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Overdue Arrears and Non-Monetary Transactions of Russia's Enterprises

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Introduction

This paper surveys several studies focusing on the mechanism of overdue arrears, barter and other non-monetary methods of payment in order to understand the status quo in the Russian economy. A major conclusion of the paper is that it is essential to analyze non-monetary transactions which bring about overdue arrears. Through a general analysis this paper will show that non-monetary transactions occur due to a shortage of liquidity which ignites the "survival" principle of enterprises through previous experiences of quasi-barter during the Soviet era in an early stage of non-monetary transactions. The "survival" principle encourages the utilization of non-monetary transactions and is complimented by the "evasion of taxes" principle. During this developing stage of non-monetary transactions, when financial repression is over, the "evasion of taxes" principle plays an important role in avoiding the heavy burdens of paying taxes. In a more detailed analysis, it is argued that non-monetary transactions of the largest gas company in the world, Gazprom, are one of the most important sources in the chain of non-monetary transactions.

In Section 1 the mutual relationship between overdue arrears and non-monetary transactions are analyzed. Section 2 concentrates on the problems of non-monetary transactions. In Section 3 transactions between enterprises, between enterprises and governments, and between enterprises and households are analyzed. The analysis of the transactions between enterprises and banks is omitted and will be publicized in a subsequent study.

1. Mutual Relationship between Overdue Arrears and Non-Monetary Transactions

1.1. The Structure of Payment of Enterprises

The structure of payment in enterprises involves enterprises, federal and local governments, households, and banks. In the payment between an enterprise and the other enterprises, payment to suppliers, payables for goods and services, and payment from clients, receivables for goods and services are included. The payment between an enterprise and governments includes taxes and social insurance. Wages are related to payments between an enterprise and households. The payment of loan interest is included in the transactions

between an enterprise and banks. In Russia, there are several kinds of payment, such as *money* (cash and deposits), *barter*, *mutual offsets*, and *payment by securities*.

1.2. History of Overdue Arrears

In this paper, we define arrears as overdue liabilities of firms including taxes and wages. Russia's Civil Law prescribes that obligations should be carried out within a "rational" period in cases where no conditions are written into contracts. The President Decree issued on December 20, 1994 prescribes that the period of obligatory settlement of goods based on contracts is equal to three months. After this, a "rational" due period has been regarded three months.

Table 1 shows the situation of arrears of Russian enterprises.[1] Though results of overdue arrears since the third quarter of 1993 are shown, overdue arrears also existed in the Soviet era. The ratio of overdue liabilities of bank loans and enterprises transactions as a percentage of GDP was 2.8 percent on average of 5 years from 1985 to 1989. That figure jumped to 4.2 percent in 1990. During the Soviet period, those arrears were covered by *mutual offsets* and subsidies.[2]

After 1992, with liberalization of prices, overdue liabilities to suppliers in industry were 23 percent of GDP in July in 1992.[3] But the federal government and the central bank forced enterprises to review mutual liabilities and finance to reduce those arrears. As a result, those liabilities diminished to 2 percent of GDP in September, 1992. But, as shown in Table 1, overdue liabilities of industry, agriculture, construction, and transportation increased gradually, and the ratio of their liabilities relative to GDP increased from 10.1 percent in 1993 to 30.1 percent in 1997. Overdue credit also increased from 10.6 percent in 1993 to 17.6 percent in 1997.

1.3. International Comparison of Overdue Arrears

According to the analysis by A. Alfandari and M. Schaffer, overdue trade credit in Russia as a percentage of GDP was relatively low compared to that found in Western countries: between 7-10 percent of GDP in Russia, vs. 10-

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1 We made Table 1 on the basis of data of the Russian State Committee of Statistics (Goskomstat). We should pay attention to two points. The first is that Goskomstat collected arrears data from medium and large enterprises and it is natural to expect that respondents will under-report their overdue payables to show up their good performances (see: Alfandari, *"Arrears" in the Russian Enterprise,* p.7). The second is that data of Goskomstat do not include penalties and unpaid interest in overdue payables to suppliers and to banks. When inflation is high, this treatment of penalties and unpaid interest is important for interpreting empirical estimates (Ibid., p.8).

2 Deliagin, *Ekonomika neplatezhei,* p.218; Afanas'ev, "Krizis platezhei v Rossii," p.52.

3 Deliagin, *Ekonomika neplatezhei*, p.218.

18 percent in the Western countries.[4] Moreover, they argue that the volumes of both total trade credit and trade credit in arrears in Russia are roughly average by both West European and East European standards. On the other hand, tax arrears are much higher for Russia than what would be found in Western economies, but they are still similar to levels observed in Central and Eastern European economies.[5] Regarding wage arrears, some countries face an enormous problem of wage arrears (Kazakhstan, Ukraine and Moldova, in addition to Russia), while others (including most of Eastern Europe as well as the OECD) face only trivial problems of wage arrears.[6] Under those circumstances, though, it does not follow that the problem of overdue arrears in Russia is not important because overdue arrears are accompanied by the spread of non-monetary transactions, which have a negative effect on the Russian economy. Non-monetary transactions did not receive much attention until C. Gaddy and B. Ickes published an excellent paper titled "Russia's Virtual Economy" in 1998. Non-monetary transactions distort price systems and make it difficult to distribute resources rationally. In addition, collection of taxes is impeded by the spread of non-monetary transactions. Without understanding non-monetary transactions, it is impossible to analyze not only overdue arrears but also general economic problems in Russia.

1.4. Non-monetary Transactions and Overdue Arrears

Overdue arrears are very difficult to define because contracts can be easily renewed. According to the annual report for 1995 of the central bank, the amount of 4,173 billion rubles (before denomination) of central-bank-directed credits was deferred. This revision resulted in the real overdue arrears of commercial banks, through which some directed credits were distributed to enterprises, not being counted as overdue arrears. Moreover, it is very difficult to get information on the contents of the contracts about deliveries and settlements. In spite of these limits, a recently published paper indicates that the rapid growth of *barter* from 1993 to 1998 is closely associated with the rise of trade credit and arrears.[7] With treasury bills (GKO) yields rising and bank credits to enterprises becoming more scarce, enterprises increasingly relied on their suppliers for trade credits to cover their working capital needs, and then given barter and offsets became prime instruments for the creation and settlement of trade credits between firms.[8] This means that barter and offsets are utilized in place of trade credits. Non-monetary transactions include *barter*, *mutual offsets*, *quasi-money payments*, and other transactions. Since non-monetary transactions are utilized to settle payment, it seems that they are likely to cut arrears.

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4 Alfandari, *"Arrears" in the Russian Enterprise Sector*, p.15.

5 Ibid., p.16.

6 Earle, *Understanding Wage Arrears in Russia*, p.9.

7 Commander, *Understanding Barter in Russia*, p.15.

8 Ibid., pp.15-16.

However, in reality, much time is needed to find partners for *barter,* and *mutual offsets* are realized only when overdue arrears are accumulated. A time lag caused by non-monetary transactions exists until overdue arrears are counted. As can be seen in Table 2, *barter* is inclined to increase gradually.[9] This means that the increase of non-monetary transactions do not decrease overdue arrears, but increase them. In addition, according to the report of Inter-Ministries Commission of Balance in Russia (Karpov commission), which investigated 210 large firms from 1996 to the first half of 1997, the higher the ratio of non-monetary transactions as a percentage of sales, the longer the period of payment.[10] The average period of payment is half a year. In short, non-monetary transactions are one important factor of arrears.

2. AN OUTLINE OF NON-MONETARY TRANSACTIONS

2.1. History of Non-Monetary Transactions

During the socialist period, the State Planning Committee (Gosplan) and the State Committee of Supply of Materials and Machines (Gossnab) controlled chains of goods and services on the exchange of not goods for money, but goods for goods.[11] Though money existed at that time, it didn't fulfill its function as a means of exchange and saving. In short, we can say that "quasi-barter" based on centralized control existed in the Soviet Union. We can also consider that a "virtual economy" existed at that time, because the state could determine the exchange ratio of goods and services freely under this "quasi-barter" system. In the second half of the socialist period, the carrying out of state-determined tasks with the maximum economy of resources, called *khozraschet,* was introduced and *samofinansirovanie* - self-financing - also began to function to set enterprises up in business autonomously. Consequently the employment of the "quasi-barter" decreased, but "quasi-barter" was still in effect even after the *samofinansirovanie* was initiated in 1987. This experience of "quasi-barter" would enable enterprises to revive *barter* to restrain cuts in production which occurred during the state of confusion after the collapse of the USSR.

2.2. Methods of Non-Monetary Transactions

There are two kinds of *barter*. One is "compelled barter," where suppliers, which include state-owed enterprises and the government, not having

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9 In addition, according to the result of an investigation of 1670 industrial firms in January, 1996, the share of non-monetary payment such as *barter* and *quasi-money* of all industrial payment amounted to 42 percent. See: Illarionov, "Bremia gosudarstva," p.17. And according to data of the Karpov commission, about 210 firms from 1996 to the first half of 1997, only 27 percent of sales of enterprises were carried out by monetary methods of payment.

10 "Neplatezhi: i shtyk ne kolet, i pulia ne beret."

11 Makarov, "Barter v rossiiskoi ekonomike."

agreements with receivers, are forced into barter; the other is "autonomous barter," where parties agree to barter. According to the "Russian Economic Barometer," 40 percent of *barter* transactions were "compelled barter."[12] On the other hand, we can further classify barter into other types. The first type is a direct exchange of products or services between two enterprises. The second type is "multilateral barter."[13] In addition, barter transactions have four cases of functions: for input to production, for consumption, for resale, for re-*barter*.[14] In general, as the percentage of *barter* of sales increases, the ratio of re-bartering also grows.

Mutual offsets were utilized to offset mutual liabilities between enterprises during the Soviet era. This former experience was very useful to operate the current procedure of *mutual offsets*.

Non-monetary methods of payment using "veksels," "kaznacheiskie obiazatel'stva," (KOs) and other payment methods did not become popular during the Soviet reign. We regard them as substitutes for money to complement *barter* trading. To understand this view, we have to consider that "veksels" need not be repaid in money in Russia. After an enterprise A issued a *veksel* and paid it to a supplier B, B can get it discounted at a bank and pay it to other partners. Finally an enterprise C which is in need of goods produced by A gets the *veksel* and the *veksel* will be exchanged for products of A. Or A will decrease receivables for its goods to C up to the value of the *veksel*. In this way, enterprise A need not pay money in its account of a bank in the same manner of *barter*. Such *vekseli* are similar to *barter* because "quasi-money" like "veksels" results in higher prices. For example, in case of a *veksel* payment, a supplier will try to raise the price of its product to get much cash, when the *veksel* is discounted at a bank.[15]

2.4. Two Characteristics of Non-Monetary Transactions

It can be observed that one of the most important characteristics of non-monetary transactions is "individuality" in setting prices. This means that non-monetary transactions are not based on the "law of indifference" of goods. More precisely, the individuality depends on degrees of demands and liquidity of goods. Such commodities as oil and gas are in high demand. The liquidity of oil is very high. By using swap trading, liquidity of these goods will be higher. On the other hand, there is only a small demand for machine tools, for example, and this results in difficulties in raising prices. Comparing prices paid by those goods with prices paid in cash, a price in cash can be set at the lowest level, and a price paid by gas and oil at the second lowest level, then a price paid by machine tools at the highest level. The director of a Moscow

12 Auktsionek, "Barter v rossiiskoi promyshlennosti," p.55.

13 Hendley, "Observations on the Use of Law by Russian Enterprises," p.35.

14 Auktsionek, "Barter v rossiiskoi promyshlennosti," p.57.

15 Klistorin, "Denezhnye surrogaty," p.55.

factory of electric motors suggested that electricity, gas, and railway transportation had the greatest *universality* as subjects of barter, liquid fuel, foods, mass-consumer products and metallurgy products have the second largest *universality*, and all remaining products have the least *universality.*[16] It can be concluded that in barter trading, the raising rate of prices against a price paid in cash is determined by objects of barter. This difference is one of the factors which determines the individuality in setting prices.

In addition, non-monetary transactions enable the settlement of payment without using bank accounts. This facilitates evasion of taxes. The settlement of barter and *vekseli* is easily carried out without using bank accounts. Though through bank accounts enterprises can offset their liabilities, they can also offset them without mediation of banks.

2.4. An Early Stage of Non-Monetary Transactions

From the standpoint of these two characteristics discussed above, we should now turn our attention to the early stage of non-monetary transactions, when the Soviet Union had collapsed during the first step of introducing the market economy. At that time, there were several factors that stimulated non-monetary transactions.

First, from the beginning of 1992, many kinds of prices were liberalized, and radical inflation had begun. The ratio of money supply (defined to include currency in circulation, sight and time deposits, or M2) to GDP, namely, a standard measure of financial "depth" that is consistently found to be higher in market economies, dropped from 68.4 percent in 1991 to 33.7 percent in 1992.[17] This means that in 1992 enterprises were faced with difficulties of payments. Non-monetary transactions became one of important measures to compensate the liquidity of enterprises. Under this condition, barter became a convenient means for enterprises to carry out transactions because the value of goods was not decreased such as rubles.

Second, enterprises with little capital were faced with a liquidity problem brought on by the radical reduction of government transfers to them. When the real interest rate in rubles was minus from 1992 to the end of 1993, the value of dollars had increased against the value of rubles and conversion of rubles into dollars brought profits. Though the government and the central bank had to supply directed credits to finance enterprises, those credits were not enough to finance them. The amount of directed credits against GDP declined from 15.5 percent in 1992, to 5.0% in 1993, to 2.3% in 1994.[18] There was also the possibility that enterprise pretended to need money because of a flight of capital. The directed credits were reduced rapidly in 1993 and 1994 and were suspended since in 1995. This reduction compelled enterprises to find some loopholes to survive. They were non-monetary transactions.

16 Volkonskii, "Analiz vliianiia formy raschetov na urovni tsen," p.28.

17 *Obzor ekonomicheskoi politiki v Rossii za 1997 god,* pp.381, 411, 412.

18 Lopez-Claros, *Fiscal Policy Issues During the Transition in Russia*, p.42.

Third, the "continuity" of the socialistic economic system, in which "quasi-barter" worked, helped to realize non-monetary transactions. Quasi-barter enabled enterprises to use non-monetary transactions under the defectiveness of the law. That is, the old Soviet law was based on a system where in most cases enterprises never "bought" goods from one another - the goods were administratively allocated.[19] It was assumed that no enterprise would order anything without being told by central planners to do so, therefore no provision had been made in the law for refusing to accept a product on the grounds that it had not been explicitly ordered by anyone. C. Gaddy points out that all Soviet law required is that the sellers notify the "buyer's" bank that shipment was made and then collect payment from that bank.[20] This system was not changed until July 1, 1992, when a new settlement system was introduced.[21] Therefore, many defense enterprises utilized this system to keep their production up without receiving payment from the Russian government. Other firms followed this example, and the situation degenerated to the point that goods were produced and delivered and the "customer" was charged, even without having ordered the goods. These transactions could be regarded as one-way *compelled quasi-barter* without guarantees of cash payment or goods payment.

To sum up, in the early stage of non-monetary transactions, the liquidity problem owing to the little capital held by enterprises and radical reduction of the government transfers to them stimulated the "survival" principle, upon which non-monetary transactions were based. On the other hand, the way to determine prices *individually* with a less developed market economy stimulated the "evasion of taxes" principle, upon which non-monetary transactions also were based.

2.5. Developing Stage of Non-Monetary Transactions

After financial repressions were over in 1995, several factors favorable for non-monetary transactions emerged. A non-flexible supplier's price was one of these factors. G. Gritsenko and V. Stupin assert that supply prices are non-flexible.[22] If a supplier knows that he cannot get money in exchange of goods or services within the period of a contract, he should admit that the supply price is too high. But the supplier does not do so. Rather, he claims that the reasons why supply prices are non-flexible lie in non-flexibility of wages and deduction of depreciation, and strict rules of calculation of profits by the tax authorities. They argue that because the tax authorities do not permit supply prices less than the cost, suppliers cannot help but send off products at high prices and try to bring prices down by allowing overdue

19 Gaddy, *The Price of the Past*, p.95.

20 Ibid.

21 Buass'e, "Upravlenie vzaimnym dolgom predpriiatii v Rossii," p.106.

22 Gritsenko, "Platezhnyi krizis v ekonomike s neravnovesnymi tsenami."

arrears. Until the end of 1994, the government lowered the value of money by inflation and covered budget deficits by issuing money.[23] After 1995, they argued that enterprises utilized *vekseli*, whose face value was discounted by 30-50 percent in the circulation market, to cut their supply prices. But in that case, due to the difference between contract prices for taxation and real prices lowered by overdue arrears, taxes payment fell into arrears.

Though the rate of inflation has stabilized, the tendency to decrease the government transfers to enterprises continued. Banks tended to invest in the state bonds with high profitability and low risk, and not to lend money to enterprises. These two factors forced enterprises to continue to face their liquidity problems, which stimulated the "survival" principle. As the market economy developed, the possibility that prices are determined not individually, but transparently, has grown. But this means that the "evasion of taxes" principle will have more significance.

2.6. The "Evasion of Taxes" Principle

The *evasion of taxes* principle is complementary to the *survival* principle because the prices subject to taxation are increased by non-monetary transactions; thus *evasion of taxes* is necessary to lighten the tax burden for lack of alternatives.

First, the *evasion of taxes* principle puts the advantage of non-monetary transactions without using bank accounts to practical use. Russian enterprises are unwilling to utilize bank accounts because money in banks is not freely convertible into cash; when an enterprise is in arrears in its tax payments, tax officials can block its bank account, forcing all of the firm's current revenues into a special account that is applied to the payment of tax debts.[24] Considering that about 80 percent of all enterprises are in arrears in their tax payment, most of which consist of penalties against delay of taxes, the bank accounts of most enterprises are controlled by the tax authorities. Therefore managers of enterprises consider non-monetary transactions as a means of not using bank accounts.

Second, the *evasion of taxes* principle is realized by declaring goods given by *barter* as costs. It is difficult for an enterprise A to deceive the tax authorities by delivering products to an enterprise B and receiving goods from B as *barter*. However, A can declare goods from an enterprise C as costs, deceiving the tax authorities, because those goods are actually incomes for A.[25] *Multilateral barter* can establish such a system.

Third, the *evasion of taxes* principle is realized by using transactions with related firms. First, relatives and friends of managers of an enterprise A es-

23 In 1993, B. Fedorov, the minister of finance at that time, almost stopped payment of wages and pensions in order to control inflation. See: Sato, "What Escalated the Russian Economic Crisis?," p.41.

24 Hendley, *Remonetizing the Russian Economy*, p.5.

25 Hendley, "Observations on the Use of Law by Russian Enterprises," p.36.

tablish an enterprise B and A delivers products of A to B on the surface. Then B also declares that it is engaging in resale of them to an enterprise C. But really A delivers its products to C. C pays for them to B on the surface, but actually pays A. Consequently overdue credit of A to B and overdue liability of B to A will be created. In order not to be found out by a tax inspection, B will be closed within a year. In this way, utilizing transactions with related enterprises enables firms to evade taxes.

We have to pay attention to the fact that the poor tax system of Russia facilitates the *evasion of taxes* principle. Under the condition of levying taxes at the rate of 55-77 percent against the nominal rate of 35 percent on profits, without evasion of taxes enterprises cannot continue their activities.[26] Furthermore, procedures governing the system of bankruptcy are inadequate. The judicial system does not fulfill its function smoothly. The writers of "Observations on the Use of Law by Russian Enterprises" indicate that multilateral *barter* introduces elements into transactions that tend to reduce the effectiveness of normal contract-enforcement mechanism, and that this makes the writing of contracts extremely difficult.[27]

2.7. Liquidity and the "Survival" Principle

The Karpov commission explains the reason for "syndrome X," which is a systemic phenomenon of an entire economy suffering from many kinds of chronic non-payment. Under the conditions of the post-Soviet economy, where powerful monopolies exist, stable economic relations have been formed and the division of labor between districts has also been completed, money had been diverted from the transactions of goods and services to the state bond markets and transactions of import. Consequently the constriction of money supply during 1993 to 1997 encouraged the exchange of goods directly. To sum up, the Karpov commission thinks that insufficiency of money for payment has been complemented by *drawing* goods, which have low liquidity, into transactions.

In this context we can restate its conclusion that non-monetary transactions are based on the *survival* principle and the *evasion of taxes* principle and the shortage of liquidity forced the *survival* principle to work. This is possibly what happened after the collapse of USSR and the liberalization of prices in 1992 with the *compelled barter*. After the confusion, the radical reduction of government transfers to enterprises and the shortage of money circulation continued. Even now the shortage of liquidity of enterprises exists and it keeps the *survival* principle at work.

At present, we should pay attention to the fact that there are some cases in which sellers refuse to sell products in cash, even if buyers ask to pay in cash. B. Ickes, P. Murrell, and R. Ryterman assert that the fact that the impe-

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26 Shmelev, "Neplatezhi - problema nomer odin rossiiskoi ekonomiki," p.28.

27 Hendley, "Observations on the Use of Law by Russian Enterprises," p.35.

tus to barter often comes from the seller suggests that other motivations for barter may be at work.[28] This means that the other principle - the *evasion of taxes* principle - can function at this time.

Here it is necessary to give a detail of the problem of liquidity. To study liquidity, it is necessary to think about money supply. In Russia, discussions about comparison of money supply with GDP are heated and many.[29] However, an adequate discussion of this matter will require much more space than the present conditions allow. In this study, only the issue concerning the flow of cash, deposits, securities, and loans is discussed. Considering this flow under the condition of four sectors such as the government, households, banks, and enterprises, Iu. Plushchevskaia and L. Starikova indicate that net debtors in 1995 and in 1996 were the government sector and the sector of enterprises.[30] We should take note that the flow of money is influenced on interest, hard currencies, and stocks of assets. And each sector has its priority to pay money (this issue will be discussed below). Here five points about liquidity between the four sectors can be made. First, the debtor - the government - issues bonds yielding high interest and thereby absorbs a lot of money and brings about "crowding out." Second, the arrears of the government owed to enterprises are an important factor in the arrears incurred by enterprises. Third, because of investment in bonds by banks and a low level of corporate governance result in difficulties in loan repayments, enterprises naturally fall into arrears. Fourth, the savings rate of households is very low and most of the deposits of households are deposited in the Sberbank, of whose stock the central bank owns more than half, so credit paid to enterprises through banks is negligible.[31] Fifth, there is the possibility that not only banks but also enterprises attempt to invest in short-term state bonds, therefore, enterprises manage to raise funds by utilizing non-monetary transactions.[32] It is suggested that those factors bring about the shortage of liquidity of enterprises.

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28 Plushchevskaia, "Issledovanie finansovykh potokov," p.123.

29 While L. Abalkin insists on a shortage of money supply in comparison with GDP, A. Illarionov asserts that a shortage of money does not exist. See: Abalkin, "Ekonomicheskie realii i abstraktnye skhemy"; Illarionov, "Teoriia 'denezhnogo defitsita' kak otrazhenie platezhnogo krizisa." However, Illarionov recognizes that one reason behind the overdue arrears crisis is the fact that most economic entities are faced with a lack of money (p.51).

30 Plushchevskaia, "Issledovanie finansovykh potokov," p.123.

31 Though the gross national saving for Russia as a percentage of GDP in 1997 is near the average for the G-7 economies, the broad money divided by monetary base for Russia is drastically lower than the average of the G-7 economies, indicating that a large part of savings is not intermediated by the financial sector. See: Rother, *Explaining the Behavior of Financial Intermediation,* pp.3-4. It is known that including the gross amount of dollars which house holds purchase in a year in house saving result in overestimation of household saving. Russian economic trends (3 April 1998) indicates that if we only include the net increase in household dollar holdings, then household savings are only 4% of GDP (or 9% of household income).

2.8. Costs of Non-Monetary Transactions

Non-monetary transactions based upon the *survival* principle and the *evasion of taxes* principle incur some costs. For example, some economists regard that the cost of arranging most *barter* transactions (in which a mutual coinciding of needs is not easily identified) is approximately 20 to 25 percent of the value of the transaction (exclusive of "tax benefits").[33] Enterprises need to shift this cost at least onto the price charged for goods. Therefore mediators for non-monetary transactions are now increasing so as to cut their "transaction costs." Some of mediators have their own large capital reserves, buy and sell industrial products by themselves, and participate in the procurement of materials and sales. Others with little capital make combinations of *barter*.

On the other hand, "veksels" play an important role to cut "transaction costs," because they can fulfill their function without enterprises needing to look for partners to barter with. In addition, goods can be transferred without utilizing bank accounts.

2.9. The Price Mechanism of Non-Monetary Transactions

2.9.1. An Early Stage of the Price Mechanism of Non-Monetary Transactions

As we have already pointed out, in the early stage of non-monetary transactions, as a result of the liquidity problem due to the small reserves of capital, and the radical reduction of the government transfers to enterprises, the "survival" principle encouraged non-monetary transactions to become popular. In addition, a less developed market supported the "evasion of taxes" principle, which encouraged non-monetary transactions to become widespread.

First, at this stage, owing to Russia's less-developed market, it was very difficult to compare prices of goods with their market prices. The exchange rate of rubles into dollars was flexible, so comparison of domestic prices with foreign market prices was also difficult. Second, after the liberalization of prices in 1992, the value of money was devalued rapidly, which made prices very difficult to be estimated in cash. These two factors encouraged non-monetary transactions. This means that we cannot judge which price - the non-monetary payment or the market price - was higher, and it was very difficult to discriminate between the price with payment in cash and the price with non-monetary payment for the same goods. At least we can say that suppliers tried to increase prices as much as possible, and tried to receive money or goods as payment as quickly as possible in order to hedge inflation. And as we have already indicated, because prices formed by non-monetary payment were determined *individually*, it is difficult to describe the general tendency of the price mechanism. Under such conditions, it seems that the old relationship among enterprises during the Soviet era and the experience of "quasi-barter" played a very important role in determining prices.

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32 Iakovlev, "Neformal'naia ekonomika" pp.28-29.

33 Hendley, *Remonetizing the Russian Economy*, p.6.

2.9.2. The Developing Stage of the Price Mechanism of Non-Monetary Transactions

At the developing stage of the price mechanism of non-monetary transactions, we base our premise on a developing market economy and a more stable value of money. This means that we can compare prices of goods with their market prices and prices of payment in cash with prices of non-monetary payments.

In the case of goods existing in the market, buyers can compare goods on offer. This makes the process of formation of prices transparent. But at this stage, we have to pay attention to Russian *singularity*. As we already indicated, supply prices are non-flexible; the non-flexibility of wages and deduction of depreciation, and there are strict rules of calculation of profits by the tax authorities in Russia. Therefore even if goods in little demand are sold, their suppliers find it difficult to sell them at a price below their cost. So they utilize non-monetary transactions to lower the supply price. In this case, because buyers have the right to choose the same kinds of goods in the market, if they buy those goods at a higher price than the market price, they can ask suppliers to take their exchange goods at a higher price than the market price, too. On the other hand, if the supplier controls the buyer, it can compel the buyer to buy its product at a higher price than the market price and to sell the buyer's product at a lower price than the market price, with a long period of barter. Of course, if the controlling supplier wants to develop relations with the buyer, it can order the buyer to buy its product at a lower market price, and to sell the buyer's product at a higher price than the market price.

In the latter case - that is, the comparison of the price in cash with the price in non-monetary payment - we should pay attention to cash constraints. Under the condition of a hard cash constraint, cash may have more value and power than its nominal value. Therefore, under such a condition, the supply price of payment in cash is lower than the supply price of payment in non-cash on the same goods. As for products of the machine-building sector, the price based upon cash is lower than *barter* price by 30-50 percent and the procurement price of raw materials based on *barter* is higher than the price based on cash by 15-25 percent.[34] Because goods with a high demand and high liquidity, such as oil and gas, are similar to cash, their demand are inclined to be set higher than prices of goods with smaller demands and lower liquidity.[35] Moreover, we should give heed to the cost-push mechanism in the transition economy.[36] This mechanism supports the increase of prices by non-monetary transactions.

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34 Malakhov, "Transaktsionnye izderzhki v rossiiskoi ekonomike," p.85.

35 Volkonskii, "Analiz vliianiia formy raschetov na urovni tsen," p.28.

36 T. Sato indicates that in the transitional economies, where elasticity of demand is not sensitive, most prices are still determined by costs; when costs per production unit are not changed, prices will begin to stabilize. See: Sato, *Economic System of Post-Socialism*, pp.79-80. N. Nozdran' also regards the increase of costs in the transitional period as the prime mover of mutual liabilities among enterprises. See: Nozdran', "Denezhnye agregaty," pp.98-100.

2.9.3. Statistical Analyses of the Price Mechanism of Non-Monetary Transactions

Do non-monetary transactions stimulate the raising of prices in practice? A positive answer to this question is that although final products are severely restricted by purchasing power and demands of the population, and world prices in case of export, nevertheless in fundamental sectors, in which those constraints do not exist, non-monetary transactions bring about a phenomenon of higher prices than in payment by money.[37] Another study tries to prove that prices increased more rapidly by non-monetary transactions, investigating the change of prices of each sector in contrast to the ratio of using non-monetary transactions in each sector.[38] V. Klistorin and V. Cherkasskii suggest that prices of all fundamental sectors except the fuel industry in 1993-1994 increased faster than consumer prices that were based upon cash payment. In this case "fundamental sectors" were the power industry, fuel industry, steel industry, transportation, and construction. In Table 3, which was made from the data of the Karpov commission, it is shown that the ratio of non-monetary methods of payment including not only *barter* but also *quasi-money* and *offsets* of sale are high in gas, electric power, ferrous metallurgy, chemistry, and machine-building.

Now it is necessary to argue about monopoly prices. The price of gas increased to 118.9 times between 1993 and 1996, exceeding the rate of the consumer price index, 80.7 times.[39] The price of electricity increased 162.8 times and the index of freight fares increased 256.9 times. These facts suggest that high ratio of non-monetary transactions of sale has some relation to rapidly raising prices. As stated before, because demands for gas, oil and electricity are high and their liquidity of them is also high, they are treated like cash. But a high ratio of non-monetary transactions means that those industries cannot levy money sufficiently. In the gas industry at least, the average period of payment is about 41 months. This means that the real gas price is lower than the nominal gas price and the gas industry tolerates the status quo. Though IMF often issued a directive to raise energy prices and Russian government superficially followed this guidance, in reality, prices were discounted by non-monetary transactions.

We suggest that there are some cases of utilization of non-monetary transactions against enterprises' will. One of those cases is that in which an enterprise delivers the actual goods in place of payment in advance in cash, so that the advance will not be spent on other objects. For example, when enterprise A is going to buy engine parts from enterprise B, B needs 6 months to produce those parts. B asks A to pay an advance in cash, but A by itself buys components for that production and delivers them to B instead of an advance

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37 "Neplatezhi: i shtyk ne kolet, i pulia ne beret."

38 Klistorin, "Denezhnye surrogaty."

39 "Problemy gosudarstvennogo regulirobaniia tsenoobrazobaniia v estestvennykh monopoliiakh."

in cash.[40] It has been suggested that 40-50 percent of all economic transactions are carried out under the condition of an advance, but this does not mean all payment in advance is carried out using money.[41] KOs can be regarded as non-monetary measures instead of an advance.

2.10. Advantages and Disadvantages of Non-Monetary Transactions

Before ending this chapter, we would like to indicate the advantages and disadvantages of non-monetary transactions. One advantage is that the "survival" principle can support employment by keeping production going. In addition, non-monetary transactions enable purchasing power to be strengthened for a time and restrain inflation temporarily.[42] But non-monetary transactions have many disadvantages. First, we can point out that economic efficiency will be decreased drastically by the decline of competition owing to the limitation of choosing clients, the increase of transaction costs by finding clients for bartering, and the coming to a standstill of prices. Second, non-monetary transactions make saving money difficult and does not allow a money circulating system, which enables savings to be invested through banks, not to work well enough. Third, measuring incomes of enterprises will be very difficult by non-monetary transactions, which makes it hard to estimate values of securities and reduces the possibilities of ways of raising money. Fourth, there is more room for interference by human factors such as the authorities and influence under transactions of non-monetary methods than under transactions in cash.[43]

3. Details of Non-Monetary Transactions

3.1. Transactions of Enterprises

3.1.1. Transactions between Enterprises

In this chapter, we will discuss details of non-monetary transactions, by considering enterprises, Gazprom, federal and local governments, and households separately. Banks have been omitted due to space limitations. Overdue receivables for goods and services and overdue payables for goods and services can be seen in Table 4. First, we can understand that, in general, overdue receivables and payables for goods and services are both inclined to increase. This means that *barter*, which exchanges goods and services into other goods and services, simultaneously increases both overdue receivables and payables. Second, the amount of overdue receivables and payables of electric power and fuel industry is extremely large. This means those arrears are very important factors in the spread of non-monetary transactions. Third, in sec-

40 Hendley, *Remonetizing the Russian Economy*, p.9.

41 Buass'e, "Upravlenie vzaimnym dologom predpriiatii v Rossii," p.107.

42 Makarov, "Barter v possiiskoi ekonomike."

43 Ickes, "End of the Tunnel?," p.126.

tors such as electric power, fuel, and transportation - that is, monopolistic sectors - overdue receivables tend to surpass overdue payables. This phenomenon will be argued below especially about gas industry.

3.1.2. Transactions between Enterprises and the Government

Table 5 shows the situation of tax arrears of sectors. We can understand that tax arrears of electric power, fuel (in 1996 especially oil-mining and oil-refining industry), and machine-metal processing industry were relatively common occurrence. Most taxes of enterprises are in the form of a profit tax and a value added tax, so we can presume that those sectors could make relatively good profits. However, it cannot be concluded that the size of tax arrears of monopolistic sectors, such as electric power, fuel industry, is very large. We think that powerful monopolists are privileged by their exemption from taxation. According to data of the oil and gas sector as a whole in 1995, actual revenues were 54 percent of notional liability and nineteen percent of the difference was due to exemptions, 4 percent to arrears, and 23 percent to noncompliance.[44] Non-monetary transactions are probably utilized in payment of taxes; in consequence it takes much time to settle taxes and tax arrears will be increased.

It is very difficult to know the share of non-monetary methods of payment of all taxes. We can show you only fragmented information about it. According to the report of the Karpov commission, only 8 percent of federal taxes in 1996 was paid using money. This was the result of an investigation of 210 large firms. In the first half of 1997, only 7 percent was paid using money. This means that more than 90 percent of all federal taxes were paid by non-monetary methods between enterprises and the federal government.[45] The Karpov commission pointed out that the low level of money transactions in payment of taxes was characteristic of all sectors except the alcohol industry. On the other hand, S. Commander and C. Mumssen wrote that by 1996-97 non-cash tax payments accounted for around 40 percent of federal revenues and more than 50 percent of provincial budgets.[46]

As for *tax offsets*, enterprises try to accumulate tax arrears for *offsets*, because they are realized once or twice a year. S. Commander and C. Mumssen indicated that this type of non-monetary transaction (tax payments in kind and tax offsets) had been correlated with the rise in inter-firm *barter* and the rise in arrears.[47] *Tax offsets* were carried out in the Soviet era, but after the collapse, in 1994 the federal *tax offsets* were begun.[48] However, federal *tax offsets* were prohibited from January 1, 1998 by a presidential decree on

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44 Gray, *Evaluation of Taxes and Revenues from the Energy Sector*, p.13.

45 "Neplatezhi: i shtyk ne kolet, i pulia ne beret."

46 Commander, *Understanding Barter in Russia*, p.6.

47 Ibid., p.13.

48 *Ekonomika i zhizn'* 33 (1996).

November 7, 1997. We are doubtful as to whether this measure will prove effective.

The federal government permitted payment of taxes by KOs and KNOs until mid-1996.[49] By prohibiting this payment, *tax offsets* became the leading non-monetary method of tax payment.

On the other hand, how often were non-monetary methods of tax payment in local budgets utilized? In summer of 1996, 40 percent of local budgets were financed by non-monetary methods in several local governments.[50] But we think that 40 percent is a little low. In September 1997, the governor of Cheliabinsk oblast', P. Sumin said that the ratio of "live money" and "money by offsets" of the revenues of its budget was 38.2 to 61.8.[51] By such means, non-monetary methods of payment of local taxes are coming into wide use. In concrete terms, non-monetary methods include not only offsets but also *vekseli*.

The federal government tried to solve the problem of tax arrears by a carrot-and-stick policy. But enterprises saw through the intention of this policy and hoped that the so-called "budget constraints" would be softened. Non-monetary transactions are accompanied by human factors. Therefore spread of non-monetary transactions enables "budget constraints" to be softened by the use of human factors. Human relationships in the provinces are closer than those in urban centers, so we can expect that local tax arrears are worse than federal tax arrears in some districts.[52] Though the performance of collection of taxes depends on abilities of government, diffusion of non-monetary transactions based on human factors makes it difficult to levy taxes. The spread of non-monetary transactions differentiates the terms of taxation and application of penal regulations, which distorts intention of payment of taxes and activates the "evasion of taxes" principle.

3.1.3. Transactions between Enterprises and Households

We discuss transactions between enterprises and households - that is, the payment of wages. We are aware of many kinds of views as to why wage arrears were created.

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49 KO is a security issued by the ministry of finance based on the determination of the Russian federal government on August 9, 1994. The amount of issue of KOs became 7.5 trillion rubles from October to December in 1994 (*Segodnia* on Aug. 21, 1996). How to exchange KOs into KNOs was decided by regulations on Oct. 21 in 1994. KNOs began to be issued in spring, 1995. The amount of issue of KNOs soon thereafter attained 21 trillion rubles. In addition, "veksels" issued by banks under a guarantee of the federal government became a measure to decrease overdue arrears.

50 *Ekonomika i zhizn'* 33 (1996).

51 *Ekonomika i zhizn'* 36 (1997).

52 According to data collected by a 1997 World Bank - Russian Academy of Sciences survey of 1,640 managers in 328 Russian firms, in Moscow the percentage of output sold using barter by Russian manufacturing firms was 15 in 1997, while in Ekaterinburg it was 46 and in Novosibirsk 47. See: Hendley, *Remonetizing the Russian Economy*.

1) "A theory of wage flexibility" - according to this theory, R. Layard and A. Richter insist that wage arrears actually enable the cutting of wages actually without decreasing wages nominally. In short, wage arrears are a method to make wages more flexible.[53] The report of the OECD followed this view.[54]

2) "A theory of the shortage of money" - S. Clarke suggests that the most important determinant of the scale of wage arrears is the proximity to cash sales, with the lowest delays being in the food and transport industries and in oil refining.[55] He also states that the main reason for non-payment is not the willful negligence or corruption of managers and officials but was the lack of funds.[56] In this view, the shortage of liquidity of enterprises is stressed.

3) "A theory of the crime of finance and politics" - V. Gimpelson indicates that the major determinants of all types of arrears is to be sought in incomplete fiscal adjustment and lack of the political will to ensure financial discipline.[57]

4) "A theory of relation with tax arrears" - M. Kuboniwa asserts that wage arrears (stocks) can be explained by tax arrears (two terms before) and the current money supply (M2) through a regression analysis from December in 1993 to January in 1996.[58]

5) "A theory of dependence on regions" - J. Earle and K. Sabirianova show by empirical study that wage arrears have regional characteristics. They conclude that the degree to which firms use arrears is negatively associated with measures of firms and regional performance and liquidity, and with forms of private ownership and recent founding date of the firm, while it is positively associated with local labor market concentration.[59]

The "theory of wage flexibility" does not explain why managers prefer wage arrears to a cut of wages. Clarke's "theory of the shortage of money" and Gimpelson's "theory of the crime of finance and politics" are not explanations for wage arrears, but for the shortage of liquidity. Kuboniwa's "theory of relation with tax arrears" is apt to relate the problem of liquidity to wage arrears by analyzing not only money supply but payment of taxes and wages. However, this theory offers neither the necessary nor sufficient conditions to explain wage arrears, because we cannot ignore the "theory of dependence on regions." We would argue that it is necessary for us to distinguish reasons for the spread of non-monetary transactions from direct reasons for wage arrears. As for direct reasons for wage arrears, the "theory of dependence on

53 Layard, "Labor Market Adjustment in Russia."
54 *Labor Restructuring in Russian Enterprises*, p.21.
55 Clarke, *Trade Union and Non-payment of Wages in Russia*, pp.6-7.
56 Ibid., p.10.
57 Gimpelson, *Politics of Labor Market Adjustment*, p.3.
58 Kuboniwa, *Russian Fiscal System and Trends after Independence*, p.107.
59 Earle, *Understanding Wage Arrears in Russia*, p.30.

regions" and the priority of payment for enterprises have a close relation with these arrears, as we will discuss below.

3.1.4. The Priority of Payment of Enterprises

Here the problem is to determine which item of payment an enterprise gives priority to and which item of payment has arrears in payment. According to data of the World Bank investigating 439 firms in the middle of 1994, the ranking of priority of payment for managers is the following: the first is payment goes to the government, the second to interest and wages, and the last goes to suppliers.[60] This ranking is favorable for the government, but not for employees. Whether priority is given to payment of taxes or payment of wages was a very important political issue. In early 1994, following an increase in wage arrears and lobbying by firms, the government introduced a scheme aimed at providing relief to firms with wage arrears.[61] Firms with wage and tax arrears could legally defer payment of part of their taxes and use the money to pay wages instead. Initially, a firm with tax arrears could use 50 percent of funds available in its bank account to pay wages instead of taxes; this was later reduced to 30 percent (hence the term "30:70 rule"). The scheme at first was temporary and applied only to firms in selected industrial branches, but by the end of 1994 was unrestricted and extended to all firms. G. Alfandari and M. Schaffer then pointed out that firms could obtain a tax deferral simply by generating wage arrears, i.e. by choosing a high enough wage such that employees could not be paid in full without recourse to running tax arrears.[62] This explains why managers prefer wage arrears to reduction of wages.

On the other hand, if a shortage of money at bank accounts occurs, in what order should payments be made? The federal law of Russia on August 12, 1996 amended the second clause of Article 855 of the civil law. This regulation separates six priority groups to offset accounts. The group of payment of wages, the state pension fund, the social insurance fund, and the fund of employment became the third priority group. Payment of taxes was included the fourth priority group. President Yeltsin signed this law because of the agreement with laborers to get backing in the presidential election.[63] But the first deputies of ministry of finance, the state tax service, and the central bank sent a letter in which they ordered banks to give the top priority to payment of the federal budget and non-budget funds. Employees sued on the basis that this letter violated the civil law. On December 10, 1996, the Supreme Court recognized their claim. As a result, the priority of payment of wages was fixed, but this is only an institutional step. We consider that overdue wage arrears are created by many and various factors.

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60 Alfandari, *"Arrears" in the Russian Enterprise Sector*, pp.31 and 63.

61 Ibid., p.30.

62 Ibid., p.30.

63 Clarke, *Trade Union and Non-payment of Wages in Russia*, p.15.

3.2. Transactions of Gazprom

Before analyzing Gazprom, we will discuss the situation of firms under the control of Gazprom. In Table 6, 22 firms, include 8 gas mining and transportation companies and 14 special gas transportation companies, are highlighted. Though points of time in the data between payment and liabilities to the government are slightly different, we can understand that enterprises with a low percentage of payment in money tend to have more liabilities to the federal budget against gas sales. Perhaps the firms with a high ratio of non-monetary transactions against gas sales need much time to pay, so they are indebted to a larger scale of liabilities against their gas sales. We expect that payment of wages, data for which could not be fond, will show the same tendency.

Next we can show the results of short-term assets and liabilities of Gazprom. Table 7 shows that payables for goods and services from buyers were 59 trillion rubles in 1995 and 82 trillion rubles in 1996. On the other hand, payables for goods and services to suppliers were only 8 trillion rubles in 1995 and 25 trillion rubles. This means that if Gazprom tries to levy these receivables, it can easily repay its payables, taxes, and premiums of social insurance. Through these receivables, such as barter and offsets, gas prices are actually discounted. Evidence for this is the presidential decree on June 19, 1997, in which - on the condition of agreement until the end of 1997 between Gazprom and clients concerning complete repayment of their liabilities to Gazprom and monetary payment from now on - Gazprom was given a right to discount up to 40 percent of the gas price. This means that Gazprom was permitted to apply dual price system, that is, a price for cash and a price for non-monetary transactions. The former price is set lower than the latter price. As stated before in this paper, demands on and liabilities of objects in barter trading result in differences between raising rates of prices against a price paid in cash.

Attention should be paid to the fact that the amount of receivables is very large. Why Gazprom allows the discounting of the gas prices through non-monetary transactions and not to collect receivables strictly? D. Gray suggests that opportunities to sell incremental gas or electricity incrementally elsewhere, if not sold to current customers, are scarce and high prices charged to industrial consumers allow the energy companies to discriminate between various customers.[64] In addition, he argues that promissory notes and brokered multilateral barter are a means of concealing revenues and evading taxes. On the other hand, H. Bagratian and E. Gürgen point out that in some cases, energy companies benefited from arrears, since they were able to swap such debt for equity in consuming enterprises on favorable terms.[65]

In this paper, it can be argued that one of reasons why Gazprom toler-

64 Gray, *Evaluation of Taxes and Revenues from the Energy Sector*, p.56.

65 Bagratian, *Payments Arrears in the Gas and Electric Sectors*, p.13.

ates payment arrears and non-monetary payment is the structure of the Russian economy. Though the reduction of subsidies from the government influenced the management of Gazprom, this did not mean its liquidity was serious nor that the "survival principle" worked well. Because it had money to spare, Gazprom had a comparable advantage, and could export gas to the West and obtain foreign currency. As C. Gaddy and B. Ickes suggest, Gazprom is even now a value-adding, resources-producing company. On the other hand, Gazprom had an incentive to evade taxes. Therefore there are cases when non-monetary payment is preferred.

We can now move on to the second reason of this problem: the transaction structure of Gazprom. Most transactions of Gazprom are carried out between Gazprom and firms under control of Gazprom. Direct transactions with clients are few. Those firms under the control of Gazprom have contracts with local "energos," which are electric companies, and large local enterprises. Therefore, it is very difficult for Gazprom to levy charges from the last clients. And the suspension of supply of gas to those clients has a very large influence, so it is difficult for Gazprom to institute vigorous action to collect charges. In addition, in line with the decision of the Russian Federal government on November 5 in 1995, there was a period when the government prohibited the cutoff of supply to clients with overdue liabilities. Therefore Gazprom has been obliged to permit non-monetary payment owing to this transaction structure.

A large amount of receivables affected on the amount of receivables in a whole economy. Gas is one of fundamental factors for production. Therefore, there is a possibility that this amount of receivables is one of main sources in chain of non-monetary transactions. At this moment, a multiplier process of non-monetary transactions is very important. E. Isaeva assumes that enterprise A ships off products to enterprise B, but A receives nothing, so A cannot pay enterprise C as much as the receivables for simplifying this model.[66] This means that A appropriates 100 rubles as receivables for goods in assets and 100 rubles as payables for goods in debts. This process will be repeated by participants. The author argues that this multiplier effect is much higher than a multiplier process of deposits, because in the former case there is no reserve requirements. This argument is helpful to consider why receivables of Gazprom can be regarded as one of main sources in chain of non-monetary transactions. But it is very difficult to corroborate this assumption here because of difficulties in obtaining data.

3.3. Transactions of the Government

3.3.1. Overdue Arrears of Expenditures of the Government

In 3.1.2, taxation was discussed. Here we address the problem of the federal government transfers to enterprises. We show in Table 8 the rate of

66 Isaeva, "Problema neplatezhei i denezhno-kreditnaia politika," p.62.

federal government transfers against GDP in 1996, and separate wages, social expenditures such as pensions and scholarships, and payment of state orders. Of course, there are other kinds of federal government transfers such as financial support to districts and subsidies to enterprises. But here we omit them. As you see Table 8, the weight of overdue arrears of payments of state orders is very heavy. Mutual offsets are utilized to decrease them, because the federal government can easily offset taxes of enterprises against overdue arrears of payment of the state orders. Another way to offset is to issue KOs and to pay them to creditors. Wage arrears from the federal budget influence the provinces considerably, because the weight of state enterprises and official authorities in regions is heavy. Therefore overdue wage arrears from the federal budget significantly affect other wage arrears.

4. MEASURES TO NON-MONETARY TRANSACTIONS

Finally we discuss measures relating to non-monetary transactions. It can be observed that former discussions did not discriminate between the problem of overdue arrears and the problem of non-monetary transactions. Consequently discussions are confused and easily misunderstood. For example, N. Petrakov suggests as fundamental reasons of "non-payment": 1) difficulties of sales of final products by domestic producers; 2) general shortage of money in domestic economy; 3) separation of financial market economy from real economy and so on. Then he proposes measures for each.[67] For instance, as for difficulties of sales, he proposes to establish a cartel and a syndicate to set up selling prices. But because these measures are for solving the problem of "non-payment," it cannot be expected that all measures will have an effect on the settlement of the problem of non-monetary transactions. Without solving the problem of non-monetary transactions, overdue arrears will not be decreased.

On the other hand, M. Afanas'ev, P. Kuznetsov, and P. Isaeva propose a macroeconomic step and a financial step to solve the problem of "non-payment."[68] They insist that it is necessary to decrease the rate of inflation as a macroeconomic step. As for macroeconomic steps, according to regression analysis about correlation between "non-payment" and several factors, nominal and real yields of short term bonds influenced the increase of "non-payment" most.[69] This suggests that banks and enterprises prefer investment to bonds for giving credit and producing goods, after profitability of bonds in rubles became very high after 1994. The next influential factors are non-payment of expenditures of the federal budget, and uncertainty of political and economic stability. Therefore control of inflation, decrease of interest

67 Petrakov, "Rynok bez deneg," pp.221-238.

68 Afanas'ev, "Krizis platezhei v Rossii," pp.64-67.

69 Lugovoi, "Neplatezhi: makroekonomicheskii analiz," pp.1032-1033.

rate, reliable execution of expenditures, and political stabilization become important themes. But we think that these factors are more related to the liquidity problem. Though non-monetary transactions are more or less related to the liquidity problem, institutional factors are also important. Even if the money supply increased rapidly, non-monetary transactions would not decrease so radically without solving institutional problems.

The Karpov commission, which investigated the situation of non-monetary transactions, pointed out that abolition of the standard of tax laws which prohibit the selling of goods at prices below cost and alternation of deduction of depreciation were necessary to make prices more flexible.[70] In addition, considering that the average period payment is 41 months in the gas sector and 10 months in the electric power sector, the commission proposed to decrease gas prices to one tenth of their former price and electricity prices to more than one third. These proposals are very important to cut off the main sources of the chain of accumulation of non-monetary transactions. But these measures are not strong enough to solve the problem, because we have to take into account the "survival" principle and the "evasion of taxes" principle and solve the liquidity problem which exacerbate the former principle. In this paper, discussion of liquidity problems is avoided by limitation of space.

The "survival" principle is not bad in itself. The Karpov commission proposed to establish rules to decrease liabilities. By establishing rules, including procedures of bankruptcy, it tries to clear the function of the "survival" principle. We can agree with this proposal. On the other hand, it is very difficult to suspend the "evasion of taxes" principle. If the government tries to levy taxes strictly, enterprises try to evade taxes more seriously. We should admit that it will take many years to weaken the "evasion of taxes" principle, because in Russia a legal culture in which neither public officials nor private firms routinely obey the law exists.[71] And it is very hard to solve the liquidity problem, too.

Due to the spread of non-monetary transactions, Russia succeeded in attaining equilibrium of its macro-economy until August 1998. This was realized by the existence of Gazprom, which had room to tolerate overdue arrears from its clients and still pay a lot of taxes. This means that even now, Gazprom, a value adding sector, plays an important role in the economy, just as in the Soviet era. This is the reason why we emphasized the necessity of paying attention to the "continuity" from the Soviet Union.

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70 "Neplatezhi: i shtyk ne kolet, i pulia ne beret."

71 Hendley, *Remonetizing the Russian Economy*.

5. Conclusion

Non-monetary transactions, which are one of most important factors of overdue arrears, can be argued through two stages. At an early stage of non-monetary transactions, the "survival" principle, which has experiences of *quasi-barter* in the Soviet era, worked because of a shortage of liquidity of enterprises which resulted from cost-push inflation. At the developing stage of non-monetary transitions, when the inflation rate was lowered and net interest rate in rubles became positive since spring 1995, the "evasion of taxes" principle which complemented the "survival" principle played an important role in increasing non-monetary transactions. Institutional defects such as heavy taxation system which forced enterprises not to utilize bank accounts helped this principle to work. Furthermore the non-flexibility of supply prices caused by non-flexibility of wages and deduction of depreciation, and strict rules of calculation of profits by the tax authorities distorted price system and encouraged enterprises not to pay for profits caused by this distortion.

Through analysis of details of non-monetary transactions, it can be argued that a large amount of Gazprom receivables is one of main components in the chain of non-monetary transactions. The gas price paid in cash was set at lower level than the price paid by non-monetary transactions since 1997. This means that before that period, the gas price was actually discounted by non-monetary transactions. It can be concluded that in reality Gazprom had continued to support other industries like those of the Soviet era. Thus, Russian enterprises need to be analyzed in terms of their "continuity" in order to understand Russia's virtual economy.[72]

References

In Russian

L. Abalkin, "Ekonomicheskie realii i abstraktnye skhemy," *Voprosy Ekonomiki* 12 (1996).

S. Auktsionek, "Barter v rossiiskoi promyshlennosti," *Voprosy Ekonomiki* 2 (1998).

M. Afanas'ev, P. Kuznetsov, "Zabytaia amortizatsiia," *Voprosy Ekonomiki* 11 (1996).

M. Afanas'ev, P. Kuznetsov, P. Isaeva, "Krizis platezhei v Rossii: Chto proiskhodit na samom dele?," *Voprosy Ekonomiki* 8 (1995).

K. Buass'e, D. Koen, G. Pontbrian, "Upravlenie vzaimnym dolgom predpriiatii v Rossii," *Voprosy Ekonomiki* 11 (1993).

M. Deliagin, *Ekonomika neplatezhei: Kak I pochemu my budem zhit' zavtra* (Moscow, 1997).

G. Gritsenko, V. Stupin, "Platezhnyi krizis v ekonomike s neravnovesnymi tsenami," *Voprosy Ekonomiki* 5 (1998).

A. Iakovlev, "Neformal'naia ekonomika: anatomiia bezdenezh'ia" *Ekspert* 3 (1999).

A. Illarionov, "Teoriia 'denezhnogo defitsita' kak otrazhenie platezhnogo krizisa v rossiiskoi ekonomike," *Voprosy Ekonomiki* 12 (1996).

A. Illarionov, "Bremia gosudarstva," *Voprosy Ekonomiki* 9 (1996).

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72 The importance of the "continuity" from the Soviet era to the Russia era in analyzing Russian economy was emphasized in Shiobara, "Financial-Industrial Groups."

E. Isaeva, "Problema neplatezhei i denezhno-kreditnaia politika," *Den'gi i kredit* 7 (1995).
V. Klistorin, V. Cherkasskii, "Denezhnye surrogaty: ekonomicheskie i sotsial'nye posledstviia," *Voprosy Ekonomiki* 10 (1997).
O. Lugovoi, "Neplatezhi: makroekonomicheskii analiz," *Ekonomika perekhodnogo perioda* (Moscow, 1998), pp.1032-1033.
V. Makarov, G. Kleiner, "Barter v rossiiskoi ekonomike: osobennosti i tendentsii perekhodnogo perioda," TSEMI, 1996 (http://www.cemi.rssi.ru/rus/publicat/e-pubs/wp96006thtm).
S. Malakhov, "Transaktsionnye izderzhki v rossiiskoi ekonomike," *Voprosy Ekonomiki* 7 (1997).
N. Nozdran', "Denezhnye agregaty: opyt perekhodnogo perioda v Rossii," *Voprosy Ekonomiki* 11 (1993).
N. Petrakov, "Rynok bez deneg - dostizhenie rossiiskikh reformatorov," *Russkaia ruletka* (Moscow, 1998).
Iu. Plushchevskaia, L. Starikova, "Issledovanie finansovykh potokov v rossiiskoi ekonomike," *Voprosy Ekonomiki* 12 (1997).
N. Shmelev, "Neplatezhi - problema nomer odin rossiiskoi ekonomiki," *Voprosy Ekonomiki* 4 (1997).
V. Volkonskii, E., Gurvich, A., Kuzovkin, E., Saburov, "Analiz vliianiia formy raschetov na urovni tsen," *Ekonomika i matematicheskie metody* 34:4 (1998).
Narodnoe khoziaistvo SSSR v 1990 g. (Moscow, 1991).
"Neplatezhi: i shtyk ne kolet, i pulia ne beret," *Rossiiskaia Gazeta*, *Vedomstvennoe prilozhenie,* March 7, 1998.
Obzor ekonomicheskoi politiki v Rossii za 1997 god, Moskva, Biuro ekonomicheskogo analiza (1998).
"Problemy gosudarstvennogo regulirobaniia tsenoobrazobaniia v estestvennykh monopoliiakh," Institut issledovaniia organizovannykh rynkov, 1997 (http://www.nns.ru/analytdoc/inior/index.html).
Rossiiskii statisticheskii ezhegodnik, Ofitsial'noe izdanie 1997 (Moscow, 1997).

In English

G. Alfandari, Q. Fan, L. Freinkman, "Government Financial Transfers to Industrial Enterprises and Restructuring," S. Commander, Q. Fan, M. Schaffer, eds., *Enterprise Restructuring and Economic Policy in Russia* (Washington, D.C., 1996).
G. Alfandari, M. Schaffer, *"Arrears" in the Russian Enterprise Sector* (1996).
H. Bagratian, E. Gurgen, *Payments Arrears in the Gas and Electric Sectors of the Russian Federation and Ukraine* (IMF Working Paper 162, 1997).
S. Clarke, *Trade Union and Non-payment of Wages in Russia* (mimeo., 1997).
S. Commander, C. Mumssen, *Understanding Barter in Russia* (EBRD Working paper 37, 1998).
T. Condon, S. Ramacbandran, *Cash Constraints and Credit Corsets: The Chimera of Interenterprise Credit* (The World Bank, Private sector, Note 41, 1995).
J. Earle, K. Sabirianova, *Understanding Wage Arrears in Russia* (SITE Working Paper 139, Revised Jan. 16, 1999).
C. Gaddy, *The Price of the Past* (Washington, D.C., 1996).
C. Gaddy, B. Ickes, "Russia's Virtual Economy," *Foreign Affairs* 77:5 (September/October 1998).
C. Gaddy, B. Ickes, *A Simple Four-Sector Model of Russia's "Virtual" Economy*, May 1998 [Draft] (http://econ.la.psu.edu/~bickes/ickres.htm).
C. Gaddy, B. Ickes, *To Restructure or Not to Restructure: Informal Activities and Enterprise Behavior in Transition, February 1998* (http://econ.la.psu.edu/~bickes/ickres.htm).
V. Gimpelson, *Politics of Labor Market Adjustment (the Case of Russia)* (Collegium Budapest, Discussion Paper, 1998).

D. Gray, *Evaluation of Taxes and Revenues from the Energy Sector in the Baltics, Russia, and Other Former Soviet Union Countries* (IMF Working Paper 34, 1998).

K. Hendley, B. Ickes, R Ryterman, *Remonetizing the Russian Economy* (1998) (http://econ.la.psu.edu/~bickes/ickres.htm).

K. Hendley, B. Ickes, P. Murrell, R. Ryterman, "Observations on the Use of Law by Russian Enterprises," *Post-Soviet Affairs* 13:1 (1997).

B. Ickes, P. Murrell, R. Ryterman, "End of the Tunnel? The Effects of Financial Stabilization in Russia," *Post-Soviet Affairs* 13:2 (1997).

S. Kim, G. Kwon, *A General Equilibrium Approach to Interenterprise Arrears in Transition Economics with Application to Russia* (IMF Working Paper 145, 1995).

R. Layard, A. Richter, "Labour Market Adjustment in Russia," *Russian Economic Trends* 3:2 (1994).

A. Lopez-Claros, S. Alexashenko, *Fiscal Policy Issues During the Transition in Russia* (IMF Occasional Paper 155, 1998).

A. Ramos, *Government Expenditure Arrears: Securitization and Other Solutions* (IMF Working Paper 70, 1998).

P. Rother, *Explaining the Behavior of Financial Intermediation: Evidence from Transition Economies* (IMF Working Paper 36, 1999).

A. Yakovlev, "Barter and Clearing Schemes: How to Define Basic Concepts," *The Russian Economic Barometer* 7:2 (1998).

Labor Restructuring in Russian Enterprises: A Case Study (OECD, 1996).

Wage Formation during the Period of Economic Restructuring in the Russian Federation (OECD, 1995).

In Japanese

M. Kuboniwa, "Dokuritsugo no roshia zaisei no seido oyobi doko [Russian Fiscal System and Trends after Independence]," *Roshia no zaisei [Russia's Fiscal System]* (Institute of Overseas Investment Belonging to the Export-Import Bank of Japan, 1996).

T. Sato, *Posutoshakaishugi no keizaitaisei [Economic System of Post-Socialism]* (Iwanami Shoten, 1997).

T. Shiobara, "Roshia no kinyu sangyo gurupu ni kansuru ichi kousatsu [Financial-Industrial Groups: Continuity and Change in Russian Corporate Development]," *Slavic Studies* 47 (1999).

T. Shiobara, *Gendai roshia no seiji keizai bunseki [Political and Economic Analysis of Modern Russia: About Financial-Industrial Groups]* (Maruzen Books, 1998).

Table 1. Overdue Liabilities and Overdue Assets

(Trillion rubles before denomination Final in each quarter are percent of GDP)

	1993			1994					1995					1996					1997					1998		
	3Q	4Q		1Q	2Q	3Q	4Q		1Q	2Q	3Q	4Q		1Q	2Q	3Q	4Q		1Q	2Q	3Q	4Q		1Q	2Q	3Q
Overdue liabilities of industry, agriculture, construction, and transportation	8.7	16.4	9.6	30.5	48.1	71.8	90.4	14.8	115.9	155.5	201.4	238.9	15.1	297.6	382.3	449.7	514.4	23.4	601.0	668.6	723.4	756.1	29.1	881.6	936.3	1034.8
Including payables for good and services	6.3				30.7	46.4	56.8	9.3	63.0	83.3	103.9	122.3	7.7	145.5	186.3	218.6	245.9	11.2	283.8	313.3	330.2	344.7	13.2	387.5	417.2	452.7
Payables to the budget on all levels					9.5	14.6	19.3	3.2	25.1	35.6	48.5	57.4	3.6	66.6	86.4	97.9	106.2	4.8	132.1	144.4	162.1	162.3	6.2	193.8	203.7	214.2
Payables to extrabudgetary funds									5.8	8.8	11.7	17.6	1.1	45.8	62.4	79.4	97.2	4.4	111.9	124.1	140.6	154.3	5.9	152.3	187.5	209.1
Payables for wages	0.382*	0.766*		2.3416*	3.4211*	4.2071*	4.2*	0.7	5.7	6.4	9.9	13.4	0.8	16.5	21.6	30.5	34.7	1.6	37.6	39.3	41.3	39.7	1.5	51.3**	57.1**	65.4**
Including overdue arrears more than 3 months						44.6	60.5	9.9	70.9	95.7	125.7	150.9	9.5	198.0	261.9	321.9	377.6	17.2	445.1	502.0	551.6	583.6	22.4	669.7	718.5	791.3
Bank credit, other loans		1.1	0.6	1.9	2.9	4.7	5.6	0.9	8.4	10.1	10.8	10.6	0.7	16.5	17.5	22.0	24.0	1.1	26.0	27.7	25.4	26.1	1.0	40.7	37.8	60.8
Total of overdue liabilities		17.3	10.1	32.4	51.0	76.5	96.0	15.7	124.3	165.6	212.2	249.5	15.7	314.1	399.8	471.7	538.4	24.5	627.0	696.3	748.8	782.2	30.1	922.3	974.1	1095.6
Overdue assets of industry, agriculture, construction, and transportation	10.1	18.1	10.6	31.0	44.7	65.6	80.4	13.2	95.9	121.4	148.7	165.5	10.4	222.0	265.5	307.6	335.5	15.2	400.1	418.8	451.3	458.4	17.6	534.2	569.8	616.8
Including receivables for goods and services		15.9	9.3	27.7	39.8	57.4	69.3	11.3	81.1	105.0	129.6	146.9	9.3	194.9	236.8	271.4	296.3	13.5	357.5	370.8	396.5	397.1	15.3	452.9	491.6	535.4
Including veksels									0.4	0.5	0.5	0.6	0.0	1.7	1.7	2.1	3.2	0.1	2.9	3.5	5.2	4.6	0.2	4.9	2.9	3.4
Receivables from the budget									6.2	7.0	8.3	7.5	0.5	8.3	9.2	10.4	10.7	0.5	12.8	10.4	10.5	10.8	0.4	24.4	29.0	35.0
Including overdue assets more than 3 months					40.9	53.9	8.8	62.6	79.6	98.4	112.1	7.1	153.9	193.6	234.2	259.9	11.8	305.8	323.2	367.9	375.0	14.4	430.6	464.3	506.3	
GDP	171.5			611.0					1585.0					2200.2					2602.3							

Note: *Not including transportation. **Not including agriculture.

Source: *Sotsial' no- ekonomicheskoe polozhenie Rossii* 10 (1993), 4- 12 (1995), 1- 12 (1996), 1- 12 (1997), 1- 10 (1998).

Table 2. Ratio of Barter of Sales of Industrial Enterprises

(Average of 12 months, %)

	1992	1993	1994	1995	1996	1997**
Percent of barter of sales	6*	9	17	2	35	41

Note: *Not including January. **The first half of the year.
Source: S. Auktsionek, "Barter v rossiiskoi promyshlennosti," *Voprosy Ekonomiki* 2 (1998), p.51.

Table 3. Ratio of Non-Monetary P ayment and Average Period of Payment in Each Sector

(Investigation period: 1996 and in the first half of 1997. Figures:204 firms)

	Average period of payment (Month)	Ratio of non-monetary payment of sales (%)
Gas	41.1	91
Nuclear power generation	12.4	95
General electric power	9.6	87
Coal	6.9	80
Machine-b uilding	6.7	77
Petromining and petrorefining	5.0	69
Ferrous metals	4.6	79
Chemicals	4.3	84
Alcohol	3.5	37
Railway	3.2	51
Automobile-b uilding	2.9	59

Source: "Neplatezhi: i shtyk ne kolet, i pulia ne beret," *Rossiiskaia Gazeta*, March 7, 1998, p.5.

Table 4. Overdue Receivables for Goods and Services and Overdue Payables for Goods and Services in Each Sector

(Trillion rubles)

	1994			1995					1996				
	R* 1	P** 2	difference 3	R 4	growth rate 4/1(%)	P 5	growth rate 5/2(%)	difference 6	R 7	growth rate 7/4(%)	P 8	growth rate 8/5(%)	difference 9
Total fundamental industry	69.3	56.8	12.5	146.9	112.0	122.3	115.3	24.6	296.3	101.7	245.9	101.1	50.4
Industry	48.9	41.5	7.4	96.0	96.3	79.2	90.8	16.8	173.8	81.0	158.5	100.1	15.3
Electric power	11.0	8.3	2.7	29.5	168.2	19.6	136.1	9.9	71.1	141.0	52.0	165.3	19.1
Fuel	14.7	11.4	3.3	22.8	55.1	17.2	50.9	5.6	36.8	61.4	28.5	65.7	8.3
Ferrous metals	4.9	3.9	1.0	7.6	55.1	7.2	84.6	0.4	9.0	18.4	11.2	55.6	-2.2
Non-ferrous metals	1.6	2.0	-0.4	2.7	68.8	2.8	40.0	-0.1	5.2	92.6	7.2	157.1	-2.0
Chemical and petrochemical	3.7	4.4	-0.7	6.4	73.0	7.4	68.2	-1.0	10.1	57.8	13.5	82.4	-3.4
Machine-b uilding and metal processing	7.8	6.5	1.3	16.4	110.3	14.5	123.1	1.9	25.0	52.4	26.8	84.8	-1.8
Forestry, woodworking, and paper	1.1	1.3	-0.2	2.3	109.1	2.6	100.0	-0.3	3.9	69.6	5.4	107.7	-1.5
Construction materials	1.1	1.0	0.1	2.2	100.0	2.2	120.0	0.0	4.1	86.4	4.2	90.9	-0.1
Light industry	0.7	0.6	0.1	1.3	85.7	1.3	116.7	0.0	1.9	46.2	2.5	92.3	-0.6
Food industry	1.5	1.2	0.3	2.9	93.3	2.5	108.3	0.4	3.7	27.6	4.0	60.0	-0.3
Agriculture	1.5	2.7	-1.2	4.0	166.7	7.8	188.9	-3.8	5.9	47.5	16.3	109.0	-10.4
Contruction	8.0	4.5	3.5	17.0	112.5	8.2	82.2	8.8	33.6	97.6	17.4	112.2	16.2
Transport	10.9	8.1	2.8	29.9	174.3	27.1	234.6	2.8	82.9	177.3	53.8	98.5	29.1

Note: *R: Overdue receivables for goods and services. **: Overdue payables for goods and services.

Source: *Rossiiskii statisticheskii ezhegodnik, Ofitsial'noe izdanie 1997* (Moscow, 1997), p.538.

Table 5. Overdue Tax Arrears in Each Sector

(Trillion rubles)

	April 1,1997							
	Overdue tax arrears of the integrated budget	Component ratio (%)	Overdue tax arrears of the federal budget	Component ratio (%)	defered taxes of the integrated budget	Component ratio (%)	deferd taxes of the federal budget	Component ratio (%)
Industry	73.6		43.9		13.4		5.4	
Electric power	8.6	11.7	5.8	13.2	0.8	6.0	0.3	5.6
Fuel	22.8	31.0	14.6	33.3	6.8	50.7	2.7	50.0
Ferrous and nonferrous metals	6.6	9.0	3.5	8.0	1.3	9.7	0.4	7.4
Chemical and petrochemical	2.8	3.8	1.5	3.4	0.4	3.0	0.2	3.7
Machine-b uilding and metal processing	19.6	26.6	11.0	25.1	2.5	18.7	1.2	22.2
Forestry, woodworking, and paper	3.7	5.0	2.0	4.6	0.4	3.0	0.1	1.9
Construction materials	2.4	3.3	1.3	3.0	0.2	1.5	0.0	0.0
Light industry	1.8	2.4	1.1	2.5	0.2	1.5	0.1	1.9
Food industry	4.0	5.4	2.4	5.5	0.7	5.2	0.3	5.6
others	1.3	1.8	0.7	1.6	0.1	0.7	0.1	1.9

Souece: from http//src-home.sla v.hokudai.ac.jp/jp/server-j-fr1.html.

Table 6. The Situation(1996) of Payment Of Enterprises under Control of Gazprom and Liabilities to Federal budget of these enterprises

	Supply of gas	Sum of receivables	Ratio of receivables	Component ratio of receivables(%)			Liabilities to federal budget(billion rubles)		
	(Unit:10 billion rubles)		(%)	Money	Securities	Barter	April1,1997	Ratio of supply of gas(%)	Jau.1,1997
Iamburggazdobycha	9.4	9.7	103.2*	0.0	0.0	100.0	129.3	1,375.5	1,781.6
Urengoigazprom	24.2	25.3	104.5*	0.0	0.0	100.0	239.5	989.7	2,229.1
Nadymgazprom	19.0	10.9	57.4	0.0	0.0	100.0	161.4	849.5	548.5
Surgutgazprom	2,675.6	2,513.4	93.9	1.6	5.6	92.8	571.5	21.4	1,704.1
Tiumentransgaz**	1,419.4	1,316.7	92.8	0.2	5.8	93.9	335.6	23.6	1,453.3
Permtransgaz	4,359.3	2,297.0	52.7	12.1	13.5	74.6	346.5	7.9	-
Volgotransgaz	7,385.7	6,308.7	85.4	9.6	6.9	83.5	1,346.7	18.2	2,274.7
Uraltransgaz	9,857.4	7,225.0	73.3	4.0	24.4	71.6	796.5	8.1	4,592.6
Severgazprom	3,157.1	2,655.8	84.1	15.8	14.5	69.7	528.8	16.7	1,245.6
Tomsktransgaz	2,698.6	2,194.7	81.3	5.9	0.5	93.6	130.5	4.8	480.2
Bashtransgaz	3,733.9	2,499.1	66.9	1.9	2.8	95.2	149.6	4.0	-
Iugtransgaz	1,736.5	1,272.2	73.3	2.5	27.0	70.5	196.4	11.3	600.8
Volgogradtransgaz	1,674.1	811.9	48.5	3.5	25.2	71.3	-	-	-
Samaratransgaz	4,475.4	2,998.1	67.0	4.3	45.8	49.7	362.0	8.1	912.1
Tattransgaz	3,092.7	1,810.3	58.5	1.5	5.6	93.0	109.2	3.5	-
Orenburggazprom	745.1	839.8	112.7*	1.0	4.1	94.9	-	-	449.9
Astrakhan'gazprom	384.1	470.2	122.4*	2.3	2.7	95.1	-	-	-
Kuban'gazprom	1,694.7	1,477.0	87.2	30.7	22.8	46.3	-	-	682.9
Kavkaztransgaz	3,215.1	2,141.5	66.6	13.1	35.9	51.1	148.4	4.6	-
Dagestangazprom	180.3	122.2	67.8	14.9	20.6	64.3	-	-	-
Lentransgaz	6,152.6	3,072.0	49.9	24.4	49.1	26.5	-	-	-
Mostransgaz	32,838.0	24,224.1	73.8	9.3	22.1	68.4	1,242.6	3.8	-
Total	91,528.2	66,295.6	72.4	8.8	20.0	71.3	-	-	-

Note: *Including overdue arrears in the sum of receivables, so figures exceed 100%.
**"Tyumengazprom" expressed in H. Bagratian, E. Gurgen, Payments Arrears in the Gas and Electric Sectors of the Russian Federation and Ukraine (IMF Working Paper 162, 1997), p. 20 is a mistake, so here corrected.

N.B.: Barter includes offsets.

Source: H. Bagratian, E. Gurgen, *Payments Arrears in the Gas and Electric Sectors of the Russian Federation and Ukraine* (IMF Working Paper 162, 1997),p.20; *Profil'* 17 (1997), p. 24; and data from http//russia.shaps.hawaii.edu/cgi- bin/ifetch?data+2483347553093+F.

Table 7. Short-Term Assets and Liabilities of Gazprom

(Unit : 10 billion rubles)

	1995	Component ratio (%)	1996	Component ratio (%)	Growth rate (%)
Short-term assets	105,349		155,672		47.8
Inventories	14,762	14.0	23,279	15.0	47.8
VAT to the purchasing goods	10,316	9.8	17,777	11.4	72.3
Short-term assets	72,195	68.5	104,266	67.0	44.4
Receivables for goods and services from buyers	59,183	56.2	81,572	52.4	37.8
Promisary notes	274	0.3	927	0.6	238.3
Receivables form subsidiaries	-	-	39	0.0	-
Advances	9,159	8.7	6,101	3.9	-33.4
Other receivables from debtors	3,579	3.4	15,627	10.0	336.6
Short-term financial investment	1,743	1.7	2,634	1.7	51.1
Financial assets	4,461	4.2	6,354	4.1	42.4
Ruble bank deposits	761	0.7	1,097	0.7	44.2
Hard currency bank deposits	2,467	2.3	1,282	0.8	-48.0
Other monetary assets	1,218	1.2	3,939	2.5	223.4
Other short-term assets	1,872	1.8	1,362	0.9	-27.2
Short-term liabilities	65,716		120,767		83.8
Credit	1,105	1.7	4,078	3.4	269.0
Bank credit	421	0.6	4,029	3.3	857.0
Other loans	684	1.0	49	0.0	-92.8
Total creditors	63,870	97.2	115,158	95.4	80.3
Payables for goods and services to suppliers	8,110	12.3	25,042	20.7	208.8
Payables for wages	905	1.4	2,040	1.7	125.4
Payables to extrabudetary funds	1,981	3.0	4,282	3.5	116.2
Payables to the budget	13,178	20.1	29,188	24.2	121.5
Advance payment	357	0.5	4,650	3.9	1202.5
Payables to other creditors	39,339	59.9	48,816	40.4	24.1
Dividends	-	-	62	0.1	-
Other short-term assets	741	1.1	1,469	1.2	98.2

Source: *Rao Gazprom Annual Report 96*, pp.35- 38.

Table 8. Percentage of Payment of the Federal Government of GDP in 1996 (%)

Wages	Social sectors	Suppliers	Total
0.5	0.5	2.0	3.0

Source: A. Ramos, *Government Expenditure Arrears: Securitization and Other Solutions* (IMF Working Paper 70, 1998), p.5.