

TURKEY'S COMPETITIVENESS IN THE EU MARKET: A COMPARISON OF DIFFERENT TRADE MEASURES

by

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- FIRST DRAFT-

ABSTRACT:

The paper basically explores the competitiveness of the Turkish firms in the EU Market by employing different trade measures such as the Balassa's Revealed Comparative Advantage Index (RCA), Vollrath's Revealed Competitiveness Index, Trade Entropy Index, Trade Overlap Index, Grubel-Lloyd Index, and Brülhart B Marginal Intra-Industry Trade Index. The main drawback of the existing empirical literature is that various RCA indices are widely used to explain the competitiveness of a country. This paper however not only focus on various RCA indices but some additional and complementary measures of competitiveness are also applied since they underline different aspects/dimensions of competitiveness.

Consistency of the results of various trade measures are then compared by using the Sperman Rank Correlation and Mann-Whitney-Wilcoxon tests etc. Based on the empirical results, some policy implications are drawn.

Keywords: Competitiveness, Different trade measures, Consistency

JEL Classification: F14

I. INTRODUCTION

The Customs Union (CU) agreement signed between Turkey and the European Union (EU) that came into force in 1996 (a unique country example of the application of the CU without any form of active participation in Brussels, ie without full membership) has led to a trade liberalisation and increased competitive pressure for both sides. Turkey has started negotiations for full-membership with the EU in 2005 after the acknowledgement of country's fulfilment of the pre-conditions by the EU such as the well known "political criteria" on the one hand, and "economic criteria" which includes the establishing of a well-functioning market economy, existence of free and functioning competition (so called the Copenhagen "economic" criteria), on the other. The beginning of negotiations has opened the door of a new era and paved the way for full-membership

The enlargement of the EU resulted in the inclusion of the ten countries in May 2004 and the two countries in January 2007. The EU now consists of twenty seven countries. Turkey's accession to the EU is anticipated by 2020. In the meantime, relative competitiveness will play a crucial role in shaping changes in trade flows and patterns between Turkey, members and third countries. It is thus important to explore the trade patterns and trade specialization.

The paper examine the relative competitiveness of the Turkish firms and compare the patterns of specialisation in trade *vis-à-vis* the EU by employing different trade measures such as the Balassa's Revealed Comparative Advantage (RCA) Index, Vollrath's Revealed Competitiveness Index (VRC), Trade Entropy Index (TE), Trade Overlap Index (TO), Grubel-Lloyd Index (G-L), and Brühlhart B Marginal Intra-Industry Trade Index (Brühlhart-B). The main drawback of the existing empirical literature is that various RCA indices are widely used to explain the competitiveness of a country. The definition and empirical adaptation of RCA indices are however subject to some controversies. Thus the paper in hand focuses not only in various RCA indices but some additional and complementary measures of competitiveness are also applied since they underline different aspects/dimensions as regards competitiveness. Consistency of the results of various trade measures are then compared by using the Sperman Rank Correlation and Mann-Whitney-Wilcoxon tests etc.

The plan of the paper is as follows. The following section focuses on the measurement of competitiveness by reviewing different trade measures. Section 3 outlines Turkey's trade and the trade relations between Turkey and the EU. Section 4 reports the data

and the empirical findings. The final section draws some conclusions and policy implications.

II. ON THE TRADE MEASURES OF COMPETITIVENESS: a selective review

In recent years, trade theories and their empirical practices have followed two main directions. First, “inter-industry trade” (based on comparative advantage) represented by the Heckscher-Ohlin (H-O) model, and second, “intra-industry trade” represented by the New Trade Theory. The H-O model relies on factor endowment differences to explain trade. Recent years have witnessed the modification of the H-O by dropping some of its simplifying assumptions and acknowledging differences in consumption, productivity, production technology, multiple cones of trade, and factor price differences. What if factor endowments of the trading countries are similar? The line of “intra-industry trade” assumes various forms of imperfect competition with production differentiation, economies of scale, consumer preferences, trade mark, and consequent specialization. There is little doubt that the two lines of models (ie. inter-industry versus intra-industry trade models) are not rival but complementary.

Taking the above introductory information into consideration, trade measures are preferred to be divided into three categories in this paper, namely i) *measure of concentration/dispersion of trade flows*, ii) *trade measures of inter-industry trade*, and iii) *trade measures of intra-industry trade*.

i) *measure of concentration/dispersion of trade flows: Trade Entropy Index/ TE*

Whether a country trading with others is considered to be deeply integrated with these countries or not is an important matter. Thus TE index is employed to measure the concentration or dispersion of the trade flow of the country in hand (Turkey in this article). As regards the empirics of the TE in this article, we are interested in the level of integration of Turkey in to the EU. This level of integration will be the starting point of deeper and detailed empirical analysis of trade measures of inter-industry trade and intra-industry trade (Laaser and Schrader 2002: 17).

The equations used to calculate (absolute) trade entropy index (TE) of import and export are as follows¹:

$$TE_{mi} = \sum_j a_{ij} \ln(1/a_{ij}) \quad \text{with } 0 < a_{ij} < 1 \quad \text{and} \quad \sum_j a_{ij} = 1 \quad (1)$$

¹ See Marwah and Klein (1995).

$$TE_{xi} = \sum_j b_{ij} \ln(1/b_{ij}) \quad \text{with } 0 < b_{ij} < 1 \quad \text{and} \quad \sum_j b_{ij} = 1 \quad (2)$$

where a_{ij} and b_{ij} represent the import and export shares of country i from country j and country i to country j respectively. The lower the index the less dispersed is the export (or import) of that country. In other words, the lower the index the more concentrated is the export (or import) of that country. Accordingly, a country with low concentration is regarded being well integrated in to the world trade, while a country with a high concentration implies that country's trade is restricted to a small number of trade partners (Laaser, Schrader 2002: 17).

ii) *trade measures of inter-industry trade: RCA, VRC*

Balassa's original definition of Revealed Comparative Advantage/ RCA (Balassa, 1965) or different versions of it, namely Vollrath's Revealed Competitiveness Index (VRC) (Vollrath, 1991).

• **Balassa's Revealed Comparative Advantage Index/ RCA**

According to the H-O theory, a country's comparative advantage is determined by its relative factor scarcity. However, it is well known that measuring comparative advantage and testing the Hecksher-Ohlin (H-O) theory have some difficulties (Balassa, 1989: 42-4) since relative prices under autarky are not observable. Given this fact, Balassa (1965) proposes² that it may not be necessary to include all constituents effecting country's comparative advantage. Instead, he suggests that comparative advantage is revealed by observed trade patterns, and in line with the theory, one needs pre-trade relative prices which are not observable. Thus, inferring comparative advantage from observed data is named "revealed" comparative advantage (RCA). In practice, this is a commonly accepted method to analysing trade data.

Balassa (1965) derives an index³ (called the Balassa Index, ie. RCA in this paper) that measures a country's comparative advantage. The Balassa index tries to identify whether a country has a "revealed" comparative advantage rather than to determine the underlying sources of comparative advantage. However, since first suggested by Balassa (1965), the definition of RCA has been revised and modified such that an excessive number of measures now exist. Some studies measures RCA at the global level (see e.g. Vollrath, 1991), others at

² See also Balassa (1977).

³ Before Balassa introduced his famous RCA index in 1965, Liesner (1958) had already contributed to the empirical literature of RCA. In this sense, Liesner (1958) is the first empirical study in the literature of RCA. The proposed simple measure of RCA by Liesner is as follows: $RCA = X_{ij} / X_{nj}$

a sub-global / regional level (see Balassa's original index), and while some others evaluates the measurement as bilateral trade between two countries or trading partners (see e.g. Dimelis and Gatsios, 1995).

The original RCA index of Balassa is as follows⁴:

$$RCA_1 = CEP = (X_{ij} / X_{it}) / (X_{nj} / X_{nt}) = (X_{ij} / X_{nj}) / (X_{it} / X_{nt}) \quad (3)$$

where X represents exports, i is a country, j is a commodity (or industry), t is a set of commodities (or industries) and n is a set of countries. RCA_1 measures a country's exports of a commodity (or industry) relative to its total exports and to the corresponding exports of a set of countries, e.g. the EU. A comparative advantage is "revealed", if $RCA_1 > 1$. If RCA_1 is less than unity, the country is said to have a comparative disadvantage in the commodity / industry. It is argued that the RCA_1 index is biased due to the omission of imports especially when country-size is important (Greenaway and Milner, 1993).

An alternative RCA index is computed in order to make reference to the "own" country trade performance only. This type of measurement of a country's RCA recognizes the possibility of simultaneous exports and imports within a particular commodity / industry.

$$RCA_2 = (X_{ij} - M_{ij}) / (X_{ij} + M_{ij}) \quad (4)$$

In the case of Equation 4, the index ratio ranges from -1 ($X_{ij} = 0$ and revealed comparative disadvantage) to +1 ($M_{ij} = 0$ and revealed comparative advantage). However, regarding RCA_2 , there exist ambiguities around zero values (Greenaway and Milner, 1993)⁵.

One can derive another version of RCA from Balassa (1965). The equation is as follows:

$$RCA_3 = (X_{ij} / X_{it}) / (M_{ij} / M_{it}) = (X_{ij} / M_{ij}) / (X_{it} / M_{it}) \quad (4)$$

where X and M represents exports and imports respectively. i is a country, j is a commodity (or industry), t is a set of commodities (or industries). A similar version of Equation 4 derived from Balassa (1965) is the following:

$$RCA_4 = \ln (X_{ij} / X_{it}) / (M_{ij} / M_{it}) * 100 = \ln (X_{ij} / M_{ij}) / (X_{it} / M_{it}) * 100 \quad (5)$$

- **Vollrath's Revealed Competitiveness Index (VRC)**

⁴ In the relevant literature some studies (eg Yılmaz and Ergun, 2003; Yılmaz, 2002; Erlat and Erlat, 2005; Akgüngör *et.al.*, 2002) name the original Balassa RCA index, ie RCA_1 here, as the Comparative Export Performance Index (CEP). These two indices are identical. Thus in this paper we employ RCA_1 only.

⁵ This index shows the share of inter-industry trade within the total trade.

Vollrath (1991) offered mainly three alternative ways of measurement of a country's RCA. These alternative specifications of RCA are called *the relative trade advantage* (RTA), *the logarithm of the relative export advantage* (ln RXA), and *the revealed competitiveness* (RC). In this study, for the sake of being systematic, we call them as VRC₁, VRC₂, and VRC₃ respectively. It is clear that the advantage of presenting latter two indices (i.e. VRC₂ and VRC₃) is that they become symmetric through the origin. Positive values of Vollrath's three alternative measures of revealed comparative advantage reveal a comparative/competitive advantage whereas negative values indicate comparative /competitive disadvantage.

However, a problem of implementing these or similar RCA indices is that real (observed) trade patterns may be distorted by government interventions, thus causing misrepresentation of underlying comparative advantage. It is thus a concern that import restrictions, export subsidies and other protectionist policies of governments, to an extent, may distort RCA indices. Fertő and Hubbard (2003), in this respect, uses nominal assistance coefficients (NACs) estimated by the OECD by country and commodity to filter the effects of possible distortions in measuring Hungarian Agri-food sector RCAs vis-à-vis the EU. Greenaway and Milner (1993), on the other hand, suggests the employment of a price-based measure of RCA called "implicit revealed comparative advantage" to get rid of the distortion caused by the post-policy intervention.

Vollrath (1991) suggests that the RC index (RCA₆ in the present paper) is preferable since supply and demand balance embodied in the index. Evaluating the shortcomings of Vollrath's three indices, Vollrath acknowledges that the RXA (relative export advantage) index which reduces the distortion effects is more commonly used in practice. It is important to point out that Balassa and Vollrath indices are based on different concepts and thus are not strictly comparable.

The relative trade advantage (RTA) (here RCA₄) is calculated as the difference between *relative export advantage* (RXA), which is the equivalent to the original Balassa index (RCA₁), and its counterpart, *relative import advantage* (RMA). It is important to note that the main difference of Vollrath's RXA from Balassa's original RCA₁ index is that it prevents from double-counting. In the present paper, the indices used are hybrids, in that the set of countries (n) is restricted to the EU whereas the set of commodities (t) refers to all trade.

$$VRC_1 = RTA = RXA - RMA$$

where $RXA = RCA_1 = CEP = (X_{ij}/ X_{it}) / (X_{nj}/ X_{nt})$ and

$$RMA = (M_{ij}/ M_{it}) / (M_{nj}/ M_{nt})$$

where M accounts for imports. In consequence;

$$VRC_1 = RTA = RXA - RMA = (X_{ij}/ X_{it}) / (X_{nj}/ X_{nt}) - (M_{ij}/ M_{it}) / (M_{nj}/ M_{nt}) \quad (6)$$

Vollrath's second RCA measure is the logarithm of the relative export advantage (here as VRC_2):

$$VRC_2 = \ln RXA = \ln RCA_1 = \ln CEP \quad (7)$$

The third measure of Vollrath is the revealed competitiveness (RC) (here as VRC_3), expressed as:

$$VRC_3 = RC = \ln RXA - \ln RMA \quad (8)$$

Given that there exists a range of RCA alternative indices suggested and employed in the literature to measure comparative advantage, some inconsistent results may occur obtained by the use of different RCA indices. Interpretation of the RCA indices in the ordinal or cardinal senses is another field of dispute. Furthermore, the stability and the consistency of alternative measures of RCA have been called into questioned (e.g. Balance et al., 1987; Yeats, 1985; Hinloopen and Van Marrewijk, 2001). It is therefore encouraged that the policy makers need cautious interpretation of RCA indices by especially underlining probabilities of revealing a comparative advantage or disadvantage.

iii) trade measures of intra-industry trade (Greenaway and Milner, 1986), ie. Trade Overlap Index, TO (Finger, 1975; Finger and de Rosa, 1979) Grubel-Lloyd Index, GL (Grubel and Lloyd, 1975) and Brühlhart B Marginal Intra-Industry Trade Index, Brühlhart-B (Brühlhart, 1994).

Trade measures of intra-industry trade show, to what extent, intra-industry specialization exists. In this paper, the trade measure named RCA_2 is employed as an indicator for competitiveness. When similar logic is applied, measurement of intra-industry trade also shows the competitiveness. As the share of the intra-industry trade in the total trade decreases, competitiveness at this industry increases. Various measures of intra-industry trade have been offered in the literature. In this paper, we employ the most well-known and employed measures.

- **Grubel-Lloyd Index/ G-L and Trade Overlap Index/ TO**

$$G-L = 1 - (|x_i - m_i| / x_i + m_i) \quad (10)$$

where x_i and m_i are exports and imports of industry i (Grubel and Lloyd, 1975). This measure is equivalent to the trade overlap index (TOI) offered by Finger (1975):

$$TO = 2 \min(x_i, m_i) / (x_i + m_i) \quad (11)$$

Both GL and TO approach +1 as trade becomes balanced, and 0 as either exports or imports dominate. That is, coefficients vary between 0 and +1. A higher coefficient implies that intra-industry specialization exists⁶.

- **Brühlhart B Marginal Intra-Industry Trade Index/ Brühlhart-B**

$$\text{Brühlhart-B} = (\Delta X - \Delta M) / (|\Delta X| + |\Delta M|) \quad (13)$$

The Brühlhart-B index takes values between -1 and +1. The index gives information on two dimensions. First, information about the proportion of marginal intra-industry trade (MIIT), and second, country-specific sectoral performance. As regard the first dimension, the closer Brühlhart-B is to 0, the higher is MIIT. If Brühlhart-B is equal to 0, the marginal trade in the particular industry is purely the intra-industry type, while at both -1 and +1 it shows marginal trade to be purely the inter-industry type. Regarding the second dimension, the definition of the sectoral performance is the change in exports and imports in relation to each other. When Brühlhart-B = -1, ΔM was ≥ 0 while ΔX was $\Delta \leq 0$ over the examined period. The opposite is true for Brühlhart-B = 1. In other words, when Brühlhart-B > 0 then this implies that $\Delta X > \Delta M$, and when Brühlhart-B < 0 then this reflects that $\Delta X < \Delta M$ (Brühlhart, 1994; 606-607).

III. TRADE RELATIONS OF TURKEY WITH THE EUROPEAN UNION

As far as the EU is concerned, Turkey is the only country signed the Customs Union (CU) agreement with the EU (in 1996) before the membership. A unique country example of signing the CU without any form of active participation in Brussels, ie without full membership. This has led to a trade liberalisation and increased competitive pressure for both sides. Turkey has started negotiations for full-membership with the EU in 2005 after the acknowledgement of country's fulfilment of the pre-conditions by the EU such as the well known "political criteria" on the one hand, and "economic criteria" which includes the

⁶ Finger (1975) suggests that the measurements of intra-industry trade stems from misclassification. In a later work with DeRosa, Finger points out that this finding is a "trade overlap" but not intra-industry trade (Finger and DeRosa, 1979). However, in later works the term "trade overlap" and the intra-industry trade are used in the same meaning.

establishing of a well-functioning market economy, existence of free and functioning competition (so called the Copenhagen “economic” criteria), on the other. The beginning of negotiations has opened the door of a new era and paved the way for full-membership

Ten years of experience in the CU has made Turkey, no doubt, more trade liberalized country on the one hand, and more capable of competing in the very competitive EU market. Thus one can easily expect that Turkey is well trade-integrated with the EU as far as any new member country signed in 2004 or 2007.⁷ The figures in Table 1 implies that early years of the CU (ie 1996-1998) marked fairly imbalanced trade (due to remarkable increase in imports but almost very slight increase in exports: that is a trade creation effect with one leg is missing!) between Turkey and the EU. 2000-2001 are the years of the most severe economic crisis in the country’s history. Turkey’s accession to the EU is anticipated by 2020 (see EUECOPOL, 2006) In the meantime, relative competitiveness will play a crucial role in shaping changes in trade flows and patterns between Turkey, members and third countries. It is thus important to explore the trade patterns and trade specialization (Utkulu and Seymen, 2003; Utkulu *et al.* 2004).

At present, over 50 per cent of Turkey’s trade is with the EU. This tends to rise with beginning of negotiations. The Current account deficit of the country reached to a peak level of 8 % of its GDP in 2006 (34 billion US\$) mainly not due to the EU countries but due to third countries. The year 2006 also mark a peak level of the Foreign Direct Investment (FDI) which amounted to 20 billion US\$, the FDI to Turkey is expected to reach to about 34 billion US\$ by the end of 2007 for which the start of the negotiations played a role to a greater extent.

Economic relations between two parties have been strong since the early 1950s, but were intensified over recent decades. The long-standing preferences between Turkey and the EU have resulted in the EU being not only the most important market for Turkey (51.6 per cent of Turkey’s exports in 2006) but also one of the main sources for imported goods (46.1 per cent of Turkey’s imports in 2006) (See Table 1).

The CU between Turkey and the EU went far beyond a basic custom union with free international trade and common external tariffs, and has given a new impetus to the liberalization process in Turkey. Apart from the liberalisation of tariffs and adoption of the EU’s common external tariff for industrial products and the industrial components of

⁷ To have more conclusive opinion, see our empirical findings of the Trade Entropy Index / TEI

processed agricultural products by Turkey, the agreement also embraces a number of integration elements which includes the adoption of the Community's commercial policy towards third countries including textile quotas, the adoption of the free trade agreements with all the EU's preferential trade partners; co-operation on the harmonisation of agricultural policy, mutual minimisation of restriction on trade in services, harmonisation of Turkey's legislation to that of the EU in the area of competition policy, intellectual and industrial property rights, public procurement and technical barriers to trade (WTO, 1999; Harrison *et al.*, 1996). The scope of the CU excludes Turkey from some of the crucial aspects of the common market: the common agricultural policy, including the free circulation of agricultural products; the free movement of labour and capital; and move towards a single currency. Unlike countries in the European Economic Area, Turkey is also a subject to anti-dumping measures by the EU. The financial support originally envisaged from the EU to Turkey has not yet been made available.

Table 1: Turkey and the EU Trade (billions dollar, %)

Year	Export (TR)	Change (%)	Export (to the EU)	Change (%)	EU Share of Export	Import (TR)	Change (%)	Import (from the EU)	Change (%)	Import share from the EU	Turkey - the EU Trade Balance
1990	12,9	-	6,9	-	53,4	22,3	-	9,9	-	44,4	-3,0
1995	21,6	-	11,1	-	51,2	35,7	-	16,9	-	47,2	-5,8
1996	23,2	7,3	11,5	4,2	49,7	43,6	22,2	23,1	37,2	53,0	-11,6
1997	26,3	13,1	12,2	6,1	46,6	48,6	11,3	24,9	7,5	51,2	-12,6
1998	27,0	2,7	13,5	10,2	50,0	45,9	-5,4	24,1	-3,2	52,4	-10,6
1999	26,6	-1,4	14,3	6,3	54,0	40,7	-11,4	21,4	-11,0	52,6	-7,1
2000	27,8	4,5	14,5	1,1	52,2	54,5	34,0	26,6	24,3	48,8	-12,1
2001	31,3	12,8	16,1	11,1	51,4	41,4	-24,0	18,3	-31,3	44,2	-2,2
2002	36,1	15,2	18,5	14,8	51,2	51,3	23,8	23,1	26,5	45,1	-4,6
2003	47,3	11,5	25,9	23,5	54,8	69,3	35,1	33,5	37,2	48,3	-7,6
2004	63,2	33,6	34,5	33,2	54,5	97,5	40,7	45,4	35,5	46,6	-11,9
2005	73,5	16,3	38,4	11,3	52,3	116,8	19,8	49	7,9	42	-10,6
2006	85,5	16,3	43,9	14,3	51,6	138,6	18,7	53,9	10	46,1	-10

Source: State Planning Organisation (SPO).

The CU agreement caused some changes in the Turkish trade especially in the early years (Seymen, 1998). Turkey's imports from the EU in 1996 (the first year of the CU implementation) reached \$23 billion, with an increase of 37.2%. Considering the 22.2% increase in Turkey's total import in 1996, it is clear that the CU had a certain impact on the increase in imports. Turkey's export to the EU totalled \$11.5 billion with an increase of 4.2%, below the 7.3% increase in total exports in 1996. Consequently, Turkey's foreign trade deficit with the Union doubled and increased to \$11.6 billion in 1996. In 1997 Turkey managed the shock effect of the CU and the rate of increase in imports from the EU decreased. The increase of imports from the EU is %7.5 whereas the increase of exports to the EU is %6.1. In 1999 and 2001 economic stagnation affected Turkey's trade negatively, so imports from the EU decreased as well. With the exception of periods of economic crises, increases in

imports were greater than the exports increases. So resulting trade deficits was high. In 2006 Turkey's exports to the EU is \$43.9 billions. Turkey's import from the EU is \$53.9 billions. Turkey's trade deficit with the Union is \$10 billions in 2006. Figures in Table 1 suggest that the EU share in the Turkish exports and imports have always been around 50 per cent. This shows that Turkey and the EU have been traditional and stable trade partners over time. This fact has not changed even in the years of economic crises of 1999, 2001 and after.

Table 2: Turkey's Trade Balance and Turkey-The EU Trade Balance (billions of \$)

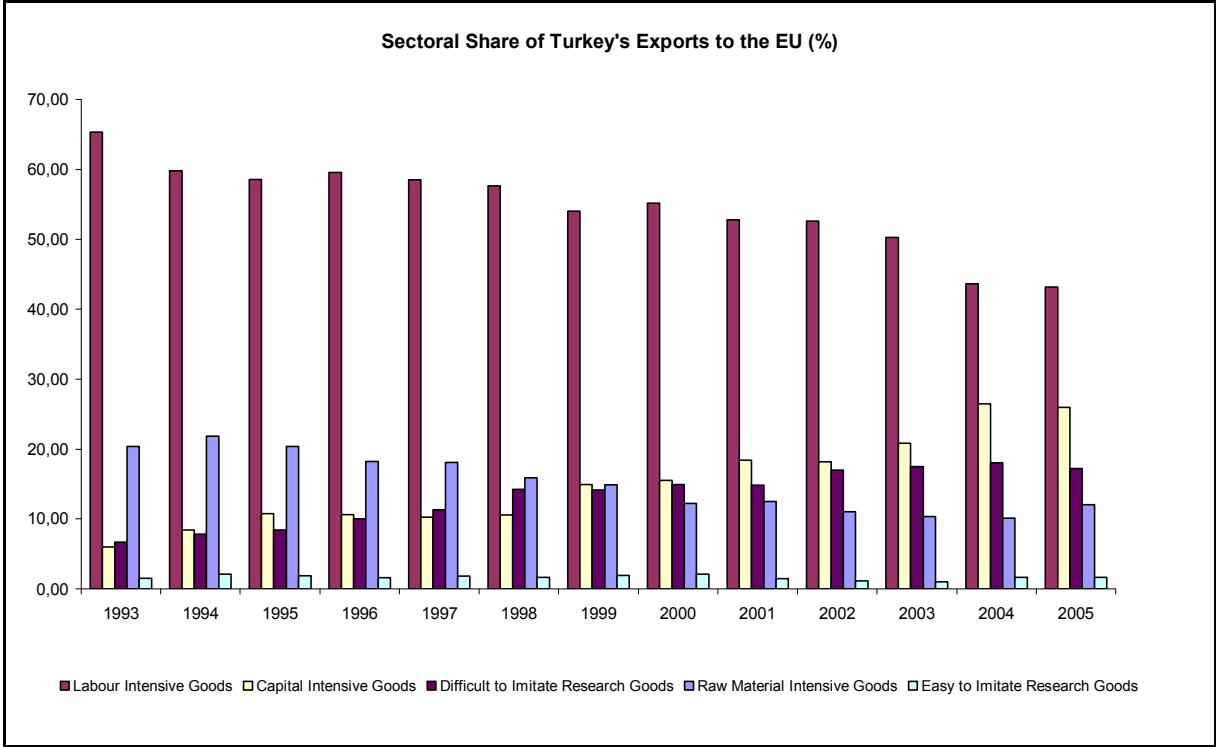
	Turkey's Trade Balance (I) \$	X/M (II)	Turkey-the EU Trade Balance (III) \$	X/M (EU) (IV)	Share of deficit originating from the EU in the total deficit $V = III / I$
1995	-14.1	60.5	-5.8	65.7	41.1
1996	-20.4	53.2	-11.6	49.8	56.9
1997	-22.3	54.1	-12.7	49.0	57.0
1998	-18.9	58.8	-10.6	56.0	56.1
1999	-14.1	65.4	-7.1	66.8	50.4
2000	-26.7	51.0	-12.1	54.5	45.3
2001	-10.1	75.6	-2.2	88.0	21.8
2002	-15.2	70.4	-4.6	80.1	30.3
2003	-22.0	68.3	-7.6	77.3	34.5
2004	-34.3	64.8	-11.4	76.0	33.2
2005	-43.3	62.9	-10.6	78.4	24.5
2006	-53.1	61.7	-10.0	81.4	18.8

Source: SPO and own calculations

Table 2 shows that although Turkey's trade deficit increases, the share of deficit originating from the EU in the total deficit decreases. In the same line, Turkey's X/M ratio to the EU improves (81.4 in 2006) after the 2000 crisis whereas the X/M ratio in average worsens (61.7 in 2006). This implies that Turkey's trade with the EU is not the source of increasing trade deficits. The third countries such as Russia, China and the oil exporting countries are the main source of Turkey's imbalanced trade and worsening trade deficits. Table 2 as a whole reflects the success story of the economic integration process started with the CU in 1996. In the early years, trade creation effects were due to boosting Turkish imports from the EU, and this was fairly imbalanced. In time Turkish exporters have seemed to learn to compete with the European partners and with the firms exporting to the EU from the third countries. Table 2 gives a satisfactory impression that in the years of new millenium Turkey has established a well-functioning market economy and the existent of free and functioning competition within the EU (so called the Copenhagen "economic" criteria).

Figure 1 and 2 give the shares of Turkey’s exports to and imports from the EU for the period 1993-2005. To be consistent with the empirical work employed in the next section, exports and imports are divided into five categories, namely, labour intensive goods, capital intensive goods, raw material intensive goods, easy to imitate research intensive goods, and difficult to imitate research intensive goods.

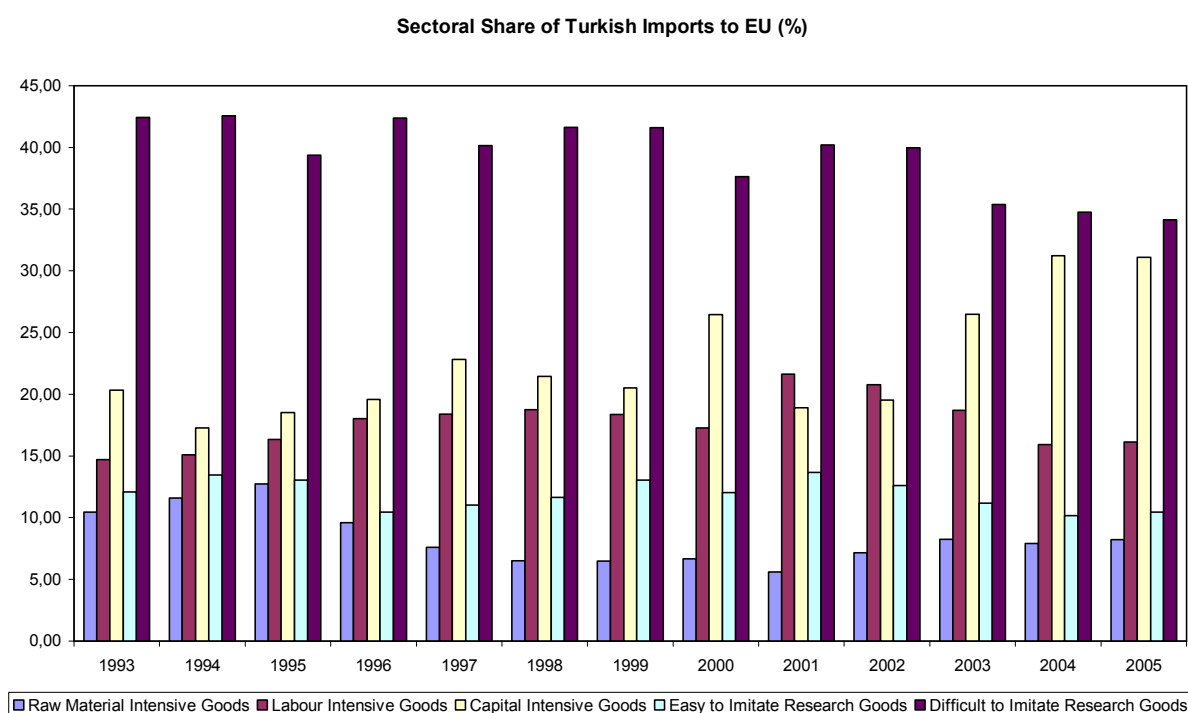
Figure 1. Sectoral Shares of Turkey’s Exports to the EU (%)



Source: Turkish Statistical Institute (TSI)

Figure 1 provides a clear evidence of gradual and sustainable move from exporting labour intensive goods to capital intensive and research intensive goods especially in the new millenium. This can be considered as a transformation from a country exporting lower value-added products to a country higher value-added products. This is a remarkable change in the export composition of the country. Figure 2 reveals that Turkey’s major category of imports from the EU for the period 1993-2005 are the difficult to imitate research intensive goods and the capital intensive goods. There has been a slight decrease in the imports of difficult to imitate research intensive goods and slight increase in the imports of capital intensive goods after 2002.

Figure 2. Sectoral Shares of Turkey's Imports from the EU (%)



Source: Turkish Statistical Institute (TSI)

IV. DATA AND EMPIRICAL FINDINGS

The data used in the empirical calculations covers the period 1993-2005. It is a classified sectoral data which includes labour intensive goods, capital intensive goods, raw material intensive goods, easy to imitate research intensive goods, and difficult to imitate research intensive goods⁸. The data used is annual with three-digits compatible with the Standard International Trade Classification (SITC), taken from the database of the ITCS (International Trade by Commodity Statistics), and from the Turkish Statistical Association (TSI). 248 different industries at the three-digit level (62 labour intensive, 37 capital intensive, 77 raw material intensive, 22 easy to imitate research intensive, 50 difficult to imitate research intensive industries) are employed in the calculation (see App. for the details of the results of the three-digit industries).

This paper empirically explores the competitiveness of the Turkish firms in the EU market by employing different trade measures. Trade measures that are subject to our calculations are mainly divided into three categories, namely;⁹

⁸ This classification also used by Yılmaz (2002) and Erlat and Erlat (2005) is based on Hufbauer and Chilas (1974). For details of this classification see the App.

⁹ See section II for details.

measure of concentration/dispersion of trade flows

- Trade Entropy Index/ TE

$$TE_{mi} = \sum_j a_{ij} \ln(1/a_{ij}) \quad \text{with } 0 < a_{ij} < 1 \quad \text{and} \quad \sum_j a_{ij} = 1$$

$$TE_{xi} = \sum_j b_{ij} \ln(1/b_{ij}) \quad \text{with } 0 < b_{ij} < 1 \quad \text{and} \quad \sum_j b_{ij} = 1$$

trade measures of inter-industry trade

- $RCA_1 = CEP = (X_{ij} / X_{it}) / (X_{nj} / X_{nt}) = (X_{ij} / X_{nj}) / (X_{it} / X_{nt})$ (original Balassa index)
- $RCA_2 = (X_{ij} - M_{ij}) / (X_{ij} + M_{ij})$
- $RCA_3 = (X_{ij} / X_{it}) / (M_{ij} / M_{it}) = (X_{ij} / M_{ij}) / (X_{it} / M_{it})$
- $RCA_4 = \ln (X_{ij} / X_{it}) / (M_{ij} / M_{it}) * 100 = \ln (X_{ij} / M_{ij}) / (X_{it} / M_{it}) * 100$
- $VRC_1 = RTA = RXA - RMA = (X_{ij} / X_{it}) / (X_{nj} / X_{nt}) - (M_{ij} / M_{it}) / (M_{nj} / M_{nt})$
- $VRC_2 = \ln RXA = \ln RCA_1$
- $VRC_3 = RC = \ln RXA - \ln RMA$

trade measures of intra-industry trade

- Grubel-Lloyd Index/ G-L and Trade Overlap Index/ TO

$$G-L = 1 - (|X_i - M_i| / X_i + M_i)$$

$$TO = 2 \min (X_i, M_i) / (X_i + M_i)$$

- $RCA_2 = (X_{ij} - M_{ij}) / (X_{ij} + M_{ij})$
- Brühlhart B Marginal Intra-Industry Trade Index/ Brühlhart-B

$$\text{Brühlhart-B} = (\Delta X - \Delta M) / (|\Delta X| + |\Delta M|)$$

TE index measures the concentration or dispersion of the trade flow of the country in hand (Turkey in this article). As regards the empirics of the TE in this article, we are interested in the level of integration of Turkey in to the EU. This level of integration will be the starting point of deeper and detailed empirical analysis of trade measures of inter-industry trade and intra-industry trade. As explained earlier, the lower the index the less dispersed is the export (or import) of that country. That is, the lower the index the more concentrated is

the export (or import) of that country. Accordingly, a country with low concentration is regarded being well integrated in to the world trade, while a country with a high concentration implies that country's trade is restricted to a small number of trade partners (Laaser, Schrader 2002: 17).

Table 3: Trade Entropy Index / TE Calculation Results of Turkey to the EU

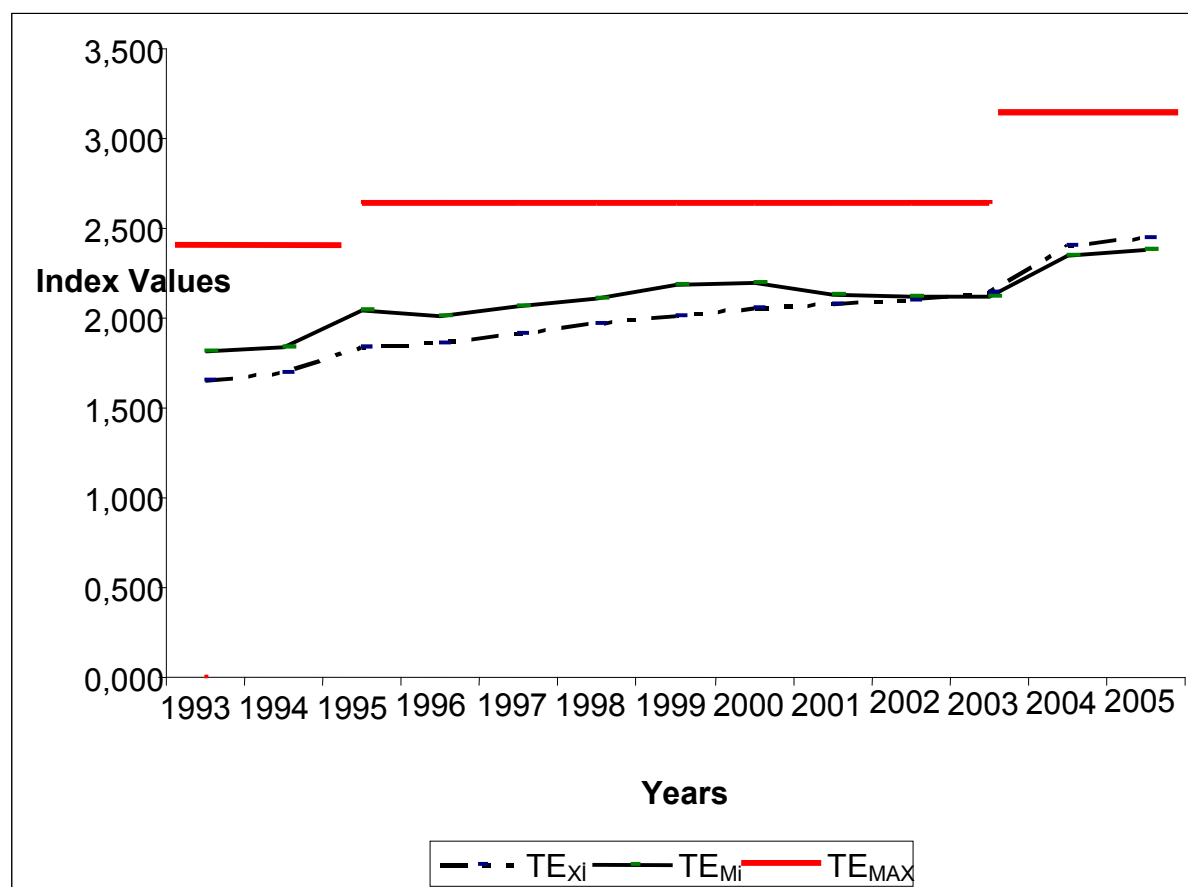
Years	TE _{xi}	RTE _{xi}	TE _{mi}	RTE _{mi}
1993	1,649	(0,69)	1,818	(0,76)
1994	1,701	(0,71)	1,834	(0,77)
1995	1,839	(0,70)	2,042	(0,77)
1996	1,862	(0,71)	2,016	(0,76)
1997	1,918	(0,73)	2,068	(0,78)
1998	1,972	(0,75)	2,109	(0,80)
1999	2,014	(0,76)	2,186	(0,83)
2000	2,055	(0,78)	2,194	(0,83)
2001	2,081	(0,79)	2,128	(0,81)
2002	2,100	(0,80)	2,123	(0,80)
2003	2,141	(0,81)	2,123	(0,80)
2004	2,398	(0,75)	2,352	(0,74)
2005	2,442	(0,77)	2,384	(0,75)

Source: own calculations

Table 3 reveals higher concentration (less dispersion) in the early 1990s for Turkey in the EU market. The relevant TE figures also point out that there exists a continuous increase in the dispersion especially evident after the CU agreement. According to TE indices reported in Table 3, Turkey seems to be integrated in the EU market. Turkey showed a considerable increase in its import entropy index, TE_{mi}, which might be a result of the CU especially after 1996 (Yılmaz and Ergun: 2003 pp.5-7)

Relative entropy ratios (RTE) (reported in parantheses) which calculated based on the maximum entropy ratios seem to be reasonably reliable indicators in examining the level of the country's trade integration with the EU. RTE_{xi} and RTE_{mi} figures in Table 3 reach the highest share (as 80 %) in 2003. 2004 however marks the joining of ten new members to the EU which lowers the RTEs although absolute entropi ratios (RTE_{xi} and RTE_{mi}) continued to increase. In Figure 3, the red line shows the calculated TE_{max}. The increasing entropy indicators obviously imply the increasing degree of integration of Turkey into the European division of labour in the last decade. At least it looks fair to come to a point where Turkey has reached a fair degree of trade distribution although trade appears to be concentrated to a certain degree.

Figure 3: Graphs of TE_{xi} , TE_{mi} , and TE_{max}



A. Findings of Trade Measures and Competitiveness in the Raw Materials Intensive Goods

In the aggregate level, all indices in Table 4 reveal comparative/competitive advantage (RCA/RC) for the full period.. G-L index give results in favor of inter-industry type trade at raw material intensive industries. Brühlhart-B index is also confirmative in the sense that change in trade within this group is import-oriented resulting a decrease in the Turkey's competitiveness (-0,41 for the period 1993-2005).

Table 4: Raw Materials Intensive Goods: Aggregated Findings for Turkey to the EU

	Raw Materials Intensive Industries												
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
RCA1 (CEP)	1,56	1,64	2,31	2,23	2,25	2,28	2,07	1,62	1,81	1,59	1,61	1,43	1,59
RCA2	0,06	0,22	0,05	0,00	0,10	0,18	0,24	0,03	0,37	0,14	0,04	0,04	0,11
RCA3	2,01	1,96	1,68	1,99	2,50	2,57	2,45	1,96	2,44	1,69	1,40	1,42	1,62
RCA4	0,70	0,67	0,52	0,69	0,92	0,94	0,89	0,67	0,89	0,53	0,34	0,35	0,48
VRC1	0,46	0,31	1,29	1,26	1,35	1,37	1,04	0,60	0,93	0,66	0,73	0,71	0,90
VRC2	0,44	0,50	0,84	0,80	0,81	0,82	0,73	0,48	0,60	0,47	0,47	0,36	0,46
VRC3	0,35	0,21	0,81	0,84	0,92	0,92	0,70	0,46	0,71	0,54	0,60	0,68	0,83
G-L	0,94	0,78	0,95	1,00	0,90	0,82	0,76	0,97	0,63	0,86	0,96	0,96	0,89
Brühlhart B	-0,34			-0,37									
	-0,41												

Source: own calculations

Analyzed at the three-digit disaggregated level, when RCA1 is taken into consideration, 31 out of 578 (39,7 %) sub-sectors (Raw Materials intensive industries) reveals comparative advantage in 2005 (see Table 5). This number has increased only slightly from 27 in 1993 (34,6 %) to 31 (39,7 %) in 2005. According to RCA3, VRC1 and VRC3 indices, the number of sectors revealing competitive advantages rises considerably over 40 % (RCA2) an even over 50% (VRC3) in 2005.

Table 5: Raw Materials Intensive Goods : Disaggregated Findings for Turkey to the EU– at the three digit level

Raw Materials Intensive Industries (N=77)														
	RCA1 (CEP)		RCA2		RCA3		RCA4		VRC1		VRC2		VRC3	
	End	%	End	%	End	%	End	%	End	%	End	%	End	%
1993	27	34,6	30	38,5	32	41,0	32	41,0	37	47,4	27	34,6	37	47,4
1994	27	34,6	33	42,3	32	41,0	32	41,0	42	53,8	27	34,6	41	52,6
1995	31	39,7	30	38,5	32	41,0	32	41,0	37	47,4	31	39,7	36	46,2
1996	28	35,9	29	37,2	34	43,6	34	43,6	36	46,2	28	35,9	35	44,9
1997	32	41,0	25	32,1	32	41,0	32	41,0	41	52,6	32	41,0	40	51,3
1998	34	43,6	30	38,5	30	38,5	30	38,5	38	48,7	34	43,6	36	46,2
1999	32	41,0	29	37,2	31	39,7	31	39,7	34	43,6	32	41,0	34	43,6
2000	31	39,7	29	37,2	30	38,5	30	38,5	39	50,0	31	39,7	38	48,7
2001	31	39,7	37	47,4	33	42,3	33	42,3	39	50,0	31	39,7	37	47,4
2002	30	38,5	35	44,9	33	42,3	33	42,3	38	48,7	30	38,5	36	46,2
2003	31	39,7	36	46,2	36	46,2	36	46,2	37	47,4	31	39,7	34	43,6
2004	29	37,2	32	41,0	31	39,7	31	39,7	35	44,9	29	37,2	34	43,6
2005	31	39,7	34	43,6	32	41,0	32	41,0	40	51,3	31	39,7	39	50,0

Source: own calculations

Full period three-digit level sectors revealing RCA/RC when all indices examined

036 Crustaceans, mollusks and aquatic invertebrates

037 Fish, aqua. invertebrates, prepared, preserved, n.e.s.

046 Meal and flour of wheat and flour of meslin

048 Cereal preparations, flour of fruits or vegetables

054 Vegetables; roots & other edible vegetable products

- 056 *Vegetables, roots, tubers, prepared, preserved, n.e.s.*
- 057 *Fruits and nuts (excluding oil nuts), fresh or dried*
- 058 *Fruit, preserved, and fruit preparations (no juice)*
- 059 *Fruit and vegetable juices, unfermented, no spirit*
- 061 *Sugar, molasses and honey*
- 062 *Sugar confectionery*
- 075 *Spices*
- 223 *Oil seeds & oleaginous fruits (incl. flour, n.e.s.)*
- 273 *Stone, sand and gravel*
- 278 *Other crude minerals*
- 283 *Copper ores and concentrates; copper mattes, cemen*
- 287 *Ores and concentrates of base metals, n.e.s.*
- 291 *Crude animal materials, n.e.s.*

Sectors having RCA/RC according to RCA1 but turn out to be RCD(disadvantage) when other indices are calculated

- 044 *Maize (not including sweet corn), unmilled*
- 073 *Chocolate, food preparations with cocoa, n.e.s.*
- 091 *Margarine and shortening*
- 222 *Oil seeds and oleaginous fruits (excluding flour)*
- 344 *Petroleum gases, other gaseous hydrocarbons, n.e.s.*
- 421 *Fixed vegetable fats & oils, crude, refined, fractio.*

Sectors having RCA/RC according to RCA3 and RCA4 (in addition to joint RCAs/RCs)

- 012 *Other meat and edible meat offal*
- 034 *Fish, fresh (live or dead), chilled or frozen*
- 035 *Fish, dried, salted or in brine; smoked fish*
- 044 *Maize (not including sweet corn), unmilled*
- 047 *Other cereal meals and flour*
- 074 *Tea and mate*
- 277 *NATural abrasives, n.e.s. (incl. industri. diamonds)*
- 288 *Nonferrous base metal waste and scrap, n.e.s.*
- 422 *Fixed vegetable fats & oils, crude, refined, fract.*

Sectors revealing RCA/RC but losing competitive power in time according to Brühlhart-B index (import-oriented change in time)

- 291 *Crude animal materials, n.e.s.*
- 054 *Vegetables; roots & other edible vegetable products*
- 278 *Other crude minerals*
- 037 *Fish, aqua. invertebrates, prepared, preserved, n.e.s.*

Sectors changing from RCA to RCD in the during the period (1993-2005)

- 001 *Live animals other than animals of division 03 (1998 e kadar RCA sonrasi RCD)*
- 074 *Tea and mate (1998 e kadar RCA sonrasi RCD)*
- 041 *Wheat (including spelt) and meslin, unmilled (2001 'den itibaren RCD)*

B. Findings of Trade Measures and Competitiveness in the Capital Intensive Goods

In the aggregate level, findings of RCA1 (CEP) seem to be different from the other RCA indices. RCA1 shows comparative advantages for the capital intensive industries in the

aggregate level after 1995 period while other RCA indices such as RCA2, RCA3, and RCA4 reveals no comparative advantage for Turkey. On the contrary, they all seem to suggest revealed disadvantage unlike RCA1. Volrath's VCR indices of revealed competitiveness also present evidence against revealed competitiveness with the exception of 1994.

G-L index provides evidence confirming that starting from 1998 capital intensive goods trade with the EU has been intra-industry type. Brühlhart-B index also confirms that change in trade at this industry after 1995, ie in the CU era, has been import-oriented resulting a decrease in the country's competitiveness (-0.06 during the period 1995-2005).

Table 6: Capital Intensive Goods: Aggregated Findings for Turkey to the EU

	Capital Intensive Industries												
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
RCA1 (CEP)	0,96	0,93	1,03	1,09	1,04	0,94	1,07	1,07	1,20	1,18	1,17	1,49	1,41
RCA2	-0,71	-0,42	-0,43	-0,56	-0,62	-0,55	-0,32	-0,49	-0,03	-0,11	-0,19	-0,16	-0,17
RCA3	0,30	0,51	0,61	0,57	0,47	0,52	0,78	0,62	1,06	1,02	0,88	0,94	0,92
RCA4	-1,19	-0,68	-0,50	-0,57	-0,75	-0,66	-0,25	-0,47	0,06	0,02	-0,13	-0,06	-0,08
VRC1	-0,09	0,14	-0,38	-0,50	-0,78	-0,68	-0,47	-0,85	-0,68	-0,49	-0,75	-0,50	-0,59
VRC2	-0,04	-0,07	0,03	0,09	0,04	-0,06	0,07	0,07	0,18	0,16	0,16	0,40	0,35
VRC3	-0,09	0,16	-0,31	-0,38	-0,56	-0,55	-0,36	-0,58	-0,45	-0,35	-0,50	-0,29	-0,35
G-L	0,29	0,58	0,57	0,44	0,38	0,45	0,68	0,51	0,97	0,89	0,81	0,84	0,83
Brühlhart B	1,00			-0,06									
	-0,05												

Source: own calculations

Examined at the three-digit disaggregated level, more detailed and perhaps different findings are found. It is now possible to see and clarify which sub-industries have competitive power. Although the aggregated data shows comparative disadvantage, the real story might be the opposite for a specific sub-industry or vice versa.

Table 7: Capital Intensive Goods: Disaggregated Findings for Turkey to the EU– at the three digit level

	Capital Intensive Industries (N=37)													
	RCA1 (CEP)		RCA2		RCA3		RCA4		VRC1		VRC2		VRC3	
	End	%	End	%	End	%	End	%	End	%	End	%	End	%
1993	11	29,7	5	13,5	5	13,5	5	13,5	11	29,7	11	29,7	11	29,7
1994	11	29,7	7	18,9	9	24,3	9	24,3	12	32,4	11	29,7	11	29,7
1995	14	37,8	8	21,6	11	29,7	11	29,7	13	35,1	14	37,8	12	32,4
1996	15	40,5	7	18,9	9	24,3	9	24,3	14	37,8	15	40,5	14	37,8
1997	16	43,2	8	21,6	12	32,4	12	32,4	12	32,4	16	43,2	12	32,4
1998	14	37,8	10	27,0	13	35,1	13	35,1	13	35,1	14	37,8	13	35,1
1999	16	43,2	9	24,3	13	35,1	13	35,1	9	24,3	16	43,2	9	24,3
2000	16	43,2	6	16,2	16	43,2	16	43,2	12	32,4	16	43,2	12	32,4
2001	15	40,5	16	43,2	18	48,6	18	48,6	11	29,7	15	40,5	11	29,7
2002	17	45,9	11	29,7	13	35,1	13	35,1	12	32,4	17	45,9	12	32,4
2003	16	43,2	9	24,3	12	32,4	12	32,4	10	27,0	16	43,2	10	27,0
2004	18	48,6	9	24,3	12	32,4	12	32,4	12	32,4	18	48,6	12	32,4
2005	17	45,9	11	29,7	13	35,1	13	35,1	12	32,4	17	45,9	12	32,4

Source: own calculations

When RCA1 is taken into consideration, 11 out of 37 sub-sectors (within the capital intensive industry) reveals comparative advantage (29,7 %) in 1993. This number has increased from 11 to 17 in 2005 (45,9 %) showing the increasing number of sub-sectors having comparative advantage. If RCA3 is examined instead of RCA1, 5 out of 37 sub-sectors (13,5 %) reveals comparative advantage in 1993 whereas number of sectors with comparative advantage increases to 13 (35,1 %). According to VRC1 ve VRC3 indices, the number of sectors revealing competitive advantages increases moderately from 11 in 1993 (29,7 %) to 12 in 2005 (32,4 %).

Full period three-digit level sectors revealing RCA/RC when all indices examined

- 121 Tobacco, unmanufactured; tobacco refuse
- 625 Rubber tyres, tyre treads or flaps & inner tubes
- 672 Ingots, primary forms, of iron or steel; semi-finish.
- 676 Iron & steel bars, rods, angles, shapes & sections

Sectors revealing RCA/RC but losing competitive power in time according to Brühlhart-B index(import-oriented change in time)

- 672 Ingots, primary forms, of iron or steel; semi-finish.
- 121 Tobacco, unmanufactured; tobacco refuse

Sectors having RCA/RC according to RCA1 but turn out to be RCD(disadvantage) when other indices are calculated

- 532 Dyeing & tanning extracts, synth. tanning materials
- 554 Soaps, cleansing and polishing preparations
- 673 Flat-rolled prod., iron, non-alloy steel, not coated
- 679 Tubes, pipes & hollow profiles, fittings, iron, steel
- 682 Copper
- 684 Aluminium
- 783 Road motor vehicles, n.e.s.

All these sectors in this group lose their comparative advantage/competitive power in time according to Brühlhart-B index.

Sectors changing from RCD to RCA during the period (1993-2005)

- 629 Articles of rubber, n.e.s. (1998 onwards)
- 782 Motor vehic. for transport of goods, special purpo. (1999 onwards)

Sectors changing from RCA to RCD in the during the period (1993-2005)

- 111 Non-alcoholic beverages, n.e.s. (1997 onwards – RCA1)
- 122 Tobacco, manufactured (2004 onwards – RCA1 and RCA3)
- 785 Motorcycles & cycles; invalid carriages (2005 onwards – VRC)
- 786 Trailers & semi-trailers; transport containers (1999 onwards – RCA1)

C. Findings of Trade Measures and Competitiveness in the Labour Intensive Goods

In aggregate level all indices show that Turkey have comparative advantage (RCA) for full period (see Table 8). G-L index suggest that sectors in this group transforms to intra-industry type in the period. Brülhart B index also reveals evidence confirming that increase / change in the trade between Turkey and the EU on labour intensive goods is export-oriented. This result implies that sectors having RCA/RC increase their competitive powers. This rise continuous even after the CU agreement at relatively lower pace.

Table 8: Labour Intensive Goods: Aggregated Findings for Turkey to the EU

	Labour Intensive Industries												
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
RCA1 (CEP)	2,08	2,05	2,31	2,30	2,40	2,51	2,43	2,51	2,36	2,39	2,38	2,32	2,32
RCA2	0,44	0,54	0,42	0,27	0,24	0,29	0,36	0,30	0,40	0,37	0,40	0,40	0,39
RCA3	4,59	4,12	3,76	3,45	3,34	3,24	3,14	3,40	2,67	2,77	3,00	3,04	2,95
RCA4	1,52	1,42	1,32	1,24	1,21	1,18	1,14	1,22	0,98	1,02	1,10	1,11	1,08
VRC1	1,52	1,42	1,62	1,61	1,69	1,75	1,70	1,77	1,59	1,63	1,68	1,59	1,59
VRC2	0,73	0,72	0,84	0,83	0,87	0,92	0,89	0,92	0,86	0,87	0,87	0,84	0,84
VRC3	1,31	1,18	1,21	1,20	1,23	1,20	1,21	1,22	1,12	1,15	1,22	1,16	1,15
G-L	0,56	0,46	0,58	0,73	0,76	0,71	0,64	0,70	0,60	0,63	0,60	0,60	0,61
Brülhart B	0,37			0,32									
	0,30												

Source: own calculations

When the original Balassa index (RCA1) is considered, 36 out of 62 sub-sectors (within the labour intensive industry) reveals comparative advantage (58 %) in 2005. This number has increased from 26 to 36 in 2005 (45,9 %) showing the increasing number of sub-sectors having comparative advantage. There exists regular and consistent increase through the period 1993-2005. If RCA3-4 are examined instead of RCA1, 33 out of 62 sub-sectors (52 %) reveals comparative advantage in 2005. Accordingly all RCA indices are consistent with each other.

However, VRC1 ve VRC3 indices of Vollrath points out slightly different outcome. Although the number of sectors revealing competitive advantages is still close (53,2 % in 2005 and 54,8 % in 1994), there has been a slight fall when the figures of 1994 and 2005 are compared.

Table 9: Labour Intensive Goods: Disaggregated Findings for Turkey to the EU – at the three digit level

Labour Intensive Industries (N=62)														
	RCA1 (CEP)		RCA2		RCA3		RCA4		VRC1		VRC2		VRC3	
	End	%	End	%	End	%	End	%	End	%	End	%	End	%
1993	26	41,9	28	45,2	29	46,8	29	46,8	34	54,8	26	41,9	34	54,8
1994	26	41,9	28	45,2	30	48,4	30	48,4	35	56,5	26	41,9	35	56,5
1995	26	41,9	24	38,7	27	43,5	27	43,5	34	54,8	26	41,9	34	54,8
1996	28	45,2	24	38,7	28	45,2	28	45,2	32	51,6	28	45,2	32	51,6
1997	28	45,2	24	38,7	26	41,9	26	41,9	34	54,8	28	45,2	34	54,8
1998	30	48,4	23	37,1	28	45,2	28	45,2	33	53,2	30	48,4	33	53,2
1999	30	48,4	24	38,7	27	43,5	27	43,5	32	51,6	30	48,4	32	51,6
2000	31	50,0	26	41,9	28	45,2	28	45,2	35	56,5	31	50,0	34	54,8
2001	32	51,6	27	43,5	27	43,5	27	43,5	36	58,1	32	51,6	36	58,1
2002	31	50,0	27	43,5	27	43,5	27	43,5	33	53,2	31	50,0	33	53,2
2003	32	51,6	27	43,5	30	48,4	30	48,4	35	56,5	32	51,6	35	56,5
2004	33	53,2	30	48,4	32	51,6	32	51,6	36	58,1	33	53,2	36	58,1
2005	36	58,1	31	50,0	33	53,2	33	53,2	33	53,2	36	58,1	33	53,2

Source: own calculations

Table 9 presents the results of three-digit level disaggregated data for labour intensive industries to be able to get rid of the well-known drawbacks of using aggregated data. Accordingly,

Full period three-digit level sectors revealing RCA/RC when all indices examined

- 651 Textile yarn
- 652 Cotton fabrics, woven
- 653 Fabrics, woven, of man0made fabrics
- 655 Knitted or crocheted fabrics, n.e.s.
- 656 Tullies, trimmings, lace, ribbons & other small wares
- 658 Made0up articles, of textile materials, n.e.s.
- 659 Floor coverings, etc.
- 661 Lime, cement, fabrica. constr. mat. (excludingglass, clay)
- 664 Glass
- 665 Glassware
- 693 Wire products (excluding electrical) and fencing grills
- 697 Household equipment of base metal, n.e.s.
- 841 Men's clothing of textile fabrics, not knitted
- 842 Women's clothing, of textile fabrics
- 843 Men's or boy's clothing, of textile, knitted, croche.
- 844 Women's clothing, of textile, knitted or crocheted
- 845 Articles of apparel, of textile fabrics, n.e.s.
- 846 Clothing accessories, of textile fabrics
- 848 Articles of apparel, clothing access., excluding textile

Sectors revealing RCA/RC but losing competitive power in time according to Brühlhart-B index (import-oriented change in time)

- 651 Textile yarn
- 652 Cotton fabrics, woven

Sectors changing from RCD to RCA during the period (1993-2005)642 *Paper & paperboard, cut to shape or size, articles*691 *Structures & parts, n.e.s., of iron, steel, aluminium*692 *Metal containers for storage or transport***Sectors changing from RCA to RCD in the during the period (1993-2005)**263 *Cotton*612 *Manufactures of leather, n.e.s.; saddlery & harness***D. Findings of Trade Measures and Competitiveness in the Easy to Imitate Research****Intensive Goods**

In the aggregate level, all indices in Table 10 show revealed comparative/competitive disadvantage (RCD). In addition, G-L index suggests that there is an inter-industry structure in the trade of easy to imitate research intensive goods between Turkey and the EU. Brühlhart-B index also confirms that change in trade at this industry after 1995, ie in the CU era, has been import-oriented resulting a decrease in the country's competitiveness (-0.69 during the period 1995-2005).

Table 10: Easy to Imitate Research Intensive Goods: Aggregated Findings for Turkey to the EU

	Easy to Imitate Research Intensive Industries												
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
RCA1 (CEP)	0,18	0,20	0,21	0,20	0,20	0,21	0,22	0,23	0,19	0,17	0,16	0,19	0,20
RCA2	-0,86	-0,77	-0,82	-0,86	-0,84	-0,85	-0,81	-0,82	-0,81	-0,86	-0,85	-0,76	-0,76
RCA3	0,13	0,16	0,15	0,16	0,17	0,15	0,16	0,18	0,12	0,10	0,10	0,18	0,17
RCA4	-2,02	-1,82	-1,89	-1,86	-1,76	-1,92	-1,85	-1,69	-2,14	-2,33	-2,28	-1,71	-1,75
VRC1	-0,60	-0,65	-0,69	-0,58	-0,53	-0,55	-0,64	-0,62	-0,65	-0,63	-0,60	-0,50	-0,53
VRC2	-1,73	-1,62	-1,56	-1,60	-1,58	-1,57	-1,51	-1,45	-1,67	-1,79	-1,84	-1,69	-1,61
VRC3	-1,48	-1,46	-1,45	-1,35	-1,27	-1,29	-1,36	-1,29	-1,49	-1,57	-1,56	-1,31	-1,29
G-L	0,14	0,23	0,18	0,14	0,16	0,15	0,19	0,18	0,19	0,14	0,15	0,24	0,24
Brühlhart B	-0,74			-0,69									
	-0,71												

Source: own calculations

Examined at the three-digit disaggregated level, when RCA1 is taken into consideration, 3 out of 22 sub-sectors (Easy to Imitate Research Intensive Goods industry) reveals comparative advantage in 2005 (see Table 11). This number has increased from 2 in 1993 to 3 in 2005 showing very limited number of sub-sectors having comparative advantage. RCA3 is also confirmative. According to VRC1 and VRC3 indices, the number of sectors revealing competitive advantages stays the same, ie 2 in 1993 and 2 in 2005.

Table 11: Easy to Imitate Research Intensive Goods: Disaggregated Findings for Turkey to the EU– at the three digit level

Easy to Imitate Research Intensive Industries (N=22)														
	RCA1 (CEP)		RCA2		RCA3		RCA4		VRC1		VRC2		VRC3	
	End	%	End	%	End	%	End	%	End	%	End	%	End	%
1993	2	9,1	0	0,0	1	4,5	1	4,5	2	9,1	2	9,1	2	9,1
1994	1	4,5	0	0,0	1	4,5	1	4,5	1	4,5	1	4,5	1	4,5
1995	1	4,5	0	0,0	1	4,5	1	4,5	0	0,0	1	4,5	0	0,0
1996	1	4,5	0	0,0	1	4,5	1	4,5	1	4,5	1	4,5	1	4,5
1997	1	4,5	0	0,0	1	4,5	1	4,5	2	9,1	1	4,5	2	9,1
1998	1	4,5	0	0,0	1	4,5	1	4,5	2	9,1	1	4,5	2	9,1
1999	3	13,6	1	4,5	2	9,1	2	9,1	2	9,1	3	13,6	2	9,1
2000	2	9,1	0	0,0	2	9,1	2	9,1	2	9,1	2	9,1	2	9,1
2001	2	9,1	0	0,0	0	0,0	0	0,0	0	0,0	2	9,1	0	0,0
2002	2	9,1	0	0,0	0	0,0	0	0,0	0	0,0	2	9,1	0	0,0
2003	2	9,1	0	0,0	0	0,0	0	0,0	1	4,5	2	9,1	1	4,5
2004	3	13,6	0	0,0	1	4,5	1	4,5	1	4,5	3	13,6	1	4,5
2005	3	13,6	1	4,5	1	4,5	1	4,5	2	9,1	3	13,6	2	9,1

Source: own calculations

Full period three-digit level sectors revealing RCA/RC when all indices examined

NONE!

Sectors changing from RCD to RCA during the period (1993-2005)

511 Hydrocarbons, n.e.s., & halogenated, nitr. Derivative (1999 onwards –RCA1)

581 Tubes, pipes and hoses of plastics (2002 onwards – RCA1, VRC1 and VRC3)

583 Monofilaments, of plastics, cross0section > 1mm (2003 onwards - RCA1 and RCA3)

Sectors changing from RCA to RCD in the during the period (1993-2005)

523 Metallic salts & peroxy salts, of inorganic acids (2001 onwards - all indices)

E. Findings of Trade Measures and Competitiveness in the Difficult to imitate Research Intensive Goods

In the aggregate level, all indices in Table 12 show revealed comparative/competitive advantage (RCA/RC). G-L index results underlines the fact that there has been inter-industry type trade at this sector group until 2000, though one can observe intra-industry type transformation 2000 onwards. Brühlhart-B index is also confirmative in the sense that change in trade within this group is import-oriented resulting a decrease in the Turkey's competitiveness.

Table 12: Difficult to imitate Research Intensive Goods: Aggregated Findings for Turkey to the EU

	Difficult to Imitate Research Intensive Industries Goods												
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
RCA1 (CEP)	0,24	0,26	0,22	0,25	0,27	0,32	0,36	0,40	0,41	0,43	0,45	0,46	0,46
RCA2	-0,83	-0,73	-0,74	-0,78	-0,75	-0,66	-0,61	-0,63	-0,48	-0,46	-0,40	-0,39	-0,40
RCA3	0,16	0,19	0,22	0,25	0,30	0,36	0,36	0,42	0,40	0,47	0,55	0,58	0,55
RCA4	-1,81	-1,66	-1,49	-1,40	-1,22	-1,02	-1,01	-0,86	-0,91	-0,76	-0,60	-0,55	-0,59
VRC1	-1,18	-1,06	-0,92	-0,94	-0,88	-0,80	-0,65	-0,49	-0,49	-0,50	-0,40	-0,48	-0,48
VRC2	-1,44	-1,33	-1,54	-1,38	-1,31	-1,15	-1,03	-0,91	-0,89	-0,84	-0,79	-0,78	-0,77
VRC3	-1,79	-1,61	-1,66	-1,56	-1,46	-1,26	-1,04	-0,80	-0,78	-0,77	-0,63	-0,72	-0,71
G-L	0,17	0,27	0,26	0,22	0,25	0,34	0,39	0,37	0,52	0,54	0,60	0,61	0,60
Brühlhart B	-0,01			-0,16									
	-0,23												

Source: own calculations

Examined at the three-digit disaggregated level, when RCA1 is taken into consideration, 6 out of 50 (12 %) sub-sectors (Difficult to imitate Research Intensive industry) reveals comparative advantage in 2005 (see Table 13). This number has increased from 2 in 1993 (4 %) to 6 (12 %) in 2005. According to RCA3, VRC1 and VRC3 indices, the number of sectors revealing competitive advantages stays about the same in 2005 compared to shares in 1993, ie 8%, 10%, and 10 % respectively.

Table 13: Difficult to Imitate Research Intensive Goods: Disaggregated Findings for Turkey to the EU– at the three digit level

Difficult To Imitate Research Intensive Industries (N=50)														
	RCA1 (CEP)		RCA2		RCA3		RCA4		VRC1		VRC2		VRC3	
	End	%	End	%	End	%	End	%	End	%	End	%	End	%
1993	2	4,0	2	4,0	4	8,0	4	8,0	5	10,0	2	4,0	5	10,0
1994	3	6,0	4	8,0	4	8,0	4	8,0	5	10,0	3	6,0	5	10,0
1995	3	6,0	4	8,0	5	10,0	5	10,0	4	8,0	3	6,0	4	8,0
1996	4	8,0	2	4,0	4	8,0	4	8,0	3	6,0	4	8,0	3	6,0
1997	4	8,0	2	4,0	3	6,0	3	6,0	3	6,0	4	8,0	3	6,0
1998	3	6,0	2	4,0	3	6,0	3	6,0	3	6,0	3	6,0	3	6,0
1999	3	6,0	4	8,0	4	8,0	4	8,0	4	8,0	3	6,0	4	8,0
2000	3	6,0	2	4,0	4	8,0	4	8,0	6	12,0	3	6,0	6	12,0
2001	4	8,0	4	8,0	4	8,0	4	8,0	6	12,0	4	8,0	6	12,0
2002	4	8,0	3	6,0	5	10,0	5	10,0	5	10,0	4	8,0	5	10,0
2003	6	12,0	6	12,0	6	12,0	6	12,0	6	12,0	6	12,0	6	12,0
2004	6	12,0	5	10,0	5	10,0	5	10,0	6	12,0	6	12,0	6	12,0
2005	6	12,0	4	8,0	4	8,0	4	8,0	5	10,0	6	12,0	5	10,0

Source: own calculations

Full period three-digit level sectors revealing RCA/RC when all indices examined

775 Household type equipment, electrical or not, n.e.s.

773 Equipment for distributing electricity, n.e.s.

761 Television receivers, whether or not combined

All sectors in this group gain their comparative advantage/competitive power in time according to Brühlhart-B index since the change is export-oriented

Sectors changing from RCD to RCA during the period (1993-2005)

- 722 Tractors (excluding those of 71414 & 74415)(2003 onwards – RCA1)
- 733 Mach.0tools for working metal, excluding removing mate.(2003 onwards – RCA1)
- 763 Sound recorders or reproducers; television record.(2003onwards – RCA3, VRC1 and VRC3)
- 792 Aircraft & associated equipment; spacecraft, etc.(1999onwards – RCA3)
- 793 Ships, boats & floating structures (2004onwards – RCA1, RCA3, VRC1 and VRC3)

Sectors changing from RCA to RCD in the during the period (1993-2005)

- 771 Electric power machinery, and parts thereof (1998 onwards – RCA, and VRC1 and VRC2 for 2005)

V. STABILITY AND CONSISTENCY OF THE TRADE MEASURES

A number of measures of stability are applied to the trade indices. One can observe that a certain product group may reveal a comparative advantage (RCA) at t time period whereas a comparative disadvantage (RCD) at t+1 time period, or vice versa. The relative importance of those products might be used as a simple stability indicator (Fertő and Hubbard, 2003; Hoekman and Djankov, 1997).

Tablo 14: Stability of Revealed Comparative Advantage

Index	Percentage Share of Industry Where:			
	RCA ₉₃ and RCD ₀₅		RCD ₉₃ and RCA ₀₅	
	1993	2005	1993	2005
RCA ₁	2,94	0,73	8,36	16,44
RCA ₂	2,20	1,81	11,12	11,32
RCA ₃	4,35	5,72	13,33	15,88
VRC ₁	6,32	8,18	7,78	6,50

Source: own calculations

As observed from Table 14, the industries in which Turkey has a RCA in 1993 but a RCD in 2005 account for between 2.94 and 6.32 per cent of the total trade value in 1993 and between 0.73 and 8,18 per cent in 2005. The industries in which Turkey has a RCD in 1993 but a RCA in 2005 account for between 8,36 and 13,33 per cent of the total trade value in 1993 and between 6,50 and 16,44 per cent in 2005. These findings do still seem to support that the structure of Turkey’s RCA has not changed remarkably during the period. However some doubts still remain as to the stability when the shift from RCD to RCA is taken in to account.

To analyse the stability issue of the RCA indices in hand further, we follow Hinloopen and Van Marrewijk (2001) in examining changes in the distribution of the original Balassa index (here named RCA_1) over the period 1993-2005. According to Table 15 however one has to admit that the industries Turkey has comparative disadvantage ratios seem to be high in the 1990s especially. Our findings suggest that Turkey's revealed comparative advantage has increased slightly. The results show a slight rise of comparative advantage of Turkey with the EU. Overall, however, it is still more sensible to evaluate findings as "stable".

Tablo 15: The Distribution of Balassa (RCA_1) Index

Summary Statistic	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Mean	1,76	1,66	2,19	2,32	2,42	2,40	2,37	2,31	2,16	2,13	2,34	2,29	2,33
Maximum	45,48	44,10	42,44	37,22	38,71	33,32	31,03	29,63	23,16	28,87	50,40	63,14	61,96
RCA_1 (CEP) (%)													
<1	72,7	72,7	69,9	69,5	67,5	67,1	66,3	66,7	66,3	66,3	65,1	64,3	62,7
<2	81,5	82,3	77,9	76,7	77,5	76,7	77,1	76,3	76,3	77,9	77,5	79,5	77,9
<4	89,6	88,4	85,9	85,9	85,5	85,1	87,1	85,5	85,9	86,7	85,9	85,5	85,1
<6	92	91,6	89,6	88,4	88,4	88,8	89,6	90	90,8	90,8	91,6	91,6	91,2

Source: own calculations

Consistency of the results of various trade measure is one of the main areas of dispute in the field. The easiest way to compare the results of measure of competitiveness with different methods is to examine the summary statistics concerned. However this type of investigation is doubtful. Thus it is the consistency of the results that matter if different indices are calculated. There are some different non-parametric consistency tests in the literature, namely;

- *Spearman Rank Correlation Coefficient*
- *Mann-Whitney-Wilcoxon test (MWW)*
- *Kruskal-Wallis test.*
- *Dichotomous consistency test.*

RCA indices try to measure the comparative (dis)advantage of an industry in the country by cardinal approach. According to Ballance et al (1987), there are two other interpretations in addition to cardinal type of interpretation, namely ordinal and dichotomous interpretations. These three type of interpretations need consistency tests (Ballance, et al, 1987; Fertö and Hubbard, 2003).

Consistency test of cardinal measurement of comparative advantage is based on the correlation between index pairs in each year. According to the results of this test that depends on the correlation between index pairs in each of thirteen years, high correlation ($\geq 0,75$) has

been attained only between three pairs. This shows that indices do not reveal consistent results for cardinal interpretation of comparative advantage.

The consistency test of ordinal measurement of comparative advantage depends on Spearman rank correlation coefficient for each pair. Table 16 reports the Spearman Rank Correlation Coefficients for full period averages of competition levels and sub-periods 1993-1995 and 1996-2005. Reported coefficients points out that relevant trade measures of competitiveness are not consistent¹⁰. Inconsistency of the results apply not only for rank but also ordinal inconsistencies. Thus arbitrary choice of the rank of the industries require cautious evaluation.

Table 16: Different Methods and the Consistency test of competitiveness measures: Spearman Rank Correlation Coefficient

Correlation Coefficients					
1993-1995		<i>RCA1</i>	<i>RCA2</i>	<i>RCA3</i>	<i>VRC1</i>
	RCA1	1			
	RCA2	0,771	1		
	RCA3	0,784	0,995	1	
	VRC1	0,592	0,725	0,740	1
1996-2005	RCA1	1			
	RCA2	0,711	1		
	RCA3	0,730	0,953	1	
	VRC1	0,508	0,694	0,671	1
1993-2005	RCA1	1			
	RCA2	0,711	1		
	RCA3	0,728	0,957	1	
	VRC1	0,509	0,694	0,685	1

Source: own calculations

Another method to test the consistency of the trade measures of competitiveness is the Mann-Whitney and Wilcoxon (MWW). MWW test does not require interval data or the assumption that both populations are normally distributed. The only requirement is that the measurement scale for the data is at least ordinal. Instead of testing for the difference between the means of two populations, this method tests to determine whether the two populations are identical (for detail see Anderson, Sweeney, Williams, 2002, Ch.19).

¹⁰ Kendall's tau_b statistics gives same results although not reported here.

Table 17: Different Methods and the Consistency test of competitiveness measures: Mann-Whitney and Wilcoxon Test (MWW)

		<i>RCA1</i>	<i>RCA2</i>	<i>RCA3</i>	<i>VRC1</i>
1993-1995	RCA1	-			
	RCA2	13.20**	-		
	RCA3	0.11	13.12**	-	
	VRC1	9.52**	1.16	9.82**	-
1996-2005	RCA1	-			
	RCA2	14.526**	-		
	RCA3	0.6561	14.149	-	
	VRC1	10.607**	0.3366	10.581**	-
1993-2005	RCA1	-			
	RCA2	14.268**	-		
	RCA3	0.3008	14.017**	-	
	VRC1	10.383**	0.0399	10.489**	-

** states that the two indicators of competitiveness is different statistically at % 1 signifigance level

Findings prove that there exists clear difference between the results of measures of competitiveness employing different methodologies. In other words, findings reached by the use of different methodologies are not consistent (see Table 17). This finding of MWW is compatible with the Spearman rank correlation coefficient results reported in Table 16.

Another method to test the consistency of the trade measures of competitiveness is the Kruskal-Wallis test. The Kruskal-Wallis test allows for testing the consistency of four different indices at the same time. Results are reported in Table 18.

Table 18: The Kruskal-Wallis (*RCA1*, *RCA2*, *RCA3*, *VRC1*) Consistency Test

	1993-1995	1996-2005	1993-2005
Ho: All indices of comp. are the same.	265.93**	315.47**	305.8972**
□□critical value (%5, df=3)	7,815	7,815	7,815

** states that the two indicators of competitiveness is different statistically at % 1 signifigance level

Empirical test results given in Table 18 provide evidence in favour of the inconsistency of the indices. That is, Ho is rejected.

Dichotomous (binary) test of consistency depends on the comparison of one pair of index to see the share of the industries whether having comparative advantage or disadvantage. Table 19 reveals some results suggesting evidence that there are coincidences at 70-80 per cent level in terms of sharing the industries as to comparative advantage or comparative disadvantage.

Table 19: Dichotomous (binary) test of consistency: The share of coincident indices (%)

YEARS		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
RCA1-VRC2														
	RCA2	70.6	72,1	65.3	63.1	56.8	64.7	63.1	60.2	72.6	65.5	63.2	65.2	66.7
	RCA3-4	72.1	76.5	73.3	77.7	71.6	75.7	71.4	73.5	75.0	70.2	69.0	68.5	67.7
	VRC1-3	89.7	92.7	80.0	80.2	80.3	78.1	70.2	74.8	73.8	70.2	70.1	76.4	74.1
RCA2														
	RCA3-4	88.7	93.4	78.9	84.2	81.1	84.0	85.7	80.0	97.5	93.6	91.7	93.8	97.6
	VRC1-3	93.8	95.8	92.4	90.3	96.6	93.8	89.6	90.0	88.1	93.4	88.5	93.4	87.7
RCA3-4														
	VRC1-3	76.8	74.0	72.3	72.9	68.2	72.7	69.8	79.6	74.5	76.5	79.8	78.8	78.2

All these results are confirmative in the direction of sensitivity of the choice of the trade measure index. That is, results vary according to the index used. For this reason, this should be taken into account and common points of the results for different indices should be observed. Our results here are also consistent with the literature underlining the importance of the sensitivity of the results¹¹. Especially verifying the findings of Ballance *et al* (1987), this paper finds that the indices are neither suitable for cardinal nor ordinal measurements since the results are not consistent. Instead, only if results of the indices are used to measure the binary comparative advantages, then they are consistent to a greater extent. In conclusion, RCA measurements employed at this work, turn out to be useful to see the comparative advantage on the specific industry of Turkey in the EU market although they prove to be less useful to explore the level of this comparative advantage or disadvantage.

VI. CONCLUSION

In the study to analyse the competitiveness of Turkey in the EU market different indices calculated based on inter-industry and intra-industry trade measures for the period 1993 to 2005. Since the alternative RCA indices explain revealed comparative advantage and competitiveness in different aspects (even original and revised Balassa indices), instead of focusing on one index, alternative RCA/RC indices have been measured and compared. Those RCA/RC indices show only the tendency of the competitiveness of the country, it gives whether a country has a comparative/competitive advantage or not, so results need cautious interpretation. To see that if any change in Turkey's competitiveness structure with respect to the EU in the period in question, Brühlhart-B index also measured in addition to other intra-industry trade measurement. Trade entropy index also measured to see trade integration level of Turkey to the EU. There is need to emphasise that also this index have constraint and reflects only country's concentrations in the market in to some degree, and geographical

¹¹ Also Seymen and Şimşek (2006) found similar results.

distance and the number of countries (in the EU market in our study) should be taken in to consideration.

It is also important that RCA calculations are based on observed trade data. Thus, there are possible influences of government interventions in the markets such as tariffs, quotas or subsidies. Although we have not measured the effect of government interventions on the RCA indices, we can still confirm that distortions are at reasonably minimal levels. Due to the implementation of the CU especially, there exists no tariffs and quotas on industrial commodities between Turkey and the EU. Furthermore, Turkey has preferential trade agreement with the EU on agricultural products.

In the study, the stability and consistency of alternative measures of RCA has been called into question. this paper finds that the indices are neither suitable for cardinal nor ordinal measurements since the results are not consistent. Instead, only if results of the indices are used to measure the binary comparative advantages, then they are consistent to a greater extent. In conclusion, RCA measurements employed at this work, turn out to be useful to see the comparative advantage on the specific industry of Turkey in the EU market although they prove to be less useful to explore the level of this comparative advantage or disadvantage.

The results in the clasification based on technological nature of the sectors show that in aggregate level, Turkey have comparative/competitive advantage in raw materials and labour intensive goods. For the Capital intensive goods, in aggregate level findings of original Balassa index seem to be different from the other RCA indices. In according to the results Turkey has relative export advantage in capital goods. On the other hand, other indeces which include import performance show that in this clasification has revealed comparative disadvantage. In aggregate level, Turkey has comparative disadvantage in the research intensive (both easy and difficult to immitiate research intensive goods. To eliminate the aggregation problem, we also analyse sectors in 3 digit level by observation. This observation gave the chance of capturing the sectors which has RCA in all indices and the sectors which shows substantial improvement in the period.

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Appendix A

Raw Material Intensive Goods

- SITC 0 Food and Live Animals
- SITC 2 Crude Material, Inedible, Except Fuels (excluding 26)
- SITC 3 Mineral Fuels, Lubricants and Related Materials (excluding 35)
- SITC 4 Animal and Vegetable Oils, Fats and Waxes
- SITC 56 Fertilizers (Other Than Those of Group 272)

Labour-Intensive Goods

- SITC 26 Textile Fibres (Other Than Wool Tops and Other Combed Wool) and Their Wastes
(Not Manufactured Into Yarn or Fabric)
- SITC 6 Manufactured Goods Classified Chiefly by Material (excluding 62, 67, 68)
- SITC 8 Miscellaneous Manufactured Articles (excluding 88, 87)

Capital-Intensive Goods

- SITC 1 Beverages and Tobacco
- SITC 35 Electric Current
- SITC 53 Dyeing, Tanning and Colouring Materials
- SITC 55 Essential Oils and Resinoids and Perfume Materials; Toilet, Polishing and
Cleansing Preparations
- SITC 62 Rubber Manufactures, n.e.s.
- SITC 67 Iron and Steel
- SITC 68 Non-Ferrous Metals
- SITC 78 Road Vehicles (Including Air-Cushion Vehicles)

Easy-to-Imitate Research-Intensive Goods

- SITC 51 Organic Chemicals
- SITC 52 Inorganic Chemicals
- SITC 54 Medicinal and Pharmaceutical Products
- SITC 58 Plastics in Non-Primary Forms
- SITC 59 Chemical Materials and Products, n.e.s.
- SITC 75 Office Machines and Automatic Data-Processing Machines
- SITC 76 Telecommunications and Sound-Recording and Reproducing Apparatus and
Equipment

Difficult-to-Imitate Research-Intensive Goods

- SITC 57 Plastics in Primary Forms
- SITC 7 Machinery and Transport Equipment (excluding 75, 76, 78)
- SITC 87 Professional, Scientific and Controlling Instruments and Apparatus, n.e.s.
- SITC 88 Photographic Apparatus, Equipment and Supplies and Optical Goods, n.e.s.;
Watches and Clocks

Appendix B

RAW MATERIAL INTENSIVE INDUSTRIES																											
	RCA1 - CEP			RCA2			RCA3			RCA4			VRC1			VRC2			VRC3			G-L			Brühlart B		
	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1993-2005	1996-2005	1996-2005
001	4,5	0,1	0,1	-1,0	-0,9	-0,4	0,0	0,1	0,5	-4,3	-2,0	-0,7	-5,9	-0,6	-0,2	1,5	-2,5	-2,6	-0,8	-2,2	-1,2	0,6	0,1	0,5	-0,5	-1,0	0,3
011	0,0	0,0	0,0	-1,0	NA	NA	0,0	NA	NA	-6,7	NA	NA	-1,7	0,0	0,0	-5,4	-4,2	-6,4	-5,9	4,0	NA	0,0	0,1	0,0	0,8	-1,0	1,0
012	0,3	0,1	0,2	0,9	0,8	0,8	31,2	18,3	11,3	3,4	2,9	2,4	0,3	0,1	0,2	-1,3	-2,1	-1,8	3,1	2,1	4,0	0,1	0,2	0,0	1,0	-1,0	1,0
016	0,0	0,0	0,0	-1,0	-1,0	0,6	0,0	0,0	5,3	NA	NA	1,7	-0,2	0,0	0,0	-7,4	-5,5	-7,2	-5,5	0,8	-2,3	0,1	0,8	0,7	0,9	-1,0	-0,2
017	0,0	0,1	0,1	-0,6	-0,5	0,0	0,3	0,7	1,3	-1,1	-0,4	0,3	0,0	0,1	0,1	-3,3	-2,4	-2,3	1,1	2,9	4,2	0,5	0,2	0,1	1,0	1,0	-0,7
022	0,1	0,1	0,1	-1,0	-1,0	-1,0	0,0	0,0	0,0	-6,3	-4,6	-3,4	-2,1	-1,2	-2,7	-2,9	-2,9	-1,9	-3,6	-3,1	-3,0	0,5	0,5	0,9	0,3	0,3	0,6
023	0,1	0,0	0,0	-1,0	-1,0	-1,0	0,0	0,0	0,0	-7,1	NA	NA	-0,6	-0,6	-1,7	-2,9	-3,4	-4,6	-2,5	-2,9	-5,1	0,2	0,1	0,1	-1,0	-1,0	-1,0
024	0,2	0,3	0,3	-0,3	-0,8	-1,0	0,8	0,2	0,0	-0,2	-1,8	-10,6	0,0	-0,2	-0,2	-1,6	-1,4	-1,3	0,0	-0,5	-0,5	0,7	1,0	0,7	0,4	1,0	0,3
025	1,3	0,6	1,2	-1,0	-1,0	-0,7	0,0	0,0	0,3	NA	-3,9	-1,4	-3,9	-1,3	-1,5	0,3	-0,5	0,2	-1,4	-1,2	-0,8	1,0	0,9	0,9	0,1	0,1	-1,0
034	0,7	0,8	1,6	0,1	0,1	0,8	2,0	2,2	9,7	0,7	0,8	2,3	0,5	0,7	1,5	-0,4	-0,2	0,5	1,5	1,9	2,9	0,8	0,9	0,6	0,5	-0,5	0,6
035	0,2	0,5	1,5	-0,1	0,5	NA	1,2	6,2	NA	0,2	1,8	NA	0,2	0,4	1,5	-1,4	-0,8	0,4	2,4	3,8	5,0	0,9	0,5	0,2	0,9	-0,2	1,0
036	2,9	1,7	1,7	0,9	0,8	0,9	21,7	14,2	23,0	3,1	2,7	3,1	2,8	1,7	1,6	1,0	0,5	0,5	5,1	5,1	4,7	0,2	0,2	0,3	0,7	0,8	0,6
037	3,7	4,8	1,5	1,0	1,0	1,0	231,7	145,0	101,7	5,4	5,0	4,6	3,6	4,8	1,5	1,3	1,6	0,4	5,4	6,4	5,9	0,1	0,0	0,1	0,9	0,9	-0,9
041	0,5	5,0	0,6	-1,0	0,0	0,9	0,0	1,8	18,9	-4,1	0,6	2,9	-7,4	1,3	0,4	-0,7	1,6	-0,4	-2,8	0,3	1,0	0,2	0,8	0,6	0,7	-1,0	1,0
042	0,2	0,4	0,2	-0,9	-0,9	-1,0	0,1	0,1	0,0	-2,5	-2,4	-4,3	-5,3	-4,3	-2,3	-1,8	-0,9	-1,8	-3,5	-2,4	-2,8	0,0	0,0	0,0	-1,0	-1,0	-1,0
043	3,8	0,5	1,1	-0,5	-1,0	-1,0	0,5	0,0	0,0	-0,8	-6,5	-8,6	0,0	-8,3	-1,0	1,3	-0,6	0,1	0,0	-2,8	-0,7	0,2	0,4	0,4	1,0	1,0	1,0
044	1,2	1,8	4,3	0,8	-0,3	-0,5	11,1	1,1	0,4	2,4	0,1	-0,9	-1,3	-3,9	3,1	0,2	0,6	1,5	-0,7	-1,1	1,3	0,1	0,1	0,6	-0,4	-1,0	1,0
045	0,0	0,3	0,0	-0,6	-1,0	-1,0	0,3	0,0	0,0	-1,1	-4,3	-9,9	-0,4	-0,5	-1,4	-4,1	-1,1	-4,4	-3,2	-0,9	-4,7	0,1	0,6	0,0	0,9	1,0	-1,0
046	4,7	3,9	18,1	1,0	1,0	NA	103,5	477,9	NA	4,6	6,2	NA	4,5	2,6	18,0	1,5	1,4	2,9	3,1	1,1	5,5	0,0	0,0	0,0	1,0	1,0	1,0
047	0,3	0,1	1,1	-0,4	0,8	0,5	0,7	13,7	4,0	-0,3	2,6	1,4	0,1	0,1	0,8	-1,1	-2,2	0,1	0,3	1,7	1,5	0,3	0,1	0,1	1,0	1,0	0,9
048	2,9	1,5	1,7	0,2	0,0	0,2	2,1	1,7	2,1	0,8	0,5	0,8	2,5	0,7	1,0	1,1	0,4	0,5	2,0	0,6	0,9	0,1	0,3	0,2	0,8	1,0	0,3
054	8,7	6,5	5,1	0,9	0,9	0,9	41,7	24,6	27,7	3,7	3,2	3,3	8,5	5,7	4,8	2,2	1,9	1,6	4,0	2,1	2,9	0,1	0,6	0,3	0,6	1,0	-0,2
056	8,6	6,2	4,2	1,0	0,9	0,9	143,5	25,1	44,6	5,0	3,2	3,8	8,5	6,0	4,1	2,2	1,8	1,4	4,7	3,2	3,5	0,0	0,1	0,1	0,9	1,0	0,9
057	27,0	21,2	23,4	1,0	1,0	1,0	1098,8	182,6	79,4	7,0	5,2	4,4	26,9	21,0	23,2	3,3	3,1	3,2	5,5	4,8	5,1	0,1	0,1	0,1	0,9	1,0	0,9
058	14,0	17,9	21,9	1,0	1,0	0,9	731,9	86,3	36,7	6,6	4,5	3,6	13,9	17,8	21,8	2,6	2,9	3,1	5,5	5,4	5,0	0,0	0,0	0,1	0,9	0,9	0,9
059	5,0	3,7	3,4	0,9	0,9	0,9	32,3	32,0	29,0	3,5	3,5	3,4	4,9	3,7	3,3	1,6	1,3	1,2	4,0	4,4	3,6	0,2	0,2	0,2	0,8	0,8	0,7
061	0,2	3,3	0,3	-0,9	0,5	0,2	0,1	5,4	1,9	-2,7	1,7	0,6	-1,9	3,2	0,0	-1,8	1,2	-1,3	-2,6	3,5	0,2	0,1	0,1	0,9	-1,0	-1,0	1,0
062	7,3	4,0	4,6	0,5	0,5	0,9	5,0	5,9	21,8	1,6	1,8	3,1	6,9	3,2	4,3	2,0	1,4	1,5	3,0	1,6	3,0	0,0	0,2	0,1	0,9	1,0	-0,9

071	0,0	0,0	0,0	-1,0	-1,0	-0,9	0,0	0,0	0,0	-4,2	-3,5	-3,3	-0,1	-0,2	-0,2	-3,9	-3,1	-3,2	-1,8	-1,5	-1,6	0,0	0,0	0,1	-0,9	-1,0	-1,0
072	0,3	1,4	1,4	-0,6	0,3	0,3	0,4	3,3	2,3	-1,0	1,2	0,8	0,0	0,9	0,9	-1,1	0,3	0,3	-0,1	1,0	0,9	0,1	0,6	0,5	-0,4	-0,7	-0,4
073	1,4	1,8	2,1	-0,7	-0,9	-0,2	0,3	0,1	0,9	-1,2	-2,3	-0,1	0,7	0,6	1,2	0,3	0,6	0,8	0,6	0,4	0,8	0,2	0,5	0,4	0,6	0,9	0,6
074	0,5	1,0	0,4	0,5	0,5	0,4	4,5	5,3	3,0	1,5	1,7	1,1	0,4	0,7	0,2	-0,7	0,0	-1,0	1,3	1,3	0,9	1,0	0,8	1,0	-1,0	-0,9	-0,2
075	10,5	11,5	5,3	1,0	0,9	0,9	89,6	57,5	38,7	4,5	4,1	3,7	10,2	11,3	5,0	2,3	2,4	1,7	3,7	3,9	3,0	0,2	0,2	0,3	0,3	-1,0	0,5
081	0,2	0,2	0,2	-0,9	-0,9	-0,9	0,1	0,1	0,1	-2,5	-2,9	-2,7	-0,2	-0,5	-0,4	-1,7	-1,7	-1,9	-0,6	-1,4	-1,3	0,2	0,1	0,1	-0,9	1,0	-1,0
091	9,7	10,0	6,3	0,1	-0,3	0,5	1,9	0,9	3,6	0,6	-0,1	1,3	9,3	2,5	2,7	2,3	2,3	1,8	3,1	0,3	0,6	0,0	0,1	0,2	0,3	1,0	-1,0
098	0,6	0,8	0,7	-0,6	-0,8	-0,6	0,4	0,2	0,4	-0,9	-1,5	-1,0	-0,2	-0,9	-1,3	-0,5	-0,2	-0,3	-0,3	-0,8	-1,0	0,7	1,0	0,9	-0,1	0,1	-0,1
211	0,2	2,0	0,9	-1,0	-1,0	-1,0	0,0	0,0	0,0	-3,7	-5,6	-5,8	-7,4	-2,2	-5,2	-1,6	0,7	-0,1	-3,6	-0,7	-1,9	0,0	0,2	0,2	-0,6	-1,0	1,0
212	0,0	0,0	0,0	-0,7	-1,0	-0,8	0,3	0,0	0,1	-1,4	-3,4	-1,9	-0,2	-0,2	0,0	-4,1	-6,5	-10,8	-2,6	-4,9	-6,6	0,3	0,0	0,0	-0,1	-1,0	0,8
222	1,8	1,5	3,4	-0,1	-0,5	-0,8	1,2	0,6	0,1	0,2	-0,5	-2,1	1,1	0,6	1,9	0,6	0,4	1,2	0,9	0,5	0,8	0,1	0,1	0,1	-0,9	-1,0	-0,9
223	14,3	14,8	9,8	1,0	1,0	0,7	226,1	107,4	6,2	5,4	4,7	1,8	14,2	14,5	9,6	2,7	2,7	2,3	5,7	4,1	4,1	0,1	0,4	0,2	0,7	0,7	0,6
231	0,2	0,4	1,1	-0,3	-0,7	0,4	0,9	0,4	2,7	-0,2	-1,0	1,0	-1,5	-1,0	-0,2	-1,4	-0,9	0,1	-2,0	-1,2	-0,2	0,0	0,0	0,0	-1,0	-1,0	-1,0
232	1,0	0,5	0,1	-1,0	-0,9	-1,0	0,0	0,1	0,0	-5,0	-2,8	-4,0	-1,2	-1,3	-2,1	0,0	-0,7	-2,5	-0,8	-1,3	-3,2	0,2	0,2	0,0	-1,0	-0,5	-1,0
244	0,0	0,0	0,0	-1,0	-1,0	-1,0	0,0	0,0	0,0	-6,9	NA	NA	-1,0	-0,1	-0,2	-7,3	-3,8	-5,7	-7,3	-1,8	-4,2	0,0	0,1	0,0	0,9	0,7	1,0
245	0,0	0,0	0,0	-0,4	-1,0	-1,0	0,6	0,0	0,0	-0,5	NA	NA	0,0	-1,7	-1,1	-3,4	-5,4	-5,2	-0,8	-5,9	-5,2	0,0	0,0	0,0	-1,0	1,0	-1,0
246	0,0	0,0	0,0	-1,0	-1,0	-1,0	0,0	0,0	0,0	NA	NA	-8,3	0,0	0,0	-2,8	-5,1	-4,5	-5,9	4,0	-0,7	-6,9	0,1	0,1	0,0	-1,0	1,0	-1,0
247	0,5	0,3	0,2	-1,0	-0,9	-1,0	0,0	0,1	0,0	-4,6	-2,6	-4,2	-0,5	-0,7	-1,1	-0,8	-1,2	-1,8	-0,8	-1,2	-2,0	0,1	0,1	0,0	1,0	1,0	-1,0
248	0,5	0,2	0,1	0,1	-0,8	-0,8	1,9	0,2	0,2	0,7	-1,4	-1,7	0,3	0,0	-0,1	-0,8	-1,7	-2,2	1,5	0,1	-0,5	0,9	0,4	0,4	-0,6	1,0	-0,6
251	0,0	0,0	0,0	-1,0	-1,0	-1,0	0,0	0,0	0,0	-3,6	-5,5	-6,6	-0,7	-0,7	-0,6	-3,1	-4,2	-4,7	-2,7	-3,8	-4,3	0,0	0,0	0,0	-1,0	-1,0	-1,0
272	0,1	0,0	0,1	-0,8	-1,0	-1,0	0,1	0,0	0,0	-1,9	NA	-7,6	-1,1	-1,5	-0,8	-2,8	-3,6	-2,5	-3,0	-4,0	-2,3	0,0	0,0	0,0	-0,9	1,0	-1,0
273	1,1	2,1	4,6	0,4	0,3	0,6	3,8	3,5	5,2	1,3	1,3	1,6	0,9	1,7	4,3	0,1	0,8	1,5	1,8	1,7	2,8	0,7	0,7	0,2	0,8	0,2	0,8
274	0,0	0,1	0,0	-1,0	-1,0	-1,0	0,0	0,0	0,0	-7,6	-6,1	NA	-3,9	-5,6	-5,2	-4,8	-2,3	-4,3	-6,2	-4,0	-5,9	0,0	0,0	0,0	-1,0	1,0	-1,0
277	2,9	1,0	0,9	0,7	0,0	0,2	8,8	1,9	1,8	2,2	0,6	0,6	2,7	0,7	0,7	1,1	0,0	-0,1	2,4	1,4	1,4	0,5	0,6	0,4	0,6	0,6	1,0
278	11,7	11,4	4,3	0,5	0,4	0,4	5,0	4,7	3,0	1,6	1,5	1,1	10,7	10,5	3,4	2,5	2,4	1,5	2,5	2,6	1,6	0,5	0,6	0,8	-0,4	0,1	-0,8
281	0,0	0,1	0,0	-1,0	-1,0	-1,0	0,0	0,0	0,0	NA	NA	-6,1	-0,6	-0,6	-0,5	-8,3	-2,9	-4,8	-7,8	-2,4	-4,1	0,0	0,0	0,0	-1,0	-1,0	-1,0
282	0,4	0,8	0,5	-1,0	-0,8	-0,9	0,0	0,2	0,1	-3,6	-1,8	-2,7	-16,1	-8,6	-13,4	-0,8	-0,3	-0,8	-3,6	-2,5	-3,4	0,0	0,1	0,0	-0,9	-1,0	-0,9
283	15,6	29,6	32,8	0,2	0,5	0,9	2,2	5,7	18,8	0,8	1,7	2,9	15,4	29,2	32,6	2,7	3,4	3,5	4,6	4,3	5,1	0,3	0,6	0,6	0,4	0,9	0,3
284	0,0	0,0	0,2	NA	-1,0	0,9	NA	0,0	20,5	NA	NA	3,0	0,0	0,0	0,2	-7,9	NA	-1,7	NA	NA	5,8	0,0	0,0	0,1	1,0	1,0	1,0
285	1,1	0,5	0,3	-0,8	-0,8	-0,9	0,1	0,2	0,0	-2,0	-1,7	-3,3	0,9	0,4	0,1	0,1	-0,6	-1,3	1,8	1,2	0,4	0,8	0,9	0,6	-1,0	0,3	-0,9
287	20,3	13,8	6,7	1,0	1,0	0,9	103,0	113,1	46,2	4,6	4,7	3,8	20,3	13,7	6,6	3,0	2,6	1,9	6,5	5,3	4,6	0,1	0,2	0,3	0,7	1,0	0,7
288	0,8	0,6	0,5	0,7	0,9	0,6	8,7	59,1	4,7	2,2	4,1	1,5	0,7	0,2	0,0	-0,3	-0,5	-0,7	1,9	0,4	0,1	0,8	0,6	0,9	0,1	0,3	0,4
289	0,2	0,8	0,8	1,0	0,9	1,0	3125,6	44,7	NA	8,0	3,8	NA	0,2	0,8	0,8	-1,7	-0,3	-0,2	11,1	6,8	12,1	0,0	0,1	0,0	1,0	1,0	1,0

291	3,9	3,1	1,3	0,9	0,8	0,8	40,2	17,5	13,9	3,7	2,9	2,6	3,6	2,6	0,9	1,4	1,1	0,2	2,8	1,8	1,3	0,4	0,8	0,9	-0,7	0,1	-1,0
292	0,9	0,4	0,4	0,1	-0,5	-0,4	2,0	0,6	0,5	0,7	-0,5	-0,7	0,4	-0,2	-0,2	-0,1	-1,0	-1,0	0,6	-0,5	-0,5	1,0	0,5	0,6	-0,6	0,4	-0,5
321	0,0	1,4	0,2	-1,0	-1,0	-1,0	0,0	0,0	0,0	NA	-9,2	-4,0	-0,7	-0,4	-1,2	-5,8	0,3	-1,9	-5,4	-0,2	-2,2	0,0	0,0	0,0	-1,0	1,0	-1,0
322	0,0	0,1	0,2	-1,0	-1,0	-0,9	0,0	0,0	0,0	NA	-7,4	-3,1	-6,2	-0,5	-1,1	-3,7	-2,7	-1,5	-5,5	-2,1	-1,8	0,0	0,1	0,3	1,0	-1,0	1,0
325	0,1	0,2	0,1	-1,0	-1,0	-0,7	0,0	0,0	0,2	NA	-8,7	-1,4	-0,7	-1,2	-1,2	-2,1	-1,4	-2,2	-1,9	-1,8	-2,5	0,0	0,0	0,0	-0,9	-0,9	-0,9
333	0,0	0,0	0,0	1,0	1,0	1,0	NA	NA	NA	NA	NA	NA	-1,1	-0,8	-0,5	-4,7	-3,8	-3,5	-4,8	-3,6	-2,8	0,0	0,0	0,0	-1,0	-1,0	-1,0
334	0,9	0,5	0,9	0,2	-0,6	-0,2	2,3	0,4	0,9	0,8	-0,8	-0,2	0,3	-0,9	-0,2	-0,1	-0,7	-0,1	0,4	-1,1	-0,2	0,9	0,3	0,7	-0,3	1,0	-0,3
335	0,9	0,6	0,5	-0,2	-0,5	-0,3	1,0	0,7	0,7	0,0	-0,4	-0,3	-0,6	-0,4	-0,6	-0,2	-0,5	-0,8	-0,6	-0,5	-0,8	0,3	0,3	0,3	-0,4	1,0	-0,4
342	0,0	0,0	0,2	-1,0	-1,0	0,2	0,0	0,0	2,0	NA	NA	0,7	0,0	-0,5	-0,1	-10,9	-5,7	-1,5	-5,0	-5,1	-0,3	0,0	0,0	0,2	-0,8	-1,0	-0,8
343	0,0	0,0	0,0	NA	NA	NA	NA	NA	NA	NA	NA	NA	-1,8	-2,2	0,0	NA	NA	NA	NA	NA	NA	0,0	0,0	NA	1,0	-1,0	1,0
344	1,1	4,9	62,0	-0,9	-1,0	-0,9	0,1	0,0	0,1	-2,4	-4,3	-2,4	-77,5	-125,5	38,4	0,1	1,6	4,1	-4,3	-3,3	1,0	0,1	0,0	0,5	-0,5	-1,0	-0,4
345	0,0	1,3	0,1	-1,0	NA	-1,0	0,0	NA	0,0	NA	NA	NA	-0,4	1,3	0,1	NA	0,3	-2,4	NA	NA	4,1	0,0	0,0	0,0	1,0	-1,0	0,9
411	2,1	0,3	0,0	-0,6	-0,6	-1,0	0,4	0,5	0,0	-0,9	-0,7	-3,6	-1,7	-6,1	-4,4	0,7	-1,1	-5,5	-0,6	-3,0	-7,0	0,2	0,1	0,0	-1,0	-0,7	0,1
421	3,1	1,2	3,1	-0,1	-0,7	0,3	1,4	0,3	2,4	0,3	-1,1	0,9	-6,2	-5,6	0,4	1,1	0,2	1,1	-1,1	-1,8	0,1	0,7	0,5	1,0	0,5	0,0	0,4
422	1,6	1,9	0,2	0,3	0,0	-0,3	3,0	2,0	0,7	1,1	0,7	-0,4	-0,4	0,5	-1,1	0,4	0,7	-1,9	-0,2	0,3	-2,1	0,1	0,1	0,0	-1,0	-1,0	-1,0
431	12,8	2,4	2,6	-0,8	-0,9	-0,9	0,2	0,1	0,1	-1,6	-2,5	-2,3	11,8	0,7	1,6	2,5	0,9	1,0	2,5	0,3	1,0	0,3	0,9	1,0	-1,0	0,5	-1,0

LABOUR INTENSIVE INDUSTRIES

	RCA1 - CEP			RCA2			RCA3			RCA4			VRC1			VRC2			VRC3			G-L			Brühlhart B		
	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1993-2005	1996-2005	1996-2005
261	1,26	2,25	0,04	-1,00	0,26	-1,00	0,00	3,15	0,00	NA	1,15	NA	0,97	1,85	-0,46	0,23	0,81	-3,27	1,47	1,72	-2,58	0,07	0,17	0,02	-0,96	0,27	0,50
263	5,73	7,71	6,62	-0,24	-0,54	-0,47	0,94	0,54	0,47	-0,06	-0,61	-0,76	2,09	-2,80	-9,04	1,75	2,04	1,89	0,45	-0,31	-0,86	0,22	0,19	0,21	-1,00	-1,00	-1,00
264	3,40	0,36	0,90	-0,98	NA	0,26	0,01	NA	2,20	-4,46	NA	0,79	-11,77	0,36	0,44	1,22	-1,01	-0,10	-1,50	NA	0,66	0,02	0,00	0,66	1,00	-0,88	0,82
265	0,01	0,02	0,00	-1,00	-0,97	-0,99	0,00	0,02	0,01	NA	-3,73	-5,08	-1,48	-0,75	-0,53	-5,07	-4,16	-5,39	-5,47	-3,89	-4,76	0,01	0,06	0,04	1,00	-0,99	0,17
266	13,08	14,44	2,70	-0,33	-0,39	-0,29	0,77	0,81	0,71	-0,27	-0,21	-0,34	8,40	8,72	-2,33	2,57	2,67	0,99	1,03	0,93	-0,62	0,92	0,71	0,36	-0,64	1,00	-1,00
267	0,14	2,02	0,19	-0,96	-0,99	-0,98	0,03	0,01	0,01	-3,44	-5,06	-4,32	-25,14	-20,39	-29,91	-1,99	0,70	-1,65	-5,22	-2,41	-5,05	0,03	0,05	0,02	-0,98	-0,96	-0,97
268	0,36	0,80	1,26	-0,85	-0,74	-0,64	0,12	0,28	0,28	-2,11	-1,29	-1,27	-1,06	-0,27	-0,10	-1,01	-0,22	0,23	-1,36	-0,29	-0,07	0,07	0,16	0,26	-0,40	-0,88	-0,17
269	0,49	0,42	0,48	0,98	0,99	0,98	175,05	729,40	104,45	5,17	6,59	4,65	0,43	0,36	0,31	-0,72	-0,88	-0,74	2,15	1,95	1,03	0,07	0,04	0,14	0,83	0,94	0,87
611	0,31	0,32	0,33	-0,88	-0,72	-0,60	0,10	0,30	0,32	-2,30	-1,22	-1,14	-1,18	-0,85	-0,50	-1,19	-1,15	-1,12	-1,58	-1,31	-0,93	0,24	0,37	0,52	0,29	-0,47	1,00
612	0,88	0,47	0,34	0,49	0,07	-0,31	4,39	2,12	0,68	1,48	0,75	-0,39	0,77	0,32	-0,01	-0,13	-0,76	-1,09	2,15	1,16	-0,04	0,43	0,59	0,89	-0,15	1,00	-0,19
613	0,59	0,90	2,04	-0,65	-0,93	-0,66	0,32	0,07	0,26	-1,15	-2,68	-1,34	-2,62	-6,12	-2,58	-0,52	-0,10	0,71	-1,69	-2,05	-0,82	0,39	0,19	0,56	-0,42	-0,64	-0,24
633	0,01	0,01	0,01	-0,99	-0,98	-0,97	0,01	0,02	0,02	-5,30	-3,81	-4,05	-1,19	-0,77	-0,98	-5,08	-5,07	-4,45	-5,26	-4,83	-4,44	0,07	0,08	0,11	-0,90	-1,00	-0,85
634	0,54	0,44	0,78	-0,28	-0,79	-0,82	0,86	0,21	0,13	-0,15	-1,55	-2,04	0,29	-0,32	-0,96	-0,62	-0,83	-0,25	0,78	-0,55	-0,80	0,73	0,38	0,55	-0,41	1,00	-0,46
635	0,67	0,46	0,54	-0,25	-0,67	-0,32	0,92	0,36	0,66	-0,08	-1,01	-0,41	0,55	0,20	0,35	-0,40	-0,78	-0,61	1,70	0,59	1,05	0,77	0,69	0,77	0,25	0,31	0,45
641	0,23	0,13	0,19	-0,89	-0,96	-0,91	0,09	0,04	0,06	-2,43	-3,18	-2,84	-2,08	-2,68	-3,23	-1,45	-2,02	-1,67	-2,29	-3,05	-2,89	0,24	0,12	0,19	-0,79	-0,60	-0,80
642	0,42	0,97	1,57	-0,83	-0,73	0,02	0,15	0,28	1,34	-1,93	-1,26	0,29	-0,73	-0,33	0,52	-0,87	-0,03	0,45	-1,01	-0,30	0,40	0,65	0,83	0,63	0,48	-0,33	0,68
651	6,72	9,29	5,93	0,18	0,23	0,21	2,21	2,94	1,96	0,79	1,08	0,67	3,15	6,08	1,34	1,91	2,23	1,78	0,63	1,06	0,26	0,81	0,98	0,80	-0,21	-0,20	-0,23
652	4,01	3,90	3,80	0,59	0,29	0,30	5,93	3,32	2,37	1,78	1,20	0,86	1,18	0,93	-2,10	1,39	1,36	1,33	0,35	0,27	-0,44	0,92	0,85	0,92	-0,13	-0,03	-0,20
653	4,03	4,38	5,74	0,53	0,29	0,50	4,99	3,35	3,87	1,61	1,21	1,35	1,01	1,22	2,68	1,39	1,48	1,75	0,29	0,33	0,63	0,87	0,88	0,72	0,34	0,13	0,72
654	0,74	1,30	1,05	-0,21	-0,48	-0,38	0,99	0,64	0,58	-0,01	-0,45	-0,54	-1,19	-2,42	-3,71	-0,31	0,26	0,05	-0,96	-1,05	-1,51	0,96	0,88	0,62	-0,42	0,26	-0,46
655	2,27	3,79	5,71	0,28	0,26	0,64	2,71	3,11	5,93	1,00	1,13	1,78	0,01	1,90	2,96	0,82	1,33	1,74	0,00	0,70	0,73	0,86	0,59	0,46	0,58	-0,17	0,73
656	2,97	6,45	7,42	0,32	0,47	0,48	2,93	5,15	3,64	1,07	1,64	1,29	2,19	4,99	5,92	1,09	1,86	2,00	1,35	1,48	1,60	0,45	0,39	0,37	0,66	0,73	0,71
657	1,24	1,39	1,45	-0,55	-0,45	-0,24	0,44	0,70	0,80	-0,83	-0,35	-0,23	-1,05	-1,14	-1,62	0,22	0,33	0,37	-0,61	-0,60	-0,75	0,85	0,81	0,84	-0,18	-0,26	-0,16
658	14,81	23,29	20,64	0,97	0,96	0,96	90,63	88,44	63,35	4,51	4,48	4,15	14,70	23,17	20,52	2,70	3,15	3,03	4,87	5,32	5,15	0,06	0,05	0,06	0,94	0,93	0,94
659	4,94	4,87	9,88	0,86	0,31	0,48	19,59	3,51	3,71	2,98	1,25	1,31	4,85	4,04	8,64	1,60	1,58	2,29	3,99	1,77	2,08	0,06	0,35	0,36	0,47	-1,00	0,57
661	2,93	5,23	8,35	0,67	0,49	0,75	7,74	5,37	9,01	2,05	1,68	2,20	2,43	4,24	7,65	1,07	1,65	2,12	1,77	1,67	2,49	0,19	0,28	0,19	0,84	1,00	0,82
662	1,38	1,80	1,69	0,09	0,42	0,52	1,83	4,47	4,11	0,61	1,50	1,41	-2,18	-0,21	-0,35	0,32	0,59	0,53	-0,95	-0,11	-0,19	0,74	0,39	0,43	0,70	0,37	0,84

663	0,32	0,54	0,54	-0,75	-0,56	-0,55	0,22	0,51	0,37	-1,53	-0,67	-0,99	-1,20	-0,60	-0,76	-1,14	-0,61	-0,62	-1,56	-0,74	-0,88	0,38	0,61	0,69	-0,16	-0,36	-0,15
664	1,61	2,02	1,87	-0,22	0,03	-0,04	0,98	1,96	1,18	-0,02	0,67	0,17	0,40	0,99	0,30	0,47	0,70	0,63	0,29	0,67	0,18	0,98	0,92	1,00	-0,03	-0,22	0,05
665	2,05	3,02	1,48	0,38	0,44	0,26	3,37	4,72	2,19	1,22	1,55	0,79	1,15	2,23	0,19	0,72	1,11	0,40	0,82	1,33	0,14	0,48	0,37	0,64	0,25	0,20	0,31
666	0,33	0,54	0,84	0,20	0,14	0,40	2,27	2,42	3,02	0,82	0,88	1,11	0,08	0,26	0,24	-1,11	-0,61	-0,17	0,30	0,63	0,33	0,95	0,99	0,75	-0,25	0,31	-0,17
667	0,00	0,00	0,00	-0,63	-0,96	-0,98	0,34	0,04	0,01	-1,08	-3,34	-4,25	0,00	0,00	-0,02	-6,44	-5,69	-6,04	-1,32	-0,67	-2,05	0,26	0,41	0,16	-0,82	1,00	-0,83
691	0,70	1,19	2,07	-0,78	-0,62	0,13	0,18	0,43	1,68	-1,69	-0,85	0,52	-0,24	0,05	1,08	-0,35	0,18	0,73	-0,29	0,04	0,74	0,88	0,98	0,35	0,75	0,57	0,97
692	0,55	1,01	1,35	-0,91	-0,33	0,18	0,07	0,93	1,83	-2,65	-0,07	0,61	-1,12	-0,19	0,13	-0,60	0,01	0,30	-1,12	-0,17	0,10	0,69	0,95	0,55	0,74	0,51	0,84
693	1,82	4,97	5,35	-0,18	0,55	0,71	1,07	6,32	7,53	0,06	1,84	2,02	0,35	3,84	4,70	0,60	1,60	1,68	0,21	1,48	2,11	0,76	0,40	0,25	0,85	-0,42	0,86
694	0,73	0,83	0,87	-0,57	-0,43	-0,45	0,42	0,74	0,49	-0,86	-0,30	-0,72	-0,01	0,13	-0,13	-0,31	-0,19	-0,14	-0,02	0,17	-0,14	0,52	0,59	0,56	-0,36	1,00	-0,38
695	0,18	0,26	0,19	-0,73	-0,78	-0,67	0,24	0,23	0,26	-1,44	-1,46	-1,35	-0,33	-0,43	-0,53	-1,74	-1,34	-1,68	-1,06	-0,97	-1,35	0,38	0,38	0,34	-0,59	1,00	-0,61
696	0,37	0,28	0,29	-0,82	-0,86	-0,74	0,15	0,13	0,19	-1,89	-2,00	-1,65	-0,08	-0,36	-0,58	-1,00	-1,29	-1,26	-0,19	-0,83	-1,11	0,53	0,26	0,26	-0,78	-0,25	-0,88
697	1,55	2,77	3,15	0,32	0,36	0,56	2,94	3,90	4,55	1,08	1,36	1,52	1,17	2,33	2,77	0,44	1,02	1,15	1,39	1,84	2,11	0,51	0,46	0,35	0,70	0,89	0,76
699	0,47	0,60	1,03	-0,53	-0,38	-0,14	0,47	0,82	0,97	-0,76	-0,20	-0,03	-0,55	-0,19	-0,01	-0,75	-0,51	0,03	-0,77	-0,27	-0,01	0,58	0,73	0,98	0,08	-0,02	0,16
811	0,94	0,80	1,55	-0,29	-0,75	-0,28	0,84	0,26	0,72	-0,17	-1,36	-0,33	0,77	0,23	0,37	-0,06	-0,23	0,44	1,68	0,35	0,27	0,32	0,96	0,37	0,62	-1,00	0,69
812	2,73	3,33	5,96	-0,10	-0,11	0,36	1,24	1,46	2,76	0,21	0,38	1,02	-0,62	0,18	3,40	1,01	1,20	1,78	-0,20	0,05	0,85	0,95	0,98	0,56	0,48	-0,10	0,56
813	0,55	0,64	0,95	-0,28	-0,49	0,08	0,86	0,63	1,51	-0,15	-0,46	0,41	0,10	-0,06	0,54	-0,59	-0,45	-0,05	0,19	-0,09	0,83	0,95	0,63	0,96	0,08	0,28	0,16
821	0,31	0,59	1,04	-0,37	-0,20	0,25	0,70	1,21	2,16	-0,36	0,19	0,77	0,08	0,27	0,71	-1,16	-0,53	0,04	0,32	0,60	1,16	0,96	0,98	0,68	0,35	0,21	0,45
831	0,49	0,44	0,35	0,69	0,24	0,28	8,18	3,02	2,29	2,10	1,11	0,83	0,44	0,28	-0,13	-0,72	-0,83	-1,05	2,35	1,01	-0,32	0,33	1,00	0,52	-0,63	0,47	-0,66
841	12,20	12,72	9,84	0,98	0,94	0,89	120,64	56,34	21,48	4,79	4,03	3,07	12,19	12,65	9,68	2,50	2,54	2,29	6,51	5,22	4,14	0,02	0,08	0,16	0,79	0,99	0,77
842	11,83	15,98	12,02	0,98	0,93	0,94	153,81	51,20	40,76	5,04	3,94	3,71	11,81	15,91	11,88	2,47	2,77	2,49	6,42	5,32	4,46	0,02	0,06	0,13	0,84	0,99	0,83
843	22,65	17,95	13,58	0,99	0,92	0,97	278,47	45,61	80,91	5,63	3,82	4,39	22,64	17,87	13,52	3,12	2,89	2,61	7,34	5,38	5,55	0,01	0,07	0,07	0,90	1,00	0,59
844	42,44	29,28	22,56	1,00	0,95	0,97	825,96	67,10	94,62	6,72	4,21	4,55	42,43	29,18	22,48	3,75	3,38	3,12	8,20	5,71	5,58	0,00	0,05	0,05	0,82	1,00	0,83
845	14,07	15,45	11,83	0,99	0,94	0,97	258,65	59,72	72,79	5,56	4,09	4,29	14,05	15,35	11,72	2,64	2,74	2,47	6,50	5,01	4,64	0,01	0,07	0,10	0,87	1,00	0,85
846	4,63	4,52	5,55	0,93	0,89	0,93	41,11	31,66	33,84	3,72	3,45	3,52	4,53	4,33	5,33	1,53	1,51	1,71	3,81	3,17	3,24	0,06	0,13	0,14	0,86	1,00	0,86
848	15,54	9,83	4,20	0,97	0,90	0,81	112,90	33,54	12,55	4,73	3,51	2,53	15,49	9,66	3,91	2,74	2,29	1,44	5,89	4,06	2,69	0,03	0,17	0,42	-1,00	-0,97	-0,46
851	0,60	0,60	0,57	0,11	-0,47	0,18	1,89	0,66	1,87	0,63	-0,42	0,63	0,47	0,36	0,23	-0,50	-0,52	-0,56	1,52	0,93	0,52	0,57	0,99	0,69	-0,50	0,95	-0,66
891	0,65	3,08	1,14	-0,63	-0,69	-0,44	0,35	0,34	0,50	-1,05	-1,09	-0,68	-5,38	-9,76	0,37	-0,44	1,13	0,13	-2,23	-1,43	0,39	0,23	0,51	0,48	1,00	1,00	1,00
892	0,09	0,15	0,19	-0,78	-0,78	-0,69	0,19	0,23	0,24	-1,66	-1,49	-1,42	-0,47	-0,38	-0,38	-2,44	-1,90	-1,67	-1,86	-1,26	-1,11	0,34	0,45	0,60	0,09	0,87	-0,23
893	0,67	0,94	1,31	-0,72	-0,53	-0,09	0,25	0,56	1,07	-1,38	-0,58	0,07	-0,08	0,09	0,47	-0,40	-0,06	0,27	-0,12	0,10	0,45	0,78	0,79	0,93	0,16	0,22	0,24
894	0,07	0,16	0,13	-0,80	-0,75	-0,62	0,17	0,26	0,30	-1,80	-1,34	-1,21	-0,07	-0,02	-0,06	-2,62	-1,83	-2,03	-0,66	-0,12	-0,38	0,23	0,24	0,20	-0,79	-0,65	-0,84
895	0,19	0,25	0,25	-0,82	-0,85	-0,76	0,15	0,15	0,17	-1,91	-1,88	-1,75	-0,49	-0,81	-0,55	-1,67	-1,37	-1,40	-1,28	-1,44	-1,18	0,26	0,21	0,26	-0,76	-0,88	-0,74
896	0,00	0,12	0,00	-0,82	-0,76	-0,93	0,15	0,25	0,05	-1,90	-1,40	-3,09	0,00	-0,67	-0,02	-5,89	-2,12	-6,52	-1,01	-1,89	-2,71	0,48	0,25	0,12	-0,89	-0,19	0,87
897	0,40	2,03	2,72	0,84	0,27	0,50	17,97	3,21	3,83	2,89	1,17	1,34	0,35	1,57	2,24	-0,93	0,71	1,00	2,15	1,49	1,74	0,16	0,31	0,34	0,66	1,00	0,66
898	0,88	0,14	0,13	-0,17	-0,83	-0,81	1,08	0,17	0,13	0,08	-1,77	-2,01	0,44	-0,80	-0,65	-0,13	-1,94	-2,07	0,68	-1,88	-1,82	0,92	0,16	0,21	-1,00	-0,23	-1,00
899	0,34	0,36	0,27	-0,65	-0,69	-0,54	0,32	0,33	0,38	-1,12	-1,09	-0,96	-0,19	-0,36	-0,29	-1,08	-1,02	-1,31	-0,44	-0,69	-0,74	0,39	0,32	0,39	-0,59	-0,15	-0,60

CAPITAL INTENSIVE INDUSTRIES																											
	RCA1 - CEP			RCA2			RCA3			RCA4			VRC1			VRC2			VRC3			G-L			Brühlhart B		
	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1993-2005	1996-2005	1996-2005
111	1,63	0,52	0,69	0,80	-0,01	0,14	13,36	1,78	1,72	2,59	0,58	0,54	1,52	0,03	0,28	0,49	-0,65	-0,37	2,71	0,06	0,52	0,03	0,58	0,27	0,73	1,00	0,63
112	0,16	0,07	0,08	-0,02	0,22	0,46	1,45	2,87	3,45	0,37	1,06	1,24	-0,02	0,01	0,05	-1,80	-2,62	-2,47	-0,14	0,21	0,95	0,43	0,54	0,28	0,88	0,72	1,00
121	19,39	24,36	13,15	0,99	0,90	0,80	551,77	34,70	11,82	6,31	3,55	2,47	18,12	21,83	12,06	2,96	3,19	2,58	2,72	2,26	2,49	0,71	0,91	0,56	-0,10	-1,00	-0,09
122	4,26	2,08	0,95	0,67	-0,25	-0,54	7,79	1,11	0,39	2,05	0,10	-0,95	3,17	-2,25	-4,05	1,45	0,73	-0,05	1,36	-0,73	-1,66	0,31	0,51	0,87	1,00	1,00	-0,38
351	0,03	0,53	0,92	NA	NA	NA	NA	NA	NA	NA	NA	NA	0,03	-3,14	0,85	-3,61	-0,64	-0,08	NA	-1,94	2,58	0,00	0,27	0,30	0,70	1,00	0,86
531	0,04	0,21	0,21	-1,00	-0,97	-0,96	0,00	0,03	0,03	-5,61	-3,52	-3,56	-3,77	-2,96	-2,89	-3,10	-1,55	-1,54	-4,44	-2,71	-2,67	0,02	0,07	0,10	-0,72	-0,93	0,33
532	1,42	1,96	1,73	-0,78	-0,69	-0,73	0,18	0,33	0,20	-1,69	-1,10	-1,60	-0,68	-0,24	-0,64	0,35	0,67	0,55	-0,39	-0,11	-0,31	0,95	0,96	0,94	0,16	0,35	0,43
533	0,30	0,39	0,45	-0,98	-0,98	-0,88	0,01	0,02	0,08	-4,46	-3,79	-2,50	-3,56	-3,31	-3,37	-1,19	-0,95	-0,80	-2,54	-2,26	-2,14	0,27	0,33	0,40	-0,55	-0,63	-0,57
551	0,24	0,26	0,09	-0,76	-0,82	-0,83	0,21	0,18	0,12	-1,55	-1,69	-2,12	-1,78	-1,74	-1,60	-1,44	-1,34	-2,38	-2,14	-2,03	-2,90	0,19	0,25	0,22	-0,78	-0,86	-0,62
553	0,11	0,28	0,36	-0,97	-0,96	-0,79	0,03	0,04	0,15	-3,67	-3,21	-1,88	-0,75	-1,37	-1,00	-2,22	-1,26	-1,02	-2,07	-1,76	-1,33	0,50	0,56	0,83	-0,13	-0,26	-0,12
554	3,32	3,31	2,23	-0,87	-0,88	-0,36	0,11	0,11	0,60	-2,25	-2,17	-0,51	0,53	-0,02	-0,63	1,20	1,20	0,80	0,17	-0,01	-0,25	0,56	0,69	0,71	0,33	0,76	0,02
621	0,97	1,51	1,52	-0,15	-0,14	-0,28	1,13	1,39	0,73	0,12	0,33	-0,32	-0,26	0,10	-1,07	-0,03	0,41	0,42	-0,24	0,07	-0,53	0,88	0,87	0,89	-0,07	0,49	0,01
625	3,46	3,18	2,70	0,46	0,24	0,36	4,16	2,99	2,75	1,43	1,09	1,01	2,96	1,98	1,84	1,24	1,16	0,99	1,92	0,97	1,14	0,46	0,88	0,71	0,28	1,00	0,28
629	0,55	1,04	1,51	-0,54	-0,22	0,01	0,46	1,16	1,30	-0,78	0,15	0,27	-0,70	-0,14	0,13	-0,60	0,04	0,41	-0,82	-0,12	0,09	0,49	0,75	0,97	0,20	1,00	0,25
671	7,57	5,79	1,10	-0,28	-0,09	-0,51	0,85	1,53	0,42	-0,16	0,43	-0,86	6,45	4,86	0,33	2,02	1,76	0,10	1,92	1,83	0,36	0,55	0,47	0,14	-1,00	-0,25	-1,00
672	14,48	8,84	9,04	0,67	0,79	0,28	7,76	16,01	2,30	2,05	2,77	0,83	10,99	3,78	5,94	2,67	2,18	2,20	1,42	0,56	1,07	0,72	0,76	0,99	0,18	1,00	-0,02
673	0,81	3,11	1,61	-0,58	0,15	-0,72	0,40	2,50	0,21	-0,91	0,92	-1,56	-5,03	-2,19	-5,75	-0,21	1,13	0,47	-1,97	-0,53	-1,52	0,19	0,41	0,26	-0,73	-0,94	-0,78
674	0,26	0,70	1,51	-0,99	-0,80	-0,60	0,01	0,20	0,33	-4,48	-1,61	-1,12	-6,26	-2,11	-1,92	-1,36	-0,35	0,41	-3,23	-1,39	-0,82	0,20	0,32	0,66	-0,26	-0,76	-0,12
675	0,01	0,02	0,20	-1,00	-1,00	-0,84	0,00	0,00	0,11	-7,61	-5,85	-2,20	-12,17	-5,25	-6,79	-4,73	-3,72	-1,59	-7,23	-5,39	-3,54	0,01	0,02	0,19	-0,75	-0,97	-0,74
676	10,13	9,42	8,99	-0,08	0,34	0,20	1,29	3,73	1,94	0,25	1,32	0,66	8,58	7,93	6,89	2,32	2,24	2,20	1,88	1,84	1,46	0,25	0,27	0,34	0,61	-0,57	0,61
677	0,01	0,02	0,04	-1,00	-1,00	-0,97	0,00	0,00	0,02	-5,70	-7,60	-3,86	-5,52	-12,68	-5,92	-5,17	-4,05	-3,34	-6,88	-6,59	-5,13	0,01	0,01	0,06	-0,77	1,00	-0,95
678	0,87	1,08	1,30	-0,74	-0,53	-0,16	0,23	0,56	0,94	-1,48	-0,59	-0,06	-0,46	-0,41	0,18	-0,14	0,08	0,26	-0,42	-0,32	0,15	0,83	0,77	0,94	0,00	0,06	0,04
679	1,50	1,68	1,57	0,15	-0,20	0,29	2,08	1,22	2,32	0,73	0,20	0,84	-0,09	-1,41	0,23	0,41	0,52	0,45	-0,06	-0,61	0,16	0,73	0,91	0,60	0,49	0,70	0,64
681	0,06	0,01	0,03	-1,00	-0,96	-0,96	0,00	0,04	0,03	NA	-3,26	-3,66	-0,03	-0,11	-0,19	-2,78	-5,19	-3,41	-0,42	-3,02	-1,89	0,31	0,04	0,20	-0,79	-0,64	-0,77
682	1,87	1,93	1,23	-0,41	-0,18	-0,46	0,63	1,29	0,48	-0,46	0,25	-0,74	1,01	0,56	-0,91	0,63	0,66	0,21	0,77	0,34	-0,55	0,67	0,54	0,34	-0,73	-0,48	-0,79
683	0,03	0,01	0,01	-1,00	-0,99	-0,96	0,00	0,01	0,03	-5,73	-4,37	-3,59	-0,13	-0,12	-0,26	-3,39	-4,81	-4,39	-1,56	-2,76	-3,08	0,06	0,02	0,03	-0,97	-0,90	-0,97
684	1,06	1,61	1,88	-0,36	-0,12	0,11	0,71	1,45	1,61	-0,34	0,37	0,48	0,22	0,68	0,72	0,06	0,48	0,63	0,24	0,55	0,48	0,51	0,61	0,70	-0,25	-0,34	-0,24

685	0,01	0,45	0,70	-1,00	-0,91	-0,88	0,00	0,09	0,08	-8,06	-2,40	-2,47	-1,82	-1,93	-1,11	-4,24	-0,80	-0,36	-4,84	-1,67	-0,95	0,00	0,07	0,08	-0,90	-1,00	-0,86
686	0,02	0,05	0,13	-1,00	-1,00	-0,99	0,00	0,00	0,00	NA	-5,61	-5,71	-2,14	-2,49	-4,57	-4,19	-2,97	-2,01	-4,96	-3,90	-3,56	0,01	0,01	0,01	-0,99	-0,99	-1,00
687	0,21	0,10	0,07	-0,88	-1,00	-1,00	0,10	0,00	0,00	-2,33	-8,63	-6,90	-0,20	-0,47	-0,52	-1,57	-2,30	-2,70	-0,67	-1,73	-2,17	0,06	0,02	0,02	-0,97	-0,81	-0,96
689	0,09	0,03	0,04	-0,60	-0,81	-0,67	0,38	0,19	0,25	-0,97	-1,66	-1,38	-0,12	-0,13	-0,06	-2,38	-3,69	-3,35	-0,81	-1,83	-1,00	0,19	0,08	0,16	-0,83	-0,79	-0,13
781	0,21	0,41	0,98	-0,22	-0,64	-0,04	0,97	0,40	1,19	-0,03	-0,91	0,17	-0,22	-1,46	-0,68	-1,55	-0,89	-0,02	-0,70	-1,51	-0,53	0,87	0,39	0,99	0,10	1,00	0,11
782	0,28	0,50	4,22	-0,83	-0,82	0,26	0,14	0,18	2,21	-1,99	-1,70	0,79	-1,76	-4,85	-0,12	-1,26	-0,70	1,44	-1,98	-2,38	-0,03	0,38	0,18	0,81	0,31	1,00	0,31
783	2,40	3,37	3,20	-0,56	-0,73	-0,04	0,43	0,29	1,20	-0,84	-1,25	0,18	-27,84	-9,61	-6,43	0,88	1,22	1,16	-2,53	-1,35	-1,10	0,85	0,95	0,77	0,26	-0,32	0,42
784	0,48	0,78	0,96	-0,70	-0,63	-0,47	0,27	0,42	0,47	-1,31	-0,86	-0,76	-1,64	-1,77	-2,46	-0,72	-0,25	-0,04	-1,48	-1,19	-1,27	0,38	0,46	0,61	-0,31	0,11	-0,33
785	0,56	0,49	0,52	0,08	-0,28	0,14	1,78	1,03	1,71	0,58	0,03	0,54	0,41	0,29	-0,04	-0,58	-0,71	-0,66	1,29	0,89	-0,07	0,71	0,50	0,30	-0,66	1,00	-0,73
786	2,30	0,95	0,78	0,50	-0,20	-0,44	4,54	1,22	0,50	1,51	0,20	-0,69	1,44	0,52	-1,16	0,83	-0,05	-0,25	0,98	0,79	-0,91	0,44	0,87	0,97	-0,26	0,72	-0,67

EASY TO IMITATE RESEARCH INTENSIVE INDUSTRIES																											
	RCA1 - CEP			RCA2			RCA3			RCA4			VRC1			VRC2			VRC3			G-L			Brühlhart B		
	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1993-2005	1996-2005	1996-2005
511	0,74	1,06	0,77	-0,63	-0,54	-0,46	0,34	0,55	0,47	-1,07	-0,60	-0,75	-2,22	-0,54	-0,85	-0,30	0,06	-0,26	-1,38	-0,41	-0,74	0,27	0,30	0,38	-0,63	-0,92	-0,60
512	0,55	0,42	0,22	-0,59	-0,85	-0,89	0,39	0,15	0,08	-0,94	-1,88	-2,57	-1,20	-1,41	-1,45	-0,60	-0,86	-1,51	-1,15	-1,47	-2,02	0,26	0,17	0,10	-0,88	-0,58	-0,98
513	0,27	0,23	0,17	-0,88	-0,94	-0,95	0,10	0,06	0,03	-2,34	-2,82	-3,35	-2,92	-2,44	-3,18	-1,32	-1,46	-1,76	-2,48	-2,44	-2,97	0,09	0,09	0,07	-0,97	-1,00	-0,91
514	0,24	0,22	0,14	-0,84	-0,83	-0,94	0,13	0,17	0,04	-2,02	-1,80	-3,18	-2,24	-1,93	-0,52	-1,44	-1,51	-1,98	-2,35	-2,27	-1,56	0,13	0,14	0,20	-0,72	-0,85	-0,42
515	0,06	0,02	0,01	-0,99	-0,99	-0,96	0,01	0,01	0,03	-4,53	-4,43	-3,56	-1,15	-1,37	-0,70	-2,78	-4,04	-4,60	-2,98	-4,37	-4,26	0,07	0,04	0,03	-0,97	-0,86	-1,00
516	0,06	0,07	0,09	-0,94	-0,91	-0,88	0,04	0,08	0,08	-3,14	-2,51	-2,53	-1,30	-0,88	-0,79	-2,83	-2,66	-2,42	-3,14	-2,61	-2,29	0,08	0,12	0,17	-0,78	-0,82	-0,77
522	0,77	0,84	0,58	-0,54	-0,66	-0,61	0,46	0,38	0,31	-0,78	-0,98	-1,16	-1,47	-1,12	-0,92	-0,27	-0,18	-0,54	-1,07	-0,85	-0,94	0,22	0,25	0,21	-0,75	-0,59	-0,73
523	3,25	4,69	0,61	-0,16	-0,02	-0,26	1,10	1,77	0,76	0,10	0,57	-0,28	-0,05	1,50	-1,87	1,18	1,54	-0,49	-0,01	0,39	-1,40	0,92	0,97	0,24	-1,00	-0,08	-1,00
524	0,89	0,78	0,57	-0,49	-0,15	-0,50	0,53	1,35	0,43	-0,64	0,30	-0,84	0,00	0,55	0,12	-0,12	-0,25	-0,56	0,00	1,23	0,23	0,61	0,99	0,64	-0,61	-1,00	0,09
525	0,00	0,00	0,01	-1,00	-0,97	-0,99	0,00	0,03	0,01	NA	-3,65	-5,10	-0,10	-0,10	-0,03	NA	-6,22	-5,08	NA	-3,98	-1,82	0,00	0,02	0,14	-0,66	-1,00	-0,22
541	0,09	0,22	0,06	-0,95	-0,85	-0,93	0,04	0,15	0,05	-3,22	-1,92	-3,04	-1,02	-1,05	-0,66	-2,37	-1,50	-2,86	-2,47	-1,74	-2,53	0,10	0,19	0,12	-0,85	-0,68	-0,93
581	0,29	0,93	2,11	-0,92	-0,82	-0,18	0,06	0,18	0,90	-2,79	-1,69	-0,10	-1,29	-0,06	0,85	-1,22	-0,07	0,75	-1,68	-0,06	0,51	0,38	0,93	0,54	0,59	-0,33	0,64
582	0,71	0,94	1,05	-0,85	-0,67	-0,36	0,12	0,36	0,60	-2,09	-1,01	-0,50	-0,50	-0,68	-0,87	-0,34	-0,06	0,05	-0,53	-0,55	-0,61	0,69	0,72	0,80	-0,13	0,02	-0,11
583	0,32	0,77	2,83	-0,95	-0,95	0,09	0,04	0,05	1,53	-3,16	-3,00	0,43	-2,04	-3,19	-1,12	-1,14	-0,27	1,04	-2,00	-1,64	-0,33	0,60	0,90	0,38	0,67	0,26	0,70
591	0,26	0,33	0,18	-0,89	-0,97	-0,89	0,09	0,03	0,08	-2,44	-3,44	-2,56	-2,00	-2,07	-1,50	-1,34	-1,10	-1,72	-2,15	-1,98	-2,24	0,35	0,38	0,30	-0,88	-1,00	-0,64
592	0,11	0,20	0,21	-0,96	-0,98	-0,91	0,03	0,02	0,06	-3,50	-3,82	-2,80	-1,06	-1,67	-1,82	-2,20	-1,60	-1,54	-2,36	-2,23	-2,25	0,19	0,25	0,27	-0,70	-0,76	-0,72
593	0,02	0,17	0,18	-1,00	-1,00	-0,78	0,00	0,00	0,16	NA	NA	-1,82	-0,89	-0,18	-0,56	-3,71	-1,77	-1,71	-3,62	-0,72	-1,41	0,02	0,17	0,16	-0,80	-0,98	-0,76
597	0,05	0,08	0,10	-0,97	-0,97	-0,97	0,02	0,03	0,02	-3,93	-3,63	-4,10	-3,91	-3,76	-3,65	-2,97	-2,48	-2,30	-4,35	-3,83	-3,62	0,07	0,09	0,13	-0,83	-0,89	-0,81
598	0,13	0,14	0,16	-0,94	-0,96	-0,91	0,05	0,04	0,06	-2,98	-3,29	-2,79	-1,30	-1,16	-1,38	-2,04	-1,99	-1,86	-2,40	-2,25	-2,29	0,16	0,17	0,22	-0,77	-0,90	-0,73
751	0,07	0,07	0,08	-0,90	-0,97	-0,96	0,08	0,03	0,02	-2,54	-3,53	-3,71	-0,52	-1,18	-1,07	-2,62	-2,64	-2,48	-2,11	-2,86	-2,62	0,08	0,04	0,06	-0,96	-1,00	-0,97
752	0,02	0,10	0,04	-0,99	-0,91	-0,94	0,01	0,08	0,04	-4,85	-2,47	-3,21	-0,37	-0,45	-0,39	-4,01	-2,28	-3,26	-3,05	-1,68	-2,40	0,02	0,08	0,05	-0,95	-0,97	-0,95
759	0,01	0,03	0,02	-0,96	-0,90	-0,70	0,03	0,10	0,23	-3,55	-2,31	-1,49	-0,14	-0,16	-0,16	-4,94	-3,39	-3,71	-3,02	-1,76	-2,01	0,03	0,09	0,08	-0,90	-1,00	-0,91

DIFFICULT TO IMITATE RESEARCH INTENSIVE INDUSTRIES

	RCA1 - CEP			RCA2			RCA3			RCA4			VRC1			VRC2			VRC3			G-L			Brühlhart B		
	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1995	2000	2005	1993-2005	1996-2005	1996-2005
711	0,11	0,29	0,50	-0,95	-0,75	-0,61	0,04	0,27	0,31	-3,21	-1,32	-1,16	-2,07	-2,75	-4,04	-2,23	-1,23	-0,70	-3,01	-2,35	-2,21	0,28	0,30	0,62	-0,03	1,00	1,00
712	0,00	0,01	0,10	-0,98	-0,99	-0,90	0,02	0,01	0,07	-4,14	-4,41	-2,67	-1,09	-0,98	-1,67	-5,43	-4,83	-2,30	-5,52	-4,82	-2,87	0,01	0,02	0,19	1,00	1,00	-0,26
713	0,49	0,87	1,00	-0,54	-0,50	-0,55	0,46	0,61	0,38	-0,78	-0,49	-0,97	-0,80	-0,58	-2,51	-0,72	-0,13	0,00	-0,97	-0,51	-1,25	0,47	0,51	0,51	-0,45	0,74	-0,47
714	0,11	0,13	0,16	0,09	-0,73	-0,17	1,81	0,29	0,92	0,60	-1,25	-0,09	-0,03	-0,14	-0,05	-2,23	-2,08	-1,82	-0,25	-0,76	-0,27	0,64	0,41	0,74	-0,14	1,00	0,10
716	0,20	0,40	0,45	-0,62	-0,78	-0,67	0,36	0,22	0,26	-1,02	-1,49	-1,35	-0,66	-1,00	-1,24	-1,63	-0,93	-0,81	-1,48	-1,26	-1,33	0,38	0,40	0,60	-0,31	1,00	-0,31
718	0,04	0,05	0,16	-0,91	-0,91	-0,35	0,07	0,09	0,62	-2,67	-2,43	-0,48	-0,96	-1,42	-0,24	-3,27	-2,92	-1,81	-3,28	-3,30	-0,91	0,10	0,10	0,64	-0,02	0,05	-0,20
721	0,14	0,21	0,28	-0,92	-0,90	-0,78	0,07	0,10	0,16	-2,72	-2,34	-1,81	-0,33	-0,68	-1,40	-1,97	-1,56	-1,28	-1,21	-1,44	-1,80	0,53	0,41	0,47	-0,49	1,00	-0,51
722	0,00	0,89	0,82	-0,99	-0,96	-0,81	0,01	0,04	0,14	-4,57	-3,32	-1,98	-0,33	0,41	-1,73	-5,80	-0,12	-0,20	-4,68	0,61	-1,13	0,03	0,52	0,87	-0,08	0,70	-0,04
723	0,19	0,37	0,30	-0,67	-0,62	-0,54	0,30	0,44	0,39	-1,21	-0,83	-0,94	-1,56	-2,13	-1,89	-1,67	-0,98	-1,20	-2,23	-1,90	-1,98	0,34	0,33	0,36	-0,59	1,00	-0,60
724	0,12	0,23	0,39	-0,99	-0,97	-0,95	0,01	0,02	0,03	-4,61	-3,70	-3,46	-16,20	-9,52	-15,27	-2,08	-1,48	-0,93	-4,87	-3,76	-3,69	0,04	0,09	0,19	-0,60	-0,96	1,00
725	0,02	0,06	0,08	-0,99	-0,92	-0,91	0,01	0,07	0,06	-5,16	-2,60	-2,83	-2,58	-1,73	-2,27	-4,18	-2,85	-2,51	-5,14	-3,43	-3,37	0,03	0,12	0,17	-0,81	-0,99	-0,68
726	0,02	0,04	0,06	-0,97	-0,98	-0,92	0,03	0,02	0,05	-3,67	-3,91	-2,97	-1,48	-1,13	-1,96	-3,88	-3,13	-2,88	-4,28	-3,30	-3,58	0,04	0,09	0,11	-0,79	1,00	-0,67
727	0,34	0,69	0,50	-0,84	-0,89	-0,70	0,14	0,11	0,23	-1,99	-2,24	-1,48	-2,64	-2,59	-2,06	-1,08	-0,37	-0,70	-2,17	-1,56	-1,63	0,66	0,82	0,98	0,26	0,35	1,00
728	0,07	0,11	0,23	-0,95	-0,92	-0,84	0,04	0,08	0,11	-3,27	-2,58	-2,19	-2,38	-1,55	-2,28	-2,68	-2,17	-1,48	-3,57	-2,68	-2,40	0,12	0,19	0,38	-0,44	1,00	-0,31
731	0,04	0,19	0,19	-0,96	-0,79	-0,78	0,03	0,22	0,16	-3,56	-1,53	-1,86	-0,87	-0,56	-1,71	-3,23	-1,65	-1,67	-3,13	-1,37	-2,31	0,05	0,18	0,16	-0,81	1,00	-0,79
733	0,30	0,89	1,20	-0,73	-0,52	-0,42	0,23	0,59	0,53	-1,45	-0,54	-0,64	-2,50	-1,79	-2,93	-1,22	-0,12	0,18	-2,25	-1,10	-1,24	0,35	0,66	0,78	0,06	1,00	-0,07
735	0,07	0,11	0,13	-0,63	-0,84	-0,76	0,34	0,16	0,18	-1,08	-1,84	-1,74	-0,25	-0,26	-0,48	-2,71	-2,24	-2,03	-1,57	-1,23	-1,54	0,33	0,33	0,40	-0,54	1,00	-0,53
737	0,08	0,28	0,29	-0,97	-0,85	-0,80	0,02	0,15	0,14	-3,73	-1,92	-1,94	-3,96	-1,49	-3,48	-2,47	-1,27	-1,24	-3,87	-1,85	-2,57	0,09	0,35	0,38	-0,53	-0,89	-0,57
741	0,29	0,53	0,52	-0,73	-0,55	-0,41	0,24	0,53	0,53	-1,45	-0,64	-0,63	-1,70	-1,20	-0,90	-1,23	-0,64	-0,66	-1,92	-1,19	-1,01	0,36	0,41	0,65	-0,16	0,17	0,02
742	0,19	0,31	0,27	-0,83	-0,87	-0,75	0,14	0,13	0,18	-1,97	-2,03	-1,70	-1,58	-1,38	-1,82	-1,64	-1,16	-1,32	-2,22	-1,68	-2,06	0,28	0,37	0,44	-0,49	-0,51	-0,44
743	0,18	0,18	0,30	-0,91	-0,84	-0,69	0,07	0,16	0,24	-2,61	-1,85	-1,44	-1,43	-0,96	-1,17	-1,74	-1,72	-1,21	-2,21	-1,85	-1,60	0,22	0,24	0,41	-0,54	-0,69	-0,47
744	0,11	0,23	0,22	-0,93	-0,86	-0,82	0,06	0,13	0,13	-2,85	-2,02	-2,05	-1,45	-1,17	-1,68	-2,19	-1,46	-1,54	-2,63	-1,80	-2,17	0,26	0,35	0,44	-0,42	1,00	-0,41
745	0,05	0,12	0,11	-0,98	-0,93	-0,90	0,02	0,06	0,07	-4,13	-2,75	-2,64	-1,35	-1,26	-1,55	-2,99	-2,14	-2,19	-3,33	-2,47	-2,70	0,12	0,21	0,25	-0,66	1,00	-0,63
746	0,23	0,28	0,36	-0,84	-0,79	-0,56	0,13	0,22	0,36	-2,04	-1,52	-1,02	-1,40	-0,85	-1,13	-1,49	-1,28	-1,01	-1,98	-1,40	-1,41	0,19	0,26	0,40	-0,40	0,36	-0,38
747	0,18	0,34	0,28	-0,82	-0,84	-0,65	0,15	0,16	0,27	-1,88	-1,84	-1,30	-1,05	-0,99	-0,93	-1,72	-1,08	-1,28	-1,92	-1,37	-1,47	0,36	0,44	0,52	-0,39	0,38	-0,42
748	0,14	0,32	0,36	-0,86	-0,56	-0,42	0,12	0,52	0,53	-2,13	-0,66	-0,64	-1,44	-0,74	-0,87	-1,99	-1,14	-1,03	-2,45	-1,20	-1,24	0,17	0,41	0,61	-0,06	1,00	-0,12
749	0,12	0,17	0,44	-0,91	-0,87	-0,61	0,07	0,13	0,31	-2,60	-2,07	-1,18	-1,60	-2,01	-2,08	-2,16	-1,78	-0,82	-2,70	-2,56	-1,74	0,18	0,18	0,44	-0,49	-0,50	-0,44
761	7,25	19,61	23,72	0,89	0,71	0,94	26,62	10,93	42,64	3,28	2,39	3,75	6,98	18,75	23,34	1,98	2,98	3,17	3,28	3,14	4,12	0,15	0,35	0,14	0,86	0,86	0,88
762	0,09	0,06	0,04	-0,85	-0,98	-0,99	0,12	0,02	0,00	-2,08	-4,02	-5,42	-0,01	-0,47	-0,66	-2,45	-2,75	-3,33	-0,14	-2,12	-2,97	0,09	0,02	0,01	-1,00	-1,00	-0,99

763	0,01	0,06	0,94	-1,00	-0,99	0,56	0,00	0,01	4,59	-7,05	-4,68	1,52	-0,05	-0,14	0,72	-4,52	-2,81	-0,07	-1,80	-1,21	1,48	0,03	0,03	0,48	-0,50	0,74	-0,48
764	0,07	0,08	0,04	-0,97	-0,98	-0,94	0,02	0,02	0,04	-3,75	-4,14	-3,15	-0,70	-1,36	-0,48	-2,63	-2,47	-3,30	-2,38	-2,83	-2,65	0,13	0,07	0,09	-0,94	-1,00	-0,97
771	0,84	0,84	0,84	-0,05	-0,59	-0,25	1,39	0,47	0,78	0,33	-0,75	-0,25	0,38	0,21	-0,04	-0,18	-0,17	-0,18	0,60	0,29	-0,04	0,91	0,79	0,84	-0,16	1,00	-0,32
772	0,17	0,24	0,35	-0,84	-0,77	-0,56	0,13	0,24	0,36	-2,03	-1,41	-1,02	-0,62	-0,39	-0,53	-1,75	-1,44	-1,05	-1,52	-0,97	-0,92	0,31	0,41	0,62	-0,23	0,30	-0,22
773	2,77	2,53	2,13	0,37	0,34	0,21	3,33	3,73	1,99	1,20	1,32	0,69	2,04	2,07	1,52	1,02	0,93	0,76	1,33	1,71	1,25	0,57	0,57	0,65	0,48	1,00	0,19
774	0,01	0,02	0,01	-0,98	-0,95	-0,97	0,02	0,04	0,02	-4,08	-3,14	-4,01	-0,87	-0,94	-0,96	-4,99	-3,70	-4,21	-4,85	-3,66	-4,19	0,02	0,05	0,04	-0,95	-0,99	-0,96
775	1,45	2,26	3,42	0,12	-0,01	0,58	1,95	1,78	4,80	0,67	0,58	1,57	0,56	0,65	2,72	0,37	0,82	1,23	0,49	0,34	1,58	0,72	1,00	0,47	0,61	1,00	0,72
776	0,01	0,02	0,02	-0,99	-0,99	-0,97	0,01	0,01	0,02	-4,94	-4,66	-3,98	-0,33	-0,43	-0,59	-5,04	-4,19	-3,99	-3,95	-3,37	-3,49	0,01	0,02	0,03	-0,96	1,00	-0,97
778	0,22	0,27	0,24	-0,86	-0,76	-0,81	0,11	0,25	0,14	-2,20	-1,37	-1,97	-0,39	-0,35	-1,08	-1,51	-1,31	-1,44	-1,01	-0,83	-1,72	0,25	0,28	0,16	-0,83	0,69	-0,87
791	0,07	0,06	0,17	-0,91	-0,91	-0,84	0,07	0,08	0,11	-2,64	-2,48	-2,18	-3,36	-2,05	-0,89	-2,69	-2,88	-1,79	-3,92	-3,63	-1,84	0,06	0,05	0,46	1,00	1,00	1,00
792	0,00	0,73	0,07	-1,00	-0,04	-0,14	0,00	1,70	0,96	-6,15	0,53	-0,04	-1,77	0,07	0,00	-5,33	-0,32	-2,64	-5,90	0,09	-0,02	0,01	0,84	0,90	1,00	1,00	1,00
793	0,28	0,40	1,56	-0,86	-0,38	NA	0,12	0,82	NA	-2,14	-0,20	NA	-3,74	-0,07	0,59	-1,28	-0,92	0,44	-2,67	-0,15	0,47	0,22	0,83	0,92	0,24	-1,00	0,33
871	0,03	0,01	0,02	-1,00	-0,98	-0,88	0,00	0,02	0,08	-7,24	-4,07	-2,54	-0,28	-0,58	-0,18	-3,36	-4,33	-3,98	-2,19	-3,80	-2,35	0,10	0,02	0,09	-0,87	1,00	-1,00
872	0,06	0,08	0,07	-0,98	-0,95	-0,87	0,02	0,05	0,09	-4,16	-3,05	-2,43	-0,94	-0,80	-0,60	-2,85	-2,56	-2,62	-2,85	-2,43	-2,23	0,07	0,10	0,16	-0,81	-1,00	-0,82
873	0,09	0,23	0,35	-0,92	-0,83	-0,74	0,07	0,17	0,19	-2,71	-1,74	-1,66	-0,93	-0,84	-1,59	-2,40	-1,46	-1,06	-2,42	-1,53	-1,72	0,12	0,23	0,27	-0,70	-0,85	-0,71
874	0,04	0,07	0,06	-0,93	-0,91	-0,86	0,05	0,08	0,10	-2,93	-2,48	-2,32	-0,64	-0,54	-0,69	-3,27	-2,66	-2,78	-2,88	-2,16	-2,49	0,08	0,13	0,16	-0,79	-0,65	-0,80
881	0,01	0,01	0,01	-1,00	-0,95	-0,96	0,00	0,04	0,03	NA	-3,15	-3,52	-0,19	-0,33	-0,61	-4,89	-4,79	-4,77	-3,25	-3,71	-4,29	0,03	0,03	0,06	-0,90	1,00	-0,91
882	0,01	0,06	0,06	-0,98	-0,95	-0,98	0,01	0,05	0,01	-4,21	-3,04	-4,61	-0,94	-1,04	-1,51	-4,24	-2,86	-2,85	-4,19	-2,95	-3,29	0,02	0,07	0,07	-0,88	-0,90	-0,89
883	0,03	0,03	0,15	-0,78	-0,95	-0,93	0,18	0,04	0,05	-1,69	-3,14	-3,04	-0,39	-1,24	-3,31	-3,60	-3,51	-1,93	-2,72	-3,75	-3,17	0,10	0,04	0,11	-0,89	-0,92	-0,90
884	0,04	0,07	0,02	-0,94	-0,90	-0,95	0,05	0,10	0,03	-3,06	-2,33	-3,51	-0,43	-0,38	-0,60	-3,35	-2,64	-3,99	-2,58	-1,85	-3,52	0,09	0,13	0,05	-0,96	-0,88	-0,99
885	0,02	0,09	0,06	-0,97	-0,88	-0,86	0,03	0,12	0,10	-3,68	-2,14	-2,33	-0,38	-0,31	-0,29	-3,88	-2,39	-2,80	-2,97	-1,48	-1,75	0,03	0,09	0,10	-0,83	-0,95	-0,79