International Review of Economics and Finance 42 (2016) 23–35

Contents lists available at ScienceDirect

International Review of Economics and Finance

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

Floating exchange rates and macroeconomic independence

Lian An [a], Yoonbai Kim [b], Yu You [c,*]

[a] Coggin College of Business, University of North Florida, 1 UNF Drive, Jacksonville, FL 32224-7699, USA
[b] Department of Economics, University of Kentucky, Gatton Business & Economics Building, Lexington, KY 40506-0034, USA
[c] International School of Economics and Management, Capital University of Economics and Business, Beijing 100070, China

ARTICLE INFO

Article history:
Received 14 March 2014
Received in revised form 16 October 2015
Accepted 19 October 2015
Available online 26 October 2015

JEL classification:
F31
F33

Keywords:
Macroeconomic independence
Monetary independence
Floating exchange rates
Cointegration

ABSTRACT

In this paper, we evaluate macroeconomic independence during different time periods categorized by different exchange rate systems and degree of capital mobility. A cointegration VAR framework is developed to evaluate the performance of floating exchange rates in increasing macroeconomic independence in Japan vis-à-vis the U.S. Using this empirical framework, we test various hypotheses related to international transmission and the movement of interest rates and goods prices. Our results show that Japan's monetary independence has declined over time, but retains some degree of monetary autonomy due to the floating exchange rate system. In contrast, although capital controls in place prior to the 1980s do not enhance monetary independence, they do help to improve goods market independence.

1. Introduction

Macroeconomic independence (or interdependence) is a prevailing issue in the open-economy macroeconomic literature. Are countries independent or interdependent? What are the factors driving macroeconomic interdependence? More specifically, as the global monetary system has evolved from fixed exchange rates to floating exchange rates with the liberalization of the capital account, does the floating exchange rate system promote macroeconomic independence, especially monetary independence? These questions are vitally important in an increasingly open and globalized world. Understanding interdependence is important also because it is foundational for a series of other issues, such as the creation of region trade agreements, the transmission of business cycles, and the formation of monetary unions.

Macroeconomic interdependence has been defined as the sensitivity of economic behavior in one country to developments in another (Tollison & Willett, 1973). In the empirical literature, the difficulty in analyzing macroeconomic interdependence begins with the "curse of dimensionality," which is associated with estimating relationships among a relatively large number of endogenous macroeconomic variables. As such, we limit our attention to two dimensions of macroeconomic independence, broadly categorized as goods market independence and monetary independence. Goods market independence refers to the freedom of market prices in two countries to move independent of one another. Monetary independence refers to the freedom of interest rates in two countries to move (or be managed) independent of one another. The degree of macroeconomic independence under floating exchange rates is model-specific and depends on the relative size of the economy, the existence of nontraded goods, the substitutability of goods and assets, and other factors. Nonetheless, the notion that floating rates promote

* Corresponding author.
E-mail address: f91yy@163.com (Y. You).

http://dx.doi.org/10.1016/j.iref.2015.10.041
1059-0560/

macroeconomic independence is prevalent among economists and policy makers. The usual argument is that the autonomy of monetary policy is enhanced under floating rates because the central bank is relieved of the obligation to maintain the fixed exchange rate. The two parity conditions, purchasing power parity (PPP) and uncovered interest parity (UIP), provide a convenient explanation. In a world of perfectly substitutable goods and assets, domestic inflation and the interest rate may not deviate from foreign counterparts under fixed exchange rates, leading to a complete loss of monetary control in a small economy. By contrast, exchange rate flexibility permits deviations between domestic and foreign inflation rates and interest rates. In this case, the goods market is better insulated from disturbances originating from abroad as necessary changes in the real exchange rate are achieved through changes in the nominal exchange rate. Thus, the breakup of the Bretton Woods system and the introduction of the modern float in the early 1970s have often been viewed as attempts to pursue macroeconomic policies independent of external influences.

Whether floating exchange rates provide insulation from external shocks and/or enhance macroeconomic and monetary independence is an empirical issue. The vector autoregressive (VAR) model is a popular choice among researchers given the uncertainty regarding the 'right' model of international transmission. Of the early contributions using the VAR model, Genberg, Salemi, and Swoboda (1987), Lastrapes and Koray (1990), and Hutchison and Walsh (1992) address the issue of international interdependence. All use variance decomposition as a measure of interdependence. Genberg et al. (1987) find a strong foreign (U.S. and Germany) influence on Swiss output, prices, and the interest rate. Their results suggest that, compared with the fixed-rate period, the Swiss economy is hardly more independent from foreign disturbances than during the floating-rate period. Lastrapes and Koray (1990) find that the experience is more country-specific: the United Kingdom has been successful, in the short run, in using flexible exchange rates to isolate the domestic economy from external (U.S.) shocks while the German economy seems to have become more sensitive to U.S. shocks. Hutchison and Walsh (1992) use a structural VAR model in which the small open-economy assumption is used to identify structural shocks. In their variance decomposition, the portion of innovations in Japanese output that is explained by foreign shocks is much larger under floating rates than under fixed rates. They attribute this result to drastic changes in the nature of shocks affecting the economy instead of the change in the exchange rate system. In particular, the variance of domestic supply shocks seems to have become much smaller in the floating rate period. They rely on the impulse responses to investigate international transmission. According to their results, floating rates were successful in mitigating the effects of both external and domestic shocks on domestic output. Broda (2001) shows that, in the developing world, flexible regimes can insulate the economy better from real shocks. Edwards and Yeyati (2005) find that flexible rates function as shock absorbers.

Schambaugh (2004) shows that floating-rate countries appear to respond less, and with more delay, to movements in the base rate. He also argues that the gap between pegs and floats becomes clear when actual pegs and floats are carefully distinguished. According to di Giovanni and Schambaugh (2008), high foreign interest rates have a contractionary effect on the domestic economy and this effect is centered on countries with fixed exchange rates.[1] Similarly, Miniane and Rogers (2007) show that countries with pegged exchange rates and open financial markets follow base shocks more closely, and Bluedorn and Bowdler (2010) find that they respond even more strongly to exogenous shocks to the base interest rate.[2]

In contrast, Frankel (1999) presents evidence in which floats may follow the base interest rate even more closely than pegs, while Frankel, Schmukler, and Serven (2004) find limited autonomy for all but the largest floating countries. Along the same line, Forssbæck and Oxelheim (2006) find that in the EU nations in the period of 1979–2000, there is no clear evidence of monetary policy constraint differing across exchange rate regimes. Bordo and MacDonald (1997) also find that countries on the gold standard had some flexibility in their monetary policy.

Comparing the fixed exchange rate period of the Bretton Woods system with the floating rate period is difficult because the two periods differ along many dimensions. One of the most fundamental changes relevant to our study is the increased capital mobility achieved through the reduction or elimination of capital controls implemented in the 1960s and 1970s. By the mid-1980s, most industrial countries had eliminated restrictions on capital inflow or outflow. As is well-known from the Mundell–Fleming model, increased capital mobility further reduces the ability of the monetary authority to control the money supply under fixed exchange rates. However, increased capital mobility also tends to magnify the reactions of the exchange rate to monetary and nonmonetary disturbances, from home or abroad. Given the multitude of channels of international transmission occasioned by exchange rate changes, whether countries will be more independent under floating rates than under fixed rates is uncertain. Moreover, whether exchange rate changes bear the burden of adjustment in interest rates and prices is an empirical issue.

Most studies of comparative economic performance under different exchange rate regimes fail to take into account the changing degree of capital mobility and attribute differences in the behavior of output and prices to the change in the exchange rate system.[3] Given the fundamental importance of capital mobility in the determination of macroeconomic outcome, such an approach seems unwarranted. The present study pays explicit attention to the degree of capital mobility in a model of international transmission among industrial countries. The purposes of this paper are twofold: 1) to assess macroeconomic independence under

[1] Obstfeld, Schambaugh, and Taylor (2005) show that while the trilemma does not bind entirely, there is still a significant difference between the loss of monetary policy autonomy under pegs as compared to floats.

[2] Another important stylized fact in international finance is fear of floating: countries are unable to pursue an independent monetary policy due to factors like lack of credibility, exchange-rate pass-through, and foreign-currency liabilities. While formally or legally floating, they may peg their currencies and de facto "importing" the monetary policy of major-currency countries.

[3] In a recent contribution, Aizenman, Chinn, and Ito (2010) simultaneously investigate the three legs of trilemma — MI, exchange rate stability, and capital mobility.