Trade Policy and WTO Accession for Economic Development: Application to Russia and the CIS

Module 2

Openness, Growth and Poverty

by

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This chapter examines the effects of trade on growth and poverty. It addresses the following questions:

- Which are the channels through which trade openness may affect the economic activities of a given country?
- What are the effects of trade openness on growth?
- What are the effects of trade openness on poverty and income distribution?

By addressing these questions we derive the following main lessons.

Lesson 1. The first channel by which trade openness affects the economic activities of a given economy is through a reallocation of resources. By pushing domestic product prices close to world prices trade forces economies to produce only goods they can produce relatively cheaply and efficiently and to buy the rest in the world market.

Lesson 2. The second channel by which trade openness affects the economic activities of a given economy is through the improved access to foreign technologies and resources. Through trade economies have access to a much wider variety of goods and factors of production, including technologies, than those available in the domestic market.

Lesson 3. Trade openness is a necessary condition for faster long term growth. There are no sustainable development miracles without a substantial expansion of exports and integration into the world economy. There is no evidence that protection and trade barriers favour long term sustainable growth. Trade is expected to foster growth as far as it leads to an efficient use of resources. Trade barriers typically shelter domestic producers from the international market. Although this may be advantageous for protected sectors, it is unlikely to induce an efficient allocation of resources in the whole economy. Trade liberalisation, in contrast, encourages an efficient exploitation of resources which in turns may trigger economic growth. Equally, access to foreign technologies and inputs provides developing countries with the opportunity of using and applying the results of R&D in foreign countries. The empirical evidence supports this prediction that trade leads to faster growth. In contrast, several studies, particularly conducted during the Eighties and the Nineties, provide robust evidence of how protectionist strategies, like import substituting industrialisation, have proven to be unsustainable in the longer term and not a viable shortcut to prosperity.

Lesson 4. However, trade openness in itself is not always a sufficient condition to achieve faster growth. It needs to be coupled with other policies, like macroeconomic stability and institutional reforms. There is consensus that openness provides a necessary environment for economic growth, but the experience of many countries which reduced their barriers to trade in the last two decades, is controversial. For most this has resulted in higher growth and improved economic performance, while for others there has been only a limited supply response and disappointing results. Whereas the trade and development literature of the 1960s and 1970s contended that "getting prices right" would result in improved economic performance, it is now recognized that these reforms are necessary but not sufficient to generate growth. Other conditions, like macro-economic stability, policy credibility, enforcement of contracts and (under very specific conditions) some targeted interventions are also fundamental (Panagariya, 2004). It is therefore very important to understand under which conditions a country can reap the benefits of trade and what measures are needed to make sure that these conditions are actually in place.

Lesson 5. Trade openness, particularly through its effects on growth, has been effective in reducing absolute poverty. Trade has also effects on poverty. Part of the story is related to growth and how far it trickles down to the poor. That growth alleviates poverty is a robust empirical

regularity, little disputed in the literature (World Bank, 2002). In fact, it is rare that growth is so biased against the poor to increase absolute poverty. The poor can also benefit from a favourable reallocation of resources induced by trade liberalisation. Many poor rural households in developing countries would likely benefit from a reduction of trade barriers in agriculture. Or, poor urban household would gain from increased access to cheaper imported consumer goods.

Lesson 6. Trade openness may instead have ambiguous effects on income distribution. Trade liberalisation engenders important redistributive effects, leaving behind winners and losers. For example, if trade is liberalised in import competing sectors and consequently prices decline, producers will be worse off and consumers better off. Therefore, even when the net effect is positive, some people may take losses, and these could possibly be concentrated among the poor. For this reason, trade liberalisation should be coupled with safety nets protecting the more exposed and weaker components of society.

Lesson 7. Country studies show that there are different models of successful trade liberalisation Countries which have successfully liberalised trade and achieved rewarding growth rates have followed different strategies based on different mix of ingredients: exchange rate management (e.g Chile); reduction of trade barriers like tariffs and non tariff barriers (Chile, Singapore, Hong Kong); introduction of export processing zones (e.g. Mauritius); targeted interventions to support the export industry (e.g. Korea)

In the first part of this chapter we develop an analytical framework to discuss the channels linking trade openness to growth and poverty. We then look at the empirical evidence. The evidence can be organised under two broad headings: cross country studies and country specific studies. The former examines if countries that have liberalised trade have performed better than those which have not. Cross country evidence provides a useful broad picture, but no insights on specific policy measures or on the microeconomic effects of liberalisation. These will then be discussed by reviewing a few country studies.

The theoretical and empirical arguments are organised so as to support the lessons spelt out above. The lessons are restated, whenever appropriate in the theoretical and empirical sections, and indexed progressively with capital letters (e.g. lesson 1A, lesson 1B) when there is more than one argument supporting them and these are spread in different part of the text (e.g. theoretical and empirical arguments).

1. Trade openness growth and poverty: analytical framework

Key question: which are the channels through which trade affects growth and poverty?

Lesson 1. *The first channel through which trade affects growth and poverty is a reallocation of resources*

Lesson 2. *The second channel through which trade affects the economic activities of a given economy is towards improved access to foreign technologies and resources.*

We can identify two channels through which trade affects growth and poverty. The *first* one is that relative product and factor prices are different under free trade than under autarky. Start with a country very protected from international trade. The government decides to liberalise trade. How can it do it? Essentially, by lifting those earlier measures which were keeping the economy isolated from international trade. As argued in module 1 all these measures have directly or indirectly to do with prices: high tariffs, a misaligned exchange rate, quantitative restrictions (which under given circumstances are equivalent to tariffs). In turn, these changes in relative prices affect the supply and demand of goods and factors of production, which produce further changes in relative prices.

Consequently, under the two regimes the allocation of resources is different, factors are used in different combinations and products are different. The most widely known analytical framework to study the effect of trade on the allocation of resources according to comparative advantage (to what countries can do relatively more cheaply then other countries) is the Hecksher-Olin model, which is described in Appendix 1. We will see how this reallocation of resources can have effects on the efficiency of the economy and thus on its long term growth prospects.

The *second* channel of transmission is that with trade an economy has access to bigger markets and new inputs, like capital and technologies. With bigger markets, if there are increasing economies of scale, it can produce at lower costs, use fewer resources for unit of output and grow faster. With additional factors of production than those available at home, with new and more productive technologies it can also raise efficiency and grow faster.

In what follows we examine how reallocation of resources and access to new product and factor markets affects growth, poverty and income distribution.

1.1 Economic growth

*Key question: what does **theory** predict on the effects of trade openness on growth?*

Lesson 3A. ***Theory*** *predicts that trade openness provides a conducive environment and a necessary condition for faster long term growth.*

The *reallocation of resources* induced by trade may have effects on economic growth. Trade barriers typically shelter domestic producers from the international market. Although this may be

advantageous for protected sectors, it is unlikely to induce an efficient allocation of resources in the whole economy. Trade liberalisation, in contrast, encourages an efficient exploitation of resources which in turns may trigger economic growth.

However, to understand the full effect of trade on economic growth we should not just consider the first reaction of the economy to a shock in relative prices following trade reforms. We should examine also *whether growth can be sustained in the long term.* Several studies explain the long run mechanisms relating openness to growth and analyse growth as a self-enhancing process (endogenous growth models). Trade integration may favour economic growth by changing the incentives and the opportunities to invest, to produce a larger number of varieties, to specialise in goods with a high potential for technological learning and innovation. (Romer, 1989, Young, 1991, Grossman and Helpman,1991).

One important process is the *transfer of technologies* or other types of innovative knowledge (managerial practices) which have been developed in a given country. These can be exported to and used in other countries if there is free trade. Transfer of technology can take place in several ways: spillovers or externalities (reverse engineering on imported components, product characteristics or designs observed in export markets etc.); transfer of technologies embodied in machines or components; training between suppliers and customers. Under free trade and if there were no protection of property rights, knowledge can be seen as an international "public good", available at no cost to multiple users. A new discovery carried out in a particular country adds to the public stock of knowledge, and all other countries can take advantage of it, therefore enhancing collective growth opportunities.

Technologies can spread internationally also through Foreign Direct Investment (FDI). More generally, a flow of foreign direct investment into a country brings new business practices and other effects in domestic companies, which may affect their productivity and growth (Hejazi and Safarian, 1999). There is widespread evidence that trade liberalisation favours the diffusion of FDI, thereby enhancing their role as conveyors of foreign technologies and business practices (see Module 15 on this).

***Lesson 4A**. However, **theory,** also predicts that trade openness in itself may not always be a sufficient condition to achieve faster growth.*

Although trade openness is a necessary condition for faster growth, several contributions in the literature help explaining why the relationship between trade and growth can be controversial and why some countries fail to exploit trade to converge towards higher levels of income per capita. The development process in some countries may fail due to 'poverty traps', in which slow growth

and poor initial conditions sustain each other. For example, trade could induce countries to specialise in products like primary commodities with little potential for enhancing productivity and growth (Young, 1991, Grossman and Helpman, 1991).

Also, new developments in the theory of international trade show that in addition to comparative advantage (according to which each country specialises in what it can do better than others - see appendix 1 below), the roles of geography and investment flows are extremely important. According to these theories, different forces interact in a complex way to determine patterns of agglomeration or dispersion of economic activities, leading to spatial inequalities. In this framework some activities will cluster in few locations, where there is a sufficient 'critical mass' of infrastructure, human capital , technological knowledge etc. When a country opens up to world trade it is initially hard to attract these activities.

Finally, an economy could be affected by distortions or intrusive factors that could make trade policy totally irrelevant. For example, labour market rigidities or an inefficient financial sector may hinder the process of adjustment and reallocation of resources which is necessary for trade liberalisation to speed up the rate of growth. A non conducive investment climate or a distorted macroeconomic framework leading to financial instability and, even more, corruption, wars and political unrest discourage new investments in tradable activities. Under these circumstances trade policy is little effective in changing the incentive framework.

The bottom line is that countries are expected to grow faster with trade, but in many circumstances other measures are necessary to make sure that they are able to exploit all the advantages and the opportunities offered by open economies. For example it is extremely important that countries have stable macroeconomic policies and a clear legislative framework to attract much needed foreign investments. Or the experience of many successful liberalisers shows that a coordinated policy package is often necessary to create sufficient momentum for a 'big push', in which industrialization and technological upgrading become self-sustaining

1.2 Poverty and income distribution

*Key question: what does **theory** predict on the effects of trade openness on poverty and income distribution?*

***Lesson 5A. Theory** predicts that trade openness can reduce average absolute poverty.*

The first link between trade and poverty is an indirect one, through growth of income per capita. If trade enhances growth, does it also implicitly reduce poverty? This partly depends on the relationship between growth and poverty. It is indeed likely that all households living in a country,

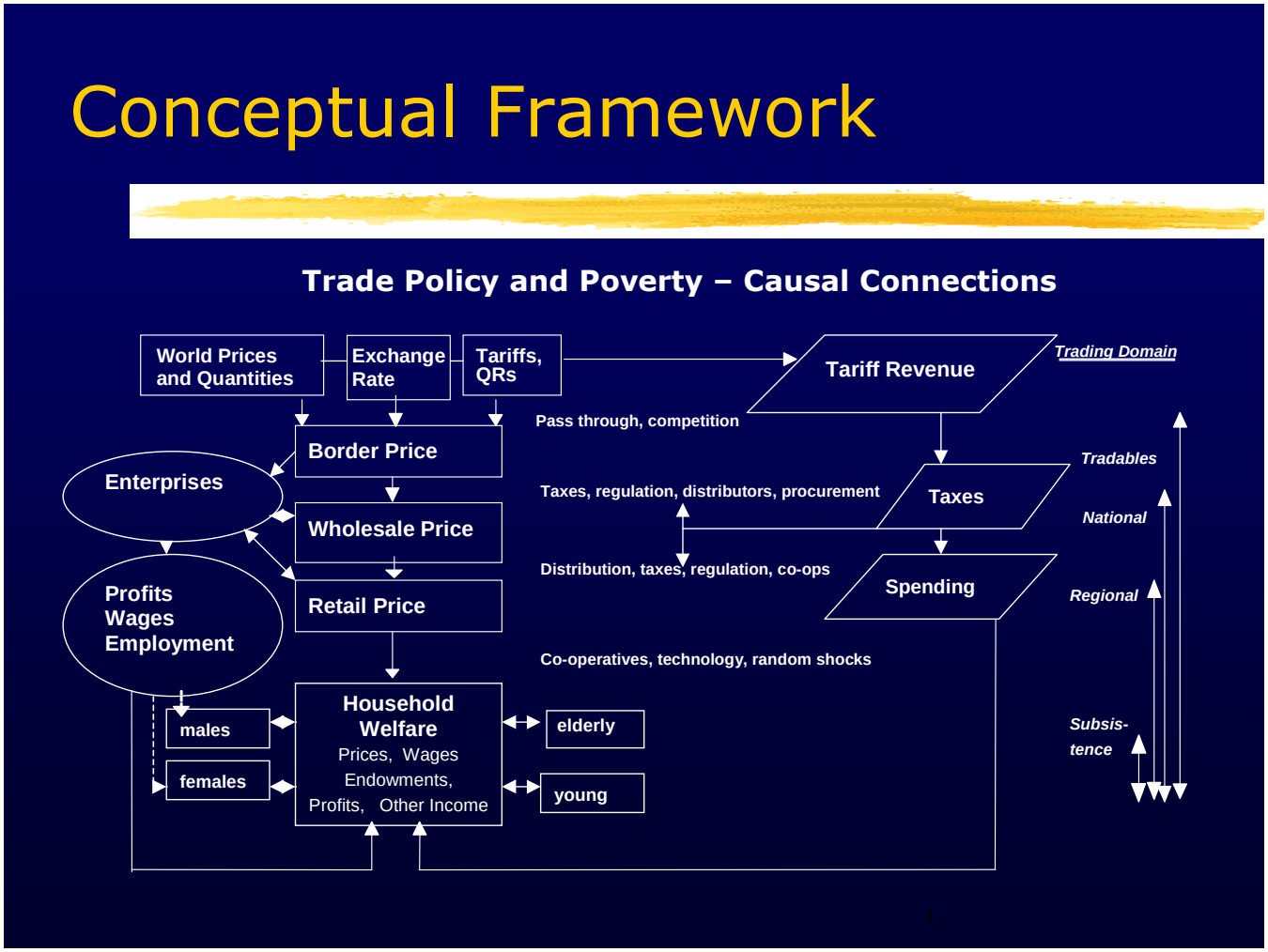
richer and poorer, get better off if the country exhibits a sustained growth rate., although the speed of poverty reduction depends on how increasing wealth is distributed among individuals (or households).

Not all the opportunities of poverty alleviation arising from trade openness are linked to economic growth. There are other possible channels through which openness may improve the welfare conditions of the poor. The Hecksher-Olin model and the Stolper Samuelson theorem described in Appendix 1 show that trade reforms induce changes in the relative demands and prices of goods and factors and these changes are not equally distributed across people in a given country. What can we say, more specifically, about the poor? Do they take advantage from this process of reallocation of resources? Yes, under many circumstances. If exported products are produced by poor urban workers, or poor rural workers, then liberalisation helps reducing poverty, as the wages of the poor will rise. Similarly, if the poor are also intensive consumers of imported products, say clothes, they gain from liberalisation as the consumer prices they face decline. Thus, as far as a sufficiently large share of the poor benefit from the reallocation process, then average absolute poverty will decline. However, the poor can find themselves on the wrong side of the reallocation process, for example as workers in import competing industries and loose out from liberalisation. Therefore, although the net effect on absolute poverty is positive, some people may take losses and, if these are concentrated among the poor, income distribution worsens.

***Lesson 6A**. However, **theory** also predicts that the reallocation of resources induced by trade openness may instead have controversial effects on income distribution, especially in the short term.*

The problem can be especially harsh if the adjustment process is slow. Consumers may be unable to find cheaper substitutes to products the price of which rises because of export demand. Equally, producers may not be able to move towards the production of more profitable goods, because they are unable to use the required technology; workers laid off from import competing firms might not find alternative jobs in the export sector, because they are not qualified or because they are unable to move where the export sector is located. Thus, the effect of liberalisation crucially rests on how low income households are able to adjust to the new set of prices and incentives generated by trade reforms. For these reasons it is essential that growth rapidly bites in to offset these likely adjustment costs.

Figure 1.1 The microeconomic links between trade policy and poverty



Source: Adapted from McCulloch, Winters and Cirera (2001)

To understand how changes in relative prices may affect poor households and the types of obstacles to adjustment which are likely to arise, it is useful to follow a framework defined in Winters (2000a and b) and in Winters, Mc Culloch and Cirera (2001). This framework is summarised in Figure 1.1. Let us briefly follow this very simple framework

Household members are at the same time producers (as employed or independent workers – owners of business) and consumers and they interact with governments as tax payers or beneficiaries of social services. Their welfare depends on their income, which can be made of wages, capital income and free services from the government, on the price they have to pay for the goods and the services they consume and on the taxes they have to pay. Changes in trade policies translate in relative changes in the price of imported and exported products (top left of figure 1).

These changes in prices are transmitted to enterprises, to consumers (downward in figure 1) and to the activities of the government (rightward in figure 1) and therefore affect all components of households' welfare. Members of poor households could be either employees or owners of the enterprise. If firms suffers from foreign competition, profits and wages decline, workers can be laid off and the firm even close down. If the firm is in the export sector it could then thrive and the opposite happens. Of course, poor household badly hit by the liberalisation will suffer less if they can easily adjust by finding a new job or opening a new activity in the export sector. For this reason adjustment is a fundamental component linking trade to poverty. Also, safety nets compensating the costs of adjustment are essential in preserving the income of the poor.

As for consumption, poor households will be better off if the prices of the goods and services they use decline because import tariffs are reduced and quantitative restrictions lifted. But these reductions in border prices will never reach poor consumers if the wholesale distribution of these products is not competitive or regulated. Lower border prices will translate in higher profits for wholesalers and consumer prices faced by the poor will remain unchanged.

Finally, a reduction in tariffs also reduces governments' revenues. This is an important source of revenue in developing countries, where the tax base for income taxes is very narrow. Governments will then face the option of raising taxes and/or reducing public expenditure (even if they can increase their deficit in the short term). The way in which these measures will impact on the poor, depends on how tax increases are distributed among income brackets and on whether expenditure is reduced for services that especially cater to the needs of poor households.

It is easy to understand how all these effects are very country specific and why trade policies need to be supplemented by a range of other policies if the benefits of liberalisation are to trickle down to the poor(see Winters 2002 for a detailed analysis of these policies). However, it should also be clear that these adjustment costs are normally short term and likely to be offset in the longer term by faster growth.

We now move to the empirical evidence.

2. Cross-country evidence.

This section focuses on cross country evidence. This includes empirical works which compare, within a unified framework, several countries according to their degree of openness to trade. These works study if openness affects some measure of performance (growth, absolute poverty, income distribution) (Dollar, 1992, Levine and Renelt 1992, Edwards 1993, Sachs and Warner 1995, Frankel and Romer, 1999, Baldwin and Spergami, 2000, World Bank, 2001 and Irwin

and Tervio 2002, Wacziarg and Welch, 2003). Although cross-country comparisons are fraught with technical problems and it is not always easy to reach firm conclusions on the causal relationship between openness and performance, they allow for a first hand comprehensive way of comparing the different experiences of several countries (Rodriguez and Rodrik, 2000).

In what follows we review the main results of this literature. We first discuss the relationship between trade and growth and then between trade and poverty.

2.1. Does openness affect growth?

Key question: what are the effects of trade openness on growth according to cross-country evidence?

***Lesson 3B**. According to **cross country evidence,** trade openness is associated to faster growth. There is no evidence of sustainable development miracles without export expansion and integration into world markets. Several contributions also find evidence that trade openness has a positive causal effect on growth. There is no evidence of the contrary, that protection and trade barriers favour long term sustainable growth.*

Average growth rates vary widely across countries and periods of time. Table 2.1 reports annual average growth rates in real GDP for 109 countries considered during two periods, from 1960 to 1980 and from 1980 to 1998. These countries are then grouped according to their level of income: rich countries (19), middle income countries (35) and poor countries (55).

Table 2.1 – Per capita real GDP average growth rates

	1960-1980	**1980-1998**
All countries	2.5%	1%
Rich countries	2.7%	1.5%
Middle income countries	3.2%	1.3%
Poor countries	2.1%	0.6%

Source: Dowrick ad DeLong (2003)

We observe a slower growth in the most recent years and for poor countries. There are many candidate factors explaining why growth rates were different for the three subsets of countries considered and we want to know if openness to trade is one of these. The simplest way to get about this issue is to contrast average growth rates of relatively closed and open countries. According to Dowrick and DeLong (2003), the 55 poorest countries of Table 1 are also the least open according to different measures of openness (see the Appendix for more details on the way openness can be

measured). However, table 2.2 provides more direct support to this view. Lindert and Williamson (2003) report average growth rates for 41 less developed countries, classified into four groups according to their level of openness between 1963 and 1992. Countries strongly or moderately open to trade have been going faster than the remaining two more protectionist groups.

Table 2.2 – Trade policy orientation and annual growth rate of GDP in less developed countries (1963-1992)

	1963-1973	1973-1985	1980-1992
Strongly open to trade	6.9%	5.9%	6.4%
Moderately open	4.9%	1.6%	2.3%
Moderately anti-trade	4.0%	1.7%	-0.2%
Strongly anti-trade	1.6%	-0.1%	-0.4%

Source: Lindert and Williamson (2003). From World Bank (1987 and 1994);

This descriptive statistics are suggestive and confirm the positive association between openness and growth. However, nothing can be inferred on the causal link between trade and growth. The first important problem is that it is almost impossible to define comparable and comprehensive measures of openness across countries and time. In the appendix we examine the alternative measures used in the literature and their implications. The second problem is that one cannot easily isolate trade reforms from other reforms which are normally associated to them and which may equally affect performance. Often countries simultaneously liberalise international trade and other domestic markets for factors, products and services.

A step forward in trying to establish the nature of this relationship is to use multivariate econometric analysis. In simple words, this type of analysis relates growth to openness and to a set of other features (other policies and characteristics) of the country that can also influence the rate of growth. Several studies carried out in the Nineties estimated this relationship for different groups of countries and by using various measures of openness (Levine and Renelt 1992, Edwards 1993, Sachs and Warner 1995, Frankel and Romer, 1999). These studies support the view that trade openness has indeed a positive effect on growth and became very influential. However, they have been questioned on methodological grounds in Rodriguez and Rodrick (2000), with reference to both the estimation methods and the indicators of trade policy used. These authors argue that this type of empirical evidence is far from conclusive. The counter reaction to Rodriguez and Rodrik (2000) 's critique has taken several directions and has focussed the whole debate more clearly.

The *first* reaction has been to improve cross country analysis by taking into account the methodological issues raised by Rodriguez and Rodrik. For example, Wacziarg and Welch (2002) work on a panel data set (combining observation across time and across country). This type of data allow them to observe also the within country effects of changes in trade policy, in other words, whether countries grow faster after they liberalise trade. They find compelling evidence that this is the case.

The *second* reaction is to note that if cross country evidence is to be rejected, we cannot prove the opposite effect either, i.e. that trade liberalization harms growth. Rather there is not even descriptive evidence of this link. Lindert and Williamson, 2003, note that the methodological 'doubts that each individual study might raise threaten to block our view of the overall forest of evidence' p. 252. They argue that one way of looking at the problem is to consider two sets of studies: one including studies showing that protection helps and trade liberalisation harms third world economic growth; another one including countries which were more closed to trade and factor flows in the Nineties than in the Sixties and rose in the global living standard ranks. Now, the first set is almost empty and the second one completely empty.

In other words, even if the evidence that trade has positive effects on growth can be questioned on methodological and other grounds, there is no competing evidence supporting the alternative scenario, i.e. that protection favours economic growth in the longer term. In contrast, several studies, particularly conducted during the Eighties and the Nineties, provide robust evidence of how protectionist strategies, like import substituting industrialisation, have proven to be unsustainable in the longer term and not a viable shortcut to prosperity (see de Melo and Grether, 2001 for a survey of this evidence).

2.2. Does openness affect convergence of income?

Key question: does trade affect growth more in poor than in rich countries and therefore favours the convergence of the poor to high levels of income?

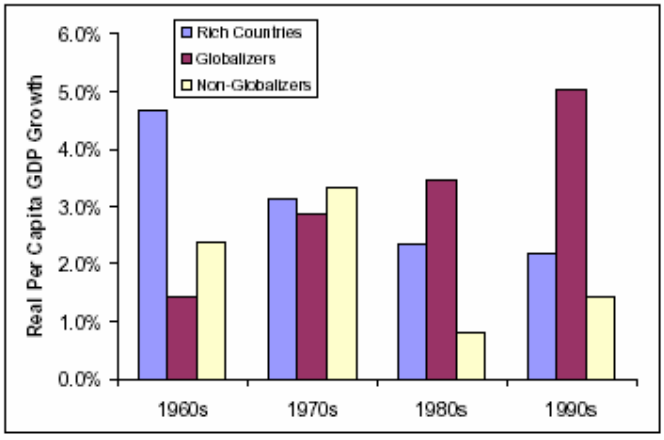
Lesson 3 C: *According to* ***cross country analysis,*** *those developing countries that managed to grow faster than rich countries and to converge to their income level are open to trade*

Up to now we have questioned whether trade policy affects growth. Yet another question is whether it affects growth more in poor than in rich countries. This is of course essential for low

income countries to acquire income levels close to those of the advanced economies. This catching up process is normally defined as convergence, which implies that poor countries grow much faster than rich ones. If we look at convergence per se, poor countries have lagged behind compared with both middle income and rich countries, even if they had positive rates of growth. In other words, even if poor countries have turned richer on average, in relative terms they became poorer than nearly forty years ago, as their distance from rich countries widened instead of narrowing down.

What is the role of trade in this process. If, as we have seen above, openness affects growth, what is its impact on convergence? Does it help poor countries to grow faster than rich ones? Again, as an initial step it is useful to consider average trends by comparing groups of countries classified according to their level of openness. Here, though, the picture is slightly more complex than in the previous section as we need to take into account three dimension, not two as before: growth of income, openness and the initial level of income. To this purpose, Dollar and Kraay (2000) divide countries into three groups: the rich countries that since the second world war can all be assumed to be open to trade; developing countries which *have* adopted open trade policies after 1980 (globalizers); developing countries which *have not* adopted open trade policies after 1980 (non-globalizers). Around 1980 many previously protected developing countries liberalised trade. The threshold between globalizers and non globalizers is based on the ratio of the sum of exports and imports over GDP. Figure 2.1 reports information on average annual growth per head from the 60s to the 90s in these three groups of countries.

Figure 2.1 - Real per capita GDP growth



Source: Dollar and Kraay (2001)

It can be observed that in the 60s the rich countries grew at higher rates than developing countries (both groups of developing countries being non globalized at that time). The 70s have been years when growth rates were similar across countries. In contrast, in the 80s and 90s the

group of post-1980 globalizers grew increasingly rapidly, much more than both the rich and the non globalizer countries.

This figure sheds new light on the already mentioned divergence between countries. It is true that poorer countries grew at lower rates, but not all of them did: those that opened their economies to international trade after the 1980s grew more than rich countries, thus they actually started to converge towards the income levels of the rich ones. These results are not surprising, when we think at the average growth rates of champions of trade liberalisation like China and East Asian countries like Korea, Taiwan or Singapore.

That countries converging to high income levels are also open to trade is also supported by the historical experience and long term patterns. As argued by Dowrick and DeLong (2003) and other commentators, countries have not been converging to a common attractor, but, rather, they have been moving in 'clubs', with groups lagging persistently behind. Membership of the convergence club has been generally associated with the adoption of open trade policies. It has also varied with time. After the second world war, new members like China or Korea entered the club and others, like several Latin American countries, left it. Exits and entries have been generally related to changes in the trade policy stance (although also other factors mattered).

***Lesson 4B**. According to **cross country evidence,** although trade openness is conducive to faster growth, in itself it is not always a sufficient condition to achieve faster growth and convergence of income levels.*

If countries belonging to the convergence club clearly share openness to trade as a common characteristic, the opposite is not necessarily true: openness to trade does not automatically generate convergence between countries: both at the beginning of the XX century and after the second world war, some countries open to trade failed to join the convergence club. This confirms the theoretical prediction that trade is a necessary condition for growth and convergence, but not always a sufficient one. Often other factors and accompanying policies are necessary to boost growth patterns. Box 1 below provides a brief outline of policies aimed at enhancing the competitiveness of an open economy.

Box 1. Government Policies for Competitiveness in a Global Economy by David G. Tarr

What reforms, policies or instruments should be employed to best achieve a reoriented restructured globally competitive industrial structure? We provide guidance on these questions based on general surveys of the experience of developing countries with industrial restructuring (see Leiberman, 1990; Atiyas, Dutz, Frischtak and Hadjimichael, 1992; Westphal, 1990; Krugman, 1989 and 1992).

The general principle is that it is crucial for the government to provide a stable macroeconomic environment conducive to business development with a clear, transparent and neutral regulatory environment and neutral incentives to all firms and industries. Clear, transparent and neutral incentives (those which do not distinguish by sector or firm) are crucial so that entrepreneurial innovation is rewarded more highly than rent-seeking activities. The economy must provide its most talented members with the incentive to engage in entrepreneurial activities such as starting or expanding firms, developing new products and lowering costs. If the economy provides extensive subsidies or tax exemptions to industries or firms, or presents a difficult regulatory framework within which to do business, corruption will be encouraged and, crucially, talented people will find it more profitable to engage in the socially wasteful activity of lobbying the government for subsidies, protection, tax or regulatory relief (see Murphy, Shleifer and Vishny,1991). This socially wasteful lobbying is especially harmful because it attracts scarce entrepreneurial talent that would otherwise be devoted to helping the economy grow.

Targeting particular industries for special assistance involves a number of risks that are potentially very costly. First, there is the risk that the wrong industries will be identified. The market is a more reliable indicator of the industries that have comparative advantage than any economic model or theory. Over time this is particularly true, as comparative advantage changes with technological development. Moreover, targeting industries as "winners" will generate rent-seeking where industries will spend resources to obtain government subsidies rather than attempting to compete more effectively on the market. Governments often find it difficult to resist these pressures. And assistance that is designed to be temporary may become permanent. Thus, experience in most countries has shown that a government policy of attempting to "pick winners" is highly counterproductive. Endorsement of a more general approach to industry development--with little differentiation in the level of assistance among industries-- thus emanates from a wider skepticism about the practical merits of *targeting* of any kind, see Westphal (1990) and Krugman (1989, 1992).

As a positive policy agenda for establishing industry competitiveness, there is much for the government to do:

1 **Sound Macroeconomic Policies**

This includes avoiding overvalued exchange rates, which discourage exports and make import competing sectors vulnerable. Fiscal deficits should be avoided in part because they crowd out private investment, and because they lead to inflation that makes price signals less transparent.

2. **Provide a neutral, transparent regulatory regime that is neither pervasive nor costly**

Regulatory, tax and licensing regimes that are pervasive, frequently changed and not transparent should be avoided since they encourage rent-seeking for regulatory relief.

3. **Provide Sound Competition Policies**

This includes first and foremost an open trade regime such that firms produce according to comparative advantage and are forced to compete. Moreover, export growth has been crucial to all recent development miracles, and import protection imposes an implicit tax on exporters. Constraints on foreign investment, including restraints on repatriation of profits and royalties, as well as inadequate protection of intellectual property, limit access to state of the art production technology and to marketing networks. Barriers to entry and exit (including licensing of capacity expansion and limits on firm size), as well as discretionary subsidies, prevent industrial development and constrain the ability to respond to new competition. Complex licensing requirements often exclude small firms for whom the costs of dealing with the bureaucracy are excessive. Protection of state-owned monopolies, including special pricing arrangements, subsidies and credits, reduces the incentive to the state-owned enterprise to restructure and inhibits competition from new more efficient competitors (who are often private and often an effective means of privatizing the industry). Price controls prevent the transmission of market signals to firms, and should be avoided.

4. **Develop Sound Labor Market Policies**

Policies which facilitate labor mobility are crucial in effective restructuring. Estimates have shown that labor adjustment costs are often larger where labor adjustment is restricted (Leiberman, p. 7). Therefore layoffs should not be restricted or penalized by law. Strong unions sometimes act as an important barrier to effective labor mobility. Retraining programs may play a useful role in facilitating labor mobility, but need to be demand driven.

5. **Adequate Infrastructure**

Inadequate or inefficient infrastructure in ports, roads, telecommunications, water and electricity can hinder industrial competitiveness. At the same time, costly public projects in these areas will increase the fiscal burden, crowd out private investment and similarly hinder industrial competitiveness. Infrastructure projects should therefore target bottleneck areas for efficiency and attempt innovative financing and participation solutions that involve the private sector.

Technical assistance in the form of information and marketing, technology transfer and training programs may also be useful. These programs would include those that help firms develop an effective export marketing strategy, that focus on adopting foreign technology to local conditions and that are designed to develop a flexible labor force. Industry associations and efficient banks are likely to be the best agents for identifying and arranging appropriate technical assistance.

2. 3. Does openness affect absolute poverty?

Key question: what is the effect of trade openness on absolute poverty?

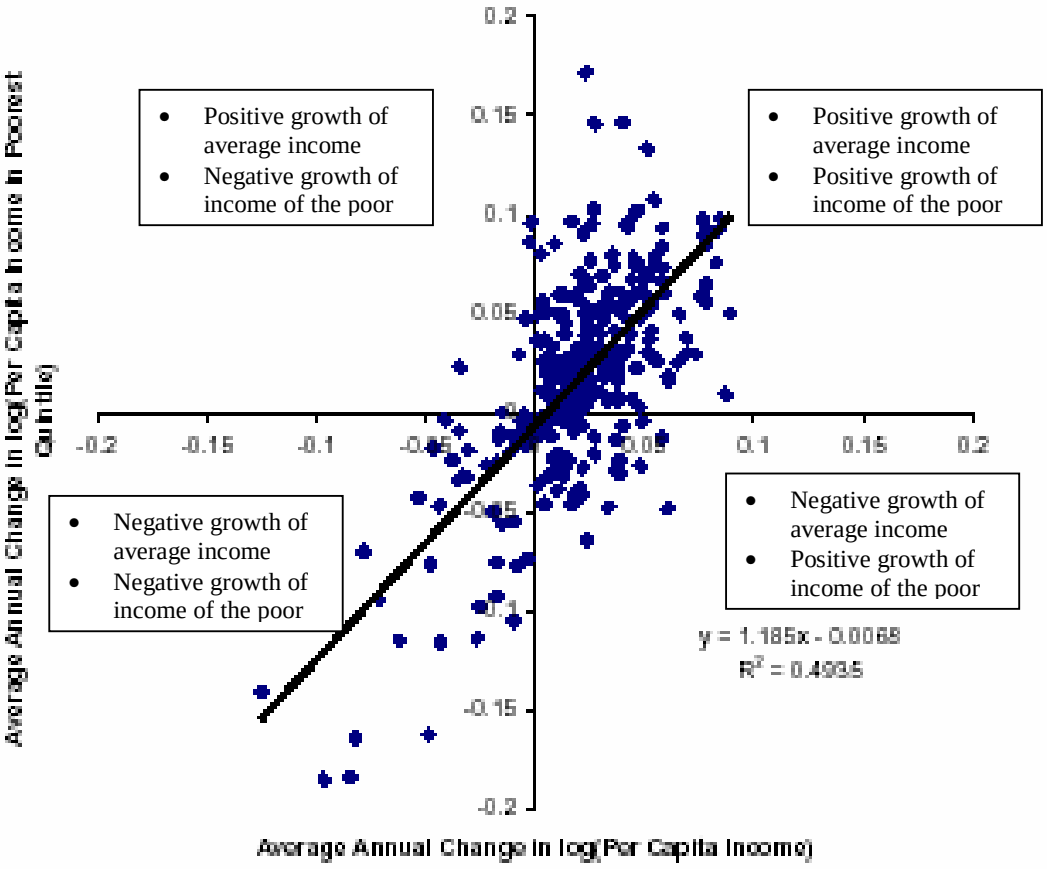
Lesson 5B. *In countries open to trade, growth has a positive effect on absolute poverty.*

Up to now we have discussed the link between openness and growth (in absolute and relative terms), but not yet the one between openness and poverty. This effect is partly mediated by growth, so we should initially consider the relationship between growth and poverty *in open economies.* If a country grows as a consequence of its increasing international trade, this effect may be beneficial for all its inhabitants, richer and poorer. However, some inhabitants may benefit more than others. Therefore, the question of whether growth in open economies is beneficial to the poor – can be divided into two more questions, one pertaining to the relationship between growth and absolute poverty, and the other one to the relationship between growth and relative poverty, income distribution.

To better gauge the different relationship of growth with absolute and relative poverty, let us focus on Figure 2.2, derived from Dollar and Kraay (2000), which relates for a sample of 92 countries *open to international trade* the average growth rates of per capita income (on the vertical axis) and the average growth rates of per capita income of the poorest fifth of their population (on the horizontal axis) in the 1990s. Each dot represents a country. Dots above the horizontal axis are countries with a positive average rate of growth in the period analysed, otherwise with a negative one. Dots on the right hand side of the vertical axis are countries with a positive rate of growth of the income per capita of the poorest households, otherwise with a negative one. *All countries*

included in this sample are open economies. With reference to figure 2.1, the sample includes rich countries and developing countries classified as globalisers.

Figure 2.2 – Open Economies:
Average Per Capita Income Growth of Total Population and of the Poorest Quintile



Source: Dollar and Kraay (2000)

Let us focus on absolute poverty first. Take dots on the left hand side, those countries for which absolute poverty worsened. Notice that most of these dots are in the bottom left quadrant of the diagram, i.e. below the horizontal line. Therefore, absolute poverty worsened mostly in countries with a negative average rate of growth. In the top left quadrant there are only two or three dots: in almost no country with a positive average rate of growth absolute poverty worsened. In contrast virtually all countries with a positive rate of growth (dots above the horizontal line) are in the top right quadrant, thus income per capita of the poor also grew. This confirms what argued earlier, that rarely growth in open economies is so biased against the poor that absolute poverty increases. We will complete the discussion of figure 2.2 below when taking up the issue of income distribution.

Lesson 5C *The largest reductions in absolute poverty in the last twenty years have occurred in countries open to trade.*

We have argued in the analytical framework that, besides for growth, there are several channels through which openness affects poverty,. Therefore we need to examine the broader relationship between openness and poverty.

One way of studying this issue is to analyse the trends in the number of people with income below a conventional level of income, a poverty line. A frequently used measure is the number of people living with less than US$1 or less per day. According to World Bank (2003) in developing countries this number fell from 1,237 millions in 1990 to 1,100 millions in 2000. In relative terms, this means that the ratio of the number of poor people on total population, fell from 28 percent to 21 percent. However there is much variation in these trends across areas. Consider Table 2.1, which reports the regional distribution of people living on less than one dollar a day, in absolute terms and in percentage of the total population in the region. Trends are very different across regions. Most of the decline took place in China, in the rest of East Asia and in South Asia. In the other regions the number of poor people increased, also relatively to total population. In Latin America, Sub-Saharan Africa, Middle East and North Africa the poverty rates did not change in a significant way, whereas in Europe and Central Asia (mostly economies in transition from socialism to market) the poverty rates increased.

Table 2.1 – Population living below US$1 per day in developing countries

	Number of people below US$1 a day (millions)		**Poverty rate (%)**	
	1990	**2000 (estimate)**	**1990**	**2000 (estimate)**
East Asia	470	261	29.4	14.5
Excluding China	110	57	24.1	10.6
South Asia	466	432	41.5	31.9
Sub-Saharian Africa	241	323	47.4	49
Latin America	48	56	11	10.8
Middle East/ North Africa	5	8	2.1	2.8
Europe/Central Asia	6	24	1.4	4.2
Total	1237	1100	28.3	21.6

Source: World bank. Global Economic Prospects 2004. (2003).

It is quite undisputable that the poverty decline in China and in East Asia has to large extent been driven by their successful export strategies and by their remarkable growth rates. The World Bank in its Global Economic Prospects 2004 carries out simulations and estimates that a further liberalisation of trade both in developing and in advance countries can potentially entice a radical reduction in the number of poor people. We should however also notice that other countries that have liberalised trade in the Nineties, like the transition economies in Eastern and Central Europe have witnessed an increase in the poverty rate.. This increase in poverty, however, cannot be attributed to trade itself but rather to the difficult transition process from a command to a market economy.

There are little econometric studies relating trade policy and poverty in a multivariate framework. A recent attempt is a study by Agénor (2002), which tests whether globalisation, captured by an index encompassing measures of financial and trade openness, had any effect on the poverty rate in 57 developing countries from the early 80s to the late 90s. The main result of this study is that the relation between globalisation and the poverty rate has a U-shaped form. When countries are only slightly open to international trade and financial flows, then increasing globalisation is found to hurt the poor; when countries are strong globalisers, then the number of poor people decreases as the globalisation index increases.

One possible explanation of this 'non-linear' relationship between globalisation and poverty, is that a full integration in international markets requires further reforms concerning other aspects of national and international economic activities, like regulatory reforms, the liberalisation of labour and financial markets and so on. Many of these policies often come along with the liberalisation of trade and they may not be implemented if the opening up to world market is limited.

2. 4. Does openness affect income inequality?

Key question: what is the effect of trade openness on income distribution?

Lesson 6B. *In countries open to trade, growth does not worsen average income distribution.*

Let us now focus on relative poverty, income distribution. Consider again Figure 2.2. The upward sloping straight line reports the average association between the two growth rates found for all the sample countries. The slope of the straight line is close to the 45 degree line, meaning that, on average, income of the poorest households grew at the same pace than average income of the country. In other words, if in a particular country the poorest households grew as much as the rest of the economy (i.e. growth is equally distributed), then such country should lie somewhere on the 45

degree line (which joins all points with equal values on the horizontal and vertical axis). The fact that the fitted line (which represents the average relationship for the sample) is namely a 45 degrees line, means that on average growth is evenly distributed across the population and does not worsen income inequality. Now, this is the average relationship, but individual countries can deviate from the average. Dots below the 45 degree line represent those countries whose poorest households grew less than proportionally than the rest of the households, meaning that growth was biased *against* the poor and income inequality rose with it. In contrast, dots above the 45 degree line represent those countries whose poorest households grew more than proportionally than the rest of the households, meaning that growth was biased *in favour* of the poor and income inequality declined with it.

Summing up figure 2.2 tells us that there is a positive average relationship between the growth rate of per capita income of the poor and the growth rate of per capita income of the whole population; however, there is much variation around this average relationship. The first result allows us to reject the statement that on average trade integration leads to growing household inequality – remember all countries in the sample are open to trade. However, the second result may suggest that this could happen in some cases (all cases below the 45 degree line). Consider three examples of developing countries that globalised their economies in the last two decades and find three opposite stories of what happened to inequality. In China income inequality increased, despite the dramatic decline of absolute poverty. In the Philippines income distribution has been stable (it lies on the 45 degree line). In Mexico, inequality increased in the 80s and fell in the 90s.

Lesson 6 C *However,* ***cross country evidence*** *is not conclusive on the broad effects of trade on inequality*

Dollar and Kraay (2001) attempt to isolate the relationship between openness and inequality from other factors – like growth- affecting income distribution. They find that, besides for its indirect effect through growth, in broad terms openness is not associated to inequality. Also careful econometric studies assessing this link do not find that trade openness affect significantly inequality (Bourguignon and Morrison, 1990, Edwards, 1997, Dollar and Kraay, 2002)

According to Ravallion (2003) it is quite understandable that cross- country studies fail to find any effect of openness on inequality. This, in fact, is heavily dependent on different country specific factors that cannot be controlled for in cross country regressions: the initial income level, the initial inequalities in incomes, educational attainments, geographic and other non-income characteristics. Also, results change a

lot depending on the alternative measures of openness (such as average tariff rates or capital controls) and inequality (such as the Gini coefficient of income distribution) used. Therefore, once more, country studies are important to understand how trade interacts with other factors in determining inequality outcomes.

3. Country studies

We have argued in the previous section that trade liberalisation often requires a comprehensive and broad mix of policies to induce fast growth rates. Indeed the experience of successful liberalisation, in terms of the policy mix adopted and the strategy followed, has been different in each country. Also, we have seen in the previous sections that the effects of openness on growth and poverty can be very different from country to country. Cross country analyses are helpful to provide a synthetic picture and to compare countries within a coherent framework. But their aggregate outcome is unable to capture specific links and effects taking place at the microeconomic level. In this section we therefore revert to country specific studies.

We first deal with policy strategies and discuss the case of: Mauritius, Chile and Korea. We then move to the analysis of the micro effects of trade openness. Specifically, we look at the pro-competitive effects of liberalisation in Chile and Columbia at the effect on labour market fluctuations and job insecurity in Chile Colombia and Mexico.

3.1. Policy strategies

Key question: Have countries followed different successful trade liberalisation strategies?

***Lesson 7**. Country studies show that there are different models of successful trade liberalisation*

Each country' strategy is unique in the blend of the different policy measures and institutional settings. It is therefore not possible to generalise and define an optimal strategy. There are however several patterns emerging that provide broad guidelines to group individual experiences. Here, we consider three patterns. The first one, is the experience of Mauritius, largely based on Export processing Zones (EPZ). The second one is the experience of Chile, which implemented fairly straight forward policies and where the exchange rate management played a very important role. The final one, is the well known tale of Korea, where the government liberalised trade and actively promoted exports at the same time.

3.1.1 Trade liberalization and the role of export processing zones (EPZ) (Mauritius)

We have seen in the analytical framework that trade liberalization should determine a reallocation of a country's resources towards more efficient uses. Mauritius provides a good example of how this process of reallocation of resources can be successfully accomplished. Mauritius's strategy has been heavily reliant on Export Processing Zones (EPZ).

Trade liberalisation was implemented gradually: it started in 1979 with a policy of exchange rate stabilisation (1979-83), followed by a gradual removal of non tariff barriers (1983-94) and tariff reductions and reforms (since 1994). These reforms changed drastically the degree of openness to trade of the economy. Since the mid Eighties, the volume of imports and exports grew at an average yearly rate of 8.7 percent and 5.4 percent respectively. The ratio of trade in goods to GDP rose from 70 to 100 per cent, compared to an average of 45 percent in the rest of Sub-Saharan Africa (Subramanian and Roy, 2001). During this period, GDP has been growing at an average yearly rate of 6 percent.

Economic growth has been essentially export led. Initially, the main export crop was sugar. Since trade reforms, exports have been progressively diversified: in addition to sugar, textiles and clothing, tourism and financial services. As a result, in 2001 manufacturing accounted for 75% of merchandise exports; the services sector (tourism and financial services) accounted for 74% of real GDP, while agriculture accounted for 6% only.

EPZs played an important role in fostering Mauritian exports of manufacturing products. They were created in the 70s with the aim of establishing companies able to compete in the export market. They provided hefty financial and fiscal incentives to exporters and also less stringent labour regulations (no severance allowances, flexible conditions of overtime, lower minimum wages for women etc.). Therefore exports from these areas were implicitly and explicitly subsidised. EPZs were initially a small enclave of efficient firms open to the international market which coexisted with a traditionally protected import-competing sector. They expanded with time, absorbing a large share of economic activities. Now EPZs account for 36 percent of total employment, 66 percent of total exports and 26 percent of GDP.

In 1994 a Technology Diffusion Scheme was introduced to finance the introduction of new technologies to improve design, quality and productivity of domestic manufacturing. Export led industrialisation and technological upgrading ultimately affected the remuneration of factors of production. Real wages have been growing in Mauritius faster than productivity. Domestic production has progressively become more capital-intensive, and has shifted to producing goods

with higher value-added, whereas the most labour intensive activities have been transferred to neighbouring countries.

The EPZ Act was followed by the Export Service Zone Act, in the 80s, which played an important role in the development of the service sector, particularly financial services. Financial services are now diversified into non banking offshore business activities, aircraft financing and leasing, international consultancy services, fund management and so on. The growth rate of the financial sector is currently around 9% per year.

Although the performance of Mauritius has been undoubtedly driven by trade, on the basis of several standard indicators, Mauritius kept protecting its import substitution industries and its agriculture up to the mid Nineties (Subramanian and Roy, 2001 and Rodrik, 1999). The export sector was indeed insulated from the rest of the economy. This prevented protectionist interests from gaining stance in the policy arena and exports from being hindered by the anti export bias of the import substitution policy. Also, returns in the export sector were sufficiently high anyway, to avoid resources from being diverted towards protected activities.

3.1.2. A successful strategy of export diversification and poverty reduction, or when pegging the exchange rate gets suicidal (Chile)

Chile started to liberalise trade in 1979 with a tariff reduction of 10% across industries. It had a first period of trade liberalisation (until 1982), when the Chilean industry was restructured by changing the product mix and rationalising the use of labour in production. However, to fight against the inflation which persisted from the 70s, Chile also pegged the nominal value of its currency (the peso) against the value of the dollar. The appreciating value of the peso generated an initial flow of external borrowing, followed by a sharp capital flight when confidence on the sustainability of the exchange rate fell. As there were capital controls, capital flight was mainly carried out by buying imported consumer durables. The deterioration in the terms of trade, coupled with an increasing foreign interest rate, ended up, in 1982-83, in the worst depression experience in Chile since the 30s.

The recession forced the country to rethink about its trade policy, as it was clear that currency pegging was a very painful way to fight against unbalances. Between 1982 and 1985 the protectionist stance gained momentum again: tariffs were raised up to 35 percent, allowing the currency to abandon the peg with the dollar and to depreciate by almost 60%.

However, this change in policy (tariffs instead of currency overvaluation) set a more reliable ground for future trade liberalisation. Since March 1985 tariffs started decreasing progressively. In 1991 they were reduced to 11%, and between 1989 to 1995 the exchange rate had appreciated again

by 22%. As a result of trade liberalisation, Chile diversified its exports into forestry, fishing, wines, fruits, and other agro-based products, thereby reducing its dependence from copper, its major export product. Even when the revaluation of the peso reduced the competitiveness of exports, these effects were offset by gains in productivity and changes in the product mix. Consequently Chile's average growth rate was a surprising 6.8% per year until 1999, when it was affected by the East Asian crisis. Anyway, since 1999, the country has avoided recession and has grown at a rate of 5.4% in 2000 and 3.1% in 2001.

During the 1990s Chile was also very successful in alleviating poverty. A key factor of success was a combination of increasing public spending in human capital and social protection, which increased equality in income distribution, and rigorous fiscal management, which led to macroeconomic stability and a favourable investment climate. Poverty rates decreased from 40 percent in 1987 to 17 percent in 1998 and extreme poverty rates from 13 percent in 1987 to 4 percent in 1998. Social indicators (primary education, youth literacy, infant mortality and life expectancy) also improved, reaching levels similar to those of the industrialized countries.

3.1.3. Trade liberalization and active export promotion (Korea)

Korea is probably the most studied experience of export led development miracle (for thorough accounts of this experience see Westphal and Kim, 1982, Westphal, 1990, Rodrik, 1995, Amsden, Wade). It is also quite unique: the gradual process of trade liberalisation was coupled with interventionist measures, as Korea's government mastered a successful strategy of investment coordination favouring export growth.

Initially, Korea adopted a mixed trade regime characterised by import substitution and an activist export policy. Exports in the textile, electrical machine, and small appliance industries, were triggered by financial incentives such as tax-free imports of raw materials. During the 70s this export strategy was extended to chemicals and heavy industries like transport equipment. As a result, exports increased by 45 percent a year, topping US$17.5 billion in 1980. Particularly, auto exports took off, and imported cars virtually disappeared. Price controls also eased the shift of resources from the production of domestic consumer goods to export goods.

During the second half of the 80s the government moved away from stimulating heavy industry, towards export-oriented consumer products, including electronics and high tech goods. It also carried out a further removal of trade restrictions to create a friendlier import environment, although many non-tariff barriers continued to be applied.

Explaining Korea's miracle is a controversial issue. Some authors argue that the high performance of Korea has to be ascribed strictly to its outward and market oriented policies

(Bhagwati, Krueger, Little). Others that trade liberalisation played a crucial role, but the observed high growth rate would not have been achieved if it had not been coupled with an industrial policy oriented to introduce technological change in selected industries (Westphal, Pack). A third view is ascribes Korea's success mostly to industrial policy and argues that trade openness played a more limited role than normally assumed (Amsden, Rodrik, Wade).

However, as argued by Panagaryia (2004), it is quite difficult to believe that Korea would have achieved similar growth rates if it had kept protecting its domestic market and if it had not pursued an export oriented strategy. The problem with Korea's strategy is that it is very difficult to implement. It is demanding on the government's apparatus and it requires the government to have a sufficiently clear strategy and sufficient bargaining power to force this strategy through, against all odds and conflicting interests. These conditions are rarely available in developing countries.

3.2 Microeconomic effects of trade liberalisation

Key question: what is the evidence on the microeconomic effects of trade liberalisation?

As argued, the effects of trade on firms or households, often depend on specific country conditions. It is therefore useful to report evidence on some specific micro issues. We first discuss the effect on competitiveness and market structure in the domestic market (Chile and Columbia). We then move to analyse labour market effects and employment security (Chile and Mexico)

3.2.1. Pro competitive effects at the firm level (Chile)

Lesson 3D Evidence on Chile *shows that trade liberalisation has pro-competitive effects and improves firms' efficiency*

Tybout (1996) examined the case of Chile in the first half of the 80s, when the first wave of trade reforms were carried out. He found that liberalisation had pro-competitive effects and that it enhanced the efficiency of domestic firms. He first looked at price-cost margins. He found that the lowest price-cost margins were in industries with the highest import penetration rates, thus imports had clearly a pro-competitive effect.

Tybout then analysed the patterns of entry and exit of firms in the industrial sector. Clearly, after trade reforms, the industrial sector was exposed to more import competition, thus a pressure to lower the output prices. There was initially a large number of exits and limited new entries, as the least efficient firms were expelled from the market. In the longer term, however, there was an

overall reorganisation of the industrial sector. This process had two main features. First, a large number of firms which survived from initial selection switched product lines and changed mix of products. Second, entering companies were larger than exiting companies, thus the average size of industrial firms increased. At the end of this process industry was characterised by lesser and bigger firms producing different products compared to the pre-trade reform period. The government played a role in this process, as several policies were introduced, including a debt relief scheme and a reduction in business taxes, to ease the cost of adjustment.

3.2.2.Effects on the volatility of employment (Chile and Columbia)

Lesson 5D Evidence on Chile and Colombia *shows that trade liberalisation does not necessarily increase job volatility and insecurity. The effects vary depending on the country and the type of firm*

Trade liberalization may affect the volatility of employment and job insecurity. On the negative side, domestic activities are more exposed to international shocks and because in more competitive markets firms are forced to adjust their labour demand fast in response to shocks in output, prices or factor costs. On the other and more positive hand, firms competing in international markets can grow faster and have more opportunities to diversify their risks and thus smoothen exogenous shocks. Therefore, the question of job insecurity is really an empirical one. There are two ways of analysing this problem empirically. The first one is to look at the effect of openness on entry and exits of firms; the second one is to analyse the job creation and destruction in firms that are present in the domestic economy before and after trade reforms. This latter question can be addressed by checking whether the 'elasticity' of labour demand changed. The elasticity measures the extent of the response of firms'labour demand to changes in wages.

One study dealing with this issue is Fajnzylber, Maloney and Ribeiro (2001), based on the experiences of Chile and Colombia. Survey data from Chile (1979-95) and Colombia (1977-90). They analyse both changes in employment due to entry-exit of firms and changes in the labour demand elasticity of existing firms. They find that liberalisation affects both the pattern of job creation and destruction through entry end exit and the demand elasticity of existing firms. However, the evidence is often contradictory with opposite results for the two countries. The bottom line is that both increased and decreased volatility are plausible outcomes and liberalisation can deliver both. It is important to understand which factors might actually change the direction of the effect. Findings are mixed: when Chile opened the economy to international trade, the wage-employment sensitivity increased for the entering and exiting companies, whereas it decreased for the continuing companies; an opposite effects was observed in Colombia, where the same

relationship decreased for the entering and exiting companies and increased for the continuing companies. These findings suggest that the theoretical prediction that more openness leads to higher sensitivity of employment level to wages is not consistent with the empirical evidence.

3.2.3. Food insecurity and price variability in rural households (Mexico)

Lesson 6D Evidence on households in Mexico *shows that different groups can be hit differently by changes in relative prices and by price volatility following trade liberalisation*

Of particular concern is the effect of liberalisation on rural households. These are normally exposed to shocks, as liberalisation in the agricultural sector implies a change in the price and in the characteristics of the crops produced.

A good example of this issue, that we draw from Mc Culloch, Winters and Cirera (2002) Box 9.4, and which is based on Barret (1998), is the one of rice reforms in Madagascar in the 80s. Following reforms, the men price of rice rose by 42 percent and price variance by 53 percent and output growth accelerated. The effects of this pattern was different for small and large farmers. As for small farmers, these were net purchasers of rice, thus their welfare declined, as shown by nutritional, educational and overall expenditure data. The way in which small farmers reacted was to increase output, and try to offset the higher variability of income with a higher mean level of income. Note that this move exposed farmers to higher risk, as it increased the variability of their overall income. Indeed their losses from increased price and volatility outweighted the benefits from increased sales. Things went better for large farmers, who were net producers of rice. However their reaction to increased volatility in prices was to limit their exposure, by reducing their output of rice. Summing up, we should not just consider the effects of a one off change in prices, but changes in volatility and insecurity are also important. Equally, different groups (small and large producers) could have a different exposure to risk and input opportunities and respond differently to changes in incentives.

Appendix 1. Reallocation of resources in the Hecksher Olin model

Trading with foreigners generates a reallocation of resources towards the production of tradable goods. The most well known model to examine how this process takes place is the Hecksher - Ohlin model. In its simplest format it is based on a two-countries, two-goods and two-factors competitive market economy (See Krugman and Obsfeld (2003) for a more detailed exposition). Let the countries be the Russia and the US, the goods be food and clothes, the factors be labour and capital. We also assume that the factors are perfectly mobile, thus can easily shift from the sector producing food and the sector producing clothes and viceversa.

Firms can rent labour and capital at given prices (the wage rate and the interest rate being the prices of one unit of labour and one unit of capital, respectively). By employing these factors, each firm can produce either food or clothes. Suppose also that the technology available requires more capital and less labour to produce one unit of food than to produce one unit of clothes (the production technology of food is more *capital intensive*, whereas the production technology of clothes is more *labour intensive*). Suppose that the key difference between the Russia and the US is that Russia has a limited stock of capital per head (50 computers per thousand people in Russia and 625 in the US in 2001).

What happens if Russia is a *closed economy* and thus does not trade with US (it is still a market economy , even if closed to external trade)? Obviously, it has to produce internally all the food and the clothes that Russians are willing and able to buy. If there are many workers supplying labour, the competition in the labour market will determine low wages, therefore clothes, produced prevalently with labour, will be cheap. By contrast, as there is little supply of capital, market forces will determine a high interest rate, therefore food, produced prevalently with capital, will be expensive.

What happens then if Russia decides to trade with the US (i.e. to *open its economy*)? If the clothes produced in Russia are cheaper than those produced in the US and food produced in Russia is more expensive than clothes produced in the US, then Russia has the opportunity to export clothes in exchange for food produced abroad. A general effect of openness, therefore, is that *a country will export the good that make intensive use of its relatively most abundant factor* (labour in our example).

The long term effect of the increasing demand of Russian clothes is that their price will gradually rise. For the same reason, the demand and the price of Russian food will fall. The change in relative product demands brings along an equivalent change in relative factor demands and prices. Thus wages rise and interest rates fall. More precisely, the Stolper-Samuelson theorem states that, in this two-countries two-goods model, if the relative price of a commodity rises, the return on the factor of production used more intensively in producing that commodity rises as well.

The rising price of food and falling price of clothes imply that in Russia there is an incentive to produce more food and less clothes. Labour initially employed in firms producing food will move to the clothing sector, whereas capital will be less in demand.. Consequently, more labour and less capital is needed after the economy opens to international trade.

In synthesis, according to the Hecksher-Ohlin model, the immediate consequences of opening the economy to international trade on the reallocation of the resources are that:

(i) production shifts from the commodity produced prevalently with the less abundant factor (food) to the commodity produced prevalently with the most abundant factor (clothes),
(ii) the former becomes cheaper whereas the latter becomes more expensive.
(iii) the remuneration rate of one unit of the most abundant factor (wage rate) rises relative to the remuneration rate of one unit of the less abundant factor (interest rate).

Appendix 2: How to measure openness and poverty

Openness

Can we unequivocally define if an economy is open or closed? How can we measure the "degree of openness"? How can we affirm whether the openness is related to trade policy decisions or simply to other factors such as a country's geographical position?

There is not a unique satisfactory method to measure openness: each measure has its own limitations and may neglect some aspects of trade reforms which should not be ignored. If we simply look at the tariffs imposed on a commodity's import or export, we may neglect the so-called non-tariff barriers, such as the legal requirements (quality, health characteristics, respect of the environment, etc.) that some countries impose on commodities crossing their borders. Moreover, data on tariffs are often messy, as a country normally imposes many kinds of tariff on many kinds of commodities. Tariffs, finally, may not account for the overall outward orientation of a country, which is often a combination of several elements (from simple administrative and institutional factors to the characteristics of the whole political system).

The empirical literature has proposed several alternative proxies to capture trade restrictions. The following proxies are some examples taken from recent studies.

Dollar (1992) adopts two indices of openness based on the real exchange rate: an "index of real exchange rate distortion" and an "index of real exchange rate variability". The author claims that an outward oriented trade policy implies that the real exchange rate is sustainable (i.e. low distortions) and stable (i.e. low variability). Both these proxies, however, may not strictly mirror trade restrictions: distortions are sensitive to the different types of trade restrictions applied and variability is a proxy for instability rather than for trade restriction.

Sachs and Warner (1995) construct an index of openness which has been widely used in several empirical studies. This index divides countries into two sets, open economies and closed economies. An economy is "closed" if any of the following criteria holds:

- its average tariff rates is higher than 40%;
- its nontariff barriers cover on average more than 40% of imports;
- it is a socialist economy;
- most of its exports are carried out by state monopoly
- its black market premium exceeds 20%.

Rodriguez and Rodrik (2000) argue that the Sachs-Warner index overestimates the effects of trade restrictions, as it actually captures a number of institutional differences between countries which are not necessarily related to trade policy.

Frankel and Romer (1999) consider changes in trade volumes (i.e. the value of commodities traded with foreign countries as a percentage of GDP) as proxies for changes in trade policy. This proxy has also been used in subsequent studies (see Dollar and Kraay, 2000a and 2000b). It has been pointed out that changes in trade volumes may measure an effect of openness and not openness per se (see Rodrik, 2000)..

Poverty

The measurement of poverty is equally complex. We have already seen the distinction between relative and absolute poverty measures. Since 1990 the World Bank adopts a measure of absolute poverty by considering what poverty means in poor countries (i.e. living with the equivalent in local currency of $1 a day). This criteria has the advantage of comparing people from different countries by setting a unique standard based on consumption levels. This measure, however, can be criticised when applied to middle-income countries, where the poverty line is higher than in poor countries. This criticism implies that many more poor people in the world are not classified as poor by the World Bank poverty index[1].

This implies that the "poverty line" could be treated as a relative concept, in that it changes with the perception of the minimum welfare below which a person is considered a poor. Chen and Ravallion (2001) adopt a relative concept of poverty line, which rises with mean income.

Another way to deal with poverty measurement is by accounting for non-income factors, which affect the welfare of poor people without directly affecting their income[2]. According to Amartya Sen, being poor does not mean living below an imaginary poverty line, such as an income of one dollar a day or less. It means, more generally, not being able to cover certain basic necessities, taking into account the circumstances and social requirements of the environment. For example, consider two households living in two different countries. They are both classed as low income household (below the 20% of the population); however, one of these household has more access to school and to information, enjoys a better standard level of health care system and it is reasonably integrated in the society, whereas the other one is socially excluded, lives in an uncomfortable or dangerous geographic area, hardly has the access to school and to public health system. These two households, which have different levels of welfare, would be classified as equally poor if poverty is measured in monetary income terms only.

The income measures of poverty also ignore inequality within households, which are difficult to observe empirically. Moreover, they do not consider individual concerns about uninsurable fluctuations in income and health over lifetime: the individuals might prefer to earn less money but on a constant basis or they could prefer to sacrifice part of their earning to cover their expenditure on health care in case of negative events; if this sort of risks are not insurable, the individuals get worse off and this is not accounted by income measures of poverty.

[1] See Wade (2002) and Reddy and Pogge (2002).
[2] See Citro and Michael (1995).

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