

**Institut für Höhere Studien (IHS), Wien  
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**No. 27**

**STYLIZED FACTS OF NEW ENTERPRISE  
FORMATION IN CENTRAL AND EASTERN  
EUROPE**

**HOW DIFFERENT ARE THE CZECH AND SLOVAK REPUBLICS?**

**Peter Huber**

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# **Stylized Facts of New Enterprise Formation in Central and Eastern Europe**

**How Different are the Czech and Slovak Republics?**

**Peter Huber**

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## Introduction

One of the most commonly stressed themes in the analysis of transition economies is their need to restructure from a government ownership based production economy to a privately owned, more service oriented society. The development of a small scale business sector has an important role to play in this restructuring process. On the one hand, small scale business creation represents a form of "bottom up" privatization of the economy. On the other hand, the fact that most service enterprises are small scale, means that new business creation is the predominant source for restructuring to service activities. Creation of new small scale enterprises is therefore one of the central features of transition.

In most mature market economies large regional differences characterize the creation of new private activities. Concerning transition economies, despite the importance of the topic, very little is known about the factors that affect the birth of new firms. Are regional differences in new firm creation caused by the same mechanisms as in mature market economies? Is a different "policy mix" necessary to increase small scale business activity in transition economies?

This paper looks at data on the creation of small enterprises available from the Czech and the Slovak Republics to address two issues. First, it attempts to explain what are the causes for the regional variation in new enterprise formation within the two countries, with the aim of identifying differences in business creation between transition and mature market economies. The underlying question is to see whether policy experiences directed at the creation of small scale enterprises in mature market economies can be applied to the transition economies or whether altogether different policy strategies have to be followed in transition.

Second, the paper looks at whether the marked differences in business formation rates which other authors have noticed as well (see: Burda/Lubyova (1995), Benacek et al. (1994)) can be explained by systematic differences in the countries. This experiment is interesting because much of the recent literature has suggested that, whether a country has high or low business creation rates in transition, may be substantially influenced by expectational forces alone,

implying that intangibles such as the "business climate" may be much more important in transition economies than in mature market economies.

The Czech and Slovak Republics represent a natural experiment which allows to address the two issues. Both countries have a long joint history, so that data is comparable to a large degree. At the same time, in the Czech Republic almost 10 enterprises per 100 inhabitants had been licensed in 1993, while in the Slovak Republic this figure was at only 5.

When looking at the variation within countries four differences can be found in the covariates of new business formation rates in the two countries and the mature market economies. First, labor market indicators have a highly significant, but oppositely signed impact on new business formation. Second, variables that are associated with market size, in contrast to mature market economies, are less significant. Third, infrastructure indicators are more important for new business creation in transition economies than in most mature market economies. Fourth, variables that are associated with the speed of restructuring, not usually included in the analysis of new enterprise formation in mature market economies, explain a significant part of the variance in new enterprise formation in economies in transition.

This suggests that while in mature market economies the availability of labor and the market size have a positive impact on new business creation, in transition economies the causality concerning labor market indicators is reversed. High new business formation creates more jobs and thereby reduces the unemployment in a region. At the same time the market size is not the limiting factors in new business creation in transition economies. Much rather this seems to be the infrastructure available for engaging in a new business.

Concerning the marked differences in new enterprise formation between the Czech and the Slovak economies, I find that they cannot be explained by the variables that are good predictors of business formation alone: A dummy variable for the Slovak regions remains highly significant in all regression specifications we try. This suggests that the process of business formation differs significantly between the two countries. A number of explanations could be put forward to explain this: Policy towards newly founded enterprises could be the reason. However, we find little evidence that policy has differed so much between the two countries, as to be capable to explain the gap in new enterprise formation. To the extent that

capital market imperfections are more important in Slovakia than in the Czech Republic one would expect that the Slovak economy would generate fewer enterprises, but again this explanation does not seem to be supported by data. In particular recent research by Johnson and Loveman (1995) has shown that most of the new enterprise formation has been financed from savings of entrepreneurs. Here the self-financing capability does not differ substantially between the countries. This leaves as the only plausible explanation we can come up with, differences in expectations concerning the future prospects of the countries, which have been deemed important in theoretical works on the process of restructuring and new business formation in transition such as Aghion/Blanchard (1993) and Chada/Corricelli (1993).

Both findings have a heavy bearing on policy in transition economies. The highly significant correlations of new business formation with labor market indicators in transition economies make clear how much can be gained from having high founding rates. The fact that infrastructure variables are highly correlated with the new business formation, rather than market size, seems to suggest that in contrast to most western countries infrastructure development should be a more effective policy measure to foster new business creation. The fact that variables associated with transition are highly significant makes clear that faster transition will increase the rate of new business creation. Finally, the conjecture that expectations concerning the future development of the countries drive the differences in new business formation suggests that the intangible factor often referred to as "business climate" is even more important in transition than in mature market economies.

The paper is structured as follows: In part one I summarize the results of empirical research on small business creation in mature market economies, while part two shortly reflects on the particularities that arise in new small scale enterprise formation in transition. Part three addresses data issues: Recent research (Benacek (1994)) has emphasized that in the context of transition, enterprise formation rates may be seriously understated, because of substantial gray and black market activities. The argument of this paper is that the problem is overrated if one is interested in analyzing the enterprise formation of "committed" entrepreneurs.

Part three and four are the main parts of the paper. Part three presents a documentation of the regional differences in small scale business creation in the Czech and Slovak Republics and

reports results concerning intra-country variation in new business formation, contrasting these to the findings on mature market economies. Part four then turns to the issue of inter-country variation in enterprise formation rates and presents econometric results concerning the differences between the Czech and the Slovak Republics. Part five finally concludes the paper and draws some policy implications.

## **Determinants of New Business Formation in Mature Market Economies**

The importance of small scale business creation in most Western countries has been richly documented. Small businesses create the majority of jobs in west European countries (O'Farrell, 1986; Storey, Johnson (1987)). They are also more flexible and therefore provide for a large part of the growth impetus in these countries, regions with higher firm birth rates in general exhibit higher growth rates (Wilken (1979))<sup>1</sup>. Given these findings it is no wonder that analysts saw with sorrow the almost complete lack of small scale enterprises in former socialist countries. Encouraging the growth of a small scale, private business sector in Central and Eastern Europe was therefore seen as one of the primary goals of transition.

However, despite the substantial evidence for the positive effects of small and medium size enterprise creation on both regional growth and employment, there is as of yet no formal model that explains the reasons for new enterprises creation and lends itself to empirical testing. Research has focused on explorative data analysis of business creation, correlating different characteristics of regions on the number of newly founded enterprises (Reynolds, Storey, Westhead (1994)). Although authors differ on the exact theoretical foundation for the relevance of certain indicators, these exercises have brought forth a number of "stylized facts" about new business formation. Three sets of variables have been found to be of importance by this research:

1) Attitudes of the population and demographic situation - The attitudes of the population towards entrepreneurial activity, as reflected in the ideological convictions will heavily influence the willingness to create new activities. Similarly, the demographic structure of a region's population is of importance: Older people as a rule will not be as willing to engage in business

creation, simply because their planning horizon is too short to go through the hardships that accompany the start up phase of a new enterprise. The education structure and work experience of the population have a major role to play. The more adaptable the workforce is to new circumstances, the more willing it will be to take up the chances that are available for them. That is more highly educated people and people in managerial functions should have higher business formation rates. Finally, there may be a difference in the propensity to engage in new business formation between men and women.<sup>2</sup>

2) Regional Characteristics - The more supportive the regional environment is of the entrepreneurial activity, the more willing will individuals in the region be to create new activities. For instance, the better the infrastructure of a region, the higher will its new firm birth rate be. At the same time the industrial specialization of the region has a role to play, both because it creates certain material work experiences that bear on the adaptability of the workforce and because, technological differences of the industries bear on the possibility of "outsourcing" of certain activities, which may in turn be an easy start for a potential entrepreneur. In general it may be expected that agricultural regions have lower "outsourcing" possibilities than industrial ones and that, due to the extreme specialization in mass production, regions with a high share of large firms create less activities.

3) Market Conditions - Market interactions influence the prices of the factors of production. In particular the labor market conditions are of importance. In general there are three factors to be considered: wages, the unemployment rate and the vacancy rate. Wages are the price of the most important input price factor for small and medium sized enterprises. It is therefore to be expected that an increase in wages *ceteris paribus* decreases the number of enterprises newly founded. The unemployment rate may influence the rate of business creation in two ways. First, it may be that in regions with high unemployment, the unemployed, because they have no employment opportunities, have a higher propensity to found new enterprises. Second, it could be that regions with high unemployment rates are also regions where demand is low. Finally, regions with many new enterprises also generate more new jobs. Unemployment and new enterprise formation could also be negatively correlated therefore, so that the coefficients of market variables are subject to simultaneity.

## The Role of Newly founded Enterprises in Transition

While for most established market economies the importance of these three sets of variables has been extensively tested, in the transition context, a case can be made that both a wider set of variables may be relevant and that certain variables will correlate differently with small business formation. Chada and Corricelli (1993) as well as Aghion/Blanchard (1993) have recently presented theoretical models which attempt to explain the rate of new business formation. Both these models share two features: First, the speed of restructuring measured by the amount of employed dismissed from the large scale state sector (or alternatively the speed of privatization) has a strong influence on the amount of new enterprises formed. Second, in both models two equilibria arise, one associated with rapid private sector development and the other with only slow private sector development.

New business creation is therefore the primary mean by which transition economies can reduce unemployment. Aside from fostering innovation and creating new employment in transition economies, small scale enterprise formation may be seen as a method both of privatizing the economy and a means of fostering competition (and thereby reducing inflation) in regions dominated by large scale monolithic enterprises.

This suggests two empirically testable predictions: First, above the usual variables included for business formation, the speed of privatization may increase the number of small scale enterprises.<sup>3</sup> Similarly, the number of workers dismissed from the state sector, as well as all other labor market indicators, should be very important in determining the rate of "bottom up" privatization. Second, if there are large discrepancies in the formation of small scale enterprises such as between the Czech and the Slovak Republic, this may not be due to systematic differences between the countries, but rather to different expectations held by the entrepreneurs. That is these differences may remain unexplainable by the data alone.

## Data & Measurement Issues

### *Business Formation*

As with all data exploration the quality of data and measurement of the variables is a central issue in new business formation. The data I use comes from the regional statistical yearbooks

of the Czech and the Slovak Republics, respectively. These sources provide a rich data collection concerning the demographic composition, the infrastructure endowments of the population and the labor market conditions of the 77 districts (okres) of the Czech Republic and the 38 districts (okres) of the Slovak Republic. Also they list the number of permits given to engage in entrepreneurial activity (licensed enterprises) per region.

Using licensed enterprises as an estimate for new business formation is not unproblematic: To obtain such a license it is not necessary that their holder actively follows an entrepreneurial activity, so that part of the licensed enterprises could be dormant. Indeed, Jilek (1994) reports that in the early phases of transition as much as 30% of the licensed enterprises were dead souls. so that licensed enterprises must be considered an upper bound estimator for new enterprise formation.<sup>4</sup>

Yet, there are also advantages to using licensed enterprises: Especially the fact that much of the enterprise formation in Central and Eastern European (CEE) countries occurs in the gray and black economy (see Benacek (1994) and Benacek/Zemplerova (1994)), which has led to the suspicion that official data is distorted and of little use to evaluate business formation, works to the advantage of this indicator. As stated the licensed enterprises are an upper bound estimator of the new enterprise formation and the minimal formality required to obtain a license suggests that they can be used as an indicator of how many enterprises are formed with the intention of long run entrepreneurial activity. After all "bottom up" privatization cannot take place relying on black and shadow activities alone, which are characterized by extreme instability with many entries and exits. Much more one should focus the attention on how many enterprises actually have attained enough formality to insure their owners' willingness to engage in more formal activities as well.<sup>5</sup>

Another problem with measurements of business formation that transcends the context of transition economies, refers to the normalization used. Clearly regional administrative units differ in sizes and some normalization must be chosen. Unfortunately, a substantial body of empirical literature shows that parameters in OLS regressions depend heavily on the kind of normalization used. In particular the coefficient of the unemployment rate used to control for labor market conditions depends on whether one uses the number of firms or the population as

normalization. Audretsch and Fritsch (1994) provide some evidence that this may be due to the size distribution of existing enterprises. Normalization with enterprise numbers overstates business formation when there are a few large enterprises in the economy, and understates the enterprise formation when there are many small scale enterprises. This suggests a normalization by the labor force. In particular I focus on the number of licensed enterprises per 100 inhabitants.

#### *Explanatory Variables*

Four sets of explanatory variables are used to explain new enterprise creation.

**Regional Variables:** Aside from variables on industrial specialization (the share of employment in transport, industry, and agriculture) this set of variables includes the average workforce per enterprise (as a proxy for large scale employment) and infrastructure variables (telephones per 100 inhabitants and an index of accessibility). These two variables measure different aspects of infrastructure quality. The number of telephone lines is associated with the quality of telecommunications infrastructure. The index of accessibility finally is a variable that measures the centrality of the location

**Data on the Demographic Characteristics of a Region:** This list of variables includes education variables (the share of population that has received university training and the share of population with vocational training), the share of productive age population and share of female population. Finally, population density and the share of population that migrated to/from the region since 1990 are variables that measure market size and market growth.

**Data on the Progress of Transition:** Two variables are included to proxy for the progress in enterprise restructuring: first, the percentage reduction of the industrial labor force of the same year as a percent of the total labor force; second, the share of the labor force involved in projects of the first round of voucher privatization. Furthermore, we include data on the influence of foreigners (the number of tourist nights per 100 inhabitants and the share of foreign enterprises in all enterprises) in this category.

**Data on the Labor Market Situation:** The labor market situation as proxied by the unemployment rate is an indicator of the availability of labor force but can also be expected to

have effects both by giving the potential number of people that could found an enterprise because of frustration in the labor market. Wages as the price for the most important input factor of small and medium sized enterprises and the regional inflation rate as a measure of excess demand in the region can be used to model market conditions. Furthermore we include vacancy rates as a measure of labor market tightness.

### **Intra-Country Variation in Enterprise Formation**

Diagram 1 and Diagram 2 display the distribution of licensed enterprises per 100 inhabitants in the districts (okres) of the Czech and Slovak Republics, respectively. These diagrams point to a number of differences and common themes in the enterprise formation rate. In both countries the variation in enterprise formation rates is high the coefficient of variation being between 0.49 and 0.61 in the Slovak Republic and between 0.39 and 0.65 in the Czech Republic in the years 1992 and 1993, respectively. However, there are also two major differences:

- In the Czech Republic on average more enterprises are formed than in the Slovak Republic. Averages being about the same as the minimum in the Czech Republic.
- At the same time in the Slovak Republic a clear East-West differential exists in business formation: more eastern regions have lower business formation rates than western ones. In the Czech Republic such a geographical pattern is less visible but also present.

Do the differences reflect systematic variations in the Czech and the Slovak Republics? Table 1 gives a first glance at this issue by comparing the enterprise formation in the Czech and the Slovak Republics on the basis of the larger administrative units, the counties (kraj). This table confirms the aggregate picture given in Diagrams 1 and 2 but suggests an additional interpretation:



Diagram 1: Number of Licensed Enterprises per hundred Inhabitants in the Czech Republic (Beginning 1993)

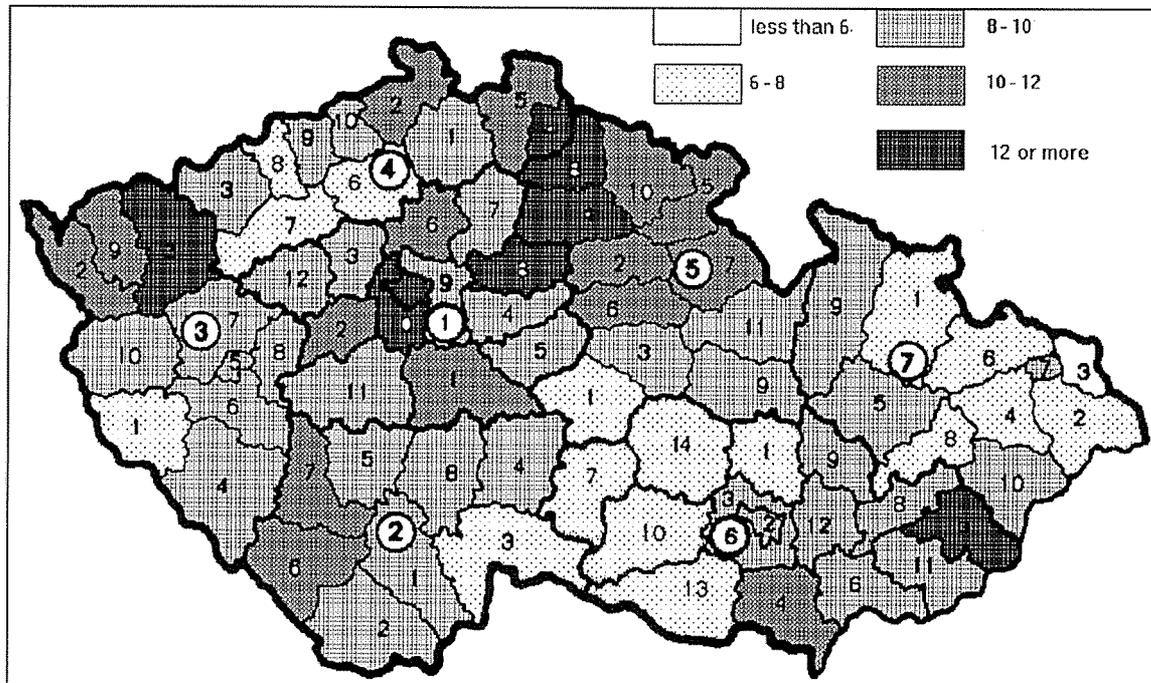
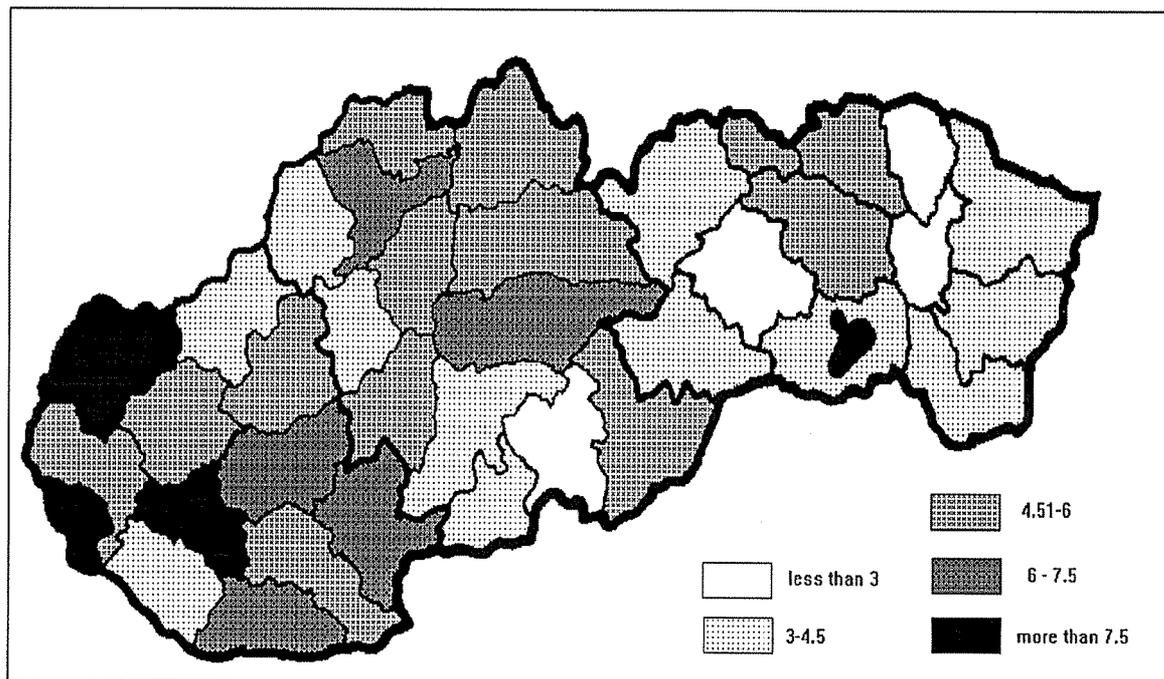


Diagram 2: Number of Licensed Enterprises per hundred Inhabitants in the Slovak Republic (Beginning 1993)



In both countries the capital cities (Bratislava, Prague) lead their countries in terms of licensed enterprises generated per hundred inhabitants, although the lead is shrinking in 1993. More



peripheral districts, on the other hand, such as South Bohemia, North Moravia and East Slovakia have a much lower new business formation rate. This may be due to the "leaders in transformation" effect of capital cities in Central and Eastern Europe: The capital cities in Central and Eastern Europe have been characterized by both a privileged starting position in terms of infrastructure and, in part as a consequence of this, by disproportionately high interest of foreigners. At the same time, more western counties have created more licensed enterprises per hundred inhabitants than eastern ones. Tourism and vicinity to Western neighbors bringing in more purchasing power seems to have a large role to play in the development of new enterprises.

This suggests that differences in the creation of new business in the Czech and the Slovak Republic run mainly along two dimensions. First, along center - periphery lines; more central regions within the country tend to have higher business formation rates than those which are more peripheral. The second dimension may be called "exposure to the west". Regions that have a more western location and are more easily accessible from abroad, tend to generate more businesses than do more eastern and therefore less accessible regions.

**Table 1: The distribution of newly founded enterprises by county**

date	Licensed Enterprises		Licensed/100 Inhab.	
	1992	1993	1992	1993
unit	Number	Number		
Prague	210,499	173,007	17.34	14.23
Central Bohemia	95,314	115,654	8.57	10.42
South Bohemia	62,693	62,949	8.89	9.12
West Bohemia	81,940	86,128	9.51	10.01
North Bohemia	117,132	109,490	9.98	9.32
East Bohemia	126,295	130,442	10.24	10.56
South Moravia	179,114	188,481	8.74	9.18
North Moravia	137,693	153,054	7.01	7.78
Bratislava	43.567	42.788	9.79	9.61
West Slovakia	88.347	90.731	5.96	6.12
Central Slovakia	80.980	84.139	5.00	5.19
East Slovakia	70.381	71.289	4.63	4.69

Source: Slovak Statistical Office, Czech Statistical Office

To put this hypothesis to a somewhat more formal test we correlate the newly founded enterprises in both countries to a number of variables (explained in section 3)<sup>6</sup>. Table 2 reports

the results for the Czech and the Slovak Republics. In general these results suggest that within the four groups of variables (regional, demographic, transitional and labor market) there are a number of variables that indicate that there is a strong center - periphery aspect to new business formation. The infrastructure variables (the number of telephone lines per 100 inhabitants and the index of accessibility) are significant or at least on the verge of significance for each year. Similarly, variables that may be deemed good proxies for center periphery issues, such as the share of agricultural employment and higher education, are highly significant correlates of enterprise formation.

At the same time, the influence of foreigners seems to be the other major determinant. Although tourist influences are highly significant in the Czech Republic only, the share of foreign enterprises in total enterprises is highly significant throughout. Even more compelling evidence for the important role of foreign influences and centrality comes from the regression results, reported in Tables A1 in the appendix. In this table infrastructure and the share of foreign enterprises belong to the most uniformly significant variables.

#### ***Differences to Mature Market Economies***

How different are these correlation results to those observed in "typical" studies on enterprise formation in mature market economies? There are two ways to answer this question. First, one can attempt to assess how important the variables grouped under "transition" are in terms of explaining enterprise formation. Second, one can consider the differences in correlations between mature market economies and transition economies concerning the other variables.

Looking at the first issue, one has to conclude that transition variables are indeed among the more important ones in explaining the regional variance in new enterprise formation in transition. Evidence for this comes both from the correlation and the regression results. The later suggest that the transition variables on their own explain 49% of the variance in new enterprise formation in the two Republics. That is they are outscored in their importance only by the labor market indicators. In particular it seems that rapid privatization increases the propensity to found enterprises as does increased restructuring (as measured by the employment reduction in industry). The only variable that seems to be of lesser importance is that of tourist nights spent, which may primarily be due to the fact that this is a bad indicator for

foreign influences.<sup>7</sup> The share of foreign enterprises is more accurate in capturing foreign influences and remains significant or on the verge of significance in all regressions except for one.

To address the second issue Table 3 in its second column reports the correlation results that can be typically expected in mature market economies<sup>8</sup>. These results suggest that, while for most other indicators the evidence is well within the band of variation, in the mature market economies, the most marked difference between mature market economies and economies in transition, such as the Czech and the Slovak Republics, lies in the market variables and the infrastructure variables. Differences in market variables concern both input markets such as the unemployment rate, wages the vacancy rate and output markets, such as population density (which measures local market size) and immigration (which measures market growth). Differences in the infrastructure variables suggest that this factor is more important than in the mature market economies.

Although labor market variables are highly significant in general, they tend to have the wrong signs. This points to a reversal of the causality between these variables, since the unemployment rate, wages, and vacancy rates not only influence the creation of new enterprises but also are strongly influenced by the enterprise formation rate. While higher unemployment increases the availability of labor and thereby *ceteris paribus* increase the propensity to found new enterprises, the founding of new enterprises also reduces unemployment by creating new enterprises.

**Table 3: Correlation of enterprise formation and explanatory variables in the Slovak and Czech Republics (1991 - 1993)**

Variable		Slovak Republic			Czech Republic		
		1991	1992	1993	1991	1992	1993
<b>Regional</b>							
Share Agr. Employment	(-)	-0.33**	-0.32**	-0.29**	-0.34**	-0.17	-0.46***
Share Ind. Employment	(-)	-0.25	-0.28*	-0.24	-0.12	-0.18	-0.13
Share Trans. Employment	?	0.17	0.09	0.03	0.14	0.08	0.24**
Telephones/100 Inhabitants	X	0.74***	0.79***	0.61***	0.54***	0.47***	0.55***
Workforce/Enterprise	(-)	-0.07	-0.06	-0.25	-0.18	-0.12	0.00
Index of accessibility	(+)	0.22	0.23	0.23	0.18	0.28**	0.08
<b>Demography</b>							
Population Density	+	0.48**	0.59***	0.38**	0.11	0.06	0.18
Share of Female Pop.	?	-0.09	-0.11	0.03	0.23**	0.17	0.23**
Share of Prod Age Pop	+	n.a.	n.a.	n.a.	0.20*	-0.01	0.37***
Higher Education	?	0.84***	0.86***	0.58***	0.42***	0.24**	0.36***
Apprentices	?	-0.46**	-0.45**	-0.21	0.40***	0.34***	0.33***
Net Immigration	+	0.25	0.27	0.34**	0.27**	0.27**	0.28**
<b>Transition</b>							
% Employment Reduction	X	0.22	0.19	0.29*	-0.28**	-0.18	-0.41***
% of workforce Priv.	X	0.46**	0.33**	0.38**	0.14	0.10	0.19
Share of Foreign Enterpr.*	X	0.60***	0.70***	0.67**	0.34**	0.08	0.23**
Tourist Nights/100 Inhabitants	X	0.14	0.17	0.21	0.56***	0.47***	0.52***
<b>Market</b>							
wage	-	0.63***	0.71***	0.57***	0.03	-0.00	0.19*
wage change (prev. year)	-	0.49**	0.58***	0.57***	0.22*	0.11	-0.12
cpi (prev. year)	(+)				0.28**	0.18	0.43***
unemployment rate	+	0.38**	-0.11	-0.41***	-0.47***	-0.52***	-0.38***
vacancy rate	X	0.07	0.12	0.15	0.29**	0.42***	0.45***

Column 1 reports the typical signs found of similar exercises in mature market economies in particular on the signs reported in (Reynolds, Storey and Westhead, 1994) and the other authors cited in the literature list. + means that a strong positive correlation exists - that a strong negative correlation exists, brackets means that one should expect marginal significance while ? implies that the correlation is indeterminate. X finally signifies that no previous results on a comparable measure could be found. \*\*signifies a significance at the 10% confidence level, \*\*at the 5% level and \*\*\*at the 1% level n.a. -not available

Output market variables, such as the population density and immigration, that are uniformly important in the creation of new enterprises in mature market economies, remain completely insignificant in the transition economies, while infrastructure variables such as the index of accessibility and telephone lines per 100 inhabitants, which are usually not as significant in mature market economies are on the verge of significance or highly significant in transition. Again evidence from the regression results in the appendix strengthen this view. This suggests

that in contrast to the mature market economies the limiting factor in new firm formation in transition economies are not so much market size and market growth but the infrastructure requirements necessary for operation of new businesses.

In summary, there are therefore four major differences that can be found between the stylized facts of new business formation in transition economies and those in mature market economies suggests. First, in line with theory, the variables associated with transition itself are highly significant. Second, labor market variables are highly significant in transition but in general have the wrong sign, reflecting the important role new enterprises have in generating new jobs. Third, infrastructure variables are more significant than in mature market economies, suggesting that center - periphery issues are even more important in transition economies than in mature market economies, and fourth, market size and market dynamics variables have a lower significance in transition than in mature market economies. This does, however, not support the hypothesis that new business creation is altogether different in the two transition economies from mature market economies. Indeed the correlation structure concerning most other indicators shown in table 2 is surprisingly similar to what one would expect to find in most studies on small scale business formation in mature market economies.

### **Inter-Country Variation**

Furthermore, the market variables' significance varies between countries: While in the Slovak Republic new business formation is closely associated with wages but not with vacancy creation in the Czech Republic new business formation is more closely associated with vacancy creation than with wages. This, may reflect differences in labor market performance: In the Slovak Republic unemployment is high and so is downward wage pressure, therefore the extra demand of new enterprises may significantly alter wages. In the Czech Republic unemployment and therefore downward wage pressure is low but in some instances it is difficult for small scale enterprises to find personnel, therefore new business creation creates more vacancies rather than higher wages.

In order to look at what the causes the marked differences in new enterprise formation rate between the Czech and the Slovak Republics, I employ regression analysis, by estimating equations of the form:

$$(1) \quad \ln(E) = a + bX + cD$$

with E the number of licensed enterprises per 100 inhabitants in 1992 and 1993, respectively, X a vector of explanatory variables, D a dummy variable which takes on the value 1 if the region is a Slovak region and 0 if it is a Czech region and a, b and c coefficient(vectors) to be estimated.

The strategy followed in order to identify what factors (regional, demographic, transitional, market) if any can explain differences in enterprise formation rates, is to include a dummy variable for the Slovak Regions in the regression and to stepwise integrate new variables into the regression. In this experiment one would consider the differences between the two countries to be explained if the coefficient on the dummy variable became insignificant.

**Table 3: Regression Analysis of the Differences in Enterprise formation between the Czech and Slovak Republics**

Control for:		1992		1993	
		With Dummy	Without Dummy	With Dummy	Without Dummy
Regional	Coeff	-0.63 (11.55)		-0.60 (10.00)	
	R <sup>2</sup>	0.70	0.35	0.68	0.39
Demography	Coeff	-0.76 (10.08)		-0.65 (8.05)	
	R <sup>2</sup>	0.69	0.36	0.76	0.32
Market	Coeff	-0.59 (3.62)		-0.42 2.37	
	R <sup>2</sup>	0.68	0.65	0.58	0.56
Transition	Coeff	-0.84 (8.90)		-0.91 (8.60)	
	R <sup>2</sup>	0.69	0.49	0.62	0.45
All except for Labor Market	Coeff	-0.75 (6.53)		-0.87 (7.29)	
	R <sup>2</sup>	0.76	0.67	0.75	0.61
Regional & Demography	Coeff	-0.71 (9.66)		-0.58 (9.11)	
	R <sup>2</sup>	0.70	0.48	0.69	0.51
All	Coeff	-0.91 (5.13)		-0.93 (4.98)	
	R <sup>2</sup>	0.78	0.73	0.75	0.69

Values in brackets represent t-values

As Table 3 shows both the regional as well as the demographic variables are highly collinear with the dummy variable for the Slovak Republic, suggesting that the two republics differ markedly in their regional and demographic characteristics. However, the estimates reported in Table 3 show that the differences in new firm creation between the two countries cannot be explained by either regional or demographic characteristics: When including the dummy variable for the Slovak Republic, it remains significant in both instances, and the  $R^2$  value of the regressions increases substantially.

The picture somewhat changes when looking at the variables of transition. Here the dummy variable for the Slovak Republic is significant but the increase in  $R^2$  is only 0.20. Including labor market indicators into the list of explanatory variables leaves the dummy variable significant but reduces the level of significance sharply. Furthermore, the increase in  $R^2$  values is significantly smaller in this case than in the other instances. Given the high multicollinearity of the different variables with the dummy variable for Slovak districts this suggests that the differences in labor market experiences and the differences in transition are closely associated with the differences in new enterprise formation.

However, although tempting as an explanation, the reliance on labor market variables to explain the differences leads to a tautology: As explained above, the high but wrongly signed coefficients of the unemployment rate, arise from the fact that new enterprise formation creates new jobs. Therefore, high enterprise formation leads to lower unemployment rather than vice versa and the labor market variables cannot be accepted as an explanation for the differences in enterprise formation rates.

For this reason in rows 5 to 8 of table 3 a combination of factors was included. As can be seen from these rows combining demographic and regional variables with the transition variables, substantially reduces the gap in  $R^2$  values, although the dummy for the Slovak Republic remains significant. This suggests the following interpretation: Some of the differences in new enterprise formation rates can be explained by differences in demographic, regional, and transition variables (with transition variables playing the most important role) but even when controlling for these variables a significant gap between the Czech Republic and Slovakia remain.

What can explain this gap in new business formation? The two possible explanations that could be given are policy differences and differences in the banking sector. If policy had been more active in the Czech Republic than in the Slovak Republic, then one could expect that business formation should be higher than in the Czech Republic. At the same time, one could expect that if more funds were available for small business creation from the banking sector in the Czech Republic business formation in this country should be higher there than in the Slovak Republic.

Table 4 summarizes the policy actions of the Czech and Slovak Republics directed towards the creation of newly founded enterprises. As can be seen, both countries have available special programs for founding of new enterprises, that either grant subsidies directly or make available at preferential rates loans for the newly founded enterprises. If any difference between the policies can be found then it is concerning the services granted to the newly founded enterprises. While the Czech Republic has established a number of information centers and science and technology parks, in the Slovak Republic the stronghold of services has been on the dissipation of information concerning new enterprise formation. Clearly this evidence is not supportive of the hypothesis that differences in policy have caused the wide gap in new business formation between the Czech and the Slovak Republics. Effectivity of such localized activities as technology parks cannot explain the "across the board" higher new enterprise formation rates in the Czech Republic.<sup>9</sup>

**Table 4**

	Czech Republic	Slovak Republic
Policy		
Subsidies	- direct subsidies for newly founded enterprises	- direct subsidies for newly founded enterprises
Services	- preferential loans - Information Centers - Founding Centers	- preferential loans - Information Centers
Banking beginning (1992)		
banks	28	5
foreign banks	5	-
savings of population (Crowns/inhabitant)	19442	17430

Similarly, Table 4 suggests that the banking sector in the Slovak Republic was much less developed in 1991 and has continued to develop slower than in the Czech Republic. However, this is not clear indication that liquidity constraints were much more rigid in the Slovak Republic than in the Czech Republic. Indeed data reported by the Czechoslovak statistical office reports that only around 20% of all credits went to the private sector or to the households between 1991 and 1993. Given these figures it is to be expected that liquidity constraints were severe in all regions, and that most enterprise formation was self financed. Here again table 5 suggests that the self financing possibilities of the Slovaks, which held in average 17430 crowns of savings per capita was smaller than that of the Czechs who had savings 19442 crowns of savings per capita. It is, however, questionable whether this difference alone can explain the remaining gap in new enterprise formation between the countries.

## Conclusions

This paper has attempted to determine the nature of the process governing new enterprise formation in transition economies. In particular the paper looked at two points: First, whether the correlates of intra-country variations in new business formation in transition economies differ substantially from mature economies. Second, to see whether inter-country variations in new business formation can be explained by the correlates of new business formation.

Some evidence was found that concerning the intra-country variation, transition economies differ from the mature market economies. In correlation analysis labor market indicators have the opposite sign in transition economies when compared to mature market economies. Similarly, in contrast to mature market economies, infrastructure variables are more important than indicators of market size. Finally, as predicted by much of the research on transition, variables that measure the speed of restructuring and foreign influences are highly significant.

In explaining the significant gap in new business formation in the Czech and the Slovak Republics differences in the labor market behavior and the transition variables are very important. This finding weakly supports much of the theoretical work in justifying the conjecture that labor markets and new enterprise formation are closely related in economies where substantial restructuring from state owned to privat activities is going on. However, some

evidence is also available that not all of the difference between the two countries can be explained by these two variables alone. Dummy variables for the countries remain significant in all regressions.

At the same time, although at the given stage of research it may be too early to give solid policy advice, the findings presented suggest that policy makers in the transition economies should in give preference to infrastructure development when attempting to increase new business formation. Furthermore, the possibility of multiple equilibria that are selected mainly by expectational forces, should cause policy makers to pay particular attention to the intangibles of business climate during transition.

## Appendix 1: Regression Results

Table A1: Regression Analysis of the Differences in Enterprise formation between Czech and Slovak Republics

Variable	1	2	3	4	5	6
Constant	2.66 (6.62)	2.02 (5.74)	1.67 (4.95)	2.23 (6.82)	-01.78 (3.08)	2.61 (4.84)
<b>Regional</b>						
Share Agr. Employment	-0.55 (0.84)	-0.92 (1.68)			-0.18 (0.28)	-1.14 (1.89)
Share Ind. Employment	-0.65 (1.42)	-0.34 (0.89)			-0.33 (0.74)	-0.218 (0.55)
Share Trans. Employment	-1.28 (1.30)	-0.90 (1.08)			-0.99 (1.07)	-0.88 (1.07)
Telephones	0.01 (3.18)	0.008 (2.47)			0.008 (2.11)	0.008 (2.46)
Index of Access.	0.004 (1.89)	0.004 (2.48)			0.004 (1.95)	0.004 (2.34)
<b>Demography</b>						
Population Density	0.00 (0.15)	0.00 (0.09)			0.00 (0.14)	1.20 (0.35)
Share of Female Pop. Higher Education	-0.87 (1.98)	-0.18 (0.48)			-0.24 (0.55)	0.12 (0.29)
Apprentices	-1.33 (0.69)	-3.65 (1.94)			-1.98 (0.93)	-3.06 (1.58)
Immigration	-1.50 (1.36)	0.77 (0.78)			-0.33 (0.32)	0.68 (0.70)
Transition %	0.01 (0.58)	0.01 (0.32)			0.01 (0.68)	-0.003 (0.19)
Employment Reduction	0.02 (5.08)	0.01 (2.23)	0.01 (3.74)	0.003 (1.08)	0.01 (3.68)	0.005 (1.63)
% Workforce Privatized	0.80 (2.57)	0.52 (1.95)	0.64 (2.31)	0.65 (2.61)	0.67 (2.15)	0.52 (1.87)
Tourist Nights	-0.0003 (0.38)	0.0005 (0.69)	0.00 (0.00)	0.0005 (0.77)	-0.0002 (0.26)	-8.25 (0.12)
Share of foreign enterprises	2.28 (2.63)	2.51 (2.46)	1.09 (1.12)	2.80 (2.97)	0.51 (0.47)	2.76 (2.56)
<b>Market</b>						
wage			0.0001 (1.46)	-0.00009 (1.02)	0.00009 (0.93)	-0.0002 (2.95)
wage change (prev. year)			-0.43 (0.76)	0.78 (1.37)	-0.53 (0.95)	0.95 (1.60)
unemployment rate			-0.03 (3.87)	-0.003 (0.38)	-0.02 (2.32)	-0.003 (0.27)
vacancy rate			0.09 (2.37)	0.09 (2.61)	0.07 (1.87)	0.05 (1.58)
Dummy for Slovak		-0.75 (6.50)		-0.80 (5.00)		-0.91 (5.13)
R2	0.67.	0.77	0.67	0.74	0.73	0.78

Values in brackets are t-values. The number of observations was 113

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## Notes

<sup>1</sup> For a theoretical foundation why this may be so see Keuschnigg (1994)

<sup>2</sup> The share of female population may, however, not be significant in regional regressions since it has very low variance

<sup>3</sup> This could be the case if state owned enterprises tend to restructure slower than private ones or if they bias the "make or buy" decision towards making for reasons of securing a threat potential vis a vis the government or finally if positive experience with private employment enhances the propensity of workers to found their own private enterprise.

<sup>4</sup> It should be noted, however, that since then the introduction of social security regulations which require that the holder of licenses also pay social security has reduced the number of dead souls

<sup>5</sup> Indeed the word "willingness" may be the important criterion here: The fact that licensed enterprises overstate the amount of newly founded enterprises may be seen as an indication that this measure is a variable that measures the supply of entrepreneurial talent.

<sup>6</sup> Unfortunately regression analysis seems unwarranted for the Slovak Republic due to degree of freedom problems but Appendix 1 reports regression results for the pooled sample of the Czech and Slovak Republic for 1992 to which we refer in the text as well

<sup>7</sup> The indicator does not measure visits that last for one day only and thereby underestimates foreign influences in border regions

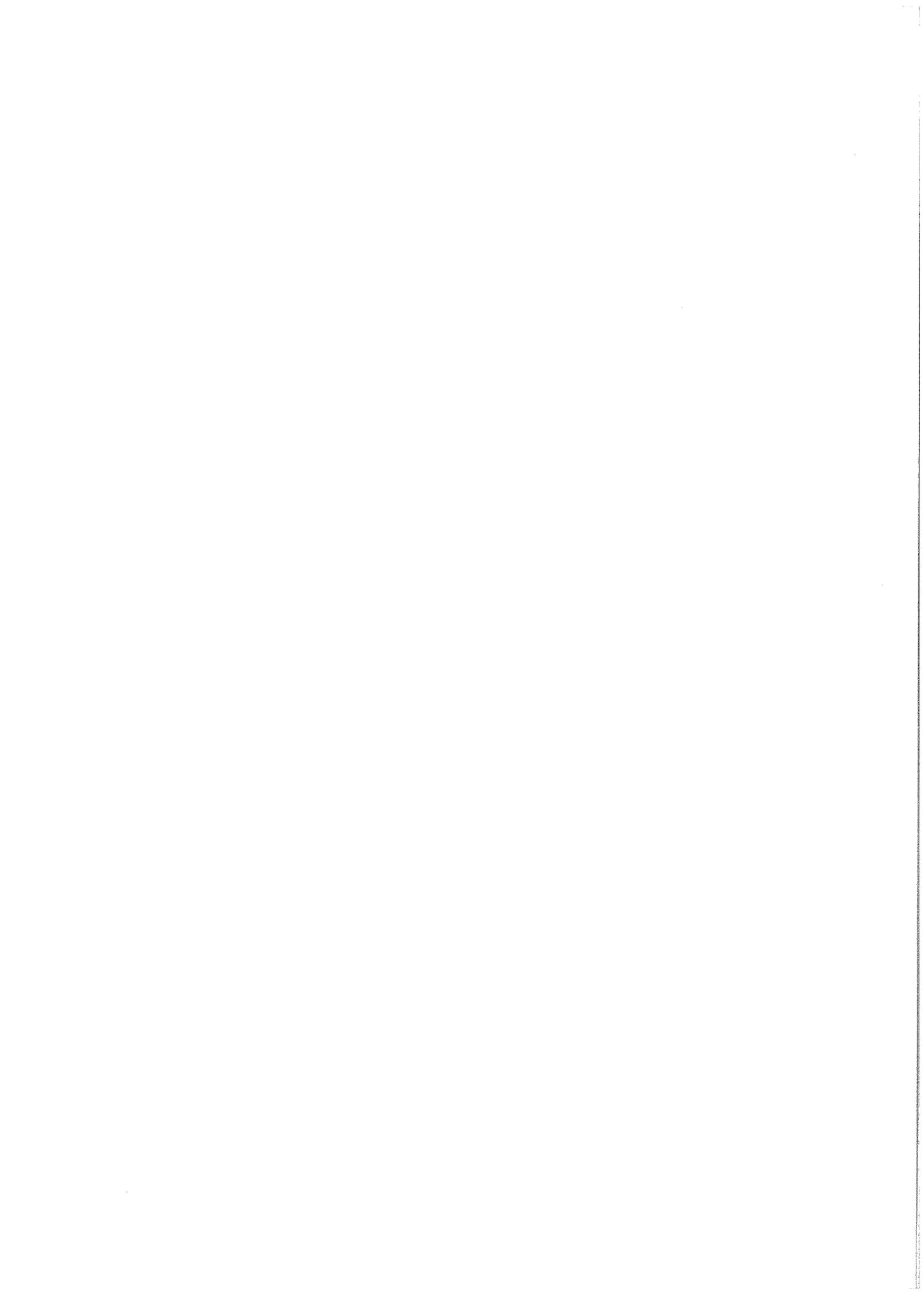
<sup>8</sup> For an explanation of the symbols used see the legend at the bottom of this table

<sup>9</sup> For a more complete list of Policy Measure towards small scale business see Buerges (1994)

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