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# *Managing Global Transitions*

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## *The Editor's Corner*

With the current Volume 5 the journal has begun a new phase in its development – the phase of bringing it to a much wider international audience. In the past few years the journal has been listed in three international databases: the International Bibliography of the Social Sciences (IBSS), the EconPapers database (the Research Papers in Economics Database – REPEC), and the Directory of Open Access Journals (DOAJ). Starting approximately at the time of printing of this issue (March 2007) the journal is also being included in the EconLit database. Our efforts to still further internationalize the journal necessitated reinforcement of our editorial board with new members. I would like to take this opportunity to thank the members of the editorial team and all the contributors for their efforts in raising this journal to even higher international levels.

The journal continues focusing on the transition research and emphasizing openness to different research areas, topics, and methods, as well as international and interdisciplinary research nature of scholarly articles published in the journal. The current issue covers topics of the dynamics of trade, the performance of banking industry, the relationship between quality management and customer satisfaction, the economic cultural influences on management, and the questions related to the workforce adaptation of minorities.

This issue starts with a paper written by Imre Fertő, who examines the dynamics of trade in Central and Eastern European countries. In the second paper, Catarina Figueira, Joseph G. Nellis, and David Parker investigate the performance of banking industry in Poland and compare the Polish banking sector to the banking sector in the United Kingdom. The third paper of Franka Piskar looks at the impact of the quality management system ISO 9000 on customer satisfaction in Slovenia. In the fourth paper, Rune Gulev examines economic cultural influences on management in the context of international headquarters-subsidiary relationships in selected European countries. In the last – fifth paper, Waheeda Lillevik investigates cultural diversity, competences and behaviour with the emphasis on workforce adaptation of minorities in Canada.

Boštjan Antončič  
*Editor*



# *The Dynamics of Trade in Central and Eastern European Countries*

Imre Fertő

We describe the evolving pattern of Central European countries' trade using recently developed empirical procedures based around the classic Balassa index. Despite significant changes in Central European economies during transition to a market economy, the distribution of the indices did not change radically over the 1990s. Our results suggest that the trade pattern converged in Czech Republic, Hungary, Poland and Slovenia, while it polarised in Estonia Latvia, Lithuania and Slovakia over the period. For particular product groups, the indices display greater variation. They are stable for product groups with comparative disadvantage, but product groups with weak to strong comparative advantage show significant variation. At the product level different development can be observed in the changes of trade specialization. The comparative advantages are still based largely on primary and natural resource intensive product groups in the Baltic countries, while CEE5 countries show a successful upgrading process in technological and human capital intensive products.

*Key Words:* international trade, revealed comparative advantage, Central Europe

*JEL Classification:* F14, F15, E23

## **Introduction**

Recently, there has been renewed interest for trade dynamics (Proudman and Redding 2000; Brasili et al. 2000; Redding 2002; Stehrer and Wörz 2003; Wörz 2005; Hinloopen and van Marrewijk 2004b; Zaghini 2005). The theoretical literature on growth and trade stresses that comparative advantage is dynamic and develops endogenously over time. In particular, one strand of the literature (Lucas 1988; Young 1991; Grossman and Helpman 1991) has demonstrated that the growth rate of a country may be permanently reduced by a 'wrong' specialisation. Another strand emphasises the role of factor accumulation in determining the evolution of international trade (Findlay 1970; 1995; Deardorff 1974).

Although there is a wealth of literature on the trade between Central-Eastern European countries and the EU member states, this has tended

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not to deal with evolution of trade patterns, except Zaghini (2005). The dynamics of trade pattern often reflects deep structural changes in the whole economy of a particular country. It takes usually a long time, since comparative advantages may not change in the short run. But, there may occur sudden external and internal shocks influencing production, diffusion of new technology and institutional systems. During the last decade, the economies of Central European countries have been considerably transformed, including transition from planned economy to market economy, increasing trade openness, FDI etc. Therefore, it is reasonable to assume that these changes may affect on the trade pattern over time. In other words, Central European countries represent exceptional cases, when powerful changes in the economy should have effects on the evolution of trade pattern.

In this paper we apply recently developed empirical methods to investigate the dynamics of trade patterns in Central European countries (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia). The novelty of the paper is that we extend the traditional empirical trade analysis by the application of the factor abundance approach (Hinloopen and van Marrewijk 2004b) to identify the changes in the pattern of comparative advantage. The paper is organised as follows. The second section briefly reviews some of the theoretical literature concerning the dynamics of trade patterns. The third section outlines the employed methodology. Results are reported in two stages. First, in the fifth section we present results on the dynamics of trade pattern in the fourth section. Second, we show the results on the structural changes in comparative advantage based on a factor abundance approach. The summary and some conclusions are presented in the last section.

### **Trade Dynamics**

The standard Heckscher-Ohlin model implies that the pattern of trade specialisation changes only if trading partners experience a change in their relative factor endowments. This suggests that the existence of persistent trade patterns is perfectly consistent with the model, if the relative factor endowments of countries do not change significantly with respect to their main trading partners.

The New Trade Theory emphasises the importance of increasing returns scale in explaining trade flows, which complicates the predictions of trade theory, because they depend on the specific assumptions about the nature of return to scale. One strand of this literature assumes that

economies of scale are internal to the firm (e. g. Krugman 1987; Helpman and Krugman 1985). In this case, the main implications of the factor proportions theorem basically do not change.

If national external economies of scale exist, trade patterns dynamics depend on the effects of the external economies of scale on the slope of the production possibility frontier. Kemp (1969) and Markusen (1981) have proven that, if external economies of scale are negligible with respect to the factor intensity differences between two sectors, then a relative supply curve is positively sloped, and yields similar implications as in the standard Heckscher-Ohlin model.

If national external economies of scale are relevant, the predictions of the model will change substantially. Wong (1995) has shown that in the presence of national external economies of scale, the world trade pattern is determined by initial comparative advantage.

However, Either (1979; 1981) argues that increasing returns depend on the size of the world market. He demonstrates that in the case of international external economies of scale, increasing returns of scale do not influence the pattern of international trade. Grossman and Helpman (1990; 1991), under the assumption that knowledge spillovers are international in scope, have shown that the history of the production structure of a country do not affect on its long-run trade pattern, which only depends on the relative factors endowments.

However, other families of models find that dynamic scale economies arising from learning by doing are country specific and suggest a lock-in effect for the pattern of specialisation. Krugman (1987) and Lucas (1988) demonstrate that in the presence of dynamic economic scale the long-run trade pattern is determined by initial comparative advantage. The main implications of these models are that international trade patterns tend to be more specialised.

Proudman and Redding (2000) built a model focusing on international trade and endogenous technical change which illustrates that a precisely specified model yields ambiguous conclusions concerning whether international trade patterns display persistence or mobility over time. They conclude that it is ultimately an empirical question.

### **Methodology**

The most popular indicator of a country's trade specialisation is the Revealed Comparative Advantage (RCA) index first proposed by Balassa (1965):

$$B = \frac{\frac{x_{ij}}{x_{rj}}}{\frac{x_{is}}{x_{rs}}}, \quad (1)$$

where  $x$  represents exports,  $i$  is a commodity,  $j$  is a country,  $r$  is a set of commodities and  $s$  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. If  $B > 1$ , then a comparative advantage is revealed, i. e. a sector in which the country is relatively more specialised in terms of exports.

Many researchers have attempted to refine revealed comparative advantage (see Vollrath 1991). Despite many criticisms, e. g. the asymmetric value, problem with logarithmic transformation, etc. (see De Benedictis and Tamberi 2001) the  $B$  index remains the popular tool in empirical trade analysis. The main advantage of the  $B$  index against alternative measures is its theoretical foundation. Earlier, Hillman (1980) had investigated the relationship between the  $B$  index and comparative advantage as indicated by pre-trade relative prices, abstracting from considerations caused by the possibility of government intervention on exports. He showed that the  $B$  index is not appropriate for cross-commodity comparison of comparative advantage, because in this case the value of  $B$  is independent of comparative advantage in the Ricardian sense of pre-trade relative prices. Furthermore, Hillman developed a necessary and sufficient condition to obtain a correspondence between the  $B$  index and pre-trade relative prices in cross-country comparisons for a given product:

$$1 - \frac{X_{ij}}{W_i} > \frac{X_{ij}}{X_j} \left(1 - \frac{X_j}{W}\right), \quad (2)$$

where  $X_{ij}$  is exports of commodity  $i$  by country  $j$ ,  $X_j$  is total exports of country  $j$ ,  $W_i$  is world exports of commodity  $i$ , and  $W$  is the world's total exports. Assuming identical homothetic preferences across countries, the condition in (2) is necessary and sufficient to guarantee that changes in the  $B$  index are consistent with changes in countries' relative factor-endowments. This condition guarantees that growth in the level of a country's exports of a commodity results in an increase in the  $B$  index. For an empirical test, Marchese and Nadal de Simone (1989) transformed Hillman's condition into:

$$HI = \frac{1 - \frac{X_{ij}}{W_i}}{\frac{X_{ij}}{X_j} \left(1 - \frac{X_j}{W}\right)}. \quad (3)$$

If *HI* is larger than unity, the *B* index used in cross country comparison will be a good indicator of comparative advantage. The authors argued that Hillman's index should be calculated in any empirical research attempting to identify the long-term implications of trade liberalisation using the *B* index. However, only two studies appear to have applied Hillman's index: Marchese and Nadal de Simone (1989) show that Hillman's condition is violated in less than 10 per cent of exports of 118 developing countries in 1985; and in the data set used by Hinloopen and Van Marrewijk (2001) Hillman's condition was not valid for only 7 per cent of export value and less than 1 per cent of the number of observations. Furthermore, Hinloopen and Van Marrewijk (2004a), using a comprehensive dataset between 1970–1997, find that violations of the Hillman condition are small as a share of the number of observations, but may be considerable as a share of the value of total world exports. The authors argue that the Hillman condition should be included as a standard diagnostic test for empirical analysis of comparative advantage.

We focus on the stability of the Balassa index over time. One can distinguish at least two types of stability (Hinloopen and Van Marrewijk 2001): (i) stability of the distribution of the indices from one period to the next; and (ii) stability of the value of the indices for particular product groups from one period to the next.

The first type of stability is investigated in two ways. First, after Dalum et al. (1998) we use the *B* index in regression analysis:

$$B_{ij}^{t_2} = \alpha_i + \beta_i B_{ij}^{t_1} + \varepsilon_{ij}, \quad (4)$$

where superscripts  $t_1$  and  $t_2$  describe the start year and end year, respectively. The dependent variable, *B* at time  $t_2$  for sector *i* in country *j*, is tested against the independent variable which is the value of *B* in year  $t_1$ ;  $\alpha$  and  $\beta$  are standard linear regression parameters and  $\varepsilon$  is a residual term. If  $\beta = 1$ , then this suggests an unchanged pattern of *B* between periods  $t_1$  and  $t_2$ , i. e. there is no change in the overall degree of specialisation. If  $\beta > 1$ , the existing specialisation of the country is strengthened. If  $0 < \beta < 1$ , this indicates despecialisation, i. e. commodity groups with low initial *B* indices grow over time, while product groups with high initial *B* indices decline. The special case where  $\beta < 0$  indicates a change in the sign of the index. However, Dalum et al. (1998) point out that  $\beta > 1$  is not a necessary condition for growth in the overall specialisation pattern. Thus, following Cantwell (1989), they argue that:

$$\frac{\sigma_i^{2t_2}}{\sigma_i^{2t_1}} = \frac{\beta_i^2}{R_i^2} \quad (5)$$

and hence,

$$\frac{\sigma_i^{t_2}}{\sigma_i^{t_1}} = \frac{|\beta_i|}{|R_i|}, \quad (6)$$

where  $R$  is the correlation coefficient from the regression and  $\sigma^2$  is variance of the dependent variable. It follows that the pattern of a given distribution is unchanged when  $\beta = R$ . If  $\beta > R$  the degree of specialisation has grown, while if  $\beta < R$  the degree of specialisation has fallen.

The second way in which the stability of the distribution of  $B$  is examined seeks to measure the extent to which Central European countries' exports have become *relatively* more or less specialised over the period. This is undertaken using the Gini coefficient as a measure of concentration (see, for example, Amiti 1998). The Gini coefficient is used as a summary measure of the difference in the structure of exports between a particular Central European country and the EU. The closer the Gini coefficient is to its upper bound of 1, the greater is the difference in structure and specialisation of a particular Central European country's exports vis-à-vis the EU.

The second type of stability, that of the value of the trade index for particular product groups, is also analysed in two ways. First, following a recent empirical method pioneered by Proudman and Redding (2000) and applied by Brasili et al. (2000) and Hinloopen and Van Marrewijk (2001), we employ transition probability matrices to identify the persistence and mobility of revealed comparative advantage as measured by the  $B$  index. There is no accepted guide in the literature for classification of  $B$  index into appropriate categories. Most studies classify data into various percentiles, like quartiles or quintiles. Hinloopen and Van Marrewijk (2001) point out that this classification has several drawbacks. First, boundaries between classes are difficult to interpret. Second, they also differ from one country to another, therefore making cross-country comparisons difficult. Consequently, following Hinloopen and Van Marrewijk (2001), we divide the  $B$  index into four classes:

Class a:  $0 < B \leq 1$

Class b:  $1 < B \leq 2$

Class c:  $2 < B \leq 4$

Class d:  $4 < B$

Class a refers to all those product groups without a comparative advantage. The other three classes, b, c, and d, describe the sectors with a comparative advantage, roughly classified into weak comparative advantage (class b), medium comparative advantage (class c) and strong comparative advantage (class d).

Second, the degree of mobility in patterns of specialisation can be summarised using indices of mobility. These formally evaluate the degree of mobility throughout the entire distribution of  $B$  indices and facilitate direct cross-country comparisons. The first of these indices ( $M_1$ , following Shorrocks 1978) evaluates the trace ( $tr$ ) of the transition probability matrix. This index thus directly captures the relative magnitude of diagonal and off-diagonal terms, and can be shown to equal the inverse of the harmonic mean of the expected duration of remaining in a given cell.

$$M_1 = \frac{K - tr(P)}{K - 1}, \tag{7}$$

where  $K$  is the number of cells, and  $P$  is the transition probability matrix.

The second index ( $M_2$ , after Shorrocks 1978 and Geweke et al. 1986) evaluates the determinant ( $det$ ) of the transition probability matrix.

$$M_2 = 1 - |det(P)|. \tag{8}$$

In both indices, a higher value indicates greater mobility, with a value of zero indicating perfect immobility.

Furthermore, to test the equality of different Markov transition probabilities we apply Anderson and Goodman's (1957) test statistics, which under null hypothesis  $p_{ij} = \overline{p}_{ij}$ , for each state  $i$  has an asymptotic distribution:

$$\sum_j n_i^* \frac{(p_{ij} - \overline{p}_{ij})^2}{p_{ij}} \sim \chi^2(m - 1) \cdot n_i^* = \sum_{t=0}^{T-1} n_t(t),$$

where  $m$  is the member of states,  $p_{ij}$  are the estimated,  $\overline{p}_{ij}$  are the probabilities under null, and  $n_t(t)$  describes the number of sectors in cell  $i$  at time  $t$ .

### Empirical Results

The revealed comparative advantage can be measured at the global level (e. g. Vollrath 1991), at a regional or sub-global level (as in Balassa's original specification) or restricted to the analysis of bilateral trade between just two countries or trading partners (e. g. Dimelis and Gatsios 1995; Gual and Martin 1995). Given that we are interested in the dynamics of

Central European countries' trade vis-à-vis the EU, calculation of the indices is restricted to an EU context, using total merchandise exports as the denominator (respectively,  $s$  and  $r$  in (1)). We focus on the period 1993–2002, with data supplied by UNCTAD at the three-digit level of the SITC for 232 product groups. Following Marchese and Nadal de Simone (1989), the indices calculated from our data set are found to be fully consistent with Hillman's condition.

#### DYNAMICS OF THE DISTRIBUTION

Table 1 shows some simple summary measures of dispersion for  $B$  index at the start and end of the period (due to lack of data in the case of the Lithuania, the end year is 2001). A general decrease in international specialisation is evident for the Czech Republic, Hungary and Poland, in that the all the measures have fallen. The numbers also suggest that these countries lost their comparative advantage for some product groups. Interestingly, the mean of  $B$  index has decreased in Lithuania and Slovenia, while the median of  $B$  index has grown. The other group of countries (Estonia, Latvia and Slovakia), however report a growth in specialisation. Furthermore, Estonia and Latvia have relatively high mean values with the lowest median values, indicating a narrow band of high specialisation.

To evaluate the statistical significance of these changes, a two-tailed Wilcoxon signed rank test was applied because of the non-normality in the distributions. The null hypothesis, of no difference in the  $B$  indices between the start and end years, can be rejected (at a level of 5% or less) in the cases of Latvia, Lithuania, Poland, Slovakia and Slovenia.

The regression results in table 2, based on (4) show a more complete picture. The coefficient on initial specialization is always significantly different from zero and one, except Slovakia. The estimations suggest that there is no reverse change in trade pattern in Central European countries. The coefficients are less than one for six countries (Czech Republic, Estonia, Hungary, Lithuania, Poland, and Slovenia) This implies that in these countries the international specialisation has increased for products in which the countries were initially relatively less specialised and has decreased for those in which they were initially highly specialised. Nevertheless, there are remarkable differences among countries: the value of  $\beta$  is relatively small for Estonia and Lithuania (below 50 per cent), thus pointing at large changes within the distribution, it is much higher for Czech Republic and Slovenia, then indicating a relative stability of

TABLE 1 Descriptive statistics of *B* index

Country	Year	Mean	Median	Std. dev.	Maxium
Czech Republic	1993	1.81	0.88	4.80	60.92
	2002	1.62	0.81	3.92	45.7
Estonia	1993	2.47	0.38	6.38	77.48
	2002	3.22	0.48	12.93	117.35
Hungary	1993	1.63	0.57	4.70	60.17
	2002	1.28	0.56	3.24	30.5
Latvia	1993	2.16	0.18	5.78	78.89
	2002	4.16	0.33	22.28	257.92
Lithuania	1993	1.66	0.38	10.98	52.01
	2001	1.45	0.40	2.89	26.55
Poland	1993	2.81	0.57	10.95	146.50
	2002	2.40	0.56	10.43	116.09
Slovakia	1993	1.18	0.59	1.82	16.40
	2002	1.35	0.52	2.57	26.85
Slovenia	1993	1.08	0.60	2.01	15.10
	2002	1.07	0.83	1.62	12.64

TABLE 2 Stability of *B* between 1993 and 2002

	$\alpha$	$\beta$	<i>R</i>	$\beta/R$	(1)	(2)
Czech Republic	0.23	0.77	0.942	0.82	0.000	0.000
Estonia	1.59	0.47	0.222	2.09	0.000	0.000
Hungary	0.34	0.60	0.828	0.72	0.000	0.000
Latvia	-0.62	2.20	0.804	2.73	0.000	0.000
Lithuania*	1.01	0.33	0.289	1.14	0.000	0.000
Poland	0.95	0.53	0.623	0.86	0.000	0.000
Slovakia	0.06	1.11	0.774	1.43	0.000	0.121
Slovenia	0.23	0.84	0.854	0.98	0.000	0.000

NOTES \*2001. Column headings are as follows: (1) Sign. of *F* ( $H_0: \beta = 0$ ); (2) Sign. of *F* ( $H_0: \beta = 1$ ).

the specialisation pattern, and somehow intermediate for Hungary and Poland. However, Latvia displayed a strong specialisation. The *F* test confirms that trade specialisation has not changed in Slovakia. However, the  $\beta/R$  ratios show that the pattern of revealed comparative advantage has tended to converge for only Czech Republic, Hungary, Poland, and

TABLE 3 Gini indices of  $B$  between 1993 and 2002

Year	Czech R.	Estonia	Hungary	Latvia	Lithuania	Poland	Slovakia	Slovenia
1993	0.642	0.7752	0.7256	0.8409	0.8257	0.8016	0.6045	0.6663
1994	0.6621	0.7737	0.691	0.8444	0.7128	0.7846	0.6154	0.6543
1995	0.6246	0.7719	0.6867	0.8995	0.718	0.7686	0.6456	0.6529
1996	0.6386	0.7775	0.6907	0.9154	0.6985	0.7443	0.6636	0.6518
1997	0.6188	0.7946	0.6822	0.9387	0.6763	0.7469	0.6257	0.6498
1998	0.6065	0.8053	0.6782	0.9561	0.7116	0.7302	0.6176	0.6353
1999	0.6082	0.8166	0.6854	0.9375	0.7451	0.7166	0.6435	0.6458
2000	0.6021	0.8259	0.6954	0.9054	0.7345	0.7029	0.6544	0.6381
2001	0.5966	0.8167	0.6739	0.8913	0.7227	0.7057	0.662	0.6306
2002	0.6418	0.849	0.6984	0.9073	n. a.	0.7561	0.662	0.621
$\beta$	-0.006	0.010	-0.002	0.007	-0.005	-0.011	0.007	-0.006
$t$	-2.010	8.460	-1.360	1.690	-0.790	-3.420	2.660	-7.540
$R^2$	0.339	0.899	0.189	0.263	0.083	0.594	0.470	0.877

Slovenia. Although Estonia and Lithuania also show ' $\beta$ -despecialization,' their the degree of specialization has actually increased. Similarly, Slovakia also experienced a growing specialisation in trade pattern.

The extent to which Central-European exports have become relatively more or less specialised over the period, *vis-à-vis* the EU, is shown by the Gini coefficients in table 3. Regressing the log of the Gini coefficients on a simple time trend (see, for example, Amiti 1998), there is a significant increase in specialisation in Estonia and Slovakia; no significant change in Hungary, Latvia and Lithuania; and a significant fall in specialisation in Czech Republic, Poland and Slovenia.

#### INTRA-DISTRIBUTION DYNAMICS

Further information on the dynamics of the trade index can be obtained by analysis of Markovian transition matrices, showing the probability of passing from one state to another between the starting year (1993) and the end year (2002). The transition matrices in table 4 suggest that values of the  $B$  index are fairly persistent from 1993 to 2002 for observations with a comparative disadvantage (class a) for all countries. The diagonal elements for this class are 0.82 or above for all countries, indicating a high probability that a product with a comparative disadvantage at the start of the period will have that same status at the end of the period.

The persistence is relatively strong at the other ends of distribution (d, d), the value of cells is larger than 40 per cent. This suggests that once obtaining a large comparative advantage they will likely maintain it over time. Note that the values relative to the ends of the distribution on the main diagonal are larger than those in the middle of distribution for the Czech Republic, Estonia, Latvia, Lithuania and Slovakia. In other words, it is easier maintain a strong revealed comparative advantage than a weak or medium one. However, indices in classes b, c and d display considerable variation in their pattern. The probability of a loss of comparative advantage for those observations starting with a weak comparative advantage (class b) are high (above 50 per cent), for Hungary, Latvia and Lithuania. There is a small chance of moving from class c (medium comparative advantage) to class d (high comparative advantage) in the cases of the Czech Republic, Hungary and Slovenia.

In summary, these results suggest that the probability of an observation moving to a lower value cell (a weakening of comparative advantage) is much higher than the reverse case. The limit distributions show a more polarised distribution for Estonia, Poland, and Slovenia, whilst asymmetry is confirmed for the Czech Republic and Hungary, tending to a right skewed distribution.

Table 5 reports the mobility indices,  $M_1$  and  $M_2$ , for each of the countries. Both indices indicate that mobility is highest in Lithuania and lowest in Slovenia. Furthermore, Estonia, Hungary and Slovenia show the most persistent pattern of specialisation, while Poland, Latvia and Lithuania are the most dynamic economies. Similarly to other papers (Brasili et al. 2000; Proudman and Redding 2000; Hinloopen and van Marrewijk 2001; 2004b; Zaghini 2005) the two indices do not yield the perfectly same ranking. But the Spearman rank correlation coefficient remains high (0.95).

Finally, Anderson and Goodman's test rejects the equality of all transition matrices relative to the estimated benchmark (table 5, columns 2–3). In other words, changes across different comparative advantage classes were significant for all countries.

### **Structural Changes in Trade Specialisation**

This section analyses some details of the structural change in Central European countries' comparative advantage. After Hinloopen and van Marrewijk (2004b) we classify most sectors at the 3-digit level according to factor intensity on the basis of the International Trade Center's clas-

TABLE 4 Transition matrices of *B* Index

<i>B</i>	a	b	c	d	a	b	c	d
	<i>Czech Republic</i>				<i>Estonia</i>			
a	0.77	0.16	0.05	0.02	0.84	0.11	0.04	0.01
b	0.40	0.42	0.15	0.03	0.20	0.48	0.20	0.12
c	0.29	0.35	0.26	0.10	0.26	0.32	0.26	0.16
d	0.25	0.06	0.13	0.56	0.11	0.11	0.22	0.56
Initial distribution	0.53	0.27	0.13	0.07	0.69	0.11	0.08	0.12
Final distribution	0.57	0.25	0.11	0.07	0.64	0.16	0.09	0.10
Limit distribution	0.61	0.24	0.10	0.06	0.55	0.21	0.12	0.12
	<i>Hungary</i>				<i>Latvia</i>			
a	0.85	0.08	0.03	0.03	0.80	0.11	0.05	0.04
b	0.51	0.46	0.03	0.00	0.56	0.22	0.11	0.11
c	0.33	0.33	0.29	0.04	0.35	0.09	0.26	0.30
d	0.06	0.12	0.41	0.41	0.36	0.07	0.14	0.43
Initial distribution	0.67	0.15	0.10	0.07	0.76	0.08	0.10	0.06
Final distribution	0.69	0.17	0.09	0.06	0.71	0.11	0.08	0.09
Limit distribution	0.73	0.16	0.07	0.04	0.68	0.11	0.09	0.12

*Continued on the next page*

sification, the joint UNCTAD/WTO organization. According to five broad factor intensity categories as follows:

- A. *Primary products* (83 sectors); e. g. meat, dairy, cereals, fruit, coffee, sand, minerals, oil, natural gas, iron ore, and copper ore.
- B. *Natural-resource intensive products* (21 sectors); e. g. leather, cork, wood, lime, precious stones, pig iron, copper, aluminium, and lead.
- C. *Unskilled-labor intensive products* (26 sectors); e. g. pipes, various textiles, clothing, glass, pottery, ships, furniture, footwear, and office supplies.
- D. *Technology intensive products* (62 sectors); e. g. various chemicals, medicaments, plastics, engines, generators, machines, tools, pumps, telecommunications and photo equipment, optical equipment, and aircraft.
- E. *Human-capital intensive products* (43 sectors); synthetic colours, pigments, perfumes, cosmetics, rubber and tires, tubes, pipes, vari-

Continued from the previous page

	<i>Lithuania</i>				<i>Poland</i>			
a	0.87	0.06	0.04	0.03	0.75	0.20	0.05	0.01
b	0.53	0.11	0.21	0.16	0.24	0.50	0.21	0.06
c	0.21	0.16	0.21	0.42	0.19	0.35	0.27	0.19
d	0.19	0.25	0.13	0.44	0.05	0.14	0.33	0.48
Initial distribution	0.69	0.16	0.08	0.07	0.65	0.15	0.11	0.09
Final distribution	0.71	0.09	0.09	0.11	0.55	0.25	0.12	0.08
Limit distribution	0.70	0.10	0.08	0.12	0.43	0.31	0.16	0.10

	<i>Slovakia</i>				<i>Slovenia</i>			
a	0.86	0.08	0.06	0.01	0.85	0.13	0.02	0.00
b	0.40	0.40	0.17	0.04	0.13	0.70	0.17	0.00
c	0.14	0.36	0.25	0.25	0.15	0.26	0.48	0.11
d	0.00	0.00	0.50	0.50	0.17	0.17	0.25	0.42
Initial distribution	0.62	0.21	0.12	0.05	0.70	0.13	0.12	0.05
Final distribution	0.63	0.17	0.13	0.07	0.64	0.22	0.10	0.03
Limit distribution	0.60	0.16	0.14	0.10	0.49	0.35	0.14	0.03

TABLE 5 Mobility indices and test statistics for equality of Markov transition matrice

	$M_1$	$M_2$	$\chi^2$	$p$ value
Czech Republic	0.663	0.983	107.702	0.000
Estonia	0.619	0.979	144.287	0.000
Hungary	0.662	0.967	131.361	0.000
Latvia	0.762	0.993	56.595	0.000
Lithuania	0.793	0.996	90.328	0.000
Poland	0.669	0.994	123.504	0.000
Slovakia	0.664	0.984	140.906	0.000
Slovenia	0.516	0.916	190.213	0.000

ous types of steel and iron, cutlery, televisions, radios, cars, watches, and jewellery.

This leaves five 3-digit sectors not classified according to intensity which will be ignored in the remainder of this section. The complete classification can be found at following website: [www.few.eur.nl/few/people/vanmarrewijk/eta](http://www.few.eur.nl/few/people/vanmarrewijk/eta).

TABLE 6 Share of product groups in exports  $B > 1$  according to factor intensity

	1993					2002				
	A	B	C	D	E	A	B	C	D	E
Czech Republic	0.22	0.07	0.21	0.17	0.33	0.07	0.04	0.16	0.33	0.41
Estonia	0.43	0.10	0.26	0.16	0.05	0.31	0.08	0.22	0.25	0.13
Hungary	0.38	0.06	0.23	0.24	0.09	0.11	0.03	0.13	0.57	0.15
Latvia	0.29	0.22	0.21	0.08	0.20	0.45	0.18	0.24	0.02	0.11
Lithuania	0.54	0.04	0.09	0.11	0.22	0.52	0.05	0.10	0.03	0.30
Poland	0.32	0.15	0.33	0.06	0.14	0.16	0.08	0.28	0.18	0.30
Slovakia	0.17	0.10	0.17	0.21	0.35	0.12	0.07	0.16	0.16	0.49
Slovenia	0.10	0.12	0.33	0.22	0.22	0.04	0.10	0.19	0.34	0.32

Table 6 (columns 4–5) displays the breakdown of the export share by resource intensity in 1993 and 2002, where the  $B$  index is larger than one. The CEE countries show a different pattern of revealed comparative in terms of resource intensity. In 1993, the Czech Republic and Slovakia have high shares (above 50 percent) of the two ‘highest’ categories: technology- and human capital-intensive products during the analysed period. Corresponding figures for Estonia, Latvia and Poland have not exceeded the 30 percent. Between 1993 and 2002, Czech Republic, Hungary, Poland and Slovenia improved their share of categories E and F by more than 20 percentage points. Estonia and Slovakia also experienced significant growth in these categories. However, Latvia lost its share by 15 per cent, whilst Lithuania’s proportion remained the same in category E and F.

It is interesting to compare the dynamics that we can observe in this table and in table 5. As we already noticed above, mobility indices are the highest in Poland, Latvia and Lithuania. However, for Latvia and Lithuania, the mobility does not mean an ‘upward’ movement on the resource-intensity scale. On the other pole, Hungary and Slovenia – although showing a highly persistent pattern in specialization remain able to increase exports’ share in technology intensive and human capital intensive products.

### Summary and Conclusions

In this paper we have investigated the changing pattern of Central European exports to the EU. As a measure of trade specialisation we have employed the classic Balassa index. Despite significant changes in Central

European economies during transition to a market economy, the distribution of the indices has not changed radically over the 1990s. The extent of specialisation in Central European trade exhibits a mixed trend. The distribution of Balassa index differs markedly from one country to the other. Our results suggest that the trade pattern has converged in the Czech Republic, Hungary, Poland and Slovenia, whilst it polarised in Estonia, Latvia, Lithuania and Slovakia over the period. Estimations based on Gini indices reinforces the conclusion that there is a significant increase in specialisation in Estonia and Slovakia; no significant change in Hungary, Latvia and Lithuania; and a significant fall in specialisation in the Czech Republic, Poland and Slovenia vis-à-vis the EU.

The stability of the indices for particular product groups displays more variation. Results suggest that the indices are stable for observations with comparative disadvantage, in all cases. But product groups with weak, medium or strong comparative advantage show significant variation, with a tendency to weakening comparative advantage. In other words, the Markov matrices show a relatively high mobility for all countries, even though changes are particularly frequent in the middle of the distribution.

How are these stylised measurements linked to the findings of other empirical studies? An overall picture emerging from empirical studies (Balassa 1977; Amendola et al. 1992; Laursen 2000; Proudman and Redding 2000; and Brasili et al. 2000) is that one can observe a general decrease in specialisation, with a few exceptions. However, our study of Central European trade only partly reinforces this result, since we observe both growth and fall in trade specialisation.

At the sector level the pattern of comparative advantage also differs by countries. The main explanation may be that the CEE countries have different backgrounds. They liberalised and reformed their economies to a varying degree; consequently, the differences in their earlier manufacturing bases, political stability, administrative reforms and geographical locations, have resulted in different developments in comparative advantages across-countries. Recent studies have shown that the specialization pattern of many CEECS has changed over time, in many cases rapidly, with the CEE countries shifting production towards higher-tech and higher-skill industries (see Havlik 2001; Landesmann and Stehrer 2002; Wörz 2003; Zaghini 2005). Consistently with these results we found that the comparative advantages in Baltic countries are still largely based on natural resources; whilst the Czech Republic, Hungary, Slovakia and

Slovenia are the most oriented towards human-capital and technology intensive products, with Poland following closely. The latter countries display a rather fast catching-up in high skill and high-technological intensive products, in spite of the significant technological gap they inherited from the planned economy period. However, the increasing trade specialisation in the Baltic countries focuses mainly on primary and natural resources intensive products. Our results complement those of Dulleck et al. (2005), who identify two different ways in quality upgrading for CEE countries. The first group (Czech Republic, Hungary, Poland Slovakia and Slovenia) can be characterised by successful upgrading of their export structure, whilst the results for the second group (the Baltic countries) was less unambiguous. In short, the Baltic states seem to be less successful in the catch up process to the European Union.

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# *Challenges Facing the Polish Banking Industry: A Comparative Study with UK Banks*

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In 2004 Poland entered the EU. This paper investigates the performance of the Polish banking industry over the period 1999–2004, by looking specifically at its comparative efficiency in relation to one of the largest banking sectors in the EU namely, that of the UK. Based on a range of efficiency measures, the empirical results reveal a surprising degree of relative efficiency in the Polish banking industry, no doubt reflecting the substantial economic changes introduced in Poland since 1989. The findings suggest that the Polish banking sector should be able to withstand the new competitive pressures that it faces following entry into the banking sector of the EU.

*Key Words:* Poland, UK, banking, efficiency, performance

*JEL Classification:* C52, F36, G21

## **Introduction**

Poland entered the EU as one of a number of new Member States in 2004. Entry into the EU implies increased competitive pressures for the Polish corporate sector created by the European Single Market and EU competition law. This is particularly true for Poland's financial services that until recently were state owned and protected from competition. The banking industry has been transformed in the EU during the last decade as a result of three major developments: (a) the establishment of a Single European Market in financial services, which has intensified competitive pressures and forced the pace of rationalization across the industry; (b) the impact of developments concerning information technology and the con-

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sequences for the delivery of financial products and services, as well as new product development (involving, for example, internet banking and money transmission services); and (c) extensive merger activity, bringing about closer integration and, to a large degree, the globalization of financial markets. This has created a business environment in which institutional investors are now challenging the dominant positions of commercial banks in both deposit-taking and loan-financing facilities. Also, Poland is by far the largest country amongst the new EU Member States and, therefore, can be expected to attract considerable attention from the European financial services industry, as its economy develops and gravitates towards the EU average.

The purpose of this paper is to consider the likely competitive pressures facing the Polish banking industry in the future. The contributions of the paper are in terms of identifying the relative competitiveness of Poland's banking sector and in applying a number of measures including stochastic cost frontier analysis. To make the research manageable, the efficiency of Poland's banking sector is compared with the efficiency of banking in the UK. The UK's banking sector is one of the largest in the EU<sup>1</sup> and is generally recognized as internationally competitive. It therefore provides a useful benchmark for comparing the efficiency of Polish banks with those of the EU in general.

The alternative, of comparing Polish banking with the average performance of banking across the EU, would arguably be less satisfactory because average EU performance masks differences within the EU. A number of performance measures are used, namely financial ratios, including profitability, and figures for operating and financing costs. Later in the paper, performance differences are also investigated using a stochastic cost frontier analysis. The paper concludes that the Polish banking sector seems already broadly comparable to the UK's banking sector in many areas of performance. It is, however, still relatively small scale, and competition is not as developed as it is in the UK when measured in terms of the number of competing banks. It also suffers from a relative weakness in terms of liquidity and poorly performing loans.

The structure of the remainder of the paper is as follows: in the second section, we describe developments in the Polish banking system since 1989, to provide an appropriate context for the statistical analysis. The third section details the various performance measures used to assess efficiency differences between the Polish and UK banking sectors, the data used and provides results using descriptive statistics and tests of signifi-

cance between means. In the fourth section, relative performance using a stochastic cost frontier analysis is reported. Finally, in the fifth section, we draw together conclusions and consider some implications for future research.

### **Developments in the Polish Banking System Since 1989**

Prior to 1989 Poland's banks were state owned and competition was limited. In 1989 the sector was primarily composed of co-operative banks. By 1993 there were still 1653 co-operative banks out of a total of 1740 banks in the country.<sup>2</sup> With the collapse of communism and the introduction of Poland's economic reform program to create a market economy, the Polish banks underwent privatization, so that by 2000 most of the banks had been transferred to the private sector. By then the industry consisted of 754 banks, however around 680 were still small co-operative units. A total of 47 of the larger banks had come under foreign ownership, with banking organizations in EU Member States being the largest single set of foreign owners.

Since the end of the 1980s, the Polish banking sector has experienced three main stages of development. Firstly, from 1989 to 1992 there was a dramatic increase in competitive pressures, but still lacking was the necessary institutional underpinning to develop a sound market-based banking system. In particular, a robust legal and regulatory framework was missing. Secondly, between 1992 and 1997 a restructuring of financial institutions occurred including recapitalization of the banks, privatization,<sup>3</sup> and new legal reforms that led to a more orderly competitive environment.<sup>4</sup> Thirdly, since 1998 strategic investors have become progressively more active, taking advantage of the benefits brought about by privatization and market liberalization. In other words, during the 1990s the banking sector became more commercially orientated, involving significant restructuring in parallel with restructuring changes going on elsewhere in the Polish economy.

In recent years, the pace of competition within the banking sector in Poland has intensified, in both the corporate finance and retail sectors. This has resulted largely from an influx of foreign-controlled banks. In fact, more than 75% of the capital in the Polish banking industry is now foreign-owned – German, Austrian and Dutch investors dominate (Balcerowicz and Bratkowski 2001). The consequence has been the development of new competitive strategies, the promotion of new human resource skills<sup>5</sup> and the expansion of systems to identify and cap-

ture new markets (Balcerowicz and Bratkowski 2001; Figueira, Nellis, and Schoenberg 2007).<sup>6</sup> In the retail sector there has been extensive development of branch networks and the use of IT in money transmission services.<sup>7</sup>

There has also been an improvement in the public perception of the banking industry in general, as the less popular and less efficient banks have either been closed or been merged with more efficient banks.<sup>8</sup> However, it appears that there are still some areas of the financial market which remain under-developed, especially the housing market. Very few Polish banks seem to specialize in providing mortgages<sup>9</sup> and, those which do, impose a number of conditions which restricts the number of people eligible to apply for a mortgage.<sup>10</sup> This compares unfavourably with the position in the EU Member States and especially the UK with its well-developed mortgage market supplied by banks and building societies.

Previous studies have compared banks operating in Poland and Western Europe according to a range of efficiency ratios and concluded that, in 1997, Polish banks were less efficient. However, given the continuing changes in the Polish banking sector it seems timely to assess this performance again, using a wider range of performance measures including econometric analysis, particularly given Poland's recent entry into the EU.

### **Performance Measurement, Data and Initial Findings**

In recent years, several studies have focused on performance in the banking sector, however many of them have concentrated on a particular country and the analysis of scale and scope economies. For example, Berger (1993) analyzed US banks between 1980 and 1989 and concluded that management of resources is critical to achieving efficiency, while scale differences played a relatively minor role. Additional studies that have evaluated the performance of US banks include those by Peristiani (1996), Berger and Mester (1997), Mukherjee, Subhash, and Miller (2001), Barr et al. (2002) and Akhigbe and McNulty (2002). Other performance studies of banking include those by Gough (1979), Hardwick (1989; 1990), Drake (1992), Dietsch (1993) and Lang and Welzel (1996).

Altunbas et al. (2001) extended the existing literature on modelling costs in banking systems by estimating scale economies, inefficiencies and technical change. In their study a sample of EU countries was used and efficiency was measured using stochastic cost frontier (SCF) techniques (for an explanation of SCF, see below). The results revealed that

production inefficiencies were larger than scale inefficiencies, a finding consistent with the majority of US studies. The study also concluded that inefficiencies tend to vary across countries and over time. Since then, other studies have focused on cost and profit efficiency issues related to EU banking, such as Maudos et al. (2002) and Weill (2004).

However, despite the recent entry of a number of Central and Eastern European countries into the EU, there appear to have been few studies of the performance of banks in these countries. The majority of studies tend to be descriptive and a number are restricted to a comparison of accounting ratios, such as return on assets or return on equity (Weller 2000; Marek and Baun 2002; Keren and Ofer 2002). Although a few studies have applied econometric modelling including SCF analysis (Mertens and Urga 2001; Hasan and Marton 2003), the literature lacks a direct comparison between the banking systems in these countries and members of the EU pre-2004. As Berger and Humphrey (1997) conclude from a survey of studies of efficiency of financial institutions, international comparisons deserve additional attention.

In this paper the performance of Poland's banking sector is compared with performance in UK banks. Bank performance can be measured along a number of dimensions, including charges, financial ratios and costs of operation. Economists usually differentiate between allocative efficiency and productive efficiency when assessing economic performance. Allocative efficiency is concerned with price-cost margins, and productive efficiency with costs of production. A distinction is also made between static efficiency gains, which are gains at a point in time or in the short-run, and dynamic efficiency gains, which are more concerned with longer-term economic performance improvements, usually associated with innovation in products and processes.

In this study, for reasons of data availability, the concern is with performance over the period 1999–2004, and with efficiency in the provision of outputs. Data do not exist to discuss price-cost margins and therefore allocative efficiency (although the existence of competition in UK banking and the growing competition in Polish banking implies a high degree of allocative efficiency) or longer-term dynamic gains. The focus is therefore on relative static efficiency using measures of productive efficiency.<sup>11</sup>

The main measures used are profitability (since in a competitive marketplace profits reflect cost control as well as revenue maximisation), other financial ratios and costs of production. The data are drawn from the *Bankscope* data base which contains balance sheet and income state-

TABLE 1 Data sample – UK and Polish banks, 2004

	United Kingdom	Poland
Total assets (US\$m)	10,703.266	168.099
Sample assets (US\$m)	6,814.344	149.299
% assets included	64	89
% of commercial bank assets included	72	89
Total number of banks	140	23
Commercial banks	66	20
Savings banks	2	1
Co-operative banks	0	2
Real estate and mortgage banks	58	0
Investment banks and securities houses	14	0

ment data published by the London-based International Bank Credit Analysis Ltd. The sample used comprises 163 banks, 140 of which are UK banks and the remaining Polish. Prior to 1999 the data in *Bankscope* are incomplete, thus preventing analyses prior to that year.

The banks examined in the *Bankscope* data base fall into the following categories: commercial, savings, co-operative, real estate and mortgage as well as investment banks and securities houses, with the majority being commercial banks. For the UK, around 41% of the banks are real estate and mortgage banks and 10% are classified as investment banks and securities houses. In contrast, the *Bankscope* data base has no Polish banks classified as investment banks and securities houses. This means that for Poland the classification ‘commercial banks’ includes banks that provide services which in the UK are mainly offered by specialist real estate and mortgage banks and investment banks. This introduces a potential lack of homogeneity in the classification of banks’ activities across the two countries. However, banks in the *Bankscope* data base are categorized according to their primary activity or, more precisely, the activity to which more than 50% of operations relate. This means that heterogeneity in activities is limited and should not constitute a significant problem when comparing banks in Poland and the UK.

The information in table 1 highlights other important differences in the two countries’ banking systems. In particular, there are many more banks in the UK than in Poland, and each of the banks has much larger average assets – averaging over \$6.814 billion in the UK as against more

than \$149 billion in Poland. Performance results may therefore be affected by firm size or scale of operation, something we test for later in the paper. It is also clear from the table that the commercial banks dominate both banking systems. For this reason, in the discussion below we concentrate upon the relative performance results for the commercial banks. As can be seen from table 1, more than 60% of the total assets of the banks in both countries are included in the study and over 70% of commercial banks' assets, which suggests that the sample used is sufficiently large to offer a fairly representative picture of performance in the UK and Polish banking sectors, especially with respect to commercial banking.

Table 2 presents the results for a range of performance measures for banks in the two countries. The indicators are chosen to reflect key banking metrics, namely asset quality ratios, capital ratios, operations ratios and liquidity ratios. Standard deviations are given in parentheses and indicate that for some of the measures, such as profitability, no major differences exist in data dispersion between Polish and UK banks, permitting a focus on the mean figures. For other indicators, such as impaired loans (defined as loans with suspended interest), there is a noticeable difference in the data dispersion, which means that both the means and standard deviations should be considered together. Two-tailed *t*-tests were undertaken to determine whether the difference between means for each of the performance measures was statistically significant at the 10% level. The results are provided in the final column of the table.

Starting with the asset quality ratios, it is clear from the information presented in table 2 that in Poland the ratio of impaired loans to total loans is significantly higher than in the UK, confirming that Poland has a more serious problem with underperforming loans in its banks' balance sheets (Polish banks also record higher average loan loss reserves to gross loans, and the difference between means is statistically significant at the 10% level). This result is almost certainly a legacy of the economic restructuring of the 1990s and the greater difficulty in assessing a borrower's credit worthiness in Poland than in the UK, with a less-well developed system of credit referencing in the former. In terms of capital ratios, however, banks in Poland are not obviously under-capitalized, as suggested by the mean value shown in the table. Moreover, the difference between the banks in the two countries is only just statistically significant at the 10% level for the ratio of equity to liabilities. Looking at the standard deviations, it is clear that loan loss reserves vary more

TABLE 2 Cost and profitability ratios of banks in the UK and Poland<sup>a</sup>  
(average values 1999–2004)

Banks	United Kingdom <sup>b</sup>	Poland <sup>b</sup>	(1)
Asset quality ratios <sup>c</sup>			
Loan loss reserves/gross loans	2.108 (3.987)	5.984 (3.177)	Yes
Impaired loans/gross loans	4.001 (7.313)	17.198 (12.029)	Yes
Capital ratios			
Equity/total assets	10.437 (9.772)	9.840 (3.116)	No
Equity/liabilities	14.551 (22.001)	11.169 (3.989)	Yes
Operations ratios			
Net interest margin	2.602 (2.745)	4.195 (2.518)	Yes
Average profit (profit/assets)	0.014 (0.028)	0.015 (0.008)	No
Return on assets employed	1.035 (2.253)	0.840 (1.016)	No
Return on equity	9.325 (11.042)	8.022 (10.565)	No
Average costs (costs/assets)	0.065 (0.071)	0.106 (0.016)	Yes
Average operational costs	0.032 (0.074)	0.051 (0.014)	Yes
Average financial costs	0.033 (0.010)	0.055 (0.008)	Yes
Cost to income ratio	68.968 (23.251)	70.676 (17.640)	No
Liquidity ratios			
Net loans/total assets	56.786 (27.903)	47.080 (13.807)	Yes
Liquid assets/total deposits & borrowing <sup>c</sup>	38.541 (39.976)	16.684 (10.818)	Yes

NOTES (1) Difference statistically significant (2-tailed test; 10% level). <sup>a</sup> Note that the results reported in this table are based on a 'balanced' panel data set – i. e. the same sets of banks are analysed in each year. <sup>b</sup> Standard deviations in parentheses. <sup>c</sup> The ratios were constructed with data from 140 UK banks and 23 Polish banks, with the exception of the following ratios where fewer banks were considered, due to data limitations: loan loss reserves/gross loans (130 UK and 18 Polish banks), impaired loans/gross loans (40 UK and 17 Polish banks) and liquid assets/total deposits and borrowing (61 UK and 20 Polish banks).

across UK banks, although the reverse is true for impaired loans. On balance, the standard deviations do not detract from the general conclusion that Poland has a greater problem with underperforming loans. With regard to the equity financing ratios, there is a wider dispersion around the mean figure for the UK.

Turning to the operations ratios, profitability is conventionally measured as a return on assets employed and as a return on equity. The

profitability figures in table 2 suggest that for banks in Poland and the UK, profits on assets employed vary little between the two. Also, while on first inspection the descriptive statistics may suggest that returns on assets employed and return on equity are higher in the UK banks than in their Polish equivalents, the mean differences proved statistically insignificant (again at the 10% level). The conclusion is that the Polish and UK banking sectors have similar profitability.

By contrast, costs of production in relation to assets employed are lower in the UK and this result is statistically significant, while the cost to income ratio is slightly higher in Polish banks (though this difference is not statistically significant) than in the UK counterparts.<sup>12</sup> This leads to the conclusion that banks in Poland have higher costs in relation to asset size than in the UK. These higher costs seem to be compensated for by higher revenues in relation to assets employed (note the higher net interest margin for Poland's banks), probably reflecting the lower level of competition in Polish banking. In turn, this suggests that as competition puts downward pressure on bank charges, the Polish banks will need to reduce their asset base, probably through further consolidation, if they are to remain competitive.

In banking, costs of production can be divided between the costs of operating the bank, including branch networks, and the cost of raising loanable funds. It is therefore useful to explore performance differences separately in terms of operational costs and financial costs. Table 2 provides figures on operational and financial costs in relation to assets employed in banks in Poland and the UK. Both operational and financial costs in relation to assets employed are on average much higher in Poland – a mean figure of 0.051 and 0.055 respectively compared with 0.032 and 0.033, and these differences are statistically significant. This finding is consistent with the notion that Poland's financial market is less advanced and competitive than the UK's. This suggests that, in general, it costs Polish banks more to raise loanable funds than is the case for UK banks with an equivalent asset base. However, with Poland's membership of the EU and the creation of single money and capital markets, this differential is likely to be eroded. This may be expected to improve the competitiveness of Polish banks in terms of raising finance.

Finally, the liquidity ratio figures in table 2 suggest that Poland's banks are more exposed in terms of liquid assets with respect to total deposits and borrowing. This finding is of particular concern when set alongside the ratio for impaired loans. Together the results suggest that a number of

Poland's banks are likely to be less able to absorb the impact of a financial crisis than banks in the UK.

### **A Cost Frontier Analysis of Banking Performance**

So far, the relative performance of Polish and UK banks has been measured using descriptive statistics. Here we assess performance using econometrics and specifically a stochastic cost frontier approach. Cost functions provide a more comprehensive analysis of performance than the simpler ratio analysis reported above. A cost function relates the costs of production observed in the data period – in this case 1999–2004 – to input and output variables, and derives directly from the theory of the firm (Varian 1992). We would have liked to have included an assessment of Polish and UK banks performance also based on a profit frontier analysis. However, like Bos (2002) and Bikker (2004), we found that while one single cost frontier exists when comparing across countries, this does not hold true for the profit frontier, probably due to different market conditions. Hence, the profit function approach does not allow for satisfactory comparisons across countries or regions.

Cost efficiency is the ratio between the minimum cost ( $C^{min}$ ) necessary to achieve a desired level of output and the observed total cost ( $C$ ). Total costs are therefore a function of the output ( $y$ ), the price of inputs ( $w$ ) and a set of other factors, which we here decompose into two parts: the level of cost inefficiency in production ( $u$ ) and a random part ( $v$ ). The latter accounts for measurement error and other random factors, such as the effects of strikes, etc., on the value of the output variables, together with the effects of unspecified input variables in the cost function (see Coelli, Rao, and Battese 1998). Assuming that  $u$  and  $v$  are multiplicatively separable from the other variables of the function and also that the variables are expressed in logarithms, then the cost function can be written as:

$$\ln C = f(y, w) + \ln u + \ln v. \quad (1)$$

Cost efficiency for an individual bank can then be described by the function:

$$\frac{C^{min}}{C} = \frac{\exp[f(y, w)] \cdot \exp(\ln v)}{\exp[f(y, w)] \cdot \exp(\ln v) \cdot \exp(\ln u)} = \exp(-\ln u). \quad (2)$$

The model employed in this paper is a standard translog functional

form (Casu and Girardone 2002; Figueira, Nellis, and Parker, forthcoming). Hence the cost equation to be estimated is:

$$\begin{aligned} \ln C = & \alpha + \sum_{i=1}^3 \beta_i \ln w_i + \frac{1}{2} \sum_{i=1}^3 \sum_{j=1}^3 \beta_{ij} \ln(w_i) \cdot \ln(w_j) \\ & + \sum_{n=1}^2 \gamma_n \ln(y_n) + \frac{1}{2} \sum_{n=1}^2 \sum_{m=1}^2 \gamma_{nm} \ln(y_n) \cdot \ln(y_m) \\ & + \sum_{i=1}^3 \sum_{n=1}^2 \rho_{in} \ln(w_i) \cdot \ln(y_n) + \delta_E \ln(E) + \frac{1}{2} \delta_{EE} \ln(E)^2 \\ & + \sum_{n=1}^2 \lambda_{En} \ln(E) \cdot \ln(y_n) + \sum_{i=1}^3 \tau_{Ei} \ln(E) \cdot \ln(w_i) + \ln \nu + \ln u, \quad (3) \end{aligned}$$

where restrictions of symmetry and linear homogeneity have been imposed on input prices. The variables included in the model are total costs ( $C$ ), which include financial and operating costs, input prices described as price of loanable funds or the costs of raising funds to lend out ( $w_1$ ), the price of labour ( $w_2$ ) and the price of physical (fixed) capital e. g. buildings ( $w_3$ ), and the quantity of outputs, which are deposits, including loans ( $y_1$ ) and other earning assets ( $y_2$ ) and financial capital ( $E$ ), which is a proxy for banks' insolvency risk.<sup>13</sup> The price of loanable funds is obtained by dividing financial cost by the corresponding liabilities, which include deposits, money market funding and other funding. The price of labour would ideally be the marginal cost of employing labour, but in the absence of these data an approximation was used based on the ratio between personnel expenses and total assets. The rationale for this approximation is that it crudely represents the labour cost per worker adjusted for variations in labour productivity (Altunbas et al. 2001).<sup>14</sup> Finally, the price of physical capital is approximated by dividing expenditures on plant and equipment (non-labour costs) by fixed assets (Bikker and Haaf 2002; Maudos et al. 2002). One possible difficulty relating to the analysis is aggregation bias because of the mixing of different sizes of banks in the two countries. We tested for this by including the logarithm of total assets. However, this proved to be insignificant in the explanation of total costs. Therefore, the mixing of different sizes of banks in UK and Poland does not seem to affect the results.

In common with some of the earlier studies of bank performance reviewed above, we estimate an *efficient frontier* for the banking industry.

A bank's performance is then assessed by measuring how efficient it is, based on its distance from the efficient frontier, a concept that dates back to Farrell (1957). Such values are sometimes referred to as measures of x-inefficiency (Berger 1993). Here the frontier is estimated by amalgamating data from the Polish and UK banking sectors and again drawing from the *Bankscope* data base. In this stage of the analysis all banks in Poland and the UK were included in the data set so as to maximise the degrees of freedom and provide a more robust estimate of the cost frontier. To model the frontier we used stochastic cost frontier analysis (SCF), as proposed by Aigner, Lovell, and Schmidt (1977), and equation 3 above.<sup>15</sup> SCF breaks down the error term into the two distinct parts already referred to, namely  $v_i$  or the random error, which is assumed to be independently and identically distributed following a normal distribution, and  $u_i$ . This is a non-negative inefficiency term and assumed to be independently and identically distributed and to follow a truncated normal or exponential distribution. The estimated inefficiency for any firm is taken as the conditional mean of the distribution of the inefficiency term, given the observation of the composed error term.

The model proposed by Battese and Coelli (1995) is used in this paper and is close to that proposed by Aigner, Lovell, and Schmidt (1977). It differs in imposing allocative efficiency and allows the use of panel data.<sup>16</sup> The estimation of the model occurs in three main steps. The first involves the estimation of the function by Ordinary Least Squares (OLS). The parameters obtained are all unbiased with the exception of  $\beta_0$  (intercept) and  $\sigma_s^2$  (sum of the variance of  $u_i$  and  $v_i$ ). The second step is carried out with the estimation of a likelihood function based on Battese and Corra (1977),<sup>17</sup> which is evaluated for a series of values of  $\gamma$  between zero and one – where  $\gamma$  equal to zero means that the deviations from the frontier are due only to noise, while a value of one indicates that the deviations are due entirely to inefficiency. The estimates for  $\sigma_s^2$  and  $\beta_0$  are adjusted, with the remaining coefficients unchanged. The final step uses the best estimates from the second step as starting values in an iterative procedure to achieve the final Maximum Likelihood estimates.

An individual bank's cost efficiency is then predicted from the estimates of the stochastic cost frontier. Battese and Coelli (1988) point out that the best predictor of  $\exp(-u_i)$  is given by:

$$E[\exp(-u_i)|e_i] = \frac{1 - \Phi\left(\frac{\sigma_A + \gamma e_i}{\sigma_A}\right)}{1 - \Phi\left(\frac{\gamma e_i}{\sigma_A}\right)} \exp(\gamma e_i + \frac{\sigma_A^2}{2}), \quad (4)$$

TABLE 3 Relative cost efficiency using SCF analysis, 1999–2004<sup>a</sup>

Banks	United Kingdom <sup>b</sup>	Poland <sup>b</sup>
By specialization		
Commercial	0.739 (0.173)	0.672 (0.098)
Savings	0.763 (0.008)	0.626 (n. a.)
Real estate and mortgage	0.858 (0.050)	—
Investment	0.695 (0.209)	—
Co-operative	—	0.700 (0.060)
By size		
Large	0.751 (0.146)	0.641 (0.061)
Small and medium	0.827 (0.150)	0.723 (0.113)

NOTES The results are based on a ‘balanced’ panel data set. Results for an ‘unbalanced’ panel data set have also been produced and similar relative values and conclusions have been obtained. These are available from the authors on request. <sup>a</sup> Final maximum likelihood estimates from which the cost efficiency estimates are derived and are presented in table 4. <sup>b</sup> Average cost efficient estimates. The corresponding standard deviation values are in parentheses. Where only one bank is included, the standard deviation is not applicable (n. a.).

where  $\sigma_A = \sqrt{\gamma(1-\gamma)\sigma_s^2}$  and  $e_i = \ln(y_i) - x_i\beta$ . The resulting cost efficiency estimates are reported in table 3. They were calculated based on data which were pooled for 6 years (1999 to 2004 inclusive) for 163 UK and Polish banks, giving a total number of 978 observations.<sup>18</sup>

The results confirm the earlier findings relating to relative costs for banks in Poland and the UK based on descriptive statistics. Commercial banks in Poland are less cost efficient than equivalent UK banks using SCF analysis, and the difference is statistically significant. The results also highlight the high relative efficiency of real estate and mortgage banks within the UK banking sector.

Table 3 also presents cost efficiency results from the SCF analysis according to bank size. As we saw earlier, the average size of banks in the UK is appreciably larger than that of banks in Poland. This means that size or economies of scale may affect the relative costs of production. To test for this, efficiency in relation to bank size was assessed. In the analysis, a large bank is one with total assets of over one billion US dollars, a definition consistent with that used by *Bankscope*. The estimates reveal that there are differences in costs across small and large banks and between UK and Polish banks, as presented in table 3. Small and medium-sized banks tend to be more cost efficient than large banks.

## Conclusions

The paper provides a basis for considering the prospects for Polish banking following the country's accession to the EU by comparing financial ratios and other performance measures between a range of banks in Poland and the UK, including commercial, savings, real estate and mortgage, investment and co-operative banks. The UK banking sector is used as an exemplar because it is generally recognized to be one of the most efficient and competitive in Europe.

The Polish banking sector has gone through considerable changes since 1989 and the results from this study suggest that, while Poland's banks still seem to be weaker in terms of impaired loans and liquidity, in other respects they are now well placed to compete successfully in the EU and, in particular, they appear to be competitive in terms of profitability. We did find evidence that Polish banks suffer higher costs of raising funds and this almost certainly reflects the less well developed money and capital markets in Poland than the UK. Over time, EU membership should progressively lead to more competitive financial markets and this should assist Polish banks in reducing financing costs in the future.

Our results have focused mainly on commercial banks, because there were an insufficient number of banks in our data set operating in the more specialist areas of banking, such as savings, real estate financing and investment and securities, to permit meaningful comparisons between Poland and the UK. It should be stressed that there are significant structural differences between the banking sectors of the two countries, for example, the UK banking industry has a very large number of real estate and mortgage banks, as well as investment banks and securities houses. In contrast, the activities of such banks have tended to be carried out by commercial banks in Poland.

Future research could usefully focus on the specialist banking functions to see whether our comparative results for commercial banking also apply to specialist banking services. In addition, while the use of the UK as a 'best practice' benchmark for the rest of the EU seems sound, further research might focus on comparisons between Polish banking and banking elsewhere within the EU. Moreover, our approach could be usefully extended to analyzing the performance of banks in other new EU members, such as Hungary and the Czech Republic, especially where the banking sector has less foreign ownership than is the case in Poland. A particular question which arises is concerned with the extent to which

the relative performance of Polish banks is a function of the high levels of foreign investment.

In the SCF analysis we found evidence that small and medium-sized banks did not suffer a cost disadvantage compared to larger banks, implying a low minimum efficient scale in banking in both the UK and Poland. It would be interesting to test the robustness of this result further and to know whether it applies to banks in other European countries too. Finally, future research could consider other bank performance dimensions that we were unable to assess given the available data, in particular customer service levels.

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### **Notes**

- 1 The UK banks' total assets amounted to almost US \$11 trillion in 2004.
- 2 For an overall picture of the number and type of banks operating in Poland from 1993 to 2000, see table 3 in Balcerowicz and Bratkowski (2001).
- 3 Privatization was one of the main objectives of the reforms that were carried out from January 1990, and the program for the privatization of state-owned banks was approved in March 1991. However, the preparation of each privatization proved time-consuming and the process did not actually start until 1993. The delay was mainly due to the enormous amount of bad debts held by state-owned banks.
- 4 The current supervision of banking and capital markets is based on guidance provided by the Basle Committee on Banking Supervision and the Joint Forum on Financial Stability. The Banking Act and the Act on the National Bank of Poland, which were introduced in 1997, reinforced the legal reforms. Finally, new amendments came into effect in 2000, which were aimed at addressing needs related to the improvement of supervision and the application of sanctions.
- 5 Opiela (2001) claims that the strategies of what he considers the most efficient banks operating in Poland are supported by fewer, but more highly paid and effective human resources.
- 6 Examples are the fast growth of retail banking, together with the intensification of the development of new IT, the creation of new products, such as credit cards and home banking, and the linkage between tra-

TABLE 4 Final maximum likelihood estimates, obtained by using the stochastic frontier approach

	Coefficient	<i>t</i> -ratio
$\alpha$	2.390	6.429
$\ln w_1 - \ln w_3$	0.386	5.189
$\ln w_2 - \ln w_3$	-0.023	-0.445
$(\ln w_1)^2/2$	0.100	4.487
$(\ln w_2)^2/2$	-0.002	-0.421
$(\ln w_3)^2/2$	0.204	11.228
$\ln w_1 \cdot \ln w_2$	0.019	2.689
$\ln w_1 \cdot \ln w_3$	-0.153	-12.604
$\ln w_2 \cdot \ln w_3$	0.019	2.228
$\ln y_1$	0.499	7.425
$\ln y_2$	0.520	7.861
$(\ln y_1)^2/2$	0.104	19.662
$(\ln y_2)^2/2$	0.109	17.191
$\ln y_1 \cdot \ln y_2$	-0.098	-15.648
$\ln w_1 \cdot \ln y_1$	0.000	-0.020
$\ln w_1 \cdot \ln y_2$	-0.033	-2.781
$\ln w_2 \cdot \ln y_1$	0.007	1.618
$\ln w_2 \cdot \ln y_2$	0.020	3.586
$\ln w_3 \cdot \ln y_1$	0.035	5.793
$\ln w_3 \cdot \ln y_2$	0.054	5.432
$\ln E$	-0.180	-1.569
$(\ln E)^2/2$	0.013	0.598
$\ln E \cdot \ln y_1$	0.004	0.479
$\ln E \cdot \ln y_2$	-0.019	-1.667
$\ln E \cdot \ln w_1$	0.025	1.375
$\ln E \cdot \ln w_2$	-0.015	-1.661
$\ln E \cdot \ln w_3$	-0.108	-7.520
$\sigma^2$	0.153	6.523
$\gamma$	0.907	53.420
Log likelihood $f(\cdot)$	464.32	—
LR test ( $\chi^2_{(1)}$ )	561.89	—

NOTE The table refers to the final maximum likelihood estimates (MLE) from which the cost efficiency estimates in table 3 are derived. The equation estimated is based on equation (4) and takes into account the restrictions of symmetry and linear homogeneity, which have been imposed on input prices.

- ditional banking and insurance services. Moreover, banks started to look at small and medium-sized enterprises as a new target market.
- 7 By 1999, more than 52% of Polish households had at least one bank card, compared with none in the mid-1990s. Moreover, from 1995 to 1999, consumer loans increased from 4% to 6% of total GDP (USAID 2000).
  - 8 It is likely that this is being achieved at the cost of changes in the way the financial environment is controlled and the elimination of inefficient entities through mergers and acquisitions.
  - 9 According to the classification used by the Bank Guarantee Fund and to Gołajewska and Józefowska (2001), there are currently three banks specialized in providing mortgages.
  - 10 The Mortgage Bond and the Mortgage Banks Act restricted housing lending to individuals whose maximum loan-to-value (LTV) ratio per single loan was 80% (however, in 2002 this was increased to 100%), with an average LTV for the whole portfolio of 60% plus 10% of the total assets secured with mortgages (from 2002, increased to 60% plus 30%) (Kempny 2002). As Chiquier (1999, 15) also claims 'lenders are given strong incentives to use alternative forms of collateral, such as a general pledge over the whole patrimony of the borrower, third-party guarantees and pledged leases'.
  - 11 Due to a lack of comparable data, the study also does not consider quality of service as perceived by consumers.
  - 12 However, the standard deviation for the cost to income ratio is substantially higher in the UK, reflecting a greater variability in this cost ratio in UK than Polish commercial banking.
  - 13 A bank's objective is to lend and invest profitably but not to do so recklessly so that there is high risk of insolvency. Hence, it is legitimate to include insolvency risk as a bank's output alongside loans and other earning assets.
  - 14 This follows because  $(PE/A) = (PE/L)(L/A)$ , where  $PE$  is personnel expenses,  $A$  is total assets and  $L$  is labour employed.
  - 15 An alternative approach to frontier analysis uses linear programming techniques, referred to as data envelopment analysis (DEA). DEA is a non-parametric method that has the advantage over SCF analysis in not requiring the prior specification of a functional form. It has, however, the major disadvantage of attributing all deviations from the frontier as inefficiency and is more easily biased by outliers in the data. As a cross-check on the SCF results, a DEA analysis was undertaken using the same data. The results suggested a larger gap in efficiency between Polish and UK banks, in favour of Polish banks. The DEA results can be obtained from the authors, but we consider them less ro-

bust than the scf results because of the properties of DEA. Hence, our preference to report the scf results.

16 See Coelli, Rao, and Battese (1998) for a more detailed explanation of the model used.

17 Battese and Corra's (1977) log-likelihood function is equal to:

$$\ln(L) = -\frac{N}{2}\ln\left(\frac{\pi}{2}\right) - \frac{N}{2}\log(\sigma_s^2) + \sum_{i=1}^N \ln[1 - \Phi(z_i)] \\ - \frac{1}{2\sigma_s^2} \sum_{i=1}^N (\ln y_i - x_i\beta)^2$$

where  $z_i = (\ln y_i - x_i\beta)/\sigma_s \sqrt{\gamma/(1-\gamma)}$  and  $\Phi(\cdot)$  is the distribution function of the standard normal random variable.

18 Details of the calculations at each stage of the scf analysis are available from the authors on request.

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# *The Impact of the Quality Management System ISO 9000 on Customer Satisfaction of Slovenian Companies*

Franka Piskar

Many companies invest great efforts into achieving appropriate organization and through it better quality of products and services. They try to achieve this in a systematic way following the standard ISO 9000. Implementing ISO is a management decision that requires consideration of company's operations, strategy, staff and, most importantly, customers. The theoretical part of the research is focused on literature review. Second part-empirical research has been done on the basis of structured questionnaires gathered from 212 responses of Slovenian companies that had already acquired the ISO 9000 quality standard certificate by 2002. We have posed eight questions about the impact of the ISO 9000 on customer satisfaction. The research results in Slovenian companies confirm the ISO 9000 quality standard's impact on better satisfying customers' needs and demands, but not the direct impact on business success. This paper also presents a very useful source of solutions and information for managers and researchers in the field of quality systems and customer satisfaction. Additionally, it comprises an short overview of customer relationship management (CRM) as a system that companies can use for monitoring and satisfying the needs of a customer during any given interaction.

*Key Words:* ISO 9000, quality management systems, customer satisfaction, customer relationship management, marketing

*JEL Classification:* L15, M31

## **Introduction**

Today's competitive market, in almost every category of products and services, is characterized by accelerating changes, innovation, and massive amounts of new information. *Much of this rapid evolution in markets is fueled by changing customer needs. Significant customer behavior and market changes happen almost overnight.* Changes in market preference or technology, which used to take years, may now take place in a few short months. As the pace of change accelerates, it becomes more diffi-

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cult to maintain stable relationships with suppliers, customers, brokers, distributors, and even your own company personnel.

Commitment to product quality and customer satisfaction programs are essential for companies to compete against competitors. Thinking about 'post-sale' customer satisfaction (or managing customer 'dissatisfaction') programs as a way to reinforce customers' buying preferences for companies products and services for their current and future purchases.

Quality of product is also defined according to the extent to which customer's expectations, needs and demands are met. Customers choose products which maximize delivered value (Kotler 1998). This results in another purchase or customer loyalty. The discrepancy between customer's expected product and delivered (perceived) product is a basic measure for quality of product and customer satisfaction.

Why does customer satisfaction matter? There are two reasons. Customer satisfaction shows whether we are doing the right things and whether we are doing them in the right way. A customer is the only financial contributor and in times of harsh competition customer satisfaction plays a more and more important role in making a purchase decision (Goodman and Colin 1992).

Implementation of the ISO 9000 defined as a set of quality standards that are determined as being necessary for manufacturers and service organizations to be effective competitors (Raisinghani et al. 2005) can be used by management of the companies to improve performance and higher quality output. *The emphasis is on the eight principals, that are: customer focus, leadership, employee involvement, process approach to activities and resources, system approach to management, continuous improvement, and strategic supplier and customer partnerships (ISO 9001:2000).* There are also other quality systems, such as Zero Defects, Total Quality Management, a national quality award named Malcolm Baldrige National Quality Award or MBNQA, and the Six Sigma approach (Vokurka 2003). They were all instituted to award those producers of goods and services that met the highest level of standards. *The most important principle in all systems is customer focus; how customers perceive quality and what are their quality expectations.*

The theoretical part of the research is focused on literature review, which confirms the correlation between quality systems and customer satisfaction with the goal of steering the company's marketing activities. As far as quality systems and customer focus are concerned, we support

the introduction of customer relationship management (CRM), which is confirmed by numerous research. *The goal of empirical research is to confirm or reject the hypothesis that ISO 9001 standard has an impact on customer satisfaction in Slovenian companies.* The research was carried out in 2002. The hypothesis will be confirmed or rejected on the basis of companies' responses to the eight questions we have posed. When researching the certificate's impact on customer satisfaction, we were interested in finding whether product and service quality improved, whether customer satisfaction and their loyalty were enhanced, whether there was a decrease in customer complaints, whether the quality of post-sale services improved, and whether the number of customers, their profitability and the sales in general increased.

### **Literature Review**

The areas responsible for quality control are marketing, design, procurement, process design, production, inspection and test, packaging and storage and product service (Besterfield 2004). Marketing has been in existence longer as a management discipline, and its recent history has been one of questioning, redefining and developing the marketing concept and the techniques of implementing new approaches to marketing. The shift of focus from quantity to quality in production represented by total quality management (TQM) has seen the development of a range of techniques to implement total quality strategies. TQM is defined as the 'management approach of an organization, centered on quality, based on participation of all its members and aiming at the long-run success through customer satisfaction, and benefits to all members of the organization and to society' (Slovenski standard 2005.). Customer satisfaction is a broad concept that includes perceived evaluation of product and service (Leem and Yoon 2004). Bathie and Sarkar (2002) in their paper started with the observation that both marketing and TQM had a core value in common – a customer focus. From the process approach (principle in ISO 9001:2000), there is great potential to use it in operationalising marketing. Working toward a process that will bring TQM and marketing together to deliver a customer focus will require changes in the way that marketing is thought of and organized.

Chien et al. (2002) stated that many companies fail to implement customer satisfaction owing to lack of experience, or not being able to keep up with the continuous implementation of customer satisfaction (requirement of the ISO 9001:2000). One of the ways is the introduction

of CRM. Bose (2002) stated that CRM is an integration of technologies and business process used to satisfy the needs of a customer during any given interaction. An important issue is also the capacity of information technology (Lesjak 2000). CRM is also a process by which a company makes good use of customer information to enhance customer loyalty (Choy et al. 2003). All this derives from six categories of customer information: technical support, customer service, product price, product quality, product package and customer satisfaction; including quality standards (Choy et al. 2003). Companies wishing to improve their relationships with customers need constantly to monitor their behavioral and internal processes. Sin et al. (2005) proposed a scale in their study which could be used as a diagnostic tool to identify areas where specific improvements are needed, and to pinpoint aspects of the firm's CRM that require work. The paper by Ahn et al. (2003) provides a comprehensive review of CRM and marketing data sources, and considers some design concepts for creating an effective CRM system from the viewpoint of practical use of the data sources. CRM is different in each country, depending on country specific factors (William and Endacott 2004). Once a CRM strategy and technology for customer service was in place, it became vital to develop processes for measuring and monitoring performance (Smith 2006). Continual monitoring of customer satisfaction and behavior, and measuring successes with benchmarking and more, will ensure that the processes continue to evolve into the best method. In the paper (Curry and Kkolou 2004) the authors present a self-assessment tool which organizations can use to evaluate their use of CRM. *The CRM approach has also a consequent beneficial effect on the organization's TQM culture.* The paper by Zineldin (2005) examines the product and service quality and customer relationship factors that influence the customer selection and image of the principal banks. *One necessary condition for the realization of quality and the creation of value added is quality measurement and control.* This is an important function to ensure the fulfillment of given customer requirements. The key ways to building a strong competitive position are through CRM, product/service quality and differentiation. In the journal *Strategic Direction* three leading organizations – John Lewis, Boots the Chemists, and Standard Life – have made customer relationship management (CRM) central to their business, but conceive, prioritize and manage it differently (Getting better every day 2005). Ngai (2005) made the first identifiable academic literature review of CRM research. The bibliography provides an academic database of the literature between 1992 and

2002 covering 89 journals. The classification approach provides a means to conceptualize the coverage of CRM and the relative popularity of CRM topic areas. CRM solutions not only improve customer loyalty, but also internal processes which in turn increase efficiency (Xu et al. 2002; Ahn et al. 2003).

Every country cognizant of this trend is gradually including customer satisfaction as an important judgment criterion for the National Quality Award to be one of the major orientations in a quality promotion policy. *Therefore, customer satisfaction should play a central role in the company's TQM, and it will also be one of the most important strategies and issues for the corporation in the future* (Chan 1993; Ekloef and Westlund 1998; Naumann et al. 2001). Another research (Chien et al. 2003) is also focused on measuring customer satisfaction. Measuring factors are: perceived quality and value, customer expectation, satisfaction and loyalty, etc., and they all affect customer satisfaction. Spathis and Constantinides (2003) also support the correlation between quality and customer satisfaction based on preliminary enterprise resource planning. Ho et al. (2005) equally confirm that quality is the key element and synonymous with the consumer's ability to choose from a wide array of products and features that provide a closer match to individual needs and desires.

A number of research activities have been conducted worldwide, which confirm the correlation between quality systems and customer satisfaction, in other words quality system's impact on customer satisfaction. Prabhu et al. (2000) confirmed that there are significant correlations between the elements of TQM and the improvement in competitiveness in 74% of English companies, as well as in 28% of companies that were ISO 9001 certified. Mendham et al. (1994) in a survey of 4,091 small businesses reported that their principal motivation for seeking certification, other than to improve quality, was to win new customers. The research results from Casadesus and Gimenez, Spain (2000), showed improved responsiveness to customer demands, increased satisfaction and access to new markets. *Terziovski et al. (1995) reported that there was no significant link between ISO 9000 certification and customer satisfaction.* Unfortunately, they failed to ask customers directly whether they were satisfied, preferring only to seek the views of contacts in their manufacturing firm sample.

Analysis of the effect of ISO 9000 quality standards and TQM on small companies in Northern Ireland (McAdam and McKeown 1999) also experienced positive effects. Veritas Labs' survey of 48 certificated com-

panies in the New York (USA) area found that the primary reason for seeking certification was pressure from existing customers, and that benefits were obtained in the form of increased employee motivation and personal accountability for job performance. *The introductions of quality standards into the Dutch companies improved competitive advantage as well as customer and employee satisfaction* (De Vries and De Jong 2002). Vloeberghs and Bellens (1996) conducted a census of all known Belgian certificate-holders. Most of the benefits experienced by these firms were internal; however, the greatest benefit is that the formal quality assurance (QA) system leads to 'greater client trust'. Brown and van der Wiele's (1995) census of accredited firms in Western Australia found that pressure from customers was the primary motivation for seeking certification, and that the four most important benefits experienced were improved quality awareness, improved awareness of problems, improved management control and improved customer service. In the research from Pan (2003) among four Far Eastern countries the benefits of ISO 9001 certification are: improved competitive edge since it is composed of 'increased productivity', 'quality improvements', 'increased customer satisfaction', 'increased profit margin', and 'cost reduction'; and improved public relations. Six Sigma is also being adopted by some service industries to improve their process that results in quality customer satisfaction (Raisinghani et al. 2005).

Carpinetti et al. (2003) presents a reference model for the process of management of quality and improvement based on a conceptual framework for managing the process of systematically deriving improvement actions from customer expectations and strategic decisions through business processes, and prioritizing actions that will most contribute to the achievement of strategic objectives. A number of similar studies reach broadly the same conclusions (Prybutok and Cutshall 2004; Heras et al. 2002; Magd et al. 2003; Fuentes et al. 2003, Martínez-Lorente and Martínez-Costa 2004; Heras et al. 2002; Magd and Curry 2003; Dolinšek and Kopač 2000).

The literature review identified benefits which had been claimed as products of ISO 9001 certification. *All this analysis indicates that the benefits are the marketing benefits.* Marketing benefits include gaining new customers, keeping existing customers, using the standard as a promotional tool, increasing market share, increasing growth in sales and improving customer satisfaction (Buttle 1997). Companies are satisfied with the impact of the standard on their organizations. These findings are

TABLE 1 Plan for data collection

Statistical population	companies and other organizations in Slovenia in 2002
Sample unit	individual company/organization in Slovenia in 2002
Sample frame	987 companies/organizations from the population: <ul style="list-style-type: none"> <li>• addresses acquired through Infolink</li> <li>• our business partners</li> </ul>
Sample size	planned: from 200 to 250 sample units, achieved: 212 sample units
Sampling procedure	simple random sampling within population
Research instrument	structured questionnaire
Data collection method	combined postal questionnaire (including mail and personal delivery and distribution of questionnaires by intermediaries), supported by telephone contacts and personal contacts; the purpose was to obtain the highest number of responses
Data processing methods	<ul style="list-style-type: none"> <li>• statistical processing using the MSSQL Server 2000; we distinguished criteria by processing pages and used ASP technology (active server pages) to review the data</li> <li>• interpretation of questionnaire responses</li> <li>• confirmation or rejection of hypothesis</li> </ul>
Time of data collection	from September to December 2002
All the answers refer to	June 30, 2002

broadly in keeping with the majority of previous research detailed earlier in this paper.

**Research Method**

Quality systems’ impact on customer satisfaction has become extraordinarily important, and companies around the world are dedicating an increasing amount of attention to it. That is why a part of our research is devoted to this issue. In table 1, the parameters and methods of data collection for later analysis are outlined. *We have set eight questions on the impact of the quality system ISO 9001 on customer satisfaction.* The questionnaire was filled out by business-functional managers. The research was carried out in the transitional period between the ISO 9001/2:1994 to the ISO 9001:2000. This period took two years from official issue of the ISO 9001:2000. Analysis of results can also be done through filters, which show mutual impacts of different variables such as:

- company economic activity,



FIGURE 1 Standard's impact on quality, customer loyalty and customer satisfaction  
 ●— standard deviation    — mean value

- number of employees,
- year of standard acquisition.

The sample of companies was large and the responses required detailed analysis. In this part we were mostly interested in the effect of the standard on customer satisfaction. Before choosing the appropriate statistical method, we reviewed researches of other authors, and the statistical methods they used. When proving similar research issues, they often used calculations of medium value and standard deviation. Therefore our research is based on providing proofs through the analysis of medium value (MV) and standard deviation (SD) based on the responses that respondents circled in the questionnaire (from 1 to 5: I strongly disagree, I disagree, I don't know, I agree, I strongly agree). With evaluations higher than 3.5 a confirmation of the hypothesis will follow; under 3.5 rejection will follow. Grades 4 – I agree – are close to the grade over 3.5 which is why we regard them as confirmation of the hypothesis.

### Results of the Survey Data

#### THE IMPACT OF THE ISO 9001 STANDARD ON QUALITY, CUSTOMER LOYALTY AND CUSTOMER SATISFACTION

Figure 1 shows that the introduction of the standard both improved product and service quality and also enhanced customer satisfaction because of various reasons: better internal work organization, trainings for the employees who have direct contact with customers (eg. trainings or the salesmen/customer relationship, sales techniques) etc. The ISO 9001:2000 standard is customer oriented. This principle is emphasized in several chapters of the above mentioned standard.

The crossing of variables showed how the year of standard acquisition had a positive impact on product and service quality (table 2).

The standard deviation shows that company estimations are clustered around the medium value and that companies' opinions on the impact

TABLE 2 The impact of the year of standard acquisition on improved product and service quality

Year of standard acquisition	MV	SD
before 1997	4.02	0.72
in 1997, 1998 or 1999	3.86	0.71
in 2000 or 2001	3.85	0.72

TABLE 3 The impact of the year of standard acquisition and the number of employees on customer satisfaction

The standard's biggest impact on customer satisfaction in companies	MV	SD
that acquired the standard before 1997	3.94	0.52
that employ from 51 to 250 people	3.93	0.49
The standard's smallest impact on customer satisfaction in companies	MV	SD
that acquired the standard in 1997, 1998 or 1999	3.63	0.80
that employ over 250 people	3.72	0.75

of this factor are very similar. This factor did not receive low estimations, all of them were distributed around 4 and 5. *Survey results also show the standard's impact on increased customer satisfaction* (figure 1). The crossing of variables showed the impact of the year of standard acquisition and the number of employees (table 3).

We are well aware of the fact that customer satisfaction in market systems, where only a price or other factors (political factors, acquaintances ...) determine the choice of suppliers. Customers choose a supplier on the basis of a price or other factors, even though this supplier does not meet their expectations. *Research results also show that there is no impact of the standard on customer loyalty* (figure 1). The crossing of variables shows only the impact of the year of standard acquisition and the number of employees (table 4) on customer loyalty.

Better product and service quality boosts customer satisfaction. Unfortunately, in the market system, where most business transactions are

TABLE 4 The impact of the year of standard acquisition and the number of employees on customer loyalty

The standard's biggest impact on customer loyalty in companies	MV	SD
that acquired the standard before 1997	3.70	0.79
that employ up to 50 people	3.50	0.84

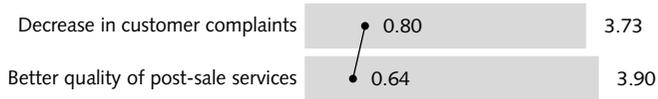


FIGURE 2 The standard's impact on customer complaints and post-sale services

●—● standard deviation    — mean value

effectuated through the system of public contracts, a price represents the only purchase criterion, and not customer satisfaction.

#### THE IMPACT OF ISO 9001'S ON CUSTOMER COMPLAINTS AND POST-SALE SERVICES

In this chapter, we analysed the standard's impact on customer complaints, that is whether the handling of complaints improved, and on post-sale services. When customers are satisfied, the number of complaints drops (figure 2).

The standard deviation is relatively high. This explains why companies have different opinions on this impact. The crossing of variables showed that the number of employees and the company economic activity both have an impact on the decrease in customer complaints (table 5).

Well established internal work organization in the company improves the quality of post-sale services and enhances customer satisfaction (figure 2); the number of employees affects post-sale services quality (table 6).

Companies with more employees achieve better quality of post-sale services. However, even the worst estimation is still good. Partial analysis

TABLE 5 The impact of the number of employees and company economic activity on the decrease in customer complaints

The standard's biggest impact on the decrease in customer complaints	MV	SD
companies that employ from 51 to 250 employees	3.84	0.73
service companies	3.82	0.80

TABLE 6 The impact of the number of employees on better post-sale services quality

Standard's impact on better post-sale services quality in companies	MV	SD
with more than 250 employees	3.95	0.62
with 51 to 250 employees	3.91	0.65
with up to 50 employees	3.88	0.59

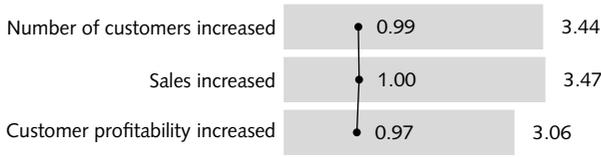


FIGURE 3 Standard's impact on sales success

●— standard deviation    — mean value

according to company economic activity or the year of standard acquisition shows no deviation from the average estimation.

The sale of a product is not the final step. There are many post-sale services that follow, such as customer education, machine servicing, or possible customer complaints handling. If the internal work organization is well established and controlled, these services must be carried out fast and in an organized way with the final goal to achieve 100% customer satisfaction.

THE IMPACT OF STANDARD ISO 9001'  
ON THE SUCCESS OF SALES

Survey results show only insignificant standard's impact on the increase in the number of new customers, sales and customer profitability (figure 3).

*The reason for this insignificant impact lies in the fact that it was difficult to extract the standard's impact on improved sales from other business impacts.* The crossing of variables showed that the best estimations were given by companies that acquired the standard before 1997, and are mostly production-oriented companies, while the worst estimations were given by companies that acquired standard in 1997, 1998, 1999 (table 7). Companies, which have acquired the standard many years ago, identified the standard's impact more easily. Before 1997, companies that acquired standards were mostly production-oriented. The crossing of other variables did not show any deviations from the average estimation.

The same results derive from the analysis of the standard's impact on the increase in sales (figure 3). The estimations of this impact either vary significantly from company to company (this is expressed by high standard deviation) or else this impact is unidentifiable.

The crossing of variables showed the impact of the year of standard acquisition and the number of employees (figure 4).

We can conclude that companies which have acquired the standard



FIGURE 4 The effect of the year of standard acquisition on the increase in sales  
 — mean value

many years ago identify the standard's impact on the increase in sales more easily, because the importance of quality has been incorporated into company's culture for a longer period.

*The analysis of the standard's impact on the increase in customers' profitability does not show significant results (figure 3). The introduction of the standard does not help companies improve business operation.* The crossing of variables showed very low MV of estimations.

The problem with identifying the standard's impact on sales success appears in all companies included in the survey. We could only identify the impact of the year of standard acquisition. Companies, which acquired the standard many years ago (before 1997), identify the standard's impact more easily than companies that have acquired the standard recently. The reason is that in a longer period, the company incorporates the standard into its culture (all employees are well aware of the importance of quality).

#### CONFIRMATION OR REJECTION OF HYPOTHESIS

The main conclusion deriving from this survey is that companies, which have acquired the quality certificate, achieve better quality from the technical point of view and therefore satisfy customers' needs and demands more successfully (figure 1: customer satisfaction, product and service

TABLE 7 The impact of the year of standard acquisition and company economic activity on the increase in the number of customers

	MV	SD
The standard's biggest impact on the increase in the number of new customers in companies that		
acquired certificate before 1997	3.73	0.88
are mostly production-oriented	3.65	0.93
The standard's smallest impact on the increase in the number of new customers in companies that		
acquired certificate in 1997, 1998, 1999	3.33	1.09

quality; figure 2: decrease in customer complaints, better quality of post-sale services). *We can therefore partly confirm with certainty the hypothesis that the ISO 9001 standard impacts customer satisfaction in Slovenian companies.* Because the area of research was broad, we also discovered areas where the introduction of standards did not have a decisive impact. *We partly reject the hypothesis, being unable to confirm that quality standards positively influenced, for example, an increase in the number of new customers, sales or customer profitability* (figure 3: all factors, and figure 1: customer loyalty).

*On the basis of the research results, we conclude that in several examples the standards had an effect on customer satisfaction, but not on the increase of profits, or on the improved business results of the organizations.* While organizations are able to measure certain effects, there are other effects that they cannot measure. The impact of the standards on increased profitability remains dubious. The problem of this survey is that it cannot recognize or extract the impact of standard acquisition on business success from other factors in a company that also affect its business success.

### **Solutions for Managers**

Research results, and our experience in this field showed that companies must think seriously about making the commitment to quality systems. It has been proved that the standard affects business decisions of top managers regarding continuous improvements, mostly improvements in processes, improvements achieved by the Deming circle (P-D-C-A) and internal audits. The research results show that their main non-financial goals will be directed towards employees (improving competences, encouraging working environment) and towards the development of information capabilities. *They are also planning improvements in business processes (improvements in quality of business operations, company reputation in the eyes of customers, development of solutions with added value (e. g. finding new markets, new products for new customers, etc.).* These activities are consecutively connected with the Deming circle (P-D-C-A), which represents the basis for the implementation of continuous improvements (Piskar and Dolinšek 2004). Therefore managers of the companies should:

1. Provide specific programs, written guidelines, and training sessions for all company personnel (every company function, level; supplier). How can they incorporate what is stated?

- *Total company commitment begins at the top.* The head of the company must be committed to total quality ‘marketing’ and customer satisfaction, live it every day, and institute procedures and information systems to ensure all employees do the same.
  - Customer service, customer satisfaction, and customer commitment become the top company priorities. The entire company must work to support the sales staff and customers.
  - Employee hiring and training programs for quality work and customer orientation need to be implemented and enforced. Regular training programs, with weekly department meetings to discuss customer problems, solutions, and complaints and next step actions for customers, are necessary.
  - *Customer feedback on performance and on the success of the new TQM programs, must be sought and received on a regular basis.*
  - Suppliers committed to quality must be sought out, so that customer satisfaction is a priority all the way up and down the chain of distribution.
2. Allow for decision-making and mistakes by all company personnel.
  3. Be committed to weeding out uncooperative company personnel.

Companies are often sales-driven, instead of market-driven or customer-driven. So, it is natural for a sales-driven company to think about TQM improvements in terms of ‘where it counts the most’, in sales. *But the sales force cannot succeed without good quality products, services and organization that are distinct from and valued by customers when compared to what competitors provide.* So, they should change to a customer-driven company. One system that can be also used to achieve this is CRM (Xu et al. 2002; Ahn et al. 2003).

### **Conclusion**

In the present competitive environment, companies need to retain existing high-value customers to remain competitive. The research results proved that with some factors there is a link between the quality standard ISO 9000 and customer satisfaction; with the goal of steering the company’s marketing activities. One of many ways is implementing the CRM system, that is now making it possible to recreate customer service, together with the corresponding quality system.

*Survey results in Slovenian companies shows some positive effect of the quality standard ISO 9001 on more successful satisfaction of customers’ needs and demands.* The impact of the year of standard acquisition is

also perceived. Companies that acquired the standard many years ago (before 1997) more easily identify this impact than companies that have acquired the standard recently. The reason is that in a longer period, a company incorporates the standard into its culture. *The direct impact of the standard on business success, i. e. on the increase in the number of new customers, sales and customer profitability and loyalty, cannot be perceived.* Establishing the methodology for defining the direct impact on business success can represent the main challenge for researches in this field.

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# *The International Headquarters–Subsidiary Relationship: Projecting Economic Cultural Influences on Management within Selected EU Countries*

Rune Gulev

Through the recent European Union (EU) enlargement it is now supposed that there exists significant divergence within European economic cultures that can negatively impact international managerial functions. This article systematically investigates two dimensions through which economic culture can be measured and compared between four EU countries: Slovenia, a new Central European entrant into the EU, and Germany, Austria and Denmark, three westernized EU members, and projects their respective impacts onto several international management functions. The findings suggest that there exists a strong link between highly interpersonal and institutional trust driven economic cultures (IITDEC) to induce increased horizontal knowledge sharing. Further evidence was found, although statistically weaker, that IITDEC is negatively correlated to expatriate utilization. Results were also obtained regarding authority driven economic cultures (ADEC). A negative correlation between ADEC and decentralization was established as well as a negative correlation between ADEC and vertical knowledge flows.

*Key Words:* economic culture, headquarter–subsidiary relationship, international management

*JEL Classification:* Z10, F23

## **Introduction**

A cardinal purpose of the European Union (EU) is to facilitate the workings of international business within a community of countries that are similar enough to agree upon certain trade conformities and harmonization. Although the essence of this purpose is irrefutable on a macro level, it raises the question of whether the multinational companies (MNCs) within the EU are indeed similar enough to arrive at a consensus regarding the fundamentals of international business and management across borders on a micro level. This question gains in merit considering the

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recent EU enlargement that engulfed a further 10 countries, each with a score of companies with new and unique sets of differences and opinions concerning the method and tone with which international management should occur.

Addressing the inherent differences between management methodologies of the EU member countries and understanding the rudiments from which the differences stem are thus key to successfully managing international business across a multitude of imperceptible barriers that require international managers of multinational corporations to adhere to several simultaneous, yet conflicting, demands relating to cross-market integration, national responsiveness and worldwide learning (Bartlett et al. 2004). A large number of survey projects and research of a multicultural nature address these issues and have been published throughout the recent past (e. g. Trompenaars and Hampden-Turner 2004; Trompenaars and Woolliams 2003; Throsby 2001; Schneider and Barsoux 1999; Sachs 2000; Mattock 1999; Martin 1992; Inglehart 1997; Holden 2002; Hofstede and Hofstede 2005; Hofstede 2001) which suggests that the topic of national differences and management variances is recognized as being of major importance to the success of international business.

The present article builds on the work of these authors by systematically linking variances in economic culture across four EU countries to respective variances in the management of an international headquarters–subsidiary relationship (HSR). Specifically, the economic cultures of three elder EU members: Germany, Austria and Denmark, are projected against the economic culture of a new EU entrant, Slovenia, which has long been recognized as being one of the most economically advanced transition economies and has displayed significant growth in the recent years (Jaklic and Svetlicic 2003; Novak 2003).

### **The Economic Culture Perspective**

The concept of economic culture is derived as a variance, or subunit, of national culture and addresses the economic and business facets related to that culture. It is within these facets that the four focus countries of this study drastically differ, thus making them worthy of analysis to explain how their economic culture differences impact the management of an international HSR. Particularly, the economic culture of the new EU entrant, Slovenia, is of interest as its membership extended the cultural variance spectrum within the common market to encompass an ex-socialist business culture. Zver et al. (2004) propose that through the EU

enlargement there now exists a significant economic culture gap within the EU between Central and Eastern European Countries (CEECS) that have recently joined the EU and elder EU members.

In an effort to depict this gap, two dimensions through which economic culture can be measured have been assembled in order to portray variances, pertinent to economic culture, between the four analyzed countries. The rationale is to understand how these variances influence the management of the HSR, specifically, decentralization levels, knowledge flows, knowledge sharing and expatriate utilization.

The two dimensions absorb economic and business values that exist within the national culture of a country and represent values germane to Slovenia's, Germany's, Austria's and Denmark's economic cultures. They build on the work of several authors' (Hall 1981; Hofstede 1984; 1997; 2001; 2005; Herzberg et al. 1993; Hardin 2002; Levi 1996) contributions to variances in, and definitions of, national culture. The usefulness of the two economic cultural dimensions (termed drivers from here on) becomes apparent when benchmarking an individual country's economic culture against that of the others. This allows for comparisons between countries and for visible results to be ascertained, which in turn sets the stage for succeeding arguments to emerge concerning the HSR management pillars.

The two drivers measure the extent to which the workforce of a country is inclined to be biased towards a specific preference of economic cultural values and probe specifically into cultural particularities germane to European countries. They consist of:

- *Authority driven economic culture* (ADECS) – the extent to which employees revere their superiors.
- *Interpersonal and institutional trust driven economic culture* (IITDEC) – the extent to which employees are receptive to inputs stemming from people and from institutions or systems.

To quantify the degree to which the sample countries are polarized within each driver, numerous sources of composite data from the European Values Study (EVS<sup>1</sup>) provided reliable indicators on several comparable and related themes within economic culture.

The first driver draws heavily from Hofstede's (1984; 1997; 2001; 2005) power distance theories and strives to examine the variances in boss–subordinate and subordinate–subordinate relationships that exist in various cultures and organizations. Viewed as a spectrum on which a culture

is either authority driven or subordinate driven, authority driven employees tend to greatly revere their managers who consequently have a great impact on the actions of their subordinates. In comparison, subordinate driven employees, who revere managers and co-workers equally, are not especially biased towards the inputs stemming from managerial sources and consequently do not automatically comply with managerial orders but retain the ability to question the logic or motives behind a particular action. In essence, this implies that subordinate driven employees are affected by their managers and the managers are affected by the subordinates, whereas authority driven employees are mainly affected by their superiors but the superiors are only mildly affected by the inputs generated by the subordinates.

Distinctive features of a highly ADEC are centralization of power, hierarchical and tall organizational pyramids, little questioning of authority, acceptance of inequality, diminutive levels of trust and a comparatively low qualification of the lower strata of employees. Contrarily, a low ADEC, or highly subordinate driven economic culture, is based on equal rights and a high level of cooperativeness, less centralization of power and flatter organizational pyramids, low levels of supervisions and a comparatively high qualification of the lower strata of employees.

The following EVS data have been utilized to measure the extent to which the sample countries are biased towards a highly ADEC or, conversely, biased towards a subordinate driven economic culture:

- The extent to which an increase in respect for authority would be viewed positively.
- The extent to which employees are free to make decisions at work without consulting with their managers.
- The extent to which a manager's orders must always be followed.

The EVS data provided a detailed, numerical breakdown of country biases within each dimension through 5 point Likert scaling, normalized agreement scaling and dichotomous responses that subsequently were successfully standardized into a ten point referencing scale by computing each dimension separately and setting its lower and upper boundaries equivalent to 0% and 100%, respectively. This was beneficial as it distributed equal weight to all five dimensions and, more importantly, maintained a uniform multivariate measuring standard that ensured fixed and accurate dimensional representation for each country's economic culture. Proceeding in this manner, the results indicate that Ger-

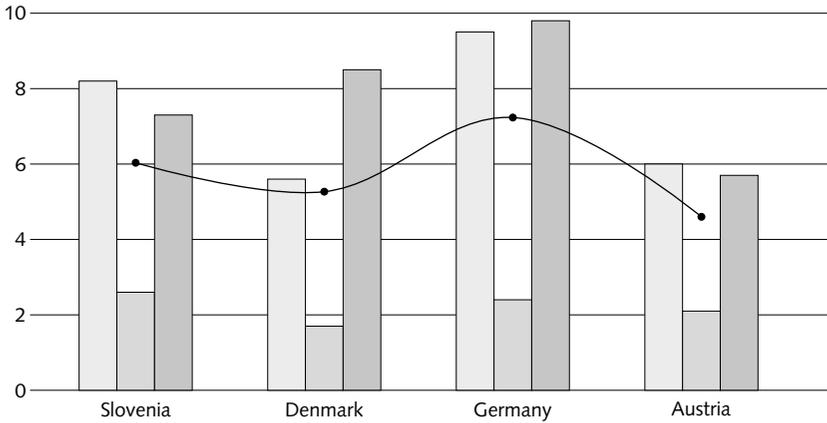


FIGURE 1 ADEC levels for the four sample countries  
 □ respect authority, □ no decision making freedom, □ always follow orders,  
 ●—● level of authority driven. Source: own creation based on composite EVS data.

many and Slovenia are the two most ADECs with scores of 7.23 and 6.03 respectively, while Denmark and Austria are the least ADECs, or most subordinate driven economic cultures, with scores of 5.27 and 4.60, respectively (see figure 1).

The second driver differentiates itself from the previous driver as it does not measure the extent to which there is a bias towards interpersonal trust opposed to institutional trust. The reasoning for this is that there may be a causal relationship between institutional trust and generalized trust in people, which implies that this driver cannot be measured along an interpersonal trust – institutional trust continuum as the two variables can be, and most likely are, interdependent. Consequently, a decrease in institutional trust would not necessarily induce an increase in interpersonal trust thus thwarting the ability to contest these two variables against each other. To overcome this predicament, the two variables are measured independently on a high–low spectrum to yield impartial results about employee receptiveness towards interpersonal and institutional inputs.

The driver components are based on Hardin’s (2002) and Levi’s (1996) findings on the levels of trust that may be sustained and fostered within certain institutions and within people. As such, it seeks to measure the amount of confidence employees retain towards their fellow employees and the magnitude of confidence allocated to institutions or systems.

Interpersonal trust is grounded in the experiences employees have with each other and the familiarity that has been built. However, employees high on interpersonal trust will extend this mindset to encompass trusting strangers, as well because the belief that people in general can be trusted is strong. Institutional trust is based on the theory that institutions provide reliable sources of input that are less likely to be tainted by individual motivations or perceptions which therefore increase its credibility and allow for deeper allocated levels of trust.

Interpersonal trust driven characteristics include having assurance and conviction along with high levels of confidence and loyalty in fellow employees. Institutional trust characteristics also bear remnants of high levels of assurance and confidence but are directed towards institutional sources that are less likely to be biased. To quantify the extent to which the sample countries rank high or low on institutional trust and interpersonal trust, one EVS statistic that directly measures the intensity of interpersonal confidence has been utilized and three EVS statistics have been applied to measure the intensity of institutional confidence in three different systems.

- The extent to which employees feel that other people can be trusted (interpersonal).
- The extent to which employees trust parliamentary systems (institutional).
- The extent to which employees trust the social security system (institutional).
- The extent to which employees trust the justice system (institutional).

The weighted scores, calculated in the same manner as the previous driver, expose that Denmark is the most IITDEC (6.93) followed by Austria (4.87) and Germany (4.25). Slovenia ranks as the least IITDEC (3.17; see figure 2).

### **The International HSR Management Perspective**

A further source of research helps explore the management aspects pertinent to this study. The rationale is to prepare the variances within the management aspects of decentralization and vertical knowledge flows (those occurring between headquarters and its subsidiaries) to be linked with variances in ADEC, and horizontal knowledge sharing (that which

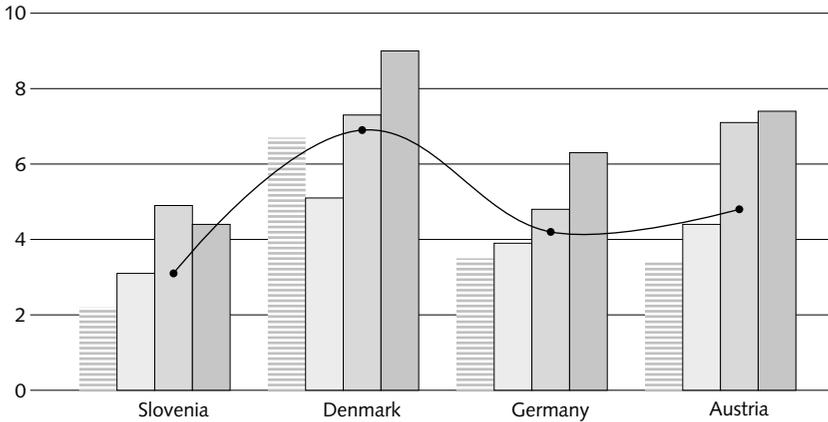


FIGURE 2 Interpersonal and institutional driven levels for the four sample countries  
 □ institutional – trust in parliament, □ institutional – trust in social security system, □ institutional – trust in justice system, ▨ interpersonal – trust in people, ●—● level of interpersonal and institutional trust. Source: own creation based on composite EVS data.

occurs between co-workers of similar status) and expatriate utilization to be linked with variances in IITDEC.

In relation to the EVS based ADEC scores, the German and, to a lesser extent, Slovenian MNC employees favour organizational structures that bear remnants of an authoritative nature; namely tall organizational pyramids, high levels of respect and reverence for their superiors and limited questioning of authority compared to their subordinate driven counterparts. Such a structure is aided through centralized and concentrated decision making conducted by a few select groups of managers who maintain focused overviews and thwart the ability and need for decision making to trickle down throughout the organization. In comparison, subordinate driven employees, in their extreme, respect managers, co-workers and subordinates equally and thus are likely to absorb inputs from local, host country environments as frequently as from the home country or headquarters; a trait generally conducive to decentralization. Hence, taking into account the focus countries' ADEC scores, a prediction towards higher levels of centralization in German and Slovenian MNCs emerges compared to Austrian and Danish MNCs.

*HYPOTHESIS 1A: German and Slovenian MNCs will be comparatively more centrally run with less authority and trust delegated downwards compared to Austrian and Danish MNCs that will be relatively more*

*decentralized as a result of the former countries having a comparatively higher ADEC than the latter countries.*

A key aspect of promoting knowledge flows within MNCs is to foster an environment of openness and support for cross-fertilization of ideas and implementation of best practices (Dowling and Welsch 2004). The obstacles to achieving this are manifold and relate mainly to cognitive (thinking, reasoning, remembering) and motivational challenges that inherently hamper key elements crucial in the empirical development of an integrated understanding of knowledge dissemination within the MNC (Mahnke and Pedersen 2004).

Consequently, the extent to which the cognitive and motivational challenges negatively impact vertical knowledge flows is dependent on the qualifications of the employees within the organization and the pro-knowledge sharing environment established among the co-workers. As previously established, the upper and especially lower strata of employees within subordinate driven economic cultures tend to be highly qualified and retain the ability to dispute managerial decisions while simultaneously harbouring a pro-knowledge sharing environment based on equal rights and a high level of cooperativeness between administrative levels. This positively impacts the extent to which organizational members can and will influence the actions and thoughts of their superiors. Thus, a prediction towards a positive relation in Austrian, and in part, Danish MNCs to foster two-way vertical knowledge flows (as a result of being subordinate driven) and a prediction in German and, in part, Slovenian MNCs to create one-way vertical knowledge flows (as a result of being authority driven).

*HYPOTHESIS 1B: Vertical knowledge flows in Austrian and, in part, Danish MNCs are predominantly two-way, from headquarters to the subsidiaries and vice versa, whereas German and, in part, Slovenian MNCs have comparatively greater extents of one-way knowledge flows from headquarters to the subsidiaries.*

The knowledge sharing disposition on a horizontal level is fundamentally a property of the composition of individualistic employee traits as individuals embody the behavioural rudiments associated with knowledge sharing. These inherent rudiments vary in accordance to interpersonal and institutional trust driven preferences and influence the deployment levels of tacit and explicit knowledge. Therefore, it is expected that organizational compositions of highly interpersonal trust driven

employees intrinsically maintain a tacit knowledge flow predisposition whereas institutionally driven employees sustain explicit knowledge inclinations. This prediction is based on the former involving higher levels of unconscious knowledge transfer that act as tacit knowledge breeding grounds and the latter being the result of repetitive and systematic knowledge transfers. However, since these two components are not mutually exclusive, it is conceivable to have simultaneous high levels of institutional and interpersonal trust driven employees in one organization and simultaneous low levels of institutional and interpersonal trust driven employees in another which would induce high and low levels of horizontal knowledge sharing, respectively as high levels of interpersonal and institutional trust act as knowledge sharing catalysts, albeit in two different forms.

*HYPOTHESIS 2A: Horizontal knowledge sharing will occur to a lesser extent in Slovenian MNCs compared to German, Austrian and especially Danish MNCs as a result of lower levels of IITDEC within the Slovenian MNCs.*

The interpersonal trust and institutional trust driven orientation of organizational employees refers to the predisposition of employees to bond and connect with co-workers and managers and the systematic results they produce. Consequently, it is assumed that organizational members high on both interpersonal and institutional trust will place considerably more confidence in the inputs that stem from their colleagues through either personal or systematic based communication than organizational members that are low on both. This will further manifest itself in the manner in which the headquarters tries to align its objectives with its subsidiaries' through its staffing policies; subsidiaries with highly IITDECs will have lesser levels of personalized headquarter participation, in the form of a low number of expatriates, compared to subsidiaries with low IITDECs which rely more on personalized headquarter participation. This is a result of the former being more prone to personally and institutionally trust their subsidiary colleagues, and do not feel it necessary to personally observe subsidiaries but rather trust the results they produce, whereas the latter feels that a high level of headquarter participation is necessary to compensate for low levels of institutional and interpersonal trust.

*HYPOTHESIS 2B: Slovenian MNCs will utilize a larger proportion of expatriates within their foreign subsidiaries to align goals of the entire*

*MNC as a result of having low levels of IITDEC compared to Danish MNCs that are highly interpersonally and institutionally trust driven.*

### **The Study**

The empirical data for the research was collected as part of a larger project researching a total of 4 economic cultural drivers and five management aspects. The data was extracted from 103 sources spread over 54 European subsidiaries that typified large (over 300 employees) and successful (over ten years of international operations with consecutive positive turnover and a five year averaged positive profitability rating) companies. Industry specific classifications were limited to the pharmaceutical and manufacturing industries with 40% of the MNCs being Slovenian, and the remaining 60% roughly equally distributed between the German, Austrian and Danish MNCs. The effects of unequal country representation in the sample data were discounted during the analysis and interpretation of the obtained results. Data collection was conducted through a uniquely constructed survey questionnaire that gathered descriptive data along a cross sectional representation of the focus countries' MNCs and specifically probed the intricacies of the HSR management perception and economic culture aspects.

The questions pertaining to decentralization probed subsidiary autonomy levels and subsidiary managers influence levels on the entire MNC. Questions related to vertical knowledge flows pivoted around the extent to which strategic information streamed vertically between headquarters and its subsidiaries and between subsidiaries and the headquarters. The respondents were also given the opportunity to directly express whether they felt knowledge was flowing one-way as opposed to two-ways within their organization. The questions linked to horizontal knowledge sharing focused on the extent to which sharing of knowledge occurred horizontally, between intra-co-worker and intra-manager environments. Finally, the questions concerning expatriate utilization explored the current number of home country nationals employed within the foreign subsidiaries. The respondents' answers to the questions were scaled against each other for ease of comparison.

In order to gauge the actual respondent's economic culture fit with the predictions of the EVs, the questionnaire first sought to identify how he or she valued certain characteristics pertinent to the economic culture drivers around which this study pivots. This was necessary as it verified that the underlying premises from which the hypotheses were made

were still valid. Succeeding questions probed the perceptions of the HSR along management dimensions within the realm of decentralization, expatriate utilization, horizontal knowledge sharing and vertical knowledge flows that the economic culture influences. The questionnaire consisted of multiple-choice closed-ended questions, five point Likert scale questions and normalized 10 point preference scaling questions. These facilitated point accumulation methods, which made it possible to compare stances on the different aspects of the HSR.

Two separate methods of empirical data analysis were utilized in order to validate the results. Spearman rank correlation tests were used to determine the direction and strength of the individual relationships between economic culture and the four HSR management aspects within each surveyed MNC, and standard linear correlation tests were used to directly quantify the association levels between economic culture and management without assigning rank values (as Spearman rank correlation tests do) but by using weighted averages. Together, they provide compared and direct correlation results, respectively.

Finally, in a survey of this nature that gauges soft values and perceptions among several countries, it is not rewarding to regard the data from each country on various subjects as the decisive truth – the data does not permit for such a degree of precision. It is the broad contrast between high and low scores that ultimately validates connections between economic culture and HSR management. Consequently, in situations where one or two of the survey countries were not polarized at an economic culture extreme, it was omitted from the standard linear correlation hypothesis testing as its economic culture score was too neutral to justify any predictions. The omitted country data is, however, considered anew during Spearman rank correlation tests and when attempting to build credibility to the trends emerging from the hypotheses.

### **Results and Analysis**

Results regarding the empirical fit of the respondents' economic culture with that of the EVS data revealed similar, although not identical, patterns. Most notably, the Danish respondents' economic culture pertaining to IITDEC dropped 4.6% from the EVS forecast whereas all other countries increased by an average of 13.6% (see figure 3). A further analogous reduction was apparent mainly as a result of Slovenia's empirical IITDEC score increasing compared to its EVS counterpart. Nevertheless, the country rankings are in complete accordance with the EVS as

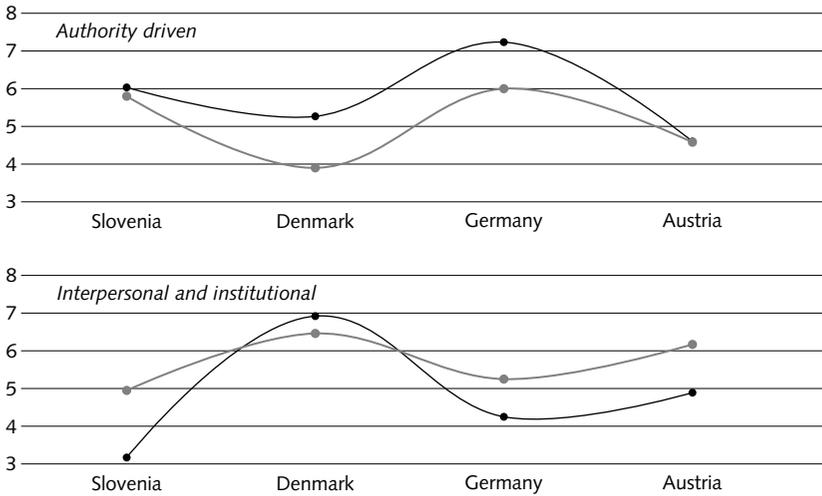


FIGURE 3 Comparison of ADEC and IITDEC stances of surveyed MNCs with EVS  
 ●—● EVS, ●—● empirical.

Denmark still ranks as being most interpersonal and institutional trust driven, followed by Austria, Germany and finally, Slovenia. Concerning ADEC, the Danish and German respondents scored as being considerably less authority driven, or more subordinate driven than the EVS indicated, while the Slovenian and Austrian ADEC scores were almost identical to the EVS. This divergence causes the Danish ADEC to fall from a neutral ranking to being least authority driven. These discrepancies are however minute and they do not distort the foundations on which the EVS based hypotheses are made.

Consequently, although the exact values of the empirical economic culture scores vary from the EVS predictions it is not to a detrimental extent, as the comparative standings are still remarkably similar. Here it is important to remember that it is not the exact values of each country's economic culture score that is of cardinal importance but rather their comparative standings, as only those validate the sought for HSR management connections. The slight alterations do therefore not have a significant bearing on the premises from which this study begins and the validity of the hypotheses remains intact.

Results relevant to hypothesis 1a confirm, albeit not pristinely, the theory. The Slovenian and German ADEC are ranked as being the most authority driven cultures, while united scoring lowest on organizational de-

centralization levels (ODL), and the Austrian ADEC, which scored lowest, ranked comparably higher on the decentralization scale (see table 1). For the standard linear correlation tests the Danish MNCs' results were omitted, as the country's neutral economic culture score did not allow for valid knowledge flow pattern predictions. Accordingly, the results of this test advocate that there is a negative correlation between ADEC and ODL. Furthermore, the Spearman rank correlation test reveals a strong negative correlation (0.566/.05) at a 95% confidence interval between the level of ADEC and the ODL.

Thus, the hypothesis is accepted although the results are not pristine. The German and Slovenian MNCs, when grouped together, score a lower decentralization score than the Austrian and Danish MNCs, as the hypothesis predicts. However, the fact that Slovenia is less authority driven from an economic culture perspective than Germany, yet has more centralized MNCs, foils any decisive conclusions to be made regarding direct linkages using the standard linear correlation test. Furthermore, the large variance spectrum displayed between the German and Austrian ADEC scores (2.63) is not reflected by an equally large variance fluctuation in ODL (0.808). This suggests that decentralization levels are not perfectly correlated to ADEC levels as the large ADEC decrease is mirrored only by a small ODL increase. Consequently, it appears that there is a tendency for high levels of ADEC to be accompanied by low levels of decentralization, or high levels of centralization, although it is not a precise relationship.

The empirical economic culture results for all four countries may provide an understanding of the origins of the small abnormalities from the otherwise overall negative relationship. The empirical ADEC score for the surveyed Danish MNCs was substantially lower (3.90) than its EVS equivalent and is in fact the lowest ADEC ranking of both the empirical and EVS findings. It is possible that the surveyed Danish subsidiaries strayed from the forecasted EVS predictions resulting in an artificially high ADEC score for the Danish MNCs. If this is the case, the corresponding ODL score displays a perfect positive correlation in accordance with the hypothesis; Denmark's low empirical ADEC score corresponds faultlessly to high ODLs. Similarly, the discrepancy in the German and Slovenian correlation, which contradicts the general trend, is minimized through the empirical economic culture data. The EVS economic culture data has the two aforementioned countries' economic culture scores separated by more than a full point (1.20), a substantial division considering their respective ODL scores that oppose the direction of the general correlation

displayed by the overall country and MNC data. However, this divide is significantly lessened in the empirical ADEC scores (0.17). The empirically small ADEC divide radically condenses the irrationality of the reverse correlation between these two country factors and helps explain how the surveyed German MNCs display a higher ODC score than the surveyed Slovenian MNCs. This still does not align the German and Slovenian country data with the direction of the hypothesis correlation but it does provide counter argumentation for the observed EVS correlation contradiction.

Results regarding hypothesis 1b act in accordance with the theory. All countries' MNCs ranked as having a predominant use of two-way vertical knowledge flows between headquarters and its subsidiaries (all MNCs averaged above-mean score of 5: Germany: 5.21, Slovenia: 6.39, Austria: 6.5, Denmark: 7.46). Again, for the standard linear correlation tests the Danish MNCs' results were omitted, as the country's neutral economic culture score did not allow for valid knowledge flow pattern predictions. Testing the three remaining countries' MNCs reveal a direct negative linear correlation between scoring as highly authority driven and having comparatively lower levels of two-way vertical knowledge flows than the highly subordinate driven MNCs (see table 1). The negative relationship is most apparent and precise through the German and Slovenian compounded ADEC scores and corresponding amalgamated two-way vertical knowledge flow scores. The 1.20 composite downward drop in the German to the Slovenian ADEC score is almost identically inversely represented with a 1.17 knowledge flow increase. The linearity of this precise relationship is however not equally reflected by the fused Austrian ADEC results. Here the 2.63 ADEC decrease between the German and Austrian scores is only marginally represented with a composite 1.286 increase in knowledge flows. Nevertheless, the sought for negative relationship between these two variables is ascertained as all three countries' ADEC scores and HSR two-way vertical knowledge flow scores display a habit of dependency, albeit to varying extents.

The Spearman rank correlation test reveals a weak negative correlation ( $-0.38/.05$ ) between the level of ADEC and two-way knowledge flow levels tested at a 95% confidence interval for all the countries' MNCs. Accordingly, the hypothesis is confirmed as there does appear to be an association between high levels of subordinate driven preferences and greater inducement of vertical two-way knowledge flow. This suggests that the more autonomy an employee feels she is empowered with, the more

TABLE 1 Authority driven levels in relation to decentralization and knowledge flows

	(1)	(2)	(3)
Germany	7.23 (6,04)	3,573	5,214
Slovenia	6.03 (5,87)	3,189	6,384
Denmark – omitted	5.24 (3,90)	6,388 – omitted	7,458 – omitted
Austria	4.6 (4,58)	4,381	6,5

NOTE Column headings are as follows: (1) authority driven; (2) level of decentralization; (3) level of two way knowledge flows. Results in brackets represent the empirical equivalent.

likely she is to relay knowledge back in the direction of the headquarters. Hence, where MNCs with a high ADEC might have a high amount of *information* flowing from the subsidiaries to the headquarters, it appears that MNCs with a high subordinate driven economic culture have a high amount of *knowledge* transmitted back to the headquarters. The empirical economic culture outcomes lend further support to this negative correlation. The slight variations in the empirically obtained ADEC results, compared to the EVS ADEC results, yield an unflawed linear correlation; incremental increases in empirical ADEC scores correspond perfectly to incremental decreases in two-way vertical knowledge flow scores.

Results regarding hypothesis 2a provide strong, unanimous support for the theory. The standard linear correlation test reveals a direct, although not perfectly uniform, correlation between high IITDEC with high levels of horizontal knowledge sharing; as IITDEC levels rise for the sample countries there is an associated rise in horizontal knowledge sharing (see table 2). However, the respective upsurges and reductions in IITDEC and horizontal knowledge sharing are not proportionately distributed in relation to each other. This is most apparent with the Danish and Austrian economic culture and MNC data. The Danish IITDEC ranks more than a full point ahead of the Austrian economic culture, yet the horizontal knowledge sharing levels are almost identical, with the exception that the Danish MNC levels just out-edge the Austrian MNC’s knowledge sharing levels by a fraction. Thus, the large gap in economic culture between these two countries is not represented with an equally large gap in horizontal knowledge sharing levels. Furthermore, low IITDECs are accompanied by lesser, but not low, levels of horizontal knowledge sharing. For this realization it is noteworthy to recognize that all countries’ MNCs scored a horizontal knowledge sharing grade above 5 and, as such,

are all considered fairly knowledge sharing prone. Consequently, Slovenia's very low level of IITDEC (3.17) is not reflected in a very low horizontal knowledge sharing score but in actually a fairly high horizontal knowledge sharing score (6.19).

Furthermore, the Spearman rank correlation test revealed a strong positive correlation (0.69/.05) between IITDEC levels and horizontal knowledge sharing tested at a 95% confidence interval for all the countries' MNCs. Together, the standard linear correlation tests and the Spearman rank correlation tests advocate that there is a direct correlation (although not perfectly linear) between high levels of interpersonal and institutional trust driven employees and their proneness to share knowledge with their colleagues, which implies that the qualities an individual with high interpersonal and institutional trust driven tendencies has promote knowledge sharing within an organization.

Results regarding hypothesis 2b provide support, although weak, for the theory. As the intensity of IITDEC increases, expatriate utilization decreases (see table 2). The Spearman rank correlation test reveals a negative correlation (-0.224/.05) between IITDEC and expatriate utilization as the hypothesis predicted. However, the negative correlation is too weak to pass the 95% critical confidence interval ( $r = -0.224 > -0.41 =$  critical negative value). Thus, the Spearman rank correlation test does display the sought for negative relation between IITDEC and expatriate utilization, albeit at an insignificant intensity level.

The standard linear correlation test reveals a direct, although not perfectly uniform, relationship between high levels of IITDEC and low expatriate utilization levels; as IITDEC levels drop, there is a corresponding increase in expatriate utilization. Slovenia, ranking lowest with regards to IITDEC, utilizes the highest number of expatriates with an average of 1.69% expatriate utilization per foreign subsidiary whereas Denmark, ranking highest with regards to IITDEC, utilizes the lowest average number of expatriates with an average of 0.73% expatriate utilization per foreign subsidiary. The German and Austrian MNC and economic culture data go in exact accordance with the negative relationship between interpersonal and institutional trust and utilization of expatriates. However, although the strength of the correlation is strong using the standard linear correlation test, the difference in expatriate usage between the Danish foreign subsidiaries and the Slovenian foreign subsidiaries, which are at opposite extremes, is only 0.96 percentage points per subsidiary. Had the proportional differences been greater, it would have provided further

TABLE 2 IITDEC in relation to horizontal knowledge sharing levels and expatriate utilization

	(1)	(2)	(3)
Germany	4.25 (5.25)	7.406	1.45%
Austria	4.87 (6.18)	8.550	1.14%
Slovenia	3.17 (4.95)	6.190	1.69%
Denmark	6.93 (6.47)	8.595	0.73%

NOTE Column headings are as follows: (1) IITDEC; (2) horizontal knowledge sharing; (3) average expatriate utilization per subsidiary. Results in brackets represent the empirical equivalent.

strength to the correlation and provided auxiliary validation to the negative relationship.

The empirical economic culture data conforms to the EVS IITDEC findings and displays proportionately decreasing levels of expatriate utilization with increasing IITDEC scores. In large, this strengthens the proposed weak link that the standard linear correlation tests supports. A surprising revelation of the survey was that a vast amount of the surveyed subsidiaries across all four countries employed zero or only a singular expatriate at the foreign subsidiary. For the Slovenian subsidiaries, in order to correspond to the low IITDEC score, a much high number of expatriates was expected. Although the Slovenian composite expatriate score was comparatively higher than the three other focus countries' MNCs, as the hypothesis predicted, it does not fully harmonize with the underpinning logic that low IITDEC will be compensated for with high expatriate utilization in order to ensure trust and alignment of headquarters objectives. However, it would be inappropriate to discredit the negative IITDEC – expatriate utilization correlation as there does seem to be a connecting factor, but, simultaneously, it is also clear that the sought for correlation is not as powerful as the theoretical findings predicted and thus it is conceivable that other factors are likely to have an inductive persuasion on the relationship.

For international HSR management, these findings have multiple ramifications. The strong evidence of an ADEC to induce centralization infers that ADEC prone MNCs are at risk of being deprived of decentralization benefits which can promote entrepreneurial skills and attitudes that can otherwise be difficult to reproduce at the subsidiary management level, which, in turn, can lead to subsidiary stagnation and prevent the subsidiary from moving forward in developing its own success

pillars. However, it must simultaneously be respected that the reverse is equally true; MNCs with low ADECS may be managed under exaggerated decentralized operations that inadvertently thwart scale operations and decreases cost advantages. The extremity of both scenarios would seldom be the result solely of an ADEC influence, however the inherent ADEC predilection within an MNC certainly can influence where the MNC structure ultimately ends up on the decentralization–centralization spectrum. In further accordance, the negative ADEC – two-way vertical knowledge flow correlation suggests that MNC managers within highly ADEC entities should be aware that knowledge flows may unwittingly be hindered within the organization and installing measures that boost knowledge flow levels, if deemed of interest to the MNC, are warranted. As such, the speed and efficiency with which valuable knowledge can be vertically transmitted and understood by the receiving partner, be it headquarters or subsidiaries, can be maintained and overall detriment to the MNC – in the form of knowledge losses – can be minimized.

The positive IITDEC – horizontal knowledge sharing correlation equally provides insight into optimizing international HSR management for MNC managers. MNCs endowed with a high IITDEC appear to be better suited to overcome motivational and cognitive horizontal knowledge sharing barriers that pre-empt the effective reuse of organizational knowledge. Therefore, managers from MNCs with a low IITDEC should be aware that the sought for level of knowledge-sharing is contingent on the inherent human traits that impact the learning intent and learning capacity of the organization's employees. In the same vein, MNC managers' utilization of expatriates appears, at least to a small extent, to be dependent on MNC IITDEC levels. Low IITDEC levels within the MNC can induce a greater utilization of expatriates as a suitable conduit for relaying strategic objectives, and thus compensate for low levels of interpersonal and institutional trust at the subsidiary level. For MNCs operating with a high IITDEC the need for this is alleviated and MNC managers should remain aware that trust and alignment of headquarters' objectives can be achieved through far more cost efficient methods than expatriation.

### **Conclusion**

The results of this study provide further nourishment for researchers and practitioners who subscribe to the notion that national management models do persist in Europe (see also Klarsfeld and Mabey 2004) and

that HSR management is influenced, in multiple ways, by variances in economic cultures. Although the results of this research do not provide indications that CEECs' and westernized European countries' economic cultures and HSR management are continuously at opposing poles, it does imply that the Slovenian economic culture and HSR management in relation to decentralization, two-way vertical knowledge flows, horizontal knowledge sharing and expatriate utilization substantially differ, in some ways, to the three elder EU members also included in this survey. This could further complicate the manner in which Slovenian EU integration occurs, and also the management methodology through which Slovenian MNCs can reap economic gains through the common market. In an attempt to further divulge complications that can arise from this, the current article has depicted two dimensions through which economic culture can vary and impact international management in different ways.

Specifically, the study shows that there are some direct linkages between ADEC and IITDEC on decentralization, vertical knowledge flows, horizontal knowledge sharing and expatriate utilization within the HSR of a MNC. Evidence, although not pristine, was found that highly ADECs are more likely to be prone to centralized MNC structures and lesser vertical knowledge flows compared to highly subordinate driven economic cultures. Further evidence was found that expatriate utilization is negatively correlated, although only by a weak margin, to highly IITDECs. However, a very strong positive correlation was detected between horizontal knowledge sharing and highly IITDECs; high levels of interpersonal and institutional trust driven preferences induce more horizontal knowledge sharing.

The purpose of this research is not to suggest an alignment of economic cultures across the EU in order to ease international HSR management variations. In fact, it is the author's strong conviction that economic cultural variances, rather than being interpreted as a source of international conflict and managerial disagreement, should be utilized as a managerial asset that can be converted into a resource for underpinning managerial and MNC core competencies. In purely Ricardian terms, tapping in to differing natural endowments has been the logical foundation from which comparative advantages have been justified for many years. The leap from this commonly accepted thought line to gaining comparative advantages through differing economic cultural endowments is small. Differing economic cultures harbour inherent organizational benefits which, when managed correctly, provide an MNC with a compara-

tive advantage. For MNCs wanting to obtain a comparative advantage that is not directly ascertainable through its own economic culture, internationally merging of the MNC with employees of a foreign economic culture that harbours the inherent sought for managerial advantage can be an integral part of achieving such a comparative advantage and bettering the overall construct of the MNC.

### Notes

- 1 The European Values Study is a large-scale, cross-national and longitudinal survey of moral, religious, political and social values. The survey was designed to investigate the nature and inter-relationship of value systems, their degree of homogeneity, and the extent to which they are subject to change across time.

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# *Cultural Diversity, Competencies and Behaviour: Workforce Adaptation of Minorities*

Waheeda Lillevik

The increasing mobility of people around the world has resulted in an increasingly culturally diverse workforce, particularly in Canada, where multiculturalism is embraced and government policies are enforced in order to ensure that the Canadian workforce is representative of its population in terms of race and ethnicity. However, there are still differences in employment conditions between minorities and non-minorities in Canada. Many organizations use competency modeling as a basis for employment decisions, particularly for managerial jobs, and some of the behaviours outlined in competency models can be linked to what has been identified as organizational citizenship behaviours (OCB). This use of competencies (and thus possibly OCBs) may be a contributor to the employment gap in Canada. Acculturation as a way to mitigate this gap is also discussed. More research in these areas needs to be done to bridge the gap between practice and theory.

*Key Words:* cultural diversity, acculturation, competency, OCB

*JEL Classification:* J61, J71

## **Introduction**

Organizations are continuously seeking improved ways of selecting the 'best' people for a particular job or organization. Particularly in Canada, this activity has become a very complex task, as firms must make attempts to ensure that all people are given fair and equitable treatment, especially concerning the functions of selection, development, and performance appraisal. With the increased number of people from other countries entering the Canadian workforce, there is added emphasis on non-exclusionary and anti-discriminatory policies and procedures within the realm of diversity management. Two of the most important trends of the past decade are a continuously growing diverse workforce, and increased competition for businesses resulting from the globalization of markets (Jain and Verma 1996). The increased emphasis on the global corporation and the growing number of mergers and acquisitions of companies

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all over the world in all industries, requires an understanding and appreciation of a diverse set of cultures (Terrisse 2001).

In Canada, companies which are considered to be crown (or government-controlled) corporations or which fall under federal jurisdiction employing over 100 employees, such as banks, telecommunications companies, and airline and railway companies, must comply with Employment Equity legislation (Taggar, Jain, and Gunderson 1997). This legislation also covers the federal public sector (Employment Equity Act of 1995). Employment Equity attempts to eliminate systemic barriers to employment in the workplace, which may adversely impact four designated groups: women, visible minorities, Aboriginal people and people with disabilities (Employment Equity Act of 1995). All of these trends and issues place increased pressure on firms to create human resources policies and programs that avert discrimination against individuals on non-work related aspects with respect to the various functions within human resource management, particularly selection and performance appraisal. While legislation has managed to guide such policies and programs, there are still perhaps uncharted ways that individuals are being assessed and evaluated in organizations that are not caught through these formal procedures.

### **The Canadian Population**

Recent statistics derived from the 2001 Canadian census data tabulated and summarized by Statistics Canada, demonstrate the substantial diversity in the Canadian population today. Consider the following facts (Statistics Canada 2003d):

- the proportion of those who were born outside of Canada (18.4%) has reached its highest level in 70 years (a fact that is also shared with the United States),
- over half of the immigrants to Canada are from Asia (58%),
- 77% of the immigrants who entered Canada from 1991–2001 are from countries other than European nations and the United States.

The largest proportion of immigrants during the 1990's came from China, followed by India, the Philippines, Hong Kong, Sri Lanka and Pakistan (Statistics Canada 2003a).

The figures above essentially represent only the immigrant population over the previous decade; this does not account for first-generation, second-generation, or later generations of immigrant populations. Since

1901, Canada has seen 13.4 million immigrants enter the country, resulting in several generations of citizens who are not of Canadian-, English- or French-born backgrounds. As of 2006, the Canadian population stands at around 32.5 million people (see [www.statcan.ca](http://www.statcan.ca)).

The visible minority population in Canada has tripled over the past two decades, with a presence of nearly 4 million inhabitants (13.4% of total population) in Canada in 2001 (Statistics Canada 2003a). Visible minorities are defined as ‘... persons, other than aboriginal peoples, who are non Caucasian in race or non white in colour’ (Employment Equity Act of 1995). This section of the population is growing at a faster rate than the total Canadian population overall, largely as a result of more immigrants coming from non-European countries than ever before. At this rate of growth, it is anticipated that by 2016, visible minorities will comprise 20% of the population (Statistics Canada 2003a). Thirty percent of the visible minorities are Canadian-born (Statistics Canada 2003a), which indicates that there are many individuals in Canada who are second- and third-generation descendants of immigrants. A related concept, ethnic origin, can also describe the Canadian population. Ethnic origin refers to the ‘ethnic or cultural group(s) to which an individual’s ancestors [belong]’, and over 200 different ethnic origins were reported among Canadians in 2001 (Statistics Canada 2003a).

#### IMPLICATIONS FOR THE LABOUR FORCE

Nearly half (46%) of all immigrants arriving in Canada during the previous decade ranged between 25 to 44 years of age, indicating that they are of working age (Statistics Canada 2003a). Immigrants to Canada have been a central part of labour force growth and development, particularly over the past ten years. Nearly 70% of the labour force growth over the past decade was accounted for by immigrants who arrived in Canada during the 1990’s and who reported themselves as being in the labour force at the time of the 2001 census (Statistics Canada 2003d). In terms of numbers, over 3 million people in the labour force (one-fifth) were born outside of Canada (Statistics Canada 2003d). In fact, Statistics Canada projects that if immigration continues at these rates, by 2011 immigration could conceivably account for nearly all of the labour force growth in this country (Statistics Canada 2003d). This is a very likely scenario, as the average age of the workforce is continuing to increase, while at the same time, lowered fertility rates in Canada over the past few decades have resulted in fewer young people entering the labour force (Statistics

Canada 2003d). Thus, Canada will have to become even more dependent on immigration to fill the expected skill shortages in various occupations, and this will produce an even more diverse labour force than the one we currently have.

The above descriptions of the Canadian population and their labour force implications illustrate the need for understanding and appreciating differences among individuals, particularly in the workplace. As the North American (and particularly the Canadian) population becomes increasingly diverse (Jain and Verma 1996), the labour market will, too, be comprised of an increasingly diverse group of people. Immigration policies have encouraged people of other nations to live and work in Canada, and over the years many immigrants have stayed and built families here, which means that some Canadians may experience a level of acculturation over the years that they reside in the country. Acculturation can be described as multidimensional, mainly focusing on the learning of cultural traits of the host/dominant culture by the minority or immigrant group (Kim, Laroche, and Tomiuk 2001).

#### THE CONTINUING EMPLOYMENT GAP BETWEEN IMMIGRANT AND CANADIAN-BORN LABOUR FORCE PARTICIPANTS

Despite the fact that there is a considerable amount of immigrants who reside and work in Canada, finding suitable employment has not been easy for this group, for a variety of reasons. There is a continuing gap in the employment rates and conditions between recent immigrants and Canadian-born persons, which has actually worsened over the past couple of decades (Statistics Canada 2003d). This gap peaked in 1996, when the differential between Canadian-born labour force participants aged 25–44 years of age (78.4%) and recent immigrant labour force participants from the same age category (61%) was 17.4%. This marginally improved over the subsequent five years, with a current gap of 16% between the two groups (Statistics Canada 2003d).

However, there have been some gains made by immigrants who have lived in Canada for a period of time. For those immigrants who arrived over a decade ago, the labour market conditions did improve; their employment rate experienced a 20% increase over that period (Statistics Canada 2003d), indicating that as immigrants continue to live in Canada, they tend to become more integrated into the labour market, which may be due in part to the acculturation process they experience during their tenure in Canada. However, it must be noted that by 2001, there was still

a gap of 7.5 percentage points between these immigrants and their counterparts who were born in the country (Statistics Canada 2003d). This still illustrates some level of inequality in the labour force between immigrant groups in general and workers who are born in Canada, with respect to labour market conditions. Considering the fact that Canada's immigration policy tends to favour entry to immigrants who are better educated and possess more skills (Statistics Canada 2003c and 2003d), there is little justification for the employment gap that exists between these two groups.

Recent Statistics Canada data indicate that immigrants to Canada contributed greatly to the educational profile of the labour force (Statistics Canada 2003c). More than 60% of the immigrants who entered Canada during the past decade possessed qualifications above secondary school (Statistics Canada 2003c), two-thirds of whom were trained at the university level (Statistics Canada 2003b; 2003c). This is higher than the percentage of the working-age population in Canada overall who have educational attainments above the high school level (53.4%) (Statistics Canada 2003c). Considerable proportions of immigrant males (43%) and females (26%) had post-secondary level schooling in technology-related and business-related fields of study in 2001 (Statistics Canada 2003c). This indicates that immigrants should be able to participate in those jobs that pay considerably well.

In Canada, the individuals who made the largest gains in earnings were those who had higher levels of education and increased work experience (Statistics Canada 2003b). This factor has influenced the gap in pay between immigrants and non-immigrants in Canada's labour force, but more dramatically than it should have. Recent immigrants' annual earnings are poor in comparison; recent male immigrants made about 63 cents for each dollar earned by Canadian-born males. The figure for recent female immigrants was 66 cents (Statistics Canada 2000b). In almost every occupational category listed in the census data, non-immigrants made more money than immigrants. Looking at skilled positions, for male immigrants, senior managers in the financial and business sectors earned just over half of what their Canadian-born peers made. For both male and female immigrants, both sexes earned less in all business and technology-related fields than non-immigrants (Statistics Canada 2000b), despite the fact that many of these immigrants had high educational levels, as discussed previously. There is some improvement in earnings for those who immigrated to Canada several years ago; there

is a steady increase in average salary for every year that an immigrant stays in Canada. This increase in salary may be due again, in part, to the acculturation that is experienced over the tenure in Canada. However, a non-immigrant male worker with a university education still earned nearly 40% more than his immigrant male counterpart living in Canada for ten years (Statistics Canada 2003b). While job tenure likely does account for this differential in wages, again, the gap should not be so high given that considerable proportions of immigrants to the country are highly skilled. The patterns for university-educated female immigrants as compared to their Canadian-born counterparts are the same, but the gap is smaller, with non-immigrants earning over 25% more than female immigrants living in Canada for 10 years (Statistics Canada 2003b).

#### HOW CAN THE DIFFERENCES IN WORKING CONDITIONS BE EXPLAINED?

Certainly there are a variety of reasons that can contribute to the explanation of the employment gaps identified above, including investments in human capital, tenure, socio-economic explanations, political reasons, etc. However, this paper seeks to identify another possible area that could contribute to why minorities do not occupy more lucrative positions. The promise of a better life with an enhanced quality of work life is an attractive proposition for people from other countries where the standard of living is not as high as the one experienced in this country. Many individuals seek to gain entry into Canada by accumulating educational and professional credentials, since such attributes increase one's chances of success of becoming a landed immigrant in Canada. However, the types of jobs these people find once they are granted entry into the country vary greatly, even with these particular qualifications. Many of the educated immigrants worked in lower-skilled jobs over the last decade as well as in high-skilled jobs. Higher proportions of university-educated immigrant males worked in various low-skilled occupations, such as taxi and limousine drivers, restaurant and food service employees, and janitorial workers, than educated non-immigrant males; for educated female immigrants, many worked as nannies or babysitters, housekeepers/homemakers, cleaners, and in kitchen helper positions (Statistics Canada 2003b). Conversely, fewer immigrants worked in higher paying managerial jobs, such as sales and marketing managers and senior managers in the financial and communications sectors, than Canadian-born workers. In nearly all cases, when compared to their

Canadian-born university-trained counterparts, recent immigrants had lower average earnings per year (Statistics Canada 2003b). From these figures it appears that, even with similar qualifications, immigrants are not getting the chance to attain the same levels of pay and status as those who are born in Canada, particularly when it comes to managerial-type positions. Managerial level positions often rely less on objective job descriptions and more on subjective, 'soft' skills – perhaps this is one reason for the discrepancies noted above.

While this discussion here relies on the employment situation in Canada for various minority groups, the patterns here are not only a Canadian phenomenon; there are significant employment gaps between blacks and whites in the US (Fairlie and Sundstrom 1999), and the Netherlands are facing increasing unemployment rates of ethnic minorities (Ashkanasy, Hartel, and Daus 2002). It is important to realize that the increased mobility of people and workers will be a concern for human resource practitioners and researchers in North America, and will also likely be important for other industrialized countries around the world as well, particularly with respect to human resources practices and policies.

### **Competencies in the Organization**

Very little has been written in academic journals about the use of competencies in the workplace (Maurer et al. 2003), and in fact there has been little attention paid to work competencies within industrial-organizational psychology (Nikolaou and Robertson 2001). Edward Lawler III (1994) wrote an exploratory paper over a decade ago outlining the apparent shift from the focus on jobs in the workplace to the new alternative of the 'competency-based organization'. The bulk of the research and literature development in the areas of human resource management, organizational behaviour, and their related fields and sub-fields still tends to hold the assumption that jobs are the 'basic building blocks' of organizations. This assumption has become fundamental to human resource management (HRM); the job paradigm appears to be the unifying concept for a number of human resource (HR) areas, starting with job analysis and job descriptions, which serve as the starting point for training, selection and compensation, in addition to other HR functions (Lawler III 1994). The origins of the job-based approach to human resource management can be traced back to scientific management and the work of Frederick Taylor (Lawler III 1994). The future

of this approach, however, appears to be looking less promising, as the mass production economy (upon which the job-based approach is established) is diminishing, and is being replaced by a global economy, augmented by continuous development and innovation in technology and process improvements (Lawler 1994).

Competency development is an area which seems to have advanced much further in practice than in theory (Maurer et al. 2003; Mirabile 1997). Examples of the development and use of competencies for selection, development, performance appraisal, etc. can be seen in various organizations (Tien, Ven, and Chou 2003; Warech 2002). The use of competencies has quickly become a 'hot topic' (Mirabile 1997), and it has also become prominent in other related disciplines; in many countries, for example, competencies are used to train doctors and assess their performance in the United States, Australia, New Zealand and the United Kingdom (Leung 2002). Reasons cited for the heightened use of competencies include the recessionary times of the 1980's and the subsequent development of strategies that were aligned with globalization of business during the following decade (Nikolaou and Robertson 2001; Sparrow and Bognanno 1993). As a result, then, many of the desired employee behaviours became job requirements, particularly for selection (Nikolaou and Robertson 2001).

The emphasis on competencies in the workplace has implications for the way that work is currently designed in organizations. Lawler (1994) posits that the fundamental building block in organizations should be the individual, not the job, in order to match the current trend towards competency-based organizations. This in itself raises numerous research issues around how employees and job candidates must equip themselves to participate in firms that employ this perspective of work organization (Lawler 1994). This trend towards the widespread use of 'competency modeling' has caused much confusion among HR researchers as well as practitioners (Shippmann et al. 2000). The widespread use of competencies for a variety of human resource functions causes particular concern as there seems to be no universal definition or even common understanding of what competencies truly represent (Grzeda 2005; Stuart and Lindsay 1997). In addition, though organizations play a key role for competence development, organizations in fact tend to suppress, impede or fail to develop individuals' abilities to display such competence (Jurie 2000). Since it is not discussed widely in the academic literature, the little research that does exist describes com-

petencies as being cognitive, learned and behavioural in nature (Mirabile 1997; Tien et al. 2003; Weinert 1999). Some definitions include motives, values and beliefs (Mirabile 1997). The competency modeling approach can identify knowledge, skills and abilities that are core to an occupational group, a level of jobs in a firm, or the entire organization; this differs from job analysis, which is more focused on individual jobs, and is using that information to select and assess individuals for those particular positions (Shippmann et al. 2000). This competency-based method appears to be one way that organizations are attempting to deal with the diminishing usefulness of the job-based approach to performance management that Lawler III (1994) discussed almost ten years ago.

As a result of the lack of consensus as to a precise definition of 'competency', there are numerous examples of competencies that are employed in firms worldwide. A study published by the American Department of Labor and the American Society for Training and Development revealed the main competencies that American employers found desirable in workers; they included skills such as adaptability, personal development, group effectiveness and influential skills. In 1991, the Secretary's Commission on Achieving Necessary Skills found that interpersonal skills such as helping others to learn, serving customers, and participation were key workplace competencies that were deemed as essential skills to be learned (Tien et al. 2003). Other common skills identified include independent thinking (initiative), communication and sharing information, teamwork and cooperation, organizational commitment, building relationships and problem solving (Getting managers to lead safety 2002; Tien et al. 2003; Warech 2002). Some researchers and practitioners consider competencies to be 'soft skills' (Hogg 1993; Hunt 2002). Many of these 'soft skills' are skills that are characteristic of higher-paying, managerial types of jobs; the types of jobs to which many minority groups appear to have limited access.

The important issue in this paper is to understand that this tool is becoming widely advocated by firms and organizational consultants, and is used and implemented by a variety of organizations. But the scant literature that investigates or discusses competencies varies widely, and in fact conceptual ambiguity underlies the entire area of competency development and use (Grzeda 2005). What is interesting to note, however, are the similarities between many of the competencies identified by organizations and various aspects of organizational citizenship behaviours. These similarities have not been explored in the literature; it is extremely

important to see that while organizations may not explicitly demand organizational citizenship behaviours within their firms, they may be indirectly requiring such behaviours of their employees through the utilization of competencies and competency models.

### **Organizational Citizenship Behaviours**

Job performance has been a rather elusive construct to define in the industrial and organizational psychology literature, despite the centrality of it to management research. While there has been considerable discussion of the 'criterion problem' (or the problem of pinning down, identifying and measuring the most accurate criterion that represented 'job performance'; Austin and Villanova 1992), little of the research explicitly outlined a definition for job performance. Campbell, Gasser and Oswald (1996) have contended that performance measurement should be aimed at studying behaviour rather than the outcomes; in fact they consider the two terms synonymous with one another (Campbell, Gasser, and Oswald 1996). Motowidlo, Borman, and Schmit (1997) argue that job performance should be measured through behaviours rather than outcomes or results, for two reasons: extraneous factors to employee behaviours can affect results, and psychological applications can be used to predict such behaviours (Motowidlo, Borman, and Schmit 1997). In addition, researchers have also suggested and confirmed that job performance is a multidimensional construct (Austin and Villanova 1992; Borman and Motowidlo 1993; Campbell, Gasser, and Oswald 1996; Motowidlo and Van Scotter 1994)

It has thus been proposed that the criterion domain of job performance contains elements of performance that incorporate behaviours, particularly those that extend beyond the critical actions necessary to accomplish a variety of job activities (Borman and Motowidlo 1993; Campbell, Gasser and Oswald 1996; George 1990; George 1991; Motowidlo, Borman and Schmit 1997). However, time and time again the personnel literature has emphasized task performance as the sole criterion to be assessed, without taking into consideration the behaviours that are outside of that realm (Borman and Motowidlo 1993). Organizational citizenship behaviours (Bateman and Organ 1983) have been defined by Organ (1988) as discretionary behaviours that promote the effective functioning of the organization. According to this definition, such behaviours are not enforceable requirements of the job, and therefore job incumbents cannot be punished if such behaviours are not exhibited (Organ 1988). While in theory this tenet of OCBS may hold true, in practice, assisted

by the recent popularity of competency modeling, oCBs are being demanded more and more on the job. The distinction between in-role and extra-role behaviours is becoming blurred (Podsakoff et al. 2000).

Over the past twenty years, the study of organizational citizenship behaviours (oCB) has become one of the most widely examined areas in the industrial-organizational psychology and personnel literature (Borman and Penner 2001; Haworth and Levy 2001; Podsakoff and MacKenzie 1997; Van Dyne, Graham, and Dienesch 1994), with a particularly strong focus on attempting to identify the various antecedents of oCBs (Betencourt, Gwinner, and Meuter 2001; Rioux and Penner 2001; LePine, Erez and Johnson 2002; Podsakoff and MacKenzie 1997). The great interest in the topic has stemmed from a belief that organizational effectiveness can be improved through such behaviours; indeed, this has been demonstrated empirically (Podsakoff and MacKenzie 1997). Thus, in this paper, it is proposed that because oCBs are becoming a perceived requirement for a number of jobs by various employers, it is important to identify what impact these oCBs may have on the employment situation of Canadians with diverse cultural backgrounds in the workplace. It is also important to identify the antecedents that lead to various types of oCBs.

In the comprehensive review of organizational citizenship behaviours, Podsakoff et al.'s (2000), the authors identified seven common themes among the various models of citizenship behaviour: helping behaviour, sportsmanship, organizational loyalty, organizational compliance, initiative, civic virtue, and self development (Podsakoff et al. 2000). Many of these organizational citizenship behaviours, such as altruism, loyalty, and helping behaviours, can be linked to many of the competencies that organizations currently use to select, train, and appraise individuals. The 'overlap' in the oCB literature and the use of competencies in practice certainly raises a serious need to examine these two concepts. In fact, one study that looked at both oCB dimensions and competencies as predictors of job performance had also revealed statistically significant positive correlations between each of the oCB factors and competencies as well (Nikolaou and Robertson 2001). oCBs are often studied in organizations but are not usually mapped on the existing formal mechanisms for behavioural assessment in firms for research purposes.

### **Diversity Management and Acculturation**

It is clear that from the above descriptions of the Canadian workforce and the focus on competencies and oCBs that the 'buzz word' of diver-

sity management is a reality that must be taken seriously (Greenwood 1994). As the literature currently stands, there are large gaps in the knowledge base of diversity in organizations (Ferris et al. 1999). While policies such as the Employment Equity Act and various diversity management policies may promote diversity within the workforce, HRM policies alignment often does not promote these goals (Ferris et al. (1996).

Multiculturalism and diversity in the workplace is a complex issue (Ferris et al. 1999; Greenwood 1994). Businesses operate with certain traditions and standards, while employees bring customs, beliefs, and values from a variety of different cultures and backgrounds. The question, then, is who must adjust? Are individuals to sacrifice, hide and change their cultural behaviours to conform to what is perceived to be important to organizations? Should people from diverse backgrounds, in essence, be penalized for what they have learned and understood to be acceptable during their early years of socialization (Greenwood 1994)?

As a result of the previous discussion, then, the main research questions that are being raised in this paper are the following: 1) are competencies and organizational citizenship behaviours related?, and 2) could the use of competencies in the workplace adversely affect certain cultural groups more than others? Again, it is important to stress that this paper is proposing a potential link between theory and practice in HRM research, along with developing a further understanding of the dynamics of diversity management in the work environment and the possible institutional prejudices that may lie in seemingly innocent organizational assessment frameworks.

While there are a number of studies devoted to investigating culture changes and the psychological adjustments members of ethnic groups must make, there is a definite lack of consensus on the concept of the immigration adaptation process (Kim, Laroche, and Tomiuk 2001). One original definition of acculturation can be identified as the phenomena that occur when those from different cultures encounter one another, resulting in changes in the patterns of behaviour of one or more groups (Redfield, Linton, and Herskovits 1936, 149). That basic definition seems to be a fitting description of the various concepts that surround socio-cultural adaptation in the 21st century. The process of acculturation entails changes in behaviours, values, attitudes and abilities of an individual (Berry 1992; McMillan and Lopez 2000). One can extrapolate from this, then, that the longer an individual stays in a new setting (i. e. a country other than the home country), the more encounters with other cultural

groups, particularly the dominant cultural group, he/she will have. This will have implications for diversity management, and perhaps for the current selection, training and development policies in organizations.

### **Implications for Learning and Conclusions**

This discussion serves to understand how organizations can foster diversity management, through providing and encouraging the proper learning content in their training and development programs. Culture is a socialization process; individuals learn behaviours, values, customs, rituals, etc. through growing up amidst others who share these same aspects; thus they are learned, not genetic. The same can be said for acculturation; once people of a different culture are exposed to other cultures, such individuals often adapt to the new culture by changing their behaviours, values, and attitudes as well. People continually learn how to adjust their own behaviours, depending on the cultural situations they face.

However, if the exhibition of OCBs can differ according to the upbringing of culturally diverse individuals, then there may be adverse effects on certain cultural groups as a result of the reliance (and over-reliance) on competencies for selection and development programs in the workplace. As managerial positions tend to be based more on the use of competencies than on other skills (such as manual dexterity, cognitive ability, etc.), the adverse effects may be more pronounced at such levels. As discussed in the beginning of this paper, visible minorities and immigrants have particular difficulties attaining such positions in Canada, and the use of competencies may play a role in this. Particularly with competencies which are often organizationally specific, political and cultural influences on the competency models may adversely impact those who are unfamiliar with them (Nordhaug 1988). In turn, this may foster discrimination, and organizations will have difficulties in attaining diversity management and Employment Equity goals.

So how does this provide implications for learning and development? If culture entails learned behaviours, acculturation entails learned behaviours, and competencies (and thus perhaps OCBs) entail learned behaviours (Evarts 1988), then these behaviours can be taught to any individual. If these managerial positions require certain competencies in an individual to result in high levels of job performance, then the onus is on employers and educational institutions (particularly business schools; Grzeda 2005) to make this training available, and deem this training as integral and important. While the North American culture may foster

many of the competencies that are desirable in organizations, various cultural groups and certainly new immigrants may not be exposed to these behaviours; however, if individuals can learn to adapt to the North American culture, then individuals can learn the competencies and OCBs that organizations desire, and this can give minority groups another tool to move up through the ranks in organizations and at least have an opportunity to engage in managerial level jobs. Trying to fill positions with the right numbers of minorities is not enough to be seen as an 'equal opportunity employer'; organizations and institutions must ensure that minorities and disadvantaged groups have the tools to rise to the top and succeed at that level. Given the popularity and widespread development and use of competencies in the workplace, there must be a call to find theory and widely recognized frameworks to base them on, to investigate on whether this competency usage could be discriminatory in nature, and to understand how organizations and higher institutions can leverage competencies to engage those workers with different backgrounds and cultures fairly to achieve organizational competitive advantage.

### **Conclusions**

This paper attempts to bridge theory and practice in human resources management by taking the popular notion of competencies and competency modeling, suggesting potential links between competencies and OCBs, and outlining the possible effects of cultural backgrounds and acculturation levels on the exhibition of these behaviours. Podsakoff et al. (2000) had identified that future research needs to examine the causal relationships among proposed antecedents of OCBs, as most prior research has only examined the various identified antecedents as direct predictors of such behaviours.

Podsakoff et al. (2000) also emphasized the need to examine OCBs in a cross-cultural context. The authors note that there may be a variety of cultural effects that are possible, including the effect of culture on the mechanisms through which OCBs are generated and the strength and frequency with which OCBs are exhibited (Podsakoff et al. 2000). In addition, no research in the HRM and related literature analyzes the notion of acculturation as either an antecedent or mediator of culture and OCBs. As mobility and immigration increase among countries, understanding acculturation processes and levels will perhaps provide further insight into why immigrants and minorities continue to experience worse employment conditions and lower earnings than their non-minority counterparts.

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