



Catalogue no. 11F0019MIE — No. 266

ISSN: 1205-9153

ISBN: 0-662-41894-8

## Research Paper

Analytical Studies Branch Research Paper Series

# Summary of: The Instability of Family Earnings and Family Income in Canada, 1986 to 1991 and 1996 to 2001

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**November 2005**

Published by authority of the Minister responsible for Statistics Canada

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## **Note of appreciation:**

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

## ***I. Introduction***

Despite its implications for family well-being, little attention has been paid to the analysis of earnings instability in the context of the family versus the earnings profiles of individuals. While a focus on individuals is important, the extent to which families can generate stable income flows from the labour market is a key concern for policymakers. Therefore, using data from Statistics Canada's Longitudinal Administrative Databank (LAD), this study documents how family earnings instability has evolved between two six-year periods: 1986–1991 and 1996–2001. We also examine how husbands' earnings instability compares to couples' earnings instability, and we compute measures of instability based on family earnings, family market income, and family income before and after tax. This allows us to examine the extent to which wives' earnings reduce the volatility of husbands' employment income; the extent to which the tax and transfer system plays a stabilization role; and the extent to which wives' earnings, taxes, and transfers reduce the differences in instability between couples in the bottom of the earnings distribution and those in the top.

## ***II. Data and concepts***

The LAD is a 20% random sample of all taxfilers and their families in Canada. It draws information from personal income tax returns, providing an accurate measurement of family earnings. Beginning in 1992, the LAD also contains information on government transfers and after-tax income, permitting us to assess the stabilization role played by government transfers and the progressivity of the tax system.

In two six-year periods, 1986–1991 and 1996–2001, we classify families of a given age group into three tertiles, based on the average employment income received by *couples* during the four years preceding the observation period. Averaging earnings over four years minimizes the influence of unusually good or bad years in the labour market, and as LAD starts in 1982, family earnings instability is analyzed from 1986 on. While the 1986–1991 period included rapid growth in the late 1980s followed by a severe recession in 1990–91, the 1996–2001 period saw slower but more sustained employment growth. Thus, because it included a period of sharply rising unemployment, one would expect 1986–1991 to be associated with greater family earnings instability than 1996–2001. This also implies that any increase in family earnings instability between the 1986–1991 and the 1996–2001 periods will be a conservative estimate of the growth of family earnings instability that would have prevailed under thoroughly comparable labour market conditions. In order to check the robustness of our conclusions, we analyze how instability evolved between the 1984–89 and the 1994–99 periods.

For each period, our sample consists of married or common-law couples where husbands are aged 25 to 50 at the beginning of the period.<sup>1</sup> Since our goal is to document the instability of family earnings due to labour market events (job loss, transitions in and out of temporary jobs, spells of non-employment, re-entry in the labour market) rather than demographic events (death, divorce), we restrict our attention to couples who remain intact throughout the six-year observation period and the four years preceding it.<sup>2</sup> We exclude couples with any self-

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1. We use the term “husbands” to refer to men living common-law as well as those who are married.

2. See Burgess *et al.* (2000) for a discussion of the importance of labour market events and demographic events.

employment income during same length of time, as we are measuring earnings instability associated with paid employment. To focus on families where husbands have a relatively strong attachment to the labour market, we restrict our attention to couples where husbands have positive earnings through the six-year observation period. Even so, we allow couples to have no earnings in some of the four years preceding the observation period.<sup>3</sup>

These sample selection rules yield samples of 199,800 families for 1986–1991 and 204,600 for 1996–2001, representing 51% and 45%, respectively, of all couples with husbands aged 25 to 50 in 1986 (1996) who have been intact for ten years during the 1982–1991 (1992–2001) period. To allow family earnings instability to vary through the lifecycle, we divide our sample into five-year groups according to the husband’s age at the beginning of the six-year observation period: 25–29, 30–34, 35–39, 40–44 and 45–50. A variable of interest is annual earnings,<sup>4</sup> including both income from T4 slips and other income not reported on a T4. We consider husbands’ earnings, couples’ earnings, family earnings, family market income, family income before tax, and family income after-tax.

### ***III. Methods***

We apply the method developed by Gottschalk and Moffitt (1994). This allows us to decompose the total variability of family earnings (across years and families) into two components: a permanent and a transitory component. The permanent component measures inequality in families’ permanent earnings and the transitory component provides a measure of family earnings instability. The transitory component is an average, across families, of the instability of earnings families experience over a given period.

### ***IV. Family earnings instability: 1986–1991 and 1996–2001***

Between the late 1980s and the late 1990s, the total variability of family earnings increased by 34%. Both components of family earnings variability grew, but the permanent component rose 41%, while the transitory component rose only 10%. Hence, among families where husbands had positive earnings throughout the observation period, family earnings inequality grew much more than family earnings instability. The permanent component grew faster than the transitory component in all age groups. Whatever age group is considered, family earnings inequality rose at least 26%. In contrast, family earnings instability rose *at most* 18%. This, and the fact that the permanent component is the most important component of family earnings variability, explains why it accounted for most of the growth in family earnings variability. In all age groups, the growth of permanent earnings inequality accounted for at least 82% of the increase in family earnings variability. Thus, the total variability of family earnings rose mainly because the dispersion of families’ permanent earnings became more unequal.

As noted, the 1986–1991 period included the beginning of the 1990–92 recession, while the 1996–2001 period was one of economic expansion. Still, the above conclusions hold when we

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3. We also require that families have positive market income in all years of the observation period. This criterion leads to the exclusion of a very small number of observations, e.g. families with negative net rental income.

4. We use the terms “earnings” and “employment income” interchangeably.

compare the periods 1984–89 and 1994–99:<sup>5</sup> between these periods, the total variability of family earnings rose 27%; the permanent component grew 33%; while the transitory component rose only 10%; in all age groups, family earnings inequality increased at least 26%; in contrast, family earnings instability rose *at most* 18%; and, for all age groups, the growth of permanent earnings inequality accounted for at least 80% of the increase in family earnings variability.<sup>6</sup>

### V. *Wives' earnings and instability*

Over the last two decades, women's growing labour force participation has led to a substantial increase in the proportion of families with two earners,<sup>7</sup> and for a growing fraction of families, the risk of job loss is now spread across two earners. To determine the impact of wives' earnings on family income instability, we compare the instability of *husbands'* earnings to the instability of earnings experienced by *couples*. The employment income of *husbands* aged under 45 and living in families located in the bottom tertile of the (age-specific) earnings distribution was, during the 1996–2001 period, at least 1.57 times more unstable than those living in families located in the top tertile.<sup>8</sup> Among couples where husbands are aged under 45, wives' earnings tend to reduce earnings instability *more* among families in the bottom third of the earnings distribution than among their counterparts located in the top tertile. However, they never eliminate the instability differences between the bottom and the top tertile. As a result, couples' earnings instability remains higher at the bottom of the earnings distribution than at the top. For both periods, the employment income of *couples* with husbands aged under 45 and located in the bottom tertile is at least 1.54 times more unstable than their counterparts in the top tertile.<sup>9</sup>

### VI. *Instability and the tax and transfer system*

Employment Insurance (EI) and Social Assistance (SA) partially compensate the loss of employment income experienced by family members as a result of job loss or prolonged periods of unemployment. Other transfers, such as refundable tax credits and the Child Tax Benefit, provide additional sources of income that may shift up the age-income profile of families and reduce the income losses that result from negative earnings shocks.

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5. Although the period following the 1990–1992 recession witnessed a slower recovery than that following the 1981–1982 recession, the aggregate unemployment rate was fairly similar during the 1984–1989 period and the 1994–1999 period. On average, it amounted to 9.3% and 9.1%, respectively.

6. These results are based on a sample that differs slightly. It consists of couples who are intact throughout the observation period (1984–89 or 1994–99) as well as during the *two* years preceding it (1982–83 or 1992–93).

7. Data from the Labour Force Survey indicate that women's labour force participation rate (among those aged 15 and over) amounted to 62.1% in 2004, up from 50.6% in 1980.

8. This conclusion holds for the 1986–1991 period.

9. Wives' earnings appear to have moderated somewhat the growth in family earnings instability between the 1980s and the 1990s. This can be seen by noting that: a) the growth in couples' earnings instability has generally been lower than the growth in husbands' earnings instability, and b) except among couples with husbands aged 45–50, the growth in couples' earnings instability has been virtually identical to the growth in family earnings instability.

To assess the extent to which government transfers and personal taxes reduce the differences in instability observed across segments of the family-level earnings distribution, we use: family market income; family market income plus EI benefits; family market income plus EI and SA benefits; family market income plus EI/SA benefits and refundable tax credits; family market income plus EI/SA benefits; refundable tax credits and family-related benefits (the Child Tax benefit plus provincially-funded family-related benefits); f) post-transfer before tax family income, g) post-transfer after-tax family income; and post-transfer after-tax family income adjusted for family size.

Even after taking account of wives' earnings, earnings of other family members, and other sources of market income, sizable differences in instability persist between families in the bottom tertile of the earnings distribution and those in the top: in all age groups, family market income in the former group is at least 1.51 times more unstable than in the latter. Simply adding EI benefits to family market income reduces these differences in instability: however, the differences in instability observed between families with husbands aged 35 to 39 and located in the bottom tertile, and their counterparts in the top tertile, dropped from 5.5 percentage points (0.160–0.105) to 3.5 percentage points (0.135–0.100), or 36%. The inclusion of SA benefits reduces instability in the bottom tertile but has, in all age groups, generally no effect on instability in the middle and top tertiles. In fact, including EI and SA benefits reduces the instability gap between the bottom tertile and the top tertile by 40% to 64% among families with husbands aged under 45. Among older families, the stabilization role of EI and SA benefits induces a drop in instability differences that varies between 31% and 47%.

Adding refundable tax credits to EI and SA benefits has generally no effect on instability in the top tertile. Moving from family market income to post-transfer before tax family income (adding EI benefits, SA benefits, and other government transfers to family market income) reduces the instability differences (between the bottom and the top tertile) by 60% to 97% among families with husbands under 45 and by 48% to 69% among older families.

During the 1996–2001 period, the tax and transfer system eliminated at least 73% of the differences in instability in family market income, between the bottom tertile and the top tertile, among families with husbands aged under 45. Among older families, the tax and transfer system eliminated between 59% and 78% of these differences.

Government transfers and taxes also reduced the degree of instability, measured in *absolute* terms that these families face. In all age groups, taxes and transfers appear to have reduced instability in the bottom tertile by between \$1,700 and \$1,900, with most of the reduction in absolute terms coming from the tax system. For families in the top tertile, the corresponding reduction varies between \$2,700 and \$4,400. Government transfers and taxes have reduced instability, measured in relative terms, more in the bottom tertile than in the top tertile simply because, taken together, they have increased family income proportionately more in the former group than in the latter.<sup>10</sup>

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10. Interestingly, families in the bottom tertile face less instability, measured in *absolute* terms, than their counterparts located in the top tertile. However, because average earnings in the bottom tertile are much lower than in the top tertile, the former group ends up facing much greater proportional income gains/losses than the latter. The same argument applies for the comparison between husbands' earnings instability and couples' earnings instability.

These results suggest that government transfers and taxes reduce the fluctuations of income that families face in absolute terms. By shifting upward the age-income profile of families in the bottom of the earnings distribution, they reduce the proportional income losses associated with negative earnings shocks, attenuate the potentially negative consequences of these shocks on consumption, and increase the economic security of families at the bottom of the earnings distribution.

### ***VII. The role of family-related benefits***

We examine, for the broad sample defined above, the role of family-related benefits in greater depth by distinguishing families who had children under 18 at some point during the 1996-2001 period from other families (Appendix Tables 9 and 10). As expected, families without children are not affected by these benefits. Families with children under 18, on the other hand, experience a drop in the instability of their income, as estimated by either MAD or the square root of  $\sigma_w^2$ . For families with children in the bottom tertile and in the 30-34 age group, provincially-funded family-related benefits (FABEN) reduce income instability (estimated by MAD) by 0.4 percentage points (from 0.162 to 0.158), while the Canada Child Tax Benefit program (CCTB) brings an additional 1.2 percent reduction, which results in a combined reduction of 1.6 percentage points (from 0.162 to 0.146).

In general, the drop in instability associated with family-related benefits is much larger for the families in the bottom tertile than in the top tertile. Overall, it appears that family-related benefits produce their intended effects, i.e., reduce the income instability of families who have children and have fairly low earnings, without affecting families without children and high-income families.

### ***VIII. Conclusion***

Changes in family earnings instability vary depending on the age group and the employment income tertile considered. In all age groups, long-term family earnings inequality rose substantially between the late 1980s and the late 1990s. Because this has been only partially offset by the tax and transfer system, inequality in after-tax family income rose during the 1990s (Frenette *et al.*, 2004).

In all age groups, wives' employment income reduces the proportional income losses that families face as a result of negative earnings shocks. Although the stabilizing role of wives' earnings is more pronounced among couples with relatively low earnings, there are dramatic differences in instability across the earnings distribution. Families in the bottom tertile display much more unstable employment income, in relative terms, than those in the top tertile.

Government transfers reduce substantially the family-level differences in instability, measured in terms of proportional income gains/losses that are observed across earnings tertiles. While the progressivity of the tax system reduces these differences to a lesser extent, it too plays an important role in reducing instability, measured in absolute terms, in all tertiles. Our results highlight the crucial role of government transfers in stabilizing the income of families at the bottom of the earnings distribution. Combined with the tax system, government transfers have

reduced substantially the differences in instability observed across segments of the earnings distribution during 1996–2001.



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