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On the link between current account and oil price fluctuations in diversified economies: The case of Canada[☆]

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ABSTRACT

This study revisits the important relationship between oil prices and current account for an oil-exporting-country with a diversified economy, namely Canada, by paying particular attention to the time-varying nature of this link. To this end, we rely on an innovative method, the time-varying parameter vector autoregressive (TVP-VAR) model with sign restriction. We find that while an oil supply shock has a non-significant impact on the current account, an oil demand shock has a positive and significant effect, which tends to increase over time. In addition, by studying the economic factors underlying the evolution of this relation, we show that the propensity to spend oil revenues on imports has a significant negative influence on the pass-through of oil demand shocks on current account. However, a deepening of the domestic financial market and an accumulation of foreign exchange reserves have a significant positive effect on this relationship.

1. Introduction

The interaction between macroeconomics and fluctuations in oil prices is one of the most discussed topics in international macroeconomics (see e.g. [Hamilton, 1983](#); [Burbidge and Harrison, 1984](#); [Gisser and Goodwin, 1986](#); [Hooker, 1996](#)). The abundance of this literature stems from the key role played by the evolution of oil prices in the formation of external imbalances (deficits for some countries and surpluses for others) and its contribution to economic activity. Thus, the oil price surge in the 2000s was considered partly responsible for worsening and for the persistence of global imbalances¹ observed during the same period. This view is relayed in the literature by some authors such as [Rebucci and Spatafora \(2006\)](#), [Blanchard and Milesi-Ferretti \(2010\)](#), and [Arezki and Hasanov \(2013\)](#). Indeed, the sharp and unprecedented increase in crude oil prices from 2003 to 2008 would have resulted in transfers of wealth from oil importers to oil exporters, thereby accelerating these imbalances.

Despite the rising interest in the current account – oil price nexus, surprisingly, much fewer theoretical ([Backus and Crucini, 2000](#); [Bodenstein et al., 2011](#)) and empirical ([Bollino, 2007](#); [Kilian et al., 2009](#); [Özlale and Pekkurnaz, 2010](#); [Le and Chang, 2013](#))

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¹ The problem of global imbalances is one of the most worrying issue that policy makers and researchers face. To reduce the extent and persistence of these imbalances during the 2000s, the International Monetary Fund (IMF) launched in 2006 the first multilateral consultation on global imbalances. In 2011, the European Union (EU) adopted two regulations on macroeconomic imbalances to detect and correct excessive imbalances. Global imbalances have also been at the centre of discussions at the G20 summits (since 2006) that have given rise to the adoption in 2011 of guidelines for measuring excessive imbalances.

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studies treat directly this issue.² Moreover, no clearcut consensus has emerged, and the common finding from these studies is that the sign and the magnitude of the impact of oil prices on the current account depend crucially on the nature of the economy considered (oil-importing or oil-exporting), the degree of domestic financial development, the degree of international financial market integration, and the management of the foreign exchange rate reserves (Buetzer et al., 2012). The relation between the current account and the price of oil for oil exporting countries also depends on the propensity of the economies to absorb oil shocks (positive or negative), which, in turn, depends on their level of economic diversification. A country with a low level of export diversification and a prominent oil sector will have a current account strongly linked to the oil balance, making systematic the relation between the current account and oil prices.

From this point of view, Canada appears as a particularly interesting case for studying this relation. Indeed, the economic features of Canada differ from those of both oil exporters and oil importers, as pointed out by Kilian et al. (2009). Compared to other net oil-exporting countries, Canada has the particularity to be among the top 10 oil-exporter and at the same time to be one of the main oil consumers. This gives to the country a quite pivotal role in the oil market framework since it can influence both sides of the market (demand and supply). Moreover, while Canada is net oil-exporter the structure of its exports is quite well diversified since the oil share account for less than 20% of the total. This point is interesting for studying the relation between the current account and the price of oil because although this relation is often considered to be linear, especially for countries with little or no diversification, it can be subject to regular disruptions because of the terms of trade in other export sectors (e.g., for Canada, the automotive industry).³⁴ Fig. 1 illustrates the time-varying nature of the relation between current account and oil price fluctuations.

The main objective of this paper is to assess the impact of oil price movements on the current account of Canada taking into account the potential non-linearity of this relation. To this end, we rely on a recent innovative method that permits to disentangle the different sources of oil price fluctuations and assess the time-varying nature of the relationship. As econometric method, we use a time-varying parameters vector autoregressive (TVP-VAR) model with sign restriction in line with Primiceri (2005), Cogley and Sargent (2005), and Baumeister and Peersman (2013).

Despite the country-case nature of this study, our paper contributes to the literature in several ways. First, we offer a recent and updated comprehensive literature review of studies that treat, directly or indirectly, the nexus between current account and oil prices. Second, we empirically investigate the relationship between current account and oil price by distinguishing the effects of oil price due to supply shocks and demand ones (see Kilian, 2009; Baumeister and Peersman, 2013). We thus account for the fact that an oil price increase due to production shortfall would not necessarily have the same impact on the current account as an unexpected increase in the demand for oil. A rise in oil prices associated with a production shortfall might compensate for the resulting loss in revenue, whereas that associated with a rise in demand triggers an oil revenue windfall. This distinction takes the form of sign-restrictions in our model. Third, allowing the relation between the current account and the price of oil to be time-varying, we leave the beaten track, where a linear relation is often assumed in favor of nonlinearity as Le and Chang (2013). By dividing the sample of their studies into three different episodes, authors show that the relation between the current account and oil prices varies considerably from year to year in terms of magnitude, sign, and signal of causality. The main obvious rationale for this framework is that different sources of oil price fluctuations do not necessarily occur at the same time. Therefore, the time-varying nature of oil price shocks leads to an unstable relation between oil prices and macro-economic variables, as argued by Kilian (2009) and Kilian et al. (2009). Moreover, Baumeister and Peersman (2013) argue that changes in factors such as the oil intensity of economic activity, energy market regulations, the capacity utilization rate in crude oil production, and the degree of oil market financialization, are probable drivers of the time-varying nature of the relation. Therefore, we propose to estimate for the whole sample period considered in this study the extent of the oil-price elasticity of current account. Furthermore, our paper provides some explanations for the relation between the current account and oil price fluctuations for Canada, which has not often been the case in previous studies.

As it is standard in the literature, we find a positive relation between oil prices and current account, indicating that an oil price increase is followed by a current account surplus for oil exporting countries. Moreover, an impulse response analysis shows that an unexpected oil price increase following an oil production shortfall does not have a significant impact on the current account. In contrast, oil demand shocks have a significant positive effect on the latter. More interestingly, the time-varying specification that we adopt in this study allows us to obtain two main results. First, we find that the oil price and current account nexus has increased over time and is mainly demand driven. Second, by conducting a formal assessment of the influence of adjustment factors on the oil price and current account nexus, we find that the positive impact of an oil price increase on the current account is mitigated by the propensity to spend an oil revenue windfall on imports. In contrast, the degree of domestic financial development and the accumulation of exchange rate reserves have a significant positive impact on the link between oil prices and current account.

The rest of this paper is organized as follows: Section 2 provides a review of the recent literature and return broadly to the reasons that make Canada an interesting case; Section 3 presents the empirical method used; Section 4 discusses the results; and Section 5 concludes.

² Most of the studies have focused on the sustainability of the current account, the reversal of the current account and its economic cost, as well as the role of the exchange rate regime (see Aizenman and Sun, 2010, and Lane and Milesi-Ferretti, 2012).

³ When the oil balance is predominant in the current account (the case of essentially oil countries), any change in oil prices is likely to mechanically drive the current account in the same direction.

⁴ Section 2 returns more broadly to the reasons that make Canada's case unique and interesting to study.

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