



January 9, 2014

TRADE AND INTERNATIONAL POLICY

Tradable Services: Canada's Overlooked Success Story

by
Daniel Schwanen

- Internationally mobile services, such as scientific research, engineering or consulting, are a rapidly increasing source of high-paying jobs for Canadians. Exports of these services from Canada have also considerably outshone goods exports since the beginning of the century.
- While goods production and transportation industries use relatively larger amounts of physical capital, most tradable service industries hold relatively large amount of intellectual property and employ workers with higher formal educational achievement. Although tradable services are less tangible than manufacturing, they are becoming equally important to Canada's future competitiveness.
- Barriers to growth in tradable services should be removed. This means opening foreign markets to Canadian-based services industries, such as under the proposed Comprehensive Economic and Trade Agreement with Europe and through Canada's participation in the plurilateral Trade in Services Agreement negotiations. As well, policies aimed at bolstering the manufacturing sector should be calibrated in such a way that they take into account the need to grow well-paying jobs in all sectors, including tradable services.

Services that can be sold from Canada to other countries are a source of strength for our economy, but are often neglected in economic policy discussions. Because these tradable services provide an important and growing source of well-paying jobs for Canadians, they warrant a focus on removing

I gratefully acknowledge the research assistance of Omar Chatur, and thank Colin Busby, Dan Ciuriak, Ben Dachis, Finn Poschmann, Ted Wigdor, and anonymous reviewers for their helpful comments. Responsibility for any remaining errors or omissions rests entirely with me.



barriers to Canada's ability to compete internationally in such services as part of our economic diplomacy and trade-negotiating strategy.

With a few notable exceptions, such as transportation and communications services, tradable services employ more workers with advanced formal education, use intellectual property (IP) relatively more and machinery relatively less as a form of capital, and use less fixed capital per employee generally than do other tradable sectors, notably manufacturing. Therefore, policies to bolster Canada's high-paying jobs across all sectors, including services, should be designed with a broader set of factors in mind than policies focused more narrowly on bolstering manufacturing jobs.

What Is a Tradable Service?

"Tradable services," for the purposes of this E-Brief, are services that can be delivered across international borders, either through virtual channels (such as a Canadian designer who sells patterns to foreign manufacturers over the Internet) or through the service provider's temporary presence in a foreign market (such as a Canadian resident engineer who works on a project abroad). This definition excludes services typically provided by Canadians in Canada to temporarily passing foreign customers (such as tourists), even though such services count as exports because they are sold to foreigners. In short, the focus here is on industries whose output can be demonstrably "sent" or "performed" by Canadian residents across borders. The services are also considered tradable using the quantitative approach of Jensen and Kletzer (2010) (see Box 1).¹

How Important Are Tradable Services to Canada's Economy?

To appreciate the importance of tradable services industries to Canada's economy, Figure 1 shows weekly earnings and employment by industry, inspired by Mudambi's (2007) "Smile of Value Creation." In the figure, which covers most Canadian non-farm industries,² jobs are grouped and then ranked from left to right by industries sharing similar broad characteristics (described in Box 2). The numbers on the horizontal axis shows the cumulative share of total Canadian employment, while the vertical axis shows the average weekly earnings for the industry corresponding to that same point.

Goods Production and Distribution:

On the left of Figure 1 are industries that produce tangible goods or whose essential role is to carry these goods to markets beyond their place of production.³ The ones farther to the left are relatively high wage, and are

1 In the parlance of international trade agreements, I focus on industries where the delivery of services through Mode 1 (crossborder supply) and Mode 4 (where a natural person who works for the supplier goes to the foreign customer) is broadly feasible, not those typically restricted to Mode 2 (where the foreign customer moves to where service is delivered) or Mode 3 (through a permanent establishment abroad to serve customers there).

2 It was not possible to cover all sectors, as some industries' employment or earnings data are not reported by Statistics Canada for confidentiality reasons. Where reasonable estimates (available from the author) could be made in lieu of confidential data, I have used them here to cover as much of the economy as possible. The data include overtime and are for employees – that is, they exclude the self-employed and business owners.

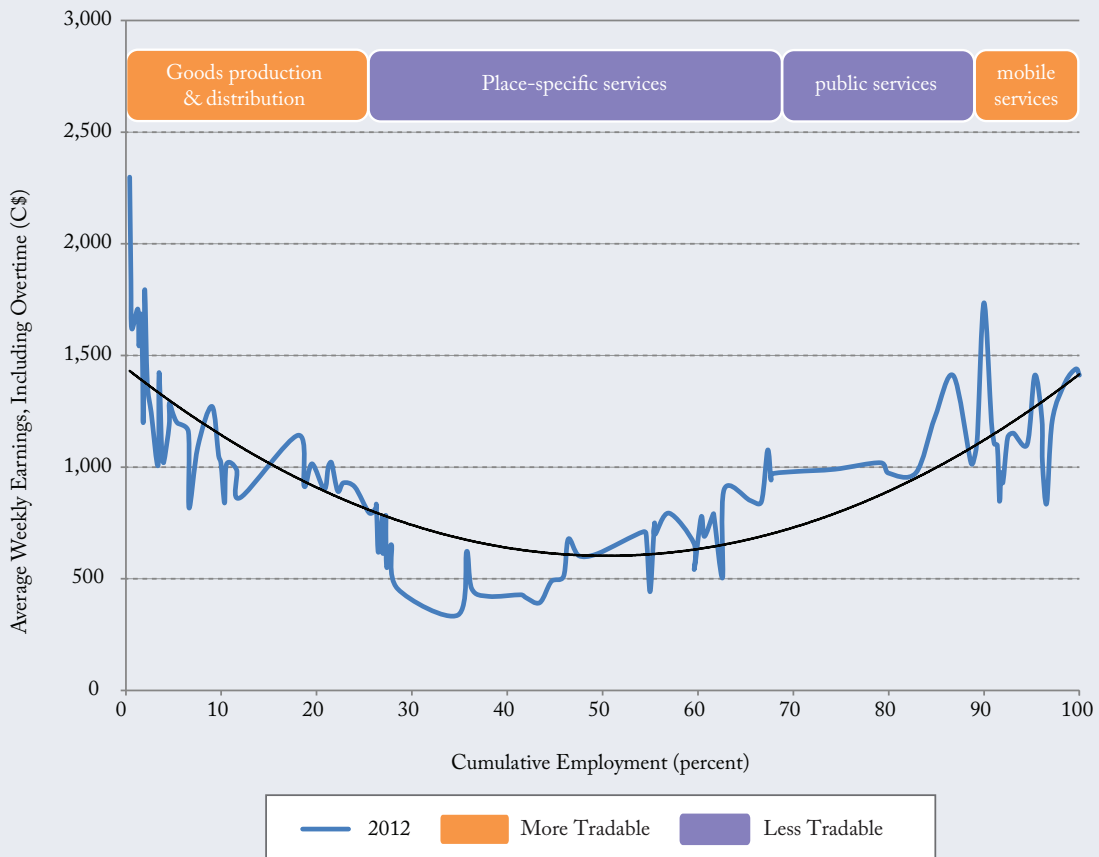
3 Note that some tradable services whose essential role is to transport goods are embedded in the left of the figure, meant to represent the "physical" side of the economy, because they share key characteristics of these goods-producing industries.

Box 1: An Empirical Approach to Identifying Tradable Services

The concept of “tradability” in services has been refined most recently in a series of papers by J. Bradford Jensen and co-authors (see, for example, Jensen and Kletzer 2010). They compare the concentration of service industries’ output by metropolitan area in the United States with the concentration of demand for this output. The latter can be estimated using, for example, an area’s population.

The measure that most intuitively allows a comparison of the concentration of output with that of demand is the Gini coefficient. An industry located in a single region accounting for a tiny portion of its customers will exhibit a Gini coefficient of close to 1, while an industry for which production is dispersed in exact proportion to its customer base will register a Gini coefficient of zero. A reasonable inference from the work of Jensen and Kletzer is that, if an industry’s output is tradable within the United States, it is also technically possible to trade it between countries. The authors call such industries tradable if they have a Gini coefficient of 0.1 or above.

Figure 1: Canada’s Smile of Value Creation



Sources: Statistics Canada, CANSIM database, table 281-0047; accessed online June 2013.

Box 2: Industry Characteristics

The four primary characteristics used to rank the industries in Figure 1 are the total stock of fixed capital per employee, the share of buildings in the stock of capital, the share of employees with a formal education of high school or less, and the share of IP products – which include, for example, software, research and development, and mining exploration – in the stock of capital. Together, these characteristics account statistically for much of an industry's average earnings, as shown in the regression results in Appendix Table A-1. Specifically, the value of capital stock per employee and the share of IP goods in the capital stock contribute positively to earnings, while building intensity and relatively low levels of formal education contribute negatively. Two secondary characteristics used to group industries are the share of engineering structures in the capital stock and the share of industry employees with a postgraduate degree.

The detailed ranking of industries is available from the author. The ranking involved some judgment in grouping similar industries with each other. From left to right in Figure 1, the first 16 (out of 112) industries are in the top quartile of industries for engineering structures as a share of fixed capital, as well as having a high value of capital stock per employee overall. The next group comprises three manufacturing industries with relatively high capital stock per employee, and eight manufacturing and distribution industries with a high share of IP in their capital stock. There follow 19 manufacturing and distribution industries whose main common characteristics are workers in the bottom two quartiles of formal educational achievement and mid-to-low levels of capital stock per worker overall. The next 19 industries are non-tradable services industries similarly characterized by employees with lower-than-median formal educational achievement, as well as, in most cases, low capital stock per employee and a relatively high share of their capital stock comprised of buildings. They are followed by 19 non-tradable service industries whose chief common characteristic is that their employees have either a higher level of formal education or use a higher level of fixed capital than do other non-tradable services industries. The seven public sector industries that follow similarly have high levels of capital per employee and/or high average educational achievement. They are followed by seven mobile services industries ranked high on the basis of fixed capital per employee and/or engineering structures as a share of capital. The last 14 mobile services industries on the right are characterized almost uniformly by high levels of educational achievement and a high percentage of IP in what is otherwise a lower-than-median stock of fixed capital.

Sources: for the 2012 capital stock data, Statistics Canada, CANSIM database, table 031-0002, retrieved October 2013; for education level reached by employees by industry, idem, 2006 Census of Canada, Topics-based tabulations: Industry – North American Industry Classification System, Sex and Selected Demographics, Cultural, Labour Force, Educational and Income Characteristics, available online at <http://www12.statcan.gc.ca/census-recensement/2006/dp-pd/tbt/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=97612&PRID=0&PTYPE=88971,97154&S=0&SHOWALL=0&SUB=0&Temporal=2006&THEME=74-&VID=0&VNAMEE=&VNAMEE>.

characterized by large capital investments in relatively long-lived and immobile engineering structures (such as mining, rail, pipelines). Some of these industries employ a large percentage of workers whose formal education has not gone beyond high school, but whose high wages are supported by high fixed capital investments. Others, however, such as electric utilities, combine their relatively high stock of physical capital with workers who have a relatively high level of formal education.

These industries are followed, immediately to the right in Figure 1, by a group of relatively footloose goods production and distribution industries whose purpose is the manufacturing or distribution of goods. Many of these also have a relatively high capital stock – chiefly machinery and equipment – per worker. The capital stock is relatively movable, although some is also building intensive. A majority of these industries employ a higher-than-average proportion of workers whose formal educational level is high school or less, but a few – such as chemicals and computer products manufacturing – also employ a proportion of post-graduates that is higher than the Canadian median.

Place-Specific Services:

In the middle are “place-specific” services industries – such as gas stations, restaurants, and ambulatory healthcare – for which the employees’ primary activity cannot be separated from the customer. As a result, their capital stock tends to be building intensive. Moving from left to right on the figure, the first set of industries in this group – the ones with the lowest earnings – are characterized, like many goods-producing industries on the left, by a high proportion of employees whose formal educational level is high school or less. Moving to the right, earnings begin to rise again as the average worker’s educational achievement increases, and some industries also begin to record IP as a significant part of their capital stock.

Publicly Provided Services:

To the right of these are mainly publicly provided services – such as hospitals, government services, and university education. The delivery of these services involves relatively large investments in fixed capital. These industries also employ workers with a higher formal educational achievement than the place-specific services immediately to the left of them. Some of their activities – in higher education, for example – are tradable across borders, which appropriately places them between non-tradable and internationally mobile services.

Mobile Services:

Moving further to the right, we begin to enter the world of mobile services, including many that can be delivered virtually. All are tradable in the sense they can be sold or delivered across borders. The first industries in this group exhibit, like public services, a relatively high amount of fixed capital stock per employee, including in engineering structures (telecommunications, for example). Farthest to the right are services such as insurance, research and development, architectural and engineering services, and commodities trading that rely comparatively more on investment in highly educated personnel or IP than on large amounts of fixed capital per worker overall.

In the figure, the higher-wage activities are located mainly on the left (physical goods production and distribution) and right (mobile services economy, excluding the transportation and distribution of goods) – that is, in sectors that produce or carry across borders goods and services that are tradable. Place-specific services in the middle record lower average earnings, giving the figure a general U-shaped or “smile” pattern. The implication is that, in the non-public sector, the tradability of a good or service is closely related to firms’ investments in education and physical and intellectual property capital, which contribute to higher earnings overall.

Figure 1 also shows that earnings in mobile tradable services are comparable with – when not higher than – those in most manufacturing industries. Furthermore, unlike in manufacturing, employment in tradable services has increased (Table 1). This increase has coincided with Canada’s relatively strong export performance in mobile tradable services: between 2001 and 2012, the volume of Canada’s goods exports fell by 1.8 percent, whereas the volume of commercial services exports – excluding travel, transportation, and government services – rose by 35 percent.⁴ Nonetheless, jobs in tradable services have not replaced all of the manufacturing jobs that were lost during the period. Furthermore, workers who lost their jobs in manufacturing are not necessarily able to move to expanding sectors of the economy, including tradable services (Quinn 2013). Tradable services, however, have provided an increased number of high-paying jobs in Canada in the midst of tough economic times.⁵

Analysis and Policy Implications

Canadians worried about future sources of well-paying jobs often hear of opportunities and threats concerning such jobs in terms that pit natural resources against manufacturing industries. A typical narrative goes like this: strong international demand for natural resources drives up the price of Canada’s currency, making it more expensive for foreigners to buy Canadian manufactured products (Coulombe 2013). This results in the loss of what are perceived to be quintessential good Canadian middle-class manufacturing jobs. Whatever its empirical merits, this story ignores the fact that, while manufacturing has been struggling, tradable service sectors have been expanding.

The notion of tradable services as a source of economic strength might be unnerving to some, in that these activities can appear as a less tangible source of wealth for Canadians than, say, the ability to manufacture products or extract minerals from the ground. They might also appear a fleeting source of income – after all, many of these services, in principle, can be provided from anywhere, and employ internationally mobile professionals, not to mention easily transferable intellectual property. A more useful way to look at the role of tradable services, however, is to see them as a key element of manufacturing competitiveness (Neely, Benedetinni, and Visnjic 2011), as well as of successful resource-based development (Wright and Czelusta 2004). Both manufacturing and resource industries depend on engineering, technical, scientific, design, research, management, financial, logistical, communications, and other services. The skills and knowledge used in these services sectors are not only vital to the success of Canada’s goods-producing sectors, but, once acquired, they can be applied or sold abroad – that is, traded.

Since competitiveness in the services sector can also bolster Canada’s manufacturing sector, an intriguing question arises of whether certain blunt policy actions that purportedly would help Canada’s manufacturing competitiveness could instead indirectly hurt it by making Canada a less attractive place from which to obtain services. For example, a number of tradable services industries might be subject to the “Kaldor paradox,” an observation that some export-oriented industries do well under a rising real exchange rate (see, for example, Rubalcaba et al.). These industries do not compete on the basis of unit labour costs, narrowly defined, but on the ability to offer their customers unique value based on factors such as skills, quality, advanced technology,

4 Statistics Canada, CANSIM database, table 380-0070.

5 Measured by Canadian value added, in 2009, exports of services – excluding wholesale and retail trade and hospitality industries not deemed internationally tradable in this paper – amounted to about one-third of Canada’s manufacturing exports, see Organisation for Economic Co-operation and Development-World Trade Organization, *Trade in Value Added* database.

Table 1: Canadian Employment by Broad Industry Group 2001-2012

Industry Group	2012 Employment	Change since 2001	Average Weekly Earnings (2012 CAN \$)
Resources, Utilities, Transport of Goods	682,685	84,370	1,566
Manufacturing	1,483,720	-491,734	976
Wholesale-Distribution of Goods	708,166	37,151	1,145
Construction	890,076	312,407	1,143
Retail, Consumer Rental, Hospitality	3,203,517	428,315	433
Other Place-Specific Services	3,342,516	736,635	757
Public Services	2,693,004	428,700	1,056
Tradable Services	1,667,245	273,641	1,336
TOTAL	14,670,929	1,818,861	895

Note: Only those industries charted in Figure 1 are listed here.

Source: See footnote 3.

access to IP and information, or international partners. To the extent that value in these industries depends on the ability to, among other things, attract and retain talent by paying internationally competitive salaries, acquire relevant IP, or grow the Canadian firm through foreign expansion, a policy to talk down the Canadian dollar as a way to help Canadian manufacturing jobs could be counterproductive. One could make a similar critique of policies that would subsidize “value-added” manufacturing that is based essentially on resource processing, rather than focus on marrying Canada’s services strengths – in science and engineering, for example – to extract value from our resources.

Canada has many less blunt policy tools at its disposal that would bolster manufacturing competitiveness. For example, it could address policies – such as those relating to milk and energy – that raise the cost of manufacturing inputs. More fundamentally, Canada needs to deal with its relative neglect of skilled trades and manufacturing-oriented careers (Lynch 2013), exemplified by significant barriers to trade apprenticeships in Canada (Bryden and Dachis 2013). Given such impediments to Canada’s manufacturing competitiveness, it is not surprising that the relative strength of the Canadian economy has shifted towards the services side. Policy should now seek to exploit those strengths.

Conclusions

From the observations above, one can draw several conclusions. First, to the extent that policies to revive Canadian manufacturing are desirable, care should be taken to ensure they are not implemented at the expense of future growth in the high-earnings tradable services sectors.

Second, trade policy should aim more specifically at removing obstacles to the ability of Canadian firms to exploit their strengths in services. The October 2013 Comprehensive Economic and Trade Agreement with

the European Union is a landmark in this respect. Although we do not yet have the details of sectors that will be excluded from the agreement's trade-in-services liberalization commitments (the "negative list"), available documentation suggests it represents a significant opening for Canada in the European market for services. As well, the agreement is reported to include state-of-the-art temporary labour mobility provisions that will make it easier to provide services across borders (Canada 2013a).

The federal government's Global Markets Action Plan (Canada 2013b) specifically mentions Canada's intention to conclude the Trade in Services Agreement (TISA), on which negotiations began in 2013 among 22 members of the World Trade Organization. Canadians should support a TISA outcome that opens up new markets for Canadian services producers. As well, implementation of the Global Markets Action Plan's pledge to assist small and medium-sized enterprises to make the leap to export markets should include a distinct component that addresses issues – such as discriminatory regulatory and procurement barriers, crossborder recognition of qualifications, the temporary mobility of business persons, and passenger air travel connectivity – that might impede exports by firms in the commercial services sectors.

In sum, since tradable services are an area of strength for the Canadian economy, and certainly one of relative success when it comes to exports and the creation of "good" jobs, Canada's trade policy and economic growth policy writ large should seek to exploit our strengths in these sectors, by focusing less on a presumed resources-versus-manufacturing dichotomy, and more on the contribution that trade in commercial services can make to Canadians' standards of living.

Appendix:

Table A1: Regression of Average Weekly Earnings

Explanatory Variable	Coefficient
Capital stock per employee (<i>natural logarithm</i>)	120.3***
Share of building in capital Stock (<i>percent</i>)	-4.4***
Share of intellectual property in capital stock (<i>percent</i>)	7.0***
Percent of employees with high school or less	-7.2***

Notes:
 *** Statistically significant at 1% level.
 Number of observations: 112. Intercept set at zero. $R^2 = .963$

References

- Brydon, Robbie, and Benjamin Dachis. 2013. *Access Denied: The Effect of Apprenticeship Restrictions in Skilled Trades*. Commentary 380. Toronto: C.D. Howe Institute.
- Canada. 2013a. "Canada-European Union Comprehensive Economic and Trade Agreement, Technical Summary of Final Negotiated Outcomes." Ottawa. Available online at <http://www.actionplan.gc.ca/ceta>.
- . 2013b. Foreign Affairs, Trade and Development Canada. *Global Markets Action Plan: The Blueprint for Creating Jobs and Opportunities for Canadians through Trade*. Ottawa. Available online at <http://international.gc.ca/global-markets-marches-mondiaux/plan.aspx>.
- Coulombe, Serge. 2013. "The Canadian Dollar and the Dutch and Canadian Diseases." *SPP Research Papers* 6, no. 30. Calgary: University of Calgary, School of Public Policy.
- Jensen, J. Bradford, and Lori G. Kletzer. 2010. "Measuring Tradable Services and the Task Content of Offshorable Services Jobs." In *Labor in the New Economy*, ed. Katharine G. Abraham, James R. Spletzer, and Michael Harper. Chicago: University of Chicago Press.
- Lynch, Kevin. 2013. "Canada needs to improve access to trades training." *Globe and Mail*, November 8.
- Mudambi, Ram. 2007. "Offshoring: Economic Geography and the Multinational Firm." Book review, *Journal of International Business Studies* 38 (1): 206–10.
- Neely, Andy, Ornella Benedetinni, and Ivanka Visnjic. 2011. "The Servitization of Manufacturing: Further Evidence." Paper presented at the 18th European Operations Management Association Conference, Cambridge, UK, July 3–6.
- Quinn, Greg. 2013. "Canada oilsands boom bypassing factory workers." *Bloomberg Business Week*, *Bloomberg News*, January 8.
- Rubalcaba, Luis, Gisela Di Meglio, Stefano Visintin, Andres Maroto, and Jorge Gallego. 2008. "The Competitiveness of European Services." Institute of Social and Economic Analysis Working Paper 01/2008. Madrid: Universidad de Alcalá.
- Wright, Gavin, and Jesse Czelusta. 2004. "The Myth of the Resource Curse." *Challenge* 47 (2): 6–38.

This E-Brief is a publication of the C.D. Howe Institute.

Daniel Schwanen is Assistant Vice President, Research, C.D. Howe Institute.

This E-Brief is available at www.cdhowe.org.

Permission is granted to reprint this text if the content is not altered and proper attribution is provided.