



# Terms of trade and current account fluctuations: The Harberger–Laursen–Metzler effect revisited

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## Abstract

This paper investigates whether extending the intertemporal model of the current account to allow for variations in the terms of trade improves its ability to fit the data. It derives a testable present-value representation of the current account that encompasses the Harberger–Laursen–Metzler (HLM) effect, according to which a temporary rise in the terms of trade improves the current account. The present-value model is tested using data from Australia, Canada, and the United Kingdom. The results show that terms-of-trade movements do not affect the current account in a significant way, and that, in two of the three cases, the model is strongly rejected by the data.

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## 1. Introduction

The standard present-value model (PVM) of the current account has been evaluated by many studies, using time-series data from different countries, over various sample periods,

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and at different frequencies.<sup>2</sup> The common result of these studies is that the standard PVM fails to explain postwar current account fluctuations of typical small open economies such as Australia, Canada, and the United Kingdom. Departing from the standard model, however, [Bergin and Sheffrin \(2000\)](#) show that stochastic variations in relative prices can play an important role in explaining current account movements. More precisely, their analysis demonstrates that amending the standard PVM to include variable interest rates and exchange rates improves its fit substantially.<sup>3</sup>

This paper investigates whether extending the intertemporal model of the current account to allow for variations in the terms of trade improves our understanding of current account dynamics. Terms-of-trade shocks are widely regarded as a major force driving business cycle fluctuations in small open economies.<sup>4</sup> This view has become even more popular after the oil-price shock in the early 1970s. Indeed, the subsequent two decades witnessed a secular decline in commodity prices along with an increase in their volatility.<sup>5</sup> In the same time, commodity-exporting countries, such as Australia and Canada, experienced an increase in their current account variability. This suggests that terms-of-trade shocks might be important in explaining current account movements in these countries.

The effects of terms-of-trade movements on the current account have been initially studied by [Harberger \(1950\)](#) and [Laursen and Metzler \(1950\)](#), who show, using a Keynesian model, that an exogenous rise in the terms of trade of a small open economy leads to an improvement in its trade balance. The reason is obvious: an improvement in a country's terms of trade raises its current income, and given a marginal propensity to consume less than unity, current consumption increases less than current income, causing private saving to increase. This so-called Harberger–Laursen–Metzler (HLM) effect has subsequently been examined within deterministic intertemporal models by [Sachs \(1981\)](#), [Obstfeld \(1982\)](#), and [Svensson and Razin \(1983\)](#), among others. More recently, the HLM effect was recast within dynamic general-equilibrium models by [Backus \(1993\)](#) and [Mendoza \(1995\)](#), for example.

This paper derives an approximate closed-form solution for the present-value representation of the current account which encompasses the HLM effect in addition to the usual consumption-smoothing motive and the effects of future changes in the interest rate and the exchange rate, highlighted in [Bergin and Sheffrin \(2000\)](#). Moreover, while [Bergin and Sheffrin \(2000\)](#) identify only the intertemporal substitution effect of expected future changes in the world real interest rate, our PVM allows us to study not only the intertemporal substitution effect but also the income and wealth effects associated with a change in the world real interest rate, as well as its instantaneous effect on net foreign interest payments.

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<sup>2</sup> See, for example, [Sheffrin and Woo \(1990\)](#), [Otto \(1992\)](#), [Ghosh \(1995\)](#), and [Bergin and Sheffrin \(2000\)](#).

<sup>3</sup> Alternative extensions have been proposed by [Normandin \(1999\)](#), [İşcan \(2002\)](#) and [Gruber \(2004\)](#). [Normandin \(1999\)](#) shows that adopting an overlapping-generation framework, and introducing government bonds as part of household financial wealth help the standard model explain current account movements in Canada and the United States. [İşcan \(2002\)](#) shows that extending the standard PVM to allow for durable consumption can be helpful in explaining the Canadian current account. [Gruber \(2004\)](#) finds that habit formation in consumption improves the ability of the PVM to fit actual current account series in a number of small open economies such as Canada, Italy, the Netherlands, and the United Kingdom.

<sup>4</sup> See [Mendoza \(1995\)](#), among others.

<sup>5</sup> See [Reinhart and Wickham \(1994\)](#).

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