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学位論文及び審査結果の要旨

横浜国立大学

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学　位　論　文　題　目	Terms of Trade, Productivity Differential and the Long-run Behavior of Commodity Currencies: The Case of Norway and Colombia （交易条件、生産性の差異、およびコモディティ通貨の長期的な行動 ―ノルウェーとコロンビアのケース―）
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This dissertation investigates the dynamic long-run and short-run behavior of bilateral real exchange rate of the Norwegian krone *vis-a-vis* the euro, and the Colombian Peso *vis-a-vis* the USD. The two countries elicit much research interest due to some seemingly peculiar characteristics. First, they are both heavily dependent on oil export for their foreign exchange earnings. Secondly, they are both non-OPEC members countries, thus, they can, for all intents and purposes, be classified as price takers in the oil market. Thirdly, their composition of their export reveals a strong relationship with the Euro area (for Norway), and the United States (for Colombia). Under the bounds testing procedure developed by Pesaran, Shin and Smith (2001), the model reveals a long-run equilibrating relationship between the real bilateral exchange rate and the behavioral variables. The study finds that the direction and magnitude of the effect oil terms of trade, productivity differential and interest rate differential on the real bilateral exchange rate follow a priori expectations. However, foreign reserves holding as a variable for Colombia gives an opposite sign to that expected. It is also safe to conclude that there exist a long-run and statistically significant relationship between the explanatory variables and the long run behavior of the real bilateral exchange rate for the two countries. Moreover, the forecasts reveal persistent misalignment across the sample, and the magnitude of these misalignments vary across the countries.

1. 論文の内容

Chapter 1 introduces and discusses the nature of the problem, namely, the effect of large movements in commodity price movements on (real) exchange rates. There has been some previous research on the subject, as discussed in this chapter. But such research is rare. While literature on `fundamental` and `behavioral ` exchange rates have come to a standstill, the question is more important than ever for countries, especially developing countries, who export commodities as the magnitudes of these swings seem larger than ever in the last two decades.

Chapter 2 revisits the literature on real exchange determinants. Much of this literature had its peak in the 1990s, but as mentioned above, the need to understand the movements is still important. While reviewing the literature on exchange determinants, this chapter also reviews the literature on the Balassa-Samuelson effect. The Balassa-Samuelson effect is seen by many as a key explanatory factor for the appreciation of an emerging nation`s currency over time. While many studies have been done exploring Balassa-Samuelson effect for the case of Japan, and also in worldwide samples, very little if any studies have been done on Latin American countries such as Colombia. Additionally, the Balassa-Samuelson research is now quite dated and used now-antiquated econometric techniques. Virtually none of the papers considered the unique situation of commodity-exporting developing countries. As such, this paper makes significant contributions in revisiting all of these questions in a new light.

Chapter 3 describes the sources and nature of the data and well as the chosen methodology, Auto Regressive Distributed Lag (ARDL), for this paper. In this chapter, we can see the real challenge to answering this difficult question. For many developing counties, as well as many Gulf States, data is not available at all or not available in sufficient frequency or length (this study uses monthly data) to conduct the analysis done here.

Chapter 4 presents the ARDL model`s estimation and interpretations for the case of Colombia (2003M1: 2017M2). Among other results, he finds that the real exchange rate for Colombia is affected by the following variables in a statistically significant way with signs consistent with a priori predictions: The Oil-based Terms of Trade; Official Reserves and CPI/PPI (a proxy for the Balassa-Samuelson effect). In short, he finds that: 1) a stronger oil price appreciates the Colombia peso (and vice versa), 2) official reserves accumulate when the currency appreciates and 3) CPI/PPI moves in accordance with the predict that as a nation`s manufacturing productivity rises faster than its service sector productivity, the currency should appreciate. Real interest rate differentials are found to have no explanatory power. Reasons for these findings are discussed.

Chapter 5 presents the ARDL model`s estimation and interpretations for the case of Norway.

In sharp contrast to the findings for Colombia, none of the above variables are found have explanatory power for Norway. The real interest rate different is founds to be significant. The lack on a Balassa-Samuelson effect is not surprising, but the others require explanation. As his dissertation discusses, the central bank of Norway essentially follows a `inflation matching` rule, in which is uses adjustments in its interest rates to ensure stable co-movements with European mainland inflation. As such, it is no surprise to see interest rates being a significant variable. In addition, as explained in documents (speeches) made by the Norwegian central bank, in the case of any boon in oil prices and oil revenues, these funds are immediately and automatically deposited in their sovereign wealth funds, where most of those funds are invested abroad. In the event there is a recession (such as in 2008), Norway, with its large budget surplus (independent of oil revenue) can easily implement Keynesian-style fiscal policies to smooth out the economy. As discussed in Chapter 4 and the concluding chapter, Colombia does not have this luxury.

Chapter 6 summarizes the dissertation and the results and compares and contrasts the results for Columbia and Norway. In short, because Colombia is a developing country, still with very low levels of educational, water, transportation infrastructures, it is quite natural that in times of oil boons, Columbia makes use of the extra funds to finance desperately needed public goods. Likewise, in times of crisis and recession, Colombia cannot help but to tap into any oil revenue it has to ease the economic suffering to the extent it can. As such, while only two countries were examined (very closely) in this dissertation, I believe the sharp contrasting results avail us many useful policy prescriptions as well as the political-economic limitations of those prescriptions for most developing countries in which commodities play a large role in their exports.

2. 論文の評価

While the present dissertation ultimately only examined two countries in great detail, I think the lessons learned from this research can be extended to other countries, especially developing countries, particularly as more data becomes available for more nations. While none of the chapters have yet been published as he has only recently completed the newest empirical results, I think the results of the chapter on Colombia may be of great interest, especially for journals focused on Latin American economies. At the same time, the contrasting effects of energy price movements on a developing and developed country`s exchange rate would also be of great interest to journals specializing in energy economics. He is now preparing to revise each chapter for one or both possibilities and then submit them to an internationally peer-reviewed journal. Overall, I believe this dissertation demonstrates Adie`s ability to apply frontier econometric techniques to interesting and important problems confronting commodity-exporting nations today, especially in such turbulent economic times. I believe these highly valuable academic contributions (高い学術的貢献) will be recognized both in policymaking and academic circles.

以上のことから、本論文審査委員一同は、本学府の博士号審査基準2に照らして, Adie, Unimke Ugbe 氏の学位請求論文「Terms of Trade, Productivity Differential and the Long-run Behavior of Commodity Currencies: The Case of Norway and Colombia」が博士（経済学）の学位を授与するに値するものとして、判断する。