

International trade regulation and job creation

Trade policy is not an employment policy and should not be expected to have major effects on overall employment

Keywords: employment, tariffs, protection, trade regulation

ELEVATOR PITCH

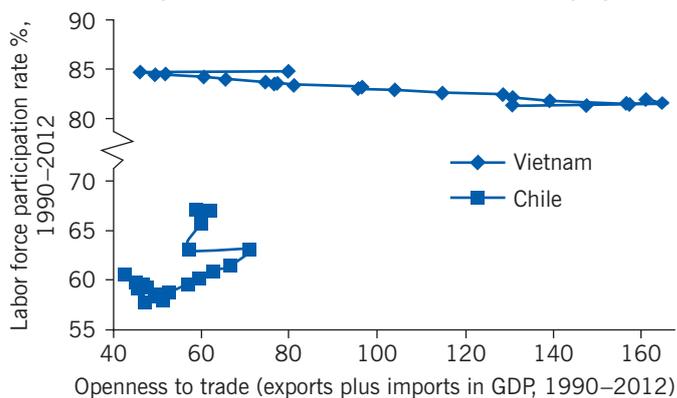
Trade regulation can create jobs in the sectors it protects or promotes, but almost always at the expense of destroying a roughly equivalent number elsewhere in the economy. At a product-specific or micro level and in the short term, controlling trade could reduce the offending imports and save jobs, but for the economy as a whole and in the long term, this position has neither theoretical support nor empirical evidence in its favor. Given that protection may have other—usually adverse—effects, understanding the difficulties in using it to manage employment is important for economic policy.

KEY FINDINGS

Pros

- + The effects of major trade policy changes on aggregate employment are mixed.
- + Through its effects on the rest of the economy such protection is likely to reduce the jobs available in export-oriented sectors.
- + Trade reforms do not increase the ratio of informal to formal employment.
- + Protecting import-competing sectors can increase the number of jobs they offer—or at least reduce the rate of decline.

No relationship between international trade and employment



Source: World Development Indicators. Online at: <http://data.worldbank.org/data-catalog/world-development-indicators>.

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Cons

- In the long term, trade liberalizations can boost employment (at least in developing countries).
- More open economies have higher levels of employment, other things being equal.
- Trade reform does not appear to cause large reallocations of labor between sectors.
- Trade reform may still cause intrasectoral reallocation from less to more efficient firms within sectors.

AUTHOR'S MAIN MESSAGE

Trade policy is not an employment policy and should not be expected to have major effects on overall employment. When it does so, it is because it interacts with distortions in labor markets, which vary from country to country and time to time. No generalization is feasible, and seeking to make one is pretty much a fool's errand. Policymakers wanting to boost employment should think about the aggregate economic balance and labor market institutions, and not interfere with international trade.

MOTIVATION

Imports cause job losses in import-competing sectors, so stopping them seems likely to preserve jobs. It is also attractive politics, because it can be presented as politicians protecting (note the word) their constituents from harm produced by adverse foreign forces over which they have no control. This is all very well, but it ignores the effect that protecting Paul has on Peter's ability to earn a living. Through a variety of well-understood mechanisms, protecting some sectors typically harms others and destroys jobs in those other sectors, with the result that one ends up with a distorted economy but very little change in overall employment.

DISCUSSION OF PROS AND CONS

In the simplest versions of the currently prevailing neoclassical model of the economy, long-term levels of employment and unemployment are determined by macroeconomic variables and labor market institutions, not by trade and not at all by trade policy. So, according to this view, trade policy can have no long-term impact on employment levels. Even neoclassicists, however, recognize that, in the short term, the level of economic activity may be influenced by trade shocks or trade policy changes; they argue, however, that in the absence of other changes, the labor market will eventually return to its former equilibrium.

The structuralist school, by contrast, rejects Say's Law that demand expands to absorb supply, and postulates that trade and trade policy shocks can affect employment permanently by creating or destroying jobs with little or no adjustment in the sectors of the economy not directly affected by the shock [1].

The difference in approach reflects the specific simplifications in different modeling strategies, which in turn stem from different perceptions about the speed of adjustment and the appropriate time period to analyze. Neoclassical theory focuses on the longer

Say's Law

Say's Law is attributed to the French economist Jean-Baptiste Say, who wrote, in *A Treatise on Political Economy*, 1834, "[a] product is no sooner created, than it, from that instant, affords a market for other products to the full extent of its own value." The idea is simply that if a product worth \$x is produced, a flow of \$x revenue is generated. (That is, the value is defined by the flow it generates.) That part of the flow which is spent on inputs that are purchased for the purpose of production, represents a direct demand, and that which is not is paid to the various factors of production used in production (land, labor, capital, taxes) as income. Since income is for spending, these people will demand goods and services from others of that value and so ultimately all \$x is reflected in demand.

The term "Say's Law" was coined by John Maynard Keynes who summarized it as saying "supply creates its own demand" and then challenged it on the grounds that income may be saved and thus not enter demand. Those who adhere to the Law, however, would argue that savings get re-directed into investment and that eventually even hoarded money gets spent.

Say, J.-B. *A Treatise on Political Economy: Or the Production, Distribution, and Consumption of Wealth* (Grigg & Elliot, 1834).

term. Structuralist theory focuses on time periods short enough that full adjustment has not occurred and reminds us that, certainly for the people affected, the adjustment path can be sufficiently long and painful to dominate their view of appropriate trade policy.

In fact, the dichotomy need not be as extreme as the previous paragraphs suggest. Theorists have modified the neoclassical model to add in the sort of labor market imperfections that create unemployment even in equilibrium. Introducing efficiency wages and job searches into trade models can lead to multiple equilibria, and predictions about both (un)employment and the welfare effects of trade liberalization become qualitatively ambiguous [2]. In partial empirical support of more general specifications of the trade model, labor turnover and attitudes toward trade liberalization are consistent with the existence of these sorts of frictions over significant periods of time.

Unfortunately the heterogeneity of economies and the difficulties of isolating trade policy from other policies and from the influence of labor market outcomes make simple statistical tests between these two views impossible. So, that leaves partial and approximate results, which in turn leave a great deal of room for judgment by policymakers.

Aggregate employment

The more direct empirical evidence, based on panel data, shows that when trade is driven primarily by Ricardian comparative advantage (based on technological differences between countries), protection increases unemployment rates across countries [3]. Several permanent trade liberalizations reveal a striking difference in the short-term and long-term responsiveness of unemployment to trade liberalization. While the immediate effect of reducing trade barriers tends to be a rise in unemployment, the longer term sees the reversal of this rise and an eventual decline in unemployment. That is, adjustment takes time but, at least in this dimension, offers positive returns in the long term.

Ricardian and Heckscher-Ohlin comparative advantage

Comparative advantage is the idea that countries will export goods which they can produce relatively more cheaply than their partners and import those in which their costs are *relatively greater* (with, possibly, a band of non-traded products in between). The theory was formulated by David Ricardo in 1817 in *On the Principles of Political Economy and Taxation*. In his exposition of trade between England and Portugal the differences in relative costs arose from the two countries having different patterns of labor productivity across industries. In modern usage, we apply the term “Ricardian comparative advantage” to any circumstance in which cost differences arise from technological differences in productivity patterns regardless of which factor the differences reside in.

The alternative view of Eli Heckscher and Bertil Ohlin postulates that technology is the same in all countries but that countries differ in the proportions with which they are endowed with different factors of production. If goods require different factors in different proportions from each other, Heckscher and Ohlin were able to show that, say, a good requiring relatively more labor would be relatively cheaper in a more labor abundant country in the absence of trade and thus would become an export when trade occurred. We use the term Heckscher-Ohlin comparative advantage wherever the differences in relative costs are postulated to stem from countries’ different endowments of factors.

Ricardo, D. *On the Principles of Political Economy and Taxation*. London: John Murray, 1817.

Where trade is determined more by differences in factor endowments (the Heckscher–Ohlin framework) than by differences in technology, standard international trade theory predicts that in capital-abundant countries trade liberalization will boost the returns to capital and (in the simplest form of the model) absolutely reduce those to labor (as predicted by the Stolper–Samuelson theorem). If job search frictions are added to the labor market, that also produces higher unemployment. In labor-abundant economies, labor is the winner from trade liberalization, and the result would be lower unemployment. There is weak empirical evidence for these outcomes, but it is dominated by the results in the previous paragraph.

The pressure to use trade policy to support employment is probably strongest in developed countries, such as those of Europe, and the US. Although trade policy in these economies is of a sectoral nature (using sector-specific trade policies to support employment in, say, agriculture, steel, or textiles), the evidence from capital-abundant countries hints that there may be an aggregate effect, at least for a few years [3]. The key question for the aggregate outcome is not whether import competition destroys jobs in the affected sectors, but whether the workers displaced are reabsorbed into the workforce reasonably quickly and without sacrificing wages too much.

Reemploying displaced workers

The late twentieth-century evidence for the US suggests that trade liberalizations disproportionately displaced less-qualified workers from manufacturing, that around one-third of those were not reemployed within a few years (the timing is imprecise in this work), and that those who were reemployed suffered an average cut in wages of 13% [4]. Reemployment was quicker and fuller in the 1990s than the 1980s, which reinforces the obvious point that labor market institutions and the general buoyancy of the economy and the labor market are major determinants of the speed of reabsorption. The costs to these workers should be considered in policy making, but claiming that they are the dominant factor is not well justified.

Hitting poor countries

There is no compelling evidence that trade liberalization disproportionately hits the weak and the poor in developing countries. Indeed, one can identify cases where trade liberalizations have been followed by very rapid growth in employment. The problem, of course, is that in these cases much more than trade policy was altered, so attribution is inevitably rather cloudy.

Increasing openness

A macroeconomic study shows that increasing openness lay behind much of the dramatic decline in the natural rate of unemployment in Singapore [5]. Introducing wage bargaining and trade unions into a specific-factors two-sector economy endogenizes the natural rate of unemployment (see **Endogeneity or exogeneity?**). Between 1966 and 2000—when the openness ratio (the sum of export and import relative to gross domestic product (GDP)) increased from about two to nearly three—the relative prices of export goods increased, and there was a rapid accumulation of capital in the export sector. Both phenomena increased

the marginal product (and, hence, the wage) of labor in terms of non-tradable goods and services, and helped to expand overall employment fourfold (as the population doubled).

Endogeneity or exogeneity?

Endogenous variables are determined by something within the system being analyzed; exogenous ones are determined wholly outside it. In the pure neoclassical model, the level of employment is entirely exogenous to international trade considerations, but if the model recognizes labor market frictions, it can become endogenous, at least in the short term. The distinction is also very important in determining causality. If we find a strong association between two variables, but both are endogenous, we don't know which causes which. If, by contrast, we are sure that one is exogenous and that our model includes all relevant considerations, we can infer that causation runs from it to the endogenous one.

The direct effects of the accumulation were larger than those of relative prices, although the latter, a natural consequence of trade liberalization, are arguably the key causal factor behind Singapore's experience. Even if entrepreneurs invested first and then sought markets for their goods, as some have maintained, the home market could never have absorbed the quantities, so trade liberalization was the key to selling large quantities without having the price fall. The results are robust as to whether either relative prices or accumulation, or both, are exogenous or endogenous.

A recent systematic review and meta-study of the literature suggests that, taken overall, the empirical results on trade policy reforms and aggregate (un)employment suggest little systematic effect [6]. But there is a tendency for studies relating openness to employment to find a positive relationship between them.

Sectoral employment

Many sectoral studies show that protection for import-competing sectors or export booms for exportable sectors are associated with increases in employment. Translating this into broad-based trade liberalizations that boost both imports and exports would suggest reallocations of labor from the former to the latter sectors. Mauritius, during its period of industrialization, 1971–1991, offers some support for this view. Exportable sectors gained employment (and wages), but importable sectors did also, despite the reduction in trade barriers appearing to open them to greater competition. The latter fact can be attributed to the general equilibrium effects of liberalization (and other policies fostering industrialization), which caused the economy to expand strongly. Similar results are found elsewhere for several countries—such as Vietnam.

A less optimistic scenario has been found for Brazil's trade liberalization of the 1990s [7]. The tariff cuts on final goods displaced workers from import-competing sectors, but exporters failed to absorb these workers, even though they expanded their output. Thus, lower product tariffs seemed to accelerate worker transitions into unemployment or out of the labor force. The same study, however, found that lower tariffs on inputs into manufacturing enhanced employment.

Sectoral reallocation

For developing countries it is perfectly plausible that both export- and import-competing sectors expand with trade liberalization: Industrialization draws workers out of low-level subsistence agriculture and into measurable employment in more easily observed and often more formal sectors. At least at first, this transfer is not curtailed by wage increases. For countries that have already passed the surplus labor stage of development, by contrast, the predicted reallocation, coupled with fairly stationary aggregate employment, seems more likely.

For this reason it is quite a mystery why trade or trade policy shocks do not generally produce large amounts of reallocation. An influential study tests whether trade liberalizations in 25 middle-income countries had the predicted reallocative effects on employment patterns across sectors and in aggregate employment [8]. At the level of nine broad sectors of the economy, trade reforms appear, if anything, to reduce the average degree of labor reallocation below pre-reform levels and to have little effect in aggregate. If we look at the data at a finer level of disaggregation of the manufacturing sector, trade reforms are associated with increases in reallocation (although these are small, poorly defined and not very robust) and a tendency for aggregate manufacturing employment to fall. Thus, trade policies do not seem to have been responsible for the wholesale contraction of sectors, although they might have induced structural change within the manufacturing sector as the sector as a whole declined.

At face value, those results are a challenge for neoclassical theory, which, after all, characterizes the benefits of trade as shrinking import-competing production and expanding exportable production [8]. But they are probably explicable in the sample of liberalizations examined. As in Mauritius, successful liberalization led to an economic expansion that allowed all sectors to survive, if not prosper. And in most cases the reforms represented a retreat from import-substituting policies that favored manufacturing, so the contraction of employment in manufacturing was not surprising.

The liberalizations varied among themselves in depth, nature, and context, so any expectations of finding an ostensibly single uniform effect should not be too high! Did countries with greater labor market flexibility have greater reallocations? Apparently not [8]. But the active pursuit of policies to encourage intersectoral mobility was effective in achieving greater reallocation. Thus, while the failure of the simple theory about trade merely shifting resources between sectors and no more should certainly be noted, it is not clear that the theory's basic insights are flawed.

Intersectoral reallocations

Recent theory and empirical work by international trade scholars have started to explore intrasectoral responses to trade reforms, which seems to be a perfectly natural outcome once it is recognized that firms differ—firm-heterogeneity, in the language of trade scholars. Reallocations of labor occur from weaker to stronger firms, often accompanied by the latter's increased investment, higher productivity growth, and more diligent search for better labor. This allows strong growth in sectoral output without significant increases in sectoral employment. The analysis has also suggested that these interfirm but intrasectoral reallocations are frequently associated with an increased demand for skilled labor relative to unskilled labor. A seminal study of Mexican firms shows that the export boom that

followed the peso devaluation of 1994 induced stronger firms to improve the quality of their products and their workforces, and to pay higher wages [9]. In this study, as in many others, this effect was used to explain the widening skill premium rather than employment levels, but the basic insight clearly translates into the employment space.

Skill intensity

For the impact of the creation of the customs union, MERCOSUR, on Argentinean firms, consider a model in which firms choose between two production technologies that differ in their skill intensity [10]. In equilibrium there are three types of firm: the skill-intensive exporters, the unskilled exporters, and the unskilled domestically oriented firms. A tariff reduction in an export market induces more firms to enter and upgrade to the skill-intensive technology, increasing the market share of more productive firms. The model appears to fit the data quite well.

Extending the model shows that the gains by better firms and their subsequent investment generate higher demand for skilled workers and increase the skill premium. This forces the least-productive firms to downgrade the skills they seek. Testing the latter model on Argentinean firm data exploiting the differential reduction in Brazil's tariffs across sectors shows that small firms downgrade skills, while larger firms upgrade them in response to Brazil's tariff reduction. The net effect on the share of skilled labor is positive and implies that one-third of the increase in the employment share of skilled labor in Argentina between 1992 and 1996 is explained by the reduction in Brazil's tariffs.

Note that the analysis looks at the reduction of protection in Argentina's main export market, rather than in Argentina itself. But it is the nature of trade agreements such as MERCOSUR that in order to win concessions by partners, Argentina has to offer to reduce its own protection. This will affect Argentinean import-competing firms, and other results in the literature strongly suggest that increasing competition in these sectors will also tend to favor stronger over weaker firms, and skilled labor over unskilled labor.

Informal labor

One issue that has attracted policy comment is whether trade liberalization leads to greater emphasis on informal rather than formal labor markets. The question is fraught with difficulties because one needs to have a clear idea about exactly what informality amounts to, which varies by country and study. Even so, the evidence is quite mixed [11]. The outcome arguably depends on how flexible labor markets are. If they are inflexible—as in Colombia in the later 1980s—firms in expanding sectors will favor informal over formal employment because it is cheaper and easier to unwind. But if they are more flexible—as in Brazil and Colombia after 1990—this is not true.

LIMITATIONS AND GAPS

The analysis is limited by several factors. But it would be fallacious to conclude—from the fact that the conclusion that trade policy has little effect on employment has technical limitations—that the effect is therefore strong (and of whatever sign one prefers). It is still the case that our best efforts in theory and empirics lead us to expect little from international trade policy for aggregate employment. The limitations include the following:

- There is a danger that trade policy is influenced by labor market outcomes (endogeneity), so observing that relationship may be mixed in with whatever influence trade policy has on the labor market.
- Defining overall trade policy stances and aggregate employment presents challenges. For example, should skilled jobs be viewed differently from unskilled ones? How should one measure the openness of an economy?
- Much of the effect of trade and trade policy is as likely to be on wages as on employment.
- The sample of major trade policy changes—those large enough to even conceivably have a detectable influence on aggregate employment—is small. It also reflects the particular circumstances of the time it occurred (about 1980–2000) and a great deal of heterogeneity across cases. So, the external validity of the current literature is far from perfect as a guide to future liberalizations.

Measuring the openness of an economy

One would think that identifying an open economy would be easy, but when it comes to trying to explain the effects of openness this is not so. The most common measure is to consider the ratio of exports plus imports to GDP. This is clear, but has the huge problem that it is clearly likely to respond to, as well as influence, the level of employment—if employment increased for some extraneous reason, output would increase and so, too, in all probability would exports. Thus, in carrying out research on the effects of openness researchers have to resort to other measures that are less likely to show such sensitivity.

One such is the average tariff, which is again nice and clear. However, if you use a simple unweighted average, you are applying the same weight to the tariff on shoelaces as to that on passenger cars. If, however, you decide to weight the tariffs by the value of imports they apply to you get a bias, because, holding everything else the same, the higher the tariff, the lower the imports. (Imagine an infinite tariff; it would allow no imports and so get a zero weight in this calculation.) Besides, lots more affects openness than tariffs: non-tariff barriers, the volatility of the exchange rate, the quality of the ports and customs, etc.

A compromise measure used quite frequently is a qualitative measure which counts an economy as closed if any of the following applies: it has average tariff rates higher than 40%; its non-tariff barriers cover on average more than 40% of imports; it has a socialist economic system; it has a state monopoly of major exports, or its black-market premium exceeds 20%. This is rich, but clearly entails a number of arbitrary thresholds and makes no allowance for what, say, socialist governments or export monopolists actually do.

While in many cases all these various indicators of openness will tell the same story, the difficulties of measuring openness should caution us against relying on the precise magnitudes that researchers claim for the effects of openness.

SUMMARY AND POLICY ADVICE

The effects of major trade policy changes on aggregate employment are mixed, although there is evidence that, in the long term, trade liberalizations boost employment (at least in developing countries) and that more open economies have higher levels of employment, other things being equal. Indeed, one can identify cases where trade liberalizations have been followed by very rapid growth in employment. The problem, of course, is that

in these cases much more than just trade policy was altered, so attribution is inevitably rather cloudy.

Protecting import-competing sectors can increase the number of jobs they offer—or at least reduce the rate of decline. But such protection, through its effects on the rest of the economy, is likely to reduce the jobs available in export-oriented sectors.

Trade policy is not an employment policy and should not be expected to have major effects on overall employment. When it does, the reason is that it interacts with distortions in labor markets, which vary from country to country and time to time. While the immediate effect of reducing trade barriers tends to be a rise in unemployment, the longer term sees the reversal of this rise and an eventual decline in unemployment. That is, adjustment takes time, but, at least in this dimension, offers positive returns in the long term.

Where trade is determined more by differences in factor endowments than by differences in technology, theory predicts that in capital-abundant countries trade liberalization will boost the returns to capital and absolutely reduce those to labor. If job search frictions are added to the labor market, the latter effect also produces higher unemployment. In labor-abundant economies, labor is the winner from trade liberalization, and the result would be lower unemployment.

The key question for the aggregate outcome is not whether import competition destroys jobs in the affected sectors, but whether the workers displaced are reabsorbed into the workforce reasonably quickly and without sacrificing wages too much.

Many sectoral studies show that protection for import-competing sectors or export booms for exportable sectors are associated with increases in employment. Translating this into broad-based trade liberalizations that boost both imports and exports would suggest reallocations of labor from the former to the latter sectors. Trade reform does not appear to cause large reallocations of labor between sectors, but it may still cause intrasectoral reallocation from less to more efficient firms within sectors. Reallocations of labor occur from weaker to stronger firms, often accompanied by the latter's increased investment, higher productivity growth, and more diligent search for better labor.

The policy message of this work is clear: Do not expect international trade policy to have major or even possibly predictable effects on aggregate employment. Policymakers concerned about employment levels should think about the aggregate economic balance and labor market institutions, and not interfere with international trade.

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Competing interests

The IZA World of Labor project is committed to the *IZA Guiding Principles of Research Integrity*. The author declares to have observed these principles.

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