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E-BRIEF

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ECONOMIC GROWTH AND INNOVATION

From Living Well to Working Well: Raising Canada's Performance in Non-residential Investment

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- Investment in plant and equipment per worker by Canadian businesses is picking up relative to counterparts elsewhere after years of underperformance.
- Canada's relative improvement owes much to outperformance by resource-rich provinces, Newfoundland and Labrador being the most recent star, while Ontario continues to slip.
- Policies that increase competitive pressures to invest and remove biases against non-residential investment could boost capital spending by businesses and improve Canadian workers' prospects for higher incomes in the future.

Business investment is a key driver of economic growth – a key reason why Canadians today live so much better than in the past. Comparing new investment per worker here and abroad provides a useful gauge of Canada's relative prospects for higher incomes and living standards in the years ahead. (Box 1 describes our data sources and methods.) Our international comparison shows an improving record for capital spending on tools for Canadian workers, in the form of machinery, equipment and non-residential buildings. However, Canada's relative gains also reflect the economic trials of its peers, which have endured deeper, longer slumps. Within Canada, divergent provincial performances in investment per worker are cause for concern – and warrant smart policy responses by both the leaders and the laggards.

This E-Brief updates similar surveys in previous years: see Robson and Goldfarb (2004, 2006); Goldfarb and Robson (2005); Banerjee and Robson (2007, 2008); and Busby and Robson (2009, 2010, 2011). We thank the reviewers of those papers for comments and questions that have improved the analysis and presentation of these reports. Colin Busby, Serge Coulombe, Eric Lascelles and Andrew Sharpe provided valuable comments on this iteration. We remain solely responsible for the content of this E-Brief.

Box 1: Measuring and Interpreting Investment per Worker

Our historical comparisons use data on business capital investment in machinery and non-residential structures, and on employment, from the OECD's Economic Outlook No. 91 (June 2012) database for countries abroad, and the Provincial Economic Accounts for Canada and the provinces. Our 2012 estimates use the projections in the OECD database, and Statistics Canada's Capital Repair and Expenditure Survey. The OECD and Statistics Canada investment numbers include private businesses and government business enterprises functioning in a commercial environment. Not all the data are available for all OECD countries throughout the period: our figures include Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, the United Kingdom, and the United States. Our comparison of residential versus non-residential investment excludes Mexico from 1991 through 2002, Greece from 1991 through 1994 and Spain from 1991 through 1999 because of missing data.

All dollar figures are in current Canadian dollars. We convert investment figures abroad into Canadian dollars using purchasing-power parity (PPP) exchange rates from the OECD. The purchasing-power adjustment allows more meaningful comparisons of the "bang per buck" of investment spending in different countries than market exchange rates would do, since – especially at a point in time – market rates will reflect relative domestic price levels very imprecisely. To obtain comparative measures more reflective of prices for capital-investment goods and services than for goods and services more generally, we benchmark the PPP measures across countries using the OECD's 2008 PPP figures for gross fixed capital formation (residential plus non-residential, no breakdown between the two being generally available to our knowledge), and construct national time series from each country's economy-wide PPP measures before and after that date.

Investment per Worker: The Historical Record

Business investment in Canada, as measured by gross non-residential private capital spending per worker, consistently lagged the average among Organisation for Economic Co-operation and Development (OECD) member countries throughout the 1990s, and the gap measured against the United States was worse. In the early 2000s, the gap with the OECD widened (Table 1). For every dollar of new business investment per worker across OECD countries from 2001 to 2005, Canadian businesses invested 94 cents, and for every dollar of investment per US worker, Canadian businesses invested 79 cents.[1]

Since then, Canada's performance has improved. From 2006 to 2010, our businesses invested 99 cents per worker for every dollar invested across the OECD, and 88 cents for each dollar invested by US businesses. Preliminary 2011 data show Canadian businesses investing more per worker than the OECD average – 102 cents per dollar across the group – and maintaining the late-2000s average of 88 cents per dollar invested in the United States.

1 We focus on gross flows of new capital investment, rather than net flows or capital stocks. Different treatments of depreciation make net investment and stock figures non-comparable across countries (see Tang, Rao and Li 2010 for a discussion of non-comparability of Canada and US official stock measures). Gross flows are more straightforward to compare internationally.

Table 1: Private Non-Residential Gross Capital Formation per Worker in Canada (by Province), the OECD, and the United States, 2001 to 2012.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011E	2012F	Average: 2001-2005	Average: 2006-2010
	(Canadian dollars)													
British Columbia	7,500	7,100	7,300	7,900	8,600	9,900	10,100	11,000	9,200	10,800	12,100	13,400	n.m.	n.m.
Alberta	20,300	18,900	19,800	22,100	28,100	31,300	31,700	33,100	23,100	23,400	25,900	27,900	n.m.	n.m.
Saskatchewan	11,700	10,600	11,400	11,200	13,500	15,400	16,900	20,400	21,900	22,900	23,500	24,600	n.m.	n.m.
Manitoba	7,400	7,200	7,000	7,300	7,200	7,900	8,300	9,500	9,100	9,600	9,400	10,300	n.m.	n.m.
Ontario	7,700	7,400	7,200	7,300	7,800	8,300	8,200	8,400	7,500	7,700	8,600	8,200	n.m.	n.m.
Quebec	6,500	6,300	6,400	6,900	6,800	7,000	7,300	7,500	6,800	6,900	7,800	8,500	n.m.	n.m.
New Brunswick	6,100	5,900	6,600	6,900	7,400	9,500	9,500	10,800	9,000	7,200	6,800	7,400	n.m.	n.m.
Prince Edward Island	5,100	5,000	5,100	5,500	5,300	5,700	7,500	7,100	4,800	4,900	7,100	7,400	n.m.	n.m.
Nova Scotia	8,000	8,200	7,500	7,000	7,100	7,000	7,200	6,300	6,700	6,500	4,500	4,500	n.m.	n.m.
Newfoundland and Labrador	10,900	10,000	11,600	13,900	15,400	13,500	11,600	13,900	12,800	17,000	24,400	34,800	n.m.	n.m.
Canada	**9,000**	**8,600**	**8,600**	**9,200**	**10,300**	**11,300**	**11,500**	**12,100**	**10,100**	**10,500**	**11,600**	**12,400**	n.m.	n.m.
OECD	9,600	9,300	9,400	9,900	10,300	11,000	11,800	12,200	10,300	10,700	11,400	11,700	n.m.	n.m.
US	11,800	11,000	11,100	11,700	12,100	12,700	13,400	13,600	11,300	12,100	13,200	13,600	n.m.	n.m.
Relative to OECD														
British Columbia	79	76	77	80	84	90	85	90	89	100	106	114	79	91
Alberta	212	203	210	224	272	283	269	272	224	218	227	238	224	253
Saskatchewan	122	114	120	113	131	139	143	168	212	213	205	209	120	175
Manitoba	77	78	75	74	69	71	70	78	88	89	82	88	74	79
Ontario	81	79	76	74	75	75	70	69	73	71	75	70	77	72
Quebec	68	68	68	70	66	64	62	62	66	64	68	72	68	63
New Brunswick	63	63	70	70	71	86	81	89	87	67	60	63	68	82
Prince Edward Island	53	54	54	56	51	52	64	59	47	45	62	63	54	53
Nova Scotia	83	88	80	71	69	64	61	52	65	60	40	38	78	60
Newfoundland and Labrador	113	108	123	141	148	122	99	115	124	158	213	296	127	124
Canada	**94**	**92**	**92**	**93**	**100**	**102**	**98**	**100**	**98**	**98**	**102**	**105**	**94**	**99**
Relative to US														
British Columbia	64	64	66	68	72	78	75	80	82	89	92	98	67	81
Alberta	172	171	179	190	233	246	236	242	204	193	197	205	189	224
Saskatchewan	99	96	103	96	112	121	126	149	194	189	178	180	101	156
Manitoba	62	65	64	63	59	62	62	70	80	79	71	76	63	71
Ontario	65	67	65	63	65	65	61	61	66	63	65	60	65	63
Quebec	55	57	58	59	56	55	55	55	60	57	59	62	57	56
New Brunswick	51	53	60	59	61	75	71	79	79	60	52	54	57	73
Prince Edward Island	43	45	46	48	44	45	56	52	43	40	54	54	45	47
Nova Scotia	67	74	68	60	59	55	53	46	59	54	34	33	66	54
Newfoundland and Labrador	92	91	105	119	127	106	87	102	113	141	185	255	107	110
Canada	**76**	**77**	**78**	**79**	**85**	**89**	**86**	**89**	**89**	**87**	**88**	**91**	**79**	**88**

Notes: n.m. = not meaningful. Data for 2012 are forecast. Sources: Authors' calculations from OECD, Statistics Canada.

The Current Picture: National Strength and Regional Divergence

A good 2012 performance would be particularly good news because employment in Canada fell less during the slump and recovered more afterwards than in many other countries, so Canada is spreading its capital investment over a greater relative number of workers. Happily, Canada's 2012 per-worker tally looks likely to be around 105 cents per dollar invested across the OECD – the best performance against that group since our data began in the early 1990s – and is likely to advance to 91 cents per dollar invested in the United States.[2]

Declaring Canada a capital investment superpower, however, would be premature. Canada's relative gains are coming against a field weakened by slumps in Europe and the United States.

Moreover, the provinces leading are Alberta, Saskatchewan, and Newfoundland and Labrador – and more recently, British Columbia – where high prices for oil and minerals have sparked investment booms. Elsewhere, the story is less happy. Quebec has improved relative to the latter 2000s, when it registered 63 cents of investment per worker for every dollar invested across the OECD and 56 cents for every dollar in the United States. But its 2012 figures stand at only 72 and 62 cents, respectively. New Brunswick has slipped, and Nova Scotia's recent numbers are awful. Notwithstanding improvement in next-door Manitoba, Ontario – which still has huge influence on the national totals – continues a long-term slide. After getting 77 cents of new investment for every dollar invested across the OECD in the early 2000s (65 against the United States) and 72 in the late 2000s (63 against the United States), Ontario workers may get a mere 70 in 2012 (and only 60 against the United States).

Making Recent Success More Widespread and More Durable

Many factors might explain inferior investment in some provinces.[3] Some have argued that strength elsewhere hurts central Canada, with high resource prices driving the Canadian dollar up. While strong sectors can and should draw capital (and labour) from weak ones, the resource boom is an unlikely suspect for low investment generally. Industries across the country supply the resource sector, and the strong dollar makes capital equipment less expensive.[4]

Tax provisions affect business investment. Corporate income-tax rates and other features of the tax system penalize businesses as their incomes and assets grow, which could discourage capital spending at the pertinent thresholds. British Columbia's imminent replacement of its Harmonized Sales Tax with a less investment-friendly

2 We would like to extend this comparison of private investment per worker to the emerging giants of India and China as well. But we have no trustworthy data on the purchasing power parities for investment of plant and equipment installed in those countries. We know their nominal investment per worker is much lower than Canada's, and their real investment is likely considerably lower as well. We also know, however, that their high investment and rapid growth mean that Canada's lead over them is shrinking. See, for example, *The Economist* (2012).

3 Some commentators have identified aspects of Canada's economy not readily susceptible of policy treatment as suspects, including greater risk-aversion or other deficiencies among Canadian managers, ignorance of the productivity-enhancing potential of new technologies, relatively low labour costs, and industry structure. We focus here on problems policy is likelier able to remedy.

4 In any event, investment in Canada lags that in other resource-rich OECD countries. For every dollar of non-residential private capital investment per worker in Australia and Norway – two comparable resource intensive OECD countries – the investment forecast for Canada in 2012 is only 65 cents. See Lascelles (2012) for further comparisons with other resource-rich countries.

retail sales tax, and Ontario's decision not to proceed with a corporate income-tax reduction are unhelpful. Generally, however, Canadian taxes have become more supportive of investment over the 2000s. Lower tariffs on capital equipment are lightening the burden of a particularly distorting tax.

To the extent that forward-looking businesses see relatively poor fiscal prospects among Canada's peers as prefiguring higher taxes and, therefore, poorer investment opportunities ahead in those countries, Canada's tax environment seems, overall, a factor supporting our recent relative performance.

Others argue that key sectors of the Canadian economy experience less competitive pressure than counterparts elsewhere (Carmichael 2012), which would lessen incentives to invest. Further ownership liberalization in the telecommunications sector and comparable moves in other sectors such as transportation and finance should sharpen the imperative to better equip workers in those industries (Canada 2008).[5] Current trade liberalization initiatives, notably the prospective Canada-EU Trade Agreement and the Trans-Pacific Partnership would have similar effects.

Another common complaint is lack of funds. Businesses have typically borrowed less money than they have lent out to other sectors of the economy in recent years.[6] This flow of funds out of the corporate sector may reflect the robustness of another activity that competes with business investment for resources: residential construction.[7] The outstanding feature of recent Canadian capital investment has been the relative strength of housing as against non-residential structures and equipment.

In the late 1990s, residential investment represented one-quarter (26 percent) of Canada's non-government capital investment, and non-residential accounted for the remaining three-quarters (Figure 1). For the OECD as a whole, residential investment represented one-third (32 percent) of total non-government investment during that period.

Housing's share of capital spending in the OECD as a whole has since fallen and has averaged about one-quarter (24 percent) since 2009. However, in Canada, residential construction's share has risen to almost two-fifths (37 percent) since 2009.

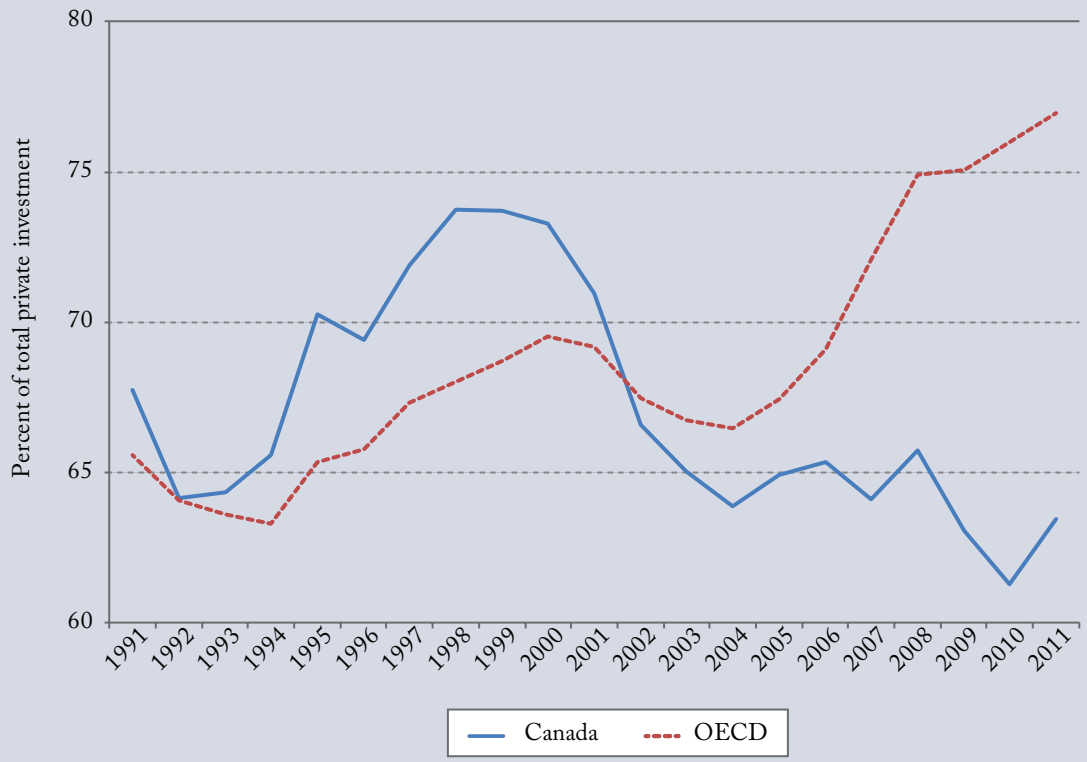
While residential construction has been a welcome support to Canadian demand and output since the crisis, policies that favour it may exact a longer-term cost by crowding out non-residential capital investment. Canada has several such measures.

5 As Sharpe and Andrews (2012) find, Canadian investment per worker in 2010 in the information and communications technology sector significantly lagged that of the US.

6 "Business" in this context means corporations and government business enterprises, the sector of the economy that undertakes the bulk of non-residential fixed investment. Before about 2000, the corporate sector typically was a net borrower from the rest of the economy: from 1990 to 1999, it absorbed about $40 per worker per year in net lending from other sectors, including the household sector – persons and unincorporated businesses. Since 2000, the corporate sector has typically been a net lender, releasing about $2,900 per worker per year to other sectors, including the household sector, which has become a net borrower (CANSIM table 378-0019).

7 While foreign saving can supply some of Canada's investment needs, and has likely helped fund some residential construction as well as government borrowing, the supply of foreign saving is constrained in the medium and long run by limits on foreign demand for Canadian assets. At least in the short run, the amount of saving absorbed or generated by governments is a policy decision. So non-residential and residential construction are ultimately competitors for the saving generated by Canada's businesses and households.

Figure 1: Private Non-residential Investment Share of Total Private Investment 1991-2011



Source: Authors' calculations from OECD, Statistics Canada.

In particular, municipal and provincial business property taxes favour residential over non-residential investment. A tax bias against one type of business input – business-related structures – relative to other business inputs or housing steers investment away from its most productive uses. Average provincial business property tax rates in Ontario in 2011, for example, were more than five times those of residential taxes (Found and Tomlinson forthcoming). Lower business property taxes should lead to greater investment in non-residential capital and – according to Smart (2012) – to more jobs.

Another policy favouring residential investment is government backing for mortgage lending. Recent moves to reduce maximum amortizations, loan-to-value and debt-service ratios for Canada Mortgage and Housing Corporation (CMHC) insurance will help. There is no obvious reason, however, for the federal government to insure mortgages at all – especially if doing so induces more housing investment rather than business investment.[8]

8 If concerns with respect to systemic risk appear too great to permit a fully private mortgage insurance system, the CMHC could reposition its financial activities so that it served only as a federal backstop to the mortgage insurance market, akin to a re-insurer, while exiting the business of directly selling mortgage insurance (Poschmann 2011).

More Tools for Canada's Workers!

In recent years, Canadian businesses have done better in equipping their workers with new capital. That relatively robust performance was a reflection of policy changes that support economic growth and capital investment. Ottawa and the provinces that have enjoyed those gains – and even more so the provinces that have not – should reinforce their efforts to give Canadian workers the better tools and workplaces that will boost their output and incomes in the future.

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