

# ***Distorted Data on “Residential Investment”***

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**The Summary**

In an important area (“Investment in Residential Construction”) the data from Statistics Canada is unbelievable (at present, it is being under-estimated by a very large amount). This is distorting our understanding of what’s happening in the economy, and not just for construction. The errors are so large that they are creating a distorted narrative about total output (and productivity) in Canada.

This is an extract (with some updates and edits) from a larger report – “7 Short Essays”.

**Some Data That We Shouldn’t Believe**

There is a narrative (now quite widespread, and causing a lot of anguish) that GDP per person in Canada has fallen for six consecutive quarters, and that the total fall is quite large. I joined in for a while, but then I realized that there are problems with one component of the data (residential construction).

During the fall of last year, I concluded that Statistics Canada’s data on “investment in residential construction” is unbelievable. Those estimates show an extremely large reduction in housing construction. For all of 2023, the total amount (in inflation-adjusted, or “real” dollars) was 16% lower than in 2019.<sup>1</sup>



The estimates during the Covid period have been sharply at odds with related data, on employment in construction<sup>2</sup> and numbers of dwellings under construction. Both of those datasets indicate quite clearly that construction activity is still very strong (stronger than pre-Covid, whereas the “investment” estimates indicate that construction activity is far lower than pre-Covid).



<sup>1</sup> Source: Statistics Canada Table 34-10-0286-01.

<sup>2</sup> These estimates are based on data from Statistics Canada’s Survey of Employment, Payrolls and Hours (Table 14-10-0220-01). The estimates combine data on “Residential building construction” plus my estimates of the residential shares for four categories of “Specialty trade contractors”.



This chart converts the two datasets (for residential investment as well as employment) into indexes. During the pre-Covid period, there was somewhat of a relationship between the two datasets (although the investment estimates were more volatile than the employment data). During the Covid period, the investment estimates have become even more volatile, and the trends have diverged considerably. At the end of the available data (for January 2023) the index for employment in residential construction is



33% above the index for investment. (There is room to argue about what is the “true” amount of employment in residential construction, but I see no plausible argument that could support a conclusion that the employment data is badly wrong and the investment data is correct.)

Another reason to suspect the accuracy of the investment data is its extreme volatility. The very rapid, very large changes that Statistics Canada has estimated (through the entire history) are impossible: given the length of construction processes, a downturn (or upturn) in on-site construction activity has to happen much more gradually than the estimates have indicated.

Secondly, if the sharp downturn had really happened, there would have been a lot of job losses in construction (and in other industries that provide goods and services to construction), and there would have been a lot of media coverage of that.

Also, because the data on employment comes directly from employers, I am inclined to trust it. On the other hand, estimates of investment in construction (especially the inflation-adjusted estimates) involve a lot of massaging of data, creating opportunities for errors.

There is, of course, an alternative explanation: perhaps both data sets are correct. In that case, builders and contractors must be paying vastly more labourers than they need to. I see no evidence that this is happening. And, given the nature of the employment (mostly short-term contracts) builders and contractors can reduce their numbers of employees very quickly. In its most recent survey of its membership, the Canadian Home Builders Association<sup>3</sup> found that “about a third of respondents noted labour shortages remain an issue”, but “33% of builders reported laying off workers”. These two observations don’t show us the magnitudes of either the shortages or the lay-offs. Based on the current very high level for the employment data, I suspect that people who are laid-off are still able to find new work<sup>4</sup>.

<sup>3</sup> <https://www.chba.ca/housing-market-index/>

<sup>4</sup> In Statistics Canada other survey of the employment situation (the Labour Force Survey), the estimates show that the unemployment rate for construction this February (7.8%) was lower than pre-Covid – 11.2% in February 2018 and 10.8% in February 2019. Data on job vacancies is now showing some reduction for construction (3.3% in December versus 4.9% a year earlier), so while employment remains strong, the labour shortages might be easing.



Or, it might be that productivity of those construction workers has plunged. Statistics Canada estimates that there has been a substantial drop in productivity in construction<sup>5</sup> (as of 2023-Q4 it is 11% lower than in 2019, whereas for the total economy productivity was slightly higher versus 2019, by 0.5%). But, I believe this is also a bad estimate - a further consequence of the bad estimates for output in residential construction. And, as another consequence, I expect that productivity in the total economy is slightly higher than estimated: there was a small drop in estimated productivity for 2023, this drop was probably due to the mis-estimation of output in residential construction.



Last October, I wrote a report on the issues in the construction data<sup>6</sup>, in which I suggested two possible causes of data errors (firstly, a technical issue related to the “lag structure” that was being used, and secondly, errors related to changes for construction costs – the “deflator” that is used to convert actual dollars into “real” activity).

I shared my report with Statistics Canada, and they took the time to respond. Based on that response, I am now satisfied that the main issue (but possibly not the only issue<sup>7</sup>) is that the deflator data is incorrect, by a very large amount. In consequence, during the past two years “real” (inflation-adjusted) residential construction activity has been under-estimated by a very large amount. (And, during the first year and a half of the Covid period, investment was over-estimated by a large amount.)

Two things have happened since I wrote that report in October:

- As can be seen in the first chart on Page 1 the on-going data releases from Statistics Canada on investment in residential construction have shown a partial rebound (but it is still far lower than pre-Covid).
- Other data (especially on employment in construction, but also including inventories of housing under construction) continue to show very strong construction activity.

Based on the employment data, the “true” volume of “real” activity in residential construction might be about one-third higher than StatsCan is estimating.

In the comments that StatsCan provided to me last fall, they noted that in the construction sector, companies and labour can move easily between residential and non-residential buildings. Therefore, there is uncertainty about the actual amount of employment in residential construction, and this might affect the comparison shown earlier (of residential investment versus residential employment). The comments weren’t disagreeing with the data, they were mentioning this as a point for me to consider.

<sup>5</sup> This is for all of construction, not just residential buildings.

<sup>6</sup> Available here: [https://www.wdunning.com/files/ugd/ddda71\\_baf15dc6f27c46c6ad5658dbb9222031.pdf](https://www.wdunning.com/files/ugd/ddda71_baf15dc6f27c46c6ad5658dbb9222031.pdf)

<sup>7</sup> Because of the large, rapid variations in the pre-Covid data and subsequently, I still wonder if the lag structure has been executed incorrectly.

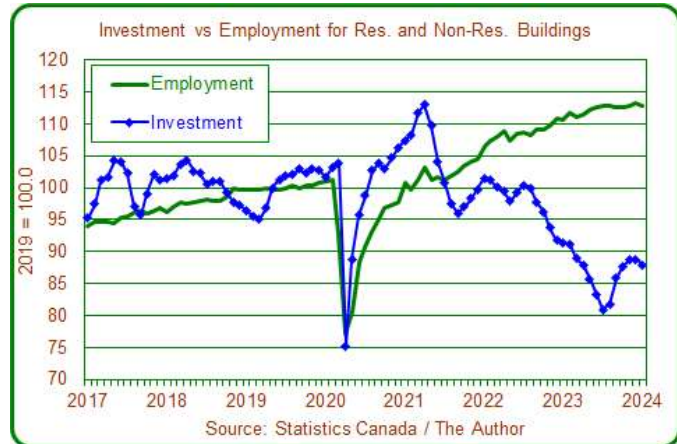


I think this chart is a reasonable test for that issue: how does total employment in building construction compare to total investment (inflation-adjusted) in construction of buildings? This data also speaks clearly and the conclusion is not affected.

### Thoughts on the Cost Deflator

To be a bit more detailed about the issue:

- Without being able to see exactly how StatsCan makes the adjustments for cost inflation, this is what I think might be happening:
  - The StatsCan estimates of investment are based on the dollar amounts that builders show in their applications for building permits. StatsCan makes assumptions about how the activity gets spread out over time (the “lag structure”), to calculate how much activity (in dollars) happens each month. Then, it converts the estimated monthly dollar amounts into estimates of “real” activity, using an index of construction costs.
  - That cost index is based on a quarterly survey of contractors, which asks how much prices have changed (in per cent) compared to the prior quarter, for a long list of construction elements<sup>8</sup>. I don’t know how long it takes to complete this questionnaire, or if that affects the quality of the responses. I also don’t know how large the survey sample is, and if that affects the data quality.
  - **Here is the potential (main) cause of the unbelievable data: the data used by StatsCan on changes in actual construction costs might be different than the assumptions about future costs that were made by builders when they applied for building permits.**



Using StatsCan data on building permits<sup>9</sup>, I have calculated the average per unit construction costs and then created indexes – these reflect the assumptions that builders made about cost growth. Then, I compared those to the cost index that is implicit within the StatsCan data on investment. The estimates are created for four different structural types of dwellings.

But, first, a reminder that the data on average per unit costs created with the building permit data are not necessarily indicative of what the actual costs will be – **the data are what the applicants have chosen to enter in the building permit applications**. In this analysis, it doesn’t matter that their assumptions about future costs might be wrong – **what matters is that Statistics Canada is using two sets of data on growth of construction costs that tell very different stories, in its calculations of “real” investment.**

<sup>8</sup> The survey questionnaire is described here: [https://www.statcan.gc.ca/en/statistical-programs/instrument/2317\\_Q2\\_V1](https://www.statcan.gc.ca/en/statistical-programs/instrument/2317_Q2_V1)

<sup>9</sup> Source: Table 34-10-0285-01

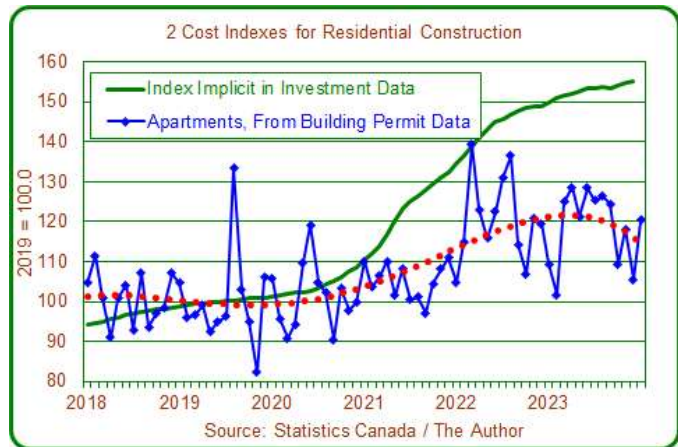
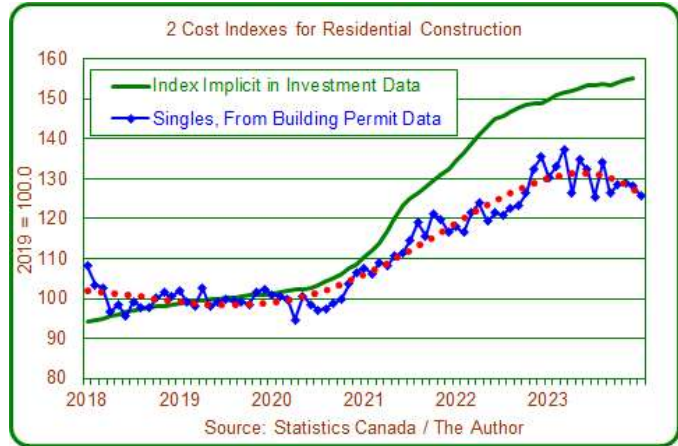




Two of the sets (for the most important housing forms, singles and apartments) are illustrated in these charts.

As of December 2023, the cost index from the building permit data – for single-detached homes – is 17% lower than the index derived from the investment data. For semi-detached homes, the index is now 13% lower. For rows, the indexes are equivalent. For apartments, the index is 32% lower.

The calculations within these charts are much more simplistic than the actual calculations that must be used by Statistics Canada. Therefore, my estimates are only approximations that may be inaccurate to some degree. That said, the very large discrepancies between the estimates confirm that the inflation-adjustment process is generating large errors in Statistics Canada’s estimates of “real” investment in residential construction.



**Why Does this Matter?**

Because bad data for an important part of the Canadian economy is distorting our understanding of what is happening in the broader economy. As I discussed earlier, the data on productivity in construction has been distorted (downwards) by a large amount, and for the total economy there is a small downward bias in the productivity estimates.

There is a narrative that the Canadian economy has weakened quite significantly, because GDP per person has fallen sharply during the past year and a half. This is partly due to distortion created by the construction estimates. In this chart, I show the as-published estimates, and a re-estimate that incorporates my recalculation of the construction estimates. This reduces (but does not eliminate) the fall in GDP per person. As of Q4-2023, in the as-published data, GDP per person was 2.3% lower than in 2019. In the adjusted data, the drop is less, at 1.5%. Most of that drop occurred during the fourth quarter, when there was very large growth in population and little





change for GDP. For Q3, the adjusted estimate of per capita GDP is just slightly (0.3%) lower than in 2019.

This brings us to a collateral issue:

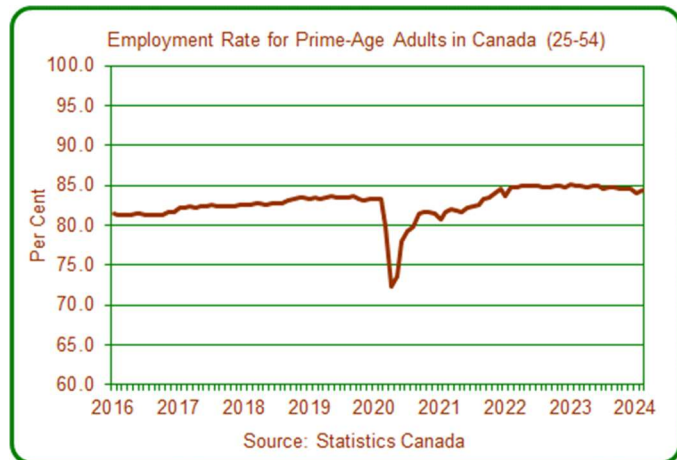
- The ratio has fallen during the past year and a half, because the economy has grown, but not quickly as the population.
- At present, the main driver of population growth is the entry of international students (on temporary visas).
- Some of those students take jobs and add to the size of the economy, but some of them don't. Therefore, the rapid growth in the number of students is tending to reduce the amount of output per person.

In general, I like GDP per person as an indicator of economic performance, but at present, I find it misleading. In this moment, we need an alternative measure.

I prefer the employment-to-population ratio (the percentage of adults who have jobs) for “prime working age” adults (25 to 54 years old). Labour productivity is an option.

The employment-to-population ratio has been roughly flat at a high level during the past two years, although the very recent data hints that a downturn might now be developing.

As was shown earlier (on Page 3), the estimate for labour productivity is now similar to 2019. Adding an adjustment for the mis-estimation of output in residential construction, labour productivity now might be about 1.25% higher than in 2019.



**If I had any influence with Statistics Canada, I would persuade them that a quick-fix would base the inflation-adjusted estimates for residential construction on a mash-up of the construction employment data, building permits issued (in units, not in dollars), and dwelling units under construction. The estimates would still be imperfect, but they should be a lot closer to reality.**

### ***About the Author***

I have been analyzing Canadian housing markets since 1982. Until 1997, I was employed at Canada Mortgage and Housing Corporation, in various positions in economic and housing market analysis. For three years, I was second-in-command of a boutique consultancy. Since 2000, I have operated as a one-person consulting company. My clients have included a wide range of interests, including all levels of government within Canada, agencies, non-profit organizations, industry associations, financial institutions, home builders, investors, and asset managers. My research has been cited in the news media and in economic research, including some Bank of Canada studies. No one paid me to write this report.