Business Start-Ups or Disguised Unemployment? Evidence on the Character of Self-Employment From Transition Economies

John S. Earle, Stockholm School of Economics and Central European University*

and

Zuzana Sakova, Rutgers University and Central European University

Revised: March 8, 2000

Abstract

We study the character of self-employment, drawing upon household survey evidence from six transition economies. Multinomial-logit analysis distinguishing employers from own-account self-employed and comparing both groups to employees and unemployed finds that own-account status is intermediate in most characteristics; tests reject the pooling of any of these categories. Selectivity-bias-corrected earnings premia are large for employers and smaller for own-account. A structural polychotomous model shows that employers respond strongly to predicted earnings premia in all countries, while the own-account response is estimated to be negative, supporting the interpretation that individuals may be pushed into own-account status by lack of work opportunities.

JEL Classification Codes: J23, J31, J6, O17, O57, P5

Keywords: self-employment, entrepreneurship, transition, private employment, Eastern Europe.

* SITE, Stockholm School of Economics, Sveavagen 65, Stockholm 11383, Sweden. Tel: (468)736-9680. Fax: (468)316-422. Email: John.Earle@hhs.se. We are grateful to the Canadian Employment Research Forum, the Canadian International Labour Network, the Ruben Rausing Fund, and the ACE-PHARE Program of the European Commission for support; and we thank participants in the Conference on Self-Employment in Ontario, Canada, and in workshops in Bloomington, Budapest, Indianapolis, Lexington, Moscow, Riga, Seattle, Stanford, and Uppsala for helpful comments on a related paper.

1. Introduction

Interpreting the meaning of differences and changes in the level of self-employment is fraught with conceptual and measurement ambiguities. On the one hand, a self-employed worker may be a successful business owner exploiting new opportunities and inventing new products, production processes, and distribution methods. At the other extreme, self-employment status may result from forced recourse to a residual sector in which the individual's activities and income differ little from those in unemployment. A high rate of self-employment may reflect an environment encouraging risk-taking, job creation, and market development, or it may indicate a lack of jobs in a primary sector in which wages are set above the market-clearing level. An increase in the self-employment rate may represent entrepreneurship derived from economic liberalization and tax reduction, or it may be a consequence of imperfect adjustment to contractions or structural shocks.

This paper proposes and implements a methodology for evaluating this ambiguous character of self-employment. We distinguish and analyze two types of self-employed: employers, who create jobs for others, and own-account workers, who work on their own or with the support only of unpaid family helpers. We argue that the employers are clearly genuine business owners (and our analysis provides evidence that this is indeed the case), but the status of the own-account workers is ambiguous, and we approach the question of their status in several ways. First, we measure the relative numbers of each category of self-employed and compare their origins and characteristics using a multinomial logit model, relative to paid employees and to the unemployed. We particularly focus on characteristics that tend to have clear associations with either the "business creation view" or the "disguised unemployment view" of self-employment – such as ability to finance a business, family background, the local unemployment rate, and certain demographic variables – and we conduct pooling tests of the differences across the categories. Next, we examine the relative earnings of employers, own-account workers, and employees, and the implied selectivity bias in the determination of employment status. Finally, we estimate a structural polychotomous choice model of employment status as a function of the selectivity-corrected

relative earnings, in order to measure the relative importance of the "pull" and "push" factors into self-employment.

Although the character of self-employment is a relevant issue for a wide variety of types of economies, whether industrialized or developing, it is particularly striking in the case of transition economies, where the self-employment rate in 1989 was generally quite low, even negligible in some countries, but grew extremely rapidly thereafter, as we shall show below. The rise was by no means uniform across countries, and moreover it may be explained either by the abrupt liberalization of prices and business entry or by the drastic structural shocks and contraction of activity to which all the transition economies were subject. The transition environment, therefore, provides an especially interesting setting for examining the relative importance of each of these categories of factors in accounting for the changing level of self-employment.

The transition has also created a quasi-natural experiment that we exploit to investigate a number of interesting determinants of entry into self-employment. One of the most studied issues in the literature on self-employment is the possible presence of a financing constraint on new business creation (e.g., Evans and Leighton 1989, or Blanchflower and Oswald 1998), but this literature has faced a difficult identification problem when measuring the impact of financing ability (usually proxied as wealth or some variable affecting wealth) on the probability of becoming self-employed. We argue that the unexpected nature of the transition suggests that our proxies for financing ability - income prior to 1989 and the receipt of property through restitution - may be less likely to suffer from simultaneity bias than some other measures, thus offering a new perspective on the importance of such constraints. Our method is to include these measures in the multinomial logit analysis, to verify that they do indeed have a strongly positive impact on the probability that an individual is an employer, and then to examine their impact on the probability of own-account status, relative to the impact on employer, employee, and unemployment status. From this comparison, we draw inferences concerning the degree to which own-

account workers are more similar to employers in facing capital constraints in starting up new businesses or more similar to employees and the unemployed, who face no such constraints.

Previous research has also faced the difficulty of distinguishing the impact of family background from that of wealth, and our analysis exploits the fact that the prohibition of most forms of entrepreneurship under the socialist regimes greatly reduces the correlation of these variables. In addition to such potentially important aspects of family background as parents' education and the ownership of a business by the family prior to the Communist takeover, we also investigate the role of "political capital," the possibility that strong political connections under the socialist regime might have been transformed into economic success through business ownership in the transition - a complaint frequently voiced in Eastern Europe. A final determinant of considerable interest for the transition concerns whether the individual operated a side business prior to 1989, most likely in the shadow economy of state socialism; the question here is whether experience in such black or gray markets provide valuable human capital in the very different setting created by economic liberalization. Again, we compare impacts of these factors on employer and own-account status, relative to those on employee and unemployment status.

Among other potential determinants, our results for schooling are of special interest because schooling decisions were taken prior to the abrupt, unexpected liberalizations of 1990-92. This suggests that the standard problem of simultaneity of schooling and self-employment choices, which arises in most stable market economy settings, is greatly mitigated in our analysis. We also examine standard demographic characteristics such as age, gender, marital status, and nationality, which have been found to be correlated with entrepreneurship in other studies (e.g., Fairlie and Meyer, 1996). Geographic factors include the local unemployment rate and residence in a capital city, which we argue represent demand-side effects bearing on our question of the "pull" and "push" mechanisms. Finally, following researchers such as Blanchflower and Oswald (1998), we investigate the possibility that entrepreneurs are distinguished by different attitudes concerning risk and self-reliance. With respect to all these

potential determinants, our method is to compare their estimated effects on the probability of own-account status with the impacts on the probabilities of employer, employee, and unemployment status, to ascertain whether own-account workers are more similar to employers, who we maintain are clear business owners, or more like employees and the unemployed, in terms of these variables.[1]

Our data are particularly conducive for such an investigation. We employ comparable household survey data with records for approximately 5000 individuals in each of six countries: Bulgaria, Czech Republic, Hungary, Poland, Russia, and Slovakia. The data were collected in early 1993 and thus pertain to the "early" transition period of these countries. The data contain complete work histories for each individual as well as extensive information on family background and on earnings. We are able to distinguish employers from own-account self-employed, to measure their magnitudes in each country, and to test hypotheses about the differences among these categories from each other and from paid employees and unemployed individuals.

The rest of this paper is organized as follows. In Section 2, we describe more fully the conceptual underpinnings of our approach and hypotheses, while Section 3 provides some context for the analysis with some background information on self-employment under socialism and in the transition of Central and Eastern Europe. Section 4 describes our data set, provides estimates of the growth of self-employment over the period 1988-1993 in each of the six countries, and gives descriptive statistics for the sample of employers, own-account workers, employees, and unemployed individuals. Section 5 reports the results of our empirical analysis, and Section 6 concludes.

2. Conceptual Approach: Motivation and Hypotheses

Distinguishing self-employment as a separate labor force state faces similar difficulties to those involved in the analysis of unemployment and nonparticipation in the labor force (Clark and Summers

[1] A fuller discussion of these potential determinants of self-employment and their estimated impacts using the same data set as in the present paper may be found in Earle and Sakova (1999).

(1979) and Flinn and Heckman (1983)).[2] Self-employment activities frequently take place in what is sometimes called the "informal economy" (Turnham *et al* (1990)), they may involve home production rather than sales to the market, and they may be closely related to hobbies, avocations that sometimes become part- or full-time vocations. Further problems include the issue of the "voluntariness" or "involuntariness" of self-employment (like that of unemployment), the status of family workers (unpaid, but nonetheless stakeholders) in a family business, and the possibility that self-employment (unlike paid employment) may generate no income at all in a bad period or in one where investment takes place with little return.

These ambiguities of theory and measurement are reflected in the difficulty of evaluating the level and changes in the extent of self-employment in an economy. On the one hand, a self-employed worker may be an entrepreneur exploiting new opportunities and inventing and improving products, production processes, and ways of distribution. At the other extreme, self-employment status may reflect the inability of a perhaps destitute worker to find a satisfactory "regular" job as an employee, and her activities and income may differ little from those of an unemployed person. A self-employed worker may be striving to grow wealthy by taking risks with new ventures, or she may be casting about desperately for any means to ensure survival. She may be developing new markets and creating jobs for others – her employees – or her self-employment may involve a withdrawal from markets, a return to pre-modern self-sufficiency.

Both points of view may be found in the existing literature on self-employment. Recent studies of the developed market economies (mostly Canada, the U.S., and the U.K.) tend to emphasize the positive, entrepreneurial aspects of self-employment, and some of the empirical findings in this research lends some support to this view, as we discuss below. Nonetheless, the equation of the concepts of self-employment and entrepreneurship in most of these studies must be reckoned as a maintained, rather than

[2] A further difficulty arives from ambiguities in the nature and boundaries of the firm. If a firm is nothing but a "nexus of contracts" (Alchian and Demsetz (1972) and Jensen and Meckling (1976)), then the employment relationship is just a form of relational contracting, and paid (wage-and-salary) employment can be distinguished from self-employment at best as a matter of degree, not as something qualitatively different.

a tested hypothesis. A positive view of self-employment also emerges from the recent attention devoted to the possibility for active labor market policies, including subsidies to unemployed individuals interested in starting new businesses, to combat high unemployment rates in Western Europe (see, e.g., Meager (1994)).

That self-employment might take on a different meaning in a different context is shown by studies of the long-term trend in the self-employment rate, which until recently (around 1970 in the U.S.; see Aronson (1991)) was in steady decline, and by those in developing countries, where the rise of paid employment may be associated with other processes of economic development, including greater interdependency, capital accumulation, and improved organization and division of labor. Particularly in rural areas, self-employment may be closer to a last resort grasping for survival where regular jobs are scarce and poorly paid (the classic articles are Lewis (1954) and Harris and Todaro (1970); recent critiques include Blau (1985) and Sharif (1993)).

Although all of these characteristics of self-employment may also be present in all countries and times, understanding them is particularly critical to an evaluation of the process of transition underway in the formerly socialist economies of Eastern Europe. Whether self-employment represents "entrepreneurial pull" or "unemployment push" has important implications for our evaluation of the success of economic transition in various countries and, more generally, for our understanding of the nature of self-employment and its connection to economic growth. That new firms begin with self-employment is almost tautological, particularly in capital-constrained Eastern Europe, but the critical question is whether the startups lead to successful businesses, filling gaps in the economy and providing paid employment for other individuals. Given the disastrous condition in which decades of communism left most state enterprises, even if many of them have been privatized recently, a number of scholars (e.g. Murrell, 1992; and Blanchard, 1997) have argued that the new private sector is probably the main hope for economic growth in Eastern Europe. An assessment of the sector's character and prospects requires an examination of the self-employed who are its driving force.

In this paper, we approach the problem of understanding the nature of self-employment by treating observations on individual labor force participants as allocated by some data-generating process among four employment states: unemployed, paid employee, own-account worker, and employer.[3] We argue that it is useful to distinguish self-employed employers from own-account workers, those who work alone or with the cooperation only of unpaid family helpers, because the former represent clear cases of genuine entrepreneurship: they are creating jobs for others, implying that they have had some success in their business, that they have been able to hire capital and other inputs to work with their employees, and that they are most likely engaged in self-employment voluntarily. While this proposition is the starting point for our analysis, the results of our research also provide substantial evidence in its support.

By contrast, the status of own-account workers, is much less clear: although some of them might be successful entrepreneurs, others might instead be displaced workers from declining firms and sectors, forced to engage in whatever activity necessary to ensure their survival. Such a situation could arise if there are wage rigidities in a "primary" sector of paid employment, for instance due to wage regulation, trade unions, efficiency wage-setting, or the predominance of the state as employer.

Our evaluation of this ambiguity proceeds in several steps. First, we compare the characteristics of each type of self-employed in 1993 to one another and to the unemployed and employees, particularly focusing on those that tend to have clear associations with either the entrepreneurship or the disguised unemployment view of self-employment. Our argument is that, if self-employment with employees is more likely to represent "entrepreneurial" activity than is self-employment without employees, then certain determinants should more strongly influence the probability of the former relative to the latter. On the other hand, if both types of self-employment represent genuine entrepreneurship, then the impact of such determinants should be equal for the two categories. For instance, if the strength of the local economy (which we measure with the inverse of the regional unemployment rate and an indicator of

[3] ILO (1997) discusses the definition of "own-account worker".

residence in a capital city), raises the probability of an individual being own-account as much as it does the probability of employer status, then this would suggest that both categories are equally entrepreneurial. If the local economy is weak, employers are few, but own-account are many, then own-account status would seem to be a residual sector, not a reflection of successful entrepreneurship.

The potential determinant that has perhaps received the most attention in the broader literature on self-employment is access to capital, which may be an important constraint in opening a new business.[4] If so, and if own-account workers and employers are equally entrepreneurial, then the effect of financing constraints should be approximately the same for both groups; but if own-account workers are rather more like the unemployed (or employees), then measures of financing ability should have much less pronounced effect. The transition situation offers an unusual opportunity to test the importance of financing constraints for entrepreneurship, because few individuals in these countries had significant savings in 1989, and a main source of capital for start-ups is restitution of property nationalized during the Communist years, a variable less likely to be plagued by problems of endogeneity than wealth measures or even inheritance (Blanchflower and Oswald (1998)). We also employ a second measure of the potential financing constraint: the individual's income prior to 1989. We interpret this variable as a proxy for pre-transition savings and believe it to be free of the usual problem of simultaneity bias in which individuals save in anticipation of starting a new business, because the overthrow of the socialist regimes and subsequent rapid liberalization was completely unexpected.

We employ a similar method with respect to other potential determinants of self-employment, evaluating their effects on own-account status relative to their impacts on employer, employee, and unemployed status, in order to ascertain which group the own-account workers most closely resemble. To estimate the independent impact of each characteristic, we employ a multinomial logit model of the determination of the individual's observed employment state. This permits us to measure the relative

[4] Evans and Leighton (1989), Evans and Jovanovic (1989), Holtz-Eakin *et al* (1994), Lindh and Ohlsson (1996), and Blanchflower and Oswald (1998) find that self-employment is positively associated with measures of wealth, although Meyer (1990) finds only a weak relationship.

magnitude of the effects across categories, which is useful for evaluating the extent to which the process generating

own-account self-employment appears to be similar to that for employers, for employees, or for the unemployed. If we find that the effects of such factors frequently argued to give rise to entrepreneurship such as financing constraints, family background, and positive attitudes towards risk and self-reliance are equally important for employers and own-account workers would imply that own-account status is equally entrepreneurial. Alternatively, the finding that such factors are substantial for employers but much less so for own-account workers would then provide some indication that own-account status is less entrepreneurial. In the limit, if the process generating own-account workers differs little from that for the unemployed, then we may conclude that own-account status is indeed little more than disguised unemployment. Thus, we use the results for employers, employees, and unemployed as benchmarks for evaluating the ambiguous category of own-account workers.

Besides examining the impact of the characteristics singly, we also conduct pooling tests of the differences across the categories (Cramer and Ridder 1991). These allow us to summarize the similarity of the data generating process for each and to test more formally their overall difference.

The second major step in our approach to understanding the nature of self-employment concerns earnings. We examine the relative earnings of employers, own-account workers, and employees, while controlling for other factors and for the implied selectivity bias in the determination of employment status. Our comparison of these categories is again motivated by the notion that employers are likely to earn a substantial premium over employees (perhaps reflecting a return to their investments, which we are unable to measure), and the extent to which own-account workers also earn such a premium is a measure of the degree to which they are successful entrepreneurs. The finding that own-account workers earn less than do employees would imply that own-account status is inferior.[5] Of course, such

[5] There may be compensating differentials for self-employment, as argued by Hamilton (1998). Here we examine only earnings and not measures of total satisfaction, although we have found that the qualitative conclusions from doing so are similar to those we present here.

estimates are consistent only once we have taken potential selectivity bias into account, and we do so making use of the multinomial logit estimates as in Lee (1983).

The final step is the estimation of a structural logit model of employment status (with three states: employee, own-account worker, and employer) as a function of the selectivity-corrected relative earnings, in addition to the other independent variables from the reduced form multinomial logit model estimates already presented. We interpret the response of employers and own-account workers to the earnings differentials as measures of the degree to which their choice of state was voluntary, in response to opportunities, or involuntary as a result of lack of opportunities as an employee. The purpose here is to measure the relative importance of the "pull" and "push" factors into the employer and own-account categories of self-employment.

3. Self-Employment under Socialism and in Transition

This section describes the economic environment for self-employment and entrepreneurship under socialism and during the transition in Eastern Europe. We first consider the pre-transition situation in the six countries, describing both the policies discouraging self-employment, hiring of labor, and private business ownership, and the systematic misallocation of labor towards large state industries. Next, we provide a brief analysis of the context for the growth of self-employment after the collapse of central planning and the liberalization of economic activity, prices, trade, and supplies in the 1990-92 period. Our discussion of the transition parallels that of the earlier period: first, the opening up of vast opportunities for entrepreneurship; and second, the rise of unemployment associated with drastic structural change and coordination failure.[6]

[6] Blanchard and Kremer (1997) discuss a coordination failure that could explain part of the steep decline in output in most of the transition economies.

3.1. Self-Employment Under Socialism

It is difficult to imagine a regime more hostile toward self-employment and entrepreneurship than the centrally planned economies of Eastern Europe. While not always completely prohibited, self-employment was heavily discouraged through explicit and implicit sanctions, and the expansion of a business through the accumulation of capital and the hiring of employees was nearly impossible in most countries for most of the pre-1989 period. High taxes, price and wage controls, centralized allocation of key inputs such as energy, credit and industrial materials, and shortages of other factors combined with the legal and bureaucratic obstacles to reduce incentives for entrepreneurship. By contrast, the central planners favored large state enterprises, particularly those in heavy industrial sectors, as the ideology and the symbol of Communist economic progress.

The principal exceptions to the strict socialist policies were Hungary and Poland, which permitted small family undertakings to operate employing unpaid family helpers and a very small number of employees (according to Kornai (1992), generally not more than one) in some service sectors. Even so, the fraction of nonagricultural employment accounted for by the private sector in 1980 was only about 3 percent in Hungary and 5 percent in Poland, including both the self-employed and their employees.[7] Gradual liberalization – formally and informally – during the 1980s led to a rapid rise in the levels of self-employment and private employment in these two countries (see Rostowski (1989) for Poland), but this sector was still tiny by the turning point in 1989, when radical reform became politically feasible.[8] In the other countries of our sample, liberalization was negligible until the late 1980s. Soviet reforms started with *perestroika* about 1987, permitting the formation of so-called "cooperatives," a somewhat nebulous group of new businesses that were sometimes founded as shells

[7] Sources for the Hungarian and Polish figures are Aslund (1985) and Hungarian Central Statistical Office (1980), respectively, cited in Kornai (1992).

[8] The Polish State Office (1993) indicates a nonagricultural self-employment rate of about 5 percent in 1989. Perhaps more significant than the self-employment experience open to Poles within their own country was their possibility to work abroad as guest workers; according to Gomulka (1998), these amounted to "some 15% of the non-agricultural labour force... for periods ranging from several months to several years."

merely to facilitate asset-stripping from a state-owned enterprise, but sometimes represented genuine entrepreneurships with new products and their own lists of employees.

Indeed, the most severe restrictions in all countries concerned hiring of employees by entrepreneurs, inasmuch as the hiring of one person by another directly violated the fundamental Marxian stricture against the "exploitation" of labor. Poland liberalized hiring rather early: from the 1979 Law on Handicrafts, certain types of entrepreneurs were permitted to hire six persons outside their family, plus two pensioners. Hungary also liberalized hiring progressively, but the Czech and Slovak Republics only relaxed the prohibitions in a cursory fashion as late as 1988. Such prohibitions, and continuing legal ambiguities over the status of employer-employee relationships, explain why the first private business were labelled "cooperatives" in the Soviet Union.

The socialist restrictions on entrepreneurship were most effective with respect to primary jobs, and the informal, part-time private sector was extensive and lively in all but the strictest of regimes, as has been well-documented by a number of studies of the second economy (e.g., Allessandrini and Dallago (1987)). Although we focus for the most part on main-activity self-employment in our analysis below, we also inquire whether prior experience in side activities in the second economy and black market was useful in promoting entrepreneurship once the transition had begun.

3.2. Self-Employment in Transition

Socialist central planning left a legacy of inefficient gaps and shortages in the economies of Eastern Europe. In broad terms, the services sector and consumer goods manufacturing were grossly underdeveloped, relative to heavy manufacturing and mining. Retail trade and consumer services were particularly neglected by the central planners (see Earle *et al* (1994)). All of these gaps became open to entrepreneurs soon after the abrupt fall of Communist governments in 1989 and the subsequent dramatic liberalizations of entry, prices, trade, hiring, and supplies, and reductions in the intrusiveness of

bureaucracy. At the same time, the inherited misallocation created severe problems of structural adjustment in the formerly favored, but now declining sectors.

Legal restrictions on the entry of new businesses tended to be relaxed quickly after 1989 in all the countries, but the extent of informal barriers and bureaucratic interference appears to vary widely. While simple registration of a business became unproblematic for most types of activities, red tape, including permit and inspection requirements, and the legal environment could still pose obstacle to entrepreneurship. Frye and Shleifer (1997) discuss the role of contract enforcement and the development of a "rule of law" as important determinants of the quantity and quality of business formation in Poland and Russia. Their small survey of shops showed healthier growth in Warsaw than Moscow, attributed to the contrast between Poland's "invisible hand" versus Russia's "grabbing hand" style of governmental involvement in the economy. These intangible factors are difficult to measure, but a number of qualitative indices drawn up by various international organizations tell a rather consistent tale: in terms of ability for private enterprise to function free of interference and corruption, the Czech Republic is usually at the top of the list in Eastern Europe, followed closely by Poland, Hungary, and Slovakia, while Bulgaria is some distance behind, and Russia is far behind.[9] These cross-country differences may be reflected in the different rates of business ownership that we report below.

Another potentially important condition for new business startups is the availability of financial and physical capital: credit, premises, and equipment. Credit availability has been the focus of a number of analyses of new private sector growth (from a theoretical perspective, see Blanchard (1997); for small sample surveys of new private firms, see Webster (1993a, 1993b)), and there have been a large number of special programs to provide credit to SMEs (small and medium enterprises, the usual OECD euphemism for new startups). Less attention has been paid to the supply of physical capital, such as premises available for rental or used equipment available for purchase, but when the state is the predominant owner of productive capital, entrepreneurs may be unable to find an attractive location for

their restaurant idea or a cheap used delivery vehicle for their wholesale operation. "Small privatization" of shops, housing, other single structures, and other small enterprise assets may be undertaken by hard-pressed state-owned enterprises themselves (as in the Polish "asset privatization") or organized through state programs such as the massive number of auctions carried out in the Czech and Slovak Republics (Earle *et al* 1994). Programs of restitution of property confiscated during the socialist period either provided compensation (in Hungary) or returned specific real assets, generally land and structures (in Bulgaria, and in the Czech and Slovak Republics). Particularly when real assets were returned, restitution sometimes had substantial value to potential entrepreneurs, either for direct use in a new business or as collateral to obtain financing. Because restitution was unexpected, we employ it as a proxy for financing ability in our empirical analysis below.[10]

Finally, at the same time that liberalization opened a plethora of new opportunities, it was also associated with a drastic decline in the measured aggregate output of most East European economies in the early 1990s. Hiring rates of established enterprises have fallen, and in some countries there have been substantial layoffs. By 1992, official unemployment rates had risen from zero in most countries to over 10 percent in Bulgaria, Hungary, Poland, and Slovakia, although they were still under 5 percent in Russia and the Czech Republic. This motivates our empirical analysis below of the other possible face of self-employment in transition: the result of job-rationing in a declining state sector.

4. Data, Self-Employment Measures, and Sample Characteristics

This paper employs data from a survey of about 5000 adult individuals (ages 20 to 69) in each of six countries: Bulgaria, Czech Republic, Hungary, Poland, Russia, and Slovakia. The sample was drawn by random selection of regions within each country, followed by random sampling of households or individuals (from either residence or voting lists) within the selected regions. The survey was carried out in spring 1993 (with the exception of Poland, which was done in early 1994) by the local Institutes

[9] See, for instance, the ratings on "reform progress" in EBRD (1996) or in World Bank (1996), or the summaries in Aslund *et*

of Sociology of the Academy of Sciences in each country. Weights that enable the sample to reproduce census proportions of key variables (gender, age, community size, and education) are provided with the data; all results reported in the paper are so weighted.

The survey questionnaire contained extensive questions on a variety of economic activities, including informal activities, and on family background. A complete retrospective work history is provided for "main-activity," so we are able to trace the evolution of each respondent's employment status. The questionnaire was designed to be nearly identical across countries, thus facilitating the cross-country comparative analysis we undertake in this paper. More information about the survey and sample can be found in Treiman and Szelenyi (1993), Hanley (1996), and Chase (1998).[11]

Our first use of the data is to provide simple computations of the evolution of the composition of the sample by labor force status, for the month of January in each of the six years from 1988 to 1993. Official figures suffer from severe biases in these early transition years, because labor force surveys commenced only in 1992 (in Hungary) and in 1993 (the other countries, except Russia), and the former statistical methods were not well-adapted for following small-scale activities. Estimates such as those in EU (1995), and cited in aggregate analyses such as that of Boeri *et al* (1998), of employment, unemployment, and self-employment are largely based on enterprise reports and registrations, administrative records, and "guesstimates" of officials in the national statistical agencies. All of these sources are particularly suspect when it comes to measuring the magnitude of self-employment or unemployment. Thus, our analysis provides new estimates concerning the evolution of these proportions, ones that are comparable across countries. Figure 1 shows the evolution of employment, unemployment and self-employment from 1988-93.

---

al (1996) or Murrell (1996).

[10] See Frydman *et al* (1993a and b) and Earle *et al* (1994) for detailed accounts of these policies.

[11] The data are downloadable from http://www.sscnet.ucla.edu/issr/da/SSEE/SSEE.intro.html, which also contains further information on sampling and data collection procedures.

All categories pertain to the individual's reported main activity in January of each year (to avoid seasonality problems).[12] Unfortunately, the questionnaire did not contain standard LFS-type questions on search behavior and availability for work, so we must rely on self-reported unemployment or self-employment status. Nonetheless, the data may be superior to administrative estimates based on registration at local labor offices, primarily for the purpose of obtaining unemployment insurance benefits. Except for our survey, such data were all that were available for these countries through most of this period. In any case, our unemployment rate estimates are very close to published estimates (e.g., Eurpean Commission (1995)), differing significantly only in 1993. Direct comparison is difficult, however, because our estimates pertain to January of the year, while the published estimates are generally annual or quarterly averages - in a period when the rates were changing rapidly. Our 1993 estimate for Hungary appears a tad high (14.1 in our survey data versus an LFS rate of 12.6 percent in the first quarter of the year), while those for Poland and Slovakia are relatively low (9.8 versus an LFS rate of 14.3 percent, and 5.8 versus 12.3, in the first quarter of the year for each country, respectively). All the other rates are closely aligned with the official statistics.

Consistent with many studies of employment in transitional economies (e.g., Boeri *et al* (1998), the figures show an enormous decline in the employee-population ratio, typically exceeding 25 percent, although a bit less in Slovakia (just under 20 percent), and much less in Russia (about 9 percent). Given that most employment statistics in these countries during this period were calculated on the basis of enterprise reports, the declines show a similar pattern to such statistics. Where did these people go? The table and figure also show the rapid rise in unemployment, in total showing a rise in non-employment of between 10 and 20 percent of the population. These well-known and tremendous shifts are frequently identified with the "social costs" of the transition process.

Less well-known and heretofore rather poorly measured is the rise in self-employment, also shown in the figure. The self-employment rate (proportion of labor force participation accounted for by

[12] An individual is defined as engaged in main-activity self-employment if he or she reports the main activity as working and

self-employment) more than doubles in most countries, the exception being Poland, where it was always large (due primarily to self-employment in private agriculture, never completely collectivized in Poland, as we discuss below). Although differences in measurement preclude exact comparisons, the figures for Bulgaria, the Czech Republic, Hungary, and Poland are in the general range of OECD countries, while Poland is on the high side, and Russia remains rather low (see, e.g., Blanchflower (1998)).

Table 1 disaggregates the main-activity self-employed ("all" self-employed have very few employees) into two groups: "employers" (who hire others as their employees), and "own-account workers" (that consist of non-employer self-employed who make use of unpaid family helpers, and individual self-employed who work alone, with neither employees nor family helpers). Although these distinctions are well-known in the development economics literature, they have generally been neglected in empirical studies of self-employment in both developing and developed economies. The reasons for this neglect may include both lack of data and the indication in such data as exists that "in a majority of cases the self-employed are creating their own jobs." (Aronson (1991), p. 90). We have argued, on the contrary, that this distinction is quite useful for our purpose of investigating the nature of self-employment.

The table shows substantial variation in the rate of employers and own-account (taken as a ratio to the labor force) across countries. But the magnitudes are broadly consistent with other sources, showing that Poland has the highest rates with almost 5 percent for employers and 15 percent for own-account workers in 1993, followed at a distance by the Czech Republic, Hungary, Slovakia, and Bulgaria in the range of 6 to 7 percent for own-account and 1 to 3 percent for employers, and with Russia, at less than 3 percent of own account and less than 1 percent of employers, far behind.

Table 2 – Panel A presents country differences in the demographics, family background, human capital and attitudes across the four employment states. We defer a discussion of the magnitudes of the differences to the next section, whether these differences are analyzed in a multivariate framework.

---

claims self-employment status.

Here we confine ourselves to definitions of the measures of the determinants, for which we provided motivation in the Section 2, above.

The demographic variables are self-explanatory, but the family background indicators require some comment. The Parent Education variable is a dummy equal to one where either parent of the individual had attained university education or more. The Large business variable is again a dummy equal to one if either of the parents or the grandfathers of the respondent owned a large (subjectively determined, as opposed to small or medium) business – prior to the Communist takeovers.

Human capital characteristics are largely standard, except that we include a dummy for owning a Side Business in 1988 as an indicator of some potentialy relevant experience. Experience is actual, not imputed, and we measure it from the respondent's work history. Both experience and job tenure are included in our earnings functions, but not in the equations we use to explain the self-employment choice.

The attitudinal indicators are constructed from a set of qualitative questions about respondents' opinions concerning the chief factors necessary to "get ahead." Each potential factor was evaluated on a scale from one to five, where 1 indicated essential and 5 not important. Self-reliance combines four such variables: hard work, ambition, political connections, and personal network. We inverted the scale for ambition and hard work, summed the four answers, and then normalized by subtracting the mean (by country) and divided by the standard deviation. Risk represents the similarly normalized and inverted response to the importance of taking risks for getting ahead.

Panel B of Table 2 presents another set of variables concerning financing constraints, communist party affiliation, local economy conditions and sector of employment. Restitution is a simple dummy equal to one if the respondent received property that had belonged to the family but been expropriated under Communist regime. Income in 1988 is a subjective evaluation, where respondents estimated which quintile they belonged in 1988. We again normalized this variable by subtracting the country

mean and dividing by the country standard deviation. Communist party membership and office-holding are simple dummies (obviously nested), referring to the respondent's position before 1989.

Table 3 provides information on labor earnings by country and status. Respondents were asked to report net income from the main activity from the last month or year.[13] In Russia only monthly income was reported. When the figure was reported on an annual basis, we divided it by 12. Here we show the mean and standard deviation of earnings in the

national currency, but in our regressions below, where we pool the country data, we normalized earnings by subtracting the corresponding country mean earnings and then took the natural logarithm. Table 3 shows that mean income for employers is highest, but there is relatively little difference between employees and own-account workers.

5. Empirical Results

This section reports the results from our econometric analysis, beginning with the reduced form multinomial logit model for four employment states, continuing with earnings functions corrected for possible selectivity bias in the choice of employment state, and concluding with a structural logit model that estimates the probability of employment state as a function of the predicted earnings differentials.

Table 4 shows the results from estimating a multinomial logit model in which the dependent variable takes on one of four values: employer, own-account, employee, or unemployed. The reference or base category is employee, and thus the estimated coefficients for a given state refer to the impact of the corresponding independent variable on the log-odds ratio of the probability of observing an individual in that state over the probability of observing him/her in the employee state. Overall, the signs and magnitudes of the coefficients of most of the variables tend to place employers at one extreme and the unemployed at the other extreme, with own-account workers and employees somewhere in the

[13] Although the survey question refers to "net" income, there is probably little difference between net and gross earnings in these countries during this period. Profit taxes accounted for most state revenue, and social insurance contributions were paid by the employer. Poor functioning of tax collection and enforcement institutions in these countries (where there had been no

middle. For instance, individuals whose marital status is single are most likely to be unemployed and least likely to be employers. The question with respect to our variables of interest, then, concerns the relative position of own-account workers and employees in between these two extremes.

With respect to the demographic variables, there is little support for the version of "disadvantage theory" that discriminated-against groups are more likely to enter self-employment: although males are more likely than females to be own-account workers and still more likely (relatively) to be employers, there is little difference for majority versus minority nationality (except for a much lower probability of unemployment for majority nationals), and the age patterns for employers and unemployed are similarly concave. Concerning family background, both parents' education and previous family ownership of a large business are strong predictors of employer status, but much weaker of own-account. Years of schooling has an effect that varies from negative for unemployed to positive for employers, with own-account in the middle but somewhat less than employees. Having operated a side-business in the pre-transition year of 1988 clearly increases the probability of own-account status in 1993, and even more so of employer status.

The risk and self-reliance attitudinal indicators both show effects that place unemployed at the low end of the groups in terms of their evaluation of the importance of these factors for getting ahead, while the employers are at the extreme high end and own-account are somewhere between employees and employers. The effects of the local market indicators are rather less clear, with the capital dummy and the local unemployment rate positively associated with unemployment and (to a smaller extent) own-account status, but little impact on the relative probability of being an employer versus an employee.

The proxies for financing constraints, however, show a strong relationship whereby employers are clearly the outliers with a strong influence of pre-transition income and receipt of property through restitution, but the probability of own-account status also benefits. The results provide some evidence

---

income tax whatsoever) made it easy for the self-employed to avoid taxation–as anecdotal evidence strongly suggested that

that such constraints are important in transition economies (and elsewhere) and that at least some own-account workers may be voluntarily self-employed, since our proxies for the relaxation of such constraints are positively associate with own-account status. The proxies for "political capital," former membership and office-holding in the Communist Party, however, show no evidence of a positive relationship to self-employment; the clearest implication is a negative relationship with unemployment.

Finally, the country dummies show results rather similar to the simple descriptive statistics: the rate of both types of self-employment is highest in Poland, while the Czech Republic and Hungary have especially high rates of own-account workers, followed by Slovakia (which had the lowest predicted rate of employer status), Bulgaria and Russia. Controlling for the other variables in the equation, these coefficients show the country effects in the probability of the four employment states.

We also used the multinomial logit framework to conduct pooling tests, as described by Cramer and Ridder (1991). Our primary interest was whether the own-account category could be pooled with the unemployed or with the employers. In the event, all the tests strongly rejected pooling, with p-values much less than .01. Thus, these results provide evidence that own-account self-employed are significantly different from employers, but they are also different from the unemployed.

Next we turn to a multivariate analysis of earnings differentials, based upon the discussion in the previous section. To control for potential selectivity bias in the determination of employment status, we follow Lee (1983) in constructing generalized residuals that we insert into each earnings function. The selection terms are calculated on the basis of the reduced from multinomial logit model. We pool the data across countries, solving the problem of currency conversion by dividing the reported earnings of each individual by the corresponding country mean.

The results, which appear in Table 5, show fairly a standard shape of the function for employees, especially in terms of gender and human capital characteristics, while the function for employers shows a low R^2 reflecting the importance of unmeasured entrepreneurial skills. Table 6 shows the implied

---

they did.

earnings differentials or employers and own-account workers relative to employees, by country. The predicted earnings of employers greatly exceed those of employees in every country except Hungary, where the difference is very small. By contrast, the earnings differential for own-account workers compared with employees is much smaller (except in Russia where it is substantial), and is even negative in Poland. Again the results provide evidence that while employers are rather clearly a successful group of entrepreneurs, the own-account workers occupy a much more ambiguous position.

Finally, we turn to our estimates of a structural logit model, in which the predicted earnings differentials for each individual (the averages of which are shown in Table 6) are inserted into the reduced form probit reported in Table 4, although here we have only three employee states: employee, own-account, and employer. The observations are pooled across countries, but we permit the response of the relative probability of each state to vary by country. Other determinants have approximately the same effects as in the reduced form multinomial logit (in particular, restituency and 1988 income have robust impacts), thus we report only the estimates of the responsiveness to relative wage differentials . These estimated coefficients. are shown in Table 7.

For both own-account and employers, the predicted earnings differentials are negative with respect to the own-account – employee differential and positive with respect to the employer – employee differential in almost every country. As discussed in Section 2, above, we interpret the positive coefficient on the earnings differential as reflecting sectoral choice on the basis of the pull of higher income. Lack of a positive relationship, on the other hand, is reflective of other considerations, including the possibility that earnings differentials may not imply job availabilities. The negative coefficient on the own-account – employee differential implies that individuals choose own-account status even though they are predicted to earn less than they could as employees. Our interpretation of this result is that many own-account workers may be rationed out of the labor market for jobs as employees. In an economy where practically all large firms are shrinking and new ones mostly involve self-employment, and moreover where wages in the large firms are not set to clear the labor market,

some displaced workers and new entrants may be forced to seek survival in a residual sector of self-employment. Although employers are clearly genuine entrepreneurs, own-account workers appear to be composed at least partly of workers who would prefer (on the basis of the wage) to be employees. In this sense, own-account status may represent a form of partial unemployment for some workers.

6. Conclusion

This paper has contrasted two alternative interpretations of a rise in self-employment, or of a difference in the rate between two countries or regions. According to one view, frequently assumed in analyses of well-developed market economies, a higher self-employment rate reflects a higher level of entrepreneurship, associated with faster innovation and growth. According to an alternative view, based on a longer historical view of economic development, higher self-employment may indicate poor functioning of market exchange institutions or structural or cyclical problems such as those that give rise to unemployment.

Both views have some plausibility when we consider the dramatic changes in the rate in the transition economies of Eastern Europe in the early 1990s. On the one hand, the rapid liberalization of the stifled centrally planned economies created vast new opportunities for entrepreneurship. On the other hand, the countries have also typically experienced severe recessions associated with a virtual collapse of the state-owned industrial sector, displacing experienced workers and reducing hiring rates to negligible levels. Which view is correct may have important implications for how one evaluates the success of a post-socialist country in meeting the demands of the transition to the market.

Our method has been to examine microeconomic data on individuals in six countries of Eastern Europe, comparing their characteristics is a multivariate, multinomial framework. We have distinguished employers, clear entrepreneurs, from own-account self-employed, and compared both to employees and to the unemployed. We have also examined earnings differentials, correcting for

selectivity bias, and estimated a structural logit that shows the responsiveness of sectoral choice to the predicted earnings differentials.

Although the evidence is somewhat mixed, we conclude that there is a case for skepticism concerning the simple equation of self-employment with entrepreneurship. Our methods show, at least with respect to the transition economies we have studied, that the own-account self-employed are quite different from employers both in their characteristics and their earnings. At the same time, they are also quite different from the unemployed in our sample. Along some dimensions they appear closer to employers (for instance, in terms of marital status, receipt of property in restitution and experience with a side business in 1988), along others they tend to be closer to the unemployed (family background), and for many characteristics they are very much in the middle (gender, schooling, attitudes, and local unemployment rates). The single most important finding that casts doubt on a positive evaluation of a rise in the fraction of the labor force that is comprised of own-account workers is that they appear to be unresponsive at best, and display a negative response at worst, to their predicted earnings advantage in own-account status. This finding is consistent with the view that at least some own-account workers might prefer to be employees, but are somehow constrained (for instance because of a non-clearing market for employees) and thus are involuntarily self-employed.

References

Alchian, A., and H. Demsetz, 1972, Production, information costs, and economic organization, American Economic Review, 62, 777-95.

Alessandrini, S., and B. Dallago, eds., 1987, The unofficial economy: consequences and perspectives in different economic systems (Aldershot, Dartmouth).

Aronson, R.L., 1991, Self-employment: a labor market perspective (ILR Press, Ithaca).

Aslund, A., 1985, Private enterprise in Eastern Europe. The non-agricultural private sector in Poland and the GDR, 1945-83. (MacMillan in association with St. Antony's College, Oxford.)

Aslund, A., P. Boone, and S. Johnson, 1996, How to stabilize: lessons from post-communist countries, Brookings Papers on Economic Activity 1, 217-313.

Blanchard, O., 1997, The economics of post-communist transition, (Oxford University Press, Oxford).

Blanchard, O., and M. Kremer, 1997, Disorganization, Quarterly Journal of Economics CXII, 41, 1091-1126.

Blanchflower, D.G., and A.J. Oswald, 1998, What makes an entrepreneur? Journal of Labor Economics 16, 1, 26-60.

Blanchflower, D.G., 1998, Self-employment in OECD countries, draft, September.

Blau, D., 1985, Self-employment and self-selection, Southern Economic Journal, 52, 2, 351-363.

Boeri, T., M. Burda, and J. Kollo, 1998, Mediating the transition: labour markets in Central and Eastern Europe, in L. Ambrus-Lakatos and M.E. Schaffer, eds., Forum Report of the Economics Policy Initiative No 4.

Chase, R.S., 1998, Markets for communist human capital: returns to education and experience in the Czech Republic and Slovakia, Industrial and Labor Relations Review, 51, 3, 401-23.

Clark, K., and L. Summers, 1979, Labor market dynamics and unemployment: a reconsideration, Brookings Papers on Economic Activity, 13-60.

Cramer, J.S., and G. Ridder, 1991, Pooling states in the multinomial logit model, Journal of Econometrics, 47, 267-272.

Earle, J.S., R. Frydman, A. Rapaczynski, and J. Turkewitz, 1994, Small privatization: the transformation of the trade and services in the Czech Republic, Hungary, and Poland, (CEU Press, London).

Earle, J.S., and Z. Sakova, 1999, Entrepreneurship from scratch: lessons from transition economics on the entry decision, draft.

EBRD, 1996, Transition Report, Infrastructure and savings, (London).

European Commission, 1995, Employment Observatory. Employment in Europe, 8, (Brussels).

Evans, D., and L. Leighton, 1989, Some empirical aspects of entrepreneurship, American Economic Review 79, 519-535.

Evans, D., and B. Jovanovic, 1989, An estimated model of entrepreneurial choice under liquidity constraints, Journal of Political Economy 97, 4, 808-827.

Fairlie, R.W., and B.D. Meyer, 1996, Ethnic and racial self-employment differences and possible explanations, Journal of Human Resources XXXI, 4, 757-793.

Flinn, C., and J. Heckman, 1983, Are unemployment and out of the labor force behaviorally distinct labor force states? Journal of Labor Economics 1, 1, 28-42.

Frydman, R., A. Rapaczynski, J.S. Earle *et al*, 1993a, The privatization process in Central Europe, (CEU Press, Budapest).

Frydman, R., A. Rapaczynski, J.S. Earle *et al*, 1993b, The privatization process in Russia, Ukraine, and the Baltic States, (CEU Press, Budapest).

Frye, T., and A. Shleifer, 1997, The invisible hand and the grabbing hand, American Economic Review 87, 2, 354-358.

Gomulka, S., 1998, Output: causes of the decline and the recovery, CASE-CEU Working Paper No. 8.

Hamilton, B.H., 1998, Does entrepreneurship pay? An empirical analysis of the returns to self-employment, draft.

Hanley, E., 1996, Self-employment in post-communist Eastern Europe: a refuge from poverty or the emergence of a new petty bourgeoisie? mimeo (UCLA Department of Sociology, Los Angeles).

Harris, J.R., and M.P. Todaro, 1970, Migration, unemployment, and development: a two sector analysis, American Economic Review, 126-42.

Holtz-Eakin, D., D. Joulfaian, and H. Rosen, 1994, Entrepreneurial decisions and liquidity constraints, Rand Journal of Economics 23, 2, 334-47.

Hungarian Central Statistical Office, 1980, Statistical Yearbook (Budapest).

International Labor Office (ILO), 1997, Yearbook of Labour Statistics, 56th Issue (Geneva).

Jensen, M., and W. Meckling, 1976, Theory of the firm: managerial behavior, agency costs and ownership structure, Journal of Financial Economics 305-60.

Kornai, J., 1992, The socialist system: the political economy of communism (Princeton University Press, Princeton).

Lee, L.F., 1983, Generalized econometric models with selectivity, Econometrica 51, 2, 507-512.

Lewis, W.A., 1954, Economic development with unlimited supplies of labour, Manchester School of Economic and Social Studies, (Manchester) 139-91.

Lindh, T., and H. Ohlsson, 1996, Self-employment and windfall gains: evidence from the Swedish lottery, Economic Journal 106, 1515-26.

Meager, N., 1994, Self-employment schemes for the unemployed in the European Community: the emergence of a new institution and its evaluation, in G. Schmid (ed.), Labor market institutions in Europe: a socioeconomic evaluation of performance, (Sharpe, Labor and Human Resource Series, London),

Meyer, B., 1990, Why are there so few black entrepreneurs? NBER Working Paper No. 3537 (Cambridge, MA).

Murrell, P., 1992, Evolution in economics and in the economic reform of the centrally planned economies, in C.C. Clague and G. Rausser, eds., Emerging market economies in Eastern Europe, (Basil Blackwell, Cambridge).

Murrell, P., 1996, How far has the transition progressed? Economics of Transition, 10 (2), 25-44.

Polish State Statistical Office, 1993, Statistical Yearbook (Warsaw).

Rostowski, J., 1989, The decay of socialism and the growth of private enterprise in Poland, Soviet Studies, 41, 2, 194-214.

Sharif, M., 1993, Working poor unemployment and wage rigidity evidence of economic distress, Kyklos 46, 1, 47-63.

Treiman, D., and I Szelenyi, 1993, Social stratification in Eastern Europe after 1989, in Transformation processes in Eastern Europe, (NWO-SSCW, The Hague).

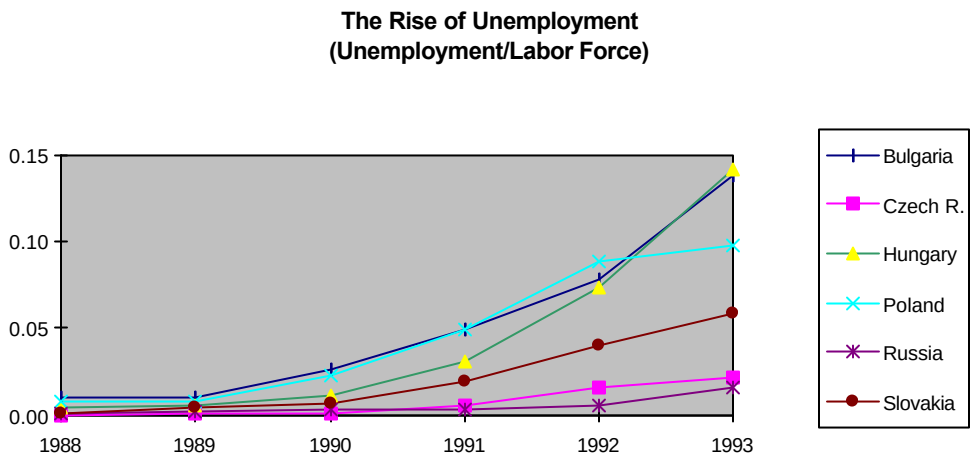
Turnham, D., B. Salome, and A. Schwarz (eds.), 1990, The informal sector revisited (OECD, Paris).

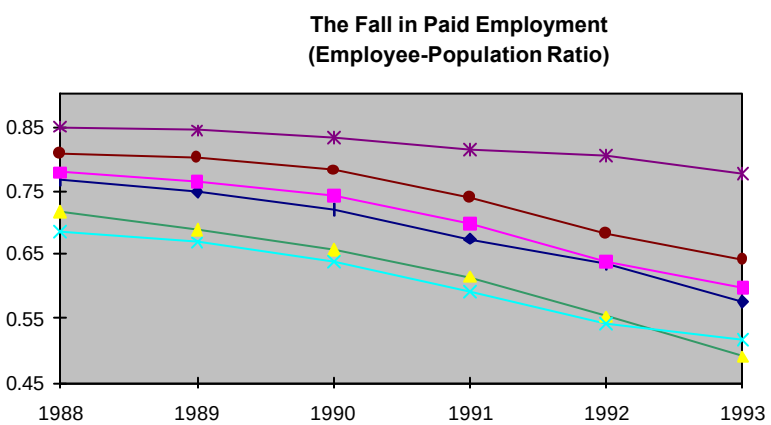
Webster, L.M., 1993a, The emergence of private sector manufacturing in Hungary: a survey of firms, World Bank Technical Paper No. 229, (World Bank, Washington).

Webster, L.M., 1993b, The emergence of private sector manufacturing in Poland: a survey of firms, World Bank Technical Paper No. 237, (World Bank, Washington).

World Bank, 1996, World Development Report, From plan to market, (Washington).

Figure 1: Evolution of Labor Force Status in Six Countries, 1988-1993





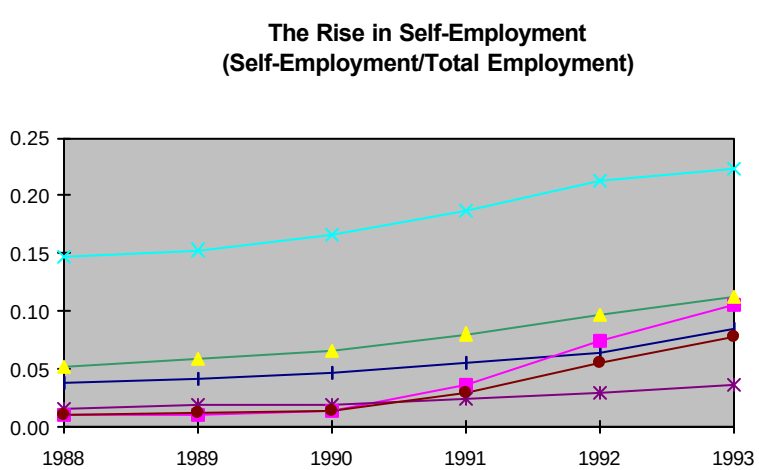


Table 1
Employment Status in 1993 by Country

	Employment Status (%)				
	Unemployed	Employed	Own-Account	Employer	**Total N**
Bulgaria	14.45	77.91	5.80	1.83	3365
Czech Republic	2.21	87.43	7.48	2.88	3764
Hungary	14.28	76.22	7.46	2.04	2705
Poland	9.90	70.31	15.09	4.71	2515
Russia	1.62	94.90	2.62	0.86	3698
Slovakia	5.93	86.65	5.80	1.62	3439
Total %	7.54	83.30	6.95	2.21	100
Total N	1468	16232	1354	431	19485

Table 2: Sample Characteristics by Employment Status and Country

Panel A

		Demographics				Family Background		Human Capital				Attitudes	
		Male	Minority	Age (yrs)	Single	Parent Educ	Large Business	Schooling(yrs)	Side Business in 1988	Experien ce (yrs)	Tenure (yrs)	Self-reliance N(0,1)	Risk N(0,1)
Bulgaria	Employer	0.75	0.91	40.8	0.15	0.48	0.01	13.0	0.12	18.8	2.9	0.12	0.24
	Own-Account	0.61	0.81	45.3	0.19	0.26	0.02	10.9	0.03	24.3	11.6	0.11	0.02
	Employee	0.50	0.82	43.2	0.19	0.24	0.01	11.1	0.02	22.5	11.9	0.02	0.00
	Unemployed	0.56	0.60	36.9	0.24	0.20	0.01	10.1	0.01	15.6	1.5	-0.18	-0.01
Czech	Employer	0.69	0.83	40.6	0.14	0.15	0.01	13.6	0.05	20.0	1.6	0.29	0.59
Republic	Own-Account	0.64	0.86	39.9	0.16	0.16	0.01	13.3	0.02	18.8	2.8	0.12	0.22
	Employee	0.52	0.85	41.3	0.20	0.11	0.01	12.6	0.02	21.0	9.4	-0.02	-0.04
	Unemployed	0.51	0.75	37.3	0.27	0.11	0.03	10.9	0.00	16.5	0.9	-0.04	-0.13
Hungary	Employer	0.78	0.94	38.6	0.15	0.32	0.11	13.4	0.15	19.2	3.7	0.04	0.35
	Own-Account	0.62	0.93	40.5	0.18	0.23	0.01	12.1	0.15	21.1	6.3	0.02	0.12
	Employee	0.52	0.96	39.5	0.24	0.24	0.02	11.9	0.08	20.5	8.7	0.01	0.00
	Unemployed	0.62	0.90	37.4	0.28	0.20	0.02	10.5	0.04	16.7	1.2	-0.05	-0.08
Poland	Employer	0.67	0.99	38.2	0.16	0.34	0.04	12.9	0.06	17.7	5.1	0.30	0.38
	Own-Account	0.58	0.99	43.4	0.16	0.11	0.02	9.6	0.04	24.9	12.7	0.12	0.05
	Employee	0.53	0.99	38.9	0.24	0.23	0.00	11.7	0.05	19.0	9.1	-0.03	-0.03
	Unemployed	0.45	1.00	33.4	0.39	0.20	0.00	11.2	0.03	11.4	1.8	-0.10	-0.03
Russia	Employer	0.81	0.81	36.6	0.16	0.42	0.01	15.0	0.06	15.9	2.0	-0.04	0.26
	Own-Account	0.58	0.87	36.6	0.35	0.32	0.06	12.8	0.32	16.3	6.4	0.12	0.25
	Employee	0.49	0.86	41.3	0.24	0.22	0.02	12.7	0.13	22.1	10.9	0.00	-0.01
	Unemployed	0.44	0.99	34.8	0.51	0.40	0.00	12.9	0.05	14.8	1.9	0.00	0.17
Slovakia	Employer	0.81	0.86	37.9	0.13	0.27	0.06	13.9	0.01	16.5	1.5	0.58	0.47
	Own-Account	0.69	0.92	37.9	0.20	0.18	0.02	13.1	0.01	17.3	3.3	0.00	0.18
	Employee	0.53	0.90	40.8	0.22	0.10	0.01	12.4	0.02	20.4	10.6	-0.01	-0.02
	Unemployed	0.49	0.86	35.4	0.34	0.07	0.01	11.3	0.01	14.5	1.1	0.06	-0.02

Note: The table shows means of each characteristic by employment status. All characteristics are dummy variables, except where noted.
N(0,1) refers to a qualitative variable that has been rescaled by substracting the country mean and divided by the country standard deviation.

Table 2: Sample Characteristics by Employment Status and Country

Panel B

		Financing Constraints		Communist Party		Local Economy		Sector					
		Restitution	Income 88 N(0,1)	Member	Officer	Capital	Unem. (proportion)	Agric	Services	Industry	Constr	Transport	Fulltime
Bulgaria	Employer	0.12	0.19	0.21	0.05	0.26	0.16	0.11	0.59	0.14	0.09	0.07	0.92
	Own-Account	0.11	0.05	0.14	0.03	0.12	0.17	0.32	0.46	0.15	0.05	0.03	0.85
	Employee	0.08	0.00	0.16	0.02	0.13	0.17	0.19	0.35	0.32	0.06	0.08	0.98
	Unemployed	0.05	-0.06	0.06	0.01	0.09	0.17	-	-	-	-	-	-
Czech Republic	Employer	0.17	0.13	0.24	0.06	0.15	0.03	0.04	0.65	0.14	0.11	0.06	1.00
	Own-Account	0.14	0.13	0.14	0.03	0.17	0.03	0.10	0.51	0.17	0.18	0.04	0.96
	Employee	0.10	-0.01	0.16	0.03	0.11	0.04	0.10	0.38	0.36	0.07	0.08	0.96
	Unemployed	0.05	-0.30	0.16	0.03	0.09	0.04	-	-	-	-	-	-
Hungary	Employer	0.42	0.55	0.07	0.02	0.27	0.13	0.09	0.56	0.10	0.09	0.16	1.00
	Own-Account	0.32	0.22	0.07	0.01	0.13	0.14	0.18	0.55	0.14	0.06	0.06	0.91
	Employee	0.31	-0.01	0.11	0.03	0.18	0.13	0.12	0.45	0.30	0.05	0.08	0.97
	Unemployed	0.28	-0.18	0.05	0.01	0.12	0.15		-	-	-	-	-
Poland	Employer	0.03	0.49	0.11	0.01	0.05	0.13	0.11	0.64	0.06	0.17	0.03	0.96
	Own-Account	0.06	-0.05	0.07	0.00	0.02	0.14	0.65	0.24	0.02	0.04	0.05	0.95
	Employee	0.03	-0.01	0.13	0.02	0.05	0.13	0.09	0.51	0.23	0.08	0.09	0.96
	Unemployed	0.03	-0.04	0.04	0.00	0.00	0.15	-	-	-	-	-	-
Russia	Employer	0.00	0.30	0.15	0.07	0.09	0.01	0.04	0.71	0.15	0.10	0.00	0.97
	Own-Account	0.00	-0.26	0.08	0.01	0.06	0.01	0.15	0.65	0.07	0.05	0.09	0.85
	Employee	0.00	0.01	0.11	0.05	0.08	0.01	0.17	0.38	0.29	0.06	0.09	0.96
	Unemployed	0.00	0.07	0.02	0.02	0.07	0.01	-	-	-	-	-	-
Slovakia	Employer	0.14	0.26	0.24	0.06	0.11	0.14	0.04	0.49	0.16	0.24	0.06	0.95
	Own-Account	0.10	0.12	0.17	0.11	0.15	0.13	0.02	0.57	0.22	0.15	0.04	0.97
	Employee	0.09	-0.04	0.15	0.07	0.09	0.14	0.14	0.38	0.32	0.07	0.08	0.98
	Unemployed	0.12	-0.12	0.08	0.01	0.03	0.15	-	-	-	-	-	-

Note: The table shows means of each characteristic by employment status. All characteristics are dummy variables, except where noted.
N(0,1) refers to a qualitative variable that has been rescaled by substracting the country mean and divided by the country standard deviation.

Table 3
Determination of Employment Status: MNL Estimates
Dependent Variable: Employment Status (Base Category is Employee)

Variables	Unemployed		Own-Account		Employer	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Constant	-0.79	1.98	-2.41	6.19	-7.06	8.82
Male	0.09	1.57	0.46	7.85	0.96	8.64
Minority	-0.53	6.03	-0.02	0.19	-0.14	0.79
Age	0.04	2.16	-0.01	0.83	0.12	3.35
Age squared/100	-0.10	4.47	0.02	1.04	-0.17	3.81
Single	0.28	4.09	-0.26	3.41	-0.35	2.53
Parent Education	0.07	0.87	0.13	1.56	0.29	2.42
Large Business	0.15	0.54	0.28	1.24	0.97	3.83
Schooling	-0.14	11.48	-0.04	4.18	0.08	4.86
Side Business 1988	-0.26	1.34	0.32	2.45	0.47	2.59
Self-reliance	-0.06	2.05	0.09	2.86	0.22	4.19
Risk	0.00	0.12	0.15	5.07	0.42	7.50
Capital	0.20	1.65	0.18	1.88	0.13	0.85
Unemployment Rate	0.06	6.89	0.01	1.29	-0.01	0.82
Restitution	-0.04	0.36	0.25	2.70	0.35	2.40
Income in 88	0.00	0.02	0.06	2.17	0.21	4.24
Member	-0.34	2.64	-0.38	3.58	-0.11	0.68
Officer	-0.68	2.36	-0.18	1.13	-0.20	0.78
Czech Republic	-1.12	6.47	0.52	3.56	-0.02	0.08
Hungary	0.28	3.24	0.29	2.59	-0.28	1.39
Poland	0.09	0.95	1.27	12.32	0.91	5.22
Russia	-1.19	5.92	-0.67	3.56	-0.91	2.90
Slovakia	-0.66	6.76	0.05	0.49	-0.52	2.63

Log likelihood	-10793.4
Chi-squared	2513.9
Number of observations	19591

Note: The omitted country dummy is Bulgaria.

Table 4
Monthly Earnings by Employment Status and Country

Country (Currency)		Employee	Own-Account	Employer
Bulgaria (lev)	Mean	2163	2568	4845
	Std Deviation	1391	2678	3410
Czech R. (Czech Koruna)	Mean	4027	6208	11042
	Std Deviation	4792	6343	27192
Hungary (Forint)	Mean	15514	21142	24889
	Std Deviation	9903	26788	27529
Poland (Zloty)	Mean	3726	3261	9448
	Std Deviation	2626	3030	13661
Russia (Ruble)	Mean	26427	81412	123213
	Std Deviation	32840	332280	217485
Slovakia (Slovak Koruna)	Mean	4049	6577	15434
	Std Deviation	4479	8540	46674

Table 5
Wage Regressions
Dependent Variables: Normalized Monthly Earnings

	Employee		Own-Account		Employer	
Variables	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Constant	-1.408	23.91	1.144	1.40	0.412	0.85
Male	0.271	25.21	0.219	3.57	0.195	1.44
Minority	0.048	3.22	0.000	0.01	-0.355	1.62
Schooling	0.050	28.89	0.054	6.27	-0.011	0.64
Experience	0.019	12.88	0.019	3.22	0.011	0.62
Exp squared/100	-0.043	12.85	-0.051	4.16	-0.034	0.74
Tenure	0.002	3.06	-0.001	0.22	-0.017	1.45
Capital	0.129	9.51	0.249	3.50	0.157	1.27
Agriculture	-0.218	10.47	-0.584	5.87	-0.584	2.76
Transport	-0.043	2.04	-0.092	0.67	-0.244	1.16
Services	-0.099	5.41	-0.200	2.59	-0.226	1.61
Industry	-0.072	4.00	-0.152	1.65	-0.319	1.79
Full-time	0.376	11.22	0.179	1.72	0.681	2.73
Czech Republic	-0.080	5.67	-0.137	1.55	-0.264	2.01
Hungary	-0.027	1.81	-0.077	0.74	-0.462	1.85
Poland	-0.105	5.61	-0.556	3.98	-0.257	1.65
Russia	-0.217	9.85	0.346	2.10	0.021	0.10
Slovakia	-0.110	7.41	-0.027	0.33	-0.237	1.19
lambda(employees)	-0.096	1.43	-	-	-	-
lambda(own-account)	-	-	0.647	3.01	-	-
lambda(employers)	-	-	-	-	0.293	1.30
Adj R squared	0.214		0.321		0.125	
N	14152		985		334	

Note: The omitted country dummy is Bulgaria and omitted sector is construction.

Table 6
Predicted Wage Differentials: Mean Log Ratios

	Bulgaria	Czech R.	Hungary	Poland	Russia	Slovakia
log(Wer/Wee)	0.476	0.322	0.007	0.361	0.584	0.263
log(Woa/Wee)	0.049	0.171	0.099	-0.111	0.431	0.161

Note: Predicted wages calculated for each individual based on the results reported in Table 5.
Wer = predicted wage as employer
Woa =predicted wage as own-account worker
Wee = predicted wage as employee

Table 7
Structural Multinomial Logit
Dependent Variable: Employment Status

(Base Category is Employee)

		Own-Account		Employer	
		Coeff	t-value	Coeff	t-value
Interactions					
Bulgaria	log(Woa/Wee)	-2.83	-5.25	-2.18	-1.83
	log(Wer/Wee)	1.56	4.93	5.17	7.57
Czech R.	log(Woa/Wee)	-1.48	-2.45	-4.58	1.12
	log(Wer/Wee)	3.54	11.00	7.81	11.82
Hungary	log(Woa/Wee)	-2.48	-4.43	-3.38	-2.70
	log(Wer/Wee)	1.90	5.61	6.24	8.32
Poland	log(Woa/Wee)	-9.63	-18.30	-6.57	-5.93
	log(Wer/Wee)	2.32	7.00	6.21	9.06
Russia	log(Woa/Wee)	0.61	0.70	-0.78	-0.48
	log(Wer/Wee)	2.04	4.86	6.35	8.17
Slovakia	log(Woa/Wee)	0.46	0.63	-2.18	-1.42
	log(Wer/Wee)	3.27	8.78	8.00	9.78
	Log-Likelihood	-5847.2			
	Chi-squared	2072.6			
	N	18065			

Note: This specification of this MNL is similar to that shown in Table 3, but the dependent variable has only three categories (omitting unemployment) and the predicted earnings differentials log (Woa/Wee) and log (Wer/Wee) are added to the regressors. The coefficients on these variables are permitted to vary across countries. All other independent variables from the Table 3 specification are also included here, but not shown.