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# Summary of: Work Hours Instability in Canada

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## **1. Introduction**

In Canada, the share of workers with standard-length workweeks, usually defined as 35 to 40 hours per week, has declined. In 1978, 47.4% of workers worked between 35 and 40 hours per week, 43.4% did so in 1989, and 39.4% in 2000. The share of those working less than 35 hours was steady between 1978 and 1989 but rose from 30.8% in 1987 to 34.1% in 2000, while the share working longer hours went from 23.0% in 1978, to 25.8% in 1989, and ended the 1990's at 26.4%.

It is often argued that these movements away from standard work hours have led to substantial declines in the well-being of individuals, and this for several reasons. First, those working short hours are more likely to face poor employment standards, less likely to be unionized, and less protected against job layoff (Chaykowski, 2005). They also have lower wages (Morissette, 1995), lower skills (Johnson and Kuhn, 2004), and less access to employment insurance (Fleury and Fortin, 2004). Non-standard work hours are also linked to stress: individuals not working enough may experience stress because low hours are often associated with low wages or job instability (Scott, Tompa and Trevithick, 2004; Dolinschi, Tompa and Bhattacharyya, 2004; Ferrie, Shipley, Marmot, Stansfeld and Smith 1998; Friedland and Price, 2003) and individuals working too much may also experience stress due to job demands, lack of leisure time, and lack of quality time with family and friends (Frederick and Fast, 1996). Finally, both overwork (Crompton, 1995) and underemployment (Scott, Tompa and Trevithick, 2004) are associated with adverse health consequences.

The polarization in work hours and the associated outcomes have led a number of commentators to emphasize the benefits and costs of alternative working arrangements. However, it is not known whether a person's position in the working hours distribution stays the same from year to year. It might be that the apparent polarization of work hours is partly the result of workers having highly variable work hours—that is, working standard hours in some periods and long or short hours in other periods. If this were the case, then the importance of hours polarization might be overstated, and more attention should be paid to individual-level hours variation.

In this paper, we investigate individual-level variability in work hours. We describe the amount of individual-level hours variation observed among a panel of workers from 1997 to 2001. In doing so, we estimate the share of the cross-sectional variance in work hours that is attributable to hours instability at the individual level, and describe the persistence of standard, long, and short hours of work. Then, we examine the well-being characteristics of workers defined according to their longitudinal working hours patterns with a view to determining whether workers choose to work variable hours or whether they do so because they are unable to secure more stable employment.

## **2. Data**

We use the 1996 to 2001 longitudinal panel of the Survey of Labour and Income Dynamics (SLID).<sup>1</sup> In this survey, respondents are asked in each year to describe their work schedules, which are then aggregated into a figure for annual working hours. In SLID, hours worked are

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1. This corresponds to the most recent 6-year panel available. Our focus is on annual hours over the period 1997 to 2001, but we use the first year of the panel to identify some personal and employer characteristics among workers.

collected by asking paid workers how many hours they “usually” get paid in a typical workweek. The focus is on a sample of approximately 8,100 individuals aged 25 to 54 in 1997, who worked on at least one occasion between 1997 and 2001. New immigrants who arrived after 1996, individuals who left the country before 2001, individuals not physically located in the country at any point over the period, and self-employed workers were excluded.

### **3. *Work hours instability: cross-sectional results***

Table 1 shows the cross-sectional distributions for 1997 and 2001. A substantial portion of workers in the sample worked standard hours (52.5% in 1997 and 57.2% in 2001). The proportion working very long hours (2,400 or more hours per year) was relatively large, especially among men: 11.4% of all paid men worked at least this many hours in 2001 compared with 8.0% of all said workers. The distribution of work hours remained relatively stable over time, except for a small shift away from low part-time hours towards full-year full-time employment (especially among women). These results suggest that overwork is stable over time.

However, only 50.6% of workers in this cohort worked in the same interval of work hours in 2001 as they did in 1997. Consistent with the growing economy, more (27.7%) moved to a higher class of hours than to a lower class (21.7%). Nearly half changed hours-classes over the five-year period, indicating substantial mobility in work hours. The share of workers working the same hours-classes in 2001 as in 1997 was higher for men than for women: 55.3% of men and 45.9% of women worked the same class of hours in 2001 and in 1997. Among workers who changed classes, women were more likely to move up: 30.6% moved up, compared with 24.9% of men.

Of all full-year full-time workers in 1997, nearly 75% were still full-year full-time in 2001. In addition, 35.2% of the “overworked” (2,400 hours or more) in 1997 were overworked again in 2001. But there was substantial mobility. Among the overworked in 1997, two-thirds worked a shorter class of hours in 2001: 43.6% worked full-time hours in 2001, and 12.9% worked less than full-time hours. The flight from overwork was larger for women than men. Among women who worked more than 2,400 hours in 1997, 70.4% shifted down to standard or part-time hours by 2001, compared with 52.0% among men.

Table 2 shows the persistence of standard (between 1,750 and 2,400 hours), long (at least 2,400 hours) and short hours (less than 1,750 hours) in the period from 1997 to 2001, ranging from one occurrence in the 5 years, to persistence over all 5 years. The “standard hours” category was the most stable pattern, especially among men. Almost one-third of all workers (and 40.2% of men) worked between 1,750 and 2,400 hours in all 5 years of the panel, and 1 in 2 workers worked standard hours in at least 4 years of the 5-year panel.

Long hours were less persistent. About 8.0% of the panel worked 2,400 or more hours in 2001; but 20.3% worked long hours in some year between 1997 and 2001, indicating that the share of workers having some experience working long hours is much larger than cross-sectional results suggest. Nevertheless, only 0.7% of the panel worked this much in all of the five years, indicating that chronic overwork is extremely rare. Men were more likely to be overworked than women.

Many workers (55.4%) worked fewer than 1,750 hours on at least one year between 1997 and 2001 and the distribution was skewed: 15.3% worked less than 1,750 hours in only 1 year, and

14.7% worked fewer than 1,750 hours in all 5 years. Period-long spells of underwork were much less prevalent among men (5.2%) than women (24.4%).

To determine how much a typical individual's annual work hours vary, we compute the mean absolute deviation (MAD) for each worker. Results indicate that 75% typically deviated from their average hours by more than 1.5 standard weeks of work (65 hours). And 50% had an average variation in hours of more than 202 hours (5 weeks), while 25% had an annual hours-variation of at least 443 hours (10 weeks). Variation was much higher among women.

This discussion suggests that there are two sources of working hours inequality: *permanent* differences in working hours *between* people, and *transitory* differences in working hours *within* people. In the first, different workers can be characterized as having very different levels of work hours, even when their respective annual work hours are averaged over long periods of time. In the second, from year to year, workers experience variation in their own working hours. Both sources are important for explaining annual earnings inequality.

To determine how much of the cross-sectional variation in work hours can be attributed to individual instability, and how much to inequality between individuals, we apply the method of variance decomposition developed by Gottschalk and Moffit (1994) to decompose earnings inequality. We find that 42.7% of the total variation in work hours can be attributed to individual-level instability in hours, while the remaining 57.3% is attributable to inequality between individuals. This share was higher among men (50.8%) than women (43.1%). The estimates suggest that the variance attributable to individual-level instability is high in annual work hours.

#### **4. Longitudinal patterns in work hours, job quality and well-being**

To examine whether this instability in work hours is a cause for concern, we split the sample according to their working-hours patterns and looked at their characteristics. We divide workers into 4 groups: (1) “always standard” (those with hours between 1,750 and 2,400 hours every year); (2) “overworked” (at least one year with more than 2,400 hours without ever going below 1,750); (3) “underemployed” (at least one year with less than 1,750 hours without ever going above 2,400); and (4) “hi-lo” (at least one year with more than 2,400 hours and at least another year with fewer than 1,750). The latter identifies workers whose working hours were particularly variable: “overtime” in some years, “part-time” in others.

Almost one-third of workers worked “always standard” hours, averaging 2,027 hours per year (about 40 hours a week), and with little instability in work hours over time. But as many as 13.3% worked more than 2,400 hours in at least one year without ever going under 1,750 hours. These “overworked” individuals worked more intensely than any other category, supplying, on average, 400 more hours per year than in the “always standard” category.

Over 43% of workers in the sample worked fewer than 1,750 hours without ever going above 2,400 hours. The “underemployed” individuals formed the largest group, and averaged approximately 34 weeks of full-time work per year over the five-year panel. Hours varied substantially from one year to the next—more than for workers in the “always standard” or “overworked” categories.

About 7.8% of paid workers fell into the “hi-lo” group. On an annual basis, hi-lo workers supplied almost as many hours (1,978 hours) as those who worked a standard full-year full-time schedule in each year. Thus, this group, through averaging years of overwork with years of underemployment, achieved approximately a standard work schedule. But this came at the cost of much more hours instability: they often experienced an annual variation of more than 10 weeks (420 hours), and they had higher annual work hours instability. Overall, men were much more likely to work standard or above standard hours, and women were more likely to work below standard. They were equally likely to be in the hi-lo category.

In the remainder of this report, we compare various indicators of job quality and well-being across these four work hours intensity groups. The objective is to determine if having highly variable work hours, which we proxy as being in the hi-lo category, is associated with having low job quality or well-being, thereby making it difficult to argue that variable work hours is a choice for most.

### *Work hours and job quality*

The job quality literature often divides the labour market into “good” and “bad” jobs.<sup>2</sup> Good jobs have stable full-time hours, pension coverage and stability, while bad jobs do not. But to what extent is having a bad job associated with highly variable work hours? Specifically, having a pension plan, being in a union are each associated with less hours variability. In contrast, being a multiple job holder, a job changer, or a non-manager and having low wages are all associated with highly variable work hours. Hence, most indicators of job quality are negatively associated with hours variability.

### *Work hours and well-being*

We use the following to proxy well-being: experiencing low-income at least once over the period; having bottom quartile or bottom decile average earnings; having a high level of stress at least once over the period; and experiencing bad health at least once over the period.

Hours variability was associated with having one or more spells of low income over the period: 15.8% of hi-lo workers experienced at least one year of low income compared with 3.3% of standard workers. Having hi-lo work was also associated with having low average annual earnings over the period: 24.4% of hi-lo workers had bottom quartile annual earnings, compared with 9.3% of standard workers. Thus, hi-lo workers are not maintaining a particularly high standard of living through averaging periods of overwork and underwork. Hi-lo work is more associated with low average earnings for men than women.

The incidence of stress was highest among those in the overworked category, but it is nearly as high in the hi-lo category. Moreover, workers with hi-lo hours had much higher incidences of stress than standard workers; 50.5% of hi-lo workers experienced stress compared to 37.6% of standard workers.

The incidence of bad health was also associated with working hours patterns. While the incidence of bad health was highest among underemployed workers, it was nearly as high for hi-lo workers. Hi-lo workers had a much higher incidence of bad health than workers who always

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2. See Gunderson and Riddell (2000) for a recent review of the Canadian job quality literature.

worked standard hours: 19.7% of hi-lo workers experienced bad health compared to 15.6% of standard-hours workers.

To test whether the relationship between working hours variability and stress or bad health is spurious, we perform a number of regressions, controlling for such background characteristics as demographic factors, industry of employment, and job quality factors. The regressions include a series of variables designed to assess the well-being of the individual at the beginning of the period, including a dummy variable indicating whether the person lived in a low-income family in 1996, was very stressed in 1996, or was in bad health in 1996. Finally, the models include the mean annual hours observed over the 1997 to 2001 period, to account for the likelihood that stress and bad health are related to the levels of hours worked.

After controlling for a variety of background characteristics, being overworked and being in the hi-lo group have roughly equal positive influences on stress. This is also true when men and women are examined separately. Hours variability remains important when we enter it directly into the model, either as the coefficient of variation (CV) or as the mean absolute deviation (MAD) of hours. The results for bad health are less consistent. Being in the hi-lo group is weakly associated with having bad health for all workers after other controls are added in. This effect is more concentrated among women: being in the hi-lo group was significant only for women. Having high MAD of hours was associated with having bad health for men and women; having a high CV of hours was only significant for men.

After controlling for initial well-being, industry of employment, job quality, and demographics, the results show that hi-lo workers had an incidence of stress that was 34% higher than workers who always worked standard hours, making them just as stressed as the overworked. Under the alternate specification, it was found that workers with the highest MAD had an incidence of stress that was 28% higher than those with the lowest hours variability. These “stress premiums” were comparable for men and women. Hi-lo workers’ incidence of bad health was 23% higher than standard-hours workers; this difference was more pronounced for women. Women hi-lo workers’ incidence of bad health was 36% higher than women standard-hours workers. Workers with the highest MAD of work hours were 29% more likely to have bad health than those with the least hours variability, again more pronounced among women than men. Thus, having variable work hours is related to lower levels of well-being.

## **5. Conclusion**

Using data from the Survey of Labour and Income Dynamics, we find that workers face substantial variability in work hours; only about half worked the same class of hours in 2001 as in 1997, and the amount of variance attributable to individual-level instability in work hours can be relatively large. In addition, while many workers have periods where they work long hours, long-term periods of overwork are rare. Further, a significant minority of workers maintain approximately full-year full-time hours through averaging periods of overwork with periods of underemployment: they face among the most variable of work hours.

Workers with lower job quality have more unstable work hours, and workers in non-standard or low-wage work have more variable work hours. Interestingly, workers with highly variable work hours also have higher incidences of low income and are more likely to report being very stressed or in bad health.

Our results imply: (1) that research on working time inequality should pay more attention to individual level hours instability; (2) the lack of persistence in long work hours, plus the high level of individual hours variability, undermine the equity-based arguments behind working-time reduction policies; (3) labour market policies designed to mitigate the hardships caused by low quality or non-standard work should consider that these workers also tend to work unstable hours; (4) policies designed to reduce working-hours variability, and not just reduce working time, could benefit workers.

**Table 1 Distribution of workers (in percentage), 1997 and 2001**

	1997	2001	Change
<b>All individuals</b>			
Non-workers	7.0	5.9	-1.1
1 to 1,199 hours	16.7	12.8	-3.9
1,200 to 1,749 hours	11.4	11.9	+0.5
1,750 to 2,199 hours	52.5	57.2	+4.7
2,200 to 2,399 hours	4.8	4.2	-0.6
2,400 hours and more	7.6	8.0	+0.4
<b>Men</b>			
Non-workers	4.6	3.6	-1.0
1 to 1,199 hours	9.8	6.5	-3.3
1,200 to 1,749 hours	7.2	6.3	-0.9
1,750 to 2,199 hours	60.8	66.0	+5.2
2,200 to 2,399 hours	6.3	6.1	-0.2
2,400 hours and more	11.3	11.4	+0.1
<b>Women</b>			
Non-workers	9.5	8.2	-1.3
1 to 1,199 hours	23.7	19.2	-4.5
1,200 to 1,749 hours	15.7	17.6	+1.9
1,750 to 2,199 hours	44.0	48.1	+4.1
2,200 to 2,399 hours	3.2	2.3	-0.9
2,400 hours and more	3.8	4.5	+0.7

Source: Survey of Labour and Income Dynamics, Statistics Canada.



**Table 2 Persistence of standard, long and short hours, 1997-2001 (in percentage)**

<b>Workers</b>	<b># Years</b>	<b>% working between 1,750 and 2,400 hours (standard)</b>	<b>% working 2,400 hours and more</b>	<b>% working less than 1,750 hours</b>
All individuals	1	11.1	11.0	15.3
	2	10.9	4.6	9.1
	3	11.8	2.6	8.0
	4	17.3	1.4	8.3
	5	32.2	0.7	14.7
<b>Total</b>		<b>83.3</b>	<b>20.3</b>	<b>55.4</b>
Men	1	9.2	14.8	15.6
	2	10.6	6.5	7.6
	3	12.1	3.8	6.2
	4	20.2	2.5	5.2
	5	40.2	1.2	5.2
<b>Total</b>		<b>92.3</b>	<b>28.8</b>	<b>39.8</b>
Women	1	13.0	7.2	15.1
	2	11.2	2.7	10.6
	3	11.4	1.4	9.8
	4	14.4	0.4	11.4
	5	24.1	0.2	24.4
<b>Total</b>		<b>74.1</b>	<b>11.9</b>	<b>71.3</b>

Source: Survey of Labour and Income Dynamics, Statistics Canada.

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