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The valuation channel of external adjustment



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ABSTRACT

International financial integration has greatly increased the scope for changes in a country's net foreign asset position through the "valuation channel" of external adjustment, namely, capital gains and losses on the country's external assets and liabilities. We examine this valuation channel theoretically in a dynamic equilibrium portfolio model with international trade in equity that encompasses complete and incomplete asset market scenarios. By separating asset prices and quantities in the definition of net foreign assets, we can characterize the first-order dynamics of both valuation effects and net foreign equity holdings. First-order excess returns are unanticipated and i.i.d. in our model, but capital gains and losses on equity positions feature persistent, anticipated dynamics in response to productivity shocks. The separation of prices and quantities in net foreign assets also enables us to characterize fully the role of capital gains and losses versus the current account in the dynamics of macroeconomic aggregates. Specifically, we disentangle the roles of excess returns, capital gains, and portfolio adjustment for consumption risk sharing when financial markets are incomplete, showing how these different channels contribute to dampening (or amplifying) the impact response of the cross-country consumption differential to shocks and to keeping it constant in subsequent periods.

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1. Introduction

The experience of the United States and several other countries over the past decades shows that external adjustment, measured by changes in a country's net foreign asset position, can take place not only through changes in quantities and prices of goods and services – the so-called “trade channel” of adjustment – but also through changes in asset prices and returns – the so-called “financial channel” of adjustment. The magnitude, composition, and working of the financial channel of adjustment have become subjects of an extensive literature, recently surveyed by [Gourinchas and Rey \(2014\)](#). The consensus of the literature is that this is a quantitatively important channel of adjustment: For instance, [Gourinchas and Rey \(2007a\)](#) estimate that the financial channel contributed on average about 30 percent of the (cyclical) external adjustment of the United States since the 1950s.¹

This paper focuses on a specific component of the financial channel of external adjustment that works through valuation effects only, which we call the “valuation channel” of external adjustment. This valuation channel works solely through a country's capital gains and losses on the stock of gross foreign assets and liabilities due to expected or unexpected asset price changes.² We study the valuation channel of external adjustment theoretically in a two-country, dynamic, stochastic, general equilibrium (DSGE) portfolio model with international trade in equity that encompasses complete and incomplete asset market scenarios. We study the determinants of the valuation channel and its relative importance in external adjustment, and we illustrate its working and its implications for macroeconomic dynamics and risk sharing.

We introduce international equity trading in a two-country, DSGE model with production under monopolistic competition. Households in our model supply labor, consume a basket that aggregates sub-baskets of differentiated domestic and foreign goods in C.E.S. fashion, and hold shares in domestic and foreign firms.³ To preserve the ability to obtain analytical results, we consider a simple production structure in which output is produced using only labor subject to country-wide productivity shocks. Monopolistic competition, based on product differentiation within countries, generates non-zero profits and firm values, essential for the asset dynamics we focus on. Uncertainty arises as a consequence of productivity and government spending shocks, and asset markets are incomplete when both types of shocks are present.

The main contribution of our paper follows from the separation of asset prices and asset quantities in the definition of net foreign assets. We show that when this separation is taken into account, it is possible to characterize the first-order dynamics of valuation effects (changes in relative, cross-country equity prices, interchangeably referred to as “valuation” below) and portfolio adjustment (changes in quantities of net foreign equity holdings, or the current account of balance of payments statistics in our model) and their relative contributions to net foreign asset and macroeconomic dynamics.⁴

We solve the model by combining a second-order approximation of the portfolio optimality conditions with a first-order approximation of the rest of the model, according to the technique developed by [Devereux and Sutherland \(2011\)](#) and [Tille and van Wincoop \(2010\)](#). Consistent with these and other studies, the excess return on foreign assets is a fully unanticipated, i.i.d. variable in our model (that

¹ [Lane and Milesi-Ferretti \(2001\)](#) provided an early discussion of the financial channel for industrial and emerging market economies. See also [Curcu et al. \(2008\)](#), [Gourinchas and Rey \(2007b\)](#), [Lane and Milesi-Ferretti \(2009\)](#), and [Obstfeld \(2004\)](#). For analysis of the role of this channel of adjustment during the recent global crises, see [Bénétrix et al. \(2015\)](#) and [Gourinchas et al. \(2012\)](#).

² [Gourinchas and Rey \(2007a, 2007b\)](#) use the terms “financial adjustment” and “valuation effects” interchangeably and refer to the role of total asset returns in external adjustment. Our definition of valuation effects is limited to the capital gain component of total asset returns. In this respect, our approach to valuation is closer to that of [Lane and Milesi-Ferretti \(2007\)](#), who distinguish capital gains from the income balance in defining valuation, and [Kollmann \(2006\)](#), who focuses only on capital gains. As we shall see, the distinction is important in our analysis.

³ Our choice to focus on international trade in equity is motivated by the existence of a wider set of established results for economies with international trade in bonds. See, for instance, [Benigno \(2009\)](#) and [Tille \(2008\)](#). [Lane and Milesi-Ferretti \(2009\)](#) document the importance of equity price movements for the dynamics of U.S. net foreign assets. See also [Coeurdacier et al. \(2010\)](#).

⁴ Importantly, this does not depend on the assumption that only two assets (home and foreign equity) are traded in our model. If we allowed for trade in multiple assets, our approach would still make it possible to solve for the first-order adjustment of a net foreign portfolio composite and a composite of cross-country, relative asset prices.

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