

# The impact of higher retail energy prices on intergenerational welfare in Saudi Arabia

Frédéric Gonand<sup>a</sup>

Fakhri Hasanov<sup>b</sup>

Lester C. Hunt<sup>c</sup>

*March 2017*

**Abstract:** This paper investigates the intergenerational welfare impact of raising retail energy prices in Saudi Arabia, an oil-exporting country with a fast growing population. To achieve this we develop a dynamic model with overlapping generations (called MEGIR-SA), which we believe is the first empirical application of its type to be developed for a Gulf region country. The model is used to analyze the effects of the administered increase in Saudi energy prices implemented in December 2015. In particular, the model analyses how these price increases might impact on the welfare of Saudis through a direct increase in energy expenditures, an indirect rise in Saudi public income stemming from a lower domestic demand for oil which fosters oil exports at a given level of domestic oil production, and a direct increase of the turnover of the energy sector. The two latter effects can be redistributed by the Saudi public authorities to private agents through higher current public spending and/or public investment. The analysis suggests that the December 2015 increase in end-user energy prices results in a net overall favorable effect on the intertemporal welfare of all households. This mirrors the impact on the income of private agents of the surplus in public oil income associated with lower domestic consumption of oil products and recycled to private agents. Moreover, it is shown that the additional oil income associated with the increase in domestic energy prices tends to be relatively more beneficial to future generations if it is recycled through public investment. This holds even more if the future price of oil remains relatively low. In a possible future situation of declining oil prices and domestic production, a desirable policy may consist of gradually increasing the fraction of the additional oil income that is recycled through public capital spending.

JEL Codes: D58 - D63 - E62 - L7 - Q28 - Q43.

Key words: Energy prices; Saudi Arabia; overlapping generations; general equilibrium.

<sup>a</sup> University Paris-Dauphine, PSL Research University, LEDa-CGEMP, 75016 Paris, France; and King Abdullah Petroleum Studies And Research Center (KAPSARC) (Riyadh, Saudi Arabia) ([Frederic.Gonand@dauphine.fr](mailto:Frederic.Gonand@dauphine.fr))

<sup>b</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC) (Riyadh, Saudi Arabia) ([fakhri.hasanov@kapsarc.org](mailto:fakhri.hasanov@kapsarc.org)) and Institute of Control Systems, B. Vahabzade Street 9, Baku AZ1141, Azerbaijan.

<sup>c</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC) (Riyadh, Saudi Arabia); and University of Surrey, United Kingdom; ([Lester.Hunt@kapsarc.org](mailto:Lester.Hunt@kapsarc.org); [L.Hunt@surrey.ac.uk](mailto:L.Hunt@surrey.ac.uk))