GLOBALIZATION AND THE GREAT U-TURN:

INCOME INEQUALITY TRENDS IN 16 OECD COUNTRIES

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Abstract

The recent resurgence of income inequality in some of the advanced industrial societies has spawned a wide-ranging debate as to the impact on inequality of an increasingly integrated world economy, typified by growing capital mobility, heightened competition in international markets, and a swelling of migration flows. This study represents one of the first systematic, cross-national examinations of the role of globalization in the "U-Turn" on inequality. We use an unbalanced data set that combines multiple observations on income inequality in 16 OECD nations across the 1967-1992 period (N = 187) and generalized linear model techniques to estimate regression models assuming country-specific random effects (REM). Results indicate that somewhat different sets of independent variables affect total variation in income inequality (across countries and over time), and variation over time within countries. Total inequality variation is principally affected by the percentage of the labor force in agriculture (+), followed by the institutional factors union density (-) and de-commodification (-), and only then by aspects of globalization including Southern import penetration (+) and direct investment outflow (+). On the other hand longitudinal variation in inequality, while still dominated by the percentage of the labor force in agriculture (+), is also principally affected by Southern import penetration (+) and direct investment outflow (+), and to a lesser extent by the net migration rate (+). In other words, globalization explains the longitudinal trend of increasing inequality that took place within many industrial countries better than it does cross-sectional inequality differences among countries. We also find significant effects on inequality of wage setting coordination (-), secondary school enrollment (-), and female labor force participation (+).

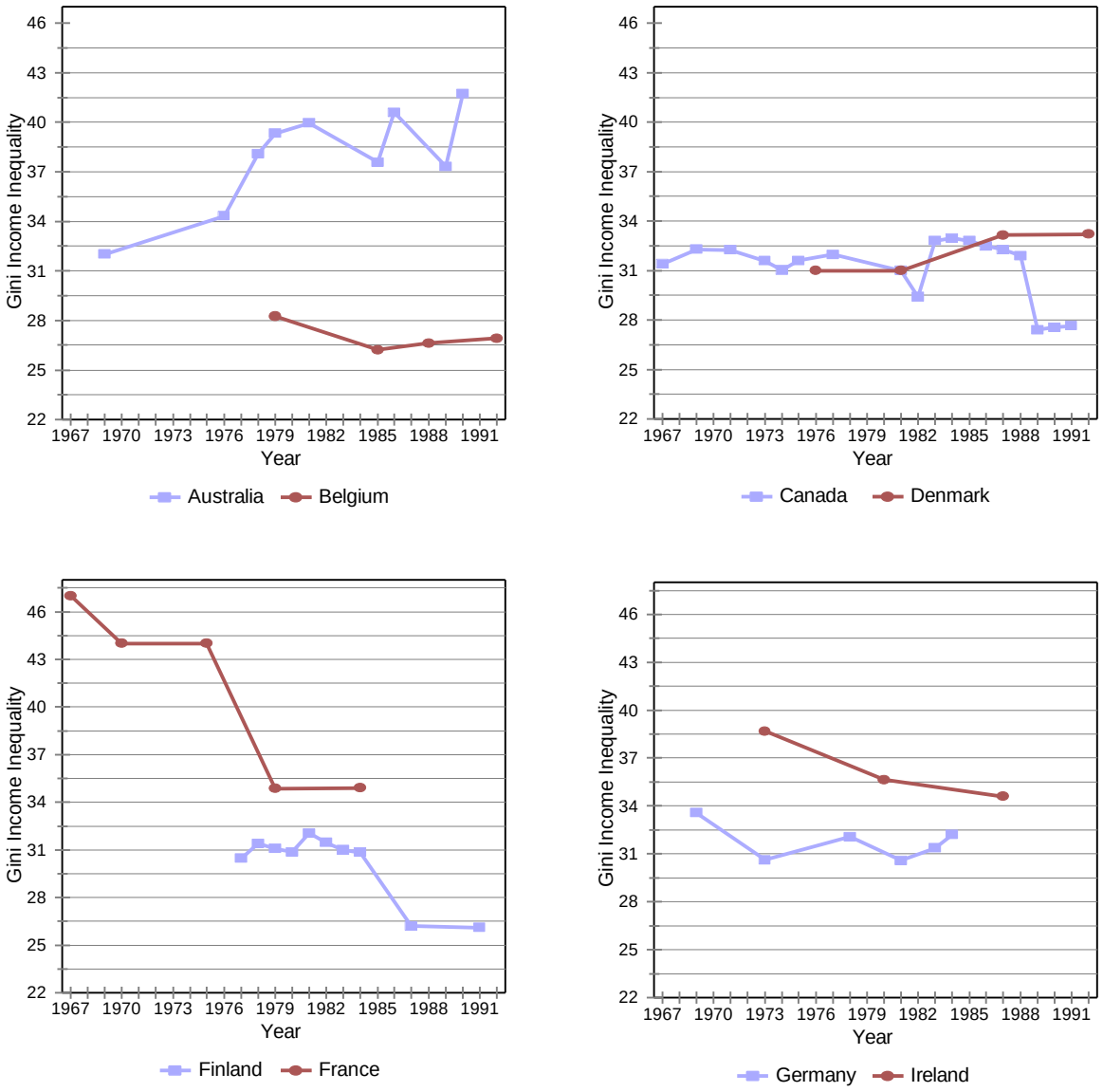

Figure 1a Recent trends in income inequality

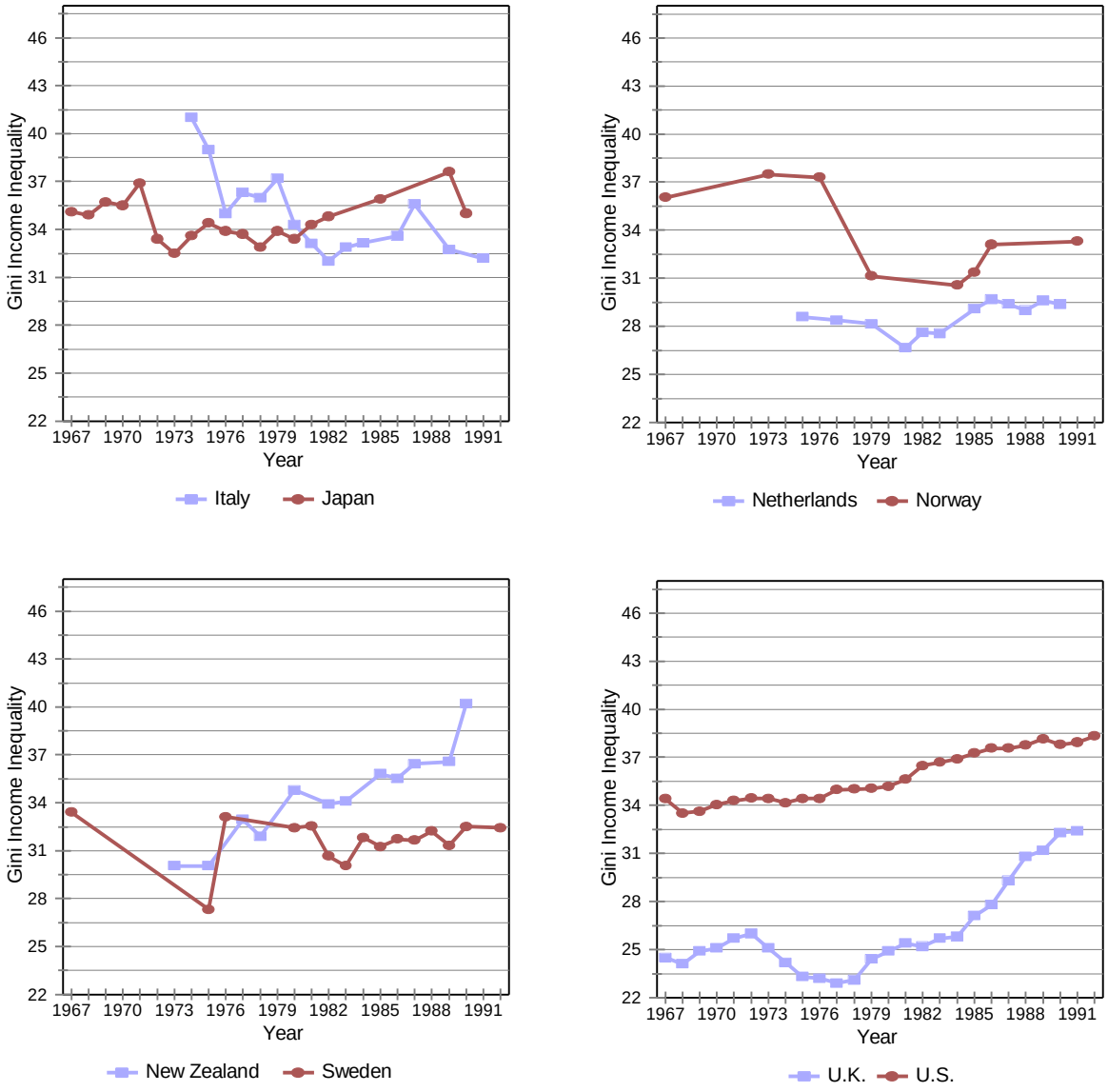

Figure 1b Recent trends in income inequality

RECENT TRENDS IN INCOME INEQUALITY IN THE OECD COUNTRIES

- We use the Deininger and Squire (1996) "high quality" data set on income inequality with 187 observations on 16 OECD countries.
- From inspection of the trends and ignoring short-term variation the following national patterns emerge over the 1967-1992 period:

Australia	**rising inequality**
Belgium	**declining then rising inequality**
Canada	no clear trend
Denmark	**rising inequality**
Finland	declining inequality
France	declining inequality
Germany	**declining then rising inequality**
Ireland	declining inequality
Italy	declining inequality
Japan	**declining then rising inequality**
Netherlands	**declining then rising inequality**
Norway	**declining then rising inequality**
New Zealand	**rising inequality**
Sweden	no clear trend
Great Britain	**declining then rising inequality**
United States	**rising inequality**

- Only the cases of Canada and Sweden are less than clear cut.
- 10 out of 16 OECD countries (bold type) have experienced an inequality upswing during the 1967-1992 period, either as **rising inequality** or **declining then rising inequality**.
- Is rising income inequality an inherent feature of economic development?

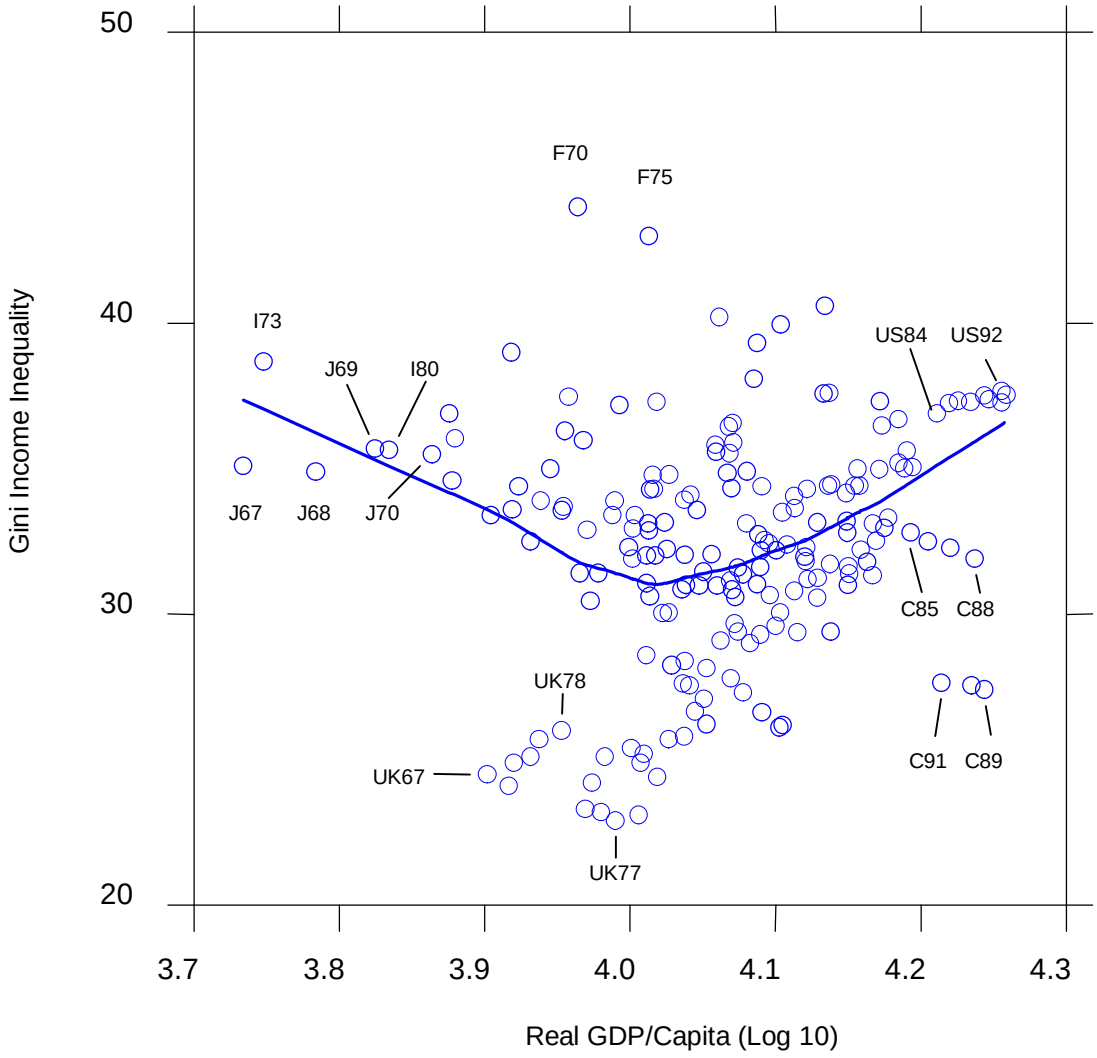

Figure 2 - Scatterplot and LOWESS nonparametric regression line showing the relationship of the Gini coefficent of income inequality to real GDP/capita (log base 10): 187 observations from 16 OECD countries, 1967-1992. Observations labeled are those for **Ireland** (**I**), **Japan** (**J**), **France** (**F**), **Canada** (**C**), the **U.S.** (**US**), and the **U.K**. (**UK**).

DIMENSIONS OF GLOBALIZATION & THE U-TURN ON INEQUALITY

3 dimensions of globalization may have contributed to an inequality upturn in OECD countries:

Foreign Direct Investment (DI) (*aka* "capital flight")

- Between 1982 and 1990 DI outflow from OECD countries grew from 20 billion US$ to 228 US$.
- DI may contribute to increasing inequality in 3 ways:
    1. DI contributes to de-industrialization (thus shifting labor force from less unequal manufacturing sector to more unequal services sector)
    2. DI undermines the bargaining position of labor (as labor is weaker vis-à-vis multinational firms than it is in relation to national firms – Alderson 1997)
    3. DI contributes to the "cheapening" of domestic labor, particularly low-skill labor (as jobs are "exported" through international relocation of manufacturing activity)

North-South Trade (*aka* "cheap imports")

- Between 1982 and 1990 OECD manufactured imports from "Southern" countries grew from 87 billion US$ to 298 billion US$
- Southern Imports (SI) may contribute to increase inequality in 2 ways:
    1. SI decreases the average wage of Northern workers (by placing them in direct competition with Southern workers) – unlikely
    2. SI reduces demand for unskilled relative to skilled labor (thus decreasing the relative wage of unskilled workers - Wood 1994)

Immigration

- Percentage of the population foreign born is 6% in Austria, 9% in the US, 11% in France, 17% in Canada, 17% in Switzerland; immigration has increased coinciding with period of increasing inequality.
- Immigration may contribute to increase inequality in 2 ways (depending on situation):
    1. immigrant population may have lower average skills than resident population
    2. immigrant population may have "bifurcated" (i.e., more heterogeneous) skills relative to residents

THE USUAL SUSPECTS: ALTERNATIVE/ADDITIONAL FACTORS OF INEQUALITY

The Kuznets Problematic

Core model of the Kuznets curve suggests the following effects on inequality (Nielsen 1994):

- **Sector dualism (+)** (inequality due to the average income difference between agricultural and non-agricultural sectors)
- **Percent labor force in agriculture (-)** (as agricultural sector is assumed less unequal)
- **Natural rate of population increase (+)** (more people at bottom of pay scale, plus proxies for "generalized" dualism)
- **Secondary school enrollment (-)** (reduces scarcity and thus premium of educated personnel)

The Great U-Turn Problematic

Research on the U-Turn (mostly in US) suggests the following effects:

- **Female labor force participation (+)** (inflates % low incomes, plus assortative mating – Thurow 1987)
- **Female-headed households (+)** (inflates % low incomes – not measured)
- **Percent labor force in manufacturing (-)** (a reverse measure of de-industrialization, may mediate effects of Southern imports, etc.)

Institutional Factors

Income inequality and institutional differences among OECD countries suggest the following effects:

- **Union density (-)** (declining role of unions leads to widening wage differentials)
- **Wage setting coordination (-)** (national centralization of wage bargaining should reduce wage dispersion)
- **De-commodification (-)** (degree to which worker can choose unemployment rather than accept a low wage and maintain a socially acceptable standard of living – Esping-Andersen 1990)

Table 1 Correlations and basic statistics for variables in the analysis of income inequality.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14
(1)	1.000													
(2)	0.135	1.000												
(3)	0.458	-0.484	1.000											
(4)	0.421	-0.567	0.813	1.000										
(5)	0.435	-0.153	0.229	0.351	1.000									
(6)	-0.018	0.500	-0.213	-0.184	0.024	1.000								
(7)	-0.253	0.605	-0.519	-0.592	-0.394	0.419	1.000							
(8)	-0.085	0.504	-0.453	-0.564	-0.219	0.279	0.631	1.000						
(9)	0.124	0.349	-0.163	-0.171	0.209	0.093	0.077	-0.023	1.000					
(10)	-0.294	-0.120	-0.050	0.140	-0.519	-0.015	0.113	-0.068	-0.168	1.000				
(11)	-0.091	-0.469	0.381	0.418	-0.095	-0.016	-0.182	-0.220	-0.213	0.358	1.000			
(12)	-0.393	-0.265	0.243	0.222	-0.557	0.060	0.153	-0.109	-0.199	0.544	0.462	1.000		
(13)	-0.031	0.507	-0.308	-0.313	-0.212	0.460	0.445	0.248	0.014	0.379	-0.042	0.075	1.000	
(14)	-0.317	-0.588	0.136	0.090	-0.286	-0.517	-0.433	-0.420	-0.244	0.155	0.300	0.187	-0.206	1.(
N	187	187	187	187	187	187	187	184	187	187	187	187	187	
Min	22.900	3.734	0.005	0.322	-2.400	59.600	0.000	0.087	-8.600	16.780	1.000	7.000	32.000	14.5
Max	44.000	4.258	1.114	1.382	12.700	121.000	2.509	0.655	10.240	100.350	5.000	39.000	80.549	37.9
Mean	32.360	4.063	0.474	0.796	5.157	88.603	1.202	0.320	1.584	48.950	2.963	24.968	55.907	22.9
SD	4.053	0.099	0.298	0.257	3.559	9.993	0.489	0.116	3.112	21.504	1.598	8.910	11.354	4.(

(1) Gini income inequality
(2) Real GDP/capita (log base 10)
(3) Sector dualism (log base 10)
(4) Percent LF in agriculture (log base 10)
(5) Natural rate of population increase
(6) Secondary school enrollment ratio
(7) Direct investment outflow/labor force (log base 10)
(8) Southern import/GDP (log base 10)
(9) Net migration rate
(10) Union Density
(11) Wage setting coordination
(12) De-commodification
(13) Female labor force particip
(14) Percent LF in manufacturir

Table 2a Regression models of income inequality (Gini * 100): Generalized linear model estimates for 16 OECD nations, 1967-1992.

Variable	Model 1	Model 2	Model 3	Model 4
Real GDP/capita[a,b]	-298.198 *			
	(-1.568)			
Real GDP/capita[2]	37.262 *			
	(1.558)			
Sector dualism[a]		2.434 **	1.510	-0.071
		(1.644)	(0.985)	(-0.042)
Percent labor force in agriculture[a]		3.864	8.696 **	7.907 **
		(1.251)	(1.805)	(2.474)
Natural rate of population increase		0.330 *	0.339 *	0.317
		(1.416)	(1.408)	(1.127)
Secondary school enrollment ratio		-0.059 **	-0.079 **	-0.059 **
		(-1.777)	(-2.379)	(-1.858)
Direct investment outflow/labor force[a]			2.341 **	
			(2.479)	
Southern import penetration/GDP[a]				6.886 ***
				(2.343)
1973-1981 period indicator		2.434 **	1.917 **	1.274
		(2.325)	(2.104)	(1.105)
1982-1992 period indicator		3.872 ***	1.917 ***	2.449 *
		(4.013)	(3.246)	(1.554)
Constant	32.350 ***	29.233 ***	25.084 ***	26.031 ***
	(37.137)	(6.261)	(3.998)	(6.223)
R^2	0.109	0.338	0.269	0.324
Rho	0.679	0.558	0.627	0.637
N	187	187	187	184

Note: Numbers in parentheses are t-values.

[a]log base 10
[b]deviated from median
*p<.10 **p<.05 ***p<.01 (onetailed tests)

Table 2b Regression models of income inequality (Gini * 100): Generalized linear model estimates for 16 OECD nations, 1967-1992.

Variable	Model 5	Model 6	Model 7	Model 8
Sector dualism[a]	2.439**	1.245	2.784**	2.392*
	(1.660)	(0.846)	(1.949)	(1.414)
Percent labor force in agriculture[a]	3.920	6.137***	4.479*	4.546*
	(1.249)	(2.316)	(1.588)	(1.597)
Natural rate of population increase	0.326*	0.204	0.278	0.225
	(1.400)	(0.997)	(1.202)	(1.001)
Secondary school enrollment ratio	-0.059**	-0.029	-0.056**	-0.030
	(-1.762)	(-1.009)	(-1.714)	(-0.934)
Net migration rate	0.015			
	(0.168)			
Union density		-0.084***		
		(-2.439)		
Wage setting coordination			-0.486**	
			(-2.663)	
De-commodification				-0.146**
				(-2.211)
1973-1981 period indicator	2.129**	1.762**	2.110**	1.936**
	(2.316)	(1.884)	(2.387)	(2.170)
1982-1992 period indicator	3.873***	3.361***	3.551***	3.516***
	(4.030)	(3.481)	(4.068)	(3.942)
Constant	29.162***	30.758***	30.223***	30.745***
	(6.203)	(7.754)	(6.783)	(6.301)
R^2	0.341	0.365	0.377	0.498
Rho	0.556	0.552	0.551	0.523
N	187	187	187	187

Note: Numbers in parentheses are t-values.

[a]log base 10
*p<.10 **p<.05 ***p<.01 (onetailed tests)

Table 2c Regression models of income inequality (Gini * 100): Generalized linear model estimates for 16 OECD nations, 1967-1992.

Variable	Model 9	Model 10	Model 11
Sector dualism[a]	2.183 *	1.665	-0.931
	(1.551)	(1.179)	(-0.595)
Percent labor force in agriculture[a]	5.499 **	5.323 *	12.598 ***
	(1.743)	(1.640)	(3.041)
Natural rate of population increase	0.295	0.183	0.281
	(1.236)	(0.815)	(1.027)
Secondary school enrollment ratio	-0.084 ***	-0.093 ***	-0.072 **
	(-2.857)	(-2.506)	(-2.196)
Female labor force participation	0.107 ***		
	(2.889)		
Percent labor force in manufacturing		-0.397 ***	
		(-2.351)	
Direct investment outflow/labor force[a]			1.772 **
			(1.832)
Southern import penetration/GDP[a]			7.501 **
			(2.691)
Net migration rate			0.102 **
			(2.477)
1973-1981 period indicator	1.793 **	1.010	1.012
	(2.188)	(1.133)	(1.046)
1982-1992 period indicator	2.949 ***	1.385 *	1.875 *
	(3.071)	(1.347)	(1.495)
Constant	25.093 ***	42.756 ***	21.826 ***
	(4.652)	(6.057)	(4.189)
R^2	0.318	0.372	0.281
Rho	0.583	0.583	0.685
N	187	187	184

Note: Numbers in parentheses are t-values.

[a]log base 10
*p<.10 **p<.05 ***p<.01 (onetailed tests)

Table 2d Regression models of income inequality (Gini * 100): Generalized linear model estimates for 16 OECD nations, 1967-1992.

Variable	Model 12	Model 13
Sector dualism[a]	-1.879	-1.543
	(-1.148)	(-0.937)
Percent labor force in agriculture[a]	15.032***	13.885***
	(4.267)	(3.696)
Natural rate of population increase	0.089	0.018
	(0.435)	(0.100)
Secondary school enrollment ratio	-0.019	-0.043*
	(-0.812)	(-1.604)
Direct investment outflow/labor force[a]	1.682**	1.038*
	(2.079)	(1.288)
Southern import penetration/GDP[a]	7.679***	5.560*
	(2.914)	(1.608)
Net migration rate	0.108**	0.129***
	(2.323)	(2.529)
Union density	-0.088**	-0.083**
	(-2.116)	(-2.266)
Wage setting coordination	-0.331**	-0.272**
	(-2.265)	(-2.256)
De-commodification	-0.093**	-0.092*
	(-1.643)	(-1.496)
Female labor force participation		0.056*
		(1.442)
Percent labor force in manufacturing		-0.167
		(-1.176)
1973-1981 period indicator	0.466	0.115
	(0.534)	(0.150)
1982-1992 period indicator	0.849	-0.065
	(0.855)	(-0.076)
Constant	25.499***	31.043***
	(6.017)	(4.820)
R^2	0.439	0.516
Rho	0.677	0.600
N	184	184

Note: Numbers in parentheses are t-values.

[a]log base 10
*p<.10 **p<.05 ***p<.01 (onetailed tests)

Table 3 Measures of relative importance of variables statistically significant in Model 13

Variable	Standardized coefficient[a]	Semi-standardized coefficient[b]	Maximum impact[c]	Maximum longitudinal impact[d]
Percent labor force in agriculture	.880	3.568	14.718	3.523
Union density	-.440	-1.785	-6.936	-.919
De-commodification	-.202	-.820	-2.944	-.480
Southern import penetration/GDP	.159	.645	3.158	1.374
Direct investment outflow/labor force	.125	.508	2.604	1.141
Wage setting coordination	-.107	-.435	-1.088	-.510
Secondary school enrollment ratio	-.106	-.430	-2.640	-.871
Net migration rate	.099	.401	2.430	.835
Female labor force participation	.064	.260	2.719	.861

[a] Unstandardized regression coefficient multiplied by the sample standard deviation of the independent variable X and divided by the standard deviation of the dependent variable Y. Represents the change in Y associated with an increase of one standard deviation in X, in standard deviation units of Y.

[b] Unstandardized regression coefficient multiplied by the sample standard deviation of the independent variable X. Represents the change in Y associated with an increase of one standard deviation in X, in original units of Y.

[c] Unstandardized regression coefficient multiplied by the maximum range (maximum minus minimum) of X in the sample. Represents the maximum possible impact of X on Y across countries and over time.

[d] Unstandardized regression coefficient multiplied by the average within-country range in X. Represents the maximum longitudinal (over time) impact of X on Y within a typical country.

CONCLUSIONS – WHAT'S THE ROLE OF GLOBALIZATION IN LATE 20TH CENTURY INEQUALITY TRENDS?

It depends if the question refers to total variation in inequality (across countries and over time) or longitudinal variation in inequality (over time within countries).

Total inequality variation is principally affected by

- percent labor force in agriculture (+)
- then institutional factors union density (-) and de-commodification (-)
- only then aspects of globalization Southern import penetration (+) and direct investment outflow (+).

Longitudinal variation in inequality is principally affected by

- percent labor force in agriculture (+)
- aspects of globalization Southern import penetration (+) and direct investment outflow (+), and to a lesser extent net immigration rate (+).

In other words, globalization explains the longitudinal trend of increasing inequality that took place within many industrial countries better than it does cross-sectional inequality differences among countries.

Inequality is also significantly affected by

- wage setting coordination (-)
- secondary school enrollment (-)
- female labor force participation (+).

CONCLUSIONS

Ten of the advanced industrial societies in our data set have experienced rising inequality, or declining then rising inequality, over the 1967-1992 period. What are the mechanisms behind this trend? Our empirical results, and particularly the presentation in Table 3, suggest that the answer may be different in a cross-national and in a longitudinal context. On one hand, if one wants to address the predominantly cross-national comparative issue of which countries have had more or less inequality in their income distribution during the last third of the twentieth century, one would look for factors that have both large effects on inequality and that vary substantially in the cross-national dimension. Percent labor force in agriculture, and institutional factors such as union density and de-commodification emerge as prime candidates to explain these cross-country differences. On the other hand, if one wants to explain the trajectory of inequality over time (perhaps an upturn) that characterized a given country over this period of time,one would look for variables that have a large longitudinal impact. Thus, while percent labor force in agriculture is still a major factor of the inequality trend in individual countries, globalization trends come to the fore as major explanatory factors. Thus for countries that experienced an inequality upturn during the period, the upward inequality trend may be attributable in substantial part to aspects of globalization we have distinguished, primarily North-South trade and direct investment outflow, and to a lesser extent immigration.

Our finding of a substantial contribution of globalization trends to trajectories of rising inequality in many advanced industrial countries in the last third of the twentieth century should be placed in a broader historical context. While many observers are struck by the unique features of the contemporary period, it is certainly not the first time in world history that the globalization of the economic sphere has affected inequality within societies. It has been argued, for example, that the 1870-1913 period was in many ways similar to the contemporary period investigated in this study. Then, too, globalization in the form of growing international trade and mass migration from Europe to the New World caused inequality to rise in the rich, people-importing countries of the New World and fall in the (at the time) poor, people-exporting countries of Southern Europe and

Scandinavia (Hatton and Williamson 1998, Chapter 11). How far will the contemporary trend of rising inequality go? First, as Hatton and Williamson (1998) soberly point out, the globalization trend that began in the late nineteenth century was reversed after World War I into a general pattern of isolationism marked by rising trade barriers and immigration restrictions. It is at least conceivable that the world of today might experience a similar reversal. Second, in the period between the two World Wars, the globalization-inequality relationship was reversed, so that the poorer countries were now experiencing sharply rising inequality. It is also conceivable, even if the world economy continues to become more "global," that the relationship of inequality with globalization will change again and the inequality upswing in advanced industrial societies level off. To assess such possibilities, much further work needs to be done in explicating the mechanisms of income stratification in advanced industrial societies that generate observed levels of income inequality.