Imports, Exports and Foreign Direct Investment Interactions and Their Effects

By

Santi Chaisrisawatsuk*
Wisit Chaisrisawatsuk

Executive Summary

Bi-directional effects between international trade and investment are investigated. Different aspects of international trade are considered in separate models to observe the linkages between trade and FDI inflows. International trade, either measured by exports or imports, is found to be complementary with FDI inflows.

Through trade, trade facilitation is identified as a key factor to induce FDI inflows to the host country from the home country. Bilateral FDI inflows are observed to have feedback effects with exports of not only the home and host countries but also on those of other trading partners. Similar linkages between bilateral FDI inflows and imports are also observed.

The relationships between international trade and investment identified suggest a crucial role for policy harmonization to further benefit from globalization. Thus, countries would need to not only liberalize trade and investment but to do it in a harmonized and cooperative manner, implying the need for more coordination within trade and investment agencies at home, and the need for plurilateral or multilateral agreements covering both trade and investment.

Table of contents

I. Introduction

There is almost universal agreement that, under general assumptions, free trade will lead to welfare improvements for countries that engage in it. The importance of investment liberalization and its inextricable link with trade liberalization has also been increasingly recognized, such that many trade agreements now include investment provisions dealing not only with mode 3 supply of services (commercial presence) but also as flows of capital either in terms of foreign direct investment (FDI) or foreign portfolio investment (FPI). Current theoretical studies have shown that international trade and investment are complements rather than substitutes if trade between the two economies is based on comparative advantages. However, if the trade between the two countries is based on their absolute advantages, there may be substitution between trade and investment, as businesses decide to supply products and services through exports or FDI. The degree of complementary between trade and investment therefore remains an empirical question.

This study explores how international trade and investment flows affect each other, using data from OECD and 6 ASEAN countries[1], and examines whether trade and investment linkages are different between developed and developing economies, or between countries that participate actively in bilateral and/or regional trade agreements. After a brief overview of the literature and global trends in trade and investment flows in the next section, the methodology and data used in the study are presented in section B. Empirical results obtained and policy implications are discussed in section C, followed by concluding remarks in section D.

1.1   Trade and Investment Linkages: Literature Review and Global Trends

"The proximity-concentration hypothesis" (Krugman, 1983; Horstmann and Markusen, 1992; Brainard, 1993a) suggests that greater transaction costs resulting from higher trade barriers and transportation cost, lead to horizontal cross-border production expansion and thus, stimulate international investment. In this view, international trade is more or less a substitute for international investment. On the contrary, "the factor-proportion hypothesis" (Helpman, 1984; Markusen, 1984; Helpman and Krugman, 1985; Ethier and Horn, 1990) seems to predict that international trade and investment are complements as firms take advantage of factor price differences through cross-border vertical production integration.

According to Aizenman, Joshua and Ilan Noy (2005), it is common to expect bi-directional linkages between FDI and trade in goods. However, it is difficult to indicate whether inflows and outflows of FDI affect differently trade in different types of goods. They suggest that there is strong feedback type of relationship between FDI flows and trade especially in manufacturing goods. Applying Geweke (1982)'s decomposition method, they find the Granger-causality from FDI flows to trade openness is found to be stronger than that from trade to FDI flows.

Raff (2004) investigates the effect of FTA or customs unions on FDI location selection and its impacts on social welfare. The study shows that economic integration, through tariff reductions, will lead to greater FDI and hence, improve social welfare. However, the paper also

---

[1] ASEAN-6 includes Brunei Darusalem, Indonesia, Malaysia, Philippines, Singapore, and Thailand.

indicates that FDI inflows resulting from trade expansion are not necessary beneficial to the host and/or home countries. There are some evidence that increased FDI due to trade enhancement lead to less competition in the domestic market and inadequate technology transfers.

The hypothesis of complementarity between trade and investment stems from the facts that there are increasing trends in intra-industry trade in many regions of the world either they are participating intensively in trade liberalization agreements (mostly regional and bilateral trade agreements) or less intensively. Economic integration promises to raise international trade volume through trade creation. By engaging in bilateral as well as multilateral trade agreements, the country hope that the resulting trade creation will induce more FDI inflows. Gain from trade will be enhanced and pushed up to its potential via increasing country's competitiveness if trade and FDI are complementary. At the micro-level, interdependence between international trade and investment is magnified through intra-firm trade (trade among firm's foreign affiliates), outsourcing of raw material, intermediate goods, and output, and firm's vertical integration behavior particularly vertical FDI. Hence, the role of FDI inflows as the source of international capitalization is no longer the only concern for developing or least developed economies (LDC). It is extended to cover many other aspects as the linkage between international trade and investment becomes more intensified. As a host country, more FDI inflows do not necessary always lead to increasing country competitiveness and thus, sustainable economic development. The quality of FDI that flows into the countries should be investigated more carefully so that it can be assured that the benefits from FDI inflows to the host countries can be fully realized. Problems such as economic instability and income disparity that might resulted from trade and investment liberalization imbalance can be avoided.

Table 1 summarizes the figures of exports, import, and FDI inflows in different parts of the world. In the last 15 years, the world exports, imports, and FDI inflows have been growing constantly. Exports and imports grew from 3,720 and 3,832 billion U.S. $ to 7,656 and 7,940 billion U.S.$ on average from period 1 (1990-1994) to period 3 (2000-2005) respectively (an annual increase by 10.58% and 10.72%). Similar pattern was experienced for FDI inflows. The World's FDI inflows increased from 201 billion U.S. $ to 841 billion U.S. $ in the same time interval (an annual increase by 31.84%). An increase flows of FDI suggests a rising important of the roles of FDI in economic development.

Despite similar growth pattern for exports, imports, and FDI inflows in different parts of the world, there are parts of the world that received more FDI inflows than the other regions. Significant increases are found in regions like Asia, the European Union and developing countries. The average of FDI inflows to developing countries increase from 62,024 million U.S. $ in period 1 to more than US$ 235 billion in period 3. Along with the growth in FDI inflows in every region, the world also experienced growth in exports and imports. Asia also experienced significant increase in exports and imports during the last decade. During the same period, the region also illustrated an improvement in FDI inflows. FDI inflows to Asia accounted for 17.41% and 17.18% of the world FDI inflows on average during 1994-1999 and 2000-2005. This seems to suggest a positive link between international trade and investment in the region.

Table 1 also shows the increasing rate of exports, import, and FDI inflows in different part of the world. The rates are measured on a 5-year basis, i.e., from a 5-year period of 1990-1994 to a 5-year period of 1994-1999 and so on. The world's FDI inflows grew significantly during 1994-1999 at a growth rate of 201.93%. In every parts of the world, during 1994-1999, FDI inflows increased faster than exports and imports. Developing economies and Asia in particularly where exports and imports grew at the rate greater than 58%. The growth rates of exports were 62.33% and 68.03% for developing countries and Asia, and imports grew at 58.42%

and 58.54% respectively. Together with the growth in trade (exports and import) developing countries and Asia also experienced high growth rate in FDI inflows at 180.60% and 145.34% respectively. As a result of the growing of China and India economies, particularly as FDI destinations, FDI flows into Asia have accounted for a large share of the world FDI. Business activities (measured by exports, imports, and FDI inflows) have been concentrated in certain regions of the world although, in recent years, we have seen a better distribution. Exports, imports, and FDI inflows have increased significantly in several parts of the world other than in Europe and developed countries especially in Africa, Asia, and developing countries.

Table 1: Exports, imports, and FDI inflows (1990-2005; 5-year simple averages)

(Mil. U.S. $)

Regions	Exports, Import, and FDI inflows		
	1990-1994	1994-1999	2000-2005
World			
Exports	3,720,438	5,394,946	7,656,527
	-	(45.01%)*	(41.92%)*
Imports	3,832,498	5,494,774	7,940,450
	-	(43.37%)	(44.51%)
FDI inflows	201,002	606,884	840,742
	-	(201.93%)	(38.53%)
Africa			
Exports	80,464	98,306	162,431
	-	(22.17%)	(65.23%)
Imports	86,805	107,876	153,925
	-	(24.27%)	(42.69%)
FDI inflows	4,349	8,537	18,142
	-	(96.30%)	(112.51%)
Asia			
Exports	598,214	1,005,193	1,599,683
	-	(68.03%)	(59.14%)
Imports	621,757	985,703	1,515,290
	-	(58.54%)	(53.73%)
FDI inflows	43,065	105,654	144,448
	-	(145.34%)	(36.72%)
European Union			
Exports	1,567,640	2,208,076	3,042,750
	-	(40.85%)	(37.80%)
Imports	1,594,582	2,143,924	3,026,649
	-	(34.45%)	(41.17%)
FDI inflows	80,109	236,565	379,082
	-	(195.30%)	(60.24%)
Developing Countries			
Exports	1,111,090	1,803,654	2,989,967
	-	(62.33%)	(65.77%)
Imports	1,170,318	1,853,998	2,842,078
	-	(58.42%)	(53.29%)
FDI inflows	62,024	174,042	235,274

	-	(180.60%)	(35.18%)

*Per cent changes from one 5-year period to the next are shown in parenthesis

Despite the impressive growth in FDI inflows in every part of the world during 1994-1999, the growth rates of FDI inflows dropped significantly in 2000-2005 in almost every region except for Africa where FDI inflows grew at 112.51%. The world's FDI inflows growth decreased from 207.93% in period 2 (1994-1999) to 38.53% in period 3 (2000-2005). Part of the reason for the big drop in world FDI inflows is the drop in FDI inflows in Asia which could be explained by the financial crisis in Asia. Many countries, Thailand for example, was under the strict debt restructuring rules of the IMF during that period. Interest rates skyrocketed in those countries under both political and economic risks. In Asia, the data suggests that the decrease in FDI inflow growth rate in 2000-2005 is associated with small declines in the growth of exports and imports. FDI inflow seems to grow at the faster pace than exports and imports during the period of 1994-1999. In the period of 2000-2005, the growth rates of FDI inflows are in line with the growth of exports and imports except in some regions such as Africa and European Union. Growth in FDI inflows in European Union may be explained by the fact that the Union has expanded to Eastern European economies.

Table 2 illustrates the correlation matrix between exports, imports, and FDI inflows in selected regions. It is shown that FDI inflows and exports are highly correlated in Africa, Asia, and developing countries. The correlation coefficients between exports and FDI inflows are very high (around 0.9) in Africa, Asia, and developing countries respectively. The correlation of these regions is higher than the correlation of the European Union (0.49) and the world (0.62). This indicates the importance of FDI inflows to exports and vice versa in these regions. Same pattern of correlation is observed for the correlation between FDI inflows and imports. The correlation coefficients between imports and FDI inflows are greater than 0.85 in Africa, Asia, and developing countries (0.87, 0.89, 0.89). In addition, we also found a highly positive links between FDI inflows in different regions. For example, the correlation between FDI inflows to Asia and European Union is 0.76 and the correlation between FDI inflows to developing countries and FDI inflows to the European is 0.75. Similar pattern of correlation is discovered in different regions. It is suggested that there are complementarities between FDI inflows in different regions due to an increasing trend of outsourcing and the developing of global value chain.

This overview of trade and FDI inflows seems to point to the direction that there is a close link between international trade and investment. The closer the relationship between trade and investment, the better chance it is for the host country to realize the benefits from trade and investment liberalization in terms of welfare improvement. Since trade liberalization implies a freer (less costly) movement of goods and services while investment liberalization implies a better environment for movement of resources. Increasing international trade according to comparative advantages is the key condition for countries to realize gains from trade in terms of welfare improvement. If trade and investment are complementary, FDI inflows are supposed to enhance the gains from trade. In addition, FDI inflows to the host country may be expected to improve efficiency and productivity of factors of production, therefore enhancing the country's competitiveness.

Correlation Matrix between exports, imports, and FDI inflows in selected regions

EX-EU	EX-W	IM-AF	IM-AS	IM-DC	IM-EU	IM-W	FDI-AF	FDI-AS	FDI-DC	FDI-EU	FDI-W
0.9508	0.9613	0.9748	0.9639	0.9673	0.9634	0.9650	0.8976	0.8205	0.8187	0.4654	0.5201
0.9895	0.9981	0.9573	0.9953	0.9987	0.9861	0.9974	0.9145	0.9026	0.8971	0.5229	0.6015
0.9889	0.9973	0.9648	0.9934	0.9980	0.9890	0.9977	0.9191	0.8919	0.8886	0.5196	0.5940
1.0000	0.9949	0.9575	0.9812	0.9895	0.9971	0.9951	0.8994	0.8684	0.8753	0.4920	0.5772
0.9949	1.0000	0.9548	0.9911	0.9970	0.9924	0.9997	0.9120	0.9033	0.9029	0.5350	0.6160
0.9575	0.9548	1.0000	0.9617	0.9655	0.9630	0.9567	0.8733	0.7784	0.7886	0.3456	0.4247
0.9812	0.9911	0.9617	1.0000	0.9971	0.9762	0.9896	0.8949	0.8858	0.8745	0.4675	0.5513
0.9895	0.9970	0.9655	0.9971	1.0000	0.9861	0.9963	0.9106	0.8917	0.8882	0.4897	0.5734
0.9971	0.9924	0.9630	0.9762	0.9861	1.0000	0.9942	0.9012	0.8588	0.8686	0.5048	0.5826
0.9951	0.9997	0.9567	0.9896	0.9963	0.9942	1.0000	0.9149	0.8982	0.8990	0.5367	0.6153
0.8994	0.9120	0.8733	0.8949	0.9106	0.9012	0.9149	1.0000	0.8302	0.8406	0.5347	0.5794
0.8684	0.9033	0.7784	0.8858	0.8917	0.8588	0.8982	0.8302	1.0000	0.9899	0.7616	0.8432
0.8753	0.9029	0.7886	0.8745	0.8882	0.8686	0.8990	0.8406	0.9899	1.0000	0.7499	0.8434
0.4920	0.5350	0.3456	0.4675	0.4897	0.5048	0.5367	0.5347	0.7616	0.7499	1.0000	0.9775
0.5772	0.6160	0.4247	0.5513	0.5734	0.5826	0.6153	0.5794	0.8432	0.8434	0.9775	1.0000