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Black markets and pre-reform crises in former socialist economies

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Abstract

Boycko [Q. J. Econ. 107 (1992) 907] and others showed that wage increases in a socialist economy result in longer queues and lower output. Beyond a certain level of shortages, wage increases may lead to a "near collapse" of the economy. We show that the presence of black markets alleviates this outcome. In particular, wage elasticity of output is always smaller in the framework that includes heterogenous agents and black markets.

JEL classification: P21; P22; O17

Keywords: Black markets; Shortages; Pre-reform crisis; Partial reform

1. Introduction

The second economy or parallel markets arise in response to various restrictions on the official economic activities. While voluntary informal transactions are ex ante beneficial to the parties involved, the effect of these transactions on the overall economy may be difficult to ascertain. This issue was particularly important for the study of the pre-reform crises of centrally planned economies (CPEs), where parallel markets were pervasive.[1] Many of the informal discussions of *perestroyka* reforms and the pre-reform crisis in the former Soviet Union (FSU) emphasized the role of the second economy in policy outcomes.[2] The formal

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[1] See Stahl and Alexeev (1985) for a brief survey and references.
[2] For example, Grossman (1977) and Alexeev et al. (1991).

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Nomenclature

b	nominal price of the public good ($b \equiv 1$)
k_i	wage elasticity of output in Model i
$l_{A(B)}$	labor of more (less) productive workers
p	black market price
q	queuing time per unit of the public good
Q	total queueing time
U	total utility in the economy
$U_{A(B)}$	utility of more (less) productive workers
$w_{A(B)}$	real measured wage of more (less) productive workers
Y	total output

analyses of the pre-reform crises, however, usually did not focus on the role of parallel markets.[3]

One of the best known examples of the formal analysis of problems that arose in some CPE's prior to radical market-oriented reforms is Boycko (1992). He modeled an economy that produced one consumer good, the monetary price of which was fixed below market clearing level. Rationing of the good was accomplished by queues, while a representative agent allocated his time between queuing, leisure, and work.[4] Boycko demonstrated that in this queue-rationed economy, an increase in measured real wages leads to longer queues that result in a smaller amount of time allocated to production.[5] This in turn reduces the supply of the good, increasing the queues and output even further. Eventually, the economy may find an equilibrium characterized by longer queues and lower output than prior to the wage increase. Alternatively, under certain conditions, the economy may completely implode.[6] A similar effect of the rise in wages on output in a queue-rationed CPE was modeled by Osband (1992). Unlike Boycko, one of the extensions of Osband's model allowed for the possibility that some of the goods are sold by the "insiders" at market prices. However, these insiders were not modeled as optimizing agents. Osband simply assumed that a certain share of output was sold in a conventional market and that these insiders spent their incomes in the same proportion as workers. The latter assumption was necessary to make sure that the insiders did not affect consumption patterns in the overall economy. Naturally, the result

[3] See for example, Boycko (1992), Bennett (1994), and Weitzman (1991). Osband's (1992) briefly discussed sales by "insiders" in one of the extensions of his model (see more on his approach later in the text). Bennett (1991) allowed for the existence of parallel markets but did not compare his results with pure non-price rationing. Leitzel (1994), who concentrated on the costs of diversion of the officially produced goods into black markets, provides a rare exception.

[4] Generally, rationing via tradable costless coupons would be more efficient than rationing by queues if one disregards administrative costs and distributional considerations. Nonetheless, while coupon schemes have been used in the former socialist countries for certain goods, the prevalent non-price rationing method has been queuing. See Sah (1987) for a comparison of the distributional consequences of different rationing mechanisms.

[5] In the FSU, the annual growth rate of measured real personal income increased from about 2% in 1987 to 12% in 1990. We use the term "measured real income" to denote income adjusted by the official price index.

[6] As Boycko pointed out, the implosion story was unlikely as "consumers would rely more on home production and the second economy" (p. 918) but he did not model these possibilities.