

The Globalization Debate and India*

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Abstract

We discuss the pros and cons of the liberalization of international capital flows and international trade in goods and services, with special reference to India. We look at both the theoretical and empirical literature studying the impact of capital flows and trade in goods on real incomes, growth and productivity growth. Both macro- and micro-level evidence is surveyed. We also review country-specific analyses, including ones for India, of the additional benefits from greater varieties as a result of trade. Finally, we look at the impact of trade on poverty and on the welfare of workers.

Key words: International capital flows; trade liberalization; welfare; growth; poverty; unemployment; globalization; wage inequality; foreign direct investment; product variety

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1. Introduction

The term globalization can broadly be defined as the integration of regions, societies and cultures across the globe through better communication and increased economic interaction. In this chapter we will restrict it to mean the increased economic integration of countries through the movements of goods, services, factors of production, and ideas across international borders. Historically, India has had a lot of restrictions on trade in goods and services as well as capital flows. These restrictions have gradually been significantly reduced over time.

The current state of debate on globalization can be divided into two parts: one pertaining to the liberalization of capital flows and the other pertaining to trade liberalization. In the debate on the liberalization of capital flows, the key question is whether to make the rupee convertible on the capital account. This effectively means removing all remaining restrictions on capital flows. There are, however, both pros and cons of this sort of unfettered movement of capital across borders. As a result, we are going to look at the economic theory and empirical evidence on this issue. It needs to be noted that most of the empirical work on this issue is based on cross-country studies where India may or may not figure in the dataset.

As far as the trade liberalization debate is concerned, there is general agreement among economists and policymakers that free trade provides aggregate gains for a country. However, free trade also creates winners and losers. Since the gains to the winners tend to outweigh the losses to the losers, in principle, everyone can be made better off. However, appropriate policies for redistributing the gains from trade may not be in place. In this context, it becomes important to analyze the impact of trade

liberalization on direct outcomes of interest such as poverty, inequality, unemployment, child labor etc., on which the political support for trade reforms crucially depends. As is well known, trade reforms in many of the Latin American countries have been reversed in response to public outrage over the adverse distributional consequences of free trade.

The rest of this chapter is organized as follows. First, we provide a brief historical perspective on India's attitude towards globalization. Next, we look at the pros and cons of financial globalization. Finally, we look at the implication of trade liberalization.

2. Globalization in Historical Perspective

The early years after independence were marked by a relatively open trade regime in India. The guiding principle was economic self-sufficiency as an imperative to maintain political independence. Relatively unrestricted import of capital and intermediate goods was considered a means to achieving their replacement by domestic production in the long run. The share of foreign controlled enterprises in the net worth of the private corporate sector rose during this period. Panagariya (2008) characterizes the trade and foreign investment policy during the period with Nehru at the helm of affairs as “benign neglect of trade policy and active defense of an open foreign investment policy.”

However, things started changing in the mid 1960s. Strict controls on imports and foreign investment were imposed. The Foreign Exchange Regulation Act (FERA) enacted in 1973 made life very difficult for foreign controlled enterprises. It forced them to dilute their equity shares to below 40% or to wind up their operations unless they qualified for an exception based on export requirement or use of sophisticated technology among other things. Consumer goods imports were prohibited completely.

The gradual liberalization of trade policy began in 1980 by dividing imports into three categories: banned, restricted, and Open General License (OGL) with the goods in the last category not requiring any license. The tariffs on goods in the restricted list increased. The imports of some consumer goods were allowed, however, they were canalized, meaning they could be imported only by state monopolies such as FCI, STC etc. The OGL list kept expanding over time. In addition, several export incentive schemes were launched as well. As far as foreign investment is concerned, while the FERA regime remained largely unchanged, rules regarding foreign collaboration for the purposes of technology transfer were relaxed or weakly enforced, resulting in increase in foreign collaboration approvals.

The major reform process started in 1991 did away with the licensing requirements for most intermediate and capital goods. However, licensing requirements on consumer goods remained until 2001. There was a tariffication of restrictions on goods which were banned or restricted earlier. The restrictions on foreign direct investment imposed under FERA (1973) were lifted. Currently, 100% foreign equity is allowed except in certain products/sectors subject to a foreign equity cap.

While India has always allowed Foreign Direct Investment (FDI, hereafter), albeit with severe restrictions during 1965-80, portfolio investments were allowed only recently. Even today there are significant restrictions on capital inflows (other than FDI) and outflows. While the rupee became fully convertible on the current account, capital account liberalization remains open to debate and is discussed in detail in the next section.

3. The Debate on Capital Account Liberalization

One of the key questions in the globalization debate in India is whether to allow unfettered movement of foreign capital or whether to make the rupee fully convertible on the capital account. While there is a broad consensus among economists on the benefits of trade liberalization, the jury is still out on the issue of the free mobility of capital.

3.1 Arguments for and against capital mobility

According to neoclassical economic theory, a typical developing country having little capital per worker should have very high returns on capital, and hence should experience an increase in investment and a growth of output per worker upon having access to foreign savings. Since India's capital per worker is much lower than that of a typical developed country, in principle it could gain from having access to foreign capital. Additionally, there could be consumption gains due to global risk sharing.

However, these theoretical gains from capital account liberalization are hard to find in the data. This is especially true of the papers using cross-country data to study the impact of capital market liberalization on investment and growth (see Henry 2007 for a survey of the literature). The studies using the policy-experiment approach to evaluate the short term effect of capital mobility on investment and growth do find some positive effect. However, establishing causality from capital mobility to growth is difficult because capital account liberalization is undertaken along with a host of other reforms. Also, there is the issue of reverse causality: governments undertake financial liberalization at times when the economy is doing well.

There is very little empirical evidence on global risk sharing either. For example, Kose, Prasad, and Terrones (2009) find some evidence of international risk sharing for

the group of developed countries but no evidence for developing countries. Even for a subgroup of developing countries more open to global financial flows, called the emerging market countries, they do not find any evidence of international risk sharing. This group of emerging market countries includes India. Looking at the case study of Chile, Caballero (2002) finds that precisely when Chile suffers a negative terms of trade shock, capital starts flowing out. That is, when Chile needs foreign capital inflows to smooth consumption in the face of a negative income shock, capital flows out of the country.

The state of the empirical literature on the benefits from capital account liberalization is nicely summarized in the following quote from Obstfeld (2008).

“Despite an abundance of cross section, panel, and event studies, there is strikingly little convincing documentation of direct positive impacts of financial opening on the economic welfare levels or growth rates of developing countries.”

As is clear from the above discussion, the presumption underlying the neoclassical argument regarding the benefits from capital account liberalization is that a country with low capital per worker is necessarily constrained by a lack of domestic savings. Hence the availability of foreign savings will increase investment and growth. Rodrik and Subramanian (2009), however, argue convincingly that even a poor country may be constrained by a lack of investment opportunities. Therefore, opening up to capital inflows may fail to increase investment and growth. Low capital per worker and low returns to investment may go hand in hand due to myriad reasons such as poor property rights protection, weak enforcement of contracts, poor infrastructure etc.

Assessing whether a country is constrained by a lack of savings or a lack of investment opportunities is not easy in practice. Rodrik and Subramanian, however, suggest a test as follows. An increase in the U.S. rate of interest should lead to an increased capital inflow into the U.S. leaving less capital for other countries including developing countries. Therefore, the rate of investment in saving constrained countries should be negatively correlated with the U.S. interest rate. Rodrik and Subramanian find this correlation to be positive for most developing countries over the period 1985-2005 (see Table 1 in Rodrik and Subramanian, 2009). What is most relevant for our purposes in this chapter is that this correlation is negative for India. For the period 1985-2006 the correlation for India is -0.67 while for the sub-period 1990-2005 it is -0.56. That is, according to this test, India is saving constrained, and hence could potentially benefit from capital inflows.

Even if one agrees that India is a saving constrained country and therefore could benefit from the inflows of foreign capital, one has to bear in mind the potential costs of capital account liberalization. The chief cost comes from the higher probability of having a financial crisis. Unlike international trade in goods, financial transactions, which are intertemporal by their very nature, are subject to market failures arising from informational asymmetries, incompleteness of contracts, and bounded rationality. These make financial markets prone to herding, panics, contagion and boom-bust cycles; in short, enhanced volatility. Fearing a significant devaluation of the local currency, foreign investors withdraw their funds which leads to significant reversal of capital flows thus precipitating a crisis.

Financial globalization has been blamed for the recent financial crises in Latin America and East Asia. Upon closer examination one finds that the capital reversals are associated mainly with short term bank loans which are recalled by foreign banks in the face of an imminent crisis and are not rolled over. Therefore, the greater a country's exposure to short term foreign currency lending, the greater its propensity for financial crises (see Rodrik and Velasco 2000 for evidence). Such reversals of capital flows are very unlikely in the case of equity investments and even long-term bond investments. Therefore, to prevent the likelihood of a crisis, a country should rely more on equities and long term debts rather than short-term borrowing. Rodrik and Velasco (2000) thus argue that the ratio of short term debt to reserves is a good predictor of crisis, and greater short term exposure predicts more severe crisis.

According to the Reserve Bank of India (RBI) the short term debt to reserves ratio for India stood at 0.15 at the end of June 2009. This number is tiny in comparison to the ratios in the East Asian countries prior to the financial crisis.¹ This ratio suggests no danger of an imminent financial crisis in India, however, it should be kept in mind that the low ratio is mainly a result of restrictions on short term bank borrowing by Indian businesses in foreign currency. The minimum maturity for external commercial borrowing for Indian businesses is fixed at 3 years by the RBI. The short-term debt comprises mainly trade credit.

In addition to the possibility of a financial crisis, capital account liberalization can also impose costs through the appreciation of the local currency. A surge in capital inflows can lead to an appreciation of real exchange rate, which in turn reduces the profitability of the tradable sector relative to the non tradable sector of the economy. If

investment opportunities are mainly in tradable manufacturing, as opposed to non-traded services, then the capital inflows could cause a decrease in investment via the appreciation of the real exchange rate. Consistent with this hypothesis, Prasad, Rajan and Subramanian (2007) find evidence that countries that finance more of their investments with domestic saving grow faster. Gourinchas and Jeanne (2007) also find that countries relying more on foreign capital have grown slowly.

In arguing against capital account liberalization and for improvement in domestic financial institutions, Rodrik and Subramanian (2009) suggest that the latter can not only increase the amount of savings available for investment, but can increase the profitability of the tradable sectors by depreciating the real exchange rate. This would spur investment and growth.

As far as the Indian experience is concerned, large inflows of capital have put an upward pressure on the real exchange rate. The RBI has mostly adopted a policy of sterilized intervention to prevent the real exchange rate from appreciating. Despite the policy of sterilized intervention, the real effective exchange rate (REER) has fluctuated over time. The REER appreciated by 12% between July, 2006 and July, 2007 and the exporters were compensated for the loss of competitiveness through direct fiscal transfers. The REER has depreciated since 2007 and in October, 2009, it was 10% less than its level at the end of 2007. However, the policy of sterilized intervention has limitations. As pointed out by Prasad and Rajan (2008), the accumulation of reserves through sterilized intervention effectively involves buying low interest bearing securities from foreign governments financed by high interest bearing domestic debt.

Given the lack of evidence on the direct benefits of financial globalization and some supportive evidence on the losses arising from financial crises or real exchange rate appreciations, the debate has shifted to the collateral benefits from financial liberalization. According to Prasad and Rajan (2008) these collateral benefits include discipline imposed on macroeconomic policies and the acceleration of domestic institutional and financial development for countries open to capital flows. For example, openness to financial flows can lead to improvements in corporate governance due to higher standards demanded by foreign investors. Similarly, the presence of foreign banks can lead to improved provision of banking and other financial services due to increased competition. Finally, since high budget deficit and other inflationary macroeconomic policies lead to capital outflows, governments are likely to adopt prudent macroeconomic policies. However, these benefits are hard to quantify and difficult to detect in the data. On the issue of discipline in macroeconomic policy, the evidence from Latin America and Turkey, if anything, is to the contrary. Despite having an open capital account, the governments in these countries have mismanaged their fiscal house leading to episodes of inflationary spirals and sovereign defaults. In fact, it is possible that access to foreign funds can allow governments to run even larger deficits than would be possible in the absence of opportunities to borrow abroad. Similarly, institutional development can be impeded if stakeholders in the domestic economy prefer to take their money out rather than voicing their support for domestic financial reforms.²

Given the high fiscal deficit in India, it is possible that access to foreign borrowing may tempt the government into running larger deficits. As far as the improvement in financial services is concerned, why not undertake direct reforms in the

financial sector rather than rely on capital mobility to indirectly improve financial institutions? As well, the benefits of competition from the presence of foreign banks can be reaped even without relaxing all capital controls by allowing Foreign Direct Investment (FDI), an approach that has been followed in India.

The arguments for and against capital mobility discussed earlier are mainly regarding portfolio investments. FDI needs to be distinguished from portfolio investment because the former is a real transaction involving the transfer of skills, technology etc. which is likely to have a positive effect on the host country.³ Since the beginning of 1990s, India has substantially liberalized its FDI regime . Now, FDI is prohibited only in a handful of sectors/activities such as multi-brand retail, atomic energy, lottery, betting and gambling. As well, except for some sectors such as print media, defense, insurance, air transport services where there is a cap of FDI below 50%, in most other sectors/activities there is either no cap on foreign ownership or the cap is not significantly below 100%.

There is considerable controversy over the speed of FDI liberalization in general and its speed in the retail sector, real estate and banking in particular. The chief concern of people opposed to rapid liberalization of FDI in these sectors, retail sector in particular, is the massive labor displacement that a flood of FDI may cause. In the absence of rapid job creation in the manufacturing sector, the well-being of these displaced workers will be adversely affected and can be a source of major social instability.⁴ Since FDI is not permitted in multi-brand retailing in India, one cannot replicate the studies on FDI in the retail sector done for other countries.⁵ However, several domestic corporations like Reliance, Tata, and others have entered the organized

retail sector. It would be interesting to study their impact on jobs in the retail sector to get a sense of what to expect from FDI.⁶

Another controversial area from the point of view of FDI is agriculture. Since agriculture is a state subject in India, any policy allowing FDI in agriculture needs to be coordinated with the state government(s) involved. Finally, given the poor state of infrastructure in India, attracting FDI for infrastructure development (education, energy, roads, ports and airports) should be a policy imperative.

3.2. The future of capital account liberalization

Given the recent empirical evidence suggesting faster growth in countries less reliant on foreign savings, one would think that there is no urgency to liberalize capital flows in India. However, India has already removed most of the barriers on capital inflows. Restrictions on capital outflows remain. So, the question is: should these restrictions be maintained? Given the increased volume of trade and financial activities, it is not clear how effective these restrictions are. Traders can use over-invoicing to evade capital flow restrictions. However, given the fear of sudden stops, it may be prudent to maintain some restrictions on capital flows. Some of the collateral benefits of financial globalization in the form of financial development can be reaped by allowing foreign direct investment in the financial sector without lifting all restrictions on portfolio capital flows.

Prasad (2008) provides an excellent summary of the current state of capital account liberalization in India. While his conclusion comes out on the side of removing the remaining restrictions on capital flows, we believe that some restrictions on certain types of capital flows, particularly short term debt, and certain restrictions on capital

outflows, to stem the tide of capital flight during a financial crisis, are worth maintaining for a developing country like India. However, the following two recommendations made in Prasad (2008) as a part of a process of gradual reform are definitely worth taking seriously. First, there is the important recommendation of the Rajan Committee (2008) allowing foreign investors to invest in government bonds. This would not only improve the liquidity and depth of this market, but could provide foundations for a corporate bond market which is yet to develop in India. It could also impose fiscal discipline on the government because a rising or unsustainable deficit would cause a withdrawal of funds by foreign investors from this market, raising the cost of deficit financing for the government. Second, a suggestion by Prasad and Rajan (2008) to allow selective capital outflows through closed end mutual funds investing abroad is also worth considering. This would not only allow domestic residents to benefit from global risk sharing, but also reduce the need for costly sterilized intervention by the RBI during times of surge in capital inflows.

Finally, before removing restrictions on commercial borrowing, bankruptcy laws need to be revamped to reduce output losses during crises. If the interest rates soar in the event of a currency crisis, even firms with moderate levels of debt in foreign currency can become bankrupt, leading to huge output losses. As pointed out by Stiglitz (2002), one important lesson of the East Asian crisis is the need for better bankruptcy laws along the lines of chapter 11 in the U.S. Such laws will allow firms to restructure faster and will prevent asset stripping by the current management of a troubled firm when there is conflict between shareholders and creditors over ownership. Better bankruptcy laws prevent liquidation and allow restructuring by establishing clear ownership of firms

which in turn allows these firms to reenter the credit market. These laws will thus allow the country to recover faster in the event of a crisis resulting from huge capital outflows.

4. The Trade Liberalization Debate

Based on standard trade theory, we can expect free trade to have a positive impact on per capita real incomes through the efficiency gains it generates from specialization and exchange, as well as through the availability of larger varieties of final and intermediate goods. Trade has a further beneficial effect on resource allocation through the destruction of the monopoly power of inefficient domestic monopolies and oligopolies. However, positive effects of trade on welfare (real incomes) may not be obtained in the presence of certain kinds of market distortions, externalities or imperfections in institutions. On the other hand, when direct policies to attack these distortions are in place, the positive effects of trade on welfare are restored (Bhagwati, 1971).

As mentioned in the introduction, trade reforms do create both winners and losers and it might not always be politically feasible for the former to compensate the latter. If the losers from trade turn out to be the poor, then trade reduces social welfare under a Rawlsian welfare function, where all the weight is put on the welfare of the poorest. Exactly the opposite would be the case if trade reduces poverty and unemployment and makes low-skilled workers better off. Importantly, adverse distributional consequences of trade reforms may erode the political support for its sustainability.

We first look at the empirical evidence on the impact of trade reforms on overall welfare with a focus on the Indian case. We then look at the impact of trade on poverty. Finally, we look at the impact of trade on the various aspects of labor markets such as

unemployment, wages, wage inequality and the bargaining power of workers. We will see that, especially when we look at the distributional implications of trade, theory overall is a bit ambiguous. However, empirical evidence shows that trade liberalization has not only made India as a whole richer, it has also reduced poverty and has made workers better off there.

4.1 Cross-country Macro Evidence on Trade, Incomes and Growth

Trade theory, as discussed above, fairly unambiguously leads to the conclusion that through gains from exchange, specialization and greater varieties of intermediate and final products (explained in detail later), trade results in positive level effects on welfare or real incomes. However, the theoretical work on the effects of trade on growth has led to more ambiguous and less robust results. To see whether the predictions on level effects are empirically valid at a broad macro level and to resolve the theoretical ambiguities regarding growth effects (again at the macro level), we look here at the cross-country macro evidence.

Frankel and Romer (1999) look at the effect of trade share in GDP on income levels across countries for the year 1985. They construct an instrument for the trade share by summing up the gravity-model driven, geography-based predicted values of bilateral trade flows across all trading partners. The variables used to predict bilateral trade flows include distance, country size variables such as land area and population and dummies for whether the countries are landlocked, have a common border etc. They find that their

instrumental variables approach produces positive effects of trade on income levels that are greater than the estimates produced by ordinary least squares. Irwin and Tervio (2002) apply the Frankel-Romer approach to cross-country data from various periods in the twentieth century to show that this trade-income relationship is indeed highly robust.

Following a different approach, Rodrik, Subramanian and Trebbi (2004) have looked at the simultaneous effects of institutions, geography and trade on per capita income levels. Using an instrumental-variable approach, they find that “the quality of institutions trumps everything else.” However, trade and institutions have positive effects on each other, so that the former affects incomes through the latter. In other words, there is an indirect channel through which trade improves welfare. Similarly, geography also affects institutions.

In order to understand the relevance of this body of literature for India, let’s first look at the size of the effects in Irwin and Tervio (2002). They find that “a one percentage point increase in the trade share increases per capita income by 3 percent., on average.”⁷ While India’s trade share of GDP was roughly 30 percent in 2005, it was about 64 percent in China. According to Irwin and Tervio’s estimates, China’s per capita GDP should be twice that of India. This is indeed what it actually is in PPP terms. Therefore, this regression result implies that China’s greater openness in trade can fully explain its higher per capita income. Similarly, India’s trade share of GDP has increased from roughly 16 percent in 1991 to 30 percent in 2005. Using this increase and the Irwin-Tervio coefficient estimate, the predicted increase in per capita income over the period 1991-2005, holding everything else constant, is 42 percent, which is an annual growth rate of 2.5 percent. Actual growth rate during this period was roughly 6 percent, showing

that the remaining 3.5 percent could be attributed to other changes, or that roughly 40% of the actual growth has come from trade liberalization.

The effects of trade barriers on growth have been studied since the early 1990s. While there is no debate among mainstream economists over the effect of trade on levels of per capita real incomes, there is quite a bit of disagreement on the impact of trade on growth. Extending the endogenous growth theory pioneered by Paul Romer (1986), where the rate of innovation is endogenous to fundamental economic factors, Grossman and Elhanan Helpman (1991) developed a series of models to study the growth effects of trade where they highlight several channels through which trade can affect growth and innovation. The positive effects come from avoiding duplication of effort in R&D, through the international exchange and transmission of technical knowledge and by allowing the pooling of knowledge across borders. However, they also make some arguments based on the interaction between relative factor-endowments (skilled relative to unskilled labor) and the relative factor intensity of R&D, where trade can reduce R&D and productivity growth.

Dollar (1992), Sachs and Warner (1995) and Edwards (1998) among many other studies, using different measures of openness, in some cases constructed from standard policy measures, showed positive effects of trade on growth. However, these papers have been strongly criticized by Rodriguez and Rodrik (2001) for the problems with their trade openness measures and the econometric techniques used. In addition, Rodriguez and Rodrik discuss the difficulty in establishing the direction of causality. While Rodriguez and Rodrik (2001) have criticized the measure of openness used by Sachs and Warner (1995) as capturing many aspects of the macroeconomic environment in addition to trade

policy, Baldwin (2003) has recently defended that approach on the grounds that the other policy reforms captured in the measure, though not trade reforms per se, accompany most trade reforms sponsored by international institutions. Wacziarg and Welch (2008), using an updated Sachs-Warner dataset, have again shown the benefit of such reforms in driving growth. In any event, the debate over the impact of globalization on economic growth is still not fully resolved either theoretically or empirically.

4.2 The gains from greater product variety through trade

On gains from trade, the debate among mainstream economists is not about their existence but really about the magnitude of such gains. Whether one takes into account the gains from new varieties or not will significantly affect the extent of the gains from trade that one calculates.

To illustrate how trade reforms (reductions in tariffs) can lead to a greater variety of goods available and how that affects the welfare analysis of a tariff cut, we present here one of the models in Romer (1994) and then apply that model to the case of the Indian tariff reforms. Output in this model is written as a function of the labor force, L and the various types of capital goods, indexed by i , as follows:

$$Y = L^{1-\alpha} \sum_{i=1}^{N(\tau)} x_i^\alpha$$

where $N(\tau)$ is the number of capital goods available as a function of the tariff level τ . To see the gains from variety, suppose that an identical amount x of each variety is used in production. Then the above equation becomes $Y = N(\tau)L^{1-\alpha}x^\alpha$. Now, suppose we double

the number of varieties available to $2N(\tau)$ and halve the amount of each variety used to $x/2$, thereby leaving the amount of capital goods used unchanged at $N(\tau)x$. In doing so, we have increased the aggregate output to $Y = 2^{1-\alpha} N(\tau)L^{1-\alpha}x^\alpha$ which clearly is greater than $Y = N(\tau)L^{1-\alpha}x^\alpha$. This illustrates the gain from having a larger number of varieties of inputs.

An import tariff affects the availability of imported inputs in two ways. First, by raising the price of each input, it reduces the usage of these inputs. Second, if there is a fixed cost of introducing a new capital input to a country, denoted by F , and if this fixed cost is increasing in the number of inputs, say $F(N) = \mu N$, then a smaller number of inputs is going to be exported to a country the higher the tariffs of that country (see Romer, 1994 for a mathematical derivation). That is, $N'(\tau) < 0$.

Romer calibrates this economy by setting $\alpha = 0.5$, as this is the value, he believes, at which a balance can be struck between having a realistic share of labor in output and a realistic value of a price-marginal cost markup on capital inputs. He derives expressions for the percentage welfare cost of imposing a tariff. We are interested in the percentage welfare gain of a trade reform, the expression for which, holding the number of varieties constant, can be shown to be

$$\left. \frac{National\ Income(0)}{National\ Income(\tau)} \right|_{N=N(\tau)} - 1 = \frac{\tau^2}{1 - \tau^2}$$

If the number of varieties is treated endogenous to the tariff, then we have

$$\frac{National\ Income(0)}{National\ Income(\tau)} - 1 = \frac{1}{1 - (2\tau - 2\tau^3 + \tau^4)} - 1$$

Reducing the tariff from 10% (India's average applied non-agricultural tariff in 2008) to zero results, in this Romer model, in only a 1% welfare gain, if the number of varieties is held constant. However, if the number of varieties is treated as endogenous, the model predicts a 25% welfare gain. If we start from a 15% tariff (the average Indian manufacturing tariff in 2005), then these welfare numbers are 2.25% and 42%, respectively. Alternatively, in 1991 the average manufacturing tariff was roughly 90%. Bringing the tariff down from 90% to zero in this model results in welfare gains of 81% under the first assumption, but welfare goes up 500 folds under the second assumption. This sounds implausible but it clearly illustrates the extent to which we can underestimate welfare gains if we neglect the possibility that trade increases input variety.

Another approach, which has been developed by Feenstra (1994) and has been used in the literature, requires the actual counting of imported input varieties and the estimation of elasticity of substitution between the various varieties. Greater variety in an input leads to higher productivity of a given total quantity of that input, and this benefit from greater variety is higher, the lower is the elasticity of substitution between the various varieties. This is quite intuitive, since when varieties are perfect substitutes of each other, the number of varieties should not matter. Using Feenstra's approach, Broda and Weinstein (2006) show that the gains for the US from greater varieties of goods through trade amount to about 3 percent of GDP. These authors, in their more recent research, extend this empirical analysis and approach to investigating the growth effects of trade through an increase in varieties, and find the gains to be even larger.

While Broda and Weinstein (2006) have used this approach for the US, Goldberg, Khandelwal, Pavcnik and Topalova (2010) use a similar approach to estimate the gains

from imported input variety for India. Defining the combination of an Harmonized System (HS) six-digit product line⁸ and the source country as an imported input variety, they are able to calculate the number of varieties within a four-digit industry or alternatively within a broader product category, including the entire manufacturing sector. They find that the true price index (that factors in the range of varieties) during the period 1989-97 was lowered an additional 31%-38% in addition to the change we see in the conventional price index for India. This is quite substantial. In addition, Goldberg, Khandelwal, Pavcnik and Topalova find that a one-percent increase in the imported input variety leads to a 13.4 percent increase in firm scope (product variety at the firm level) for India.

4.3 Trade and Productivity growth

While theory is very clear about the impact of trade on real incomes, it does not resolve the dispute when it comes to the growth impact of trade. As mentioned in section 4.1, models can be created that provide arguments on both sides of the trade and growth debate. As explained earlier in this chapter, macro empirical studies are also not fully conclusive in resolving this debate, as they are subject to the criticisms of Rodrik and Rodriguez (1998) (also explained earlier). However, before we move on to micro-level (plant/firm-level) studies on trade and productivity to find a resolution, it is important to understand that, theoretically, trade can affect a firm's innovation (or imitation or adaptation) in opposing directions. To illustrate that, we explain in this section the arguments from Rodrik (1992) and from Devarajan and Rodrik (1991) in some detail.

The Rodrik and Devarajan-Rodrik arguments can be explained as follows. A tariff cut reduces the market size of a domestic import-competing producer and that reduces her equilibrium output. At the same time trade liberalization also increases competition from foreign substitutes, thereby flattening the demand curve and reducing the firm's price-marginal cost mark up (reducing monopoly power). The reduction in monopoly power causes the firm to produce a higher output since the firm's incentive to limit output to raise the price is lower. While the former is the market size effect, the latter is called the pro-competitive effect of trade liberalization. The two effects on the incentive to innovate go in opposite directions making the impact of trade on productivity theoretically ambiguous. Therefore, we next look at the empirical evidence on the subject in the hopes of obtaining a resolution to this aspect of the globalization debate.

4.3.1 Micro-level Studies on Trade and Productivity

In this context, it is important to mention a few micro-level studies that look at a couple of channels mentioned above. The early notable papers are Levinsohn (1993) and Harrison (1994) followed by Krishna and Mitra (1998), using plant/firm level data from Turkey, the Ivory Coast and India, respectively. While Levinsohn focuses on the impact of trade liberalization on markups, Harrison and Krishna and Mitra look at the impact on both markups and productivity growth.

All three studies mentioned above have found that the markup, given by the ratio of the price to marginal cost, fell as a result of trade reforms in Turkey, Ivory Coast and India respectively. Thus, the monopoly power of domestic firms (and therefore the deadweight or efficiency losses associated with this monopoly power) went down as a

result of trade liberalization. In the case of India, Krishna and Mitra find that for three of the four industries studied the markups went down from above one to below one.

According to Levinsohn (1993), in the presence of adjustment and sunk costs, a firm may lose money while it adapts to a new trading environment. The other important result was on productivity growth. Krishna and Mitra find that the firm-level productivity growth was on average 3%-6% higher in the post-reform (post-1991) period than in the pre-reform period in India. Pavcnik (2001), who uses Chilean plant-level data, is the first to econometrically correct for the problem of simultaneity and selection in production function estimation to derive total factor productivity estimates to study the effects of trade liberalization. She uses the well-known Olley-Pakes procedure to obtain her estimates. She also finds that productivity rises upon trade liberalization. A variant of her approach (the Levinsohn-Petrin approach) has been used by Topalova (2004) for India. This paper is more sophisticated than Krishna and Mitra in that it corrects for the simultaneity of input and output determination, thereby yielding consistent estimates of TFP. The results are qualitatively very similar to those of Krishna and Mitra. Topalova finds that for a four-digit industry in India, a 10 percentage point reduction in tariffs leads to 0.5 percent increase in TFP.

Thus the micro evidence on the impact of trade on productivity and productivity growth clearly supports those on the pro-trade side of the debate. This turns out to be especially true in the Indian context.

4.4 Trade and Poverty

While theories can be constructed on both sides of the trade-and-poverty debate, there are a number of fairly plausible reasons for expecting trade to reduce poverty. In the first place, as explained earlier, trade generates efficiency gains from specialization and exchange, as well as through the availability of larger varieties of final and intermediate goods. Secondly, in many poor countries that are abundant in unskilled labor, under fairly plausible conditions freer trade should lead to an increase in the returns to unskilled labor there (often called the Stolper-Samuelson effect). This leads to increases in the incomes of the poor in these countries who lack human and physical capital.

A number of factors may, however, be working in a direction opposite to the Stolper-Samuelson type effects. One of them is the lack of complete intersectoral factor mobility, at least in the short run. In the short to medium run, there will be adjustment costs to be incurred and at best intersectoral factor mobility will be imperfect, and the impact of trade liberalization on poverty, in theory, will be ambiguous. This can be illustrated by the use of a specific factors model. If both labor and capital (or land) are sector-specific in a two sector model, trade liberalization will increase real incomes (both real wages and rents) in the export sectors, but will reduce real incomes in the import-competing sectors. On the other hand, if labor is treated as mobile while capital or land as sector-specific in this model, real rents to capital or land will go up in the export sector and go down in the import-competing sector. The impact on workers in real terms will be ambiguous. These ambiguities regarding the impact of trade on poverty are accentuated further by the lack of clear theoretical predictions on the effect of trade on growth. Ultimately, the relationship between trade and poverty thus becomes an empirical question.

Topalova (2005) is the first rigorous empirical study of the impact of trade liberalization on poverty in India.⁹ In fact, she looks at district-level poverty. Her study finds that “rural districts where industries more exposed to trade liberalization were concentrated experienced a slower progress in poverty reduction.” She further writes that “compared to a rural district experiencing no change in tariffs, a district experiencing the mean level of tariff changes saw a 2 percentage points increase in poverty incidence and a 0.6 percentage points increase in poverty depth. This setback represents about 15 percent of India’s progress in poverty reduction over the 1990s.” She also finds this poverty accentuating effect of openness to be much weaker in states with institutions that support more flexible labor markets. However, she finds “no statistically significant relationship between trade exposure and poverty in urban India.”

Topalova’s work was clearly seen by some as a blow to the arguments made by free traders, especially in the Indian context. However, subsequent work by Hasan, Mitra and Ural (2007) finds different results. Unlike Topalova who restricts her analysis to tariffs, they look at both tariffs and non-tariff barriers (NTBs). Just the way Topalova arrives at her district-level measure of tariffs, Hasan, Mitra and Ural weight tariffs and alternatively NTBs by sectoral employment to arrive at the state level inverse measure of the trade exposure of the labor force. But unlike Topalova, they refrain from using nontradable employment weights (where Topalova sets zero sectoral tariffs) in the aggregation of protection. They allow for the transmission of changes in protection rates to domestic prices to vary by state in some of their analysis. Third, it is in order to avoid sampling related issues, that they, in contrast to Topalova’s approach of using district-level measures of urban and rural poverty, work with state-level measures of urban, rural,

and overall poverty. They also complement their analysis with robustness checks using region-level measures of poverty, where regions are the ones defined as in the National Sample Survey (NSS).

In no case do Hasan, Mitra and Ural find poverty-worsening effects of trade liberalization. In fact, their main finding is that states whose workers are on average more exposed to foreign competition tend to have lower rural, urban and overall poverty rates (and poverty gaps), with this effect being more pronounced in states with institutions supporting more flexible labor markets (and in urban areas relative to rural areas). They also find that, over time, trade liberalization leads to greater poverty reduction in states more exposed to foreign competition by virtue of the sectoral composition of their work force.

While there is considerable disagreement here between the two studies, based on the fact that in the second study certain advances were made over the first, we believe that the trade and poverty issue is also a credit item on the “balance sheet” of globalization, at least in the Indian case.¹⁰

4.5 Trade and the Labor Market

4.5.1 Trade and Unemployment

Whether trade reduces or increases unemployment depends on whether relative technological differences or relative factor endowment differences across countries are the primary drivers of trade and whether there is factor mobility across sectors. It also

depends on international differences in labor-market search frictions. In a two sector model, with labor being the only factor of production and where unemployment arises due to search frictions, where these frictions are symmetric across these two sectors, Hasan, Mitra and Ranjan (2009) study the following two cases theoretically: (a) perfect labor mobility (the Ricardian case), where comparative advantage is exclusively productivity-driven and (b) no intersectoral labor mobility (where labor becomes sector-specific), where comparative advantage, while still dependent on productivity, is also driven by relative sectoral labor force size. Using cross-state data from India, they find that overall (rural plus urban) unemployment on average does not have any relationship with average protection (weighted average with 1993 sectoral employment as weights) over time and across states. However, there are some conditional relationships between the two variables: In particular, they find strong evidence that reductions in protection reduce unemployment in the urban sectors of states with flexible labor markets and with large employment shares in net exporter industries. Across such states and within such states over time, the employment-weighted protection and unemployment are positively correlated. In the context of the theoretical prediction mentioned earlier, the empirical results fall in between the two extremes, depending on the flexibility of labor markets. The results get closer to the predictions of the model with perfect intersectoral labor mobility as we move from states with rigid labor laws to those with labor laws that lead to more flexible labor markets. In contrast, cross-country work by Dutt, Mitra and Ranjan (2009) provides fairly strong and robust evidence for the negative relationship between unemployment and trade openness: a one standard deviation increase in openness leads to a 2.4% increase in the unemployment rate. Using panel data, they find an unemployment-

increasing short-run impact of trade liberalization, followed by an unemployment-reducing effect leading to the new steady state.

Thus the empirical evidence on the trade-unemployment nexus does not provide unqualified support for the free traders in the globalization debate. The unemployment reducing effect of trade is not universal across time or space. Actually, in the short run, trade, on average, increases unemployment. However, we do not believe this provides any ammunition for protectionists. Rather, this result emphasizes the need for social protection, in the presence of which free trade is restored as the optimal policy. This is just a special case of the argument made in Bhagwati (1971).

4.5.2 Trade and Wage Inequality

This is another controversial topic in the globalization debate that has drawn several scholars into it. In a two-sector, two-factor Heckscher-Ohlin model where skilled and unskilled labor are the two factors of production, trade, for an unskilled labor abundant country, raises the relative price of the export good (which is unskilled labor intensive) and by the Stolper-Samuelson theorem raises the reward to unskilled labor and reduces the reward to skilled labor, thereby reducing wage inequality. The prediction for a developed country is an increase in wage inequality. However, some of the evidence points to an increase in wage inequality as a result of trade in both developed and developing countries. Feenstra and Hanson (1997a, b) use state-level, two-digit data for Mexico for the period 1975-88 to empirically investigate the relationship between input trade and wage inequality. They find that wage inequality goes up as a result of trade, specifically input trade. They argue that since the production activities shifted from the US to Mexico are the least skill intensive in the former and the most skill intensive in the

latter, the demand for skilled labor goes up in both countries. This can account for rising inequality in both the U.S. and Mexico.

Kumar and Mishra (2008) have looked at the impact of tariff reductions on wage premiums in India and have found that tariff reductions result in increases in “industry wage premiums.” Consistent with some of the recent empirical literature on this issue, Kumar and Mishra define “industry wage premiums” as “the portion of individual wages that accrues to the worker’s industry affiliation after controlling for worker characteristics.” Note that since skill variables such as education, experience etc are controlled for these are not the premiums for additional skills. As a result, Kumar and Mishra argue that “since different industries employ different proportions of skilled workers, changes in wage premiums translate into changes in the relative incomes of skilled and unskilled workers.” They in fact find that tariff reductions have been larger in the more unskilled labor intensive industries, where the increases in the “industry wage premiums” have also been bigger. As a result, they infer a reduction in wage inequality in India. This is consistent with the Stolper-Samuelson effect, or is simply that the increase in productivity gets passed on as an increase in the industry wage premium, both being greater in the labor-intensive industries.¹¹

4 .5.3. Trade and labor demand elasticity

This is a part of the globalization debate that shows adverse effects for workers and stresses the need for social protection to accompany trade reforms. As explained by Rodrik (1997) and Slaughter (2001), trade increases labor-demand elasticity (its absolute value). The labor-demand elasticity has two components. The first component is the elasticity of labor demand at constant output and therefore, represents the substitution that takes place along a given isoquant as relative factor prices change. The second component comes from the fact that as wage falls, the cost of production falls, and the

price of output falls as a result. This price reduction in turn leads to an increase in the demand for output. The demand for the labor input, being a derived demand, also increases as a result.

In this context, trade has the following role. Trade in inputs leads to the availability of more substitutes for the services of labor, because of which the elasticity of substitution between labor and all other inputs might increase (See Rodrik, 1997). Trade also increases the elasticity of demand for final import-competing goods through the availability of more and cheaper imported substitutes. In short, trade makes it easier for firms and consumers to substitute the services of domestic workers with those of foreign workers (Rodrik, 1997). Precisely due to this reason, Rodrik (1997) has argued that a more elastic labor demand is associated with lower bargaining power of workers. In addition, it results in larger wage and employment volatility from given volatility in productivity. However, Rodrik ignores that higher labor-demand elasticity also results in higher wage and employment growth from given productivity growth.

We next look at the evidence so far on the impact of trade on labor-demand elasticities. Slaughter (2001) finds mixed evidence for the US using four-digit industry-level data, while Krishna, Mitra and Chinoy (2001) find no statistically significant effect of trade reforms on labor-demand elasticities, using plant level data for Turkey. However, Hasan, Mitra and Ramaswamy (2007) find support for this Rodrik hypothesis, using 2 digit industry-level data at the state level from India. They find that the evidence is stronger for states with more flexible labor markets (labor laws). Using their constant-returns-to-scale specification, post liberalization the elasticity is estimated to have gone

up from 0.38 to 0.52 on average for all states and from 0.64 to 0.8 for states with labor laws supporting a flexible labor market.¹²

We clearly see the need for social protection that is underscored by these empirical results that have implications for the bargaining power of workers. Reduction in the bargaining power of workers could be another channel through which trade might reduce unemployment. In addition, in poor countries where labor productivity is low, a decline in the bargaining power of labor might realign incentives in a way in which greater effort is rewarded (and lack of effort is punished). This can result in a productivity increasing and ultimately a wage increasing effect. In addition, these empirical results, in the context of a rapidly growing country like India, mean a declining share of a rapidly expanding pie. Labor's slice of the pie might still ultimately be larger in size due to trade.

4.6 The Future of Trade Liberalization

Trade liberalization is still an unfinished business and a work in progress in India. While in the case of manufacturing, India has moved from virtual autarky to almost complete free trade within just a couple of decades, agricultural tariffs still remain high. In 2008, while the bound duties on cereals were 119 percent, the MFN rate was 31.1 percent. Tea and coffee are even more protected. India needs to negotiate reduction of agricultural subsidies in rich countries, in return for which it should lower its own high agricultural tariffs. A multilateral approach here is important. If the removal of agricultural subsidies in rich countries and agricultural tariff liberalization in poor countries happen simultaneously, the short-run costs on Indian farmers of agricultural tariff liberalization might be much lower. One problem here is fiscal. In the presence of a minimum

procurement price of food grains, lowering tariffs might be fiscally costly for the government. However, high food prices and shortage of food are a real problem in India. Reduction of agricultural tariffs might help in this regard.

While the manufacturing tariffs have come down significantly, they still remain high on some goods such as automobiles. European, Japanese and American car manufacturers have set up plants in India to serve the domestic market. It might be the case that these tariffs might have encouraged what we call “tariff-jumping” foreign direct investment. But now that the plants are in place and the foreign manufacturers have trained their Indian workers (who are available at much lower wages than in the developed world), removal of tariffs on automobiles should neither lead to the shutting down of these plants nor lead to a flood of import of automobiles.

While formal trade barriers have been brought down a lot, informal barriers still remain. These take the form of too few and poor quality of ports, lack of good roads, poor quality of road transport and high contract enforcement costs. Infrastructure in general is a problem.¹³ For trade to expand, these bottlenecks will have to be addressed. Even though in terms of import duty rates China and India are not very different, China does a lot better when one looks at trade as a proportion of GDP. This is partly due to better trade facilitation there through better transport infrastructure, better ports, better roads and better infrastructure overall. Additionally, firms do not face rigid labor laws that change the relative factor costs from what would be implied by a country’s factor abundance or scarcity. Apart from affecting the volume of trade, the welfare gains associated with any given amount of trade liberalization depends on these complementary factors.

While we realize that political costs of further trade and complementary reforms can be quite high, a piecemeal and too gradual an approach can sometimes be counterproductive. Nobody could have imagined that the reforms India has had so far would be politically viable. Also, once reforms gathered momentum, opposition went down. Moreover, very few people probably view the reforms that have taken place so far to be reversible. To understand this one needs to understand the idea of the resistance to reforms being related to “individual-specific uncertainty” as in Fernandez and Rodrik (1991). While people who are already (prior to the reforms) in the export sector gain for sure from trade reforms and they know that, there are certain other winners. They are the ones who move from import-competing sectors to export sectors. The ones who lose are the people who end up staying in the import-competing sectors post-reform. The uncertainty over who stays and who moves can lead to considerable opposition to reforms. However, once reforms have been implemented (say by a dictator or through pressure from the IMF), the individual-specific uncertainty is resolved and reform can then generate the support it needs (and the opposition to its reversal). These seem to have been true for the reforms so far and are most likely to be true for any further reforms.

5. Conclusions

In this chapter, we have discussed the pros and cons of the liberalization of international capital flows and international trade in goods and services, with special reference to India. While the empirical results do not show large gains from the liberalization of international capital flows for developing countries, generalizations are difficult. While it has been argued that there is a lack of investment opportunities rather than a scarcity of savings in many developing countries, the evidence does not support this proposition for

India. Here, we also caution about the possibility of financial crises and the possible appreciation of the exchange rate that can render Indian exports uncompetitive in the world market. However, considerable liberalization of capital flows already has taken place and is irreversible and in fact, some of it goes hand in hand with the liberalization of trade in goods and services. We, therefore, review some of the regulation suggested by researchers in finance and international finance to reduce the risks associated with international capital flows.

In the case of liberalization of trade in goods and services, mainstream theoretical literature in international trade shows that in aggregate terms trade always improves welfare. The prediction tested empirically is that trade leads to an increase in real incomes. Cross-country data support this prediction. Country-specific analyses, including ones for India, show the additional benefits from greater varieties as a result of trade. The theory regarding the effect of trade on productivity growth and growth overall leads to “an embarrassment of riches” in terms of the predictions that can be derived under alternative sets of assumptions. While the empirical macro trade and growth literature has come in for a lot of criticism, making it difficult to reach any clear conclusions as a result, the firm-level and plant-level evidence clearly is in support of trade. In terms of the distributional impact of trade, under perfect intersectoral mobility of factors of production, theory predicts that trade leads to an increase in the welfare of poor, unskilled workers in a developing country. This is a direct prediction of the Stolper-Samuelson theorem. However, this can break down if this intersectoral mobility does not exist in reality, which is likely to be the case in a developing country like India. In this case, the empirical evidence goes both ways, but the most recent evidence that corrects problems

with the earlier investigation, is pro-trade, i.e., trade is good for poverty reduction. One thing, however, that has been argued theoretically and found in recent empirical work is that there is a reduction in the bargaining power of workers arising from the greater substitutability of the services of labor both for producers and consumers as a result of trade. However, the increase in the wages of the unskilled and the reduction in wage inequality that have been found for India as a result of trade negate the importance of the bargaining power effect of trade.

Before we end this chapter, we want to point out to the readers one important aspect of globalization we have not covered in this chapter which has to do with the freer movement of workers across borders. For India, the gain certainly has been the increase in remittances, while the loss, some may argue, results from “brain drain.” This brain drain could also result in important benefits stemming from the creation and expansion of Indian ethnic networks abroad.¹⁴

In conclusion, the literature on globalization, especially on trade liberalization, that we have covered in this chapter should impress upon the reader that globalization has overall, in net terms, been good for India. It would therefore be fitting to end with the following quote from a recent speech by Shashi Tharoor:¹⁵

A measure of the extent to which the globalization debate has ended in India came for me a couple of months ago when I spoke in Kolkata alongside the Chief Minister of West Bengal, Mr Buddhadeb Bhattacharya, a stalwart of the CPI-M, the Communist Party of India-Marxist. And he said: “some people say globalization is bad for the poor and must be resisted. I tell them that is not possible. And” -- this is the crucial part—“even if it were possible, it would not be desirable.” So when a Communist Chief Minister speaks that way about globalization, one can accept that this debate is largely over.

References

- Arbache, Jorge S. (2004). "Does Trade Liberalization Always Decrease Union Bargaining Power?" *Economia* 5(1), 99-121.
- Baldwin, Robert (2003). "Openness and Growth: What is the Empirical Relationship." NBER Working Paper # 9578.
- Basker, Emek. (2005). "Job Creation or Destruction? Labor Market Effects of Wal-Mart Expansion." *Review of Economics and Statistics*, 87(1): 174–183.
- Bhagwati, Jagdish N. (1971). "The generalized theory of distortions and welfare," in: J. N. Bhagwati et al., eds., *Trade, Balance of Payments and Growth*, North-Holland, Amsterdam.
- Brock, Ellen and Dobbelaere, Sabien (2006). "Has International Trade Affected Workers' Bargaining Power?" *Review of World Economics* 142(2), 233:266.
- Broda, Christian and Weinstein, David E. (2006). "Globalization and the Gains from Variety." *Quarterly Journal of Economics* 121(2), 541-585.
- Caballero, Ricardo J. (2002). "Coping with Chile's External Vulnerability: A Financial Problem," Banco Central de Chile Working Paper No. 154, May 2002.
- Commander, Simon; Chanda, Rupa; Kangasniemi, Mari and Winters, L. Alan (2008). "The Consequences of Globalization: India's Software Industry and Cross-Border Labour Mobility." *World Economy* 31(2), pp. 187-211.

Deaton, Angus and Kozel, Valerie (2005). "Data and Dogma: The Great Indian Poverty Debate." *The World Bank Research Observer* 20(2), 177-199.

Devarajan, Shantayanan and Rodrik, Dani. (1991). "Pro-competitive effects of trade reform: results from a CGE model of Cameroon." *European Economic Review* 35, 1157–1184.

Dollar, David (1992). "Outward-Oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs: 1976-85." *Economic Development and Cultural Change* 40(3), 523-44.

Dutt, Pushan; Mitra, Devashish and Ranjan, Priya (2009). "International Trade and Unemployment: Theory and Cross-National Evidence." *Journal of International Economics* 78(1), 32-44.

Edwards, Sebastian (1995). "Openness, Productivity and Growth: What do we really know." *Economic Journal* 108(447), 383-98.

Feenstra, Robert C. (1994). "New Product Varieties and the Measurement of International Prices." *American Economic Review*, 84(1), 157-177.

Feenstra, Robert C. and Hanson, Gordon H. (1997a). "Foreign Investment, Outsourcing and Relative Wages," in Robert C. Feenstra, Gene M. Grossman, and Douglas A. Irwin, eds., *Political Economy of Trade Policy: Essays in Honor of Jagdish Bhagwati*, MIT Press, 89-127.

Feenstra, Robert C. and Hanson, Gordon H. (1997b). "Foreign Direct Investment and Relative Wages: Evidence from Mexico's Maquiladoras." *Journal of International Economics* 42, 371-394.

Fernandez, Raquel and Rodrik, Dani (1991). "Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty." *American Economic Review* 81(5), pages 1146-55.

Frankel, Jeffrey and Romer, David (1999). "Does Trade Cause Growth?" *American Economic Review* 89(3), 379-99.

Goldberg, Linda (2007). "Financial Sector FDI and Host Countries: New and Old Lesson," *Economic Policy Review* 13(1), 1-17.

Goldberg, Pinelopi; Khandelwal, Amit; Pavcnik, Nina and Topalova, Petia (2008). "Imported Intermediate Inputs and Domestic Product Growth: Evidence from India." *NBER Working Paper 14416*.

Goldberg, Pinelopi and Pavcnik, Nina (2007). "Distributional Effects of Globalization in Developing Countries." *Journal of Economic Literature* 45(1), 39-82.

Gourinchas, Pierre-Olivier and Jeanne, Olivier (2007). "Capital flows to developing countries: the allocation puzzle," NBER working paper # 13602, Cambridge, MA.

Grossman, Gene M. and Helpman, Elhanan (1991). *Innovation and Growth in the Global Economy*, MIT Press, Cambridge, MA.

Guruswamy, M.; Sharma, K.; Mohanty, J.P. and Thomas, J.K. (2005). "FDI in India's Retail Sector: More Bad than Good?" *Economic and Political Weekly* XL(7), 619-623.

Hanson, Gordon H. (2009). "The Economic Consequences of the International Migration of Labor," *Annual Review of Economics* 1, 179-208.

Harrison, Ann E. (1994). "Productivity, Imperfect Competition and Trade Reform: Theory and Evidence." *Journal of International Economics*, 36(1-2): 53-73.

Hasan, Rana; Mitra, Devashish and Ranjan, Priya (2009). "Trade Liberalization and Unemployment: Evidence from Indian States", *mimeo*, Syracuse University and UC-Irvine.

Hasan, Rana; Mitra, Devashish and Ramaswamy, K.V. (2007). "Trade Reforms, Labor Regulations and Labor Demand Elasticities: Empirical Evidence from India," *Review of Economics & Statistics* 89(3), 466-481.

Hasan, Rana; Mitra, Devashish and Ural, Beyza P. (2007). "Trade Liberalization, Labor-Market Institutions and Poverty Reduction: Evidence from Indian States," *India Policy Forum* 3, 71-122.

Henry, Peter Blair (2007). "Capital Account Liberalization: Theory, Evidence, and Speculation." *Journal of Economic Literature* 65, 887-935.

Iacovone, Leonardo; Javorcik, Beata; Keller, Wolfgang and Tybout, James (2009). "Walmart in Mexico: The Impact of FDI on Innovation and Industry Productivity", mimeo, University of Colorado – Boulder.

Irwin, Douglas and Tervio, Marko (2002). "Does Trade Raise Income: Evidence from the Twentieth Century." *Journal of International Economics* 58, 1-18.

Kose, M. Ayhan; Prasad, Eswar S. and Terrones, Marco E. (2009). "Does financial globalization promote risk sharing?" *Journal of Development Economics* 89, 258-270.

Krishna, Pravin and Mitra, Devashish (1998). "Trade Liberalization, Market Discipline and Productivity Growth: New Evidence from India." *Journal of Development Economics* 56(2), August 1998, pp. 447-462.

Krishna, Pravin; Mitra, Devashish and Chinoy, Sajjid (2001). "Trade Liberalization and Labor Demand Elasticities: Evidence from Turkey." *Journal of International Economics* 55(2), December 2001, pp. 391-409.

Kumar, Utsav and Mishra, Prachi (2008). "Trade Liberalization and Wage Inequality: Evidence from India." *Review of Development Economics* 12(2), 291-311.

Levinsohn, James, 1993. "Testing the Imports-as-Market-Discipline Hypothesis." *Journal of International Economics* 35(1), 1-22.

Null, Gary (2010). "Globalization and Poverty: Interview with Vandana Shiva," Center for research on Globalization,
<http://www.globalresearch.ca/index.php?context=va&aid=11540>

Obstfeld, Maurice (2008). "International Finance and Growth in Developing Countries: What Have We Learned?" Commission on growth and development, working paper #34.

Pavcnik, Nina (2001). "Trade Liberalization, Exit, and Productivity Improvements: Evidence from Chilean Plants." *The Review of Economic Studies* 69, 245-76.

Panagariya, Arvind (2008): *India: The emerging giant*. Oxford University Press. New York.

Prasad, Eswar and Rajan, Raghuram G. (2008). “A Pragmatic Approach to Capital Account Liberalization.” *Journal of Economic Perspectives* 22 (Summer): 149–172

Prasad, Eswar; Rajan, Raghuram G. and Subramanian, Arvind (2007). “Foreign Capital and Economic Growth.” *Brookings Papers on Economic Activity*, 153–230.

Prasad, Eswar (2008). Some New Perspectives on India’s Approach to Capital Account Liberalization, mimeo, Cornell University

Report of the High Level Committee on Financial Sector Reforms (Chairman: Raghuram Rajan). 2008. (http://planningcommission.nic.in/reports/genrep/report_fr.htm)

Rodriguez, Francisco and Rodrik, Dani (2001). “Trade Policy and Economic Growth: A Skeptic’s Guide to the Cross-National Evidence.” In Bernanke, B. and Rogoff, K. (eds.) *Macroeconomics Annual* 2000, Cambridge, MA: MIT Press for NBER.

Rodrik, Dani (1992). Closing the productivity gap: does trade liberalization really help?. In: Helleiner, G., Ed., *Trade Policy, Industrialization and Development: New Perspectives*, Clarendon Press, Oxford.

Rodrik, Dani (1997). “Has Globalization Gone Too Far?” Washington, DC: Institute for International Economics.

Rodrik, Dani. and Subramanian, Arvind (2009). Why did financial globalization disappoint? *IMF Staff Papers*, Volume 56, Number 1, March.

Rodrik, Dani and Velasco, Andres (2000). Short term capital flows. In Annual world bank conference on development economics, World Bank, Washington, D.C.

Rodrik, Dani; Subramanian, Arvind and Trebbi, Francesco (2004). "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development." *Journal of Economic Growth* 9(2), 131-165.

Romer, Paul (1986). "Increasing Returns and Long-Run Growth." *Journal of Political Economy* 94(5), 1002-1037.

Romer, Paul (1994). "New Goods, Old Theory, and the Welfare Costs of Trade Restrictions," *Journal of Development Economics* 43, pp. 5-38.

Sachs, Jeffrey and Warner, Andrew (1995). "Economic Reform and the Process of Global Integration." *Brookings Papers in Economic Activity*, 1-118.

Slaughter, Matthew (2001). "International Trade and Labor-Demand Elasticities." *Journal of International Economics* 54(1): 609-629.

Stiglitz, Joseph (2002). *Globalization and Its Discontents*. New York: Norton.

Topalova, Petia (2004). "Trade Liberalization and Firm Productivity: The Case of India." *IMF Working Paper 04/28*.

Topalova, Petia (2005). "Trade Liberalization, Poverty, and Inequality: Evidence from Indian Districts," in Ann Harrison, ed., *Globalization and Poverty*, University of Chicago Press.

Wacziarg , Romain and Welch, Karen (2008). "Trade Liberalization and Growth: New Evidence." *World Bank Economic Review* 22(2), 187-231.

¹ It exceeded 1 in Indonesia, Philippines, South Korea, and Thailand. Malaysia was the only crisis country where it was less than 1 in 1997. In Korea it exceeded 3 by the end of 1997. Regression results in Rodrik and Velasco (2000) reveal that countries where the ratio is greater than 1 have a 10 % higher probability of a crisis than countries where the ratio is less than 1.

² See Rodrik and Subramanian (2009) for a critique of the "collateral benefits" approach along these lines.

³ See Goldberg (2007) for a nice of survey of the literature on the benefits from real and financial sector FDI accruing to the host country.

⁴ See Guruswamy et al. (2005) for some back of the envelope estimates of potential job destruction caused by FDI in the retail sector in India.

⁵ For example, Iacovone et al. (2009) study the impact of the entry of Walmart into Mexico on industry structure, productivity performance, and the rate of innovation of Mexican domestic manufacturing firms, but not on employment.

⁶ One can follow the approach of Basker (2005) who estimates the impact of Wal-Mart expansion on employment at the county level using data from the U.S. He finds an increase in retail employment, but a decrease in wholesale employment due to vertical integration by Wal-Mart.

⁷ It is important to note that the trade share in these regressions has been instrumented by geography and gravity based variables.

⁸ The HS classification of products, mainly used for tariffs, is an internationally standardized system. This system covers all traded products and assigns them names and numbers. The classification is done at several degrees of disaggregation. A six-digit classification is more disaggregate than a four-digit classification and so on.

⁹ It needs to be noted here that, even prior to the paper by Topalova, there has been an ongoing debate regarding whether poverty has been going up or down following the introduction of the broad set of economic reforms in 1991. See for instance Deaton and Kozel (2005). In addition, see Null (2010) for an interview of Vandana Shiva, an environmental and social activist, who, as a critic of globalization, invokes the issue of extreme overall poverty levels (rather than changes) in India even in this period of rapid economic growth, spurred by globalization.

¹⁰ The term “globalization balance sheet” was, to the best of our knowledge, coined at the Peterson Institute of International Economics in Washington, DC.

¹¹ See Goldberg and Pavcnik (2007) for a comprehensive survey of research on the impact of globalization on all aspects of inequality, including wage inequality.

¹² There are formal direct tests of the effect of trade on bargaining power of workers. See for instance Brock and Dobbelaerre (2006) for Belgium and Arbache (2004) for Brazil.

¹³ As mentioned earlier, this is an area where India could attract FDI, with the expectation that better expertise in building infrastructure more efficiently will come along with it.

¹⁴ For an in-depth analysis of the costs and benefits of international migration, see Hanson (2009). For a study that shows a positive impact of international labor mobility on the performance and behavior of Indian software firms, see Commander, Chanda, Kangasniemi and Winters (2008).

¹⁵ See <http://www.sudgestaid.it/files/gennaio09/ShashiTharoorRomeSpeech.pdf> . We thank an anonymous referee for pointing this out to us.