

A CASE STUDY ON TRADE LIBERALIZATION: ARGENTINA IN THE 1990s

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Abstract

The link between trade and wages is embodied in the Stolper-Samuelson theorem and its generalizations.

The Stolper-Samuelson logic is that trade affects relative factor rewards by changing relative prices.

Since in Argentina non-skilled labor was neither as abundant a factor as land nor as scarce as capital it could not be expected to be the big winner of the process of opening up of the Argentine economy nor it could be expected to be a big loser.

So, the huge unemployment experienced by the Argentine economy in the 1990s as well as the widening wage gap between skilled and unskilled labor came as a complete surprise. Neither land nor non-skilled labor –the relatively abundant resources- were winners. Capital and skilled labor –the relatively scarce factors- were. So, all results were exactly the opposite of what the SST predicts. It was factor mobility rather than factor abundance what determined winners and losers. The more internationally mobile factors were the winners while the less mobile were the losers.

In Argentina, trade liberalization meant mainly import liberalization by lowering tariffs which protected labor intensive-industries. So, the short-run effect was a massive destruction of jobs in non-skilled labor-intensive activities. A negative correlation between employment and import penetration ratios in the manufacturing industry is found.

The opening up of the economy lowered significantly the price of capital goods. This encouraged a drastic process of capital for labor substitution. So, this was another source of job destruction.

In those industries where the import penetration increased the most, wage inequality widened relatively more between unskilled and skilled workers.

The impact of the increasing unemployment and growing inequality in wage distribution on income distribution is analyzed.

Finally, some general conclusions are drawn from the analysis of the Argentine case.

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"The most destructive weapon of mass destruction in the world is poverty."
Ex-President Lula.

Introduction

The link between trade and wages is embodied in the Stolper-Samuelson Theorem (hereinafter SST) and its generalizations.

The Stolper-Samuelson logic is that trade affects relative factor rewards by changing relative prices.

According to the Heckscher-Ohlin theory, the expanding sector after the opening of trade should be that which is intensive in the country's abundant factor, while the shrinking sector should be intensive in the country's scarce factor. So, trade liberalization will benefit an economy's relatively abundant factor and harm the economy's relatively scarce factor.

However, when Argentina liberalized its international trade in the early nineties this prediction did not fulfill. There was a price shift but it benefited the price of non-tradables against the price of tradables. Neither land nor non-skilled labor –the relatively abundant resources- were winners. Capital and skilled labor –the relatively scarce factors- were. So, all results were exactly the opposite of what the SST predicts.

In this paper, we investigate the reasons of these seemingly anomalous results.

First of all, according to the SST, labor can be a loser in a trade liberalization process only in an economy where labor is scarce.

Although non-skilled labor in Argentina was not as abundant a factor as land it was not as scarce as capital. Thus it could neither be expected to be the big winner of the process of opening up of the Argentine economy nor could be expected to be a big loser.

So, the huge unemployment experienced by the Argentine economy in the 1990s under the liberalization program implemented in that decade as well as the widening wage gap between skilled and unskilled labor came as a complete surprise.

But this was not the only one surprise. Contrary to what was expected, relative prices shifted in favor of non-tradable goods leading to a major overvaluation of the real exchange rate. As a result, imports became cheaper and exports were discouraged. The huge increase in imports led to a massive job destruction in import-competing industries. The growing current account deficit was another consequence of the appreciation of the real exchange rate until the huge crisis the Argentine economy experienced at the end of 2001 forced a mega-devaluation of the peso.

Before going on, it is worthwhile mentioning the results obtained in other country studies. These empirical studies on the effects of trade reforms on employment show contradictory results. The comprehensive study of trade liberalization in developing countries by the World Bank in the early 1980s led to largely inconclusive results.¹ Rama's (1994) analysis for the Uruguayan manufacturing sector finds a significant negative impact of trade reform on employment: reducing the protection rate within a sector by one percent leads to an employment reduction between 0.4 and 0.5 percent within the same year. Revenga (1995) finds a small reduction in aggregate employment in the Mexican manufacturing sector during the trade reform program

¹ See Papageorgiou et al. (1990).

implemented in the late 1980s. Currie and Harrison (1997) find that in Morocco employment in the average private sector manufacturing firm was basically unaffected by trade liberalization, although there were significant employment losses in exporting firms and in the most highly affected firms. Another study by the World Bank published at the beginning of this century recognizes that “a series of case studies on the effects of trade liberalization shows a considerable dispersion of the net impact on employment”.² Dutt et al. (2009) as well as Felbermayr et al. (2011) find support for the hypothesis that trade openness reduces aggregate unemployment.

The Argentinean case seems to be of special interest not only because the negative effect on employment that accompanied trade liberalization runs quite contrary to the standard theoretical framework but also because of the fact that Argentina was considered in the 1990s the best pupil of the IMF, the World Bank and the USA government, as the then minister of Economy Domingo F. Cavallo recalls.³ Argentina was a sort of laboratory for liberalization policies, so its results are highly representative of the outcomes of the experiment.

This paper is structured as follows. Section 1 is devoted to present what should have been expected to happen after trade liberalization, according to the traditional economic theory. In Section 2, the role of non-tradable goods in trade theory is considered. Section 3 presents what happens when trade liberalization is accompanied by financial liberalization as it happened in Argentina. In Section 4 the evolution of the Argentine economy during the 1990s is presented. Section 5 describes the effects of the trade reform which took place in Argentina during the nineties. In Section 6, the evolution of tradable and non-tradable goods relative prices is reviewed. Section 7 is devoted to an analysis of the connection between unemployment and trade liberalization. Section 8 discusses reasons for the persistence of unemployment. Section 9 presents the subsidy program the Argentine government implemented at the peak of the economic crisis. Section 10 analyzes the evolution of real wages after trade liberalization. Section 11 presents evidence on income distribution in Argentina after the economic reforms. Section 12 concludes.

1. Trade liberalization in economic theory

Traditional international trade theory assumes that factor supplies are fixed and wages are flexible. The link between trade and wages is embodied in the Stolper-Samuelson (1941) theorem and its generalizations (Ethier, 1984)⁴. The Stolper-Samuelson logic is that trade affects relative factor rewards by changing relative prices: abundant factors in an economy gain from trade liberalization while scarce factors lose.

As it follows from Appendix Table A, Argentina is land abundant. Land abundance is measured by agricultural land area divided by the total labor force, an imperfect but simple estimate of the abundance of agricultural resources. Argentina is second only to Australia.

Following Romalis (2004, 80), GDP per capita is used as a proxy for the abundance of physical and human capital. Appendix Table B shows the average values between 1992 and 1993 for Argentina and other countries. These years were selected

² See Dollar and Collier (2001).

³ See Cavallo (2004).

⁴ Echenique-Manelli (2003) provide a weak version of the Stolper-Samuelson Theorem for n goods. Their Theorem 13 states that, if the price of good j increases, and the prices of all other goods either decrease or stay the same, then the owners of the factor intensively used in producing j will gain, and the owners of at least one of the other factors will lose.

because they are the first two years after the implementation of the new economic plan and before the peso overvaluation distorted Argentina's GDP values in dollars. Argentina occupies a place far below human and physical capital abundant countries and near Libya, Gabon and Mexico.

Coremberg (2009) built estimations of physical capital stock for Argentina between 1990 and 2006. For 1998 he gets a value of \$ 19.388 for the capital labor ratio, being \$ 92.751 the value for U.S.A. for the same year (ibid, 51). This value is in line with the level of GDP per capita for both countries. As expected, this ratio places Argentina among the capital-scarce countries.

According to economic theory, Argentina's abundant factor –land⁵- should have been the winner and a scarce factor like capital should have been the loser after trade barriers were raised in the early 1990s.

As far as non-skilled labor is concerned, the traditional point of view as stated, for instance, by Krueger (1983) has been that developing-country trade liberalization should boost labor-intensive output and thus increase employment. That is why trade liberalization has been seen as an important component of a “pro poor” development strategy.⁶

However, non-skilled labor in Argentina is in an intermediate situation: it could not be expected to be a clear winner as may happen in underdeveloped countries endowed with an abundant non-skilled labor supply nor could it be expected to be a big loser as it happened to be.

2. Trade liberalization with non-tradable goods.

Traditional trade models assume the existence of only tradable goods. In reality, however, many of the goods consumed in an open economy are non-tradable.

Opening up a small economy makes the supply elasticity of tradable goods infinite since a small open economy can buy/sell as many tradable goods as it wants at a given world price. Any excess demand for tradable goods is met by importing more of them from abroad without impact on prices.

The story is different for non-tradable goods. Any excess demand for non-tradable goods will require an increase in their relative price to clear the market.⁷

In this context, trade liberalization -through tariff and non-tariff barrier reductions- makes imports cheaper, which leads to a higher consumption of them. The fall in the price of imports has also an income effect increasing the demand for exportables and non-tradables as well.

3. Trade liberalization plus financial liberalization

Trade liberalization was accompanied in Argentina by capital account liberalization. Although both have usually been twin components of the liberalization package, until recently there has been little study on how they interact.⁸ The Argentine case highlights the need for further research on the subject, showing how the predictions of international trade theory may be affected by the effects of capital flows.

⁵ Additionally to what have been already argued, the fact that Argentina's main exports consists of agricultural products also indicates that the abundant factor is land while the fact that the main imports consist in capital and skill intensive goods indicate capital and skilled labor as the scarce factors.

⁶Winters et al. (2004, 108).

⁷ See Végh (2011, 45).

⁸ Antras and Caballero (2009) is an almost isolated exception.

Financial liberalization has been considered desirable and advisable because it leads to a Pareto optimum: with international financial freedom, world product is maximized. Borrowers benefit from more capital formation and pay lower interest rates. Lenders gain because they have the chance of lending wealth abroad at a higher interest rate than the less productive domestic investment returns.

Controls which prevent investors from withdrawing capital from a country act as investment irreversibility. Their removal makes investors more willing to invest in a country, as it is easier to get their money out in the future⁹. Moreover, a regime of free capital mobility may signal that imposition of controls is less likely to occur in the future¹⁰ thus encouraging capital to flow in.¹¹

However, in spite of the theoretical arguments, no definitive view emerges as to the aggregate effects of capital account liberalization.

Eichengreen (2001) overviews the literature pointing out that it remains one of the most controversial and least understood policies. While Rodrik (1998b) finds no significant statistical association between capital account openness and growth, Fischer (1998) argues on the existence of positive effects of capital account liberalization on output, which is supported by evidence provided by Quinn (1997). The role of preexisting policies, particularly the absence of macroeconomic imbalances, in determining the effects of capital control liberalization on growth and investment, is examined by Arteta et al.(2001) while Chinn and Ito (2002) investigate the empirical relationship between capital controls and the financial development of credit and equity markets.

In a comprehensive survey of the research on financial globalization, Prasad et al. (2003) include fourteen studies on developing countries, but find only three that document a significant positive relationship between international financial integration and economic growth. Prasad et al. (2003) conclude that "...an objective reading of the vast research effort to date suggests that there is no strong, robust, and uniform support for the theoretical argument that financial globalization per se delivers a higher rate of economic growth."

While most of the literature is devoted to the discussion of the effects of financial liberalization on growth, little reference is found on the effects on domestic prices or the real exchange rate¹², aspects which were crucial in the Argentine case, as we shall see. Practically no attention is paid to the eventual effects of financial liberalization on the level of employment. Either full employment is assumed and there is no meaningful question in this respect or a positive correlation between growth and employment is taken for granted in which case the effect on employment depends on the effects on growth.

Let us see what happens when trade liberalization is associated with financial liberalization. If restrictions on capital flows are removed, the subsequent capital inflow will increase domestic demand for tradables and non-tradables. This will result in an increase in consumption of tradable goods –their prices will remain fixed at the international level- and in a rise of the relative price of non-tradables to meet the excess demand for them. This increase in the price of non-tradables may even offset the initial effect in favor of the exportable good prices.

⁹ See, for instance, Labán-Larraín (1993).

¹⁰ Bartolini-Drazen (1997)

¹¹ The Convertibility Law, by which the peso was pegged to the dollar at a fixed rate, was an additional stimulus to encourage capital flows to Argentina.

¹² Calvo et al. (1993) and Urrutia and Meza (2010) are important exceptions.

So, there will be a change in relative prices in favor of the non-tradable sectors and against the import-competing sector. In the short run the real income of the factor used intensively in the rising-price industry will grow and the real income of the factor used intensively in the falling-price industry will shrink. But now the rising-price industry not necessarily is the export industry as in the SST; it may be the non-tradable goods one. In the Heckscher-Ohlin approach factors of production are assumed to be mobile. So, in the long run the implications for factor incomes depend on the factors demanded by the expanding sector relative to the factors released by the contracting industry. As in the Heckscher-Ohlin approach full employment is assumed, gains and losses in the long run are only in terms of income. Even so, when analyzing a real world case, there remains the issue of how long should be the long run.

What happens if some factors are specific to sectors? Then, the big winners in the long run will be the factors that are tied to the expanding sector of the economy while the losers will be those factors that are tied to the economy's import-competing sector.

As we shall see, in the Argentine case the net loser has been non-skilled labor - intensively used in the import-competing industries- while land -intensively used in export activities- has not been a winner as it should have been if export prices had been the gainers of the opening up process.

4. Argentina's economic performance in the 1990s.

The economic performance of Latin American countries in the 1980s was quite unsatisfactory. In what has been called the "lost decade" the region's economy was disrupted by the debt crisis and raging inflation.

This experience shocked the region; so, Latin America embraced structural economic reforms during the 1990s. All countries liberalized international trade, external capital flows and privatized public utilities.

Argentina was not an exception. It was one of the countries where more aggressively economic reforms were followed.

After the hyper-inflationary processes of 1989 and 1990, a drastic economic reform took place in Argentina.

The key measures that shaped this economic program were the Convertibility Law, the liberalization of external trade and financial flows and the privatization of public enterprises.

The Convertibility Law established a fixed exchange rate of one peso per one dollar. The Central Bank was obliged to sell foreign currency at that rate as required by the market. In order to fulfill this obligation, it had to keep international reserves equivalent to at least 100% of the monetary base. This meant the transformation of the Central Bank into a virtual Currency Board.

The openness of trade to the world economy was a central piece in the stabilization strategy as it was meant to contribute to the convergence between domestic and international prices of tradable goods.

Liberalization of financial flows aimed at encouraging foreign investment in Argentina.

Most of the publicly owned enterprises were privatized between 1992 and 1994.

As a result of this package, inflation was drastically abated from a level of 5.000% per year in 1989 to just 0.16% in 1996. GDP grew 40% between 1990 and 1994.¹³

In spite of this huge increase in GDP, the unemployment¹⁴ rate rose from 6.0% in October 1991 -immediately after the Convertibility Program was launched- to 12.2% in October 1994 -just before the Tequila effect- to 17.3% in October 1996 (see Table1). We may also notice that unemployment rates started increasing in mid-1992, after the introduction of the Convertibility Plan in April 1991 and long before the irruption of the December 1994 Tequila crisis. Table 2 shows the detailed evolution of unemployment rates between 1991 and 1995.

That is why the pre-Tequila period (1991-1994) deserves a special attention in the analysis. Due to the fact that the Argentine economy was badly hit by successive external shocks during the second part of the nineties (the Asian, Russian and Brazilian crises) there is an extended wrong idea that those shocks bear the exclusive responsibility for the high unemployment rates in Argentina at the end of the past century. Those events only worsened an already existing trend to higher unemployment.

Table 1
Unemployment rates in Argentina *

Year**	%
1989	7,6
1990	7,5
1991	6,5
1992	7,0
1993	9,3
1994	12,2
1995	16,6
1996	17,3
1997	13,7
1998	12,4
1999	13,8
2000	14,7

*Average of 28 urban centers which represent 70% of the urban population.

**October of each year.

Source: INDEC

Table 2
Unemployment rates – May and October 1991/95

¹³ Although there is some discussion on the comparability between the GDP figures pre and post Convertibility, the growth rates *within* each of both periods have not been objected. The discussion has to do with the absolute value of GDP in the 1990s.

¹⁴ Unemployed is defined by the National Bureau of Statistics of Argentina (INDEC) as the person who is jobless at the time of the survey but is actively looking for a job.

Year	May	Oct
1991	6.9	6.0
1992	6.9	7.0
1993	9.9	9.3
1994	10.7	12.2
1995	18.4	16.6

Source: INDEC

5. Trade liberalization in Argentina

Until mid-1989 the maximum Argentine import tariff was 50% and there was a tariff surcharge of 15% on all imports, which meant that the average tariff was 39% if we include that surcharge.

In July 1989 a significant unilateral reduction of external trade barriers took place. As a result, the maximum tariff was reduced to 35% -applied only to a few electronic goods-, the average tariff declined to 12% and all import licenses were eliminated. The country proceeded with further liberalization thereafter. In 1990, import licensing requirements were removed and tariffs were made uniform to 21 per cent and, thereafter, progressively reduced further. The main exceptions to the general rule were IT goods with a 35% tariff, domestic appliances (30%) and the car industry (35% tariff), due to their weight in the labor market as important employers. The average unweighted import tariff was 10.5% in 1995.¹⁵ At the same time, many non-tariff restrictions were almost completely eliminated.

At the same time, export duties, which affected the main agricultural exports, were abolished.

As it was previously stated, the Argentine GDP grew 40% between 1991 and 1994.

Table 3
Real GDP annual rates of growth

<u>Year</u>	<u>%</u>
1989	-7,0
1990	-1,3
1991	10,5
1992	10,3
1993	6,3
1994	8,5
1995	-4,6
1996	4,3
1997	8,4
1998	3,9
1999	-3,4

¹⁵ Ernst (2005, 2)

Source: Secretaría de Programación Económica

However, when analyzed sector by sector, this growth does not have an even distribution. It was biased towards the non-tradable goods producer sectors. In fact, during the period 1990-1994, while Agriculture grew 36%, and Manufacturing Industry, 35%, Services grew 41%, and Construction, 88%.

We have here two surprises. The first one is that the winners in terms of growth were the non-tradable sectors. We come back soon on this issue.

The second one is that despite the fact that growth was led by two labor-intensive sectors –services and construction-, employment lagged far behind.

In effect, the rate of employment -which measures the proportion of the total population currently employed- fell from 35,7% in May 1990 to 34,8 in May 1995 (see Table 4).¹⁶ This suggests that the economic growth that took place during the period under analysis was accompanied by a significant increase in average labor productivity. This phenomenon was favored by a drastic shift in the relative price between labor and capital: the radical reduction of import tariffs significantly reduced the price of imported capital goods and this induced a sharp process of capital deepening.¹⁷ Table 5 shows the evolution of capital goods imports during the nineties; their participation in total imports practically doubled between 1990 and 1994. Around 60% of them went to the growing non-tradable sector. Meloni (1999) elaborated a time series for the reproductive capital stock, that is the capital stock formed by non-residential construction and durable production equipment. It shows the process of capital deepening which took place in the 1990s (see Figure 1).

Table 4
Employment rates in Argentina

<u>Year*</u>	<u>%</u>
1990	35.7
1991	36.8
1992	37.1
1993	37.4
1994	36.7
1995	34.8
1996	34.0
1997	34.6
1998	36.9
1999	36.6

*May of each year

Source: INDEC

¹⁶ There was a limited increase in the employment rate shortly after the Convertibility Program was launched in 1991. But this only lasted until 1993. Before the Tequila crisis, employment began to fall, as the rate for 1994 shows.

¹⁷ In an analysis which covers the whole decade, Coremberg (2003) finds that the increase in the stock of capital was the main source of economic growth during that period. Bour (2002) found that along with the importance of physical capital investment, TPF explains more than one third of the rate of growth in the period.

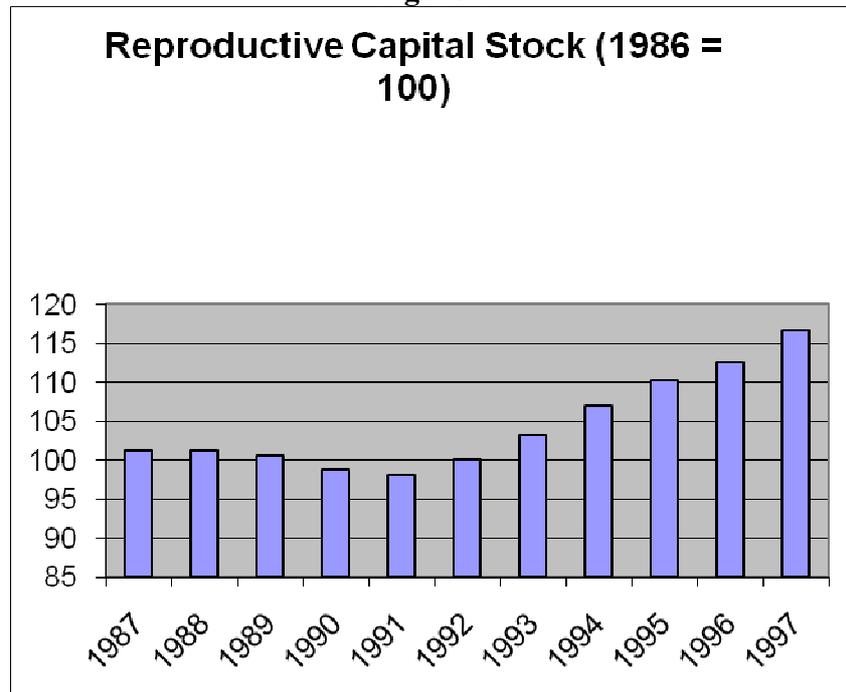
Table 5
Capital goods imports – 1990/99

Year	Billions of U.S. dollars	% of total imports
1990	0,593	15
1991	1,338	17
1992	2,900	21
1993	3,889	25
1994	5,696	28
1995	4,509	24
1996	5,348	24
1997	7,387	26
1998	8,155	28
1999	6,515	27

Source: Ministry of Economy

As a consequence of the change in the capital-labor relative price, there was a jump in the marginal capital-labor ratio. As an average, it was necessary to invest a larger amount of capital per additional unit of labor than it had been required before the economic reform. The GDP elasticity of employment has been estimated in only 0.17¹⁸ for the period 1990-95. This explains the small effect that economic growth had on employment. Even the usually labor-intensive non-tradable sector's growth was capital biased.

Figure 1



Source: Meloni (1999)

At the same time, trade liberalization was reflected in a huge increase in foreign trade. Total imports soared, from \$4.1 billion in 1990 to \$20,0 billion in 1994, while exports rose from \$3,7 billion to \$15,8 billion in the same period. The participation of imports in the aggregate supply expanded from 5.6% in 1990 to 14.6% in 1994.

¹⁸ See Damill et al. (2002).

This increase in international trade was accompanied by a substantial expansion in the deficit in current account which doubled between 1992 and 1994 (see Appendix Table C).

6. The change in final-good relative prices

Convertibility together with trade liberalization assured stability of tradable good prices. Domestic prices would not increase if international prices did not because imports could easily replace local production. But this did not mean stability of prices for the non-tradable goods.

As a matter of fact, the prices for non-tradables kept increasing until 1995. As shown in Table 6, the prices of services –mostly non-tradables- increased 75% between 1991 and 1995. On the contrary, the prices of goods –mostly tradables- increased only 31% between 1991 and 1993 and from then on remained practically without changes.

The result was a change in relative prices in favor of non-tradables. Thus it should not come up as a surprise that non-tradable production grew far ahead of the tradable one, as pointed out before. So, relative prices favored a transfer of resources from tradable production to non-tradable production. Therefore, it was also natural that the current account deficit kept growing and more and more capital inflows were needed to make up for it.

As a matter of fact, net capital inflows¹⁹ exceeded the current account deficit (see Appendix Table C) thus allowing for a significant accumulation of foreign reserves which expanded the monetary base and fed domestic credit creation.

Excess demand –fueled by this foreign capital inflow- resulted in an increase, on one hand, in the volume of imports, and, on the other hand, in the price of non-tradable goods.

Table 6
Prices of goods and services
(1991 = 100)

Year	Goods	Services
1991	100	100
1992	122.4	136.4
1993	131.1	147.8
1994	133.0	168.8
1995	136.8	175.5
1996	136.8	176.1
1997	136.4	178.6
1998	137.2	180.9
1999	133.4	182.7

Source: Ministry of Economy

This price behavior resulted in continuous erosion of the competitiveness of tradable sectors. The current account deficit increased from 5.5 billion dollars in 1992 to

¹⁹ As Calvo et al.(1993) have documented, the surge of private capital inflows into emerging economies in the early 1990s was stimulated by the temporary decline in industrial country interest rates.

10,1 billion dollars in 1997 –more than one third of this year’s exports (see Appendix Table C).

So, the Argentine economy required, in order to work smoothly, a continuous and growing inflow of foreign capital. When it suddenly stopped, as it happened during the Tequila crisis, imports abruptly shrank (see figures for 1995 in Appendix Table C); deep recession and high unemployment were the immediate consequence.

However, if we have a look at Table 1 we notice that unemployment started increasing in 1992, long before the end-of-December 1994 Tequila crisis.

As stated before, from the point of view of the SST, labor was not an obvious candidate to be a loser in the process of trade liberalization. On the other hand, if relative prices moved in favor of non-tradables, which are usually labor-intensive products, labor should have been among the winners. Why the results were just the opposite?

7. From trade liberalization to unemployment

Given the scarcity of capital, the closed Argentine economy had developed a labor-intensive manufacturing industry.

In Argentina, trade liberalization mainly meant import liberalization by lowering tariffs which protected labor-intensive industries. So, the short-run effect, from the very beginning of the economic reform program, was the increase in unemployment, especially in labor intensive manufacturing industries (see Appendix Table D).²⁰

As Galiani-Sanguinetti (2003, 505) point out, significant rises in import penetration ratios were observed during the nineties in those sectors where Argentina does not have comparative advantages (see Appendix Table E). They computed import penetration indicators as the ratio of imports to gross value added by industry.

Since the industries that experienced larger reductions in protection levels employed a greater proportion of low-skilled workers, trade liberalization is the obvious candidate to blame for the resulting massive unemployment.

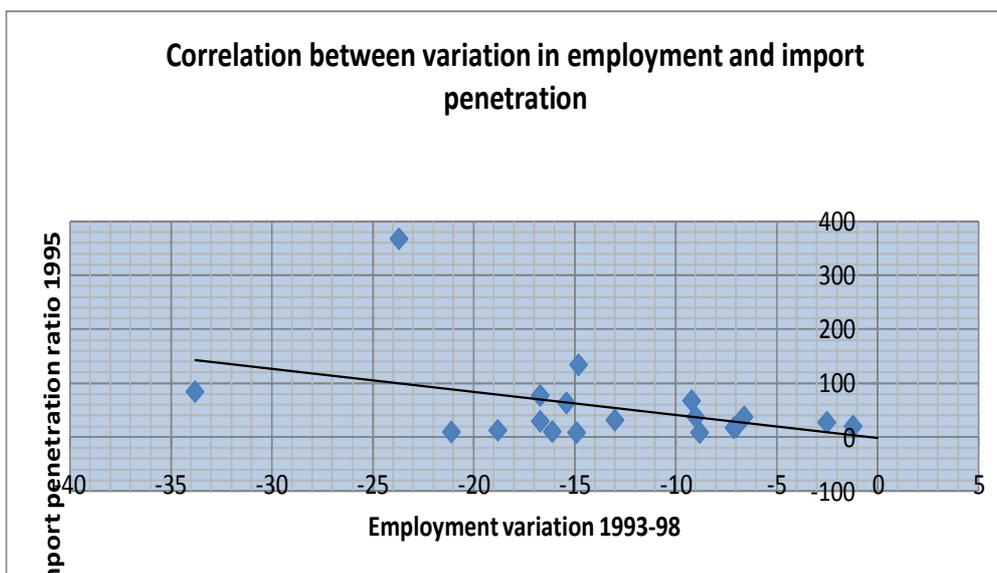
In order to test if in fact there is an association between unemployment and exposure to international trade the simple correlation coefficient between the variation in employment between 1993 and 1998 and the import penetration ratio reached in 1995 was calculated. The value obtained is -0.41.²¹, which demonstrates the existence of a negative –although weak- correlation between trade openness and the level of employment. The greater the import penetration was the greater the loss in employment (see Figure 3). However, one may wonder why the correlation coefficient is relatively low. A look at Figure 3 makes evident the presence of idiosyncratic factors. The same level of job variation appears associated with different levels of import penetration, although the relationship has always the same negative sign. Since the seminal research carried out by Davis, Haltiwanger and Schuh on the U.S. manufacturing industry it is well known that job creation and destruction are subject to the influence of idiosyncratic factors (Davis et al., 1996), Unfortunately, “the current state of economic science provides little knowledge about the relative importance of these various (idiosyncratic) factors or the precise reasons why they generate such heterogeneity in outcomes” (ibid., 153). In their analysis of the U.S. manufacturing sector, they document the importance of idiosyncratic factors in the determination of job creation and destruction among industries. In the Argentine case, the presence of idiosyncratic factors may partly

²⁰ An exception is Petroleum distillery where unemployment was mainly the result of layoffs by the state-owned company in preparation for its privatization.

²¹ Petroleum distillery was excluded because its behavior is explained by other reasons –see footnote 20.

explain the specific rate of variation in each industry on top of the systematic influence of import penetration on them.

Figure 3



Besides, the successive external shocks which took place since 1995 added another source of stress to the labor market. With its economy widely opened, Argentina lacked any protection against external shocks. So, after any country devalued –be it Mexico, Thailand, Russia or Brazil- markets betted Argentina would follow suit because they considered that the currency convertibility scheme was very difficult to maintain. The consequences were capital flight, higher interest rates, lower levels of consumption and investment and a lower rate of growth. In some years, this implied employment stagnation, in others higher unemployment.

During the nineties, job destruction in the manufacturing sector was constantly high, exceeding the rate of job creation by something running from 36% to 65% (see Table 7). As stated in Beker (1998, 14) while “the average job destruction rate in the U.S. is 10.3%... for Argentina it is higher than 20% after 1990. About one in five manufacturing jobs disappeared every year. Only a little more than half of them were replaced.”

Table 7
Job Flows. Manufacturing industry. 1990/1995

	1990	1991	1992	1993	1994	1995
Job creation (%)	9,53	12,57	16,3	13,25	12,85	13,23
Job destruction (%)	12,92	20,73	21,47	25,69	22,85	21,14

Job reallocation (%)	22.45	33,29	37,78	38,94	35,69	34,38
Net change	-3,38	-8,16	-5,17	-12,44	-10	-7,91
Excess reallocation	19,07	25,13	32,61	26,5	25,69	26,47

Source: Andreoli-Massot (1999)

It is interesting to have a look at the behavior of two opposite sectors: Food and Beverages on the one hand and Textiles on the other.

As reported in Beker (1998, 18), Food and Beverages had a strikingly differential behavior. The rates of creation and destruction during the nineties were the highest every year.²² But the sectoral job creation rate was twice or more the average one, although it was always lower than the destruction one, as in the rest of the manufacturing industry. The gap between both rates is the smallest one in comparison to the rest of the sectors.

Food and Beverages is a sector in which Argentina has comparative advantages. The foreign supply in 1999 in this sector was still a small proportion of domestic production (3.5% of value added). Its Index of Production grew 34% between 1990 and 1995.

Sectoral real wages -deflated by the sectoral index of wholesale prices- increased 53% over the same period. The drastic restructuring process the sector suffered implied high rates of job creation and destruction which allowed productivity gains that were followed *pari passu* by the evolution of real wages.

The textile sector was badly exposed to foreign competition. The foreign supply participation in this sector in 1999 was 19.8%. Its rates of job creation were very low while those of destruction were only second to Food and Beverages for most of the years. In 1995, production was at the same level as in 1990. Labor productivity rose, however, almost 50% while real wages increased only 10%.

For the manufacturing industry as a whole, the establishments that shut down accounted for only a small fraction of total job destruction. Most job destruction took place in establishments which survived.

This leads Beker (1998, 16) to conclude that large job destruction and job creation were the keys for the survival of continuing plants, which bore the main responsibility in total job flows.

It seems that continuing plants were precisely those which adapted themselves to the new environment through drastic changes in their human resources stock.

In short, greater international openness exposed Argentine manufacturing firms to increased foreign competition. Some firms, especially in labor intensive industries, could not compete with imports and had to shut down; others re-engineered their processes to become more competitive by laying off part of their workforce. In both cases massive job destruction was the outcome.

The increase of employment in the non-tradable activities, fostered by the increase in their relative prices, was not sufficient to absorb the massive layoffs in the manufacturing industry. In Argentina, trade liberalization in the nineties was a weapon of massive job destruction.

²² The participation of some activities strongly seasonal may be only a partial explanation of these high rates.

8. Persistence of unemployment

Persistent unemployment has been a persistent problem for economic theory. It has also been a big challenge for policy makers in many countries.

In Argentina, double-digit unemployment came in the nineties to stay for long. Why was it so persistent?

In standard neoclassical theory, resources are *assumed* to move instantaneously and costless out of activities where the terms of trade are deteriorating into activities where the terms of trade are improving. With full employment *assumed*, labor markets adjust to equate wages in all industries so there are no relative losers from a change in the terms of trade.

If labor mobility is not restricted, workers can be expected to switch between sectors until the wage differential between sectors exactly compensates the utility change experienced by the marginal relocating worker (Rosen, 1979).

Friction unemployment is compatible with the neoclassical theory but in the long run the labor market should be in equilibrium; no unemployment can persist. That is why the usual explanation for long run unemployment in the orthodox framework is labor market rigidity. In particular, unemployment benefits are held responsible for raising the reservation wage and so prolonging unemployment duration.

However, the lack of a well-developed social security system makes this reason less relevant in the case of Argentina in the 1990s. Most unemployed in the 1990s came from the informal sector and had no right to any unemployment benefit. Only in 2002 an across-the-board subsidy for all unemployed heads of households was established.

Moreover, the high reallocation figures shown in Table 7 do not seem to depict an inflexible labor market. For instance, if compared with other countries' figures reported in Davis et al. (1996, 21), they are only comparable to the high New Zealand's figures for the period 1987/92.²³

On the contrary, there are a number of reasons why labor may be imperfectly mobile and thus unemployment may persist in the long run.

First, labor may be sector specific –a bricklayer may not be trained to be a butcher. As Kriechel and Pfann (2005) point out “specific human capital is usually measured through the tenure at the displacing firm. It is assumed that at least part of the learning on the job cannot be transferred across firms or industries. This part of the learning by working on the certain job is designated as the specific human capital.”

Lamo et al. (2010) model reallocation of specialized labor across sectors following a relative demand shock in a two-sector Mortensen-Pissarides framework with wage rigidity and endogenous job destruction, augmented with specific human capital in which young agents initially are allocated into vocational or general education. They assume that general skills, which are provided by general education, are required to work in the modern sector. In order to work in the traditional sector specific skills, provided by vocational education, are sufficient. While general skills can be used in the traditional sector, vocational education cannot be used in the modern sector.

They show that large amounts of specific skills dramatically slow down the adjustment of labor markets. In their simulation they find that “in the absence of labor mobility, our model indicates that the period of convergence to a steady-state with no mismatch is of the order of magnitude of a generation, i.e. the necessary time for older

²³ In 1984 New Zealand started a deep liberalization program which culminated with the labor market reform in 1991.

workers with inadequate skills to have retired.” (Ibid., 5). Finally, they use their model to analyze the developments in the labor market of Estonia and Poland after the enlargement of the European Union in 1998 and the Russian crisis; they confirm the role of specific skills on the speed of the labor market adjustment.

Second, there may be imperfections in the spatial organization of industry – fishing takes place near oceans and seas while farming takes place on the plains.

Third, transport costs impose a limit on workers’ mobility. The higher commuting costs are the more restricted the market area for each single worker.

As a matter of fact, cheap transportation has been one of the successful policies implemented in Argentina after the 2001 crisis as one of the instruments to reduce unemployment.

Fourth, legal restrictions that raise the cost of employment adjustment, notably those relating to employment protection, have twofold effects. On one hand, they reduce inflow into employment as they make firms more cautious about hiring; on the other hand, the costs they impose on employers reduce the level of firing. Which effect is more important is a quantitative issue; it may be argued that the overall effect on unemployment may be small as these effects tend to cancel out (see Bentolila and Bertola, 1990).

Fifth, wage rigidity may be an obstacle to clear the labor market. Competitive equilibrium theory *assumes* that all markets clear, including the labor market. If so, unemployment is not an excess supply of labor; it may only be a temporary mismatch between supply and demand.

In fact, if wages are flexible enough, unemployment is ruled out. Excess supply will depress wages until they reach the level where the quantity demanded equals the quantity supplied. So, unemployment needs to be explained through the existence of some rigidity in the labor market: nominal wage rigidity (the so called Keynesian case²⁴) or real wage rigidity (the classical case).

Keynes introduced the distinction between voluntary and involuntary unemployment. Unemployment is always voluntary in the classical model. Involuntary unemployment is the Keynesian case. But both are attributed to some market imperfection which prevents wages from clearing the labor market.

Of course, real wage rigidity will disappear in the long-run. But how long is the long-run strongly depends on the institutional characteristics of the labor market.

An explanation of downward wage rigidity must explain why the wages of both existing and new employees do not decline when there is high unemployment. The traditional approach has been to attribute wage rigidity to union power, minimum wages, and normative traditions. Efficiency wage theory provides another set of arguments: average labor productivity depends on the real wage paid by the firm. If wage cuts harm productivity, then cutting wages may end up raising labor costs. So, efficiency wage theory explains real-wage rigidity and the existence of involuntary unemployment.

Caballero-Hammour(1996), point out that incomplete contracting difficulties impose a form of rigidity on real wages. The existence of specific investment is made responsible for the decoupling of job creation and destruction.

Blanchard-Wolfers (1999) offer another potential suspect. Long run unemployed may either stop searching or lose skills. In both cases they become irrelevant to wage formation.

²⁴ Wage rigidity was not a reason for unemployment in Keynes’ General Theory. It was introduced by his followers to explain why the labor market does not clear.

Table 8 shows the evolution of real wages in Argentina during the nineties. They declined in 1995 when the Tequila crisis triggered high unemployment. But after that, in spite of persistent high unemployment, nominal rigidity left the downwards adjustment process in the hands of the inflation rate. But inflation was very low in the nineties thanks to the Convertibility Plan. At the end of the nineties there was even deflation (see Table 8). So, the long run promised to be very long. Thus currency devaluation was the only instrument available to produce a sharp decline in real wages. It came in early 2002 when the Convertibility Law was abolished and the rate of exchange jumped from one peso for one dollar to four pesos for one dollar. Then, real wages declined and employment started increasing.

Table 8
Average real wages and annual inflation rates
Argentina 1991/2000

Year	Average real wages	Annual CPI Variation
	1994= 100	
1991	87,0	84.0%
1992	94,5	17.5%
1993	100,1	7.4%
1994	100,0	3.9%
1995	94,4	1.6%
1996	92,6	0.2%
1997	92,1	0.3%
1998	95,8	0.7%
1999	94,5	-1.8%
2000	94,0	-0.7%

Source: González (2004, 22) and INDEC

9. What did Argentina do to cope with high unemployment?

The Convertibility Plan was implemented “without anesthesia” as the then President Menem put it. No safety net accompanied the drastic economic changes which took place at the beginning of the nineties. As it has been said before, most unemployed came from the informal sector and had no right to any unemployment benefit.

The sharp increase in the unemployment rate in May 1995, due to the Tequila crisis, forced the introduction of a program targeting the unemployed over 18 years old. Although it was supposed to be a universal program, due to budget constraints it covered no more than 15% of the unemployed. Beneficiaries were supposed to work in a workfare or social work program.

At the peak of the 2001/2002 crisis Argentina implemented an across-the-board subsidy for all unemployed heads of households. Given the urgency of coping with the effects of the crisis, the quest for mechanisms that could be set up quickly to transfer income to the poor in the most targeted way possible dominated any optimal design consideration. Near 2 million households –representing 13 percent of the labor force

and 5% of the total population- received a social benefit of around 50 dollars a month in exchange for 4 hours of daily labor in community activities.²⁵

“Formal surveys indicate that the program is well-targeted to intended households (poor families with children) and is highly popular among participants. Studies by international researchers (including the World Bank) find that projects are generally well-run, completed on time, and provide needed services to poor communities.” (Tcherneva and Wray, 2005, 9).

The cost of the program was estimated in about 1 percent of GDP. As the economy began to recover, beneficiaries exited the program for work offered at higher remuneration in the private sector.

One of the most surprising results of the program was the large influx of women into it. Many households chose to designate the woman as the head so that she could participate in the program while the husband attempted to find private sector work, including work in the underground economy.²⁶

Although, it “was a limited employment guarantee scheme implemented as an emergency response to crisis, it provides a relevant example of successes and issues that emerge from the implementation of such an initiative. Domestic consensus, for instance, is a very necessary program element, as the initiative relies heavily on local/municipal government and the commitment of individuals for implementation.” (Papadimitriou, 10).

10. Wage inequality

Real wages followed initially the trend of the rest of non-tradables and increased until the huge level of unemployment reached with the Tequila crisis abated them. The growth in Services and Construction favored by the change in relative prices stimulated an initial rise in average real wages (Table 8). Massive job destruction in the manufacturing sector offset this trend, although skilled workers and professionals proved to be better prepared to overcome the restructuring process.

In fact, Table 9 shows the increase in relative wages during the nineties in favor of professional and skilled positions. Since the manufacturing sector is more intensive in low-skilled labor, the aggregate demand of these workers was more affected by trade liberalization than the aggregate demand of professional and skilled labor.

Table 9
Income From Primary Job by Skill Level
(Monthly income in 1998 constant prices, pesos)

Year	Wages			Relative wages		
	<i>Professional</i>	<i>Skilled</i>	<i>Unskilled</i>	<i>Prof./Skilled</i>	<i>Prof./Unskilled</i>	<i>Skilled/Unskilled</i>
1990	1176.7	570.2	366.2	2.1	3.2	1.6
1992	1483.6	685.2	438.9	2.2	3.4	1.6
1994	1715.8	725.4	424.4	2.4	4.0	1.7
1996	1661.9	632.5	354.5	2.6	4.7	1.8
1998	1794.1	644.8	356.2	2.8	5.0	1.8

Source: World Bank, "Poor People in a Rich Country: A Poverty Report for Argentina (2001)

²⁵ Details of this program can be found in (Kostzer 2007).

²⁶ Tcherneva and Wray, 2005, 9

Galiani-Sanguinetti (2003, 508) found that sectors where trade liberalization had larger effects, as measured by import penetration at the sector level, were also the sectors where, *ceteris paribus*, a higher increase in wage inequality was observed. They found that during the 1990s, in those industries where the import penetration increased the most, wage inequality also widened relatively more in favor of the most skilled workers.

On the other hand, as mentioned before, Galiani-Sanguinetti (2003, 511) found that the aggregate trends on wage differentials might be explained by the impact of trade liberalization on wages. They found a positive and significant correlation between import penetration and the wage premium of skilled workers in the manufacturing sector, although the identified effect of trade only explains a small portion of the rise of the skilled wage premium during the nineties.

A plausible story for the positive correlation found in Galiani-Sanguinetti(2003) may run as follows.

A growing literature argues that technological change is responsible for the increase in wage inequality observed in many countries during the past years.²⁷ If we can find a reason why skill biased technical change was associated with import penetration we could have a reasonable explanation.

We have seen that the opening up of the economy lowered significantly the price of capital goods. This encouraged a drastic process of capital for non-skilled labor substitution. There is a lot of evidence that skill and capital are complementary; so, it should be no surprise to find that capital deepening is associated with an increase in the demand for skilled labor. It is not hard to imagine that this process of non-skilled labor substitution has been stronger in those sectors more subject to trade pressures.

On the other hand, firm survival might have been associated with the introduction of technical change. Technological change can exert an upward pressure on the demand for skilled workers and thereby increase their wage premium over unskilled workers. It does not seem unreasonable to assume that the more exposed to import competition a firm was, the more its survival depended on cutting costs by a sharp increase in productivity.

Finally, there is a third, complementary, argument based on the existence of wage differentials across industries for workers with the same skills²⁸. Each sector contains hundreds of goods and processes of varying skill intensity. If imports shrink the less skill-intensive activities, this would depress unskilled workers real wages in direct proportion to import penetration and consequently contribute, *ceteris paribus*, to widening wage differentials within each sector.

In synthesis, trade liberalization in Argentina meant a lower demand for unskilled labor. The unskilled labor supply elasticity determined the relative effect on wages and employment.

11. Income distribution after liberalization

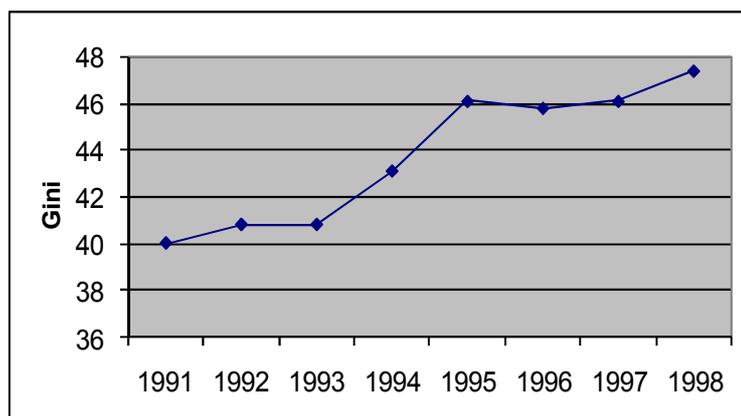
We have seen that increasing unemployment and growing inequality in wage distribution characterized the Argentine economy in the 1990s. What happened with income distribution?

²⁷ For example, see Autor (2006)

²⁸ Galiani-Sanguinetti (2003, 508)

Gasparini et al. (2000, 2) point out that the Gini coefficient increased steadily from 40.0 in 1991 to a record level of 47.4 in 1998 (see Figure 2). This means that during the 1990s Argentina ceased to be one of the most egalitarian countries in Latin America as she traditionally had been and approached the Latin America simple average Gini coefficient of 49.0.²⁹

Figure 2
Gini coefficient
Equivalent household income distribution
Greater Buenos Aires, 1991-1998



Source: Gasparini et al. (2000)

Gasparini (1999, 125) coincides in the existence of “a shift of skilled and qualified labor demand at a higher rate than the shift in supply, which had implied a relative increase in wages (and employment) in groups with incomes higher to the rest.” So, greater wage inequality also meant greater income inequality. On the other hand, he also points out that “the participation of capital in total income increased, which probably had positively affected the global level of inequality.”

Lindemboim (2005) estimated capital participation in income. The figures for the gross operating surplus³⁰ show a significant increase between 1993 and 1999.

It is true that capital income includes land rents and there is no separate estimation for this component. However, the evolution of the agricultural relative prices during the nineties –as we have seen before- does not encourage the hypothesis that the improvement in capital participation in income should be mostly attributed to land rents. Undoubtedly, capital -which was supposed to be a loser according to SST- became a net winner after the opening up of the Argentine economy.

Table 10
Gross operating surplus 1993-1999

²⁹ See Londoño-Székely (1998).

³⁰ The gross operating surplus plus the wages and indirect taxes equals the GDP at market prices.

Year	Gross surplus (%)
1993	47.93
1994	50.27
1995	52.00
1996	57.33
1997	56.82
1998	55.36
1999	54.83

So, both labor income and capital income behavior favored a more unequal distribution after the economic reforms of the 1990s. This result is consistent with Rodrik's (1998a) view that globalization tends to favor the more internationally mobile factors relative to the less mobile ones. In the Argentine case it seems that it was factor mobility rather than factor abundance what determined which were the winners and which were the losers.

An explanation for this may be the following. Suppose a closed economy with an import-competing sector which is relatively labor intensive, as the Argentine case was. Opening up this economy creates an excess supply of labor and an excess demand for capital. Since capital is internationally mobile, it will flow into this country. But the immobile factor is trapped within the boundaries of the country and cannot move out of it. The excess supply of labor will either lower real wages or create unemployment or a combination of both. *Ceteris paribus*, a lower wage must imply an absolute increase in the return to capital until it equals the international level. So, the opening up of the economy provides to internationally mobile factors the opportunity to earn the international rates of return. That is why internationally mobile factors are the candidates to be the winners while immobile factors are candidates to be the losers.

Finally, according to Gasparini et al. (2000, 17), unemployment had only a mild effect on household inequality. An important reason for that is that those who became unemployed during the nineties had extremely low individual labor incomes at the beginning of the decade. Thus, the change in labor status (from unemployed to employed) of some individuals would not have a very strong effect on household inequality.

12. Summary and conclusions

Trade liberalization has been seen as an important component of a "pro poor" development strategy.

However, the Argentine case suggests some important points which should be considered when launching a trade reform program.

1) Trade liberalization in Argentina was accompanied by capital account liberalization. The latter had faster and deeper effects on relative prices. This resulted in quite different consequences from the ones expected to follow from trade liberalization alone.

The main consequence of financial liberalization was an important inflow of capital and a consequently real exchange rate appreciation. In a country with a fixed exchange rate regime –which was the case of Argentina under the Convertibility regime- this real exchange rate appreciation took the form of an increase in the prices of non-tradables. The real-exchange-rate appreciation resulted in an adverse effect on the current account balance as well as in a shift of resources from tradable to non-tradable goods. This outcome blatantly diverges from the SST's prediction of a shift in factors in

the opposite direction. So, if trade liberalization is accompanied by capital account liberalization it is likely that relative prices will change in favor of non-tradable goods.

2) Trade liberalization caused huge job losses in formerly protected labor intensive sectors. A negative correlation between employment and import penetration ratios in the manufacturing industry is found. The increase of employment in the non-tradable activities, fostered by the increase in their relative prices, was not sufficient to absorb the massive layoffs in the manufacturing industry. Although labor was not a scarce factor it became a clear loser of the trade liberalization process. In Argentina, trade liberalization in the nineties became a weapon of massive job destruction.

3) The need to catch up with the rest-of-the-world technology caused an adoption of new technologies. This increased the demand for skilled labor, thus widening the gap between skilled and non-skilled workers' wages. So, trade liberalization came hand in hand with greater inequality.

4) Trade liberalization triggered a shift in relative prices between labor and capital because of the reduction of import tariffs on capital goods thus inducing a process of capital deepening. Capital for labor substitution was another source of higher unemployment.

5) In short, contrary to the SST, abundant factors –land and labor- were the losers and scarce factors –capital and skilled labor- were the winners. It was international factor mobility rather than factor abundance what determined which was the winner and which was the loser. The opening up of the economy provides to internationally mobile factors the opportunity to earn the international rates of return. Thus internationally mobile factors are the candidates to be the winners while immobile factors are candidates to be the losers.

In line with Larch and Lechthaler (2010, 33) conclusions, the Argentine experience remarks the importance of policies to stimulate the training of unskilled, unemployed labor as part of an economic opening up strategy which inevitably produces winners and losers.

As far as further research is concerned, several subjects may be underlined. The interaction between trade and financial liberalization is clearly an area which deserves much more theoretical effort, including the effects on factor relative prices and their consequences on the labor market. Persistent unemployment from both the theoretical and the empirical points of view is also an area which should be given priority in research.

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APPENDIX

Table A: Agricultural land area and labor force*

Country	Agricultural land area (sq.km)	Labor force (million)	
	(1)	(2)	(1)/(2)
Australia	4.172.880	8,6	485.219
Argentina	1.328.500	13,7	96.971
South Africa	993.780	11,2	88.730
Algeria	413.090	7,7	53.648
Canada	676.000	14,8	45.676
Brazil	2.645.000	69,6	38.003
Mexico	1.025.000	32,5	31.538
U.S.A.	4.112.000	132,1	31.128
Russia	2.154.940	74,3	29.003
Spain	279.000	15,8	17.658
France	292.421	25,8	11.334
China	5.225.440	666,6	7.839
India	1.797.080	331,8	5.416

*1992

Table B: GDP per capita. Average 1992/1993

Country	GDP per capita
<i>Argentina</i>	<i>6908</i>
Switzerland	35842
USA	25165
Spain	14416
Portugal	10026
Libya	7097
Gabon	5491
Mexico	5106
Brazil	2961

Table C: Balance of Payments. Argentina 1992/97

	1992	1993	1994	1995	1996	1997
Current Account	-5.462,0	-7.672,0	-10.117,0	-2.768,0	-3.787,0	-10.118,8
Commodities	-1.450,0	-2.426,0	-4.238,0	2.238,0	1.622,0	-3.194,6
Exports	12.235,0	13.117,0	15.839,0	20.964,0	23.811,0	25.223,0
Imports	13.685,0	15.543,0	20.077,0	18.726,0	22.189,0	28.417,6
Services	-2.257,0	-2.730,0	-2.941,0	-2.222,0	-2.495,0	-3.069,2
Exports	2.454,0	2.454,0	2.599,0	2.860,0	3.226,0	3.271,0
Imports	4.711,0	5.184,0	5.540,0	5.082,0	5.721,0	6.340,2
Income	-2.416,0	-2.927,0	-3.258,0	-3.216,0	-3.248,0	-4.205,0
Interest	-1.289,0	-1.081,0	-1.136,0	-1.054,0	-1.326,0	-1.770,0
Earned	2.099,0	2.135,0	3.073,0	4.348,0	4.587,0	5.332,0
Paid	3.388,0	3.216,0	4.209,0	5.402,0	5.913,0	7.102,0
Profits & Dividends	-1.127,0	-1.846,0	-2.122,0	-2.162,0	-1.922,0	-2.435,0
Transfers	661,0	411,0	320,0	432,0	334,0	350,0
Capital Account	8.567,3	12.152,0	10.678,0	2.699,0	7.569,0	13.180,8
I. Banking Sector	826,0	-1.528,0	1.895,0	4.360,0	-519,0	-1.794,0
Central Bank	-177,0	-2.818,0	307,0	1.929,0	849,0	-800,0
Others	1.003,0	1.290,0	1.588,0	2.431,0	-1.368,0	-994,0
II. Public Sector	1.285,0	7.121,0	4.097,0	5.945,0	8.731,0	7.331,0
National Govt	1.853,0	6.473,0	4.471,0	6.435,0	8.583,0	6.495,0
Local Govt	31,0	889,0	189,0	374,0	612,0	1.231,0
Public Enterprises	-599,0	-241,0	-563,0	-864,0	-464,0	-395,0
III. Private Sector	2.766,0	4.559,0	4.454,0	4.923,0	5.415,0	9.035,0
IV. Other Movts	3.690,3	2.000,0	232,0	-12.529,0	-6.058,0	-1.391,2
Variation in Reserves	3.105,3	4.480,0	561,0	-69,0	3.782,0	3.062,0
MEMO ITEM						
Imports	14.873,0	16.783,0	21.590,0	20.122,0	23.781,0	30.323,6

Table D
Employment Index by Activity
Base 1993 = 100

Manufacturing Sector	1993	1994	1996	1998	Variation 1993-98 (%)
Manufacturing Sector	100	97.1	88.0	88.3	-11,7
Food and Beverages	100	100.0	91.1	88.0	-12,0
Tobacco	100	89.9	72.5	67.0	-32,8
Textil products	100	90.0	83.0	81.0	-18,8
Apparel	100	92.1	77.9	78.9	-21,1
Leather, footwear	100	97.0	85.2	85.2	-14,9
Wood production (non furnitures)	100	98.8	86.9	92.9	-7,1
Paper production and paper products	100	100.5	93.6	83.3	-16,7
Printing and publishing	100	100.3	94.1	91.2	-8,8
Petroleum distillery	100	73.3	69.1	66.8	-32,2
Chemical products	100	97.4	94.6	93.4	-6,6
Rubber and Plastic products	100	96.0	97.9	102.5	2,5
Non metal mineral products	100	95.0	84.0	83.9	-16,1
Basic metals	100	96.3	93.0	93.0	-7,0
Metal products (non machinery and equipment	100	97.0	86.4	98.8	-1,2
Machinery an equipment	100	95.9	89.2	90.8	-9,2
Computer, Accounting and Office Machinery	100	97.0	92.0	76.3	-23,7
Engines and Electric equipment	100	94.9	82.2	84.6	-15,4
Audio, video, TV and commnication equipment	100	89.1	64.8	66.2	-33,8
Medical, Ophthalmic, watches and clocks, etc	100	94.6	89.0	85.3	-14,8
Motor vehicles and equipment	100	103.5	85.8	91.0	-9,0
Other transportation equipment	100	87.0	73.0	83.3	-16,7
Furniture and manufacturing industries	100	93.9	80.4	87.0	-13,0

Source: INDEC

Table E
Import Penetration Ratios: Imports to Gross Value Added by Industry (%)

Manufacturing Sector	1990	1991	1993	1995	1999
Food and Beverages	0.4	1.5	2.9	3.1	3.5
Tobacco	0.1	0.1	0.1	0.1	0.2
Textile products	1.6	6.7	13.6	12.2	19.8
Apparel	0.3	3.9	11.9	9.1	11.3
Leather, footwear	0.6	2.9	7.7	8.2	11.9
Wood production (non furniture)	3.3	5.5	11.8	16.6	21.4
Paper production and paper products	3.4	11.6	20.9	28.8	32.6
Printing and publishing	0.4	1.4	4.4	8.0	9.7
Petroleum distillery	0.3	2.0	2.9	6.1	3.9
Chemical products	14.7	21.9	25.3	36.8	44.3
Rubber and Plastic products	2.4	7.1	18.1	26.7	29.1
Non metal mineral products	2.2	4.0	7.3	9.7	11.1
Basic Metals	4.3	10.3	15.0	19.5	24.0
Metal products (Non machinery and equipment)	2.7	5.5	11.5	20.4	26.0
Machinery and equipment	11.8	28.6	60.5	67.3	92.0
Computer, Accounting and Office Machinery	70.7	124.4	308.5	368.3	357.8
Engines an electric equipment	10.9	17.1	44.2	62.8	68.4
Audio, video, TV and communication equipment	12.7	53.9	83.7	83.8	107.1
Medical, Ophthalmic, watches and clocks, etc	27.8	52.3	100.4	133.9	159.1
Motor vehicles and equipment	3.5	12.6	28.0	36.6	46.8
Other Transportation equipment	16.7	32.8	99.4	77.2	220.3
Furniture and manufacturing industries	4.4	18.0	29.0	30.9	39.5

Source: Galiani-Sanguinetti (2003)