Testing present value models of the current account: a cautionary note

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Abstract

Following Campbell and Shiller [J. Pol. Eco. 95 (1987) 1062], many papers have evaluated the intertemporal approach to the current account by testing restrictions on a Vector Autoregression (VAR). The attractiveness of the Campbell–Shiller methodology is that it is thought to be immune to omitted information. This paper shows that this is not always true. In particular, it is shown that if fundamentals are driven by unobserved (to the econometrician) permanent and transitory components, then the restrictions of a standard Present Value model of the current account might not be testable with a VAR. This is because the theoretical moving average representation can turn out to be non-invertible. This implies that observed data, including the current account, do not reveal the underlying shocks to agents’ information sets.

The paper shows how researchers employing the Campbell–Shiller methodology can be tricked into thinking the current account responds excessively to shocks when in fact the data are consistent with the theory.

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JEL classification: F32; F41

Keywords: Vector Autoregression; Present Value models

1. Introduction

The intertemporal approach to the current account has improved our understanding of a wide range of issues in open-economy macroeconomics, including the effects of monetary and fiscal policies, the effects of terms of trade shocks, the effects of
trade policies, and the degree of international capital mobility. The basic idea behind
the intertemporal approach is that a (small) country operating in a global capital
market is like an individual operating in a domestic capital market. This analogy is
extremely useful since it makes available all of the machinery that has been
developed to study the Permanent Income Hypothesis of consumption. From this
perspective, the key prediction of the intertemporal approach is that current accounts
should respond to transitory shocks, but not to permanent shocks.

Operationally, the predictions of the intertemporal approach rest on a number of
auxiliary assumptions about asset market structure, demographics, and the decompo-
sition of observed time series into various components. Most studies are quite explicit
about their asset market and demographic assumptions. In keeping with the Perma-
nent Income Hypothesis, it is usually assumed that international financial markets
are incomplete, in the sense that bonds are tradeable but state-contingent claims are
not. At the same time, domestic capital markets are usually assumed to be effectively
complete, in the sense that a representative agent exists for each country. In addition,
most studies assume these representative agents have infinite planning horizons, pre-
sumably due to an operative bequest motive.

While the existing literature is usually clear about its asset market and demo-
graphic assumptions, it is noticeably less clear about the way decompositions are
handled. In fact, one could argue that along this dimension there has been a bit of
technological regress. Early empirical studies of the intertemporal approach focused
on a single expenditure category, and examined whether the current account responds
only to its transitory component. For example, Ahmed (1986) studied the response of
Britain’s trade balance to government expenditures. Ahmed decomposed government
expenditures into permanent and transitory components using a simple univariate
linear de-trending procedure. He argued (persuasively) that for this particular case
alternative decompositions are likely to produce similar results, since most of the
variation in government expenditures were driven by the ‘natural experiments’ of
wartime expenditure, which are widely perceived to be temporary.

More recently, however, empirical testing of the intertemporal approach has
shifted to a methodology pioneered by Campbell (1987) and Campbell and Shiller
(1987). Campbell and Shiller evaluate the predictions of Present Value models by
testing the implied cross-equation restrictions on a Vector Autoregression (VAR).
The attractiveness of their methodology rests on its perceived robustness to omitted
information. That is, under certain conditions their tests are valid even when the
econometrician has access to less information than individual firms and households.
Clearly, in most applications this kind of robustness is important. The key insight
of Campbell and Shiller is to note that the observed decisions of agents can be

1 Obstfeld and Rogoff (1995) survey the intertemporal approach to the current account, and provide
an extensive bibliography.

2 Glick and Rogoff (1995) emphasize another important distinction, i.e., between global and country-
specific shocks. They show that under certain conditions, the current account should only respond to
country-specific (transitory) shocks. Global shocks manifest themselves as changes in the world real
interest rate.
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