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Black cash tax evasion in Russia: Its forms, incentives and consequences at firm level

by

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This paper discusses Russia's "black cash" economy. Using interviews and survey data, we examine the mechanics of several distinctly Russian tax evasion schemes and attempt a rough estimate of the scale and dynamics involved in tax evasion based on black cash. Entrepreneurs' opinions are also used to get an idea of the incentives and costs of black cash tax evasion. We next describe the apparent economic consequences of black cash tax evasion and formulate general formal conditions for successful evasion at firm level. Finally, we recommend several policy measures to reduce the incentives to such behavior and discuss questions for future research. (JEL: D21, H26, O17)

1. Introduction

One of the biggest problems facing the Russian economy is a weak, ineffective tax system. Without doubt, it is a central cause of the fiscal distress plaguing the country today. As weak tax regulation stimulates development of an informal sector, the recent boom in research interest in taxation and informal economic activity in Russia seems only natural. Yet,

work in the field continues to suffer from treating taxation issues and informal economy issues in isolation rather than examining their relationships.

In the first historically significant treatment of the informal sector and shadow economy in the USSR, Berliner (1952) interviewed Soviet managers to establish common behaviours. More recently, several Berkeley-Duke Occasional Papers on the Second Economy in the USSR were based on interviews with Soviet immigrants in the US in the 1970s and 1980s. A number of scholars (e.g., Treml and Alexeev (1993)) have attempted to analyse the development of a hidden economy using Soviet statistical data.

Recent research follows two lines. Frey and Shleifer (1997), for example, use surveys to investigate the interactions between small business and local governments. Kaufmann and Kaliberda (1996), by contrast, apply statistical methods to estimate the size of the shadow economy in Russia and other post-socialist countries.

Similar Russian studies date from the late 1980s. A number books and articles discuss informal sector development in a centrally planed economy (Rutgaizer (1992) provides a detailed review of these Soviet-era publications). Post-Soviet literature, which did not emerge until 1995, may be divided into three groups. The first includes studies in the style of Soviet political economy (see R.E.J. (1996) or Ispravnikov and Kulikov (1997)). The second group embraces statistical works (see WB-GKS (1995), Ponomarenko (1997), Methodology (1997), Nikolayenko et al (1997)). The third consists of empirical studies based on enterprise surveys (e.g. Yakovlev (1996), Simachev (1998), Radaev (1998), and Dolgopyatova (1998)). Radaev's approach is notably similar to that of Frye and Shleifer (1997), and his results confirm several of the theoretical hypotheses on corruption in transition economies formulated by Shleifer and Vishny (1993). Prior to 1997, however, researchers rarely approach the relationships between the informal activity of enterprises and tax evasion.

Further, possibly due perhaps to a lack of data, papers on tax reform in Russia and other transition countries have tended to discuss tax evasion in general terms (e.g. Tanzi (1993) and Sinelnikov (1995)).

The situation changes with the release of the EBRD's 1997 transition report. For the first time, extensive attention is given to problems of corruption, informal activity and tax

evasion. Johnson et al (1997) also find a link in Russia and other CIS countries involving large-scale informal sectors, inefficient tax administration and low economic growth.

In December 1997, the report of a special governmental commission based on analysis of financial data of 210 largest industrial enterprises with tax arrears was released in Russia (IBC report (1997), see also Karpov (1998a) and Karpov (1998b)). At that time, the commission's chairman, Pyotr Karpov, introduced the notion of a "virtual" economy in Russia. His research dealt with the role of non-monetary payments in tax arrears increase.

Gaddy and Ickes (1998a, b, c) develop similar ideas. Using interview data, they try to explain the behaviour and motivation of Russian industrial enterprises, which actively seek to pay using non-monetary means. They described main tax arrears schemes and proposed very interesting theoretical model concerning barter and restructuring in Russia - see their main paper Gaddy and Ickes (1998a). Tompson (1998) discussed the assumptions of this model and analysed main objective causes of "strange" behaviour of Russian enterprises leading to barter, tax arrears and lack of restructuring.

Sinelnikov et al (1998) consider the problem of tax evasion mainly from a macroeconomic point of view, defining factors of evasion and testing their significance on the basis of regression analysis. Lopez-Claros and Alexashenko (1998) discussed also some specific features of Russian tax system, which ease evasion and avoidance.

Thus, we can observe the sharp increase of research interest to problems of tax evasion, informal activity and barter economy in Russia. Notably, Russian and western scholars alike focus on tax arrears and barter. Very few papers (Sinelnikov et al (1998), Kosals (1998) and Makarov (1998)) briefly discuss "monetary" ways of tax evasion. One technique, and probably the most important in present-day Russia, is unaccounted turnover of cash.

Similar schemes are well known in tax theory and tax policy, and have provided abundant fodder for researchers studying development of "cash" economies in developed countries and the related impacts on tax collection (e.g. Tanzi (1982)). However, the Russian case of "black cash" evasion differs significantly from traditional Western-style schemes. In our opinion "black cash" tax evasion actually drives the changeover to "virtual" barter transactions in Russian industry.

Black cash evasion is possible and widespread among small and medium-sized enterprises (SMEs) rather than large enterprises. Due to that, SMEs manage to get bigger reduction of costs and increase in profits than large enterprises. In economic terms, black cash evasion raises opportunity costs of capital and creates an additional budget constraint on firms that cannot use the method for tax evasion. As the risk of detection rises in relation to the size of the firm, other methods of avoiding taxes must be sought. Thus, large enterprises in Russian heavy industry attempt to reduce their costs by tax arrears and engaging in non-monetary exchanges. But, it means, in fact, that they avoid taxes thereby (see IBC (1997), Gaddy&Ickes (1998a)). So, in our opinion, black cash evasion and Russia's barter-based virtual economy are essentially two sides of the same coin.

In this paper, we consider the main aspects of Russia's black cash economy on the base of interview data. Section 2 includes brief description of our sample and questionnaire. Section 3 is mainly devoted to analysis of two distinctly Russian schemes of tax evasion. Section 4 discusses the scale and dynamic of tax evasion using black cash, and opinions from entrepreneurs on the incentives and costs of black cash evasion. In section 5, we formulate formal conditions for successful black cash evasion at the firm level, conclude the section with policy recommendations. Finally, section 6 discusses general consequences of black cash evasion on enterprise behaviour. We introduce here a few ideas concerning possible impact on micro- and macroeconomic situation to be made by "black cash" tax evasion. These ideas will have been examined in our future studies.

2. Sources of information and research approach used

Informal interviews with Russian entrepreneurs and experts provide the substance for this research. Below are the main subjects discussed with respondents in accordance with Berliner (1952):

- Incentives for tax evasion in diverse industries;
- Typical tax evasion schemes in different industries;

- Limits on using certain schemes;
- Case-specific risks of detection;
- Costs of evasion (in terms of intermediary's brokerage, bribes etc);
- Destination of underreported entrepreneur's income;
- Possible actions of government aimed at reduction of scale of evasion.

The sample included ten entrepreneurs. A general description of the sample is given in Table 1.

[Insert Table 1 please]

It can be seen that the survey attempts to balance the views of old and new, large and small, Moscow and non-Moscow enterprises. Note that all real-sector enterprises are located outside Moscow. The Moscow region thus provides views only relevant to trade and service enterprises.

Three additional experts were interviewed in Moscow – a director of an accounting and consulting firm, a banker and an independent accountant. The first had clients in construction, fishery, wholesale trade and publishing. The second contracted mainly with large and medium-sized industrial enterprises and budget-financed entities. The third was specialised in retail and wholesale trade of consumer goods.

The interviews were conducted in 1997 and the first half of 1998. Each interview lasted between two and three hours. We also used data from formal surveys of Russian managers in 1995-1997 on kinds of payments. These surveys were based on an all-Russian sample used by the governmental Centre for Economic Analysis (about 1500 industrial enterprises) and on a Moscow sample by Higher School of Economics

(about 300 respondents in wholesale trade). For discussion of the methodology of these surveys and a detailed sample description see Yakovlev (1996) and Yakovlev & Glissin (1996).

3. Black cash tax evasion schemes

Cash-based tax evasion is a long-established topic in Western tax evasion studies (see, for example, the model assumptions in Alingham & Sandmo's (1972) classic paper, as well as the theoretical summaries of Cowell (1985) and review of empirical studies by Tanzi and Shome (1993)). A number of papers also analyse the scale of evasion in different countries using a "currency ratio" approach (Tanzi (1983), Hepburn (1992), Spiro (1995)). However, the Russian-style cash evasion is sufficiently different to that we call cash evasion in Western economies. Thus, it is most productive to compare the traditional scheme of "cash" evasion found in many developed countries against the two most popular Russian schemes involving "black cash" tax evasion.

3.1 Traditional scheme

Figure 1 (see Appendix) gives a brief description of the traditional scheme. We qualify five main characteristics of the traditional "cash" schemes, i.e.:

1. The scheme is possible only if the taxpayer gets part of his receipts in cash (currency).
2. The scheme is typical for self-employed people or small, non-corporate businesses. The taxpayer is usually not an enterprise, but an individual.
3. Part of the taxpayer's operations with normal customers is illegal (sales or work without invoicing).
4. This scheme is strongly connected with underreporting of total revenue.
5. All transactions are real.

In our sample, two respondents used this scheme. Respondent 5 typically declared to the local tax authority only $300 to $400 each month on total revenues of $2000 to $2500 each month. Respondent 10 reported about a quarter of his trade turnover to the tax authority. General parameters of activity of these two firms (see Table 1) correspond to the traditional scheme formulated above. The level of underreporting of total revenue by firms using such a scheme in Russia is likely higher than in the case of similar firms in developed countries. At the same time underreporting of total revenue using a more sophisticated reverse *obeznalichivanie* scheme outlined below is even more significant. The implication here is that the extent to which these specifically Russian schemes are used is probably quite wide. For example, respondent 1 during a four-year period reported only 1% of his actual total revenues.

3.2 Basic "obnalichivanie" scheme used by Russian enterprises

The basic *obnalichivanie* scheme (see Fig. 2 in Appendix) was well known to interviewees. Respondents 3, 4, 7 and 9 said they regularly used this scheme; respondents 2 and 8 said they used it occasionally. The main idea of this scheme is the replacement of high-taxed elements of total revenue such as salary or profit with low-taxed elements such as material expenditures. The basis of such replacement is the contract between the client and an intermediary "sham" firm. Under the terms of the contract, the client (a real-sector enterprise) transfers money to the bank account of the sham firm in exchange for a phoney work report. Often the client uses the results of its own activity based on the orders of its customers as the phoney report. In exchange for bank payments to the sham firm, the client receives unaccounted, or "black", cash. The total amount of black cash returned equals bank payments minus the commission of the sham firm, typically less than 2% to 3% of initial client's payment. The black cash funds are thus available for unofficial salary payments, investment or discretionary use by the entrepreneur.

Although such arrangements reduce the client's tax payments significantly, the client's financial report still appears in order to the tax inspectors. As far as the tax authority is concerned, the firm spent money and received goods or services. Obviously, any sham firm would face immediate problems with the tax authority if requested to provide legitimate

explanations of its sources and application of funds. To avoid troublesome enquiries, sham firms *never* report to the tax authority. They operate two or three months and then vanish. Hence, their Russian name, *odnodnevki*, or "one-day," firms.

While the scheme seems similar to the well-known practice of *overreporting costs*, there is a significant difference. In the case of traditional overreporting of costs, the taxpayer buys some goods at a higher price from its regular supplier. The taxpayer's "take" in the deception is the unreported repayment of the difference between the normal price and the higher price. Thus, at the base of this form of tax evasion is a real transaction and the counterparty is a real firm. In contrast, the Russia scheme assumes a *fictitious* transaction and a counterparty that never reports to the tax authority. Thus, no money transferred is ever reported to the tax authority.

A crucial element in the Russian scheme depends on how the tax inspector reacts when a small sham enterprise does not submit a financial report. According to the common sense, one would logically expect Russian tax authorities to track down the people behind such sham enterprises and subject them to sanctions such as fines or imprisonment. Yet, basing on their long experience, all our respondents noted that Russian tax authorities *do not do this*! The explanation obtained from one expert is generally as follow:

> "Every tax authority must have a tax collection plan. Within that plan, the local tax authority must collect a certain amount of taxes and fines. To accomplish this task, limited worker resources are dedicated to each tax inspection. Typically, a tax authority's district contains a few large and medium-sized enterprises and many small enterprises. In any case, enforcement of tax law is complicated, given that the tax laws themselves may be inconsistent. In the course of an audit of a large or medium-sized enterprise, the tax inspector usually can find mistakes in the bookkeeping and collect additional taxes and fines. The quality of bookkeeping in small businesses is generally lower than in the large and medium-sized firms, so the tax inspector is virtually assured of finding grounds for additional taxes and fines, but even here the amounts

recovered scarcely justify the time and effort involved. In case of an unreported small firm, the tax inspector faces greater challenges in terms of tracking down the firm's manager, accountant, owners, and reconstructing of firm's financial documents. This resource cost may well exceed any possible taxes and fines recovered from errant firm. Indeed, there is a real possibility that the non-reporting firm was actually a real-sector enterprise forced to close its doors due to poor competitiveness. Thus, the tax inspector finds it much easier to pay regular visits to 'stationary' enterprises, no matter their size, than to run about in search of 'flying' firms."

This explanation seems quite plausible. For example, according to official Russian data (see STS (1997)) the difference between the number of enterprises registered and number of enterprises reporting on 1.1.1997 was about 600000 firms. It is equal to 21,5% of all enterprises registered. Apparently, it means that the tax authorities made little attempt to penalise non-reporting firms.

We would stress that the above description by our respondent applies to the behaviour of local tax inspectors. The federal tax authorities, without doubt, must be able to judge the difficulties of detection against further losses to the budget. In other words, they have the power to force local inspections to intensify their efforts to discourage such schemes, but they *refrain from doing so*! Adding to the reluctance to take on such difficult tasks may be the personal interests of certain politicians. For example, one could recall the famous story about a cardboard box containing a half million dollars in cash that was found in the Russian White House in June 1996.

In summary, the basic black cash tax evasion scheme differs from the traditional scheme as follows:

1. The basic scheme is applied mainly where the taxpayer is paid via a bank account, so the potential circle of taxpayers involved is much broader. The taxpayer is not an individual, but an enterprise.

2. The scheme includes fictitious transactions (whereas all transactions are real in the traditional scheme). Therefore the volume of transaction is higher than if it was fully reported (in the traditional scheme these are equal).

3. The taxpayer officially only engages in legitimate operations with normal customers and suppliers. All illegal operations are limited to contacts with highly transient "sham" firms.

4. While the incomes of individual workers and the entrepreneur are underreported, there is no underreporting of total revenue or sales volume of enterprise. The outsider can only observe a change in expenditure structure. In addition to the accounted turnover of enterprise, there are three non-accounted cash transfers, i.e.: sham firm to client-enterprise, client-enterprise to workers and client-enterprise to owners.

3.3 Reverse "obeznalichivanie" scheme

This scheme (see Fig. 3 in Appendix) is often applied by newly created retail trade firms, which operate on "wholesale" or "small-lot wholesale" markets in cities (see respondent 1 in Table 1). At first glance, this may seem like a combination of traditional and basic schemes. We note the following distinguishing characteristics of the reverse scheme:

1. This scheme can be applied only when the taxpayer gets receipts in cash form (like traditional scheme).

2. This scheme requires a certain amount of fictitious transactions (like basic scheme). Again total transaction volume is higher than in the traditional scheme.

3. Individual incomes and total sales volumes are underreported as in the traditional scheme, but the scale of underreporting is much higher.

4. The taxpayer is not an individual, but an enterprise.

One might ask why retail traders would prefer this scheme to the traditional scheme. There is a simple explanation; it is an excellent way to procure unaccounted, or "black", goods. In the traditional scheme, the underreporting is limited as the tax inspector can cross-reference against supplier invoices to determine the amounts of goods the retail trader purchased from wholesale firms. With this information, it is possible to evaluate approximately

the total revenue of the retail trader as value of goods purchased plus mark-up. Of course, the retail trader can destroy all supplier invoices when the goods purchased are sold. But, there is a high risk of detection in the event of an audit of a wholesaler by the tax authorities. The official only needs to compare the outgoing invoices of the wholesale firm against the retail trader's incoming invoices. Thus, the retail trader must be certain as to whether a tax inspector can identify the wholesale supplier or not. If not, evasion in retail trade becomes a fairly simple matter.

That scheme is convenient for wholesale firms, too, because the Russian government has limited the use of cash for inter-firm transactions (Government Decree no. 1258 of 17 November 1994). If the contacts between the wholesale supplier and the retail firms are close enough, it is even possible to modify the scheme further so that the supplier receives black cash that it then launders through a sham firm. This variant can be cheaper since the commission of sham firm is the lower the larger the amount of money exchanged. (Normally, the commission of sham firms in a reverse scheme is 0.5% to 1%.) Thus, in general, the scheme provides the conditions whereby all supplier deals are legitimate, while nearly illegal operations in the retail trade are undetectable to the tax inspector. In this connection, one important remark can be made about shuttle trade. It is commonly believed that shuttle trade accounts for the lion's share of unaccounted turnover in the consumer goods' market in Russia. However, our interviews with three traders and two experts indicate that the unaccounted turnover of firms involved in reverse schemes is probably higher than total shuttle trade turnover.

3.4 The role of banks

The above description of the reverse scheme only partly explains instances where sham firms get unaccounted cash for their clients. According to our experts' evaluations, certain small and medium-sized banks provide most of the cash funds for the basic scheme. This has become a specialised and highly lucrative business for Russian banking. The following is the short description of banks' participation in the basic scheme.

While banks typically have no direct contact with clients of sham firms, the bank involved is usually affiliated with a financial agent or investment company responsible for the formation and dis appearance of sham firms and contacts with clients. This company opens an account in a bank for purposes of regularly receiving legal cash funds on the legitimate basis (for example, for the purpose of purchase of shares or promissory notes [*veksels*] from individuals). The price for legal cash funds measured in non-cash rouble in the interbank market normally does not exceed 100.1%. In this case, however, the financial company pays the bank 101% for cash funds received. It is also the standard price. It means, however, that the bank has 0.9% per day irrespective of GKO yield, exchange rate dynamic etc. Often such banks have no other operations.

Further, the financial company buys *veksels* from certain individuals. It is possible now in Russia to buy "junk" *veksels* or shares at 0.1%–0.2% of their nominal value. Of course, the price fixed in the contract between financial company and individuals will be not 0.2%, but 98%. After that, this financial company sells the *veksels* purchased to a sham firm at 100%. As there is a risk that the authorities may try to verify the identities of individuals in the course of an audit, such financial companies often make fictitious "contracts with individuals". These identities are developed from persons with lost passports or the passports of deceased people (such passports are used often in registration of sham firms). Besides, many other forms of bank participation in the basic scheme are possible as well.

4. Entrepreneur views on scale and dynamics of tax evasion involving black cash, the incentives and costs of tax evasion

We assume the basic and reverse schemes started already in 1992. Table 2 presents summary answers of respondents to the questions "When did you put such schemes in your business practice?" and "How important is 'black cash' evasion for your business?"

[Insert Table 2 please]

Experts said they could observe the earliest cases of the basic scheme's introduction in Moscow in spring-summer of 1992. At that time it was mostly applied by new private small

and medium-sized enterprises. In 1993-1994, many non-Moscow firms and many privatised and state-run enterprises began to apply the scheme. It is interesting that not only old enterprises (4, 6-8), but also two new enterprises (3 and 9) had not used any tax evasion schemes before the introduction of a basic scheme. It can also be noted that already in 1993-1994 in Moscow it was difficult or even impossible to enter into some markets without black cash evasion. In 1994-1995, there was a period of sharp competition between sham firms organisers accompanied by the increase of their advertising activity in all newspapers and decrease of their commission. In 1996, sham firm markets stabilised, and there were no significant changes in 1997 or the first half of 1998.

The respondent evaluations are reflect currency ratio dynamics. Indeed the share of M0 in M2 in 1990-1991 was 17-18%. In 1992-1993 this ratio increased to 40%. After that in 1994-1997 it fluctuated between 33% and 39%. This link was analysed in some previous research when Sinelnikov et al (1998) tested dependence between total taxes collected and currency ratio in Russia in 1992-1995 and found that it was negative and significant.

In all respondents' and experts' opinion, the main cause of black cash scheme introductions was the exorbitant wage and salary tax set in 1992 (including social security payments) in comparison to the low level of social guarantees. In contrast, a number of entrepreneurs said they would still pay profit tax because it was a "fair" tax, i.e. the state had a right to claim a share of the net income of a business. All were convinced, however, that the state pension fund and other state social funds were completely mismanaged. In their opinion, it was better for workers to get salary plus part of their social security payments today in black cash than to get an official salary with social guarantees that would never materialise. The popularity of the black cash scheme was based on its simplicity and low risk of detection. Many respondents felt that detection was only possible in cases of excessively spreading of information or if one person directly involved in the scheme provided the tax inspection with necessary data.

In fact it is not so plausible. In our opinion, the government could stop or significantly limit tax evasion two or three years ago, but had not done this. It is worth noting, however, that the entrepreneurs do not link black cash evasion with bribes or corruption in

their perceptions. Moreover, politicians might sometimes use sham firms. Therefore, the state tax service and tax police have little incentive to go after all sham firms. As a result, the usual taxpayer costs of evasion equal but the brokerage of the sham firm.

The analysis of interviews made it possible to define the main limits on using basic and reverse schemes. Usually it was difficult to introduce either scheme in a large enterprise because too many people were involved. It was easier to use the schemes in big cities than in small towns. It was more difficult to use the reverse scheme when suppliers and consumers are located in different regions. Finally, the reverse scheme could only be applied in a consumer goods market. According to respondents, it is much easier to introduce these schemes when the firm generates many transactions and the average size of transaction is small.

Our questionnaire included a question about the destination of the economic effects of tax evasion. There was significant difference between small and medium-sized firms and large enterprises. It should be stressed that in the sector of small and medium-sized firms the economic effect of "black cash" evasion is distributed between owners, managers and workers. In practice, it means that workers get the significant part of salary in "black cash" (from 50% by no.4 to 95-97% by no.1 and 9). The total salary of workers (black + white) usually is higher than their opportunity legal earnings. The difference can be 20-25% or even higher. It is interesting that the entrepreneurs' or managers' income usually is formed from the remaining black cash funds. In trade and in construction these funds are used often as additional working capital.

It is also possible to invest these funds in equipment. Respondent 4 (who works for a state-run enterprise!) explained that in 1997 his firm bought special equipment for new division. The equipment cost about US$ 40,000. The price in cash was 10% to 15% lower than the price of using a bank account. The enterprise signed the contract with a sham firm for production and delivery of necessary equipment at the second higher price. Owing to this combination, the enterprise could buy the equipment at lower price (1), include this equipment in its balance sheet for flawless bookkeeping purposes (2), and get additional black cash

funds (3). Of course, such combinations are only possible when the supplier agrees to take black cash.

In general, we can conclude that in sector of small and medium-sized firms relatively wide application of black cash scheme reduces the total costs of enterprises significantly. This economic effect normally is used not only for consumption of workers, managers and owners, but also for development of the enterprise. These firms have high profitability and black cash schemes offer a way to raise funds for developing the business. Notably, though, most possible investments are limited to the black cash payments area.

In the large enterprise sector fair distribution of evasion's effect becomes difficult. For example, enterprise 6 sometimes took part of its receipts in cash (5-7%). Its top managers were sincerely interested in the survival and development of the firm, but it had no resources for additional legal payments of salary. Thus, the managers were ready to pay a "black" premium, but they could not explain to the workers the source of this money, because the high number of workers increased the risk that information about such practices could leak out. In 1995-1996, the enterprise actually paid a black premium a few times. In 1992-1993, most workers bought the shares of one local voucher fund. Managers thus explained to workers that the "black" premium payments were dividends from the voucher fund.

This example illustrated the problem of application of basic scheme in large enterprises, but it is not typical. In practice, the weakness of Russia's corporate governance statutes stimulates dishonest behaviour on the part of top managers and major shareholders. The standard scheme of tax evasion in the case of a large enterprise (see Fig. 4 in Appendix) assumes that a few small intermediary firms affiliated with managers or the largest shareholders of that large enterprise control its cash flow. To redistribute the revenue of the parent enterprise, they can manipulate sales and purchases prices, play with arrears, veksels, offsets, barter operations etc. Further, these small firms transfer a part of main enterprise's revenue to sham firms in exchange for black cash for managers and major shareholders in the parent enterprise or to off-shore companies affiliated with the same persons. The result of such "redistribution" of cash flow is a loss of assets and especially a loss of working capital of large enterprises.

It should be stressed that, in contrast to small and medium-sized firms, the income of managers of large enterprises in Russia is normally independent on the net revenue of the enterprise. The salary of workers, payments to small suppliers and tax payments constitute the rest.

Concluding the analysis of interviews, we present a summary description of different schemes (see Table 3).

[Insert Table 3 please]

We stress that tax evasion on the part of small and medium-sized firms may be done in pursuit of some competitive advantage through lower overall production costs. Black cash evasion Russian-style also causes an inevitable amount of fictitious turnover from transactions with sham firms. Therefore, all firms involved need additional working capital to make the scheme work. At the same time only small and medium-sized companies can pay higher interest rate and really can get this additional working capital.

Finally, it is too difficult to estimate the scale of evasion on the basis of informal interview data. Therefore, we also use data from formalised surveys of industrial and trade enterprises. The probability of plausible responses to direct questions about informal activity is likely close to zero. Therefore, we asked respondents to evaluate the shares of different kind of payments (bank payments, cash payments, barter, invoices etc) in all inter-firm payments *in their industries*. We assumed (1) that answers received were based on the business experience of respondents and (2) that indirect form of question gave them no reasons for significant distortion of data. Further, we used the evaluations of share of cash payments as indirect indicator of scale of illegal activity. It was done as Russian enterprises cannot account officially for the inter-firm cash payments of more than 2,000 roubles. In our opinion, the high share of inter-firm cash payments evidences black cash turnover. We also asked respondents about changes in the proportions of various payments during the last year (increasing, stable, decreasing). We asked about the reason for using cash in inter-firm payments.

There were two all-Russian surveys of industrial enterprises in the end of 1995 and in spring of 1997 and a number of surveys of Moscow wholesale firms in 1995-1998. The

following are the main results (see also Yakovlev & Glissin (1996) and Yakovlev & Vorontsova (1997)).

According to data of first industrial enterprise survey the average evaluation of share of the black cash turnover in industry in respondents opinion was about 20% as at the end of 1995. The share of cash payments fell consistently as the enterprises grew in size – from 29% among small enterprises (less than 100 workers) to 17% in the group of large enterprises (more than 1000 workers). The highest cash turnover share was observed in light industry (28%) and in the chemical industry (26%). The share of cash inter-firm payments in industry increased in 1995, but not strongly. The main reasons for using black cash in the industry were high taxes (51% of responses), the drawbacks of payments system (35%) and political instability (21%).

According to surveys of Moscow trade firms in February 1995 and March 1996, the average share of cash inter-firm payments in the wholesale market was about 30%. Managers in larger firms, as a rule, gave the lower evaluations of share of cash inter-firm payments. The average number of workers was still quite high (66 people) in the group of firms with evaluations of cash inter-firm payments' share over 50%.

The data of subsequent surveys indicated the decrease of average evaluations level – down to 10% in industry and down to 22-24% in Moscow wholesale trade. Most respondents expected a decrease in the share of cash inter-firm payments in the future. It should be noted, however, that in 1997 many industrial enterprises from the CEA sample did not answer the question about cash payments. There were similar differences in evaluations between large and small enterprises and between industries.

In any case, the formalised survey data confirms the ubiquity of cash inter-firm payments. What differed were the dynamic views in the formalised surveys and the informal interviews (decreasing vs. stability). In this connection, we note that the data of broad surveys likely describes the scale of application of traditional scheme in case of industrial enterprises, or the reverse scheme in case of wholesale firms.

5. Formal conditions for successful black cash evasion at firm level

The above analysis was mainly descriptive. Now we consider the formal conditions of black cash evasion Russian style. Our general assumptions are the following:

1) All enterprises (excluding sham firms) are legal. They regularly submit their financial reports to the tax authorities.

2) There is a system of perfect tax withholding, i.e. workers pay no taxes themselves. The employer covers all individual income taxes (including social security payments). The employer is further responsible for corporate income tax, VAT, excise and import taxes etc.

3) There is competitive market with free entry. Total revenue of one firm (TR) is equal to its total costs (TC).

Taking into account assumption 3, we can describe the structure of total revenue for one firm using costs of different factors:

(1) $TR = TC = M + wL + rK + \tau$

In this equation (1) M is material cost or income of suppliers; wL is cost of labour or net income of workers and rK is cost of capital or "normal" after-tax profit (net income) of the entrepreneur. Finally, τ is total of taxes or the income of state.

The main result of activity for the entrepreneur is rK. But, there is a difference between M and wL, on one hand, and τ, on the other. The entrepreneur can't get at his profit until suppliers and workers have been paid. Therefore, we can say that in the entrepreneur's opinion M, wL and rK are "productive" costs or incomes. Conversely, τ is not connected directly with business activity. In the entrepreneur's opinion, it is rather "non-productive", or "pure", cost. Thus we can write:

(2) $M + wL + rK = PI$ and $PI + \tau = TC$

Consider now in detail the parameter τ. In fact, τ is some function of factors M, wL and rK.

(3) $\tau = f\ (M, wL, rK)$

However, τ includes "general" taxes (for example, individual income tax, social security payments, profit tax or sale tax) and "special" taxes (for example, excise or customs). The value of these "special" taxes varies significantly for different goods and the tax base in this case is often "physical". We also remark that τ can include other taxes such as property tax, license payments etc. They usually have no direct link to value of total revenue, and we indicate this group as "independent" taxes.

In practice, links between relevant "general" taxes and M, wL and rK are normally linear. One big exception is the case of progressive individual income tax. But usually it is possible to calculate some average tax rate for individual income tax. Therefore, we can write

(4) $\tau = a_1 \bullet M + a_2 \bullet wL + a_3 \bullet rK + E$

Parameter E includes all "special" and "independent" taxes.

Assume now for the purpose of analysis' simplification that E=0. Assume also that $a_1 < a_2$, $a_1 < a_3$ and they are all exogenous for the taxpayer, but he can manipulate in his reports to tax authority with data on M, wL and rK. These assumptions are corresponded to Russian tax law and to interviews' data. Indicate new distorted data with symbol (´). Then

(5) $M' + wL' + rK' = PI'$ and $PI' + \tau' = TC'$

We can see that evasion is possible if $TC' < TC$. In this case at least some short time (before other firms will introduce that scheme) entrepreneur will get not only rK, but also economic profit π amount to (TR - TC´). This π is the *net effect of evasion for the entrepreneur.*

Taking into account the relations between a_1, a_2 and a_3 we can point out that the entrepreneur-taxpayer will be interested in $wL' \to 0$, $rK' \to 0$ and $M' \to PI'$. The logical outcome is: $\tau' \to \tau\ (M')$. Therefore the maximum *gross* effect of evasion (or extreme losses of state budget) is:

(6) $\tau(M, wL, rK) - \tau(M') \text{ under } wL' = 0 \text{ and } rK' = 0.$

As a legal firm with zero salary and zero profit may seem strange even to a Russian tax authority, the official salary and official profit in case of evasion cannot equal zero ($wL' > 0$, $rK' > 0$). We remark further that, as a result of evasion, the entrepreneur should get a higher net income (otherwise, evasion would hold no interest) and his workers should get at least the same net salary. We assume for the sake of simplicity that the entrepreneur will not pay his workers a higher salary in case of evasion (this corresponds to our general assumption 3). Thus,

(7) $wL = wL' + wL_{black}$

The normal profit rK also should be represented now in two parts – "white" rK' and "black" rK_{black}. Moreover, the entrepreneur, after evasion has been initiated, should receive additional profit π, because otherwise he would have no incentive to evade taxes. Therefore we write:

(8) $rK = rK' + rK_{black}$

(9) $rK < rK' + rK_{black} + \pi$

The entrepreneur can get π in a legal ("white") form, but then he must pay additional tax of $a_3 \bullet \pi$. For simplicity, we assume below that he takes his π exclusively in illegal ("black") form.

Our next remark concerns to relation between M and M´. $M' > M$ because the technology does not change and $wL' < wL$, $rK' < rK$. In section 3, we saw that transformation of official salary and official profit to "black" salary and "black" profit is possible for a legal operating firm on the basis of a fictitious transaction with a sham firm. If volume of such transaction is equal to M_{fict}, we can write:

(10) $M' = M + M_{fict}$

Thus, the trade-off is observable: $wL_{black} + rK_{black} + \pi \leftrightarrow M_{fict}$. We saw above that this substitution is riskless for the taxpayer, but it inflicts some transaction costs (or commission) that reflect the risk of intermediary sham firm. Let us indicate this commission as **r**, which is equal to some percentage of fictitious transaction volume. Then:

(11) $M_{fict} = (wL_{black} + rK_{black} + \pi) \bullet (1 + \mathbf{r})$

Our last remark concerns the start of evasion. Evasion reduces costs. Therefore, in the case of perfect competition $TR' < TR$, because $TC' < TC$. We can assume, however, that the first firm introduced this evasion scheme initially will sell its goods at former price, which will include now economic profit. Then for this first firm $TR' = TR$. Of course after involvement of other firms in evasion price will decrease. But after that any firm can not pay all taxes – because the costs of full legal existence would be higher than normal total costs. Thus success of evasion at perfect competition depends on start conditions for first firm.

Now taking into account this remark we can describe the general condition of successful tax evasion using a "black cash" scheme. After some arithmetical operation using equations (2), (5), (7), (9), (11) and also equation (4) for τ and τ' both under E=0 and $TR'=TR$ we can formulate:

(12) $$\pi = [wL_{black} \bullet (a_2 - a_1 - \mathbf{r} \bullet (1 + a_1)) + rK_{black} \bullet (a_3 - a_1 - \mathbf{r} \bullet (1 + a_1))] / [(1 + \mathbf{r}) \bullet (1 + a_1)]$$

We assumed above that enterprise could choose the level of wL_{black} and rK_{black}. Therefore, wL_{black} will be equal to zero under $((a_2 - a_1) - \mathbf{r} \bullet (1 + a_1)) \leq 0$ and rK_{black} will be equal to zero as well if $((a_3 - a_1) - \mathbf{r} \bullet (1 + a_1)) \leq 0$. Consequently, $\pi > 0$ and tax evasion is possible only under following conditions:

(13a) $(a_2 - a_1) - \mathbf{r}\bullet(1+ a_1) > 0$ or

(13b) $(a_3 - a_1) - \mathbf{r}\bullet(1+ a_1) > 0$.

This is to say that each condition separately provides sufficient incentives for evasion. If only condition (13a) is realised, firms will hide salary. If condition (13b) is realised, firms will pay all salaries in legal form, but will hide their profit.

In fact there are both conditions in current Russia. And left part of each inequality is much higher than zero. Taking into account Russian tax regulation in 1997 and assuming **r** equal to 0.1, we obtain that $((a_2 - a_1) - \mathbf{r}\bullet(1+ a_1)) = 0.847$ and $((a_3 - a_1) - \mathbf{r}\bullet(1+ a_1)) = 0.777$. Thus, legal operating firm can get net profit amount to 847 rouble if it substitutes 1,000 roubles of "black" salary for 1,000s rouble of legal salary.

What can these inequalities say for economic policy? In both cases the increase of **r** influences negative the volume of π. But **r** reflects the level of risk for sham firms. Therefore, the imposition of hard sanctions on sham firms could limit tax evasion. But, in fact, without a change of other conditions, these sanctions can limit significantly not only tax evasion, but also business activity at all. Johnson et al (1997) observed such effect of repressive economic policy in Belarus and Uzbekistan by comparison of informal sector development in different transitional countries.

Therefore, probably more important are policy measures, which will promote the decrease of $(a_2 - a_1)$ and $(a_3 - a_1)$. For example, about ½ of a_2 in Russia is connected with social security payments. We jointed them with taxes in our analysis, but in fact for employee they are not taxes! It is a kind of insurance. However, neither employer nor employee in Russia is interested in eventual social securities payments. Indeed, it would be strange to expect any other behaviour on the part of employees, considering that the state pension fund takes 28% of official salary of each worker, but the worker himself gets only 1% deposited in his personal pension account. At the same time current level of state pension is very low (about 400 roubles a month) and it does not depend on level of previous salary of worker. In our opinion, this situation can be changed only if each employee will get in future at least one half of his

current social security payments. This is the only way the government can encourage workers to prefer "white" salary.

The case of $(a_3 - a_1)$ is more complicated. In fact, a_3 includes a_1. Therefore, an increase of a_1 can influence of tax evasion incentives only under reduction of rates of some taxes concerning to a_3. It is possible, for example, in the case of an increase in sales tax rate (concerns a_1) and a decrease in the VAT rate (concerns a_3). We do not mean that this way is the first best one. In sectors where normal accounts-based methods of taxation are unreliable due to problems of taxpayer compliance or administrative corruption, it would be better probably to introduce *presumptive taxation* (see Thuronyi (1996)). This approach assumes that "desired" base for taxation is not directly measured, but inferred from indicators that are more easily measured than the base itself. Russian government is trying now to introduce such system for small businesses. In the context of the Russian situation, such approaches could limit "black cash" evasion.

But perhaps more important is fairer utilisation of collected taxes. Many respondents said the state must use its revenues to do something for business and workers in exchange for tax payments, but it does not. None could see any reason to pay taxes today given the state's priorities in use of tax revenues.

6. Concluding remarks and topics for future research

Russian "black cash" tax evasion schemes differ from to traditional Western-style "cash" evasion schemes. First, they concern mainly firms, not individuals. Second, such evasion is possible even when a firm does not get its receipts in cash. Third, Russian schemes are almost risk-free for a legally operating firm. Therefore, the scale of tax evasion exceeds the levels in developed countries. On the basis of interviews and surveys, it seems clear that virtually all enterprises in Russia have incentive to use a "black cash" scheme at some time. The main reason is the unpunished existence of thousands of sham firms affiliated with private banks. Indeed, this is presently one of the best businesses in Russian banking.

The usual enterprise-taxpayer does not regard participating in black cash schemes to be on a par with bribery, corruption or "investment in relational capital" (see Gaddy & Ickes (1998a)). We can propose the following simple explanation of this phenomenon. Many politicians themselves may use some "sham" firms. Therefore tax authorities don't detect and penalise all "sham" firms.

According to our interviews, the main incentive to evade taxes was excessive taxation and an unfairness tax system. Respondents saw no sense in paying taxes, because in their opinion the state did nothing for business or citizens.

Economic effect of tax evasion mainly is used in personal consumption of managers (owners) and workers. But there are significant differences between small and medium-sized firms and large enterprises. First, the importance of black cash schemes is much higher for small businesses. Second, managers (owners) of small and medium-sized companies often use the additional profit for development of these enterprises. Payments of salary in black cash enable to decrease the total costs and to rise the competitiveness of business. At the same time, the application of black cash schemes in the large enterprises is limited. As the risk of excessively dissemination of information is higher, managers and large shareholders invest the funds generated from tax evasion into other businesses.

On the basis of this analysis, it is possible to develop other hypotheses. For example, if we divide the economy into two sectors, we can have a "legitimate" sector where tax evasion is limited[2], and a "quasi-legal" sector where tax evasion is widespread.

Using the simple microeconomic approach it can be shown that tax evasion in second sector should lead to increase of prices and reduction of supply in first sector. This way legitimate enterprises will try to compensate the difference in profitability of business in compare to quasi-legal enterprises, which pay much lower taxes. At the same time the competition between these quasi-legal enterprises should lead to relatively decrease of prices and rise of sales. Thus, black cash tax evasion will create additional budget constraint in legitimate sector. It will also distort prices, supply and demand in both sectors in compare to equilibrium under tax compliance.

Assume now that reducing their supply legitimate firms at the same time can not reduce enough their costs (for example, because of high fixed expenses for social infrastructure or because of inability to sell excessive equipment and buildings). So, we obtain the situation where total profit in legitimate sector is insufficient to cover the opportunity costs of capital. And many legitimate firms can try to invest their working capital in other businesses. At the same time, they will try to use in main business monetary surrogates (MS) – instead of working capital. It is possible if marginal transaction costs by introduction of MS initially are lower than marginal revenue by alternative use of working capital. As a result, the legitimate firm will have even higher total costs (and losses) in its main business, but it will get some profit from other businesses[3]. In our opinion, such behaviour of firms is quite rational while in the model of Gaddy & Ickes (1998a) it is sometimes irrational (see Tompson (1998)). The problem here is that transaction costs of MS will increase sharply after the introduction of MS by all legitimate firms.

We can also venture a second hypothesis. We saw that application of evasion schemes leads to additional volume of fictitious transactions at the firm level, so we can say that the black cash economy has some virtual elements. We can further assume a higher velocity of money circulation in such fictitious transactions and that an economy with widespread black cash evasion will need for some additional money to provide for this additional turnover. However, the government and central bank do not recognise this fictitious turnover! By correction of GNP, they take into account only underreporting of real transactions (see WB-GKS (1995), Methodology (1997) etc). This means, however, that the GNP observable for the government was less than factual GNP. This is a different conclusion than the view of Tompson (1998) which says that GNP has been systematically overstated, including nominal prices for goods paid for with money and goods paid by offsets, barter and other monetary surrogates. In our opinion, both views are partially correct, but the implication is that nobody can correctly evaluate the underestimation of GNP in the first case, or its overestimation in the second. There is no market economy in Russia, rather it has become a kingdom of distorting mirrors.

Therefore, we would repeat here our view that the black cash economy and the virtual barter economy in Russia are, in fact, two sides of the same coin. Small and medium-sized firms (mainly *de novo*) avoid taxes through black cash schemes. Large companies, which are mainly privatised or state-run enterprises, avoid taxes through monetary surrogates and by accumulating tax arrears.

What can be done in this situation? In section 5 we discussed some political measures limiting black cash evasion. The suggestions were personification of social security payments and development of an efficient pension system; simplification of tax regulations for small business; use of presumptive taxation; and fairer utilization of taxes collected. In the field of barter economy, the most important measure would be discounting and marketisation of all debts as proposed by Karpov (see IBC (1997)). However, it only makes sense to introduce these measures if the government will not admit new tax arrears and will stop black cash evasion. It is not so easy because monetary surrogates circulation and black cash turnover both are highly profitable businesses at present. The people in these businesses have power and very likely are reluctant to changes that work against their interests. Thus, the main conditions for successful changes in tax policy will be a tough political will and broad-based support for such reforms on the part of the population at large. Sadly, such conditions seem extremely remote given the current situation in Russia today.

Appendix

Figure 1.

The traditional Western-style scheme of tax evasion or direct underreporting of total revenue

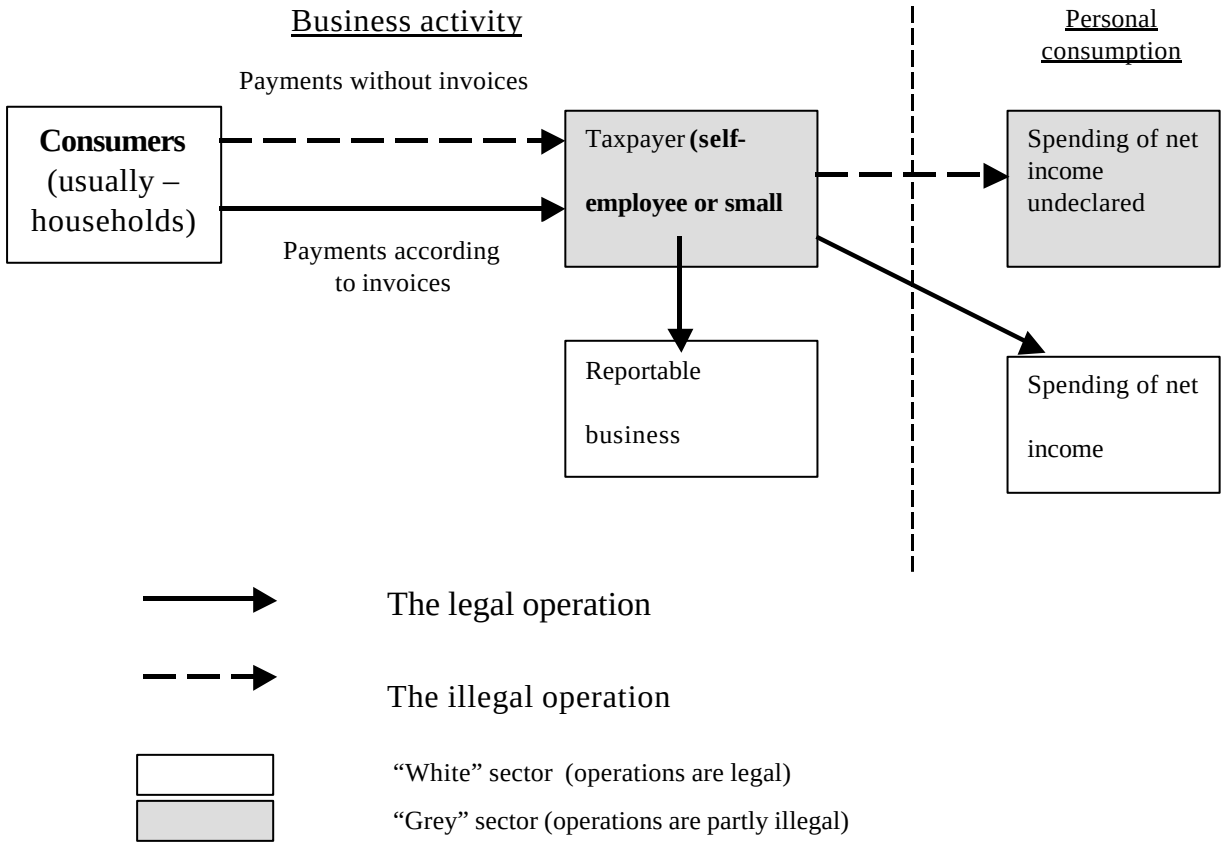


Figure 2.

The basic obnalichivanie scheme; turning non-cash funds into unaccounted black cash

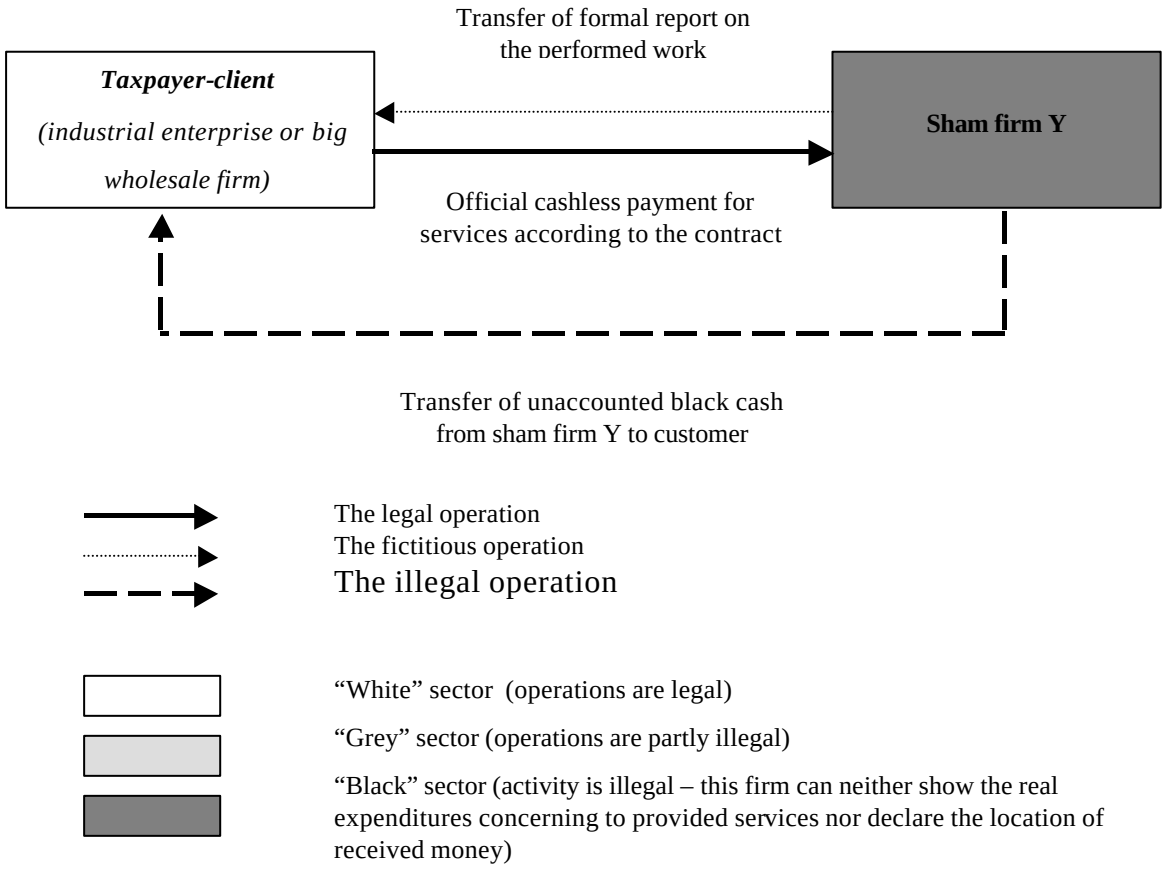


Figure 3.

The reverse obeznalichivanie scheme; turning unaccounted black cash into non-cash money
(usually with money laundering)

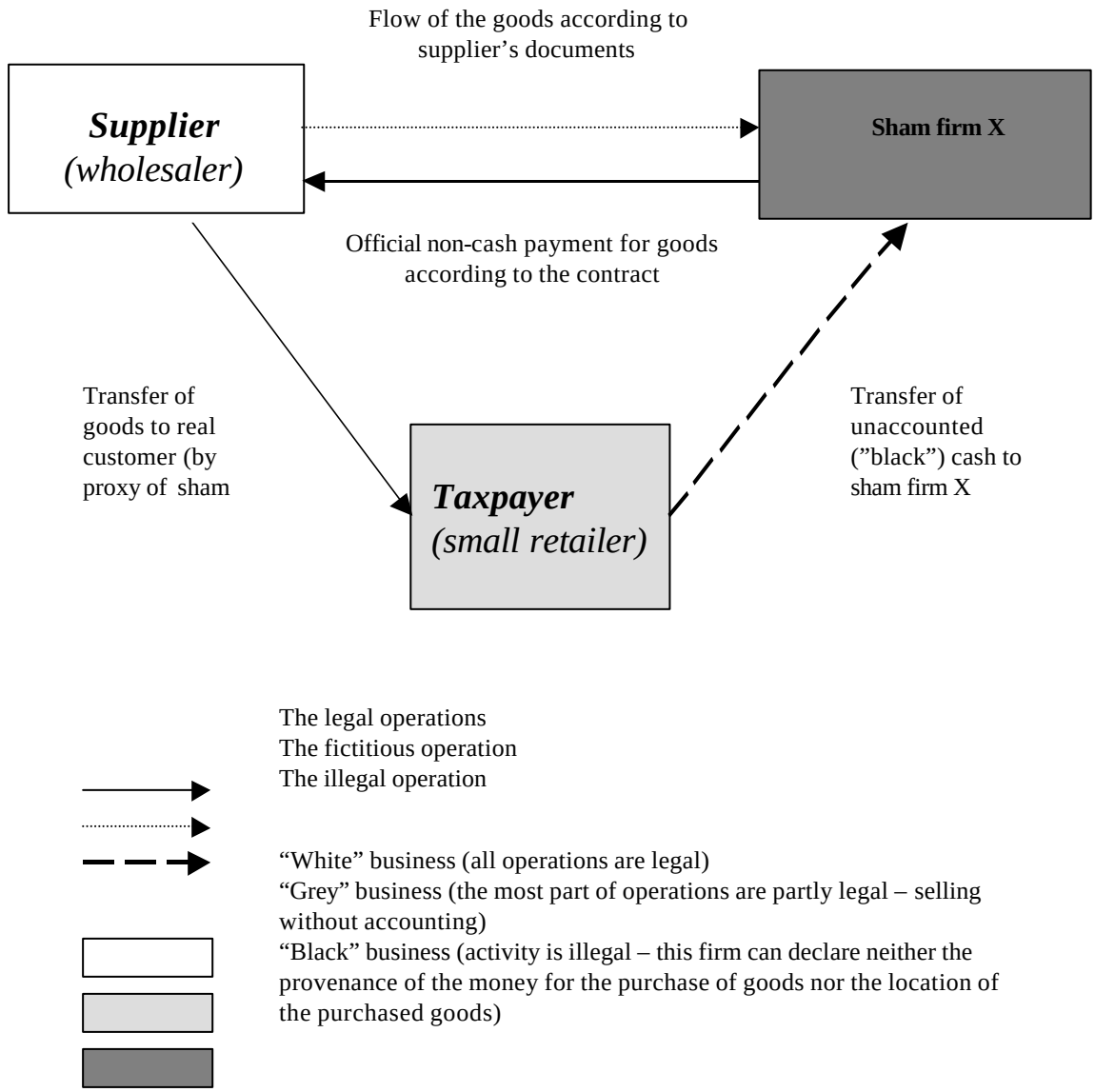
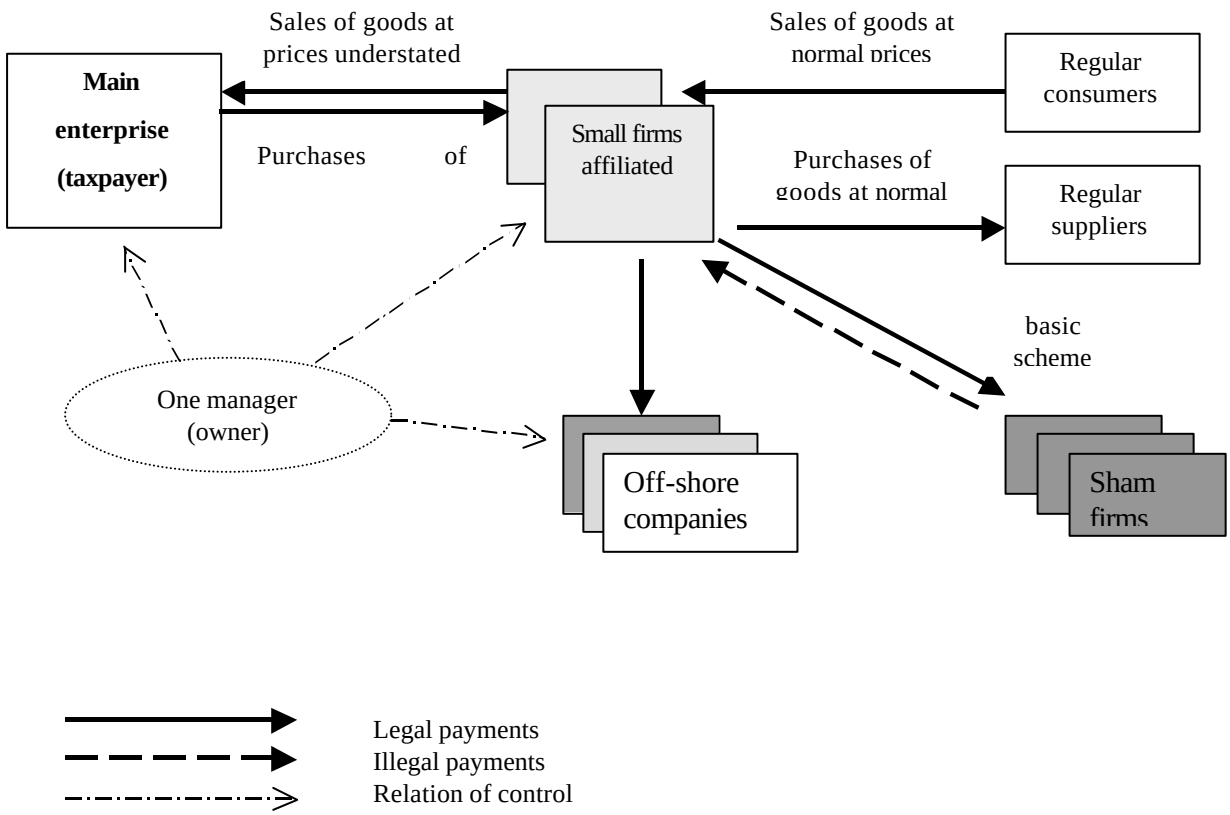


Figure 4.

The general principles of tax evasion in large Russian enterprises



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[2] We would stress that "virtual" barter economy in terms of IBC (1997) and Gaddy & Ickes (1998a, b, c) is not connected with tax evasion, but with tax arrears. Of course, these tax arrears often already can be never paid.

[3] A similar approach was developed by Malakhov (1997) within a one-sector model. Later he provides empirical data to confirm this idea.