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## ECONOMICS OF BARTER: AN ASSESSMENT OF BASIC ARGUMENTS

*An overall shift to non-monetary exchange in former Soviet Union has become an issue of great concern for economists and politicians. Still, this problem has not gained a deep assessment in the literature, mainly, because of weak empirical data and short history of the problem. This paper "Economics of Barter" presents a critical review of recent studies on non-monetary exchange and summary of basic explanations of this phenomenon in order to restate emphases. The idea behind this is to show that agents, pursuing their profit- (or rent-) maximizing goals become subject to such formal and informal constraints that make them rely upon barter, rather than on monetary transactions.*

### Introduction

An overall shift to non-monetary exchange in former Soviet Union has become an issue of great concern for economists and politicians. Still, this problem has not attracted proper attention in the economic literature, mainly, because of insufficient empirical data and short history of the problem.

The very existence of a large market for barter, and its rapid growth during recent decade, represents something of a challenge for modern economics. The costs associated with finding "a double coincidence of wants" was viewed by William Stanley Jevons (1875) as motivation towards the invention of money. This keystone of monetary theory contributes to a widespread belief, that barter exchange is necessarily inefficient. Impact on prices, and other effects of barter were usually analyzed from the neoclassical standpoint, which neglects institutional matters. Sometimes, such an approach does not provide satisfactory explanations, especially when institutional imperfections take place, namely in transition from plan to market. The discussion of institutional premises of barter in post-Soviet economies represented in recent works of Gaddy and Ickes (1998), Commander and Mumssen (1998), Kaufmann and Marin (1998), and empirical assessments made by Estrin and Rosevear (1998), Veronica Orlova (Movchan

(1999) and Aukutsionek (1997) demonstrate a growing interest in the problem of barter in transition economies.

In this paper we will not focus on consequences of barter, but summarize basic explanations of this phenomenon in order to identify emphases. The idea behind this is to show that barter is nothing but reaction of rational economic agents to existing institutional environment. Agents, pursuing their profit- (or rent-) maximizing goals are subject to such formal and informal constraints that make them rely upon barter, rather than on monetary transactions.

### Definitions

Non-monetary exchange is broadly defined as economic transactions without use of money. In post-Soviet countries three basic instruments evolved to facilitate non-monetary transactions: barter, veksels (promissory notes to pay) and vzaemozaliky (offsets). Let us briefly characterize each of them.

There are several definitions to barter. The Law of Ukraine "On Taxation of the Profit of Enterprises" defines barter as

.. economic transaction that includes payment for goods or services in other than monetary form, including any type of writing-off and compensation of mutual indebtedness, when money that has to compensate the value of sold

goods or services are not received/shown up on the account of the seller as a result of operation (Law 1994, article 1.19).

Banks defined barter as "a transaction which is bound by a single contract that specifies the goods to be exchanged to an equivalent value" (1983,160).

However, it does not merely a pure exchange of goods in some proportion. In reality, a certain share of value in barter transaction is transferred in cash on commission basis.

Veksels are the main money surrogates used in the post-Soviet countries. Usually corporations, banks and governments are the issuers of such quasi-monetary instruments.

Offsets are essentially the transactions where debts for goods and services, or taxes, are used to clear mutual obligations between the enterprises (inter-enterprise payment offsets), and between the government and enterprises (tax offsets).

According to Ministry of Finance, in 1996 the tax offsets represented approximately one third of expenditures and revenues of local governments in Ukraine.

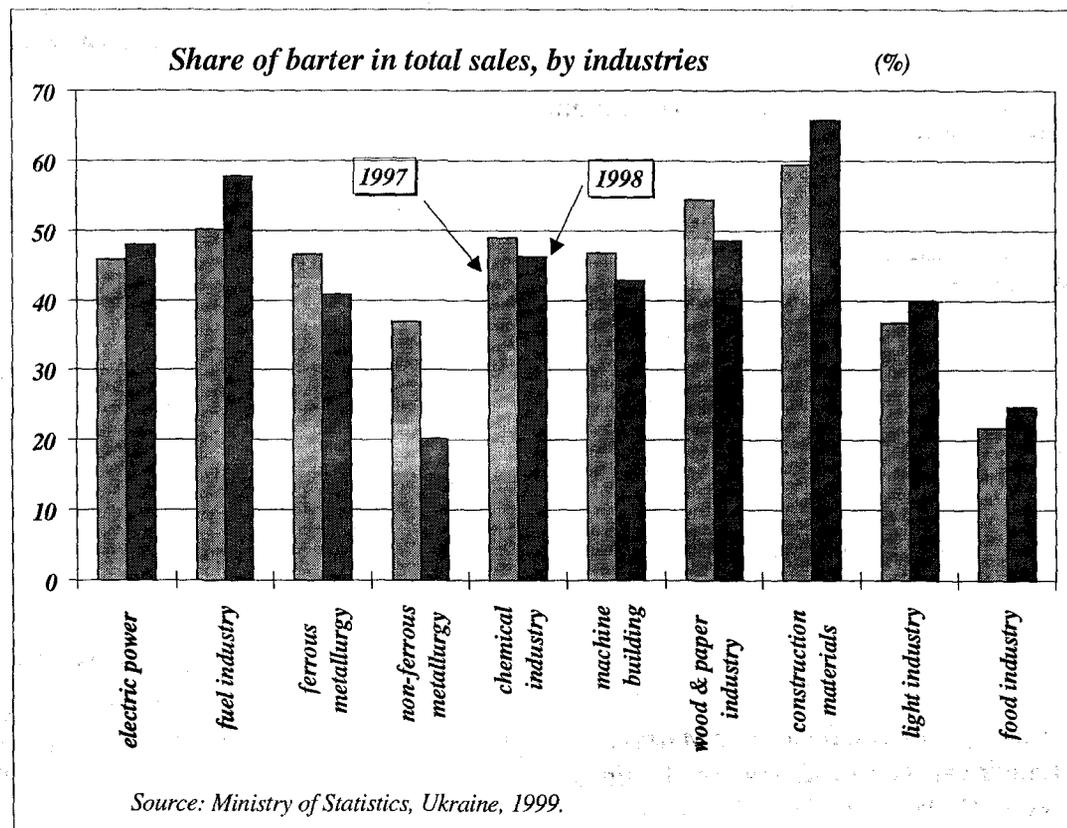
In practice, veksels and offsets are widely used in various schemes designed to minimize taxation in barter deals.

**Barter in Ukraine.**

According to recent data from State Committee of Statistics, volume of barter amounts to 42.4% of the total industrial product sales in 1997 and 42.5% in 1998.

Reported that their estimate of barter constitutes 51 percent to the volume of industrial sales. This result was based upon a survey of 165 barter deals among 55 Ukrainian firms in 1997. According to this survey, the following motives drive enterprises to barter.

Below we provide some assessment of the most discussed explanations of barter, namely, tax evasion, lack of circulation assets (demonetization) and trade credit argument.



Motives for Barter	1997, in percent*
No cash	87.5
No bank loan	29.1
No trust in the value of money	6.0
Faster payment compared to cash payment	72.1
No struggle with other creditors	7.8
No courts to enforce rights	6.0
To maintain production	12.5
Goods in stock could be used	66.1
Liquid good	1.8
Better deal on the price in barter	20.8
Reducing the tax burden	9.5
Avoiding controls on foreign trade	1.8
Reducing regulations	6.0
Capital flight to the west	0.0
State pressure	1.8
Others	1.2

Source: Kaufmann and Marine (1998)

### Explanations of barter

#### Tax evasion argument.

Opaque nature of a barter deal is viewed as major foundation for economic inefficiency. Outsiders, including tax authorities, have limited ability to monitor the transaction. As in barter deal only relative prices matter, two trading parties can agree on any nominal price without affecting the real exchange rate between the goods. Moreover, this rate can be set arbitrarily.

The ability to manipulate prices provides the means for tax evasion, for instance, by understating profits. In economic literature on barter this is one of the most debated issues. Recent studies on FSU economies tend to undervalue the importance of the tax evasion motive to barter. Basically, there are two common arguments for this.

First, survey results do not report that barter is an instrument for tax evasion. Second argument was expressed by Commander and Mumssen(1998):

"... there is little evidence that clever manipulation of nominal prices in inter-firm barter deals has been successfully used for tax minimization. Quite to the contrary, most firms

believe that inter-firm barter actually increases their tax bill. This is corroborated by the observation that barter prices almost always exceed cash prices, with margins of up to 50 percent."

The weakness of both arguments stems from unreliable data they were based on. The first argument does not seem valid because of insufficient level of confidence in survey results based upon entrepreneurs' responses to the questionnaires. Regarding the legacy of communist governance, embodied in the cultural specificity of post-Soviet entrepreneurship and other behavioral aspects, we can hardly expect respondents to jeopardize their privacy, rather than sincerely answer the question concerning their illegal actions. All in all, let us leave this issue opened for the sociological debate and concentrate on the second argument. The second argument is based on the lower cash prices observations. The problem is that those prices are not the "true" prices. Below we will present some brief analysis of "rules of the game" in order to show the ambiguous nature of these prices.

The roots of the problem we can find in tax legislation. It is necessary to note that legal

\*Answers have been ranked between very important and irrelevant. The percentages reflect the "very important" plus "important" responses.

rules on barter taxation are based on the concept of *zvychainy* (normal) prices. In Ukrainian legislation there is no clear definition of *zvychaina* price. According to "The Law on Taxation of Profits of Enterprises" it is essentially a market price of the good traded under "normal market conditions". Another regulation, issued by Tax Administration, defines *zvychaina* price as "price that was contracted in similar deals, published in advertising materials, statistical bulletins or estimated in sample survey on prices".

In Ukraine, four different agencies, namely, Verkhovna Rada, Cabinet of Ministers, President's Administration and Tax Administration issued different definitions of *zvychaina* price. Some of them are not applicable at all. So, bargaining parties can choose an appropriate one, which fits a specific deal. For example they can set ordinary prices by publishing them in price-lists. According to the legislation, if actual prices in barter deal are lower than *zvychainy* prices, the latter are used as a benchmark for accounting of tax duties. If participants of barter deal are willing to manipulate prices, the only thing they have to do is to coordinate published prices and those being used in their barter contract.

Returning to our discussion, we found that understanding of the processes that underlie the formation of observed values, in our case, of cash prices, may question the argument<sup>1</sup>.

To summarize the discussed above, we conclude, that there is no strong evidence against tax evasion motive for barter. Although barter transactions are not properly constrained against price manipulation, it does not necessarily mean that opportunity of tax evasion is a motivation to barter. It is unlikely that net benefits of cheating the Tax Administration outweigh the transaction costs of non-monetary exchange.

Now, let us focus on demonetization argument, which seems to provide more realistic explanation of barter.

### **Demonetization**

Many economists and businessmen view barter as an engine for survival for firms under

financial crisis and institutional breakdown. On the one hand, firms are driven to barter because they are short of operation funds (no cash available). On the other hand, under given "rules of the game", they found rational not to engage in cash transactions. Demonetization of the economy is the most popular explanation of the evolution of non-monetary exchange. This explanation includes wide range of arguments that stick to macroeconomic and institutional roots of this phenomenon.

Macroeconomic origins of the lack of liquidity in monetary system can be generalized as follows. Government measures aimed to conduct tight monetary policy, with presence of huge budget deficit and steady decline in production, have led to extremely high interest rates. Bank credit to enterprises has declined to extremely low level, partially due to the high opportunity cost of enterprise crediting, partially due to the accumulation of bad enterprise debts in banking system. Indeed, during the first years of macroeconomic stabilization, government excessively borrowed at T-bill market issuing bonds with attractive high yields. It is not surprising, that banks resorted to bond market rather than supply loans to credit market. Excessive and unproductive government spending crowded out investment in industrial sector. Those banks that used to credit to industrial sector have soon discovered that most of their debtors are insolvent.

The following problems of institutional origin worsened the situation in banking sector and skyrocketed interest rates.

The bankruptcy legislation does not provide effective procedure for enterprise liquidation. Even if the costly and time consuming bankruptcy process is initiated, creditors get access to the liquidated assets only after obligations to workers and government had been repaid.

The absence of risk-sharing institutions, underdeveloped legal institutions for the acquisition of assets of insolvent debtors, and lack of expertise of banks in risks evaluation,

<sup>1</sup> This example presents a good illustration of how economic analysis.

ie analysis of the legal rules can effectively supplement

all these factors contributed to the significance of "moral hazard problem" which has translated into unaffordable interest rates.

Arrears, to a great extent, contribute to the lack of operation funds. Being widely discussed in economic literature, this problem has deep roots, and, sometimes, the distinction between causes and consequences is not obvious.

Here, I would like to emphasize that government actions supposed to cure the problem, in fact, lead to its worsening. Motivated by plausible reasons the government shapes the problem by introducing wrong incentives.

For example, periodic writing-offs and offsets campaigns create strong expectations on their persistence in future. As a result, firms rationally decide to accumulate arrears.

Other example concerns Kartoteka-2, which had been invented for the sake of better tax collection. According to this regulation, once enterprise was recorded as a tax debtor, it was left with only one bank account. Any funds that arrive to this account were automatically transferred to clear tax obligations. In order to maintain production (buy inputs, pay wages), enterprise rationally decided to abstain from cash and engage in non-monetary transactions.

All the aforementioned illustrates how underdeveloped institutional environment creates such an incentive structure that channel behavior of economic agents to inefficient activities.

### **Trade credit argument**

In the literature on this topic, there is a clear vision that barter and other forms of non-monetary exchange have flourished on the ground of institutional imperfections. Some researchers, while not questioning its inherent inefficiency, consider barter as a solution to some problems of economic organization in transition.

This issue is closely related to the legacy of economic organization in planned economy. Modern economic theory views the Soviet economy as a big integrated firm. Central

planning encouraged direct links between enterprises and established stable networks for supply and distribution of goods and services. However, the supply chains were inflexible and slow, many enterprises had only one supplier of input and one buyer of output. The Communist Party effectively enforced stable and long-term relationships and economic discipline<sup>2</sup>. This ensured almost risk-free trade credit<sup>3</sup>. Typically, a trade credit refers to the relations between input (or intermediate good) suppliers and producers of a final good. Under the central planning the maturity of trade credit was usually low, reflecting period necessary to clear payments in banking system. Hence, the inter-enterprise arrears were impossible. Disintegration of the Soviet Union led to the breakdown of wide variety of inter-enterprise linkages, which caused dramatic decline in output. Collapse of the communist rule, combined with absence of the new enforcing institutions, led to the weakening of financial discipline. Newly established links highlighted the question of creditworthiness of the partners. In the imperfect institutional environment and disorganized network chains, barter trade can provide some advantages. According to Commander and Mumssen (1998), spot barter can replicate an inter-firm credit. This analogy stems from the fact that it takes time to turn payment in-kind into cash. When firm sells its output in barter deal, it often receives goods or services that are difficult to utilize quickly. It takes time and effort (cost) to sell the good or money surrogates received in barter operations, and use them for clearing tax obligations or purchasing inputs. Suppose that producer of final good arranges a barter deal with its supplier of inputs. From the supplier's point of view, he grants a credit to the producer, because it takes time to him to utilize the received final good. As an interest for such a trade credit, some commission cash payment can be used. Hence, spot barter, trade credit and bank credit, to some extent, can be considered as substitutes for provision of working capital.

<sup>2</sup>Hierarchical structure of the Communist Party constituted the backbone of economic organization, and performed a function of solving the "principal-agent problem"

<sup>3</sup>Trade credit arises from the period between the time goods are delivered and services performed, and the time when payment for these goods and services takes place.

There is another important advantage of trade credit in barter deal. It removes credit risk. Indeed, in cash deal there is significant risk that producer will fail to pay for inputs in time, or will not pay at all. By contrast, in barter deal supplier of inputs immediately possesses this payment (in the form of a good).

Normally, the utilization of payment in-kind is very costly. If all other firms are cash constrained, how could the supplier exercise the value of the received goods? According to our reasoning, the cashless producer of final good can use barter to acquire trade credit from his supplier. If this supplier is also cash constrained, he has to ask for similar trade credit from his own supplier, and so on. Thus, barter trade results in reallocation of trade credit along the whole chain of production: from producers of primary inputs to producers of final products. For instance, households provide a credit of similar nature to firms by accepting wage arrears and wages in-kind.

The role of industries that produce primary inputs (energy and raw materials) would be a good issue for further research on barter. Intuitively, we can guess that initial inflow of credit into production chains originate from government subsidies to fuel and energy industry.

To sum up, trade credit argument suggests vision of barter as a response of enterprises to the constrained access to bank credit. Yet, it explains effects of barter, rather than causes. Obviously, such a device for reallocation of trade credit helps maintain the production. However, it is necessary to note that barter solution for the lack of credit has some deficiency. On the one hand, barter does not create net credit, but redistribute it (Commander and Mumssen, 1998). On the other hand, it increases transaction cost. One source for this is a complexity of barter contract. Suppose for example, a final producer transfers its product in exchange for inputs. In order to quickly liquidate his trade credit, supplier of inputs may be tempted to sell the received

final product on lower prices. It would be more costly to constrain such a behavior in the contract, if many cases of re-barter take place.

### Concluding remarks

- Anti-market by its nature, non-monetary exchange shades information on a transaction. As a result, it distorts signaling role of prices. Price mechanism for efficient allocation of resources does not work. In bilateral barter deal, prices do not reflect the true opportunity costs of resources. They result from the mutual agreement of the two parties rather than derived from decisions of participants at competitive market.

- The phenomenon of barter trade should be studied in contingency with other forms of non-monetary exchange such as veksels and offsets, because they almost always supplement barter schemes.

- In any research on transition economy it is vitally important to carefully treat any observations concerning enterprise behavior.

- Intransparent nature of barter deal provides room for tax evasion. However, there is no strong evidence that this is a motivation to barter.

- Banking crisis and lack of developed financial institutions deprive enterprises from operation funds, thus pushing them to barter.

- Inter-enterprise barter deals can provide a risk-free trade credit. However, barter does not create, but redistributes credit from primary input producers to final good producers.

- Persistent barterization of economic activity encourages the development of institutions that facilitate non-monetary exchange. There is a number of evidences for this: private firms that use modern information technologies to search partners for barter exchange, state agency that mediates in-kind pension payments, various clearing agencies and veksels exchanges etc. This is an alarming tendency, because greater institutionalization now promises more problems with its removal in future.

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## ЕКОНОМІКА БАРТЕРУ: ОЦІНКА ОСНОВНИХ АРГУМЕНТІВ

Широке розповсюдження немонетарного обміну в економіках колишнього Радянського Союзу викликає все більше занепокоєння економістів і політиків. Однак ця проблема не дістала глибокого опрацювання в економічній літературі, значною мірою внаслідок ненадійності емпіричних даних і короткого періоду їх накопичення. Стаття "Економіка бартеру" пропонує критичний аналіз останніх досліджень з даного питання, а також підсумовує існуючі пояснення немонетарного обміну з метою зробити наголос на певних аспектах проблеми. Ідея полягає в розумінні сутності бартеру як реакції раціональних економічних агентів на інституційне середовище, в якому вони працюють.