

## DOES TRADE CAUSE INEQUALITY?

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In 1998, after-tax income for Americans in the top one percent of the U.S. tax bracket increased at more than three times the rate of the bottom 90 percent of the population. Further, between 1989 and 1998, the incomes of the richest one percent of Americans grew about eight times as fast as income for the bottom ninety percent of the population, adjusted for inflation (Johnston). President George W. Bush's tax plan will further increase the share of after-tax income going to the very wealthy, as the top one percent of income earners in the U.S. will reap forty percent of the tax breaks while paying only 18.5 percent of the national income tax burden (Johnston). These figures highlight the ongoing problem of income inequality in the U.S. Despite receiving some media attention over the past decade or two, national politicians have continued to ignore the issue of inequality. Whether President Bush's tax plan will spur economic growth is up for debate, but his plan will certainly do nothing to alleviate the problem of growing income inequality in the U.S.

Given that tax breaks alone will not ameliorate America's growing inequality, what is the solution? In this article, I seek to examine the extent of inequality in the United States, including historical trends in inequality. Further, I will analyze the causes of this rising inequality. Using inequality as my dependent variable, I will examine the effects of trade and unionization on inequality. Additional independent variables include economic growth and government spending per capita. My analysis reveals strong positive correlations between increased trade and increased government per capita spending on inequality. Further, unionization and economic growth have negative correlations with inequality, implying that as unionization levels and economic growth increase, inequality decreases.

I expected that trade would lead to increasing inequality, but the fact that government spending is correlated with increased inequality is a troubling finding in that many solutions to inequality prescribe government spending on social welfare programs. However, my data uses an overall measure of government spending, leaving room for a positive impact for government social welfare spending on decreasing inequality. If government spending seems only to exacerbate inequality, what then is the solution? It is, how-

ever, heartening to see that economic growth lessens inequality, demonstrating that increased productivity, technological progress, as well as other factors that produce economic growth can reduce inequality. This effect should be examined for potential free market economic approaches to lowering inequality via programs to increase economic growth.

Lastly, the political landscape in the U.S. has consistently seen unions lobbying against free trade. For example, labor organizations such as the AFL-CIO have repeatedly voiced their opposition to NAFTA and many provisions of the World Trade Organization. Since trade seems to increase inequality, should unions be opposing free trade? Unionization levels in the U.S. have declined from 31.8 percent of the work force in 1948 to 13.5 percent of the work force in 2000 ("Union Sourcebook"). This decline in unionization has paralleled the rise in inequality, prompting the question of whether decreases in unionization are not only correlated with increased inequality, but are in fact causing inequality. I believe that diminishing labor power in the U.S. has caused some of the increase in inequality due to decreases in lobbying power on government trade policy and decreased centralized bargaining power in setting wages.

Further, I seek to compare trends in U.S. and global inequality and their causes. While U.S. inequality is about equal to the international mean, it is one of the highest, if not the highest, among developed nations. Additionally, trade seems to have a much greater impact on inequality in the U.S. than in other nations. I will thus examine inequality across the globe to glean lessons for solving America's rising inequality.

Before examining the causes of inequality, it is important to understand the levels of inequality, trends in inequality, and the effects of inequality in America. Inequality in the U.S. has created an entire class of the working poor. The real hourly wage of Americans without a high school diploma fell from \$11.85 to \$8.64 between 1973 and 1993. In the early 1970s, households in the top five percent of the income scale earned ten times more than those families in the bottom five percent bracket. By 1996, that number had grown to fifteen times (Kapstein 22). Families at the bottom as well as the less educated and low skilled have experienced the greatest decline in real welfare. Susan Collins found that between 1973 and 1993, men in the bottom ten percent of the income distribution saw their real earnings fall by a staggering 21.5 percent (12). This is consistent with the hypothesis that income inequality in the U.S. is largely manifested in a relative decline in the incomes of workers at the bottom. While overall levels of employment have increased, declining real wages for low-income workers more than offset the gains in hours at work. Thus, poor Americans are, on average, working more and making less, causing an overall decline in the welfare of the poor (Wallerstein 650). Though I will not examine the effect of immigration on inequality,

immigrant levels have increased from comprising 4.7 percent of the U.S. population in 1970 to 8.2 percent in 1992. Immigrants are, on average, less educated than native-born Americans, thus increasing the supply of low-skilled workers and forcing down their wages (Collins 17), further hurting low-skilled American workers. While I will not delve into the deleterious effects of inequality on the U.S., inequality tends to create social tensions within a society, often exacerbating crime, racial tensions, and urban decay (36).

In focusing on the effects of globalization on inequality, I define globalization as the trend toward increasing levels of international trade in goods, services, labor, and capital. Decreasing trade barriers, increasing trade, spreading and improving technology, and capital that is more mobile correlate with increased wage inequality and the immiseration of less-skilled workers (Freeman 19). As developing countries shift from import substitution to export production (20), globalization is providing the foundation for a battle within countries between those who have the skills necessary to benefit from globalization and those who are threatened by globalization (Rodrik 2). In a world moving toward complete global integration of labor, capital, goods, and service markets, the potentially injurious effects of trade on American society are increasing. While I do not envision massive social disintegration nor do I support trade protectionism, the forces of trade causing increased inequality in the U.S. must be addressed before they further tear at the ties and values that hold Americans together. The U.S. must halt the rise in inequality and reinvigorate the American promise of an equal opportunity for all by following through on the promise of redistributing the gains from trade so that all Americans benefit. America should combat inequality by cooperating with foreign countries to avoid a race to the bottom and working with the private sector to establish market-based solutions which do not increase government inefficiency nor produce government waste, but promote job training and education for those workers left behind by globalization. A role for government exists not in purely spending money, which seems to increase inequality, but in working with other governments, with the private sector, and with unions and labor to increase their bargaining power, which does decrease inequality.

#### *Statistical Analysis of the Causes of Inequality in the U.S.*

I ran a multivariate regression analysis to quantitatively analyze the effect of trade, government per capita spending, economic growth, and unionization on inequality in the United States. I am primarily interested in the effects of trade, government per capita spending, and unionization. I hypothesize that trade will be positively correlated with inequality while

unionization should be negatively correlated with inequality. I expect that trade will increase inequality in the U.S. due to competition with low-skilled workers from less-developed countries forcing down the wages of less-skilled workers in the U.S. Additionally, I predict that declining unionization levels will increase inequality due to labor's ability to conduct centralized bargaining, boosting the wages of the lower and middle classes as well as increasing labor's political influence in opposing free trade. These two hypotheses proved true. However, government per capita spending is positively correlated with inequality. This is problematic as one of the traditionally proposed solutions to inequality is increased government spending. Again, however, this is an overall measure of government spending, including non-welfare-related spending. On a more positive note though, economic growth decreases inequality, leaving open the possibility for free-market solutions to increase economic growth and thereby decrease inequality without increasing government spending.

The **unit** of analysis is the United States from 1948 to 1999. The dependent variable, inequality, is measured as the Gini coefficient. The Gini coefficient ranges from zero, perfect equality, to one, perfect inequality. Perfect equality is defined as each quintile of the population having twenty percent of the income. The Gini coefficient is based on the difference in area between the line of perfect income equality and the real line of income distribution. Income is measured for each household. The data comes from the U.S. Census Bureau. While there are other measures of inequality, such as percentile relationships (90th/10th percentile of income), the Gini coefficient measures overall inequality across all income groups. Additionally, while wealth might be a preferable measure of inequality than income, data on wealth is harder to find. Moreover, income data better measures changes in wages. Thus, using the Gini coefficient for household income as the measure of inequality, the general trend is toward increased inequality, with the major increases occurring after 1970. The Gini coefficient was 0.376 in 1947 and rose to 0.428 by 1999, an increase of 13.8 percent. The mean of the variable was 0.376, with a maximum of 0.430 and a minimum of 0.348.

The trade variable is measured as the ratio of exports plus imports divided by gross domestic product (GDP). The data comes from the Bureau of Economic Analysis. This formula for measuring trade levels is standard practice and provides an accurate estimate of the level of trade in the U.S. The variable ranges from .061 to 0.117, or from trade constituting 6.1 percent of GDP to 11.7 percent of GDP. Trade was 10.9 percent of GDP in 1947 and 10.7 percent of GDP in 1999. Trade decreased in the 1950s, remained flat through the 1960s, rose in the late 1970s, decreased again in the mid 1980s, and has risen since then.

The government spending per capita variable is measured as total gov-

ernment spending divided by the U.S. population in that year. The government spending data comes from the Bureau of Economic Analysis and measures yearly total government consumption expenditures and gross investment. The population numbers come from U.S. Census estimates. I measure government spending per capita to take into account actual amounts spent per person rather than gross amounts to gain a better understanding of the effect of government spending on the welfare of individual citizens. The spending per capita variable is 252 in 1947 and 5993.60 in 1999. All amounts were computed in 2000 dollars, so there has been a dramatic real increase in government per capita spending in the U.S.

The economic growth variable measures the percent change in gross domestic product from the preceding period. Thus, positive values indicate economic growth while negative values signal economic retraction. This data is also from the Bureau of Economic Analysis. The variable ranges from -1 to 15 percent, with a mean of 7.25 and a mode of 6. Economic growth has been positive in every year except 1949. I use the economic growth variable to measure the effect of economic growth on trade with the hope that the positive correlation between economic growth and declining inequality could lead to market-based solutions to inequality.

Lastly, the unionization variable measures the percentage of the U.S. workforce that belongs to a union. The data is from the Labor Research Organization and measures unionization levels as the number of union members divided by the total number of U.S. workers. The variable ranges from 13.9 to 32.5, with a mean of 24.9. The unionization variable was at 31.8 in 1948 and steadily decreased to 13.9 in 1999.

The relationships between the dependent variable, inequality, and the independent variables are as hypothesized with inequality and trade having a strong positive correlation of 0.792, government spending per capita and inequality being highly positively correlated at 0.894, and economic growth and unionization being negatively correlated with inequality. Due to the nature of time-series data and the interrelatedness of the data, there is some serious multicollinearity in the independent variables as witnessed by the high correlations between the independent variables, at levels as high as 0.989.

The regression on inequality with trade, government spending per capita, economic growth, and unionization as the independent variables produces an R square value of .844, indicating that the regression has explained 84.4 percent of the variance in inequality and the model is thus explaining the causes of inequality well. The unstandardized b values are 0.279 for trade,  $9.44 \times 10^6$  for government spending per capita,  $-1.556 \times 10^3$  for economic growth, and  $4.4 \times 10^5$  for unionization. The only significant variable is economic growth, but due to problems of multicollinearity and serial correlation,

it is likely that more if not all of the variables may be significant. Thus, the regression analysis reveals positive relationships between trade and government spending on inequality and negative relationships between economic growth and unionization on inequality. In other words, trade and government spending increase inequality while economic growth and unions decrease inequality. According to this regression model then, it appears that free market solutions to spur the economy, not simply increased government spending, will help ameliorate the problem of inequality in America.

### *The Effect of Trade on Inequality*

The primary purpose of my analysis is to determine if trade causes inequality in America. Trade and inequality have both steadily increased in the U.S. since 1947, but is the relationship more than a correlation? My analysis found a very high correlation of 0.792 between trade and inequality and an unstandardized b value of 0.279, indicating that if the trade variable, the ratio of exports plus imports divided by gross domestic product, increased by 1, the Gini coefficient measuring inequality would increase by 0.279. More reasonably, if exports and imports divided by GDP increases by 10 percent, or .1, then the level of inequality would rise by 0.0279 on a scale of zero to one. Trade thus seems to have some effect in causing inequality in the U.S., but it is certainly not the only factor involved. Further, protectionism is not a simple solution to inequality in America as trade leads to economic growth, which lessens inequality. Likewise, protectionism has many negative effects, such as increasing prices and creating inefficiencies in the form of dead weight loss.

Many researchers have attempted to estimate the degree to which trade explains rising inequality in America. The ratio of wages for workers with at least some college education to those workers with a high school education or less increased by 18 percent between 1973 and 1993 (Cline 1). Real wages have fallen significantly in the lower levels of the income distribution, especially amongst the least educated workers (1). Generally, the researchers have found that trade can explain only a moderate portion of the rising U.S. inequality. In a 1992 article, Borjas, Freeman, and Katz found that immigration and trade from low-skilled countries can explain approximately 20 percent of the increasing wage differential between skilled and unskilled workers in the U.S., using factor content analysis which I will discuss below (4). In a follow-up 1996 study by Borjas, Freeman, and Katz, the authors found that immigration disproportionately increased the labor supply of high school drop-outs and the less-educated generally, leading to a drop in the wages of native high school drop-outs in the U.S. (250). This study further supports my hypothesis that the influx of primarily unskilled workers is

increasing the supply of low-skilled workers in the U.S. and hence decreasing their wages. In a supporting study, Cline also estimated that international influences accounted for approximately 20 percent of the rising wage inequality in the U.S. (Rodrik 15).

On the other hand, trade economists such as Lawrence and Slaughter argued that the previous studies were incorrect and not supported by the data. Lawrence and Slaughter asserted that according to trade theory, if Borjas et al. and Cline were right, trade would reduce the relative price of the imported goods made with unskilled labor. Further, industries should shift to using more unskilled labor since the wages to unskilled workers would be decreasing. However, according to research by Lawrence and Slaughter, import prices have not fallen relatively and industries are actually shifting to using workers that are more skilled. However, the results found by Borjas et al. and Cline are likely still accurate as Lawrence and Slaughter fail to account for the overall increase in the supply of skilled labor in the U.S. (Cline 4).

Sachs and Shatz find that declines in the relative price of low-skill intensive goods can be attributed to changes in productivity and input costs, not globalization (Collins 30). However, input costs are clearly influenced by globalization as increased economic integration has lowered the relative prices of many inputs, especially low-skilled labor. Sachs and Shatz further found that while U.S. trade with less developed countries reduced overall manufacturing employment in the U.S. by 5-7 percent between 1978 and 1990, it reduced manufacturing employment in industries that utilized low-skilled workers by a substantial 23.5 percent (33). However, it is important to remember that the manufacturing share of total jobs in the U.S. continues to decrease, implying that fewer Americans are working in manufacturing so international competition for manufacturing jobs will hurt American workers less and less as they move into other sectors of the economy. Further, when analyzing the effect of trade on the U.S., one must keep in mind that U.S. imports from less developed countries are still quite small, comprising only 3 percent of U.S. GDP in 1995 (20).

Adrian Wood, a proponent of a strong trade effect on inequality, argues that the rise in international trade has caused wage inequality in the U.S. and elsewhere due to the decrease in wages at the bottom. This is a common argument in favor of protectionism and the role of trade in causing inequality. Wood estimates trade dependence as the ratio of imports plus exports to GDP, as I do. He finds that demand for unskilled labor relative to skilled labor has fallen in developed countries, which has led to increased wage inequality in his opinion. As employment in manufacturing as a share of total employment has fallen, America has experienced growth in imports of low-skill intensive manufactures from developing countries.

Two main economic theories are at work here: factor content analysis

and factor price equalization. Factor content analysis asserts that trade in goods is essentially trade in factors. That is, when the U.S. imports 100 units of clothing from Mexico, which were produced using 50 units of low-skilled labor, the U.S. is effectively importing 50 units of low-skilled labor. In effect, this means that since the U.S. imports goods produced with a lot of low-skilled labor from the developing world, the supply of low-skilled labor in the U.S. has increased. According to the law of supply and demand then, the rise in the supply of low-skilled workers will force down the wages received by these workers, explaining the drop in wages to low-skilled workers.

The factor price equalization theorem states that with free trade, factor prices will eventually equalize across the globe. The impact on labor is significant since the wages of low-skilled workers in the U.S. would have to come down to the level of wages in developing countries. This theory also helps to explain the fall in wages for less-skilled workers in the U.S. Wood found that trade lowered the economy-wide relative demand for unskilled labor by about 20 percent for all developed countries in 1990 (Wood 68). Increased imports of manufacturing goods from developing countries have decreased demand for less-skilled workers and caused falling real wages for less-educated workers in the U.S. (Freeman 21). Developing countries export goods to the U.S. that use intensively less-skilled workers, displacing low-skilled workers in the U.S. Factor content analysis views this as an effective import of low-skilled workers, increasing their supply and thus decreasing wages to the low-skilled workers in the U.S.

As the Stolper-Samuelson theory predicts, free trade is causing wage equalization. According to factor content analysis, free trade effectively increases the supply of unskilled workers in the U.S., thus decreasing their wages. Additionally, technology is increasing the demand for skilled workers, pushing their wages up. Thus, inequality is growing as wages for the unskilled are declining while wages for the skilled are increasing due to the forces of supply and demand (Kapstein 24-5). A further theoretical model, the Heckscher-Ohlin model, states that trade hurts the locally scarce factor and benefits the locally abundant factor of production (Frieden 435). Thus, in the U.S., which is capital-rich, trade benefits the capitalists and hurts the laborers. Trade and globalization tend to favor capital, which is more mobile, over labor in the long term, especially in developed countries. Among capitalists, those utilizing the more mobile factors gain more from trade than those using fixed specific factors of production (426).

Thus, it appears that trade has increased inequality in the U.S. primarily due to increased American imports of goods produced by low-skilled workers, which has effectively increased the supply of low-skilled workers in the U.S. and hence decreased their wages. Further, the skill premium has raised the wages of the highly skilled. Therefore, with wages at the bottom

decreasing and wages at the top of the income scale increasing, inequality in the U.S. has ballooned.

### *The Effect of Unions on Inequality*

Unions in the U.S. have consistently and powerfully lobbied against free trade, prompting me to ask whether unions are correct in assuming that free trade runs counter to their interests. My analysis shows a correlation of  $-.876$  between unionization and inequality, indicating a strong negative relationship between unionization levels and inequality in the U.S. Studies by Card, Freeman, Dinardo, Fortin, and Lemieux all estimate that the decline in union density in the U.S. can explain about 20 percent of the rise in wage inequality in the 1980s (Wallerstein 650-1). As the sheer number of unionized workers in the U.S. has decreased, the level of inequality has risen. Unions affect inequality via their central bargaining power in affecting the level of wages for workers in the bottom and middle-income levels and by lobbying the government against free trade, such as the unions did in opposition to NAFTA and certain aspects of the World Trade Organization negotiations.

Wallerstein has found that the more wages are determined in a central manner, via collective bargaining or government action, the more equal the distribution of income is (Wallerstein 650). Additionally, Gottschalk and Smeeding's research reveals that powerful central bargaining institutions in Germany, Italy, and Scandinavia have led to significantly lower inequality than in the U.S., which has a much a weaker, almost nonexistent, central bargaining system (653). Empirically, the Gini coefficient was 0.30 for Germany in 1994, 0.273 in Italy in 1995, 0.250 for Sweden in 1992, and for Norway in 1995, while the U.S. Gini coefficient was 0.408 in 1997 (World Bank). Unions are able to lower inequality by decreasing the difference in wages among organized workers and raising the wages of similarly low-educated workers. Gootschalk and Smeeding estimate that the decline in unionization can explain approximately 20 percent of the increase in male earnings inequality in the U.S. (Gottschalk and Smeeding 647). In countries in which unions are stronger, inequality is lower as unions have the power to increase wages at the bottom and prevent the effects of wage equalization from occurring as fully as they have in the U.S.

Further, the decrease in unionization also parallels a decrease in the influence of unions and labor in government (Rodrik 75). Twenty-five percent of the U.S. labor force was unionized in the 1970s, while that number was about 16 percent in 1996 (Kapstein 22). With the decline in unionization, unions and labor are also losing their political power, having reduced bargaining power for job security and benefits (23). While unions continue

to play an important role in lobbying the government, as the number of unionized workers decreases, so too does their power. For example, a bill that labor opposed, U.S. House Resolution 79 (Senate Resolution 6), which declared a Department of Labor rule regarding safe working conditions relating to ergonomics without force or effect, passed in the House of Representatives and the Senate and was signed by President Bush on March 20, 2001. Sixteen Democratic members of the House and six Democratic members of the Senate voted in favor of the bill. This bill demonstrates that organized labor was clearly unable to sway Republicans and even some Democrats, traditional allies of labor, on a critical issue for unions, safe working conditions. Business groups, such as the National Association of Manufacturers, supported this bill and, with their support, it became law. As unionization in the U.S. has decreased, the power and influence of business interests, which are generally supportive of free trade, has increased. In the 2000 election, for example, total business contributions to candidates and parties given through political actions committees (PACs), soft money donations, and individual donations, was \$841,827,123, of which 59 percent went to Republicans. On the other hand, the total given by labor interests was \$53,319,185, of which 93 percent went to Democrats (Center for Responsible Politics). Thus, the continued decrease in the political lobbying power of the unions stands to have a significant impact on the distribution of power within Congress itself. In other words, as labor donates less to candidates, who are primarily Democrats, perhaps the Democratic party itself will come to be less of an advocate for labor, further hurting labor interests in the U.S. This has already begun to happen as both Democrats and Republicans in Congress ally in favor of free trade and anti-labor legislation such as the ergonomics bill.

### *The Effect of Government on Inequality*

One of the traditional ways that people suggest the U.S. should respond to increasing trade and increasing inequality is by having the government spend money on social programs such as welfare, unemployment insurance, and job training programs. However, my research revealed that increased government spending per capita is positively correlated with inequality. What then is the solution? I propose finding government solutions that are not solely based on spending more money, but which also rely on international cooperation and coordination with the private sector, although some government spending may be necessary to redistribute some of the gains from trade and implement these programs.

According to the Classical Ricardian trade model, free trade unambiguously benefits a country moving from autarky to free trade, however, the ben-

efits may not be equally distributed. In attempting to analyze the distributional effects of trade, the specific factors model asserts that factors specific to the exported good gain from trade while the specific factors used in producing the imported good lose. The change in the welfare of labor, the mobile factor, is ambiguous. The specific factors model then predicts that capitalists and workers in exporting industries will favor trade while capitalists and laborers in import-competing industries will oppose trade. Thus, Stephen Magee investigated the lobbying behavior of labor and capital and discovered that lobbying does in fact occur along industry lines, with labor and capital in exporting industries lobbying for increased free trade and labor and capital in import-competing industries advocating for protectionism and limited free trade. Given the distributional effects of trade and the lobbying that interests conduct, there is a role for government in distributing the gains from trade so that all citizens benefit from trade.

Despite my initial intuition that government-spending programs would decrease inequality, my research reveals a positive correlation between government spending levels per capita and inequality. Wallerstein's research also rejects the hypothesis that government spending reduces inequality and finds that higher levels of government spending as a portion of GDP actually increase wage inequality (Gottschalk and Smeeding 68). If government spending is not the solution, perhaps voting liberal parties, which tend to be more favorably disposed to labor, into office is the solution. However, Wallerstein's research decisively rejects the theory that liberal parties' influence in government reduces wage inequality or that conservative political forces within government increase wage inequality. The partisan composition of government does not appear to have any direct effect on wage inequality. However, liberal governments do tend to support more centralized bargaining by unions and are more inclined to intervene in the wage-setting process, which does tend to decrease wage inequality (668). This research thus suggests that governments should restrain themselves from throwing money at the problem of inequality but instead assist labor in organizing and bargaining for better pay and working conditions.

However, to provide an international comparison, countries that spend more on social welfare programs, such as the Scandinavian countries, do have lower inequality than countries with lower levels of social protection, such as in the U.S. Social spending is negatively correlated with income inequality on a global level (Gottschalk and Smeeding 673). This research begs the questions of whether other countries are spending government funds in a manner that more effectively fights inequality.

Even if government spending were effective in reducing inequality in the U.S., globalization inhibits government's ability to provide social insurance for its citizens due to international competition by governments to create the

most favorable environment for corporations. With economic integration and increasing capital mobility, corporations are free to search the globe for the lowest level of corporate taxes and government restrictions on working conditions, leading to a race to the bottom, which limits government's ability to provide social insurance for its citizens. If governments choose to spend government money, increase corporate taxes, and/or institute government legislation to establish a minimum wage or better working conditions, the state risks having corporations flee their countries. One potential role for government then is to foster international cooperation to avoid such races to the bottom and allow governments to protect their value systems and institute policies to reduce inequality if they so choose. Creating any environment of international cooperation is, of course, very difficult.

Although there are problems with government spending to alleviate inequality, some economists have hypothesized that continued globalization without efforts to decrease inequality could lead to a decrease in political support for continued international financial integration and a retreat from globalization as those who continue to lose out under free trade unite against trade (Rodrik 9, Kapstein 17). Kapstein thus believes that states should adopt John G. Ruggie's idea of "embedded liberalism" in which the state ensures that the gains from trade are used to compensate the losers in international trade to maintain political stability (Kapstein 21). Kapstein argues that states are breaking their promises to their citizens by maintaining their commitment to an open economy but not to social welfare programs for workers (21). In fact, since 1992, according to Kapstein, governments in the U.S., Canada, Germany, and Sweden have cut back on social spending in the face of growing inequality (27). Thus, it appears that trade in the U.S. may be more highly correlated with inequality than in other nations due to the fact that U.S. government spending efforts to reduce inequality are ineffective and actually increase inequality while some other nations, especially the Scandinavian nations, use government expenditures to effectively reduce inequality levels.

#### *International Inequality and Trade*

In order to compare the causes and degree of inequality in the U.S. and across the globe, I ran a second multivariate regression analysis using the most recent cross-sectional data I could find on all countries. After accounting for missing data, which I believe to be randomly distributed and not a major cause of heteroskedasticity, my sample size was 72, large enough to produce acceptable standard errors. I regressed trade, growth in trade minus growth in GDP, and capital flows on inequality. I included the variable growth in trade minus growth in GDP rather than simply trade growth to

examine the effect of trade growth outpacing GDP growth such that the country is globalizing faster than it is economically growing. I hypothesized that trade and growth in trade less growth in GDP would be positively correlated with inequality internationally, as my data for the U.S. has shown. However, I expected that capital flows would decrease inequality by stimulating economic growth within countries receiving such capital. The data supports my hypotheses of positive relationships between trade and inequality and trade growth and inequality and a negative correlation between capital flows and inequality.

The unit of analysis is the country in the most recent period available. All of my data comes from the World Bank. The Gini Coefficient measures the dependent variable, inequality, which measures the percentage shares of income held by different segments of society. The Gini coefficient ranges from a low of zero to a high of one. Increases in the Gini Coefficient represent increases in inequality. The data in the survey comes from different years, ranging from 1985 to 1999. There are some problems with the data, in that the data comes from different years and the survey methods varied across countries. The data comes from survey data from the countries themselves or World Bank country departments, compiled in the World Bank's Distribution of Income of Consumption published in 2000. Inequality, or the Gini Coefficient, ranges from 19.5 to 60, with a mean of 39.544. As a point of reference, inequality for the U.S. in 1997 was 40.8.

Trade, trade growth, and capital flows all come from the 2000 World Bank report on Integration with the Global Economy. The World Bank took its data from the World Trade Organization and from its own departments. Trade is measured as the sum of merchandise exports and imports divided by the value of GDP after subtracting the value added in services, measured in current U.S. dollars. This measure of trade is similar to the simple imports plus exports divided by GDP variable used earlier in this paper. The trade data comes from all countries' economic activities in 1998. The trade variable ranges in value from 29.5 to 644.5, with a mean of 128.453. The trade variable is 78.9 for the U.S. A higher value on the trade variable represents a country for which trade is a greater percentage of GDP.

Growth in trade is the difference between the annual growth in trade of goods and services and annual growth in GDP, both in real terms, from 1988 to 1998 across countries. This variable enables me to examine the degree to which globalization is occurring at a faster pace than overall economic growth for a country. Growth rates were calculated using constant price series taken from national accounts and expressed as percentages. The trade growth variable ranges from -13.4 to 19.9, with a mean of 3.232. High values of trade growth mean that the country's increased trading is outpacing its GDP, probably indicating falling values of other components of GDP such as gov-

ernment spending, consumption, or investment. The growth in trade variable was 5.3 for the U.S.

Gross private capital flows are the sum of the absolute values of direct, portfolio, and other investment inflows and outflows recorded in the balance of payments financial account, excluding changes in the assets and liabilities of monetary authorities and general government. It is measured as a ratio of GDP converted to international dollars using purchasing power parities. The capital variable ranges from 1 to 63, with a mean of 9.22. A higher value on the capital variable indicates higher levels of private capital flows into and out of a country. The value for the U.S. in 1998 was 10.3, only about one point above the mean.

The bivariate correlations show a correlation of 0.040 between trade and inequality, .085 between trade growth and inequality, and -0.229 between capital and inequality. This would indicate that inequality goes up with increased trade and increases in trade growth above GDP. However, private capital flows appear to decrease inequality. The first regression, with trade, trade growth, and capital regressed on inequality as the dependent variable yields a small  $R^2$ -square value of 0.067, meaning that the regression has only explained 6.7 percent of the variance. The unstandardized  $\beta$ -coefficients are 0.0095 for trade with an insignificant  $t$ -value of 0.742, 0.178 for trade growth with an insignificant  $t$ -value of 0.690, and -0.199 for capital with a  $t$ -value significant to the alpha 0.05 level at -2.056. The regression line is:

$$\text{Inequality} = 39.583 + 0.0095(\text{trade}) + .178(\text{trade growth}) - .199(\text{capital})$$

Thus, a country with the minimum trade value of 29.5, the minimum trade growth value of -13.4, and the maximum capital value of 63, would have a predicted inequality value of 24.94. On the other extreme, a country with the maximum trade value of 644.5, the maximum trade growth value of 19.9, and the minimum capital value of one, would have a predicted inequality value of 49.06. Taking extreme values of the independent variables to maximize inequality yields a predicted inequality level nearly twice that of the predicted minimum inequality. While the percentage of variance explained remains small at 6.7 percent, this equation demonstrates the significant effects of trade, trade growth, and capital on inequality levels across the globe. Thus, trade and trade growth above GDP growth increase inequality, while increased capital flows decrease inequality. Capital has the strongest correlation with inequality.

The international analysis demonstrates that trade is a much less important factor in causing inequality globally than it is in the U.S. Further, though I did not regress unionization on inequality internationally due to a lack of available data, capital flows decrease inequality significantly across the

globe. Thus, the international data produces another free market solution to inequality, namely increased capital flows. However, trade flows alone, as in the U.S., produce inequality, due to factor price equalization and factor content analysis. To this end, if a country seeks to decrease its inequality level, this model suggests that the country should seek capital investment. It appears that countries become more unequal when trade growth outpaces GDP growth. When the growth in exports and imports outpaces GDP growth, growths in other segments of GDP are probably decreasing, such as investment, consumption, and/or government spending. As Gottschalk's research has shown, in Scandinavian countries, for example, increases in government spending, unlike in the U.S., actually decrease inequality. The analysis suggests that if a country seeks to lower its level of income inequality it cannot simply close itself off to the world. While trade tends to increase inequality, the country should not decrease capital mobility as capital flows decrease inequality. Therefore, protectionism will not solve the problem of income inequality within countries.

Adrian Wood found that the factor equalization of wages across the globe has lowered the wages of the less-skilled as trade has lowered the economy-wide relative demand for unskilled labor by about 20 percent for all developed countries in 1990 (Wood 68). What Richard Freeman has called the "immiseration" of less-skilled workers in developed countries across the globe has manifested itself in the form of falling relative wages and inequality in the U.S. and unemployment in Europe. Except for Italy and Germany, nearly all industrial economies experienced rising income inequality in the 1980s, with the greatest increases in inequality occurring in the U.S. and Great Britain and the lowest increases in Northern Europe. Most of the increase in inequality stems from rising inequality among men and the reduction in social welfare spending (Gottschalk and Smeeding 636).

Thus, the international analysis reveals that while other developed countries have also experienced growth in inequality along with growth in trade, the effect of trade on inequality appears to be much higher in the U.S. Specifically, the correlation coefficient between trade and inequality in the U.S. is 0.792 while it is only 0.040 internationally. Some of that difference is attributable to better and higher levels of social spending in other developed nations, especially those in Northern Europe. Furthermore, it appears that other developed nations spend their government dollars in ways that better address the problem of inequality. This would be an interesting avenue for further research. It would also be informative to look at the role of unions in other developed countries. Developed countries with higher levels of centralized bargaining than the U.S., such as Germany, also have lower levels of inequality (Gottschalk and Smeeding 653). This is consistent with the negative correlation between unionization and inequality in the U.S. Generally

then, unions internationally tend to bring down inequality levels due to their centralized bargaining and political powers. The international comparison clearly demonstrates that while unions and efficient government spending may combat inequality, protectionism is not the simple solution to inequality as capital investors will be unlikely to invest in countries that practice protectionism. In fact, capital mobility and investment strongly decrease inequality.

#### *Policy Implications and Conclusions*

While trade clearly appears to increase inequality, protectionism is not the solution to increasing levels of inequality in the U.S. Trade does allow for imports of goods produced with low-skilled labor from the developing world. According to the factor content model, this effectively increases the supply of low-skilled workers in the U.S. and forces down wages for low-skilled American workers. If the factor equalization model is correct, then this downward trend of low-skilled wages could be disastrous as wages for the less skilled in the U.S. continue to fall. Additionally, as the U.S. continues to specialize in skill-biased technology, workers at the top will experience rises in their wages. Thus, as the wages at the bottom fall and wages at the top rise, inequality will increase as trade increases.

While simply cutting the U.S. off from the rest of the world is an attractive and simple solution to inequality, it will not solve the problem. According to Ricardian trade models, countries as a whole unambiguously benefit from opening to free trade. However, with differences among individual citizens in terms of endowments and preferences, the gains from trade are often unevenly distributed. Thus, protectionism is not the solution since it will eliminate all potential gains from specialization and from exchange associated with free trade. With uneven distribution of the gains from trade, the solution to inequality more likely lies in some form of redistribution.

Further, the costs of limiting free trade in the U.S. are prohibitive. The costs of trade barriers in the U.S. have been estimated at 0.75 percent of U.S. national income. U.S. consumers pay the majority of these costs in the form of increased prices paid on imports (Feenstra 159). The cost of U.S. protection to the U.S. economy in 1985 was approximately \$15-30 billion, while U.S. GNP in 1985 was about \$4 trillion, keeping the costs of protectionism under 0.75 percent of GNP (166). Further, due to protectionism, many protected U.S. industries have been able to raise prices above what they would be with free trade, costing U.S. consumers (164). With protectionism, U.S. citizens lose out as they pay subsidies to U.S. industries, receive less of a variety of products, and pay higher prices due to inhibited competition. Additionally, a retreat from multilateral free trade in the form of regional

preferential trade agreements is not the solution as they may lead to efficiency losses with trade diversion as explained by Viner (172). The division of the world into three regional trading groups could cause a 2 to 8 percent reduction in world welfare due to a decline in available product varieties (174). As such, the U.S. must stay the course of globalization and multilateral trade agreements while finding other solutions to growing inequality in the U.S.

One potential solution is for the U.S. to spend more money on job training for displaced workers as well as on unemployment insurance and the earned income tax credit (Collins 39). This is essentially a redistributive measure to offset the losses that low-skilled workers have experienced in the face of globalization. Increases in the education level of low-skilled workers raise wages at the bottom (Wallerstein 669). However, my research reveals that government spending is correlated with increased inequality. Thus, with government spending, programs have the potential to create inefficiency and government waste. However, since government spending in other countries, such as Germany, Italy, and Sweden appears to ameliorate inequality, perhaps U.S. government spending just is not being used properly to decrease inequality. A topic for further research would be to investigate how a country such as Germany or Sweden spends its government revenue. I believe that an efficient use of government funds in programs such as job training and reeducation, effectively investing in the U.S. labor endowment, would boost productivity and raise average wages (Collins 41). The public and private sectors should also work together to increase workers' skills, thereby increasing their wages, through partnerships for job training and education. Such programs could include government-matching funds for companies that provide job training or more government funding for junior college-level job training programs with German-style private-sector internships.

Another potential solution to inequality lies in unions and labor power generally. I began by asking the question of whether unions should be lobbying against free trade as they so often do. On the surface, it appears as if they are correct as trade does increase inequality and lower wages for low-skilled workers. However, perhaps unions should focus more on achieving redistribution rather than protectionism for while protectionism is costly in terms of overall welfare for the U.S., redistribution still allows everyone to enjoy the gains from trade. The problem herein lies with the will of the American people. One of the reasons why U.S. inequality is higher than that of Sweden or Germany, for example, is that the U.S. tax system is less progressive. Trying to get any redistributive measures passed in Congress and then signed by the president would be very difficult, especially given the current composition of Congress and the political beliefs of President George W. Bush.

A further union-based solution to inequality generated by my research is

increasing the power of unions to centrally bargain for wages. As Gottschalk and Smeeding's research showed, countries such as Germany and Sweden have much stronger centralized bargaining apparatuses and hence lower levels of inequality. In contrast, the power of unions to bargain for wages in the U.S. is limited by their sheer size and breadth as well as by the American political landscape. In 2000, unions only represented 13.5 percent of the U.S. labor force ("Union Sourcebook"). Further, as U.S. workers continue to migrate away from manufacturing industries and into more highly skilled fields, unionization levels will continue to decrease. The factor of the political landscape in the U.S. is critical here. The U.S. is unlike a country such as Germany, which has very strong unions and a much more liberal, left-of-center party. The German Social Democratic Party (SPD) is allied with the Greens in government. Germany has a long history of government and labor involvement in setting wages, unlike anything in the U.S. Thus, in my opinion, the U.S. cultural and political history is such that unions are not likely to grow in power in the U.S. Due to the economic factors of globalization in the U.S., the power of unions is decreasing and the U.S. government will not act to increase their power without a political mandate thereto, which clearly is not present in the U.S. Thus, without significant changes in the political preferences and power structure of the U.S., increasing the power of unions is not a feasible solution to American income inequality.

According to Kapstein, the U.S. should expand education and training programs so that workers can compete in the global economy, implement taxation changes to prompt economic growth, and coordinate with other governments toward mutually beneficial solutions. Kapstein sees only four paths for governments that want to fight inequality and help workers: protectionism, education and training, public works programs and employment subsidies, and tax policy and income transfers. He dismisses protectionism as "a remedy that is worse than the disease," as it increases prices. Protectionism is too costly as it precludes the U.S. from enjoying any of the benefits of trade. Public works programs stand the risk of creating inefficiency according to Kapstein. Despite the potential for inefficiency, Kapstein believes that part of the solution to inequality is public works and employment subsidies to increase jobs as well as tax reform and income transfers to help the working poor and finance new welfare programs. The U.S. could lower or end taxes to the poor and replace that revenue with a value-added tax on luxury goods that would primarily affect the rich (32-4).

International cooperation to avoid a race to the bottom in terms of wages, labor and environmental standards, and tax policy is a great idea, but as any student of international relations could explain, the prisoner's dilemma predicts that attempts at international cooperation inevitably result in both sides defecting. The U.S. should continue to keep these lines of discus-

sion open, but international cooperation does not provide the solution to U.S. income inequality.

Many of Kapstein's proposed solutions, including job training and education, public works programs, changes in the tax code, and employment subsidies generally fit under the umbrella of redistribution and government spending. There are two problems with this line of reasoning. The first is that there is little proof that such spending will decrease inequality. Secondly, the political support for increasing government spending and redistributive measures in the U.S. is, in my estimation, far below the critical level needed for implementation. I would argue that there is very limited support for any form of increased taxes for redistribution or government spending. Thus, with the possibility of increasing the power of unions, increasing global cooperation, and increasing government efforts at redistribution somewhat dismissed, what then is the solution to inequality?

Until American society recognizes inequality as a serious problem that it is ready and willing to address, there remain few solutions to inequality. Opening to free trade came with an implicit promise that the gains from trade would be redistributed such that the gainers would compensate the losers under globalization so that all Americans would be better off. Until there is a political will to actively work to solve the problem of inequality, the only solution is a laissez-faire hope for economic growth. Economic growth, stimulated by technological progress and increased productivity, does decrease inequality. However, economic growth also has the potential to further create a divide between the high skilled and the low-skilled workers in the United States. Finding a politically feasible and realistic solution to inequality is nearly impossible. Until such time as the American people and our political leaders recognize the manner in which inequality tears at the fabric of American society, levels of inequality in the United States will continue to rise under the influence of globalization.

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