

1. INTRODUCTION

1. This note addresses the issue of higher energy prices impact on Ukrainian economy. It concentrates on oil and natural gas prices, but notes how those prices relate to the price of other energy sources in Ukraine, as well as to measures of inflation. High oil prices are already a reality, while the import gas price, which is far below the market price in Central Europe, is increasingly under pressure to increase by Russian and Turkmen suppliers. The analysis is limited to impact on GDP and some discussion of the direct inflation response.³ Information is also provided about energy inputs and consumption shares across the economy, which helps shed light on microeconomic pressures that many sectors would experience in the face of price increases. The main quantitative result is that, depending on the scenario, the impact on the economy would be in range of 0.4-8.6% GDP “loss” for the first year after the shock relative to the baseline (no energy price change) and 0.2-6% GDP “loss” for the second year, with the high end of these ranges being the result of separate, drastic, price shocks in both oil and natural gas simultaneously. A discussion of additional non-linearities in the economy’s response is also provided.

2. The note is organized as follows. First, we describe the structure of the Ukraine’s market of oil and gas, and explore oil and gas price trends in the country. Then, we estimate oil and gas vulnerability indicators for Ukraine and compare them with other countries. Next, using assumptions on price elasticities drawn from cross country studies, we calculate the direct impact of higher oil and gas prices on Ukraine’s GDP. We then discuss the potential impact of increases in oil and gas prices on inflation. Finally, we provide some policy recommendations for reducing Ukraine’s vulnerability to energy price increases.

2. STRUCTURE OF THE MARKET

3. Oil and gas play an important role in Ukraine’s economy. Table 1 shows the energy balances of Ukraine in percentages of total final energy consumption (TEC).⁴ Natural gas and oil products constituted 60% of final energy consumption in 2002. Natural gas is the most important source of energy, accounting for 43.3% of energy consumption by end users. Industry is by far the major final consumer of energy at 41%, followed by the residential sector with 31% and transportation with 10%. The largest final consumers of natural gas are residential sector (41%) and industry (36%). Oil products are most heavily used by transportation (55%) and agriculture (18%).

4. Total primary energy supply (PES) exceeds the final consumption by 71%;⁵ this figure is 20 to 30 percent higher than figures for OECD countries, due to aging capital, outdated energy transformation technologies and distribution losses (both technical and non-technical). 20% of PES (equivalent to 34% of TEC) is used by electric plants as an

³ We recognize the related important variables influenced, such as exchange rate, current account and fiscal balance, but leave those beyond the scope of this note.

⁴ Annex 1 presents energy balances in thousand tons of oil equivalent (ktoe) on a net calorific value basis.

⁵ This is much higher than in many other countries: for example, in the OECD countries this indicator is equal to 45%, in the EU – 41%, in Russia – 50%.