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IMRE FERTŐ and LIONEL J. HUBBARD

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Revealed Comparative Advantage and Competitiveness in Hungarian Agri-Food Sectors Technology Foresight in Hungary

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REVEALED COMPARATIVE ADVANTAGE AND COMPETITIVENESS IN HUNGARIAN AGRI-FOOD SECTORS

BY IMRE FERTŐ AND LIONEL J. HUBBARD

Abstract

This paper investigates the competitiveness of Hungarian agriculture in relation to that of the EU employing four indices of revealed comparative advantage, for the period 1992 to 1998. Consistency tests implies that the indices are less satisfactory as cardinal measures, but are useful in identifying whether or not Hungary has a comparative advantage in a particular product group. The results suggest that despite of significant changes in Hungarian agriculture during the 1990s, the pattern of revealed comparative advantage has remained fairly stable. RCA indices, despite their limitations, provide a useful guide to underlying comparative advantage and offer a further insight into the competitiveness of Hungarian agri-food sectors and the implications for trade when membership of the EU becomes a reality.

FERTŐ IMRE–LIONEL J. HUBBARD

MEGNYILVÁNULÓ KOMPARATÍV ELŐNYÖK ÉS VERSENYKÉPESSÉG A MAGYAR ÉLELMISZER-GAZDASÁGBAN

Összefoglalás

A dolgozat a magyar mezőgazdaság versenyképességét vizsgálja meg az Európai Unióval szemben. A versenyképesség mérésére a megnyilvánuló komparatív előnyök négy különböző indexét használjuk az 1992 és 1998 közötti időszakra. A konzisztencia tesztek azt sugallják, hogy ezek az indexek kevésbé alkalmasak arra, hogy kardinális mércéül szolgáljanak, ugyanakkor jól használhatóak arra, hogy megállapítsuk, hogy Magyarországnak egy adott termékből van-e megnyilvánuló komparatív előnye vagy sem. Az eredmények arra utalnak, hogy a hazai mezőgazdaságban a kilencvenes években lezajlott lényeges változások ellenére a megnyilvánuló komparatív előnyök szerkezete stabil maradt. Az RCA indexek, korlátaik ellenére, hasznos útmutatóul szolgálhatnak a komparatív előnyök azonosításában, illetve további információkkal szolgálhatnak a magyar mezőgazdaság versenyképességének megítéléséhez.

1. INTRODUCTION

The Association Agreement signed between Hungary and the European Union (EU) in 1991 has led to partial trade liberalisation and increased competitive pressures for both partners. Hungary's accession to the EU is anticipated early in the new millennium, whereupon relative competitiveness will play an important role in determining changes in trade patterns and flows between Hungary, member states and third countries. At present, over 60 per cent of Hungary's trade is with the EU. This is destined to increase with EU membership, as the removal of market barriers fosters intra-Union trade.

Hungary's exports of agricultural commodities and food, although a declining share of total trade, make a significant contribution to reducing a negative overall trade balance. In 1998 the agri-food trade balance was US$ 1.5 billion; the overall trade balance was US$ –2.7 billion. Furthermore, Hungary was the only Central and Eastern European country (CEEC) to maintain a positive agricultural trade balance with the EU throughout the 1990s. In this paper we focus on Hungary's trade in agricultural and food products and examine its relative competitiveness vis-à-vis the EU. Our analysis is based on revealed comparative advantage (RCA). This is a common approach to analysing trade data. However, since first proposed by *Balassa* (1965), the definition of RCA has been revised and modified such that a plethora of measures now exist. Some specifications aim to measure RCA at the global level (eg. *Vollrath,* 1991), others at a regional or sub-global level (as in Balassa's original specification), whilst some restrict the analysis to bilateral trade between just two countries or trading partners (eg. *Dimelis* and *Gatsios*, 1995; and *Gual* and *Martin*, 1995, *Fertő* and *Hubbard*, 2001). Given that we are interested in the competitiveness of Hungary within a European context, we have chosen to calculate RCAs with the EU as the comparator, but using total rather than bilateral trade flows.

The following section briefly reviews the literature on the competitiveness of Hungarian agriculture and food production during the 1990s. The *third section* outlines our approaches to measuring RCA indices and the potential importance of government interventions. Results for Hungary are reported in *section 4* and the stability of the RCA indices are discussed in *section 5*. A summary and our conclusions are presented in *section 6*.

2. Recent Studies of Competitiveness in Hungarian Agri-Food Products

No single measure of international competitiveness has general acceptance in the literature, but an important aspect is the level of prices across countries. In general, prices in the EU exceed those in Hungary. It is a common assumption that price differences between the EU and the CEECs will remain significant until eastern enlargement. However, *Orbánné* (1998) shows that prices of food have increased faster in Hungary than in the EU, reducing consumer price differentials. Similarly, because agricultural prices in Hungary have risen, whilst in the EU they have fallen, price differences at farm-gate level have also diminished.

Using farm account survey data, *Heinrich* et al. (1999) compare Hungarian and German average unit costs and revenues for 1992 to 1998. Generally, they find that Hungarian producer prices are lower than those in Germany by between 20 and 50 per cent, although they question whether this competitive advantage could be sustained if Hungary's input prices were to adjust to EU levels.

Hughes (1998) calculates cross sectional Total Factor Productivity (TFP) indices for different types of farms in Hungary and analyses international competitiveness by estimating Domestic Resource Cost (DRC) ratios. The TFP analysis indicates that smaller farms have higher productivity than larger farms, especially for crop production, but the DRC results suggest that the larger farming companies and co-operatives are the most internationally competitive.

Banse et al. (1999*a* and 1999*b*) also use DRC, as well as private resource costs (PRC) and bilateral (to the EU) resource cost indices, to investigate the international and private competitiveness of different agricultural and food processing activities in Hungary. They conclude that crops are more competitive than livestock and, in general, that arable production is internationally competitive. Food processing is found to be competitive, except the milk, sugar and tobacco industries.

In summary, the results of these recent studies on the competitiveness of Hungarian agriculture show that crops are more competitive than livestock production, and that most of the arable production is internationally competitive. This is confirmed by *Gorton* and *Davidova* (2001), especially with respect to the first half of the 1990s. Evidence of more widespread competitiveness in the agri-food sectors is presented by *Eiteljörge* and

Hartmann (1999), who use trade data to calculate RCA indices. Their analysis indicates a degree of competitiveness in livestock and meat, but covers only three years (1995-97) and is restricted to aggregate data (26 product groups). We adopt a similar approach but use highly disaggregate data (255 product groups) over a seven-year period (1992-98). Moreover, whereas *Eiteljörge* and *Hartmann* use the rest of the world as the comparator, we focus on Hungary's position vis-à-vis the EU.

3. MEASURING REVEALED COMPARATIVE ADVANTAGE

The concept of revealed comparative advantage (RCA) is grounded in conventional trade theory. The original RCA index, formulated by *Balassa* (1965), can be written as:

$$B = (x_{ij} / x_{it}) / (x_{nj} / x_{nt})$$

where x represents exports, i is a country, j is a commodity, t is a set of commodities and n is a set of countries. B is based on observed trade patterns; it measures a country's exports of a commodity relative to its total exports and to the corresponding export performance of a set of countries, e.g., the EU. If B>1, then a comparative advantage is revealed.

Vollrath (1991) offered three alternative specifications of revealed comparative advantage, following analyses of international competitiveness in agriculture (*Vollrath*, 1987 and 1989; and *Vollrath* and *Vo*, 1990). The first of these measures is the *relative trade advantage* (RTA), which accounts for imports as well as exports. It is calculated as the difference between *relative export advantage* (RXA), which equates to the Balassa index[1], and its counterpart, *relative import advantage* (RMA):

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[1] Vollrath's RXA differs from Balassa's B in that (i) it eliminates country and commodity double-counting attributed to the latter, and (ii) it accounts for *all* traded goods and *all* countries, rather than sub-sets, and is therefore global in nature. The indices used in the present study are hybrids, in that the set of commodities (t) refers to all trade, but the set of countries (n) is restricted to the EU. Double-counting is not eliminated, but does not present a problem since we are using low levels of commodity aggregation (255 product groups) and because Hungary is not yet part of the EU.

$$RTA = RXA\text{-}RMA$$

where,

$$RXA = B$$

and

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

where m represents imports. Thus,

$$RTA = [(x_{ij} / x_{it}) / (x_{nj} / x_{nt})] - [(m_{ij} / m_{it}) / (m_{nj} / m_{nt})]$$

RXA, RMA and RTA are the measures used by *Eiteljörge* and *Hartmann* (op. cit.).

Vollrath's second measure is simply the logarithm of the relative export advantage (ln RXA); and his third measure is *revealed competitiveness* (RC), defined as:

$$RC = \ln RXA - \ln RMA.$$

The advantage of expressing these latter two indices in logarithmic form is that they become symmetric through the origin. Positive values of Vollrath's three measures, RTA, ln RXA and RC, reveal a comparative/competitive advantage.

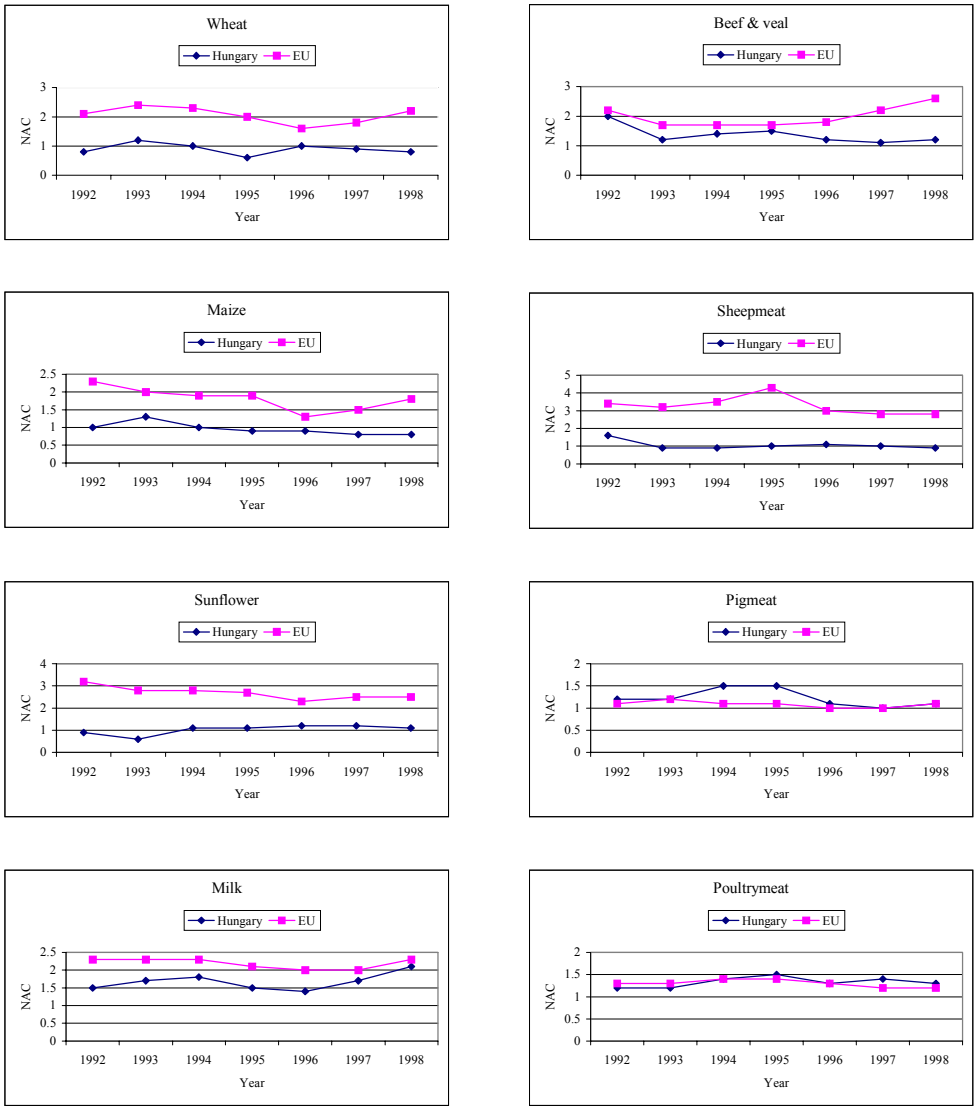
A problem of using these and similar indices is that, in reality, observed trade patterns can be distorted by government policies and interventions and may therefore misrepresent underlying comparative advantage. Government interference in agriculture is commonplace, a point noted by Balassa (op. cit.). The extent to which import restrictions, export subsidies and other protectionist policies might distort indices of revealed comparative advantage is therefore a concern.

As a measure of government support to agriculture, the OECD (1999) estimates Nominal Assistance Coefficients (NACs) by country and commodity. The NAC is a measure of producer support expressed in relation to gross farm receipts valued at world (undistorted) prices; a value of >1 indicates positive support, a value of 1 indicates no support and a value of <1 indicates negative support, i.e. taxation. Two features are evident in the NACs presented in *Figure 1* for Hungary and the EU over the period 1992–98. First, the level of support, in general, was higher in the EU; pigmeat in the mid-1990s was the only significant exception. Second, support in Hungary tended to be higher for livestock products than for arable crops; the NACs are close to 1 for wheat, maize and sunflower, with these crops effectively taxed in some years. There are no clear trends

in the levels of support over the seven-year period. Whilst government intervention in Hungarian agriculture will harmonise with that of the EU following accession, the level of support afforded to agriculture in the EU is expected to diminish, with reform of the Common Agricultural Policy and as a consequence of commitments to the World Trade Organisation. Thus, it is fair to presume that harmonisation of policies will occur at lower levels of EU support than those suggested by the measures in *Figure 1*. Nevertheless, agriculture is unlikely to be completely free of government intervention for some considerable time.

Figure 1

Nominal Assistance Coefficients for Hungary and the EU, 1992-98



Source: OECD (1999)

There is a wealth of literature on the potential welfare gains from agricultural trade liberalisation (e.g., *Tyers* and *Anderson*, 1988 and 1992; and OECD, 1995), which implies that agricultural policies must have an impact on trade flows (i.e. volume) and possibly on trade patterns (i.e. direction). *Peterson* and *Valluru* (2000) fail to show that government policies significantly affect the latter. They conclude that natural factor endowments are of prime importance, as predicted by conventional trade theory, with agricultural policies affecting only flows and not underlying patterns. Earlier, *Vollrath* and *Vo* (1990) found export performance to be more affected by economic fundamentals than by government intervention, whereas the reverse applied to import behaviour. Of the four indices defined above, B and ln RXA embody only export data; RTA and RC account for imports as well. This led *Vollrath* (1991) to recommend the use of B and ln RXA in preference to RTA and RC, because the former two are less susceptible to policy-induced distortions which tend to be more pronounced on the import side. However, export subsidies have been widely used in agriculture, especially by the EU and Hungary, and there would appear less of an argument, in this respect, in favour of B and ln RXA.

Whilst concerns over the trade-distorting effects of government interference cannot be totally allayed, we contend that the four RCA indices defined above, when used judiciously, still provide a useful guide to underlying comparative and competitive advantage in the Hungarian agri-food sectors. Specifically, in the next section we show that it is more prudent to use the indices as binary rather than cardinal measures of comparative advantage. As a final point, *Vollrath* (1989) notes that government intervention and competitiveness tend to be inversely related. This suggests that those product groups revealing a comparative advantage could become even more internationally competitive if markets were to become more open.

4. Revaled Comparative Advantage in Hungarian Agri-Food Sectors

The four RCA indices defined above are computed for Hungary's trade in agri-food products over the period 1992–98, with the EU as the comparator. The data are supplied by the OECD at the four-digit level of the Standard International Trade Classification (SITC). There are 253 four-

digit product categories, to which we add two five-digit product categories (wheat starch and maize starch). The full sample therefore covers 255 product categories and covers trade flows in each of the seven years. Annual RCA indices are calculated at the four-digit level, but reported at the two-digit level.

Summary statistics (mean and coefficient of variation) for the four indices are displayed in *Table 1*. The indices present a similar pattern, with all four showing a revealed comparative advantage for eleven of the 22 product groups: live animals; meat; cereals; vegetables and fruit; sugar; beverages; oilseeds; cork and wood; and various animal and vegetable materials, including oils and fats. The relatively low coefficients of variation for these product groups indicate that the indices were fairly stable over the seven-year period.[2]

Notwithstanding that the general pattern of revealed comparative advantage for the four indices is similar, specific results are likely to be sensitive to the index used. Indeed, *Ballance* et al. (1987) suggest some simple statistical tests for examining the extent to which various RCA indices are consistent in their identification of comparative advantage. The usual interpretation of an RCA index is that it identifies the extent to which a country has a comparative (dis)advantage in a product. Ballance et al. offer two other interpretations: that the index provides a ranking of products by degree of comparative advantage; and that the index identifies a binary type demarcation of products based on comparative advantage and comparative disadvantage. Referring to these three interpretations as cardinal, ordinal and dichotomous, they suggest a test of consistency for each.

The consistency test of the indices as cardinal measures of comparative advantage is based on the correlation coefficient between paired indices in each of the seven years. Of the six possible pairings, only two (B and RTA, and ln RXA and RC) show a high level of correlation ($\geq$ 0.75). This suggests that the indices are not consistent as cardinal measures of comparative advantage.

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[2] This is confirmed by inspection of the annual indices, which are available from the authors.

Table 1

Revealed comparative advantages of Hungary with respect to the EU, by product group and index, 1992-98

	Mean				Coefficient of variation (per cent)			
	B	RTA	ln RXA	RC	B	RTA	ln RXA	RC
Revealed comparative advantage if:	>1	>0	>0	>0				
00: Live animals other than animals of division 03	**3.85**	**3.56**	**1.33**	**2.59**	20	23	17	15
01: Meat and meat preparations	**4.18**	**3.87**	**1.42**	**2.65**	18	20	13	19
02: Dairy products and birds' eggs	0.45	**0.18**	-0.81	**0.59**	16	63	-20	71
03: Fish, crustaceans, molluscs	0.12	-0.02	-2.20	-0.18	34	-188	-17	-163
04: Cereals and cereal preparations	**2.50**	**2.14**	**0.79**	**1.85**	54	66	69	39
05: Vegetables and fruits	**2.70**	**2.35**	**0.96**	**2.00**	26	28	31	10
06: Sugar, sugar preparations and honey	**1.19**	**0.74**	**0.13**	**1.08**	32	79	237	69
07: Coffee, tea, cocoa, spices	**1.03**	**0.05**	-0.01	**0.02**	26	286	-4553	725
08: Feedstuff for animals	**1.06**	-0.83	**0.02**	-0.61	30	-35	1500	-44
09: Miscellaneous edible products & preparations	0.78	-0.25	-0.28	-0.24	23	-120	-91	-114
11: Beverages	**1.23**	**0.98**	**0.15**	**1.58**	35	42	261	23
12: Tobacco and tobacco manufactures	0.74	-0.12	-0.51	-0.33	75	-414	-132	-190
21: Hides, skins and furskins, raw	0.76	-0.38	-0.33	-0.42	31	-60	-106	-56
22: Oil seeds and oleaginous fruits	**9.70**	**9.33**	**2.16**	**3.19**	44	46	25	20
23: Crude rubber	0.92	**0.10**	-1.06	-0.83	132	1269	-153	-191
24: Cork and wood	**2.23**	**1.25**	**0.78**	**0.82**	23	32	31	16
26: Textiles fibres and their wastes	0.78	-0.16	-0.27	-0.20	22	-109	-84	-105
29: Crude animal and vegetable materials, n.e.s.	**1.68**	**0.94**	**0.48**	**0.80**	26	36	59	17
41: Animal oils and fats	**3.07**	**2.72**	**0.95**	**2.09**	57	59	70	15
42: Fixed vegetable oils and fats	**2.73**	**1.99**	**0.97**	**1.40**	29	53	28	56
43: Processed animal and vegetable oils and fats	0.12	-1.02	-2.16	-2.21	25	-43	-12	-17
59212: Wheat/Maize starch	0.38	**0.13**	-1.18	**0.28**	58	192	-71	300

Source: Authors' calculations based on SITC data at the four-digit level.
Note: Revealed comparative advantages are shown in bold.

The consistency test of the indices as ordinal measures is similar, but based on the rank correlation coefficient for each pairing. Results show that the indices are more consistent in *ranking* product groups by revealed comparative advantage, with 33 of the 42 correlation coefficients (6 pairings x 7 years) being > 0.75.

The test of the indices as a dichotomous measure is simply the share of product groups in which both of the paired indices suggest comparative advantage or comparative disadvantage. This test indicates that all four of our indices are reasonably consistent, with 38 of the 42 shares being ≥ 70 per cent (*Table 2*).

Table 2

Dichotomous consistency test: shares (per cent) of matching indices

YEAR	1992	1993	1994	1995	1996	1997	1998
B:							
RTA	67	71	71	71	72	69	70
ln RXA*	100	100	100	100	100	100	100
RC	80	81	83	83	80	80	80
RTA:							
ln RXA	67	71	71	71	72	69	70
RC	82	85	81	85	85	85	87
ln RXA:							
RC	80	81	83	83	80	80	80

Source: Authors' calculations based on SITC data at the four-digit level.

* By definition, B and ln RXA are perfectly consistent.

These simple tests shed light on the sensitivity of any conclusions based on the RCA indices. They confirm that the indices are less consistent as cardinal measures, in accord with the findings of Ballance et al. However, the test results offer more support for use of the indices as a binary measure of comparative advantage. Accordingly, we conclude that our RCA measures are useful proxies in determining whether or not Hungary has a comparative advantage in a particular product group, though less useful in indicating the extent of any comparative advantage.

5. STABILITY OF REVEALED COMPARATIVE ADVANTAGE

The coefficients of variation presented in *Table 1* suggest that the RCA indices were fairly stable over the seven years, 1992–98. To examine this further, a number of measures of stability are applied to the indices. A simple indicator of stability is the relative importance of those products which reveal a comparative advantage in time period t but a comparative disadvantage (RCD) in t+1, or vice versa, i.e. an RCD in t and an RCA in t+1 (Hoekman and Djankov, 1997). Those product groups in which Hungary had an RCA in 1992 but an RCD in 1998 accounted for between 1 and 5 per cent of the total value of agri-food trade in 1992 and less than 1 per cent in 1998 (*Table 3*). Those product groups for which there was a 'switch' in the opposite direction - an RCD in 1992 but an RCA in 1998 – were slightly more prevalent but still only accounted for, at most, 15 per cent of the total value of agri-food trade in either year (Table 3).[3] This would seem to support the contention that the structure of Hungary's revealed comparative advantage did not change radically during the 1990s.

Table 3

Stability of revealed comparative advantage

Index	Percentage share of product groups where:			
	RCA_{92} and RCD_{98}		RCD_{92} and RCA_{98}	
	1992	1998	1992	1998
B	5.2	0.1	14.4	14.8
RTA	0.9	0.7	6.4	2.1
ln RXA	5.2	0.1	14.4	14.8
RC	0.9	0.7	6.3	2.2

Source: Authors' calculations based on SITC data at the four-digit level.

[3] The results based on B and ln RXA are identical because of the perfect match under the dichotomous consistency test – see *Table 2*.

A second indicator of stability in RCA is the correlation between the index in time period t and the index in subsequent time periods. Using 1992 as the base year, the correlation coefficients for our four indices for Hungary over 1993-98 are all reasonably high; 22 of the 24 (4 indices x 6 years) coefficients are ≥ 0.70, lending further support to the notion that the structure of comparative advantage did not alter significantly.

However, examining changes in the distribution of the B (Balassa) index over the period, as suggested by *Hinloopen* and *Van Marrewijk* (2001), shows that Hungary's revealed comparative advantage has weakened somewhat, i.e. the distribution has tended to shift to the left, yielding a higher proportion of lower value indices. This is illustrated by the summary statistics in *Table 4*. The mean value of the B index halved over the period, and the maximum value decreased from 61 to 25. Furthermore, in 1992, 71 per cent of the B values were less than 4; by 1998 this share had risen to 87 per cent. This apparent weakening of comparative advantage, as revealed by the B index, accords with the relative fall in Hungary's agri-food exports to the EU, which fell from 51 per cent of Hungary's total agri-food exports in 1992 to 45 per cent in 1998.

Table 4

The distribution of the B index

Summary Statistic	1992	1993	1994	1995	1996	1997	1998
Mean	4.0	3.6	3.0	3.1	3.4	2.4	2.0
Maximum	61.3	62.6	36.2	31.8	49.4	28.9	24.8
Per cent of B index:							
<1	47	53	47	51	42	56	58
<2	64	69	67	67	62	65	69
<4	71	76	78	76	76	82	87
<8	91	89	93	85	89	95	96

Source: Authors' calculations based on SITC data at the three-digit level.

This 'slippage' in comparative advantage is further supported by the estimation of a transition probability matrix (after *Proudman* and *Redding*, 2000; and *Hinloopen* and *Van Marrewijk*, 2001), which indicates that there is a high likelihood of the value of Hungary's B indices decreasing from

one period to the next.[4] However, as already noted, it is more prudent to interpret our four RCA indices as binary rather than cardinal measures of comparative advantage, and in this respect the indices appear more stable. Indeed, the proportion of B indices revealing a comparative disadvantage (B<1) over the period, although fluctuating year-on-year, shows no clearly discernible trend (*Table 4*).

This stability in Hungary's comparative advantage, as opposed to comparative disadvantage, if correctly identified, is a rather surprising outcome. Hungary's internal and external economic environments changed radically during the 1990s. Internally, the organisation of agriculture and food production underwent major structural change, for example in terms of farm size and ownership status, price liberalisation and restructuring of the food processing and retailing sectors. Externally, the communist trading bloc (COMECON) was dissolved, the Central European Free Trade Agreement was established, with Hungary as a founding member, and an Association Agreement with the EU was signed in anticipation of full membership. Against this background, one might have expected even the dichotomy of Hungary's revealed comparative advantage/disadvantage in agri-food trade to show more disruption.

6. SUMMARY AND CONCLUSIONS

We have presented an analysis of the competitiveness of Hungary's agri-food products in relation to that of the EU, based on four indices of revealed comparative advantage, computed for the period 1992 to 1998. Consistency tests and the role of government intervention suggest that any results need to be interpreted with care. The indices are less satisfactory as cardinal measures, but are useful in identifying whether or not Hungary has a comparative advantage in a particular product group.

All four indices indicate that Hungary has revealed comparative advantages for eleven of the 22 aggregated product groups: live animals; meat; cereals; vegetables and fruit; sugar; beverages; oilseeds; cork and wood; and animal and vegetable materials, oils and fats. These results complement recent studies which, using price and cost based methods,

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[4] The estimated transition probability matrices are available from the authors.

have found that arable production is internationally competitive. Our findings suggest that, in addition, Hungary has a comparative advantage for animal and meat products. Despite significant changes in Hungarian agriculture and food processing, and in the wider internal and external economic environments during transition, the RCA indices interpreted as binary measures have remained fairly stable. Nevertheless, there is evidence of a weakening of the level of comparative advantage as revealed in the original Balassa index. Since our calculations are based on observed trade data, attention has been drawn to the possible influence of government-induced distortions in the functioning of international markets. Whilst this is an issue that has been extensively researched, the impact on RCA indices is not clear. Measurement of government intervention shows that support for agriculture in Hungary is biased towards livestock products, but levels of support are lower than in the EU, the comparator in our analysis. It has also been noted that government intervention and competitiveness tend to be inversely related, suggesting that those product groups revealing a comparative advantage could become even more competitive if markets were to become less distorted.

As to the future, Hungary's markets are unlikely to become less distorted with membership of the EU, at least in the medium term. *Gorton* and *Davidova* (2001) note that agriculture in the CEECs is likely to become more competitive with adoption of EU output and input prices. However, the outcome in Hungary would appear more mixed, with higher output prices offset in some instances by higher tradable input prices. Much will depend on the political decision regarding the direct income payments made to farmers under the CAP. These are not entirely independent of production, and their extension to the new EU members could well act as a spur to exports. In the meantime, RCA indices, despite their limitations, provide a useful guide to underlying comparative advantage and offer a further insight into the competitiveness of Hungarian agri-food sectors and the implications for trade when membership of the EU becomes a reality.

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