Archives of Business Research – Vol.6, No.10
Publication Date: Oct. 25, 2018
DOI: 10.14738/abr.610.5334.

Kurihara, Y. (2018). Capital Mobility in the World: TPP Experience. *Archives of Business Research,* 6*(10),* 276-282.

Capital Mobility in the World: TPP Experience

Yutaka Kurihara
Aichi University. Japan

ABSTRACT

TPP without the U.S. has been ongoing. This paper examines the relationship between saving and investment in the Trans-Pacific Partnership (TPP) economies. Global saving in the world has been used for investment financing in other regions where domestic and regional finance markets are not well organized. TPP countries, in general, have well organized financial markets of their own, however, better opportunities would be provided for TPP economies if the stronger market integration is accomplished. The empirical results indicate that the role of reginal saving has been important in Asia, however, the U.S. saving-investment has been playing important role for TPP economies.

Keywords: capital, investment, saving, TPP, U.S.

INTRODUCTION

This paper examines the role of regional and global savings in financing domestic investment for TPP economies. A traditional model that specifies the relationship between saving and investment is employed and is expanded considering the capital mobility of the other area.

12 countries, including the United States agreed to start the TPP under former U.S. President Obama. Markets had thought that the possibility of launching the TPP would be quite high. The U.S. Congress had not approved the TPP, and the possibility of the realization of TPP, which includes the United States, suddenly became quite low. One reason could be the fulfillment under the presidential campaign promise made by President Trump. He decided to not join the TPP and withdrew from it. Now, the possibility of launching the TPP without the United States is becoming much higher. The United States is looking for (Free Trade Agreements with each country instead of TPP.

The TPP, which includes Canada, Mexico, Japan, Australia, New Zealand, Chile, Peru, Malaysia, Singapore, Vietnam, and Brunei would have reduced tariffs and obstacles for international trade among these countries. In the past, the negotiations included the United States. Market obstacles of dampening trade and investment would almost be eliminated through the TPP. After a long discussion and severe negotiation, the TPP was eventually approved by 12 countries. The TPP was ready to start, but President Trump decided to not join.

Capital mobility is sometimes strongly linked with investment. For example, there would be a lot of cases where Asian companies launch branches in the United States with the usage of U.S. capital, which was originally U.S. savings. On November 10, 2017, an agreement on the TPP negotiations among 11 countries was reached at the TPP Ministerial Meeting held in Republic of Vietnam. This agreement is expected to employ as a foundation for making a broader free trade area in the Asia-Pacific region and to confer the momentum to improve other economic partnership negotiations. Furthermore, this agreement is important because it will maintain the high-level content of the TPP Agreement while founding a free and fair economic order for sharing prosperity in the Asia-Pacific region where there has been high growth as well as a push toward the foundation for further expanding that situation.

A rapid increase in international capital flows has occurred in the world (see, for example, Obstfeld & Taylor, 2003). This increase is the result of liberalization of financial transactions in emerging markets and bringing large capital flows between developed and emerging economies. In the 1980s, the liberalization had also promoted sharp capital flows in developed economies. A recent development in financial technologies, including ICT (information, communication, and technology), has contributed to the surge in international capital flows into emerging economies. There would be a high possibility that FinTech would push efficient financial transactions and cause much more capital mobility. In principle, an increase in international capital mobility can confer significant profits. For example, allocating one saving into the most profitable country (market) and providing an opportunity for each country to share country specific risks by trading across countries. A variety of opportunities would cause a lot of benefits for the market participants, especially for developing and emerging market participants. For example, volatile international capital flows have often been avoided for the main source of excess volatility in financial markets (Kose, Prasad, Rogoff, & Wei, 2009). Productivity, profits, and managing risks are important, and usage expansion of other countries' markets brings stability to financial markets and the world economy.

On the other hand, while worldwide capital flows have been increasing sharply, regional movements for promoting trade freedom have been going well. Since the 1990s, advancement in regionalism has been a continuing trend in the world economy. Various types of trade agreements, such as free trade agreement have a long tradition of being formed on a regional basis: APEC, EU, NAFTA, MERCOSUR, CEEAC, and RCEP are some of these regional agreements. Also, regional trade agreement, RTA, the established monetary union such as EMU and ongoing discussion on monetary integration in other regions are also regionally based in many cases.

Whether or not the allocation of worldwide saving on investment is efficient has been examined in the study of Feldstein and Horioka (1980). When capital can move internationally, capital can move freely across borders and seek the most productive investment opportunity. In such a case, domestic investment is likely to be related strongly with the foreign saving instead of domestic saving, and capital flow occurs internationally. The Feldstein-Horioka puzzle states that correlation between domestic investment and domestic saving is high and does not match observed capital mobility in data. In this view, this study is new but a very traditional one.

To make an integrated free trade area, symmetric economic activity is important. The theory of currency integration has helped us learn from the past. To realize such economies, FDI (Foreign Direct Investment) is an important channel for the international transmission of disturbances. Also, TPP without the United States may have serious impacts on TPP member countries. However, this study focuses on the relationship between saving and investment considering global capital mobility instead of FDI.

This paper is structured as follows. Section 2 reviews existing studies which focuses on the relationship between saving and investment globally. Section 3 provides a theoretical model. The model in section 3 is used for empirical analyses in section 4. Section 4 performs empirical analyses, and the results are analyzed. Finally, this paper ends with a brief summary.

RELATED EXISTING STUDIES

Many studies have investigated the relationship between domestic saving and domestic investment for either theoretical or empirical aspects of the relation of capital mobility. However, few previous studies have added regional and global savings in empirical analysis. The distinction is very important for acquiring a stable and efficient resource of funds for

investment. The resource is not limited to a domestic one. Also, no consensus has been reached, so researchers continue studying this issue. TPP has not been focused at all despite its importance.

Golub (1990) and Tesar (1991) showed high saving-investment relationships for various cases by examining the Feldstein and Horioka (1980) model. Hoffmann (2004) demonstrated that long-run capital mobility has been stable over the century, and variation in the mobility of capital seems to have been affected by short-run capital flows. Adedeji & Thornton (2007) indicated that capital mobility in African countries has increased because of the reflection of the realization of market-oriented reforms including the privatization and rationalization of the public sector and the partial liberalization of the exchange regimes and financial systems. Rocha (2009) indicated that heterogeneity and cross-section dependence completely change the estimation of the long run coefficient, and there is an intermediate degree of capital mobility, and the coefficients are stable. Behera (2015) used the Pedroni and Westerlund cointegration tests and found that saving and investment are related. Akadiri, Ahmed, Usman, and Seraj (2016) found that short- and long-run relationships between saving rates and investment rates in Turkey exist with a large structural break in 1993. Behera (2016) indicated that there is a long-run equilibrium relationship between domestic saving, investment, and current accounts in all groups regardless of their degree of financial openness in the newly industrialized economies. Behera (2017) indicated that the degree of capital mobility is higher when the newly industrialized countries become more against their domestic capital regulation after the 1980s. Drakos, Kouretas, and Vlamis (2017) discovered that there exists a strong relationship between saving and investment in the long-run that is consistent with the existence of a financial constraint for 14 EU countries. Hwang and Kim (2018) demonstrated that the global and country-specific factors account for almost 50% of the saving-capital mobility and has increased particularly in Europe.

On the other hand, Sinn (1992) found that saving and investment relationship in the United States is much weaker within a nation than among nations. Kalyoncu (2007) discovered that Denmark, France, Greece, Italy, Japan, Spain, Sweden, Turkey, and the United Kingdom show low capital mobility in OECD countries. Gur, Erden, and Ozkan (2011) found that openness of the economy has no influence on the saving-investment link and found that it is not plausible to use the relationship as an indicator of international capital mobility. Brunel and Sassari (2013) showed that the estimated saving-retention coefficient is close to zero for 21 OECD countries when global shocks are taken into account by common factors. Behera (2015) discovered that the current period pass through of saving to investment is negative and significant for the post-1980 period in Brazil and in the 1990s and 2000s in South Africa. Moroke (2015) examined the relationship between investment and savings in South Africa and found evidence of imperfect capital mobility. Amirkhalkhali & Dar (2016) found a stable current account that is indicative of low capital mobility or binding financial constraints when the public debt is high. But and Moley (2017) discovered a low relationship and a high capital mobility for OECD. The OECD saving-investment correlation dropped to a low level just before the 2008 crisis began. Adams, Sakyi, Evans, and Opulu (2016); and Kim, Kim, and Wang (2007) showed low capital mobility in emerging economies. Ketenchi (2015) indicated that the global financial crisis had a deeply negative impact on investment rates in 2007 and for the period of 2007–2013 for 27 EU members. Mitra (2015) used a VECM and investigated the short- and the long-run domestic saving-investment relationships for the Philippines and discovered a lack of significant long-run relationships between domestic saving and domestic investment rates. Drakos, Kouretas, and Vlamis (2018) showed that there exists a long-run relationship between savings and investment for EU member countries with the savings retention coefficient being low but statistically different from zero.

Kim (2008) indicated that capital mobility in East Asia is lower than in the OECD countries and also regional saving and investment data demonstrate that investment in East Asia is mainly financed by regional savings. Eslamloueyan & Jafari (2010) checked Asian countries and showed that they are more open to trade, enjoy less trade barriers, and have a higher degree of capital mobility.

Kurihara (2017) examined to what extent the expansion of FDI and international trade is related to the phenomenon of synchronized business cycles for TPP member countries. Larger investments would make the domestic economy more susceptible to economic disturbances abroad. Also, FDI is an important channel through which economies may affect each other in a significant fashion, especially for the 12 TPP countries. Foreign disturbances may influence the domestic economy for a shorter period when relayed through the FDI channel. The trend toward greater economic interdependence through FDI implies an underlying tendency for business cycles to display a less synchronized behavior. However, this paper does not focus on the FDI

THEORETICAL MODEL

The model employed in this paper includes the relationship between saving and investment and takes into account the resource of the saving, which is important. The resource of the saving is not limited to the domestic country. This seems more realistic as financial globalization is ongoing. Kim, Kim, and Choi (2018) presented this model that focuses on the world as a whole. The basic model is very simple, and it is shown in equation (1).

$$\Delta I_{it} = \alpha_t + \beta \Delta S_{it} + \varepsilon_{it} \quad (1)$$

Where I is the domestic investment, S is the domestic saving, the subscript i denotes country, and the subscript t denotes time. The model can be expanded as in equation (2).

$$\Delta I_{it} = \alpha_t + \beta \Delta S_{it} + \gamma \Delta US_{it} + \delta \Delta TPP_{it} + \varepsilon_{it} \quad (2)$$

In equation (2), the United States and TPP except for the U.S. savings are added as explanatory variables. Regression on (2) provides the extent to which domestic investment is related to domestic, United States, and TPP except for the U.S. savings. While β can be interpreted as the usual saving coefficient and γ can be interpreted as the extent to which domestic investment is financed by U.S. and TPP savings and the relative role of U.S. and TPP capital markets contributing to financing domestic investment, respectively. All of the expected coefficients are positive, but the plus/minus and the degree should be examined. The panel analyses are performed.

EMPIRICAL ANALYSES

Data and method

All the data are from International Financial Statistics (IMF). Avoiding unit roots, the change of the data is used for estimation. The sample period is from 1990 to 2017. All the data are yearly.

The empirical methods used are ordinary least squares (OLS) and robust estimation. In addition to the OLS method, robust estimation is also used for estimation. Robust least squares is unlike maximum likelihood estimation. OLS estimates for regression are sensitive to the observations that do not follow the pattern of the other observations. This is not a problem if the outlier is simply an extreme observation from the tail of a normal distribution; however, if the outlier is from non-normal measurement error or some other violation of OLS, it

compromises the validity of the regression results if a non-robust regression method is employed.

EMPIRICAL RESULTS

The results show that, although the role of domestic saving is the resource of investment in the same domestic country, TPP regional saving is the main source for investment in each country. Also, the United States plays a very important role in investment in each TPP country. This is not an absolute difference between OLS and Robust least squares.

Table 1: Empirical results

	OLS	Robust Least Squares
C	-32.925*** (-5.775)	-32.476*** (-4.855)
Domestic	0.579*** (6.861)	0.573*** (5.790)
United States	11.182*** (11.633)	11.087*** (9.857)
TPP except the United States	65.897*** (5.760)	64.995*** (4.842)
Adj.R2/Adj.Rw2	0.985	0.996
F-statistic/Rn2-statistic	89.411	194.031
Prob(F-statistic/ Rn2-statistic)	0.007	0.000
D.W.	2.469	

Note: Parentheses are the t-statistic (OLS) and the z-statistic (Robust Least Squares). *** denotes significant at 1%.

Granger causality tests are also used to check the relationship among the explanation variable and dependent variable. This test is as follows: A time series *X* is said to Granger-cause *Y* if one can show a series of t value and F value on lagged values of *X* (lagged values of *Y* included), and those *X* values give statistically significant for values of *Y*. The results are displayed in Table 2.

Table 2: Pairwise Granger causality test

Null Hypothesis	F-Statistic	Prob.
Domestic saving does not Granger cause investment	5.400	0.019
Investment does not Granger cause domestic saving	1.987	0.170
U.S. saving does not Granger cause investment	4.678	0.031
Investment does not Granger cause U.S. saving	0.026	0.888
TPP without the U.S. does not Granger cause investment	4.199	0.039
Investment does not Granger cause TPP without the U.S.	0.244	0.603

The results are as expected. The empirical results of the Table 1 is robust and stable.

CONCLUSION

This study analyzed the role of TPP and U.S. capital markets in providing benefits of international capital mobility, in particular financing domestic investment. The results are clear. The empirical results show that although the role of domestic saving is the resource of investment in the same domestic country, TPP regional saving is the main source in each country. Also, the U.S. savings plays a very important role in investment in each TPP country. Boosting the economy is strongly related with investment. Stable and sufficient capital is necessary to promote investment. For the strong and sound prosperity of TPP, the United States would play important roles.

However, this study still leaves some room to be analyzed. Focusing on the international trade volume of this area and focusing on business cycles would be necessary to judge whether or

not TPP would be beneficial. Expanding the ample period using monthly data would be much more reasonable instead of yearly data, and microdata would be necessary. These problems will be discussed in another opportunity.

ACKNOWLEDGEMENTS

This paper is supported by the Nitto Foundation.

References:

Adedeji, O., & Thornton, J. (2007). Savings, investment, and capital mobility in Africa countries. *Journal of African Economies, 16*(3), 393–405.

Adams, S., Sakyi, D., Evans, E., & Opulu, O. (2016). Capital inflows and domestic investment in Sub-Saharan Africa. *Foreign Trade Review, 51*, 328–343.

Akadiri, S. S., Ahmed, I. I., Usman, O., & Seraj, M. (2016). The Feldstein-Horioka paradox: A case study of Turkey. *Asian Economic and Financial Review, 6*(12), 744–749.

Amirkhalkhali, S. & Dar, A. (2016). Public debt, saving-investment-current account dynamics, and capital mobility in OECD countries, 1999–2013. *Applied Econometrics and International Development, 16*(1), 5–12.

Behera, S. R. (2015). Saving-investment dynamics and capital mobility in the BRICs, 1970-2013. *Applied Econometrics and International Development, 15*(1), 5–22.

Behera, S. R. (2016). Current account dynamics and capital mobility in the newly industrialized countries. *International Review of Applied Economics, 30*(4), 441–461.

Behera, S. R. (2017). Saving investment dynamics and capital mobility in the newly industrialized countries. *Singapore Economic Review, 62*(2), 403–422.

Brunel, U., & Sassari, U. (2013). Capital mobility and global factor shocks. *Economics Letters, 120*(3), 513–515. http://dx.doi.org/10.1016/j.econlet.2013.06.008

But, B., & Moley, B. (2017). The Feldstein-Horioka puzzle and capital mobility: The role of the recent financial crisis. *Economic Systems, 41*, 139–150. http://dx.doi.org/10.1016/j.ecosys.2016.05.008

Chang, Y., & Smith, T. R. (2014). Feldstein-Horioka puzzles. *European Economic Review, 72*, 98–112.

Drakos, A. A., Kouretas, G. P., Stavroyiannis, S., & Zarangas, L. (2017). Is the Feldstein-Horioka puzzle still with us? National saving-investment dynamics and international capital mobility: A panel data analysis across EU member countries. *Journal of International Financial Markets, Institutions and Money, 47*, 76–88. http://dx.doi.org/10.1016/j.intfin.2016.11.006

Drakos, A. A., Kouretas, G. P., & Vlamis, P. (2018). Saving, investment, and capital mobility in EU member countries: A panel data analysis of the Feldstein-Horioka puzzle. *Applied Economics, 50*(34–35), 3798–3811. http://dx.doi.org/10.1080/00036846.2018.1436150

Eslamloueyan, K., Jafari, M. (2010). Capital mobility, openness, and saving-investment relationship in Asia. *Economic Modelling, 27*(5), 1246-1252. http://dx.doi.org/10.1016/j.econmod.2010.02.007

Feldstein, M., & Horioka, C. (1980). Domestic saving and international capital flows. *The Economic Journal, 90*, 314–329.

Golub, S. (1990). International capital mobility: Net versus gross stocks and flows. *Journal of International Money and Finance, 9*, 424–439.

Gur, T. H., Erden, L., & Ozkan, I. (2011). An empirical investigation on the determinants of the saving-investment interaction. *Panoeconomicus*, 58(3), 343–353.

Hoffmann, M. (2004). International capital mobility in the long run and the short run: Can we still learn from saving-investment data? *Journal of International Money and Finance, 23*(1), 113–131. http://dx.doi.org/10.1016/j.jimonfin.2003.08.006

Hwang, S. H., & Kim, Y. J. (2018). Capital mobility in OECD countries: A multi-level factor approach to saving-investment correlations. *Economic Modelling, 69*, 150–159.

Kalyoncu, H. (2007). Saving-investment correlations and capital mobility in OECD countries: An error correction analysis. *Applied Economics Letters, 14*(7–9), 597–601.

Ketenchi, N. (2015) Capital mobility in the panel GMM framework: Evidence from EU members. *European Journal of Comparative Economics, 12*(1), 3–19.

Kim, S., Kim, S. H., & Wang, Y. (2007). Saving, investment and international capital mobility in East Asia. *Japan and the World Economy, 19*(2), 279–291. http://dx.doi.org/10.1016/j.japwor.2006.05.001

Kim, S., Kim, S., & Wang, Y. (2008). Saving, investment in East Asia: Regional or global savings? *Japan and the World Economy, 31*, 1–7.

Kim, S., Kim, S., & Choi, Y. (2018). International capital mobility: regional versus global perspective. *Review of World Economics, 154*, 157–176. https: //doi.org/10.1007/s10290-017-0300-6

Kose, M., A., Prasad, E., Rogoff, K., & Wei, S. J. (2009). Financial globalization: A reappraisal. *IMF Staff Papers, 56*(1), 8–62.

Kurihara, Y. (2017). Do FDI and TPP without the United States Promote Stability in TPP Countries? *Journal of Economics and Development Studies*, *5*(3), 30-34.

Mitra, R. (2015). Saving-investment correlation and capital flows: The Philippines 1960-2014. *Economic Bulletin, 35*(4), 2853–2861

Moroke, N. D. (2015). Box-Jenkins transfer function framework applied to saving-investment nexus in the South African context. *Journal of Governance and Regulation, 4*(1), 63–77.

Obstfeld, M., & Taylor, A. M. (2003). *Globalization and Capital Markets*. In M. D. Bordo, A. M. Taylor, & J. G. Williamson (Eds.), Globalization in historical perspective (pp. 121–187). Chicago University of Chicago Press.

Rocha, F. (2009). Heterogeneity, saving-investment dynamics, and capital mobility in Latin America. *Empirical Economics, 36*(3), 611–619. http://dx.doi.org/10.1007/s00181-008-0215-0

Sinn, S. (1992). Saving-investment correlations and capital mobility: On the evidence from annual data. *Economic Journal, 102*, 1162–1170. http://dx.doi.org/10.1007/s10644-011-9115-y

Tesar, I. I. (1991). Saving, investment and international capital flows. *Journal of International Economics, 31*, 55–78.