REMAPPING INEQUALITY IN EUROPE:

THE NET EFFECT OF REGIONAL INTEGRATION ON TOTAL INCOME INEQUALITY 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

Stratification research implicates 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, the construction of international economy and polity within political-geographic regions, should matter for inequality. This paper connects regional integration to inequality through multiple mechanisms, offers theoretical arguments that distinguish globalization from regional integration, develops hypotheses on the relationship between regional integration and inequality, and reports new evidence on the impact of regional integration on inequality in Europe.

Income inequality in Europe has a between-country as well as a within-country component: cross-national differences in levels of economic development result in large differences in average household income, while a range of factors generate differences in income among individuals within countries. Indeed, an objective of regional policy in the European Union is to level out between-country inequality by directing development aid to poorer areas. This paper develops the argument that regional integration in Europe should, in fact, decrease inequality between EU member states, while simultaneously increasing inequality within EU member states. The goal of this paper is to examine how European integration relates to between-country, within-country, and total income inequality.

To bring evidence to bear on these questions, data are compiled from several sources, detailed below. The analysis includes a total of 17 Western European countries (the 15 members of the EU as of 1998, plus Switzerland and Norway), and spans the 1950-1998 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) random- and 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 sub-samples 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 income inequality.

Below, I develop the theoretical arguments that connect regional integration to income inequality, 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 implications of this research.

THEORY AND LITERATURE REVIEW

Theoretical approaches drawn from economics and sociology suggest that regional integration should affect income inequality. I begin with between-country inequality, then turn to within-country inequality.

Classical economic theory and between-country convergence

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" (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, varying according to the period and countries included, and whether convergence is measured as σ- or β-convergence (Arestis and Paliginis 1995; Armstrong 1995; Ben-David 1993, 2001; Dewhurst and

Mutis-Gaitan 1995; Hallett 1981; Leonardi 1995; Marques and Soukiazis 1998; Slaughter 1997, 2001; Soukiazis n.d.[a]; Soukiazis n.d.[b]). The debate over the interpretation of σ- and β-convergence (Sala-i-Martin 1990, 1996a) warrants elaboration. Briefly, σ-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, β-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. I follow Sala-i-Martin (1996a:1328): "σ-convergence studies how the distribution of income evolves over time and β-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 σ-convergence.

A key methodological debate within the literature is over the use of population-weighting. 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. These differences are consequential: weighted studies tend to find convergence, while unweighted studies tend to find divergence (Firebaugh 2000).

Of the many studies in the convergence literature, Ben-David's (1993) study on σ-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, nor is the political dimension of regional integration included in the study.

Bornschier, Herkenrath, and Ziltener's (2004) study of convergence and regional integration is the other analysis that comes closest to that reported here. They examine β-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 Bornschier 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 Bornschier et al. pool a sample of 33 countries, including non-EU members; (2) this analysis uses all the available data from 1950-1998, whereas Bornschier et al. use data from two years; and (3) this analysis examines both weighted and 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 policies that 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 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 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 mine) increases income inequality rests on the idea that the labor/capital balance of power is a key determinant of income inequality (Harrison and Bluestone 1988).

Although globalization and regional integration are distinct processes (Held et al. 1999:5; Kim and Shin 2002; also see below), the logic of labor strength as a key mediator between economy and inequality 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, 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.

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 1999; 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 have such coercive power, and their 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 divergent ways (Beckfield 2006).

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

States structure stratification: policy produces and reproduces social cleavages. 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). Three arguments link regional integration to welfare-state retrenchment through political mechanisms: first, regional integration constrains welfare spending via policy feedbacks such as the EMU convergence criteria; 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, where retrenchment advances further where politicians shift blame to the EU for cutbacks. For the sake of space, I do not elaborate on these arguments here; see Beckfield (2005) for the relevant theory and evidence.

DATA AND METHODS

The analysis employs three classes of models: time-series analysis where the region-year is the unit of observation, panel models where country-year is the unit of observation, and analysis of variance where individual household income is the unit of observation.

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 through the year 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 σ-convergence. I also use two weighted measures of dispersion, the coefficient of variation and standard deviation of logarithms, following Firebaugh (Firebaugh 1999:1608). Finally, I use two samples: the original six members of the EEC, and the 15 members of the EU at the end of the period examined here.

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 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. Data were kindly provided in dyadic form by Andrew Rose and come from the IMF's *Direction of Trade Statistics.*

I also control for the EU's total GDP per capita, to assess the influence of economic development, which is hypothesized to bring convergence through classical economic

mechanisms. 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 time-series analysis of between-country inequality 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

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]; results from both datasets are consistent, so I report only the LIS results here).

The Luxembourg Income Study contributes 48 country-years of observations for which data are also available on the key independent variables.

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. 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. Following Frankel (1997), economic integration is measured as the regional trade share, or the percentage of a country's total exports that go to European Union countries (specifically, the EU-15).

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 guard against spurious association among variables with common trends. Year is coded as: 1950=1, 1951=2, …, 1997=48. Real GDP per capita is included to control for the strong relationship between development and inequality (Nielsen and Alderson 1995); data come from the Penn World Table (Heston, Summers, and Aten 2002). 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 (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 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 model (REM) and the fixed-effects model (FEM). The REM adjusts for the panel structure by including a normally-distributed panel-specific error term. It preserves both between-country and within-country variation. This is in contrast to the FEM, which is equivalent to a model with indicator variables for each country. I estimate both random- and fixed-effects models.

Analysis of variance

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 LIS 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, which means that the proportion of the total income inequality that is between-country 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 with the results of the time-series analysis. 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 economic development in the EU, for the six original members of the EU. Model 1 shows that political integration (Article-177 cases) 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 coefficients are -.824 and -.846, respectively.

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 -.654.

Model 4 shows that economic development is also associated with convergence: the coefficient for EU GDP per capita is negative and statistically significant. This is consistent with the approach to convergence drawn from orthodox economic theory. 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, 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 real GDP per capita. However, the evidence for cointegration of these series is weaker. Still, results from OLS models with Newey-West standard errors are substantively identical to those shown in Table 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 weighted by population. Is the dramatic convergence in the European Union shown above in the unweighted dispersion measures also seen in weighted measures of dispersion? Tables 3 and 4, and the parallel Newey-West models, show that the results for weighted convergence are substantively identical to those for unweighted convergence discussed above.

Turning to the results for panel models of within-country income inequality, Table 5 shows results from random-effects models 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. Model 2 includes the political integration covariate, and the results support the argument that political integration raises income inequality: the coefficient estimate is positive and statistically significant. 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 support the argument

that regional economic integration raises income inequality, and that this effect is attenuated at high levels of economic integration.

Table 6 shows results from fixed-effects models that control for all unmeasured country-specific effects. 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. Table 7 shows results from random-effects models that control for year, economic development, the welfare state, and globalization. The coefficient estimates for the regional integration covariates retain not only their statistical significance, but also their size, across the various model specifications. Also, FDI 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. Finally, Table 8 shows results from fixed-effects re-estimations of the models shown in Table 7, and the results are substantively identical.

The finding that regional integration is associated with a decrease in between-country income inequality (convergence) but an increase in within-country income inequality raises the question of the relationship between regional integration and *total* income inequality in the European Union. 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 (Table 9) show that between-country 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-country inequality contributes more to total income inequality than between-country inequality. The reason for this is that the *change* in between-country inequality was much larger. 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.

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 and Newey-West models show that there is a robust association between regional integration and weighted and unweighted convergence, for both the EEC-6 and the EU-15. 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. Regional integration accounts for about half the increase in income inequality observed in these countries, and both economic integration and political integration are significantly associated with national income inequality. These results hold for models that include a range of controls, including 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 income distributions, this negative net effect could easily reverse.

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 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. 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 (Bornschier 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 EU has expanded to include ten new member states, 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 (Brandolini 2007). 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 20th 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, because, as this paper demonstrates, regional integration matters more than globalization for inequality. Regional integration has profoundly restructured stratification in Europe, and the new European inequality is less about where one lives, and more about how one ranks in national systems of stratification.

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

Variable	Model 1	Model 2	Model 3	Model 4
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**	23.472**	55.296**	31.702**
	(1.102)	(1.118)	(7.066)	(1.635)
R^2	.679	.715	.428	.749
Cointegration tests:				
Engle-Granger	-3.661**	-4.001**	-1.720	-3.244*

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

Variable	Model 1	Model 2	Model 3	Model 4
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**	32.228**	81.732**	40.425**
	(.757)	(.712)	(4.033)	(.953)
R^2	.693	.783	.812	.866
Cointegration tests:				
Engle-Granger	-2.287	-3.159*	-1.487	-2.103

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

Variable	Model 1	Model 2	Model 3	Model 4
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**	22.492**	50.220**	30.152**
	(1.074)	(1.124)	(7.080)	(1.663)
R^2	.666	.683	.369	.714
Cointegration tests:				
Engle-Granger	-3.804**	-4.020**	-1.811	-3.381*

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

Variable	Model 1	Model 2	Model 3	Model 4
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**	27.154**	79.200**	35.232**
	(1.133)	(1.173)	(6.001)	(1.806)
R^2	.467	.542	.678	.627
Cointegration tests:				
Engle-Granger	-2.567	-2.896	-2.571	-2.532

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

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

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

Variable	Model 1	Model 2	Model 3
Political Integration		.054 (.035)	.062* (.031)
Economic Integration			1.836** (.558)
Economic Integration^2			-.015** (.005)
Year	.132** (.040)	.102** (.043)	.063 (.043)
Constant	21.638** (1.569)	21.969** (1.552)	-30.582* (16.569)
R^2	.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

Variable	Model 1	Model 2	Model 3	Model 4
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^2	-.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^2	.394	.469	.485	.424

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

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

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

Table 9. Analysis of Variance in Household Incomes, 13 EU Countries, 1980-2000

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

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