Informality in Russia

A Survey of Recent Research by the Centre for Labour Market Studies

Fabián Slonimczyk

ICEF-Higher School of Economics, Moscow

Georgia Project Kick-Off Workshop. Bonn, November 2011.

Finished Work

Vladimir Gimpelson and Anna Zudina.

"Informals" in the Russian Economy: How Many And Who Are They?

HSE WP Series "Labour Markets in Transition", 6, 2011.

Fabián Slonimczyk.

The Effect of Taxation on Informal Employment: Evidence from the Russian Flat Tax Reform.

HSE WP Series "Labour Markets in Transition", 5, 2011.

Work in Progress

- · Earnings in the Formal and Informal Sectors
- Informality and Participation in the Pension System
- Self-employment in the CIS Countries
- Informality and Subjective Well-being: Are Informal Workers Less Happy?
- Does Increasing the Minimum Wage Raise Informality?

"Informals" in Russia: Main Findings

- The relative size of the informal sector has been growing gradually but steadily
- 2 Most dynamic component is informal employees
- Self-employment is a stable small percentage of the LF
- Informality in Russia has strong seasonal component
- 5 Informality increased pari-passu with GDP per capita
- 6 Young and uneducated informals are at risk
- Informals concentrated in services and agriculture

Informal Sector Size: Rosstat Administrative Data



Figure: Employment (millions of individuals)

Informal Sector Estimates



Figure: Informality as a Percentage of Employed LF

Informal Sector Structure



Self-Employed

Figure: Informal Employment in Main Job (millions of individuals)

Cyclicality of Informal Sector



Figure: Informality as a Percentage of EAP

Composition: Gender, Urban-Rural



Figure: Informality for Males-Females, Urban-Rural

Composition: Age



Figure: Informality by Age Group

Composition: Education



Figure: Informality by Education Level

Composition: Occupation



Figure: Informality by Occupation Group

Multinomial Logit: Age Group Marginal Effect (%)



Informal Employees

Self-Employed/Entrepreneur

Multinomial Logit: Education Marginal Effect (%)



Informal Employees

Self-Employed/Entrepreneur

Multinomial Logit: Occupation Marginal Effect (%)



Informal Employees

Self-Employed/Entrepreneur

- In 2001, Russia introduced a tax reform that drastically reduced taxation levels
- But lower income brackets were mostly unaffected: control group
- The effect of the reform estimated using a differences-in-differences strategy
- Other aspects of the reform make it a good quasi-experiment
 - Little or no room for anticipation effects
 - No specific incentives to misreport income around the threshold
- But not perfect, since treatment is defined based on income bracket

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The Russian Longitudinal Monitoring Survey

- Rounds VIII-XVIII (1998-2009)
- In typical round, 10,000 individuals in 4,000 household
- The adult questionnaire contains information on up to three 'jobs': main job, second job, irregular remunerated activities
- Special supplement on informal work (round XVIII)

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Working Definition

Employed	Main Job	Entrepreneur	Firm Owners Individual Entrepreneur	Formal Informal Informal
	Employee	/ee For Firm For Individual Entrepreneur		
	Second Jo	Formal Informal		
	Irregular A	ctivities		Formal Informal

Informality at Main Job



Notes: RLMS, rounds VIII-XVIII (1998-2009).

Background Characteristics

	All Employed	Informal Employee	Informal Entrepr.	Informal Sec. Job	Informal Irreg. Activ
Female	0.54	0.49	0.42	0.56	0.45
Age	39.5	36.4	40.1	38.9	38.6
College Degree	0.27	0.12	0.23	0.28	0.15
Schooling (Yrs)	12.3	11.5	12.1	12.5	11.4
Work Experience	14.3	9.2	14.4	14.8	11.3
Married	0.51	0.42	0.66	0.48	0.42
Urban Location	0.77	0.76	0.80	0.88	0.63
Russian National	0.87	0.86	0.77	0.86	0.81
Russian Born	0.91	0.88	0.82	0.87	0.92
Size HH	3.4	3.5	3.6	3.0	3.4
"After Tax" Income					
This Job (rubles)	13,194	11,043	18,661	7,142	7,043
% Reported for Tax	86.6	32.0	62.9	NA	NA
All Jobs (rubles)	13,446	11,132	18,878	17,024	12,470
Obs	7192	815	204	158	583

Job Characteristics

	All Employed	Informal Employee	Informal Entrepr.	Informal Sec. Job
Tenure (Yrs)	7.3	2.8	7.2	2.5 ^は
Changed Jobs	0.16	0.35	0.13	NA
Changed Occupation	0.11	0.21	0.06	NA
Has Subordinates	0.20	0.08	0.38	0.10 [♭]
Firm Characteristics [‡]				
Ent Size (# of Emp)	584.4	61.8	-	76.2
State Owns Share	0.50	0.06	-	0.20
Russian Indiv Owns Share	0.56	0.91	-	0.70
Firm from Soviet times	0.59	0.09	-	0.40
Firm owes money	0.07	0.13	-	0.19 [#]
Firm pays in kind	0.01	0.03	-	0.02 [‡]
Job Benefits [‡]				
Paid Vacation	0.90	0.17	-	0.19
Paid Sick Leave	0.87	0.11	-	NA
Paid Maternity Leave	0.79	0.07	-	0.17
Paid Health Care	0.24	0.01	-	0.05
Paid Trips to Sanatoria	0.28	0.01	-	0.03
Paid Child Care	0.05	0.01	-	0.01
Obs	7192	815	204	158

Compliance with the Law

Sup for employees	All	Informal	Informal	Inf. Irreg.
	Employed	Employee	Sec. Job	Activ
Under oral agreement	0.11	0.69	0.81 ^は	0.96 [#]
% Labor Law Compliace	83.1	52.9	NA	53.2 [#]
% Contract Compliance	86.1	64.3	NA	65.5 [#]
% of Inc Declared for SS	87.6	31.2	NA	10.5 [#]
Obs	6453	777	80	186
Sup for entrepreneurs	All	Formal	Informal	Inf. Irreg.
	Employed	Entrep	Entrepr.	Activ
Unregistered	0.48	0.03	0.27	0.98 [#]
% Labor Law Compliance	64.4	85.9	53.6	21.3 [#]
% Contract Compliance	66.3	87.5	55.5	27.5 [#]
% Formal Employees	64.0	85.7	53.4	8.3 [#]
Contributes to SS fund	0.47	0.95	0.60	0.06 [#]
Obs	397	64	194	126

Notes: The data sources are RLMS round XVIII and the supplementary questionnaire on informality by the Center of

Labor Market Studies, Higher School of Economics (2009). ^bBased on job-B answers by individuals who do not

perform irregular activities. [#]Based on job-A answers by individuals who do not have a main job.

The Russian Flat Tax Reform

Gross Yearly	PIT	Before (2000) PIT ST		PIT	After (2001) IT ST		
Income (r.)		Employee	Employer		Employee	Employer	
<3,168 [♯] 3,168–4,800 [♯]	0 12	1	38.5	0 0	0	35.6	
4,800-50,000	12			13			
50,000-100,000 100,000-150,000 150,000-300,000 300,000-600,000 >600,000	20 20 30 30 30	1	38.5	13	0	35.6 20 20 10 2 ⁶	

Notes: The data source is Russian Tax Code, part 2 (2001-2). [#]The tax allowance in 2001 was only available to

those with income below 20,000 rubles. ${}^{\flat}$ Rate initially set to 5% and lowered to 2% in 2002.

Combined Tax Burden



Summary Statistics by Treatment

	Control	Treated	All Employed
Female	0.61	0.52	0.54
Age	42.29	37.18	38.21
Medium Ed Comp	0.76	0.87	0.85
College Ed Comp	0.12	0.23	0.21
Schooling (Yrs)	11.07	12.16	11.94
Work Experience	20.12	16.26	17.04
Married	0.47	0.59	0.57
Urban Location	0.63	0.78	0.75
Russian National	0.63	0.73	0.71
Russian Born	0.92	0.92	0.92
Size HH	3.32	3.54	3.50
# Fem HH	1.77	1.86	1.84
# Youth HH	0.72	0.84	0.81
# Elderly HH	0.29	0.18	0.20
Obs	17,404	68,475	85,879
Indiv	3,545	11,487	15,032

Informal Employment by Treatment



DID FE

	Informal Employee	Informal Irregular Activities	Any Informal Employment
Household Characteristics	YES	YES	YES
Individual Characteristics	YES	YES	YES
Year Dummies ^b	YES	YES	YES
DID Estimates			
Post	0.0495	0.0350	-0.0315
	(0.099)	(0.075)	(0.119)
$Treat \times Post$	-0.0250**	-0.0403***	-0.0584***
	(0.010)	(0.010)	(0.014)
Constant	0.2799	0.4481*	0.2996
	(0.306)	(0.232)	(0.365)
Obs	44,452	53,769	47,718
# of Indiv	11,263	12,411	11,969
R^2 Overall	0.04	0.03	0.01

 $INF_{it} = \theta_t + X_{it}\beta + Z_i\gamma + \psi Post_t + \mu Treat_i + \alpha (Treat_i \times Post_t) + c_i + \epsilon_{it}$

Notes: RLMS, rounds VIII–XVIII (1998–2009). ^bNine year dummies were included but not reported. ***p < 0.01, **p < 0.05, *p < 0.1.

Some Robustness Checks

	Informal Employee	Informal Irreg Activ	Any Informal Employment	All Irregular Activ	Informal Irreg Activ as Main Job
Baseline	-0.0250**	-0.0403***	-0.0584***	-0.0421***	-0.0343***
	(0.010)	(0.010)	(0.014)	(0.010)	(0.009)
Including interactions $District \times Year$	-0.0246**	-0.0337***	-0.0467***	-0.0373***	-0.0295***
	(0.011)	(0.010)	(0.015)	(0.011)	(0.009)
Control group excludes	-0.0256**	-0.0408***	-0.0588***	-0.0427***	-0.0350***
unreported income	(0.010)	(0.010)	(0.014)	(0.011)	(0.009)
Treatment defined using income from all sources	-0.0363**	-0.0219**	-0.0708***	-0.0339**	-0.0219**
	(0.014)	(0.011)	(0.019)	(0.013)	(0.011)
Treatment defined using 2001 labor income only [†]	-0.0183	-0.0455***	-0.0637***	-0.0514***	-0.0365***
	(0.012)	(0.014)	(0.019)	(0.015)	(0.010)
Treatment defined using 2001–4 labor income [†]	-0.0223**	-0.0421***	-0.0517***	-0.0429***	-0.0346***
	(0.011)	(0.010)	(0.015)	(0.011)	(0.009)
$Treat imes Trend^{\flat}$	-0.0063**	-0.0148***	-0.0187***	-0.0159***	-0.0137***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Placebo Reform [‡]	-0.0008	0.0128	0.0251	0.0055	-0.0074
	(0.012)	(0.015)	(0.019)	(0.016)	(0.010)

Notes: RLMS, rounds VIII–XVIII (1998–2009). ^b Includes a post-reform time trend (2000 = 1) instead of the post-reform dummy. ***p < 0.01, **p < 0.05, *p < 0.1.

ATT Semi-parametric Estimation

$$\hat{M_{DID}} = \sum_{i \in T} \frac{1}{N_{T,t}} [(INF_{i,t} - INF_{i,2000}) - \sum_{j \in C} W(i,j)(INF_{j,t} - INF_{j,2000})]$$

ATT Semi-parametric Estimation



Informal Irregular Activities

ATT Semi-parametric Estimation



Informal Employees

Detailed Treatment Groups

$$INF_{it} = \theta_t + X_{it}\beta + Z_i\gamma + \psi Post_t + \sum_{h=1}^4 \mu_h Treat_i^h + \sum_{h=1}^4 \alpha_h (Treat_i^h \times Post_t) + u_{it}$$

	Informal Employee	Informal Irregular Activities	Any Informal Employment
Post	0.0494	0.0358 (0.075)	-0.0298 (0.120)
$Treat^1 {\times} Post$	-0.0172	-0.0209*	-0.0310*
	(0.012)	(0.012)	(0.017)
$Treat^2 \!\times\! Post$	-0.0235*	-0.0601***	-0.0768 ^{***}
	(0.013)	(0.013)	(0.018)
$Treat^3 \times Post$	-0.0267**	-0.0501***	-0.0793***
	(0.011)	(0.012)	(0.016)
$Treat^4 \!\times\! Post$	-0.0388***	-0.0276*	-0.0390*
	(0.014)	(0.015)	(0.020)
Obs	44,452	53,769	47,718
# of Indiv	11,263	12,411	11,969
\mathbb{R}^2 Overall	0.04	0.03	0.01

Notes: RLMS, rounds VIII–XVIII (1998–2009). ***p < 0.01, **p < 0.05, *p < 0.1.

Weighted DID

$$\begin{split} M &= \sum_{i=1}^{n} \omega_i \left[INF_{it} - \theta_t - X_{it}\beta - \psi Post_t - \alpha (Treat_i \times Post_t) - u_{it} \right]^2 \\ \omega_i &= K \left(\frac{Y_{it} - 3625}{h} \right) / \sum_{i=1}^{n} K \left(\frac{Y_{it} - 3625}{h} \right) \end{split}$$

	Informal Employee	Informal Irregular Activities	Any Informal Employment
Post	-0.0658	0.0245	-0.1852
	(0.121)	(0.063)	(0.141)
$Treat \times Post$	-0.0178	-0.0329*	-0.0546**
	(0.019)	(0.019)	(0.027)
Obs	41,930	50,914	45,134
R^2 Overall	0.005	0.03	0.001
# of Indiv	10,180	11,220	10,856

Notes: RLMS, rounds VIII–XVIII (1998–2009). Treatment effect estimated by a weighted fixed effects regression. ***p < 0.01, **p < 0.05, *p < 0.1.

Extensive Margin

	Informal Employee	Informal Irreg Activ	Any Informal Employment
A. Baseline			
Post	0.2740***	0.4429***	0.5704***
	(0.093)	(0.058)	(0.114)
$Treat \times Post$	-0.0146	-0.1433***	-0.1355***
	(0.025)	(0.023)	(0.027)
Obs	21,224	24.924	22.899
# of Indiv	7,339	8,080	7,709
R^2 Overall	0.027	0.016	0.054
B. Robustness Tests			
Including interactions	-0.0111	-0.1467***	-0.1357***
District imes Year	(0.025)	(0.023)	(0.028)
Treatment defined using	-0.0314	-0.0948***	-0.1242***
income from all sources	(0.029)	(0.026)	(0.031)
Control group excludes	-0.0121	-0.1387***	-0.1310***
unreported income	(0.025)	(0.023)	(0.027)
$Treat \times Trend^{\flat}$	-0.0007	-0.0212***	-0.0197***
2	(0.004)	(0.004)	(0.005)

Notes: RLMS, rounds VIII–XVIII (1998–2009). Sample restricted to those unemployed just before the reform and who were employed at least once in the post-reform period. The dependent variable is set to zero in round 9. Round 8 is excluded. ^b Includes a post-reform time trend (2000 = 1) instead of the post-reform dummy. ^{***} p < 0.01, ^{**} p < 0.05, ^{*}p < 0.12.

- There is evidence that the tax reform reduced participation in informal employment
- The effect was significant economically and statistically for informal employees (-2.5%) and for irregular activities (-4.0%).
- Semi-parametric DID estimates are higher. The reform had permanent effects.
- No evidence of an effect on informal entrepreneurs or on the second job
- Robust to different specifications. Stronger effect on higher income brackets

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Informality in the last 12 months

	All Employed	Informal Employee	Informal Entrepr.	Informal Sec. Job	Inf. Irreg. Activ
Worked extra job	0.09	0.08	0.08	0.96	0.33
Raised cattle for sale	0.04	0.03	0.04	0.03	0.14
Agric. on own plot for sale	0.04	0.02	0.03	0.04	0.14
Performed services for pay	0.08	0.08	0.06	0.11	0.61
Obs	7192	815	204	158	583

Distribution by Occupation

	All Employed	Inf Emp	Inf Entrep	Inf Sec Job	Inf Irreg Act
1-digit ISCO Occup	Main Job	Main Job	Main Job		-
Legislators, Sen Manag, Officials	5.2	1.0	30.9	5.8	0.7
Professionals	17.1	2.8	3.9	18.8	9.3
Technicians, Assoc Prof	17.4	10.2	4.9	9.7	6.2
Clerks	5.8	2.2	0.0	1.3	1.9
Service and Market Workers	13.0	28.0	26.5	14.9	18.9
Skilled Agric-Fishery	0.3	0.1	2.0	0.0	1.5
Craft and Related Trades	13.1	17.3	21.1	18.8	32.6
Plant-Machine Oper-Assemblers	14.8	15.2	9.8	11.0	8.2
Unskilled Occupations	13.3	23.1	1.0	19.5	20.8
Obs	6659	814	204	154	583

Distribution by Industry

	All Employed		Inf Emp	Inf Entrep	Inf Sec Job
1-digit Industry	Main Job	Sec Job	Main Job	Main Job	
Food and Other Light Industry	6.3	2.6	6.7	4.2	3.5
Civil Machine Construction	3.3	1.1	0.7	0.0	0.7
Military Industrial Complex	1.8	0.4	0.0	1.0	0.0
Oil and Gas Industry	2.8	2.2	0.8	0.0	2.1
Other Heavy Industry	3.1	1.5	0.4	0.0	1.4
Construction	9.5	10.6	19.1	13.0	14.0
Transportation, Communication	9.5	7.3	11.7	9.4	10.5
Agriculture	5.1	2.6	5.8	3.1	2.8
Government and Public Adm	2.3	1.1	0.4	0.0	0.0
Education	10.5	20.5	0.8	2.1	12.6
Science, Culture	3.2	5.9	1.2	1.6	4.2
Public Health	7.9	9.2	1.6	0.5	2.8
Army, Security Services	5.5	0.7	1.2	1.0	0.0
Trade, Consumer Services	20.8	26.0	45.7	61.5	37.1
Finances	2.3	1.1	0.9	0.5	1.4
Energy (Power) Industry	1.9	1.5	0.7	0.0	2.8
Housing and Communal Services	4.3	5.9	2.4	2.1	4.2
Obs	6422	273	758	192	143

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