Informal Economy Activities and Entrepreneurship: Evidence from RLMS[1]

Byung-Yeon Kim

(Seoul National University)

ABSTRACT

This paper uses the Russian Longitudinal Monitoring Survey (RLMS) from 1994 to 2004 to analyze the effect of previous informal economy activities on the creation of entrepreneurship. We find that previous participation in the informal economy is positively associated with the probability to become entrepreneurs in the present. We also find that that a desire to switch jobs expressed in the past is positively related to moonlighting in the present and to actual job changes in the future. Workers who moonlighted as self-employed in the past represent 22.8-24.5% of the new entrepreneurs.

Keywords: Informal economy, entrepreneurs, Russia.
JEL Classification: J22, J24, O17, P20.

I.   Introduction

Entrepreneurship is argued as one of the driving engines of economic growth (Schumpeter, 1934; Baumol, 1990; Murphy et al., 1991). Indeed, the Schumpeterian approach to growth suggests that entrepreneurial dynamism is the key to growth and innovation (Aghion and Howitt, 1997). Hence, economists have long been interested in understanding the determinants of entrepreneurship. Among the suggested reasons, credit constraints were found to be a major obstacle to become an entrepreneur. For example, Blanchflower and Oswald (1998) find that the receipt of an inheritance or gifts increased a typical individual's probability of being self-employed. This finding is corroborated with earlier work by Evans and Jovanovic (1989) and Holtz-Eakin et al (1994) in that they showed that large amounts of asset help in regression equations to increase the probability of transition into self-employment. In contrast, Hurst and Lusardi (2004) recently find that there exists a highly non-linear relationship between initial household wealth and the propensity to start a business. Only for households in the top 5% of the wealth distribution is there a positive association between these two.

In particular, entrepreneurship is found to be a key determinant of economic growth in transition economies (McMillan and Woodruff, 2002; Berkowitz and Dejong, 2005). McMillan and Woodruff (2002) document that the development of entrepreneurship economic in China and Poland accounts for robust growth in these countries to a substantial extent but economic decline experienced by Russia in the early part of transition was caused by slow development of entrepreneurial development. Berkowitz and Dejong (2005) present intra-national evidence for the relationship between entrepreneurship and growth. They use Russian regional data to estimate the effect of entrepreneurial development, measured by the regional registry of small private enterprises per thousand inhabitants, on growth, and find that the two variables are positively associated.

Compared to the number of works on entrepreneurship and growth, insufficient attention was paid to the question of what determines entrepreneurship. As documented previously, economists argued that the extent of risk aversion differs between entrepreneurs and non-entrepreneurs. For example, Kihlstrom and Laffont (1979) indicate that less risk averse individuals are more likely to be entrepreneurs. Some empirical results are consistent with this conjecture (Pattillo, 1998; Djankov, et al, 2006). Using data from special surveys on entrepreneurship in China and Russia, Djankov et al (2006) find that entrepreneurs have lower risk aversion than non-entrepreneurs.[2] In addition, according to their work, one big difference between entrepreneurs and non-entrepreneurs is that the former is more likely to have entrepreneurs in their family and as friends from their childhood and adolescence, implying some influence of information and network on becoming entrepreneurs. This finding is related with results on the relational determinants of entrepreneurship. For example, Stuart et al (1999) indicate that social capital defined as entrepreneur's referral network determines their chances of receiving venture capital.

Guariglia and Kim (2006) use the panel data from the Russian Longitudinal Monitoring Survey (RLMS) to investigate the association between moonlighting and self-employment in Russia, and find that previous moonlighting encourages job changes to self-employment. They argue that workers contemplating self-employment could experiment with it as a secondary form of employment, before leaving their main job and becoming full-time self-employed. In this work, they suggest that secondary jobs could serve as the entry point of self-employment and could evolve into entrepreneurships in the future.[3] Furthermore, Kim

---

[2] The surveys include questions on family and background, attitude toward work and leisure, and education. They find that Chinese entrepreneurs are more risk-taking and greedy than Russian entrepreneurs who tend to have a better educational background.

[3] Earle and Sakova (1999) suggested that the considerable rise in self-employment after the transition can be seen as a "quasi-experiment" for understanding the sources of entrepreneurship in transition economies. Due to the lack of capital and of a banking system to finance small businesses, the start-ups would nearly always have begun as self-employed activities.

and Kang (2008) find that the lagged share of the informal economy of regional GDP in Russia is positively correlated with small enterprise formation in the same region. Their result implies that the informal economy helped entrepreneurial activities to grow in the face of government failure but such informal activities tended to become official over time.

Using RLMS from 1994 to 2004, this paper sets out to investigate the question of whether informal economic activities are associated with entrepreneurship. A possible hypothesis is that moonlighting in Russia is used as a mechanism that enables workers to experiment with entrepreneurial activity, instead of immediately shifting to it. Moonlighting can in fact reduce the risk attached to a job change in two ways. First, it can make a reversal less costly when the prospects of the job tried turn out not to be bright. In such a way, moonlighting can help those individuals, for whom changing jobs at once would be too costly and risky, to start a new job or business more smoothly. Second, it provides a period for obtaining the necessary skills and information, accumulating human capital needed for entrepreneurship. Third, main jobs may provide network for future entrepreneurial activity, suggesting that keeping main job for the time being is beneficial for the individual contemplating about a job switch.

Research using micro level panel data such as RLMS has the following advantages. First, it allows us to look at individual's decision more closely and perhaps more reliably compared to the case using aggregate data. Controlling individual characteristics would be arguably easier than controlling national or regional heterogeneity. Second, the panel nature of the data offers a unique advantage that enables us to analyze the dynamics of job changes. Surveys of entrepreneurs and non-entrepreneurs may present contrasting characteristics between the two groups at one point of time but do not show directly how one becomes an entrepreneur.

The dynamic aspect of informal economic activities has been largely neglected by the existing studies on moonlighting, which generally only show snap-shot pictures of moonlighting, without looking at its changing nature. Although Klopov (1996) put forward the idea that moonlighting has a positive role in smoothing labor market transitions, the hypothesis has never been tested empirically except Guariglia and Kim (2006). The understanding of the dynamics of informal economy activities is extremely important for the implications it has on the economy as a whole. As Asea (1996) suggests, what matters for the economy as a whole is whether informal economy activities can evolve into formal activities, after having allowed participants in the informal economy to sufficiently develop their human capital. If this is the case, then the informal economy might provide a dynamic outlet for entrepreneurial talent, which could then lead to a better formal economy as part of a natural evolution (Asea, 1996; Levenson and Maloney, 1998).

In this paper, we will try to answer the following questions: Is there any evidence that previous participants in the informal economy particularly individual economic activities subsequently become registered entrepreneurs?; Is the desire to switch jobs associated with engagement in informal economic activities?; Did actual job changes take place after participation in informal economic activities?

This paper is organized as follows. Section II presents our dataset and provides a descriptive statistics. Section III discusses our empirical methodology and empirical results. Section IV summarizes main findings and concludes.

II. Data and descriptive statistics

The data used in this paper consist of round 5 to 13 of the Russian Longitudinal Monitoring Survey (RLMS), corresponding to interviews held in each year from 1994 to

2003 except for 1997 and 1999. The survey is based on a nationally representative sample of several thousands of households across the Russian Federation.[4] The RLMS contains detailed information on households' income and expenditure, as well as on individuals' demographic characteristics, education, and labor force activities, including those related to secondary jobs. We restrict our sample to adult individuals who have a main job, received positive wage from the main job in the previous month of the interview, and whose age is below Russia's retirement age (60 for man and 55 for woman).

We classify an individual as holding a secondary job relating to individual economic activities if he answered "yes" to the following questions:

"Tell me please, in the last 30 days did you engage in some additional kind of work for which you were paid or will be paid? Maybe you sewed someone a dress, gave someone a ride in a car, assisted someone with apartment or car repairs, purchased and delivered food, looked after a sick person, sold purchased food or goods in a market or on the street, or did something else that you were paid for?"

As the above question suggests, this secondary job can be viewed as self-employment activities. In order to be classified as holding a multiple job, an individual also needs to state that she worked a positive number of hours in the last 30 days on her additional job, and that she received a positive wage payment on that job.

Table 1 reports variable means over the pooled sample for working-age population, together with standard errors and the ranges of the variables. Compared to non-moonlighters, multiple-job holders are more educated in higher education; especially, 40% of moonlighters

---

[4] The RLMS is managed by the University of North Carolina at Chapel Hill Population Centre, in collaboration with five agencies which include Paragon Research and the Russian Institute of Sociology. The surveys from round 5 to round 13 took place in the following periods: November-December 1994 for round 5, October-December 1995 for round 6, October-December 1996 from round 7, October 1998-January 1999 for round 8, September-December 2000 for round 9, September-December 2001 for round 10, September-December 2002 for round 11, September-December 2003 for round 12, and September—December 2004 for round 13.

have university degree while only 25% of non-moonlighters have. Monthly working hours of moonlighters in their main job are slightly lower than those of non-moonlighters, and real wage rates of moonlighters in their primary jobs are very similar to those of non-moonlighters. However, the moonlighters' real wage rates in the secondary jobs are more than two times higher than the wage rates in their primary jobs.[5] Regional differences are also noticeable: moonlighting is particularly high in metropolitan cities.

An important step is to identify entrepreneurs from the survey data. We consider two definitions for which we refer to 'definition A' and 'definition B' respectively. Our first definition of an entrepreneur (definition A) is based on the question:

In your opinion, are you doing entrepreneurial work at this job?

Those who answered `yes' to the question are coded as entrepreneurs. We classify an individual as an entrepreneur (definition B) if she chose 'an entrepreneur' to the following question:

Read it carefully and say which answer best describes your primary occupation

at the present time. Choose only one answer[6]

96 percent of those who select 'an entrepreneur' for their main job according to definition A said 'yes' to the question asking entrepreneurial activities (definition B), suggesting that definition B is stricter than definition A. Yet, some people like paid managers in a company may engage in entrepreneurial activities although they are not entrepreneurs in terms of

---

[5] This comparison is based on money wages. Income in kind such as free or subsidized housing, health care, and nursery facilities are widely available for main jobs. If those fringe benefits were included, the difference between income from main jobs and secondary jobs would obviously become smaller. Friebel and Guriev (1999) analyze the negative effect of in-kind payments from enterprises on job mobility. Higher risk attached to secondary jobs and opportunities for using equipment available on main jobs can also explain why workers hold main jobs in spite of their far lower wage rates.

[6] An interviewee can choose one of the following 14 answers in addition to 'An entrepreneur': 'A high school or vocational school student,' 'A university or technical school student,' 'Unable to work for health reasons, disabled,' 'Retired and not working,' 'On maternity leave,' 'On official leave for looking after a child under 3 years old, not interrupting employment,' 'A housewife, caring for other family members, raising children,' 'Temporarily not employed for other reasons and looking for a job,' 'Temporarily not employed for other reasons and not looking for a job,' 'A farmer,' 'Working at an enterprise, organization, collective farm, state farm, or cooperative,' 'Working at other than an enterprise, organization, collective farm, state farm, or cooperative,' and 'Other.'

occupations. Hence, we use both of the two definitions for our estimations.

Table 2 summarizes the number of entrepreneurs of each definition by round. For definition A, the number of entrepreneurs is stabilized to around 5 percent of the working population from 2000 to 2004, followed by 7-8 percent from 1994 to 1998. It is unclear what factors caused the downward adjustment of the share of the number of respondents responded to doing entrepreneurial work; it may be due to a change in the economic structure between pre- and post-Russian crisis that took place in 1998. The number of entrepreneurs as a share of the working population according to definition B is more stable; it has been around 3 percent in all periods.

According to definition A, a conditional probability to become entrepreneur after engaging in informal economy activities in the previous period is 8.5% while that without involving in such activities in the previous period is 5.2%. A similar difference is found when we apply definition B: a conditional probability to become entrepreneur post informal economy activities in the previous period is 3.7% while that without working in such activities in the previous period is 2.4%

Table 3 shows occupational distributions of entrepreneurs according to ISCO codes. There exist systematic differences in occupational distribution between entrepreneurs and the whole population. Notably, entrepreneurs are concentrated in the group of 'legislators, senior managers, officials': 23 and 48 percent of working population belong to this group according to definition A and B, respectively, while only 5.8 percent of working population are reported to belong to the same category.

III. Entrepreneurship, Moonlighting and Job Changes

Empirical Methodology

In this section, we first investigate the question of whether, in the future, people who have moonlighted in the past will hold main jobs as entrepreneurs. To formally test the effect of moonlighting on the creation of entrepreneurship, we estimate random-effects probit regressions for the probability that previous moonlighters now become entrepreneurs. Given our interest in understanding the determinants of officially registered entrepreneurship, we use the sample of entrepreneurs officially registered.[7] Given the possibility of long-time interval to become an entrepreneur after participation in informal economy activities, we allow three lags of moonlighting. Using lagged moonlighting,

$$ENT_{it} = \alpha + \beta_1 M_{it-1} + \beta_2 M_{it-2} + \beta_3 M_{it-3} + X_{it}\theta + v_i + v_t + \varepsilon_{it} \qquad (1)$$

where i indexes individuals and t indexes time.[8] ENT_{it} indicates that the individual i at time t choose an entrepreneur as one's main job. M_{it} is a dummy variable denoting an individual i moonlighted in t period. X_{it} is the vector of control variables.[9]

In order to understand the effect of the desire to switch a job on participation in the informal economy, we include information from the following question as regressor:

"Would you like to find different work?"

The responses are coded as 1 if the respondent answers "yes" and 0 if the respondent answers "no". We use the first lag of the variable quantifying the intention for a job switch, along with the variables used in the regressions reported in the equation (1). We use the current intention or the lagged intention of a job change to explain current period moonlighting. The estimation equation is as follows:

---

[7] The question asking the respondents is as follows: "Are you employed in this job officially, in other words, by labor book, labor agreement, or contract?"

[8] t refers to the rounds of the RLMS used in estimation. The available rounds are 5 to 13, but some early rounds are lost due to the inclusion of the previous moonlighting as regressor. Time dummies are included in all regressions.

[9] We used a Heckman procedure to estimate above equation but including predicted entrepreneurial profits. The estimated profits are not significant. However, main results remain the same as the case without the variable.

$$M_{it} = \alpha' + \beta_1' DESIRE_{it} + X_{it}\theta' + v_i' + v_t' + \varepsilon_{it}' \quad (2)$$

where $DESIRE_{it}$ indicates that the individual i at time t expressed an intention to switch job.

As regards job changes, RLMS do not provide direct information on whether the respondent changed jobs.

Our method for the identification of job changes is based on the answers given by respondents to the following question:

Tell me, please, since what year and month have you been working at this place?
We assume that a job change has occurred if the starting date of the current job is posterior to that reported in the previous year survey. In this case, the job switch occurs between the date of the previous survey and that of the present survey. According to this methodology, the annual average of the number of the respondents who switched jobs from 1994 to 2004 is 19.2% of total respondents.

$$JOBCHANGE_{it} = \alpha'' + \beta_1'' M_{it} + \beta_2'' M_{it-1} + X_{it}''\theta'' + v_i'' + v_t'' + \varepsilon_{it}'' \quad (3)$$

where $JOBCHANGE_{it}$ indicates that the individual i at time t changed his job. Our interest is to look at whether or not the current or previous moonlighting is positively associated with job changes.

Empirical Results

The regression results are presented in Table 4. Table 4 reports estimation results using definition A and B of entrepreneur. Among the key variables relative to moonlighting, only on the third lagged moonlighting is significant, suggesting that it takes some time to become officially registered entrepreneur after moonlighting experience. Some suggestions can be made about the interval period between moonlighting and becoming officially registered entrepreneurs. Given Guariglia and Kim (2006)'s finding of the positive lagged

impact of moonlighting on self-employment, there is a possibility that moonlighting helps to the creation of self-employment from which entrepreneurs emerge and thus takes some time. Another conjecture is that moonlighting leads to unofficial entrepreneurial activities that transform themselves to registered ones in the future.

Table 5 shows that an intention for a job change expressed in the current period is positively associated with moonlighting. In addition, moonlighting in the previous period is also positively associated with job changes. These results suggest that moonlighters are more active in changing their jobs compared to non-moonlighters. We check further whether moonlighting is affected by concern about job losses or getting necessities. The question about concern on job losses asks respondents as follows: "How concerned are you that you might lose job?" Respondents are required to reply to select one of the five choices starting from very concerned (1) to not concerned at all (5). A similar question is asked about getting necessities: "How concerned are you about the possibility that you might not be able to provide yourself with the bare essentials in the next 12 months?" In the same way as before, respondents can choose the answer from very concerned (1) to not concerned at all (5). The results in equation (3) show that the variables pertaining to concern on job losses are insignificant or significant in a way that less concern is positively correlated with moonlighting. Furthermore, the variable relative to concern about getting necessities is not significant. These results indicate that moonlighting in Russia is not driven by survival but by exploiting opportunities including job changes.

Table 6 shows the results about the relationship between previous moonlighting and actual job changes. Moonlighting in the previous period is positively and significantly associated with actual job changes, identified as explained above. In addition, there is a positive correlation between Moonlighting in the two period before and actual job changes. Concerns about job losses or getting necessities are not significant in determining actual job

changes. Furthermore, the positive coefficient on concern about getting necessities suggests that the less concern about material welfare one has, the higher probability of job changes one makes.

This finding might be explained by the fact that individuals who desired to switch jobs used moonlighting as an experimental mechanism, and actually changed their main job if the experiment was successful. A possible explanation for this finding could be that moonlighting in Russia is used as a mechanism that enables workers to experiment with a different job, instead of immediately shifting to it.

In order to put the marginal effects obtained before in a better context, Table 6 shows workers' transition to entrepreneurship after a spell of moonlighting as self-employed (i.e. Individual Economic Activities). We only focus on those moonlighters who hold a self-employed second job because we are interested in seeing whether they convert their main job to self-employment following a moonlighting spell as self-employed. Several observations can be drawn from the Table. Column 5 of the Table reports ratios obtained by dividing the number of workers who were moonlighting as self-employed at time t and hold a main job as entrepreneurs in period $t+1$, $t+2$, and $t+3$, (column 1) by the total number of workers who hold entrepreneurship as a main job (column 3). These ratios, which ranged between 11 and 16%, suggest that following a spell of moonlighting, a significant number of people hold an entrepreneurial primary job.

The ratios reported in column 5, however, do not consider the fact that former moonlighters might have already held a main job as entrepreneurs in period t. In addition, we look at newly emerged entrepreneurs out of moonlighting activities as a percentage of total entrepreneurs who became entrepreneurs in the current period. In other words, column (6) indicates the ratio between the number of workers who did not have a main job as

entrepreneurs, but who were moonlighting as self-employed in period *t*, and switched to a main job as registered entrepreneur at time *t+1*, *t+2*, and *t+3* and the number of inflows in entrepreneurial activities in period *t+1, t+2*, and *t+3*, respectively. The shares reported in column 6 show that self-employment moonlighting contributes to the expansion of entrepreneurship in Russia, as it represents 22.8-24.5% of the new entrepreneurs.

IV. Conclusions

Using the RLMS, this paper looks at the relationship between self-employment moonlighting and entrepreneurship Russia. We can summarize our findings as follows. First, previous moonlighting is positively correlated with the probability to become entrepreneurs in the present. Second, an intention for a job shift is positively correlated with moonlighting and previous moonlighting is positively associated with present job changes.

These findings may be due to the fact that Russians use moonlighting as a mechanism to smooth the process of changing jobs, especially to entrepreneurs. Moonlighting can in fact allow individuals to transform their secondary job into the primary one without exposing them to the risk arising from an immediate shift from one job to the other. According to our results, an intention to change jobs tends to end up with an actual job change, suggesting that there is a significant association between the intention and the implementation. We can therefore conclude that there is a considerable interaction between the three key variables in our analysis: moonlighting, an intention for a job change, and an actual job change.

The quantitative significance of newly emerged entrepreneurs from previous moonlighting experience is noticeable: 22.8-24.5% of the new entrepreneurs is due to those people starting entrepreneurs as a main job after a period of self-employment moonlighting.

Table 1. Means of variables

Engage in some additional kind of work	No			Yes		
	Mean	Stan. dev.	Min/max	Mean	Stan. dev.	Min/max
Number of observations	24,046			1,486		
Demographic characteristics						
Gender (woman=0, man=1)	0.472	0.499	0/1	0.621	0.485	0/1
Age	37.81	10.24	18/60	36.04	9.83	18/60
Marital status (single=0, married=1)	0.773	0.418	0/1	0.765	0.4238	0/1
Number of children aged 0-6	0.26	0.50	0/5	0.31	0.53	0/3
Number of working-age males	1.11	0.64	0/6	1.11	0.61	0/4
Education						
Up to high school	0.865	0.341	0/1	0.882	0.322	0/1
Professional courses	0.287	0.452	0/1	0.330	0.470	0/1
Vocational training without secondary education	0.098	0.296	0/1	0.260	0.448	0/1
Vocational training with secondary education	0.220	0.414	0/1	0.241	0.428	0/1
Technical & medical school	0.338	0.473	0/1	0.287	0.452	0/1
University education	0.253	0.435	0/1	0.275	0.446	0/1
Postgraduate education	0.010	0.102	0/1	0.012	0.109	0/1
Main jobs						
Monthly real wages	3677	4233	15/155791	3559	4043	75/45167
Working hours per month	170.1	54.3	24/640	167.9	58.4	24/480
Wage rate	23.7	30.4	0.1 /861	23.5	36.6	0.5/790
Job tenure	8.1	8.3	1/51	7.1	7.6	1/38
Wage arrears (0=no, 1=yes)	0.241	0.428	0/1	0.332	0.471	0/1
Additional jobs						
Monthly real wages				1561.5	2761.2	0/30102
Working hours per month				28.1	42.7	0/390
Wage rate				127.7	295.1	0/5425
Settlement type						
Town	0.758	0.427	0/1	0.798	0.401	0/1
Rural non-agricultural	0.056	0.230	0/1	0.044	0.206	0/1
Rural agricultural	0.185	0.388	0/1	0.157	0.364	0/1
Regions						
Moscow, St. Petersburg	0.114	0.318	0/1	0.158	0.365	0/1
Northern and North Western	0.070	0.256	0/1	0.059	0.237	0/1
Central and Central Black-Earth	0.197	0.398	0/1	0.156	0.363	0/1

Engage in some additional kind of work	No			Yes		
	Mean	Stan. dev.	Min/max	Mean	Stan. dev.	Min/max
Volga-Vyatski and Volga Basin	0.176	0.381	0/1	0.193	0.394	0/1
North Caucasian	0.102	0.303	0/1	0.113	0.316	0/1
Ural	0.168	0.374	0/1	0.140	0.347	0/1
Western Siberian	0.081	0.272	0/1	0.082	0.275	0/1
Eastern Siberian and Far-Eastern	0.087	0.283	0/1	0.094	0.293	0/1
Occupations						
Legislators, senior managers, officials	0.059	0.235	0/1	0.050	0.218	0/1
Professionals	0.174	0.379	0/1	0.195	0.396	0/1
Technicians and associate professionals	0.158	0.365	0/1	0.137	0.344	0/1
Clerks	0.063	0.243	0/1	0.043	0.204	0/1
Service workers, market workers	0.108	0.310	0/1	0.069	0.255	0/1
Skilled agriculture & fishery workers	0.003	0.062	0/1	0.010	0.103	0/1
Craft and related trades	0.150	0.357	0/1	0.232	0.422	0/1
Plant & machine operators assemblers	0.175	0.380	0/1	0.172	0.377	0/1
Unskilled occupations	0.106	0.307	0/1	0.085	0.279	0/1

Notes: The educational, occupational, and regional variables are dummy variables coded as 0 or 1. For instance, the variable 'up to high school' is coded 1 if the individual's highest educational qualification is high school or anything lower, and as 0, otherwise.
Source: RLMS, round 5-13

Table 2. Number of entrepreneurs

RLMS round	Definition A		Definition B	
	Number	Percentage	Number	Percentage
Round 5	252	8.61	89	3.02
Round 6	193	7.66	67	2.64
Round 7	154	7.57	59	2.83
Round 8	189	8.53	67	3.00
Round 9	116	4.55	83	2.99
Round 10	151	5.06	96	2.97
Round 11	148	4.58	111	3.15
Round 12	130	4.61	110	3.56
Round 13	108	3.93	86	2.85

Note: The percentages are calculated as the proportion of entrepreneurs in
Source: RLMS round 5-13

Table 3. Occupations of entrepreneurs

	Entrepreneur (Definition A)		Entrepreneur (Definition B)		Whole population	
	Number	Percentage	Number	Percentage	Number	Percentage
Legislators, senior managers, officials	327	22.80	366	47.91	1,480	5.82
Professionals	200	13.95	46	6.02	4,490	17.65
Technicians and associate professionals	265	18.48	74	9.69	4,005	15.75
Clerks	68	4.74	5	0.65	1,579	6.21
Service workers, market workers	251	17.50	154	20.16	2,679	10.53
Skilled agriculture & fishery workers	20	1.39	5	0.65	108	0.42
Craft and related trades	137	9.55	55	7.20	3,968	15.60
Plant & machine operators assemblers	114	7.95	47	6.15	4,460	17.53
Unskilled occupations	52	11.05	12	1.57	2,666	10.48
Total	1,434	100.00	764	100.00	25,435	100.00

Source: RLMS round 5-13

Table 4. Effects of previous moonlighting on entrepreneurship

Dependent variable: Entrepreneurship	Definition A		Definition B	
	Coeff.	*t*-value	Coeff.	*t*-value
Moonlighted in the previous round	-0.018	-0.15	-0.232	-1.09
Moonlighted in the two previous round	0.105	0.93	-0.245	-1.18
Moonlighted in the three previous round	0.333	3.27	0.291	1.92
Demographic characteristics				
Gender (woman=0, man=1)	0.109	1.44	0.315	2.93
Age	0.009	3.21	0.021	4.14
Age squared/1,000	-0.010	-3.45	-0.022	-4.12
Marital status (single=0, married=1)	0.051	0.55	0.208	1.37
Household characteristics				
Number of children aged 0-6	0.131	1.93	0.107	1.06
Number of working-age males	-0.011	-0.18	-0.083	-0.80
Education				
Vocational training & Technical school	-0.108	-1.29	0.159	1.32
University education	0.456	5.16	0.461	3.80
Postgraduate education	-0.577	-1.47	-5.711	-0.00
Settlement type				
Urban	Omitted category		Omitted category	
Rural	-0.130	-1.48	0.008	0.07
Regions				
Moscow, St. Petersburg	0.221	1.22	-0.591	-1.39
Northern and North Western	-0.214	-1.11	-0.343	-1.04
Central and Central Black-Earth	0.228	1.55	0.412	1.96
Volga-Vyatski and Volga Basin	0.118	0.79	0.235	1.10
North Caucasian	0.033	0.20	0.270	1.15
Ural	-0.041	-0.26	-0.161	-0.64
Western Siberian	0.235	1.38	0.337	1.41
Eastern Siberian and Far-Eastern	Omitted category		Omitted category	
Tenure	-0.026	-4.96	-0.036	-3.90
Wald test χ^2(25)	141.72		87.42	
Number of observations	11,121		11,176	

Source: RLMS round 5-13
Note: Time dummies are included but the coefficients are not reported for the sake of brevity.

Table 5. Effects of desire for job change and concern for job loss on the decision to moonlight

Dependent variable: Moonlighting	Equation (1)		Equation (2)		Equation (3)	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Moonlighted in the previous round	0.575	9.10	0.763	8.78	0.866	9.45
Demographic characteristics						
Gender (woman=0, man=1)	0.329	4.84	0.399	6.60	0.340	4.61
Age	0.002	1.07	0.006	3.30	0.004	2.14
Age squared/1,000	-0.003	0.002	-0.007	-3.70	-0.005	-2.40
Marital status (single=0, married=1)	-0.023	0.24	-9.188	-2.43	-0.034	-0.31
Household characteristics						
Number of children aged 0-6	0.123	2.42	0.106	2.31	0.126	2.26
Number of working-age males	-0.112	-1.91	-0.079	-1.62	-0.123	-1.93
Education						
Vocational training & Technical school	0.154	2.30	0.161	2.73	0.164	2.30
University education	0.015	0.18	0.060	0.86	0.002	0.3
Postgraduate education	0.590	2.32	0.418	1.85	0.565	2.09
Settlement type				-0.35		
Urban	Omitted category		Omitted category		Omitted category	
Rural	-0.178	-2.39	-0.149	-2.33	-0.128	-1.63
Regions						
Moscow, St. Petersburg	-0.153	-1.16	-0.146	-1.25	-0.254	-1.78
Northern and North Western	-0.263	-1.89	-0.288	-2.34	-0.381	-2.54
Central and Central Black-Earth	-0.273	-2.39	-0.315	-3.12	-0.350	-2.89
Volga-Vyatski and Volga Basin	-0.264	-2.27	-0.213	-2.14	-0.307	-2.49
North Caucasian	-0.206	-1.65	-0.135	-1.26	-0.238	-1.81
Ural	-0.459	-3.62	-0.24	-3.05	-0.515	-3.79
Western Siberian	-0.221	-1.72	-0.281	-2.44	-0.288	-2.10
Eastern Siberian and Far-Eastern	Omitted category		Omitted category		Omitted category	
Tenure	0.005	1.23	0.003	0.78	0.004	1.00
Desire for job change in the current round	0.266	4.27			0.267	3.86
Desire for job change in the previous round			0.136	2.58		
Concern about job loss in the current round					0.044	1.82
Concern about job loss in the previous round					0.005	0.23
Satisfaction with life					-0.047	-1.39
Concern about getting necessities					0.004	0.13
Wald test χ^2 (21/21/24)	188.29		232.10		195.01	
Number of observations	5,758		7,929		5,186	

Source: RLMS round 5-13

Note: 'Desire for job change' is coded as 1 if an interviewee answers 'yes' to the question ' *Would you like to find (another) job?*' and as 0 otherwise. 'Concern about job loss' is coded from 1 to 5 as decreasing degree of concern to the question '*How concerned are you that you might lose your job*'; for example, '*very concerned*' is coded as 1 and '*not concerned at all*' is coded as 5. 'Satisfaction with life' is code from 1 to 5 as decreasing degree of satisfaction to the question '*To what extent are you satisfied with your life in general at the present time?*' Similarly, 'Concern about getting necessities' is coded from 1 to 5 as decreasing degree of concern to the question '*How concerned are you about the possibility that you might not be able to provide yourself with the bare essentials in the next 12 months?*' Time dummies are included but the coefficients are not reported for the sake of brevity.

Table 6. Effect of moonlighting on actual job change

Dependent variable: Job change	Equation (1)		Equation (2)	
	Coeff.	*t*-value	Coeff.	*t*-value
Moonlighted in the current round	0.036	0.43	-0.009	-0.09
Moonlighted in the previous round	0.172	2.26		
Moonlighted in the two previous round			0.205	2.33
Demographic characteristics				
Gender (woman=0, man=1)	0.338	7.11	0.282	5.10
Age	-0.005	-3.77	-0.004	-2.13
Age squared/1,000	0.003	2.05	0.002	1.13
Marital status (single=0, married=1)	-0.106	-1.67	-0.004	-1.13
Household characteristics				
Number of children aged 0-6	-0.098	-2.50	-0.017	-0.37
Number of working-age males	0.050	1.34	-0.012	-0.28
Education				
Vocational training & Technical school	0.066	1.40	-0.015	-0.28
University education	0.143	2.46	0.087	1.30
Postgraduate education	-0.306	-1.28	-0.053	-1.87
Settlement type				
Urban	Omitted category		Omitted category	
Rural	-0.061	-1.17	-0.042	-0.71
Regions				
Moscow, St. Petersburg	0.280	2.65	0.312	2.45
Northern and North Western	0.088	0.84	0.129	1.04
Central and Central Black-Earth	0.053	0.60	0.027	0.26
Volga-Vyatski and Volga Basin	-0.047	-0.53	0.031	0.30
North Caucasian	-0.005	-0.06	0.084	0.73
Ural	-0.070	-0.75	0.015	0.14
Western Siberian	0.664	0.66	0.071	0.60
Eastern Siberian and Far-Eastern	Omitted category		Omitted category	
Desire for job change in the previous round	-0.349	-8.50	-0.385	-7.55
Concern about job loss in the current round	0.000	0.01	0.006	0.35
Concern about job loss in the previous round	-0.016	-1.17	-0.017	-0.96
Satisfaction with life	-0.006	-0.29	-0.008	-0.33
Concern about getting necessities	0.038	1.89	0.053	2.00
Wald test χ^2(28)	338.69		182.61	
Number of observations	7,981		4,466	

Source: RLMS round 5-13

Note: The dependent variable has binary responses denoting whether an individual's current job is started in the interview year or not. In other words, we detect an occurrence of job change by comparing the interview year and answer to the following question: '*Tell me, please: Since what year and month have you been working at this place? If you left and then returned to this enterprise, give the date you last returned.*' Time dummies are included but the coefficients are not reported for the sake of brevity.

Table 7. Occupational transition following moonlighting

| Period | Terminal Occupation | Those who moonlighted in initial period t | | Total number of individuals (3) | Inflow into jobs (4) | $\frac{(1)}{(3)}$ (%) (5) | $\frac{(1)-(2)}{(4)}$ (%) (6) |
		Number of individuals (1)	Number of individuals who already had this occupation as main job (2)				
$t+1$	Entrepreneur (Definition A)	182	50	1,525	585	11.9	22.6
	Entrepreneur (Definition B)	147	56	1,019	469	14.4	19.4
$t+2$	Entrepreneur (Definition A)	144	36	1,089	429	13.2	25.2
	Entrepreneur (Definition B)	130	43	818	362	15.9	24.0
$t+3$	Entrepreneur (Definition A)	101	25	756	295	13.4	25.8
	Entrepreneur (Definition B)	90	26	635	257	14.2	24.9

Note: In column 1, the number of individuals refers to those who were moonlighting as in period t, and who hold main jobs as entrepreneurs (definition A or definition B), in turn, in period $(t+1)$, $(t+2)$ or $(t+3)$. Column 2 gives the number of individuals who were moonlighting in period t and held main jobs as entrepreneurs in that period, and hold the same main jobs in period $(t+1)$, $(t+2)$ or $(t+3)$ respectively. In column 3, total number of individuals is defined as the number of individuals who are entrepreneurs in period $(t+1)$, $(t+2)$ or $(t+3)$, and who participated in RLMS survey in period t. In column 4, inflow into jobs is defined as the number of individuals who newly become entrepreneurs in period $(t+1)$, $(t+2)$ or $(t+3)$ respectively, and who participated in RLMS survey in period t.
Source: RLMS, round 5-13

References

Aghion, P. and P. Howitt, 1997, *Endogenous Growth Theory*, MIT Press, Cambridge Massachussetts.

Asea, P. K., 1996, "The Informal Sector: Baby or Bath Water? A Comment," Carnegie-Rochester Conf. Ser. Pub. Pol., 163-171.

Baumol, William J., 1990, "Entrepreneurship: productive, unproductive, and destructive," *Journal of Political Economy*, Vol. 98, Issue 5: pp. 893-921.

Berkowitz, D. and D. N. Dejong, 2005, "Entrepreneurship and Post-socialist Growth" *Oxford Bulletin of Economics and Statistics*. Vol. 67, No. 1, 25-46.

Blanchflower, David and Andrew J. Oswald, 1998, "What Makes an Entrepreneur?" Journal of Labor Economics, Vol. 16, Issue 1: pp. 26-60.

Djankov, S., E. Miguel, Y. Qian, and G. Roland, E. Zhuravskaya, 2006, "Entrepreneurship in China and Russia Compared?" *Journal of the European Economic Association*, Papers and Proceedings, 4(2-3), 352-65.

Earle, J. S. and Z. Sakova, 1999, "Entrepreneurship from Scratch: Lessons on the Entry Decision into Self-Employment from Transition Economics," IZA Discussion Paper, No. 79.

Evans, David and Boyan Jovanovic, 1989, "An Estimated Model of Entrepreneurial Choice under Liquidity Constraints," *Journal of Political Economy*, Vol. 97: pp.808-827.
Evidence from Sectoral Transitions in Mexico," *The World Bank Economic Review*, 13 (2), 257-302.

Friebel, G., and S., Guriev, 1999, "Why Russian workers do not move: attachment of workers through in-kind payments", Working Paper No. 283, William Davidson Institute at the University of Michigan Business School.

Guariglia, A. and B-Y Kim, 2006, "The Dynamics of Moonlighting: What is Happening in the Russian Informal Economy?", *Economics of Transition*, Vol. 14, No. 1, 1-45.

Holtz-Eakin, Douglas, David Joulfaian and Harvey S. Rosen (1994), "Entrepreneurial Decisions and Liquidity Constraints," *Rand Journal of Economics*, Vol. 25: pp. 334-347.

Kihlstrom, R. and J. Laffont, 1979, "A General Equilibrium Theory of Firm Formation based on Risk Aversion," *Journal of Political Economy*, 87, 719-748.

Kim, B-Y and Kang, Y., 2008, "The Informal Economy and the Growth of Small Enterprises in Russia," mimeo.

Klopov, E., 1996, "Vtorichnaya zanyatost' kak forma sotsial'no-trudvoi mobil'nosti," in Gordon, L., eds., *Trudvye Peremeshcheniya i Adaptatsiya Rabotnikov*, Institut Mirovoi Ekonomiki i Mezhdunarodnyi Otnoshenii, Moscow.

Levenson, A. and W., Maloney, 1998, "The informal sector, firm dynamics and institutional participation", World Bank Policy Research Working Paper No. 1988.

McMillan, J. and C. Woodruff, 2002, "The Central Role of Entrepreneurs in Transition Economies," *Journal of Economic Perspectives*, Vol. 16, 153-170.

Murphy, Kevin M, Andrei Shleifer and Robert W Vishny, 1991, "The Allocation of Talent: Implications for Growth," Quarterly Journal of Economics, Vol. 106, Issue 2: pp. 503-530.

Pattillo, C., 1998, "Investment, Uncertainty, and Irreversibility in Ghana, IMF Staff Papers, 45, 522-553.

Schumpeter, Joseph A., 1934, *The Theory of Economic Development*, Cambridge: Harvard University Press.

Stuart, T., Hoang, H., and Hybels, R., 1999, "Inter-organizational Endorsements and the Performance of Entrepreneurial Ventures," *Administrative Science Quarterly*, 44, 2, 315-349.