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Trends in Entrepreneurial Activity in Central and East European Transition Economies

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Abstract

After 1989, radical changes in the level of entrepreneurial activity have taken place in the Central and East European (CEE) region countries, transitioning from the communist to a market economy system. In this paper we explore these developments at the macro level of countries. In particular, we investigate developments in business ownership rates in four CEE transition economies (Czech Republic, Hungary, Poland and Slovak Republic) in the period 1989-2008, and compare them with developments in other OECD countries. To this end we make use of EIM's COMPENDIA data base, which contains harmonized data on the number of business owners in OECD countries. Data for the four CEE region countries under consideration have recently been added to COMPENDIA. Our analysis reveals that, since the fall of the Berlin Wall in 1989, business ownership rates in the four CEE countries have been converging rapidly towards the levels of other OECD countries, and more specifically, Western European countries. This shows that the communist system did not have prolonged negative effects on the private business sector in these four countries. Instead, based on their institutional and cultural roots, or 'civilization fundamentals', these CEE countries were able to rebuild the entrepreneurial sector in a relatively short period of transition. Finally, in spite of the general trend of convergence towards Western European countries, we also find sizable differences among these four CEE countries in the level and development of business ownership since 1989.

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1. INTRODUCTION

This paper explores the different developments of business ownership (BO) rates over the period 1989-2008 in four Central and East European (CEE) countries: the Czech Republic, the Slovak Republic, Hungary and Poland, against similar trends observed in other OECD countries during the same period. Understanding country differences in entrepreneurship is important because entrepreneurship is widely believed to play a key role in economic development (Audretsch and Thurik, 2004, 2010). Such understanding is particularly relevant in countries undergoing systemic transformation from the centrally-planned or communist to a market economy system. Immediately after the Second World War, the Central European countries under study fell under Soviet dominance which lasted until 1989-1990. During 45 years private business ownership was disallowed or barely tolerated as a marginal, unimportant addition to a dominating state-owned sector. Within the official paradigm of the socio-economic development under communism there was no room for entrepreneurship as a potential factor contributing to such development.

The situation has changed dramatically after 1989, when the communist system collapsed, and the transition towards a market economy system was initiated. Obviously, entrepreneurs played an important role in this process reflected in the explosion of entrepreneurial initiatives in the CEE region, particularly during the 1990s. These developments have attracted considerable attention among entrepreneurship researchers. The vast majority of this research focused on how individual entrepreneurs cope with the opportunities, threats and challenges within a particular transition context being still affected by the inheritance from the communist past and characterized by mounting barriers and obstacles resulting from a weak institutional base during the early phase of implementing the free market system (Smallbone and Welter, 2001; Peng, 2001; Doern, 2009; Van der Zwan, Verheul and Thurik, 2011). Most recent research acknowledges the heterogeneity of entrepreneurial responses to institutional conditions and the fact that entrepreneurs may also influence change (Welter and Smallbone, 2011). An interesting direction of this debate is related to the “homo sovieticus” mindset developed by several generations of population living under communism (Zinovyev, 1986), which is reflected, inter alia, in the lack of individual initiative, overreliance on the state and passive, obedient acceptance of the rules imposed by the government authorities. The important

question in this debate is to what extent such mindset affected entrepreneurial attitudes, once the communist-type regimes collapsed and the basic institutions of the free market capitalist system were introduced after 1989 (Shiller, Boycko and Korobov, 1992).

However, research focusing on the macro-economic consequences of the collapse of the communist system has been scarce. In particular, until recently, a lack of reliable empirical data on the number of entrepreneurs at the country level impeded exploration of developments in entrepreneurial activity in transition countries. Since many years, EIM Business and Policy Research in The Netherlands maintains an international data base with self-employment (business ownership) numbers for 23 OECD countries that are comparable across countries (Van Stel, 2005). The data base contains harmonized data since 1972, and is updated every year. The original 23 countries are the 15 countries of the (former) European Union plus Iceland, Norway, Switzerland, the United States, Japan, Canada, Australia and New Zealand. Recently the data base has been extended with time series for seven additional countries, namely Czech Republic, Hungary, Korea, Mexico, Poland, Slovak Republic, and Turkey (Van Stel, Cieslik, and Hartog, 2010).

The extension of the COMPENDIA data base has paved the way for longitudinal analysis of the business ownership (BO) rates, covering 20 years during the period 1989-2008, in four transition economies in Central and Eastern Europe: Czech Republic, Hungary, Poland and Slovak Republic. These countries share historic and cultural traditions due to long term links with the Western civilization but also the experiences of 45 years under the communist regime (1945 – 1989). In this paper we investigate developments in business ownership rates in these four CEE transition economies in the period 1989-2008, and compare them with developments in other OECD countries.

The rest of the paper is organized as follows. In the second section we conduct a literature review with the purpose to identify key factors affecting the levels and changes in BO rates of the four countries under study (Czech Republic, Hungary, Poland and Slovak Republic). Based on this review we formulate seven hypotheses for further testing. These hypotheses mainly focus on the question whether convergence may have occurred between BO rates of the four CEE countries and those of other OECD countries. The hypotheses also focus on differences *among* these four countries. Next, in

the third section, we discuss our data base with harmonized data on the number of business owners across OECD countries over a long range of years. In section four we present business ownership data for OECD member countries with particular focus as how the new CEE countries fit within general patterns of business ownership in the OECD during 1989 – 2008. The results are discussed in the fifth section in the context of seven hypotheses being formulated. In the final section we discuss some policy implications stemming from our research, limitations, as well as directions for future research.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Scope of literature review

In this section we make an attempt, based on a literature review, to identify key factors affecting the levels and trends in business ownership rates over time in four Central and East European (CEE) transition economies: the Czech Republic, Hungary, Poland and the Slovak Republic. The first group of factors is related to the historic roots and cultural traditions. Over many centuries these four nations have developed strong ties with the Western civilization. In the last 100 years, all of them gained independence after World War I and, after a short period of building the fundamentals of modern states during 1918-1939, fell under Nazi occupation and later Soviet dominance, which ended only in 1989.

The second group of factors relates to the experiences of the four countries under study with respect to the private business sector under communism. Despite the fact that general principles of the command-type economy were quite universal and driven by the ideological motivations, there were notable differences as to the extent the non-state-owned business sector and individual initiatives were tolerated and controlled.

Thirdly we take into consideration the level of economic development and the growth of GDP in the four CEE countries during 1989 – 2008. The relationship between economic development and entrepreneurial activity is vividly discussed in the literature (e.g. Acs, Audretsch and Evans, 1994; Carree et al., 2002, 2007; Wennekers et al., 2010). On the other hand there are sizeable differences in the level of socio-economic development among the four countries under study. Finally, we examine the speed of implementation of market

oriented reforms in these countries after 1989, with particular reference to those shaping the institutional environment for private business initiatives.

2.2. Historic and cultural roots

Within the new institutional economic analytical framework, there are several levels of institutions, the highest of which is that of informal, institutionalized rules shaped over the centuries, including norms, customs, traditions and religions (Williamson, 2000). Winiecki (2004) adapted this framework to the analysis of conditions that affected transition success from the communist to the free market system. According to Winiecki, what played a decisive role in the rapid development of the new private sector under transition was not so much the communist legacy as the pre-communist legacy, which he called “civilization fundamentals.” Therefore, it is useful to determine how close the informal rules that existed before communism were to the kind of institutional environment necessary to the efficient functioning of the free market system that emerged after the communist break-up. The informal rules that shape civilization fundamentals include freedom of entrepreneurship, perception of the general need for law and order, and generalized trust. To develop his argument, Winiecki pointed out that practically all successful transition economies in Europe were those that belonged historically to Western Christendom, whereas the “laggards” fell outside the eastern borders of Christianity.

The arguments raised by Winiecki are powerful as they pertain to the differences between Poland and Russia, the example the author used. However, they are of limited use in explaining the differences among the Czech and Slovak Republics, Hungary and Poland because these countries all fall within the historic borders of Western Christendom. Still, by taking into account the variations in their civilization fundamentals, one may point to particular historic institutional traditions that could explain the phenomenon of Czech entrepreneurship revival. Benacek (1995) stressed the role of the Czech Protestant traditions, which date back to the 1780s, and to the proliferation of liberal and cosmopolitan ideas in the 19th century. These factors, combined with the very high level of industrial development in the area, provide a fruitful historic base on which Czech entrepreneurship could regain its strength after the 45 “lost” years under Soviet dominance.

A similar argument based on the pre-communist legacy concept can be developed with respect to the formal rules, particularly the legal framework for starting and running a business. Here we may refer to the concept of legal origin developed by La Porta et al. (1999), who distinguished between the traditions of common law and civil law, where common law is typically associated with less government inclination to intervene in the economy and, therefore, greater favorability for entrepreneurship.

The original concept (La Porta et al., 1999) identified within the civil law tradition a socialist legal system that prevailed in the communist economies. However, following widespread criticism, this sub-category was eliminated in the most recent formulation (La Porta, Lopez-de-Silanes and Shleifer, 2008). What seems especially important, however, is the level of pre-communist maturity of the legal system, particularly whether regulations that affect business operations were established before World War II. All four countries under study managed to shape the basics of business law during their short period of independence from 1918 to 1939. Although it does not seem to be useful in explaining differences in the levels of business ownership rates among the four countries, this legal maturity had a practical impact during the early days of transition because the necessary laws could be quickly restored and/or updated. For example, the sophisticated Polish Commercial Code of 1934 was not cancelled under communism, even though most of its regulations were not compatible with the centrally planned system. Under the new circumstances after the fall of communism, the Code was found to be extremely useful, especially for setting up limited liability companies, which became the most popular business vehicles for setting up larger domestic operations and subsidiaries of foreign companies.

Based on the above analysis we may formulate three hypotheses:

H1: As all four countries under study belonged historically to the Western Christendom, this facilitated rapid catching-up of BO rates with those prevailing in the mature market economies while at the same time downplaying the role of communist heritage.

H2: Due to historic and cultural links with some Western European countries, BO rates prevailing in these countries form a “historic benchmark” to which CEE region tended to converge.

H3: Among the CEE countries under study the historic roots of the Czech Republic provided the most favorable environment for catching up with respect to BO rates.

2.3. Experiences with entrepreneurship under communism

The experiences with entrepreneurship under communism varied significantly among the four countries under study. The private sector was practically liquidated in Czechoslovakia by the mid-1960s, whereas it was allowed to exist as a “marginal addition” to the dominating state-owned sector in Hungary and in Poland. The relevant policies in both countries were implemented in waves, with periods of greater flexibility interspersed with tightened measures aimed at curbing the size and the “excessive richness” of the private business owners. In the case of Poland, an important additional factor was that foreign travel was much less restricted than it was in the other three countries. Therefore, many Poles -particularly the young- had exposure to the free market system from working abroad (often illegally) and (particularly in the 1980s) from the chance to engage in “individual international trade” (Johnson and Loveman, 1995, p. 232).

In view of these developments, one may argue that Hungary and Poland were much better prepared for the “entrepreneurial take-off” in 1989 than the Czech and Slovak Republics were. First, at the verge of the systemic transition, Hungary and Poland had many individuals with at least some experience in starting and running small private business, albeit in the very peculiar and restrictive environment of a centrally planned economy. Second, these businesses were firmly legal with clearly defined rules on registration requirements, tax obligations, restrictions as to the scope of activities, maximum number of employees, and so on. This observation contradicts the prevailing approach (e.g., Peng 2001), which has pointed to the “gray” underground character of the private sector under communism. While this character may have applied in the former Soviet Union, it definitely did not in Hungary and Poland. Third, some formal regulations designed specifically for the private sector could be easily adapted to the new market-economy environment. For example, the simplified tax scheme for small-scale craft activities currently in use in Poland relies heavily on regulations introduced in the 1980s.

However, there were important negative implications of the “communist embeddedness” of the incumbent private sector in Hungary and Poland, particularly the business skills, attitudes,

ethical and moral standards and operating routines developed while conducting business under communism that became obsolete impediments when the rules changed. The lack of customer focus serves as a good example here; under communism, clients were generally not looked after because of the acute shortage of consumer goods and services, so customers waited in lines and got what they got. The major concern of the private business owners operating within the “shortage economy” was getting access, often through informal and/or illegal arrangements, to various production inputs, materials, and components—not customer service. As a result, they were ill-equipped to operate within a market environment where the crucial success factor related to building a strong client base.

Since the communist authorities in Hungary and Poland often switched between flexible policies toward the private sector to tightened measures, the private sector in both countries followed a “low profile” strategy to survive the instability. This strategy was reflected in deliberate avoidance of demonstrations of excessive richness but also in limited market visibility. This strategy obviously contrasts with the proactive, dynamic orientation required when operating within a free-market environment.

While the extant transition literature has focused on the impact of rapidly changing conditions on the survival of the state-owned enterprises, in fact the “transition shock” also brought similar challenges to the incumbent private sector (Winiecki, 2004), as exemplified by the words of an incumbent entrepreneur: *“In 1989 Poland changed to such an extent that, in order to continue my prosperous business, I had to start de novo. The same business, in a different environment, became a new kind of activity”* (Osborn and Slomczynski, 2005, p. 88).

Some empirical data has suggested that the overall balance of already being in business at the time of transition, on the one hand, and “communist embeddedness,” on the other, was not positive for the incumbent private sector and that it was the newly established entrepreneurial firms that were the key driving force of the transition process. For example, Cieslik and Kaciak (2009a) found that the incumbent private sector was only marginally engaged in the advanced forms of entrepreneurship, namely exporting; in 2003, among approximately 50,000 exporters, only 1,200 private firms were established before 1989 and they provided only 4% of the Polish commodity exports. At the same time, 40,500 domestic exporting firms established after 1988 contributed 32% of the export volume (54% of export volume was generated by 7,100 foreign subsidiaries and 10% by 1,200 state-owned enterprises). This

paucity of pre-1989 exporters is surprising, given that many Poles were engaged in individual (informal) international trade, particularly in the 1980s, and the income derived from such operations helped to build a capital base for setting up many genuine private businesses after the collapse of the communist system.

The above analysis leads to the following hypothesis:

H4: Experiences with entrepreneurship under the communist regime in Hungary and Poland contributed to the accelerated growth of BO rates after transition. However, this contribution is moderated by the fact that the private sector before 1989 was deeply rooted in the communist environment and consequently the experiences accumulated were not always useful within a market economy system.

2.4. Level of economic development and the growth of GDP after transition

The complex relationship between entrepreneurship and the level of economic development has been subject to considerable debate in the extant literature (for an overview, see Wennekers *et al.*, 2010). For instance, rising per capita income tends to go together with rising real wages (Lucas, 1978), implying increasing opportunity costs of self-employment and hence a negative relation between entrepreneurship and the level of economic development. On the other hand, the importance of services (niche) markets and a higher preference towards autonomy in highly developed economies suggest a positive relation.

Data from the four CEE countries (Figure 1) show considerable differences in their GDP per capita in the early 1990s, particularly between the most industrialized of the four, the Czech Republic and the least developed Poland (Czech income per capita was almost double that of Poland in 1992). During 1992-2008 all four countries experienced growth in GDP per capita, but the pace of growth was much faster in the countries with a lower base: Poland and Slovakia. In fact, the growth of GDP achieved in Slovakia was remarkable and, as a result, Slovakia surpassed Hungary in GDP per capita in 2007. Consequently, the distance between the highest (Czech Republic) and the lowest (Poland) GDP per capita shrank from 46% in 1992 to 30% in 2008.

At the same time there was a clear trend in narrowing the gap as to the GDP per capita between the four CEE countries under study and the remaining OECD members. Whereas in the early 1990s the average GDP per capita in this region represented only 35 % of the

COMPENDIA-23 average, by 2008 this ratio increased to 51% (see Figure 1).¹ This in turn led to gradual transition of this region from the manufacturing-based, efficiency-driven to the innovation-driven development stage. Following the classification of stages of development put forward by the World Economic Forum (Schwab, 2009), both the Czech and Slovak Republics have been categorized as innovation-driven economies, whereas Hungary and Poland have been classified as being in transition from efficiency-driven to innovation-driven. One may reasonably expect that within 10-15 years all four CEE countries will reach the innovation-driven stage, following the path of mature Western economies. While an innovation-driven economy is associated with many entrepreneurs trying to commercialize new innovative ideas in the market, in efficiency-driven economies the exploitation of economies of scale by large firms plays a more dominant role and there is typically less room for small-scaled entrepreneurship.

Insert Figure 1 about here

The above literature review and data presented lead to the following hypotheses:

H5: The narrowing gap as to the level of GDP per capita between mature market economies and CEE countries during 1989-2008 contributed to the convergence of BO rates between these two groups of countries.

H6: The relatively high level of economic development in the Czech Republic contributed positively to bridging the gap in BO rates with the mature economies.

2.5. The speed of market oriented reforms

The impact of the speed and magnitude of macro-economic reforms can be studied from the perspective of the individual decision to start a business and/or from the perspective of how the reforms affected the growth of the private sector in general. The research conducted by Smallbone and Welter (2001) on a number of transition economies in the 1990s demonstrated that the need for independence and autonomy was by far the most common reason for starting a business in these countries. Clearly, the radically changing external environment,

¹ The COMPENDIA-23 countries are those originally included in EIM's COMPENDIA data base. The group includes the first 20 countries listed in Table 1 of this paper (i.e. excluding the CEE countries), and Luxembourg, Iceland and Japan (Van Stel, Cieslik and Hartog, 2010).

particularly the quick dismantling of the state-owned sector, could prompt such individual decisions. To account for the transition-specific factors in a person's considering entrepreneurship as a life-path option, Cieslik and Kaciak (2009a) adopted Shapero's model of an entrepreneurial event (Shapero and Sokol, 1982). The "systemic displacement" in the model reflects the negative emotions invoked by working in highly bureaucratic state-owned enterprises, government or municipality organizations with very limited opportunities to demonstrate initiative. The model's "between systems" effect encompasses the overall feeling that the communist system has collapsed irreversibly and the new era has begun. At the same time, the numerous businesses being started by former colleagues from work, friends and relatives creates a "positive pull" through demonstration effects, prompting similar decisions to start businesses by people with no previous experience or relevant family backgrounds.

The research on drivers of engaging in entrepreneurial activity during the early stages of systemic transformation, points to the complexity of motivations, reflecting typically the mixture of economic, societal and psychological factors. This challenges the appropriateness of some theoretical concepts in the extant literature, which are based on "crude dichotomy" (Smallbone and Welter 2009, pp. 44-47). We have particularly in mind the distinction between proprietorship and entrepreneurship introduced by Scase (2003) or the much more widely recognized distinction between necessity and opportunity entrepreneurship, adopted in the GEM Project (Reynolds *et al.* 2002).

With respect to the magnitude and speed of major macro-economic reforms that paved the way for the market-based economy, Poland emerged as the clear leader among transition economies in the CEE region. As early as 1990, Poland put in force a set of radical regulatory changes that introduced free-market mechanisms and eliminated protective measures for the state-owned sector. In other countries—Hungary and then the Czech and Slovak Federal Republic (CSFR)—the respective reforms were introduced more gradually.

The empirical data that demonstrates the significant increase of new entrepreneurial start-ups in Poland during 1989-1992 seems to support the argument that the "shock therapy" during the initial phase of systemic transition was an important factor in the formation of the new private sector. However, there were similar trends during this period in other CEE countries, particularly the Czech Republic and Slovakia, where the overall pace of systemic

transformation was much slower at that time, suggesting that there were other important factors contributing to the expansion of the private sector.

The effectiveness of the “shock therapy” versus that of gradual transition has been the subject of a vivid economic and political debate, particularly in Poland, with strong voices of criticism pointing out the unnecessary hardships of the shock therapy, particularly for the employees of the state-controlled sector (e.g., Kolodko, 2000). Johnson and Loveman (1995) argued that, from the perspective of the new private sector, the overall impact of the shock therapy was positive because it shaped the macro-economic conditions that were necessary for accelerated growth. However, based on the comparative analysis of specific policy measures related to the development of the small business sector in Hungary and Poland, Fogel and Zapalska (2001) found “no evidence on the appropriateness of macro-economic policies to suggest that slower or more gradual policies have overall a greater positive effect on SME development and entrepreneurial growth” (p. 50). One possible explanation might be the bi-directional impact of the speed of market oriented reforms on SME sector. On the one hand, speedy reforms led to the quick elimination of laws and regulations embedded in the communist past. At the same time, however, new regulations have been introduced in a hectic way, following a trial and error approach. Adaptation to frequent changes in regulations (including tax codes) during the early days of transition was time-consuming and costly, particularly for smaller firms.

Similarly inconclusive findings result from analyzing the impact of the overall business climate, particularly the impact of the ease of doing business on business ownership. Using the aggregated World Bank index as a measure of the ease of doing business in 2009 (World Bank, 2009), at the bottom of the list were both the Czech Republic and Poland, as the most heavily regulated of EU countries, with the exception of Italy and Greece. Slovakia and Hungary, ranked in the middle of the list. Thus, the rankings of the four countries in terms of ease of doing business do not correspond with the rankings based on the level of business ownership. This conclusion does not necessarily reflect transition-specific conditions but reinforces a more general argument raised by Van Stel, Storey and Thurik (2007) regarding the rather insignificant impact of administrative considerations on the level of entrepreneurial activity.

The above literature review leads to the following hypothesis:

H7: The high speed and broad scope of market oriented reforms in Poland contributed positively to bridging the gap in BO rates with the mature economies.

3. DATA

In this paper we use business ownership rates for 24 OECD countries, defined as the number of non-agricultural business owners in a country divided by the size of the labour force. Business ownership (self-employment) is defined as the total number of unincorporated and incorporated self-employed outside the agriculture, hunting, forestry and fishing industries, who carry out self-employment as their primary employment activity, see Van Stel (2005, p. 108). Unpaid family workers are excluded. These data are taken from EIM's COMPENDIA data base (version 2009.1).² In this data base, self-employment numbers as published in *OECD Labour Force Statistics* are corrected for measurement differences across countries and over time and thus harmonized. In particular, in OECD Labour Force Statistics owner-managers of incorporated businesses (OMIBs) are counted as self-employed in some countries, and as employees in other countries. Also, the raw OECD data suffer from many trend breaks relating to changes in self-employment definitions over time. EIM has constructed a method to correct for these inconsistencies (see Van Stel, 2005). For an update of the harmonization methods and for detailed information regarding the specifics of the business ownership data for the CEE countries, we refer to Van Stel, Cieslik and Hartog (2010).

4. RESULTS

4.1. Trends in BO rates 1989-2008 – a comparative analysis

To test our hypotheses we have conducted comparative analysis of trends in BO rates -both actual levels and dynamics of change- during the period 1989-2008. Taking into consideration the above-mentioned mix of economic, institutional and cultural factors affecting the levels and trends in business ownership rates, the countries originally included in the COMPENDIA data base (except for Iceland, Luxembourg and Japan) have been divided into four major country groups (see Wennekers et al., 2010): Mediterranean, Anglo-Saxon, Western European

² COMPENDIA is an acronym for COMPARative ENTrepreneurship Data for International Analysis. See <http://www.ondernemerschap.nl> for the data and Van Stel (2005) for a justification of the harmonization methods. This database has been used and acknowledged widely (see, among other studies, Armour and Cumming, 2008, Carree et al., 2002, 2007, Davis, 2008 (p. 54), Koellinger and Thurik, 2012, Nyström, 2008, and Parker, Congregado and Golpe, 2012).

and Scandinavian. The fifth group consists of the four Central and Eastern European countries (CEE) which have recently been added to the COMPENDIA data base.

Table 1 demonstrates remarkable developments in business ownership in the four Central and East European (CEE) transition economies (the Czech Republic, Hungary, Poland and Slovak Republic) since 1989. Radical changes in the levels of business ownership during the period under study were combined with diversified patterns, as BO rates evolved over time.

Insert Table 1 about here

After 45 years of communist dominance, during which period private business was disallowed or tolerated only as a marginal addition to the state-ownership sector, and subsequently 20 years of transitioning from a centrally-planned to a market economy, the CEE countries were able to catch up with the mature Western economies in terms of the levels of BO rates. While in 1989 the average (weighted) BO rate for the area comprising the four CEE countries was less than one third of the COMPENDIA-23 average, by 2008 this gap had effectively been closed (Table 2; panel 1). At present BO rates in Hungary, Slovak Republic and Poland are quite similar to those of Western European countries, which are geographically and culturally close (Table 2; panel 2). The Czech Republic is a clear exemption; with a very high rate it fits better to the Anglo-Saxon group. Taking into account that very high BO rates in the Mediterranean countries are strongly affected by historic and cultural factors which are specific for this region, we may conclude that nowadays the CEE region as a whole fits very well within a general pattern of business ownership rates in Europe (Figure 2).

Insert Table 2 about here

Insert Figure 2 about here

The most surprising outcome of the developments taking place in the course of transition from the centrally-planned to a market economy system was that countries that lagged behind in business ownership at the early stage of the transition process, the Czech and Slovak republics, eventually emerged as the leaders in entrepreneurial activity, surpassing Hungary and Poland, which had a more sizeable private sector under communism (Figure 3). As discussed in greater detail in Subsection 2.3. above, due to severe restrictions under

communism, at the outbreak of systemic transformation in 1989, the private business sector was practically non-existent in Czech and Slovak republics (then Czechoslovakia). Nowadays (2008), Slovak Republic surpassed United Kingdom as to the level of the BO rate, whereas Czech Republic emerged as a clear leader, lagging only behind two Mediterranean countries traditionally showing exceptionally high business ownership rates, namely Italy and Greece. An additional effect was that the levels of BO rates among CEE countries which were extremely differentiated at the beginning of the transition process, have gradually converged over time (Table 2; panels 3 and 4).

Insert Figure 3 about here

4.2. Actual vs “equilibrium” business ownership rates in the CEE countries

In the statistical analysis conducted in the previous subsection we have investigated the convergence of BO rates in the CEE region with those achieved in other OECD countries during 1989 – 2008. In this section we investigate to what extent the four CEE countries, since 1989, have converged towards business ownership levels which are compatible with their levels of economic development. For each stage or level of economic development one can think of a ‘natural’ rate of business ownership expressing the relative importance of scale economies, the importance of the service sector and several other phenomena influencing the average scale of production (Wennekers et al., 2010).

For this purpose we re-estimate (part of) the model by Carree et al. (2002, 2007). In particular, we re-estimate the ‘equilibrium’ relation between economic development and the business ownership rate. Using this relation we are able to describe the patterns of convergence of the business ownership rate towards the ‘equilibrium’ business ownership rate for the four CEE countries since 1989. For full details of the econometric analysis we refer to the Appendix to this paper. In this section we will focus on the implications for convergence.

According to our estimation results the ‘equilibrium’ rate of business ownership can be written as $E_{it}^* = 1.381 - 1.333 \frac{YCAP_{it}}{YCAP_{it} + 1}$, where $YCAP$ is expressed in thousands of US dollars of price level 2000. Using this equilibrium relation, Tables 3a until 3d describe

the convergence pattern of the (non-agricultural) business ownership rate for the four CEE countries.

In 1989, at the end of the Communist period, business ownership (self-employment) levels in the four CEE countries were relatively low. In particular, business ownership levels were lower than could be expected on the basis of their level of economic development. From the last columns we can see that convergence has clearly taken place: the difference between the ‘equilibrium’ and actual business ownership rate has decreased since 1992 (and indeed since 1989). In fact, for Czech Republic the business ownership is even higher in 2008 than could be expected based on their per capita income level. Slovak Republic has just recently converged towards the equilibrium rate, while convergence in Hungary and Poland also occurs, but at a slower speed. Figure 4 shows the actual and ‘equilibrium’ business ownership rates for the four CEE countries in 2008. As a point of reference, the United States is also included in the figure.

Insert Table 3 about here

Insert Figure 4 about here

5. DISCUSSION

The results of the analysis contained in the preceding section lead to a general conclusion that the period of 45 years under communist rule, a system which ideologically and practically battled with entrepreneurial initiatives, did not have prolonged negative effect on the private business sector in the CEE region. What mattered most were the institutional and cultural roots or “civilization fundamentals”. Based on those fundamentals, the CEE countries were able, within the relatively short period of transition, to rebuild the entrepreneurial sector.

This is particularly reflected in the gradual convergence of the BO rates in the CEE region towards the OECD (COMPENDIA-23) average (Table 2; panel 1): from 32.5% in 1989 to 98.7% in 2008. This confirms Hypothesis 1: *As all four countries under study belonged historically to the Western Christendom, this facilitated rapid catching-up of BO rates with those prevailing in the mature market economies while at the same time downplaying the role of communist heritage.*

In Hypothesis 2 we speculated that: *Due to historic and cultural links with some Western European countries, BO rates prevailing in these countries form a “historic benchmark” to which CEE region tended to converge.* Such trend is clearly visible for Hungary and Poland (Table 2; panel 2), whereas in the case of the Slovak and Czech republics their “historical benchmark” seem to be the Anglo-Saxon countries. Such developments in the Czech Republic can be explained by the strength of additional factors, namely its most intensive, among CEE countries, historic ties with the Western civilization. In Hypothesis 3 we speculated that such *“historic roots provided most favorable environment for catching up with respect to BO rates”*. Parallel to that was a relative high rate of socio-economic development at the beginning of the transition period (Figure 1), compared to other CEE countries under study which, as expected in Hypothesis 6, also “contributed positively to bridging the gap in BO rates with the mature economies”. Indeed, the speed of catching up was extremely fast. As exemplified by the data contained in Table 2, Czech Republic has surpassed, in terms of BO rate, the COMPENDIA-23 average already in 1996, reaching in 2008 a level 43% higher than the said average.

As to the developments in the Slovak Republic, one shall also bear in mind that Czech and Slovak republics have a tradition of functioning as a two-nation state since 1918 and were separated only in 1993. Historically being less advanced, the Slovak Republic could benefit from continuing strong economic, cultural and institutional ties with the Czech Republic, resulting in similar approaches to rebuilding the private business sector after transition to a market economy system. Based on that we consider Hypotheses 2, 3 and 6 as confirmed.

Regarding the impact of past experiences with the private business sector under communism we could distinguish between those countries having sizeable private sector at the outbreak of systemic transition (Hungary and Poland) and countries where the private sector was practically non-existent (Czech Republic and Slovak Republic). In Hypothesis 4 we speculated: *Experiences with entrepreneurship under the communist regime in Hungary and Poland contributed to the accelerated growth of BO rates after transition.* We have pointed out, however, that the positive impact of such experiences can be limited due to the strong embeddedness in the past institutional environment.

The results of empirical analysis presented in the preceding Section (Table 1 and Figure 3) point out to the complex nature of such a relationship. Clearly, the communist past helped in

the rapid expansion of the small business sector in Hungary and Poland in the early 1990s. Later on we could note a saturation (Poland) or even decline of BO rates (Hungary). On the one hand this was the result of many of the new business establishments closing after a short period, due to a lack of experience of their owners, inadequate financing, uncertain fiscal regulations, etc. At the same time incumbent private firms could not adjust to the market economy system and ceased operations, despite being successful under communism. Thus our analysis seem to confirm the findings from the extant literature, referred to in sub-section 2.3, that the entrepreneurial experiences accumulated under communism were not much useful for growth of the private business sector after transition to a market economy system. Based on the above we may conclude that Hypothesis 4 was partially confirmed.

Hypothesis 5 read: *The narrowing gap as to the level of GDP per capita between mature market economies and CEE countries during 1989-2008 contributed to the convergence of BO rates between these two groups of countries.* The fast increase in GDP per capita of the CEE countries implied moving from an efficiency-driven type of economy towards an innovation-driven type of economy, where entrepreneurial opportunities are more abundant, especially in a transition context (Stam and Van Stel, 2011). In this sense, the catching-up process in terms of economic development of the CEE countries contributed to a catching-up process also in terms of business ownership. Moreover, since in the long run countries tend to follow an ‘equilibrium’ rate of business ownership which is declining with economic development³, the fast increase in GDP per capita for the CEE countries implied that their equilibrium BO rates were declining, contributing to a convergence process between the actual and the equilibrium BO rates for the CEE countries (see Section 4.2). We conclude that Hypothesis 5 is confirmed.

With respect to Hypothesis 7, *the high speed and broad scope of market oriented reforms in Poland contributed positively to bridging the gap in BO rates with the mature economies*, the empirical analysis leads to some observations which are similar to those related to Hypothesis 5. The substantial impact of radical economic reforms introduced in Poland on BO rates could be noted during 1989-1991. The “shock therapy” involving major privatizations and closures of many state-owned companies meant the loss of hundreds of thousands of jobs deemed

³ Note that, whereas the relation between economic development and business ownership (a measure of *incumbent* entrepreneurship) is mostly found to be L-shaped, the relation between economic development and measures of *new-firm* entrepreneurship such as GEM’s TEA rate, is often found to be U-shaped (see e.g. Kelley, Bosma and Amorós, 2011). The high exit rates in modern economies form the most likely explanation for these different patterns.

secure under the previous regime. In addition, the “winds of history” spirit (Cieslik and Kaciak, 2009a) inspired many people to start their own business. Later on, the impact of radical reforms seemed to vanish, which strengthens some doubts on this subject, raised in the extant literature (Fogel and Zapalska, 2001) and discussed in subsection 2.5. We may therefore conclude that Hypothesis 7 is partially confirmed.

Summing up the discussion of the results of the empirical analysis in relation to the hypotheses developed in Section 2 we are able to confirm 5 out of 7 hypotheses. Two remaining hypotheses are partially confirmed. It is interesting to note that the two hypotheses being only partially confirmed relate to the developments under communism and during the 20 years of transition. This reinforces the key conclusion derived from our analysis that what mattered most with respect to business ownership rates were the historic economic, institutional and cultural ties with the Western world (the “civilization fundamentals”).

6. POLICY IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

6.1. Policy implications

As “latecomers”, the CEE countries are in a privileged position as they may study trends in the mature economies and assess the effectiveness of various policy measures aimed at enhancing entrepreneurship. The accumulated body of policy-oriented entrepreneurship research can be helpful in this respect, as well. Since the current entrepreneurship policy debate lacks a sound empirical background, inclusion of these CEE countries in the harmonized COMPENDIA data base is very important as it provides benchmark BO rates, useful for shaping entrepreneurship policies.

Based on the research presented in this paper we point out some conclusions and recommendations.

One of the key policy issues, to be addressed by the CEE policymakers, is whether they shall strive for further increasing the general level of business ownership, which is in fact their most often declared policy statement. Here we shall refer to the concept of the “optimal” business ownership rate (in terms of achieving the highest GDP levels), estimated by Van Praag and Van Stel (2010) as being in the range of 12.5%. Except for the Czech Republic, the remaining CEE countries achieved lower than “optimal” business ownership rates, so far.

However, Van Praag and Van Stel find the optimal rate to decrease with higher participation levels in tertiary education.⁴ This is generally a strongpoint of the CEE region, particularly of Poland, which scholarization index ranks very high among European countries (Central Statistical Office, 2010, p. 27).

Assuming that the CEE countries are quite close to or above their “optimal” business ownership rates, further increases of the total number of business establishments may not be justified. Alternatively, these countries should rather focus on the ambitious segments of entrepreneurship in view of their potential contribution to the growth of GDP and employment (Stam and Van Stel, 2011). Here we have in mind fast-growing, knowledge-based or innovation-driven firms, creative industries, exporters, etc. In fact, some interesting trends have already become noticeable. We refer to Cieslik and Kaciak (2009b), who demonstrate a significantly higher proportion of high-growth firms and gazelles among Polish manufacturing SMEs, as compared to other OECD member countries (OECD, 2009).

While improving the general conditions for entrepreneurship development, CEE countries should concentrate on the measures that reinforce positive effects of “civilization fundamentals” and downplaying the role of communist heritage. This includes, inter alia, promoting good practices regarding business ethics and corporate social responsibility (CSR). While shaping specific instruments and policy measures, due to historic ties, the accumulated experiences of Western European countries seem to be particularly relevant.

6.2. Limitations and future research directions

The recent inclusion of the four CEE countries in the COMPENDIA data base shall be seen as a first step in the harmonization efforts regarding BO rates in transition economies. In view of the distinct characteristics of their statistical systems, more work is required to make sure that the differences as to the levels of the BO rates are not affected by methodological inconsistencies.

A major limitation of our study stems from the fact that it focuses on quantitative aspects of entrepreneurship development. To offer a more meaningful contribution, relevant for entrepreneurs and policymakers, additional research on the qualitative dimensions of entrepreneurship development in transition economies will be necessary. The analysis based

⁴ Since their education implies a bigger span of control, higher-educated entrepreneurs optimize their profits by running larger firms – implying a lower number of business owners at the macro level.

on secondary self-employment data shall not be seen as a substitute of research based on case studies, in depth interviews or questionnaire surveys. Just the opposite, having access to reliable, harmonized business ownership data enables triangulation of results obtained from studies using other methods.

Regarding these qualitative dimensions, we need to explore in greater detail the distribution of entrepreneurial activity by major categories: the size of informal versus formal entrepreneurship and the share of marginal-scale entrepreneurial engagements, including those for which the business is a secondary activity, dependent self-employment and those using commission and task contracts without registering the business. The distribution between the solo-entrepreneurs and employers in each country is worth considering as well. As demonstrated by a more detailed research on data availability in Poland (Van Stel, Cieslik and Hartog, 2010), OECD labour force survey data (LFS) on which base business ownership is measured in COMPENDIA, can be broken down to distinguish not only between employers and solo-entrepreneurs but also between those who engage in business as an auxiliary activity next to, e.g., work under an employment contract.

In our research we investigated non-agricultural BO rates at the country level. A deeper analysis of spatial variations of such rates within each country might be useful for identifying differences between highly developed and backward regions. To date, a lack of harmonized business ownership data at the regional level hampers such analysis.

An obvious limitation results from the concentration of our research on four CEE countries with very similar historic and cultural traditions and relatively short (45 years) periods of communist rule. Thus extension of the analysis to other members of the former Soviet Bloc, following earlier work by Smallbone and Welter (2009), is highly recommended. In the case of such countries like Belarus, Russia and Ukraine we may expect a different picture as the key factors affecting entrepreneurship differ significantly from those observed in the four countries under study: the “civilization fundamentals”, experience with entrepreneurship under communism, the level of socio-economic development and the speed of implementation of market-oriented reforms. On top of that, those countries experienced communist rule over 70 years. This can be seen as a minor difference with 45 years experienced by the Czech Republic, Hungary, Poland and Slovak Republic. It meant, however, that three, rather than two generations of people could develop a “homo sovieticus” mindset with potentially

negative effects as to the initiatives to start and run own businesses. Another group of countries worth studying are the Baltic States. Here one can expect similar patterns as to the BO rates, compared to those identified in the four CEE countries under study. In general, broadening the scope by including countries representing different levels of economic and cultural development would greatly enhance the prospects for a high-quality research on the trends in entrepreneurial activity in a transition environment.

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Appendix: Re-estimating Carree et al. (2002, 2007)

*The model*⁵

The main equation in the model by Carree et al. (2002, 2007) explains changes in the rate of business ownership (self-employment) from an error-correction process towards ‘equilibrium’ or ‘natural’ business ownership rates. A second equation acts as a definition and describes the ‘equilibrium’ rate of business ownership as a function of economic development. Equation (1) relates the change in the rate of business ownership E_{it} to the extent in which this rate deviates from the ‘equilibrium’ rate E_{it}^* , to which the unemployment rate U_{it} deviates from the sample average unemployment rate and to which the labour income share LIQ_{it} deviates from the sample average income share. Equation (2) describes the ‘equilibrium’ relationship between business ownership rates and economic development ($YCAP_{it}$) as either U-shaped (2a) or L-shaped (2b). In the quadratic form, entrepreneurship declines with per capita income up till a minimum (when $YCAP_{it}$ equals $-\beta/2\gamma$) after which entrepreneurship increases with per capita income. In the inverse function, entrepreneurship gradually declines towards an asymptotic minimum value (of $\alpha - \beta$). In the first equation the following notation is used: $\Delta_4 X_t = X_t - X_{t-4}$. The model reads as follows:

$$(1) \quad \Delta_4 E_{it} = b_1 (E_{i,t-4}^* - E_{i,t-4}) + b_2 (U_{i,t-6} - \bar{U}) + b_3 (LIQ_{i,t-6} - \overline{LIQ}) + b_{ITA} D_{ITA} + \varepsilon_{1it} \quad ;$$

$$(2a) \quad E_{it}^* = \alpha + \beta YCAP_{it} + \gamma YCAP_{it}^2 \quad ;$$

$$(2b) \quad E_{it}^* = \alpha - \beta \frac{YCAP_{it}}{YCAP_{it} + 1} \quad ,$$

where

- E : number of business owners per labour force,
- E^* : ‘equilibrium’ number of business owners per labour force,
- $YCAP$: per capita GDP in thousands of purchasing power parities per U.S. \$ in 2000 prices,
- U, \bar{U} : unemployment rate and sample average, respectively,
- LIQ, \overline{LIQ} : labour income share and sample average, respectively,
- D_{ITA} : dummy variable with value 1 for Italy, and 0 for other countries,
- ε_1 : disturbance term
- i, t : indices for country and year, respectively.

The rationale of the model

The variable to be explained in equation (1) is the growth in the number of business owners per labour force in a four-year period. The parameter b_1 reflects the speed of an error correction mechanism between the ‘equilibrium’ and the actual rate of self-employment at the start of the period and is expected to have a positive sign. As control variables, unemployment and the labour income share are included. Unemployment is

⁵ Apart from some minor adjustments, the description of the model, variables and data sources is taken over from Carree et al. (2007).

expected to act as a push factor for self-employment and its expected sign is positive. The labour income share is an (inverse) proxy for business profitability and its expected sign is negative. Finally, we follow Carree et al. (2002) incorporating a dummy for Italy. Italy, and Northern Italy in particular, is exceptional in the sense that a relatively high value of GDP per capita is combined with a high and rising self-employment rate. The model is estimated by substituting the definition (2a) or (2b) into equation (1):

$$(3a) \Delta_4 E_{it} = a_0 - b_1 E_{i,t-4} + b_2 U_{i,t-6} + b_3 LIQ_{i,t-6} + a_4 YCAP_{i,t-4} + a_5 YCAP_{i,t-4}^2 + b_{ITA} D_{ITA} + \varepsilon_{lit}$$

$$(3b) \Delta_4 E_{it} = a_0 - b_1 E_{i,t-4} + b_2 U_{i,t-6} + b_3 LIQ_{i,t-6} + a_4 \frac{YCAP_{it-4}}{YCAP_{it-4} + 1} + b_{ITA} D_{ITA} + \varepsilon_{lit} .$$

For this paper we are mainly interested in the parameter estimates of α , β and γ and these are calculated as a reparametrisation of the parameters in (3a) and (3b):

$$(4a) \hat{\alpha} = (a_0 + b_2 \bar{U} + b_3 \overline{LIQ}) / b_1 \quad \hat{\beta} = a_4 / b_1 \quad \hat{\gamma} = a_5 / b_1 ,$$

$$(4b) \hat{\alpha} = (a_0 + b_2 \bar{U} + b_3 \overline{LIQ}) / b_1 \quad \hat{\beta} = a_4 / (-b_1) .$$

Using these parameter estimates, variable E^* can be computed (see equation 2).

Variables and data sources

E: Business ownership or self-employment is defined as the number of business owners (in all sectors excluding the agricultural sector), expressed as a fraction of the labour force. Business owners include unincorporated and incorporated self-employed individuals but exclude unpaid family workers. Data on business ownership are taken from EIM's COMPENDIA data base (available through www.eim.net). In COMPENDIA numbers of self-employed reported in *OECD Labour Force Statistics* are harmonized across countries and over time. For the model estimations in the present paper, version 2008.1 of the COMPENDIA data base is used. See van Stel (2005) for an account of how an earlier version of this data set is put together. Data on total labour force are from *OECD Labour Force Statistics*;

YCAP: Gross domestic product per capita. The variables gross domestic product and total population are taken from *OECD National Accounts* and *OECD Labour Force Statistics*, respectively. GDP (in thousands of US \$) is measured in constant prices. Furthermore, purchasing power parities of 2000 are used to make the monetary units comparable between countries;

U: Unemployment rate. It is measured as the number of unemployed as a fraction of the total labour force. The labour force consists of employees, self-employed persons, unpaid family workers, people employed by the armed forces and unemployed persons. The main source for this variable is *OECD Main Economic Indicators*;

LIQ: Labour income share. It is defined as the share of labour income (including the "calculated" compensation of the self-employed for their labour contribution) in the gross national income. Total compensation of employees is multiplied by (total employment/number of employees) to correct for the imputed wage income for the self-

employed persons. Next, the number obtained is divided by total income (compensation of employees plus gross operating surplus and gross mixed income). The data of these variables are from *OECD National Accounts*.

Estimation results

Following Carree et al. (2002, 2007) we estimate the model using weighted least squares (with population as the weight factor). Instead of the 23 OECD countries originally used by Carree et al., we now use data of 27 OECD countries to estimate the model, where the four CEE countries have been newly added to the data base.⁶ For the 23 original countries we use data for the years 1996, 2000, 2004 and 2008.⁷ However, since the early years after the collapse of Communism cannot be considered representative for the relation between economic development and self-employment in the four CEE countries (as self-employment was artificially low), we only use the last two years of data (i.e., 2004 and 2008) for these four countries. Our sample then consists of 100 observations. The results are presented in Table 4.

⁶ The 23 OECD countries originally used by Carree et al. comprise of the former EU-15, together with Iceland, Norway, Switzerland, the United States, Japan, Canada, Australia and New Zealand.

⁷ Due to the four year lag in the model, the 'equilibrium' relation between self-employment and economic development is actually estimated using data for the years 1992, 1996, 2000 and 2004.

Table 4: Estimation results

		Quadratic 'equilibrium rate': equation (2a)	Inverse 'equilibrium rate': equation (2b)
Equations (3a) and (3b), dependent variable: 4-year growth of business ownership rate			
a ₀	autonomous effect	0.057*** (3.6)	0.186** (2.6)
b ₁	error correction	0.118*** (4.1)	0.111*** (3.9)
b ₂	unemployment	0.023 (1.1)	0.027 (1.3)
b ₃	labour income share	-0.060*** (3.6)	-0.052*** (3.3)
a ₄	per capita GDP	-0.000189 (0.3)	-0.148** (2.2)
a ₅	per capita GDP	-2.54 ^E -06 (0.2)	
b _{ita}	Italy	0.013*** (3.4)	0.013*** (3.3)
α	2(a) and 2(b)	0.158** (2.3)	1.381*** (9.3)
β	2(a) and 2(b)	-0.0016 (0.3)	1.333** (2.0)
γ	2(a) and 2(b)	-2.15 ^E -5 (0.2)	
minimum		-	
asymptote			0.048
R ² _{adj}		0.232	0.221

Note: Absolute t-values in parentheses. * Significant at 0.10 level; ** Significant at 0.05 level; *** Significant at 0.01 level. The number of observations is 100.

Since the Inverse model seems to perform somewhat better, we will use this model in the paper. According to our estimation results the 'equilibrium' rate of self-employment can then be written as $E_{it}^* = 1.381 - 1.333 \frac{YCAP_{it}}{YCAP_{it} + 1}$, where $YCAP$ is expressed in thousands of US dollars of price level 2000.

List of Tables

Table 1. Non-agricultural business ownership rates in selected OECD countries, 1989-2008.

Country	1989	1996	2002	2008
Greece	0.188	0.197	0.190	0.198
Italy	0.198	0.208	0.207	0.204
Portugal	0.134	0.167	0.147	0.131
Spain	0.123	0.130	0.127	0.131
Mediterranean countries	0.166	0.177	0.172	0.168
Australia	0.158	0.159	0.158	0.145
Canada	0.105	0.128	0.124	0.120
Ireland	0.102	0.112	0.113	0.116
New Zealand	0.120	0.137	0.135	0.128
United Kingdom	0.113	0.112	0.104	0.115
USA	0.108	0.106	0.098	0.096
Anglo-Saxon countries	0.111	0.111	0.104	0.104
Austria	0.072	0.074	0.087	0.089
Belgium	0.111	0.119	0.115	0.111
France	0.099	0.086	0.079	0.086
Germany	0.071	0.082	0.086	0.097
The Netherlands	0.080	0.098	0.103	0.119
Switzerland	0.069	0.077	0.074	0.068
Western European countries	0.084	0.086	0.086	0.095
Denmark	0.060	0.064	0.067	0.070
Finland	0.081	0.080	0.079	0.088
Norway	0.081	0.071	0.065	0.084
Sweden	0.069	0.081	0.081	0.087
Scandinavian countries	0.071	0.075	0.074	0.083
Czech Republic	0.002	0.112	0.146	0.152
Hungary	0.061	0.120	0.103	0.097
Poland	0.046	0.077	0.077	0.091
Slovak Republic	0.001	0.053	0.065	0.117
Central and Eastern European countries	0.037	0.087	0.092	0.105
COMPENDIA-23	0.113	0.111	0.106	0.107

Source: EIM, COMPENDIA 2009.1 data base.

Note: Business ownership rates for the country groups are weighted averages of the underlying countries.

Table 2. Comparative analysis of trends in BO rates during 1989 – 2008.

No.	Description	1989	1996	2002	2008
1.	Average BO rates in the CEE countries as % of average COMPENDIA-23, of which:	32.5	78.6	86.7	98.7
	- Czech Republic	1.5	100.9	137.7	143.1
	- Hungary	53.8	107.9	96.8	91.0
	- Poland	40.4	69.4	72.8	85.2
	- Slovak Republic	0.7	48.1	61.7	109.5
2.	Average BO rates in the CEE countries as % of average Western European group, of which:	43.8	101.8	106.4	111.2
	- Czech Republic	2.0	130.7	169.0	161.2
	- Hungary	72.6	139.8	118.8	102.5
	- Poland	54.5	89.9	89.4	96.0
	- Slovak Republic	1.0	62.2	75.8	123.4
3.	Lowest BO rate as % of the highest BO rate within the CEE country group	1.3	44.5	44.8	59.6
4.	BO rates in individual CEE countries as % of the average BO rate for the CEE group as a whole				
	- Czech Republic	4.6	128.4	158.8	145.0
	- Hungary	165.6	137.3	111.7	92.2
	- Poland	124.3	88.3	84.0	86.4
	- Slovak Republic	2.2	61.1	71.2	111.0

Source: EIM, COMPENDIA 2009.1 data base.

Note: Business ownership rates for the country groups are weighted averages of the underlying countries (see Table 1).

Table 3a: Actual and 'equilibrium' self-employment rates, Czech Republic

Year	Per capita income in US\$ of 2000	Four-yearly growth of per capita income	'Equilibrium' SE rate (E*)	Actual SE rate (E)	E*-E
1989	N.A.	N.A.	N.A.	0.002	N.A.
1992	12798	N.A.	0.145	0.069	0.076
1996	14429	0.127	0.134	0.112	0.022
2000	14995	0.039	0.131	0.133	-0.002
2004	17054	0.137	0.122	0.151	-0.030
2008	20609	0.208	0.110	0.152	-0.043

Source: EIM, COMPENDIA 2009.1 data base, and own calculations.

Table 3b: Actual and 'equilibrium' self-employment rates, Hungary

Year	Per capita income in US\$ of 2000	Four-yearly growth of per capita income	'Equilibrium' SE rate (E*)	Actual SE rate (E)	E*-E
1989	N.A.	N.A.	N.A.	0.061	N.A.
1992	9477	N.A.	0.175	0.085	0.091
1996	10001	0.055	0.169	0.120	0.049
2000	12114	0.211	0.150	0.110	0.040
2004	14549	0.201	0.134	0.112	0.021
2008	16022	0.101	0.126	0.097	0.029

Source: EIM, COMPENDIA 2009.1 data base, and own calculations.

Table 3c: Actual and 'equilibrium' self-employment rates, Poland

Year	Per capita income in US\$ of 2000	Four-yearly growth of per capita income	'Equilibrium' SE rate (E*)	Actual SE rate (E)	E*-E
1989	N.A.	N.A.	N.A.	0.046	N.A.
1992	6966	N.A.	0.215	0.068	0.148
1996	8619	0.237	0.186	0.077	0.109
2000	10568	0.226	0.163	0.080	0.083
2004	11896	0.126	0.151	0.078	0.073
2008	14706	0.236	0.133	0.091	0.042

Source: EIM, COMPENDIA 2009.1 data base, and own calculations.

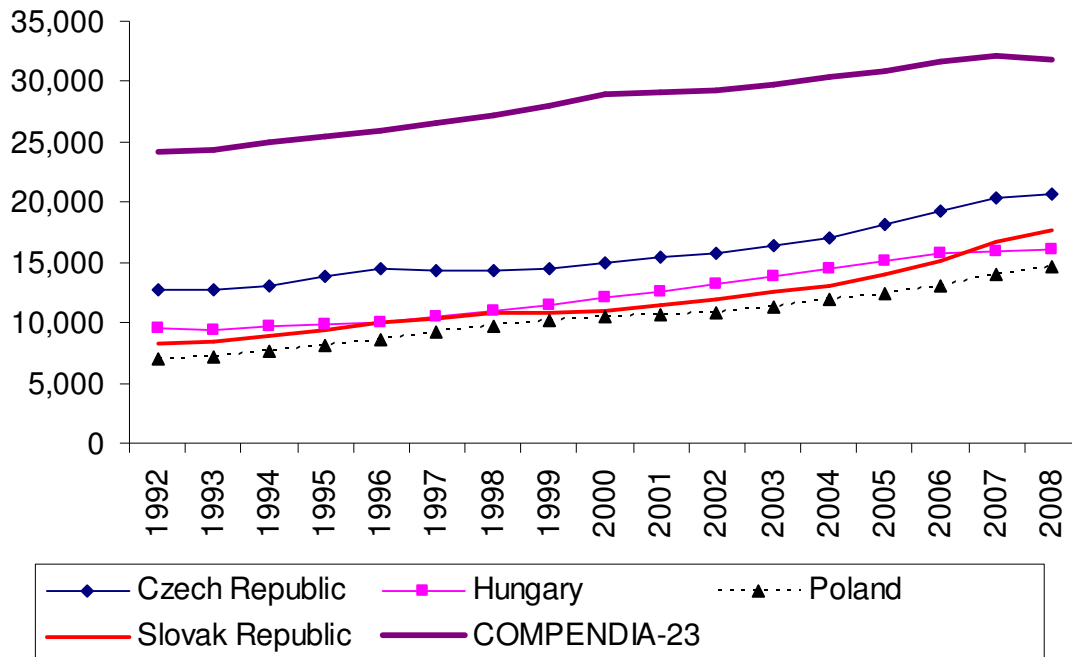
Table 3d: Actual and 'equilibrium' self-employment rates, Slovak Republic

Year	Per capita income in US\$ of 2000	Four-yearly growth of per capita income	'Equilibrium' SE rate (E*)	Actual SE rate (E)	E*-E
1989	N.A.	N.A.	N.A.	0.001	N.A.
1992	8253	N.A.	0.192	0.041	0.151
1996	9984	0.210	0.169	0.053	0.116
2000	10972	0.099	0.159	0.060	0.099
2004	13115	0.195	0.142	0.091	0.051
2008	17721	0.351	0.119	0.117	0.002

Source: EIM, COMPENDIA 2009.1 data base, and own calculations.

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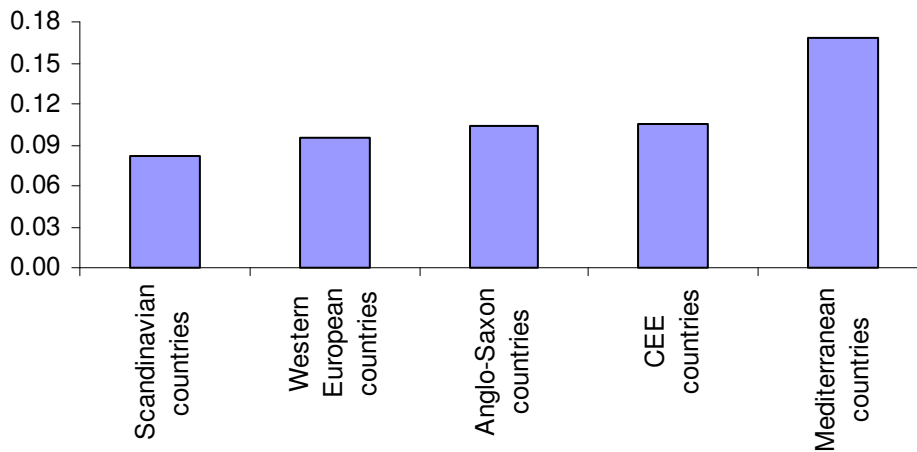
Figure 1: GDP per capita in four CEE countries, 1992-2008



Source: EIM, COMPENDIA 2009.1 data base, based on OECD National Accounts and OECD Labour Force Statistics.

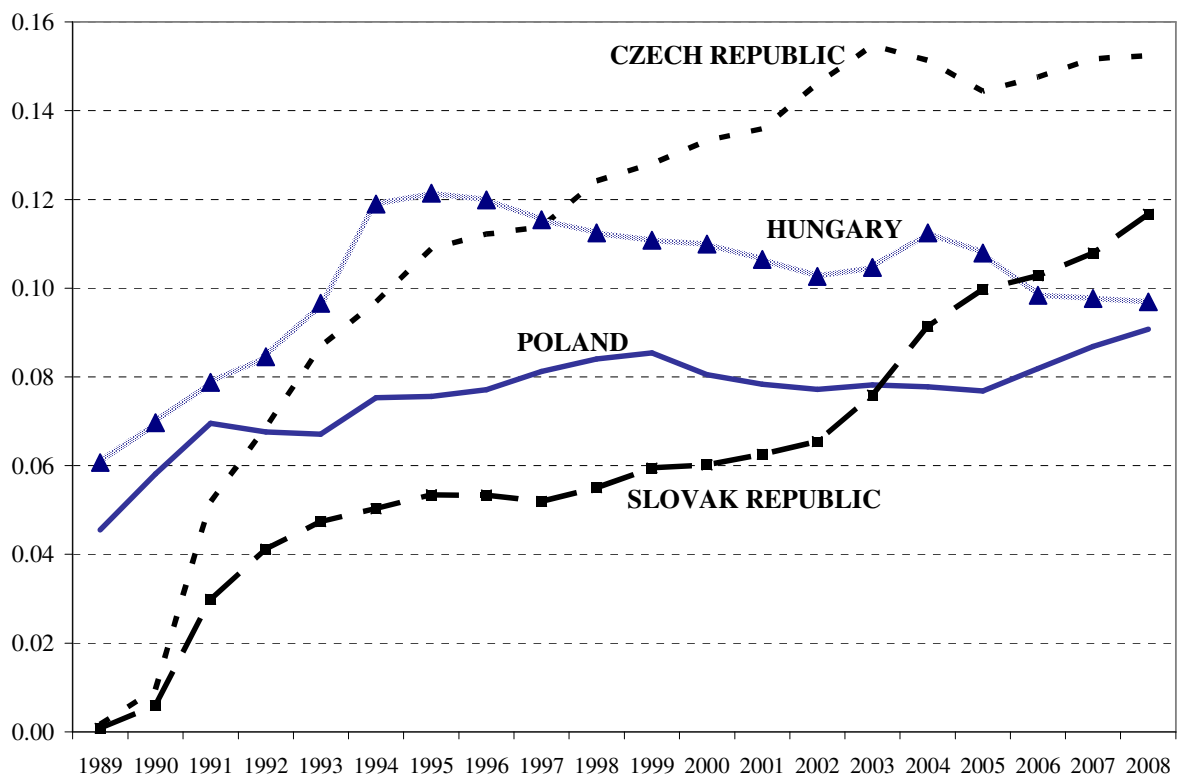
Note: GDP per capita is expressed in purchasing power parities per U.S. \$ at 2000 prices. The COMPENDIA-23 level of GDP per capita is included as a benchmark.

Figure 2. Non-agricultural BO rates by major OECD country groups in 2008



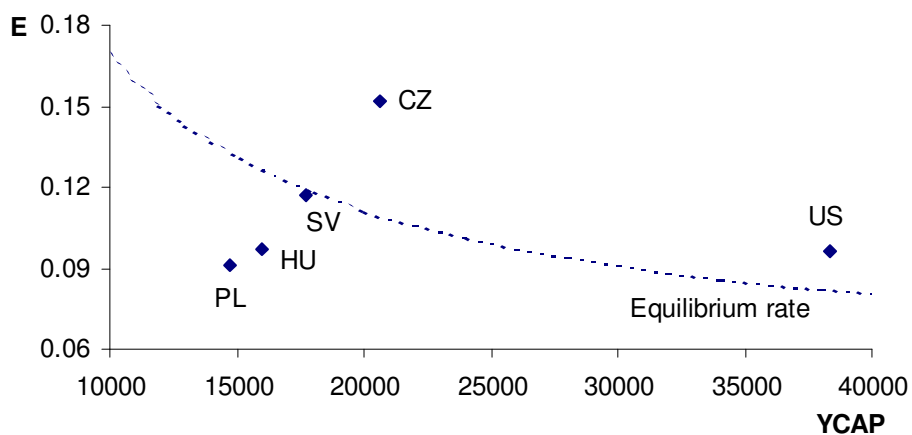
Source: EIM, COMPENDIA 2009.1 data base.

Figure 3. Development in non-agricultural business ownership rates in four CEE countries, 1989-2008.



Source: EIM, COMPENDIA 2009.1 data base

Figure 4. Actual and 'equilibrium' business ownership rates in 2008



Source: EIM, COMPENDIA 2009.1 data base, and own calculations.

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