

## GLOBALIZATION: CONTENTS AND DISCONTENTS

Orley Ashenfelter , Robert F. Engle , Daniel L. McFadden , Klaus Schmidt-Hebbel 

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### Abstract

William Shakespeare's Tragedy of King Richard III, written approximately in 1592, is the story of evil acts by the detested and misshapen hunchback, Richard, who plots to sow discontent among his brother, the King, and others, and has his brother murdered along with other wicked deeds in order to gain the throne. It opens with the line, "Now is the winter of our discontent" (p. 111, ed. Wright 1936). "The Winter of Our Discontent" is also the title of John Steinbeck's (1961) novel of a man who trades his moral convictions to reclaim lost family wealth. "Globalization and Its Discontents" is the title of Joseph Stiglitz's (2002) book that critiques rigid adherence by major economic institutions—such as the International Monetary Fund—to economic orthodoxy in the promotion of globalization. (*JEL* F6, D72, D3, O23, O24, L17, K33)

### ABBREVIATIONS

**AEA** American Economic Association

**AEs** Advanced Economies

**DCs** Developing Countries

**EMDCs** Emerging Markets/Developing Countries

**EMEs** Emerging-Market Economies

**EU** European Union

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LHS Left-Hand Side Axis

NYU New York University

RHS Right-Hand Side Axis

TP Total Product

TPP Trans-Pacific Partnership

## I. INTRODUCTION

This article is based upon presentations at the closing session of the 13th International Conference of the Western Economic Association International (WEAI), hosted by the Instituto de Economía, Universidad Católica de Chile, Santiago, January 3–6, 2017. The panelists are Nobel Laureates Daniel L. McFadden and Robert F. Engle, and Professors Orley Ashenfelter and Klaus Schmidt-Hebbel. Daniel L. McFadden holds the E. Morris Cox Chair at the University of California, Berkeley, and is Presidential Professor of Health Economics at the University of Southern California. He received the Nobel Prize in Economic Sciences in 2000 for developing economic theory and econometrics for discrete choice analysis. Among many honors, he holds the John Bates Clark Medal from the American Economic Association (AEA). He has served as President of the Econometric Society and the AEA, and is currently President-Elect of the WEAI. Robert F. Engle is the Michael Armellino Professor of Finance at New York University (NYU) Stern School of Business, and was awarded the 2003 Nobel Prize in Economic Sciences for his research on the concept of autoregressive conditional heteroskedasticity (ARCH). He is the Director and Founder of the NYU Stern Volatility Institute and is the Co-Founding President of the Society for Financial Econometrics. Among many awards and invitations as Keynote Speaker, he has given Keynote Addresses at the 10th, 11th, and 13th WEAI International Conferences in Tokyo, Wellington, and Santiago. Orley Ashenfelter is the Joseph Douglas Green 1895 Professor of Economics at Princeton. He is a recipient of the IZA Prize in Labor Economics, the Mincer Award for Lifetime Achievement of the Society of Labor Economists, and the Karel Englis Medal awarded by the Academy of Sciences of the Czech Republic. Among the acknowledgements of his many contributions, he has served as president of the American Economic Association, the American Law and Economic Association, the Society of Labor Economists, the American Association of Wine Economists, and is currently President of WEAI. Klaus Schmidt-Hebbel is Professor of Economics, Pontificia Universidad Católica de Chile. Previously he served as Chief Economist of the Organization for Economic Cooperation and Development (OECD), Division Chief of Economic Research at the Central Bank of Chile, and Principal Economist at the World Bank.

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is the rise of multinational corporations and financial institutions that elude management by national authorities. These aspects of globalization are clearly economic. However, there are other features, usually perceived as more broadly humanistic or moral, that nationalists conflate with free trade and use as arguments against free movement of goods, services, capital, and labor. These include international cooperation on protection of the environment and health, human rights and religious tolerance, law and conflict resolution, governance, and preservation of history and culture. There are also overarching issues of economic policy—the benefits of diversification and exploitation of comparative advantage versus the systemic risks of interdependence, and economic and moral arguments for assistance to less developed countries (LDCs) that promote economic convergence and equality in living standards.

The case for free trade is part of the foundation of classical economic reasoning. David Ricardo (1817) showed that two nations both benefit by specializing in and trading goods in which they have a comparative advantage; it is not difficult to extend this argument to show that in a classical economic world with competitive markets, nations can use redistributive income policies to assure that free trade is a Pareto improvement over autarky; see Grandmont and McFadden (1972). Then, in classical economic reasoning, discontent with free trade should arise only if governments are unwilling or unsuccessful in adopting incomes policies to assure that all share in the benefits of trade. In this view, curtailing free trade to compensate for unsuccessful incomes policies is a distant second best.

The discontent apparent in the global political economy starts with actual losers, the displaced workers and marginalized businesses that are uncompensated for the economic disruptions of free trade. Second are the perceived losers, the economic agents who are unable to balance the broad and largely invisible gains from cheap imports against fear arising from visible displacements of firms and workers. Beyond these groups are nationalists and cultural warriors who have moral and political economic objections to globalization. These include opponents of unchecked or unregulated capitalism, cultural traditionalists, and supporters of cultural diversification who are skeptical of monoculture.

A central question for economists (and governments) is what policies can and should be used to assuage the concerns of the discontented, *and* save the core economic benefits of globalization for the many who are or should be content—those who gain from lower prices, more options, and greater demand for their skills or products. Also, what policies should be avoided? With that, I turn the discussion over to the panel.

### III. KLAUS SCHMIDT-HEBBEL

#### A. *Globalization and Its Measurement*

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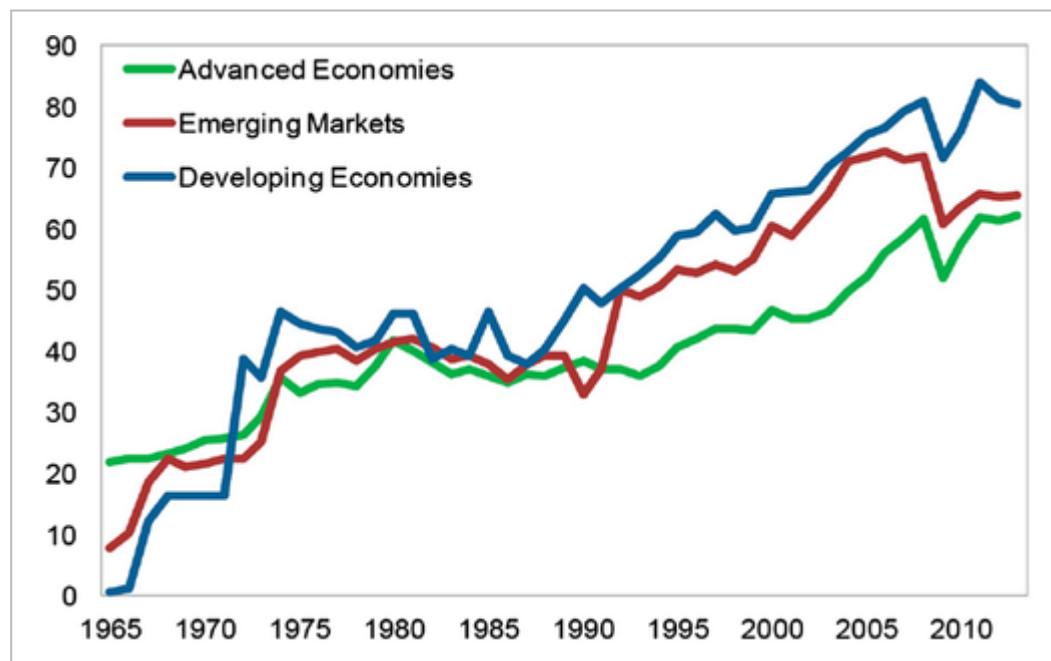
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also the international adoption of economic institutions, including market-based economies, macro and micro institutions, and environmental and labor standards. The adoption of political institutions and regimes is also important: the rule of law, protection of human rights, and democratic principles. Finally, there is social and cultural globalization, involving the spreading of norms such as English usage, Internet access, and so on.

Traditional measures of globalization are narrow measures of *de jure* and *de facto* trade and financial openness. They dominate in the economics literature. Broader measures encompass economic, political, and social measures of globalization—and they are used more exceptionally. Many measures are applied to a large annual dataset of countries, starting in the late 1960s.

Descriptive data for narrow and broader measures of globalization, reported in Figures 1-3, reflect a large increase in globalization during the last half century (Table 1).<sup>1</sup>



**Figure 1**

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World Trade Openness, 1965–2012 (total imports plus exports as percentage of GDP)

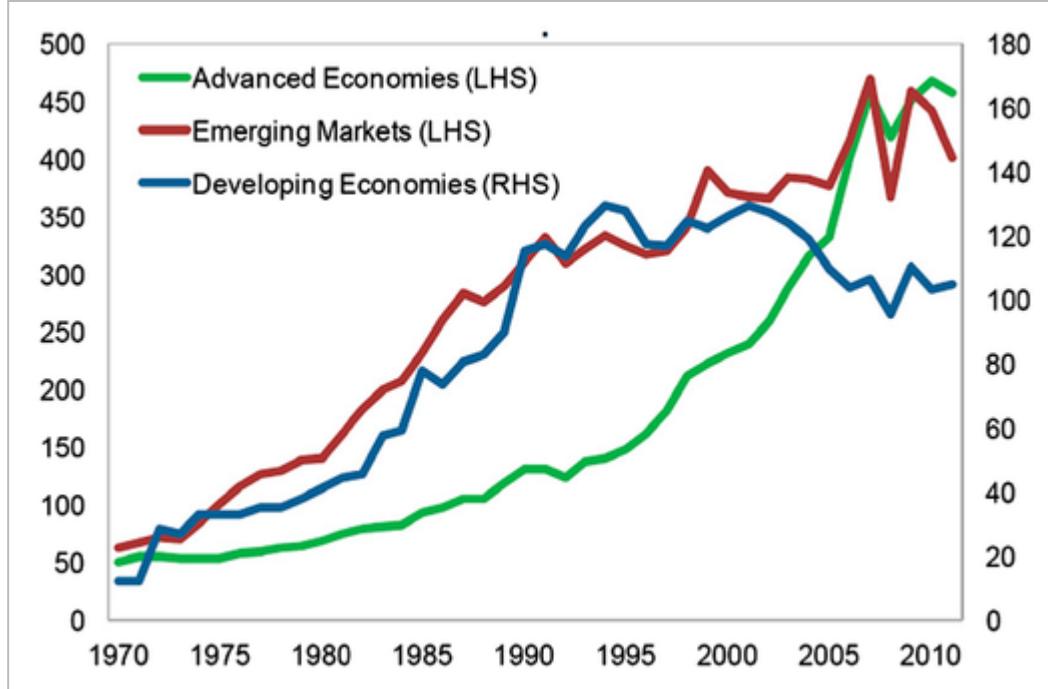
Source: Dabla-Norris et al. (2015).

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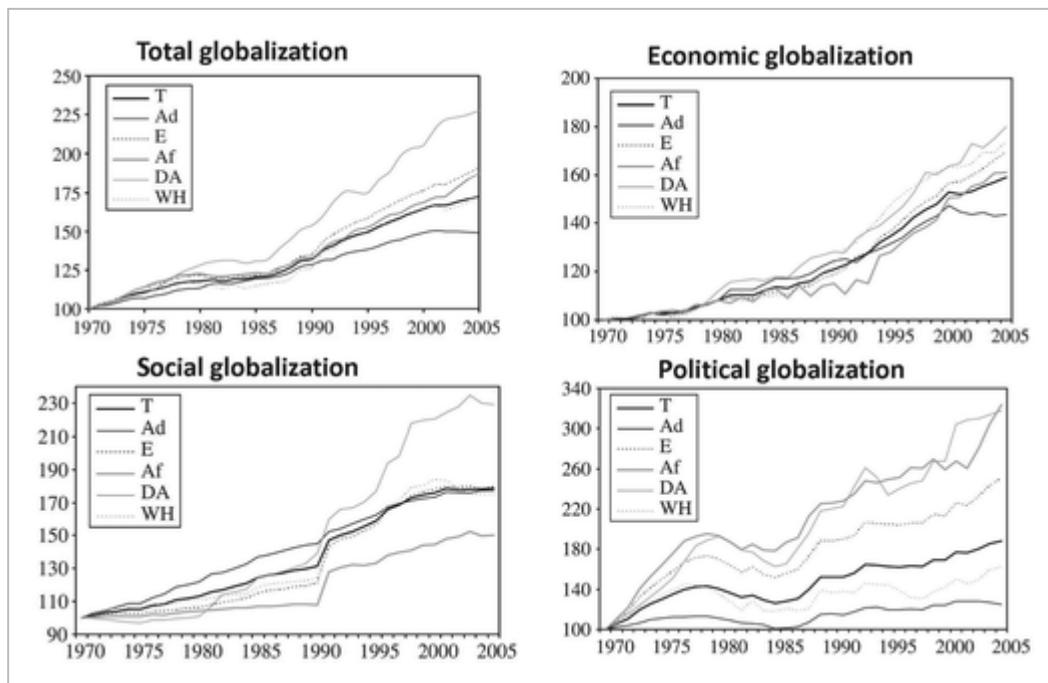
**Figure 2**

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World Financial Openness, 1965–2012 (total external assets and liabilities as percentage of GDP)

Source: Dabla-Norris et al. (2015).



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**Table 1. KOF Globalization Index: Components and Weights**

<i>Indices and Variables</i>	<i>Weights (%)</i>
A. Economic globalization	36
(i) Actual flows	50
Trade (percent of GDP)	21
Foreign direct investment, stocks (percent of GDP)	28
Portfolio investment (percent of GDP)	24
Income payments to foreign nationals (percent of GDP)	27
(ii) Restrictions	50
Hidden import barriers	24
Mean tariff rate	27
Taxes on international trade (percent of current revenue)	26
Capital account restrictions	23
B. Social globalization	37
(i) Data on personal contact	34
Telephone traffic	25
Transfers (percent of GDP)	3

*Note:* The KOF Globalization Index is published by the KOF Economic Institute, ETH University, Zurich.

*Source:* Potrafke (2015).

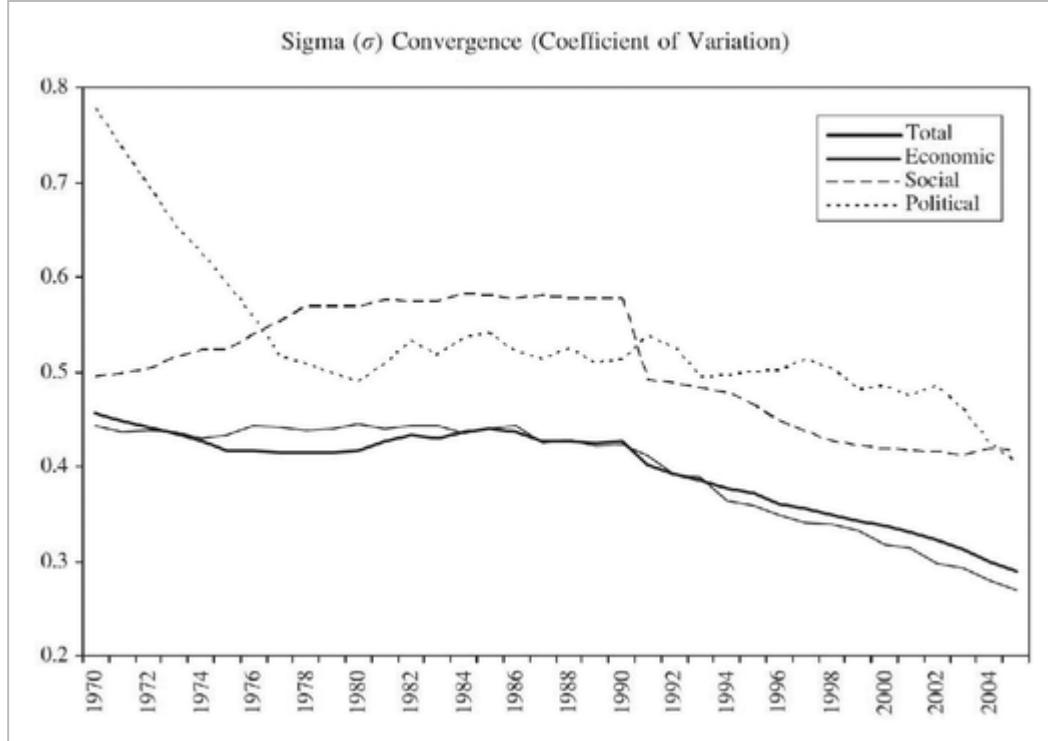
Statistical tests confirm increasing globalization. International differences in total and partial globalization measures decline substantially between 1970 and 2005, reflected by the large reduction in cross-country coefficients of variation of globalization measures ( $\sigma$ -convergence; Figure 4).

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**Figure 4**

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Globalization Indexes:  $\sigma$ -Convergence

Source: Villaverde and Maza (2011).

An alternative test is based on estimating a dynamic cross-country panel-data equation for the following specification:  $\Delta G_{i,t} = \alpha + \chi_t + \beta G_{i,t-k} + \epsilon_{i,t}$  ( $\beta$ -convergence). The significant coefficient estimate ( $\beta = -0.081$ ) implies a half-life of convergence to steady state of 41 years for the total Globalization Index (Table 2).

**Table 2. Beta ( $\beta$ ) Convergence**

Total		Economic		Social		Political	
Value	t-Statistic	Value	t-Statistic	Value	t-Statistic	Value	t-Statistic
-0.081*	-11.90	-0.068*	-9.91	-0.064*	-10.71	-0.113*	-23.03

Notes: The reported regression is for KOF's total Globalization Index, by the KOF Economic Institute, ETH University, Zurich.

Source: Villaverde and Maza (2011).

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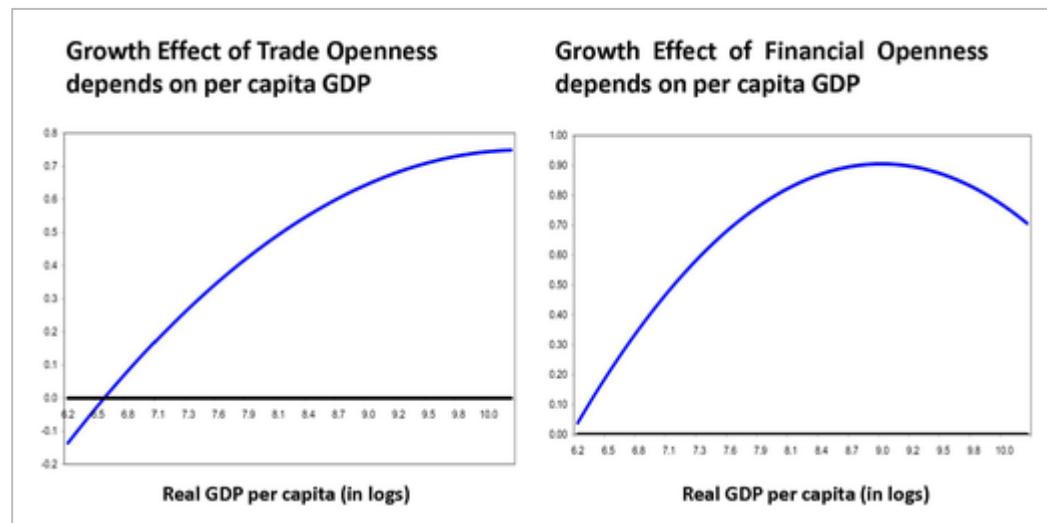
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models for growth levels (G) and GV, find that trade openness and financial openness affect both G and GV significantly. Growth effects of openness depend nonlinearly and/or nonmonotonically on the level of development (per capita gross domestic product [GDP]). Finally, the G and GV effects of foreign real and financial shocks depend on levels of openness. We see this in Table 3 and Figures 5 and 6.

**Table 3.** Trade and Financial Openness, and Foreign Real and Financial Shocks, Affect Growth and Growth Volatility Independently and Significantly

			Growth	Volatility
Openness	Trade		+	+
	Financial		+	-
Shocks	Real	ToT	+	+
		TP growth	+	+
	Financial	Capital inflows	+	+

Notes: Positive (+) and negative (−) signs reflect statistically significant coefficients reported in Calderón, Loayza, and Schmidt-Hebbel (2008).



**Figure 5**

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Shocks	Growth		Growth volatility	
	Trade Openness	Financial Openness	Trade Openness	Financial Openness
Terms of trade	↓	↑	↓	↓
Trade part. growth	↓	↑	↑	↓
Capital inflows	↑	↓	...	↓
World interest rate	↑	↑	...	↓

**Figure 6**

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Growth and Growth Volatility Effects of Shocks Depend on Levels of Trade Openness and Financial Openness

Notes: Arrows indicate statistically significant effects of interaction terms between foreign shocks and measures of openness on two outcomes: growth and growth volatility. The dots reflect statistically nonsignificant effects. Upward (downward) pointing arrows indicate positive (negative) effects. For example, higher financial openness raises significantly the positive effect of terms of trade shocks on growth and lowers significantly the positive effect of terms of trade shocks on growth volatility. Based on coefficients reported in Calderón, Loayza, and Schmidt-Hebbel (2008).

### C. Globalization and Distribution

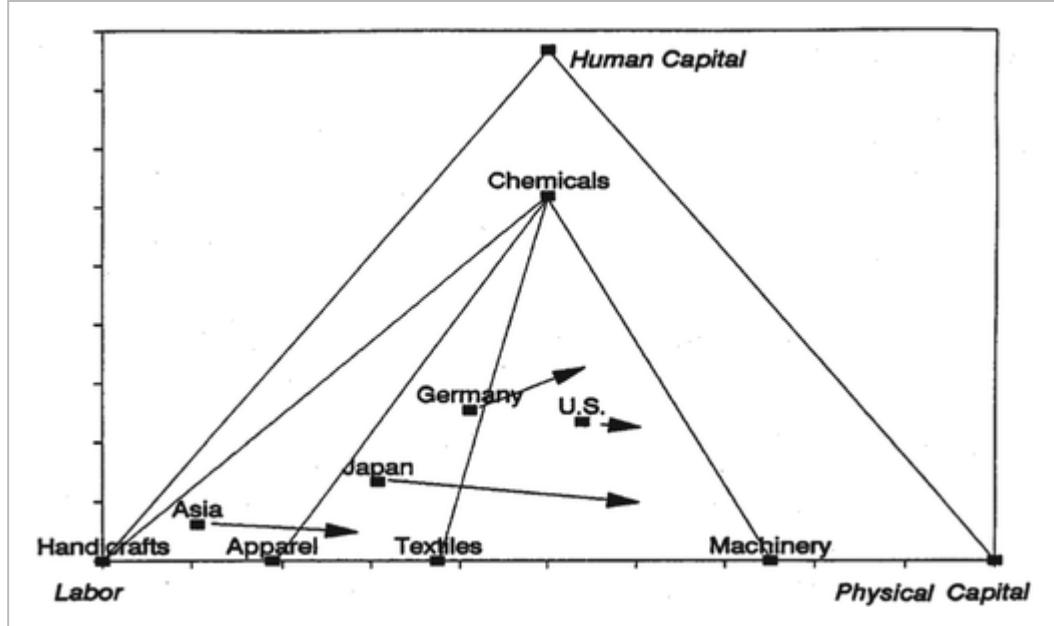
There is a growing literature (although still tiny compared to the growth-globalization nexus) that tends to show that accounting for technology is not the same as accounting for globalization. Globalization reduces poverty worldwide, in particular in Emerging-Market Economies/Developing Countries (EMEs/DCs). It also likely improves the world's income distribution (this is not the same as cross-country average income distribution), but globalization affects factor returns and personal income distribution very differently in rich and poor countries. Developing a three factor, multi-goods model, Leamer (1995) predicts the effects of changes in goods prices—due to larger international trade—on factor returns in the United States. See Figure 7 and Table 4.

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**Figure 7**

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Trade and Factor Returns: Leamer's Triangle Generalizes Stolper-Samuelson

Source: Leamer (1995).

**Table 4. Effects of Price Changes on U.S. Factor Earnings**

Reduction in Price of	Effect on U.S. Earnings			
	Raw Labor	Human Capital	Physical Capital	Skill Premium
Machinery	+	+	-	?
Chemicals	0	-	0	-
Textiles	-	+	+	+

Source: Leamer (1995).

Recent empirical research of inequality in the world reports the contribution of globalization and technology to changes in income concentration measures worldwide and for advanced economies (AEs) and for emerging-market and developing economies (EMDCs). Different measures of

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Model Specification	(1) Summary Model	(2) Full Model	(3) Benchmark Model	(4) Sectoral Exports	(5) Sectoral Productivity	(6) IV Estimation
<b>Trade globalization</b>						
Ratio of exports and imports to GDP	−0.058 (1.83)*					
Export-to-GDP ratio		−0.061 (1.49)	−0.056 (2.02)**		−0.050 (1.77)*	−0.054 (1.67)*
<b>Financial globalization</b>						
Ratio of cross-border assets and liabilities to GDP	0.035 (1.79)*					
Ratio of inward FDI stock to GDP		0.042 (2.38)**	0.042 (2.48)**	0.040 (2.37)**	0.037 (2.06)**	0.032 (1.81)*
<b>Technology</b>						
Share of ICT in total capital stock	0.075 (2.57)**	0.057 (1.90)*	0.054 (1.95)*	0.053 (2.05)**	0.050 (2.17)**	0.068 (2.70)***
<b>Control variables</b>						
Credit to private sector (% of GDP)	0.063 (4.66)***	0.052 (3.68)***	0.054 (4.08)***	0.054 (5.13)***	0.053 (4.55)***	0.044 (3.58)***

Source: Jaumotte, Lall, and Papageorgiou (2013).

**Table 6. International Panel-Data Evidence II**

Variables	Market Gini (1)	Net Gini (2)	Top 10% (3)	5th Income Decile (4)	Bottom 10% (5)
Trade openness	−0.025 (0.017)	−0.008 (0.014)	−0.011 (0.014)	0.002 (0.003)	0.005 (0.005)
Financial openness	0.098*** (0.016)	0.047** (0.019)	0.026** (0.011)	−0.002 (0.002)	−0.008* (0.004)
Technology	56.85* (31.01)	15.03 (30.01)	31.11* (15.81)	−3.775 (3.572)	−11.51*** (3.587)
Financial deepening	0.050** (0.021)	0.026** (0.011)	0.022*** (0.007)	−0.004 (0.001)	−0.002 (0.002)
AEs * Financial deepening	−0.049**	−0.033**	−0.03***	0.007***	0.004*

Source: Dabla-Norris et al. (2015).

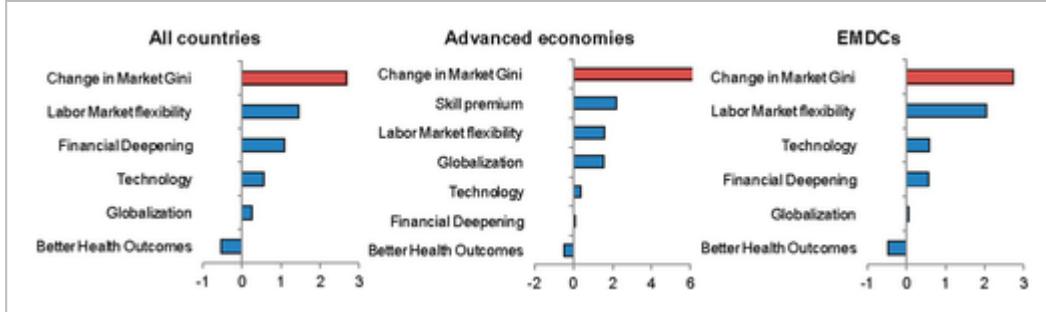
Considering AEs and EMDCs separately, globalization and technology affect the latter country groups very differently. Trade raises (lowers) demand for high-skilled (low-skilled) labor in AEs (EMDCs), increasing (decreasing) inequality in AEs (EMDCs). With financial globalization, capital in general (and foreign direct investment [FDI] in particular) flows toward EMDCs, raising demand for complementary high-skilled labor, increasing inequality in EMDCs. Technology generally raises demand for skilled labor relative to unskilled labor, also increasing inequality. A decomposition of the increase in Gini coefficients between 1985 and 2012 estimates that overall globalization has contributed by less than a third to the 6 percentage-point average rise in Gini coefficients in AEs between 1985 and 2012, while

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**Figure 8**

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Decomposition of Market Gini Change in AEs and EMEs, IMF 2015 (1985–2012 Gini point change)

Source: Dabla-Norris et al. (2015).

## D. Implications for Globalization Research and Policy

There are many research challenges to better understand the effects of globalization, and policies to address them. We need better analytical models that can assess the separate and joint contribution of globalization and technology to growth, and also measure the separate and joint contribution of globalization and technology to poverty and to income distribution. We need to better understand the links (bi-causality) between globalization and technology. Empirical work also needs to be more robust. This means closer links between empirical and analytical models, and broader measures of globalization (beyond trade and financial openness). Finally, this includes considering well-founded interactions between technology and globalization, and addressing classical econometric problems when doing empirical research.

## E. Who Are the Globalization Discontents?

The basic story is that the average agent and voter win with globalization. However, there are losers, very few in absolute terms (poverty declines), but more in relative terms (especially in AEs). Risk-averse agents are hurt by larger uncertainty (not higher income volatility) due to globalization (and other changes). Many voters are scared by large numbers of immigrants. In terms of political economy, the few losers (especially those who have much to lose), and many risk-averse agents form effective coalitions that block or reverse globalization reforms that benefit a majority of winners and less risk-averse agents. Politicians exploit such coalitions against globalization to gain power. Recent examples include the Brexit plebiscite and Trump's election in 2016. In 2017, there is the prospect that anti-European Union (EU) and anti-globalization populists from the left and the right may win European elections.

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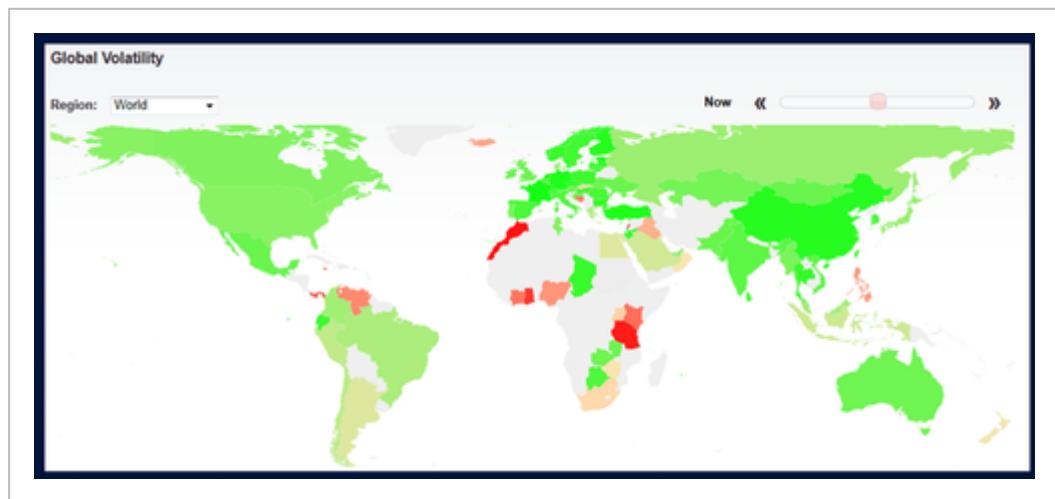
countries. An interior second-best solution for immigration could be based on immigrant quota systems, as established in Australia, New Zealand, and Canada.

It is incumbent on economists to better disseminate and explain our research results. This includes discussing both positive and negative welfare implications, and evaluating and taking seriously both the positive and negative welfare implications of anti-globalization ( protectionist) policy proposals. The policy implications for governments are to promote full globalization, except free mobility of people, and to compensate losers selectively and temporarily, for example, by establishing retraining for unemployed workers.

## IV. ROBERT F. ENGLE

I want to look at how globalization relates to volatility in financial markets. One way to do this is to visualize how global markets responded to a series of recent political events using some global volatility maps ([www.vlab.stern.nyu.edu](http://www.vlab.stern.nyu.edu), New York University Stern Volatility Institute), which show less volatility in shades of green, and greater in red.

Starting with the world now, in early January 2017 (Figure 9), there is not much volatility, at least not in larger, established markets. Now, let's consider what volatility looked like before and after some political events that we can all agree had the potential to roil markets in 2016.



**Figure 9**

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Global Volatility: January 6, 2017

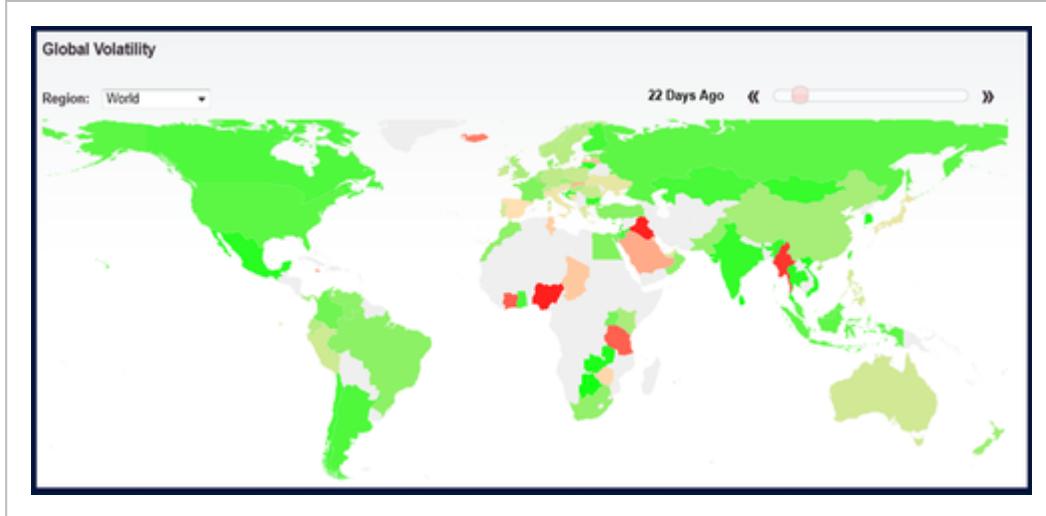
Source: The Volatility Laboratory of the NYU Stern Volatility Institute (<https://vlab.stern.nyu.edu>)

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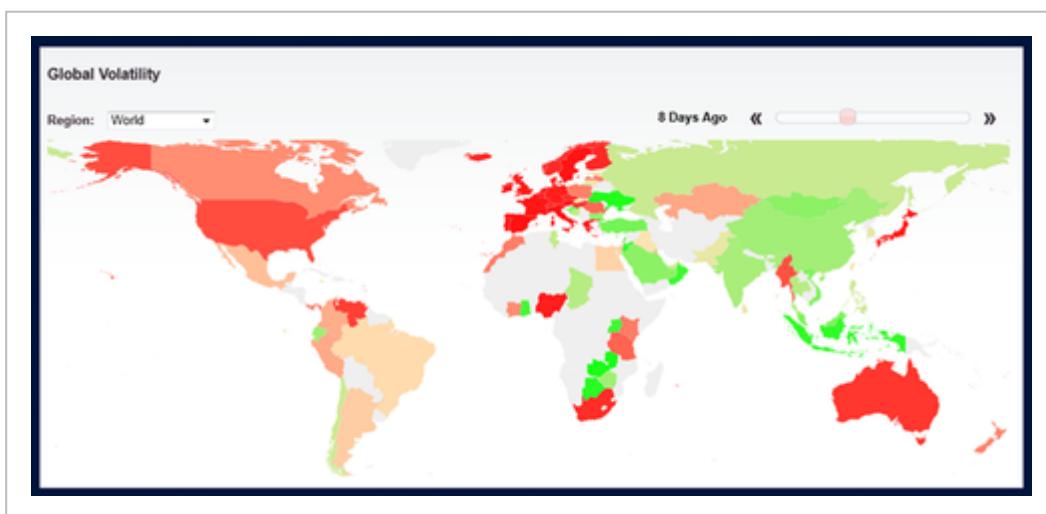
**Figure 10**

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Global Volatility: June 8, 2016

Source: The Volatility Laboratory of the NYU Stern Volatility Institute (<https://vlab.stern.nyu.edu>)



**Figure 11**

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Global Volatility: June 28, 2016, Brexit

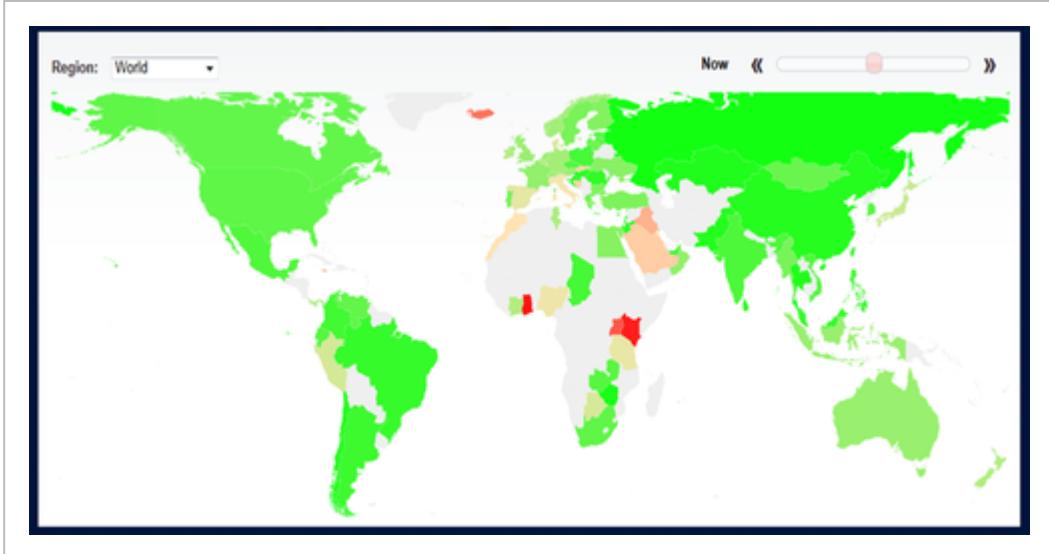
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**Figure 12**

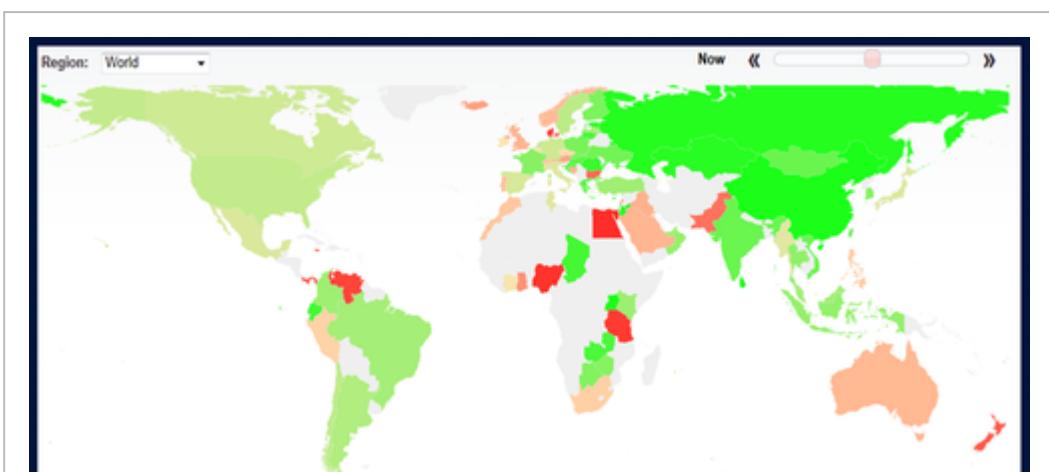
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Global Volatility: August 30, 2016

Source: The Volatility Laboratory of the NYU Stern Volatility Institute (<https://vlab.stern.nyu.edu>)

Turning to a more recent event, on the day of the presidential election in the United States we mostly see low volatility (Figure 13). Two days after Trump was elected, there was not much difference (Figure 14). But by November 14, almost a week after the election, we saw much more volatility in Mexico, South America, Australia, India, parts of the Middle East, Japan, and much of Asia (Figure 15). But there was essentially no impact on financial markets in the United States, China, or Russia. The pattern of increased volatility matches countries with existing trade agreements with the United States, and countries that counted on passage of the Trans-Pacific Partnership (TPP), which is now seen as quite unlikely.

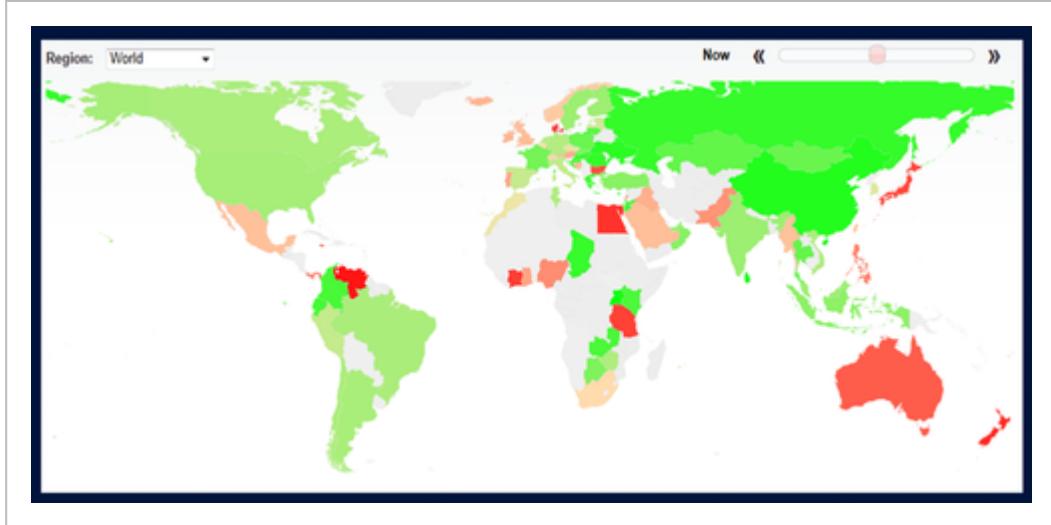


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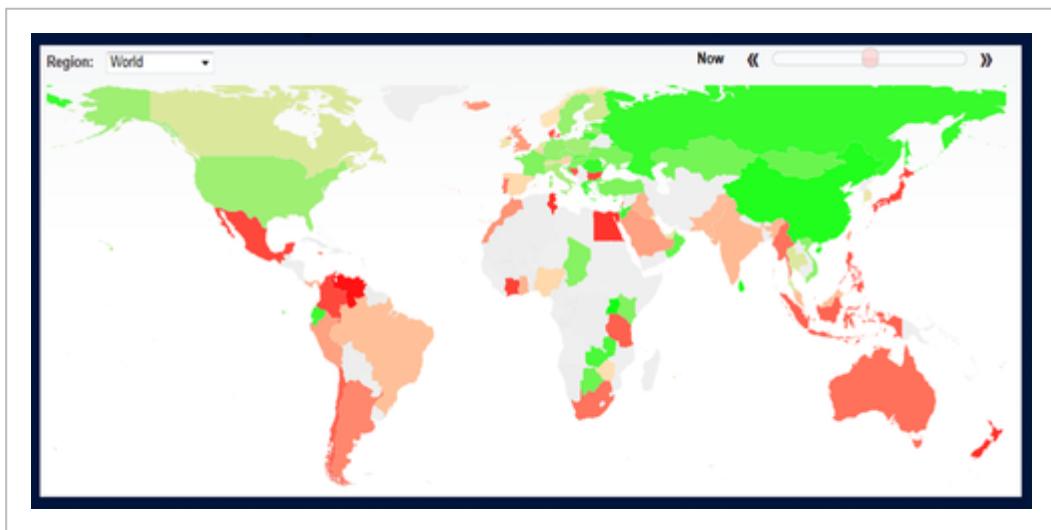
**Figure 14**

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Global Volatility: November 10, 2016

Source: The Volatility Laboratory of the NYU Stern Volatility Institute (<https://vlab.stern.nyu.edu>)



**Figure 15**

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Global Volatility: November 14, 2016

Source: The Volatility Laboratory of the NYU Stern Volatility Institute (<https://vlab.stern.nyu.edu>)

To some degree, volatility is an indicator of what markets expect to happen with significant policy

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United States that were slated for Mexico. He has proposed big tax breaks for firms that remain or expand in the United States, but we have no details, and thus cannot really assess what benefits they might have. Cutting corporate tax rates and restructuring taxes might help to repatriate profits, but this is complex.

Cancelling TPP is a Trump priority. However, apart from causing harm to many small countries that worked hard to become part of the partnership, and would gain from access to larger markets, the chief impact would be to create opportunities for China.

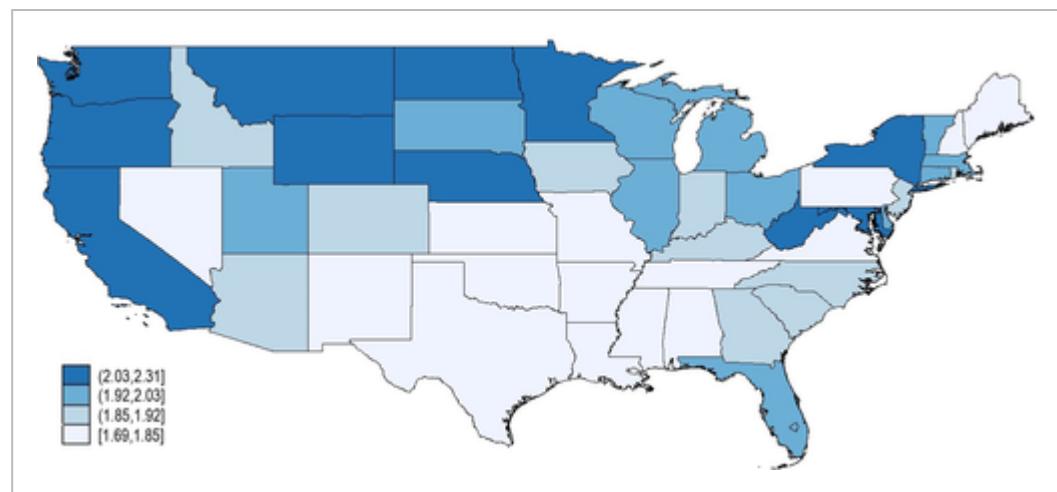
But for all of Trump's arguments to end free trade agreements, raise trade barriers, and so on, the businessmen nominated to his cabinet are not pro-tariff, and in fact have in many cases led firms that are global. So parsing what might actually change is not simple.

In any event, trade barriers won't bring back jobs. Technology is the real impetus for the decline in employment in some sectors. Economists need to address the issue that, while technology provides a plethora of goods and services, it does not generate jobs, at least not jobs in traditional manufacturing. And I suspect that Ford in Detroit will be even more automated than in Mexico.

My overall prediction is that Trump's policies will be on net a negative for the United States and positive for China, which will gain economically.

## V. ORLEY ASHENFELTER

I am going to be brief, and talk some about the discontents. To put things in context, Figure 16 of the United States, from ongoing joint work with Stepan Jurajda<sup>3</sup> shows some results from what we call the McWage project. This map shows the Big Mac Wage Index aggregated from county data to the state level.



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I think this is a very good measure of the “real wage,” that is, of goods earned per hour of work, as both production and product are quite standardized.

As you can see, there is a lot of variation across states. Some will immediately see a correlation with recent voting behavior in this map and, indeed, higher wage states, in blue, tended to be blue states in the recent election also. In dark blue states workers are paid enough to buy nearly three Big Macs for an hour's wages, in light blue areas less than two. Why is this?

There are no doubt many reasons why basic, unskilled wage rates are so low in so many places. Globalization is certainly responsible for declines in demand for low-skilled workers, and many U.S. safety net policies increase the labor supply of low-skilled workers. The combination of increased supply and decreased demand leaves these wage rates stagnant. But a key factor in differences across states is that U.S. political forces—including state legislatures—have evolved quite different policies toward workers' welfare. Surprisingly, voters themselves tend to support worker welfare and often take direct action, such as increasing the minimum wage by referendum as a response to inaction by the legislature or governor (or both).

Let's first look at Ohio or West Virginia, which as you can see are right next to Pennsylvania, but Ohio and West Virginia McDonald's workers have higher wages. The reason for this is primarily a result of political action, as both West Virginia and Ohio have taken direct action to raise their minimum wages above the federal minimum, unlike Pennsylvania. In some cases where legislatures have been intransigent, direct voter initiatives have resulted in increased minimum wages. For example, when Chris Christie, the governor of New Jersey, vetoed an increase in the minimum wage, and the legislature did not have the votes to override the veto, voters amended the state constitution to include a minimum wage that is indexed to the consumer price index. Voters in states as varied as Alaska, Arizona, Nebraska, South Dakota, and Washington similarly took action because politicians would not. Perhaps surprising to many people, the last increase in the federal minimum wage was signed into law by President George W. Bush, with phased increases over several years. President Obama proposed federal minimum wage increases, but not at the beginning of his first term when that would have been possible. So, it remains at \$7.25.

There are of course other factors. Blue collar unions in the United States have lost considerable economic and political power, and a smaller percentage of the workforce is represented by unions. There has also been an increase in noncompete clauses and other legislation that weakens the bargaining power of both skilled and unskilled workers. Currently about 20% of workers sign noncompete agreements, which typically preclude a worker from accepting a position with a competing firm for some period of time. These agreements, which may be motivated by issues related to intellectual property, seem to be widespread even when hard to justify on such grounds. In any case these agreements reduce a worker's bargaining power with the current employer. In some cases

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uncertainty, stagnant wages, and other concerns are the result of globalization.

Whether this is the case or not, the sanguine reaction of political actors to concerns about globalization no doubt exacerbates discontent.

## Questions and Answers

### Question:

**Peter Elias**, Warwick University: The chief economist of the Bank of England recently said (Cole and Phillips 2017) that the public does not trust economists. Perhaps for reasons such as failure to predict the Great Recession beginning in 2008, the fact that GDP did not fall in the United Kingdom but has actually risen since the Brexit vote, etc. Is this a “Michael Fish moment,” and if so, what do economists need to do? Let me explain. Michael Fish (see [Wikipedia, Great Storm of 1987](#)) is a weather forecaster whose forecasts were treated as absolutely reliable. In October 1987 there was a report of the potential for a hurricane-like storm. Fish said it simply was not possible and people went to bed assuming all was well. The violent cyclone that struck England and France killed 22 and did billions of pounds of damage. As a result of this poor forecast we now have a world class weather data collection system and sophisticated weather models.

### Answers:

**Daniel L. McFadden**: The public image of economics is shaped by opinions offered without careful factual analysis and without appropriate caveats. It is important for economic science that we protect the integrity of our data collection and analysis, and avoid overselling our results. We need to develop scientifically cautious outlets to communicate fact-based results as a counterweight to careless forecasts.

**Robert F. Engle**: Why are meteorologists now better forecasters than economists? There has been a vast improvement in data collection and computing. Consider satellite measurements, and so on. So the answer for economists is that we could use additional data. We could look at information from social media that financial institutions now integrate into their analyses. And there is actually more agreement among economists than we realize. For example, there is broad agreement that globalization leads to a Pareto improvement.

### Question:

**Helen Ladd**, Duke University: What about the effects of globalization on women?

### Answer:

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## Answers:

**Orley Ashenfelter:** Discussions of economists' failure often really relate to things said by noneconomists. People and the media tend to hear and report what they want to hear, so what is heard is skewed and not from trained economists. Consider that the only accurate prediction of the outcome of the U.S. presidential election was Ray Fair's (2014) forecast 2 years ago based on economic conditions and the past history of party voting—and that this prediction was made prior to the parties selecting the nominees, and regardless of who they might be. And although he over-estimated the popular vote share that Republicans would receive (perhaps because of a weak candidate) he was right with his general prediction. And he is an economist!

**Klaus Schmidt-Hebbel:** There are measures of the quality of institutions and political factors, but there is little work on what we observe more locally. Many institutions are in fact globalized. For example, inflation-targeting is now common. So there is less variation across countries and regions for some important economic policies. I also note that the presumed cancelation of the TPP, which would have provided institutional support for globalization beyond trade, is a huge cost to smaller countries, especially as they invested heavily in negotiating the agreement.

## Questions:

**Andre De Palma**, Ecole Normale Supérieure Paris-Saclay:

**First question:** Is globalization a metaphor for loss of diversity and is that a problem?

**Second question:** For Professor Engle, can you say more about the future of the environment?

## Answers:

**Robert F. Engle:** For the second question, climate policy is likely to be one of the biggest disasters of the Trump administration. Consider the nominee to head the Environmental Protection Agency. He does not believe climate change relates to human actions or fossil fuels. Some hope that private sectors are worried enough about the consequences of climate instability that they will continue with changes already underway. We might also see class action litigation against fossil fuel companies, as we saw against tobacco companies in the past.

**Daniel L. McFadden:** Back to your first question. Monoculture creates systemic risk, for example, in vineyards. Large areas planted in the same varietals are susceptible to the rapid spread of pests or disease, and thus to widespread collapse. For example, Phylloxera are yellow sap sucking insects related to aphids that girdle the roots of grape vines, cutting off nutrients and water and reducing the ability of the plants to fight off secondary fungal infections; these insects spread rapidly in an irrigated

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**Klaus Schmidt-Hebbel:** Latin America is an outlier in reducing inequality, but still records the world's largest economic concentration. So there is room for improvement. Trade could relate to reducing poverty and concentration. But with commodity prices falling, the region is now in recession; what comes in the future? The region has to diversify beyond commodities. We need to look at broad horizontal policies that focus on human capital development through education and training, avoiding adoption of vertical industrial policies that target specific economic sectors.

**Question:**

**Misty Heggeness**, U.S. Census Bureau: Professor Ashenfelter's answer about women and globalization was correct, but I am still curious. I study the population of highly educated and skilled women in science and technical fields. Childcare and other family responsibilities are not yet proportional between women and men. What is the impact of globalization on this reality?

**Answer:**

**Orley Ashenfelter:** I was being a little glib when I answered the previous question about globalization and gender equality, as I think things are more complicated than a simple comparison of trends indicates. I don't think there has really been much research directed at the effect globalization has had on gender and family differences across countries. In economies that are more open than in the United States (where trade is not a high proportion of GDP), the answers could be different. This is a sensible research question and you might want to work on it.

1 Table 1 reports the components and weights of the KOF Globalization Index (see the list of Abbreviations, above). In German, Konjunkturforschungsstelle (KOF) means Economic Research Center.

2 Both these regressions and those reported next control for other income inequality determinants, including education, financial deepening, labor market institutions, and redistributive policies.

3 See Jurajda and Ashenfelter (2016).

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