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Explaining the real exchange rate in Kazakhstan, 1996–2003: Is Kazakhstan vulnerable to the Dutch disease?

Ali M. Kutan [a,b,c,*], Michael L. Wyzan [d]

[a] *Southern Illinois University, Edwardsville, IL, USA*
[b] *Center for European Integration Studies, University of Bonn, Bonn, Germany*
[c] *William Davidson Institute, University of Michigan Business School, MI, USA*
[d] *International Institute for Applied Systems Analysis (IIASA), Schlossplatz 1, A-2361 Laxenburg, Austria*

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Abstract

Kazakhstan possesses extensive natural resource reserves expected to yield significant export revenues. Since independence in 1991, the composition of exports has changed in favor of energy-related sectors. In the context of such evidence and considerable expected future revenues, researchers have pointed to possible Dutch disease effects. This paper examines whether Kazakhstan is vulnerable to this condition. Using an extended version of the Balassa–Samuelson model including the price of oil, we find evidence that changes in those terms had a significant effect on the real exchange rate during 1996–2003, suggesting symptoms of significant Dutch disease effects in Kazakhstan.

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* Corresponding author.
E-mail addresses: akutan@siue.edu (A.M. Kutan), wyzan@hotmail.com (M.L. Wyzan).

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1. Introduction

Many economies were faced with shocks as a result of the sharp increases in energy prices in the 1970s. There is a huge body of literature that analyzes the impact of these shocks and the consequences of the adjustment policies followed by various countries. It includes a significant number of papers devoted to the ''Dutch disease'' problem faced by resource-exporting countries.[1] The narrow, original definition of this phenomenon involves the following: oil-exporting countries have periodically experienced significant increases in their national wealth due to higher oil prices, resource discoveries, or technological progress in the energy sector. The booming demand caused by greater wealth leads to shift of an economy's productive resources from the tradable goods sector to the non-tradable goods sector. Such shrinkage of the tradables sector was termed the Dutch disease, referring to the supposedly adverse effects on Dutch manufacturing of that country's natural gas discoveries in the 1960s.

Corden and Neary (1982) show that a resource boom affects the rest of the economy in two main ways: the resource movement effect and the spending effect. According to the resource movement effect, the boom in the energy sector raises the marginal productivity of labor in that sector, which causes a movement of labor from both the manufacturing and non-tradable sectors to the booming sector. The result is a contraction of the tradables sector due to a reduction in the application of productive factors there. The spending effect argues that the boom in the natural resource sector, which may be caused by a rise in the world price of the resource, leads to increased income in a country and, consequently, to increased demand for traded and non-traded goods. Since the prices of traded goods are fixed internationally, this effect leads to rising prices of non-traded goods relative to traded ones, that is, a real appreciation of the exchange rate. This, in turn, leads to mobile factors moving from the traded to the non-traded and resource sectors, namely, a contraction of the non-booming traded goods sector.

Kazakhstan possesses extensive reserves of natural resources. It is heavily reliant on revenues from the export of primary commodities, in particular petroleum and natural gas. The economy's dependence on revenues from the oil and other natural resource-based sectors raises the possibility that the economy will be vulnerable to external commodity price fluctuations and, possibly, Dutch disease effects. This question arises not only in the context of future revenues, but also with respect to the current situation, where there is evidence of structural changes in favor of the natural resource sector and a major flow of foreign direct investment (FDI) into that sector, accompanied by a real appreciation of the currency. Examining whether these changes are typical of countries in transition to a market economy or a specific signal of Kazakhstan's vulnerability to the Dutch disease is important for predicting the future development of the Kazakhstani economy.

Estimates of Kazakhstan's proven petroleum reserves range from 5.4 billion to 17.6 billion barrels (Energy Information Agency (EIA), 2002). However, these reserves pale in comparison with estimates of the country's possible reserves, both ''offshore'' (i.e., in the Caspian Sea) and onshore, with optimistic estimates running as high as 51 billion barrels of oil and 7.5 trillion cubic meters of gas. As a result of these possibilities, Kazakhstan has

[1] See, e.g., Corden and Neary (1982), Corden (1984), and Rosenberg and Saavalainen (1998).