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The Role of Institutions and Policies in Creating High European Unemployment: The Evidence

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THE DEBATE OVER THE CAUSES OF HIGH UNEMPLOYMENT

The economies of western Europe remain afflicted by high and intractable rates of unemployment, with the European Union unemployment rate standing at 8.3% as of September 2000, while the unemployment rate in the eleven country euro zone area was 9.0%. In stark contrast, the U.S. unemployment rate touched a thirty year low of 3.9% in September 2000. This divergence in performance has opened a great debate. One side claims that Europe's unemployment is the result of rigid sclerotic labor markets that have rendered it incapable of adjusting to technological advance and change in the international economy. Unemployment benefits are too generous and their duration too long, unions are too strong, and employee protections are such that firms are discouraged from hiring workers. This contrasts with the U.S. economy which is marked by flexible dynamic labor markets that have adjusted to these developments and used them to create new jobs.

The other side claims that Europe's unemployment problem is significantly attributable to bad macroeconomic policy (Baker and Schmitt 1998; Palley 1998, 1999; Solow 1994), which has resulted from mistaken adherence to the theory of the natural rate of unemployment. This has prompted policy makers to adopt austere macroeconomic policies aimed at reducing inflation, regardless of the unemployment cost or the underlying cause of inflation. Currency market concerns have also played an adverse role. In the 1980s and 1990s the persistent threat of currency speculation induced European governments to raise rates so as to defend their currencies and guard against imported inflation. Subsequently, arrangements leading up to the introduction of the Euro aggravated the problem as countries were forced to satisfy strict fiscal convergence criteria that called for policies of austerity irrespective of economic conditions. The net result has been a persistent contractionary bias to policy, and policy has also exhibited insensitivity to the state of the business cycle. Contrastingly, U.S. macroeconomic policy has been relatively flexible and counter-cyclical (Palley 1999). Both the U.S. budget deficit and Federal Reserve monetary policy have exhibited clear counter-cyclical fluctuation, and in the recession of 1990-91 the Fed lowered short term nominal rates such that the real rate was zero.

Moreover, this sharp difference in macroeconomic policy persists through to the present. Thus, in 2001, faced with an economic slowdown, the U.S. Federal Reserve slashed its interest rate in the first six months of the year by over 40%, lowering rates from 6.5% in January to 3.75% in June. Side-by-side, fiscal policy shifted into expansionary mode with a significant tax cut, albeit one tilted toward the affluent. And all of these policy shifts were undertaken despite the fact that the unemployment rate was still below 4.5% and the inflation rate had actually increased above 3%. In stark contrast, the European Central Bank has begrudgingly lowered rates by just 0.25% to 4.5% despite the fact that Europe's unemployment remains significantly higher and growth has been slowing.

These two accounts of unemployment have enormously different policy implications. If the labor market flexibility hypothesis is correct, Europe needs to adopt the U.S. model and introduce policies of labor market flexibility that render wages downwardly flexible, reduce employee protections, and reduce unemployment benefits and other social protections. If the macroeconomic policy hypothesis is correct, Europe should adopt expansionary macroeconomic policies predicated on lower real interest rates. It also needs to adopt policy rules that ensure monetary and fiscal policy move in counter-cyclical fashion.

The outcome of this controversy is not only germane to the countries of the OECD. It is also relevant for the developing economies which are marked by a parallel debate. Thus, the Washington Consensus--which represents the developing country analogue of the Euro-sclerosis hypothesis--maintains that employment and output growth in the developing world depends upon the adoption of policies of labor market flexibility. Supporters of this consensus therefore counsel developing countries to resist calls for international labor standards since such standards would promote worker rights of freedom of association and collective bargaining.

These observations reveal the critical nature of the debate over the causes of unemployment. How it is resolved promises to have deep lasting impacts on policy in both developed and developing countries. The current paper provides some new evidence on the relative contributions of macroeconomic factors and labor market institutions to unemployment in the OECD. The principal empirical innovation of the paper is that it combines macroeconomic time series variables that capture the stance of macroeconomic policy with microeconomic labor market institution data. This means that the effects of both labor market institutions and macroeconomic policy are taken into account in statistical examinations of the causes of higher unemployment. The principle findings are that macroeconomic policy variables consistently and robustly matter for the evolution of country unemployment rates, and that macroeconomic policy affects unemployment rates in the manner expected. High real interest rates and slow growth raise unemployment, as does a slowdown in export growth. With regard to the microeconomic labor market variables the evidence is more problematic. Unemployment benefit duration and union density are both consistently insignificant. The level of wage bargaining coordination and the extent of union coverage matter consistently, but they need not raise unemployment if they are appropriately paired with other policies. Finally, the significance of other microeconomic variables (employment protection, unemployment insurance wage replacement rate, tax burden) is unstable and not robust to changes in specification. These findings lead to the conclusion that high unemployment in western Europe is principally the result of self-inflicted dysfunctional macroeconomic policy. European policy makers adopted a course of disinflation, high real interest rates, and slower growth that raised unemployment. Moreover, they all adopted this course at the same time, thereby generating a wave of trade based cross-country spill-overs that generated a continent wide macroeconomic funk and further raised unemployment.

Finally, a last important finding is that real interest rates have tended to be systematically higher in countries with high union density despite the lack of any evidence that high union density raises inflation. This suggests that central banks have systematically raised interest rates in countries with high union density.

EVIDENCE ON THE CAUSES OF OECD UNEMPLOYMENT

As noted above, the principal contribution of the current study is to fully incorporate both microeconomic labor market institution variables and macroeconomic variables, thereby allowing for a proper assessment of the relative contributions of labor market institutions and macroeconomic policy to higher unemployment. This section describes the data, the empirical model, and the empirical findings.

Data

Data for the labor market institutional variables were supplied by Nickell, and are described in his widely cited study on the impact of labor market rigidities on unemployment (Nickell 1997). Data for the macroeconomic variables were drawn from the annex tables in the 1999 *OECD Economic Outlook,* the World Bank CD-Rom, and IMF CD-Rom.[(1)] Further details regarding the data are provided in the data appendix.

The macroeconomic variables are captured in annual time series data so that there is one observation per year for each variable for each country. Contrastingly, the labor market institution variables correspond to fixed effects. For each type of labor market institution a six year average measure was constructed for each country covering the periods 1983-88 and 1989-94. Thus, for each institution in each country there are two observations--one for the period 1983-88, and the other for the period 1989-94. Lastly, data for the following countries was used in the regressions: Austria, Belgium, Denmark, Finland, France, Germany, Holland, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, U.K., Australia, New Zealand, Japan, U.S., and Canada.

Table 1 shows average macro data and labor market institution data for these twenty countries for the periods 1983-88 and 1989-94. The macroeconomic data are average

standardized unemployment rate (%), average real GDP growth (%), average inflation rate (%), average short term nominal interest rate (%), and average short term real interest rate (%) defined as the difference between the short term nominal interest rate and inflation rate. The labor market institution data are the wage replacement rate (%), unemployment benefit duration (years), an index of employment protections (1-20), union density (%), the overall tax rate (%), index of spending on active labor market programs, index of union wage coverage (1-3), and an index of coordination in wage bargaining (2-6).

There are a number of features worth remarking. First, with regard to unemployment rates the U.S. is in the bottom half of the distribution, but many countries also had lower unemployment rates over the period 1983 - 94. Second, inflation rates were much higher in Europe in the first half of the sample, but they fell significantly in the second half. Third, average short-term real interest rates have been very much lower in the U.S. than in the rest of the world.. These two features, disinflation and higher real interest rates in Europe, are indicative of the more difficult macroeconomic conditions that have confronted European economies.

With regard to the labor market institution data, the U.S. clearly has the most "laissez faire" markets as indicated by its low wage replacement rate, low benefit duration, low level of employment protections, low union density, low tax rate, low spending on active labor market programs, low union wage coverage, and low level of coordination of wage bargaining. Many of these features carry over to the Anglo-Saxon economies of the U.K., Canada, and New Zealand--particularly regarding employment protection, tax rates, labor market spending, union wage coverage, and coordination of wage bargaining. However, despite having deregulated labor markets, Australia, Canada, New Zealand, and the U.K. all tended to have unemployment rates that clustered at the top of the distribution.

An Empirical Model

The empirical model used to estimate the causes of unemployment is given by

$$
\begin{aligned}
(1)\ UNEMP_{j,t} = {} & a_0 + a_1 UNEMP_{j,t-1} + a_2 UNEMP_{j,t-1} + a_3 EMPPROT_{j,t} + a_4 REPRATE_{j,t} \\
& + a_5 BENDUR_{j,t} + a_6 UNIONDEN_{j,t} + a_7 UNIONCOV_{j,t} + a_8 COORD_{j,t} \\
& + a_9 TAXRATE_{j,t} + a_{10} ALMPROG_{j,t} + a_{11} DINFLATE_{j,t} + a_{12} REALINT_{j,t-1} \\
& + a_{13} GDPGROW_{j,t} + a_{14} GDPGROW_{j,t-1} + a_{15} EUROPEN_{j,t} + a_{16} CANUS_{j,t} + \\
& + a_{17} IREDUM + a_{18} SPADUM + u_{j,t}
\end{aligned}
$$

The definition of variables is as follows:

$UNEMP_{j,t}$ = standardized unemployment rate in country j in year t.

$EMPPROT_{j,t}$ = index of employment protection (1 - 20) in country j

$REPRATE_{j,t}$ = unemployment insurance wage replacement rate (%) in country j

$BENDUR_{j,t}$ = benefit duration (years) in country j

$UNIONDEN_{j,t}$ = union density (%) in country j

$UNIONCOV_{j,t}$ = extent that union wage coverage extends to non-union workers (1 = less than 25%, 2 = 25 - 70%, 3 = greater than 70%) in country j

$COORD_{j,t}$ = extent of coordination (index = 2 - 6) of wage bargaining amongst unions and employers in country j

$TAXRATE_{j,t}$ = total tax rate (sum of average payroll, income, and consumption tax rates) in country j

$ALMPROG_{j,t}$ = measure of active labor market policy (spending per unemployed worker as a percent of the potential output per worker) in country j

$DINFLATE_{j,t}$ = change in the CPI inflation rate (%) in country j in year t

$REALINT_{j,t}$ = real interest rate (%) in country j in year t

$GDPGROW_{j,t}$ = rate of real GDP growth (%) in country j in year t

$EUROPEN_{j,t}$ = measure of exposure of individual European countries to intra-European trade in year t (0 for non-European countries).

$CANUS_{j,t}$ = measure of exposure of the Canadian economy to trade with the U.S. in year t (0 for all countries except Canad)

IREDUM = dummy variable capturing effects specific to unemployment in Ireland

SPADUM = dummy variable capturing effects specific to unemployment in Spain

The variables can be broken down into three sets. The microeconomic labor market variables consist of EMPROT, REPRATE, BENDUR, UNIONDEN, UNIONCOV, TAXRATE, COORD, and ALMPROG. The macroeconomic variables consist of DINFLATE, REALINT, GDPGROW, EUROPEN, and CANUS. The significance of the EUROPEN and CANUS variables is discussed below, and the construction of these variables is described in the appendix. Lastly, the IREDUM and SPADUM capture fixed effects that are specific to Ireland and Spain. Both of these economies had much higher unemployment rates over the sample period, reflecting their position as quasi-developing economies on the periphery of the European Union.(2)

With regard to the specification of the empirical model, the inclusion of two lags of the unemployment rate as explanatory variables reflects the fact that adjustment in labor markets tends to be gradual as it takes time for workers to reallocate and for firms to create new jobs. As a result, all economies exhibit considerable persistence to unemployment shocks.

With regard to the macroeconomic variables, the effects of macroeconomic policy and conditions is captured by the change in the inflation rate (reduced inflation corresponds to tight policy), the level of real interest rates (high real rates corresponds to tight policy), and the rate of real GDP growth. The inclusion of the economic openness variables, EUROPEN and CANUS, is especially important. These variables capture the cross-country Keynesian multiplier effects that operate through international trade. Within the European economy it is critical to control for cross-country growth spill-over effects owing to the high degree of economic integration among countries. Just as an explanation of unemployment in Texas would need to control for developments in the U.S. economy, so too a similar logic holds in Europe where countries are very integrated economically with each other. This same logic also holds for Canada which is highly integrated into the U.S. economy. Such effects are noticeably absent from other studies examining the causes of higher European unemployment (Nickell, 1997: Blanchard and Wolfers, 1999).

Empirical Findings

Table 2 reports several regression estimates of equation (1) based on two stage least squares for the sample period 1983-1994.(3) Column (2.a) reports the benchmark regression equation which contains just two lags of country unemployment rates. In this model there are assumed to be absolutely no differences between countries, and both micro institutions

and macro policy and performance factors are absent. Despite this, the model has considerable explanatory power as measured by the Adjusted R^2 which indicates the goodness of fit of the model with the data. This highlights the fact that persistence in unemployment rates is a feature common to all economies, and it should therefore be incorporated in all models of unemployment.

Column (2.b) expands the benchmark equation to include labor market institution variables. The coefficients of the replacement rate (REPRATE) and the overall tax rate (TOTTAX) are both statistically significant at the 5% level, and both raise unemployment. The extent of wage bargaining coordination (COORD) is significant at the 1% level and lowers unemployment. Employment protections (EMPPROT) and union coverage (UNIONCOV) are both significant at the 10% level, and both raise unemployment. Lastly, benefit duration (BENDUR), union density (UDEN), and active labor market programs (ALMPROG) are all insignificant at the 10% level.

Regression (2.c) further expands the model to include country specific effects for Ireland (IREDUM) and Spain (SPADUM). Both of these country specific effects are statistically significant and positive at the 1% level, and their inclusion dramatically changes the significance of other explanatory variables. Now, both the employment protection index and replacement rate become statistically insignificant at the 10% level, but union density and spending on active labor market programs now both become statistically significant at the 1% level. This is indicative of coefficient instability among the microeconomic labor market institution variables.

Regression (2.d) begins the task of incorporating macroeconomic variables by including the change in inflation (DINFLATE), the lagged real interest rate (REALINT(-1)), and the current and lagged real output growth (GDPGROW and GDPGROW(-1)). Inclusion of these variables dramatically improves the quality of the regression estimate as indicated by the jump in the Adjusted R^2 statistic and the fall in the standard error of the regression equation. The variables DINFLATE, REALINT(-1) and GDPGRO are all statistically significant at the 1% level, while GDPGROW(-1) is statistically significant at the 10% level. All are signed in a manner consistent with conventional understandings of the impact of macroeconomic policy on unemployment. Disinflation raises unemployment, as do higher real interest rates.[(4)] Faster growth lowers unemployment.

As regards the labor market institution variables, inclusion of the macro variables causes major changes. First, the union density coefficient becomes insignificant--a feature which is examined in greater detail below. Second, the statistical significance and magnitude of the tax coefficient falls considerably. Third, the variables EMPROT and REPRATE now become significant at the 1% level, which is indicative of coefficient instability surrounding these variables. This too is further discussed below.

Column (2.f) further augments the model by including the international trade exposure variables EUROPEN and CANUS. The former is significant at the 1% level, while the latter is only significant at the 14% level. Both are negatively signed. The large magnitude and clear statistical significance of the coefficient of EUROPEN indicates the importance of interdependence amongst European economies.[(5)] The signs of the other macro variables (DINFLATE, REALINT(-1), GDPGROW, GDPGROW(-1)) remain unchanged, and all coefficients are statistically significant at the 1% level. The coefficients of these macroeconomic variables are robust and stable with regard to changed model specification, lending confidence to their importance for explaining unemployment. With regard to the micro variables, BENDUR, UNIONDEN, TAXRATE, and ALMPROG are all statistically insignificant at the 10% level. REPRATE, UNIONCOV, and COORD are statistically significant at the 1% level, while EMPROT is significant at the 6% level.

Column (2.g) reports the findings for the full model that includes all labor market institution variables, all macroeconomic variables, and the Ireland and Spain country fixed effect variables. The coefficients of all the macroeconomic variables remain same signed, and all except the CANUS variable are statistically significant at the 1% level. The Ireland and Spain country fixed effects are also both positive and statistically significant at the 1% level. However, most of the labor market institution variables are statistically insignificant. This holds for the employment protection index(EMPROT), the wage replacement rate (REPRATE), benefit duration (BENDUR), and union density (UDEN). The full model therefore suggests that none of these variables matter for explaining unemployment. Spending on active labor market programs (ALMPROG) is statistically significant at the 1% level, and it contributes to lower unemployment. The overall tax rate (TOTTAX) is also significant at the 10% level, and higher taxes rates raise unemployment.

This fully specified model helps understand a number of features. First, both union wage coverage (UNIONCOV) and the extent of coordination in wage bargaining (COORD) are significant at the 1% level, and both variables are statistically significant in most of the other regressions. These variables have opposite signs with the former being positive, while the latter is negative. The UNIONCOV variable takes values of 1-3, while the COORD variable takes values of 2-6. These two variables are strongly positively correlated, having a correlation coefficient of 0.49, and a regression of COORD on UNIONCOV yields

(2) UNIONCOV = 1.897 + 0.197COORD Adj.R^2 = 0.235

(25.53) (11.11)

Figures in parentheses are t-statistics. Thus, if COORD = 2, the predicted value of UNIONCOV = 2.3: if COORD = 6, the predicted value of UNIONCOV = 3.1. The two variables therefore co-move strongly and systematically, and should best be thought of as a "system of industrial relations." Coordination in wage bargaining lowers unemployment, while union wage coverage raises it. As long as these two features are appropriately paired, there need be no negative impact on unemployment.[(6)] Problems only emerge when there is extensive union wage coverage that is unaccompanied by wage bargaining coordination. This finding is consistent with the work of Calmfors and Drifill (1988).[(7)]

Second, the inclusion of the country dummy variables for Ireland and Spain causes the EMPROT and REPRATE variables to become statistically insignificant. Inspection of table 1 shows that Spain had extremely high unemployment rates, and it also had an extremely high level of employment protection and a very high replacement rate. The statistical significance of these two institutional variables therefore appears to be entirely related to Spain - i.e. is an outlier phenomenon. When a Spain dummy is included, they become insignificant. This phenomenon holds for both the full model (compare regressions (2.e) and (2.f)) and for the restricted model with just labor market institution variables (compare regressions (2.b) and (2.c)). The policy implication is that existing employment protections and wage replacement rates have not been a contributory factor to European unemployment, except perhaps in Spain.

Finally, regressions (2.g) and (2.h) provide estimates of the restricted model with just macroeconomic variables. These regressions are presented to give additional evidence of the significance of macroeconomic factors for explaining unemployment. The coefficients of the macro variables continue to be highly statistically significant, they remain same signed, and their magnitude is little changed. At the same time, the restricted regressions with just macro variables perform very well in terms of Adjusted R^2 and standard error of the regression, being only marginally worse than the full model which includes the labor market institutional variables.

Further Interpreting the Results

In sum, the regressions reported in table 2 provide clear evidence of the importance of macroeconomic forces for unemployment. This conclusion is robust to empirical specification. Based on regression (2.f), permanently lowering the inflation rate by 1 percent point increases unemployment by 0.4 percent points. An increase in real interest rates of 1 percent point increases unemployment by 0.3 percent points. Lowering the rate of real output growth by 1 percent point increases unemployment by 2.1 percent points. This latter finding implies an Okun coefficient of 1/2 . This is fully in accordance with existing estimates of the Okun coefficient (Palley, 1993), which lends additional support to the results presented. For a European country that exports 20% of its GDP, a 1% percent point increase in the growth rate of other European economies results in a 0.35% decrease in that country's unemployment rate.

Regression (2.f) indicates that a one hundred basis point increase in the real interest rate increases the unemployment rate by 0.4% points. During the period 1989-94, the U.S. real interest rate averaged 1.80%. In Canada the real interest rate averaged 4.7%, raising the Canadian unemployment rate relative to the U.S. by 1.2%. In Germany, the real interest rate averaged 4.03%, raising the German unemployment rate relative to the U.S. by 0.9%. In France, it averaged 6.12%, raising the French unemployment rate relative to the U.S. by 1.7%. Finally, in the Scandinavian countries (Denmark, Finland, Norway, and Sweden), the real interest rate averaged 5.87%, raising the Scandinavian unemployment rate relative to the U.S. by 1.6%.

With regard to the labor market institution variables, the regressions provide no evidence that lowering employment protections, replacement rates, or benefit durations will reduce unemployment. Nor will lowering union density. However cutting taxes can. A 10% point reduction in tax burdens (which in most countries means reducing taxes by about one fifth) lowers the unemployment rate by only 0.8% points. Increasing spending on active labor market policies has a much bigger bang for buck. Increasing active labor market spending per unemployed worker by an amount equal to 10% of potential output per worker lowers the unemployment rate by 1.2% points. Spending on job training and placement programs for the unemployed is therefore a more cost effective fiscal approach to the problem of unemployment.

Finally, if properly paired, coordination of wage bargaining and union wage coverage can actually lower unemployment. If both of these institutions were maximally implemented (UNIONCOV = 3, COORD = 6), then the unemployment rate would be reduced by 0.6% points. Of course if there is widespread union wage coverage and no coordinated wage bargaining, then unemployment rates will rise.

Some Further Regressions for an Extended Sample Period, 1979-1998

The regressions reported in table 2 cover the sample period 1983-94. This was a period in which unemployment in western Europe had already jumped to the higher levels of today. The bulk of the jump in European unemployment rates occurred between 1979 and 1983, and for this reason it is worthwhile to extend the sample period backward and forward by four years to cover the period 1979-98. The data panel was therefore expanded to include additional annual observations on the macro variables DINFLATE, REALINT(-1), GDPGROW, GDPGROW(-1), EUROPEN, and CANUS. The drawback to this extension is that the fixed effect microeconomic institution variables were constructed from observations for the periods 1983-88, and 1989-94. To the extent that institution variables are slow to change, widening the time period of application should have only minor significance. However, if there were large institutional changes in either the years 1979-83 or the years 1995-98, then the results could be misleading.

Table 3 reports a similar set of regressions to those reported in table 2, the principal difference being that it uses an extended sample period covering 1979-98. The regressions also exclude ALMPROG. This was done because the extended sample period over-laps with the instrument for ALMPROG which used the 1979 unemployment rate in its construction (see footnote 2). Across the board, the results are very similar to those reported in table 2. The bottom line is that the conclusions drawn on the basis of the regressions reported in table 2 are confirmed by the regression results in table 3.

QUANTIFYING THE CAUSES OF CHANGED UNEMPLOYMENT RATES

The previous section reported several estimates of structural equations determining the causes of unemployment. This section changes the focus of analysis and uses these estimates to identify what caused country unemployment rates to change between 1983 and 1994. For this purpose, the preferred equation is that reported in column (2.f) of table 2. According to this equation, the contribution of microeconomic institutional factors to unemployment is given by

$$\begin{aligned}(3)\ MICRO_{j,t} = [&0.007EMPPROT_{j,t} + 0.007REPRATE_{j,t} + 0.007BENDUR_{j,t} \\ &+ 0.007UNIONDEN_{j,t} + 0.541UNIONCOV_{j,t} - 0.286COORD_{j,t} \\ &+ 0.012TAXRATE_{j,t} - 0.019ALMPROG]/0.154\end{aligned}$$

The change in unemployment rates attributable to changes in labor market institutional factors is then computed as

$$(4)\ DMICRO_{j,t} = MICRO_{j,t} - MICRO_{j,t-1}.$$

Table 4 reports an analysis that decomposes the actual change in country unemployment rates between 1983 and 1994 into those parts attributable to micro and macro factors. Columns (1) and (2) detail the country unemployment rates ruling in 1983 and 1994 respectively, while column (3) reports the change in country unemployment rates between 1983 and 1994. Column (4) then details that part of the change attributable to changed microeconomic institutional settings. Finally, column (5) details the change in unemployment rates attributable to macroeconomic factors. This macroeconomic component is computed as

$$(5)\ DMACRO_{j,t} = DUNEMP_{j,t} - DMICRO_{j,t}$$

The table has a number of interesting and important findings. First, DMICRO is negative in thirteen out of twenty countries, indicating that most countries have pursued policies designed to flexibilize labor markets. Second, DMACRO is positive in fifteen out of twenty countries, indicating that over the period 1983 - 94 most countries experienced negative macroeconomic outcomes that raised unemployment rates. Third, in Europe's three biggest economies (France, Germany, Italy) these negative macro shocks were quantitatively large. In all three economies the direction of microeconomic change was such that unemployment should have fallen, but instead unemployment rose owing to the large scale of macroeconomic shocks. Fourth, the U.S. unemployment rate fell by 3.5% points, and this decline was almost entirely due to favorable macroeconomic conditions. Fifth, Finland, Sweden, and Spain all suffered large increases in unemployment rates, and in all three instances the increase was almost entirely due to unfavorable macroeconomic forces. Sixth, Belgium, Denmark, and Holland experienced reductions in unemployment rates, and favorable macroeconomic developments explain more than fifty percent of the decline in these three cases.

In sum, almost all of the decline in the U.S. is attributable to positive macro forces, while almost all of the increase in Europe is attributable to negative macro forces. And in those few instances in Europe where unemployment rates fell, macro forces were again primarily responsible. The policy implication is clear. Rather than engaging in a wholesale re-making of labor market institutions and arrangements, European governments should correct the dysfunctions that have driven macro economic policy over the last two decades. That these dysfunctions remain in place is clearly evident in the different policy responses of the Federal Reserve and the European Central Bank to the economic slowdown of 2001.

THE POLITICAL ECONOMY OF MONETARY POLICY: HAVE CENTRAL BANKERS WAGED WAR ON UNIONS?

Both Nickell (1997) and Scarpetta (1995) report that union density has a statistically significant positive impact on unemployment rates. This contrasts sharply with the findings reported in the current study, and it is worth enquiring as to the source of this difference.

One clue to this difference comes from a comparison of regressions (2.c) and (2.d) in table 2 in which the inclusion of macroeconomic variables appears to undo the unemployment impact of union density. In the regressions reported by Nickell (1997) the only macro variable is the change in inflation rates. This suggests that the effect may be related to the inclusion of real interest rates.

To test this hypothesis union density was regressed against the average measure of country real interest rates shown in table 1. The resulting pooled least squares regression, with and without a time dummy to capture changes in financial market conditions across the periods 1983-88 and 1989-94, is given by

$$\begin{aligned}(6.a)\ REALINT_j = {} & 3.505 + 0.032\ UNIONDEN_j \quad Adj.R^2 = 0.096 \quad N = 40 \\ & (5.33) \quad (2.27)\end{aligned}$$

$$\begin{aligned}(6.b)\ REALINT_j = {} & 2.943 + 0.035\ UNIONDEN_j + 0.923\ TIMEDUMMY \quad Adj.R^2 = 0.145 \quad N = 40 \\ & (4.12) \quad (2.49) \quad (1.77)\end{aligned}$$

Figures in parentheses are t-statistics. In both regressions, with and without a dummy for the period 1989 - 1994, the coefficient of UNIONDEN is positive and statistically significant at the 5% level. According to these regressions, a 10% absolute increase in the union density rate therefore results in a 0.3% point increase in the real interest rate.

To test for robustness, this union interest rate hypothesis was also tested in a simple time series model with one lag of the real interest rate and with a union density fixed effect for the period 1983 - 94. The resulting regression was

(7) $REALINT_{j,t}$ = 1.822 + 0.483$REALINT_{j,t-1}$ + 0.018 $UNIONDEN_j$ Adj.R^2 = 0.333 N = 238
(4.82) (10.11) (2.36)

The union density coefficient is positive and statistically significant at the 5% level, and according to equation (7) the net effect of a 10% increase in union density is to raise real interest rates by 0.35%. This almost exactly matches the results from regressions (6.a) and (6.b).

Prima facie , regressions (6.a), (6.b) and (7) suggest that central bankers may have raised rates in economies where union density is high. However, it is possible that union density causes inflation and central banks were really aiming to lower inflation. To test this hypothesis union density was regressed on average consumer inflation (as reported in table 1) yielding

(8.a) $INFLATION_j$ = 3.845 + 0.023 $UNIONDEN_j$ Adj.R^2 = -0.005 N = 40
(3.25) (0.89)

(8.b) $INFLATION_j$ = 4.839 + 0.019 $UNIONDEN_j$ - 1.633TIMEDUMMY Adj.R^2 = 0.045 N = 40
(3.76) (0.74) (-1.74)

Both regressions (8.a) and (8.b), with and without a dummy for the period 1989-94, show that there is no statistical relation between inflation and union density. This conclusion was further tested by a simple auto-regressive pooled time series model of country inflation rates given by

(9) $INFLATION_{j,t}$ = 0.514 + 0.776 $INFLATION_{j,t-1}$ + 0.001 $UNIONDEN_j$ Adj.R^2 = -0.005 N = 240
(1.59) (26.69) (0.14)

Again, figures in parentheses are t-statistics, and again union density has no explanatory power regarding inflation. In sum, regressions (8.a), (8.b) and (9) all show no statistical relation between inflation and union density. This challenges the defense that real interest rates were higher in countries with higher union density because unions cause inflation. Instead, it looks as if central banks systematically raised interest rates in countries with high union density. This is fully consistent with the idea that monetary policy is a site of class conflict, and it has largely been captured by interests antagonistic to unions (Palley, 1997).

BEYOND THE WASTELAND: TOWARD FAIR AND FULL EMPLOYMENT FOR ALL

The conventional wisdom is that the cause of high European unemployment lies in a job market that is rigid and inflexible. These rigidities include excessive employment protection, too generous replacement rates, too long benefit durations, and high rates of unionization. The empirical results reported in this paper directly challenge this received wisdom. These results are based on an empirical model of unemployment that includes both microeconomic labor market institution variables and macroeconomic variables. The evidence clearly shows that macroeconomic factors matter for unemployment, and these factors are robust to changes in the empirical specification of the model. However, when it comes to microeconomic factors the evidence is much more problematic. The level of wage bargaining coordination and the extent of union coverage matter consistently, but they need not raise unemployment if they are appropriately paired. The level of benefit duration and the level of union density are both consistently insignificant. The significance of other microeconomic variables (employment protection, replacement rate, tax burden) is unstable and not robust to changes in specification. Moreover, none of these variables is significant in a fully specified model that takes account of country specific fixed effects related to Ireland and Spain.

This leads to the conclusion that high unemployment in western Europe is the result of self-inflicted macroeconomic policy. European policy makers adopted a course of disinflation, high real interest rates, and slower growth that raised unemployment. Moreover, since all adopted this course at the same time, they generated a wave of trade based cross-country multipliers that further raised unemployment and contributed to a continent wide macroeconomic funk.

The policy implications are clear. Lowering European unemployment will require a period of sustained expansionary macroeconomic policy, and this policy needs to be pursued by all countries. Flexibilizing labor market institutions will not lower unemployment as these institutions are not the cause of unemployment. Indeed, if it involves just reducing the extent of wage bargaining coordination, it could raise unemployment.

These policy conclusions are consistent with the two dimensional macroeconomic - microeconomic policy framework illustrated in figure 1.[(8)] In that framework, unemployment is caused by macroeconomic factors. Microeconomic labor market institutions impact distributional outcomes by protecting workers and giving them voice and bargaining power. Weakening these institutions therefore worsens income distribution but has little impact on unemployment.

Table 5 presents some data on patterns of cross-country income distribution. Simple pooled regressions using the data in tables 1 and 5, appropriately matched by year, yield the following relations between income distribution, union density, and employment protection

(10.a) $90/50_j$ = 206.04 - 0.581 $UDEN_j$ Adj.R^2= 0.40 N = 19
(27.78) (-3.60)

(10.b) $90/50_j$ = 188.03 - 0.612 $EMPPROT_j$ Adj.R^2=-0.02 N = 19
(22.43) (-0.85)

(10.c) $90/50_j$ = 212.35 - 0.582 $UDEN_j$ - 0.612 $EMPPROT_j$ Adj.R^2= 0.41 N = 19
(22.95) (-3.64) (-1.12)

(10.d) $90/10_j$ = 4.539 - 0.023 $UDEN_j$ $Adj.R^2$= 0.29 N = 19
(12.56) (-2.91)

(10.e) $90/10_j$ = 4.196 - 0.060 $EMPPROT_j$ $Adj.R^2$= 0.15 N = 19
(12.16) (-2.03)

(10.f) $90/10_j$ = 5.156 - 0.023 $UDEN_j$ - 0.061 $EMPPROT_j$ $Adj.R^2$= 0.47 N = 19
(13.11) (-3.38) (-2.59)

(10.g) $10/50_j$ = 45.987 + 0.141 $UDEN_j$ $Adj.R^2$= 0.18 N = 19
(13.11) (-3.38)

(10.h) $10/50_j$ = 46.265 + 0.552 $EMPPROT_j$ $Adj.R^2$= 0.25 N = 19
(19.29) (2.66)

(10.i) $10/50_j$ = 40.356 + 0.141 $UDEN_j$ + 0.554 $EMPPROT_j$ $Adj.R^2$= 0.47 N = 19
(13.74) (2.78) (3.16)

(10.j) $GINI_j$ = 0.332 - 0.001 $UDEN_j$ $Adj.R^2$= 0.39 N = 17
(19.07) (-3.38)

(10.k) $GINI_j$ = 0.307 - 0.003 $EMPPROT_j$ $Adj.R^2$= 0.08 N = 17
(15.06) (-1.56)

(10.l) GINI = 0.360 - 0.001 $UDEN_j$ - 0.003 $EMPPROT_j$ $Adj.R^2$= 0.51 N = 17
(17.59) (-3.74) (-2.12)

where $90/50_j$ = ratio of income of 90th percentile household to median household in country j

$90/10_j$ = ratio of income of 90th percentile household to 10th percentile in country j

$10/50_j$ = ratio of income of 10th percentile household to median household in country j

GINI = gini coefficient in country j

$UDEN_j$ = union density (%) in country j

$EMPPROT_j$ = index of employment protections (1 - 20) in country j.

Figures in parentheses are t-statistics. The regressions show that both union density and employment protections work unambiguously to reduce income inequality. Union density reduces income inequality between the top and the middle (90/50), and the top and the bottom (90/10).[(9)] Employment protections reduce inequality between the top and the bottom (90/10), but have no impact on the top and the middle (90/50). Both union density and employment protections reduce income inequality between the bottom and the middle (10/50). In sum, unions appear to equalize income across both left and right tails of the income distribution, while employment protections seem to operate on just the left tail.

The policy taxonomy shown in figure 1 is confirmed by the unemployment rate regressions in tables 2 and 3, and by the above income inequality regressions. It can now be used to understand labor market evolutions over the last two decades. In the U.S. macroeconomic policy has been expansionary but labor market institutions protecting workers have eroded: the result has been low unemployment and increased income inequality. In Europe macroeconomic policy has been contractionary but labor market institutions protecting workers remain intact: the result has been high unemployment but relatively unchanged income inequality. Restoring the golden age economic prosperity of the immediate post-World War II era will require expansionary macroeconomic policy combined with labor market institutions that protect workers' voice and bargaining power. Unfortunately, the laissez-faire "Washington" consensus that dominates policy making recommends the exact opposite combination.

DATA APPENDIX

The following appendix details the data that was used in the regression reported in Tables 1 - 2.

All data for the labor market institution variables (EMPROT, REPRATE, BENDUR, UNIONDEN, UNIONCOV, COORD, TAXRATE, ALMPROG) were provided by Nickell and are as described in Nickell (1997).

The macroeconomic data were taken from the OECD *Economic Outlook* (1999), the World Bank CD-Rom, and the IMF CD-Rom.

The series on real GDP growth was taken from the World Bank series of that name on the CD-rom. Updates for 1998 were taken from the World Bank's home page. These series match the real GDP growth figures reported in the June 1999 *OECD Economic Outlook* , Annex Table 1.

Short-term interest rates are from the IMF CD, series 60B, money market rates. For Ireland, series 60C, Treasury bills, was used due to the unavailability of the money market series. Missing values for New Zealand 1978-82 and Australia 1996-98 were filled in using 60C values.

The measures of inflation are the percent change in consumer prices drawn from the OECD database's purchasing power parity figures for private consumption, updated to match the OECD's published 1999 figures. DINFLATE is computed as the first difference of the annual inflation rates.

The real short-term interest rate was computed as the difference between the short-term nominal interest rate and the CPI inflation rate.

Standardized unemployment rates were drawn from the Statwise database where available, and completed manually from the OECD Economic Outlook (1999) Annex Table 22, with which these figures are in accordance.

To extend the series to include values back to 1977, the June *1999 OECD Economic Outlook* numbers were supplemented by values from the June *1994 OECD Economic Outlook*. However, these two series are not always identical owing to adjustments made by the OECD. To achieve compatibility, the 1994 figures were adjusted hard copy from the OECD. The series were adjusted for compatibility according to the following:

1979 Adjusted std.unemp = 1979 std.unemp per OECD June 1994 * [1980 std.unemp per OECD June 1999/ 1980 std.unemp per OECD June 1994].

Thus, earlier measures of the standardized unemployment rate were converted to the new basis by multiplying the old series by an adjustment factor. This adjustment factor was computed as the ratio of the first year of the new series to the old measure of standard unemployment in that year. The first year of the series in Annex Table 22 is 1980.

A similar scaling method was used to create standard unemployment rate values for countries for which they were unavailable. In these instances, values for the commonly used definition of unemployment rates (Annex table 21) were adjusted according to :

$$\text{Adj. Std.unemp}(t) = \text{common unemp}(t) * \frac{\text{std.unemp}(t+1)}{\text{Common unemp}(t+1)}$$

where the adjustment factor was calculated for the earliest year for which the standard unemployment series was available. The countries to which this was applied are: Denmark, Austria, Portugal, Ireland; New Zealand had a scalar of 1.

The cross-country Keynesian multiplier openness variable is designed to capture the impact of growth in the rest of the European economy on each European country. Canada is especially exposed to growth in the U.S., and a similar variable was therefore also constructed for the Canadian economy. The European country openness variable is defined as

$$\text{(5.a) } EUROPEN_{j,t} = sx_{j,t}\left[\sum_{\substack{i=1\\ i=j}}^{n} [EMP_{i,t} / TOTEMP_{-j,t}]\, GY_{i,t}\right]$$

where

sx_j = export share of GDP for country j

EMPi = employment in country i (i = j)

TOEMPi = total employment in all European countries excluding country j

GYi = growth of real output in country i (i = j)

The logic of this openness variable is as follows. The sx_j component measures the export openness of a country, while the rest of the term measures real growth outside the country. This real growth component is the employment weighted average of country growth rates. For all non-European countries EUROPEN takes on a value of zero. The Canadian openness variables is defined as

$$\text{(5.b) } CANUS_t = sx_{CAN,t}\, GY_{US,t}$$

where

$sx_{CAN,t}$ = Canadian export share of GDP

$GY_{US,t}$ = U.S. real GDP growth rate

For all countries other than Canada it is zero.

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Table 1: Country Macroeconomic and Labor Market Institution Data

MACRO DATA										
	Av.std.unemp.(%)		Av. GDP growth(%)		Av. Inflation(%)		Av. ST int.rate (%)		Av.STreal int.rate(%)	
Country	**1983-89**	**1989-94**	**1983-89**	**1989-94**	**1983-88**	**1989-94**	**1983-88**	**1989-94**	**1983-88**	**1989-94**
Australia	8.4	9.05	4.43	2.65	7.6	3.78	12.62	9.79	5.02	6.01
Austria	2.86	3.43	2.09	2.76	2.87	3.3	5.36	7.78	2.49	4.48
Belgium	10.3	7.83	2	1.77	3.83	2.88	7.21	8	3.38	5.12
Canada	9.98	9.81	4.26	1.35	4.45	3.17	9.32	7.87	4.87	4.7
Denmark	6.41	8.51	2.71	1.49	5.02	2.53	10.47	10.48	5.45	7.95
Finland	5.68	9.9	3.41	-0.26	5.47	3.87	12.76	11	7.29	7.13
France	9.71	10.35	2.19	1.69	5.25	2.75	9.57	8.87	4.32	6.12
Germany	6.7	5.9	2.35	2.92	1.53	3.57	4.73	7.6	3.2	4.03
Holland	8.51	6.36	2.47	2.84	1.4	2.57	5.47	7.63	4.07	5.06
Ireland	15.98	14.7	2.77	5.44	5.6	2.9	11.42	9.13	5.82	6.23
Italy	8.88	9.76	2.73	1.29	8.3	5.43	14.52	11.67	6.22	6.24
Japan	2.68	2.35	3.98	2.61	1.27	2.05	5.147	4.9	3.877	2.85
New Zealand	4.48	8.85	1.81	1.98	10.7	3.08	17.31	9.38	6.61	6.3
Norway	2.78	5.58	3.35	2.91	7.17	3.02	13.22	10.06	6.05	7.04
Portugal	7.63	5.06	3.12	2.58	17.42	9.67	16.7	13.78	-0.72	4.11
Spain	20.13	19.21	3.22	2.08	8.52	5.77	13.75	12.58	5.23	6.81
Sweden	2.76	5.06	2.56	0.38	6.47	6.07	10.97	11.94	4.5	5.87
Switzerland	0.81	2.31	2.07	1.2	2.22	3.78	3.58	6.47	1.36	2.69

UK	10.75	8.9	3.95	1.07	4.68	5.17	10.32	9.94	5.64	4.77
USA	7.16	6.36	3.68	2.06	3.45	3.83	8.08	5.63	4.63	1.8

LABOR MARKET INSTITUTIONS								
	Replacement rate (%)		**Benefit duration (yr)**		**Emp.Pro.Index(1-20)**		**Union density (%)**	
Country	**1983-88**	**1989-94**	**1983-88**	**1989-94**	**1983-88**	**1989-94**	**1983-88**	**1989-94**
Australia	39	36	4	4	4	4	44.7	40.4
Austria	60	50	4	2	16	16	51.2	46.2
Belgium	60	60	4	4	17	17	53.6	51.2
Canada	60	59	5	1	3	3	35.9	35.8
Denmark	90	90	2.5	2.5	5	5	73.7	71.4
Finland	75	63	4	2	10	10	70.9	72
France	57	57	3.75	3	14	14	13.8	9.8
Germany	63	63	4	4	15	15	34.3	32.9
Holland	70	70	4	2	9	9	30.4	25.5
Ireland	50	37	4	4	12	12	53.4	49.7
Italy	20	20	0.5	0.5	20	20	44.1	38.8
Japan	60	60	0.5	0.5	8	8	28.3	25.4
New Zealand	38	30	4	4	2	2	50.4	44.8
Norway	65	65	1.5	1.5	11	11	56.5	56
Portugal	60	65	0.5	0.8	18	18	46.3	31.8
Spain	80	70	3.5	3.5	19	19	18	11
Sweden	80	80	1.2	1.2	13	13	81.1	82.5
Switzerland	70	70	1	1	6	6	28.6	26.6
UK	36	38	4	4	7	7	44.8	39.1
USA	50	50	0.5	0.5	1	1	19	15.6

LABOR MARKET INSTITUTIONS								
	Overall tax rate (%)				**Union Wage Cover (1-3)**			
			Lab.Mkt.Spending				**Bargain.Coord.(2-6)**	
Country	**1983-88**	**1989-94**	**1983-88**	**1989-94**	**1983-88**	**1989-94**	**1983-88**	**1989-94**
Australia	30.8	28.7	4.1	3.2	3	3	3	3
Austria	54.5	53.7	8.7	8.3	3	3	6	6
Belgium	47.6	49.8	10	14.6	3	3	4	4
Canada	37.8	42.7	6.3	5.9	2	2	2	2
Denmark	48.8	46.3	10.6	10.3	3	3	6	6
Finland	59.6	69.5	18.4	16.4	3	3	6	5
France	62.8	63.8	7.2	8.8	3	3	4	4
Germany	52.6	53	12.9	25.7	3	3	5	5
Holland	59.3	56.5	4	6.9	3	3	4	4
Ireland	33.6	34.3	9.2	9.1	3	3	2	2
Italy	57.2	62.9	10.1	10.3	3	3	3	4
Japan	33.1	36.3	5.4	4.3	2	2	4	4
New Zealand	35.3	34.8	15.4	6.8	2	2	3	3
Norway	49.9	48.6	9.5	14.7	3	3	6	6
Portugal	33.5	37.6	5.9	18.8	3	3	4	4
Spain	50.1	54.2	3.2	4.7	3	3	3	3
Sweden	68.9	70.7	59.5	59.3	3	3	6	6
Switzerland	40	38.6	23	8.2	2	2	4	4
UK	44.6	40.8	7.8	6.4	3	2	2	2
USA	42.6	43.8	3.9	3	1	1	2	2

Table 2: Time-series Unemployment Rate Regressions Using Pooled Annual Data, 20 OECD Countries, 1983-94

<----------UNEMP---------->								
Variable	**(2.a)**	**(2.b)**	**(2.c)**	**(2.d)**	**(2.e)**	**(2.f)**	**(2.g)**	**(2.h)**
a_0	0.359***	-0.378	-0.049	0.695**	0.383	0.434	1.190***	0.795***
	(2.91)	(-0.95)	(-0.13)	(2.21)	(1.13)	(1.30)	(8.17)	(5.84)
UNEMP(-1)	1.522***	1.475***	1.392***	1.273***	1.237***	1.142***	1.204***	1.287***
	(28.49)	(27.99)	(27.11)	(23.26)	(22.01)	(20.76)	(21.82)	(22.72)
UNEMP(-2)	-0.564***	-0.617***	-0.644***	-0.348***	-0.313***	-0.296***	-0.271***	-0.293***
	(-10.29)	(-11.17)	(-12.39)	(-5.96)	(-5.30)	(-5.27)	(-4.88)	(-4.97)
EMPPROT		0.034*	0.005	0.023***	0.029*	0.007		
		(1.84)	(0.27)	(1.55)	(1.96)	(0.49)		
REPRATE		0.013**	0.005	0.007***	0.013***	0.007		
		(2.40)	(0.94)	(1.78)	(2.69)	(0.20)		
BENDUR		0.029	0.026	$-4.6\text{x}10^{-5}$	0.016	0.007		
		(0.58)	(0.55)	(-0.01)	(0.42)	(1.47)		
UNIONDEN		0.008	0.016***	-0.002	0.003	0.007		
		(1.37)	(2.84)	(-0.51)	(0.56)	(1.47)		
UNIONCOV		0.385*	0.556***	0.381**	0.415***	0.540***		
		(1.86)	(2.81)	(2.46)	(2.69)	(3.64)		
COORD		-0.463***	-0.520***	-0.243***	-0.298***	-0.286***		
		(-4.11)	(-4.85)	(-2.76)	(-3.24)	(-3.28)		
TAXRATE		0.020**	0.035***	-0.005*	-0.003	0.012*		
		(2.57)	(4.42)	(-0.83)	(-0.40)	(1.93)		
ALMPROG		-0.014	-0.029***	-0.002	-0.006	-0.019***		
		(-1.56)	(-3.23)	(-0.230)	(-0.81)	(-2.73)		
DINFLATE				-0.084***	-0.077***	-0.064***	-0.080***	-0.086***
				(-3.54)	(-3.27)	(-2.86)	(-3.51)	(-3.58)
REALINT(-1)				0.070***	0.061***	0.046***	0.046***	0.040**
				(3.85)	(3.39)	(2.70)	(2.97)	(2.41)
GDPGROW				-0.263***	-0.245***	-0.225***	-0.257***	-0.274***
				(-10.23)	(-9.30)	(-9.01)	(-10.65)	(-10.78)
GDPGROW(-1)				-0.055*	-0.067***	-0.103***	-0.079**	-0.040
				(-1.68)	(-2.08)	(-3.31)	(-2.48)	(-1.21)
EUROPEN					-0.227***	-0.269***	-0.167**	-0.135**
					(-2.62)	(-2.97)	(-2.51)	(-2.00)
CANUS					-0.318	-0.031	-0.057	-0.288
					(-1.49)	(-0.15)	(-0.29)	(-1.44)
IREDUM			1.028***			1.332***	1.196***	
			(3.07)			(4.84)	(4.87)	
SPADUM			2.440***			1.536***	1.229***	
			(5.74)			(4.49)	(4.56)	
Adj. R^2	0.956	0.959	0.964	0.977	0.978	0.981	0.979	0.976
S.E.	0.930	0.896	0.840	0.664	0.655	0.615	0.641	0.682
N =	240	240	240	239	239	239	239	239

***** = significant at the 1% level**

**** = significant at the 5% level**

*** = significant at the 10% level.**

Note: t-statistics in parentheses.

Table 3 Time Series Unemployment Rate Regressions Using Pooled Annual Data, 20 OECD Countries, 1979-98

	<----------UNEMP---------->			
Variable	**(3.a)**	**(3.b)**	**(3.c)**	**(3.d)**
a_0	0.776***	0.520**	0.715***	1.268***
	(3.54)	(2.31)	(3.18)	(13.34)
UNEMP1	1.289***	1.249***	1.186***	1.236***
	(29.87)	(29.03)	(20.76)	(29.21)
UNEMP2	-0.363***	-0.323***	-0.280***	-0.300***
	(-8.44)	(-7.55)	(-6.78)	(-7.18)
EMPPROT	0.019**	0.023**	0.001	
	(2.03)	(2.44)	(0.07)	
REPRATE	0.005**	0.010***	0.002	
	(1.99)	(3.61)	(0.76)	
BENDUR	0.021	0.027	0.010	
	(0.78)	(1.04)	(0.39)	
UNIONDEN	0.002	0.005**	0.002	
	(0.85)	(2.05)	(0.82)	
UNIONCOV	0.328***	0.374***	0.390***	
	(2.94)	(3.42)	(3.72)	
COORD	-0.258***	-0.307***	-0.178***	
	(-4.84)	(-5.73)	(-3.23)	
TAXRATE	-0.002	-0.001	0.005	
	(-0.41)	(-0.19)	(1.27)	
DINFLATE	-0.060***	-0.062***	-0.061***	-0.057***
	(-3.64)	(-3.86)	(-3.97)	(-3.59)
REALINT (-1)	0.032***	0.035***	0.028***	0.022**
	(2.88)	(3.24)	(2.70)	(2.26)
GDPGROW	-0.256***	-0.229***	-0.233***	-0.254***
	(-13.95)	(-12.24)	(-13.07)	(-14.40)
GDPGROW(-1)	-0.033	-0.048**	-0.079***	-0.067***
	(-1.40)	(-2.04)	(-3.45)	(-2.86)
EUROPEN	-0.252***	-0.267***	-0.197***	
	(-4.16)	(-4.28)	(-3.94)	
CANUS		-0.429***	-0.210	
		(-3.00)	(-1.49)	
IREDUM			1.105***	1.327***
			(5.80)	(7.92)
SPADUM			0.923***	0.944***
			(4.11)	(5.30)
Adj. R^2	0.978	0.979	0.981	0.980
S.E.	0.631	0.615	0.584	0.603
N =	394	394	394	394

***** = significant at the 1% level**

**** = significant at the 5% level**

*** = significant at the 10% level.**

Note: t-statistics in parentheses.

Table 4: Decomposition of the Causes of Changing Unemployment Rates into Factors Due to Changing Labor Market Institution (DMICRO) and Macroeconomic Slowdown (DMACRO).

Country	(1) UNEMP 1983 (%)	(2) UNEMP 1994 (%)	(3) DUNEMP (2) minus (1)	(4) DMICRO 1983-94	(5) DMACRO 1983-94
Austria	3.8	3.8	0.0	-0.79	0.79
Belgium	11.1	10.0	-1.1	-0.51	-0.59
Denmark	10.3	8.2	-2.1	-0.26	-1.84
Finland	6.1	16.8	10.7	2.29	13.17
France	8.1	12.3	4.2	-0.34	4.54
Germany	6.9	8.4	1.5	-1.61	3.11
Holland	9.7	7.1	-2.6	-0.89	-1.71
Ireland	14.0	14.3	0.3	-0.69	0.99
Italy	7.7	11.4	3.7	-1.68	5.38
Norway	3.5	5.5	2.0	-0.77	2.77
Portugal	7.8	7.0	-0.8	-1.69	0.89
Spain	17.5	24.1	6.6	-0.64	7.24
Sweden	3.7	9.4	5.7	0.23	5.47
Switzerland	0.9	3.8	2.9	1.63	1.27
U.K.	11.1	9.6	-1.5	-3.80	2.3
Australia	10.0	9.7	-0.3	-0.38	0.80
New Zealand	5.8	8.1	2.3	0.40	1.90
Canada	11.9	10.4	-1.5	0.20	-1.70
U.S.	9.6	6.1	-3.5	0.05	-3.45
Japan	2.7	2.9	0.2	0.25	0.05

Table 5: Measures of Country Income Distributions

		RATIO			
Country	**Year**	**10th/50th**	**90th/50th**	**90th/10th**	**Gini**
Australia	1989	.45	1.93	4.3	0.308
Austria	1987	.56	1.87	3.34	
Belgium	1992	.58	1.63	2.79	0.23
Canada	1991	.47	1.83	3.9	0.285
Denmark	1992	.54	1.55	2.86	0.239
Finland	1991	.57	1.58	2.75	0.223
Franc	1984	.55	1.93	3.48	0.294
Germany	1989	.54	1.72	3.21	0.263
Holland	1991	.57	1.73	3.05	0.249
Ireland	1987	.50	2.09	4.18	0.328
Italy	1991	.56	1.76	3.14	0.255
Japan	1992	.46	1.92	4.17	0.315
New Zealand	1987-8	.54	1.87	3.46	
Norway	1991	.56	1.58	2.8	0.233
Portugal					
Spain	1990	.49	1.98	4.04	0.306
Sweden	1992	.57	1.59	2.78	0.229
Switzerland	1982	.54	1.85	3.43	0.311
UK	1991	.44	2.06	4.67	0.335
USA	1991	.36	2.08	5.78	0.343

Source: Mishel, Bernstein, and Schmitt, 2000.

Figure 1 The Policy Menu			
		LABOR MARKETS	
		Regulate	Flexibilize
MACRO POLICY	Expansionary	A. Progressive consensus	B. United States
	Contractionary	C. Europe	D. Washington consensus
Source: Palley (1998).			

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1. The OECD continually changes its reported measure of standardized unemployment, and as a result the measures used here do not match earlier measures used by Nickell (1997). The current measures are drawn from the OECD's *Economic Outlook* , December 1999.

2. Over the period 1983-94 Spain had average standardized unemployment of 19.15%, while Ireland had average standardized unemployment of 15.32%. The next country after these two was Belgium with an average standardized unemployment rate of 11.33%.

3. Two stage least squares was needed because the ALMPROG variable is defined as the percentage of GDP spent on labor market policies normalized on the unemployment rate. The instrument for this variable was spending as a percent of GDP normalized on the average unemployment rate in 1977-79 (see Nickell 1997, p 64).

4. The statistical significance of REALINT is at odds with results reported by Scarpetta (1995) which have informed much OECD policy analysis. This difference likely stems from differences in the measure of real interest rates. Scarpetta used a measure of world real interest rates based on a GDP-weighted average of domestic long term rates. The current estimate uses the short run country interest rate which is the appropriate rate for purposes of assessing the impact of country macroeconomic policies on country unemployment rates.

5. Though negatively signed, the Canadian openness variable (CANUS) is only significant at the 14% level. This may be because the impact of the U.S. economy on the Canadian economy is fully incorporated in the domestic GDP growth variable.

6. Indeed, given the coefficients in column (2.c) of table 3, a properly constructed system of coordinated wage bargaining and extensive union coverage can lower unemployment. The coefficient of COORD is -0.298, while that of UNIONCOV is 0.415. However, the value of COORD is twice that of UNIONCOV.

7. Ireland suffers especially from having high coverage and low coordination (UNIONCOV = 3, COORD = 2). The U.K., Canada, and New Zealand also suffer, albeit less so (UNIONCOV = 2, COORD = 2).

8. Stanford (2000) uses a similar framework to compare Canada and other industrial economies.

9. These cross-country findings are consistent with the time series data for just the U.S. which show that union density dramatically lowers U.S. income inequality (Palley, 1999).