JEI JOURNAL OF ECONOMIC ISSUES
Vol. XLII No. 1 March 2008

Institutionalism and New Trade Theory: Rethinking Comparative Advantage and Trade Policy

Thomas I. Palley

ABSTRACT: Gomory and Baumol (2000), and Samuelson (2004) have raised concerns about international trade's future impact on U.S. national income. The focus is how globalization may affect the size and distribution across countries of gains from trade. Though their analysis is developed using a pure trade theoretical framework, it has strands in common with institutionalist thinking. Their findings spotlight the need for a new U.S. trade policy agenda aimed at maximizing the U.S. share of gains from trade, and complementing conventional Keynesian open economy macroeconomic analysis.

Keywords: outsourcing, gains from trade, comparative advantage, trade policy

JEL Classification Codes: F1, F11, F13

Institutionalism and New Trade Theory

International trade theory has long been dominated by the theory of comparative advantage. That theory claims, subject to a few pathological exceptions, countries are made better off by international trade.[1] That said, the theory also acknowledges (Stolper and Samuelson 1941) that capital and labor share differentially in the gains from trade, and individual factors can actually lose. However, factors that lose can still in principle be fully compensated for their losses out of the gains from trade, though this seldom happens in practice for reasons of political economy.

The author is an economist in Washington D.C. He can be contacted at www.thomaspalley.com.

The theory of comparative advantage has played a central role in promoting the policy case for free trade and globalization. Though accepted by most professional economists, some economists question its theoretical assumptions regarding the existence of full employment and the ability of markets to bring about a global allocation of production on the basis of country relative efficiency (Palley 2003). Institutional economists also question its lack of attention to institutional forms, particularly multi-national corporations and their impact on patterns of trade.

These theoretical critiques of comparative advantage trade theory are also being increasingly joined at the political level. Thus, more politicians and members of the public are questioning the scale of benefits from trade and globalization. In particular, there are growing concerns about the welfare impacts of possible future developments regarding offshore outsourcing of production.

The current paper explores recent work by Gomory and Baumol (2000) and Samuelson (2004) – henceforth GBS — examining these issues. In particular, the paper focuses on excavating and clarifying the economic argument of Gomory and Baumol, which is difficult to access in their book.

GBS work in the tradition of comparative advantage equilibrium theory (especially Samuelson) and explore how changing patterns of global production can affect the distribution of gains from trade. Their findings paint a much more mixed picture of the benefits from globalization than implied by conventional trade theory.

GBS's findings also reveal the potential for some convergence between neo-classical trade theory and institutionalist trade theory. This convergence operates at many levels, from the analysis of how trade works, to policy. First, expansions of trade may not be the win—win outcome conventionally claimed, and trade expansion may systematically create "country" winners and losers. Second, GBS's arguments emphasize transfers of technology and production methods between countries, and behind these transfers implicitly stand multi-national corporations that engage heavily in foreign direct investment. This links to the product-cycle theory of trade developed by Vernon (1966; 1979). Third, increasing returns to scale (IRTS) play a central role in the Gomory – Baumol account of trade conflict, and this links with Post Keynesian economics that has long emphasized IRTS effects (Kaldor 1981). However, Gomory and Baumol work with static IRTS that links the level of productivity to market size: Post Keynesians have tended to emphasize dynamic IRTS operating through Verdoorn's law, which rests on a link between productivity growth and market size. Fourth, GBS see a place for strategic trade policy to capture greater gains from trade, and this links with the spirit of institutionalist policy thinking.

It is also important to understand the character of GBS's re-thinking of trade, which has nothing to do with "protectionism." They are strongly in favor of trade, believing there are gains to be had by all. What is open to question is how the size of those gains and their distribution across countries may change over time. That raises important new policy issues regarding what can be done to maximize the U.S. share of gains from trade and hold on to them, and it is this issue that is their ultimate concern.

Finally, GBS's analysis is conducted in terms of microeconomic theory, which is the basis of conventional trade theory. That means their rethinking tackles conventional trade theory on its own terms, which strengthens their critique. To this can then be added macroeconomic critiques (Blecker 2005a; 2005b) and empirical critiques about the effect of trade deficits on jobs and investment (Bivens 2004; Blecker 2006).

The GBS Contribution to the Trade Debate

Before engaging with the substance of GBS's analysis it is worth distinguishing their argument from some existing theoretical critiques of trade. First, their argument is not about the adverse income distribution impacts of trade. These effects are widely understood, and Samuelson made the pioneering contribution to this area of trade theory in his work with Wolfgang Stolper (1941). According to the Stolper-Samuelson theorem, the factor that is relatively scarce in the pre-trade equilibrium loses out when a country opens to trade. In the case of the United States, that means American workers lose as they implicitly become part of a global labor market. This income redistribution effect remains operative, but it is distinct from the new concerns raised by GBS.

Second, GBS's argument is not about wage losses and employment dislocation costs caused by rearranging country production patterns in accordance with the principle of comparative advantage. Kletzer and Rosen (2005) have emphasized wage losses and they propose wage insurance to compensate those losing from trade. These costs of trade-induced job dislocations and the case for wage insurance also remain real and present, but they too are distinct from and supplementary to the new concerns of GBS.

The new issue raised by GBS is the dynamic evolution of comparative advantage and the resulting impact on the distribution of gains from trade. The theory of comparative advantage says that there are gains from trade for the global economy as a whole. However, the distribution of those gains between countries depends on demand and supply conditions that determine the terms of trade (i.e. the relative price of imports and exports), and these conditions can change.

One critical factor is the global pattern of demand, and a country will benefit more from trade if international demand for its products is relatively stronger as this will drive up the price of its exports. A second factor is the evolution of supply, and it is possible that rapid supply growth can harm a country by increasing global supply and driving down the price of its exports.

This latter possibility was first identified by Harry Johnson (1954; 1955) and subsequently expanded by Jagdish Bhagwati (1958), while the empirical work of Hans Singer (1950) and Raul Prebisch (1968) on declining prices of commodities relative to manufactured goods gave it operational policy significance. The Johnson – Bhagwati work then spawned a policy literature that showed how countries whose production has an impact on global prices can use export tariffs to tilt the terms of trade in their favor, thereby capturing additional gains from trade.

In the post-World War II period the United States did relatively well from trade as capital was globally scarce, demand for capital goods was strong, and there were also relatively few capital goods suppliers. That meant the United States enjoyed favorable terms of trade, which meant it captured a large share of the gains from trade. The question is will this continue over the next fifty years?

The earlier work of Johnson (1954; 1955) and Bhagwati (1958) focused on the effects of trade opening and domestic technological advance on the terms of trade and distribution of gains from trade. Samuelson (2004) changes the focus and examines the implications of economic catch-up by trading rivals. It is commonly assumed that all countries benefit from technological progress in other countries because this expands the global production possibilities frontier (PPF).[2] However, it turns out that while it is true that the global PPF is expanded, it is not necessarily true that all countries benefit from the expansion. This is an important theoretical finding.

Samuelson's (2004) concern, developed in the context of the debate over international outsourcing and trade with China, is that increases in productivity of foreign trading partners may diminish the United States' share of the gains from trade. The economic logic is as follows. As China catches up in the production of goods in which the United States has historically specialized – be it through its own innovation efforts or by outsourcing of production to China by U.S. firms – this will increase global supply and drive down U.S. export prices, thereby worsening the United States' terms of trade. Though there are still gains from trade for the United States, these can be less than they were prior to China catching up.

Gomory and Baumol (2000) explore similar themes in an environment in which firms also have internal economies of scale so that average unit costs fall as the volume of production increases. Like Samuelson's (2004) model, theirs is a world of full employment so that the problems they identify are to do with trade and not unemployment. Introducing unemployment only compounds the concerns they identify.

Economies of scale mean that each good is produced by only one country. Gomory and Baumol assume that all countries have access to the same technology. Which country gets to produce what goods then depends on which gets to move down its cost curve first and thereby gain a cost advantage that locks-out other producers. Such lockout means that multiple different equilibria are possible, and the particular equilibrium that actually prevails depends on which country gets a head start in which industries.

The existence of multiple equilibria means that it is only by chance that the actual equilibrium maximizes global output, and the prevailing allocation of production across countries may be globally inefficient. For instance, one country may get a head start in a large number of industries, thereby blocking new entrants into them. Consequently, the scale of production is too small in these industries and the global economy loses the benefit of larger scale. In this situation, rearranging the pattern of global production can benefit all by expanding scale in some industries and reducing it in others.

By way of example, consider the case where there are two identical countries and four industries, and each country has full employment. Suppose the initial equilibrium has country one controlling industries 1 – 3, and country two controlling industry 4. In this event, scale is too small in industries 1 – 3, and too large in industry 4. A superior production plan that expands global income is to have each country produce two goods, thereby expanding production in industries 1 – 3 and contracting it in industry 4.

The inefficiencies can get even worse if countries have different cost curves. Such differences can exist because of differences in technology that confer an absolute advantage on one country, or due to "external" economies of scale arising from agglomeration effects. Such positive agglomeration effects arise when individual firms' efficiency is enhanced as the entire industry expands so that industry expansion lowers the costs of individual firms. In this case, not only can there be a global mal-distribution of production (Gomory – Baumol inefficiency), but production can also be misallocated to countries with inferior technology and higher costs. This can happen if a high cost inefficient country gets to move down its average cost curve first, thereby becoming the low cost global producer and acquiring "ruling" cost advantage. Even though other countries are potentially more efficient, they are locked out by the first country's head start moving down its average cost curve.[3]

This situation is illustrated in Figure 1, which shows the average cost curves for industry k in countries 1 and 2. The average cost for industry k in country 1 lies above that of country 2 throughout. Yet country 1 can become the global producer if it gets a head start and moves down its average cost curve first, thereby gaining a competitive advantage over a new entrant in country 2 and locking out that new entrant. Figure 1 shows country 1 producing $Q_{1,k}$ at an average cost of $\$_{1,k}$. Country 1 is able to block country 2 from producing despite the fact that it is potentially more efficient because country 1 has secured a cost advantage by being first to move down the average cost curve.

In sum, where cost curves differ across countries world output can be reduced for two reasons. First, the country with the true low cost production technology may not produce. Second, production may be mal-distributed globally, with some countries producing too many types of good and others producing too few, thereby resulting in inefficient exploitation of economies of scale.

In addition to giving rise to potentially inefficient global production patterns, Gomory and Baumol (2000) show that IRTS can give rise to trade conflict as countries' incomes converge. This argument is illustrated in Figure 2. Assuming two identical countries with identical technologies with identical demands for each good, global income is maximized when countries have the same number of industries and each country produces half of world output. However, individual country income is maximized when a country has more than half of the industries. That means there exists a zone of conflict in which reallocating production between countries can increase global income, but one country also benefits at the expense of the other.

The economic logic for this pattern is as follows. Consider an initial equilibrium where most industries are located in one country. In this case, scale is too low in those

Figure 1. Average Unit Costs in Industry k for Countries 1 and 2

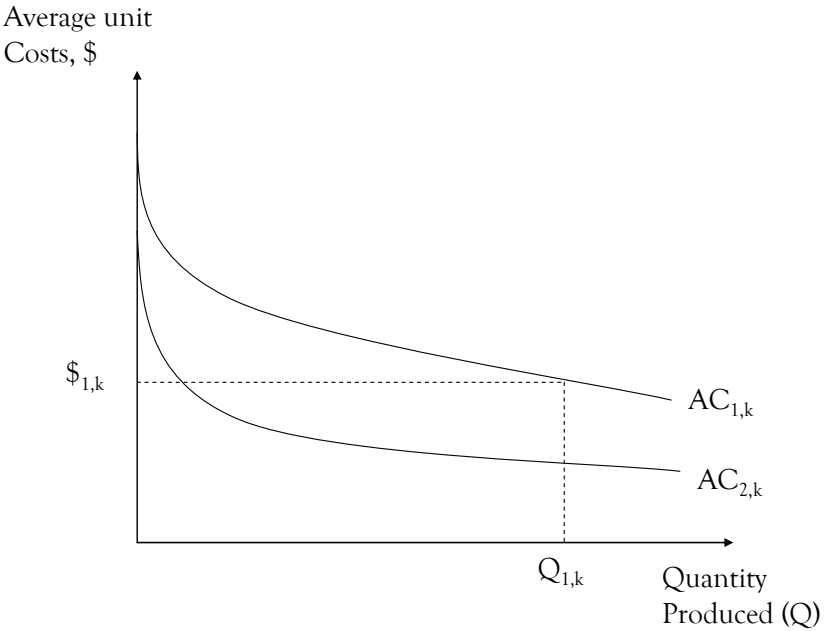
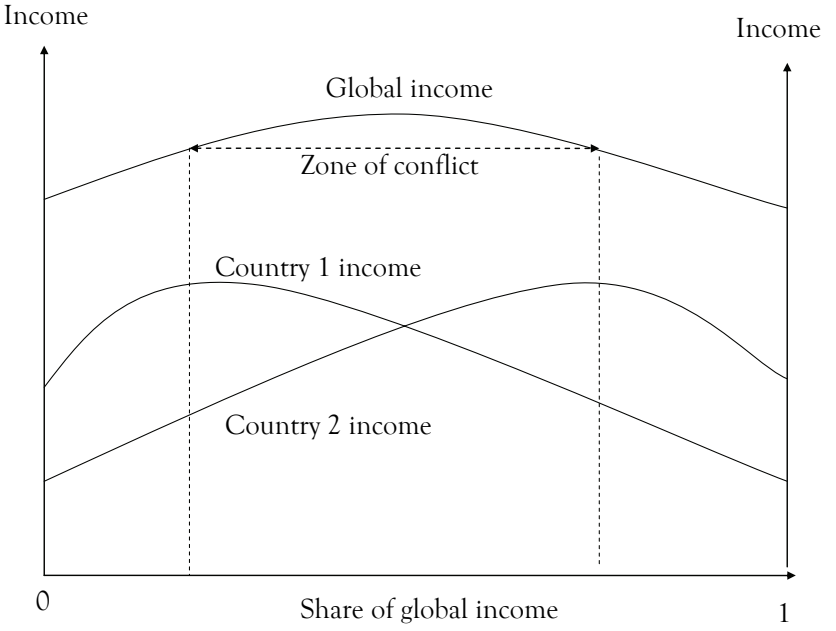


Figure 2. How Trade Can Become a Source of Conflict as Country Incomes Converge



industries and too high in the few industries located in the other countries. Reallocating some industries from the country with many to the country with few can increase global income by increasing the scale of production. Output expands in those industries that remain because resources are transferred into them: it also increases in the industries that are transferred because they had limited access to resources before and now get expanded access in the new country location. All countries benefit from this scale effect.

However, in addition there are terms of trade effects as the prices of goods produced by the expanding industries falls. That means the marginal gains to the country receiving new industries exceeds the gains to the country losing industries. As incomes of the two countries converge, the scale gains from further reallocations decrease and the terms of trade effects may outweigh the scale benefits.[4] At this stage, further industry transfers can lower the income of the country losing industries even though they expand global income and the other country's income.[5]

The moral of the story is twofold. First, countries do not benefit from autarky and producing everything, because they lose the benefit of economies of scale. Second, countries still want to retain a more than proportionate share of industries as this restricts global output in those industries, driving up prices of those goods. Since they also export these goods, this confers a terms of trade benefit that increases their income. The implication is that losing too much of the industrial base is bad for an economy, although it might be good for the global economy. Correspondingly, a country that has a disproportionately few number of industries has an interest in engaging in strategic policy to attract more industries as this confers both scale gains and terms of trade improvements.

Policy Implications of GBS's Critique

The central focus of Samuelson's (2004) analysis is the economic implications of technology catch-up in other countries. For Gomory and Baumol (2000) it is the implications of loss of the industrial base and transfer of industries to other countries. Both have dramatic implications for trade policy. Traditionally, such policy has been thought of in terms of tariffs, quotas, and export subsidies. Now, it needs to be re-conceptualized in terms of the forces driving industrial and technological development within countries, and it must also take account of the possibility for rivalrous strategic policy between countries.

Technology transfer and catch-up is critical in both stories, particularly that of Samuelson. Additionally, there is a new emphasis on the fact that comparative advantage in the modern world is created and not endowed. In the 18th century world, trade was driven by the search for exotic spices and raw materials. In that epoch, climate and natural resource endowments significantly determined the pattern of comparative advantage, and little could be done to alter this pattern.[6] In today's economy, comparative advantage is driven by technology, and technology can be importantly influenced by human action and policy. That ability to influence has huge implications for the distribution of gains from trade among countries.

Strategic trade policy is significant in both stories, particularly that of Gomory and Baumol. Within their stylized framework, the critical insight is that equilibrium in a world of IRTS is potentially quite fragile. That opens the way for policy interventions that change the equilibrium, and thereby redistribute the gains from trade. For instance, policy may confer a temporary benefit on a country's producers that moves them down their average cost curves so that they acquire ruling cost advantage. This can establish a new equilibrium pattern of global production that persists after the policy benefit is removed.

Such possibilities mean that the presence of IRTS creates much room for economic conflict between countries. Given the existence of multiple equilibria in which the distribution of gains from trade depends on the particulars of the prevailing equilibrium, countries may have an incentive to try and change the equilibrium.[7] This generic policy implication of IRTS has long been present in new trade theory (Krugman 1984; Brander and Spencer 1985), but Gomory and Baumol's detailed simulations show just how potentially malleable the equilibrium pattern of trade is in the presence of IRTS.

Specifically, there are a number of scenarios in which strategic policy matters. For instance, consider a situation in which technology is initially unequally distributed across countries. In this case, backward countries will have an incentive to use policy to acquire technology and establish production within their borders. Doing so can increase global income, but it may diminish the income of those countries losing industries if the global economy is in Baumol and Gomory's zone of conflict.

Another example is if some industries earn higher profit mark-ups. In that case, countries will have an incentive to wrest control of those industries in order to earn the higher mark-ups. Moreover, even countries with strictly higher average cost curves may have an incentive to wrest control despite the fact they are less efficient. Given the presence of IRTS, a high cost country can accomplish such a transfer if government temporarily provides assistance that moves domestic producers down their cost schedule to establish ruling cost advantage – as shown earlier in Figure 1.

Finally, strategic policy can be especially powerful in a world with unemployment due to inadequate demand. In this case, countries that stimulate their own domestic demand and poach demand from other countries (through such measures as subsidies and under-valued exchange rates), increase production in their industries and lower average costs. Consequently, these countries can become the ruling low cost producer at the expense of others.

Relative productivity decline and loss of technological leadership play an important role in the GBS story. Most immediately, this raises questions about the wisdom of international outsourcing in industries where the United States has historically had comparative advantage and been an exporter. Such outsourcing involves technology transfer. Though companies benefit from outsourcing because they get to earn foreign profits, outsourcing can diminish U.S. national income if it transfers technology that increases competition versus U.S. exports.

Outsourcing also has some parallels with offsets whereby countries require companies to promise to transfer some part of production to the buyer country as a

condition of the sales contract. The classic example of this is the aircraft industry, both civilian and military. Offsets are a way that one country can capture an industry from another, and they are therefore very troubling from a national interest perspective.[8] However, companies are much less troubled by offsets because they win the order and then get to earn profits on their foreign production. This highlights the divergence between company and national interest – more below about this.

Within the GBS framework, technological leadership is key, and there are signs that the United States may already be slipping. Freeman (2004) reports that the U.S. share of world high-tech exports fell from 30% in 1980 to 17% in 2001. The U.S. share of world scientific papers fell from 45% in 1980 to 35% in 2001, and the U.S. share of papers in the chemical abstracts service fell from 73% in 1980 to 40% in 2003. China is gaining especially rapidly in the technology area and graduated 325,000 BS engineers in 2003, versus 65,000 in the United States. The U.S. lead in producing students with science and engineering PhDs is also falling. In 1989, major Asian nations produced 48 PhDs for every 100 U.S. PhDs: in 2001, they produced 96 for every 100.

This pattern suggests the United States needs to bolster public expenditures on science education and research and development. Additionally, tax law should be structured to encourage companies to undertake R&D spending of their own and to invest in the latest technologies and equipment. What was viewed previously as domestic policy is now part of trade policy in the new era of globalization.

Not only does globalization enhance the significance of science and technology policy, it also adds new difficulties. In the pre-globalization era domestically developed science and technology innovations were likely to be applied domestically so that benefit accrued significantly to the innovating country. Today, with corporations organizing production on a global basis, there is nothing to ensure that domestically produced innovations will be applied domestically. Instead, corporations may simply transfer the innovation to a foreign production location. This may be the best way for the corporation to maximize profits, but it may not maximize national income. In the era of globalization, profit maximization by firms contributes to the maximization of global output, but it does not necessarily maximize national output. This is not understood yet by national policymakers.

These observations point to the need for a new policy agenda that addresses corporations. Such an agenda is currently absent. In the 1950s it could reasonably be said that what was good for General Motors was good for the country. This was not because the managers at General Motors in the 1950s were any more altruistic or patriotic than managers are today. It was because the global economy was less open and firms were less capable of organizing production on a global basis, so that firms were more nationally bounded. Consequently, corporate interests aligned more closely with national interests. That alignment has been fractured by globalization. Before globalization, maximization of profits by competitive firms maximized national income. Today, firms maximize profits on the basis of global production allocations. This maximizes global output but does not necessarily maximize national income. Hence the need for national policies that re-root corporations by re-aligning profit maximization with the national interest.

In this regard, there may be important differences across countries. American corporations are free to choose their business strategy on a global basis, without regard to American national interest. Indeed, taking account of American national interest would be a breach of fiduciary duty since managers have an obligation to maximize shareholder value. Contrastingly, in China the national government exerts significant control over corporations, and national interest is factored into business strategy. From a national perspective that means China is advantaged relative to the United States, though shareholders in Chinese corporations are not as well served as shareholders in U.S. corporations.

A third area needing policy attention is exchange rates. This problem is not addressed by GBS, but is implicit in their work. GBS's analysis is based on pure trade theory, and as such it abstracts from exchange rate issues. In effect, it assumes that exchange rates are at purchasing power parity values. However, if exchange rates deviate from this they can give rise to significant costly distortions.

In a world of IRTS, countries can use undervalued exchange rates to give national firms a competitive advantage. Under-valued exchange rates lower the price of exports and increase the price of imports, thereby increasing product demand and output. In this fashion, under-valued exchange rates can help firms move down their average cost schedules and acquire ruling comparative advantage. Countries can therefore strategically use exchange rates to capture industries in which they were not previously active. Moreover, manufacturing firms are clusters of knowledge, skills, and capital, and firms are clustered in industries. Once firms and industries are destroyed it is costly and difficult to reassemble them so that they may not return even if the exchange rate under-valuation is corrected. Consequently, episodes of exchange rate under-valuation can have permanent impacts on the structure of global production (Palley 2003).

Moreover, even in conventional trade theory exchange rate under-valuation gives rise to deviations from comparative advantage and misallocation of production (Blecker 2005a). Comparative advantage is a theory of balanced trade. Consequently, if a country has an under-valued exchange rate and a persistent trade surplus, it implies it is exporting some products that it lacks a comparative advantage in. Likewise, the country running persistent trade deficits is importing some products that it may truly have comparative advantage in.

In the presence of unemployment, which is assumed away by pure trade theory, under-valued exchange rates can be used strategically to poach aggregate demand from other countries and thereby reduce a country's unemployment at the expense of other countries. Long ago, this possibility was identified by Joan Robinson ([1937] 1947, 156-70) who termed such policy a "beggar-my-neighbor" remedy for unemployment.[9]

The bottom line is that exchange rates matter significantly for global production and employment outcomes. In a world without IRTS, under-valued exchange rates result in deviations of production from comparative advantage. In a world with IRTS, exchange rate under-valuation can be used to permanently change the equilibrium and lock-in new patterns of global production.

These effects speak to making exchange rates a central part of trade policy and trade agreements. Yet currently, U.S. policy makers have rejected exchange rate intervention on the grounds that markets know best. This policy stance is at odds with reason and evidence. There are many theoretical reasons for believing that foreign exchange markets are prone to herd behavior. There is also strong empirical evidence that exchange rates depart from their theoretically warranted equilibrium levels — be they defined as purchasing power parity or as the exchange rate consistent with sustainable current account deficits. Worse than that, in some cases other countries (especially the East Asian economies) are strategically manipulating their exchange rates, and that means the United States is being economically out-gamed, losing industries and racking up large trade deficits that carry future burdens.

Another form of strategic policy is domestic procurement. Here, countries can direct government purchases toward national companies, thereby scaling up production at those firms. In this fashion, they can help firms move down their average cost curve, thereby becoming the global low cost producer and grabbing global leadership.

Countries can also engage in labor exploitation to gain advantage. In this case they shift down business's average cost schedule rather than moving along it. This has direct relevance for trade with China, which American trade unions have accused of engaging in labor exploitation for purposes of gaining trade advantages.

Labor exploitation is horrendous and unacceptable. However, a legitimate way of lowering business' costs concerns the method of providing health and social insurance. In the United States, such insurance is provided via jobs, making it a job cost. This raises the cost of U.S. based production, competitively disadvantaging U.S. producers and providing an incentive to offshore work. Providing health insurance through a national insurance system that is funded by federal tax revenues can potentially reduce this incentive.[10] The same holds for funding Social Security. Indeed, to the extent it is funded by taxation of global corporate profits, the cost is partially borne by profits from offshore production.

In sum, GBS's analysis of trade provides microeconomic justification for a collection of policies that has some resemblance with what has historically been called industrial or competitiveness policy. However, the proposed policies do not involve policymakers "picking winners," something there is no reason to believe they can do. Instead, policy should be viewed as establishing the right economic climate, and that climate can be described in terms of "structure" and "atmosphere."

Structure refers to law, rules and institutions. It sets the frame in which business operates, and should provide incentives for firms to innovate and invest and for workers to improve their skills. Structure should also ensure that the interests of corporations are aligned with the national interest. Atmosphere refers to the ruling economic conditions, which should be favorable to domestic business performance. Atmosphere can be thought of in terms of promoting full employment and adequate demand, and that includes expansionary macroeconomic policy and the maintenance of competitively valued exchange rates.

Conclusion: The Importance of GBS's Contribution

GBS's theoretical work has the potential to dramatically change the trade policy debate. Though there are always gains from trade, countries can suffer from further globalization in the sense that their future gains from trade may fall, making them worse off than before.

In a sense, GBS's work helps pure trade theory catch up with the new realities of globalization. Technology is now highly mobile, and its transfer between countries can be significantly influenced by policy. Strategically designed policy can influence the nature of global equilibrium, and thereby change the distribution of gains from trade. Such strategic policy includes research and development policy, rules governing corporate behavior, exchange rate manipulation, government procurement policy, offset requirements, and policies that impact the international competitiveness of firms. The bottom line is that in such a world it is a mistake for countries to ignore strategic trade policy, and is especially dangerous if a country allows itself to be outgamed by other countries.

Finally, Gomory and Baumol's analysis of trade promotes a convergence between trade theory and macroeconomics. Their analysis shows how trade can transform international patterns of production, countries can suffer reduced income as a result, and that pattern of international production can be impacted through such policies as undervalued exchange rates and industrial subsidies. This resonates with macroeconomics, which has long identified potential disruptions from the international economy operating through aggregate demand (AD).

In macroeconomic analysis the focus is on trade deficits, which act as a leakage of AD that reduces output and investment. Under-valued exchange rates and unfair competition can be important causes of trade deficits. However, within macroeconomic models shortages of AD are reversible through policies of AD expansion. This contrasts with Gomory and Baumol's analysis in which beggar-my-neighbor policies can leave a permanent footprint through their impact on the structure of production.

Notes

1. One pathology is the existence of real wage rigidities (Brewer 1985). A second is when a country is a large player in world markets so that trade opening may adversely impact its global terms of trade (Johnson 1954; 1955).
2. For example, see Freeman (2004) in which the tacit assumption is that globalization expands U.S. national income, although workers lose because of a super-sized Stolper – Samuelson effect.
3. Agglomeration economies of scale are particularly complex. Where these are present, a country can appear to have the lower cost curve. However, this may be because it was the first starter, and thereby acquired the extra benefit of agglomeration economies.
4. In the Gomory – Baumol model, given their assumptions of identical technology and cost curves across countries, the critical convergence factor is industry scale of production. This determines whether there are global efficiency gains to be had by rearranging global production patterns. When all industries everywhere are producing at the same scale, there are no global gains to be had. However, countries can benefit themselves by capturing industries, but their gain comes at the expense of other countries.

5. The Gomory – Baumol (2000) model assumes identical countries so that a zone of conflict emerges as country incomes converge. In the real world, where countries differ, a zone of conflict may develop as the distribution of production of tradeable goods is equalized. Thus, China can have a far lower national income than the United States owing to a large immobile and unproductive non-tradeable sector, but the two countries can still be in the zone of conflict because the distribution of tradeable goods industries is converging.
6. A more precise representation is that Europe had a technological advantage, while the tropics had climatic advantage.
7. It is also true that in some instances cooperatively reorganizing global production patterns can raise incomes and improve welfare for all countries. This can happen when the world initially gets locked into an extremely inefficient equilibrium in which a high cost country gets to be the first to move down its average cost schedule and acquire "ruling" cost advantage. In this case, all can benefit by switching production to the "true" low cost producer. Even though the first-mover country gives up producing a lucrative product, it gains because costs are so much lower in the latecomer country.
8. Offset requirements are illegal under the WTO but in countries like China, where the state exerts significant influence over large chunks of the economy, the tacit pressure for offsets is still there. In the United States, airlines get to choose the aircraft they wish to fly and don't impose production requirements. For aircraft sales in China that is not the case.
9. Blecker (2005b) points out how Joan Robinson anticipated many of the macroeconomic policy problems inherent in new trade theory with IRTS.
10. If wages rise to compensate for the burden of higher tax payments needed to fund the system, this would reduce the beneficial job retention impact.

References

Bhagwati, Jagdish. "Immizerizing Growth: A Geometrical Note." *Review of Economic Studies* 25, 3 (1958): 201-5.

Bivens, Josh. "Shifting the Blame for Manufacturing Job Loss: Effect of Rising Trade Deficit Shouldn't be Ignored." Economic Policy Institute. Washington DC, 2004.

Blecker, Robert. "Financial Globalization, Exchange Rates and International Trade." In *Financialization and the World Economy*, edited by Gerald A. Epstein, pp. 183 - 209. Cheltenham, UK and Northampton, MA: Edward Elgar Publishing Ltd., 2005a.

——. "International Economics after Joan Robinson." In *Joan Robinson's Economics : A Centennial Celebration*, edited by Bill Gibson, pp 309 - 49. Cheltenham, UK and Northampton, MA: Edward Elgar Publishing Ltd., 2005b.

——. "The Economic Consequences of Dollar Appreciation for U.S. Manufacturing Investment: A Time-Series Analysis," unpublished paper. Department of Economics, American University, Washington DC, revised, May 2006.

Brander, James and Barbara Spencer. "Export Subsidies and International Market Share Rivalry." *Journal of International Economics* 18, 1-2 (1985): 83-100.

Brewer, Anthony. "Trade with Fixed Real Wages and Mobile Capital." *Journal of International Economics* 18, 1-2 (1985): 177-86.

Freeman, Richard. "Labor Goes Global: The Effects of Globalization on Workers Around the World." Rocco C. and Marion S. Siciliano Lecture. University of Utah, Salt Lake City, Utah, November 18, 2004.

Gomory, Ralph and William Baumol. *Global Trade and Conflicting National Interest.* Cambridge, MA: MIT Press, 2000.

Johnson, Harry. "Increasing Productivity, Income-price Trends and Trade Balance." *Economic Journal* 64, 255 (1954): 462-85.

——. "Economic Expansion and International Trade." *Manchester School of Economic and Social Studies* 23 (1955): 95-112.

Kaldor, Nicholas. "The Role of Increasing Returns, Technical Progress and Cumulative Causation in the theory of International Trade and Growth." *Economie Appliquee* 34, 4 (1981): 593-617.

Kletzer, Lorie and Howard Rosen. "Easing the Adjustment Burden on Workers." In *The United States and the World Economy: Foreign Economic Policy for the Next Decade*, edited by C.F. Bergsten, pp. 313-41.Washington DC: Institute for International Economics, 2005.

Krugman, Paul. "Import Protection as Export Promotion: International Competition in the Presence of Oligopoly and Economies of Scale." In *Monopolistic Competition in International Trade*, edited by Henryk Kierzkowski, pp. 180-193. Oxford: Oxford University Press, 1984.

Palley, Thomas. "International Trade, Macroeconomics, and Exchange Rates: Re-examining the Foundations of Trade Policy." Paper presented at a conference on Globalization and the Myths of Free Trade held at the New School for Social Research, New York, NY, April 18, 2003.

Prebisch, Raul. "Towards a Dynamic Development Policy for Latin America." E/CN 12/680/Rev 1. New York: United Nations. Reprinted as "Development Problems of the Peripheral Countries and the Terms of Trade." In *Economics of Trade and Development*, edited by James D. Tinebert, pp. 287-297. London and New York: John Wiley & Sons, 1968.

Robinson, Joan. *Essays in the Theory of Employment*, 2nd edition. Oxford: Basil Blackwell, [1937] 1947.

Samuelson, Paul. "Where Ricardo and Mill Rebut and Confirm Arguments of Mainstream Economists Supporting Globalization." *Journal of Economic Perspectives* 18, 3 (2004): 135-46.

Singer, Hans."The Distribution of Gains Between Investing and Borrowing Countries." *American Economic Review* 40, 2 (1950): 473-85.

Stolper, Wolfgang and Paul Samuelson. "Protection and Rea Wages." *Review of Economic Studies* IX, 1 (1941): 58-73.

Vernon, Raymond. "International Trade and International Investment in the Product Cycle." *Quarterly Journal of Economics* 80, 2 (1966): 190-207.

——. "The Product Cycle Hypothesis in a New International Environment." *Oxford Bulletin of Economics and Statistics* 41, 4 (1979): 255-67.