TD Bank Financial Group

TD Economics

Topic Paper

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A NEW PERSPECTIVE ON WAGES: EDUCATION, GENDER, AND AGE

A slew of recent publications and editorials have focused upon the anemic rate of wage growth of Canadian workers over the last few decades. Notably, a recent TD Economics publication[1] reported that real after-tax income per Canadian worker had risen only 3.6 per cent over the last fifteen years – markedly less than the 25.5 per cent growth in real GDP per Canadian over the same period. Similarly, a recent Statistics Canada research paper[2] found that real "median wages of Canadian workers have changed little over the last two decades… …despite the growing experience and educational attainment of the work force." This raises an interesting question – what would the rate of wage growth have been if one controlled for the fact that the average worker today is older, more educated, and for that matter, more likely to be female than workers of decades past? There is good reason to think that the overall growth in wages has been biased upward by shifts in education and age, and biased downward by a change in the ratio of men to women in the workforce. The purpose of this publication is to control for each of these factors. The result is an even more pessimistic picture of Canadian wage growth than past estimations.

REAL MEDIAN HOURLY WAGES IN CANADA
Cumulative per cent change 1981-2004

Overall			
+1.1%			
Men		**Women**	
-2.2%		+8.5%	
Fixed-Age Men		**Fixed-Age Women**	
-10.4%		+4.1%	
Fixed-Age Men		**Fixed-Age Women**	
Uni.-Educ.	**Non-Uni.**	**Uni.-Educ.**	**Non-Uni.**
-5.8%	-13.9%	-4.8%	-4.0%

Source: Statistics Canada

Peeling the onion

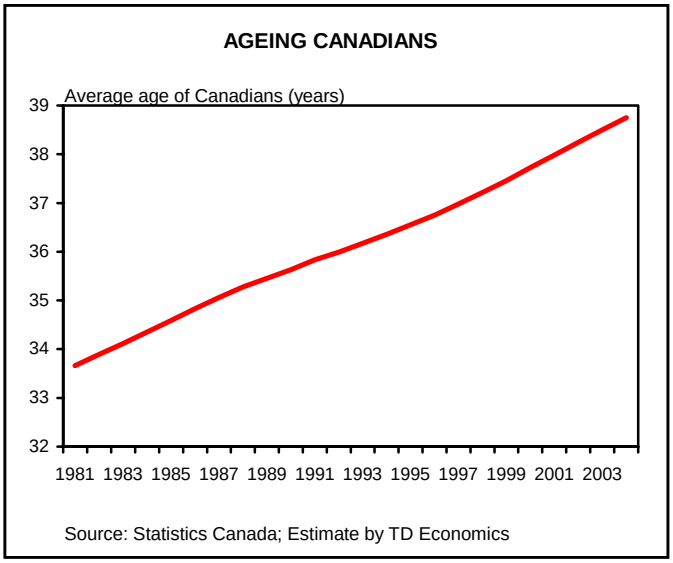
Let us dissect the data to arrive at a more meaningful understanding of wage growth. We can begin by separating the two genders. Whereas the cumulative increase in real median hourly wages was 1.1 per cent between 1981 and 2004[3], men's and women's wages went in opposite directions. The real hourly wages of male workers declined by 2.2 per cent between 1981 and 2004, while the real hourly wages of female workers rose by 8.5 per cent over the same time span.

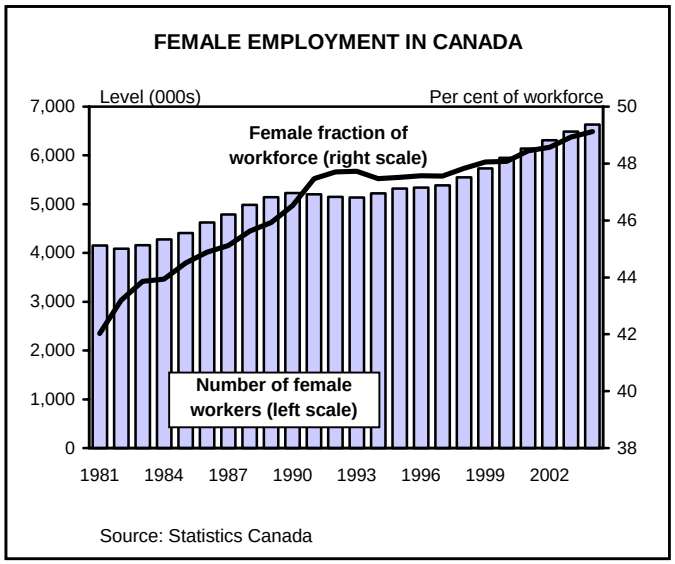
Superficially, the fact that women's wages have increased more quickly than men's seems somewhat unjust – to men. But hold that outrage for a moment. Although women's wages have indeed outgrown men's, they remain lower on an absolute basis. Why is this? The existence of a gender earnings gap is well documented[4]. Roughly half of the differential can be attributed to a variety of broad differences between the male and female workforce. These include disparate work experience and job tenure, a relative preference for part-time versus full-time work, familial duties, the field studied in school, the industry of work, and the chosen occupation within that industry. But a justification for the other half of the wage differential is either difficult to measure, or non-existent, suggesting that we should continue to expect a further narrowing of the wage gap in the future.

Taking the gender-based wage data and going one step further by controlling for age, we see that men's real hourly wages have fallen by a rather large 10.4 per cent between 1981 and 2004, while women's real hourly wages have risen by just 4.1 per cent. Clearly, the rate of wage growth is worse after having controlled for age than before. This is because Canada's population has aged over the timespan in question: whereas the Canadian average age was roughly 34 years in 1981, the average today, by our calculation, is about 39 years. And we also know that older workers tend to be more experienced, and thus receive higher wages. As a result, the effect of an ageing population biases the overall rate of wage growth upward. It is thus desirable to remove the effects of age when making a balanced comparison.

Changing educational norms

Just as changes in gender and age composition can skew the true rate of wage growth, so, too, can changes in education. We know that the proportion of Canadians with a university degree has increased over time. In fact, just 16.0 per cent of the population aged 15+ had a university degree in 1981, versus a full 25.8 per cent in 2001. This means that part of the reason personal income rose at all over the past few decades was that more people were graduating with university degrees, and as a result, getting better paid jobs. But the flip side of the story is that for a fixed level of education, Canadian workers did not enjoy nearly the same wage growth as the aggregate figure suggests. In fact, holding age and education constant, Canadians of both genders saw outright declines in their wages. The real median hourly wage for university-educated men of a fixed age fell by 5.8 per cent between 1981 and 2004, while the real median hourly wage for non-university-educated men of a fixed age fell by 13.9 per cent. For women, also holding age constant, the result is a 4.8 per cent drop in real median hourly wages for university-educated women, and a 4.0 per cent drop for non-university-educated women. Astonishingly, for all levels of education and for both sexes, workers earned less in 2004 than in 1981.





To be clear, this does not mean that the average university-educated young woman who took a job in 1981 is likely to be earning less money today, after twenty-three years in the workforce. On the contrary, individual workers generally see their wages increase over time, roughly commensurate with their rising experience and seniority. But if that same worker were to take a time travel machine from 1981 to 2004, she could expect to receive a lower hourly wage today.

The reason overall women's wages were able to rise while both university and non-university educated women's wages fell is that a composition shift occurred as the proportion of women with a university degree surged during the last few decades.

Lower quality?

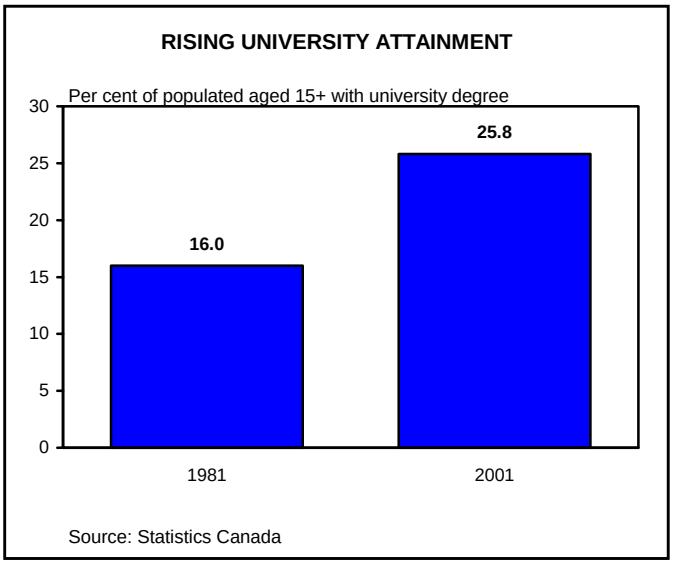
One possible justification for declining wages is if the quality of university and high school graduates is diminishing. There are two schools of thought surrounding the

value of schooling. The first maintains that intelligence is ingrained at birth, and that schooling is merely a mechanism that separates the wheat from the chaff without actually instilling any useful knowledge. If this were true, then an increase in university graduates would simply mean that less capable people were obtaining a university degree, thus diluting its value, resulting in lower wages for university graduates. And if the cream of the group who used to stop at a high school degree were then obtaining a university degree, this would suggest that the quality of high school-educated workers would also decline, resulting in lower wages for this group, also.

Conversely, the second school of thought suggests that the value of school has nothing whatsoever to do with screening, and everything to do with boosting the knowledge and abilities of students (their human capital). At its extreme, this means that everyone who pursues a university degree ends up substantially more capable than they were before, and that an increase in the number of university graduates has no diluting effect whatsoever on the quality of the graduates.

In actual practice, schooling appears to offer a mix of the two – it is partially a screening device, and partially a vehicle for increasing knowledge. The consensus among economists is that the latter is the main driver, and that screening is somewhat less important, but still has an influence. As a result, it is worth contemplating the possibility that the quality of recent high school and university graduates may have declined marginally over time, explaining at least part of the decline in wages by level of education.

As an aside, let us be clear that the spectre of declining wages for university educated workers does not compromise the value of a university education in the least. To the contrary, the wage premium for university versus non-university educated workers remains substantial, and, in the case of men, may have actually increased over the last twenty years by virtue of more rapidly falling wages in the non-university educated workforce. Moreover, university educated workers continue to face lower unemployment rates than other groups, providing a further advantage not reflected in wages. In short, the benefits of a university degree should be no less alluring in the aftermath of this report than they were before.



Other explanations?

There are a number of other factors that might play a contributing role toward the decline of wages. These include changes in job stability, the relative treatment of young and inexperienced workers when compared to their older and more experienced brethren, and possible biases in the underlying data. Let us examine each of these.

Despite perceptions to the contrary, job stability in Canada has not much changed over the past twenty years. Workers seem no more inclined to hop from job to job today than in the past. To illustrate, 76 per cent of Canadian employees kept the same job over the entirety of 1980, versus 80 per cent of employees in 2001. As a result, changes in job stability do not appear to explain any of the decline in median wages after controlling for gender, age, and education.

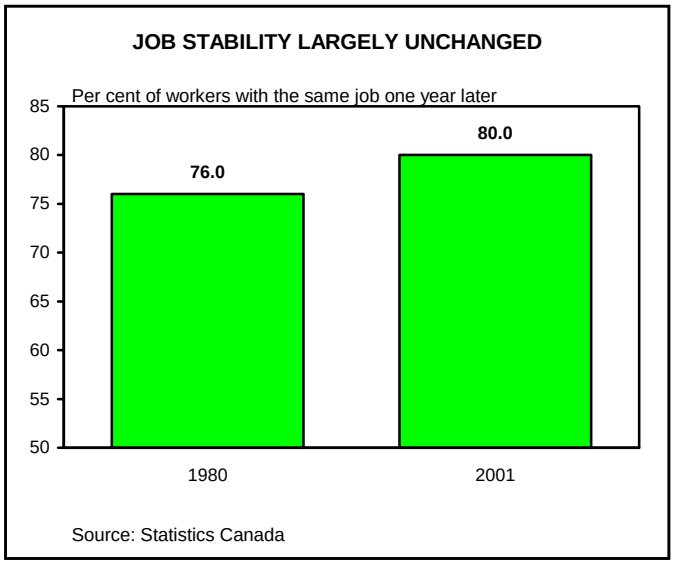
A closer examination of the data suggests that young and inexperienced workers have suffered the brunt of the decline in wages. The fastest growth in the incidence of low paying jobs has come, for both men and women, in the youngest age category – aged 17-24 – over the last few decades. In addition, workers of all ages with fewer than two years of job tenure have also had poor wage outcomes. These workers receive, on average, lower wages than in the past, whereas those with greater than two years seniority have, on average, higher wages than in the past. In short, the phenomenon of declining wages seems to hit the

young and inexperienced especially hard. A recent Statistics Canada paper examines this subject in detail.[5] There are a few possible reasons for declining wages among this group. The proportion of young and inexperienced workers in temporary jobs has risen significantly over time, and these jobs by their very nature are unlikely to be as lucrative as permanent positions because there is no need to win the loyalty of the worker. Another possible reason is that, given rising educational trends, the most able young people today are potentially still in school when they are aged 17-24, and thus not in the workforce to the same degree as they were in earlier decades.

Lastly, the education-based data presented in this paper may suffer from a slight bias of its own. In controlling for age, sex, and education, we have examined workers aged 25-34 – a group slightly younger than the average worker, and thus possibly disproportionately affected by the age-based wage malaise described a moment ago.

The bottom line

To conclude, as dismal as overall wage growth has been over the past twenty years, the situation is even worse when one standardizes by age, sex, and education. Don't get us wrong – having a better-educated work force with more experienced workers, more women, and a narrower male-female earnings gap are all achievements to be applauded. But regardless of the reasons, these are the only factors that prevented an outright and substantial real decline in Canadian hourly wages between 1981 and 2004.



Eric Lascelles, Economist
416-982-6420

ENDNOTES

[1] Drummond, Don and Beata Caranci. "In Search of Well-Being", January 18, 2005, TD Economics.

[2] Morissette, René and Anick Johnson. "Are Good Jobs Disappearing in Canada?", Analytical Studies Branch Research Paper Series, January 2005, Statistics Canada.

[3] The longitudinal data upon which this paper was based were compiled using multiple surveys. As a result, the potential exists for bias in the data resulting from subtle differences in survey design. Nonetheless, an abundance of evidence supports the conclusion that wages have been falling in Canada after controlling for age, sex, and education. These include the data at hand, census records, the Survey of Consumer Finances, the Labour Force Survey, plus the comments of a Statistics Canada representative via telephone.

[4] Drolet, Marie. "The Persistent Gap: New Evidence on the Canadian Gender Wage Gap", Analytical Studies Branch Research Paper Series, January 2001, Statistics Canada.

[5] Morissette, René and Garnett Picot. "Low-paid Work and Economically Vulnerable Families over the Last Two Decades", Analytical Studies Branch Research Paper Series, April 2005, Statistics Canada.