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ON THE THEORY OF INTERNATIONAL CURRENCY PORTFOLIOS

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Abstract

The paper develops a general equilibrium theory of the optimal currency composition of international bond portfolios. Like the partial equilibrium portfolio balance literature of the 1980s, the theory emphasizes the critical roles of government debt and government balance sheet operations in the determination of portfolios, prices and allocations. Consistent with empirical findings, optimal foreign currency positions are found to be small, with their size decreasing with exchange rate volatility, while optimal domestic currency positions are large and increasing with domestic interest rates. A large open market purchase of domestic currency bonds from private households lowers domestic interest rates. Keywords: Portfolio balance theory; imperfect asset substitutability; interest parity; open market operations; quantitative easing.

JEL Classification: E42, F41.

1. Introduction

The objective of this paper is to develop a theoretical framework that features, in general equilibrium, imperfect portfolio substitutability between bonds denominated in different currencies. The theory emphasizes the critical roles of government debt and government balance sheet operations in the determination of portfolios, prices and allocations.

Monetary theory has long looked at government balance sheet operations through the prism of various irrelevance theorems. In the simplest case of flexible prices, an exchange of nominal bonds for money by a central bank would lead to an increase of the domestic price level and of the nominal exchange rate, but the change in the relative supplies of domestic and foreign currency bonds would have no effects on domestic and foreign interest rates and on allocations. The reason is that Ricardian equivalence holds, and that nominal government bonds denominated in different currencies are perfect substitutes. The fact that governments do in practice conduct balance sheet operations must therefore reflect an implicit assumption that they are instead imperfect substitutes. The reason could be some form of asset market friction, or alternatively asset market incompleteness in otherwise frictionless markets. This paper pursues the second possibility in an open economy setting.

The portfolio balance literature of the 1980s is very closely related to this paper, both in terms of the questions studied and in terms of the continuous-time stochastic framework used.[1] However, that literature has since been criticized for its partial equilibrium nature. This paper revisits that literature, addresses the critiques, and arrives at a general

[1]This analytical framework has recently become very popular again in macroeconomics. See e.g. He and Krishnamurthy (2012, 2013) and Brunnermeier and Sannikov (2014).