

MACROECONOMIC AND ENVIRONMENTAL IMPACT OF ENERGY SUBSIDIES IN KAZAKHSTAN

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Overview

Energy subsidies represent policies that affect energy prices and costs. They are common in both industrialized and developing economies. A policy leads to subsidization of energy use if resulting energy prices are below their full cost recovery levels or if such prices do not fully internalize the cost of negative externalities. As a result, energy subsidies promote energy use and lead to increasing levels of emissions of green-house gases. Lower energy costs take away the incentive for producers and consumers to invest in efficiency improvements. Energy subsidies are estimated as 0.7 per cent of world GDP and most of these subsidies encourage fossil fuel consumption. Studies have shown that removal of such subsidies would result in emission reduction. However, the feasibility of phasing out subsidies depends on the resulting economic and social impacts. Energy subsidies in Kazakhstan are estimated at between 3.3% and 6.96% of the country's GDP. The aim of our study is to evaluate the impact of energy subsidy reform on the economic and environmental indicators of Kazakhstan.

Methods

Our project will handle evaluation of energy subsidy reform in three stages. At the first stage, the magnitude of energy subsidies will be estimated. At the second stage, Computable General Equilibrium model of Kazakhstan economy will be developed. This model will replicate the interconnectedness of various sectors within the economy consistent with the current level of subsidies and associated emissions. At the third stage, the impact of subsidy reform on emissions and economic activity will be evaluated under different policy scenarios. Policy recommendations will be formulated based on our findings.

Results

The CGE model of Kazakhstan economy is in the process of being developed. Initial findings are based on the analysis of input-output tables and the social accounting matrix. By analyzing the links between ten producing sectors and four sectors of final demand we postulate potential impacts of increasing energy prices on specific economic sectors. Based on the analysis of the composition of CO₂ emissions we expect that the largest reductions in CO₂ emissions would be associated with reforming subsidies for coal. Further investigation is required that would allow for indirect links between the sectors and associated multiplier effects of the reduction of energy subsidies.

Conclusions

To study the effect of reducing energy subsidies it is necessary to take into account multiple links that each producing sector has with other sectors and consumers. Our initial steps in this direction involve a review of existing studies and compilation and analysis of the data. Our preliminary findings based on data analysis allow us to identify those sectors which would be most affected or would benefit most if energy subsidies on specific commodities were to decrease. This analysis needs further elaboration and explicit modelling of the links between the producing sectors and sources of final demand.

References

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