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James Alm

Tulane University of Louisiana, jalm@tulane.edu

Jorge Martinez-Vazquez

Georgia State University, jorgemartinez@gsu.edu

Sally Wallace

Georgia State University, swallace@gsu.edu

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Do Tax Amnesties Work? The Revenue Effects of Tax Amnesties During the Transition in the Russian Federation

*James Alm**, *Jorge Martinez-Vazquez*, and *Sally Wallace*
Department of Economics,
Andrew Young School of Policy Studies,
Georgia State University,
Atlanta, Georgia 30302-3992, USA
(email: jalm@gsu.edu)

Abstract: Governments of all kinds have frequently and increasingly turned to tax amnesties as part of their fiscal programs. An amnesty typically allows individuals or firms to pay delinquent taxes without being subject to some or all of the financial and criminal penalties that the discovery of tax evasion normally brings. Tax amnesties are a controversial revenue-raising tool. Advocates emphasize the immediate and short-run revenue impact, and often argue that future tax revenues may increase if the amnesty induces individuals or corporations not on the tax rolls to participate, and if the amnesty is accompanied by more extensive taxpayer services, better education on taxpayer responsibilities, and stricter post-amnesty penalties for evaders and greater expenditures for enforcement. Critics contend that the actual experiences of many countries indicate that the immediate impact on revenues is almost always quite small. They also question the long-run revenue impact of a tax amnesty, especially if honest taxpayers resent the special treatment of tax evaders and if individuals come to believe that the amnesty is not simply a one-time opportunity. This paper discusses the multiple tax amnesties enacted in the Russian Federation during its main transition period of the 1990s and analyzes the impact of these amnesties on tax collections. We find that these amnesties had little short- or long-term impact on revenues. We conclude that the Russian amnesties, like most other amnesties, seem unlikely to have had significant and demonstrable positive – or negative – impacts on the revenues of the Russian Federation, a conclusion that calls into question their usefulness as a policy instrument.

1. INTRODUCTION

Governments of all kinds have frequently and increasingly turned to tax amnesties as part of their fiscal programs. An amnesty typically allows individuals or firms to pay delinquent taxes without being subject to some or all of the financial and criminal penalties that the discovery

* Corresponding author (phone +1 404 413 0093; fax +1 404 413 0145; email jalm@gsu.edu)

of tax evasion normally brings. An amnesty is also often accompanied by increases in tax administration efforts, especially in enforcement measures (e.g., higher audit rates, improved audit selection procedures, greater penalties). In the last twenty years, nearly forty states in the United States have enacted some form of tax amnesty, sometimes more than once, and many other countries in virtually all parts of the world have used one or more amnesties.

Tax amnesties are a controversial revenue-raising tool. Advocates of amnesties emphasize the immediate and short-run revenue impact, as individuals take advantage of the grace period to pay unpaid taxes. Advocates also argue that future tax compliance (and therefore future tax revenues) may increase if the amnesty induces individuals or corporations not on the tax rolls to participate, and if the amnesty is accompanied by more extensive taxpayer services, better education on taxpayer responsibilities, and stricter post-amnesty penalties for evaders and greater expenditures for enforcement. Critics contend that the actual experiences of many countries indicate that the immediate impact on revenues is almost always quite small. They also question the long-run revenue impact of a tax amnesty. If honest taxpayers resent the special treatment of tax evaders, then their compliance may decline. Further, if individuals come to believe that the amnesty is not simply a one-time opportunity, then they may reduce their current compliance in anticipation of another, future amnesty.

The relationship between amnesties and revenue has been empirically examined, but the available evidence is mostly for amnesties granted by state governments in the United States (Fisher, Goddeeris, and Young 1989, Alm and Beck 1990, Alm, McKee, and Beck 1990, Dubin, Graetz, and Wilde 1992, Alm and Beck 1993, Luitel and Sobel 2007). Much less is known about the effects of amnesties at the international level, and more in particular about amnesties in transitional countries.¹ However, there are several compelling reasons for studying the experiences of transitional countries. Over the last decade almost all countries in transition have embarked in large scale tax reform efforts with very different rates of success (Martinez-Vazquez and McNab 2000). Low taxpayer compliance (by international standards) has invariably been a problem in all these transition countries. This relatively low taxpayer compliance has usually been explained as a logical legacy of planned socialist regimes where taxes often did not explicitly exist, at least at the individual or household levels, where payments were frequently negotiated, where there was no tradition of voluntary compliance, where tax administration was extremely weak, and where there was widespread public distrust toward government institutions. High official penalty rates exacerbated the compliance problem as taxpayers complained that, once they got behind on tax payments, they quickly amassed large penalties and interest charges. With low and decreasing tax revenues and low compliance, it is not surprising that transitional countries have been tempted by the potential solution offered by tax amnesties. However, the effects of a tax amnesty in a transition country that has only recently introduced taxation on a wide scale are unknown.

The main purpose of this paper is to discuss the multiple tax amnesties enacted in the Russian Federation during its main transition period of the 1990s and to analyze the impact of

¹ One exception is Torgler and Schaltegger (2005), who conduct experiments in two different countries (Costa Rica and Switzerland) in order to examine whether individuals will vote to allow an amnesty. In general, they find that individuals do not typically vote to offer an amnesty. Even so, they also find that the possibility of voting also tends to increase the post-vote level of compliance. See also Torgler, Schaltegger, and Schaffner (2003).

these amnesties on tax collections. We find that these amnesties had little short- or long-term impact on revenues, a result that is robust across a wide range of alternative specifications. We conclude that the Russian amnesties, like most other amnesties, seem unlikely to have had significant positive – or negative – impacts on the revenues of the Russian Federation, a conclusion that calls into question their usefulness as a policy instrument.

The rest of the paper is organized as follows. In the next section we provide an overview of Russia's tax system. In section 3 we review Russia's history with tax amnesties, and we analyze the revenue impact of these amnesties in sections 4 and 5. We conclude with some lessons from Russia for other countries in transition that are considering tax amnesties as a way to boost their tax revenues.

II. AN OVERVIEW OF THE RUSSIAN TAX SYSTEM

The tax system of the Russian Federation is a complex and burdensome combination of federal, state, and local taxes, and has undergone some change each year since 1992 (Martinez-Vazquez and Wallace 1999, Martinez-Vazquez, Rider, and Wallace 2008). In the early years after the transition, new taxes were introduced, most notably the value-added tax (VAT); in more recent years, detailed changes have regularly been made to the major taxes. The tax system is similar to that of developed countries in its reliance on the VAT, excise taxes, and income taxes. However, Russia lacks the sophisticated tax administration required to uphold and enforce the multiple layers of taxes. Moreover, the lack of comprehensive tax policy development imposes a myriad of taxes on businesses and individuals, thereby complicating compliance, lowering taxpayer confidence and imposing heavy statutory burdens on labor and capital income.

1. Level of Taxation

Evaluating (even estimating) the level of tax effort in Russia is difficult. Transition economies have had a difficult time off-loading the relatively large amount of public expenditures associated with the Soviet period, so that large deficits are not unusual for these countries, particularly in the years immediately following the transition. Russian tax revenues as a percent of GDP fell from about 26.4 percent in 1992 to 20.3 percent in 1998, and then started climbing in the following years to reach 29.4 percent in 2004 (see *Table 1*). This level of tax revenues is not low by some international standards, and lies in the range of 'upper-middle income countries' and above that of 'lower-middle income countries' (USGTA 1999). Russia's tax effort is also quite similar to that found in the Baltic States. A comparison of similar statistics for total consolidated government tax revenues relative to GDP also demonstrates that Russia is close to the middle of the pack; Germany, the Czech Republic, Hungary, and Canada have higher ratios, but the United States, South Africa, and Argentina have lower ratios.²

² The distribution of tax effort between the central and subnational governments in Russia is quite different from that in most countries. The central/subnational revenue split in Russia is very roughly 50/50, while in most countries subnational government revenues are a much smaller portion of total revenues. This results in a situation in which Russia's central government revenue-to-GDP ratio is more in line with that of lower-middle income countries, while that of the subnational governments in Russia is similar to that of high-income OECD countries.

*Table 1: Tax Receipts (Consolidated Budget) in Russia
(as percent of GDP)*

Year	Consolidated Tax Receipts (reported), as percent of GDP	Consolidated Tax Receipts (adjusted for consistency over time), as percent of GDP	Deficits (-) / Surplus (+) (reported), as percent of GDP
1992	29.60	26.40	-18.90
1993	28.91	23.68	-7.30
1994	29.04	23.90	-10.40
1995	22.68	22.68	-6.00
1996	22.04	22.04	-8.60
1997	22.70	22.70	-7.60
1998	20.27	20.27	-8.00
1999	21.39	21.39	-0.99
2000	24.58	24.58	+2.99
2001	25.80	25.80	+2.91
2002	28.87	28.87	+0.89
2003	25.44	25.44	+1.37
2004	29.40	29.40	+4.10

Sources: Ministry of Finance, Goskomstat, and GSU/USAID Fiscal Reform Project. Prior to 1995, budget receipts were not classified according to tax and non-tax receipts.

While the general trend in taxes to GDP has been an increase since 1998, it has not been smooth growth. The spike up in 1999-2000 is larger than any of the year-to-year declines except for the decline just after the break-up of the Soviet Union in 1991-1992 and that associated with the fiscal crisis of 1998. The ratio of tax revenue to GDP declined slightly again in 2003 before gaining in 2004. The current (2007-2008) economic crisis and fluctuation in world oil prices have lead to some recent fluctuations in this ratio.

2. Tax Structure

Since 1992, the tax system in Russia has revolved around four basic taxes: the value-added tax (VAT), the Enterprise Profits Tax (EPT), the Personal Income Tax (PIT), and excise taxes; in total, these taxes contribute roughly three-quarters of total tax collections of the consolidated budget. *Table 2* shows the distribution of these taxes over time. At the beginning of the transition, the VAT and the EPT constituted 75 percent of total tax collections. Over time, the relative importance of the VAT and the EPT has fallen, as VAT and EPT tax rates have been lowered (and EPT exemptions in particular have grown), and together they now constitute less than half of total tax revenues. In contrast, the PIT and excise taxes have grown in importance as a consolidated revenue source until year 2004, when shares of these taxes in total collections declined from 13.6 to 11.6 percent for PIT and from 10.2 to 5.0 percent for excise taxes. In 1998 and 1999, excise tax rates fell significantly behind price increases, but attempts to index most excises had failed until indexation was passed in 1999. Currently, property taxes are relatively small revenue raisers. There was a noticeable increase in the share of natural

resource taxes in total tax collections in year 2002 when it climbed from 5.8 percent in year 2001 to 10.6 percent. The share continued to grow slightly both in 2003 and 2004 due in large part to oil prices on the world market.

Another important point regarding taxes is that the major taxes, the VAT, the EPT, the PIT, and excise taxes are federal government taxes, and they have been shared with the regional governments, originally as ‘regulating taxes’ and later at homogenous sharing rates on a derivation basis. These taxes, however, are collected fully by the central government tax administration.

*Table 2: Russian Tax Structure:
Taxes as Percent of Total Consolidated Tax Collections*

Year	Total Collections	Enterprise Profits Tax	Personal Income Tax	Value Added Tax	Excise Taxes	Property Taxes	Natural Resource Taxes	Taxes on Foreign Operations
1992	100	32.97	9.08	42.06	4.45	NA	2.20	NA
1993	100	38.39	10.05	27.93	4.07	NA	2.65	NA
1994	100	33.42	11.99	25.56	5.08	NA	2.09	6.21
1995	100	32.50	10.13	26.50	6.74	4.68	3.42	6.73
1996	100	20.44	11.96	30.41	11.29	7.81	4.48	4.83
1997	100	17.85	13.12	29.85	10.97	8.30	6.22	4.86
1998	100	17.71	13.09	28.77	12.46	8.62	4.09	6.72
1999	100	21.94	11.64	28.60	10.82	5.29	4.50	8.56
2000	100	23.38	10.23	26.76	9.73	3.79	4.55	13.43
2001	100	21.91	10.91	27.25	10.38	3.82	5.79	14.13
2002	100	14.77	11.42	24.00	8.42	3.84	10.55	10.31
2003	100	15.68	13.57	26.27	10.20	4.10	11.70	13.49
2004	100	17.58	11.64	21.67	4.95	2.97	11.74	17.42

Sources: Ministry of Finance, Goskomstat, GSU/USAID Fiscal Reform Project, the International Monetary Fund, and the World Bank. The budget classification was changed in 1994, so that there are minor inconsistencies in the collections reported for certain categories; these have been adjusted, and the adjusted figures are reported in this table.

3. The Problem of Arrears

The tax system in the Russian Federation is haunted by many characteristics of the Soviet system. Under the previous regime, taxes completely lacked transparency. Often, enterprises did not know what other taxpayers in similar circumstances paid in taxes, and the population at large was neither aware of taxes nor had any perceptions of tax burdens. Very few individuals actually filed tax returns, paid taxes during transactions, or were even aware of the existence of turnover taxes or profit taxes. This tax system created a taxpayer culture of mistrust of government and of noncompliance that endures today. Taxpayers tend to believe that tax burdens are distributed arbitrarily and that the government is wasteful if not corrupt. Many taxpayers continue to refuse to pay taxes through nonfiling of returns and underreporting of income.

Negotiated taxes were the main feature of the tax system in the Soviet Union, and, after the years of transition, Russia’s tax system still retains an important element of negotiation. This is most apparent in how settlements are reached on the payment of arrears.

Arrears were a pervasive fact in the Russian economy in 1990s and early 2000s, and they have had a significant impact on the performance of the tax system. Tax arrears started accumulating in early 1990s, growing from 0.6 percent of GDP in 1992 to 18.0 percent of GDP in 1998. After that, they steadily declined, and hit 2.2 percent of GDP in 2004 (Bernstam and Rabushka 2005.)

There were several types of arrears.³ By the end of 1998 (when the problem of tax arrears was the most acute), *total arrears* (excluding government budget arrears) represented three-fourths of GDP, and *tax arrears* (composed of delinquent payment of taxes and deferred payments as agreed upon between the tax authorities and taxpayers) were 18 percent of GDP. The problem of tax arrears was linked to the existence of *inter-enterprise arrears* (and to *wage arrears*), as well as to the problem of *government arrears* to the private sector.⁴ The growth of tax arrears was also linked to the use by the federal and subnational governments of *tax offsets*, or the mutual cancellation of debts between the taxpayer and the government in which delinquent taxpayers were allowed to swap their tax debts to the government for government arrears or payables.

Tax arrears appeared early in the transition, and, although their level has oscillated, their trend has been a clearly increasing one. By type of tax, arrears were most important for the VAT, accounting for over half of total arrears. By economic sector, arrears were most common in the fuels, electric power, machine building, transportation, and construction industries, accounting for over 60 percent of total arrears. Geographically, there was also considerable concentration of arrears, corresponding to the concentration of tax collections. According to the USGTA (1999), close to half of the total arrears came from a handful of relatively wealthy regions – Moscow, St. Petersburg, Tatarstan, Bashkortostan, Kemerovo, Nizhny Novgorod, Samara, and Sverdlovsk.

Large taxpayers were mainly responsible for the accumulation of arrears. In a survey of 210 enterprises with the largest tax arrears, the Interdepartmental Balance Commission (IDBC) found that as of December 1997 each had tax arrears in excess of R 1 billion (Karpov 1997). These were generally successful enterprises in sectors such as oil and gas, utilities, nuclear power, railways, car manufacturers, or coal mining. The IDBC also found an extraordinary use of tax offsets by practically all enterprises. On average, these companies paid only 8 percent of accrued tax liabilities in real cash, with the rest of the taxes paid through different tax offset schemes. In the late 1990s, the share of tax arrears in the federal budget grew faster than the share of tax arrears in subnational governments.

While there are many reasons for tax arrears, ironically, the use of periodic tax amnesties – a policy designed by the federal governments to combat arrears – seems to have made the problem worse. Each amnesty seems to have built up expectations that new arrears would be at least partially forgiven in the future. These amnesties, and their impact on revenues during the transition, are discussed in the following sections.

³ With the exception of government wage arrears, no published data exist on government budget arrears. Sundberg and Morozov (1999) report that the new budget arrears at the federal level in 1998 were R 24.6 billion and R 26.4 billion in 1997. At the subnational level, budget arrears were R 86.2 billion by February 1999.

⁴ Inter-enterprise arrears have been interpreted by observers as less threatening than tax arrears and government spending arrears. Alfandari and Schaffer (1996) and Alexeev (1998) show that inter-enterprise arrears in Russia have not been significantly different from those in Western economies.

III. RUSSIA'S HISTORY WITH TAX AMNESTIES

During the 1990s into 2000, Russia suffered from lagging tax collections and widespread tax evasion. The Russian tax authorities attempted to reform the tax system, but only partially succeeded, after the election of President Vladimir Putin in 2000. As part of its overall fiscal program, the Russian Federation has enacted a number of tax amnesties since 1992.

The first amnesty was introduced on 27 October 1993 by Presidential Decree No. 1773 ('On Tax Amnesty in 1993'). This Decree established a short amnesty from October 27th to November 30th, 1993, and stipulated that all enterprises, organizations, and private entrepreneurs who disclosed their unpaid taxes and tax payments for 1993 and all previous years would not be liable for any sanctions on these unpaid liabilities. The Decree also specified that any concealed incomes discovered after November 30th would be penalized by the State Tax Service (STS) at three times the unpaid tax liability. As part of the amnesty, banks were required to provide the STS with account information.

The design of the amnesty was flawed in several ways. First, the amnesty provided too short a period within which taxpayers were allowed to disclose unpaid tax obligations. Second, the amnesty required that the liability be repaid within one month. Third, the amnesty failed to allow for inadvertent or unintended mistakes. The 1993 amnesty was repealed by Presidential Decree 746 of 21 July 1995.

The next amnesty was introduced by Presidential Decree No. 65 of 19 January 1996 (with amendments of 22 April 1996).⁵ Under this Decree, enterprises and organizations with tax arrears were allowed to defer payments on the arrears, provided that all current payments were made in time and in full. Enterprises and organizations that were granted deferments were required to pay 50 percent of the total amount due by October 1998, with payment made via quarterly installments of 5 percent of the liability; interest penalties were imposed at an annual rate of 30 percent on unpaid amounts. Deferment of the remaining 50 percent liability was granted over the following 5 years in equal payments, with no interest penalty.

At the time, this Decree was widely, if mistakenly (given the high rate of inflation), seen by taxpayers as burdensome, due largely to the requirement that 50 percent of arrears be repaid and that the remaining 50 percent be faced with nominal interest penalties of 30 percent annually. In any event, this amnesty was continued in somewhat modified form by Presidential Decree No. 685 on 8 May 1996, a Decree that also contained provisions that requested the Russian parliament (or Duma) to pass a draft law on a tax amnesty. Provisions of the new Decree that were immediately effective included such things as reduced interest penalties on late payments and tax arrears and an allowance for 'technical errors' (or simple arithmetic mistakes) in the preparation of tax returns, all of which were intended to reduce the burden of tax payment. These latter provisions relaxing penalties were seen as quite significant, and the perception was that they were introducing a 'true' tax amnesty. At the same time the STS was expected to increase the frequency of tax audits. However, there was little outward evidence that the STS would in fact be able to increase administrative efforts. There were no increases in planned budgetary appropriations for tax administration before or after the period. In the

⁵ The full title of the Decree was "On Granting Deferments on Paying Arrears on Taxes, Interests, and Penalties for Tax Legislation Violations at 1 January 1996 to Enterprises and Organizations".

political arena, the economic hardships suffered throughout Russia during the transition gave the Communist and other opposition parties renewed political strength. Standoffs within the central administration contributed to creating an atmosphere where 'no one was minding the store.' The appearance of lack of government control of current events, including the effectiveness of the tax administration authorities, did not help to make the amnesty relevant in the eyes of taxpayers.

Presidential Decree No. 65 was followed roughly a year later by Budget Law 29-FZ of 26 February 1997, which established guidelines for newly granted deferments on taxes and other mandatory payments. Under Article 20 of the Budget Law 29-FZ, an interest rate of 50 percent of the refinancing rate of the Central Bank of the Russian Federation was charged for newly granted deferments (or payment by installments) on taxes and other mandatory payments to the federal budget; also, penalties were not to accrue on tax and other mandatory payment arrears to the federal budget due to late payment by the state for works conducted under state contracts. Importantly, the Law asked that the government specify the procedures by which tax arrears were to be handled. These procedures emerged in Russian Government Decree No. 254 of 5 March 1997. Budget Law No. 42 FZ of 26 March 1998 elaborated on the issue of deferments of taxes to the federal budget, also requiring that the Government of the Russian Federation should present the procedures by which tax arrears as of 1 January 1998 were to be handled. The procedures were specified in Russian Government Decree No. 395 of 14 April 1998. These specifications of the amnesties post-1997 focused the amnesty 'machinery' somewhat more toward documented arrears. This may have been a pragmatic focus as pressure from bi-lateral donors as well as internal pressure in Russia called for clearing books of various types of arrears.

The tax amnesties of 1997-1998 affected a limited number of enterprises. The decree of 1997 affected just 4 enterprises, and the decree of 1998 affected 36 enterprises (Bukaev 2001). Budget Law No. 36 FZ of 22 February 1999 continued the tradition that had been established in the 1997-1998 budget laws to provide deferments on late tax payments and fines that were accumulated by enterprises by January 1st of the year. Government Decree No. 1002 of 3 September 1999 specified the procedure. According to this decree, all enterprises that had delinquent tax payments (with an exception for oil extracting and oil refining companies) could apply from September 1999 to March 2000 to defer (or 'restructure') their tax liabilities with the State Tax Service. However, before they did so, they needed to pay the current tax obligations for the two previous months. If the deferment was approved, the enterprise would pay its tax liabilities (including accumulated fines) in 10 years, servicing its debt to the federal budget at a 5.5 percent interest rate. Of the 216,000 enterprises that could apply to defer their R 386 billion delinquent tax payments, only 21,600 (with R 164 billion of debt) applied. Of those enterprises that applied, 74 percent were approved, for which R 90 billion in delinquent tax payments were deferred (or R 46 billion in tax payments and R 44 billion in accumulated fees) (Bukaev 2001).

The Budget Law for fiscal year 2000 stated in Article 132 that the Government of the Russian Federation should complete in year 2000 the procedure of deferring the delinquent tax payments that started according to the Article 115 of the Budget Law for fiscal year 1999. The procedure was not completed in 2000, and the Budget Law for fiscal year 2001 (Article 124)

gave another extension to reschedule the delinquent tax payments. Government Decree No. 410 of 23 May 2001 was issued in accordance with this extension and amended Government Decree No. 1002, giving enterprises another chance to legally defer their payments. According to this decree, if an enterprise has been paying taxes on time after it deferred its delinquent tax obligations, then half of accrued fees should be waved; if it was to pay off its tax liabilities in two years, the fees should be waved entirely. The Budget Law for fiscal year 2002 extended the time for rescheduling delinquent payments only for agricultural enterprises.

More recently, a tax amnesty was introduced on 1 March 2007. This amnesty allowed individuals with previously undeclared income over the period 2001 through 2006 to declare their income and pay back taxes at a 13 percent personal income tax rate on the declaration (e.g., the same rate as the flat tax rate), without facing any criminal penalties; after declaration, they would be safe from any prosecution related to their crimes against Russian tax laws. The declaration period was through 31 December 2007. It was hoped that the tax amnesty would help attract some of the income that had flowed out of the country in the 1990s, but this hope was not realized.

In total, given the poor quality of tax administration in the Russian Federation, these various amnesties and related provisions were seen by tax officials as an easy and attractive way of dealing with delinquent tax liabilities, especially those of mounting tax arrears. However, the almost yearly enactment of some form of amnesty during the transition contributed to the widespread belief that amnesties would be a regular event. Contrary to best lessons extracted from the international experience with tax amnesties, a further drawback of Russia's many amnesties was that they were never accompanied by substantive tax reform. Serious efforts with tax reform are a more recent phenomenon (Martinez-Vazquez and Wallace 1999, Martinez-Vazquez et. al. 2006). The effects of the amnesties on tax collections therefore emerged as a matter of concern for the tax authorities. The next section discusses the empirical evidence on whether revenue collections increased or decreased as a consequence of all or any of Russia's amnesties, focusing on the experience during the transition.

IV. THE REVENUE IMPACTS OF TAX AMNESTIES DURING THE TRANSITION

1. Theoretical Framework

As noted earlier, the international experience with tax amnesties suggests that, while tax amnesties may increase revenues in the short term, they do little to increase the overall level of compliance. Most of the empirical work on tax amnesties has been done in the context of developed countries, and follows from the theoretical model of behavior under an amnesty derived by Alm and Beck (1991) based upon the seminal model of tax evasion first developed by Allingham and Sandmo (1972).

An agent (either an individual or a firm) is assumed to have some unreported income from years past, which has accumulated to E_0 in the year of the amnesty. The individual/firm must choose the level of previously evaded income to report in the amnesty. The income reported in the amnesty A is taxed at a rate of t . If the individual/firm does not report $A=E_0$ during the amnesty period, the agent may be caught with probability p and subject to a penalty at the rate

f on the unreported income. If the firm or individual is caught, income I_C is defined as $I_C = [E_0 - tA - f(E_0 - A)]$; if they are not caught, income I_N is $I_N = [E_0 - tA]$. The agent has a utility function defined over income, and chooses A to maximize expected utility, or $U = [pu(I_C) + (1-p)u(I_N)]$. From the comparative statics of this maximization, it is straightforward to demonstrate that the tax administration can encourage more income reporting during the amnesty if the amnesty is accompanied by increases in the probability of detection or in the penalty.⁶ However, the impact of the tax rate t on the level of income reported in the amnesty is ambiguous.

Note that by choosing the level of previously unreported income to declare during an amnesty, the individual or firm is effectively choosing T , or the amnesty-induced revenues, equal to tA . From this perspective, we can empirically estimate the impact of the amnesty on the total level of amnesty-induced collections. We assume that T is a function of previously unreported income, the amnesty tax rate, the penalty rate, and the probability of detection, similar to a tax evasion analysis:

$$T = g(E_0, t, f, p) \tag{1}$$

As discussed above, tax amnesties have been frequent in the Russian Federation, especially during the transition. It appears also that follow up post-amnesty has been weak, as suggested by the increasing trend of tax evasion and the run-up of tax arrears during most of the transition period. From the perspective of our model, the public perception of the penalty for underreporting and the probability of getting caught, f and p , will affect the level of income reported during the amnesty period; given the comparative statics of the agent's decision, if an individual/firm believes that p or f will increase post-amnesty, then amnesty revenues tA will also increase.

We can also define another variable, total taxes collected R , as $R = T + N$, where N is the normal (non-amnesty-induced) level of taxes collected and T is again amnesty-induced collections. The impact of an amnesty (and its various provisions) on R is more complicated than the impact on T alone. However, while we might expect an amnesty to increase total tax revenues R to some extent, the full revenue impact of the amnesty could be very different than its impact on T alone, depending on a range of considerations (e.g., the perception of getting caught post-amnesty, the impact on individuals who have no unpaid taxes, and the like). This suggests an alternative equation defined over total taxes collected and one that is analogous to equation (2):

$$R = h(E_0, t, f, p) \tag{2}$$

Russia's special case as a transition country could affect the perception of both f and p . As noted earlier, the transition years in Russia were fraught with significant tax evasion and 'legalized' evasion through the development of tax arrears. Russia's first post-soviet amnesty in 1993 may have been less influential than an amnesty in another country due to the significant level of tax evasion to that point; that is, the public may have had a difficult time believing that their probability of detection was significant and/or that a penalty would be imposed if they

⁶ These comparative static results are well-known in the tax evasion literature. For a summary, see Alm (1999).

were caught. Also, if the administrative follow-up after the 1993 amnesty was not strong, this could influence the perception of f and p in subsequent amnesties.⁷ While we cannot directly measure the follow-up post-amnesty, the continued increase in tax evasion and tax arrears as well as the decrease in taxes as a share of GDP may indicate a relatively weak follow-up.

It is quite relevant that Russia's largest revenue sources come from taxes levied on enterprises and not directly on individuals, as is the case of the VAT, the EPT, and excise taxes. Less empirical investigation has been done on the results of tax amnesties that concentrate on firm-level taxes. Theoretically, firms and individuals should respond similarly to an amnesty, but firms may have different perceptions of f and p because of differences either in the opportunities available to shelter income or in the tax knowledge and sophistication of those responsible for filing taxes.

2. *Econometric Modeling: Basic Specifications*

We test for the impact of tax amnesties in the Russian Federation on tax revenues, using monthly data on tax collections for the major revenue sources of the general government for the period January 1995 to December 2000. Our basic empirical model uses a structural approach that follows from equations (1) and (2), where we use various proxies for the explanatory variables, as discussed below. For the dependent variables, we estimate separate equations for the EPT, the VAT, and excises (denoted ET), and the total monthly revenues from these three taxes combined.⁸ Ideally, we would like to identify separately revenues from the tax amnesty, but we only have data on total collections. We expect that, if amnesties have a positive impact on the income reported in the amnesty A , then monthly collections around the amnesty will increase for each tax source included in the amnesty. Although there is information on tax collections prior to 1995, these data are not available by month. Consequently, we are unable to examine the effects of the first tax amnesty in 1993. All revenue variables are expressed in real terms to allow us to compare collections in different years with quite different inflation rates. *Figures 1, 2, 3, and 4* show the evolution over time of each of these taxes and of the total; *Figure 5* shows similar information for all tax revenues plus the change in the stock of arrears. These figures suggest that it is unlikely that amnesties have had much impact – either positive or negative – on tax collections. As discussed later, our empirical results also demonstrate this conclusion.

The level of previously unreported income E_0 is not known. While there are some estimates of the level of underreported income in Russia, these vary widely, and are not available on a monthly basis. We assume that the level of unreported income is proportional to *Real GDP Per Capita*. The amnesty tax rate t should be the applicable tax rate available on reported income during the amnesty period. We would like to use the VAT and EPT effective tax rates, but we do not have the data to do so. The statutory VAT rate has little variation over the period so is not used. We use the statutory federal EPT rate as a proxy for t in the EPT equation. This is

⁷ This observation has been made in other countries such as India and Argentina (Uchitelle 1989) and the Philippines (Das-Gupta and Mookherjee 1998, Yoingco 1987).

⁸ We also calculate the total monthly revenues from all revenue sources, including the EPT, the VAT, and excises, plus separate taxes on securities, on personal income, on property, on licenses, on land, and on natural resources.

admittedly a rough measure of the tax rate facing amnesty-responders, but it may capture the impact of swings in the EPT tax rate on amnesty activity.

The State Tax Service of the Russian Federation does not publish its post-amnesty enforcement procedures or expenditures. While amnesty regulations in the Russia are often accompanied by a threat of more frequent audits and higher penalties following the amnesty, none of these are actually specified, and it is difficult to find consistent, publicly available data on the level and type of enforcement expenditures. Therefore, it is difficult for us to proxy f and p by any administrative variable.⁹ However, we expect that the public perceptions of f and p are affected by the timing of tax amnesties; that is, amnesties that are close together may indicate a lack of seriousness on the part of tax administration to penalize more heavily post-amnesty those who underreport. Accordingly, the variables of most interest in our estimations are those that capture the timing of a tax amnesty. An amnesty could in principle have a positive or a negative impact on revenues.

There were two major tax amnesties enacted during the period for which we have monthly data: Presidential Decree No. 65 on 19 January 1996, and Budget Law No. 29-EZ of 26 February 1997. Decree No. 65 was in force from January to April of 1996, while Budget Law No. 29-EZ was in force mainly for March to June of 1997. To identify the impact of the initial 1996 amnesty and its immediate follow-up amnesty, we include two dummy variables in our basic specification. The first, *Dummy-1996 Amnesty*, equals 1 for January 1996 through December 2000 and 0 otherwise. The second, *Dummy-1997 Amnesty*, equals 1 for March 1997 through December 2000 and 0 otherwise. Even if an amnesty has a positive impact on total tax collections, we expect that the impact of the second amnesty would be less than the first if the public perceives amnesties as a regular occurrence.

In addition, we include a dummy variable, *Dummy-Seasonal*, equal to 1 for December collections and 0 otherwise, because the month of December in Russia has always been characterized by a strong seasonal increase in collections (and a fall in arrears). We also include a time trend ($Trend_t$) and a *Constant*.

Our basic specification is therefore:

$$T_t = b_0 + b_1 \text{ Real GDP Per Capita}_t + b_2 \text{ Dummy-1996 Amnesty} + b_3 \text{ Dummy-1997 Amnesty} + b_4 \text{ Dummy-Seasonal} + b_4 \text{ Trend}_t + e_t, \quad (3)$$

where T_t represents real tax collections by month for the specific revenue source, e_t represents the error term, and b_k are parameters. As presented in more detail in section 5, we find across our various basic specifications that the amnesties had little short- or long-term impact on revenues. It is these results that we emphasize.

3. Econometric Modeling: Alternative Specifications.

Of course, numerous other specifications are possible. An amnesty may affect revenues in only the period of the amnesty, it may have a declining impact after some initial period, it may simply shift the trend-line of revenues up or down without changing its slope, it may affect the

⁹ Preliminary analysis of the limited administrative data for 1998-2004 by Martinez-Vazquez, Rider, and Wallace (2009) demonstrate an inconsistency in tax administration efforts.

intercept and the slope of the trend-line, and so on. We have in fact estimated many different specifications. Our main results are completely unaffected.

Specifically, we apply various time series methods. Unlike our basic specifications that predict the future movements of a variable by relating it to a set of variables in a structural framework, time series methods extract predictable movements of a variable from its own past observed data, and then use this information to forecast future movements of the variable. There are several reasons for the use of the time series approach. The precise form of a complete structural model may be difficult to specify. Further, even if it is possible to write down a structural model, past data may not be available for all structural variables that are believed to affect the variable of interest; even if such data are available, estimation of a structural model might result in such large coefficient standard errors that forecasts have unacceptably large errors. Future values of the structural variables may likewise be difficult to obtain, so that forecasting may not be feasible. All these reasons account for the use of time series methods in the analysis of tax amnesties. Indeed, Zellner and Palm (1974) demonstrate that a time series equation may be seen as a reduced form equation from a more complete structural system.

Our three alternative specifications start with the simplest time series method and proceed to more general and sophisticated procedures. All methods give the same result: the various amnesties offered during the transition in the Russian Federation had no impact on the level or the trend of tax collections.

The first and simplest analysis examines the simple long run time trend of the time series. We estimate a simple trend model with the form $T_t = b_0 + b_1 \text{Trend}_t + e_t$, where the variables are defined above. This equation is estimated with ordinary least squares methods over the entire period (and over the sub-periods before and after the amnesties to evaluate any structural change that may have occurred in tax collections following the amnesty). If there was a change in tax collections over the sub-periods before and after the amnesties, then some statistically significant change in either the intercept or the slope parameter should occur over the sub-periods of the equation. In fact, we find no difference in the regressions, so that the trend of revenues collected did not change over time.

A second and more sophisticated method is the autoregressive-integrated moving average (ARIMA) model, typically attributed to Box and Jenkins (1976). The essence of this method is similar to simple smoothing and decomposition. ARIMA modeling involves an iterative three-stage procedure of identification, estimation, and diagnostic checking. Using the techniques of Box and Jenkins (1976), the monthly tax data are tested to see if the ARIMA process that generated the income tax revenues **before** the amnesties was the same as the process that generated the income tax revenues **after** the amnesties. These results indicate that the ARIMA process generating the tax revenue is unchanged before and after the amnesties.

A third time series approach recognizes that a discrete 'intervention' like an amnesty can be represented as an additive effect of the amnesty on revenues (Box and Tiao 1975). Intervention analysis requires the specification both of a starting point for the intervention (e.g., an amnesty) and of the shape of the intervention impact. This method is commonly referred to as multivariate ARIMA or MARIMA time series analysis. The starting point for the intervention is simply the time at which the amnesty occurs. The shape of the intervention is more complicated. The shape may be modeled by a 'Step' function with zero values up to the point of the intervention

and 1 for all periods following the intervention, by a ‘Pulse’ function where the intervention occurs at one period and the intervention variable has just one non-zero value, or by a ‘Ramp’ function in which the step is spread over some period as a ramp response. Put differently, a step function assumes that the amnesty has a discrete impact on revenues at the time of the amnesty and an equal impact for all subsequent periods, a pulse function assumes that the amnesty has an impact only in the period in which the amnesty is initially introduced, and a ramp function allows the amnesty to have an impact both at the time of the amnesty and after the amnesty, although the post-amnesty impact may decline in subsequent periods. These three interventions are estimated separately. Like the ARIMA approach, MARIMA analysis requires that the underlying time series be identified, estimated, and checked. The MARIMA estimation results demonstrate that the various intervention variables (Step, Pulse, or Ramp) are never statistically significant. As with the previous results, the amnesty had no impact on post-amnesty tax compliance.

To summarize, all methods give the same result: the various amnesties offered during the transition in the Russian Federation had no impact on the level or the trend of tax collections. These results are available upon request.

Table 3: Regression Results

Independent Variables	Dependent Variable			
	Real EPT Per Capita	Real VAT Per Capita	Real ET Per Capita	Real Total Taxes Per Capita
Real GDP Per Capita	0.010 (0.817)	0.021 (1.796)	0.011 (2.032)	0.041 (1.819)
Dummy-1996 Amnesty	-7.160X10 ⁶ (-5.199)	-9.721X10 ⁵ (-5.199)	7.693X10 ⁵ (1.382)	-7.363X10 ⁶ (-2.986)
Dummy-1997 Amnesty	-2.101X10 ⁶ (-1.417)	-1.724X10 ⁶ (-1.302)	5.699X10 ⁴ (0.095)	-3.767X10 ⁶ (-1.419)
Dummy-Seasonal	3.849X10 ⁶ (3.291)	6.987X10 ⁶ (6.690)	2.921X10 ⁶ (6.177)	1.376X10 ⁷ (6.569)
Trend	1.226X10 ⁶ (-1.419)	9.598X10 ⁵ (1.243)	3.348X10 ⁵ (0.958)	2.521X10 ⁶ (1.629)
Constant	-2.440X10 ⁹ (-1.411)	-21.910X10 ⁹ (-1.238)	-6.670X10 ⁸ (-0.956)	-5.010X10 ⁹ (-1.621)
Observations	72	72	72	72
R-squared	0.476	0.445	0.462	0.476
Adjusted R-squared	0.436	0.403	0.421	0.436
Akaike Criterion	32.565	32.339	30.754	32.565
Schwarz Criterion	32.755	32.528	30.944	32.755
F-statistic	11.970	11.573	11.334	11.970

V. ESTIMATION RESULTS

Our estimation results from the basic specifications are presented in *Table 3*. We find that the 1996 amnesty led to a reduction in real revenues from the enterprise profits tax (*Real EPT Per Capita*), the value-added tax (*Real VAT Per Capita*), and total taxes (*Real Total Taxes Per Capita*). In contrast, the 1997 amnesty had no significant impact on any of the individual taxes or on the combination, although the signs of the coefficient on *Dummy-1997 Amnesty* are the same as the sign on *Dummy-1996 Amnesty*.

The EPT, VAT, and total taxes results suggest that the 1996 amnesty had a long-term, negative impact on revenues from these taxes. (Recall that this dummy variable takes the value of one for all months after the introduction of the 1996 amnesty.) This could be a result of lax enforcement of the amnesty or to expectations about the prospect of another future amnesty. However, when we estimate these same equations using a dummy variable for the amnesty months only, we get no significant impact at all. Other specifications that allow for an immediate impact with a subsequent decay also suggest no significant impact; that is, in all of these other cases, other forms of the amnesty dummy variables do not lead to significant changes in the results.

For the other explanatory variables in the regressions there are no surprises. The estimated coefficient for the December collections (*Dummy-Seasonal*) is consistently positive and highly significant. The coefficient for our proxy for the level of unreported income, *Real GDP Per Capita*, is positive in all equations and statistically significant in several of them. Note that, besides increasing levels of unreported income, these estimates for GDP could be picking up the simple relation between growth in real income and real tax revenues.

VI. CONCLUSIONS: LESSONS FROM EXPERIENCE

The recent experience of the Russian Federation with tax amnesties largely coincides with previous empirical findings in the United States. Overall, the main lesson from the Russian experience during the transition and beyond is a simple one.

Our own estimation results, using a range of structural and time series methods, suggest that these amnesties had little demonstrable permanent impact on revenues. Since the use of fiscal gimmicks such as amnesties imposes additional costs, we suggest that the Russian Federation and other transitional countries would be better off avoiding them. Empirical evidence from other countries indicates that amnesty programs most effective in generating revenues are those that reduce taxes, interest, and penalties on items reported in the amnesty, that allow known delinquents to participate, and especially that increase post-amnesty enforcement. However, this last feature is often neglected – as in the case of the Russian Federation.

In short, an amnesty is unlikely to be any kind of fiscal panacea. It is also unlikely to be any kind of fiscal poison. On balance, it seems desirable to avoid the use of these fiscal gimmicks. The experience of the Russian Federation strengthens the overall conclusion that developing and transitional countries would be well-advised to follow a fiscal strategy that excludes tax amnesties.

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Figure 1: Real Enterprise Profit Tax (EPT) Monthly Collections

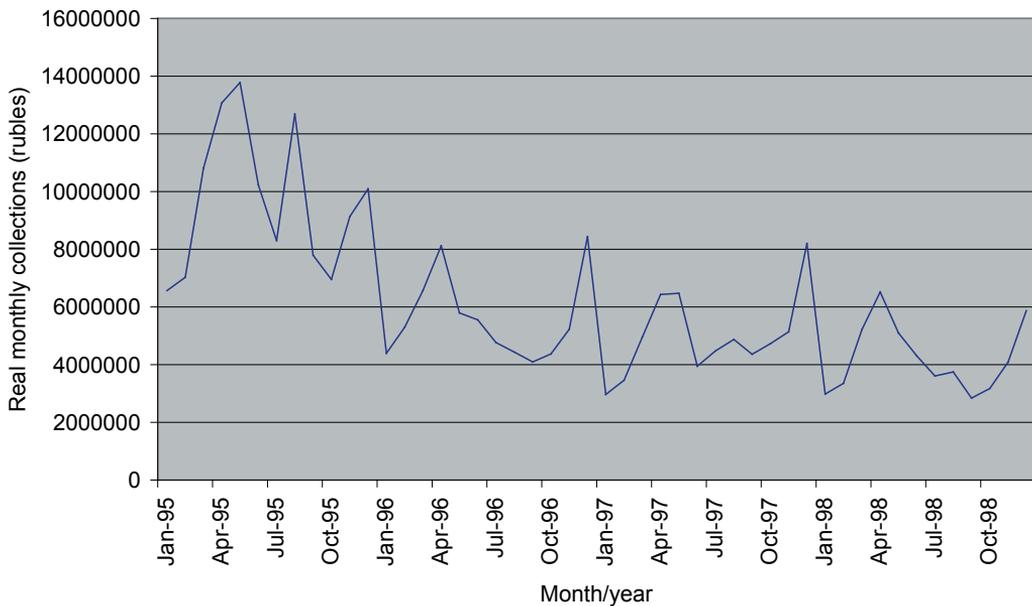


Figure 2: Real Value Added Tax (VAT) Monthly Collections

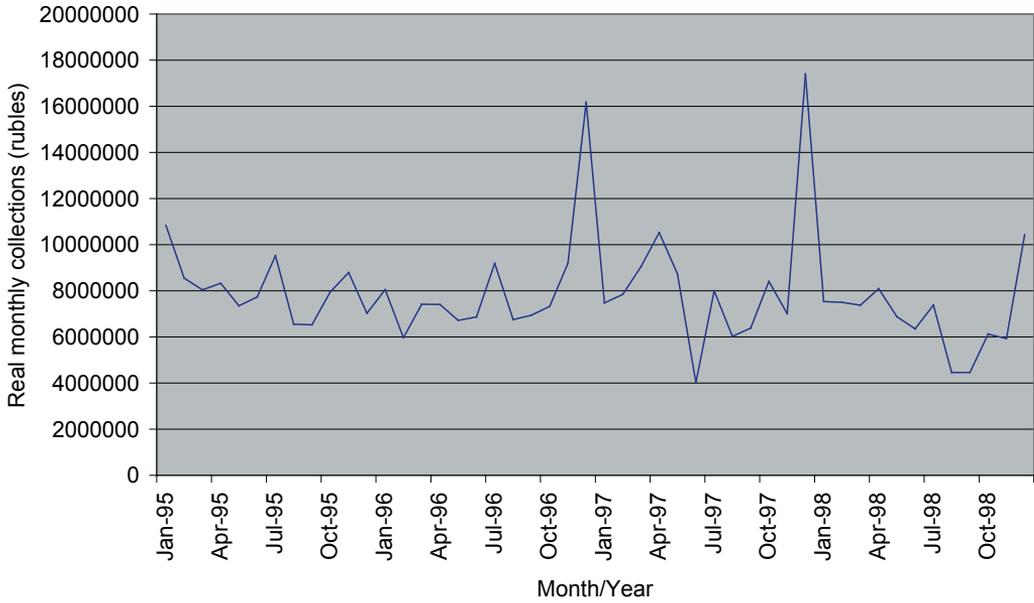


Figure 3: Real Excise Tax (ET) Monthly Collections

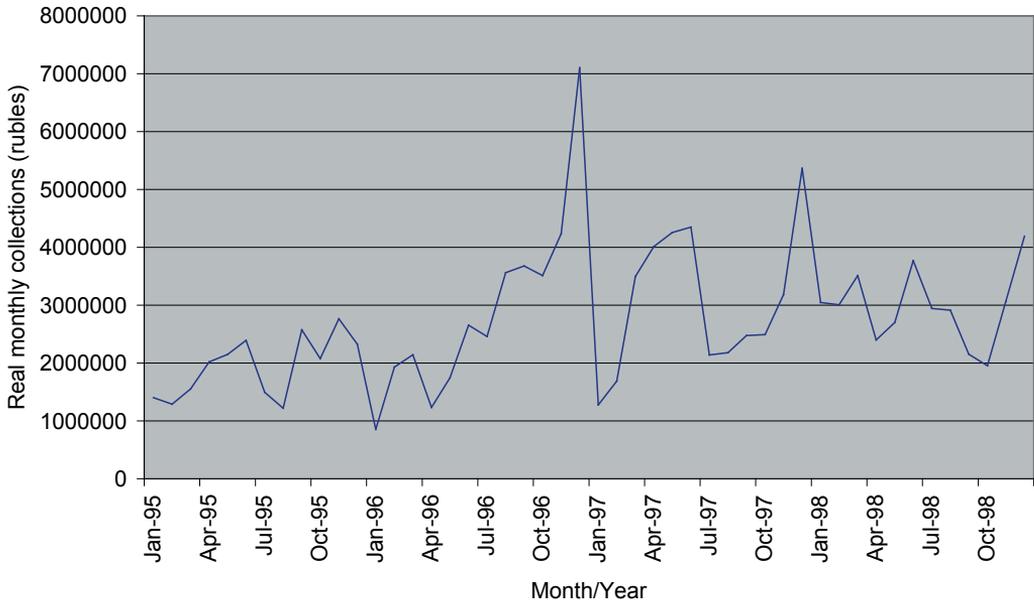


Figure 4: Total Revenues, Real Monthly Collections

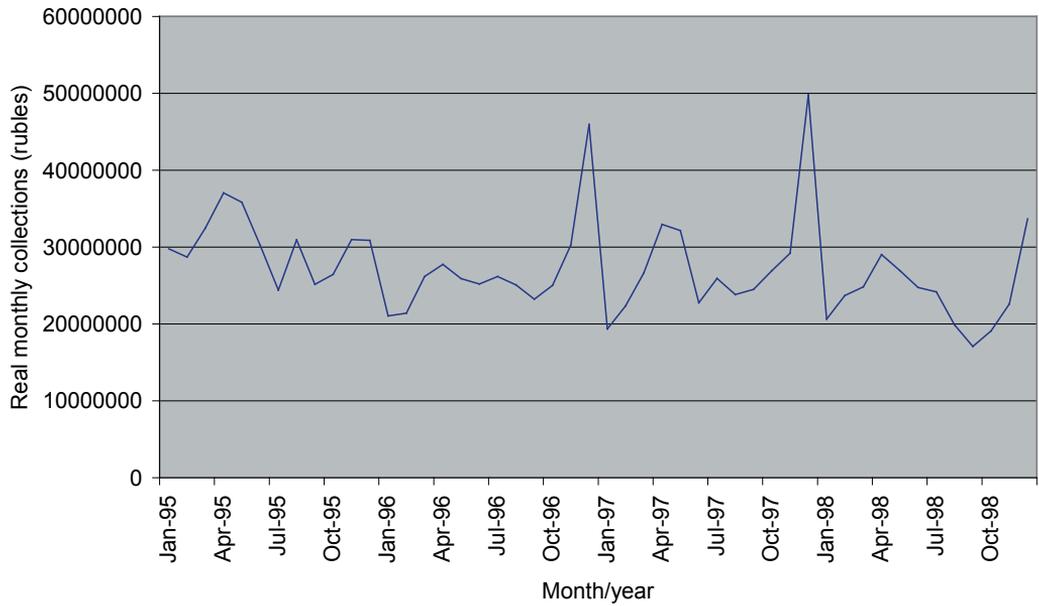


Figure 5: Total Revenue Plus Change in Stock of Arrears, Real Monthly Collections

