Canadian International Labour Network

Labour Market Outcomes:

A Cross-National Study

CILN is a collaberative research venture between the Social Sciences and Humanities Research Council (SSHRC) and McMaster University. Additional funding is provided by the University of British Columbia, the University of Toronto, Queen's University, York University and Human Resources Development Canada (HRDC).

McMaster University

DEPARTMENT OF ECONOMICS

MEASURING UNEMPLOYMENT AND STRUCTURAL UNEMPLOYMENT[1]

W. Craig Riddell
Department of Economics
University of British Columbia
and
Canadian Institute for Advanced Research

August 1999

Abstract

This paper surveys recent research on how to measure labour market activities such as unemployment and labour force participation. The conventional approach to distinguishing between unemployment and non-participation is to use a priori reasoning and self-reported survey responses about current activities, specifically availability for work and job search. In contrast, the research surveyed here employs evidence on the subsequent consequences of current activities, in particular on transitions among labour force states. This general approach appears to be a promising method for bringing evidence to bear on these difficult measurement issues.

JEL codes: E0, J0, J2, J6

Keywords: unemployment, labour force participation, job search, availability for work, labour market transitions, discouraged workers

[1] This paper is based on a luncheon address at the CSLS conference on Structural Aspects of Unemployment, Ottawa, April 22-23, 1999. The research on which this address is based is joint with Stephen Jones of McMaster University and has been supported by the SSHRC and the Canadian International Labour Network. We thank Statistics Canada for facilitating access to data on labour market transitions.

Measuring Unemployment and Structural Unemployment

This paper deals with the definition and measurement of unemployment, and the relevance of this broad conceptual issue for structural unemployment. It summarizes and discusses the implications of ongoing research on this topic with Stephen Jones of McMaster University (Jones and Riddell 1998a, 1998b, 1999a). Our overall assessment at this point is that we are making some progress on the difficult issue of how best to define and measure concepts like unemployment and labour force participation. I will try to lay out our reasons for this belief in sufficient detail that you can make your own assessment of whether this claim is convincing.

The question of how best to define unemployment has long been controversial. The nature of the controversy is easy to describe. We frequently see statements in the press and other media that the true amount of unemployment is much greater than the "official" measure provided by Statistics Canada. Just recently a report from a left wing think tank claimed that Canada's jobless rate is nearly 18 percent, rather than the official rate of 7.8 percent, when one includes the unemployed, under-employed and discouraged (Robinson, 1999). Less frequently – and usually from right wing think tanks – the opposite claim is made – that many of those officially classified as unemployed are not really serious about finding work and should be excluded from such measures.

To some extent these differences in opinion reflect differences in the underlying purpose of the unemployment rate. The way one measures unemployment is likely to be different if the unemployment rate is intended to be a measure of the overall state of the economy than if it is an indicator of the extent of hardship in the economy or if it measures the degree of excess supply in the labour market. But the differences in opinion go beyond differences in objectives. For the purposes of this discussion I will presume that the principal objective of the unemployment rate is to provide a measure of the extent of unused labour supply, that is a measure of the number of individuals who are attached to the labour market but not currently employed. Even if you accept that this is the main purpose of our unemployment measures, there are important differences of opinion on how to implement this concept.

To a considerable extent the controversy arises because there is no clearly correct answer. We don't have much disagreement about how to identify those who are employed. The problems arise because of the many "grey areas" involved in separating the non-employed into two groups: the unemployed and out-of-the-labour force, or participants and non-participants. The principal criteria used to make this distinction are availability for work and job search. But what precisely is meant by being available for and searching for work? And what should be done about those who state that they want work but are not currently searching? As stated by one U.S. Presidential Commission on the Measurement of Employment and Unemployment, " When should a person not working but wanting work be included in the labor force and thus counted as being unemployed? This constitutes the most difficult question with which the Committee has had to deal." [President's Committee to Appraise Employment and Unemployment Statistics, 1962, p. 49]

These difficulties are illustrated by the fact that different countries have adopted different ways of operationalizing broad concepts such as "availability for work" and "job search". For example, Australia and the United States require "active job search" for classification as unemployed, while Canada and most other OECD countries include both "active" and "passive" searchers among the unemployed. The difficulties are also illustrated by the fact that within the same country there have been changes over time in key procedures. For example, "discouraged workers" were classified as unemployed prior to 1975 in Canada and prior to 1967 in the United States, but are now treated as being out-of-the-labour force in both countries. I will return to these two examples – active versus passive job search and discouraged workers -- in what follows.

In the past the question of how to distinguish between unemployment and out-of-the-labour force has been addressed primarily using a priori reasoning. For example, most countries use job search rather than a weaker criterion such as the desire for work for classification as unemployed. The reasoning is that those who search are displaying by their behaviour their strong attachment to the labour force. Those who say they want work but are not searching are not providing enough evidence of their labour market

attachment. After all, anyone can claim that they want work. If they are serious about this claim, why are they not taking some action to find work?

The same kind of a priori reasoning is used to justify requiring "active" job search for classification as unemployed, and thereby treating those using only "passive" search methods – such as "looking at job ads" – as non-participants. Why should we consider someone who only looked at ads to be serious enough about obtaining employment to be classified as unemployed?

Stephen Jones and I take a different approach. Rather than relying on a priori considerations – about which reasonable people may disagree – we ask whether such definitional issues can be resolved on the basis of evidence. We classify individuals in the same state if they display equivalent labour force behaviour. On the basis of a priori reasoning, conventional methods may place red hats on some people and white hats on others. But if the red hat types are indistinguishable in their behavior from the white hat types, then under our approach they would be classified in the same way. By "labour force behaviour" we mean their subsequent labour force status – the likelihood that in some future period the individual will be employed, be searching for work, desire work, or neither search for nor desire work.

What is the relevance of this approach for structural unemployment? At least two aspects appear to be potentially important. First, the classic definition of structural unemployment involves situations in which there are unemployed workers in one region or occupation or skill category and unfilled vacancies in different regions, occupations or skill categories. Such unemployment may result in job search, but if the workers are well informed about the situation they face it is also likely to show up as desiring work but not searching. Thus some of what we conceptually refer to as structural unemployment appears likely to show up as non-participation rather than unemployment in our labour force statistics.

The second way in which these measurement issues are relevant for structural unemployment is perhaps less familiar. Because we do not have good data on job vacancies, we often turn to other indicators in our attempts to distinguish structural unemployment from other types of unemployment. A common such indicator is the

duration of unemployment, with longer term joblessness being viewed as more likely to be structural in nature. However, our measures of unemployment duration can be quite sensitive to how we distinguish between unemployment and out-of-the-labour force. The reason is that many spells of job search end in labour force withdrawal – as conventionally measured – rather than employment. For example, consider someone who loses a job, spends three months searching for work, stops searching for a month but continues to want work, then searches for an additional two months before obtaining employment. In our labour force statistics this would show up as two brief spells of unemployment (lasting 3 and 2 months respectively) and one short spell of non-participation (lasting one month). However, this is arguably a single six month spell of unemployment more broadly defined. Thus if transitions between unemployment and "near unemployment" are common, conventional measures of unemployment may give us a misleading picture of the duration of joblessness among those desiring work.

Our first work in this area (Jones and Riddell, 1998a, 1999a) was based on Canadian data over the period 1979-1992. We used a survey (euphemistically called the Survey of Job Opportunities) carried out in March of most years and which asked non-employed respondents who did not search for work whether they wanted work and if so why they did not search. We refer to those who did not search but state that they want work as the "marginally attached". A subset of this marginal attachment category that has received substantial attention is the discouraged worker group – those who state that they did not search because they believed no work is available in their area or suitable to their skills. Another subset that I will discuss subsequently is a group we refer to as "Waiting".

The magnitude of the marginal attachment category is non-trivial. In Canada they typically constitute a group about one-quarter to one-third the size of the unemployed category. In other words, the unemployment rate would be about 25 to 35 percent higher if we used a broader definition which includes those who did not search but state that they want work. To illustrate the importance of these measurement issues in comparing different countries, note that in Australia the marginal attachment category is two to three times as large as the unemployed -- i.e. six to twelve times as large as in Canada. This appears to be due to the fact that Australia employs a very strict availability for work

criterion. To be classified as unemployed in Australia, an individual needs to be actively seeking work and available to start work within seven days. Similarly in the U.S. the marginal attachment group is substantially larger than in Canada – about two-thirds to three-quarters the size of the unemployed category, or about two to three times as large as in Canada.

In order to implement our method we need to observe the subsequent labour force activities of individuals who are classified in different ways in the current period. That is, we need longitudinal data. To create a longitudinal data set with information on the desire for work among non-searchers we take advantage of the rotation group structure of Canada's Labour Force Survey. Individuals who enter the survey remain in the LFS for 6 consecutive months. Each month approximately $1/6^{th}$ of the sample rotates out and a new rotation group joins. Thus approximately 5/6th of the sample is common between a pair of contiguous months. Because the SJO is a supplement to the LFS we are able to link up most SJO respondents in March to their subsequent labour force behavior in April. In discussing the findings I will focus on transition rates into employment because this is most relevant for assessing the degree of labour force attachment. However, we generally find that our rankings of the degree of labour force attachment are identical across alternative destination states.

Figure 1 shows three transition rates – those from Unemployment as conventionally measured (U in the figure) and those from two subsets of non-participants: the marginally attached (M) and those who do not want work – a group we call the "Non-Attached" (N). The principal message here is that the M category is quite distinct from the remainder of those classified as non-participants. Indeed, if anything M appears closer to U than to N in its degree of labour force attachment, as measured by the probability of being employed next month. If we were to look at the transition rates into other destination states, we would see a very similar story. However, it is also important to note that the U and M groups are distinct (that is, their transition rates into employment are significantly different from each other). The sample sizes underlying these average transition rates are large and the associated standard errors are small.

What Figure 1 shows are average transition rates. In our formal tests of equivalence we control for observable characteristics such as age, gender, education, marital status, and region. The results are essentially unchanged from those based on simple inspection of the sample averages and their standard errors.

The SJO asks those who want work why they did not search. We classify the reasons given into four categories: Personal (which includes family responsibilities, illness, and going to school), Waiting (which includes waiting for recall to former job, waiting for replies, and has a new job to start sometime in the future), Discouraged (believes no work available in region or suitable to skills), and Other. We find that the Waiting subcategory displays very strong labour force attachment -- even stronger than those classified as unemployed. Figure 2 shows the transition rates into employment when the Waiting subset is separated from the rest of the Marginal Attachment category. (These are denoted M(W) and M(NW) respectively.) According to this evidence we would be inclined to classify the Waiting sub-category of M as unemployed rather than as OLF, as is conventionally done. This conclusion continues to hold when we examine the transitions into each of the destination states rather than the single transition rate into employment shown in the figure.

It is important to note that this Waiting subset of M does not include those classified as “Temporary Layoffs” and “Future Job Starts”. Statistics Canada’s Labour Force Survey currently classifies as unemployed individuals on temporary layoff or with a job to start within the next four weeks providing they are available for work. That is, job search is not required for these types of situations. The Waiting subset of M identified here does not include those classified as Temporary Layoff or Future Job Starts. Yet when these individuals state that they are not searching because they are waiting for recall, expect to start a job, or waiting for replies, they are clearly not dreaming. A large fraction of them are employed a month later. One interpretation of this evidence is that the conventional criteria for “Temporary Layoffs” and “Future Job Starts” may be too rigid.

A second point to note is that once the Waiting subset of M is removed, the remainder of the Marginal Attachment category is an intermediate state, distinct from both U and N and approximately halfway between the two.

The final point to note is that the Discouraged Worker subset of M does not appear to be distinct from those not searching for personal or other reasons. Despite the substantial amount of attention often paid to discouraged workers in discussions of hidden unemployment, there does not appear to be any reason to treat discouraged workers differently from other non-searchers who want work.

This methodology can also be used to assess the United States procedure of treating passive job searchers as out-of-the-labour force versus the Canadian method of classifying passive job searchers as unemployed. This difference in methods accounts for a non-trivial amount of the Canada - U.S. unemployment rate gap -- about 0.6 to 0.7 of a percentage point at present. That is, the current Canadian unemployment rate would be about 7.1 rather than 7.8 percent if U.S. definitions of unemployment were used. But which definition makes more sense? Our analysis of this issue indicates that those using only passive search methods (in this case those who only looked at job ads) are somewhat distinct in their labour force behaviour from those using active methods. (Note that active search includes those using multiple methods, which is quite common.) At first glance this appears to provide some support for the U.S. method. However, the passive job searchers are also clearly distinct from those who are not searching at all. In general the passive searchers appear closer in their behaviour to active searchers than to non-searchers. On this basis, the case for maintaining the restrictive U.S. methodology appears weak.

I will conclude with a brief discussion of new projects that are currently underway. One question you may be asking is: Are these findings peculiar to Canada or do they hold more generally? A second natural question is: Given that Canada recently made substantial revisions to its Labour Force Survey, do the findings based on the previous LFS have any relevance in the current situation? The ongoing research is intended to provide answers to both questions.

Until recently it was not possible to do this kind of work in the U.S. The reason is simple. Although the CPS has included for some time a question on the desire for work among non-searchers, this question was asked only of those leaving the survey that month – i.e. those in the outgoing rotation group. It is thus not possible to follow the subsequent behavior of these individuals. However, with the substantial revisions to the CPS in 1994, the desire for work question is now asked each month of all survey respondents. In work in progress with the CPS data (Jones and Riddell, 1998b) we find that the marginal attachment group – which you will recall is much larger in the U.S. – is an intermediate category between the unemployed and the remainder of those conventionally classified as non-participants. In this respect the findings are very similar to those obtained for Canada.

The CPS data allows us to separate the M category into three sub-groups according to their reasons for not searching: Personal, Discouraged and Other. Thus there is no counterpart to the Waiting sub-category in the CPS. We find no persistent differences among these three sub-groups in terms of their transition rates into employment. Again it appears that the discouraged worker category does not stand out relative to others who state that they desire work.

Finally I want to briefly mention some preliminary findings from a project with data from the revised LFS (Jones and Riddell, 1999b). Since January 1997 the LFS asks non-searchers about their desire for work. Thus there are now monthly counts on the marginal attachment group. We find that the M category continues to be an intermediate group in terms of labour force attachment under the revised LFS. Interestingly, those not searching because they are waiting for replies or waiting for recall continue to exhibit behavior that is distinct from the rest of the marginal attachment category.[2] At the very least this waiting group is a clear candidate for inclusion in any broader or supplementary measures of unemployment.

CONCLUSIONS

Here is a summary of what I take away from this body of research.

1. There is substantial heterogeneity within the group we conventionally classify as OLF. Some non-participants have very weak attachment to the labour force according to our criteria, while others have much stronger attachment.

2. The desire for work among non-searchers conveys substantial information about the degree of labour force attachment. Asking people whether they want work is not a meaningless question; indeed the response conveys considerable information about future labour force status. For "hard-nosed" economists who believe that a question about the desire for work is meaningless unless one also specifies the remuneration, working conditions and non-wage benefits associated with the job, this is perhaps the most surprising finding.

3. Now that both Canada and the U.S. obtain monthly counts on those who desire work this information may become more widely reported and discussed.

4. In Canada, the waiting sub-category of marginal attachment displays particularly strong labour force attachment. This may indicate that our measures of temporary layoffs and future job starts are too rigid. Even if this is not the case, the waiting sub-category appears to be a clear candidate for inclusion in any broader or supplementary measures of unemployment.

5. Discouraged workers do not stand out as a distinct group relative to others who are not searching but state that they desire work. This result continues to hold even after we control for regional labour market conditions at the level of the province.

---

[2] In the revised LFS there is no longer a category for those not searching because of "waiting for a job to

6. The U.S. procedure of classifying those who use only passive job search methods as non-participants does not appear well supported by this type of evidence.

7. This general approach seems to be a promising method for bringing evidence to bear on the difficult questions of how best to measure unemployment and labour force participation. We do not claim that these issues can be fully resolved on the basis of this type of analysis alone. However, we do believe that this type of evidence can lead to more informed decisions on these important issues.

---

start".

References

Jones, Stephen R.G. and W. Craig Riddell (1998a). "Unemployment and Labor Force Attachment: A Multi-State Analysis of Non-Employment" in Labor Statistics Measurement Issues edited by John Haltiwanger, Marilyn E. Manser and Robert Topel. Chicago: University of Chicago Press, 1998, pp. 123-152.

Jones, Stephen R.G. and W. Craig Riddell (1998b). "The Dynamics of Labor Force Attachment in the US Labor Market" mimeo, September 1998.

Jones, Stephen R.G. and W. Craig Riddell (1999a). "The Measurement of Unemployment: An Empirical Approach" Econometrica vol. 67 (January 1999) pp. 147-161.

Jones, Stephen R.G. and W. Craig Riddell (1999b). Unemployment and Labour Force Attachment: A Study of Canadian Experience 1997-1999. Background report prepared for Statistics Canada, August 1999.

President's Committee to Appraise Employment and Unemployment Statistics. Measuring Employment and Unemployment. Washington, D.C.: U.S. Government Printing Office, 1962.

Robinson, D. (1999). "Nice work – if you can get it", Behind the Numbers: Economic Facts, Figures and Analysis, 1(1), April. Ottawa: Canadian Centre for Policy Alternatives.

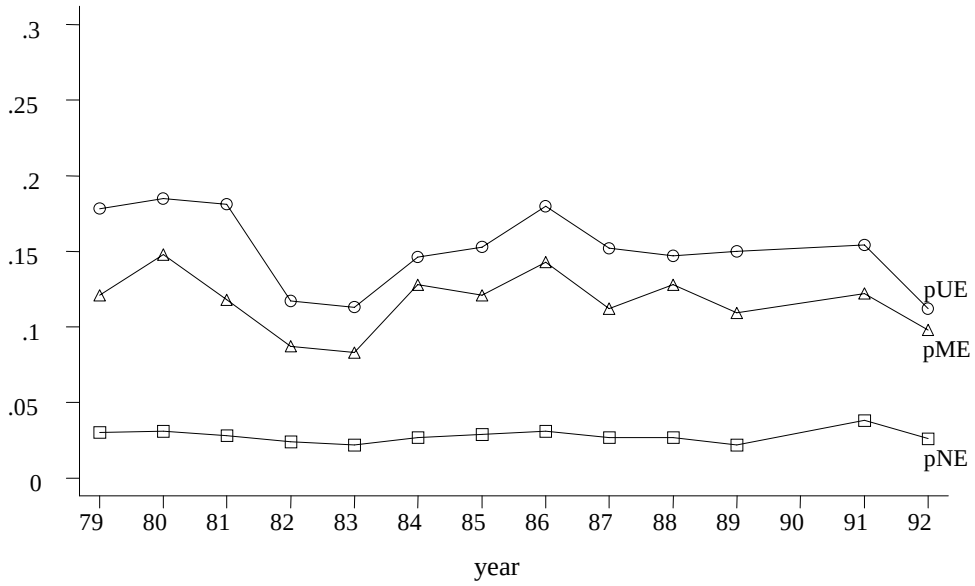

Figure 1 – Transition rates from non-employment into employment

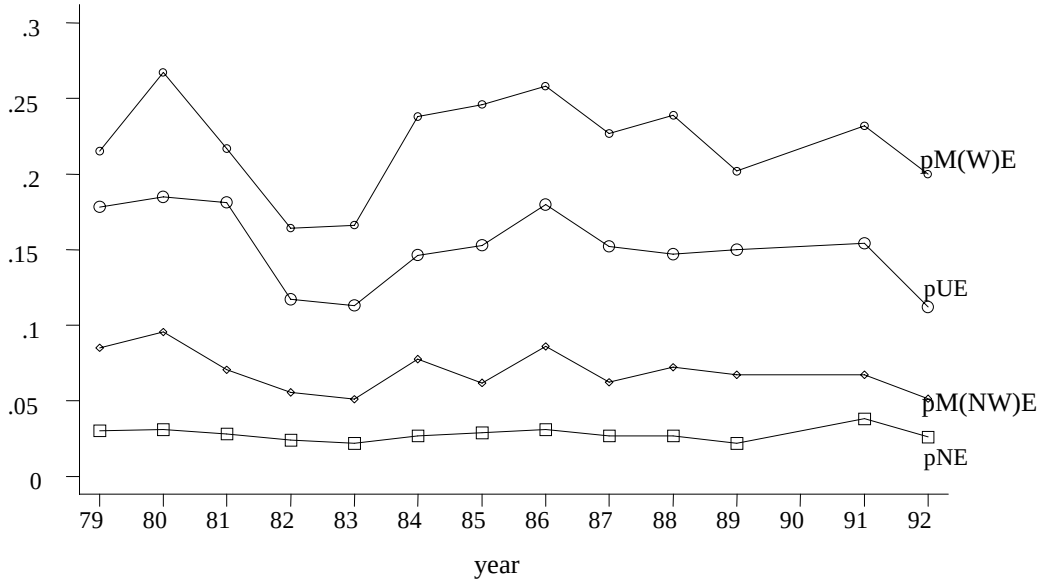

Figure 2 – Transition rates into employment from sub-groups of marginal attachment

CILN Working Papers (downloadable)

wp43 **John Flemming John Micklewright**
Income Distribution, Economic Systems and Transition

wp42 **John Micklewright Kitty Stewart**
Is Child Welfare Converging in the European Union?

wp41 **W Bentley Macleod**
A Note on the Optimality of Bonus Pay

wp40 **Xin Meng Robert G Gregory**
Impact of Interupted Education on Earnings:
The Educational Cost of the Chinese Cultural Revolution

wp39 **Miles Corak**
Death and Divorce: The Long Term Consequences of Parental Loss on Adolescents

wp38 **Lori Curtis Martin Dooley**
Child Health and Family Socioeconomic Status in the Canadian National Longitudinal Survey of Children and Youth

wp37 **Heather Antecol**
An Examination of Cross-Country Differences in the Gender Gap in Labor Force Participation Rates

wp36 **W. Craig Riddell**
Canadian Labour Market Performance in International Perspective: Presidential Address to the Canadian Economics Association

wp35 **Shelley Phipps**
Economics and Well-Being of Canadian Children

wp34 **W. Craig Riddell**
Measuring Unemployment and Structural Unemployment

wp33 **Susan Johnson**
Automatic Certification or Mandatory Representation Votes? How the choice of union recognition procedure affects union certification success.

wp32 **James Andreoni Eleanor Brown Isaac C. Rischall**
Charitable Giving by Married Couples: Who Decides and Why Does it Matter?

wp31 **Herb Schuetze Peter Kuhn**

Self-Employment Dynamics and Self-Employment Trends: A Study of Canadian Men and Women, 1982-1995

wp30 **Isaac C. Rischall**
The Effect of High School Effort on Future Earnings

wp29 **Isaac C. Rischall**
The Roles of Education, Skill and Parental Income in Determining Wages

wp28 **Isaac C. Rischall**
The Value of a Fresh Start: Earnings Persistence and the Migration of Single Mothers

wp27 **Martin Browning Tom Crossley**
Shocks, Stocks and Socks: Consumption Smoothing and the Replacement of Durables During an Unemployment Spell

wp26 **Heather Antecol Kelly Bedard**
Against All Odds: The Surprising Labor Market Success of Young Mexican Women

wp25 **Heather Antecol**
Why is there Inter-Ethnic Variation in the Gender Wage Gap? The Role of "Cultural" Factors

wp24 **Martin Browning Tom Crossley**
Unemployment Insurance Benefit Levels and Consumption Changes

wp23 **Heather Antecol Peter Kuhn**
Employment Equity Programs and the Job Search Outcomes of Men and Women: Actual and Perceived Effects

wp22 **Thomas F. Crossley**
Firms and Wages: Evidence from Displaced Workers

wp21 **Jennifer Stewart Martin Dooley**
The Duration of Spells on Welfare and Off-welfare among Lone Mothers in Ontario

wp20 **Peter Kuhn Arthur Sweetman**
Vulnerable Seniors: Unions, Tenure and Wages Following Permanent Job Loss

wp19 **Kelly Bedard**
Human Capital Versus Signaling Models: University Access and High School Drop-outs

wp18 **Peter Kuhn Arthur Sweetman**
Assimilation and Economic Success in an Aboriginal Population: Evidence from Canada

wp17 **Martin D. Dooley**
The Evolution of Welfare Participation Among Canadian Lone Mothers From 1973 - 1991

wp16 **Lori Curtis Martin D. Dooley Ellen L. Lipman David H. Feeny**
The Role of Permanent Income and Family Structure in the Determination of Child Health in the Ontario Child Health Study

wp15 **LaDonna A. Pavetti**
A New Social Contract: Moving to a Work-Based Assistance System

wp14 **Gary Burtless**

The Job Prospects of U.S. Welfare Recipients: Lousier Pay but Bigger Earnings Supplements

wp13 **J.B. Burbidge L. Magee A.L. Robb**
Cohort, Year and Age Effects in Canadian Wage Data

wp12 **Martyn Andrews Alan Harrison**
Testing for Efficient Contracts in Unionized Labour Markets

wp11 **Herb J. Schuetze**
Taxes, Economic Conditions And Recent Trends in Male Self-Employment: A Canada-U.S. Comparison

wp10 **Peter Kuhn**
Canada and the "OECD Hypothesis": Does Labour Market Inflexibility Explain Canada's High Level of Unemployment?

wp9 **Stephen R. G. Jones W. Craig Riddell**
The Measurement Of Unemployment: An Empirical Approach

wp8 **Pierre Lefebvre Philip Merrigan Martin Dooley**
Lone Female Headship and Welfare Policy in Canada

wp7 **Heather Antecol Peter Kuhn**
Gender as an Impediment to Labor Market Success: Why do Young Women Report Greater Harm?

wp6 **John Myles Paul Pierson**
Friedman's Revenge: The Reform of "Liberal" Welfare States In Canada and the United States

wp5 **Jeff Borland**
Earnings Inequality in Australia: Changes and Causes

wp4 **Jeff Borland**
Union Effects and Earnings Dispersion in Australia, 1986-1994

wp3 **Robert Gregory Boyd Hunter**
The Macro Economy and the Growth of Income and Employment Inequality in Australian Cities

wp2 **Peter Kuhn**
Labour Market Polarization: Canada in International Perspective

wp1 **Peter Kuhn A. Leslie Robb**
Shifting Skill Demand and the Canada-US Unemployment Gap: Evidence from Prime-Age Men

Last updated March 27, 2000