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人民币汇率与利率关系研究

A Study on the Relationship between RMB Exchange
Rates and Interest Rates

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摘 要

在市场化 and 开放的经济环境中,利率和汇率分别代表了货币在货币市场和外汇市场上的价格,二者都是调节宏观经济、引导资源配置的重要杠杆,是货币当局对内对外货币政策的重要工具。西方国家自 1973 年实行浮动汇率制后,汇率理论得到快速的发展,同时也伴随着大量的对汇率与利率关系的实证研究,但实证研究的结果却是多样的不确定的,这也反映了汇率与利率之间存在复杂的多方面的联系。随着我国改革开放的进行,汇率和利率的市场化进程加快,汇率和利率作为调节经济的手段得到更多的使用。当前人民币汇率和利率之间存在怎样的互动关系,直接影响着我国货币政策的传导效果,也关系到我国利率市场化和资本市场开放等重大政策问题。基于此,本文对人民币汇率与利率关系进行了研究,在检验汇率与利率关系的理论、实证分析人民币汇率和利率行为模式的同时,希望能够给有关政策的制定和具体实施提供一些参考。

本文的第一章论述了本课题研究的意义和本文的基本框架。第二章和第三章分别介绍和分析了汇率与利率关系的理论以及人民币汇率利率互动机制的现实环境。第四章用双变量 VAR-EGARCH 模型对人民币汇率与利率之间价格和波动的溢出关系进行了实证研究。第五章用单位根、协整及古典线性回归模型对粘性价格汇率理论进行了检验。第六章用马尔可夫转换向量自回归(MS-VAR)模型分析了不同汇率政策下人民币汇率与利率之间的区制转换关系。本文的主要观点和结论如下:

第一,人民币汇率与利率之间的价格溢出是单向而不是双向的,人民币利率变动对人民币汇率变动有显著的价格溢出效应,而人民币汇率变动对人民币利率变动的溢出效应在统计上不显著。在基于 MS-VAR 模型对人民币实际汇率变动和实际利率差进行的格兰杰因果检验也得到了类似的结论,只有实际利率差“格兰杰-引起”人民币实际汇率变动,而不存在人民币实际汇率变动“格兰杰-引起”实际利率差。

第二,人民币汇率与利率之间存在显著的双向波动溢出效应,这表明在货币市场和外汇市场间存在有效的信息传导机制,也表明人民币汇率与利率之间具有显著的非线性关系。在波动的非对称性方面,汇率方面存在波动的不对称性,正

的新息对汇率波动的冲击要大于负的新息，但利率变动的波动非对称性在统计上不显著；在两个市场之间，人民币利率变动对汇率变动的波动溢出不存在非对称性，而人民币汇率变动对利率变动的波动溢出存在非对称性，正的人民币汇率变动相比负的人民币汇率变动，对人民币利率变动的条件方差会形成更大的冲击。

第三，就本文所考察的时间段里，人民币购买力平价不成立，这对应了粘性价格货币理论中价格在短期存在粘性。就非抵补利率平价和实际利率差模型而言，2005年7月的汇率改革是一个重要时间点，在此之前人民币非抵补利率平价不成立，在此之后，人民币非抵补利率平价以及实际利率差模型，都得到了实证方面的支持。

第四，人民币汇率与利率的行为模式具有马尔可夫区制转换的特点，转换的区制可以分为低波动区和高波动区，高波动区制中人民币实际汇率变动和实际利率差的波动都要大于低波动区制。2005年7月的汇率改革同样是区制转换的一个重要事件，在汇率改革之后，人民币实际汇率变动和实际利率差都从之前的低波动区制进入了高波动区制，这反映了不同的汇率制度或政策对人民币汇率与利率关系变化的影响。

关键词：人民币；汇率与利率；实证分析

Abstract

Under the opening financial market, interest rate and exchange rate are the two powerful adjustments of monetary market and foreign exchange market, and are the main methods of the Central Bank monetary policy. Over the periods from 1973:3 to present which floating exchange rates prevail in western countries, progress has been made in the exchange rate theory and there are also lots of empirical studies explored on the relationship between interest rates and exchange rates, but empirical evidence has proved elusive on the theoretic link. It seems the linkage between exchange rates and interest rates is complicated. During the course of Chinese economic reform and opening, RMB exchange rate and interest rate liberalization is expedited and RMB exchange rate and interest rate are utilized more frequently to regulate the economy. What is the relationship between RMB exchange rate and interest rate and how the two interact determine the effect of our currency policy and also influence the policy-making of interest rate liberation and capital market opening in our country. Based on the above reason, this paper investigates the relationship between RMB exchange rates and interest rates, tests the exchange-rate theories and hopes to provide some reference for the currency policy-making in our country.

Chapter 2 and Chapter 3 of this paper introduce exchange rate and interest rate theories and analyze the actual mechanism of RMB interest rate and exchange rate interaction. Chapter 4 studies the dynamic relationship between exchange rates and interest rates of RMB via a multivariate Exponential Generalised Autoregressive Conditional Heteroskedasticity (EGARCH) model. In chapter 5, unit root tests, Johansen's cointegration test and Classical Linear Regression Model are used to test the Dornbusch model with RMB data. Chapter 6 employs a bivariate Markov Switching Vector Autoregressive (MS-VAR) model to study the regime linkages in RMB real exchange rate-real interest differential relation under different exchange rate policies. The main viewpoints of this paper are as follows.

First, price spillover between RMB exchange rate and interest rate is unidirectional instead of bidirectional. Evidence shows that movement of interest rates will affect future exchange rate movements, but changes in exchange rates have no direct impacts on future changes of interest rates. Using Granger causality tests on MS-VAR model we get the similar result. We find evidence of causality of real exchange rate changes from lagged real interest differentials. While the real exchange rates do not Granger cause the real interest differential.

Second, in terms of volatility, the RMB exchange rates and interest rates exhibit cross spillover effects. Hence, there is effective information transferring mechanism between the two markets. It also shows there is nonlinear relationship between RMB exchange rates and interest rates. As to the asymmetric impacts of volatility from innovations, we find statistically significant asymmetric effects exist for RMB exchange rates. The positive innovations of exchange rate changes have greater impacts on conditional volatility of interest rates, but not vice versa.

Third, the Theory of Purchasing Power Parity finds no empirical support during the period of the sample data, corresponding to the sticky price exchange-rate theory which shows the price is sticky in a short period. As to the Uncovered Interest Rate Parity (UIP) and real-interest-differential (RID) model, July 2005 is a very important time breakpoint. From July 2005, our country adopts a managed floating exchange rate regime based on market supply and demand with reference to a basket of currencies. Our empirical study finds that the UIP was rejected before July 2005 and is supported after July 2005. And RID model also acquires empirical support since July 2005.

Fourth, there is strong evidence of volatility Markov regime switching in the relation between RMB real exchange rate and the real interest differential. The switching regimes include the high volatility regime and the low volatility regime. The standard deviations of real exchange rate changes and of real interest differential are both higher in high volatility regime than low volatility regime. The RMB exchange rate reform in July 2005 is also an important event as to the regime switching. The RMB real exchange rate changes and real interest differential both moved into high volatility regime from low volatility regime since July 2005. It shows exchange rate policy exercises an effect on the regime of the RMB real exchange rate and the real interest differential.

Key Words: RMB; Exchange Rate and Interest Rate; Empirical Analysis

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