Chapter 5
Oil Prices and Spain's Interest Rates:
Did the Link Change After EU Accession?

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ABSTRACT

This chapter studies the impact of oil shocks on Spain's short-term interest rates. In so doing, it investigates whether the connection between these two variables changed after 1986 – a period marked by both Spain's EU accession and the move to interest rates as the monetary policy instrument. For the period after 1986, we find that, in response to oil shocks, real short-term interest rates tended to rise, while nominal interest rates increased only gradually. Oil prices impacted interest rates in periods of high oil prices, such as that around the 1990 spike and in some instances since 1999. The increase in interest rates after an oil price shock contributed to reducing inflation, while also making the economic slowdown more marked. The main results are not robust to starting the estimation in 1970, implying that monetary policy became more restrictive in reaction to oil price changes after EU accession.

1. INTRODUCTION

There is a large literature on the macroeconomic consequences of oil price shocks, which largely focuses on the latter's impact on domestic prices and especially real output. Given that crude oil is a basic input to production, the theory normally predicts that supply-side consequences of oil price hikes include a contraction in overall economic activity and inflationary pressures. In addition, aggregate demand is expected to fall in oil importing countries, and go up in oil exporting countries. Existing empirical work has by and large confirmed the results found in the theoretical literature.[1] The initial studies for the US

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identified a linear negative link between oil prices and real activity. It was eventually found that by the mid-1980s such linear relationship began to lose significance. Three leading non-linear approaches have been developed by Mork (1989), Lee et al. (1995), and Hamilton (1996) with the aim of re-establishing the negative relationship between increases in oil prices and real output developments.[2] Mork's (1989) study found that the real effects of oil price increases are different from those of decreases, with oil price decreases not having a statistically significant impact on US economic activity. Two other non-linear models were later developed in the literature, namely: the scaled specification (Lee et al., 1995), which takes the volatility of oil prices into account; and the net specification (Hamilton, 1996), which considers the amount by which oil prices have gone up over the last year.

The present paper is meant to extend the empirical work on oil price impacts by examining the case of macroeconomic developments in Spain, the fourth largest euro area economy. We shall focus on the behaviour of interest rates in the face of oil price shocks. In what represents another focus, we shall investigate whether the connection between Spain's interest rates and oil prices has changed since 1986, the year in which this country entered the European Union (EU) and started using interest rates as the monetary policy instrument. The institutional changes involved may have modified in a substantial and broad fashion the environment in which the Spanish economy had been operating, potentially affecting the way oil prices affected domestic interest rates.[3] The abandonment of previously dominant monetary intermediate targets (see e.g. Ayuso and Escrivá, 1998, and Camarero et al., 2002) may have had specific direct consequences on the link between short-term interest rates and oil shocks – a link that reflects the way monetary authority responds to the disturbances. While the monetary policy's regime change highlighted above is not the only structural transformation taking place in the Spanish economy between 1970 and the financial crisis of 2007, it is the most relevant to the present study.[4] The latest global financial crisis, which erupted in 2007, in retrospect would point to some exuberance in the period immediately leading to it; very importantly, the transmission mechanism of monetary policy has remained somewhat impaired ever since – a concern only compounded in recent years by the outbreak of the COVID-19 pandemic. In order for our study to establish the specific role of EU accession (with Spain's concomitant adoption of a new style of monetary policy), our estimation sample must leave out the period starting somewhat before the outbreak of the 2007 financial crisis. On top of the relevance that our study has for understanding historical transition between monetary policy regimes (in Spain and indirectly in other countries that have already graduated to some sort of inflation targeting approach), it is worth recalling that similar transition processes are currently underway or envisioned in a number of countries around the world (see e.g. Mæhle and King, 2022).

The approach to model estimation pursued here considers the linear and three leading non-linear methods described above. We use of two different identification schemes, a recursive one and one based on short-run restrictions drawing from Cushman and Zha (1997), and Kim and Roubini (2000). The latter approach is used here in a counterfactual monetary policy analysis comparing the period before and after Spain's EU accession.[5] Unlike most of the literature, which focuses on the effect of oil shocks on real output developments, we concentrate on short-term interest rates, although also exploring the latter's structural relationship with both inflation and economic activity. Our analysis combines impulse responses (including counterfactual experiments), variance decompositions and historical decompositions – the latter showing the contribution of oil prices to interest rate fluctuations over time.

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