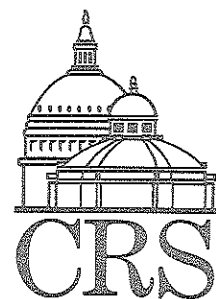


CRS Report for Congress

Does Trade Reduce Wages of U.S. Workers?

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DOES TRADE REDUCE WAGES OF U.S. WORKERS?

SUMMARY

The real wages of the average American worker has steadily declined since the early 1970s. Further, among workers, wages have become far more unequally distributed, with skilled workers gaining relative to the less skilled. Over this same period, the American economy has also become more globalized. The level of trade (exports and imports) has steadily risen, foreign investment in the United States and U.S. investment abroad has grown, and for the last ten years or more, the United States has run a large trade deficit (both overall and in manufactured goods). As wages have stagnated here, wages in other industrial countries have risen sharply to more or less match U.S. wages.

Many would link these two trends. They argue that rising foreign competition has eroded our manufacturing base and eliminated high-paying jobs. Similarly, the perception of ever-rising trade with low-wage nations is seen as exerting strong downward pressure on the wages of workers, particularly low-skilled workers.

This report examines in some detail the hypothesis that trade is undermining the economic status of the American worker. Two questions are addressed: one, Has trade tended to reduce the average level of wages? and, two, Has trade increased the inequality of wages? The general conclusion reached is that poor wage performance is largely a problem of the domestic economy, that would have occurred with or without trade. Stagnant average wages is most likely rooted in poor productivity performance and exacerbated by the falling price of investment goods (which workers produce but do not directly consume) and the rising price of housing services (which workers consume but do not produce).

The trend toward rising wage inequality also seems the result of forces originating in the domestic economy, not through the effects of trade. The factor price equalization theorem, a major tenet of mainstream international economic analysis, does provide a possible avenue by which trade could make the distribution of wages more unequal. But corollary effects that would also follow from this process are not evident in the American economy. An alternative explanation, again rooted in the functioning of the domestic economy, is that the recent evolution of technology has favored the skilled worker relative to the unskilled worker.

These findings suggest a policy focus that, where appropriate, aims at raising domestic productivity, particularly in services; and raising the skill level of less-skilled workers.

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DOES TRADE REDUCE THE WAGES OF U.S. WORKERS?

The economic case for free trade remains as compelling as it was when first made by Adam Smith in 1776. A reduction of impediments to the flow of goods and assets — freer trade — among nations will raise their economic welfare. This conclusion was validated by most studies of the recently enacted NAFTA and the Uruguay Round Agreement. However, the public debate that these initiatives have stirred suggests that a large segment of the American public feels that the expansion of trade is harmful to their economic wellbeing.

Two facts seem to support such a negative view of trade liberalization. Since the early 1970s, the real wages of the American worker have stagnated. At the same time, U.S. foreign trade and investment have increased markedly. Many see these two phenomena as linked, with increased globalization of the U.S. economy eroding the position of the American worker.

Correlation, however, does not imply causality. This report will attempt to clarify the degree to which (if at all) foreign trade has adversely affected the American worker. Specifically: Has foreign trade eroded the *average level* of U.S. wages? Has foreign trade caused a more *unequal* distribution of wages, adversely affecting lower skilled workers?

TWO RECENT TRENDS

STAGNANT AND MORE UNEQUAL LABOR COMPENSATION

The economic fortune of the average American worker has been stagnant since the early 1970s. Between 1947 and 1973, average real hourly earnings rose an average 1.9 percent per year, leading to a doubling of income every thirty-six years. This steady upward march stopped in the 1970s. Between 1973 and 1992 real hourly wages declined, and are now 13 percent *below* their 1973 level.

Real hourly *compensation*, which includes the value of assorted fringe benefits along with the value of a worker's paycheck and is, therefore, a more meaningful measure of earnings, shows only a somewhat less pessimistic story. Real compensation did rise, but only a meager 5 percent over the two decades as a whole. By either measure, the improvement in labor's real income has

deteriorated since 1973. If the rate of improvement in labor income prior to 1973 had persisted, it would be some 30 to 40 percent higher than it is today.¹

A second concern is a sharp increase in the *inequality* of worker earnings that has occurred since 1973. Whether based on differences in education or work experience, the gap between high and low skilled workers has widened markedly. The difference between the earnings of the college educated and the earnings of those with only a high school education rose 15 percent. Similarly, the gap in earnings between men in their forties and men in their twenties rose 25 percent. The trend seems to be continuing. In the three years between December 1979 and December 1992, the growth of hourly compensation in "white collar" occupations exceeded that in "blue collar" occupations by 7.9 percent. The disparity in the data on earnings was even wider.²

INCREASED GLOBALIZATION

Coincident with the deterioration in the income of U.S. labor, particularly low-skilled workers, has been major changes in U.S. economic relations with the rest of the world.

First, the United States has become increasingly integrated with the world economy. Total trade of the United States (exports plus imports) has grown from 12.7 percent of GDP in 1970 to 25 percent in 1990. At the same time, the stock of foreign direct investment in the United States grew from 3 percent of total investment to over 8 percent. Some conclude from these trends that U.S. economic well being is greatly dependent on foreign trade.

Second, in the 1980s, there was a ballooning of the U.S. trade deficit. It grew from less than one percent of GDP in 1980 to over 3.5 percent by 1987. The widening trade deficit was the means by which the U.S. economy pushed the level of domestic spending (consumption) beyond the level of domestic production. However, despite the fact that employment and output were rising at the same time, many perceived the deficit, particularly the growth in imports, as a major factor depressing domestic production, leading to increased unemployment and stagnant or declining wages.

Third, the productivity and wage levels of foreign workers has converged on the once preeminent American levels. In the 1950s, output per worker in Europe was one-half that of the United States while Japan's was only one-sixth

¹ Data are for production or nonsupervisory workers on private, non-farm payrolls and can be found in: U.S. Department of Labor. Bureau of Labor Statistics. *Employment and Earnings*; and, *The Monthly Labor Review*, January 1994.

² For further discussion of these trends in inequality, see: Murphy, Kevin M. *Changes in Wage Structure in the 1980s: How Can We Explain Them?* Mimeo. University of Chicago, 1992.

of the U.S. level. But rapid accumulation of physical and human capital in other countries has all but closed that gap. As a result, a trade-weighted average of foreign wages has risen from 64 percent of the U.S. level in 1973 to 93 percent of the U.S. wage level by 1990.³ To some, this convergence has been perceived as the rest of the world prospering at the expense of the U.S. worker.

ARE THE TWO TRENDS LINKED?

The coincidence of the changes in the U.S. international position with the severe slump in wages and compensation is often turned into one of causality. Such linking finds support in the writing of a few economists. Lester Thurow has argued that the huge increase in the U.S. trade deficit in manufactured goods has dampened the pace of employment and wages in the traditionally high wage manufacturing sector.⁴ George Johnson and Frank Stafford conjecture that there has been a steady erosion of economic rents (i.e., extra-normal returns to all factors of production including labor) that had been derived from America's technological leadership. As technological prowess grows in other countries, these rents are reduced, exerting downward pressure on U.S. real wages.⁵ Edward Leamer of UCLA, has argued that accelerated rates of capital accumulation abroad are predictably causing "factor price equalization," whereby wages in the United States and other countries converge. This convergence is not just a matter of foreign wages rising to the U.S. level, but also of U.S. wages falling.⁶ As discussed later, the process of factor price equalization can be used to explain both the fall in the average level of U.S. wages and the increased inequality of wages between skilled and unskilled labor.⁷

³ U.S. Department of Labor. Bureau of Labor Statistics. *International Comparisons of Hourly Compensation Costs for Production Workers in Manufacturing, 1975-1990*. Report 817. Washington, November 1991.

⁴ Thurow, Lester. *Head to Head*. New York, William Morrow, 1992.

⁵ Johnson, George E., and Frank P. Stafford. International Competition on Real Wages. *Papers and Proceedings of American Economics Association*. May 1993. p. 127-130.

⁶ Leamer, Edward. *Effects of the U.S.-Mexico Free Trade Agreement*. NBER Discussion Paper #3991. 1991.

⁷ Other analysts have argued that trade has adversely effect U.S. wages. See: Ravenga, Ana L. Exporting Jobs? The Impact of Import Competition on Employment and Wages in U.S. Manufacturing. *Quarterly Journal of Economics*, v. 107, no. 1. p. 255-282; and, Reich, Robert B. *The Work of Nations*. New York, Alfred Knopf, 1991.

DISPUTING THE ALLEGED LINKAGE

A recent study by Robert Lawrence of Harvard and Matthew Slaughter of MIT, provides a very compelling factual refutation of each of these alleged linkages of trade to falling real wages.⁸ The discussion that follow draws extensively on this research.

THE STAGNATION OF WORKER COMPENSATION

Impact of the Trade Deficit: The linkage of the U.S. trade deficit to lost jobs and reduced wages in the manufacturing sector is easily dismissed. A trade deficit does not necessarily cause a reduction in domestic output. Far more often, a trade deficit allows a nation to increase domestic spending beyond its economic capacity. This latter scenario was certainly the case for the United States in 1980s.

For the sake of argument, however, Lawrence and Slaughter assume that the large trade deficits of the 1980s led to a reduction in domestic manufacturing output. Then they ask whether such a change would be able to explain the degree of wage deterioration seen in the manufacturing sector. They conclude that the shift in the trade balance is far too small to explain the deterioration of hourly wages.

As Lawrence and Slaughter calculate, in 1991 the trade deficit was equal to about 5 percent of value added in manufacturing, and manufacturing accounted for about 17 percent of total employment. Thus, eliminating the trade deficit would have had the effect of adding 0.85 percent (0.05×0.17) to employment in manufacturing. An increase in the demand for labor of this size would have raised average hourly earnings for all employees by a meager 0.07 percent, far too small to account for the poor wage performance of the 1980s.

Impact of Foreign Competition: A second avenue by which trade could reduce wages and domestic living standards is by the steady erosion of our technological advantage in the world economy. This would manifest itself as a steady deterioration of our export prices relative to import prices, or what economists term a decline in the U.S. "terms of trade." The Nation's gains from trade would still exist, and make trade worthwhile, but the gains would be smaller than before. A "terms-of-trade" loss, is a "decrement" to domestic living standards, effectively lowering the real wage of the domestic work force.

Such a development should not be surprising. The emergence of technologically capable economies in the post-war era was always expected to produce strong competitors to U.S. producers. The result of increased

⁸ Lawrence, Robert Z., and Matthew J. Slaughter. *International Trade and American Wages in the 1980s: Giant Sucking Sound or Small Hiccup*. Brookings Papers on Economic Activity. Number 2. Washington, 1993. p. 161-225.

competition should have pushed down the price of U.S. exports, leading to a deterioration of the nation's "terms of trade."

The United States did experience a deterioration in its terms of trade in the 1970s. The magnitude of that effect, however, was small, tending to reduce real wages by less than 2 percent over the decade. A small effect is not surprising since imports account for no more than 12 percent of final spending in the economy. Therefore, the 15 percent terms-of-trade loss over the decade would cause only a 1.8 percent loss in real purchasing power.

In the 1980s, however, no decline in the U.S. terms of trade occurred. On the contrary, the substantial, though unsustainable, rise in the dollar exchange rate in this period strengthened the U.S. terms of trade, raised real GDP and real wages. In any event, the effect of changes in the U.S. terms of trade, and thereby real wages is too small to explain the sharp deterioration of worker compensation over the last 20 years.

Impact of Factor Price Equalization: The "factor price equalization" theorem of economists asserts that there is a tendency for the returns to labor and capital to be equalized throughout the trading world.⁹ For the United States this implies that with freer trade U.S. wages could fall, as the return to U.S. capital rises. Yet, there has been no observed redistribution towards profits as labor's share of national income has shown no significant decrease over this period. In 1991, that share was equal to 65.6 percent of value added in the business sector, only one percentage point lower than in 1979.¹⁰

Similarly, the factor price equalization theorem also predicts that international trade could work to raise the wages of foreign labor and lower wages in the United States.¹¹ Can the stagnation of U.S. workers' compensation be due to a shift of labor income abroad? Such an effect would show up as a growth in labor's real product wage¹² falling below the pace of

⁹ Samuelson, Paul A. International Trade and the Equalization of Factor Prices. *Economic Journal*, no. 58, 1948.

¹⁰ Evidence to the contrary in household and personal income data are a definitional quirk. See Cutler, David and Lawrence Katz. Macroeconomic Performance and the Disadvantaged. *Brookings Papers on Economic Activity*, vol. 2, 1991. p. 1-74.

¹¹ The factor price equalization theorem predicts an adverse impact of trade liberalization on the factor of production that is scarce in the country relative to the country's trading partners, i.e., labor in the United States vis-à-vis labor in the rest of the world, relative to capital, the abundant factor of production.

¹² The real product wage is the nominal wage deflated by the price of the product produced, rather than a cost-of-living price index that represents the cost of products consumed. If real product wages match productivity increases, then labor's wage fully reflects its contribution to the value of output.

productivity advance. But this has not happened. As Lawrence and Slaughter observe (and is explained more fully later in the report), labor's product wages have kept pace with the advance of productivity, casting doubt on trade as the source of the problem.

AN ALTERNATIVE EXPLANATION: A DOMESTIC PROBLEM

Stagnant Productivity Growth: If foreign trade is not the reason for the stagnation of real wages since 1973, what is? Two forces seem to be at work here. One is the sharp slowdown in the rate of productivity growth that commenced in the early 1970s. The other is a way of calculating real wages.

Economic analysis and empirical evidence indicate that the single best predictor of wages is productivity. High rates of productivity growth will most often translate into high rates of wage growth and vice versa. There has been little doubt that a high level of worker productivity has supported high worker wages in the U.S. economy.

As can be seen in the table below, annual productivity growth in the U.S. business sector averaged 2.4 percent between 1949 and 1973. But from 1973 to 1979, that rate fell to 0.3 percent. From 1979 through 1988 productivity recovered modestly to average 0.8 percent per year.

TABLE 1. Multifactor Productivity Growth
(percent)

	Private Business ^a	Manufacturing
1949-73	2.4	1.6
1973-79	0.3	-0.1
1979-88	0.8	1.6

^a GDP minus government and nonprofits.

Source: Gullickson. From *Economic Insights*, January 1994. p. 5.

From 1973 to 1979, real compensation did track with slow rising productivity. But after 1979, real compensation failed to rise even as fast as productivity in the business sector. Lawrence and Slaughter estimate that from 1979 through 1991, output per worker grew by a cumulative 10.5 percent, not a very speedy pace by historical standards. Over the same period, real compensation (average hourly compensation deflated by the Consumer Price Index for Urban Consumers) grew only 1.5 percent. Apparently something more than slow productivity was dampening the growth of worker compensation. One might reasonably conjecture that someone else was receiving the value of this

discrepancy between output and wages. Perhaps U.S. capital or foreign labor, or both.

Use of Production Rather Than Consumption Price Index: As Lawrence and Slaughter demonstrate, the gap can be closed by a more discerning examination of the price deflator used to generate the real compensation (or wage) series. Economic theory says that the appropriate deflators to determine real product wages should be a measure of the prices of goods *produced* by U.S. workers. The CPI used in the calculation of the real compensation series, however, measures the price of goods *consumed* by U.S. workers. The two price series contain different bundles of goods that have exhibited different rates of price change.

If compensation is deflated by an index of output prices, real compensation then moves in step with productivity change. In other words, if workers had chosen to consume the products they produced, their real compensation would have risen by as much as productivity. Thus, part of the "real wage problem" has been caused by a sizable discrepancy in the prices of products workers consume relative to the prices of products they produce.

There are three likely sources of difference in production and consumption prices. The first is the price of investment goods. (Workers produce investment goods but do not directly consume them.) These prices have fallen substantially in recent years in response to strong productivity gains in these industries. If the prices of investment goods were removed from the production price deflator, about half of the difference between production and consumption compensation would be removed.¹³

A second major difference in consumption and production prices is housing. Housing costs represent 20 percent of the CPI index, but are not part of the business sector production price index. Moreover, housing costs have been inflating rapidly in recent years, rising 17 percent more than did the overall CPI from 1975 to 1991. If hourly compensation were deflated by the CPI minus the price of shelter, then Lawrence and Slaughter calculate that so measured real compensation would rise by enough to erase the other half of the gap between output growth and wage growth.

A third possible discrepancy between real product wages and real consumption wages can be introduced by international trade. Imports are clearly part of consumption but they are not part of U.S. production. If import prices rise faster than export prices — if the United States experiences a decline of its terms of trade — real domestic consumption wages could be reduced. During the period in question, however, no such deterioration in the

¹³ One might argue that the lower price of investment goods should at some point feed back in the form of lower consumer goods prices and benefit the consumer. Why this has not occurred is a question that deserves further research.

terms-of-trade occurred. In fact, on average over the 1980s the United States saw a small terms-of-trade improvement.

One should note, however, that this terms-of-trade improvement was the consequence of the sharp appreciation of the dollar in the first half of the 1980s. It is a reasonable conjecture that in the years just ahead, some further amount of dollar depreciation will be needed to reduce the trade deficit that the earlier appreciation helped generate. At that time, the United States would experience a terms-of-trade loss that would be a decrement from U.S. real income. (The size of the real income reduction is unlikely to exceed 1 percent. Thus it is unlikely to be a major force perpetuating stagnant real wage growth in the years just ahead.)

Then, it would seem that, to the extent that real wages have advanced slower than productivity growth, domestic forces, not trade, have been the principal cause.

The Nature of the Productivity Problem: Having explained away the gap between output and wages, the question that still remains is why has productivity growth been so slow over the last 20 years. While a complete answer to this question has yet to be found, it is revealing to examine a bit more closely the productivity data presented earlier in table 1. What is evident is that the persistent weakness in productivity has become largely a problem of the service sector. Productivity in the manufacturing sector did collapse in the 1970s but since 1979 has made a full recovery. But overall productivity in the business sector did not, implying persistent slack in services.

It is possible that there is substantial error attached to measuring productivity in the services. But, these problems have always been present, and there is no reason to assume that this error changed drastically after 1973. Many also expect the service sector to be in a major transition, as it digests the prospects offered by computers. As yet, however, no sizable enduring productivity boost is evident.¹⁴

One is left with the fairly strong conclusion that the poor performance of average real compensation in the U.S. economy is largely rooted in the domestic

¹⁴ An associated effect of these productivity trends is the shrinking of employment opportunities in the U.S. manufacturing sector. Manufacturing's share of real output has held very steady over the last 20 years, fluctuating between 18 percent and 20 percent of GDP. But, given the pace of productivity advance, fewer and fewer workers are required to produce any given level of output, and the workers needed must have a higher level of skill than was true before. The apt analogy is that of U.S. Agriculture, the small number of farmers is not the result of the pressures of foreign competition, but rather the pressure of phenomenal productivity growth in U.S. agriculture.

problem of poor productivity growth in the service and housing sectors, not in the effects of expanding international trade.¹⁵

THE CAUSES OF WAGE INEQUALITY

It is quite plausible that the increased integration of the world economy could cause increased wage inequality in a nation. It has long been recognized that while expanding trade would raise overall welfare, it could also have strong effects on the distribution of income in a country.

In the theory of international trade, the theorem of factor price equalization predicts that trade can affect relative wages through its effect on relative product prices. The theorem can be easily extended to consider the effects on different types of labor (skilled vs. unskilled) as well as between the broad category of labor vs. capital. If unskilled labor is relatively abundant in the rest of the world, greater openness among economies could drive down the relative U.S. price of traded goods that use unskilled labor intensively in production. This will tend to reduce the size of the traded goods sectors that use unskilled labor intensively, and in turn reduce the demand for and wage of such labor.

Couple this theory with the evidence of a sharp rise in manufactured exports from Third World countries with abundant supplies of low-skilled labor and it seems at least plausible that such trade has and will continue to hurt, the economic status of unskilled workers in the United States.

Lawrence and Slaughter demonstrate, however, that a careful consideration of the implications of this theorem and a look at the evidence do not support this position. As noted above, the factor price equalization process is initiated by a fall in the relative price of the product as a result of trade. If factor price equalization through trade had lowered the wages of less skilled workers, one would also expect to see a decline in the relative price of the goods produced using unskilled labor intensively. But Lawrence and Slaughter find that the price of such goods actually rose slightly more in the 1980s than did the price of goods produced by higher skilled workers. This increase in the relative price of goods produced by lower-skilled workers would predict that if further price equalization was working, foreign trade in the 1980s should have decreased the disparity between low and high skilled workers in the United States.

¹⁵ International comparisons reveal that the convergence of real wages in France, Germany, and Japan to the U.S. level was rooted in the growth of *non-manufacturing* output per employee. Thus, this convergence of foreign real wages was not the result of superior manufacturing productivity abroad displacing U.S. workers as trade in manufactures has expanded. Rather, relatively *superior* productivity performance in the largely untraded services sector was the main source of foreign wage convergence.

A second prediction stemming from the working of a factor-price-equalization process is that the now relatively cheaper low-skilled workers would be used more intensively by all industries and the relatively more expensive high skilled labor would be used less intensively. What Lawrence and Slaughter find is that just the opposite has occurred. Throughout U.S. manufacturing there has been a significant *increase* in the ratio of skilled to unskilled workers.¹⁶ The overall conclusion then is that trade and the process of factor price equalization does not seem to be driving the trend toward increased inequality of wages.¹⁷

This result may not be all that surprising if one considers some other evidence. First, despite the rapid growth of exports from Third World countries, the bulk of U.S. trade is still with other high wage industrial countries. In 1990, the average U.S. trading partner had a manufacturing wage rate equal to 88 percent of the U.S. level. Second, trade with all countries is still only a fraction of U.S. output and trade with low-wage countries (countries with wages less than half the U.S. level) amounted to only 2.8 percent of U.S. GDP.

This would suggest that, despite a long stream of anecdotal evidence to the contrary, the force of factor price equalization caused by trade liberalization may not be that strong and easily offset by other forces induced by freer trade and occurring within domestic industries. One such force, scale economies, are more fully realized through expanding trade and can work to offset the effect of factor price equalization by raising the real return to all factors of production.¹⁸ A second offsetting force can arise through trade's tendency to heighten competition and raise efficiency, thereby generating enough improvement to allow for all factors to see their real wage rise.

If not trade, then what is causing increased wage inequality? A leading alternative conjecture is that "biased" technological change has generally induced a shift towards the more intensive use of skilled labor at the expense of unskilled labor. Such technical change makes skilled workers more productive (and wages higher) and less skilled workers less productive (and wages lower). It has been argued that the new information technology has made skilled labor more complementary to capital and unskilled labor even more of a substitute.

¹⁶ This conclusion was true at several levels of industry disaggregation making it unlikely that outsourcing of the low-skilled parts of the production process was masking a factor-price equalization effect.

¹⁷ This conclusion has been reached by other research. See, for example, Borjas, George, Richard Freeman, and Lawrence Katz. On the Labor Market Effects of Immigration and Trade. In Borjas and Freeman, ed. *Immigration and the Workforce*. Chicago, University of Chicago Press, 1992.

¹⁸ For a fuller and more insightful analysis of the role of trade and scale economies see: Brown, Drusilla, Alan Deardorf, and Robert Stern. *Protection and Real Wages: Old and New Trade Theories and Their Empirical Counterparts*. Paper presented at CEPR/CESPRI Conference. May 27-28, 1993.

Thus, the process of both capital accumulation and technological change will work to reduce the wage of unskilled labor.¹⁹ But no direct evidence of the nature of such "technological" change or of why it has occurred exists. Nor can we be sure that it will continue. Thus, it could happen that future trade may induce more inequality through the undiluted effect of factor price equalization. With or without trade there is no reason to be optimistic about the economic fortunes of low skilled workers.

WHAT POLICY RESPONSE?

One response, often tempting to those who still see trade as a threat to the economic welfare of American workers, is to use some form of trade protection to preserve jobs and wages. This is a costly and temporary solution. Numerous studies have shown that the cost to the economy of jobs saved by protection is extraordinarily high. For example, a recent study by Gary Hufbauer and Kimberly Elliott, estimated that the consumer cost of *each job saved* across 23 U.S. industries ranged from \$100,000 to more than \$1 million and averaged about \$170,000. These sums are far higher than the average wage in the protected industry and likely far higher than the cost of any past or prospective labor adjustment program.²⁰ From a strictly economic standpoint, it would be cheaper (more efficient) to let the job vanish and to have the government directly pay a worker his lost income.

Further, because poor wage performance is mostly rooted in forces occurring in the domestic economy, the advantage afforded by protection would be temporary. Relatively rapid productivity growth in the manufacturing sector will mean still fewer manufacturing jobs, and if technological change continues to exhibit its bias for high skilled workers, their wage will ultimately rise relative to those of less skill with or without trade or protection.

The evidence cited in this discussion points to other policy routes focused on the functioning of the domestic economy. Restoring productivity growth in the domestic service sector would provide the most assured path to higher average wages. A substantial increase in spending on education and retraining could give the greatest assurance against widening wage inequality.

These remedies are easier said than done, however. We know little about why productivity in services collapsed, leaving the cure equally problematic. Many hold out hope that the computer revolution will soon begin to boost productivity in the production of services. It is only slightly less unclear how

¹⁹ See, Gvilihes, Zvi. Capital-Skill Complementarity. *Review of Economics and Statistics*, no. 465, 1967. p. 51.

²⁰ Hufbauer, Gary Clyde, and Kimberly Ann Elliott. *Measuring the Costs of Protection in the United States*. Washington, Institute for International Economics, 1994.

we might more efficiently structure an enhanced effort in education and retraining, an issue with which Congress is now grappling.

In both cases, however, the cure to poor wage performance and rising wage inequality points to the need for increased investment in technology and in physical and human capital. Recent history, however, raises some doubt about the prospect for the American economy to raise its level of investment as such an increase must entail a reduction of domestic consumption or an increase in foreign borrowing.

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