SOCIAL EXCHANGE RATES, MERCOSUR AND ECONOMIC DEVELOPMENT

Léo da Rocha Ferreira
Universidade do Estado do Rio de Janeiro
Brazil

Contributed paper selected for presentation at the 25th International Conference of Agricultural Economists, August 16-22, 2003, Durban, South Africa

SOCIAL EXCHANGE RATES, MERCOSUR AND ECONOMIC DEVELOPMENT

Léo da Rocha Ferreira *

SUMMARY: The path towards a common market requires an alignment of macroeconomic policies. In the case of the MERCOSUL member countries, the observed disparities in the exchange, tax and monetary policies constitute major imbalances and impede future international economic integration. Apart from residual differences on trade policies among the member countries, macroeconomic policy disparities also reflect populism and the resulting lack of political will and mutual commitment with the regional goals. There is general professional agreement that, under a fixed exchange rate regimen with trade protection, the social exchange rate exceeds the official and/or market rate. Accordingly, the adoption of an exchange regimen with flexible exchange rates *certeris paribus* should significantly reduce the difference between the official exchange or market rate and the social exchange rate.

The general purpose of this paper is to evaluate the impact of the changes of exchange policies in Brazil against the backdrop of the MERCOSUR economic integration process. To do this, an appropriate measure for the social exchange rate is developed and estimated. This measure also has an immediate practical relevance, as it is suitable for use in the economic analysis of investment projects in Brazil.

By using a model of opportunity cost for foreign exchange to estimate the social exchange rate, the study concludes that there was no relevant alteration in the order of economic activities according to the degree of effective protection. The exchange policy changes effects will only be felt in the medium and long run, but their reflections can already be clearly perceived through the declining tendency of the social exchange rate.

Key words: Social exchange rates, MERCOSUR, exchange rate policy and economic development.

---

* Professor of Economics at Universidade do Estado Rio de Janeiro (UERJ). Rua São Francisco Xavier, 524 - Room A - 8026 – CEP 20550-013 – Rio de Janeiro, RJ Tel.: 55 – 21 – 2587-7240 Tel./FAX: 55 – 21 – 2567-9305 – leorocha@uerj.br. The author wishes to thank Paulo Fernando Cidade de Araújo and William Tyler for their valuable comments and suggestions on a previous version of this paper and to acknowledge also the help and data work done by Leandro Fernandes Caruso. The normal caveats apply.

1. INTRODUCTION

The formation of regional trade blocks has intensified during recent years, reflecting in part a component of and a reaction to the globalization process. In this aspect, MERCOSUR development is closely linked to an alignment of its members' macroeconomic policies, since the political and economic evidence clearly shows that the differences in the exchange, tax and monetary policies are increasingly deepening the imbalances among its members. The ongoing economic and political crisis in Argentina may very well in the end speed up a convergence process, mainly towards an alignment of the exchange policy for MERCOSUR.

During the 1950s and until late 1980s, the prevailing economic development strategy as revealed through the pursuit of economic policies was one of import substitution led industrialization. Currency overvaluation, coupled with recurrent foreign exchange crises, was accompanied by heavy protection for domestic industrial activities. Import policies allowed only the entrance of products with no national similar or to complement the domestic production. These import policies were characterized by very high customs duties, discretionary controls by the government and special tax regimens.[1] It was only in the very late 1980s, and especially the early 1990s, that this heavy protection began to be dismantled by a sweeping trade policy reform.

As a key part of a series of economic policy reforms during the 1990s, the Government successfully launched a stabilization program (the *Plano Real*) in 1994; this program embodied de-indexation, more conventional monetary policies, confidence boosting through a verbal commitment to renewed fiscal discipline, and the use of the exchange rate as a nominal anchor, which was gradually transformed into a crawling peg. Although inflation dropped dramatically, it did not fall quickly enough to avoid substantial currency appreciation in real terms. The resultant overvaluation in turn undermined export performance, produced pressures to partially reverse some of the gains in trade policy liberalization, undercut economic growth, and dictated restrictive interest rate policies to defend the exchange rate. Finally, in January 1999 the Government was forced to abandon the crawling rate system and to adopt a flexible exchange rate regime.

With a flexible exchange rate regime, the freedom of capital movement reduces the space for irresponsible fiscal policies, such as, for instance, increasing governmental expenses with no provisions made for their financing. Large public sector deficits during 1995-97 were accompanied by large increases in public sector debts. Greater fiscal discipline, reflected by public sector primary surpluses during 1999-2002, has staved off financial crisis, but the overall macroeconomic balances remain precarious. Pressures to refinance the public sector debt keep real interest rates in Brazil high, deterring investment and undermining future economic growth.

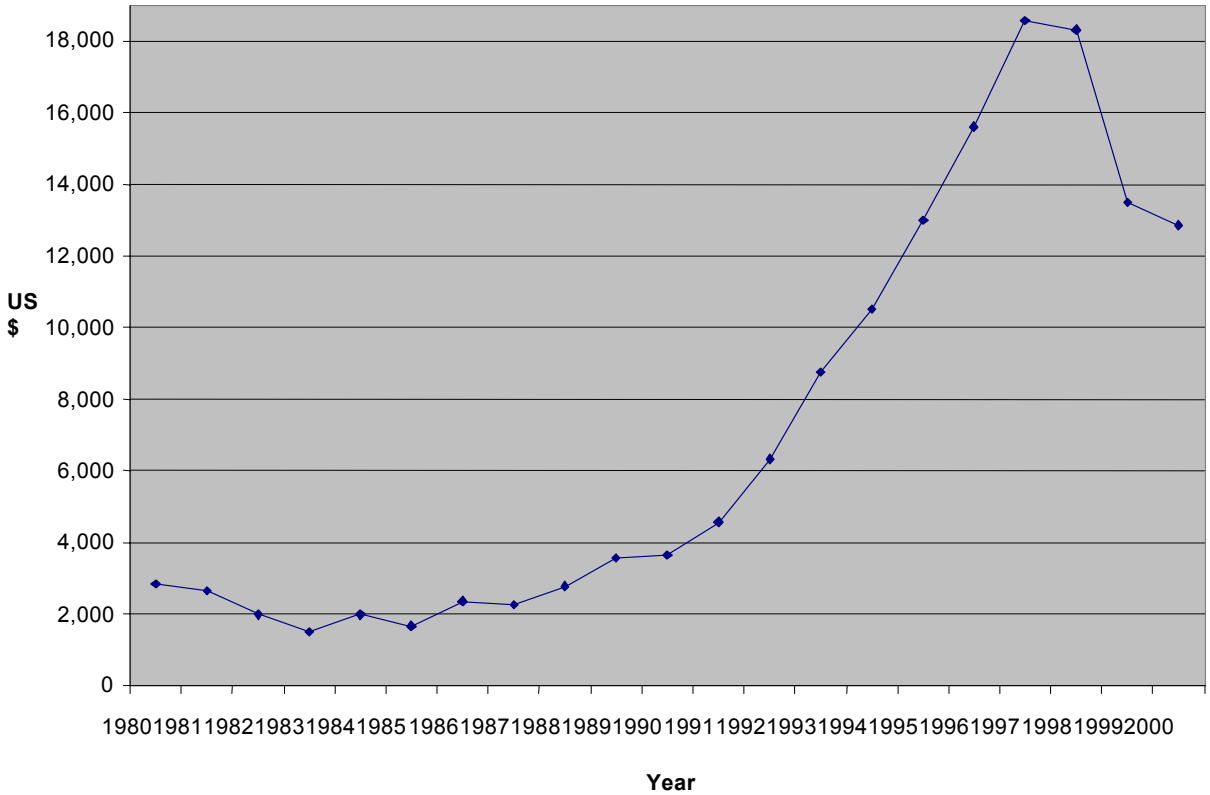
[1] Typical examples of the discretionary controls in use were the imposition of import (and export) quotas and the prohibition of importation of certain products. Under special taxation regimens a considerable portion of the import schedule was favored with tax reductions or even exemptions.

The overall objective of this paper is to evaluate the impact of the changes of exchange policies in Brazil against the backdrop of the MERCOSUR economic integration process. To do this, an appropriate measure for the social exchange rate is developed and estimated. Specifically, this measure has an immediate practical relevance, as it is suitable for use in the economic analysis of investment projects in Brazil.

2. MERCOSUL: CONSIDERATIONS AND PERSPECTIVES

The Asuncion Treaty signed in March 1991, set forth the stages required for the formation of a common market among Argentina, Brazil, Paraguay and Uruguay, known as MERCOSUR. Although it has been going through a critical phase because of the Argentina exchange crisis, the region represents about 75% of the South America's GDP, 60% of its population and 65% of its territory. From the geographical viewpoint, MERCOSUL is the largest customs union in the world. The geographical area covered by MERCOSUL is almost four times larger than that of the European Union. Figure 1 presents the evolution of the total Brazilian trade with MERCOSUL during the period 1980-2000. After MERCOSUR's creation in 1992, there has been a significant increase in the intra-regional trade. Beginning in 1998, the total Brazil-MERCOSUL trade fell as a result of the economic and exchange problems experienced by Argentina.

Figure 1 – Evolution of total Brazil-MERCOSUL trade, 1980-2000 (in US$ million)



As world trade expands, the importance of the exchange rate in transactions between countries increases proportionally. Thus, exchange stability between the currencies of the same economic bloc becomes increasingly important. The occurrence of a systematic devaluation of a certain currency in relation to another currency of another member country will bring forth an ongoing accumulation of deficits in the balance of trade of the partner with the more stable currency. On the other hand, an artificial exchange valuation may cause still worse results. The result may be the surging of demands for compensating mechanisms in the impaired country, consequently affecting the free trade in the integration area. Thus, an environment marked by an exchange instability process entailing frequent alterations in relative prices generates uncertainties on the investment decisions and distortions in the production of goods and services.

International experience and the economic literature[2] provide some examples of the importance of intra-region exchange stability. The relatively low instability of actual exchange rates historically observed within the European Union is considered a positive factor in the consolidation of the single European market. On the other hand, the scenario of exchange instability of Latin American countries in the 60's and 70's is noted as one of the main reasons for the failed attempts to regional integration.

Argentina presents a good example of the ill effects of inconsistent macroeconomic and exchange rate policies, with resultant exchange instability and economic crisis. In the early 1990s, precisely to assure some modicum of exchange and economic stability, the Argentine government adopted a currency board, fixed exchange rate regime. With the illusion that the regime would permanently guarantee peso convertibility at the stipulated one peso to one US dollar exchange rate, much of the economy became dollarized. However, as the 1990s wore on, expansionary Argentine fiscal policies, with the accumulation of substantial debt, undermined the viability of the currency board regime, and dollar convertibility at the stipulated exchange rate had to be abandoned. The economic and political consequences, with attendant banking system insolvency, economic collapse, rapid impoverishment increases, and high unemployment, are still unfolding.

Argentina has been a major participant in MERCOSUL, especially in relation to its trade with Brazil. The current economic crisis in Argentina presents important questions regarding the future of MERCOSUL. Nonetheless, in addition to discussions among the MERCOSUL member countries, important ongoing negotiations are taking place. Perhaps most importantly, discussions are currently underway – both at the MERCOSUL level and individual country level – concerning proposals for the formation of Free Trade Area of the Americas (FTAA). In addition, negotiations are also taking place between the MEROSUL countries and the European Union regarding the establishment of a free trade agreement. Recent economic analysis, based upon a comprehensive general equilibrium-modeling framework, show Brazil reaping considerable economic gains from either or both of these potential free trade arrangements.[3] There is also a proposal to expand MERCOSUL with the joining of member countries of the Andean Community (CAN). Finally, the coming

[2] Arguments along this line, with supporting evidence, are presented in GENBERG & SIMONE (1993).
[3] See TARR *et al* (2002).

round of multilateral trade negotiations, agreed in Doha in November 2001, also hold the prospect for additional Brazilian, and MERCOSUL, benefits from greater market access. An overall question is whether the multi-lateralism and the extension of regionalism could threaten MERCOSUR.

Three possible scenarios, or options, can be contemplated in this regard:[4]

1. There are those who think that MERCOSUL will be short-lived. They point to the negotiations underway and the separation between the countries with each country going its own way in accordance with its own interests. Avoiding larger political attrition with the various meetings, it is argued, will lead to no practical and useful result for the parties;
2. The second option is very close to the first. It points out to the collapse of intra-regional investments within the MERCOSUL, bearing in mind that the limited investment obtained so far has been precariously maintained, so there is little incentive for any new investments; and
3. Finally, a third option has a lot to do with a similar experience occurred in the European Union. Currently, Argentina – beset by unfolding economic crisis – has been responsible for continuous conflict within the MERCOSUL and resultant paralysis of MERCOSUL actions. During the 1960s, France pursued a similar disruptive stance within the European Union. Thus, the action taken by the European Community at the time was important. After many recurring problems and a serious institutional crisis, the so-called Hague Summit was held in December 1969. It set forth a group of goals to be reached, which served as basis for the European Community's actions and which was known as a community tripod of goals and agreed actions.[5] As the name suggests, the tripod may be summed up in three words: **deepening** (more integration between the member states with the creation of an economic and monetary union), **completion** (full achievement of common policies and launching of new policies) and **widening** (increase of number of members with the joining of new members).

The third option, in fact, can be interpreted as a deepening of MERCOSUL, with widening of its means of action, as well as the aspects included in the Common External Tariff (TEC) and technical standards, aiming at a more advanced integration stage. This would include completing existing agreed actions and launching new policies aimed at more complete economic integration for MERCOSUL. Another important and desirable aspect would include the widening of its geographic space with the joining of new members.[6]

The important element in the discussions currently underway is the search for a continuous deepening of MERCOSUR's regional integration. Clearly this goal can be attained with no need to choose between regionalism and multi-lateralism. These are not

[4] See the article of BASSO & FLOH (2001) in *Gazeta Mercantil* of 19/06/2001.
[5] See BASSO & FLOH (2001), op cit..
[6] Venezuela has formally presented its application for admission under the same conditions as Chile and Bolivia.

necessarily considered conflicting tendencies or goals, but rather converging ones, as long as the implicit arrangements are well balanced and well negotiated.

Table 1 shows the evolution of the nominal and effective tariff protection rates in Brazil for the period 1987-2000. As observed, the Brazilian trade opening process caused a decrease of the average nominal rate from 49 to 17.1% for capital goods and from 57.5 to 14.1% for other imported goods. Correspondingly, there were also observed decreases in the average effective tariff rates, e.g., from 47.5 to 17.8% for capital goods and from 77.1 to 18.8% for other imported goods, during the period.

Table 1 – Nominal and effective tariff protection rates in Brazil, 1987-2000 (in %)

	Average Nominal Rates			Average Effective Rates		
Year	Oil	Capital Goods	Others	Oil	Capital Goods	Other
1987	15.6	49.0	57.5	8.3	47.5	77.1
1988	5.6	46.8	39.6	-2.9	50.2	52.1
1989	1.9	38.8	32.1	-5.4	44.0	46.5
1990	3.3	37.2	30.5	-3.4	41.5	47.7
1991	1.7	28.5	23.6	-4.0	31.3	34.8
1992	0.6	20.2	15.7	-4.0	22.1	20.3
1993	0.0	19.1	13.5	-5.0	21.7	16.7
1994	0.0	19.0	11.2	-4.9	22.4	13.6
1995	0.0	16.5	12.8	-2.4	18.0	17.1
1996	0.0	15.5	13.0	-1.8	16.7	19.9
1997	0.0	17.8	15.6	-2.2	18.6	21.6
1998	0.0	17.7	15.5	-2.2	18.6	20.2
1999	0.0	17.6	14.8	-1.8	18.2	19.6
2000	0.0	17.1	14.1	-1.6	17.8	18.8

Source: KUME, PIANI & SOUZA (2000) for 1987/1998 and TYLER (2002) for 1999 and 2000.

Authors such as VALLS PEREIRA (1998), recognizing the importance of the exchange stability for MERCOSUR, recommend consistent domestic policies and similar inflation rates for the member states. Besides the establishment of common inflation goals, they suggest an agreement on the exchange system for MERCOSUL countries.

To conclude, convergence in a regional integration agreement towards a common market requires an alignment of macroeconomic policies. Evidence clearly demonstrates that marked differences between the exchange, tax and monetary policies deepen the imbalances between the members. Such an alignment constitutes a difficult challenge because of a lack of political will and mutual commitment to regional goals. However, the recent events in Argentina may well, in the end, expedite this convergence process, mainly towards an alignment of exchange policies for MERCOSUL.

3. METHODOLOGY

With such major ongoing phenomena as globalization and the expansion of international trade relations, the divergence between the official or market exchange rate and the social rate cannot be disregarded in project evaluation. If the required adjustments are not made, there will be an over- or underestimate of the project costs and benefits. Consequently, market prices will not necessarily reflect social, or scarcity, prices. Thus, we have to proceed with the necessary adjustments to the exchange rate for the purpose of project evaluation. With this wider goal in mind and in the light of the existing literature, a specific model was adapted to the Brazilian conditions for the calculation of the social exchange rate. Whenever a project is likely to affect a country's balance of payments, its foreign currency-calculated items must be properly adjusted with the utilization of the social exchange rate.

A project can affect a country's balance of payments in three ways: (a) increases in exports, as a result of the goods or services produced; (b) increments in imports of the equipment and inputs required; and (c) decreases in imports of similar or substitute goods.

The concept of social exchange rate in Brazil, widely used in the economic or social evaluation of projects, is formalized in the pioneering work developed by Bacha and Taylor.[7] In order to assess the impact of changes of a country's exchange policy, its results have to be analyzed in relation to the social benefits and costs generated by the project implementation.

The relevant literature presents various methodological alternatives for the calculation of the social exchange rate.[8] The possibilities of using use more involved alternative methodological approaches such as the estimation of a fundamental equilibrium exchange rate and of the social cost of foreign exchange generation were assessed but not pursued for data availability reasons.

It is widely accepted by economists that the social exchange rate is usually higher than the official rate or the market rate. Accordingly, it is correct to say that the social (direct) benefits with an export or with a decrease in imports are higher than the respective amounts in currency units. Likewise, the social (direct) costs with an import or with a decrease in exports surpass the conversion into currency units at the current exchange rate.

The argument of the balanced exchange rate has several versions. The simplest one adopts as social exchange rate the exchange relationship or parity exchange between two currencies providing identical market value in a typical basket of goods and services.

The methodology for the calculation of the opportunity cost of foreign exchange consists of decomposing the offer function of foreign exchange revenues in order to

[7] See works by BACHA (1970) and BACHA & TAYLOR (1971).

[8] The main methodological alternatives used for the calculation of the social exchange rate are: linear and non-linear programming, the opportunity costs of foreign exchange, the fundamental equilibrium exchange rate (FEER), and the social costs of generating foreign exchange.

compare the opportunity costs of various ways to expand foreign exchange revenues. This approach is related to the Ricardian principle of comparative advantage in world trade. Generally, the opportunity cost models for generating net foreign exchange are the simplest and based on the static theory of international trade. Following this reasoning, the existence or not of distortions in the operation of domestic markets of factors, tariff policy, the existence of quotas, prohibitions, preferential agreements between nations, dumping and other barriers to foreign trade are considered to be relevant and measurable. Thus, the social benefits and costs generated by a certain project are calculated from an actual situation and evidently not from an ideal situation. Consequently, the calculation of the social exchange rate using this methodological approach requires a more generic model.[9]

Brazil's participation in total world trade corresponded to less than 1%[10] in 2000. Therefore, the hypothesis of a small country, usual in international economics, can be applied to the Brazilian case, since its economy has a marginal participation in the total of world imports and exports. As a result, international prices are not affected by greater imports or exports carried out by the country.[11]

The empirical analysis used secondary data of the balance of payments (presented in Table 2) and elasticity estimates for export and import prices, which are shown in Table 3. Both exports and imports of any good or service are obtained respectively from the excess offer and domestic demand. The hypothesis of international prices being given for the country is imposed below in the development of the analytical framework.

[9]The theoretical development and popularization of this approach are due to Arnold C. Harberger of Chicago University. The treatment is, in general lines, similar to that adopted for the social cost of other inputs discussed by CONTADOR (2000). Although HARBERGER (1972) adopts the tariffs and subsidies on import and export as the only distortions, there are no great difficulties in expanding the reasoning to consider also the distortions in the markets of factors.

[10] According to data from Foreign Trade Secretariat (SECEX), of the Ministry of Development, Industry and Foreign Trade, the participation of Brazilian exports and imports in 2000, in relation to the world total, was 0.88 and 0.89%, respectively. It can be noted that these shares have fallen from around 3% in the late 1940s.

[11] This hypothesis (the small country assumption in international trade theory) can be incorrect in certain cases, such as, for instance, coffee exports, where Brazilian behavior can affect international price. Soybeans is another basic product for which Brazil, having emerged as a major world exporter, also has the ability to affect world prices in these markets.

Table 2: Behavior of Brazil's Trade Balance, 1980-2000 (US$ Million)

	Exports (X)			Imports (M)			Balance
Year	Basic	Manufactured	Total	Oil	Capital Goods	Total	(X – M)
1980	8428	9028	20133	9405	4381	22954	-2821
1981	8852	11884	23292	10600	4023	22092	1200
1982	8195	10253	20176	9568	3272	19395	781
1983	8484	11275	21899	8607	2506	15429	6470
1984	8755	15132	27006	6735	2151	13916	13090
1985	8538	14063	25642	5418	2480	13154	12488
1986	7280	12404	22349	2786	3464	14045	8304
1987	8022	14839	26224	3850	3958	15053	11171
1988	9411	19187	33789	3198	4795	14605	19184
1989	9548	18634	34383	3390	4576	18263	16120
1990	8748	16988	31414	4354	3989	20661	10753
1991	8737	17757	31620	3371	4256	21041	10579
1992	8840	21396	35862	3069	4499	20554	15308
1993	9366	23473	38597	2138	5091	25659	12938
1994	11058	24959	43545	2339	7575	33105	10440
1995	10969	25565	46506	2587	11445	49664	-3158
1996	11900	26413	47747	3461	12705	53301	-5554
1997	14474	29190	52990	3220	16993	61347	-8357
1998	12970	29369	51120	1964	16089	57594	-6474
1999	11827	27328	48011	2124	13555	49272	-1261
2000	12562	32528	55086	3188	13586	55783	-697

Source: FGV, *Conjuntura Econômica.*

Table 3 – Estimates of elasticity-export and import prices ratios

Estimate	Elasticity-export offer price (ε)	Elasticity-import demand price (η)
CARVALHO & DE NEGRI (2000)		
Basic Products	0.123	-1.342
World Imports (PB)	**0.655**	-
RESENDE (1997)		
Total Imports (short term)	-	**-0.540**
Total Imports (long term)	-	-0.083
VARGAS (1993)		
Basic Products	1.890	-1.040
Basic Products*	-	-0.620
DE LA CAL (1981)		
Total Imports (short term)	-	-0.180
Total Imports (long term)	-	-1.488
Basic Products	**0.544**	-
Manufactured Products	0.852	-
Capital Goods	-	**-1.020**
Oil	-	**0.313**
CARVALHO & HADDAD (1980)		
Basic Products	0.589	-
Manufactured Products	0.576	-
World Imports (PB)	0.786	-
World Imports (PM)	2.825	-
LEMGRUBER (1976)		
Total Imports	-	-0.495
Capital Goods	-	-0.727
Intermediate Consumption Goods	-	-0.023
Final Consumption Goods	-	-0.213
Oil	-	0.663
TYLER (1976)		
Manufactured Products	**0.878**	-
World Imports (PM)	0.003	-
SUPLICY (1976)		
Total Imports	-	-0.134
Basic Products	0.567	-
Manufactured Products	0.872	-
World Imports (PB)	1.183	-
World Imports (PM)	2.021	-
DOELLINGER *et al.* (1971)		
Basic Products	2.120	-
Manufactured Products	1.480	-

PB – Basic Products; **PM** – Manufactured Products and * imports without wheat and oil
Source: Bibliography Reference

The model of the opportunity cost for foreign exchange for a large number of products, according to the development of the concept popularized by HARBERGER (1972), with approximately linear functions of offer and demand can be formalized by the expression below:[12]

$$E^* = E\left[\frac{\sum_i \varepsilon'_i X_i \left(1+t^*_{xi}\right)^{-1} + \sum_j |\eta'_j| M_j \left(1+t^*_{mj}\right)}{\sum_i \varepsilon'_i X_i + \sum_j |\eta'_j| M_j}\right] \qquad (1)$$

Where,

E* = the opportunity cost of foreign exchange;
E = current exchange rate;
ε'_i = elasticity-price of offer of export of each class of products **i** in relation to the exchange rate;
η'_j = elasticity-price of demand of import of each class of products **j** in relation to the exchange rate;
X_i = export amount in dollars of class of products **i**;
M_j = import amount in dollars of class of products **j**;
t^*_{xi}= sum of distortions in the market of factors and tariffs over the exports of each class of products **i**; and
t^*_{mj} = sum of distortions in the market of factors and tariffs over the imports of each class of products **j**.

Adding further the definition of mean tariff (with distortion) of export,

$$\overline{\left(1+t^*_x\right)^{-1}} = \frac{\sum_i \varepsilon'_i X_i \left(1+t^*_i\right)}{\sum_i \varepsilon'_i X_i} \qquad (2)$$

and of import

$$\overline{\left(1+t^*_m\right)} = \frac{\sum_j |\eta'_i| M_j \left(1+t^*_j\right)}{\sum_j |\eta'_j| M_j} \qquad (3)$$

[12] The next step would be to ascertain that the social rate does not depend on the magnitude of the effect on the balance of trade. For further details and graphic presentation, see FERREIRA (2002).

and the mean export elasticity

$$\overline{\varepsilon'} = \frac{\sum_i \varepsilon'_i \, X_i}{\sum_i X_i} \quad \text{, where} \quad X = \sum_i X_i \tag{4}$$

and of import

$$\overline{\eta'} = \frac{\sum_j \eta'_j \, M_j}{\sum_j M_j} \quad \text{, where} \quad M = \sum_j M_j \tag{5}$$

and substituting in the expression (1) it results in

$$E^* = E\left[\frac{\overline{\varepsilon'}\overline{\left(1+t_x^*\right)^{-1}}X + |\overline{\eta'}|\overline{\left(1+t_m^*\right)}M}{\overline{\varepsilon'}X + |\overline{\eta'}|M}\right] \tag{6}$$

or better yet, the social exchange rate can be interpreted as:

$$\frac{E^*}{E} = \left[\frac{\overline{\varepsilon'}\overline{\left(1+t_x^*\right)^{-1}}X + |\overline{\eta'}|\overline{\left(1+t_m^*\right)}M}{\overline{\varepsilon'}X + |\overline{\eta'}|M}\right] \tag{7}$$

4. RESULTS AND DISCUSSION

The estimate of the social exchange rate, derived from the model of the opportunity cost for foreign exchange used import data (M) and export data (X) from the balance of payments published by the Fundação Getúlio Vargas in its monthly magazine *Conjuntura Econômica.* Exports comprise basic (i.e., primary) products, manufactured goods and others products categories. For imports there are oil, capital goods and others goods categories. In relation to export and import price-elasticities we used estimates made by CARVALHO & DE NEGRI (2000), RESENDE (1997), DE LA CAL (1981) and

TYLER (1976), presented in Table 3. Finally, import tariffs and related distortions were approximated by the average nominal tariff protection rates (Scenario 1) and the effective rates (Scenario 2) estimated by KUME, PIANI, & SOUZA (2000) for the period 1980-98 and by TYLER (2002) for 1999-2000.[13]

The results from the estimations of the social exchange rate for the period 1980-2000 are presented in Table 4. They show that the social exchange rate has always been higher than the exchange rate in force. For the period under analysis, there was observed a gradual drop in the premium of the social exchange rate (in comparison with the prevailing exchange rate) from 17.4% in 1980 to 2.2% in 2000 (using nominal protection rates) and from 20.3% in 1980 to 2.7% in 2000 (using effective tariff protection rates). Thus, the research results show that the mean distortion in the exchange market in 1980 was around 20%, while in 2000 this distortion would be around 2.5%.

In the graphic representation of the social exchange rate evolution for the period under consideration, presented in Figure 2, we can notice three distinct phases in relation to the social exchange rate evolution in the period being analyzed. The first phase comprises the period from 1980 to 1986 when the social exchange rate evolved downward, with a variation of 29.5% to 28% higher than the exchange rate in force. The second phase refers to the 1987-1992 period when there was a much more marked drop of the social exchange rate with variation from 18.5 to 6.4%. Finally, the third phase comprises the period from 1993, where there is a certain stabilization of the rate variation with a fluctuation going from 6.2 to 6.9%. It is worth noticing that as of 1999, coincident with the adoption of the flexible exchange rate regime, we can observe a possible start of a faster decrease of the social exchange rate in relation to the prevailing market rate.

[13] The data used in the social exchange rate estimations are presented in Tables 1, 2 and 3. The mathematical formulation employed is the equation (11), where the opportunity cost of foreign exchange is given by the E*/E ratio, and is expressed as a premium in relation to the prevailing exchange rate (E). As to the elasticity-price coefficients, the estimates by various authors were examined, and it appears that there are no major discrepancies in the estimates found in the literature. Thus, the coefficients used may be considered as representing the mean elasticity. For the Brazilian exports before 1987, therefore, before the Kandir Law, an average distortion of 13% was considered related to the ICMS application. Tyler's estimates were made for a yet unpublished research in progress.

Table 4 – Estimates of Social Exchange Rates in Brazil, 1980-2000 (E*/E)

Year	Social Exchange Rate with Nominal Protection Rates	Social Exchange Rate with Effective Tariff Protection Rates
1980	1.1742	1.2029
1981	1.1334	1.1530
1982	1.1315	1.1514
1983	1.0781	1.0891
1984	1.0521	1.0674
1985	1.0659	1.0839
1986	1.1306	1.1636
1987	1.1817	1.2072
1988	1.1251	1.1441
1989	1.1155	1.1463
1990	1.1181	1.1585
1991	1.0956	1.1237
1992	1.0608	1.0718
1993	1.0610	1.0720
1994	1.0619	1.0733
1995	1.0744	1.0910
1996	1.0744	1.0989
1997	1.0917	1.1120
1998	1.0912	1.1079
1999	1.0841	1.0999
2000	1.0224	1.0270

Source: Author's estimates.

Figure 2 – Evolution of estimate of social exchange rate, 1980-2000

5. CONCLUSIONS

MERCOSUL is one in many attempts to achieve some degree of regional integration in Latin America. The most dramatic and advanced of these attempts has been the NAFTA (North America Free Trade Agreement). By attempting to achieve a free trade area between among of the world's most developed countries (the US and Canada) and a heavily protected developing country (Mexico), NAFTA possesses unique elements. At the time of NAFTA's effectiveness Mexico had been undergoing a series of economic reforms, intended to modernize the economy and reduce protection. By most professional accounts, Mexico has been a major beneficiary of the NAFTA.

One major difference between MERCOSUL and NAFTA is that MERCOSUL has much more lofty and ambitious aims, i.e., the eventual creation of a common market following the effective establishment of a customs union. With MERCOSUL, unlike NAFTA, the protectionism against the rest of the world was intensified instead of remaining unchanged. Consequently, the regional integration process with MERCOSUL has brought controversies into the international setting. Until recently, this integration process had been successful in creating trade among its members. This success however

has been reached at the expense of the some trade deviation in relation to the other countries, especially in relation to the European Union.[14]

As mentioned above, the convergence towards a common market requires an alignment of the macroeconomic policies. In the case of MERCOSUL, the evidence shows that differences in the exchange, tax and monetary policies are major factors impeding integration. Deepening of the integration efforts will require reductions in the imbalances among MERCOSUL members.

The original hypothesis that the change in the exchange regimen in January 1999 would cause a considerable decrease of the social exchange rate was not effectively demonstrated. Moreover, the gradual decrease of the social exchange rate in the considered period was largely due to the commercial opening process started in Brazil at the end of the eighties.

The effect of the changes in the exchange policy takes longer to appear. In this aspect, the research results can be compared with the analysis of Brazilian import policies, made by KUME, PIANI & SOUZA (2000). They studied the major changes observed in the 1987-1998 period, along with their effects on foreign trade. According to this work, the Brazilian import policy can be subdivided into four stages.

During the first stage, between 1987 and 1989, the average nominal rate dropped from 54.7% to 29.4% and the effective rate from 67.8% to 38.8%.[15] However, the emphasis of the change was only on the redundant portions of the legal tariff rates while non-tariff barriers and the special taxation regimes that allowed imports with tax exemptions or reductions, were left largely untouched. Consequently, as observed by KUME, PIANI, & SOUZA (2000), the effects on the import volume and the domestic production were nil. In this period, the research results showed a reduction of the social exchange rate from 18% to 11%, using the average nominal rate and from 21% to 15%, using the effective rate.

A second stage encompassed the 1990-93 period; it involved rather sweeping trade policy reforms. After the 1990 extinction of the administrative barriers that hindered foreign purchases and of special regimens, a schedule of tariff reductions was enforced in the 1991-93 period. At the end of this process, the legal average nominal tariff rate had fallen to 12.5% and the effective rate to 15.2%. At this stage, the import controls were solely exercised by the customs tariff, at levels consistent with those in force in other developing economies. In 1993 the estimated social exchange rate was about 6% (nominal average rate) and 7% (effective rate).

---

[14] See, for instance, CASTILHO (2001) work on agreements and disagreements between MERCOSUR and European Union, where MERCOSUR'S bargaining power is pointed out in the negotiations with the European Union, exactly for this reason.

[15] In addition to the nominal rate applicable to a certain product, the effective rate also considers the rates applied to its inputs that encumber its cost structure. In other words, the effective rate measures the increased in the added value provided by the rate structure in relation to the added value without the presence of rates (free trade situation). For further details and alternative methodologies to estimate the effective rate, see WILLIAMSON (1989), pp 82-83, *op cit*.

During a third stage, occurring during 1994, the rate reductions were accelerated as a result from the need to impose more discipline on the domestic prices, by expanding the foreign competition, what caused also the anticipation of the commitments assumed at MERCOSUR for the establishment of the foreign common rate. These actions caused a decrease of the nominal average rate to 10.2% and of the effective rate to 12.3%. As a result, the acquisitions abroad were intensified and Brazil, prompted by the real currency appreciation taking place as a part of the Plano Real, started having commercial deficits as of the last two months of that year, a fact that had not occurred since January 1987.[16]

During a fourth stage, covering the period beginning in 1995, the country suffered a set back in the import liberalization process that had been gradually implemented since 1988. The Mexican crisis in December 1994 made clear the gravity of the risks to maintain high deficits in current transactions and led the Brazilian government to increase tariff rates on automobiles, electro-electronic goods and textiles, among others. At the same time, the nontariff barriers were reapplied to foreign products, as a pre-payment of imports, compliance with health requirements and creation of a long list of products for which a previous import license was required again. In 1995, the average nominal rate increased to 12.2% and the effective rate to 15.6%, while the estimated social exchange rate was 7.4%, using the average nominal rate, and 9.1% using the effective rate.

Finally, in November 1997, in view of the Asian crisis effects on the international financial market, the Brazilian government raised the customs duties in three percentage points, causing the average rate to rise to 14.9% and the effective rate to 18.6%. After a relative stabilization, in 1997 the estimate of the social exchange rate has its first increase, going up to 9.1% using the average nominal rate and 11.2% using the effective rate.

Given the agriculture potential in MERCOSUL countries, the investment in agronomic research is a fundamental factor to increase its international competitiveness. Both Argentina and Brazil have excellent public systems of agricultural research. Although the available resources have dwindled in the last years, both research systems are still productive.

Another major question yet to be answered concerns the private sector's investment needs, mainly for the agricultural sector. We can observe a large flow of new technologies and an increase of investments in research. We can already perceive a greater immediate need of public investments in research and in science-oriented formation to meet a potential demand.

Despite the setbacks in 1995, the reach of the commercial opening measures adopted in Brazil since 1988 has been remarkable. Nominal and effective protection rates were substantially reduced, and the result has been a greater uniformity in the structure of incentives provided by the tariff rates, implying less governmental intervention in the allocation of society's scarce resources. However, there was no important change in the order of activities according to the degree of effective protection. To conclude, the effects of both - the trade policy liberalization and the adopting of a flexible exchange rate regime

[16] See KUME, PIANI, & SOUZA (2000), *op. cit*.

- will only be felt in the medium and long terms, but we can already clearly perceive some sign of their effects in the declining trend of the social exchange rate.

6. BIBLIOGRAPHY

BACHA, E. "Taxas de câmbio de equilíbrio: formulação teórica e exemplificação". ***Revista Brasileira de Economia***, 24(1): 145-153, January/March 1970.

_____. & TAYLOR. L. "Foreign exchange shadow prices: a critical review of current theories". ***The Quarterly Journal of Economics***, 85(2): 197-224, 1971.

BASSO, M. & FLOH, F. "Três opções para o MERCOSUL", ***In***: Análise & Perspectivas, ***Gazeta Mercantil***, 19/06/2001, p. A-3.

CARVALHO, J. L. & HADDAD, C. L. S. ***Estratégias comerciais e absorção de mão-de-obra no Brasil***. Rio de Janeiro, Editora da FGV, 1980.

CARVALHO, A. & DE NEGRI, J. A. ***Estimação de equações de importação de produtos agropecuários para o Brasil (1977/1998)***. Brasília, IPEA, Texto para Discussão Nº 698, January 2000.

CASTILHO, M. R. "Acordos e desacordos nas relações comerciais EU – MERCOSUL". ***In***: BAUMMANN, R. (org.). ***MERCOSUL – avanços e desafios da integração***. Brasília, IPEA/CEPAL, 2001, 479p.

CONTADOR, C. R. ***Projetos sociais - avaliação e prática***. São Paulo, Editora Atlas, 4th Ed, 2000.

CORDEN, W. M. "The normative theory of international trade", ***In***: JONES, R. W. & KENEN, P. B. (eds.) ***Handbook of international economics***, North Holland, 1984.

DE LA CAL, Manuel S. ***Uma análise econométrica da balança comercial brasileira: 1965 – 1979***. Niterói, Universidade Federal Fluminense, MS Thesis, 1981.

DOELLINGER, C.; FARIA, H. B. C.; RAMOS, R. N. M. & CAVALCANTI, L. C. ***Transformações da estrutura das exportações brasileiras: 1964/70***. Rio de Janeiro, Editora do IPEA, 1973.

FERREIRA, Léo R. ***Taxa social de câmbio e política cambial no Brasil***. Rio de Janeiro, UERJ, Full Professor Thesis, 2002.

HARBERGER A. C. (Org.) ***Project evaluation: collected papers***. Chicago, Markham, 1972.

KUME, H.; PIANI, G. & SOUZA, C. F. B. ***A política brasileira de importação no período 1987-98: descrição e avaliação***. Rio de Janeiro, IPEA, May 2000, ***mimeo***, 27 p.

LEMGRUBER, A. C. "O balanço de pagamentos do Brasil – uma análise quantitativa". ***Pesquisa e Planejamento Econômico***, 6(2): 313-52, August 1976.

RESENDE, M. F. C. ***Disponibilidade cambial e especificação da função de demanda de importações***. Rio de Janeiro, IPEA, Texto para Discussão Nº 506, August 1997, 38p.

SUPLICY, E. ***Os efeitos das minidesvalorizações na economia brasileira***. Rio de Janeiro, Editora da FGV, 1976.

TARR, D. G.; Harrison, G.; Rutherford, T. and Gurgel, A. ***Regional, Multilateral and Unilateral Trade Policies for Growth and Poverty Reduction in Brazil***, unpublished World Bank working paper, March 2002.

TYLER, W. G. ***Strengthening the Policy Environmnt for Export Growth in Brazil***. Rio de Janeiro, FCE / UERJ, 2002 (work in progress).

_____. ***Manufactured export expansion and industrialization in Brazil***. Tubingen, Germany, J.C. B. Mohr, 1976.

VALLS PEREIRA, L. "Tratado de Assunção: resultados e perspectivas". ***In***: BRANDÃO, A. S. P. & VALLS PEREIRA, L. (orgs.) ***MERCOSUL – perspectivas da integração***. Rio de Janeiro, Editora da FGV, 3rd ed, pp 11-46, 1998.

VARGAS, Gloria C. "Tasa de cambio real efectiva y exportaciones brasileñas de productos manufacturados". Rio de Janeiro, IPEA/PNPE, ***Cadernos de Economia***, Nº 14, November 1993, 84p.

WILLIAMSON, J. ***A economia aberta e a economia mundial***. Rio de Janeiro, Editora Campus, 1989.