

FISCAL FEDERALISM AND REGIONAL DEVELOPMENT IN RUSSIA

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***Abstract** - Western economies with high-level performances such as the US, Germany and Switzerland are often organized as federations. In contrast to Russia, these federations display strong and well-designed structures of different levels of government institutions. International experience suggests that well-designed institutional structures are an important precondition for a strong and effective fiscal system. This paper thus focuses on the issue of asymmetric information and transaction costs between the center and the regions in the Russian Federation. Is the revision of the fiscal scheme a solution to the immense budgetary problems? What can Russia learn from the experiences of other countries?*

Key-words - FEDERALISM, FISCAL SYSTEM, RUSSIA.

JEL Classification: H11, P51, R58.

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1. INTRODUCTION

Western economies with a high level of economic performance such as the US, Germany and Switzerland are often organized as federations. However, the concrete design of the public sector differs widely within this group. In Russia, the structure of the federal system is set forth in the constitution and the three Federation Treaties (March, 1992), which formally define the relationship between the center and the federal subjects. These documents place the federal level in charge of designing and implementing federal programs for economic, political and social development – tasks that focus primarily on income redistribution to the poor. In addition, the constitution states that all significant security and technical policy issues for the creation of a unified market are federal tasks (Konstitucija Rossijskoj Federacii, Article 71). As a consequence, the Federation is responsible for establishing and providing a stable and smoothly functioning institutional framework for economic decision-making. Since in Russia, as in other transformation economies, the implementation of a sound and effective market-based institutional framework is one of the central goals of the transition process, the quality of these public goods could be considered as an indicator for the development level and the efficiency of the ongoing reform process as a whole.

A huge body of literature exists on fiscal problems in Russia. However, for many years, the budget deficit has been interpreted mainly in the context of stabilization policy. Today, it is increasingly clear that a sustainable solution of fiscal problems is only possible if the tax-sharing mechanism between the center and the regions is revised (Summer, 2000). However, even if these problems were solved to an adequate extent, the Russian fiscal system would still face problems of tax arrears and non-payment. Non-payment and tax arrears can be interpreted as indicators of the low quality of the institutional framework, a centrally provided public good. However, non-payment and tax arrears schemes in Russia differ in a variety of ways from other international experiences with unofficial economies: First, in Russia the public sector is heavily involved in the unofficial economy. One particularly important issue regarding unofficial activities in the public sector is the accumulation, tolerance and persistence of tax arrears. Second, in Russia arrears and non-payments mainly concern the relationship between firms and the government – individuals usually have no opportunity to accumulate arrears against the government budget and therefore to profit by the weak institutional framework (Yakovlev, 2001). Third, all varieties of unofficial transactions seem to be relatively risk-free.

While there has been a spate of recent work on the unofficial economy in Russia (Gaddy and Ickes, 1998; Commander and Mumssen, 2000) linkages between the design of fiscal federalism and the unofficial economy, and

especially the emergence of tax arrears, have not been tackled in the literature so far. Therefore the purpose of this paper is to analyze the "regional determinants of tax arrears. The main hypothesis of this paper is that in Russia, lower-level governmental units have large incentives to be involved in these "unofficial activities and to tolerate tax arrears thereby hindering transfers to the federal level. We show that the size of tax arrears depends not only on the revenue capacity in a given region, but also on the distance between the center and the local capital.

The paper is organized as follows: The following chapter presents some stylized facts concerning the fiscal system in Russia, and an overview of recent developments in fiscal federalism and regional policy in Russia. In Chapter three, we reconsider the standard arguments put forward by the theory of fiscal federalism and discuss them against the background of concrete experiences in Russia. In Chapter 4, a cross-section approach is used to analyze the determinants of regional tax arrears, both tax arrears as a share of regional GDP and tax arrears per capita. In conclusion, the paper seeks to formulate long-run goals for fiscal policy.

2. STYLIZED FACTS

Russia became a sovereign state six months before the breakdown of the Soviet Union (June 20, 1991). Since then, the Russian Federation has been organized as a three-tiered federation with 89 federal subjects. In international comparison this is an extremely high number: the USA is divided into 51 federal units and the German system of fiscal federalism is based on 16 so-called *Bundeslaender* or federal subjects (Seidel and Vesper, 1999). The Russian federal subjects cannot be considered as a homogeneous bloc. On the one hand, the legal status of the federal entities differs, since 21 of these federal subjects have the status of a republic, 11 that of an autonomous *okrug* or *oblast*, 49 that of an *oblast* and six that of a *kray*. On the other hand, the more than 80 subjects of the Russian Federation are extremely heterogeneous in terms of economic performance, ethnic, religious, demographic, and social structures, and climatic conditions (Wallich, 1994). These disparities suggest a potentially important role for central government transfers in promoting greater fiscal uniformity of tax burdens and public service provision among the regions.

According to the Russian Constitution, the central administrative authorities are responsible for the delimitation of responsibilities between the federal government and the subordinate regional authorities. The responsibilities of the subordinate regional authorities are defined *ex negativo* (Article 73): All governmental tasks which are not explicitly granted to the federal government are granted to the lower fiscal level (Article 73). However, the constitution leaves unclear how the different levels are weighed in the execution of joint responsibilities. Thus, in providing public goods, there is a large amount of room

to maneuver within the jurisdiction of each of the various levels (Bell, 1998). This is at the root of fiscal non-transparency and insecurity.

In practice, the Russian fiscal system is based on a competitive relationship between the center and each of the sub-national units, as well as among the sub-national units themselves. The consolidated budget, which reflects the budgetary activities of the center and the sub-national units, reached a volume of about 26 percent of GDP measured in revenues in 1999 (Table 1). The revenue responsibilities of the various federal levels are essentially laid out in the tax law. In general, all high-revenue taxes such as the VAT are shared, mainly with the subordinate regional authorities (mixed system). The budgetary situation of the sub-federal level is therefore decisively influenced by the tax legislation decisions of the center. In fact, the quotas obligating the federation and subordinate regional authorities to share taxes have been changed numerous times over the last years (Table 2).

At the same time, the subordinate units have only a limited jurisdiction over the determination of tax rates and tax bases. However, sub-federal units are granted the authority to create so-called extra-budgetary funds, to which locally operating enterprises have to pay an amount which is fixed by the local government. One important attraction of extra-budgetary funds for the regions is that they do not have to be shared within the federal government. Since these funds are not included in the official budget system, their existence increases the non-transparency of the budgetary sphere as a whole (Wallich, 1994).

Neither the Russian constitution nor the Federation Treaties guarantee equal living conditions in all of Russia's regions. However, at the federal level there is a fiscal equalization fund. Here as in Germany, VAT is the starting point for financing fiscal equalization or intergovernmental grants. A grant paid to an individual region is the result of a complicated, annual process of re-negotiations. The decision concerning the provision of grants to a given region depends only partly on the differences calculated between the average and the regional per capita tax revenue. Furthermore, along with the "neediness" of the region, political factors play a role in the negotiations. Consequently, the fiscal equalization fund does not actually bring about equalization. Moreover, since intergovernmental grants comprise only around one percent of GDP (Goskomstat), the federal subjects depend heavily on local tax revenues to finance their fiscal activities.

For many years, the Russian federal government's deep financial problems – in contrast with balanced regional budgets – have been a typical characteristic of the Russian fiscal system. The unbalanced budgetary situation in Russia had its source in the combination of weak institutions, the enforcement problems of the center and the current tax collection scheme: all major taxes are collected by

Table 1: Consolidated Budget

In % of total revenues/total expenditures

	1992*	1993	1994	1995	1996	1997	1998	1999
<i>Revenues, total</i>	100	100	100	100	100	100	100	100
Profit taxes	29.4	33.8	27.5	27.0	17.3	15.8	14.7	18.4
Personal income taxes	8.1	8.8	9.9	8.4	10.1	11.6	10.8	9.8
Excises	4.0	3.6	4.2	5.6	9.6	10.3	10.3	9.1
VAT	37.5	22.5	21.0	22.0	25.8	26.5	23.8	24.0
Tax on international trade and transactions	8.8	4.7	10.8	4.6	3.0	1.1	2.4	2.9
Capital revenues	-	-	-	-	-	2.0	2.0	1.9
Privatization	-	-	-	-	-	1.8	2.7	-
Budgetary funds	-	-	-	-	-	-	-	8.1
Other	12.2	26.6	26.6	32.3	34.2	30.9	33.3	26.0
<i>Expenditures, total</i>	100	100	100	100	100	100	100	100
Economy	34.5	28.1	27.0	-	-	-	-	-
Industry, Energy, Construction	-	-	-	7.4	6.0	4.6	2.9	2.5
Agriculture, fishing	-	-	-	4.2	3.9	3.4	2.6	2.9
Transport, communication	-	-	-	2.7	-	2.8	2.5	2.1
Socio-cultural purposes	23.2	24.9	23.5	26.0	28.9	34.0	31.7	29.2
Education	-	-	-	11.6	-	-	-	-
Health	-	-	-	8.3	-	-	-	-
Social security	-	-	-	4.2	-	-	-	-
Defense	14.3	12.5	11.9	9.8	9.8	10.2	7.5	9.3
Administration, law enforcement	5.9	7.3	7.9	7.7	-	10.3	9.6	9.7
International trade	7.0	4.8	2.1	4.4	4.1	-	-	-
Debt service	-	-	-	5.1	6.6	6.2	14.2	13.0
Environment protection	-	-	-	-	-	0.5	0.4	0.4
Budgetary funds	-	-	-	-	-	-	-	7.4
Other	15.2	22.5	27.5	8.6	40.9	28.0	28.5	23.6
Overall balance in % of expenditures/GDP	-10.8	-13.8	-24.5	-11.2	-14.4	-18.0	-14.0	-4.3

In % of GDP

	1992*	1993	1994	1995	1996	1997	1998	1999
<i>Revenues, total</i>	28.0	29.0	29.0	26.1	24.8	23.5	24.5	26.8
Profit taxes	8.2	9.8	8.0	7.0	4.3	3.7	3.6	4.9
Personal income taxes	2.3	2.6	2.9	2.2	2.5	2.7	2.7	2.6
Excises	1.1	1.0	1.2	1.5	2.4	2.4	2.5	2.4
VAT	10.5	6.5	6.1	5.7	6.4	6.2	5.8	6.4
Tax on international trade and transactions	2.5	1.4	3.1	1.2	0.7	0.3	0.6	0.8
Capital revenues	-	-	-	-	-	0.5	0.5	0.5
Privatization	-	-	-	-	-	0.4	0.7	-

Budgetary funds	-	-	-	-	-	-	-	2.2
Other	3.4	7.7	7.7	8.4	8.5	7.3	8.2	6.9
<i>Expenditures, total</i>	<i>31.4</i>	<i>33.6</i>	<i>38.5</i>	<i>29.4</i>	<i>28.9</i>	<i>28.6</i>	<i>28.0</i>	<i>28.0</i>
Economy	10.8	9.4	10.4	-	-	-	-	-
Industry, Energy, Construction	-	-	-	2.2	1.7	1.3	0.8	0.7
Agriculture, fishing	-	-	-	1.2	1.1	3.4	0.7	0.8
Transport, communication	-	-	-	0.8	-	0.8	0.7	0.6
Socio-cultural purposes	7.3	8.4	9.0	7.7	8.4	9.7	8.9	8.2
Education	-	-	-	3.4	-	-	-	-
Health	-	-	-	2.4	-	-	-	-
Social security	-	-	-	1.2	-	-	-	-
Defense	4.5	4.2	4.6	2.9	2.8	2.9	2.1	2.6
Administration, law enforcement	1.8	2.4	3.0	2.3	-	2.9	2.7	2.7
International trade	2.2	1.6	0.8	1.3	1.2	-	-	-
Debt service	-	-	-	1.5	1.9	1.8	4.0	3.6
Environment protection	-	-	-	-	-	0.2	0.1	0.1
Budgetary funds	-	-	-	-	-	-	-	2.1
Other	4.8	7.6	10.6	2.5	11.8	5.6	8.0	6.6
Overall balance in % of expenditures/GDP	-3.4	-4.6	-9.4	-3.3	-4.2	-5.1	-3.5	-1.2

* In 1992 the volume of unreported fiscal activities was extraordinary high. *Voprosy Ekonomiki*, n° 1-1994, p. 42. Sources : Goskomstat; Rosstat; author's calculations.

Table 2: Revenues and expenditures at various budgetary levels* in %

	Federal level			Subordinate regional authorities		
	1997	1998	1999	1997	1998	1999
Revenues, total	48.2	47.4	51.1	51.8	52.6	48.9
Profit tax	35.7	37.3	36.8	66.0	62.7	63.2
Personal Income tax	2.3	0.1	17.0	97.7	99.9	83.0
Excise tax	81.6	78.4	77.7	18.4	21.6	22.3
Value added tax	70.4	68.9	77.0	29.6	31.1	23.0
Customs, etc.	99.7	99.7	100.0	0.3	0.3	0.0
Other Revenues						
from state assets	48.0	33.3	29.8	52.0	66.7	70.2
from the sale of state assets	80.2	86.9	-	19.8	13.1	-
Expenditures, total	44.3	49.8	48.1	55.7	50.2	51.9
Industry, energy, building	60.2	59.3	54.6	39.8	40.7	45.4
Agriculture, fishing	31.8	19.4	25.4	68.2	80.6	74.6
Socio-cultural measures	22.8	25.1	23.3	77.2	77.9	76.7
Administration	34.9	35.1	31.9	65.1	64.9	68.1
Legislation	76.6	73.8	74.5	23.4	26.2	19.0
Defense	100.0	100.0	100.0	-	-	-

* Before the fiscal equalization.

Source: *Social'no-ekonomičeskoe položenie Rossii*. Own calculations.

**Table 3: Revenues, Expenditures and Surplus/Deficit of Regional Budgets
(in US\$ per capita/ranking of the federal subjects 1997)**

Federal Subjects	Revenues	Expenditures	Surplus /Deficit	Revenues	Expenditures	Surplus /Deficit
				Ranking	Ranking	Ranking
Yamalo-Nenets AO	4956.2	5146.5	-190.3	1	1	83
Evenki AO	3511.7	3698.7	-187.0	2	3	81
Khanty-Mansi AO	3276.2	3364.1	-87.9	3	5	75
Chukotka auton. Okrug	3065.5	4045.7	-980.2	4	2	88
Tyumen oblast	2452.7	2540.1	-87.5	5	6	74
Nenets AO	1784.1	1774.9	9.2	6	8	2
Taimyr AO	1744.9	1764.4	-19.5	7	9	20
Koriak AO	1705.2	3516.0	-1810.8	8	4	89
Magadan oblast	1674.2	1876.2	-201.9	9	7	84
Republic of Sakha (Yakutia)	1261.6	1691.0	-429.4	10	10	87
Moscow	1100.4	1062.4	38.0	11	12	1
Republic of Tatarstan	904.1	929.8	-25.7	12	14	29
Kamchatka oblast	903.4	1291.1	-387.7	13	11	86
Murmansk oblast	761.1	821.6	-60.5	14	16	60
Sakhalin oblast	756.5	827.8	-71.4	15	15	70
Republic of Komi	755.2	944.9	-189.7	16	13	82
Tomsk oblast	643.1	664.9	-21.8	17	19	23
Krasnoyarsk kray	591.4	652.9	-61.5	18	20	63
Kostroma oblast	585.9	632.1	-46.1	19	21	44
Khabarovsk kray	559.7	603.2	-43.4	20	22	39
Kemerovo oblast	538.2	701.1	-162.9	21	18	80
Republic of Bashkortostan	523.4	528.2	-4.8	22	27	6
Samara oblast	512.7	516.5	-3.9	23	30	5
Amur oblast	500.0	550.5	-50.5	24	25	50
Primorski kray	496.2	553.7	-57.5	25	24	57
St. Petersburg	490.4	508.0	-17.6	26	33	16
Republic of Udmurtia	482.1	528.3	-46.3	27	26	45
Yaroslavl oblast	478.4	522.3	-43.9	28	29	40
Perm oblast	457.7	479.9	-22.2	29	36	24
Vologda oblast	452.9	503.6	-50.6	30	34	51
Omsk oblast	452.8	515.8	-63.0	31	32	66
Republic of Karelia	450.5	560.9	-110.4	32	23	78
Republic of Kalmykia	448.2	527.2	-79.0	33	28	73
Sverdlovsk oblast	436.4	447.5	-11.0	34	41	11
Lipetsk oblast	428.0	468.0	-40.0	35	37	35
Moscow, Oblast	423.4	449.9	-26.5	36	40	30
Irkutsk oblast	423.1	489.2	-66.1	37	35	68
Oryol oblast	420.7	428.1	-7.4	38	47	8
Novgorod oblast	411.1	430.3	-19.2	39	45	18
Arkhangelsk oblast	405.5	467.9	-62.4	40	38	65
Jewish autonomous oblast	400.0	515.8	-115.8	41	31	79
Republic of Mordovia	390.6	437.0	-46.4	42	43	46
Chelyabinsk oblast	390.4	401.0	-10.6	43	51	10
Republic of Kabardino-Balkaria	387.8	428.8	-41.0	44	46	37
Novosibirsk oblast	382.2	444.7	-62.4	45	42	64
Republic of Tyva	379.7	737.5	-357.8	46	17	85
Nizhniy Novgorod oblast	375.5	432.3	-56.8	47	44	55
Republic of Khakasia	373.6	421.5	-47.9	48	49	47
Orenburg oblast	368.6	421.5	-52.9	49	48	53
Republic of Buryatia	355.3	463.6	-108.3	50	39	77
Republic of Chuvash	344.2	367.5	-23.3	51	60	25
Republic of Altay	343.7	404.8	-61.1	52	50	62

Leningrad oblast	343.1	389.0	-45.8	53	55	43
Republic of North Osetia	341.4	384.7	-43.3	54	56	38
Kursk oblast	340.1	359.4	-19.3	55	64	19
Kaliningrad oblast	336.2	384.3	-48.1	56	57	48
Ivanovo oblast	335.3	344.5	-9.2	57	69	9
Astrakhan oblast	333.7	392.9	-59.1	58	53	58
Chita oblast	331.8	400.1	-68.2	59	52	69
Kaluga oblast	329.1	365.2	-36.1	60	61	34
Republic of Adygeya	328.4	348.7	-20.3	61	67	22
Pskov oblast	328.3	341.1	-12.8	62	70	13
Ryazan oblast	328.3	348.3	-20.0	63	68	21
Altay kray	325.1	379.3	-54.2	64	58	54
Vladimir oblast	316.4	328.7	-12.4	65	73	12
Saratov oblast	315.7	392.6	-76.9	66	54	72
Tver oblast	315.1	360.5	-45.4	67	62	42
Ust-Ordyn Buryat AO	309.5	350.1	-40.6	68	65	36
Kirov oblast	301.2	334.4	-33.2	69	72	33
Volgograd oblast	289.0	308.0	-19.0	70	77	17
Ulyanovsk oblast	288.1	349.1	-61.0	71	66	61
Tula oblast	287.9	360.2	-72.3	72	63	71
Krasnodar kray	283.5	286.8	-3.3	73	78	4
Republic of Karachayevo-Cherkessia	280.5	311.3	-30.8	74	76	32
Belgorod oblast	280.3	286.4	-6.1	75	79	7
Komi-Permyak AO	274.8	340.3	-65.5	76	71	67
Aginski Buryat AO	272.9	369.2	-96.3	77	59	76
Republic of Mary-El	271.4	323.6	-52.2	78	74	52
Tambov oblast	266.6	282.2	-15.7	79	80	15
Kurgan oblast	257.1	314.2	-57.1	80	75	56
Voronezh oblast	255.9	252.4	3.5	81	86	3
Smolensk oblast	253.9	281.5	-27.6	82	82	31
Stavropol kray	244.5	260.2	-15.6	83	83	14
Republic of Dagestan	237.7	281.7	-44.0	84	81	41
Rostov oblast	229.6	253.1	-23.6	86	85	26
Penza oblast	229.6	253.6	-23.9	85	84	27
Bryansk oblast	206.5	232.1	-25.6	87	87	28
Republic of Ingushetia	182.3	231.3	-49.0	88	88	49
Republic of Chechnya	34.6	94.3	-59.7	89	89	59

Source: Goskomstat; DIW Berlin. Own calculations.

regional governments and shares of these taxes are passed on to the central government. Since local governmental units do not have access to domestic or international financial markets, incentives to tolerate tax arrears concerning federal taxes are high. Additionally, the acceptance of bartering, locally issued money or offsets as tax payment hampers federal transfers. In this sense, high tax arrears and large shares of in-kind revenues can be considered indicators or symptoms of the weak vertical structures within the fiscal scheme. Therefore, the Russian fiscal system can be considered to be based on a competitive approach between the center and the sub-national units, as well as among the federal subjects. Formally, the corporate tax rate is important in stimulating competition among the regions: it consists of an 11% tax on profits payable to the federal budget and an additional regional tax rate which can reach a maximum of 19%. In addition, a fiscal equalization fund exists which is financed thanks to VAT.

Since only about one percent of GDP is available for this fund, the federal subjects depend mainly on their own tax collection and economic performance – and differ widely in this regard (Table 3).

In 1997 the oil-rich Yamalo-Nenets had the highest per capita revenue with USD 4,956.20, more than twenty times higher than the Republic of Ingushetia. The lowest per capita revenue, as well as the lowest per capita expenditures, were reached in the Republic of Chechnya. However, according to the per capita deficit, the Republic of Chechnya ranked number 59 out of a total of 89. In any federation with regional differences as great as they are in Russia currently, a granting and transfer system of fiscal equalization would be overburdened with the task of overcoming regional differences in fiscal performance. Therefore, fiscal relations have become a central problem during the last decade. In Russia, these relations are usually plagued by manifold short-term conflicts between the regions and the center, which often result in fiscal arrangements being made on a case-by-case basis between the individual lower level governmental unit and the center. Russia still lacks a long-run strategy to deal with this problem.

3. BASIC THEORETICAL CONSIDERATIONS

The traditional theory of fiscal federalism lays out a general normative framework for the assignment of functions to different levels of government and the provision of appropriate financial resources to regional governments. Regional governments have their *raison d'être* in providing those public goods that are consumed entirely within their own jurisdiction (Oates, 1999). Therefore geography and boundaries play an important role in the theoretical justification of fiscal federalism.

The theory of fiscal federalism usually bases its arguments on a neoclassical economic theory. It assumes that the lower governmental unit behaves as an individual and consists of totally identical persons. In the ideal case, all lower level governmental units have the same fiscal capacity. However, even in this case neither taxation nor the provision of public goods would be expected to be equal all over the country. Local differences in preferences for public goods might occur; and as a result, the tax burden might be much higher in some regions than in others.

Therefore every governmental unit has to decide between consuming private (P) or public goods (G).

Output (Y) is the increasing concave function of the number of workers (N) in the community:

$$Y = f(N) \quad f' > 0 \quad f'' < 0 \quad (1)$$

The resulting budget constraint is:

$$Y = N * P + G = f(N) \quad (2)$$

The individuals have totally identical preferences which are reflected in the utility function $U(P,G)$, where U is assumed to be quasi-concave. The task of the government is to choose G to maximize U . The conventional result is:

$$U_P = N * U_G \quad \text{or} \quad \frac{NU_G}{U_P} = 1$$

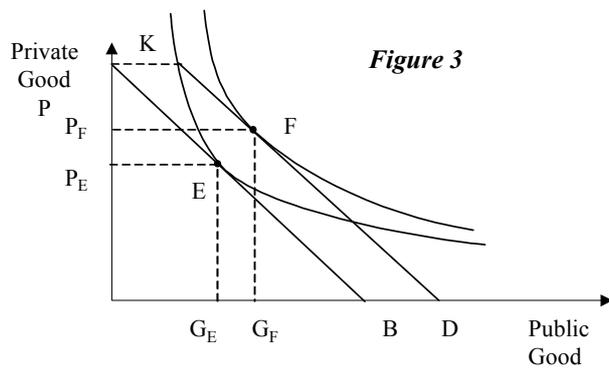
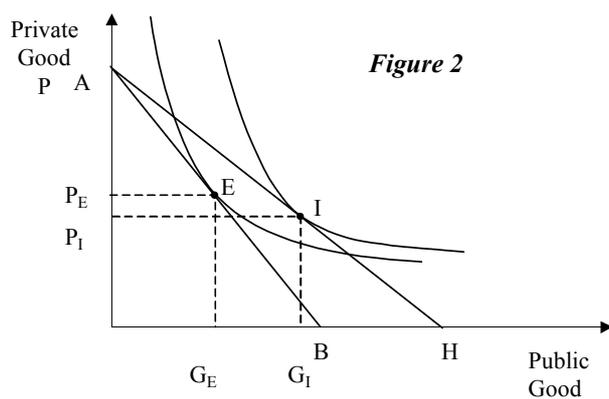
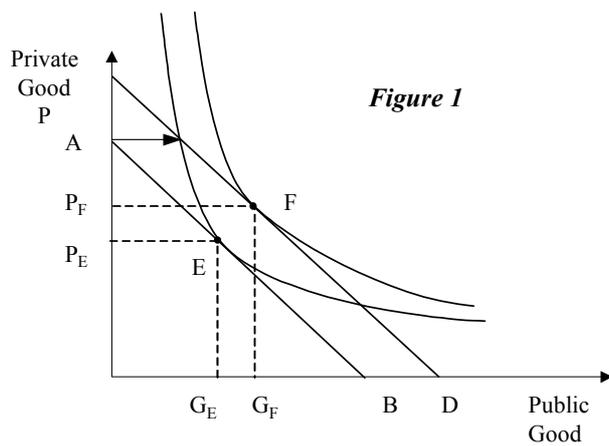
in other words, that the sum of the marginal rates of substitution equals the marginal rate of transformation¹. It is clear from Figure 1 that under these circumstances and without any transfer E is realized.

However, in a federal system, the different levels of the public sector can not only be financed by taxes and debt, but also by intergovernmental grants². Intergovernmental transfers are usually analyzed in simple models. Grants can take different forms: conditional or unconditional grants and grants made available through federal matching programs. Non-matching unconditional grants are also known as lump-sum transfers. All these are official forms of intergovernmental transfers. However, in times of a weak institutional framework, "unofficial intergovernmental transfers may be made. In the following we distinguish three forms of unofficial grants to the lower governmental level; in all cases the regional government is responsible for the initiation and volume of these unofficial transfers: First, we look at the simple case of non-transfer of collected taxes to the federal level. This kind of unofficial grant to the lower governmental level takes place because the higher level has enforcement problems. Second, we consider the acceptance of barter and in-kind payment in the case of joined taxes and the hampering of tax sharing with the federal level that results. In this case, any transfer of revenues to the center is very costly. Third, we discuss tax exemptions granted to the enterprise sector and the acceptance and tolerance of tax arrears in the case of joint or federal taxes.

According to the aforementioned model of fiscal federalism, a lump-sum intergovernmental grant leads both to a shift of the budget constraint from AB to CD and to the realization of F : an increase in the consumption of both the private and the public good. Or in other words, only part of the transferred money is spent on the public good and the utility level of the lower level governmental unit increases remarkably. From the point of view of the lower level governmental unit, such a lump-sum transfer is very attractive, since the decision

¹ One important finding is that if we increase N , output increases. However, the maximum level of private consumption per capita decreases while the maximum level of public goods increases!

² Theoretically intergovernmental grants are justified by the motive of income redistribution, externalities and the correction of inefficiencies in the local public goods equilibrium.



on spending the additional money is made entirely freely. Note: the corresponding unofficial form of these lump-sum transfers to the lower level governmental unit is the non-transfer of taxes to the federal level. The result for the regional government is the same: a shift of the budget constraint from AB to CD. Again the lower level governmental unit is totally free in deciding how to spend the additional money.

In the case of matching grants the federal level contributes a portion of the total outlay for the public good. Figure 2 shows that matching grants leads to a shift from AB to AH. Now the budget constraint is a less steep line; in other words the public good is cheaper than before. Getting a matching grant leads to a realization of I; according to Figure 2 again the utility level of the lower level governmental unit has increased. However, now the consumption decision follows a different pattern: the level of private good consumption may decrease, while public good consumption may increase. The corresponding "unofficial transfer" of such a matching grant might be the acceptance of barter and in-kind payments. These collected taxes are "local goods" and can only be used in limited ways. If "shared taxes" are collected in this way they operate as matching grants in principle. However, since barter and in-kind transfers include only private goods, the effect on the budget constraint is somewhat different: not the public but the private good becomes cheaper through such a transfer. In figure 2 the budget line thus becomes steeper.

The third case of grants that is usually discussed in the literature is the conditional lump-sum grant, a grant which can be used only for one strictly delimited purpose. As Figure 3 shows, such a grant would alter the budget constraint from AB to KD. The relative price of the public good is left unchanged. The corresponding form of this kind of official grant is the "unofficial toleration of tax arrears" in the case of federal taxes. These tax arrears can be only "spent as subsidies to the enterprise sector, more concretely they can only be granted to the specific enterprise responsible for paying taxes". Note that not the revenue side of the lower level governmental budget but the expenditure side is affected by this phenomenon. However, the effect is the same: they increase the room to maneuver in the financial sphere. Nevertheless, we have to bear in mind that these forms of indirect revenue can only be spent in a limited way – as subsidies to a usually tax-paying enterprise.

4. INITIAL EMPIRICAL FINDINGS

In the traditional model of fiscal federalism, forms of unofficial intergovernmental grants do not have any room. The standard argumentation neglects the existence of asymmetric information and transaction costs as well as weak institutions and enforcement problems of the center. However, all these difficulties are important in the case of Russia and might be important for the

fiscal systems of other emerging economies. In Russia the size of aggregated tax arrears is very significant: these forms of indirect subsidization of the enterprise sector increased dramatically during and after the financial crisis and reached nearly 10 percent of GDP in Russia in 1999.

In the following we use a cross-section approach to analyze the regional determinants of tax arrears in Russia in the year 1998. We employ a data set created using regional figures published by ROSTAT and covering the economic development in 79 regions, oblasts, republics, etc³. The data underwent extensive checks, not just to make them comparable and compatible, but also to identify econometric problems. However, it is not unlikely that the database still contains some problems related to data quality and measurement issues.

In the following we employed a simple OLS approach. Since we are attempting to understand the logic behind tax arrears, we analyzed the problem in three ways. First we took the nominal amount of tax arrears (arr) as the dependent variable. Then we analyzed the determinants of the relative size of tax arrears in two ways: by the share of tax arrears to GDP (arrgdp), and by tax arrears per capita (arrpc). The explanatory variables are as follows:

- regional GDP as a proxy for income level of the region (rgdp),
- regional GDP per capita as a proxy for income level per capita (rgdppc),
- regional GDP per capita as a percentage of average GDP per capita in the Russian Federation as a proxy for relative income level of the region (rgdppca),
- tax arrears to regional GDP as a proxy for the relative importance of this kind of revenue (arrrgdp),

³ The countries included in the data set are Altay kray, Amur oblast, Arkhangelsk oblast, Astrakhan oblast, Belgorod oblast, Bryansk oblast, Chelyabinsk oblast, Chita oblast, Chukotka auton. Okrug, Irkutsk oblast, Ivanovo oblast, Jewish autonomous oblast, Kaliningrad oblast, Kaluga oblast, Kamchatka oblast, Kemerovo oblast, Khabarovsk kray, Kirov oblast, Kostroma oblast, Krasnodar kray, Krasnoyarsk kray, Kurgan oblast, Kursk oblast, Leningrad oblast, Lipetsk oblast, Magadan oblast, Moscow oblast, Moscow, City, Murmansk oblast, Nizhniy Novgorod oblast, Novgorod oblast, Novosibirsk oblast, Omsk oblast, Orenburg oblast, Oryol oblast, Penza oblast, Perm oblast, Primorski kray, Pskov oblast, Republic of Adygeya, Republic of Altay, Republic of Bashkortostan, Republic of Buryatia, Republic of Chuvash, Republic of Dagestan, Republic of Ingushetia, Republic of Kabardino-Balkaria, Republic of Kalmykia, Republic of Karachayevo-Cherkessia, Republic of Karelia, Republic of Khakasia, Republic of Komi, Republic of Mary-El, Republic of Mordovia, Republic of North Osetia, Republic of Sakha (Yakutia), Republic of Tatarstan, Republic of Tyva, Republic of Udmurtia, Rostov oblast, Ryazan oblast, Sakhalin oblast, Samara oblast, Saratov oblast, Smolensk oblast, St. Petersburg, Stavropol kray, Sverdlovsk oblast, Tambov oblast, Tomsk oblast, Tula oblast, Tver oblast, Tyumen oblast, Ulyanovsk oblast, Vladimir oblast, Volgograd oblast, Vologda oblast, Voronezh oblast, Yaroslavl oblast.

- distance to the center measured in the distance between the local capital and Moscow as an indicator of geographically-induced enforcement problems (distance),
- the share of urban population as an indicator for taxpayer concentration in the region under consideration (shareu).

Table 3: Descriptive Statistics

	arr	arrpc	arrgdp	rgdp	rgdppc	rgdppca	arrrgdp	distance	shareu	wage
arr	1.0000									
arrpc	0.6103	1.0000								
arrgdp	1.0000	0.6103	1.0000							
rgdp	0.8168	0.3661	0.8168	1.0000						
rgdppc	0.6565	0.8291	0.6565	0.6637	1.0000					
rgdppca	0.6565	0.8291	0.6565	0.6637	1.0000	1.0000				
arrrgdp	0.3003	0.5820	0.3003	0.0460	0.1252	0.1252	1.0000			
distance	-0.1137	0.3239	0.3239	-0.1137	-0.1308	0.2991	0.2991	1.0000		
shareu	0.4232	0.4187	0.4232	0.4475	0.5005	0.5005	0.1591	0.0470	1.0000	
wage	0.6127	0.7118	0.6127	0.5143	0.7546	0.1546	0.2905	0.1201	0.3148	1.0000

arr	= nominal arrears	rgdppca	= regional GDP per capita in % of average GDP per capita
arrpc	= arrears per capita	arrrgdp	= arrears in % of regional GDP
arrgdp	= arrears in % of total GDP	distance	= distance to Moscow
rgdp	= regional GDP	shareu	= share of urban population
rgdppc	= regional GDP per capita	wage	= regional wage

With regard to the dependent variables, Table 3 shows strong correlations between total arrears and the share of arrears to GDP. Both are strongly correlated to regional GDP, regional GDP per capita and regional GDP per capita as a percentage of average GDP per capita in the Russian Federation. Since all these variables are used as a proxy for the income situation in a region, we can expect that regional income will have an important impact on the size of regional tax arrears. Of particular interest here is the strong correlation between the regional wage in percent of average wage paid in the Russian Federation as an indicator for wage costs of the enterprise sector. At a glance, this finding might underpin the hypothesis that the wage costs are rolled over to the public sector to a certain extent via tax arrears and that tax arrears tend to be tolerated by local authorities in the case of high local wages. What is even more interesting is the correlation between the different measurements of tax arrears in the various regions and the distance between each local capital and Moscow. Since the local authorities are responsible for collecting both regional and federal taxes, the quality of enforcement of the given federal law on tax sharing might be reflected in the correlation between tax arrears and the distance variable.

Table 4: Empirical Results**Dependent variable: ARR**

	Coefficient	t	P> t
Arrrgdp	211.947	2.593	0.012
Rgdppca	38.883	4.486	0.000
Distance	-0.519	-4.087	0.000
Shareu	21.006	0.705	0.483
Wage	1.484	0.849	0.399
Const	-4741.072	-2.307	0.024

Number of observations = 78

R-squared = 0.5975

R-squared adjusted = 0.5695

Dependent variable: ARRPC

	Coefficient	t	P> t
Arrrgdp	144.518	14.036	0.012
Rgdppca	13.978	14.234	0.000
Distance	0.027	1.714	0.000
Wage	-0.173	-0.111	0.912
Const	-1585.147	-11.435	0.000

Number of observations = 78

R-squared = 0.9230

R-squared adjusted = 0.9188

Dependent variable: ARR GDP

	Coefficient	t	P> t
Arrrgdp	0.008	2.593	0.012
Rgdppca	0.001	4.486	0.000
Distance	0.000	-4.087	0.000
Wage	0.004	0.849	0.912
Shareu	0.001	0.705	0.4883
Const	-0.176	-2.307	0.024

Number of observations = 78

R-squared = 0.5975

R-squared adjusted = 0.5695

Table 4 presents the result of our estimations. Our most important finding is that regional tax arrears are mainly determined by the importance of this kind of revenue (arrrgdp) and the income situation in the region (rgdppca). This finding holds for all three equations. However, it seems interesting that the coefficient for the income variable has a positive sign. In other words, the higher the regional GDP per capita in comparison to the average GDP per capita in the region, the higher the tax arrears. Therefore, the most important factor in tax

arrears is the size of the regional tax base itself. We can say that tax arrears do not operate similarly to or take the place of traditional intergovernmental grants, which are usually implemented to at least partly equalize the income situation within the different regions of a federation. Tax arrears cannot be considered a mechanism of indirect governmental grants, as regional disparities are actually strengthened by this kind of unofficial taxation.

However, tax arrears are determined not only by regional GDP but also by the distance of the region from Moscow. The distance between the local capital and Moscow seems to have a statistically significant influence. All in all, the existence of tax arrears seems to follow geographical patterns. However, interpreting these striking results is more difficult. Concerning the total or nominal amount of tax arrears there is a negative relationship between the distance and the arrears. What does this mean? The simple interpretation is: the further a region from Moscow, the lower the total tax arrears. In other words, distance lowers the nominal amount of tax arrears. This finding must be interpreted in light of the fact that the Russian system of fiscal federalism is characterized by a lack of rules and thus, of enforcement. Within the Russian system, the concrete design of intergovernmental relationship is totally negotiable. Our finding may in fact underpin the hypothesis that regions closer to Moscow possess a better bargaining position than regions on the periphery, as far as tax payment to the federal level is concerned. From the federal point of view, the toleration of tax arrears may decrease with increasing distance between the region and Moscow.

However, according to our second estimation, distance has a positive impact on the size of tax arrears per capita. To interpret this finding correctly, we must recall that population density in Russia differs widely among the individual lower-level governmental units. High population density is found in cities and economically the most important cities are Moscow and St. Petersburg. While such entities might have high nominal tax arrears, tax arrears per capita are comparably low. Therefore the different influences of distance on the nominal size of tax arrears and the size of tax arrears per capita is not contradictory but actually underpins the aforementioned hypothesis. According to our estimation, neither regional wage costs nor the share of urban population have any influence on the existence of tax arrears in the Russian Federation.

5. CONCLUSION

Formally, as is true in other countries as well, the federal system in Russia is shaped by the attempt to achieve gains in efficiency by decentralizing governmental tasks. Preferences for one publicly provided good or another, such as education or health, may vary from region to region. Since market mechanisms fail to measure preferences for public goods, democracy is an important precondition for making fiscal federalism work in all economies. In

Russia, however, the co-operation between the center and the regions is not grounded in a sound and stable system. Furthermore, the external institutions established by law appear to be so weak that in many cases they have been replaced by informal internal arrangements – in other words, in Russia the governmental sector itself is highly involved in so-called unofficial activities. This engagement is mirrored in the tremendous volume of tax arrears. Local governments seem to increase their revenues and influence indirectly by tolerating tax arrears. Tax arrears themselves can be considered an indirect subsidization of the regional enterprise sector.

The empirical study of the determinants of tax arrears has shown that they can be explained mainly by the size of the regional tax base itself. The higher the regional GDP, the higher the tax arrears. Therefore, tax arrears cannot be considered a mechanism for indirect intergovernmental grants, as regional disparities are actually strengthened by this kind of unofficial taxation. The distance between the region and Moscow is one important factor behind tax arrears. However, it is interesting that with increasing distance, the total nominal amount of tax arrears decreases, while the size of tax arrears per capita increases.

The implications of our findings for policy are quite clear: First, it is essential that the existing tax law be effectively enforced. Second, federal monitoring and supervision of the regional tax agencies must be intensified. Third, unlawful behavior should be sanctioned. In other words, in order to take advantage of the potential efficiency gains offered by fiscal federalism, the vertical co-ordination of revenue and expenditure responsibilities between the different governmental levels should be streamlined. Problems of destruction and enforcement should be eliminated and replaced by harmonization and co-operation. Eliminating the tremendous tax arrears seems to be a prerequisite not only for implementing a functioning system of intergovernmental transfers but also for a sound fiscal policy on the macro level.

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SYSTÈME FÉDÉRAL, RÈGLES DE FISCALITÉ ET DÉVELOPPEMENT RÉGIONAL EN RUSSIE

Résumé - Certaines économies occidentales parmi les plus performantes, comme les Etats-Unis, l'Allemagne ou la Suisse, sont organisées sous la forme de fédérations. Contrairement à ce qui se passe en Russie, il existe dans ces pays des règles claires qui organisent la répartition des compétences et des attributions entre les différents niveaux de gouvernement. Les comparaisons internationales montrent que l'existence de ces règles notamment en matière de fiscalité est essentielle au bon fonctionnement des institutions. Cet article traite des problèmes d'asymétrie d'information et de coûts de transaction dans les relations entre le gouvernement central de la Fédération de Russie et les régions membres. Il analyse en particulier les graves problèmes budgétaires qui en résultent et les moyens de les réduire à la lumière des expériences étrangères.

SISTEMA FEDERAL Y DESARROLLO REGIONAL EN RUSIA

Resumen - Algunas economías occidentales dentro de las más competitivas, como la de Estados Unidos, Alemania o Suiza, se han organizado en federaciones. Al contrario de lo que ocurre en Rusia, existen en estos países normas claras que organizan la distribución de las competencias y las atribuciones entre los distintos niveles de gobierno. Las comparaciones internacionales muestran que la existencia de estas normas, sobre todo en lo que se refiere a hacienda, es esencial para un buen desarrollo de las instituciones. Este artículo trata de los problemas de asimetría de información y de coste de transacción en las relaciones entre el gobierno central de la Federación de Rusia y las regiones miembros. Se analiza sobre todo los graves problemas de presupuesto que resultan de esta gestión y los medios para reducirlos con la ayuda de las experiencias extranjeras.