Introduction to the Theoretical Framework of Dunning’s Investment Development Path

Nguyen Thi Kim Anh*, Le Hong Ngoc

VNU University of Economics and Business, 144 Xuan Thuy Str., Cau Giay Dist., Hanoi, Vietnam

Received 22 November 2016
Revised 30 December 2016, Accepted 22 December 2016

Abstract: Proposed in 1981 by John H. Dunning, the investment development path (known as the IDP model) has been considered to be an application of the eclectic paradigm. It is an expansion of Dunning’s terms on internationalizing activities of TNCs at a macro level in order to explain a country’s FDI patterns. The nature of the IDP model is a dynamic approach which examines the systematic relationship between a country’s net position of foreign direct investment (both inward and outward FDI) and its different stages of development. Recently, numerous authors around the world have conducted research about the development of investment using the IDP model for countries and/or groups of countries that have been effective in terms of policy implications. This article briefly collects and introduces some theoretical aspects of Dunning’s IDP model aiming at providing a theoretical framework for further research on FDI.

Keywords: Eclectic paradigm (OLI paradigm), Investment Development Path (IDP), John H. Dunning.

1. Introduction

Foreign direct investment (FDI) is not a new concept in research on international economics. FDI embraces two directions, namely inward (IFDI) and outward (OFDI) direct investments. Both have been creating not only positive but also negative impacts on the host and home economies, especially on socio-economic development in a developing nation. Since FDI is the fundamental object of study, the research approaches to FDI are divided into two major categories, namely macroeconomic and microeconomic theories. The microeconomic approach explains FDI patterns from enterprises’ perspective, while the macroeconomic approach studies from a nations’ outlook.

Among all, Dunning’s eclectic paradigm is considered to be a common framework for analysis of TNCs’ international business [1]. One of its applications is the investment development path (IDP), which generalizes the international investment development process and the changes in the international investment position of a country.

This article reviews existing papers applying the IDP model in order to develop a theoretical framework for further research on countries’ FDI patterns. After an overview of the OLI (eclectic) paradigm and motives of international investment, this article introduces a theoretical framework of the investment development path (IDP model). The framework includes the nature of the IDP model, the five
stages’ features, and a review of some papers applying IDP. Finally, some limitations in the empirical research and the model’s application will be introduced.

2. Overview of Dunning’s OLI paradigm and four motives of international investment

2.1. Dunning’s OLI paradigm

In order to summarize arguments on FDI, Dunning came to the eclectic paradigm in order to provide a more sufficient explanation for the establishment and development of FDI [2]. According to the eclectic paradigm, a TNC will conduct an OFDI once it has obtained all three types of advantages, known as OLI advantages.

(i) Ownership advantages (O-advantage) include product brand, production techniques, business skills and economies of scale… which help the TNC successfully compete with local firms.

(ii) Location advantages (L-advantages) include the endowment of natural resources, cheap labor, and tax incentives… of the host country. These make a nation attractive for a TNC’s added-value business. The more immovable the L advantages are, the more attractive the host country is and the more likely a TNC will choose to invest in it.

(iii) Internalization advantages (I-advantages) include TNC’s specific advantages in self-production. The higher the value from internalizing a cross-border intermediary market, the more likely a TNC will internalize its production instead of outsourcing through a contractual agreement. Besides, the internalization of assets (especially intangible ones and those that are not easy to transfer) ensures intellectual property rights by avoiding unauthorized reproduction.

According to Dunning, the above three conditions can be divided into two groups: Push factors (including O and I advantages) and pull factors (including L advantages). These advantages are to change over time and space, and depend on each stage of development for a country. Among the three, L advantages are considered to be essential to attract FDI for the host country since they are under control of the host government.

2.2. International investment’s four seekings

In addition to OLI advantages, FDI patterns and TNCs’ strategies also relate to four seekings - the main international investment motives. In reality, there are some cases in which TNCs co-ordinate or develop more motives into international business strategies.

Firstly, market seeking: Market-seeking investments relate to the enhancement of international markets, support commercial channels and the establishment of new markets with available access to raw materials. The market-seeking motive is the basic feature of internationalization at the very first stage and the most popular motive for TNCs from developing nations. The heading markets are neighbors to the home country.

Secondly, natural resources seeking: This main FDI motive aims to enhance long-term supply of natural resources (such as gas and minerals) for TNCs. These enterprises mostly conduct business in primary industries or in those employing large amounts of natural resources. Due to its importance in securing resource supply, natural-resource seeking is the key motive for a large proportion of TNCs from developing nations, especially from those that are resource-poor. The selection of investment location does not depend on the closeness or similarity in the region but depends on the availability of natural resources.

Thirdly, efficiency seeking: Efficiency-seeking investments are normally conducted by TNCs from relatively more developed nations, focusing on some industries (such as electronics and textiles). A TNC expands its value chain through FDI in developing markets whose production costs are lower. This motive is relatively unimportant for TNCs from developed nations and depends on the nature of the products and international production forms.

Fourthly, strategic asset seeking: Strategic-asset seeking investments are conducted in
order to reinforce available competitive advantages, acquire new ones and especially seek human capital resources. This motive is relatively modest for TNCs from developing nations since pure strategic-asset seeking FDI requires the prerequisite of superior absorption. Since nearly all strategic-asset FDI aims to advance a TNC’s absorption, it is rarely a vital motive for TNCs from developing nations.

3. Theoretical framework of the investment development path (IDP)

The IDP has been considered as a dynamic form of eclectic paradigm. In international papers, IDP has been described in many ways - as “a model”, “a hypothesis”, “a paradigm”, “a theory” or “an approach”. In the only two Vietnamese researches on the subject, IDP is referred to as “a model”. However, it is determined by Dunning himself as “a dynamic approach” [3]. Other authors also agreed that IDP is a “theoretical approach” and develop their investigation by applying IDP into empirical research.

The IDP examines the systematic relationship between a country’s net outward investment position (NOIP, calculated by the difference between OFDI and IFDI) and its different stages of development. The model argues a country has the tendency to experience five different stages of economic development and these five stages can be classified by the country’s trend towards a net FDI investor and/or a net FDI receiver. Basically, the IDP model is an expansion of Dunning’s conditions on TNCs’ internationalization on a macro level to explain the FDI patterns of a country. However, Dunning emphasized that not all countries must go through all five stages. The movement along the IDP while a country’s development level is changing implies that countries are moving not only forward but also backward on IDP (when there is an economic expansion or recession). Additionally, some countries may skip one IDP stage.

The basic hypothesis is that when a country develops, its OLI configuration changes. At the same time, changes in FDI flows create impacts back onto the economic structure. All conditions for changes and impacts on the national development trajectory are determinable. The precondition is that the country must integrate into the global capital market.

In order to quantify this relationship, Dunning proposed estimation under the form of a quadratic function

\[
\text{NOIP} = \alpha + \beta_1 \text{GDP} + \beta_2 \text{GDP}^2 + \mu
\]

where NOIP is the net outward investment position and GDP is the gross domestic product of a country. Despite the fact that a country’s economic development level encompasses many structural variables, Dunning employed GDP as a representative indicator and the only independent variable. All variables can be adjusted to population (using per capita value - pc: NOIP_{pc} = \alpha + \beta_1 \text{GDP}_{pc} + \beta_2 \text{GDP}_{pc}^2 + \mu). This is the underlying idea of Dunning himself and of many other authors choosing to investigate and model the nature of countries’ IDPs around the world. However, some authors expand this quadratic estimation to polynomial ones or add some structure variables. These changes and contributions depend on different research purposes.

An IDP is composed of five stages. Originally, it included only four stages. The fifth one is developed by Dunning to adjust to the practical development of countries in the contemporary world. Basically, each stage refers to the country’s international investment position, main features of IFDI and OFDI, O and L advantages (on a macro level), and government’s role in promoting investment.

**Stage I**

Countries in Stage I have negative NOIP (OFDI < IFDI) or NOIP equal to 0 since there is no OFDI, none or negligible IFDI. Therefore, those are net FDI receivers and in fact pre-industrialization and the world’s least developed nations. For countries having IFDI, most IFDI flows into primary industries, uncomplicated production and labor-intensive ones. This FDI is natural resource seeking.
A host country’s L advantages are insignificant, mostly due to insufficient infrastructure, a low-skilled labor force, underdeveloped commercial institutions and legal systems, low income, political and/or economic instability and a low level of technology, etc.

Enterprises’ O advantages are underdeveloped and not capable of conducting OFDI. Some enterprises lack technological accumulation.

In Stage I, government intervenes in two ways: (1) provide basic infrastructures, upgrade human capital by education and training; and (2) implement economic policies such as import protection, export subsidies… to improve national competitiveness.
**Stage II**

In Stage II, NOIP still decreases and remains negative (OFDI < IFDI) but at the end of Stage II, it has the sign of increase. IFDI increases but still at low level, mostly flows into consumer production industries, infrastructure, export-orienting industries, and low-skilled labor intensive ones. OFDI occurs negligibly. Countries are still net FDI receivers.

Foreign investors conduct FDI to seek natural resources and markets to avoid trade barriers to less developed nations. Some TNCs invest in markets at a higher IDP stage to seek markets or strategic assets.

Host country’s L advantages are improving: high growth rates, expanding domestic markets in terms of scale and purchasing power, improving infrastructure in terms of transport and communication systems, more attractive to investors, abundant low-cost labor force, more favorable polices in education and technological transfer. The domestic market is open for international investment.

The O advantages are increasing by the accumulation of experiences during international business expansion. Enterprises have obtained tangible advantages but not enough to conduct significant OFDI. Very few big corporations conduct OFDI in neighboring markets to seek strategic assets. If a government’s policies on FDI promotion are more effective, the O advantages will be upgraded to produce more technological- and intellectual-intensive products; whereby to increase the opportunity for outward investment. Some enterprises with available O advantages are capable of participating in some TNCs’ global value chains.

Government plays an important role in FDI promotion through push factors such as export subsidies, technological development, incentives in education and training, upgrading human capital, enhancement of transport and communication systems.

However, some authors believe that the country’s characteristics in Stage II are a natural result of those in Stage I.

**Stage III**

Although NOIP is negative (OFDI < IFDI), it is increasing. The amount of IFDI increases but its growth rate starts decreasing due to market expansion reducing competitive advantages in labor-intensive industries. OFDI increases significantly in terms of quantity and growth rate. Countries at Stage II are so-called “emerging” or newly industrialized, yet still net FDI receivers. IFDI is natural resource or market seeking in countries at lower IDP stages; and efficiency and strategic asset seeking in those at higher IDP stages.

Once the economy develops, the national L advantages develop. Since domestic wages and average income levels increase, the competitiveness of low-cost labor reduces. Industrialization and specialization expand remarkably, the competitiveness of domestic markets is enhanced.

Noticeably, O advantages become less important since enterprises develop specific competitive advantages to create new intangible assets (e.g: technological innovation, marketing…) and exclusive assets (e.g: brand, trademark, and intellectual property, copyright) that allow them to compete. Intellectual transfer enables enterprises to be less dependent on government policies but yet are in need of government incentives. Some become TNCs and establish overseas affiliations. They start OFDI. Due to changes in the OLI configuration, they convert from labor-intensive production to human capital- and technological-intensive production and transfer more assets to markets at a higher IDP level to make the most out of competitive advantages.

Governments should be active in policies that promote investment in industries having huge advantages, encourage spill-over effects, increase expenditure on education and training, remedy market failures and promote integration and competition for enterprises, etc.
**Stage IV**

In this stage, NOIP starts overcoming the threshold of 0, becomes positive (OFDI > IFDI). Countries become net investors. Although there is an increase in the quantity of both IFDI and OFDI the IFDI growth rate is lower than OFDI growth rate. FDI flows in two directions: (1) towards countries at lower IDP stages to seek for markets and efficiency (from low-cost labor) to uphold competitive advantages; and (2) towards countries at a higher IDP stage to seek strategic assets through M&A and strategic alliance…

A host country’s L advantages are mainly based on assets such as market structures, a high-quality labor force, and high scientific and technological capabilities. The costs of capital usage lower than labor usage has creating advantages in capital-intensive industries.

National trade growth has brought about the upward tendency of TNCs internationalizing trade and production. Enterprises develop available advantages and become more and more competitive. They start to internationalize, become TNCs and participate in the expansion of global markets. At this stage, intangible assets are more important than tangible ones. They promote OFDI due to the loss of competitive advantages in their own home markets and outsource production to others.

Governments continue to supervise and generate and minimize market failures and uphold the economy’s competitiveness; and especially attaches importance to the creation of favorable conditions for market operation by upgrading assets in infant industries and eliminating ineffective industries.

**Stage V**

Countries in Stage V have their NOIP fluctuate around 0. NOIP is sometimes negative, sometimes positive, depends on short-term fluctuations of some economic factors (e.g: exchange rate, economic cycles, etc.) and enterprises’ business strategies. IFDI and OFDI frequently grow at high rates. Countries become net investors. In fact, these countries reaching Stage V are modern, industrialized, leading in investment in research and development (R&D) and the most developed nations in the world (USA, Japan, England…). FDI seeks markets and strategic assets (knowledge and experiences) or efficiency (through M&A) in markets at lower IDP stages. Production is likely to be specialized in markets at Stage IV and V.

FDI becomes dependent less on L advantages but more on TNCs’ strategies. Country’s FDI flows depend on technological capability and technological organization. Markets of different countries at Stage V have similarities in the level of development; therefore, L advantages become less and less vital.

Enterprises incessantly internationalize and conduct business on a global scale, gradually resulting in the blur of their nationality. The more an enterprise internationalizes, the less dependent are its assets on natural resources, the economic - political - social - cultural conditions of the home country, and the more dependent on the capability of effective management of available advantages and ability to increase profit. Investors conduct a transformation from utilization of available O advantages into purchase of new advantages.

As mentioned above, Dunning added Stage V to become more suitable for countries’ development practices. In cases at Stage V, the absolute GDP value is not a trustworthy indicator that represents the level of development or international investment position of a country.

Instead, a number of other indicators are under consideration, for example, the tendency of internationalizing transactions through a TNCs’ activities. When there are similarities in the L-advantage configuration, the NOIP of different countries becomes the same and balances. In this stage, it is difficult to clearly distinguish the relationship between FDI and the development level. This relationship turns out to be less reliable since a country’s success in upholding its international investment
position depends on enterprises’ capability in the process of generation and operation of overseas business.

4. Review of some papers applying the IDP model

Internationally, many authors have applied the IDP model to examine the relationship between a country’s FDI position and its economic development. The research object can be a country (India, China, Romania, etc.) or a group of countries (Middle East and North Africa countries, Central and Eastern European countries). In terms of research method, most papers are conducted by a quantitative method; nevertheless, there are a few qualitative ones. While quantitative research estimates the IDP model by estimating Dunning’s proposal quadratic formula, a qualitative one describes and compares the characteristics of OFDI and IFDI to the features of the IDP’s stages; both are in order to determine the country’s IDP stages and its position on the IDP curve.

Sathye’s paper (2008) is a quantitative research [4]. The author examined India’s economic development from a FDI perspective using an IDP framework. The quadratic formula was estimated using data from 1991-2005. The result has shown that the relationship between NOI and GDP correspond with IDP models in the first stages of development; yet in Stage III, the development pattern was different from the theoretical description: After Stage I and II (IFDI > OFDI), suddenly since 1998 India’s OFDI increased until 2000 and then reversed. 2006, when OFDI was expected to be more than IFDI during 2007-2008 (what happens in Stage IV or V), was the year that India’s development differed from the theory. The author explained that the main factor leading to the GDP growth was not IFDI but the removal of economic barriers in India; and its OFDI was more likely enterprise-specific rather than country-specific.

One qualitative research is Ramasamy’s paper (1998) which evaluates models of FDI in Malaysia [5]. Based on the IDP model, Malaysia was determined to be in a passing period between Stage III and Stage IV. After examining Malaysia’s IFDI from an historical development perspective, the author analyzed OFDI in the relationship with its economic development and compared the characteristics of GDP and FDI (both OFDI and IFDI) with IDP’s features. Since 1997, Malaysia entered Stage III and expected FDI from countries at higher IDP stages. The author also emphasized that policy makers must be careful on FDI promotion policies.

In an article, Bensebaa (2008) applied cluster analysis to distribute Central and Eastern European (CEE) countries into five homogeneous groups, then analyzed and outlined the IDP [6]. Using quadratic formula, the author has pointed out that the cases of these countries are appropriate to the IDP model: Most CEE countries were at Stage I or Stage II. However, some countries experienced similarities in terms of GDP with EU15 (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Italia, Luxemburg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom), but differences in term of OFDI. Some least developed CEE countries are similar in terms of OFDI with more developed ones but not in terms of GDP. This result also points out a difference in the empirical research from the IDP theoretical hypothesis.

Recent papers have applied a polynomial formula (rather than a quadratic one) to examine the IDP. In the case of Romania, Masca and Vaideen (2010) applied the formula \( y = \beta_1 x + \beta_2 x^2 + \beta_3 x^3 + \beta_4 x^4 + \beta_5 x^5 + \mu \) to the data during 1990-2007 [7]. The result showed the IDP movement of Romania: Stage I during 1990-1999 (low IFDI and OFDI, NOI around 0), Stage II during 2000-2007 (increasing IFDI, low OFDI, negative NOI) and Stage III starting in 2007. In conclusion, the authors believed that the Romanian government should consider the development of domestic investment with the
protection of strategic foreign economic benefits. It was crucial to drive domestic enterprises to a new level of internationalization through government support for ownership advantages. Since data after 2007 was not available, the authors couldn’t forecast the tendency thenceforward.

Many countries’ cases are successfully proved by using the IDP model, yet few cases cannot be explained thoroughly by applying the IDP. Ellstrom and Engblad (2009) applied the theory of IDP in the case of Brazil to evaluate if this country has developed consistently with the model [8]. The results showed that the shape of the Brazilian IDP correlates with the theoretical IDP, but the underlying factors causing the shifts in NOI are not due to the development of the country’s OLI configurations (initially caused by economic reforms and global business cycles). The authors concluded that the theory of the IDP to a very limited extent could explain the development path of Brazil.

5. Some limitations and application of the IDP model

5.1. Some limitations in empirical research

The IDP model has been facing many limitations in empirical research, which have been pointed out by some authors [9, 10]. The most frequent ones are summarized and listed below.

Limitations in variables. Dunning employs only two variables (NOIP and GDP, with or without adjustment to the population). On one hand, the NOIP is not a complete indicator to analyze the impacts from structural changes of FDI. NOIP value fluctuation in each stage is also a constraint. Both countries in Stage I (no or very little IFDI) and Stage V (significant FDI) have the value of NOIP equal to 0. An increase in the NOIP (OFDI increases or IFDI decreases) which normally implies an enhancement in an economy’s competitiveness, could result from disinvestment or reverse investment - meaning a decrease in competitiveness. On the other hand, GDP is also not a sufficient indicator to measure the development level of an economy. Therefore, many authors have proposed to add some structural and non-structural variables to reflect more precisely the development level as well as a country’s characteristics.

Limitations in the estimation equation. The quadratic equation in use has created several incomparable problems in statistics. The quadratic description appears in different forms in accordance with different country samples. Besides, this quadratic equation occurs with heteroscedasticity, especially in the case of developing country samples [4].

Limitations in data selection. Dunning used data on FDI flows in his research. Nevertheless, in recent papers, some authors have employed data on FDI stocks. The reason is that previous databases on FDI flows were insufficient, creating errors in calculating the NOIP. Conversely, data on FDI stocks may include the value from greenfield FDI or merger and acquisition (M&A) in international investment, which is more likely to be a structural change rather than a quantity change. Therefore, care must be taken to select data on FDI that is compatible with research purposes.

Other problems. The IDP basically measures FDI quantity while the measurement of FDI quality is also essential. FDI quality relates to the way FDI is conducted compatibly with the purposes and strategies of the host country to promote its advantages. FDI quality in developed countries means investment in intellectual intensive industries as well as value added activities in global value chains. For developing countries, FDI quality is important since investment enhances a host country’s technological transfer and absorption. Besides, there are also other important factors such as FDI forms, the host country’s natural structure, macroeconomic policies and government administration.

Dunning has developed two IDP versions: “narrow” IDP and “broad” IDP. The narrow version is the original IDP, allowing the
estimation of the basic relationship between the NOIP and the economic development of a country. A broad version is constructed with considerations of national feature such as economic structure, government policies and the inconsistency of FDI. This version implies that there still exists a “gap” in the intervention procedures and mechanism in spite of the existing relationship of FDI and the development level. The problems of linkage, absorption and accumulation, government stagnation and spill-over effects are vital in explaining not only the success of some countries but also the failures of others. This broad version escapes from the original relationship, considers the inconsistency of FDI in terms of investment motives and development impacts, as well as institutional orientation issues of the government. In general, the narrow version focuses on FDI in terms of quantity, while the broad one focuses on FDI in terms of quality.

5.2. Application of the IDP model

In addition to the description of a country’s international investment position using estimation equations and scatter diagrams, many authors have applied some indexes to investigate more comprehensively and analyze further each IDP.

Papers on Central and Eastern countries using IDP have applied an outward foreign direct investment performance index (OFDIPI). This index is used to assess the amount of OFDI conducted by a country in a relative relationship with its economic potential; whereby to point out which country can move further on IDP. By analyzing OFDIPI, if its value is less than 1, the amount of OFDI conducted is less than its proportion in the home country’s economy (calculated by its participation in the global economy). Alternatively, if its value is more than 1, the OFDI conducted has a higher proportion relatively to the scale of the home country’s economy. It can be claimed that the closer to or the more than 1 this index is, the more likely this country will move further and more rapidly on IDP than it has at the present.

In some IDP research on China, the authors have applied an investment position index (IPI) which is calculated using the formula: IPI = (OFDI - IFDI) / IFDI.

IPI means that if the IDP is correct, this index will show different cases. For example, the IPI doesn’t exist in Stage I since there is no IFDI. Once the country receives IFDI, the IPI’s value will be in the range of -1 to 0, meaning Stage II or III (country having international investment, conducting little OFDI).

Figure 3. IPI value in each IDP stages.
Source: Kun, 2011.
Here, the distinction between Stage II and Stage III is the slope of the IPI. If the IPI is positive, this country has become a net investor and reached Stage IV. If the IPI is more than 1, this country has a huge amount of net FDI. In Stage V, the IPI will decrease and fluctuate around 0.

5.3. Application of IDP model in research on Vietnam’s OFDI

In Vietnam, there are only two PhD dissertations [12, 13] that employed the IDP model to examine Vietnam’s OFDI patterns. In both writings, the data on GDP and FDI was collected from Vietnam’s General Statistics Office (through online database or yearbook). However, there are some issues in using this data: FDI data is announced annually (not quarterly) providing limited observations which could make it difficult to evaluate a whole path; the data is only available from 1990-2015 (except the years 1995-1997) in terms of numbers of projects and total registered capital (not implementation capital); there is no separation between FDI stock and FDI flow; values are rounded in tens resulting in statistical errors… Therefore, research on Vietnam’s FDI needs to employ data from other trustworthy international databases (WB, ADB, UNCTAD…) which have more sufficient figures.

The IDP model can be employed for case studies of Vietnam and even ASEAN nations in which Vietnam is a member country. The IDP model is able to generalize an overall picture of Vietnam’s foreign investment in relationship with economic development. It is worthy to investigate which stage Vietnam has been at in comparison with other countries in the region, as well as how Vietnam can move forward to higher IDP stages, meaning higher levels of FDI and higher levels of economic development.

6. Conclusion

In order to investigate the FDI development of countries or groups of countries, many authors around the world have employed the investment development path proposed by John H. Dunning. Among numerous theories explaining FDI patterns, the IDP model, as an application of eclectic paradigm, has been considered to be a modern and popular theoretical approach. Until now, there are many papers applying IDP in the cases of countries (India, Portugal, Romania, China, Ireland, Finland…) as well as groups of countries (Middle East and North Africa, Eastern and Central European countries). The IDP has provided a panorama of FDI patterns on a macro perspective. Those results have proven the feasibility and application of the IDP model in research and its implications in terms of policy orientation in reality. So far, its value is still acknowledged worldwide. In Vietnam, there are only two papers applying the IDP model in order to determine Vietnamese OFDI’s situation and proposing some policy implications to promote OFDI, which have proven its validity in studying Vietnam’s FDI.

From the authors’ own experiences, from research and summaries from numerous international studies that have been undertaken, this article in some ways has introduced general knowledge on Dunning’s investment development path - one useful approach for research on FDI and international economics, from the very basic concepts and nature as well as limitations and applications.

References


