Explaining rise of barter in Russia: Virtual Economy vs. Monetary Issues

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Abstract

Just a few years into the market economy, in the mid 90's Russian economy experienced a rapid increase barter trading as enterprises avoided use of money. Determining the true cause and driving force behind this demonetization became a hot topic. Two different schools of thoughts evolved: those who adopted the virtual economy hypothesis as the explanation and those who favored monetary issues in the economy as the cause. This paper lays out both sides in detail and provides an analysis of the two. I find that while the monetary school argument draws upon direct empirical results, the virtual economy hypothesis presents a stronger argument and has empirical foundations that are not too far behind.

I would like to thank Dr. Richard Ericson for his input and guidance in this project.

Introduction

In a command economy, producers' goals and actions are determined by orders from higher authorities. Ultimately, the highest authority makes centralized planning and decisions, hence the term Centrally Planned Economy. Unlike market economics, the command economy enterprise is not concerned with maximizing profits or satisfying shareholders' interests, as it simply wants to follow its superior's instructions and plans. Such was the way Russian economic enterprises operated prior to 1989, during the communist era.

Further, the role of money was extremely limited and passive in the command economy of Soviet Union.[1] The roles included nothing more than "a mere accounting entry in the books of the state bank" (Ericson, 1997), a method to monitor financial flows in order to "check on implementations of financial plans. Cash is only involved in things like wage payments and consumer purchase" (Ericson). Whereas in a traditional market oriented economy, money was the essential economic instrument for transactions, counting unit of indication for economic values, the credit system and etc[2]. The former Soviet Union had an essentially demonetized economy.

After its collapse, the country has been moving towards becoming a market oriented economy. Given its size and impact on the rest of the world, the transition of Russian economy is a topic of great importance. As with any transition, unheard and unusual economic phenomena have been taking place in Russia. One such phenomenon

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[1] The Soviet Economy had a dual monetary system: industrial and household money. Household money is the cash used by households for consumer goods purchase and thus it is called cash-money. On the other hand, industrial money is for inter-enterprise use only and exists only on in deposit slips and accounting books. Thus, it is called non-cash-money. Convertibility of non-cash money, of course, is limited only for roles such as wage payments. All cash money from the retailer are eventually submitted to banks and inverted into non-cash money. For further discussion see Woodruff, pg 43-52 (1999)

[2] For further discussion on role of money in the context of barter in Russia see Poser (1998)

was the rise of barter and other forms of non-monetary transactions in the economy in the mid 1990s. During this period overall share of non-monetary transactions in industrial sales jumped from being under 10% of total sales in 1992 to over 50% in 1998.

Table 1. Barter as percentage of sales in industrial enterprises

Year	Share of Barter in Sales in Industry (%)
1992	5
1993	9
1994	17
1995	22
1996	35
1997	42
Jan 1998	50
Feb 1998	46
Mar 1998	50
Apr 1998	50

Source: Tompson (1998) Russian Economic Barometer

The magnitude varied from sector to sector:

Table 2. Growth of barter in different sectors in (%) of sales

	1993	1994	1995	1996	1997
Electric Power	4	13	19	35	46
Fuel Complex	10	17	20	32	33
Metals Industries	14	32	37	47	56
Engineering and metalworking	12	18	23	35	41
Chemical and Petrochemical	21	25	23	43	52
Timber, wood processing	12	21	18	35	46
Building materials	11	24	35	48	59
Light industry	8	20	22	40	42
Food industry	6	9	11	17	25
Other branches	8	11	16	24	27
Manufacturing:	7	12	14	26	32
Consumer goods	12	17	20	37	42
Investment goods	11	25	30	44	55
Intermediate goods	10	15	14	22	31
Agriculture					

Sources: Russian Economic Barometer

Between 1992 and 1989, the point of collapse, the economy seemed to be progressing as expected. The economy was being decentralized, markets became free, financial intermediaries were introduced and the country opened itself to foreign and domestic investments. Money had abandoned its passive role and turned into an actively functional economic instrument.

However, starting in 1993 and 1994, incoming macroeconomics data from Russian Economic Barometer displayed clear indications of rapid rises in non-monetary transactions, that industrial enterprises were using less and less money for their transactions. All of a sudden, Russian economy was demonetizing at the speed of light, and seemed to be going in the wrong direction. Had Russia decided barter economy was

better than a monetized one? What was the cause? What were the consequences?

Good amount of literature sprung on the phenomena. With allowance of some overlapping, the literature can be categorized into two competing schools of thoughts:

- Virtual economy school
- Monetary school

The purpose of this paper is to present in the two different thoughts and provide a critical comparison to decide if either presents a winning argument. The paper consists of 5 sections. First, I will specify the different types of non-monetary transactions. In the following two sections (2 and 3) I present the virtual economy and the monetary school arguments in detail. Section 4 proceeds to analyze and compare the two arguments. I find that that the virtual economy side lacks systematic empirical evidence as a whole, but presents the better argument of the two. The monetary school sits on direct empirical results, but fails to demonstrate any inconsistency with the virtual economy hypothesis framework. Section 5 concludes the paper.

1. A non-monetary transaction

As the terminology suggests, a non-monetary transaction (NMT) is exchanging anything of economic value (goods, notes, etc) through means other than money. The *main* point of NMT concept is non/minimal-usage of financial intermediaries for transactions. For example, let's assume firms A and B decide to trade goods for their own reasons. A would ship to B, B would ship to A and each reports to their accountants the rate of exchange and the prices they used in the transaction. This means as far as the bank is concerned, who would handle such transaction in a normal situation, no action in the economy has taken place. Nothing has been bought and paid for and thus, the level of

money demand and supply remain unaffected.

There are of course different types of NMTs corresponding to different types of situations and demands. Commander and Mumssen (1999) recognizes existence of four general kinds of NMTs:

1. **Barter**
2. **Money surrogates**
3. **Offsets** (*zachety*): debts for goods
4. **Debt swaps, cross cancellations of debts**

Barter consists of exchanging goods for goods. Consider, for example, firms A and B producing goods 1 and 2 respectively. If A can use good 2 for input, and B could use good 1 as well, then they would conduct in direct exchanges. This requires double-coincidence of needs. However, such coincidences are rare in real world scenarios. It may be the case that one of B's suppliers, C, may be needing A's goods. Then, A could ship to C, C would ship B and B to A. One can imagine how the network would need to grow further in order to match the buyers and sellers.

Money surrogates (*veksels*) are promissory notes issued by enterprises, banks or government with specified maturities and discount rates. There are two types of surrogates: commodity and financial. Depending on who issues them, the level of liquidity varies. Most liquid veksels were issued by enterprises with good reputation and stable operation. One example is veksel issuance of Irkutsenergo[3]. It is the main supplier of energy in the Irkutsk region. Given that only 30% of the total revenue was in cash with a higher level of cash expenditure, they issued commodity veksels. At its mature date, which varied from 6-12 months, owners of Irkutskenergo veksels would redeem them for

energy only.

Offsets (*zachety*) take place when someone accepts goods as payment of an outstanding debt. Besides being exercised among firms, offsets were commonly used between firms and the government (tax authorities), and firms and utilities producers.

The weight of these different NMTs has varied over time.[4] Understanding the nature of these NMTs is quite important for analyzing the two different school of thoughts and their explanatory power for the rise of NMTs.

The distinction between the two school of thoughts became clear with the arrival of Gaddy and Ickes' paper "Russia's Virtual Economy." They exploited the idea of virtual economy, arguing that NMT is directly related with the emergence of virtual-economy in Russia. The name virtual-economy comes from a hypothesis proposed to explain the widespread lack and delay of industrial restructuring in Russia. It says the industrial sector is avoiding reformation and yet managing to survive (and sustain production) by trading its products at much higher "virtual" prices. Since nobody will pay cash at those prices, enterprises resort to bartering. In contrast, the monetary school rejects the idea of virtual economy and instead proposes that the sudden surge in NMTs is due to the dysfunctional financial system, which is as a result of bad monetary policies.

2. The Virtual Economy Hypothesis

The first appearance of the notion "virtual economy" seems to have been in Pyotr Karpov's report (Karpov (1998)) on the financial data of Russia's 210 largest industrial enterprises in 1997. In their 1998 paper, Gaddy and Ickes turned the idea into a fully developed model explaining how Russian economy has been operating ever since the fall

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[3] Commander and Mumssen (1998)

[4] For more discussion see Commander and Mummsen (1999)

of the Soviet Union. The model argues that contrary to the common belief, the Russian economy had not been moving towards a market economy, but indeed had been sliding further away from reforming and restructuring. Its logical chain starts with an assumption that for various socio-economic reasons the Russians (including the government) did not want to shutdown their massive and inefficient industrial sectors for complete reform. For example it could have meant unrealistically high social costs coupled with extreme uncertainty existed at the time. If the assumption is granted, the model pursues the following structure:

Assumption: No desire reform and intention to keep firms in production

⇒ Thus, production continuous under highly inefficient and unprofitable operation

⇒ Unable to sell products on the competitive markets due to their low quality and high costs

⇒ Thus, receive no or little revenue in cash

⇒ Forced into arrears as firms do not have the income to meet payments

⇒ Further, there is no income for inputs

⇒ Many other firms find themselves in the same position

⇒ NMTs (bartering, offsets, etc) start taking place as a means of obtaining inputs and paying for debts as no one has cash

⇒ Firms start using "virtual prices": outputs are priced higher than their market values in exchange for inputs.(This means the supplier of the inputs getting lower prices for their product)

⇒ Under the new prices, firms appear profitable.

⇒ Increased participation in NMTs means more room for exercising virtual prices and this becomes an incentive for increasing "barterization"

Thus, the firms "become" profitable on the accounting books through the inflated output (which means deflated input prices). If real prices reflecting market competition and economic values were used, most of these firms would be losing money. Therefore, in reality they are unprofitable. In other words, they are wasting economic resources. In order for them to keep producing (and continue wasting), there must be a source in the system adding economic value; since otherwise it would run out of economic resources.

Such economic values, Gaddy and Ickes argue, are transferred from value generating units through a complex network of transactions that include political involvements and ultimately the government. In the case of Russia, the value adding source consists of energy producers and other profitable sectors of the economy. The profitable sector is pressured to be engaged in unprofitable transactions by the government. While providing domestic services, the energy companies receive substantial portion of their revenue from exports. Hence, its production is not affected by domestic crisis and gets enjoy stability of foreign currency. The government can threaten to punish for refusal to participate. The punishment could be just about anything, since the Russian government pretty much has absolute power on any area at any given time. This whole process creates a web of economic cycle based on virtual prices, thus earning the name "virtual economy." Of course as a result the inflated commodity prices, suddenly the Russian GDP is depicted to be much larger than it really is. Gaddy and

Ickes mentions that the inflated figures permit the government to spend more[5], an incentive to favor such virtual economy.

We mentioned that the cause of virtual economy originates from hesitation to restructure the industrial sector by the producers. Once the cycle starts, it is continuously supported by the government who seems to be very pessimistic about large scale reformation. There are two reasons for the reluctance. First, if the enterprises are unable get their hands on a moderate short term financing to purchase their inputs, it is impossible for them to find a long term financing for such a large amount. This means the burden of financing goes to the government. Even if we assume the government had money to spend, the investment is considered to be too risky/uncertain. Secondly, keeping the enterprises in existence translates into jobs. Jobs mean social stability. The benefit of maintaining social stability seems to far exceed the costs related with delaying economic reformation, at least in minds of the Russians. The short term benefits are understandable. However, the long term gains are less obvious.

Further interests of the government to maintain the virtual economy include the issue of its income from taxation. If no one is turning in profits, real or virtual, then the government would not receive much income. Given most of its income comes from taxes, the government gladly subscribes to the virtual economy. However, a simple subscription is not enough. As mentioned before, only the government has the power to "motivate" the value generating firms to participate in the virtual economy. Thus, government is the *key* towards sustaining the virtual economy.

Simplified example of the virtual economy operation could be portrayed by a trade between a tire producer (T) and its energy supplier (E). Let 's suppose that the

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[5] Gaddy and Ickes pg.1, September/October 1998, *Forreign Affairs*

market value of 1 tire is 100 rubles, but T's inefficient production costs 150 rubles to produce 1 tire. Thus, on a competitive market T would soon go bankrupt and fire all those workers, or require a huge loan to go under complete restructuring. Further, suppose that T owes 300,000 rubles in electricity bills. Given that there is an agreement of an offset for T to pay its bills with tires, in a normal economy (non-virtual) E could expect to receive 300,000/100=3000 tires (since, it could turn around and hopefully sell the tires to another party for at least 100 rubles per tire and receive the original amount of 300,000 rubles it needs (assume no transaction costs here)). However, T decides to trade its tires at the virtual price of 200[6] rubles per tire. Even if E does not want this deal, it is pressured by the government to "want" it. Hence, E now would receive only 300,000/200=1500 tires. On one hand, when E gets rid of the tires at their market value, 100 rubles per tire, it will receive only 1500x100=150,000 rubles. Thus, it occurs a loss of

300,000-150,000=150,000 rubles from the trade with T.[7] E's loss did not evaporate, but was transferred to T. Thus the concept of "value transfer." On the other hand, T valued its tires for 200 rubles/tire. Since, its cost was 150 rubles/tire, it realizes a "profit" of 50 rubles/tire. The government will gladly tax that 50 rubles per tire and is relieved to see that T's workers are still employed. An actual scenario may include tax related incentive from E's side to agree to barter and further involvement of third parties and thus developing onto a complex network.

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[6] There, however, must be a limit to how the virtual prices can be set. Unreasonably high prices could turn E into an unprofitable producer. Thus, in reality the price must be just high enough for T to cover its costs so it can keep producing.

[7] Government in turn may agree to let E pay its tax by those tires, rewarding for the cooperation. This would reduce E's loss.

In the midst of this model, barter is simply a required step for the whole cycle. The main concern is that use of virtual prices allows for continuation of production for enterprises such as T. However, virtual prices can be only exercised through NMTs, as it has to skip over the financial intermediaries. The virtual economy alternatively may be called a survival mechanism[8]. As the Russian economy tumbles, more and more enterprises are forced to feed off the survival mechanism and along with it the size of barter trading grows.

Next, we will look at the monetary school argument.

3. Monetary School Argument

On the note of dismissing the virtual economy argument, this school argues that the rise of barter is a result of bad monetary policies. Jan Poser (1998) provides a detailed argument.

The monetary school is based on a combination of three separate arguments that share a common origin, a bad monetary policy:

A. High costs of holding money

B. Taxation incentives[9]

C. Decreased supply of money

(A) Means holding money was too costly. (B) Corresponds to the fact that holding money worsened the tax liability situations for enterprises and (C) states that ultimately money was nowhere to be found.

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[8] Not as in "survive and succeed", but as in "barely kept alive."

[9] Notice, taxation is also an incentive to engage in a virtual economy. However, reasons are somewhat different in both situations. In the virtual economy, the government may receive goods for taxes at virtual prices so that (a) it at least receives *something* for taxes and (b) value transferring is made possible. On the monetary school side, inter-firm barter is preferred in order to reduce/avoid taxes. Government-firm barter would occur when firms have no other means to pay taxes other than payment in goods.

(A) In the Soviet days, the usage of money fell into two categories: non-cash and cash. Cash was restricted only to wage payments and consumer purchases. The industrial sector, representing majority of the transactions, could only use what is phrased non-cash money, basically an instrument of account. A producer may convert non-cash money into cash only for purposes of paying wages. In essence, they were two different types of money. One could be recognized as a typical currency that can be exchanged for goods and the other simply existed on accounting books and nothing more. The restriction was released as the Soviet system fell in 1989 and resulted in "excessive spillovers from the non-cash to the cash cycle."[10] Conceptually this was no different than increasing money supply (cash) by several folds. Since commodity prices were also set free, increase in money supply caused inflation to sky rocket.

However, interest rates were not set free and they were easily caught up by inflation. Thus, all holdings in banks carried negative interest rates. In attempt to control the situation, the government re-imposes[11] restrictions on the convertibility of non-cash money into cash and thus limiting firms to only certain kinds of transactions (non-cash). In spite the illiquidity, the firms kept selling goods on credit. The source of non-cash credit came from the non-Russian central banks. They could not lend cash money, but they could issue non-cash credit. This causes a surge in the supply of non-cash money inflating prices of industrial goods. Hence, the non-cash money is also hit by a high rate of inflation.

Enterprises, who keep all their money at banks, were suffering the horrifying cost of using money and as such, were eager to get out of this situation. One way to do it was

[10] Poser (1998)
[11] Poser (1998), p. 165, *Communist Economies and Economic Transformation Vol, 10, No.2 1998*

to avoid keeping balances at banks and engage in direct barter trading. For the Russian enterprises at the time, barter trading was easier than it sounded, since it would simply replace "already existing trade links between enterprises…there is no searching for a partner"[12] and establishment of buyer-seller matching networks.[13]

Moreover, it was unrealistic to repay its debts by money (non-cash) for either a firm did not have sufficient funds or the receiving party preferred direct barter to escape from getting hit by inflation. Hence, once barter was set up among firms, it made sense only to continue (or even increase) the establishment.

(B) The system was set up such that tax was collected only upon payments. This meant the longer the delay of a payment is, the less is the real tax burden, reduced by inflation. For example, suppose a firm owed 10% tax for a sale worth 1 million rubles. It would owe 100,000 rubles for taxes. After three months, it would still owe 100,000 in taxes. However, If the payment is delayed by 3 months and monthly inflation rate is at 20%, it would only be owing 57,870 rubles in real taxes.[14]

Trapped by results of its own policies, the government's real income decreases and its forced to print more money and adding inflation; this creates a continuous cycle of indefinitely increasing inflation. In order to prevent this, the government orders banks to closely collect copy of transactions and debit for taxes automatically as soon as a transaction takes place. However, because of the policy firms are now trying to avoid doing close business with the banks. By engaging in barter trades, firms would be able to

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[12] Auckutionek (1998)

[13] This is another point of overlap between the monetary and virtual economy sides. While the monetary school states firms utilizes the already established network to barter, for the virtual economy side the network provides just the right basis for value-transferring to take place.

[14] 1.23 = 1.728 inflation rate for the three month period. 100,000/1.728 = 57,870 real value of the tax after 3 months with respect to the beginning of the first month

escape/reduce their tax liabilities.[15]

(C) The third component, dealing with reduction in supply of money (illiquidity) is a popular choice in the literature for explaining increase in NMTs, specifically in barter trades.

Not being able to receive payments on its outputs reduces the available amount of cash firms had.[16] In a market economy, such problem would be solved by financing through banks for extended credit. However, in the case of Russia, banks are reluctant to give credit simply for the level of uncertainty involved with the loans.[17] For banks, simply purchasing foreign currency rather than issuing credit to a large industrial enterprise who is trying to survive in the transaction period probably presents much safer and better investment. A survey conducted by Krueger and Linz (2002) concludes when enterprise managers were asked for the reasons to engage in barter, 60% had replied it was lack of cash. Another survey done by Commander and Mumssen (1998) indicates over 70% of the firms participated, consisting mostly of manufacturing and service types, had "difficulty with getting access to bank credit.

If rise in barter is to be explained by the level of liquidity, there must be a strong correlation between the two.[18] Measures of barter already exists. Thus, we need credible measures of liquidity in the Russian economy to check for a correlation. This is exactly what Krueger and Linz (2002) provides. They find that 1% increase in liquidity is

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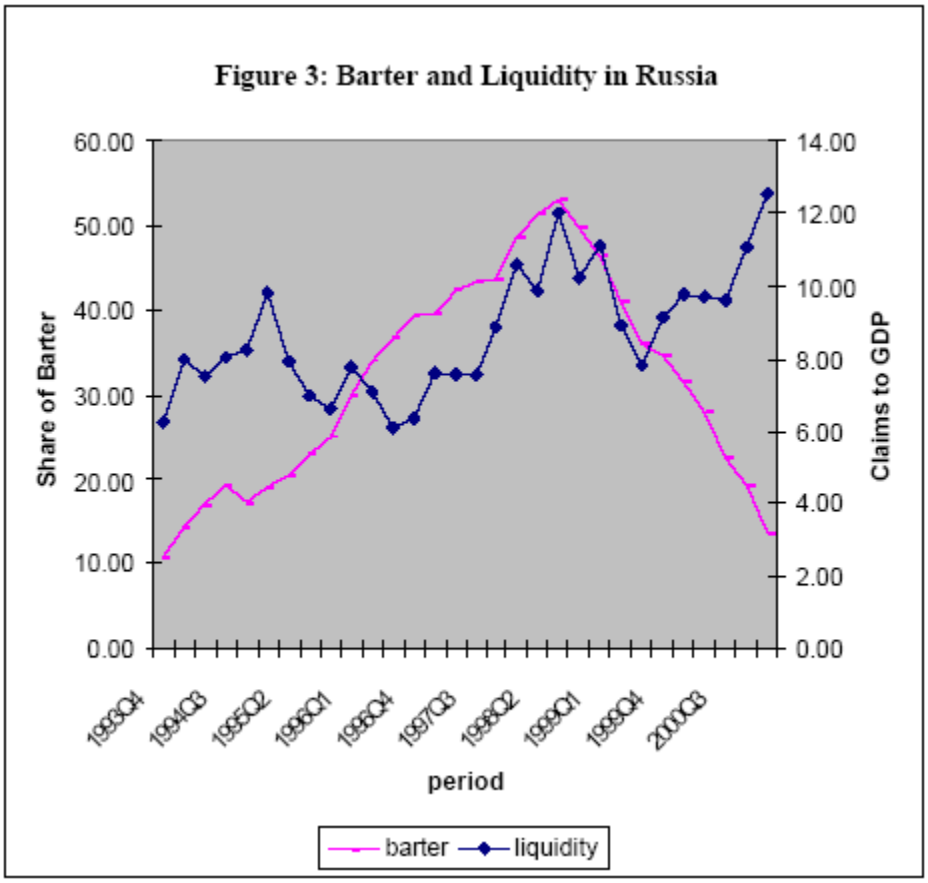
[15] Aukutsionek (1998)

[16] Commander and Mumssen (1998) phrases this being incentive for barter as "goods now vs. money later (or never)"

[17] Poser (1998)

[18] As discussed above, shortage of cash is caused by non-payment on the receivable and dysfunctional financial intermediaries. Consequently, this lack of liquidity pushes firms into barter trading. The empirical result is only a supporting point, but does not stand as an independent statement.

estimated to reduce barter by approximately 4.5%.[19]



The above three causes contribute to the common theme that in order to be able to continue production, firms were forced establish inter-firm credit systems through barter trading because the financial sector failed to function. Monetary policies such as restriction on conversion of non-cash to cash and instant taxation by the bank that were intended to help the circumstance had adverse effects and encouraged bartering.

The next section provides an analytical comparison of the two schools from the point of logical coherency and strengths of their empirical sources.

[19] Krueger and Linz (2002)

4. Virtual Economy *versus* Monetary School

i. Analyzing the VE hypothesis

The virtual economy hypothesis basically originates from three different empirical sources: the Karpov survey, Norilsk Nickel study and anecdotal hints and references. Use of anecdotal sources are hard to verify and thus by their nature is difficult be counted as a source for scientific studies. However, the basic idea of anecdotes logically reduces to the notion/fact that the Soviet economy was run by enterprises that operated highly inefficient production:

- ⇨ Soviet enterprises were inefficient
- ⇨ In the new market economy, given the inefficiency they must
    a. Shutdown
    b. Reform
    c. Keep producing through value-transferring
- ⇨ Neither (a) nor (b) is acceptable
- ⇨ But (c) is can be achieved with relative ease by simply implementing virtual prices to the existing inter-firm networks

Unless one wishes to argue that the Soviet economy was very efficient, it is hard to deny the common notion represented by the virtual economy hypothesis. Value-transferring was not something new to the market economy as it existed in the Soviet years. The issue then becomes how the value-transferring system can be kept? The natural way would be to keep everything the same, but exclude any involvement of financial intermediaries, which is what the framework of VEH displays.

The case of trade between Norilsk Nickel and Norilskgazprom, in Gaddy and

Ickes (1999) is used to show value transferring activities as an example of the virtual economy. Even though the companies are relatively large enterprises, it is difficult to use a single incidence between two companies to make an implication about the whole economy. Further, due to the uniqueness of their geographic situations the companies had no choice but to engage in virtual economy style trades.[20] When the uniqueness is removed, it becomes even harder to use the Norilsk as a point of reference to show that the rest of the economy is becoming "virtual."

In light of the crash in 1998, economists further questioned viability of the virtual economy argument. Gaddy and Ickes maintained[21] that it was still "the best way to understand the economic developments." Instead of an empirical support for their claim, they simply provided another "accounting model" of how the virtual economy hypothesis *can be fitted* to explain events in the economy.

The virtual economy hypothesis as a whole lacks the systematic empirical support it needs. There are numerous accounting models available explaining the hypothesis could fit in the big picture, but little trace of their existence. However, it stands on a very solid logical foundation with sound assumptions. When each premise's empirical basis is supported individually (lack of restructuring, value-transferring, etc) and put together into the framework of VEH, it produces very good argument.

ii Analyzing the monetary school argument

In contrast to the virtual economy hypothesis, the monetary school argument draws its results from direct empirical studies.[22] However, one critical failure of the monetary school is its failure to successfully address the issue of rise in the prices of

[20] Ivanenko (2001)
[21] Gaddy and Ickes, "Virtual Economy and Economic Recovery in Russia" *Transition Newsletter*, 2001

industrial goods (virtual prices). The decreased supply of money argument heavily relies on the M2:GDP ratio. Tompson (1999) points out the ratio is small not because the supply of money[23] has shrunk so much but because the measured GDP was larger than it really was. When virtual prices used, the GDP figure can turn into an impressive number without any actual increase in production.

Secondly, the monetary school also does not address the issue of value subtraction. Even though, the actual size of value subtraction in Russia in 1990 remains subject to empirical findings, in the absence of any significant reformation, the majority of the industrial sector operates under the inefficient unprofitable system, inherited from the Soviet days. As firms cannot continue indefinitely under loss, the virtual economy hypothesis offers value transferring as the solution. Barter permits virtual prices and virtual prices allow value-transferring. Value-transferring requires virtual prices, leading to barter. The low level of liquidity argument runs nicely consistent with the VEH. This is assuming value transferring could be proven for a significant portion of the economy.

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[22] Krueger, Linz (1999), Commander, Dolinskaya and Mumssen (1999), etc

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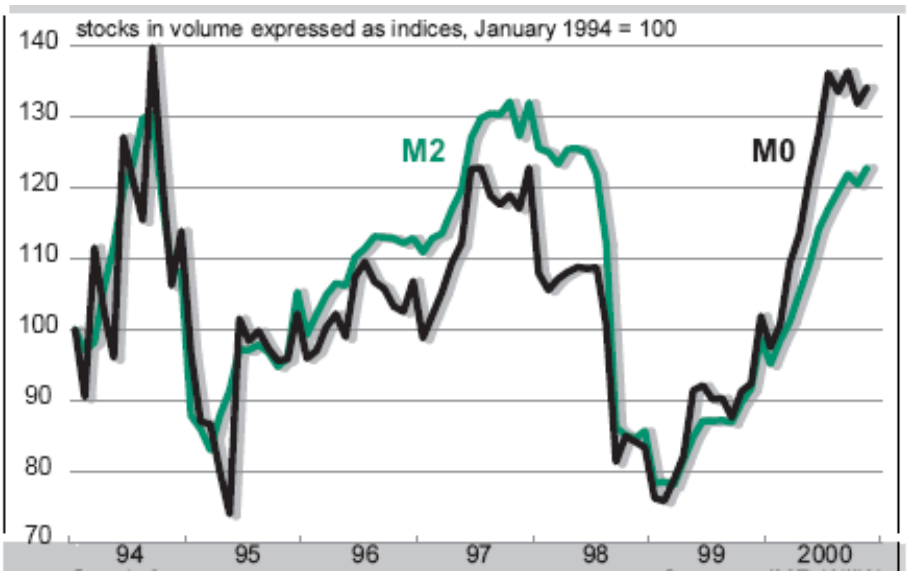


Darin (2000) presents an empirical evidence denying existence of value transfer. The data is based on 50 transactions of Ukrainian companies. Whether Ukrainian economy is a good analogue of Russian economy is questionable, since it is much smaller in size and its behavior is influenced by few major elements.

As a whole, the weakness in the monetary school argument is that it almost *refuses* to acknowledge issues raised by the virtual economy side. Specifically, it fails to confront a) virtual prices and b) value transfers. On positive note, its conclusions are supported by several different empirical findings that can be counted for credibility.

iii. Cross comparison

First, when lined up head-to-head, the major difference between the schools is their empirical roots. Basically the monetary side rests their findings on simply asking whether barter was caused by money (or liquidity) issues. The virtual economy hypothesis however lacks such direct empirical testing due to the complexity of its logical framework, but when its premises are supported individual empirical studies the viability is not that different from that of the monetary school side.

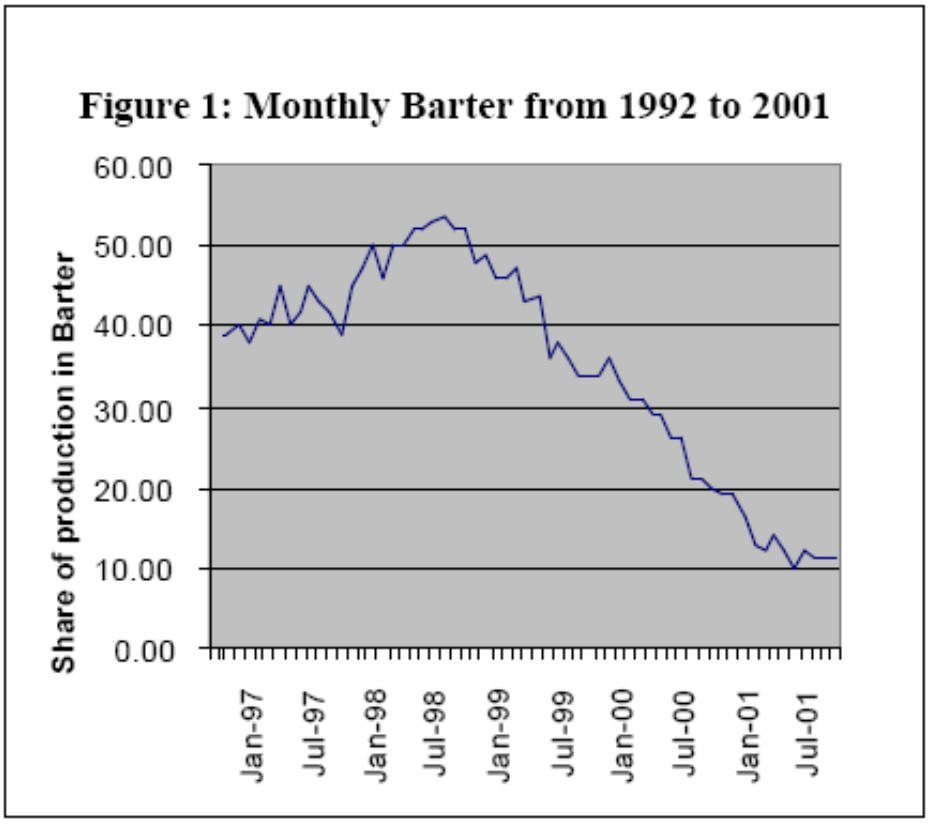
Secondly, the virtual economy hypothesis more or less attempts to provide a general picture of Russian economy and thus providing explanations for various phenomena that have been occurring throughout the transition, including the rise of NMTs. In that regard, it is interesting and appealing. In contrast, the monetary school exclusively focuses on the barter issue and thus forgetting the possibility of the virtual economy. The questions used in the surveys do not demand answers that may reveal information about the existence of the virtual economy. For example, let's consider the question "What was the reason your company engaged in barter?" The response "Lack of

cash" is used as a support of the monetary school. However, this answer does not break the consistency of the virtual economy set up. In fact, since no one would pay cash for the virtual prices, firms are bound to receive no cash. Thus, a firm in the virtual economy would also answer "Lack of cash." In another words, if the virtual economy school lacks systematic empirical foundation as a whole, the monetary school lacks empirical basis that negates the virtual economy side.

5. Conclusion

In this paper, I provide a detailed presentation of the virtual economy hypothesis and the monetary school argument, both aimed at justifying the rise of NMTs in Russia. The virtual economy school provides a model involving various phenomena that occurred (still occurring in some areas) in the mid 1990s. Part of the model gives an explanation for the rise of NMTs in Russia. The monetary school gives an argument based on tightened monetary supply and policies that reinforces it. I find that the virtual economy hypothesis lacks empirical evidence for its claims. Though, the monetary side possesses plenty of empirical findings, it never successfully dismisses the virtual economy school due to the style the data was collected. The virtual economy hypothesis offers a very natural explanation for the way Russian economy progressing and increase in barter occurred. We saw that negating VEH more or less induces to denying that the Soviet economy was efficient and value-transferring had not existed then, which is false. In addition, we witnessed some major similarities (taxation incentives and continuation of inter-firm networks) between the two schools and given that the monetary school lacks power to question the consistency of its rival.

The level of NMTs has decreased significantly since the crash of 1998.



*Source: Russian Economic Barometer and Institute for Economy in Transition (IET).*13

After the crash the financial illiquidity loosened up dramatically and bartering decreased. This fact may seem to support the monetary school argument and go against the other, for the crash did not mean all the firms restructured over night and did not require value-transferring anymore. Such argument maybe responded by the fact that the currency devaluation has lifted the ruble value of export by great deal allowing domestic firms to produce at very low cost and sell at higher prices. However, such response remains subject to empirical testing. Also, a post-crash empirical study on the level of

value-transferring in the economy would be quite useful towards further verification of VEH.

In the end, we must note it is quite possible that while some sectors lived the virtual economy, others simply lacked cash. The presence of the vast scale economic disorganization in Russia could easily have allowed coexistence of the two different ways barter trading had increased.

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