

Economic Research in Canada: Evolution and Convergence

James A. Brander, Sauder School of Business, University of British Columbia

Gregor W. Smith, Department of Economics, Queen's University

April 2017

Abstract

We describe the history and current state of economic research in Canada, including the role of the Canadian Economics Association (CEA) and other institutions. Our paper is organized around two central questions. Is Canadian economic research distinctive? And should it be more distinctive? We argue that a distinct Canadian school of economics existed in the past, but that economic research in Canada has converged on an evolving global standard in both method and topics. We ask whether this convergence serves the Canadian public interest and we raise some questions about the future of the CEA and its flagship journal, the *CJE*.

JEL classification: N01, B20, A11

Contact Information: Brander: Asia Pacific Professor in International Business and Public Policy, Sauder School of Business, University of British Columbia; james.brand@sauder.ubc.ca. Smith: Douglas D. Purvis Professor of Economics, Department of Economics, Queen's University; smithgw@econ.queensu.ca

Acknowledgements: We thank the organizers of this special issue, Charles Beach, Nancy Gallini, and the managing editor, Francisco Ruge-Murcia, for giving us the opportunity to write this paper. For helpful comments and advice we thank an anonymous reviewer, Werner Antweiler, Robert Dimand, Allan Gregory, Keith Head, John Helliwell, Pierre Fortin, and Barbara Spencer. We are also grateful to Sophie Endl and Jennifer Ng for valuable research assistance.

1. Introduction

This symposium issue of the *Canadian Journal of Economics (CJE)* celebrates the 50th anniversary of the Canadian Economics Association (CEA). In this first article we offer an overview of economic research and of the economics profession in Canada, emphasizing recent years, but with significant historical commentary.

One major question we address is whether the research contributions of the Canadian economics profession comprise a distinctive body of work that differs in meaningful ways from research done elsewhere. Is there now or was there ever a Canadian ‘school’ of economics, or at least a distinctly Canadian voice in economic research? Is the Canadian presence in economic research less distinctive now than in the past? We also consider the corresponding normative question — whether there *should* be a distinctive Canadian voice in economics. More broadly, is there some market failure in the research process that leads to an inefficient level of national distinctiveness—either too much or too little?

We are not the first to ask questions about the distinctiveness of Canadian economics. However, this symposium issue of the *CJE* provides an ideal opportunity to revisit these questions. And, as the title of our paper suggests, our answers are dynamic, not in the sense that we make claims to a particularly lively writing style (although we are doing our best), but in the sense that the answers have evolved over time.

In addition to analyzing the development of economic research in Canada, we also discuss the interesting history of the CEA and its flagship journal, the *CJE*, which have played important roles in promoting economic research in Canada. We also provide information about the changing characteristics of the economics profession in Canada, including its increasing size and the growing importance of women in economic research.

By the “Canadian economics profession” we mean economists resident in Canada. We therefore provide little discussion of the many important contributions made by Canadian-born or Canadian-trained economists resident in other countries. However, we would be remiss not to mention Nobel Prize winners Robert Mundell (born in Ontario, B.A. from UBC, taught briefly at McGill and Waterloo), Myron Scholes (born in Ontario, B.A. from McMaster) and William Vickery (born in BC).

We also restrict attention primarily to the *research* activities of economists. We recog-

nize the large and increasingly significant role of Canadian economists in the *operations* of both governments and the private sector. And the teaching role of economists is also very important. However, our focus here is on research rather than teaching or professional practice, keeping in mind that the effects of research on government policy, on business practice, and on the teaching of economics are of central importance in assessing the value of that research.

Much of our discussion is focused on the most recent 25 years, as a 1993 issue of the *CJE* celebrating the 25th anniversary of the CEA contains several articles addressing the evolution of the profession over the first 25 years of the Association's life. However, we summarize some elements of those earlier reviews and offer our own interpretation of the broad sweep of Canadian economic thought before focusing on the most recent period.

Section 2 provides a brief organizational history of the economics profession in Canada, focusing on the evolution of the CEA and *CJE* (and their forerunners), up to 1992. Section 3 provides an overview of Canadian research contributions to 1992, emphasizing the question of distinctiveness. Section 4 then reviews some of the major changes that have occurred in the Canadian economics profession and in economic research in Canada over the past 25 years. Section 5 addresses our central questions about the role and distinctiveness of economic research in Canada in the past 25 years. Section 6 contains concluding remarks.

2. The Canadian Economics Profession up to 1992

2.1 Before 1967

When Canadian confederation occurred in 1867, some activity classifiable as economic research took place within universities, colleges, schools, departments of government, and private sector organizations (such as banks). There were, in particular, 17 degree-granting institutions in the founding provinces of Canada at the time of Confederation.¹ Within these universities there were, as of 1867, some historians and philosophers doing work

¹ Laval University is usually regarded as Canada's first post-secondary institution, having started operations as the Séminaire de Québec in 1663, renamed Université Laval and granted a royal charter in 1852. The University of New Brunswick, founded in 1785 and chartered in 1827, was Canada's first English-language university.

that overlapped with economics, but there were no economists in university positions in Canada.

According to Taylor (1960), the first university course in economics taught in Canada was a series of lectures on Smith, Mill, and Jevons, offered by the philosophy department at Queen's University in 1878. This experiment apparently met with at least limited success, as Queen's hired an economist (Adam Shortt) to teach political economy a decade later, in 1888, as did the University of Toronto (W.J. Ashley). Other early adopters of these academic innovations (teaching economics and hiring economists) were McGill (1899) and McMaster (1904), and many other universities soon followed suit.

By 1912 there were enough economists and political scientists in Canada to justify creation of a Canadian Political Science Association (CPSA), which included both economists and political scientists. Economist Adam Shortt became the first president of the CPSA. In the upheavals surrounding the First World War, the CPSA became inactive and was not revitalized until 1929. Its second president, Oscar Skelton, was also an economist.

Canadian economists of the early 20th century, like today's economists, had a desire to publish their work, combined with perceived difficulty in achieving suitable publication. Only rarely could publishers justify the cost of publishing a book on economics. Economists published a few papers in the annual *Proceedings of the Royal Society of Canada* and some in the *Journal of the Canadian Bankers Association* (edited for a period by Adam Shortt) and in other journals, along with entries in some reference materials such as the encyclopedia, *Canada and Its Provinces*, published in twenty-two volumes between 1914 and 1917. Also, between 1910 and 1928, a significant volume of economic research appeared in Queen's University Bulletins — limited-circulation pamphlets containing research by economists at Queen's and elsewhere in Canada. In Quebec, the French language journal *L'Actualité économique* was founded in 1925 at l'École des Hautes Études Commerciales (HEC) by Édouard Montpetit. This journal became, and continues to be, an important outlet for Canadian French-language research in economics.

In 1928, the University of Toronto began publishing the first direct forerunner of the *CJE*, the annual *Contributions to Canadian Economics (CCE)*.² The opening sentence

² The first English language economics journals were the *Quarterly Journal of Economics (QJE)*, 1886),

of the first issue stated that: “It has long been a source of frequent complaint among Canadian economists that no medium existed for the pooling of information on economic subjects of particular interest to Canada.” This journal continued only until 1934, after which its role was subsumed by the new *Canadian Journal of Economics and Political Science (CJEPS)*, started up as the official (quarterly) journal of the resuscitated CPSA and published by the University of Toronto Press. Bladen (1960) provided an interesting account of the founding of the journal.

The CEA was founded in 1967, obtaining a friendly separation from the CPSA at the 1967 CPSA annual conference, which devolved into two conferences: one for the purified CPSA and the other for the newly formed CEA.³ The President of the CPSA for the 1966–67 year was economist Anthony Scott of the University of British Columbia (UBC). He became the founding President of the CEA at this inaugural 1967 conference before passing on the torch to Grant Reuber of the University of Western Ontario (now Western University) at the end of the conference. The first anniversary of the founding of the CEA was therefore in June 1968, the 25th anniversary was in June 1992, and the 50th anniversary was in June 2017.

The CEA began publishing its flagship journal, the *CJE*, in 1968. This event was a second aspect of the split between economics and political science, as the pre-existing *CJEPS* was replaced in 1968 by the *CJE* and the *Canadian Journal of Political Science*. Since 1975 the CEA also has sponsored the multidisciplinary journal *Canadian Public Policy (CPP)*.

2.2 The First 25 Years of the Canadian Economics Association, 1967–1992

The 1993 *CJE* symposium commemorating the 25th anniversary of the CEA contains several papers addressing the activities of Canadian economists after the Association was founded in 1967. Helliwell (1993) noted that the economics professoriate expanded rapidly in the 1960s and early 70s but that its growth slowed dramatically by the late 70s, reflecting

the *Economic Journal* (1891), the *Journal of Political Economy (JPE)*, 1892) and the *American Economic Review (AER)*, 1911).

³ Sociologists had also been housed in the CPSA and had separated in a sequence of steps earlier in the 1960s, forming the Canadian Sociology and Anthropology Association (later just the Canadian Sociology Association).

the underlying pattern of growth in the Canadian university system. In the 60s and 70s, there was also significant expansion of economics graduate programs, resulting in a sharp increase in the number of economists with Canadian PhDs. As of 1990, using a large sample covering most of the profession in Canada, Helliwell found that only 9% of those who received PhDs in the 50s had earned them in Canada. The numbers for subsequent decades were 14% for the 60s, 35% for the 70s, and fully 62% for the 80s. Thus Canadian-trained PhDs went from being a small share of new academic appointments in the 50s to being the majority by the 80s.

The growth of Canadian PhD programs had at least one other important and largely unanticipated effect. A substantial and growing share of the PhD student population consisted of students from outside Canada who came to Canada to do a PhD, and many of those students stayed in Canada afterwards. The expansion of Canadian PhD programs likely had the effect of making the economics profession in Canada more international in the sense of drawing in many people born, raised, and educated through undergraduate levels in other countries.

Another change was a great improvement in computing power and computer availability. Computer users migrated from paper tape to punch cards, and then to keyboards. Computer availability in Canada went from about one per university to one or more per faculty member in that period, and the personal computers of 1992 were more powerful than university mainframes of 1967 had been. Statistical software also improved dramatically. Regression analysis changed from a rare luxury to a commonplace tool, which was notably helpful at smaller universities.

Fortin (1993) studied changes in the annual CEA conference over the 1967–1992 period. He compared characteristics of the research papers presented at the eight conferences at the start of the period (1967–1974) with the four conferences at the end (1989–1992), focusing on papers written by authors with Canadian affiliations (the overwhelming majority of papers presented).

One big change between 1967 and 1992 was a dramatic increase in the size of the conference, reflecting a major increase in the size of the profession in Canada. There were on average only 48 papers per year in the early period (384 papers over eight years) but

that grew to about 224 papers per year (897 over four years) by the later period. In the early period, only 11 papers had women senior authors—an average of less than two per conference, comprising only about 3% of papers presented. In the later period the number was 100 papers—about 25 per conference or about 11% of papers presented, a larger but still limited percentage.

Regionally, the most notable change was increasing participation by economists from the French-language universities in Quebec. Fortin calculated that the share of papers presented by Francophone authors (usually written and presented in English) almost tripled, going from 5.5% in the earlier period to 15.2% in the later period. In essence, economists in the French-language universities of Quebec went from being largely separated from the rest of the profession in Canada as of 1967 to being largely integrated. The annual conference of the Société canadienne de science économique (founded in 1960) was an active forum for French-language economists in Canada throughout the period, as it remains today, and many people attend both conferences.

3. Canadian Economic Thought up to 1992

We now summarize some research contributions of Canadian economists, drawing on previous such summaries, including those of Bladen (1960) and Taylor (1960) from an issue of the *CJEPS* commemorating its 25th anniversary. We also comment on Johnson's (1968) review of Canadian economics in the inaugural issue of the *CJE* and on material from the 1993 *CJE* symposium. This provides a recursive bibliography for future review authors and their readers in 2042 and 2067.

3.1. Canadian Economic Thought before 1945: The Canadian School

Our summary of early Canadian economic thought is brief and idiosyncratic. More complete accounts of Canadian economic thought can be found in the book-length treatments of Goodwin (1961) and Neill (1991). Dimand and Neill (2008) provide an excellent concise review of Canadian economic thought.

As already indicated, very little economic research was undertaken in Canada in the 19th century (or before). Gourlay (1822) made an early effort to assemble and analyze economic data. An early economic theorist was John Rae, who spent most of his career

as a schoolteacher in Upper Canada (Ontario). His best known work, published in 1834, is commonly referred to as *New Principles of Political Economy*, but its full title reveals more about both the content of the book and the personality of the author: *Statement of some new principles on the subject of political economy exposing the fallacies of the system of free trade, and of some other doctrines maintained in the "Wealth of Nations"*. James (2017) notes that Rae's work now appears very modern in some respects, as one of his principal themes is that economic growth and development depend fundamentally on innovation, and that governments should explicitly promote innovation through support for education, scientific research, and in other ways. Rae achieved little recognition in his lifetime and he was unable to obtain a university position in Canada. However, his contributions were ultimately recognized by the CEA by naming a prize in his honour, first awarded in 1994, given every two years to the economist in Canada judged to have the best research record in the preceding five years.

Another early contribution was an 1857 review of the Cournot model by John Cheriman, a mathematics professor at Toronto, available as an appendix to Dimand (1995). However, a significant body of economic research done in Canada did not begin accumulating until after economics teaching programs were established in Canadian universities in the late 19th and early 20th centuries. Taylor (1960, p 7) reports a certain rivalry between Toronto and Queen's, stating that "Until about 1920 Queen's and Toronto were the two principal centres of economic studies" but that "Queen's, however, was really the only centre of *Canadian* economic studies."

In 1920, Toronto first appointed economist Harold Innis. He was born in Canada, did his B.A. at McMaster, then served in the Canadian Army during the First World War until he was seriously wounded in 1917. He did a PhD at the University of Chicago and went from there to Toronto. This appointment marked a shift at Toronto toward a stronger focus on Canadian economic issues and Innis soon became the leader, along with William A. Mackintosh of Queen's, of what we view as the 'Canadian School' of economics. A central component of the Canadian School was the 'staples thesis', attributed to Innis (1930, 1940) and Mackintosh (1923, [1939] 1964). A measure of his stature is that Innis remains the only person based outside the United States to be named as President of the

American Economic Association (1952).⁴

The staples thesis articulated the point that understanding Canada’s economic development requires careful attention to the role of staple industries based on natural resources, particularly fish, fur, timber, minerals, and wheat. The importance of geography and the development of a transport sector to move these products internally as well as to export markets were also viewed as fundamental. At a deeper level, this work reflected an important methodological position. As stated by Dimand and Neill (2008, p 5), the staples thesis implied “rejecting the universal applicability of neoclassical analysis” Instead, the approach was more focused on Canada-specific institutions, geography, resources, history and politics. Furthermore, the basic point applies to the economic development of any country or region—emphasizing the role of local conditions and the historical record in economic growth. From this point of view, applying theories based just on the experience of the leading industrialized countries (the UK and the US) is misleading.

In the inter-war period, the staples thesis dominated Canadian research on economic history and economic development (major fields in economics at that time), and also strongly influenced research in other major areas, including international trade, transport economics, public economics, and natural resource economics. More broadly, the staples thesis approach of focusing on local conditions, de-emphasizing simple mathematical models, and emphasizing instead multi-disciplinary understanding of economic phenomena could be applied to other areas of economics as well, such as macroeconomics and labour economics. These are the core elements of what we view as the Canadian School of economics.

Many of Canada’s leading economists in the inter-war period can be viewed as members of this Canadian School. In addition to Innis and Mackintosh, among the most noteworthy was Irene (Biss) Spry, arguably Canada’s first female economist of note. Originally from South Africa, she studied economics at the London School of Economics and at Cambridge before obtaining a faculty position at Toronto in 1929. She moved to the Wartime Prices and Trade Board during the Second World War and ultimately took up a

⁴ Innis did not serve as President due to ill health. Creighton (1957) and Watson (2006) provide (very different) biographies of Innis. See Grant (2015) for Mackintosh’s biography.

faculty position at the University of Ottawa. She received the Order of Canada in 1992.

One aspect of the Canadian School was the close relationship between economics and political science. Most of the early economists were appointed as professors in “political economy” and incorporated political science into their own research. It was no accident that economists and political scientists shared a single association and a single flagship Canadian journal until as late as 1967. And they were often in the same university department. The Department of Political Economy at Toronto did not split into separate departments of economics and political science until 1982. (See Drummond, 1983.)

Academic economists of the pre-1945 period often contributed to the public service and to economic policy. Ferguson (1993) described the wide-ranging contributions to the federal public service by several economists from Queen’s (*e.g.* Oscar Skelton as Undersecretary of State for External Affairs from 1925 until his death in 1941, and W. Clifford Clark as Deputy Minister of Finance from 1932 until his death in 1952). Prime Minister William Lyon Mackenzie King had a PhD in economics from Harvard and published two early papers in the *Journal of Political Economy* (*JPE*). Mackintosh’s ([1939] 1964) influential essay was written for the Rowell-Sirois Royal Commission (1937–1940). Taylor (1960) wrote his review of economic scholarship while he was Deputy Minister of Finance, a scenario difficult to imagine today.

3.2 Canadian Economic Thought, 1945–1967: the Post-War Consensus

Even before the Second World War, economics was changing, both in Canada and elsewhere. The worldwide depression of the 1930s and the publication of Keynes’s *General Theory* in 1936 had major effects on the economics profession, and continuing improvements in communications and transportation were bringing economists in different countries into more regular contact with one another. But the War itself was a watershed, setting in motion important changes that profoundly affected the economics profession everywhere, including Canada. The changes ushered in a period of methodological consensus, first among economists in the English-speaking world, and ultimately in the world as a whole.

One key factor underlying this change was innovation, speeded up dramatically by the War, in transportation and communications. Before 1945, contact between economists in different countries was difficult and comparatively rare. After 1945, the growth of air

transport led to the gradual development of the ‘conference circuit’, bringing Canadian economists into regular contact with their contemporaries in other countries, particularly the United States. Regular communication with foreign colleagues by telephone became feasible, and mail became faster.

The role of universities also changed dramatically. Prior to 1945, university attendance in Canada was confined largely to an intellectual and social elite, and the economics professoriate was correspondingly small. After 1945, university enrolments in Canada rose sharply, due in part to changes in public attitudes toward university participation, supported by policies making university education more accessible. Also, fertility in Canada rose sharply after 1945 (the baby boom), creating dramatic increases in demand for university education starting in the early 1960s. And the university participation of women started to rise sharply in the late 1950s. Figure 1 illustrates these demographic trends, focusing on 1920 through 1992.

University enrolment barely kept pace with population growth in the inter-war period, but grew much more rapidly than population from the late 1940s on. The growth of the professoriate was similar. The number of full-time university faculty members in Canada (in all fields combined) grew from just over 2,000 in 1920 to just over 3,000 by 1940, then exploded to over 30,000 by 1975. Economists’ numbers increased by more than average, probably by a factor of about 12 between 1940 and 1975.⁵ In addition, economic research in public sector organizations such as the Bank of Canada, Statistics Canada, and government departments increased dramatically, and several economic think tanks also emerged in this period, including the C.D. Howe Institute, the Conference Board of Canada, and the Fraser Institute, among others.

Numerically, research economists added to the Canadian profession during the 1950s and 1960s completely swamped those previously in place. As before, most of these new economists had graduate degrees from American universities, but many of the new gen-

⁵ See Section W, *Historical Statistics of Canada*, Statistics Canada. Scott (1973) estimated that the number of academic economists was about 120 in 1950, and about 370 in 1965. Grubel (1981) estimated the number at about 770 in 1975. If the number had doubled between 1940 and 1950 (in line with aggregate enrolment) that would imply a 12-fold increase between 1940 and 1975, not counting economists outside universities.

eration of economists had not been raised in Canada and had never been exposed to the Canadian School of economics, even as undergraduates.

Another major change in this period was a shift toward viewing economics primarily as a scientific rather than descriptive discipline. Many major contributions to economics using sophisticated mathematical modelling and formal econometrics date from this period. Based mainly on work done in the 1940s and 1950s, the first Nobel Prizes awarded in economics, to Frisch and Tinbergen (1969), Samuelson (1970), Kuznets (1971), Hicks and Arrow (1972), and Leontief (1973), were all for mathematical and/or quantitatively-oriented economic research.

By the 1960s, it was this type of work that motivated most young economists entering the Canadian profession. The shift from a Canadian school dominated by descriptive methods to an emerging scientific discipline (or “pseudo-scientific” to critics) was a scientific revolution of the type described by Thomas Kuhn (1962). Members of the old school did not change their minds, they were just displaced by a new generation.

We should not overstate the extent of consensus that characterized the 1950s and 1960s in Canada. There were some Canadian economic nationalists who did not share in the emerging global consensus, and there was also a small group of Marxian or radical economists in Canada. Even within the economic mainstream, there were disagreements over whether economics was becoming too mathematical, and different economists would often take contrasting positions on the policy issues of the day, as illustrated by a symposium on the Carter Commission on taxation published as a supplement to the first (February 1968) issue of the *CJE*. However, these arguments were very similar to the arguments taking place in the US, the UK, and elsewhere.

Johnson (1968) reviewed the major contributions of economists resident in Canada over the 1945–1967 period. Johnson was a prominent expatriate Canadian economist appointed jointly at the University of Chicago and the London School of Economics, who made major contributions to macroeconomics and international economics. Here is his summary view (p 141):

[T]here are four broadly defined areas in which I think Canadian economists have made or are making significant contributions to the scientific discipline of economics. These are the economics of natural resources, monetary economics,

public finance and especially the theory of federal finance [fiscal federalism], and international economics. All four fields of research obviously reflect policy problems important to the management of the Canadian economy.

Johnson argued that Canada's most obvious area of leadership was natural resource economics. He emphasized the contributions of Scott (1955a, 1955b), based on the now widely accepted insight that natural resources should be viewed as a form of capital, and Gordon (1954) for his classic work on common property (open access) resources.

In his discussion of monetary economics, Johnson cited the work of Mabel Timlin (1942), one of Canada's prominent early female economists. Starting out as department secretary in Economics and Political Science at the University of Saskatchewan in 1921, she ultimately became a full professor at Saskatchewan, the first woman social scientist Fellow of the Royal Society of Canada (1951), and the first female president of the CPSA (1959–60).

Thus the early post-war period in Canadian economics was characterized by adoption of an emerging scientific framework based on formal mathematical modeling, collection of relevant data and, in some cases, econometric analysis of that data.⁶ To most young economists of the time, just as there was no 'Canadian' approach to physics or chemistry, there was also no specifically 'Canadian' method of economic analysis. However, the most influential Canadian economists of that period were influenced in their choice of topic by their Canadian experience. The emphasis on resource economics was a natural extension of the staples thesis. The emphasis on international trade reflected Canada's history as a trading nation and was also a natural extension of the staples thesis. The emphasis on fiscal federalism also was a result of Canada's history. Most of the influential economists in this period had been raised in Canada and had developed an interest in economic issues affecting Canada before going to graduate school. Thus these topics were largely a reflection of the Canadian experience, even if methods had converged on a global standard.

3.3 Canadian Economic Thought, 1967–1992

⁶ In the 1950s, it could take days, using mechanical calculators, to do the calculations for a few straightforward regressions. However, some economists did have small armies of research assistants for this purpose. And a few, such as Frisch and Tinbergen, had access to one of the scarce early computers in existence at that time.

By the 1967–1992 period, the Canadian economics profession had become sufficiently large and specialized that it is difficult to summarize even the major research contributions, and the history of Canadian economic thought in this period remains to be written. Alexander (1995) provides a valuable overview of the contributions of women economists in Canada in this period (and earlier).

In the 1993 *CJE* symposium issue, just one paper, by Wonnacott (1993), focused on specific research contributions, in international trade. The decision to select international trade for special attention in 1993 reflected the high visibility of Canadian economists in the field and the importance of international trade to the Canadian economy and to Canadian politics. The 1988 Canadian General Election is one of the few general elections anywhere to be fought primarily over an international trade agreement—the Canada US Free Trade Agreement (which went into effect in 1989 and became the North American Free Trade Agreement in 1994). Canadian academic economists played a major role in the debate over the Agreement and in the underlying research literature.

Canadian economists also continued to play an important role in natural resource economics and its close cousin, environmental economics. For example, very early in the period, Dales (1968a) made a fundamental contribution to the study of environmental economics as the first economist to propose and analyze cap and trade systems for emissions trading.

Fortin (1993) studied field popularity in his comparison of CEA conferences from early and late in the 1967–1992 period. Some major fields from early in the period remained popular, including macroeconomics, labour economics, international trade, and public economics. But there was a sharp decline in the relative importance of economic history, the history of economic thought, and economic development—once major fields in Canadian economics. And there was a notable increase in the importance of industrial organization, financial economics, and econometrics. Very probably a similar pattern applied in other countries. Underlying the evolution of fields was the increasing importance of economists in business schools. By 1992, in most of Canada’s large universities, the number of business school economists was significant compared to economics department size, and in some cases was of similar magnitude (counting people in finance as economists,

possibly despite their objections).

A theme in several of the 1993 symposium papers is a concern over the potential neglect of Canadian economic issues. Fortin (1993) identified papers with some Canadian content and found that it fell from about 46% in 1967–1974 to about 33% in 1989–1992. This is a large decline but, even so, 33% is a large percentage. Many of the papers at these conferences were empirical papers that either focused on Canada or included Canada on a comparative basis. This is particularly true of papers from non-university sources, such as the Bank of Canada, Statistics Canada, *etc.* (which together comprised just over 10% of total papers). Both the methods used and questions asked in these papers were very similar to those in economic research done in other countries, but Canadian issues received significant attention.

4. Changes in the Environment for Economic Research in Canada, 1993–2017

We now consider several important changes that have influenced economic research in Canada over the past 25 years. Some of these are global trends, but we try to emphasize interactions with the Canadian research environment.

4.1 Technology

Perhaps the most striking change that has occurred in economic research over the past 25 years is the expansion of the Internet. Hilbert and Lopez (2011) calculate that the Internet transmitted less than 1% of the information flowing through two-way telecommunications networks in 1993. That percentage rose to 51% by 2000, and exceeded 97% by 2007. While perhaps not everything flowing through the Internet should be classified as information, it has greatly changed the conduct of economic research, increasing global integration of the profession and reducing regional distinctiveness in economic research.

A second major technological change has been the continued increase in computing power. As of the late 1980s, the Cray-2 supercomputer represented a major step forward in computing power. By the early 1990s only the largest Canadian universities had even one Cray-2 or equivalent supercomputer, and few economists were able to reserve time on such machines. The iPhone 6 of 2017 is more powerful than the Cray-2 supercomputers of the late 1980s and inexpensive laptop or desktop computers are vastly more powerful.

Computing power is rarely a bottleneck for most economists, which contributes to the decentralization of economic research.

Faster computing has allowed solving and simulating a wide range of economic models that were computationally infeasible to work with 25 years ago. The combination of the Internet and computing improvements has also greatly affected teaching, both through the use of technology in the classroom and through the development of on-line courses at colleges and universities and on-line supplements to regular classes.

4.2 Data Availability

A great increase in data availability has occurred since 1993. In Canada, most public-use data sets come from Statistics Canada. Its acquisition and provision of information are as hotly debated by researchers now as they were in 1993. Since our focus is on things that have changed, we note the Canadian Research Data Centre network (CRDCN), which administers Research Data Centres, secure computer facilities that allow researchers to work with confidential data from Statistics Canada, described by Currie and Fortin (2015). In addition, Canadian economists have access to greatly improved public-use data sets created outside Canada, such as those from the United Nations, the World Bank, the IMF, and statistical agencies in other countries.

Recent improvements in technology have also facilitated proprietary data development through laboratory experiments, field experiments, and surveys (often done on-line). Collection and sale of data by third-party vendors has also become very important. In some cases, the cost is modest and routinely incurred by university libraries, but some valuable data sources are either expensive and/or require hard-to-obtain permission. And, increasingly, corporations such as Amazon and Google and other organizations accumulate large amounts of valuable proprietary data that research economists are sometimes able to use. Large data sets with thousands or tens of thousands of observations are routinely used by economists, but much bigger data sets with hundreds of thousands or millions of observations have also become available. Analysis of such “big data” is often regarded as qualitatively different from traditional empirical work in economics.

The ability to work with larger data sets may partially explain the trend (Hamermesh, 2013) toward papers that are longer and have more co-authors (often in different places),

and the increasing importance of empirical research. Table 1 shows co-authorship information for papers published in the *CJE* for the three time periods 1968–1970, 1991–1993, and 2014–2016.

Table 1: Papers Published in the *CJE* by Number of Authors

	One	Two	Three	Four+	Total
1968–1970	121	24	4	0	149
1991–1993	102	62	14	2	180
2014–2016	53	75	50	3	181

The pattern shown in Table 1 is striking. In the 1968–70 period fully 121 out of 149 papers (81%) were solely authored, and only four papers had as many as three authors. In the most recent period, co-authored papers were the norm, as only 29% of papers (53 out of 181) were solely authored. The number of papers published per year in the *CJE* has not changed much over the past 50 years, despite a large increase in the number of economists (both in Canada and in the world as a whole). However, although not shown in the table, the average length of papers has increased substantially. Also not shown in the table, international co-authorship grew dramatically over time, partly due to the general increase in co-authorship and partly crowding out within-country co-authorship.

4.3 Journals

By 1967, the primary mechanism for the transmission of research findings in economics was journals rather than books, conference proceedings, oral traditions, or other outlets. That was even truer in 1993, and is probably still truer now, notwithstanding technological progress that makes other research transmission media possible.

Technological change has lowered the costs of editing and producing scholarly journals. And Internet availability obviously cuts down distribution costs and distribution lags. In effect, the supply curve for journal space has shifted out. . However, the demand curve for journal space has also shifted out due to the increasing number of research economists both from traditional locations such as North America, Western Europe and Australia, and from a surge of new entrants based in China, Japan, India, Eastern Europe, South America and elsewhere. The resulting equilibrium has resulted in many more journals

(without any apparent reduction in price).

However, the number of ‘top journals’ has not increased. By definition, there can only be three “top three” or ten “top 10” journals in economics. Competition to publish papers in top journals has increased dramatically since 1993 and overwhelmingly since 1967. There are probably more research economists in the field of industrial organization now than there were research economists in total in 1967, as is also true of several other fields.

The development of specialized journals is one result of this trend. For example, as of 1967 there was probably only one well-known specialty journal in industrial organization: the *Journal of Industrial Economics* (1953). As of 2017, a partial list would also include new journals started after 1967 such as the *Rand J. of Economics* (1970), the *International J. of Industrial Organization* (1983), the *Review of Industrial Organization* (1984), the *Economics of Innovation and New Technology* (1990), and the *Journal of Economics and Management Strategy* (1992). There are also new journals in related areas such as experimental economics, game theory, and regulation, and journals dealing with the industrial organization of specific industries.

In addition to publishing in journals, economists can of course self-publish, simply by putting papers on the Internet, and many do. But journals continue to play a central role in certification of research quality, especially for hiring, promotion, tenure, and salary decisions, and in awarding research grants. As economists have become more specialized, it has become harder to assess research contributions in fields outside one’s own area, and using journal quality and journal citations as indicators of quality has probably become more important. Journals are also a foundation for literature searches using online search engines such as Google Scholar, and for the organization of university libraries. Journals are probably more important than ever.

4.4 Research Funding

The structure of research funding has an important effect on the conduct of research. Most financial support for research in economics in Canada comes from the SSHRCC federally and from the FRQSC in Quebec. These funds support graduate students, post-doctoral fellows, journals, conferences, and research projects. The *CJE* has benefited from

receiving SSHRCC funding over the years. Research also is supported and coordinated by CIFAR (in Economics since 1991) and CIRANO (1994). One noteworthy change in federal support for research since 1991 has been the Canada Research Chair (CRC) program, founded in 2000 and intended to attract top scholars to Canada or to retain those who might leave. As of December 2016, this program has funded ten Tier 2 chairs (emerging researchers) and 13 Tier 1 chairs (established outstanding researchers) in economics. An external evaluation of this program certainly would be of interest.

4.5 Associations and Study Groups

Another change in the research environment in Canada over the past 25 years has been the rise of specialized study groups, paralleling the increased importance of specialized journals. Various associations of economists other than the CEA existed prior to the 1990s, whether organized by region or by interest. These included the Société canadienne de science économique (1960) (see Paquet, 1989), the Canadian Network for Economic History (1965), the Atlantic Canada Economics Association (1971), and the Canadian Association for Business Economics (1975) (see Parish, 1997). Periodically the CEA also has jointly met with the Canadian Agricultural Economics Society, to the benefit of both.

As the economics profession has become larger and more specialized, there has been a natural centripetal force that could weaken encompassing organizations, such as the CEA. The 1980s saw the appearance of the Canadian Economic Theory Conference (1981), the Canadian Econometrics Study Group (1984), and the Canadian Macroeconomics Study Group (1987). Each of these latter groups focuses on organizing a small, annual conference, with rotating organizers and locations. Many more study groups subsequently developed, whether organized by sub-discipline (*e.g.* in development economics, public finance, and so on) or by methodological outlook (*e.g.* the Progressive Economics Forum, 1998).

4.6 Participation of Women

The increasing participation of women in economic research has had a major impact in recent decades, in Canada and elsewhere. Figure 2 illustrates this trend using data on *CJE* authors for the same three time periods used in Table 1: 1968–1970, 1991–1993, and 2014–2016.

Figure 2 presents a striking picture. In the 1968–70 period fully 80% of papers published in the *CJE* were solely-authored papers published by men. Most of the other 20% were co-authored papers for which both (or all) authors were male. In fact, in that period we found only one solely-authored paper by a woman and one paper co-authored by a woman. By 1993 some change had occurred but still only a small minority of papers had either a female sole author or co-author. A major change occurred by 2014–16. Papers with either a female sole author or co-author were up to 33% of the total.

The Canadian Women Economists Network (CWEN) was founded in 1990 to promote networking by women economists and the advancement of women in economics. It organizes sessions and a mentoring breakfast at the CEA meetings and biennially makes an award to a young researcher.⁷ In 2016 the CEA, in cooperation with CWEN, created a new standing committee, the Canadian Women Economists Committee (CWEC) that would take over many of the functions previously carried out by CWEN. Thus CWEC is to some extent a successor to CWEN, although CWEN, as of this writing, continues to exist as a distinct organization. As of 2017, the CEA has had five women presidents, Alice Nakamura (1994–95), Barbara Spencer (2004–05),⁸ Victoria Zinde-Walsh (2010–11), Nancy Gallini (2016–17), and Frances Woolley (2017–18). And Angela Redish is scheduled to become the 6th female CEA president in the 2018–19 year.⁹

4.7 The Spatial Concentration of Research

The picture presented by Johnson (1968) suggests that economic research in Canada was concentrated mainly in just a few universities. That picture has changed markedly over time, although the ranking of research organizations has been relatively stable. Davies,

⁷ CWEN/RFÉ (2015) reported on the status of women in economics in Canadian universities, and tracked the trends over time. The report also singled out prominent women working as economists outside universities

⁸ An interesting account of Barbara Spencer’s experiences as a female economist in Australia and Canada is provided in her address to the 2002 CWEN luncheon, available as “Trying to Follow the Yellow Brick Road: My Early Experiences as a Woman Economist” at <https://blogs.ubc.ca/barbaraspencer/> and also on the CWEN website.

⁹ The AEA has had only three women presidents: Alice Rivlin (1986), Anne Krueger (1996), and Claudia Goldin (2013), but its first female Vice-President, Edith Abbott, served in 1919 and the author of the lead article in the first issue of the *AER* (in 1911) was a woman, Katherine Coman.

Kocher, and Sutter (2008) documented these points. They first reviewed early assessments of research performance showing, as of 1968, that economic research was concentrated in a first tier consisting (in alphabetical order) of British Columbia (UBC), Queen’s, Toronto, and Western, followed by second tier of 7 or 8 other universities with a substantial research presence.

Davies *et al.* then did their own assessment. For each university they pooled the economics department with other economists at that university. They tracked publications in the *CJE* and in a set of top ten journals in economics from 1980 to 2000, and then compared sub-periods. Their findings show how much concentration fell over time. For example, the performance ratio of the 1st institution to the 10th institution in the earliest sub-period (1980–86) period was 17.2. In the latest sub-period (1994–2000) the corresponding ratio was 6.6. More sophisticated measures yield similar outcomes — dramatically reduced concentration of research activity.

Moving to the present, rankings of Canadian research organizations at RePEc as of 2017 confirm that research is much more broadly distributed now than it was 50 or even 25 years ago.¹⁰ In March 2017, RePEc identified 192 economics research units in Canada, as more departments emphasize research than in the past. It distinguishes between economics departments and other units at a given university. The top four producers of economic research are (in rank order) UBC’s economics department (renamed the Vancouver School of Economics in 2012), and the economics departments at Toronto, Queen’s, and Western.

The RePEc list also documents the increased importance of business schools in economic research, with Toronto’s Rotman School taking 5th position in the overall ranking, UBC’s Sauder School in 10th position, and HEC Montreal in 13th. Non-academic institutions are high on the list, including the Bank of Canada in 7th spot, between the SFU economics department in 6th position and McMaster in 8th, closely followed by McGill in 9th. In addition to a broader distribution across economics departments and business schools, other research units are also active. Such units in the top 50 also include, for

¹⁰ Viewed on March 11, 2017. We acknowledge that RePEc may be subject to significant omissions and that, as always, it is possible to argue for other methods. But we believe that for the trends described here it is very unlikely to be misleading.

example, Statistics Canada, the School of Public Policy and Governance at Toronto, the School of Public Policy at Calgary, and the C.D. Howe Institute.

4.8 The CEA Annual Conference

The CEA annual conference, typically occurring in late May or early June, plays an important role in the research life of economists in Canada. In addition to being devoted primarily to the presentation of research papers, the conference is also where the CEA awards several prizes, including the John Rae Prize, the Douglas Purvis Memorial Prize, and the Harry Johnson Prize. And since 2010 the CEA has recognized distinguished contributors to Canadian economics as Fellows, normally two but sometimes three per year. A featured lecture named for Harold Innis is also given. Various administrative meetings are also held at the conference, including the annual general meeting of the CEA.

We now provide a brief update on some of the trends identified by Fortin (1993) using data from the 2015 and 2016 CEA annual conferences. Fortin found 48 papers per year by Canadian authors at the annual conference in the 1967–1974 period and 224 papers per year in the 1989–1992 period. Further dramatic growth in the meetings occurred in the following period, with 1137 papers presented by authors resident in Canada in 2015 and 2016, or about 568 per year. Furthermore, by 2015–16, papers presented by authors from outside Canada had become an important part of the conference, with about 200 per year. Overall, the conference was on the order of three times as large in 2015 and 2016 as at the 25-year anniversary and well over 10 times as large as in the early years of the Association.

The growth of the annual conference was not, however, just a matter of trend growth. After some disappointing conferences in the mid-1990s, the CEA made a number of changes to make the CEA annual conference more attractive. The Association is affiliated with the Federation of Humanities and Social Sciences but its conference has met separately from the Federation’s annual Congress since 1999. This change allowed the CEA to choose its own meeting locations emphasizing ease of transportation and reduced congestion at conference sites, while also improving services and lowering costs.

The CEA also sought to bring into the conference the field-specific study groups, starting with a concerted effort in 2004. Initially viewed by some as alternatives to the

CEA, they are now in symbiosis with it: Study groups typically organize sessions at the annual CEA conference and in return are partly sponsored by the CEA. The CEA also greatly increased the number of plenary speakers by initiating State of the Art lectures. These measures had a major impact on attendance and other measures of success of the annual conference.

The role of women at the annual conference also grew dramatically in the second 25 years of the Association's life. Of the 1137 papers presented in 2015 and 2016 by Canadian authors, 311 were presented by women, or about 27% (up from 3% in the late 1960s and from 11% in the early 1990s). The number of non-academic presenters (from government, think tanks, the private sector and other organizations) rose from about 10% to about 15%.

Field representation was similar to that in the early 1990s. Of the 1535 papers presented by both Canadian and non-Canadian authors in 2015 and 2016, the macroeconomics areas (broadly defined) accounted for 264. Other large fields included trade and development economics (212), labour economics (167 papers), environmental and resource economics (102 papers), industrial organization (100 papers), and financial economics (96 papers). Public economics narrowly defined had only 78 papers, but if we add areas such as health economics, the economics of education and welfare economics, the combined total rises to over 200. Also noteworthy was the substantial presence of papers on experimental economics (49) and behavioural economics (27).

4.9 The Role of the *CJE*

As of 1968, most active research economists in Canada belonged to the CEA (as can be inferred from Helliwell, 1993) and received the *CJE*. The *CJE* was a highly desirable place to publish. Using citation data, Hawkins *et al.* (1973) rated the *CJE* as a top ten economics journal on their preferred list (OK, in 10th place).¹¹ Using a reputational survey, Bush *et al.* (1973) ranked the *CJE* 17th out of 87 economics journals. Within Canada, it was arguably the most important journal outside the top 6 or 7. A typical Canadian economist would peruse the *CJE* when it arrived (in hardcopy!) and quite likely

¹¹ Both those lists had the *AER*, the *JPE*, *Econometrica*, and the *QJE* at the top, as do many current rankings.

discuss some articles informally with colleagues, contributing to an awareness of what other economists in Canada were doing and to a sense of intellectual community. By 1993 this phenomenon had declined but still had some significance.

At present, we suspect that few Canadian economists peruse the *CJE* on a regular basis to keep abreast of ‘Canadian economics’. The emergence of specialty journals has created a large intermediate tier of perceived journal quality between the top 5 or 6 general interest journals in economics and the next group of general interest journals, including the *CJE*, which now rarely appear even in the top 50 economics journals in most rankings.¹² The *CJE* remains highly cited within the field of international trade, and its Viewpoints section also is widely read. But it has not been immune to the general decline in the rankings of national, general-interest journals.

We studied papers in the *CJE* in three periods, 1968–1970, 1991–1993, and 2014–2016, to compare its role when the CEA was founded, at the 25-year anniversary, and today. We categorized papers as empirical, theoretical or other. The ‘other’ papers generally are about Canada and related to policy. For example, the 1968 volume contains, among others, two papers reviewing the 1967 Bank Act, a paper on Canadian public policy and the media, and a six-paper symposium as a supplement to the first (February) issue on the Carter Commission report on taxation. Figure 3 shows the pattern. The number of ‘other’ papers was much higher in 1968–1970 (about 25%) than in 1991–1993 (10%) or 2014–2016 (5%). (The count for 1993 includes the symposium papers.) One big change is the decline in policy-oriented papers about Canada.

We also assessed which papers had significant Canadian content. The trend toward more empirical research tends to increase Canadian content, as theoretical papers are unlikely to be classifiable as ‘Canadian’. However the share of papers focusing on Canada has still fallen, from about 40% in the two earlier time periods to about 30% in 2014–2016. Looking just at empirical papers, the Canadian share has dropped more sharply. It was

¹² There are now many rankings of economics journals, (*e.g.* ideas.repec.org/top/top.journals.all.html). Except for the top few journals, rankings differ wildly depending on the criteria used. However it is clear that second-tier general interest journals such as the *CJE*, *Economica*, *Economic Inquiry*, *etc.* have dropped a long way down the rankings, supplanted by leading field journals, and rarely appear in the top 50 on most lists at present.

about 70% in 1968–1970, rose to about 80% in 1991–1993, and dropped to about 50% in 2014–2016. Even 50% is a large fraction and anyone looking through an issue in the latest period would still notice a lot of Canadian content, especially in labour economics. However, despite a significant increase in the number of research economists in Canada in the past 25 years, the number of empirical papers about Canada published in the *CJE* has actually fallen.

What has happened to research on Canadian economic issues? Some has migrated to other outlets, such as *CPP*, and reports published by think tanks, the Bank of Canada, Industry Canada, and other government outlets. Successive *CJE* editors and co-editors (a group that includes us) have been very open to publishing high quality research on Canada. So this pattern raises the issue of whether there is a shortfall in the supply of specialized, technical, empirical research on Canada, particularly work that is not directly policy-related.

5. Canada’s Evolving Research Distinctiveness

The introduction posed several questions about economic research in Canada. Has there ever been a Canadian school of economics? Has the distinctiveness of Canadian economic research declined over time? Is there some misallocation of resources for economic research leading to insufficient distinctiveness in Canadian economic research?

5.1 Convergence of Canadian Economic Research towards the Global Standard

We have already answered the ‘positive’ question regarding the distinctiveness of economic research in Canada. That distinctiveness has fallen dramatically over time. We can identify four eras in Canadian economic research. Transitions dates are somewhat arbitrary, but World War dates are convenient. First came the period up to 1914, as described by Goodwin (1961). Although economics was a well-developed subject in the UK, the US, and continental Europe long before 1914, very little of note was done in Canada—too little for the question about distinctiveness to have much meaning.

The second era began with a systematic body of economic research appearing in the encyclopedic *Canada and Its Provinces* (Shortt and Doughty, eds, 1914–1917), leading naturally into the “Canadian School” associated with the staples thesis. This approach, which

dominated Canadian economics in the inter-war period, was distinctive in both method and subject matter, and emphasized the fields of economic history and Canadian economic development. At the same time there were distinct schools in Cambridge (England), Sweden, and Austria. The distinctiveness of these schools was in part due to national issues but perhaps even more to geography and the limits to communication.

The third era, which we somewhat arbitrarily define as going from one cataclysmic event (the Second World War) to another (the founding of the Canadian Economics Association) is the 1945–1967 period. As described by Johnson (1968), Dales (1968b), and others, the new generation of research economists in Canada became integrated with the broader profession (dominated by economists in the US and UK), using essentially the same methods. But Canadian economics had distinct subject areas of strength related to the Canadian experience, particularly in natural resource economics, international economics, and parts of macroeconomics and public finance.

Since 1967, economic research in Canada has entered a fourth era in which it has gradually become globalized in both methods and subject matter. Economists from Quebec became increasingly integrated with the research community in the rest of Canada in this period as both groups became more integrated into the global community of research economists. And English has emerged as the international language of economic research.

In the 1993 symposium issue of the *CJE*, Neill and Paquet (1993) echoed a view articulated earlier by Taylor (1960), favouring a Canada-first emphasis in economic research. But they concluded that, while there had been a distinct Canadian Economics, it had largely disappeared. Using RePEc it is possible to compare the activities of Canadian economists with those in other countries. The distribution of activity by field in Canada is very similar to that in the world as a whole.¹³ Researchers based in Canada also are active in fields that have grown sharply on a global basis since 1992, such as behavioral economics. There is little or no country-specific pattern to field choice within economics and it is difficult to reject the hypothesis that any differences that do exist are due to random or idiosyncratic factors. Many PhD graduates from Canadian universities find

¹³ In the 1993 symposium Scott (1993) observed that research fields were very similar for AEA and CEA members.

employment in other countries on very much the same basis as they find employment in Canada. Certainly there is no evidence of significant differences across countries in the subject matter or methods taught in PhD programs. This high level of convergence in economic research across countries has affected not just Canada, but other countries as well.

The globalization of economic research does not imply a loss of diversity of methods and approaches. For example, empirical work in Canada, as elsewhere, uses a wide range of methods. Macroeconomics is notorious for not featuring an accepted standard model, and Canadian researchers use the full range of methods and models.

Section 4 identified some reasons for this convergence. The globalizing effect of the Internet is undeniable. Most research articles can be readily accessed (in open-access form) in almost every country, and co-authors can easily meet remotely through conference calls or communicate using email. As in earlier periods, output partly reflects technology. Less obviously, the proliferation of field journals as opposed to national, general-interest journals has reduced the importance of national schools of thought in favour of a global norm. Also, increasingly academics in Canada originate from many different countries. A similar phenomenon applies in other countries as well, as the labour market for PhD economists has become a global one.

What about the relative performance of Canada? Davies *et al.* (2008) cited several studies and provided their own analysis. Canada was, by most measures, the third most significant contributor to economic research, after the US and the UK, up to the end of the 20th century. As other countries have converged on the global standard for economic research, that position has eroded. In RePEc rankings, Canada now ranks after the US, the UK, Germany, France, and Italy, and it would be natural to expect that, over time, China and India will move up the rankings. But Canada's per capita research performance is still impressive.

5.2 The Normative Implications of Research Convergence

Is this global convergence in both method and topic in Canada's interest? Canadian research in economics (and in most other areas) is still supported primarily by taxpayers, both in the form of direct research grants and, more importantly, through financial support

for universities from provincial governments. And taxpayers also foot the bill for economic research in the Bank of Canada, Statistics Canada, and departments in both federal and provincial governments. We might therefore ask whether Canadian taxpayers are obtaining a reasonable return on this investment. And quite apart from the return on investment for Canadian taxpayers, what about the overall public interest for Canada and for the world as a whole?

Scott (1993) noted that Canadian economists have strong incentives to invest in working with US data and on US empirical problems. For example, most work done by Canadian financial economists focuses on US financial markets. And leading journals based outside Canada do not publish much on Canada: If Canada is like the US in some respect there is no reason to highlight it; if it is different, then it is not representative and so, again, perhaps not worth focusing on.

It is possible to publish a paper in a top journal using Canadian data, but it is difficult. For 2016 we counted the number of empirical papers dealing primarily with Canada in the leading economics journals. First we looked at the standard top five general interest journals.¹⁴ In these outlets, the number of empirical articles primarily about Canada was easy to count: it was 0. This compares with 96 empirical papers focused primarily on the US. There were three articles in which Canada was one of a small group of countries studied on a comparative basis.

We also looked at the top journals in the major fields.¹⁵ In the seven journals we considered, in 2016 there were three empirical papers focused primarily on Canada, compared with 206 focused on the US. And there were four papers in which Canada was one of several countries considered on a comparative basis. By any reasonable standard there is a dramatic shortfall within leading journals in empirical research on Canada relative to the US. We acknowledge that to assess the value of empirical research related to Canada we should perhaps look for evidence of readership and citation in Canada, or to the teaching of economics in Canada, rather than in non-Canadian journals. However, our key point

¹⁴ The *AER*, *JPE*, *QJE*, *Econometrica*, and the *Review of Economic Studies*.

¹⁵ We used the *Rand Journal of Economics*, the *Journal of International Economics*, the *Journal of Monetary Economics*, the *Journal of Finance*, the *Journal of Labor Economics*, and the *Journal of Public Economics*. We also included the *Review of Economics and Statistics* as a leading empirical journal.

is not about the relative quality of work on Canada, it is about the incentives faced by economists doing research in Canada.

The evidence leads to a syllogism. Academic economists in Canada (whether seeking promotion, expanded employment opportunities, grant support, or just recognition for their work) have strong incentives to seek publication in leading journals. Leading journals are unlikely to publish work on Canada. Therefore Canadian economists tend to underinvest in research on Canadian economic issues.

The *CJE* is the only well-ranked economics journal with a commitment to addressing Canadian issues. It is certainly a high-risk strategy for young Canadian researchers to invest in learning about Canadian data and Canadian institutions rather than devoting that time to US or European data and institutions. For non-academic researchers, the issue is different. Researchers in the Bank of Canada or government departments are mandated to work on Canadian topics. But that means their work will be unlikely to appear in leading journals. For example, studies by Bank of Canada researchers on measuring the output gap or on exchange-rate pass-through in Canada may be useful to policymakers in Canada and possibly in other small, open economies, but they are difficult to place in leading journals in macroeconomics. It follows that this research will be underestimated by measures based on journal rankings. And for these researchers there is not much opportunity, apart from the *CJE*, for refereed, external validation and certification of their work on Canada in highly regarded journals.

These observations lead us to invite readers to consider the future role of the *CJE*. In the future should it perhaps have a new focus on certifying (*i.e.* publishing) research specifically on Canada? This focus could occur through a new section of the journal, a re-orientation of the entire journal, or a new, separate series. Such multiple sections or series, distinguished by method or subject, are common in other academic disciplines. A new CEA-sponsored journal is another possibility. A new series or journal would have the added benefit of providing another publication option for a paper about Canada, making research on Canada less risky in terms of publication likelihood. Perhaps CPP could take a larger role, although much empirical work lies outside its current range. The anticipated result would be more research on Canada, with the associated benefits to teaching and

policy in Canada. And possibly such a reform would have broader benefits for the world as a whole, through promoting research diversity.

Asking this question leads to a similar question about the CEA. Should it promote research on economics in Canada (as it does well) but also re-emphasize research on the economics of Canada? We are confident in our claim that economic research in Canada has converged on the global norm. We are less confident of the normative implications, but we invite readers to consider these questions.

6. Concluding Remarks

This 50th anniversary issue of the *CJE* is a celebration of economic research done in Canada. The papers that follow this one provide fascinating and informative reviews of major Canadian contributions to economic research over the past 25 years in most major fields in economics. As the papers demonstrate, economists in Canada have made outstanding contributions that are out of proportion to Canada's relative size measured by population or by GDP. Canada continues to rank very highly as measured by research impact, and much of that impact arises from the work reviewed in this anniversary issue. And the papers are not just retrospective. They also set the stage for important new lines of research that will be developed over the next 25 years. For researchers looking for interesting future projects, reading the papers that follow in this issue is an excellent way to begin.

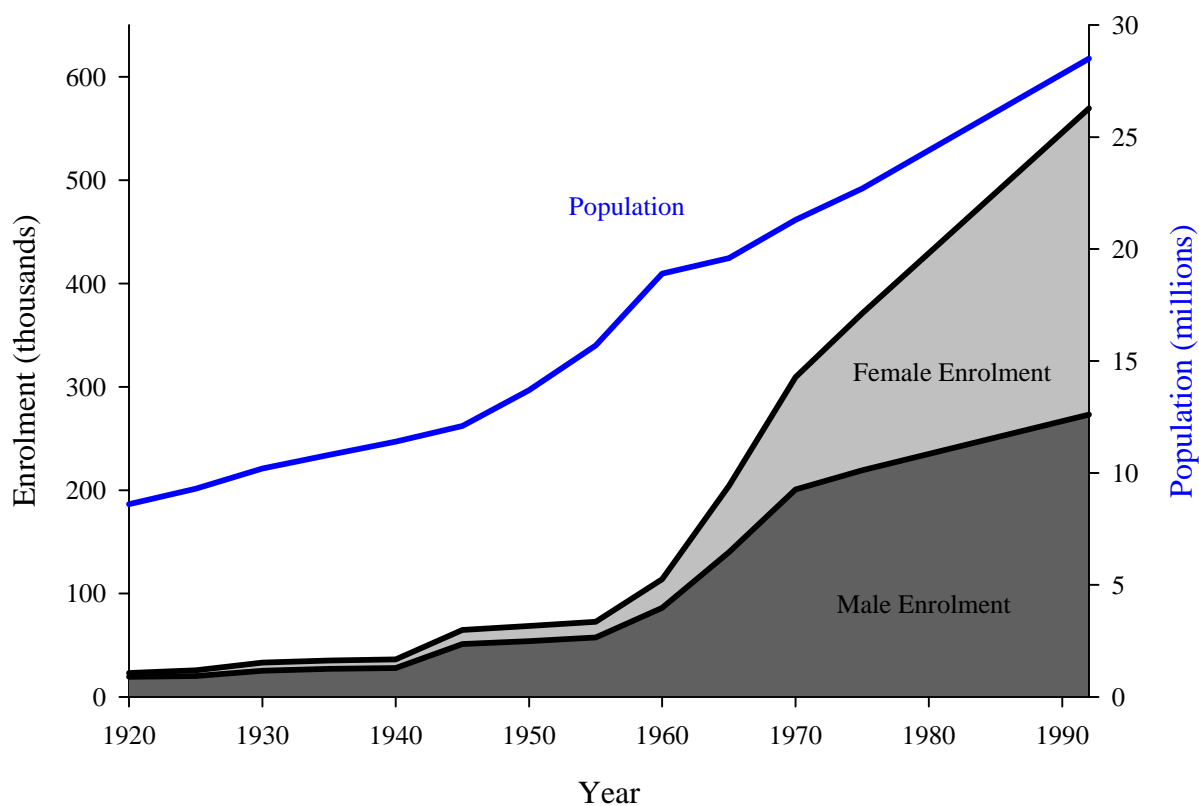
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Figure 1: Full-Time University Enrolment and Population, 1920-1992



Note: The figure shows full-time university enrolment in Canada by men (in black) and women (in grey) in thousands, on the left axis, along with population (in blue) in millions on the right axis. The source is M. Wisenthal, *Historical Statistics of Canada*, Section W for each 5-year period from 1920 to 1975 and CANSIM Table 477-0019 for 1992.

Figure 2: Authorship of *CJE* Articles by Gender

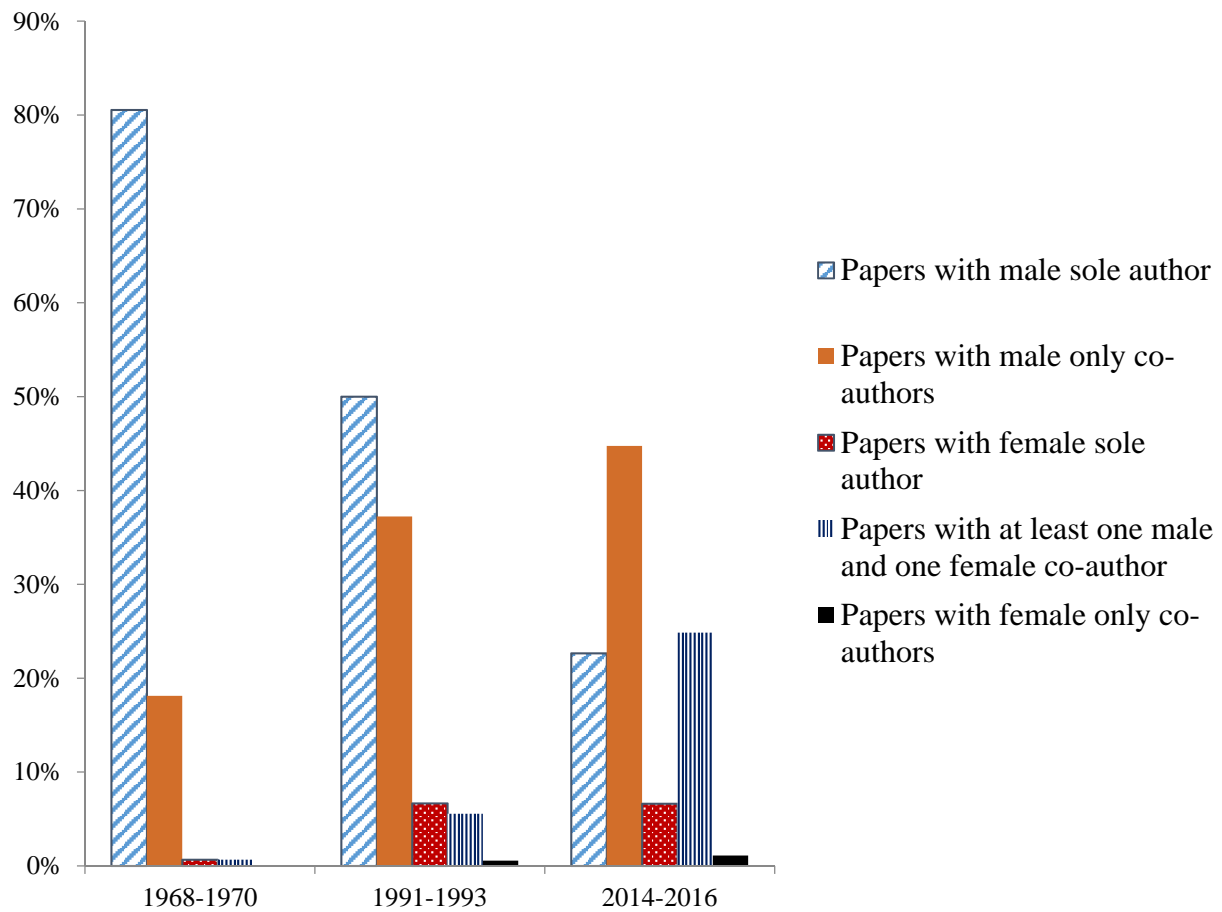


Figure 3: Types of Papers Published in the *CJE*
(Theory, Empirical, and Policy and Other)

