formation des vendeurs et des clients, la définition des clients cible et les études de marché, le positionnement vis à vis de la concurrence, le support technique aux ingénieurs commerciaux, le tout supposant selon la fiche de poste une grande connaissance du produit.
Il avait accès à l'ensemble des données techniques et commerciales relatives aux IRM détenues par la société SIEMENS.
Dès lors, la transmission de l'expérience acquise et des informations collectées chez SIEMENS à l'une ou l'autre de l'entreprise directement concurrentes et vendant les mêmes produits dans un secteur d'activité inhabituellement restreint, en ce qu'il présente un risque important pour cette entreprise, rend légitime la protection de ses intérêts par le biais d'une clause de non concurrence.”)
436 See Auzero & Dockès, supra note 426 at 208–09.
last longer than two years. As for geographic restrictions, clauses covering the entirety of France are not necessarily invalid, so long as the employee can find similar work with another company.\textsuperscript{437} Additionally, geographic restrictions are only valid to the extent that they can be clearly defined.\textsuperscript{438}

The Cour de cassation summarizes this discussion well, explaining that “Pour être valable, une clause de non-concurrence doit laisser au salarié la possibilité d’exercer normalement l’activité qui lui est propre.”\textsuperscript{439} The NCC, in other words, must be limited not only in time and space, but in the types of activities that it restricts as well.\textsuperscript{440}

Courts, when evaluating whether the restriction unduly burdens the employee, generally consider two parameters: whether the restricted activity corresponds to something the ex-employee has done for a long time (if not, there is no undue burden); and whether the restricted activity fully encompasses the general experience of the ex-employee or whether her or his skills can reasonably be applied elsewhere.\textsuperscript{441} So, for example, if the ex-employee would be effectively forced to move out of the territory covered by the NCC to honour it, it is deemed an undue burden.\textsuperscript{442} By contrast, if the restriction only covers a highly specialized activity within a larger field, other employment is possible.\textsuperscript{443} As a result, if the restriction is drafted in imprecise or excessively general language, the clause is likely to be found invalid.\textsuperscript{444}

\textit{Include financial compensation for the employee.} This compensation must be more than symbolic; courts will generally reject any sum totalling less than 10 per cent of the employee’s monthly salary.\textsuperscript{445} It must also be separate from the compensation that the employee will receive for her work.\textsuperscript{446} Since it is compensation for something separate from the employment itself, it cannot be affected by the way in which the contract ends (for example, the fault of the employee).\textsuperscript{447} Importantly, this requirement applies retroactively to clauses pre-dating the 2002 reformulation.\textsuperscript{448}

Note, finally, that judges are given considerable discretion when addressing clauses that fail to meet the proportionality requirement. If an NCC lacks either a legitimate interest or

\textsuperscript{437} See Ray, \textit{supra} note 430 at 414.
\textsuperscript{438} See e.g. CA Poitiers 18 septembre 2013 n° 559, 11/04803 (discussed in Martinon, \textit{supra} note 436), where a clause covering any departments of France where the ex-employee did work on behalf of the company was found valid to the extent it could be defined.
\textsuperscript{439} Cass Soc 18 octobre 1952, Bull civ n° 736.
\textsuperscript{440} See Beckhard-Cardoso, \textit{supra} note 426 at 6.
\textsuperscript{441} See Auzero & Dockès, \textit{supra} note 426 at 210.
\textsuperscript{442} See CA Papeete 14 octobre 2004 n° 506/SOC/00 (discussed in Martinon, \textit{supra} note 436).
\textsuperscript{443} See e.g. CA Toulouse 2008, \textit{supra} note 441, where an engineer who specialized in MRI technology could reasonably find work in other sectors of the medical scanning industry.
\textsuperscript{444} See e.g. CA Amiens 9 février 2005 n° 04/00850 (discussed in Martinon, \textit{supra} note 436), where a restriction covering activities “susceptibles de concurrencer” was found invalid.
\textsuperscript{445} See Martinon, \textit{supra} note 436 at s 3.
\textsuperscript{446} See Auzero & Dockès, \textit{supra} note 426 at 211.
\textsuperscript{447} See \textit{ibid} at 212.
\textsuperscript{448} See Beckhard-Cardoso, \textit{supra} note 426 at 11.
sufficient compensation, it is null. If it overreaches in terms of geography, time, or scope of activity prohibited, however, the judge may limit it as she pleases.\textsuperscript{449}

\textsuperscript{449} See Ray, \textit{supra} note 430 at 415.