DOMESTIC CONSEQUENCES OF UNEQUAL EXCHANGE: HOW GLOBAL TRADE INCREASES OUR LIVING STANDARDS BUT DEINDUSTRIALIZES OUR ECONOMY

By
Dr Christopher Kollmeyer
Department of Sociology
University of Aberdeen
Aberdeen AB24 3QY
Scotland, United Kingdom
Email: c.kollmeyer@abdn.ac.uk
Phone: +44.01224.273.154

ABSTRACT

Using a novel application of unequal exchange theory, this study seeks to analyze how global trade patterns affect national incomes and employment patterns in affluent countries. The study begins by demonstrating that North-South trade typically embodies an unequal exchange of labor inputs, resulting from workers in less developed countries being significantly underpaid relative to their labor productivity. Based on this empirical observation, it is hypothesized that North-South trade should increase average living standards in affluent countries, but also accelerate the deindustrialization of their economies and heighten their unemployment rates. Using panel data from 18 OECD countries over a 34-year period, several variations of this hypothesis are tested with simultaneous equations models. The results suggest that, for affluent countries, North-South trade does increase average living standards and reduce manufacturing employment, but that it likely mitigates unemployment problems rather than increase them. The theoretical and policy implications of these findings are discussed.

Key Words: Unequal exchange, North-South trade, globalization, deindustrialization, unemployment, economic growth

DOMESTIC CONSEQUENCES OF UNEQUAL EXCHANGE: HOW GLOBAL TRADE INCREASES OUR LIVING STANDARDS BUT DEINDUSTRIALIZES OUR ECONOMY

INTRODUCTION

Most of the world's affluent countries have experienced considerable increases in their living standards over the last few decades. For example, as measured in 2000 US dollars, the average per capita income of 18 countries in the Organization for Economic Cooperation and Development (OECD) rose from just under $15,000 in 1970 to just over $30,000 in 2006 (OECD 2007)[i]. This amounts to more than a doubling of the average living standard in less than two generations. The positive aspects of this growing affluence, however, have been undermined by dwindling job opportunities in the manufacturing sector and rising levels of unemployment across the economy as a whole. Since 1970, these 18 affluent countries have experienced, on average, nearly a 50 percent drop in manufacturing employment and almost a threefold increase in general unemployment rates. These latter two developments have been particularly troubling, in large part because the full-employment economy, based on ample high-wage jobs in the manufacturing sector, helped underpin the emergence of egalitarian societies during the mid-20th century.

How has globalization contributed to these socioeconomic changes? It is well known that, over the period in question, trade links between affluent countries (the North) and less developed countries (the South) have grown considerably. In the United States, for example, the inflation-adjusted value of imports from less developed countries has increased 14-fold over the last 30 years (OECD 2002, 2005b). Undoubtedly, this structural change in the world economy has contributed to the domestic effects mentioned above. But the exact nature of this causal relationship remains unclear. While we know with great certainty that globalization has contributed to the deindustrialization of Northern economies (Alderson 1999; Brady and Denniston 2006; Kollmeyer 2007; Rowthorn and Ramaswamy

1999; Saeger 1997; Wood 1995), we do not know if these changes are interrelated with rising living standards and unemployment rates as well.

To fill this gap in the literature, the present study assesses the possibility that economic globalization has increased the average living standards of affluent countries, but also contributed to the deindustrialization of their economies and the heightening of their unemployment rates. To gain theoretical insight into this research question, I draw on the concept of *unequal exchange*. This concept was originally developed by scholars (notably Emmanuel 1972 and Amin 1976), seeking to explain why the South continually lags far behind the North in terms of its economic development. In answering this question, their research advanced two claims: (1) that trade between countries at different levels of economic development embodies vastly different quantities of labor inputs, and (2) that consequently this type of trade facilitates an ongoing transfer of wealth from less developed countries to affluent countries, even though the trade flows may have equivalent market values. This influential argument has been controversial for many reasons, one being that it implies international worker solidarity is unlikely because Northern consumers benefit from the exploitation of Southern workers.

The present study seeks to contribute to the literature on international political economy by reversing the typical subject matter of unequal exchange scholarship. Instead of analyzing how North-South trade affects less developed countries, as many scholars have already done, the present study analyzes how North-South trade affects affluent countries. To facilitate this analysis, I begin by detailing the theoretical reasons why North-South trade should boost average living standards in affluent countries, but also displace many of their manufacturing workers, thereby increasing levels of deindustrialization and unemployment. With simultaneous equations models, I compare this theoretical expectation to the actual experiences of 18 OECD countries between 1970 and 2003. The results show that, for affluent countries, North-South trade is indeed associated with rising living standards and

declining manufacturing employment, but that this type of trade may actually reduce overall

unemployment rates rather than increase them.

GLOBALIZATION AND SOCIOECONOMIC CHANGE IN AFFLUENT COUNTRIES

The world economy has undergone significant structural change over the last few decades. In

an early analysis of this transformation, Fröbel and his colleagues (1980) introduced a prominent

framework for understanding how the emergent global economy altered trading and employment

patterns around the world. Their analysis centered on the claim that, for much of the modern era, the

world economy exhibited an international division of labor in which less developed countries

specialized in agricultural production and natural resource extraction, and affluent countries specialized

in manufacturing finished goods. Hence, during this time, North-South trade revolved around the

South exporting raw materials to the North, and the North manufacturing these materials into finished

products, some of which were then exported back to the South. Organized in this way, the world

economy created vibrant and growing manufacturing sectors in affluent countries.

With the onset of globalization, however, this long-standing trade pattern began to change. By

the 1970s, many multinational firms began outsourcing their routine manufacturing jobs to subsidiaries

and subcontractors in less developed countries (where wages are low), and then exporting the finished

products back to affluent countries (where consumer prices are much higher). The popularity of this

business strategy, Fröbel and his colleagues claimed, eventually reorganized the international division

of labor, leaving the South to specialize in labor-intensive and low-skilled manufacturing jobs, and

leaving the North to specialize in high-skilled economic activities, such as strategic management,

product development, and finance (see also Castells 2000:163-215; Gereffi 1994; Reich 1991:81-170).

This structural change in the world economy not only industrialized many less developed

countries, but according to Fröbel and his colleagues, it also brought chronic unemployment problems

to the world's most affluent countries (see also Bluestone and Harrison 1982; Harrison and Bluestone

1988; Ross and Trachte 1990). Such a claim makes intuitive sense, because seemingly the very

manufacturing jobs disappearing in the North were reappearing in the South. Yet despite its

plausibility, this argument never gained serious credibility among most social scientists. Instead, the

dominant view holds that "rigidities" in the domestic labor market, not trade with less developed

countries, have been the root cause of the North's unemployment problems (Krugman 1994; Layard et

al 2005).[ii]

What has been definitively established, however, is that globalization has contributed to the

deindustrialization of Northern economies. Numerous studies demonstrate that deindustrialization is

caused in part by trade with less developed countries, and in part by changes occurring wholly within

the domestic economy (Alderson 1999; Brady and Denniston 2006; Kollmeyer 2007; Rowthorn and

Ramaswamy 1999; Saeger 1997; Wood 1995). Two factors account for the domestic economic

changes: (1) the propensity of consumers, as they become more affluent, to spend an increasing portion

of their incomes on services rather than manufactured goods, and (2) the ability of manufacturing firms

to achieve rapid productivity growth, which enables them to maintain production levels with fewer and

fewer workers. While the statistical association between North-South trade and deindustrialization is

robust, the theoretical explanation for this relationship has been less convincing. In general, the offered

explanation maintains that imports from the South, since they are labor-intensive, displace more

domestic jobs than exports to the South create. While this claim is indeed true, a more detailed

explanation can be developed.

GLOBALIZATION AS UNEQUAL EXCHANGE

The following section develops insights into why growing trade relationships with less developed

countries likely alter certain aspects of the socioeconomic structure of affluent countries. I first review

the common argument that trade has little effect on the socioeconomic structure of affluent countries,

and then I draw on unequal exchange theory to show why this outcome likely only occurring for trade among affluent countries.

Argument 1: Global Trade is Inconsequential

Some scholars believe that globalization has played only a minor role in the socioeconomic changes occurring in affluent countries. The underlying premise of this claim is that international trade generates counterbalancing effects on the domestic economy, since exports create new wealth and new manufacturing jobs, while imports do basically the opposite (Freeman 2004; Krugman 1996; Krugman and Lawrence 1993, 1994; Lawrence and Slaughter 1993). In describing this logic, Krugman and Lawrence (1994) write the following about declining manufacturing employment in the United States:

> To assess the overall impact of growing international trade on the size of the [domestic] manufacturing sector, we need to estimate the net effect of this simultaneous growth of exports and imports. A dollar of exports adds a dollar to the sales of domestic manufacturers; a dollar of imports, to a first approximation, displaces a dollar of domestic sales. The net impact of trade on domestic manufacturing sales can therefore be measured simply by the manufacturing trade balance. (p. 45)

Based on this rationale, they claim that US trade imbalances are much too small to account for recent changes in the US labor market. Instead, they assert that deindustrialization has primarily been caused by rapid productivity gains in the manufacturing sector, which over time enable domestic firms to produce a constant output of goods with fewer and fewer workers.

Importantly, this argument tacitly assumes that exports and imports have equal but opposite effects on the domestic economy. That is to say, for example, $1 million of exports creates new jobs at the same rate that $1 million of imports displaces existing jobs. Granted, if this assumption is valid, then small to moderate trade imbalances would hardly affect employment patterns as Krugman and Lawrence claim. But for reasons described below, this assumption may not hold under some common

situations. Before elaborating on this idea, let me first describe a situation in which Krugman and Lawrence's claim should remain valid.

The argument that trade globalization has only negligible effects on the domestic economy likely holds for goods produced and traded among countries functioning at similar levels of economic development and operating within integrated trade zones. This should occur because market forces, occurring within similar and integrated economies, should eventually equate the wages of workers with their productivity. When this happens, the value of trade balances, as Krugman and Lawrence state, should approximate the amount of domestic wealth and jobs created and displaced by trade.

Equation 1 formally expresses the rationale behind this argument:

$$Real\ labor\ costs\ =\ W_1/P_1\ =\ W_2/P_2 \tag{1}$$

where W equals the prevailing wage rate, P equals the prevailing productivity rate, and the subscripts $_1$ and $_2$ represent different countries. Here, since country 1 and country 2 operate within an integrated economic system, real labor costs should be the same in both countries. Again, this occurs because market competition and factor mobility should equate a country's prevailing wage with its prevailing productivity rates. This does not imply, however, that wages and productivity rates will be the same in both countries. Indeed, for a variety of reasons, they may be significantly different. But it does mean that, for example, if manufacturing workers in country 1 are more productive than manufacturing workers in country 2, then market forces should eventually ensure that the former receives proportionately higher wages than the latter. This, in turn, should equalize real labor costs between these two countries, creating a situation in which firms cannot reduce their real labor costs by operating in country 1 instead of country 2, or vice versa. Furthermore, since both countries have the same real labor costs, the monetary value of trade flows between these countries should accurately reflect the actual amount of labor inputs embodied within them. It is under these conditions that imports and exports should generate counterbalancing effects on domestic employment patterns and living standards.

Argument 2: Global Trade Facilitates Unequal Exchange

A central premise of neo-classical economics is that international trade, if occurring within competitive markets, should improve the economic positions of all participants. This idea, however, has been assailed by several scholars. Most notably, Emmanuel (1972) sought to explain why the South continually lags far behind the North in terms of its economic development, even though both sets of countries participate in international trade. Drawing on economic theories generated by classic political economists—such as Smith, Ricardo, and Marx—he argued that trade occurring between countries at different levels of economic development typically results in a transfer of wealth from the less developed country to the affluent country, even though the trade flows have equivalent monetary values. He called this phenomenon "unequal exchange."

For Emmanuel, unequal exchange is an inherent characteristic of North-South trade. It arises, he argued, because capital is highly mobile across countries (which equalizes profit rates around the world), but workers are not (which sustains large wage differences between countries). When such conditions prevail, the low wages paid to Southern workers should manifest not as higher profits for Southern producers, but instead as lower market prices for Southern goods. This outcome, Emmanuel contends, essentially allows Northern consumers to buy Southern imports at a steep discount (since these goods embody low wages), but compels Southern consumers to pay full price for Northern imports (since these goods embody high wages). Or, stated in different terms, North-South trade purportedly enables affluent countries to import something of greater value than they export to less developed countries, even though the traded goods have equivalent monetary values.

The dynamics of this process were further clarified by Amin (1976:138-54). Among other things, he examined the possibility that North-South wage differentials merely reflect underlying productivity differences between Northern and Southern workers. This is an important consideration, because if true, it means that Northern workers essentially earn their higher wages by being more productive. But, according Amin's research, this is not the case. He found that Northern workers are

indeed more productive than their Southern counterparts, but that the modest differences could not explain the substantial gap between Northern and Southern wages. Consequently, his study confirmed the argument that North-South trade facilitates an unjustifiably large net outflow of labor power from less developed countries to affluent countries (see also Gibson 1980; Nakajima and Izumi 1995).

In light of surging North-South trade, the rationale underlying this argument makes intuitive sense. One could easily argue that multinational firms, through their worldwide search for cost advantages, have been the primary agents of economic globalization. To reduce production costs and bolster profits, multinational firms often choose to locate their routine manufacturing operations in the South. They choose the South, however, not merely because it offers low wages, but more precisely, because it offers lower wages than its productivity levels would otherwise suggest. This argument infers that

$$RCL_S = (W_S / P_S) \quad < \quad RCL_N = (W_N / P_N), \tag{2}$$

where the subscripts $_N$ and $_S$ represent the North and the South, respectively, and the abbreviation RCL stands for *real cost of labor.*

Unlike the situation expressed by equation 1, the notion of unequal exchange implies that the wage-productivity ratios across regions of the global economy remain imbalanced, with the South having a much lower real costs of labor than the North. If this is indeed the case, then market prices of Southern goods should underestimate the actual amount of labor inputs embodied within them, and hence North-South trade should facilitate an unjustifiably large net transfer of labor power (and hence wealth) from less developed countries to affluent countries.

[Insert Table 1 about here.]

Table 1 illustrates this theoretical argument with actual data. It compares real labor costs in various parts of the world by adjusting nominal wages with productivity rates for 13 select countries. With equation 1 and internationally comparable data compiled by the International Labour Organization and the United Nations (ILO 2006, UN 2006), the real cost of labor is estimated for each

country. The resulting figure equals a country's nominal wage expressed in US dollars (column 1) divided by its productivity rate benchmarked against the US rate (column 2). As column 4 indicates, real labor costs vary considerably across these 13 countries. On average, the less developed countries of Asia and Latin America have real labor costs equal to 28 percent and 61 percent, respectively, of the real labor costs in the United States. Yet the differences between the United States and Canada are negligible. Importantly, these findings suggest that unequal exchange still occurs today.

Based on these results, it seems plausible that an unequal flow of labor inputs embodied within North-South trade could increase living standards in affluent countries, but also deindustrialize their economies and heighten their unemployment rates. Figure 1 offers a more detailed depiction of this hypothesis.

[Insert Figure 1 about here.]

DATA AND RESEARCH METHODS

As demonstrated above, one can use the concept of unequal exchange to logically argue that North-South trade, unlike North-North trade, should generate socioeconomic changes in affluent countries. The following three equations, where i = country and t = year, specify the particular determinants of these hypothesized socioeconomic changes:

(1) Manufacturing Employment$_{it}$ = f(Imports from the South$_{it}$, Exports to the South$_{it}$, Imports from the North$_{it}$, Exports to the North$_{it}$, National Income$_{it}$ Unbalanced Productivity Growth$_{it}$, Unemployment$_{it}$ ε_{it})

(2) National Income $_{it}$ = f(Imports from the South$_{it}$, Exports to the South$_{it}$, Imports from the North$_{it}$, Exports to the North$_{it,\ it}$ Manufacturing Employment$_{it}$ Unemployment$_{it}$ ε_{it})

(3) Unemployment$_{it}$ = f(Manufacturing Employment$_{it,}$ National Income $_{it}$, Regime Type$_i$, ε_{it})

For each variable in this system of equations, I gather repeat observations of 18 OECD countries between 1970 and 2003. This process yields a panel dataset containing a maximum of 612

separate observations (n=18, t=34). The 18 OECD countries used in the study are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States.

The proposed model has three endogenous (or dependent) variables. The first endogenous variable, *manufacturing employment*, equals the number of employees working in a country's manufacturing sector as a percentage of that country's total workforce. Data come from the OECD's (2005c) *STAN Structural Analysis Database*, which assembles internationally compatible economic data on OECD countries. The manufacturing sector is defined as categories 15-37 from the third revision of the International Standard Industrial Classification (ISIC) scheme. The second endogenous variable, *national income,* measures a country's per capita income. It equals a country's real gross domestic product (GDP) divided by its total population, with GDP expressed in US dollars at prices and purchasing parities from the year 2000. Data come from the OECD's (2006a) *Annual National Accounts - Volume I - Comparative Tables.* The final endogenous variable, *unemployment*, measures the percentage of a country's workforce unable to find employment. Data come from the *Labour Force Statistics – Summary Tables* (OECD 2006b).

The proposed model also contains four exogenous explanatory variables. The theory of unequal exchange suggests that, for North-South trade, the domestic effects of imports are not entirely offset by the domestic effects of exports. To test this hypothesis, I disaggregate North-South trade into its constitutive components, creating the variables *imports from the South* and *exports to the South*. Both of these variables are measured through a two-step process. The first step delineates the North-South divide in the global economy. To accomplish this, I start with the OECD's regional classification scheme, which places the world's countries into one of five geographic regions: Africa, Asia (which includes the Middle East), Central and South America, Europe, North America, and Oceania. From here, I define the South as Africa, Asia, Central and South America, and Oceania, and I define the North as Europe and North America. I then make several adjustments to these categories, moving

Mexico and Turkey (from North America and Europe, respectively) to the South, and moving Australia and New Zealand (from Oceania) and Israel, Japan, and South Korea (from Asia) to the North. This division constitutes the North-South divide in the global economy.

The second step calculates the monetary value of traded manufactured goods flowing across the North-South divide. To make this calculation, I sum the values of North-South trade falling within categories five through eight of the Standard International Trade Classification (SITC) scheme. This step eliminates the value of agricultural products, raw materials, services, and other non-manufactured goods from the value of North-South trade. To facilitate international comparison, the resulting values are expressed as a percentage of GDP. Data come from the *International Trade by Commodities Database* (OECD 2002, 2005b), which reports the annual monetary value of imports and exports at the national, regional, and global levels. This calculation is made for each country-year observation in the data set.

Another set of exogenous explanatory variables captures the effects of North-North trade. To allow for the possibility that imports and exports affect domestic socioeconomic structures in different ways, I disaggregate North-North trade into the variables *imports from the North* and *exports to the North*. These variables are calculated with a two-step process. First, I obtain the value of worldwide imports and exports in manufactured goods from the *International Trade by Commodities Database* (OECD 2002, 2005b). Then, from this value, I subtract the corresponding values for imports and exports from the South as calculated above. The resulting figures, expressed as a percentage of GDP, represent the value of North-North trade in manufactured goods. This calculation is made for each country-year observation in the data set.

The model also contains several exogenous control variables. The first is *unbalanced productivity growth*. As discussed above, it is well known that faster rates of productivity growth in the manufacturing sector, relative to the general economy, can contribute to deindustrialization. To control for this factor, I measure the magnitude by which productivity gains in the manufacturing sector

outpace those made by the overall economy. For any given observation, this variable equals that country-year's real increase in value added per worker in the manufacturing sector divided by that country-year's real increase in value added per worker in the overall economy. Data on the size of the workforce across sectors are taken from the OECD's (2005c) *STAN Structural Analysis Database*, and data on real value added across various sectors are taken from the United Nations' (2006a) *National Accounts Main Aggregates Database.* A second control variable accounts for annual changes in the *prime interest rate*, which is known to affect rates of economic growth and job creation. Data for this variable come from the United Nations' (2006b) *Common Database.* A third control variable accounts for changes in *fixed capital investment* across the economy, something that should help spur economic growth, but that may also causes manufacturing employment to decline as firms substitute capital for labor. This variable, which was calculated with data from the United Nations' (2006b) *Common Database*, measures national expenditures on capital investment each year, as measured in thousands of 1990 US dollars per person. The final control variable, *centralized wage bargaining*, accounts for cross-national differences in the institutionalized means by which employees and workers set wages. This variable runs along a 5-point scale, in which five equals a highly centralized wage bargaining system and one equals a highly decentralized wage bargaining system. These systems of wage coordination may affect the economy and labor market in various ways. This data come from Kenworthy (2003).

Finally, it must be emphasized that each of the three endogenous (dependent) variables, at some point in the model, also serves as endogenous explanatory variables. This arrangement, of course, is a hallmark of simultaneous equation models.

Statistical Estimation

The use of simultaneous equations models, such as the one being employed in this study, present researchers with certain methodological complications that must be addressed. Their primary advantage, however, is their ability to capture the complex feedback loops that typically characterize

socioeconomic processes. For example, in the model under consideration, the variable *national income* appears as an explanatory variable in one equation and a dependent variable in another. This implies a circular pattern of causation. Importantly, variables embedded in such patterns of causation are usually correlated with one or more of the model's disturbance terms. When this occurs, standard versions of ordinary least squares (OLS) regression will yield biased and inconsistent parameter estimates, even for large samples, and therefore an alternative estimator should be used.

Another complication must also be considered. Frequently, simultaneous equation models exhibit correlation among the disturbance terms of the individual equations. If left unaddressed, this situation will lead standard versions of OLS regression to generate inefficient parameter estimates, leading to unnecessarily large standard errors. Given the nature of the model being analyzed here, it seems likely that disturbances affecting one equation will affect the other equations as well. At minimum, we know that the measurement for each variable, across all three equations, comes from the same observational unit (country-year). If the model contains unobserved effects, a near certainty given the complexity of the processes being analyzed, the resulting errors will manifest as correlation among the disturbance terms and cause OLS to generate inefficient parameter estimates.

To overcome these complications, I use a modified version of two-stage least squares (2SLS) regression. This technique uses the single-equation approach to estimating simultaneous equations, whereby each equation in the model is estimated separately, using instrument variables to overcome problems associated with circular causation. In the first stage, the explanatory variable embedded within the circular causation, the so-called "problematic" variable, is replaced with an instrument variable, which by definition must be uncorrelated with the disturbance terms yet highly correlated with the problematic variable. A primary benefit of 2SLS is that, instead of finding an actual instrument variable that meets these criteria, one is calculated by regressing the problematic variable on the entire set of exogenous variables. The predicted value derived from this regression then serves as the instrument variable. In the second stage, the instrument variable replaces the problematic variable, and

the equation is estimated with OLS. This process is then repeated for each equation in the model. Importantly, by riding the model of correlations between the regressors and disturbance terms, 2SLS yields unbiased and consistent parameter estimates.

However, since the issue of correlation among the various disturbance terms remains unaddressed, 2SLS should be modified to account for unobserved effects in the data. If this is not done, the unobserved effects will cause correlation among the disturbance terms, and the resulting parameter estimates will be inefficient. For panel data, this problem can be mitigated by introducing controls for fixed or random effects. Thus, to improve the efficiency of my parameter estimates, I adopt Baltagi's (1981) error components, two-stage least squares (EC2SLS) estimator with random effects, which has been shown to perform well under similar conditions.

RESULTS

The primary argument being advanced in this study is that (1) trade with less developed countries sets in motion dynamics that eventually alter the socioeconomic structure of affluent countries, but that (2) trade with other affluent countries does not induce such changes. Results from several simultaneous equations models provide empirical support for this assertion. The analysis begins with Table 2, which shows four models that isolate the effects of North-South trade from the effects of North-North trade. Then the analysis focuses on Table 3, which shows result from three models that comprehensively test of the relationships depicted in figure 1. Correlations and descriptive statistics for the variables used in these analyses are reported in the appendix.

North-North Trade

Model 1 and 2 assesses how trade among affluent countries affects levels of manufacturing employment and national income therein (see table 2). The expectation is that North-North trade will negligibly affect the socioeconomic structures of affluent countries, because the imports and exports

comprising these trade flows should embody very similar quantities of labor inputs. In both of these models, the variables associated with North-North trade are statistically significant, exhibit the expected signs, and importantly have *equal* but *offsetting* magnitudes.

Specifically, model 1 considers how North-North trade affects manufacturing employment in affluent countries. After controlling for other relevant factors, the results of this model indicate that *exports to the North* (b = .064) create domestic manufacturing jobs while *imports from the North* (b = -.090) reduce them at almost the same level. This outcome was expected for two reasons. First, for trade in general, we expect exports to stimulate manufacturing job growth, since they increase the demand for domestic workers; and we expect imports to eliminate manufacturing jobs, since they essentially replace domestic workers with foreign workers. Second, for North-North trade in particular, we expect the effects from imports and exports to counterbalance one another, because the labor inputs embodied within these trade flows should be very similar. Overall, the dynamics of trade among affluent countries should create a situation in which imports and exports displace and create domestic manufacturing jobs at almost the same rates.

Next, model 2 investigates how North-North trade affects national incomes in affluent countries. As expected, the results here indicate that *exports to the North* (b= .207) increase national income while *imports to the North* (b = -.201) reduce it by nearly the same amount. This outcome was expected for two reasons. First, for trade in general, we expect exports to increase national income, because they increase the amount of economic activity (and hence wealth creation) occurring within the domestic economy. But we expect imports to have the opposite effect, because they embody the opportunity costs of economic activity (and hence wealth creation) that could have occurred within the domestic economy but did not. Second, for North-North trade in particular, we expect the effects of imports and exports to offset one another, because the quantity of labor inputs embedded within these trade flows should be very similar. In sum, the results from both model 1 and model 2 are consistent with theoretical expectation discussed above.

[Insert table 2 about here.]

North-South Trade

Using the results from models 1 and 2 as benchmarks, models 3 and 4 test whether trade with

less developed countries generates similar consequences (see table 2). In particular, these models

assess how trade with less developed countries affects levels of manufacturing employment (model 3)

and national income (model 4) in affluent countries, while holding other factors known to affect these

outcomes constant. In both models, the variables associated with North-South trade are statistically

significant, exhibit the expected signs, and importantly have *unequal* and *imbalanced* magnitudes.

Specifically, model 3 assesses whether North-South trade diminishes manufacturing

employment in affluent countries. Here the results indicate that *imports from the South* (b = -1.212)

displace many more domestic manufacturing jobs than *exports to the South* (b = .465) create. More

specifically, in its net effect, North-South trade seems to displace about three manufacturing jobs for

even one job it creates. This outcome, of course, is consistent with expectations.

Next, model 4 assesses the relationship between North-South trade and the national incomes of

affluent countries. Here the results reveal an imbalance between the magnitude of the coefficient for

imports from the South (b= .032) and the magnitude of the coefficient for *exports to the South* (b=

.245). This suggests that the North-South trade, instead creating offsetting effects on national income,

actually generates imbalances in the flow of wealth that flavor the affluent countries. Again, this

finding is consistent with expectation. Unequal exchange theory suggests that affluent countries, when

trading with less developed countries, essentially purchase products at deflated prices because, under

competitive market conditions, low Southern wages depress the prevailing market prices of Southern

goods. If this argument is correct, then it follows that the North would accrue wealth by trading with

the South, even when the trade flows are balanced in monetary terms.

Combined Model

Table 3 shows results from a comprehensive test the hypothesized relationships depicted in figure 1. For each of the three models in this table, the variables of theoretical interest are statistically significant, exhibit the expected signs, and also have the expected relative magnitudes. Consistent with the earlier models, the results from model 5 and 6 indicate that trade among affluent countries has little overall effect on the prevailing levels of manufacturing employment and national income within these countries. For both models, the coefficients for *imports from the North* and *exports to the North* nearly offset one another. This substantively implies that North-North trade is causing neither rising living standards nor deindustrialization in affluent countries. Conversely, for models 5 and 6, the coefficients for *imports from the South* and *exports to the South* do not offset one another. In fact, the resulting imbalances suggest that North-South trade does contribute to causing rising living standards and deindustrialization in affluent countries.

[Insert table 3 about here.]

Model 7 investigates the hypothesized determinants of unemployment. While the model is statistically robust, its substantive implications are less clear. The results suggest that North-South trade does indeed generate indirect effects on unemployment rates, but they also suggest that these indirect effects may offset one another in ambiguous ways. On one hand, North-South trade decreases the availability of domestic manufacturing jobs, which according to model 7 should contribute to rising unemployment rates. On the other hand, North-South trade increases national incomes, which according to model 7 should reduce unemployment rates. The net effect, thus, depends on how fast national incomes grow compared to how fast manufacturing employment falls.

To help determine this net effect, as well as help summarize the study's overall results, table 4 provides counterfactual estimates of how North-South trade affects each of the three dependent variables used in this study. These counterfactual estimates are based on two separate calculations, each using the parameter estimates generated by models 5 through 7. The first calculation is based on

the actual data from 2003 for each independent variable in the model; the second calculation does the same, except it hypothetically assumes that trade between the North and the South does not exist during this period. The results of these counterfactual estimates suggest trade with less developed countries generally reduces unemployment in affluent countries, because it apparently stimulates job growth across the entire economy (through rising national incomes) faster than it displaces jobs with manufacturing firms competing against Southern producers. More specifically, if these 18 affluent countries ceased trading with less developed countries, the calculations indicate that their average unemployment rate would rise by 1.84 percentage-points, that their average level of manufacturing employment would rise by 2.86 percentage-points, and that their average national income would decline by $1,919, (measured in prices and purchasing parities for the year 2000).

[Insert table 4 about here.]

CONCLUSION

This study analyzed how one of the most pronounced manifestations of globalization—the rapid expansion of trade with less developed countries—has affected national incomes and employment patterns in affluent countries. To theoretically frame this inquiry, the study extended well-known insights from the sociology of development. In particular, it used the concept of *unequal exchange* to demonstrate that North-South trade often facilitates an unjustifiably large transfer of labor power from less developed countries to affluent countries. This purportedly occurs because workers in less developed countries, compared to workers in affluent countries, are significantly underpaid relative to their labor productivity. Based on the underlying logic of this argument, I hypothesized that North-South trade should increase average living standards in affluent countries, but also displace many of their manufacturing jobs. This latter outcome, I further hypothesized, should contribute to rising levels of deindustrialization and unemployment.

This hypothesis was tested with panel data from 18 OECD countries covering a recent 34-year period. Derived from simultaneous equations models, the findings indicated that trade with less developed countries, unlike trade with other affluent countries, does indeed boost average living standards and change employment patterns in affluent countries. As expected, it was found that North-South trade generally increases national incomes but reduces the manufacturing sector's share of total national employment. Yet, unexpectedly, it was found that North-South trade may actually reduce unemployment rates rather than increase them. Overall, counterfactual estimates indicate that, if trade with less developed countries were eliminated, affluent countries would experience almost a two percentage-point rise in their unemployment rates, more than a two percentage-point increase in manufacturing's share of total national employment, and almost a $2,000 per person decline in national income. Of course, since these are complex phenomena with multiple causal factors, the counterfactual estimates cannot be seen as precise.

Nonetheless, these findings provide empirical support my contention that North-South trade, unlike North-North trade, sets in motion dynamics that eventually alter the socioeconomic structure of affluent countries. In particular, the findings indicate that trade with less developed countries generate benefits (rising living standards and declining unemployment rates) as well as drawbacks (accelerated deindustrialization), which are not induced by trade with other affluent countries. These empirical findings, along with the attendant theoretical explanation offered above, should help advance our understanding of the domestic consequences of economic globalization. This is partially the case because prior studies, while identifying a robust statistical correlation between North-South trade and deindustrialization, have not offered detailed theoretical explanations of the purported casual mechanism driving this relationship. The tacit explanation has been that, since the South specializes in labor-intensive production, and since the North specializes in knowledge- and capital-intensive production, imports coming from the South displace more jobs than exports can create. While this is

indeed true, the present study more fully explicates the underlying dynamics of this phenomenon, which hopefully help clarify our understanding of these socioeconomic processes.

Furthermore, the findings presented here directly impinge upon several vexing policy issues. Proponents of free trade are often dismayed that popular support for globalization often lags far behind their enthusiasm for it. From their perspective, free trade should be wildly popular because it enhances society's overall material well-being. The findings presented here—especially those showing that trade with less developed countries boosts national incomes in affluent countries—provide some validation for this argument. Yet the findings reveal problems with this argument as well.

First, my results call into question the often-uttered claim that Northern workers, if given the chance, can successfully compete against workers anywhere in the world. Based on the evidence presented here (see especially table 1), it is hard to imagine how Northern workers could successfully compete against Southern workers in industries where labor costs are decisive. This is not the case because Northern workers lack the required skills or work ethics, but rather because they are significantly disadvantaged by the wage structure in the South.

The results also remind us that North-South trade, while generating clear benefits for society at large, does produce negative consequences for certain segments of society. Especially for less-skilled workers in the North, who once enjoyed high-wage employment opportunities in the manufacturing sector, globalization has undermined their economic well-being. As their fates worsen, it creates downward pressure on the wages and working conditions of other Northern workers with similar skills and qualifications. In this way, the dynamics that once supported upward social mobility for the less educated can be put into reverse, eliminating those economic structures that once helped produce egalitarian class structures. To redress this problem, policymakers should develop ways to share the wealth and opportunities generated by globalization with those people disadvantaged by trade-induced socioeconomic changes. Such strategies have succeeded in some Northern countries, although they have been largely eschewed across the Anglo-American countries (Rodrik 1998).

Finally, this study reinforces long-standing concerns about how much less developed countries benefit from free trade. The results presented here suggest the wealth generated by North-South trade gets distributed in a zero-sum fashion, in which affluent countries gain at the expense of their less developed trading partners. This outcome, many development scholars would surely argue, arises from the paltry wages paid Southern workers, which itself partially depends upon repressive political forces hindering efforts to improve wages, working conditions, and environmental safeguards in the South. Without intervening social and political pressures, free trade regimes will likely reinforce (and perhaps exacerbate) the already highly polarized distribution of global income. This outcome could be mitigated, however, by embracing trade policies that seek to improve wages and working conditions in less developed countries. If successful, such policies could not only improve the living standards of billions of needy people in the South, but they could also help alleviate social problems facing Northern countries, such as those stemming from large-scale international migration and growing environmental degradation. Such an outcome seems like a win-win situation.

REFERENCES CITED

Alderson, Arthur. 1999. "Explaining Deindustrialization: Globalization, Failure, or Success?" *American Sociological Review* 64(5):701-21.

Amin, Samir. 1976. *Unequal Development.* New York: Monthly Review Press.

Baltagi, Badi H. 1981. "Simultaneous Equations with Error Components." *Journal of Econometrics* 17(2):189-200.

Bluestone, Barry and Harrison Bennett. 1982. *The Deindustrialization of America: Plant Closing, Community Abandonment, and the Dismantling of Basic Industries.* New York: Basic Books.

Brady, David and Ryan Denniston. 2006. "Economic Globalization, Industrialization and Deindustrialization in Affluent Democracies." *Social Forces* 85(1):297-329.

Castells, Manuel. 2000. *The Rise of the Network Society*, *Revised Edition*. Oxford: Blackwell

    Publishers.

Emmanuel, Arghiri. 1972. *Unequal Exchange: A Study of the Imperialism of Trade.* New York:

    Monthly Review Press.

Freeman, Richard B. 2004. "Trade Wars: The Exaggerated Impact of Trade in Economic Debate." *The*

    World Economy 27(1):1-23.

Fröbel, Folker, Jürgen Heinrichs, and Otto Kreye. 1980. *The New International Division of Labor:*

    Structural Unemployment in Industrialized Countries and Industrialization in Developing

    Countries. Cambridge: Cambridge University Press.

Gereffi, Gary. 1994. "The Organization of buyer-driven global commodity chains: how U.S. retailers

    shape overseas production." In G. Gereffi and M. Korzeniewicz, eds. *Commodity Chains and*

    Global Capitalism, Westport, CT: Greenwood Press, pp. 95-122.

Gibson, Bill. 1980. "Unequal Exchange: Theoretical Issues and Empirical Findings." Review of

    Radical Political Economics 12(3):15-35.

Harrison, Bennett and Barry Bluestone. 1988. The Great U-Turn: Corporate Restructuring and the

    Polarization of America. New York: Basic Books.

International Labour Organization (ILO). 2006. *Key Indicators of the Labour Market: Country Profiles*.

    Geneva. ILO.

Kenworthy, Lane. 2003. "Wage-Setting Coordination Scores: Data Set." Department of Sociology,

    University of Arizona. Available at http://www.u.arizona.edu/~lkenwor/data.html

Kollmeyer, Christopher. 2007. "Explaining Deindustrialization: How Affluence, Productivity Growth,

    and Globalization Erode Manufacturing Jobs." Paper presented at the Annual Meetings of the

    American Sociological Association, New York, NY, 11-14 August 2007.

Krugman, Paul. 1994. "Past and Prospective Causes of High Unemployment." Pp. 49-80 in *Reducing*

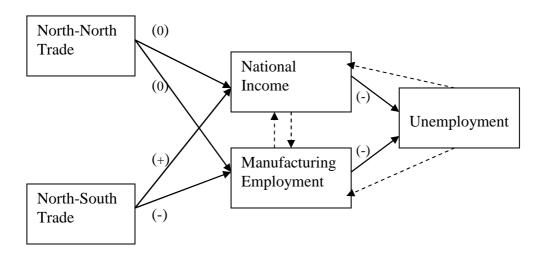   *Unemployment: Current Issues and Policy Options.* Kansas City, Mo.: Federal Reserve Bank.

--------. 1996. "Domestic Distortions and the Deindustrialization Hypothesis." *National Bureau of Economic Research Working Paper Series* (Working Paper 5473).

Krugman, Paul and Robert Lawrence. 1993. "Trade, Jobs, and Wages." *National Bureau of Economic Research Working Paper Series* (Working Paper 4478).

--------. 1994. "Trade, Jobs, and Wages: Blaming Foreign Competition for U.S. Economic Ills is Ineffective; The Real Problems Lie at Home." *Scientific American* (April):44-49.

Lawrence, Robert and Matthew Slaughter. 1993. "Trade and American Wages in the 1980s: Giant Sucking Sound or Small Hiccup?" *Brookings Papers on Economic Activity* (2):161-226.

Layard, Richard, Stephen Nickell, and Richard Jackman. 2005. *Unemployment: Macroeconomic Performance and the Labour Market*, 2nd Edition. Oxford: Oxford University Press.

Nakajima, Akiko and Hiroshi Izumi. 1995. "Economic Development and Unequal Exchange Among Nations: Analysis of the U.S., Japan, and South Korea." *Review of Radical Political Economics* 27(3):86-95.

OECD. 2002. *International Trade by Commodities Database*. Paris: OECD.

--------. 2005a. *International Direct Investment by Industrial Sector*. Paris: OECD.

--------. 2005b. *International Trade by Commodities Database*. Paris: OECD.

--------. 2005c. *Structural Analysis (STAN) Database*. Paris: OECD.

--------. 2006a. *Annual National Accounts - Volume I - Comparative Tables*. Paris: OECD.

--------. 2006b. *Labour Force Statistics – Summary Tables*. Paris: OECD.

--------. 2007. *Annual National Accounts - Volume I - Comparative Tables*. Paris: OECD

Reich, Robert. 1991. *The Work of Nations: Preparing Ourselves for 21st Century Capitalism*. New York: Vintage Books.

Rodrik, Dani. 1998. "Why Do More Open Economies Have Bigger Governments?" *Journal of Political Economy* 106(5):997-1032.

Ross, Robert J.S. and Kent C. Trachte. 1990. *Global Capitalism: The New Leviathan.* New York: State

     University of New York Press.

Rowthorn, Robert and Ramana Ramaswamy. 1999. "Growth, Trade, and Deindustrialization."

     International Monetary Fund Staff Papers 46(1):18-41.

Saeger, Steven S. 1997. "Globalization and Deindustrialization: Myth and Reality in the OECD."

     Weltwirtschaftliches Archiv 133(4):579-607.

United Nations. 2006a. *National Accounts Main Aggregates Database*. United Nations Statistics

     Division. New York: United Nations.

------------. 2006b. *Common Database.* United Nations Statistics Division. New York: United Nations.

Wood, Adrian. 1995. "How Trade Hurt Unskilled Workers." *Journal of Economic Perspectives*

     3(3):57-80.

Figure 1. The Hypothesized Domestic Consequences of Global Trade

North-North Trade

(0)

(0)

National Income

(-)

Unemployment

(+)

Manufacturing Employment

(-)

North-South Trade

(-)

Note: Solid lines indicate direct effects of primary theoretical interest. Dashed lines indicate indirect effects.

Table 1. International Comparison of Average Labor Costs in Manufacturing Sector for 13 Select Countries: Figure in 2003 US Dollars.

	(1) *Nominal Wage* *(US$ / hour)*	(2) *Productivity* *(US =1.00)*	(3) *Real Wage* *(1÷2)*	(4) Real Wage (US = 1.00)
Northern Countries				
United States	$16.14	1.00	$16.14	1.00
Canada	$15.56	.89	$17.48	1.08
Southern Countries				
from Asia				
China	$0.79	.24	$3.26	.20
India	$0.26	.17	$1.56	.10
Indonesia	$0.27	.12	$2.16	.13
Philippines	$0.89	.11	$8.35	.52
Sri Lanka	$0.34	.11	$3.17	.20
Thailand	$0.95	.11	$8.29	.51
Average	$0.58	.14	$4.46	.28
Southern Countries				
from Latin America				
Argentina	$4.33	.38	$11.44	.71
Brazil	$1.84	.22	$8.48	.53
Chile	$2.21	.22	$10.18	.63
Costa Rica	$2.01	.22	$8.98	.56
Mexico	$2.14	.21	$9.99	.62
Average	$2.50	.25	$9.81	.61

Note: Calculations made by author using internationally compatible data on wages, employment, and value added for the manufacturing sector (ILO 2006; UN 2006). Productivity rates (column 2) and real wages (column 4) are benchmarked against U.S. levels in 2003, where U.S. equals 1.00.

Table 2. The Effect of Trade on Manufacturing Employment and National Income: EC2SLS Random-Effects Parameter Estimates from Simultaneous Equations Model of 18 OECD Countries, 1970-2003

	Model 1	Model 2	Model 3	Model 4
	Manufacturing Employment	*National Income*	*Manufacturing Employment*	*National Income*
Exogenous Explanatory Variables:				
Imports from the North	-.090**	-.201***		
	(.030)	(.025)		
Exports to the North	.064**	.207 ***		
	(.023)	(.025)		
Imports from the South			-1.212***	.032
			(.112)	(.029)
Exports to the South			.465***	.245**
			(.083)	(.091)
Endogenous Control Variables:				
Manufacturing Employment		-.627***		-.645***
		(.056)		(.074)
National Income	-.453***		-.156**	
	(.053)		(.047)	
Unemployment	-.647***	-.286***	-.647***	-.269***
	(.032)	(.057)	(.029)	(.070)
Exogenous Control Variables:				
Unbalanced Productivity Growth	-3.082***		-4.00***	
	(.639)		(.575)	
Capital Investment	-.859***	1.399***	-.914***	1.323***
	(.173)	(.181)	(.152)	(.192)
Prime Interest Rate	-.089**	-.133***	-.175***	-.225***
	(.029)	(.025)	(.025)	(.029)
Centralized Wage Bargaining	.256**	.043	.253**	.091
	(.089)	(.076)	(.079)	(.083)
Constant	42.74***	31.162***	38.754***	31.159 ***
R^2 within panels	.84	.89	.87	.87
R^2 across panels	.30	.56	.29	.55
R^2 overall	.61	.71	.62	.71
Number of Observations	541	541	541	541

Notes: Numbers in parentheses are standard errors. * $p < .05$; ** $p < .01$; *** $p < .001$

Table 3. Domestic Consequences of Global Trade: EC2SLS Random-Effects
Parameter Estimates from Simultaneous Equations Model of 18 OECD Countries, 1970-2003

| | Model 5 | | |
	Manufacturing Employment	National Income	Unemployment Rate
Exogenous Explanatory Variables:			
Imports from the North	-.129***	-.259***	
	(.030)	(.028)	
Exports to the North	.106***	.201***	
	(.020)	(.018)	
Imports from the South	-1.30***	-.032	
	(.113)	(.132)	
Exports to the South	.558***	.485***	
	(.096)	(.097)	
Endogenous Control Variables:			
Manufacturing Employment		-.605***	-.907***
		(.064)	(.050)
National Income	-.274***		-.626***
	(.051)		(.053)
Unemployment Rate	-.637***	-.243***	
	(.029)	(.060)	
Exogenous Control Variables:			
Unbalanced Productivity Growth	-3.604***		
	(.563)		
Capital Investment	-.586***	1.567***	
	(.159)	(.162)	
Prime Interest Rate	-.135***	-.118***	-.108**
	(.025)	(.026)	(.037)
Centralized Wage Bargaining	.211**		-.036
	(.077)		(.100)
Constant	39.47***	29.824***	40.124***
R^2 within panels	.88	.90	.50
R^2 across panels	.22	.55	.21
R^2 overall	.58	.69	.33
Number of Observations	541	541	541

Notes: Numbers in parentheses are standard errors. * $p < .05$; ** $p < .01$; *** $p < .001$

Table 4. Actual, Predicted, and Counterfactual Estimates for Dependent Variables in Model:
Calculations Based on OECD-18 Averages for Year 2003

	National Income	Manufacturing's Share of Total Employment	Unemployment Rate
Actual	$28,650	15.63%	6.41%
Predicted (full global trade)	$29,287	16.04%	3.69%
Predicted (no trade with South)	$27,368	18.90%	5.53%
Δ if no trade with South (absolute Δ)	- $1,919	2.86 %-pts	1.84 %-pts
Δ if no trade with South (% Δ)	- 7%	18%	49%

ENDNOTES

[i] The 18 OECD countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States.

[ii] In their 600-plus-page survey of the contending explanations for unemployment, Layard and his colleagues discuss neither trade nor globalization as possible factors in the rise of unemployment in the North. Instead, they argue that domestic institutions (especially the welfare state, business regulatory laws, and trade unions) have set market wages artificially high, thereby preventing the labor market from reaching equilibrium.