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**Unemployment compensation reciprocity
in English-speaking countries**

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UNEMPLOYMENT COMPENSATION RECIPIENCY
IN ENGLISH-SPEAKING COUNTRIES

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Abstract

The paper explores developments in unemployment compensation reciprocity rates in the member-countries of the Organisation of Economic Cooperation and Development (OECD) with particular attention to six English-speaking countries. While the generosity of social protection programs can be assessed by looking at both replacement rates and reciprocity rates, the paper highlights changes in the latter. The study uses time series data for OECD member-countries from 1959 to 2005. Data for 20 high-income countries are utilized to explore the effects of changes in the statutory provisions of unemployment compensation programs. Again, more detail is presented for the six English-speaking countries.

JEL Classification

J60, J65

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1. Introduction

Unemployment compensation (UC) refers to the unemployment insurance (UI), unemployment assistance (UA), and combined UI-UA programs of individual countries. The primary objective of UI and UA are fundamentally different. Payments of UI benefits are intended to smooth income by replacing a portion of an eligible worker's lost wages attributable to unemployment. Payments of UA benefits are intended to eliminate or reduce poverty among low income families where unemployment occurs. Thus while both make payments occasioned by unemployment, UI is paid to eligible individuals regardless of income while UA is paid only to families with unemployment whose income and assets fall below a designated threshold. The typical pattern of receipt in a combined UI-UA system is to receive UI first and then UA after exhaustion of the UI entitlement; UA may also be received directly after the onset of unemployment when the person does not satisfy UI eligibility requirements.

The cost of providing UC programs has three important determinants: the unemployment rate, the replacement rate, and the reciprocity rate. When each of the three determinants is larger, the cost of UC support is higher.² The unemployment rate is the ratio of unemployment to the labor force, usually expressed as a percentage. Labor economists and other researchers have devoted much attention to understanding the determinants of the unemployment rate and have conducted numerous investigations of unemployment rates in the member countries of the Organisation of Economic Cooperation and Development (OECD).³ Causal factors in determining unemployment rates have included indicators of product market competition, tax wedges, the minimum wage, collective bargaining, UC benefit generosity and employment protection legislation. Recent summary investigations of the determinants of unemployment appear in the OECD (2006) and an associated working paper.⁴

The second important determinant of the cost of providing UC programs is the replacement rate defined as the fraction of lost earnings replaced by a UC benefit payment. The

² The derivation of an actuarial framework for assessing the costs of UC programs is given in Chapter 2 of Vroman and Brusentsev (2005).

³ For instance, see Blanchard and Wolfers (2000); Layard, Nickell and Jackman (2005); Nickell and Layard (1999); Nickell, Nunziata and Ochel (1999); and Pissarides (2001).

⁴ See Chapters 3 and 7 in the *2006 Employment Outlook*, and Bassanini and Duval (2006).

role of actual replacement rates on unemployment has not received as much attention in empirical analyses. When cross-national unemployment rates and other labor market outcomes are investigated, the replacement rate series most widely used are those derived by the staff at the OECD.⁵ The authors have characterized these OECD measures as stylized replacement rates because they are simple averages of potential replacement rates for unemployed workers in different situations; instead, we use actual replacement rates based on administrative data.⁶

The third important determinant of the cost of providing UC programs is the reciprocity rate defined as the number of unemployed individuals who receive a benefit payment as a proportion of unemployment. To our knowledge, there is little existing research on UC reciprocity rates. Hence, the objective of this paper is to explore developments in UC reciprocity rates for member-countries of the OECD. In this exploration, we pay particular attention to six countries where the main language spoken is English (Australia, Canada, Ireland, New Zealand, the United Kingdom and the United States). The reciprocity rate is important because UC only pays benefits to people who meet both entitlement and eligibility conditions. Entitlement conditions restrict benefits to individuals who either, in the case of UI benefits, have a sufficient record of contributions from past labor market work and have been unemployed for a limited duration or, in the case of UA benefits, are unemployed and have low income. Eligibility conditions, on the other hand, restrict UC benefits to individuals who are not only out of work, but also currently available for work and undertaking active steps to find work; and who meet various administrative requirements.

While the OECD comprises 30 member-countries, we concentrate on a large subset of these, termed OECD-20 countries.⁷ We adopt this classification for two obvious reasons. First, the OECD-20 countries have extensive social protection arrangements and the longest continuous experiences with UC. Unemployed workers in all OECD-20 countries receive cash

⁵ See Salomäki and Munzi (1999) for an extensive survey of the literature.

⁶ See Brusentsev and Vroman (2006) which has a short review of earlier replacement rate research. This paper and Vroman (2007) conducts empirical investigations of replacement rates.

⁷ Except for Iceland, Japan, Korea, and Luxembourg the other OECD members are middle-income countries with per capita Gross Domestic Product (GDP) measurably lower than the OECD-20 group. The decision to exclude Japan and Korea is based on their different institutions; Iceland and Luxembourg are excluded because they are small countries with populations of less than one million.

payments from UC programs. Such benefits provide income support for temporary periods, replacing part of the loss of earnings caused by unemployment. Second, the OECD-20 countries have well-developed statistical reporting systems and readily available data, particularly labor market information that has been standardized by the OECD. As a result, a broader set of quantitative analyses can be undertaken.

One reason for concentrating on the English-speaking countries is the conviction that these countries broadly share a common approach toward social protection. This conviction is supported by a number of analysts who have shown how diverse policy instruments contribute to the development of distinctive welfare state regimes.⁸ Esping-Andersen (1990), for instance, classifies the approach as liberal welfare capitalism, an ideology based on self-reliant individualism together with the influence of liberal work ethics. Briefly, this liberal world of welfare capitalism is characterized by a heavy reliance on means-tested programs, modest benefits, and market solutions in the form of occupational welfare and private insurance. Moreover, the social rights of individuals are limited by conditioning social security benefits on the administration of a means test or on contributions based on a history of employment in the labor market.

This paper addresses two specific questions. First, how have UC reciprocity rates in the OECD-20 countries evolved? Second, how do the six English-speaking countries compare? In section two, we summarize the evolution of unemployment from 1960 to 2004 to provide a context for the discussion on reciprocity rates. Section three traces developments in reciprocity rates during approximately the same period. Our empirical investigation utilizes country-specific administrative data based on the individual recipient, part of our multi-year effort to assemble data appropriate for examining trends in UC programs. Our results indicate that reciprocity rates have varied widely over time and across countries. The descriptive analysis is followed in section four by some preliminary regression analysis of reciprocity rates. Section five summarizes our main findings.

⁸ See, for instance, Esping-Andersen (1989, 1990), Esping-Andersen and Korpi (1987), and Korpi (1989).

2. The evolution of unemployment

Within the OECD-20 countries, the bulk of household income is derived from labor market earnings. The inability to secure meaningful and remunerative employment results in economic hardship for affected individuals and their dependents. Lack of labor market work also has deleterious consequences for mental health, family stability and participation in the wider society.

Inadequate demand for labor services has two important manifestations: unemployment and underemployment. An unemployed person is able to work and actively seeking work but unable to secure a position of employment.⁹ This contrasts with underemployment. An underemployed person is in one (or both) of two situations: has a job but at a skill level below that for which she or he has been trained; or has a job but is working fewer hours than desired. Both aspects of underemployment cause the earnings of the affected individual to be less than the earnings derived from standard hours of work at the usual or customary occupation. Because unemployment is more directly amenable to measurement, it is generally used to assess the labor market performance of a country.

Figure 1 shows the evolution of the average unemployment rate for the OECD-20 countries from 1959 to 2005.¹⁰ The information in Figure 1 highlights three trends. First, there is a long-run tendency toward higher average unemployment. The average unemployment rate was quite low for the OECD-20 countries at the beginning of the period: 3.8 percent. By 2005, the average unemployment rate had increased substantially to 6.8 for the group. The change in the average unemployment rate over the period was 3.0 percentage points. Second, as a broad generalization, average unemployment rates increased significantly in the aftermath of the first and second oil price shocks: 1973-74 and 1979-80, respectively. Third, as well as displaying a regular cyclical pattern, Figure 1 shows that the average unemployment rate increased

⁹ The Thirteenth International Conference of Labour Statisticians (<http://laborsta.ilo.org>) adopted a standard definition of unemployment that is applied by member countries. The unemployed comprise all persons above a specified age who during the reference period were: (i) without work; (ii) currently available for work; and (iii) seeking work. National definitions of unemployment, however, may differ from the recommended international standard definition. National definitions vary from one country to another with respect to age limits, criteria for seeking work, reference periods, and treatment of persons temporarily laid off or seeking work for the first time.

¹⁰ Each constituent country is weighted by the size of its labor force.

significantly during the recessions of 1974-75, 1981-82, 1991, and 2001. The severity of the 1981-82 recession is demonstrated by the high average unemployment rate that persisted throughout most of the early 1980s. The economic recovery of the late 1980s is reflected in a lowering of the average unemployment rate but remaining at a much higher level than the period before the recession. Following the 1991 recession, the trend toward higher unemployment continued. The average unemployment rate fell dramatically in the late 1990s, but rose again during the 2001 recession. The impact of the most recent recession on the average unemployment rate, however, was not as severe as the three previous recessions.

2.1 Unemployment in the English-speaking countries

Table 1 shows the five-year average unemployment rates from 1960 to 2004 in the six English-speaking countries. The evolution of unemployment coincides with major developments in world economic conditions. The world economy performed exceptionally well in the 1960s and the average unemployment rate was remarkably low in Australia, New Zealand, and the United Kingdom in the first five-year period: 2.1 percent, 0.1 percent, and 1.5 percent, respectively.¹¹ It was significantly higher in Canada, Ireland, and the United States: 5.6 percent, 5.1 percent, and 5.7 percent, respectively.

Macroeconomic performance deteriorated in the 1970s as the world economy was exposed to a series of shocks. Economic growth slowed significantly and was accompanied by high unemployment and increased rates of inflation. As well as the regular cyclical pattern in unemployment, Table 1 shows that unemployment performance deteriorated significantly in the aftermath of the oil price shocks, especially in Australia, Ireland, and the United Kingdom where the average unemployment rate escalated to 5.5 percent, 8.1 percent, and 4.7 percent, respectively, during 1975-79. The average unemployment rate also increased in Canada and the United States to 7.5 percent, and 7.0 percent, respectively. The exception to this general trend is New Zealand where the average unemployment rate increased, but remained remarkably low at 0.9 percent.

Similar to the overall trend in the OECD member-countries, the severity of the 1981-82 recession is reflected in the increased unemployment rates in all six countries. In particular, Ireland, New Zealand, and the United Kingdom were adversely affected experiencing an increase

¹¹ Prior to 1986, the unemployment rate in New Zealand is based on registered unemployment.

in average unemployment of 3.7, 3.3, and 5.0 percentage points, respectively. Economic recovery and expansion occurred in the late 1980s and employment grew steadily in all six countries. Yet unemployment declined only in Canada and the United States: a decrease of 0.9 percentage point and 2.1 percentage points, respectively. The average unemployment rate reached its highest level in 1985-89 in Ireland and the United Kingdom, 16.5 percent and 9.8 percent, respectively.

During 1990-94, the trend toward higher unemployment continued in Australia and New Zealand with the highest level of unemployment recorded in these two countries during the entire period: 9.5 percent and 9.0 percent, respectively. While Ireland and the United Kingdom experienced a decrease in unemployment from the previous five years, there was a reversal of the previously decreasing trend in unemployment in Canada and the United States. All six countries saw a fall in the average unemployment rate in the 1995-99 period, and two countries reduced unemployment sharply. Ireland and New Zealand saw a reduction of 5.1 and 2.4 percentage points, respectively.

While the United States saw a reversal of the previous downward trend in unemployment during 2000-04, unemployment continued to fall in the five other English-speaking countries. Australia, Canada, New Zealand, and the United Kingdom saw unemployment fall by 1.8, 1.5, 1.6, and 2.2 percentage points, respectively. Ireland experienced another sharp reduction of 5.4 percentage points in this period.

Except for Ireland and the United States, a significant upward trend in the average unemployment rate is noticeable in each country from 1960 to 2004. Between 1960-64 and 2000-04, the unemployment rate rose by 4.1 percentage points in Australia, 1.7 percentage points in Canada, 4.9 percentage points in New Zealand, and 3.5 percentage points in the United Kingdom. In contrast, the average unemployment rate in Ireland and the United States decreased by 0.9 and 0.5 percent points, respectively, over the period.

High unemployment implies widespread economic hardship for many individuals and families. This hardship provides the prime reason why unemployment protection is needed. Unemployment assistance, unemployment insurance, and other programs help to cushion the impact of unemployment. Having set the background of the evolution of average unemployment in the OECD-20 countries, and unemployment in the six English-speaking countries, we examine developments in UC reciprocity rates in the following section.

3. Developments in unemployment compensation reciprocity rates

For many countries there is a strong association between economic performance and UC reciprocity rates. The UC benefit data examined here were derived from a variety of country sources, but most often from annual statistical yearbooks, summary reports of the social insurance agency and/or reports from the department of labor. Increasingly these data can be obtained from web sites in the individual countries. Our data collection activity is part of a multi-year effort to assemble data appropriate for examining averages and trends in the provision of unemployment compensation.

Two of the OECD-20 countries, Australia and New Zealand, provide support to unemployed individuals through UA payments while the remaining 18 countries have UI payments as the main initial source of income support for experienced unemployed workers. Ten countries operate a combined UI-UA program where UA payments are reserved for individuals who are ineligible for UI and/or for persons who have exhausted UI entitlements.¹² In 16 of the OECD-20 countries, UC payments are linked to the past level of labor-market earnings. Australia, New Zealand, Ireland and the United Kingdom, however, operate a flat benefit system where weekly (or fortnightly) benefits are paid at a uniform or flat rate.

The analysis in this section examines the proportion of unemployed persons who receive UC payments. For many countries, data extend back to 1960. While we could not obtain the requisite data for all OECD-20 countries back to 1960, we do have data for a sufficient number to discern long term developments. Table 2 shows the evolution of the reciprocity rate for individual countries of the OECD-20 group as well as the overall average for the OECD-20. For each of these countries, the table displays data for nine five-year periods between 1960 and 2004. A clear long-run trend toward a higher average reciprocity rate over the period is discernible. The average reciprocity rate for the OECD-20 countries in the first five-year period was 0.538 and consistently rose over time to 0.895 by 2000-04. This implies that approximately one in two

¹² The ten countries are Austria, Finland, France, Germany, Ireland, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

unemployed individuals received UC benefits at the beginning of the period whereas almost nine in ten received UC benefits by the end of the period.¹³

3.1 Reciprocity in the English-speaking countries

Table 3 summarizes data on reciprocity rates for the six English-speaking countries. The table also displays means, standard deviations and coefficients of variation (CV, the ratio of the standard deviation to the mean) of the five-year averages of these data. The most striking feature of the reciprocity rate data is the unusually low reciprocity in the United States relative to the other five countries: the mean of 0.361 is less than half the overall average. On average, about one in three unemployed individuals received UC benefits in the United States whereas at least two in three received UC benefits in the other five countries.

During these 45 years, reciprocity was most stable in the United Kingdom and the United States as indicated by their CVs which are below 0.15. At the opposite extreme, Australia and New Zealand exhibit the greatest variability in reciprocity with CVs of 0.39-0.46. Finally, note that the overall average CV is 0.141.

The five-year detail in Table 3 provides an insight into country-level developments that is not apparent in the overall averages. First, note the increases in reciprocity in both Australia and New Zealand after the 1960s. These increases were substantial and perhaps to be expected in UA programs when unemployment increases. Higher unemployment is associated with longer unemployment duration and increased eligibility among families with unemployment despite conditioning eligibility on family income.

Second, note the change in reciprocity in Ireland where the increase in the reciprocity rate after 1985-89 coincides with the very large reduction in unemployment noted previously.¹⁴ During these approximately 20 years the number of unemployed and recipients of UC benefits both declined substantially, but of the two, unemployment decreased much more rapidly. As a result, the average reciprocity rate increased from 1.019 during 1985-89 to 1.728 during 2000-04.

¹³ When data are weighted by each country's unemployment, the increase in reciprocity over the same period ranges from approximately 0.50 to 0.60.

¹⁴ The unemployment rate in Ireland during 1985-89 averaged 16.5 percent whereas during 2000-04 it averaged 4.2 percent.

Third, Table 3 also shows a large reduction in reciprocity in both Canada and the United Kingdom since the late 1980s. Major Canadian policy changes of the early-to-mid 1990s included more severe disqualification penalties for quits, reductions in potential benefit duration and increases in qualifying requirements. The effect of these changes is apparent as the reciprocity rate for the final two periods was below 0.50 compared to an average of 0.783 during 1985-89. The most obvious policy change in the United Kingdom was to reduce maximum potential duration in its UI program from twelve to six months in October 1996. Its average reciprocity rate of 0.563 during 2000-04 is the lowest of its nine averages in Table 3.

The increases in the reciprocity rates in Ireland and New Zealand since 1985-89 have effects that are sufficiently large to cause the overall unweighted-average to increase modestly despite decreases in reciprocity in Canada, the United Kingdom and (over the final two periods) in Australia. In fact, the overall averages are highest for the final two periods in Table 3 because reciprocity increased so much in the former two countries.

When one considers a weighted-average based on the relative size of the labor force in each country with respect to the combined labor force, a different (and less variable) overall average emerges. The size of the labor force in each of Ireland and New Zealand is less than one percent of the combined labor force, by far the smallest of the six countries. The large size of the labor force in the United States (69 percent of the combined labor force), coupled with the relative stability of its reciprocity rate, makes the weighted-average both lower and less variable than the unweighted-average displayed in Table 3.

4. Regression analysis of annual reciprocity rates

The regression analysis of reciprocity rates examines data for 47 years extending from 1959 to 2005. While many time series for individual countries are shorter, the data for nine countries span at least 45 years and another five countries have from 40 to 44 annual observations. Shorter data periods, ranging from 21 to 31 years, are examined for six countries; five have data spanning from 26 to 31 years; only Switzerland has as few as 21 years. The shorter data periods reflect the absence of relevant data.¹⁵ Observe that the 47-year data period

¹⁵ The Portuguese data extend from 1978, or two years after UC benefit payments commenced. There were no reciprocity data for Italy from 1977 to 1992, the only country with a mid-series break in data

includes more than a decade of experience before the sharp increases in unemployment of the mid-1970s and early 1980s.

The analysis examines reciprocity rates for each country individually.¹⁶ Our starting point is a baseline specification where the reciprocity rate is regressed on the unemployment rate (current and lagged one year) and a linear time trend. This trend-cycle specification is common in analyses of economic time series. The coefficient on current unemployment signals the instantaneous sensitivity of reciprocity to changes in unemployment while the coefficient on lagged unemployment shows how strongly payments are sustained when unemployment remains high (or low). The trend is used as a general control for slowly evolving determinants of the reciprocity rate.

The baseline regression equations explain a substantial share of the variation in reciprocity rates: 18 regressions have an adjusted R^2 of at least 0.40 and ten have an adjusted R^2 of at least 0.70. Table 4 summarizes the sign and significance of the coefficients across all OECD-20 countries while Table 5 displays the regression results for the English-speaking ones.

Table 4 shows that the regression results are highly varied across the OECD-20 countries. Nine coefficients on the unemployment rate are significant but six of these are negative. These coefficients indicate that reciprocity does not respond proportionately when unemployment changes. Lagged unemployment enters with three significantly positive and three significantly negative coefficients. Readers should note that only 17 lagged unemployment coefficients are included. For the three countries (France, Greece and Italy) with high collinearity between current and lagged unemployment, the lagged unemployment rate was excluded. Overall, the reciprocity rate displays considerable independence of the unemployment rate. Only 15 of 37 unemployment rate coefficients enter the regressions significantly.

In contrast, the trend coefficients were predominantly positive and twelve positive coefficients were statistically significant. For most countries, UC reciprocity in recent years was much higher than the years before 1970. Of the 16 countries where averages for 1960-64 and

availability. A shorter period was used for New Zealand because of the very low unemployment prior to 1978 which yielded extremely volatile reciprocity rates, particularly between 1969 and 1977. Typically, the short data periods reflect absence of reciprocity data during the 1959-1980 period.

¹⁶ At a later time, a pooled analysis of the OECD-20 countries may be undertaken.

2000-04 can be compared, that is, in Table 2, nine had an increase in the reciprocity rate of at least 0.200 and the increase was 0.199 for a tenth (Greece). The positive and significant trend coefficients noted in Table 4 provide an alternative way to summarize these long-term increases.

A key analytic question regarding reciprocity rates is to ask: What effect do changes in UC statutory provisions and administrative activities have on reciprocity? Two important UC provisions are the replacement rate and the maximum potential benefit duration. The former, in turn, is influenced by the statutory replacement rate, the maximum weekly benefit and the availability and generosity of payments to dependents. These provisions exert an important influence on the actual replacement rate. In aggregate annual data, the actual replacement rate can be measured rather easily.

Measuring potential benefit duration, in contrast, and assessing its effect on reciprocity, presents an important challenge. Ten of these countries provide unemployment protection through a combination of UI and UA benefits. The two benefits are typically received sequentially, UI first and then UA. Many countries link potential benefit duration for UI to years of past experience in covered employment. Thus older workers in several countries have much longer potential entitlements to UI benefits than younger workers. Potential entitlement can be very long, that is, exceed one year. In many countries, UA may be received for an unlimited period if individuals satisfy the necessary conditions for continuing eligibility. Finding an empirical proxy for unlimited potential duration is a difficult challenge in measurement.

In addition, even UI may be received for multi-year periods in some countries. In the past, Denmark has had a maximum duration of up to seven years (1988 to 1994), five years (1995 to 2000) and currently benefits can potentially extend for four years. At the opposite extreme, the United States and Italy have operated programs where the maximum potential duration is 26 weeks or less in most years since 1959. The United States is unique in that maximum potential duration varies over the business cycle and is activated mainly through temporary federally-financed benefits although jointly-financed Federal-State Extended Benefits (EB) may also be activated in those states with high unemployment claims.¹⁷ During the most

¹⁷ Following the 2001 recession only five states activated the EB program which has automatic triggers reflecting state-specific claims activity. The emergency federal programs are created by federal legislation.

recent recessions, temporary federally-financed benefits provided the bulk of the UI benefits that extended beyond 26 weeks.

Table 5 displays reciprocity rate regression results for the six English-speaking countries. The baseline regression results appear in the top half of the table. These reciprocity rate regressions are six of the 20 baseline regressions summarized previously in Table 4. Note that two of the significant negative trend coefficients from Table 4 are from Canada and the United Kingdom and also appear in Table 5.

For each of the six countries, an expanded specification which added the replacement rate and maximum potential benefit duration is also tested. Where potential duration is unlimited the empirical proxy is set to five years (or 60 months). For both Australia and New Zealand, however, this unlimited potential duration applies for all years of the data period. Since there is no time-series variation, the potential duration variable is not used for these two countries. For Ireland and the United Kingdom, where UA also has unlimited potential duration, there is variation in UI potential duration which means that a duration variable can be tested.

The bottom six regressions in Table 5 display coefficients for maximum potential duration and the replacement rate only when these variables enter significantly. A first-order autoregressive correction is also included in the regressions because the residuals in the baseline regressions exhibit positive autocorrelation. All six autoregressive coefficients in Table 5 are positive and five are statistically significant. Dummy variables for periods of low reciprocity are also entered for the United Kingdom and the United States. These dummy variables also make significant contributions to explained variation.

Potential duration enters significantly only in the United States. The increase in potential duration during recessions has a strong positive effect on reciprocity. This institutional arrangement has operated during all recessions since the late 1950s. It provides a way of targeting benefit payouts over the business cycle to provide a large boost in payments during periods when unemployment is high and securing new jobs is most difficult.¹⁸ While Canada,

¹⁸ For the most recent recession annual payouts from regular UI programs averaged about \$20 billion during the pre-recession years 1999 and 2000 but about \$40 billion during 2002 and 2003. During the latter two years, annual payments of about \$10 billion were made under an emergency federal benefit program but less than \$0.4 billion under EB.

Ireland and the United Kingdom changed UI potential duration during these years, no discernable effect on the reciprocity rate is found.

The United Kingdom reduced maximum potential duration in its UI program from 52 weeks to 26 weeks in October 1996. Regression equations were fitted using a dummy variable for the post-1996 years to test for an effect of this reduction. While the dummy entered with a negative coefficient, it is not consistently significant. Its size and *t*-ratio varied depending upon the inclusion or exclusion of the linear time trend and upon the presence of a correction for autocorrelation. A clear cut effect of this reduction is not found.

Higher replacement rates would be expected to raise reciprocity rates and statistical support for this was found in both Canada and New Zealand. The positive replacement rate coefficients indicate that increasing the replacement rate by five percentage points would increase the reciprocity rate by some five to six percentage points in these two countries. In the other four countries no evidence of a replacement-rate effect is found.

Both Ireland and the United Kingdom operate UC as a mixed UI-UA system. Note in Table 3 that their average reciprocity rates have been moving in opposite directions (increasing in Ireland but decreasing in the United Kingdom). The mix of recipients, however, has been evolving strongly towards a larger share of UA recipients. This evolution is examined using a trend-cycle regression specification for the 1959-2005 period in Ireland and the United Kingdom. An increase in the unemployment rate initially reduces the UA share but lagged unemployment raises the UA share in both countries, and the current and lagged effect are both significant. A linear trend is also positive and significant. While the overall reciprocity rate has been changing in opposite directions, both countries are paying an increased share of UC support as UA and a reduced share as UI, probably influenced by a secular increase in the average duration of unemployment spells. Increased duration could affect reciprocity in countries where the maximum duration of UI benefits is limited. A significant trend towards an increased UA share is present, however, even when UI maximum potential duration is included in the regression equations.

5. Concluding comments

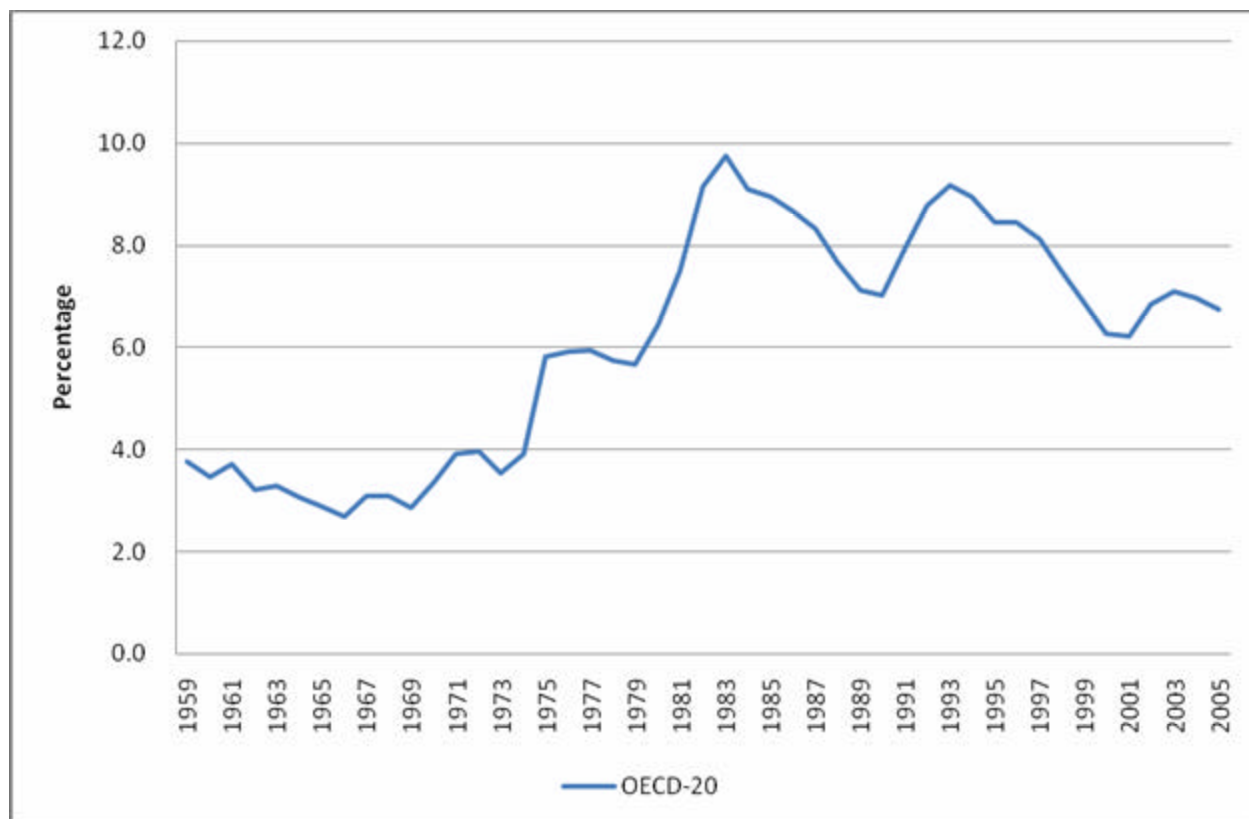
As stated in the introduction, the cost of providing UC programs is based on three important determinants: the unemployment rate, the replacement rate, and the reciprocity rate. While much research attention has been devoted to understanding the determinants of the unemployment rate and role of stylized replacement rates, to our knowledge there is little existing research on UC reciprocity rates. This paper is a first step in tracing developments in UC reciprocity rates for a large set of countries. While we acknowledge that our analysis is descriptive, we recognize that an understanding of the evolution of reciprocity rates is important to understanding the cost structure associated with UC programs. Not only does the reciprocity rate provide information about what fraction of the unemployed collect benefits but also how effective UC is in meeting the income support needs of the unemployed.

This paper examined important aspects of unemployment and UC reciprocity rates for 20 OECD member countries. The individual sections focused initially on all OECD-20 countries, then on the six English-speaking ones. This concluding section emphasizes our judgment of the most important of the findings documented in the paper.

The evolution of unemployment protection occurred against a backdrop of changes in unemployment occasioned by the business cycle and by the energy crises of the mid 1970s and the late 1970s. Sharp changes in unemployment were documented for the OECD-20 and individual English-speaking countries. Unemployment during 2000-05 was systematically higher than in the years before 1970. Also, the most recent recession had a much smaller effect on the unemployment rate throughout these countries than the downturns of the early 1980s and of 1991. Among the English-speaking countries, especially noteworthy patterns were observed in New Zealand and Ireland. The unemployment rate in New Zealand was especially low before 1980, consistently less than 2.0 percent. There was a large escalation of unemployment in Ireland between 1975-79 and 1985-89. This rising unemployment rate was followed by an unprecedented decline in unemployment, a decrease from 16.6 percent during 1985-89 to 4.2 percent during 2000-05.

Within the six English-speaking countries, the unusually low UC reciprocity rates in the United States was noted. In addition, maximum potential duration varied the most in the United States and it has a strong effect on reciprocity. Important recent decreases in reciprocity were documented for both Canada and the United Kingdom. We also found that reciprocity rates varied more than replacement rates. The systematic decrease in the UC replacement rate in the United Kingdom between 1965-69 and 2000-05 was noted. While the focus of our current paper is UC reciprocity rates, we examine replacement rates in Brusentsev and Vroman (2006) and Vroman (2007). Overall among the six countries, UC benefits were received by about three quarters of the unemployed. Within the six English-speaking countries, Australia demonstrated high stability in its reciprocity rate over the past 20 years. Also worthy of note is the increase in reciprocity rates in Ireland that have accompanied the decrease in unemployment since the late 1980s. In short, the analysis of these six English-speaking countries revealed a number of unique country-specific developments in UC reciprocity rates since the early 1960s.

Our greatest challenge is to find a relevant proxy for the maximum potential benefit duration in order to assessing its effect on reciprocity. The search for a proxy remains a difficult challenge and will be the focus of future research. Current plans are to test for larger marginal effects of the first year than of later years in maximum UI eligibility and for differentially larger effects of UI maximum potential duration than UA potential duration. In addition, the plan is to complete the information set for all of the OECD-20 countries by collecting information about potential duration.

Figure 1**Average unemployment in the OECD-20, 1959 - 2005**

Source: Organisation of Economic Cooperation and Development (OECD), Labour Force Statistics 1985-2005 and earlier issues.

Table 1**Average unemployment in the six English-speaking countries, 1960 – 2004**

	Australia	Canada	Ireland	New Zealand	United Kingdom	United States
1960-64	2.1	5.6	5.1	0.1	1.5	5.7
1965-69	1.7	3.9	4.9	0.3	1.7	3.8
1970-74	2.2	5.8	5.7	0.2	2.5	5.4
1975-79	5.5	7.5	8.1	0.9	4.7	7.0
1980-84	7.3	9.8	11.8	4.2	9.7	8.3
1985-89	7.2	8.9	16.5	4.8	9.8	6.2
1990-94	9.5	10.3	14.7	9.0	9.0	6.6
1995-99	8.0	8.8	9.6	6.6	7.2	4.9
2000-04	6.2	7.3	4.2	5.0	5.0	5.2

Source: Organisation of Economic Cooperation and Development (OECD), Labour Force Statistics 1985-2005 and earlier issues.

Table 2

Unemployment compensation reciprocity rates in the OECD-20, 1960 – 2004

Country	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95-99	00-04
Number	16	16	16	18	18	19	20	20	20
Australia	0.355	0.205	0.210	0.641	0.819	0.883	0.866	1.042	0.871
Austria	0.844	0.867	1.100	0.737	0.700	1.003	1.308	1.329	1.282
Belgium	0.958	0.925	1.019	0.986	0.948	0.937	0.937	0.905	0.895
Canada	0.893	0.894	0.913	0.804	0.716	0.783	0.713	0.488	0.465
Denmark				0.674	0.746	1.057	0.945	0.926	0.832
Finland	0.200	0.446	0.571	0.683	0.806	1.010	1.094	1.270	1.226
France	0.095	0.172	0.267	0.427	0.604	0.721	0.848	0.790	0.960
Germany	0.779	0.736	0.706	0.708	0.660	0.646	0.721	0.794	0.875
Greece	0.115	0.168	0.221	0.485	0.242	0.221	0.360	0.329	0.313
Ireland	0.792	0.849	0.920	0.985	1.017	1.019	1.244	1.440	1.728
Italy	0.434	0.439	0.519	0.550			0.344	0.359	0.471
Netherlands	0.852	1.098	1.034	0.720	0.854	1.006	1.280	1.616	1.653
New Zealand	0.275	0.391	0.927	0.775	0.638	0.796	1.044	1.187	1.262
Norway	0.506	0.514	0.463	0.579	0.735	0.914	1.162	0.958	0.777
Portugal				0.294	0.250	0.300	0.725	0.876	1.217
Spain					0.360	0.396	0.545	0.386	0.498
Sweden	0.306	0.330	0.429	0.642	0.780	1.017	0.944	0.991	0.960
Switzerland						0.678	0.638	0.778	0.667
United Kingdom	0.780	0.738	0.883	0.936	0.906	0.763	0.769	0.722	0.563
United States	0.417	0.325	0.375	0.440	0.360	0.277	0.365	0.307	0.386
Average	0.538	0.569	0.660	0.670	0.674	0.759	0.843	0.875	0.895
Wgt. Average	0.500	0.467	0.526	0.578	0.538	0.524	0.581	0.547	0.605

Source: Data derived by authors.

Bold type indicates that there are fewer than five years of data.

Table 3
Average unemployment compensation recipiency rates
in the six English-speaking countries, 1960 – 2004

	Australia	New Zealand	Canada	United States	Ireland	United Kingdom	Average	Weighted Average
1960-64	0.355	0.275	0.893	0.417	0.792	0.780	0.585	0.515
1965-69	0.205	0.391	0.894	0.325	0.849	0.738	0.567	0.438
1970-74	0.210	0.927	0.913	0.375	0.920	0.883	0.705	0.505
1975-79	0.641	0.775	0.804	0.440	0.985	0.936	0.764	0.570
1980-84	0.819	0.638	0.716	0.360	1.017	0.906	0.743	0.510
1985-89	0.883	0.796	0.783	0.277	1.019	0.763	0.753	0.437
1990-94	0.866	1.044	0.713	0.365	1.244	0.769	0.833	0.497
1995-99	1.042	1.187	0.488	0.307	1.440	0.722	0.864	0.444
2000-04	0.871	1.262	0.465	0.386	1.728	0.563	0.879	0.464
Mean	0.655	0.810	0.741	0.361	1.110	0.785	0.744	0.487
Std. dev.	0.300	0.317	0.157	0.049	0.288	0.107	0.105	0.042
Coeff. var	0.458	0.392	0.213	0.135	0.259	0.137	0.141	0.086

Source: Data derived by authors.

Table 4
Summary of coefficients from the baseline regression equations

	Positive and Significant	Positive	Negative	Negative and Significant
Intercept	19	0	1	0
U Rate	3	9	2	6
U Rate Lagged	3	8	3	3
Trend	12	1	4	3

Regression equations to explain UC reciprocity rates in OECD-20 countries between 1959 and 2005

where

U Rate = unemployment rate

U Rate Lagged = lagged unemployment rate

Table 5. Reciprocity Rate Regressions for English-speaking Countries

	Constant	TUR	TUR Lag	Max Dur UC	Repl Rate	Trend	Other Variables	AR(1)	Years	Mean DepVar	Adj. R2	Std. Error
Australia	0.077 (2.70)	3.211 (2.23)	4.714 (3.10)			0.00586 (3.65)			60-05	0.658	0.922	0.086
Canada	0.982 (21.14)	1.805 (1.31)	-1.279 (0.91)			- 0.01171 (10.60)			59-05	0.741	0.776	0.083
Ireland	0.776 (24.05)	-2.534 (2.29)	0.399 (0.35)			0.02192 (20.95)			59-05	1.112	0.913	0.089
New Zealand	0.493 (7.24)	-2.450 (0.96)	5.337 (2.06)			0.02106 (5.82)			78-05	0.956	0.773	0.125
United Kingdom	0.716 (28.09)	2.353 (1.79)	0.098 (0.07)			- 0.00599 (5.49)			59-05	0.716	0.454	0.077
United States	0.285 (6.71)	5.213 (4.99)	-3.875 (3.80)			- 0.00061 (0.79)			67-06	0.354	0.392	0.055
Australia	0.076 (0.66)	2.773 (2.85)	2.934 (3.01)			0.01012 (2.73)		0.819 (8.94)	61-05	0.666	0.968	0.055
Canada	0.679 (5.14)	-0.280 (0.40)	-1.310 (1.90)		1.138 (3.97)	- 0.01199 (4.14)		0.843 (10.08)	60-05	0.735	0.952	0.037
Ireland	0.755 (13.17)	-2.205 (1.98)	0.116 (0.10)			0.02217 (12.58)		0.484 (3.26)	60-05	1.118	0.933	0.078
New Zealand	0.003	-4.816	8.312		1.026	0.02432		0.628	78-05	0.956	0.840	0.105

	(0.01)	(1.97)	(3.46)		(2.10)	(3.48)		(3.77)			
							D7174				
United Kingdom	0.736	2.700	-0.270		0.00629	-0.193	0.396	60-05	0.712	0.816	0.044
	(27.47)	(3.09)	(0.30)		(6.33)	(6.26)	(2.86)				
							D8194				
United States	0.007	3.318	-3.318	0.689	0.00019	-0.042	0.199	67-06	0.354	0.941	0.017
	(0.28)	(8.43)	(9.39)	(12.51)	(0.63)	(4.64)	(1.09)				

Source: Reciprocity rate data derived by the authors. Beneath each coefficient is the absolute value of its t ratio.

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