

Greenflation and implications for monetary policy

June 2023

Conny Olovsson and David Vestin (2023), in “[Greenflation?](#),” use a New Keynesian model to study the economic and inflationary effects of an ambitious policy to reduce fossil fuel use. In an economy where energy is not used in production, a flexible energy price and a monetary policy rule that sees through energy-price changes can provide efficient prices. However, in the more realistic scenario when energy is used in production and prices are sticky, there will be deviations from efficiency. Since energy’s share of income is small, these deviations remain marginal unless the increase in the carbon tax is aggressive and/or monetary policy ill-suited. Numerically, the resulting increase in the CPI is modest and peaks below one percent. The authors conclude that during a green transition, monetary policy should see through energy prices and instead focus on core or wage inflation.

Maximilian Konradt and Beatrice Weder di Mauro (2023), in “[Carbon taxation and greenflation: Evidence from Europe and Canada,](#)” empirically study the effects of carbon pricing on inflation dynamics. Their results show that carbon taxes so far have not led to significant increases in inflation. Instead, a carbon tax tends to increase the cost of energy while leaving the price of other goods and services unaffected.

These results are fully in line with what our theoretical model predicts should happen. This is due to the nature of prices in the energy and goods/services sector, respectively: while energy prices tend to be fairly flexible, goods prices and wages are fairly sticky.

Kosuke Aoki (2001), in “[Optimal monetary policy responses to relative-price changes,](#)” develops a model with a flexible-price sector and a sticky-price sector. He shows that it is optimal for the central bank to put higher weights on sectors with rela-

Curated by:

Conny Olovsson*
(ECB, Sveriges Riksbank)
and **David Vestin**
(Sveriges Riksbank)

** The opinions expressed here are the sole responsibility of the authors and should not be interpreted as reflecting the views of Sveriges Riksbank or the ECB.*

tively more rigid prices. In fact, if a price is fully flexible - which is a reasonable approximation for the energy price at a quarterly horizon - its weight in the optimal inflation index is zero.

Aokis findings are fully consistent with our results. During the green transition, monetary policy should see through the increasing energy prices and focus on core inflation (which in our setting is defined as CPI inflation excluding energy inflation). A policy that makes sure that core inflation remains on target while allowing the CPI to increase from the higher energy prices, can implement the efficient (flex-price) allocation without negatively affecting output. This is in contrast to the findings of other recent research.

Marco Del Negro et al. (2023), in [“Is the green transition inflationary?”](#), consider a qualitative model with “dirty” and “clean” goods, while abstracting from both green and brown energy use and from sticky wages. The results show that the green transition tends to create a trade-off between keeping inflation low and closing the output gap.

The difference relates to the assumptions about price rigidity: we assume that the energy price is fully flexible and that energy is an input into production, whereas Del Negro et al. (2023) assume that different energy types in production are implicitly captured and that all prices are rigid. We also show that the increase in CPI will, in fact, be modest.

Florencia S. Airaud et al. (2023), in [“The green metamorphosis of a small open economy,”](#) consider a small open emerging economy and find that a green transition triggered by higher prices for fossil fuel puts upward pressure on the aggregate price level. In addition, the resulting increases in marginal costs of production drive the prices of consumption goods. Similar to the findings in Del Negro et al. (2023), monetary policy can reduce the inflationary pressure but only at the cost of higher output losses.



© E-axes Forum, Inc. All rights reserved.

The E-axes Forum is an independent nonprofit, nonpartisan research organization on macroeconomic policies and sustainability. The Forum is dedicated to aggregating knowledge from around the globe with the aim to catalyze the engagement of economists and decision makers who are working on policies towards achieving a sustainable economy.

www.e-axes.org
228 Park Ave S., PMB 35845, New York, NY 10003