Do Multinational Companies have two-way Investments?

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Abstract

This study investigates about firm's capital invest direction on abroad. Past research was devoted to one-way investment, this paper deduce two-way investment. We focus on multinational companies in the same industries and their capital flow. This study focuses on three characteristics of two-way investment reasons: human capital difference, technology, and capital market imperfections. The researchers indicate whether and how these three factors associate with the types of two-way investments.

In this study, we use the SPSS and choose countries listed in IMD database. The result of this paper shows that human capital difference, technology, and capital market imperfections are positively correlated with the MNCs two-way investment.

Introduction

In the past, classical economic theory predicts that capital should flow from rich countries to poor countries, due to the effect of diminishing returns of capital. But Lucus(1990) had mention that the capital does not flow from developed countries to developing countries in spite of the fact that developing countries have lower levels of capital per worker. This concept of conflict is so call the "Lucas Paradox." In addition, international business management scholar Dunning (1981) had mentioned that the developed countries have more outward investment than developing countries, even the poorest developing countries are no outward direct investment. And the eclectic theory can describe the kind of investment-development cycle. From the above narrative, the international economic theory and the international business management theory have the conflict of theoretical perspectives.

For the reason, the purpose of these researches is as follows:

First, this research combined different perspectives of outward investment and then deduced the two-way investments.

Second, with the previously proposed theory of Lucus and Dunning, this research deduced three hypotheses. The research describe whether the developing countries or developed countries, both their multinational companies are two-way investments in the world market. Finally, this research use empirical research to verify the arguments of this research.

Literature review and Hypotheses

From the above narrative, because of the risk uncertainties, Lucus(1990) considers that developing countries will outward investment to the developed countries to reduce the risk uncertainties. On the other hand, Dunning (1981) use the investment-development cycle to explain that only the developed will outward investment. The theory of OLI supports the assumption. The following will discuss the Lucus and Dunning's investment theory.

Lucus(1990) had mentions that previous predictions of the simplest neoclassical models of trade and growth are focus on technology. And consider developed countries and developing countries are producing the same good and the same constant returns to scale. The only different from developed countries and developing countries is their levels of capital per worker. Thus, if the capital good is in free trade market, the new economy will take place in the poorer economy until the wages and the capital returns are equalized. But Lucus(1990) had mention that the capital may flow from developing countries to developed countries, it's differ with the previous neoclassical models. In the past, scholars have proposed different empirical results they compare with the United States and the India, and then find that the production per person in the United States(developed country) is fifteen times than in India(poorest developing country)(Lucus,1990;Robert Summers and Alan Heston,1988). Lucus(1990) suppose that the developed and developing countries are comply with the constant returns of Cobb-Douglas-type on technology. The Lucus(1990) propose the formula as fallows,

$$y=Ax^{\beta} \quad \text{(y is income per worker;x is capital per worker)}$$

Besides, the marginal product of capital is $r=A\beta x^{\beta-1}$, the formula of production per worker is as follows,

$$r=\beta A^{\frac{1}{\beta}} y^{\frac{(\beta-1)}{\beta}}$$

But if use these formula, the calculation results will support the investment goods would flow rapidly from the United States to India or other poor countries. Lucus(1990) assumptions that technology and trade conditions confirm that the example may be wrong. Such as the differences in human capital (labor quality, human capital) per worker, external benefits of human capital(skill level), capital market imperfections(political risk). Laura Alfaro, Sebnem Kalemli-Ozcan, and Vadym Volosovych(2008) referred to that Lucus

Paradox can be distinguish into two groups and this paper generalize on Table 1.

Table 1: distinguish Lucus Paradox into two groups

Group 1 Fundamentals	**Group 2** International Capital Market Imperfections
missing factors of production	asymmetric information
government policies	Sovereign risk
institutional structure and total factor productivity	

Dunning(1981)use the ownership-locational-internalisation (OLI)theory(also called the eclectic theory) to explain the direct investment flows. The OLI advantages are the Dunning's previous argument on 1979 and 1980.And the OLI characteristics may vary according to the country, industry and firm(Dunning;1981).The Dunning's argument are generalize on Table 2.

Table 2:Some illustrations of how OLI characteristics may vary according to country, industry and firm specific considerations. Dunning (1981,pp.35)

Structural Variables OLI	Country (home-host)	Industry	Firm
Ownership	Factor endowments (resources, skilled labor),market size, character. Government policy towards innovation, protection of proprietary rights, competition and industrial structure, government controls on inward direct investment	Degree of product or process technological intensity; nature of innovations; extent of product differentiation; production economies; importance of favoured acess to inputs and/or markets	Size, extent of production, process or market diversification; extent to which enterprise is innovative, or marketing-oriented, or values security and/or stability (in sources of inputs, markets), extent to which there are economies of joint production
Internalisation	Government intervention and extent to which policies encourage MNEs to internalize transactions (transfer pricing, government policy towards mergers, differences in market structures between countries). With respect to transaction costs, enforcement of contracts, buyer uncertainty; adequacy of technological, educational, communications, Infrastructure in host countries and ability to absorb contractual resource transfers	Extent to which vertical or horizontal integration is possible/ desirable (need to control sourcing of inputs or markets), extent to which internalizing advents can be captured in contractual agreements (cf. early and later stages of product cycle); use made of ownership advantages extent to which local firms have complementary advantage to those of foreign firms; extent to which opportunities for output specialization and international division of labour exist	Organisational and control procedures of enterprise; attitudes to growth and diversification (the boundaries of a firm's activities); attitudes toward subcontracting-contractual ventures(licensing, franchising, technical assistance agreements),extent to which control procedures can be built into contractual agreements
Location	Physical and psychic distance between countries; government intervention (tariffs, quotas, taxes, assistance to foreign investors or to own MNEs) such as Japanese government's financial aid to Japanese firms investing in South East Asian labour intensive industries	Origin and distribution of immobile resources; transport costs of intermediate and final goods products; industry specific tariff and non-tariff barriers; nature of competition between firms in industry	Management strategy towards foreign involvement; age and experience of foreign involvement (position of enterprise in product cycle); psychic distance variables (culture, language, legal and commercial framework); attitudes towards centralization of certain functions (R&D); regional office and market allocation; geographical structure of asset portfolio and attitude to risk diversification

Dunning (1981) mentioned that a country's international investment situation is related to its gross national product (GNP). He distinguish the relationship between direct investment flows and income levels into four stages. This research integrates these four stages on the Table 3.It can also called the investment-development cycle.

Table 3: The integrate of Investment-Development four stages

Stage	Stage 1	Stage 2	Stage 3	Stage 4
Inward condition	Little inward investment	Inward direct investment is rising	Inward investment is falling (or because outward investment is rising faster than inward investment)	Inward investment has fallen
Outward condition	No outward direct investment	Outward direct investment remains very small	Constant outward investment	Outward investment is rising (faster than the inward investment)
NOI (outward investment flows)	A small negative NOI	NOI is negative but become larger	NOI still negative but become smaller	NOI is positive and rising
GNP (1971)	GNP:$400 or less/per capita	GNP:$400-$1500/per capita	GNP:$2000-$4750	GNP:$2600-$5600
Number of countries (1971)	25 poorest developing countries	25 countries	11 countries	6 countries (all developed countries)
Represent country (1971)	India	Brazil Malaysia	U.K.	U.S.
Inward investment				
Of	Substantial	Substantial	Declining and/or more specialized	Declining and/or more specialized
Internalisation advantages	Substantial	Probably declining	Probably increasing	Substantial
Ld	Few	Increasing	Declining	Declining
Outward investment				
Od	Virtually none	Few	Increasing	Increasing
Internalisation advantages	Not applicable	Few and specialized	Still limited	Increasing
Lf	Not applicable	Beginning to emerge	Increasing	Increasing

Of：the foreign ownership advantages　Ld：the domestic of locational advantages

Od：the domestic ownership advantages　Lf：the foreign of locational advantages

In summary, Dunning (1981) thank that the countries in Stage 1 is insufficient location specific advantages. So it doesn't attract the foreign firms to investment. In stage 2, Buckley and Casson (1980) referred to that inward direct investment is becoming commercially viable and the domestic markets increase and the variable costs of servicing are reduce in those market. This stage is an important point, it starting import substituting manufacturing investment (replacing or supplementing consumer and capital goods imports), and the government starting set some barriers to imports. Their point still focus on developed countries investment to developing countries, and need congenial investment climate and an adequate legal and commercial framework (Dunning,1981;Root and Ahmed,1978).In stage3,because the technology cycle(Dunning,1981;Magee,1977),the net inward investment per capita starts to fall, and outward investment is rising(firm develop their comparative ownership advantage) in this stage. So this stage can be mark as the country's international direct investment specialization (Dunning;1981).Finally, the country in stage 4 is a net outward investor(Dunning;1981). The outward investment is rising or faster than the inward investment. Because of their rising domestic labour cost and lower rates of productivity growth, the country in this stage may want to outward direct investment.

This paper find, Dunning consider such as the technical progress, high labor costs, and the rates of productivity, the developed countries will outward direct investment. But Lucus consider the level of skill will influence the investment return, and also mentioned that the technology will influence the investment return. Besides, the countries government policies, international capital market imperfections are also influence the investment activity. And these factors may result the developing countries invest to the developed countries. Although the sample is focus on U.S. that time, this research considers it doesn't influence our research result. The research also regards U.S. as the developed countries. Thus, this study intends to integrate the arguments of the two scholars, deducing today's free market is two-way investments. Compare with Lucus and Dunning's investment aspect on Table 4.

Table 4: Compare with Lucus and Dunning's investment aspect

	Lucus (LDC to DC)	Dunning (DC to LDC)
Outward Investment Factors	• Levels of capital per worker • **Human capital (labor quality, human capital)** • External benefits of human capital (skill level) • **Technology** • **Capital market imperfections (political risk)**	• Location specific advantages • Government's barriers to imports • Congenial investment climate • **Adequate legal and commercial framework** • **Technology cycle (develop their comparative ownership advantage)** • **High domestic labour cost and low rates of productivity growth**

Table 4 exhibit the factors of outward direct investment, and this paper choose the same or similar factors to discuss as follows.

Human capital difference

Lucus(1990) referred to that the labor quality and human capital in developed countries is better than developing countries. Anne Krueger's (1968) research that level of education, age, and sector will affect worker productivity. So their argument is that outward investment will occur from developing countries to developed countries. On the other hand, the Dunning (1981) propose that developed countries are high domestic labour cost and low rates of productivity growth, so they may invest to developing countries. Capital and labor are an important role to attract the FDI last 30(Eurico Brilhante Dias and Kristina Makalengva, 2013; Dunning, 2003). Contractor and Mudambi (2008) referred that human capital investment had a greater effect in emerging Asia than in developed countries. Advanced countries consider their education and skills in the service sector will protect them from foreign competition (Contractor and Mudambi; 2008). This paper supposes that both developed countries and developing countries need outward investment base on their compare condition.

H1: The outward investment of human capital has significant effect on both developed countries and developing countries.

Technology

The technology progress is an important thing in our life. The level of technology will affect their reward. Lucus (1990) refer to that technology can be a intercept parameter to compare the two countries. In addition, Dunning (1981) mentioned that technology cycle may affect their level of outward investment. It's about their comparative advantage, the more technology progress countries may outward investment. Like developed countries outsourcing to the developing countries base on comparative advantages. Previous studies argue that foreign entrants investment intensively in R&D may rapidly the progress of domestic technological development (Qian Gu and Jane W Lu,2011;Hejazi & Safarian, 1999; Javorcik, 2004). Qian Gu and Jane W Lu(2011) consider that can promote the competitiveness of host-country firms in international markets. Base on the important of technology, this study consider both the developed countries and developing countries need outward investment to improve the market more efficiency.

H2: The outward investment of technology has significant effect on both developed countries and developing countries.

Capital market imperfections

Lucus(1990) think that because of the capital market imperfections, the countries may

have outward investment. He proposes that political risk is an important factor, it may limit the capital flows and the capital's transfer speed. And the international capital market imperfections, mainly sovereign risk (risk of nationalization) and asymmetric information are also influence the outward investment. Although the expected on capital return may be higher in developing countries, the high risks uncertainty exist in the same time. And the high risk may reduce the expected capital returns. Dunning (1981) referred to that adequate legal and commercial framework are the important outward investment factors. Butler, Joaquin(1998) mentioned that political risk may let the sovereign host government unexpectedly change the "rules of the game" under which businesses manage.

Thus introduced the concept of risk should be dispersed in the free market. In order to diversify the risk, the free market will need two-way investment.

H3: The outward investment of capital market imperfection has significant effect on both developed countries and developing countries.

Research method

In this study, we use the SPSS and choose all countries listed in IMD database. Choose sample data from 2009 to 2013.The variables are as follows.

Independent variables

- **Human capital difference**: Choose the data list on the "**Business Efficiency**".
- **Technology**: Choose the data list on the "**Technological Infrastructure**".
- **Capital market imperfections**: Choose the data list on the "**Government Efficiency**".

Dependent variables

- **Two-way investment**: Choose the data list on the "**Economic Performance**". (Some domestic economy, international investment information lists on the database)

References

1. Buckley, Peter J., and Mark Casson,(1980), "The optimal timing of a foreign direct investment ",*University of Reading, Discussion Papers in International Investment and Business Studies*,Vol.48.
2. Eurico Brilhante Dias and Kristina Makalengva,(2013), "China Inward FDI and Chinese Exports to High-Income Countries (HICs): A Historical Perspective Based on Bibliometric Method ", *International Business Research*; Vol. 6, No. 12.pp.17-30.
3. Farok J.Contractor,Susan M.Mudambi,(2008), "The Influence of Human Capital Investment on the Exports of Services and Goods: An Analysis of the Top 25 Services

Outsourcing Countries", *Management International Review*;Vol.48, No.4.pp.433-445.

4. Hejazi, W., and Safarian, A.,(1999), "Trade, foreign direct investment, and R&D spillovers", *Journal of International Business Studies*, Vol.30,No.3,pp:491–511.

5. John H. Dunning,(1979), "Explaining changing patterns of international production: In defence of the eclectic theory", *Oxford bulletin of Economics and Statistics*,Vol.41, pp:269-295.

6. John H. Dunning,(1980), "Towards an eclectic theory of international production: Some empirical tests", *Journal of International Business Studies*,Vol.11, pp:9-31.

7. John H. Dunning,(1981), "Explaining the international direct investment position of countries: Towards a dynamic or developmental approach",*Weltwirtschaftliches Archiv*,Vol.117,No.1, pp:30-64.

8. Dunning, J.,(2003). "The role of foreign direct investment in upgrading China's competitiveness", *Journal of International Business and Economy*, Vol.4,No.1, pp:1-13.

9. Javorcik, B. S.,(2004). "Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages", *American Economic Review*, Vol. 94, No.3, pp:605–627.

10. Kirt C. Butler Domingo Castelo Joaguin,(1998), "A note on political risk and the required return of foreign direct investment", *Journal of International Business Studies*,Vol.29, No.3,pp:599-607.

11. Krueger, Anne O.,(1968), "Factor endowments and per capital income differences among countries", *Economic Journal*,Vol.78,pp:641-659.

12. Laura Alfaro, Sebnem Kalemli-Ozcan, and Vadym Volosovych, (2008), "Why doesn't capital flow from rich to poor countries? An empirical investigation", *The Review of Economics and Statistics*, Vol. 90, No. 2,pp: 347-368.

13. Magee, Stephen P.,(1977), "Multinational corporations, the industry technology cycle and development", *Journal of World Trade Law*, Vol. 11,pp: 297-321.

14. Qian Gu and Jane W Lu,(2011),"Effects of inward investment on outward investment: The venture capital industry worldwide 1985–2007", *Journal of International Business Studies*, Vol. 42,pp.263-284 .

15. Robert E. Lucas, JR.,(1990), "Why doesn't capital flow from rich to poor countries?", *American Economic Review*, Vol. 80, No. 2,pp: 92-96.

16. Root,Franklin R.,and Ahmed A.Ahmed,(1978), "The influence of policy instruments on manufacturing direct foreign investment in developing countries", *Journal of International Business Studies*, Vol. 9, No. 2,pp: 81-93.

17. Summers, Robert and Heston, Alan,(1988),"A New Set of International Comparisons of Real Product and Price Levels: Estimates for 130 Countries, 1950-1985," *Review of In-come and Wealth*, Vol.34, pp:1-25.