Economic Modelling 27 (2010) 1246–1252

Contents lists available at ScienceDirect

Economic Modelling

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

Capital mobility, openness, and saving-investment relationship in Asia

Karim Eslamloueyan *, Mahbobeh Jafari

Department of Economics, Shiraz University, Shiraz, Iran

ARTICLE INFO

Article history:
Accepted 18 February 2010

JEL classification:
E22
F32
F41

Keywords:
Saving-investment relationship
Openness
Capital mobility
Asia, panel data

ABSTRACT

The main objective of this paper is to investigate the relationship between openness to trade and saving-investment behaviour in Asia during the period 1990–2006. We use this relationship to examine whether those Asian countries that are more open to trade and enjoy less trade barriers have also higher degree of capital mobility. Cluster analysis is used to classify the countries into different groups according to the share of trade in their gross domestic products and their average tariff rates. The goal is to place the countries that are similar to each other in terms of their trade policy in one group. We apply the Generalized Least Square (GLS) technique to a set of balanced panel error correction models to estimate the short- and long-run relationship between saving and investment. The estimation results indicate that there exist long-run equilibrium relationships between domestic saving and investment in all groups regardless of their degree of trade openness. Moreover, contrary to Amirkhalkhali and Dar (2007) for the case of OECD, we find out that more openness in terms of trade policy is associated with higher degree of capital mobility for the case of Asian countries. One policy implication of this result for the Asian economies is that trade openness can be used as a strategy to attract capital from abroad. Our findings also confirm the prediction of new open economy macroeconomic models regarding the short- and long-run behaviour of current account.

1. Introduction

The relationship between domestic saving and investment is a hotly debated issue among economists. Feldstein and Horioka (1980) argued that saving responds to international opportunities for investment and investment in one country can be financed by domestic and foreign saving. They stated that, under perfect capital mobility, "there should be no relation between domestic saving and domestic investment" (Feldstein and Horioka, 1980, p.317). It follows that saving equals investment when there is capital immobility.

The approach used by these authors is sometimes referred to as "quantity approach" to international capital mobility. This approach emphasizes on net transfer of real resources across borders. (Jansen, 1996, p.750) Feldstein and Horioka (1980) used a cross country regression model for 21 OECD countries over the period 1960–74 and found, contrary to the prediction of neoclassical growth models, a strong association between domestic saving and investment rates. The finding of Feldestein and Horioka (1980) about strong relationship between saving and investment has led to numerous theoretical and empirical papers on the correlation between domestic saving and investment.[1]

Feldstein and Horioka (1980) suggested that significant barriers to capital mobility might explain the strong link between saving and investment. It becomes then clear that barrier to capital mobility is sufficient but not necessary condition for the existence of saving-investment relationship.

The quantity approach of Feldstein and Horioka (1980) provides a useful, but incomplete, method of measuring capital mobility because evidence of positive saving-investment relationship is also consistent with other models such as intertemporal budget constraint of modern open economy macroeconomic models.[2] The new open economy macroeconomic models allow domestic saving and investment to diverge from their long-run equilibrium paths [see, for instance, Blanchard and Fisher (1989) and Jansen (1996)]. According to these theories, short-run saving-investment dynamics can be different from their long-run behaviour. In other words, they allow temporary current account imbalances.

Many empirical works, such as Leachman (1991), Jansen (1996), Jansen and Schulze (1996), Pelgrin and Schich (2008) and Rocha (2009) have supported the assertion of modern open economy macroeconomic

* Corresponding author. Department of Economics, Shiraz University, Eram Square, Shiraz, Postal Code: 71946-84759, Iran. Tel.: +98 711 6134429; fax: +98 711 6276371.
E-mail address: keslamlo@rose.shirazu.ac.ir (K. Eslamloueyan).

[1] For a survey of the literature on this issue see Apergis and Tsoumas (2009).

[2] Many researchers proposed alternative explanations for the strong association between saving and investment rates. For instance some attributed the domestic saving-investment relationship to country size (Murphy, 1984 and Ho, 2002), information constraints (Obstfeld, 1986), government policies such as constant current account targeted by governments or solvency constraint (Coakly et al., 1996; Coakly and Kulasi, 1997; and Rocha, 2009) and other underlying variables affecting both saving and investment. For a survey of the literature on the Feldstein–Horioka puzzle see Apergis and Tsoumas (2009).

0264-9993/$ – see front matter © 2010 Elsevier B.V. All rights reserved.
doi:10.1016/j.econmod.2010.02.007

theories that the short-run saving-investment dynamics might be different from their long-run equilibrium behaviour.

Obstfeld (1986) pointed out that the relation between saving and investment is related to current account dynamics and hence is central to open-economy macroeconomic models. This implies that saving-investment movement and capital mobility can be affected by the degree of openness. Therefore it is an important question whether capital mobility and trade in goods are substitutes or complements. It is important because, as Feeney suggested, the relationship of complementarity between goods and asset markets increases the importance of trade liberalization [Feeney (1994) p. 562].

Following the pioneer work of Mundell (1957) some economists argued that trade in final goods and international factor mobility are substitutes. Using the assumptions underlying the 0Heckscher–Ohlin–Samuelson model, the tradition trade theories predict a substitution relationship between openness and capital mobility. However, the prediction of these models about the relationship between factor mobility and trade is at odds with what is observed in real world. Markusen (1983) suggested that the largely accepted idea that trades in goods and factor mobility are substitutes is a special result of traditional Heckscher–Ohlin model and it might not hold in a more general context. Some researchers showed that there is complementary relationship between trade in goods and mobility of capital [see, for instance, Markusen (1983) and Feeney (1994)]. In other words, they claimed that more openness to trade is associated with higher capital mobility. Feeney (1994) developed a theoretical model to explore the link between international asset and goods markets. This author argued that the gain from trade liberalization would be higher when there is a complementary relationship between trade in assets and international trade in goods.

Some empirical works have recently studied the relationship between trade openness and the degree of capital mobility for different sets of countries. For example, Bahmani–Oskooee and Chakrabarti (2005) used a panel of 126 countries over the period (19060–2000) and showed that the association between domestic saving and investment varies with the degree of openness. They found that saving-investment relationship is significantly stronger for the group of closed economies that it is for the group of more open economies. Payne and Kumazawa (2005) investigated the effect of domestic saving, foreign aid and openness on investment rate for a sample of 29 Sub-Saharan African countries for the period 1980–2001. They found that capital mobility has gradually increased over time. Moreover, openness had a positive and significant impact on investment rate.

Using a random coefficients error correction model, Dar and AmirKhalkhali (2006) studied the relationship between capital mobility and openness in a group of seven most industrialized countries. They could not strongly conclude that trade in goods and capital flows are complementary among G-7 countries. Using the same econometric technique, Amirkhalkhali and Dar (2007) examined the dynamics of saving-investment and the impact of trade openness on saving-investment relationship for a sample of 23 OECD countries. However, they failed to show that more openness to trade is associated with greater capital mobility in the countries under investigation.

More recently, Fouquau et al. (2008) used a panel threshold regression model to study the impact of economic growth, demography, degree of openness, country size and current account balance on saving-investment relationship for a sample of 24 OECD countries over the period 1960–2000. Their results indicated that saving-investment relationship is mostly influenced by degree of openness, country size and current account to GDP ratios. More specifically, they showed that saving coefficient is smaller and capital mobility is higher in countries with larger degree of openness. The empirical works that have studied the relationship between trade openness and saving-investment relationship are mostly concentrated on OECD countries.

In this paper we attempt to use saving-investment dynamics to study the possible relationship between capital mobility and openness in term of trade policy for Asian countries. Fig. 1 shows the difference between average ratio of domestic investment to GDP, IR, and the average ratio of domestic saving to GDP, SR, over the period 2000–2004 for 21 Asian countries. As the figure show, two extremes can be identified. First extreme comprises countries with strong association between their domestic saving and investment. India, Pakistan, and Uzbekistan belong to this group. Second extreme includes countries with large difference between their domestic saving and investment. Among these countries are Bahrain, Oman, Kuwait, Malaysia, Singapore, and Saudi Arabia. What does the association between saving and investment imply for capital mobility and trade openness in these economies?

Some authors have studied saving-investment relationship in Asia. For example, Kim et al. (2007) estimated the degree of international capital mobility in East Asia using the saving–investment correlation originated in Feldstein and Horioka (1980). Sinha (2002) studied the relationship between saving and investment rates for Japan and 10 other Asian countries. Guillaumin (2009) investigated the degree of financial integration for selected East Asian countries. Kim et al. (2009) examined the sustainability of Asian countries' current accounts and showed that the current accounts of five crisis-affected Asian countries were sustainable. None of these works has studied the relationship between capital mobility and openness in Asia.

Hence, the main goal of this paper is to use saving-investment dynamics to examine the association between openness to trade and capital movement in Asia. We use intertemporal budget constrain of modern open economy macroeconomic theories as our theoretical framework. Using this framework, we examine whether the countries that are more open to trade and enjoy less trade barriers in Asia have also higher capital mobility. In other words, we attempt to verify the existence of complimentary relationship between openness and capital mobility for Asian economies.

To achieve our main goal, we use cluster analysis to group the Asian countries based on their degree of openness to trade and their average tariff rates. After grouping the countries, we employ panel data error correction model (ECM), suggested by intertemporal general equilibrium models, to investigate the short- and long-run behaviour of domestic saving and investment for each group separately. Error correction terms will be used to determine the degree of capital mobility of different groups. To the best of our knowledge no research has investigated this subject for the case of Asian countries.

We will show that capital mobility and trade in goods are complements. This might have important policy implication for developing countries that suffer from inadequate capital stock. In other words, trade openness or trade liberalization can be used as a strategy for these countries to attract saving from abroad. Moreover, our approach allows to examine the assertion of modern open economy macroeconomic models regarding the behaviour of saving-investment for different groups of Asian countries. More specifically, we also explore the short- and long-run movement of current account for these countries. The result of this paper might also add to our understanding about the prediction of modern open economy macroeconomic theories about current account movement.

In sum, this research not only sheds light on relationship between trade openness and capital mobility in Asia, but it also provide further insights into short- and long-run movement of current account. The rest of paper is organized as follows. The second section is allocated to the methodology and the data description. The empirical results are presented in Section 3. Section 4 is the concluding remarks.

2. Methodology and data description

Modern open economy macroeconomic theories use infinitely-lived representative agent models and overlapping generations models to explain short- and long-run saving-investment relationship. For example, Blanchard and Fisher (1989) follow Fischer and