Journal of International Economics xxx (2012) xxx–xxx

Contents lists available at SciVerse ScienceDirect

Journal of International Economics

journal homepage: www.elsevier.com/locate/jie

Book review

Martin D.D. Evans, Exchange-Rate Dynamics, Princeton University Press, 2011,

The role of macroeconomic factors on exchange rates was put in doubt by the work of Meese and Rogoff (1983). This scepticism negatively influenced the research on exchange rates in the eighties and the nineties. However, in the last decade, exchange rate economics has experienced a revival. Martin Evans, in cooperation with Richard Lyons, has been a protagonist of this revival. His book *Exchange-Rate Dynamics* reviews the recent literature with a focus on his own research.

A major feature of the recent development is the combination of the macroeconomic dimension with microstructure models, either at the theoretical or at the empirical level. Linking the two dimensions is not obvious. The microstructure approach puts emphasis on structural aspects and on high frequency exchange rate movements, while the macroeconomic approach tends to abstract from institution and focuses on lower frequency movements. The work of Evans and Lyons has been a key to link the two approaches. First, the seminal paper of Evans and Lyons (2002) shows that there is a strong relationship between order flow and exchange rates at the daily level, while the subsequent literature shows that this relationship also holds when one considers weekly or monthly level. Moreover, Evans and Lyons (2009) and Evans (2010) show that order flows are related to current and future macroeconomic fundamentals. This empirical evidence therefore nicely ties the two ends, macro–micro or low–high frequency. On the theoretical side, Evans and Lyons have themselves proposed theories linking the two dimensions. My work with Eric van Wincoop (Bacchetta and van Wincoop, 2006) has also been motivated by this evidence. A substantial part of the book is guided by this interaction between the micro and macro approaches.

The book is a combination between a textbook and a monograph. Several sections or chapters are nice and synthetic reviews of concepts and recent literature. These sections are definitely useful as references for a PhD course in international finance or macroeconomics and are good complements to existing textbooks like Obstfeld and Rogoff (1996), Lyons (2001), and Sarno and Taylor (2002). Other parts of the book present in relative details models developed by the author, which often are not published, or describe his empirical studies. Part of these sections could be useful for a specialized course, but they should mainly be seen as a reference for researchers. Given this mixed structure, a weakness in the presentation of the book is that it is not always clear what the objectives of each section are. This is especially the case as the level of detail is uneven in the book. Typically the existing literature is reviewed in a concise way, while the models developed by the author tend to be covered in long, at times lengthy, details. In addition, I have to admit that I have not fully understood the logic behind the ordering of the various chapters. This is however partly compensated by the summary and bibliography sections at the end of each chapter. I actually found these bibliography sections very useful.

If we focus on the textbook part of the book, there are various sections that I could definitely recommend and that I will use in my courses. Chapters 1 to 3 and 11 cover recent developments that are basically independent of the microstructure approach. Sections 1.1 and 1.2 present basic concepts in international macroeconomics that should be covered in most courses, while 6.1 is a good introduction to the FX market. Section 1.3 presents a relatively standard two-country flexible price complete market model, which is in the spirit of the international real business cycle literature. A nice feature of that section is that the discussion is centered on the present value equation of the nominal exchange rate (equation 1.61). This equation shows that the current spot exchange rate is equal to the present value of current and future fundamentals. These fundamentals include the real exchange rate and the risk premium which are endogenous in general equilibrium. The chapter explains how these two variables are determined. First, it does it analytically by considering an endowment economy and then it does it numerically in production economy. This section is probably too detailed for a standard PhD course, but the details could be useful to more advanced researchers. This is also the case for Chapter 2 which makes a nice synthesis of the literature models with sticky prices. It presents different versions of the model, considering either prices preset for one period or staggered prices à la Calvo. The other main distinction is complete vs incomplete financial markets. The section on incomplete markets is more detailed and uses approximations techniques applied by the author in his research with Victoria Hnatkovska.

Chapter 3 takes a more partial equilibrium and empirical perspective, by reviewing the present value approach of the exchange rate and the related empirical. I find this chapter particularly useful as a reference for an applied PhD course or for an advanced Master course. Chapter 11 reviews some of the recent literature on Uncovered Interest Parity and carry trade strategies. It is a useful update and complement to Chapter 2 of Sarno and Taylor (2002).

The first step towards the microstructure approach is found in Chapter 4 with the description of the model in Bacchetta and van Wincoop (2006), which introduces dispersed information in a relatively standard model. The chapter provides more structure and more details than the published paper and is therefore more useful as a teaching reference than the original paper. Obviously I strongly recommend this chapter. The model is consistent with several features of exchange rate behaviour, while order flows can easily be introduced due to heterogeneity of information and therefore the needs for trade. The order flow part of the model is described in Section 8.1 of the book.

The microstructure part of the book really starts in Chapter 5, with the presentation of an extension of the Glosten–Milgrom model, introducing market makers. This is followed by the Portfolio Shift model described in Chapter 6. Both chapters put the emphasis on market makers and focus in particular on how information is transmitted to the markets and how it interacts with order flow. These chapters are useful in understanding the functioning of the FX markets when market makers play a central role (as we know, and as it is described in the book, the role of market makers has been declining over time). Chapter 8 focuses on order flow and describes how it can

doi:10.1016/j.jinteco.2012.02.001

be incorporated in the Bacchetta-van Wincoop model and in a limit-order market. The last section explains how order flow can be estimated when data is incomplete.

Chapters 7, 9, and 10 cover the path-breaking research of Martin Evans and Richard Lyons, as well as subsequent research. Chapter 7 is a nice survey of the empirical research linking exchange rates to order flow, starting with Evans and Lyons (2002). Chapter 9 reviews the papers of Evans and Lyons (2009) and Evans (2010) examining the link between order flows and macroeconomic fundamentals and including both the theoretical model and the empirical analysis. Finally, Chapter 10 reviews the empirical literature on the impact of macroeconomic news on exchanges rates, in particular when order flows are taken into account.

Overall *Exchange-Rate Dynamics* is a rich book that covers most of the interesting recent developments in exchange rate economics. In particular it gives a detailed review of the literature that links the microstructure approach to the macroeconomic approach. This link is definitely a step forward in our understanding of exchange rates. At the same time, the book shows the tension that exists between the two approaches. The deeper we go in the microstructure approach, the simpler is the macroeconomic environment. This is due to technical modeling reasons, but also to the differences of the issues of interest. In any case, the book will definitely be a major reference for people teaching or researching in the field and several sections or chapters should be on graduate courses syllabus.

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