

STRATIFYING EUROPE:  
REGIONAL INTEGRATION RAISES INCOME INEQUALITY BUT BRINGS  
CONVERGENCE IN THE EUROPEAN UNION \*

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## ABSTRACT

Research on the determinants of inequality has implicated globalization in the increased income inequality observed in many advanced capitalist countries since the 1970s. Meanwhile, a different form of international embeddedness – regional integration – has largely escaped attention. Regional integration, conceptualized as the construction of international economy and polity within negotiated regions, should matter for inequality. This paper offers theoretical arguments that distinguish globalization from regional integration, connects regional integration to inequality through multiple theoretical mechanisms, develops hypotheses on the relationship between regional integration and inequality, and reports fresh empirical evidence on the net effect of regional integration on inequality in Western Europe. Three classes of models are used in the analysis: (1) time-series models where region-year is the unit of analysis, (2) panel models where country-year is the unit of analysis, and (3) analysis of variance to identify how the between- and within-country components of income inequality have changed over time. The evidence suggests that regional integration remaps inequality in Europe. Regionalization is associated with both a decrease in between-country inequality, and an increase in within-country inequality. The analysis of variance shows that the net effect is negative, and that within-country inequality now comprises a larger proportion of total income inequality.

## INTRODUCTION

Recent research on social stratification has implicated globalization in the increased income inequality observed in many advanced capitalist countries (Alderson and Nielsen 2002). Meanwhile, a different but increasingly prevalent form of international embeddedness – regional integration – has largely escaped attention (Beckfield 2006; Boje, van Steenbergen and Walby 1999). Regional integration, conceptualized as the construction of international economy and polity within negotiated regions, should matter for inequality. This paper (1) offers theoretical arguments that distinguish globalization from regional integration, (2) connects regional integration to inequality through multiple mechanisms, (3) develops hypotheses on the relationship between regional integration and inequality, and (4) reports fresh empirical evidence on the net effect of regional integration on inequality in Western Europe.

Total income inequality in Western Europe has a between-country as well as a within-country component: cross-national differences in standards of living and levels of economic development result in large cross-national differences in average household income, while a range of institutional and demographic factors produce different levels of inequality among individuals living in different countries. Indeed, a key objective of regional policy in the European Union is to level out between-country economic inequality by directing development aid to poorer areas. This paper develops the argument that regional integration in Europe should, in fact, decrease economic inequality between EU member states, while simultaneously increasing economic inequality within EU member states. For instance, drawing on economic theory, *economic* integration should reduce between-country inequality through the mechanisms

of declining returns to capital investment and factor price equalization. On the other hand, economic integration should increase within-country inequality by exposing labor unions to increased international competition. Turning to the political dimension, *political* integration should reduce between-country inequality by fostering the adoption of common regional economic policies, but it should increase within-country inequality by constraining European welfare states.

To bring evidence to bear on these questions, data are compiled from several sources, including the Luxembourg Income Study, the International Monetary Fund, the Penn World Table, and the Comparative Welfare States Dataset. The analysis includes a total of 17 Western European countries (the 15 members of the EU as of 1997, plus Switzerland and Norway), and spans the 1960-1998 period. Three classes of models are used in the analysis: (1) cointegrating-regression time-series models where region-year is the unit of analysis, (2) fixed-effects panel models where country-year is the unit of analysis, and (3) analysis of variance to identify how the between- and within-country components of total income inequality change over time. Using three different subsamples of countries and time points (following the limitations of data availability), evidence from the models is combined to estimate the *net effect* of regional integration on total economic inequality in Western Europe.

The results suggest that regional integration has remapped inequality in Europe. Regional integration is associated with a substantial decrease in between-country economic inequality, although, interestingly, political integration seems to outweigh economic integration. At the same time, regional integration accounts for about half of the increase in within-country income inequality observed over the 1973-1997 period,

and again the influence of political integration is pronounced. The analysis also shows that inequality is associated much more strongly with regional integration than with globalization. Bringing this evidence together in an analysis of total inequality shows that regional integration is associated with a net decrease in inequality in Europe, and that within-country inequality now comprises a significantly larger proportion of total income inequality than it did at the beginning of the period. Specifically, the results show that regional integration, rather than globalization, has generated a pattern of income inequality in Western Europe where national stratification structures matter more than international economic differences: the new European income inequality is less about where one lives, and more about where one ranks within increasingly polarized national income distributions.

In what follows, I first develop the theoretical arguments that connect regional integration to income inequality between and within European countries, and review relevant research. Next, I discuss the data and methods used in each stage of the analysis: (1) time-series analysis of trends in between-country income inequality, (2) panel models of income inequality within countries, and (3) an analysis of variance using individual-level income data from the Luxembourg Income Study. Finally, I report the results of each part of the analysis in turn, and conclude by summarizing the findings and considering some of the key implications of this research.

## THEORY AND LITERATURE REVIEW

Theories of markets drawn from economics and sociology offer several explanations for why regional integration should affect inequality in national incomes. I discuss economic

theory first, and then turn to the sociological approaches of world systems theory and political-institutionalist theory. Next, I consider theoretical approaches to within-country national income inequality.

*Classical economic theory and between-country convergence*

Many arguments that regional integration brings convergence come from economic theory. For instance, economic trade theory is especially relevant to European integration because trade liberalization is a central goal of the European Union and its forerunner, the European Economic Community. Many economists argue that regional integration should bring convergence through free trade (e.g. Ben-David 1993, 1996, 2001).

Neoclassical economic theory predicts that, assuming free trade and factor mobility, less-developed economies will grow faster than more-developed ones, as a function of declining returns to capital investment (Barro and Sala-i-Martin 1992). Declining returns to capital implies that both regional economic integration and the overall level of economic development should bring convergence. Economic theory posits multiple additional mechanisms through which trade may exert convergent pressures: (1) the factor price equalization (FPE) theorem says that under completely free trade, internationally homogeneous technology, preferences and products, factor prices in a country with free trade equal world factor prices; (2) trade may allow for international diffusion of technology, raising the technology levels of poorer countries; (3) trade in capital goods can raise GDP per capita in poorer countries by increasing capital stock (Slaughter 1997); (4) trade may reduce the perceived risk of investing in poorer countries (Slaughter 2001). Trade is also one condition under which endogenous growth theory

predicts convergence, in that trade “suffices to narrow the technology gap” between rich and poor trading partners (Eicher 1999:180).

Given the EU’s rapid progress toward a common market and the evidence that the creation of the EU increased the volume of trade among EU countries (Frankel 1997; Rose 2002), many economists have turned to the EU as an empirical site for testing the convergence hypothesis, but the results are inconclusive. Many find evidence of convergence (Armstrong 1995; Ben-David 1993, 2001; Dewhurst and Mutis-Gaitan 1995; Leonardi 1995), while others find mixed convergence and divergence, depending on the period and countries included, and whether convergence is measured as  $\sigma$ - or  $\beta$ -convergence (Marques and Soukiazis 1998; Soukiazis n.d.[a]; Soukiazis n.d.[b]), and still others find or predict divergence (Arestis and Paliginis 1995; Hallett 1981; Slaughter 1997, 2001). There is also a complex debate surrounding the conceptualization and measurement of convergence, and the interpretation of  $\sigma$ - and  $\beta$ -convergence (Sala-i-Martin 1990, 1996a). Briefly,  $\sigma$ -convergence is a decrease over time in the dispersion of real GDP. It is a reduction in the level of inequality in the distribution. On the other hand,  $\beta$ -convergence is a negative relationship between an initial level of real GDP and growth in GDP over some period of time. It is slower growth in richer economies than in poorer ones. I follow Sala-i-Martin (1996a:1328): “ $\sigma$ -convergence studies how the distribution of income evolves over time and  $\beta$ -convergence studies the mobility of income *within the same distribution*” (emphasis mine). As the hypothesis that European integration brings convergence concerns change in the distribution of per capita income rather than mobility within a constant distribution, this study examines  $\sigma$ -convergence.

A key methodological debate within the literature is over the use of population-weighted dispersion measures. Firebaugh (2000) notes that part of the disagreement arises from the different theoretical concerns of economists and sociologists: economists are interested in the convergence issue as a test of growth theories that predict outcomes at the level of the economy, and in such a context there is no reason to give one national economy more weight than others in the calculation of international economic inequality. Sociologists, on the other hand, study convergence for what it says about income inequality between individual people, so in a sociological context there is reason to give large countries more weight than small ones in the calculation of between-country income inequality. These methodological differences are consequential: weighted studies tend to find convergence or stability in the level of world income inequality, while unweighted studies tend to find divergence (Firebaugh 2000).

Of the many studies in the convergence literature, Ben-David's (1993) study on  $\sigma$ -convergence within the European Economic Community through 1985 is one of two that comes close to mine. Ben-David goes further than the others in that he measures rather than assumes economic integration among EU countries, but even this study is limited. Regional import share is the lone measure of integration, only the six original EEC countries are analyzed, and the data extend only to 1985, just before the Single European Act took effect in 1986, and well before the Maastricht Treaty was signed in 1992. Furthermore, Ben-David does not show econometric evidence of an association between economic integration and convergence, and other work has suggested that economic integration cannot be credited with convergence among Denmark, Ireland, and the U.K., since convergence among these countries began well before they joined the

EEC in 1973 (Slaughter 1997). Recently, given the EU's stated goal of reducing inequalities among sub-national regions, some convergence researchers have examined regions within the EU, finding both convergence and divergence (Dunford 1996; Marques and Soukiazis 1998). The literature is limited not only by inconclusive findings, but also, and more importantly, by a failure to econometrically model the relationship between convergence and sensitive measures of economic integration, and an exclusion of the political dimension of regional integration.

Bornschieer, Herkenrath, and Ziltener's (2004) study of convergence and regional integration is the other analysis that comes closest to that reported here. They examine  $\beta$ -convergence, using the growth rate from 1980 to 1998 as the dependent variable, and they find that regional integration – measured as the number of years each state had been a member of the EU, as well as transfers sent/received by the state through the EU's structural fund – is associated with convergence. The Bornschieer et al. study differs from the analysis presented here in that (1) this analysis uses two alternative samples of the EU (the EEC-6 and the EU-15), whereas Bornschieer et al. pool a sample of 33 countries, including non-EU members; (2) this analysis uses all the available data from 1950-1998, whereas Bornschieer et al. use data from two years; and (3) this analysis examines weighted convergence, whereas Bornschieer et al. examine only unweighted convergence.

### *Institutionalism and convergence*

A political-institutionalist approach to convergence and regional integration can be synthesized from the political-cultural approach to markets (Fligstein 2001), neo-institutionalist “world polity theory” (Meyer et al. 1997), and the state-centered theory of

economic development (Evans 1995). World polity theory holds that states enact policy scripts diffused and legitimated by international organizations (Boli and Thomas 1999; Meyer et al. 1997), and the theory can be extended in the context of regional political integration to predict that the production of regional policy scripts affects economic development: states should converge in their development policies as they adopt regional scripts. The state-centered theory of development connects the generation and adoption of regional policy scripts to economic development. Under this scenario, regional political integration brings convergence by isomorphically structuring the state organizations and policies that have been shown to affect economic development (Evans 1995; Evans and Rauch 1999).

Related arguments for convergence come from institutionalist economic sociology: the political creation of region-level understandings should generate increasingly similar economic outcomes (Fligstein 2001). In the language of Fligstein's political-cultural approach (Fligstein 1996, 2001), regional political integration establishes a regional social order (European Union, the regional polity) that permits the establishment of regional markets that contain regional fields. Regional political integration should bring economic convergence as economic actors follow common rules, markets increase in size and complexity, and economic growth stabilizes throughout the region. As this brand of institutionalist economic sociology is relatively new, the implications of the theory for convergence in the European Union have not been tested, although the reinforcing relationship between political and regional integration in the European Union has been examined (Fligstein and Stone Sweet 2002), and the

intensification of market exchange among European countries has been noted (Fligstein and Merand 2002).

*Economic integration, labor, and within-country income inequality*

Turning from between-country income inequality to within-country income inequality, the argument that globalization, defined as “a process (or set of processes) which embodies a transformation in the spatial organization of social relations and transactions ... generating *transcontinental* or *interregional* flows and networks” (Held et al. 1999:16; emphasis added) increases income inequality rests on the idea that the labor/capital balance of power is a key determinant of income inequality. Many take for granted the idea that labor strength reduces inequality (Harrison and Bluestone 1988). Cross-national work shows that globalization weakens labor by creating an international labor pool (Western 1997).

Although globalization and regional integration are distinct processes (Held et al. 1999:5; Kim and Shin 2002), the logic of labor strength as a key mediator can be extended to regional integration. Because economic integration creates a larger labor market and increases wage competition between workers (Alderson and Nielsen 2002; Western 1997), economic integration can be expected to increase income inequality as workers are exposed to the competition of regional labor markets. Although these ideas have not been synthesized in this way and subjected to empirical analysis, there is evidence on the operation of these mechanisms: the formation of the EEC created a regional market by raising the volume of international trade and investment (Ben-David 1993), economic openness raised the likelihood of union decline in the advanced

capitalist countries (Western 1997), and income inequality is lower where labor unions are stronger (Alderson and Nielsen 2002). Also, there is evidence that economic insecurity among workers increases in industries where foreign investment increases (Scheve and Slaughter 2004) – suggesting that workers accurately perceive international competition.

In considering trade openness in the European context, it is important to appreciate that the small, open economies of Western Europe have historically developed institutions to insulate workers against the pressures of international competition (Cameron 1978; Katzenstein 1985). Strong welfare states with generous unemployment benefits and training programs; along with corporatist bargaining that coordinates the state's macroeconomic policy, labor unions' wage demands, and corporations' employment decisions; stabilize the national economy against the vicissitudes of international markets (Katzenstein 1985). These corporatist states (such as Belgium and the Netherlands) are deeply embedded in the regional European economy (Fligstein and Merand 2002). This suggests that the effect of economic integration on income inequality should be dampened at the high levels of economic integration exhibited by small, open corporatist states. In sum, regional economic integration – the expansion of markets to the regional level from the national level – should increase income inequality as workers are exposed to the wage competition of a larger labor pool, but this effect should be dampened or even reversed in the most deeply regionally-integrated economies, because those economies are stabilized by strong welfare states and corporatist institutions.

### *Globalization vs. regional integration*

Although regional integration may affect income inequality in part through market expansion, regional integration and globalization are not equivalent (Huber and Stephens 2001:7; Kim and Shin 2002; Scharpf 1997; Walby 1999). Regional integration and globalization can be conceptualized as alternative *forms* of international embeddedness. There are three key distinctions between these forms. First, regional integration is geographically bound. Globalization is defined most simply and most often as the intensification of cross-border flows, and the borders crossed are any national borders: US-Germany trade is as much globalization as France-Germany trade. But regional integration involves the intensification of international interaction within bounded regions. The geographical boundedness of regional integration is relevant to the effect of economic integration on income inequality because political institutions and human capital stocks should be more similar within than between regions, creating more intense market competition within than between regions.

A second difference between regionalization and globalization is political: regional polities are more strongly institutionalized than the world polity. Regional polities like the European Union can compel compliance with their directives. For instance, the EU required its members to meet budgetary and other requirements before joining the currency union. Only a select few global organizations, such as the World Trade Organization (WTO), have such coercive power, and its power is not nearly as far-reaching across policy domains as the EU's. This is crucial for the mechanism through which economic integration is expected to affect income inequality: Following the institutionalist approach to markets (Fligstein 2001), the establishment of common

understandings, rules, and laws shapes market behavior. This implies that firms considering international expansion should be most likely to expand within the EU (thus submitting labor to increased regional but not necessarily global competition).

Finally, regional integration differs from globalization in that regionalization has progressed further than globalization; indeed, much of what is referred to in the literature as globalization may be characterized as regionalization (Fligstein 2001:196-203) or even Europeanization (Fligstein and Merand 2002). For instance, Fligstein and Stone Sweet (2002) show that nearly half of all world trade occurs within the EU, and Alderson (2004) finds that the vast majority of the “globalization” of production occurs among advanced industrial economies, most of which are located in Europe and North America.

Globalization and European integration are distinct processes, and as such may be related to income inequality in different ways.

In sum, I emphasize that regionalization and globalization are distinct forms of international embeddedness. Regionalization and globalization represent different structures of internationalization. While both involve increasing density of economic and political ties that span international boundaries, regionalization is geographically and politically bounded, and globalization is unbounded. How is it that the two processes could have different effects on income inequality? Building on the work of Alderson (2004) and Western (1997), I argue that economic integration raises income inequality through the expansion of market competition. Given that labor unions are largely organized at the national rather than the regional level (Streeck and Schmitter 1991), the expansion of the market through regional economic integration subjects labor to increased competition, which undermines unionization (Western 1997). If labor markets

expand more readily and labor is more competitive within regions (given that human capital may be more similar within than between regions, firms can more easily exercise control over subsidiaries within than between regions, and political institutions are more similar within than between regions), then regional integration is likely to exert a large effect on labor unions. And, if trade is more regionalized than globalized (Fligstein and Merand 2002), the effects of regionalization to date may outweigh the effects of globalization to date.

*Political integration, the welfare state, and within-country income inequality*

The sociological approach that ties income inequality to the welfare state also has implications for the relationship between integration and inequality. States structure stratification: economic policy produces and reproduces social cleavages (e.g., tight monetary policy restricts inflation and benefits the privileged stratum, while full employment policy benefits the disadvantaged [Boix 1998; Hibbs 1987]). The welfare state shapes stratification directly through income transfers (Korpi and Palme 1998), and ample research shows that the welfare state reduces inequality and poverty (Alderson and Nielsen 2002; Brady 2003; Kenworthy 1999).

If the welfare state dampens inequality, then the question becomes what effect European integration has on the welfare state. Many welfare-state scholars implicate European integration in the retrenchment of Western European welfare states (Huber and Stephens 2001; Korpi 2003). Four arguments link regional integration to welfare-state retrenchment through political mechanisms: first, regional integration constrains welfare spending via policy feedbacks; second, regional integration constrains welfare spending

through the diffusion and adoption of classical- liberal policy scripts; third, regional integration facilitates retrenchment through the politics of blame avoidance; and fourth, regional integration limits national autonomy by tying the economic fortunes of the national economy to the regional economy.

The first argument highlights the so-called “convergence criteria” in the 1992 Maastricht treaty that set the path to Economic and Monetary Union (EMU). The criteria require that state budget deficits be no greater than 3% of GDP, and this requirement initiated proposed welfare-state cutbacks (Huber and Stephens 2001). This can be understood as a policy feedback effect, whereby accession to EMU pressures states to reform social welfare policy (Boje et al. 1999; Pierson 1996; Pitruzzello 1997; Schulz 2000). As Huber and Stephens write, “the convergence criteria contained in the Maastricht accord pressed further austerity on all member governments” (2001:234). Likewise, although Pierson (2001) is skeptical of the argument that globalization is linked to welfare-state retrenchment, he does argue that EMU is one force that pressures European countries toward austerity.

The second argument, that the EU diffuses market-oriented policy scripts, is more general. The EU is a market-led project where “negative integration,” or the removal of barriers to trade and market regulations, surpasses “positive integration,” or regional regulations that correct market dysfunctions (Scharpf 1996, 1999). Very generally, the EU advances market-centered policies, such as deregulation, privatization, tax competition, and “market compatibility requirements” (Pierson and Leibfried 1995; Scharpf 1997). Huber and Stephens cite “the move to financial deregulation that had begun in the early 1970s [that] was essentially completed in western Europe by the

beginning of [the 1990s] due to the Europe 1992 [single market] project” as a force for retrenchment in the 1990s. Scharpf calls this dynamic “regulatory competition,” and he specifically cites political integration through the European Commission and the European Court of Justice as forces that bring EU member states into this competition. More broadly, the EU has established several mechanisms for the generation, diffusion, and adoption of common policy objectives, including, most recently, the Open Method of Coordination (Hemerijk 2005).

The third argument is that regional integration facilitates welfare-state retrenchment through the politics of blame avoidance. Pierson (1996) subtly argues that under the “politics of retrenchment” – whereby strategic political actors seek to avoid blame for rolling back popular welfare programs – EU member states can blame the EU for retrenchment. This suggests that retrenchment may go further inside the EU than outside of it since non-EU member states may be unable to shift blame so easily. To anticipate the methodological details discussed below, both EU and non-EU states are included in the analysis reported in this paper.

A fourth argument that links regional integration to the welfare state identifies a logic that ties policy options to economic forces. Regional *economic* integration may constrain the welfare state by placing common economic pressure on all members of a regional economy. For instance, national welfare states may find it difficult to maintain policies to promote full employment when intensified trade ties their economic fortunes to developments in other national economies within the integrated regional economy (Korpi 2003:603).

## DATA AND METHODS

Any analysis of European integration is complicated by the changing composition of the European Union. The forerunner to the EU, the European Economic Community, was established in 1957 by treaty among Belgium, France, Germany, Italy, Luxembourg, and the Netherlands, but since then the EU has added nine members: Austria, Denmark, Finland, Greece, Ireland, Portugal, Spain, Sweden, and the United Kingdom. Because the variables used in the analysis would be affected by the changing membership of the EU, the time-series analysis of between-country inequality analysis uses two samples: (1) the 15 countries that are currently members of the European Union, and (2) the 6 countries that were members of the original European Economic Community. Because international trade data are reported for the Belgium-Luxembourg Economic Union rather than separately for Belgium and Luxembourg until the late 1990s, I calculated all variables for the Belgium-Luxembourg Economic Union; thus, the EU-15 sample includes 14 economies and the EEC-6 sample includes 5 economies.

### *Time-series analysis*

The dependent variable for the time-series analysis is dispersion in real GDP per capita. Data come from the Penn World Table, which provides purchasing-power-parity (PPP) estimates in 1996 dollars for the period 1950-2000 (Heston et al. 2002).

I use three common measures of dispersion: the coefficient of variation (standard deviation divided by the mean), Gini coefficient, and standard deviation of logarithms. The coefficient of variation and the standard deviation of logarithms are the two most common measures of  $\sigma$ -convergence. These unweighted measures were calculated in

Stata using the *inequalr* add-on command (Kolenikov n.d.; Whitehouse 1995). I also use two weighted measures of dispersion, the coefficient of variation and standard deviation of logarithms, following Firebaugh (Firebaugh 1999:1608).

Consistent with conceptualization of regional integration as having both political and economic dimensions (Fligstein and Stone Sweet 2002), the independent variables are political and economic integration. Following Fligstein and Stone Sweet (2002), political integration is measured as the number of cases sent from national courts to the European Court of Justice. This measure improves on measures of political or formal integration used in previous work (typically, an indicator variable for “member of the EU” where the unit of analysis is country, or “establishment of the EU” where the unit of analysis is region or world). Under Article-177 of the 1957 Rome Treaty, national courts forward cases involving EU law to the European Court of Justice, the judicial body with final, binding authority to interpret EU law. Thus, the number of cases forwarded from member states of the EU in a given year is an indicator of claims made on laws of the regional polity by members of national polities. I argue that an increase in the cases sent to the regional court indicates increasing integration of national polities with the regional polity, and deepening institutionalization of the regional polity. A complete time series of observations on this variable is available through 1997; data come from Stone Sweet and Brunell (1999).

I also use an alternative measure of political integration: the number of directives adopted by the European Union in a given year. In the EU, the European Commission is the body that has responsibility for advancing the adoption of common policies, and monitoring progress toward integration. The Commission also has the authority of

legislative initiative, and proposes directives to the Council of Ministers. The Council of Ministers then decides, sometimes in cooperation with the European Parliament, whether to adopt directives. If a directive is adopted, the goals of the directive are binding on the member states, although the member states are free to determine the precise legal mechanism of compliance. Member states comply with EU directives through the adoption of national implementing measures. If a member state fails to comply, the European Commission can bring suit against it in the European Court of Justice under the provisions of Article 169 of the Rome Treaty. Thus, the number of directives adopted in a given year is one measure of the construction of the European polity. The data form a time-series, where region-year is the unit of analysis, and the data come from the European Union's CELEX database (European Communities 2004). The correlation between these two measures of political integration is .90.

Economic integration is measured as exports to EU countries as a percentage of total exports. Intraregional exports – or the regional trade share – have been used in previous work as a measure of economic integration (Fligstein and Stone Sweet 2002; Frankel 1997). This measure taps the extent to which the national economies of the EU are embedded in exchanges with other EU countries, and as such this indicator of economic integration has face validity. Economic integration increases if countries within the region trade with each other more, and economic integration decreases if countries within the region trade with each other less, as a proportion of their total trade. Complete time series of observations on exports by country are available for all EU countries except Austria (which is missing data for the 1957-1959 period) through 1999;

the data for Germany are for West Germany through 1990. Data were kindly provided in dyadic form by Andrew Rose and come from the IMF's *Direction of Trade CD-ROM*.

I also use an alternative measure of regional economic integration, the regional import share. Imports from the EU as a percentage of total imports is calculated by dividing the sum of imports from EU members by the sum of total imports by EU members in a given year. Data are from the same source as above. Results for the imports measure are substantively identical to those reported in the tables.

I also control for the EU's total GDP per capita, to assess the hypothesized effect of economic development. To construct the measure of GDP per capita at the EU level, I divide the sum of GDP for all the EU countries by the sum of the populations of all the EU countries. EU GDP per capita is coded in thousands of 1996 US dollars. Data are from the Penn World Table (Heston et al. 2002).

I use time-series models to estimate the relationship between dispersion in GDP per capita at year  $t$  and political and economic integration at year  $t-1$ . OLS regression can be used with trending time-series variables when the variables are *cointegrated*. Cointegrated time-series meet two conditions: (1) they are integrated of the same order – for instance, if a series is stationary after taking first-differences, it is integrated of order 1, denoted  $I(1)$ ; (2) the residuals from a levels-on-levels regression of two or more cointegrated time-series are stationary – that is, they are  $I(0)$ . Given that the time-series variables used in this analysis satisfy the conditions for cointegration, I follow Hamilton (1994) and estimate OLS regressions using the untransformed time-series in their original levels. By Dickey-Fuller tests for unit roots, the analysis variables are integrated of order 1, thereby satisfying the first condition for cointegration. By Engle-Granger tests, the

second condition for cointegration, that the residuals from the cointegrating regression be stationary, or  $I(0)$ , is also satisfied in many of the models. As a robustness check, I also estimate OLS models with an autocorrelation-consistent covariance matrix estimator, the Newey-West estimator (Newey and West 1987). This model is designed to account for serial autocorrelation in the residuals. As there are some OLS models where the second cointegration condition is not satisfied, the fact that the Newey-West results are consistent with the OLS results is reassuring. I discuss the Newey-West results in the text, but for the sake of space, these models are not shown.

The analysis proceeds as follows. First, I perform Dickey-Fuller unit root tests for stationarity to assess whether the variables are  $I(1)$ . Next, I estimate regressions of each dependent variable on the one-year lags of the political integration measure and the economic integration measure. Following estimation of the models, I then check the residuals for stationarity, using the Engle-Granger test, with critical values from MacKinnon (1991). For each model, I report the coefficient estimates, standard errors, R-squared, and Engle-Granger test statistics. Where the Engle-Granger test statistic is marked with an asterisk, the test is evidence for cointegration (that is, a significant test statistic means that the null hypothesis of nonstationarity in the residuals can be rejected).

#### *Panel models: fixed- and random-effects*

Turning from the models of between-country inequality to the models of within-country inequality, the dependent variable becomes the Gini coefficient, a common measure of inequality that varies from 0 to 1, where 0 is perfect equality and 1 is perfect inequality (Firebaugh 1999). The primary data source is the Luxembourg Income Study

“Key Figures” database (LIS 2003). The LIS calculations of the Gini coefficient are based on post-tax and post-transfer incomes. As a robustness check, I also use data from another popular database, the “high-quality” data published by Deininger and Squire (1996, 2003). The Luxembourg Income Study contributes 48 country-years of observations for which data are also available on the key independent variables, and the larger Deininger and Squire dataset contributes 100 observations for which data are also available on the key independent variables. An important difference between the LIS and Deininger and Squire datasets is that the LIS data tend to come from later years (the average year is 1988, compared to 1982 for the Deininger and Squire data).

As in the time-series analysis, the key independent variables are political and economic integration. The difference here is that the unit of observation is the country-year, rather than the region-year. Again following Fligstein and Stone Sweet (2002), political integration is measured as the number of cases sent from national courts to the European Court of Justice. This measure improves on measures of political or formal integration used in previous work (typically, an indicator variable for “member of the EU” where the unit of analysis is country).

Economic integration is again measured as the percentage of a country’s total exports that go to European Union countries. Because the EU has expanded from 6 members in 1957 to 15 members by 1995, I use two versions of this intraregional trade share measure: in one version, the EU is defined as the 6 original members of the EU, and in the other version, the EU is defined as the 15 members of the EU as of 2000. These measures tap the extent to which the national economies of the EU are embedded in exchanges with other EU countries, and as such these indicators of economic

integration have face validity. Economic integration increases if countries within the region trade with each other more, and economic integration decreases if countries within the region trade with each other less, as a proportion of their total trade. The EU-15 measure more faithfully reflects European integration since an aspect of European integration is the expansion of the EU, but I also use the EEC-6 measure as a robustness check, and I find that the results are consistent.

The analysis includes controls for year, real GDP per capita, social security transfers, and outflow of foreign direct investment per worker. Year is included in the models to control for the linear increase in income inequality in these countries, and to guard against spurious association among variables with common trends. Year is coded as follows: 1950=1, 1951=2, ..., 1997=48. Real GDP per capita is included to control for the strong relationship between development and inequality demonstrated in previous work (Nielsen and Alderson 1995). As above, GDP data come from the Penn World Table (Heston, Summers, and Aten 2002). Real GDP is coded in thousands of 1996 dollars. The measure of social security transfers as a percentage of GDP is incorporated into the models because welfare state effort has been shown to reduce inequality and poverty (Kenworthy 1999; Korpi and Palme 1998). Data come from the OECD's *Historical Statistics* (2001) and *Statistical Compendium* (2003). Finally, outflow of foreign direct investment (FDI) per worker is included to control for the role of globalization in the U-turn on inequality (Alderson and Nielsen 2002). FDI data come from the IMF's International Financial Statistics (IMF various years), and labor force data come from the OECD (1995, 1998, various years). Consistent with previous work, this variable is logged.

The data on within-country inequality and its predictors form an unbalanced panel, with countries contributing different numbers of observations, depending on data availability. OLS estimation is often inappropriate for use with panel data, since the errors are likely to be correlated within panels, and the unmeasured heterogeneity that causes this correlation may bias parameter estimates (Greene 2000). Two common solutions to this problem are the random-effects GLS model (REM) and the fixed-effects OLS model (FEM). The REM adjusts for within-panel error correlation by including a normally-distributed panel-specific error term; therefore, the REM is often thought of as a better choice if the data reflect a random sample. The REM also preserves both between-country and within-country variation. This is in contrast to the FEM, which differences away all between-country variation in subtracting each observation from the within-country mean. The FEM is often thought of as a better choice where the analyst has data on the entire population of interest. It should also be noted that the REM estimator does not require a large number of observations per country for consistency, whereas the FEM does. Because the number of years in the data is small relative to the number of countries, and because much of the meaningful variation in income inequality is between-country rather than within-country, for this study the REM is more appropriate than the FEM. However, as a robustness check, I also estimate fixed-effects models. The fixed-effects models provide a stringent test of the hypothesis that regional integration affects income inequality, given that the associations between the regional integration covariates and income inequality are estimated net of all unmeasured between-country effects. The fixed-effects model is equivalent to a model with indicator variables for each country.

The small size of the sample raises important methodological issues. One problem is that there are insufficient degrees of freedom necessary to estimate coefficients for all the controls that could conceivably be drawn from the literature. Since the central objective of this study is to assess the relationship between regional integration and national income inequality, it is not necessarily appropriate to build a full synthetic model of income inequality, but because it is necessary to include a few key controls, I employ the following strategy to deal with the small-N problem: the baseline model has only four covariates (political integration, the linear and squared terms for economic integration, and year), each of the other three controls is added sequentially, and then a model is estimated with a full complement of controls. Another methodological issue is outliers, which can be especially problematic in small-N studies. Examination of residual-versus-predicted value plots suggests outliers are not a problem here, as no residual is more than 2.6 standard deviations from the regression line. A final methodological concern is that standard errors of coefficient estimates typically decrease as sample size increases. With this practical tendency in mind, I use the .10 and .05 cutoffs for significance tests.

*Total income inequality: analysis of variance in household incomes*

To address the crucial question of how between-country and within-country changes in income inequality combine to produce a net effect on total income inequality, I use individual-level income data from the Luxembourg Income Study to conduct an analysis of variance (ANOVA) at two time periods: circa-1980 and circa-2000 (the availability of income data dictates the periods). The analysis of variance shows what

proportion of the total income inequality in the EU is between-nation, and what proportion is within-nation. I also calculate the Gini coefficient for the EU at both time points. A comparison of the Gini coefficients indicates whether total income inequality has risen or fallen, while the ANOVA shows how the relative contributions of between- and within-nation inequality to total inequality have changed.

I use the latest and earliest available data from 13 EU member states: Austria (1987 and 2000), Belgium (1985 and 2000), Denmark (1987 and 1992), Finland (1987 and 2000), France (1984 and 1994), Germany (1981 and 2000), Ireland (1987 and 2000), Italy (1986 and 2000), Luxembourg (1985 and 2000), Netherlands (1983 and 1999), Spain (1980 and 2000), Sweden (1981 and 2000), and the United Kingdom (1979 and 1999). Unfortunately, income data are not available from the LIS for Greece or Portugal (as in the analysis of within-country income inequality). This means that the proportion of the total income inequality that is between-nation will be understated in the analysis of variance.

The LIS reports data on total disposable income, net of all income sources, taxes, and transfers, in current national currency units (LIS 2003). To make the data comparable, I first deflated the income data by the relevant consumer price index, where the reference year was set to 1995 (CPI data come from the United States Bureau of Labor Statistics [2005], except Luxembourg's CPI, which is from the International Monetary Fund [2005]). I then used exchange rates from the Penn World Table (Heston et al. 2002) to convert the incomes to a common currency (U.S. dollars).

In calculating measures of income distribution such as the Gini coefficients used here, the Luxembourg Income Study uses top- and bottom-coding to reduce the influence

of outlying observations, an equivalence scale to approximate individual incomes from household-level income data, and sampling weights that allow the estimation of population-level statistics. I follow LIS practice, with the exception that I use the equivalence scale preferred by Gustafsson and Johansson (1999). The analysis for the earlier period includes 115,565 observations (Austria contributes 11,147; Belgium, 6,447; Denmark, 12,382; Finland, 11,863; France 12,656; Germany, 2,727; Ireland, 3,292; Italy, 8,020; Luxembourg, 2,008; Netherlands, 4,738; Spain, 23,917; Sweden, 9,592; United Kingdom, 6,776). The analysis for the later period includes 112,243 observations (Austria contributes 2,362; Belgium, 2,359; Denmark, 12,829; Finland, 10,421; France 11,289; Germany, 10,982; Ireland, 2,447; Italy, 7,925; Luxembourg, 2,418; Netherlands, 4,971; Spain, 4,772; Sweden, 14,491; United Kingdom, 24,977).

## RESULTS

I begin by discussing the results of the time-series analysis of between-country inequality. Table 1 shows results from cointegrating regressions of the coefficient of variation in GDP per capita on two measures of political integration, one measure of economic integration, and the measure of the level of economic development in the EU, for the six original members of the EU. Model 1 shows that political integration (the number of Article-177 cases forwarded to the ECJ for preliminary references) has a statistically significant negative association with the coefficient of variation in per-capita income. This is consistent with the hypothesis drawn from the political-institutionalist approach that political integration brings economic convergence. Model 2 shows that this result holds for the second measure of political integration, the number of directives

adopted by the EU. Both associations are strong: the standardized coefficient for the Article-177 cases measure is  $-0.824$ , and the standardized coefficient for the directives measure is  $-0.846$ .

Turning to the economic covariates, Model 3 shows that the measure of economic integration, exports from EU economies to EU economies as a percentage of total exports from the EU, is also negatively associated with the coefficient of variation in GDP per capita. This supports the hypothesis drawn from economic theory that regional economic integration brings convergence of national economies. However, the size of the association between economic integration and convergence is smaller than that between political integration and convergence: the standardized coefficient for economic integration is  $-0.654$ . More importantly, the economic integration series is not cointegrated with the dispersion series: the Engle-Granger test does not fall below the 5% critical value of  $-3.469$  (or the 10% critical value of  $-3.135$ ). This suggests that the residuals from this regression are serially autocorrelated, and the results cannot be interpreted as evidence that economic integration and economic convergence have a long-run relationship.

Model 4 shows that economic development is also associated with convergence: the coefficient for EU GDP per capita is negative and statistically significant at the 5% level. This is consistent with the approach to convergence drawn from orthodox economic theory. While the association is strong (the standardized coefficient is  $-0.865$ , the Engle-Granger test statistic ( $-3.244$ ) just falls below the 10% critical value ( $-3.135$ ). This is marginal evidence that the series are cointegrated, and suggests that economic development and convergence among the EEC-6 may not share a long-run relationship.

Indeed, in models that include GDP as a control, the Engle-Granger test is never significant, even at the 10% level, suggesting that non-cointegration of the GDP series may “swamp” the cointegration of the other series (results for analyses of the Gini coefficient and the standard deviation of logarithms are consistent).

OLS models with standard errors estimated by the Newey-West autocorrelation-consistent covariance matrix estimator (ACCME) give substantively identical results to those shown. Both measures of political integration, the measure of economic integration, and GDP show statistically significant negative associations with dispersion in GDP per capita among the EEC-6.

Do these findings hold for the EU-15? Table 2 shows that to some degree, they do. In terms of the bivariate associations, the results are identical: both measures of political integration, the measure of economic integration, and the measure of economic development are significantly and negatively associated with dispersion in GDP per capita among the EU-15. The magnitudes of the associations are actually larger than those shown in Table 1, and the increase in the size of the economic integration coefficient is especially large: it increases from  $-.654$  to  $-.901$ . However, the evidence for cointegration of these series is much weaker for the EU-15 than for the EEC-6. The only series that is cointegrated with convergence is the directives series. In this cointegrating regression (Model 2), the Engle-Granger test statistic ( $-3.159$ ) just barely surpasses the 10% critical value ( $-3.135$ ).

Results from OLS models with Newey-West standard errors are substantively identical to those shown in Table 3.2: the number of Article-177 cases, the number of EU

directives, EU exports, and EU real GDP per capita are significantly and negatively associated with dispersion in real GDP per capita among the EU-15.

Conclusions of convergence studies often depend on whether the measure of income dispersion is unweighted or weighted by population. Is the dramatic income convergence in the European Union shown above in the unweighted dispersion measures also seen in weighted measures of dispersion? Table 3 shows results from time-series models of weighted dispersion in real GDP per capita among the EEC-6. The results for weighted dispersion are substantively identical to those for unweighted dispersion shown in Table 1. Model 1 indicates that the number of Article-177 cases has a strong and statistically significant negative association with dispersion (the standardized coefficient is  $-.816$ ), and the Engle-Granger test suggests that the series are cointegrated. Model 2 shows the same finding for the second measure of political integration: the negative association between the number of EU directives and weighted dispersion in per-capita GDP is large (the standardized coefficient is  $-.827$ ) and statistically significant, and the series are cointegrated.

Once again, the results are somewhat weaker for economic integration (Model 3). Although the negative association between EU exports and weighted dispersion in GDP per capita is statistically significant, it is smaller (standardized coefficient =  $-.607$ ) than in the political integration models, and the Engle-Granger test shows that the series are not cointegrated.

Model 4 is a regression of weighted dispersion on EU GDP per capita. Again the results mirror those shown in Table 1: while there is a significant negative association between dispersion in GDP per capita and the level of GDP per capita, there is only weak

evidence that the series are cointegrated. The Engle-Granger test statistic of -3.381 just falls below the 10% critical value of -3.135. As above, regressions that include GDP per capita as a control are not cointegrated.

OLS estimates combined with Newey-West standard errors produce results that are substantively identical to those shown in Table 3: in all four models, the negative association between the respective covariate and weighted dispersion in real GDP per capita among the EEC-6 reaches statistical significance at the 5% level.

Table 4 shows results from models of weighted dispersion among the EU-15 member states. The Engle-Granger tests suggest that no independent variable is cointegrated with weighted dispersion, as all test statistics (-2.567, -2.896, -2.571, and -2.532, respectively) fail to reach even the 10% critical value of -3.135. This indicates that the residuals from the cointegrating regressions are serially correlated. In OLS models with Newey-West standard errors that correct for this autocorrelation, the coefficients retain their statistical significance at the 5% level.

Turning to the results for within-country income inequality, Table 5 shows results from random-effects models of national income inequality that control only for year of observation. Model 1 includes just the year covariate, in order to obtain a baseline estimate of the trend in income inequality. The trend is statistically significant and positive, consistent with rising income inequality in Western Europe. Model 2 includes the political integration covariate, and the results are consistent with the argument that political integration raises income inequality: the coefficient estimate is positive and statistically significant.

To gauge the substantive significance of this effect, I used the estimated regression equation to simulate the expected change in income inequality for an increase from the minimum level of integration to the maximum level of integration (in this sample, the minimum number of Article-177 cases is 0, and the maximum is 56). Such an increase in political integration is expected to raise the Gini coefficient from 27.55 to 30.64, or about .8 of a standard deviation. This is a substantial change. For instance, the difference between Germany's and Norway's average Gini coefficients is also about .8 of a standard deviation. But political integration alone does not explain the trend: the coefficient estimate for the year term decreases in magnitude from .133 to .105 but remains statistically significant after political integration is incorporated into the model.

Model 3 includes the measure of regional economic integration, the percentage of total exports from a national economy that is sent to the European Union (specifically, the EU-15). This model also includes the square of this measure, to assess the hypothesis that the effect of economic integration decreases in the most regionally-integrated economies. The results are consistent with the argument that regional economic integration raises income inequality, and that this effect is attenuated at high levels of economic integration. The inflection point, where the effect equals zero, is about 60%, indicating that regional economic integration raises income inequality where exports to the EU constitute less than a distinct majority of total exports. For instance, an increase in economic integration from the minimum level found in these data, 44%, to the inflection point, is associated with an expected increase in the Gini from 24.89 to 28.69, or about one standard deviation. This is similar to the increase in income inequality that the U.K. observed over this period. And, increasing economic integration from 53% to

60% (approximately Sweden's change) yields an expected increase in the Gini from 27.83 to 28.69, or about .22 standard deviations.

Table 6 shows results from fixed-effects models that control for all unmeasured country-specific effects. Again there are three models: a baseline model that estimates the trend, a model that adds political integration, and a model that adds economic integration. The results are consistent with those shown in Table 5, except that the effect of political integration does not reach significance in the second model. In Model 3, which includes both political and economic integration, the political integration coefficient is statistically significant and approximately the same size as in the random-effects model (.062 vs. .055). The economic integration coefficients are also slightly larger in the fixed-effects model (1.836 vs. 1.639 for the linear term and -.015 vs. -.013 for the squared term).

The evidence shown in Tables 5 and 6 suggests that regional integration matters for national income inequality. Consistent with the argument that political integration raises income inequality by constraining the welfare state, the association between the Article-177 cases measure of political integration and the Gini coefficient is positive and statistically significant. Consistent with the argument that economic integration raises income inequality by exposing labor to international markets, the export share measure of economic integration is positively and significantly associated with the Gini coefficient, and this association does, as expected, decrease at high levels of integration. But do these estimates of the effects of regional integration hold up to controls?

Table 7 shows results from random-effects models that control for year, economic development (real GDP per capita), the welfare state (spending on social security

transfers as a percentage of GDP), and globalization (capital flight, or outflow of foreign direct investment per worker). Model 1 introduces GDP per capita, and the results suggest that regional integration affects income inequality net of economic development. The effect of economic development itself is significantly negative, suggesting that increasing national wealth decreases income inequality. This negative coefficient is somewhat surprising in light of the U-turn literature, but it must be remembered that the model also controls for year, and year and GDP per capita are highly correlated ( $r = .77$ ). Since these covariates are in the model as controls, and it is not the objective of this analysis to disentangle their effects, this collinearity is not especially troublesome.

Model 2 introduces spending on social security transfers, and the results suggest that regional integration affects income inequality net of the welfare state. It is surprising that the effect of welfare spending is not itself significant. Model 3 introduces FDI outflow, and the results suggest that regional integration affects income inequality net of globalization (results are identical in models that replace FDI with economic openness).

Finally, Model 4 includes all the controls, and once again the results for regional integration are consistent with those shown in Table 5. It is noteworthy that the coefficient estimates for the regional integration covariates retain not only their statistical significance, but also their size, across the various model specifications (including models that add unemployment, corporatist wage coordination, and union density to the model). Another notable finding is that FDI outflow does not significantly affect income inequality in either Model 2 or Model 4. This suggests that globalization may not matter for income inequality, net of regionalization.

Table 8 shows results from fixed-effects models. The results for regional integration are consistent with those shown in Table 7: across the models, the effect of political integration is positive and statistically significant, and the effects of the economic integration terms are statistically significant (positive and negative, respectively). Surprisingly, the effect of year is no longer significant. Indeed, none of the controls reaches significance.

I have argued that the positive effect of economic integration on income inequality is attenuated at high levels of integration because the most deeply-integrated economies have developed institutions that insulate labor from the pressures of international competition, but the analysis so far has demonstrated only that the effect of economic integration does in fact decrease at high levels – not why it does so. Empirical assessment of the argument that the impact of economic integration varies according to the strength of the welfare state and the level of corporatism is straightforward, and can be accomplished by introducing interaction terms. If my argument is correct, we would expect negative interactions between economic integration and both welfare effort and corporatism.

Table 9 shows results from models that introduce these interaction terms. Model 1 includes an integration-by-corporatism interaction, where the measure of corporatism is Kenworthy's 11-item scale from the *Comparative Welfare States Data Set* (Kenworthy 2003; Huber et al. 2004). Because of missing data on this key measure, this model uses just 36 observations. The results are consistent with the argument that the effect of economic integration is attenuated in corporatist countries: where corporatist bargaining insulates labor against some of the pressure of international competition, the effect of

economic integration is reduced. In other words, exposing labor to a regional market fails to have the expected effect of raising income inequality – where corporatism protects labor. Model 2 includes a regional integration-by-social security transfers interaction. These results are inconsistent with those from Model 1: the economic integration effect is not significant, and neither is the interaction term (nor are they jointly significant by an F-test). Model 3 tests this hypothesis using an alternative, programmatic rather than spending-based, measure of the welfare state, Lyle Scruggs’ newly-available decommodification index (Scruggs 2004). The results show that economic integration raises income inequality, but this effect is significantly weaker in highly-decommodifying welfare states.

Table 10 shows results from fixed-effects models that include these interaction terms, and the results are generally consistent with those in Table 9, except for Model 2. In the random-effects estimation of Model 2, the main effect of economic integration and its interaction with social security transfers were nonsignificant, but in the fixed-effects estimation of Model 2 shown in Table 10, these effects are statistically significant. In all three models, the association between economic integration and the Gini coefficient is positive and statistically significant, and the interaction term for economic integration and the welfare state is significant and negative. This suggests that the effect of economic integration on income inequality is buffered in strong welfare states and corporatist political economies.

To evaluate the robustness of these results, I re-estimated the models shown in Tables 5-10 using the “high-quality” dataset on income inequality published by Deininger and Squire (1996). These data have been used in many cross-national studies

of income inequality (see Moran [2003] for a review), but the dataset has become the object of debate in the literature, with some authors questioning its quality (Atkinson and Brandolini 2000). While it is important to acknowledge the skepticism directed toward the Deininger and Squire data, the dataset nevertheless provides an unusual opportunity to cross-validate the results of this analysis. Generally, the results from models estimated using the Deininger and Squire data are consistent with those from the LIS data. The exception is that the effect of political integration is not significant in these models. This might be because the Deininger and Squire data tend to come from earlier years than the LIS data (the data exhibit the clear U-turn noted in recent studies of income inequality), and it is possible that the effect of regional political integration intensified with the acceleration of European integration in the 1990s. For instance, if the Maastricht convergence criteria put downward pressure on welfare spending, and this downward pressure raised income inequality, this effect would not appear in the data before the Maastricht treaty was signed in 1992.

The results for economic integration, however, are substantively identical using the Deininger and Squire data. In random-effects and fixed-effects models that control for the time trend (with these data, a second-order polynomial is necessary to capture the U-turn) and political integration, the linear term for economic integration is always positive and statistically significant, while the squared term is always negative and statistically significant. This is also the case in models that include the controls in Tables 7 and 8 (the only control that reaches significance is the curvilinear year trend). In models that include interaction effects for economic integration by the welfare-state and corporatism measures (as in Tables 9 and 10), the economic integration main effect is

always positive and statistically significant, while its interaction term is always negative and statistically significant. That the results for economic integration can be replicated using a different dataset suggests that the results shown here are robust.

The finding that regional integration is associated with a decrease in between-nation income inequality (convergence) but an increase in within-nation income inequality raises the question of the relationship between regional integration and *total* income inequality in the European Union. As regional integration has advanced, between-nation inequality has declined, and within-nation inequality has grown, how has *total* income inequality changed?

As detailed above, I address this critical question with an analysis of variance (ANOVA), using individual-level income data from 13 countries at two time points, circa 1980 and circa 2000. I also calculate Gini coefficients for the pooled samples, to estimate the trend in total income inequality, ignoring country of residence. Among these 13 European countries, total income inequality has declined: the Gini coefficient for the earlier period is .393; for the later period, it is .330. Results from the analysis of variance show that between-nation inequality among these 13 nations accounts for 27% of the total variation in income inequality in the earlier period, but just 10% in the later period. This suggests that the sharp convergence of per-capita incomes among EU countries discussed above outweighs the increase in national income inequality shown above – even though within-nation inequality contributes more to total income inequality than between-nation inequality. The reason for this is that the *change* in between-nation inequality was much larger than the *change* in within-nation inequality. This suggests that regional integration, on the whole, has decreased total income inequality. The

decrease in total income inequality would probably be even larger if the analysis included Greece and Portugal. (Data from the Penn World Table on real GDP per equivalent adult are suggestive. Without Greece and Portugal, the EU average, in 1996 U.S. dollars, is 27,443, with a range of 19,527 to 48,481. With Greece and Portugal, the EU average is 26,023, with a range of 16,211 to 48,481. Greece's real GDP per equivalent adult is 16,211; Portugal's is 17,372.

## SUMMARY AND DISCUSSION

This paper has examined the consequences of regional political and economic integration for income inequality in Western Europe. Regional integration is associated with economic convergence among European Union member states, and increased income inequality within national societies. A synthetic institutionalist approach explains the economic convergence effect as a result of the diffusion of common policies concerning economic development and the diffusion of common rules to guide market behavior. It explains the positive effect of regional integration on national income inequality by highlighting the consequences of economic integration for labor, and of political integration for the welfare state.

The evidence that regional integration is associated with convergence is based on a time series analysis of dispersion in real GDP per capita for the European Union member states. Cointegrating time-series regressions show that there is evidence of a strong long-run relationship between political integration and economic convergence among the original six members of the European Union: Belgium, France, Germany, Italy, Luxembourg, and the Netherlands. This association holds for two measures of

political integration: the number of cases forwarded to the European Court of Justice under Article 177 of the *Treaty Establishing the European Community*, and the number of directives adopted by the European Council in a given year. One especially interesting finding is that the relationship between political integration and economic convergence is stronger than that between economic integration and economic convergence, suggesting that institutional forces may actually outweigh markets in bringing national economies closer together. This is in line with arguments from economic sociology that the institutions established by political actors such as states and international organizations are essential for the understanding of markets: “the essential insight we [economic sociologists] have to offer is that to fully understand economic activity we need to recognize that it is embedded in both *social structures* (e.g., networks) and *institutions* (e.g., rules, meaning systems) and that both have important effects on economic activity that are often neglected by orthodox economists” (Campbell 2003:1-2). The evidence clearly shows that it is the construction of the regional polity that matters as much as, if not more than, the construction of regional markets and the process of economic development, for economic convergence.

The evidence that regional integration raises income inequality comes from a panel analysis of data from 12 Western European countries for the 1973-1997 period. The dependent variable for the analysis is the Gini coefficient, a common indicator of national income inequality. Regional integration has a substantively and statistically significant positive effect on the level of income inequality. Both political integration (measured by the number of Article-177 cases forwarded to the ECJ by national courts) and economic integration (measured by exports to European Union countries as a

percentage of total exports) raise income inequality, and both of these effects are dampened in generous welfare states. These results hold for random-effects GLS as well as fixed-effects OLS models, and they hold for models that include controls for union density, corporatism, unemployment, economic development, social welfare spending, decommodification, and globalization. That regional integration affects income inequality net of globalization is an especially important finding, as it suggests that regionalization and globalization are distinct processes that may have different effects. Regionalization is not a simple proxy for globalization.

Bringing these results together with an analysis of individual-level income data on 13 Western European countries for the early 1980s and the late 1990s, there is evidence that the convergence effect of regionalization on between-country income inequality has outweighed the polarizing effect of regionalization on within-country inequality. National stratification structures have grown less equal, while national economies have converged, and the convergence has been stronger. Total income inequality in the EU has declined, and in this way it can be concluded that regional integration has had a negative net effect on total income inequality. However, it must be stressed that within-country income inequality now makes up about 90% of total income inequality in Western Europe, so the future of income inequality, especially among the EU-15, will depend most on what happens to national systems of inequality. If regional integration continues to polarize national income distributions, this negative net effect could easily reverse.

It should be noted that this study has several limitations. As a function of data availability, each of the three components of the analysis use slightly different samples.

For example, the analyses of within-country and total income inequality exclude Greece and Portugal. Also, the analysis does not extend past 1998, due to missing data on some of the key variables. As there is evidence of further welfare retrenchment in the late 1990s, this is an important period (Korpi 2003). Moreover, the measure of economic integration is based on trade rather than investment. While the trade-based measure of economic integration shows a decrease in regional integration since the 1970s, it is possible that regional investment has intensified given the liberalization of capital markets that was part of the Single Market Program (Fligstein 2008). Finally, the analysis reported here does not speak to the social or cultural dimensions of European integration, nor does it examine the gender or ethnic dimensions of inequality.

Limitations aside, this research carries a number of potentially important implications, and opens new avenues for research on inequality. Most important, how has regional integration affected inequalities relating to gender, ethnic, and citizenship status? There is a pressing need for research on these key questions. Another promising project would be an application of the theoretical approach outlined here to other regions. The case of North American integration is especially interesting, because it represents economic integration with a minimum of political integration, and because the national political economies of Canada, Mexico, and the United States exhibit extreme differences. The case of the Common Market of the Southern Cone (Mercosur) should also provide an interesting comparison to the European Union, because Mercosur has explicitly modeled itself on the EU, and there are extensive political and economic ties between the two regions. Analysis of regionalization in the Americas would help to illuminate the relative roles of the political and economic dimensions in regionalization

and assess the generalizability of the political-institutionalist approach to regionalization in other areas of the world political-economic system (Herkenrath et al. 2005).

Finally, in considering the ultimate implications of the findings that regional integration is associated with economic convergence and growing national income inequality, it is useful to consider the counterfactual: what if the European Union did not exist? What if regional integration never happened? First, it is likely that the national economies of the EU would not have converged as much as they have. This is because the effect of political integration on convergence is especially strong (and stronger in the original six members on the EEC), the analysis shows that convergence and development do not share a long-run relationship, and the redistributive structural and cohesion funds are important for convergence (Bornschieer et al. 2004). Second, it is possible that income inequality would have grown even more than it has since the 1970s – if the national economies of Western Europe were globalized rather than regionalized, and wages at the bottom of the income distribution were driven down further by competition with low-wage Southern labor rather than high-wage Northern labor within the European region. If globalization replaced regional integration, it is possible that labor unions would have declined even more steeply, multinational capital would have demanded even more deregulation, tax competition would have eroded the state's revenue base even more, and retrenchment would have gone further than it has. Of course, these counterfactual scenarios are highly speculative. The fact remains that regional integration has happened, and there is evidence that it has re-stratified Europe.

Now that the European Union has expanded to include ten new member states – from Central and Eastern Europe – what do the results of this paper imply for the future

of inequality in Europe? It is clear that the addition of the new member states in 2004 and 2007 has rapidly increased total income inequality in Europe, because the new member states are substantially less developed, on average, than the EU-15. In this way, integration (as expansion) has reversed the long-term trend toward convergence among the EU member states. The more interesting question, of course, is what happens next: will the new member states experience rapid economic growth and converge upward? Classical economic theory would expect so, but a sociological approach is more cautious, and the results reported in this paper suggest there is good reason for caution. The convergence that Western Europe experienced over the last half of the 20<sup>th</sup> century resulted more from political than economic integration, and it could be argued that political integration in the European Union is now somewhat stalled, after the French and Dutch rejected the EU constitution, and amidst ongoing anxieties surrounding Turkey's possible accession to EU membership. This stall in the progress of political integration has important implications for inequality in Europe. More than globalization, this research shows that regional integration has profoundly restructured inequality.

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Table 1. Time-Series Models of Unweighted Between-Country Income Inequality, 6 EEC Countries, 1950-1998

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<u>Variable</u>	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>
Article-177 Cases	-.125** (.013)			
Directives		-.200** (.019)		
Exports to the EU, % of Total Exports			-.973** (.166)	
EU Real GDP per Capita				-1.375** (.117)
Constant	22.129** (1.102)	23.472** (1.118)	55.296** (7.066)	31.702** (1.635)
R <sup>2</sup>	.679	.715	.428	.749
Cointegration tests:				
Engle-Granger	-3.661**	-4.001**	-1.720	-3.244*

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*Notes:* Independent variables are lagged one year.

Standard errors in parentheses.

\* $p < .10$ ; \*\* $p < .05$  (two-tailed tests, except cointegration test)

Table 2. Time-Series Models of Unweighted Between-Country Income Inequality, 15 EU Countries, 1950-1998

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<u>Variable</u>	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>
Article-177 Cases	-.071** (.007)			
Directives		-.152** (.012)		
Exports to the EU, % of Total Exports			-.962** (.068)	
EU Real GDP per Capita				-1.242** (.072)
Constant	30.577** (.757)	32.228** (.712)	81.732** (4.033)	40.425** (.953)
R <sup>2</sup>	.693	.783	.812	.866
Cointegration tests:				
Engle-Granger	-2.287	-3.159*	-1.487	-2.103

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*Notes:* Independent variables are lagged one year.

Standard errors in parentheses.

\* $p < .10$ ; \*\* $p < .05$  (two-tailed tests, except cointegration test)

Table 3. Time-Series Models of Weighted Between-Country Income Inequality, 6 EU Countries, 1950-1998

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<u>Variable</u>	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>
Article-177 Cases	-.118** (.012)			
Directives		-.186** (.019)		
Exports to the EU, % of Total Exports			-.861** (.166)	
EU Real GDP per Capita				-1.281** (.119)
Constant	21.333** (1.074)	22.492** (1.124)	50.220** (7.080)	30.152** (1.663)
R <sup>2</sup>	.666	.683	.369	.714
Cointegration tests:				
Engle-Granger	-3.804**	-4.020**	-1.811	-3.381*

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*Notes:* Independent variables are lagged one year.

Standard errors in parentheses.

\* $p < .10$ ; \*\* $p < .05$  (two-tailed tests, except cointegration test)

Table 4. Time-Series Models of Weighted Between-Country Income Inequality, 15 EU Countries, 1950-1998

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<u>Variable</u>	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>
Article-177 Cases	-.066** (.010)			
Directives		-.144** (.020)		
Exports to the EU, % of Total Exports			-.999** (.102)	
EU Real GDP per Capita				-1.202** (.137)
Constant	25.521** (1.133)	27.154** (1.173)	79.200** (6.001)	35.232** (1.806)
R <sup>2</sup>	.467	.542	.678	.627
Cointegration tests:				
Engle-Granger	-2.567	-2.896	-2.571	-2.532

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*Notes:* Independent variables are lagged one year.

Standard errors in parentheses.

\* $p < .10$ ; \*\* $p < .05$  (two-tailed tests, except cointegration test)

Table 5. Random-Effects Models of Within-Country Income Inequality, 12 Western European Countries, 1972-1997

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<u>Variable</u>	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
Political Integration		.052* (.031)	.055* (.029)
Economic Integration			1.639** (.514)
Economic Integration <sup>2</sup>			-.013** (.004)
Year	.133** (.039)	.105** (.041)	.071* (.042)
Constant	21.847** (1.910)	22.251** (1.903)	-24.917 (15.541)
R <sup>2</sup>	.238	.289	.474

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*Notes:* Unstandardized coefficients.  
Standard errors in parentheses.  
\* $p \leq .10$ ; \*\* $p \leq .05$  (two-tailed tests)

Table 6. Fixed-Effects Models of Within-Country Income Inequality, 12 Western European Countries, 1972-1997

<u>Variable</u>	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
Political Integration		.054 (.035)	.062* (.031)
Economic Integration			1.836** (.558)
Economic Integration <sup>2</sup>			-.015** (.005)
Year	.132** (.040)	.102** (.043)	.063 (.043)
Constant	21.638** (1.569)	21.969** (1.552)	-30.582* (16.569)
R <sup>2</sup>	.238	.289	.477

*Notes:* Unstandardized coefficients.  
Standard errors in parentheses.  
\* $p \leq .10$ ; \*\* $p \leq .05$  (two-tailed tests)

Table 7. Random-Effects Models of Within-Country Income Inequality, 12 Western European Countries, 1972-1997

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<u>Variable</u>	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>
Political Integration	.050* (.029)	.055* (.029)	.060* (.029)	.058* (.030)
Economic Integration	1.242** (.547)	1.656** (.527)	1.340** (.563)	1.248** (.578)
Economic Integration <sup>2</sup>	-.010** (.004)	-.014** (.004)	-.011** (.004)	-.010** (.005)
Year	.309** (.106)	.085* (.050)	.130** (.064)	.346** (.117)
GDP Per Capita	-.665** (.279)			-.573* (.319)
Social Security Transfers		-.073 (.143)		-.206 (.141)
FDI Outflow			-.411 (.347)	-.253 (.402)
Constant	-9.765 (17.064)	-24.823 (15.819)	-15.941 (17.100)	-8.387 (17.679)
R <sup>2</sup>	.394	.469	.485	.424

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*Notes:* Unstandardized coefficients.  
Standard errors in parentheses.  
\* $p \leq .10$ ; \*\* $p \leq .05$  (two-tailed tests)

Table 8. Fixed-Effects Models of Within-Country Income Inequality, 12 Western European Countries, 1972-1997

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<u>Variable</u>	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>
Political Integration	.063* (.032)	.063* (.032)	.067** (.032)	.068** (.033)
Economic Integration	1.851** (.574)	1.834** (.577)	1.633** (.604)	1.602** (.624)
Economic Integration <sup>2</sup>	-.015** (.005)	-.015** (.005)	-.013** (.005)	-.013** (.005)
Year	.044 (.130)	.062 (.053)	.107 (.066)	.018 (.181)
GDP Per Capita	.057 (.358)			.303 (.481)
Social Security Transfers		.003 (.165)		.026 (.203)
FDI Outflow			-.317 (.353)	-.453 (.412)
Constant	-31.369* (17.546)	-30.547* (16.916)	-24.397 (17.994)	-25.666 (18.612)
R <sup>2</sup>	.477	.477	.490	.499

---

Notes: Unstandardized coefficients.

Standard errors in parentheses.

\* $p \leq .10$ ; \*\* $p \leq .05$  (two-tailed tests)

Table 9. Random-Effects Models of Within-Country Income Inequality, 12 Western European Countries, 1972-1997

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<u>Variable</u>	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
Economic Integration	.220** (.100)	.212 (.187)	.516** (.260)
Neo-corporatism	10.640 (9.873)		
Neo-corporatism × Economic Integration	-.338** (.153)		
Social Security Transfers		1.073 (.803)	
Social Security Transfers × Economic Integration		-.017 (.011)	
Decommodification			.777 (.567)
Decommodification × Economic Integration			-.018** (.009)
Year	.004 (.049)	.129** (.061)	.161** (.046)
Constant	18.365** (5.910)	9.167 (11.768)	-.757 (15.819)
R <sup>2</sup>	.323	.316	.284

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*Notes:* Unstandardized coefficients.  
Standard errors in parentheses.  
\* $p \leq .10$ ; \*\* $p \leq .05$  (two-tailed tests)

Table 10. Fixed-Effects Models of Within-Country Income Inequality, 12 Western European Countries, 1972-1997

<u>Variable</u>	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
Economic Integration	.410** (.145)	.398** (.193)	.588* (.300)
Neo-corporatism	27.215 (16.108)		
Neo-corporatism × Economic Integration	-.521* (.265)		
Social Security Transfers		1.971** (.842)	
Social Security Transfers × Economic Integration		-.028** (.013)	
Decommodification			1.235* (.697)
Decommodification × Economic Integration			-.020* (.011)
Year	.002 (.059)	.073 (.059)	.119** (.048)
Constant	3.510 (9.385)	-3.571 (11.782)	-13.384 (17.780)
R <sup>2</sup>	.395	.350	.350

*Notes:* Unstandardized coefficients.  
Standard errors in parentheses.  
\* $p \leq .10$ ; \*\* $p \leq .05$  (two-tailed tests)

Table 11. Analysis of Variance for Total Income Inequality, 13 EU Countries, 1980-2000

<u>Country</u>	<u>Circa 1980</u>	<u>Circa 2000</u>
Austria n = 11,147 in 1987; 2,362 in 2000	6890.308 (109.180)	4043.003 (259.065)
Belgium n = 6,447 in 1985; 2,359 in 2000	-9425.623 (63.695)	4011.936 (307.923)
Denmark n = 12,382 in 1987; 12,829 in 1992	10842.25 (118.269)	5625.275 (122.520)
Finland n = 11,863 in 1987; 10,421 in 2000	5156.422 (84.345)	3337.554 (136.464)
France n = 12,656 in 1984; 11,289 in 1994	4746.414 (122.395)	2040.179 (136.091)
Germany n = 2,727 in 1981; 10,982 in 2000	6421.407 (184.543)	5130.83 (161.041)
Ireland n = 3,292 in 1987; 2,447 in 2000	-2210.738 (117.189)	406.343 (401.864)
Italy n = 8,020 in 1986; 7,925 in 2000	-1306.108 (112.135)	-3926.767 (142.541)
Luxembourg n = 2,008 in 1985; 2,418 in 2000	6235.026 (194.410)	13495.79 (367.294)
Netherlands n = 4,738 in 1983; 4,971 in 1999	2185.837 (177.867)	2433.114 (174.787)
Spain n = 23,917 in 1980; 4,772 in 1990	-3865.180 (71.461)	-3766.030 (158.374)
Sweden n = 9,592 in 1981; 14,491 in 2000	3814.611 (91.355)	3899.116 (121.107)
Constant (UK) n = 6,766 in 1979; 24,977 in 1999	9543.011 (63.691)	14138.61 (81.942)
R-squared	.2749	.1031
n	115,565	112,243

Note: All coefficients  $p < .001$ , except Ireland ca. 2000.