



The Investment Development Path Hypothesis: A Panel Data Approach for Portugal and the Cohesion Countries, 1990-2007

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1. Theoretical Model (1/3)

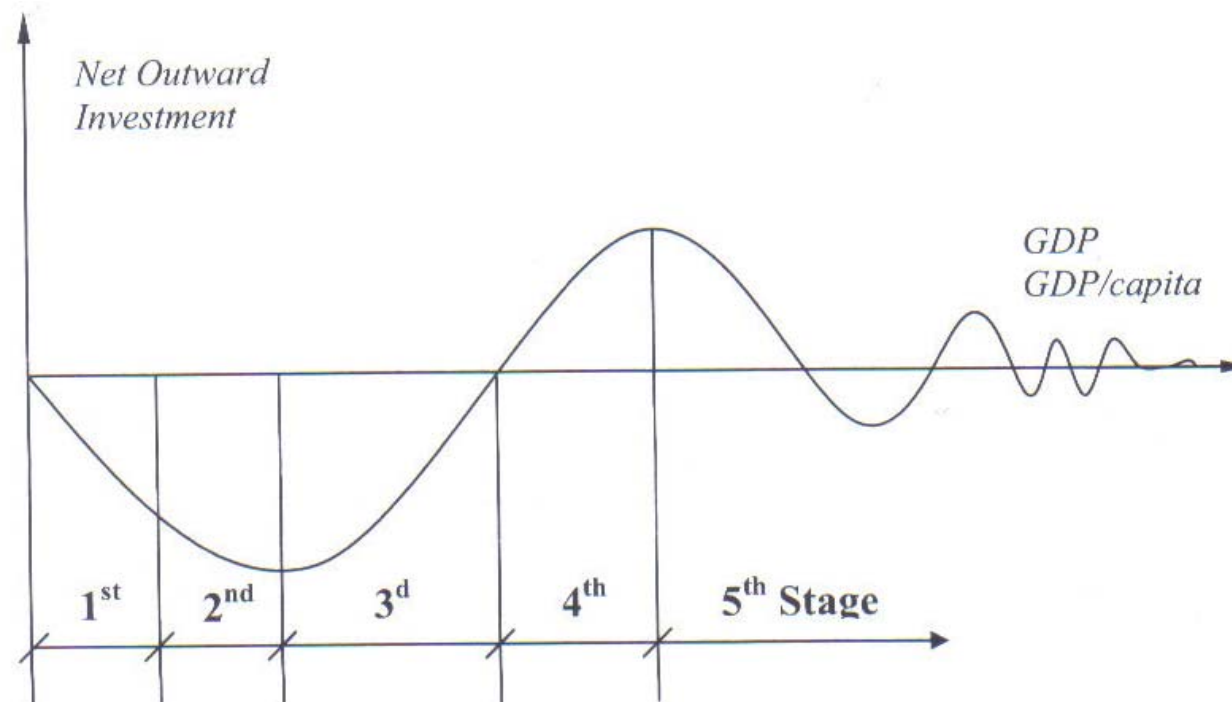
The Investment Development Path (IDP) hypothesis, introduced by Dunning (1981) and further developed specially by Dunning and Narula (1996) and Durán and Úbeda (2001, 2005)

Basic assumption



With an increasing level of development (proxied by the GDP or GDP *per capita*), a country's NOI (net outward investment position, defined as the difference between outward direct investment stock and inward direct investment stock) faces five different stages, from an initial one – where the country is a net inward receiver of FDI – to a matured one - where the country becomes a net outward investor

1. Theoretical Model (2/3)



Source: Dunning and Narula (1996)

1. Theoretical Model (3/3)

Stage	Inward FDI	Outward FDI	NOI Position
1	<p>Least Developed Countries</p> <p>Insufficient locational advantages</p> <ul style="list-style-type: none"> ■ Only high natural-asset countries can attract a significant amount of FDI 	<p>Absence of domestic firms' ownership advantages</p> <ul style="list-style-type: none"> ■ No outward FDI 	Negative
2	<p>Improvement of a country's locational advantages</p> <ul style="list-style-type: none"> ■ Faster growth of inward FDI than of GDP, specially in sectors with scarce created assets 	<p>Domestic firm create or upgrade their ownership advantages</p> <ul style="list-style-type: none"> ■ Little outward FDI 	Increasingly negative
3	<p>Emerging countries</p> <p>Erosion of comparative advantages in labour-intensive activities</p> <p>Development of created-asset locational advantages</p> <ul style="list-style-type: none"> ■ Gradual slowdown in inward FDI 	<p>Growth of ownership advantages, increasingly associated to the property of intangible assets</p> <ul style="list-style-type: none"> ■ Increase in the rate of growth of outward FDI, specially in countries at lower stages of development 	Negative but increasing
4	<p>Locational advantages mainly based on created assets</p>	<p>Domestic firms compete locally with foreign firms and expand their activity abroad</p>	Positive
		<ul style="list-style-type: none"> ■ Superiority of outward FDI over inward FDI 	
5	<p>Most advanced countries</p> <p>NOI position tends to fluctuate around zero, reflecting high levels of inward and outward FDI</p> <p>Less stable relationship between a country's international investment position and its stage of development</p>		

2. Previous Empirical Studies (1/3)

- During the last two decades, several econometric and descriptive studies have been made in order to test the IDP hypothesis
- In general terms, the most recent tests tend to analyse IDP for a particular country in detriment of multi-country studies using cross-sectional analysis, which reveals incapable of capturing the dynamics and the structural changes inherent to the economic development process

2. Previous Empirical Studies (2/3)

Author (s) and date	Scope of the study	Main results
Tolentino (1993)	Cross-section of 30 countries (1960-1975, 1976-1984 and 1960-1984)	<ul style="list-style-type: none">- Quadratic equation: $\text{NOI} = \alpha + \beta \text{GDP}_t + \gamma \text{GDP}_t^2 + \mu_t$- Results consistent with the theory (U-shape curve) for the first and third periods, but not between 1976 and 1984
Dunning and Narula (1994)	US-Japanese FDI relationship	Modifications of the original paradigm: inclusion of macro-organizational policy variables and importance of acquisition of ownership advantages
Narula (1996)	Cross-section of 40 developing countries (1975 and 1988)	Support for the U-shaped relationship predicted by the IDP concept (first, the NOI position decreases though with further development increases again)

2. Previous Empirical Studies (3/3)

Author (s) and date	Scope of the study	Main results
Buckley and Castro (1998)	Portugal (1943-1966)	<ul style="list-style-type: none"> - Replacement of the quadratic equation: $\text{NOI} = \alpha + \beta \text{GDP}_t^3 + \gamma \text{GDP}_t^5 + \mu_t$ - Empirical support for the idiosyncratic nature of the IDP - Beyond a country's level of development, non-economic factors affect the levels of inward FDI
Bellak (2000)	Austria (1990-1999)	Empirical support for the idiosyncratic nature of the IDP: the Austrian NOI position is below average and largely varies according to industry-type and type of partner country
Barry, Görg and McDowell (2003)	Irish-US FDI relationship (1980-1999)	Empirical support for the IDP but Irish FMN do not follow the standard pattern, as its FDI outflows are disproportionately horizontal and concentrated in non-traded sectors
Boudier-Bensebaa (2004)	Central and Eastern European Countries (1990-2002)	Empirical support for the idiosyncratic nature of the IDP: CEE's NOI position become more and more negative over the period, but its GDP has not steadily grown and sometimes even decreased

3. Our study

3.1 Data and Methodology (1/2)

- FDI stocks have been used to estimate NOI and GDP has been used to proxy level of development
- Sample: U.S.A., Japan and 23 European Union countries (Belgium and Luxembourg considered together and Ireland excluded)
- Period: 1990-2007

3. Our study

3.1 Data and Methodology (2/2)

- Fixed-effects panel data models used to estimate the relationship between a country's international investment position (*noi*) and its level of development (*gdp*)
- The model we used can be describe by

$$noi_{it} = g(gdp_{it}) + \gamma d_t + \eta_i + \varepsilon_{it}$$

where noi_{it} and gdp_{it} are the values of *noi* and *gdp* for country $i=1, \dots, 25$ in time-period $t = 1990, \dots, 2007$, d_t is a temporal dummy, η_i a country specific effect and ε_{it} a disturbance term

$g(gdp_{it})$ is defined by $g(gdp_{it}) = \beta_0 + \beta_1 gdp_{it} + \beta_2 gdp_{it}^2$

or $g(gdp_{it}) = \beta_0 + \beta_1 gdp_{it} + \beta_2 gdp_{it}^2 + \beta_3 gdp_{it}^3$

3. Our study

3.2 Results (1/5)

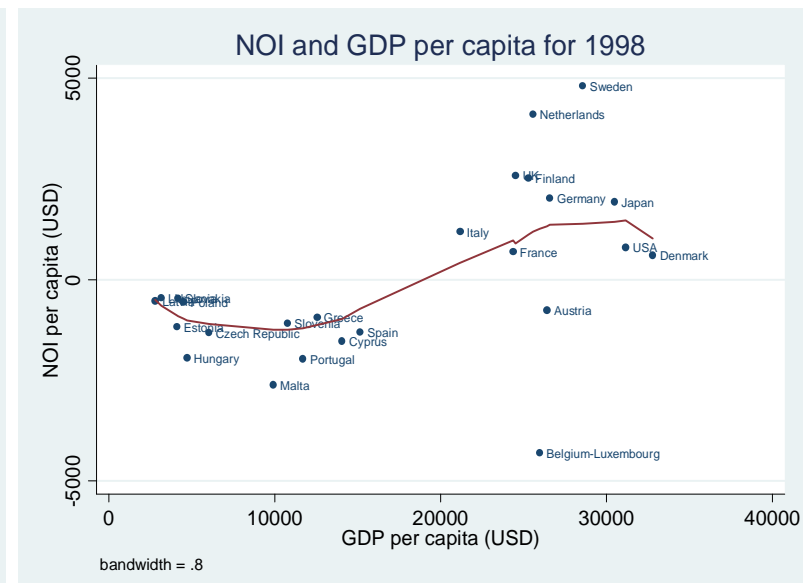
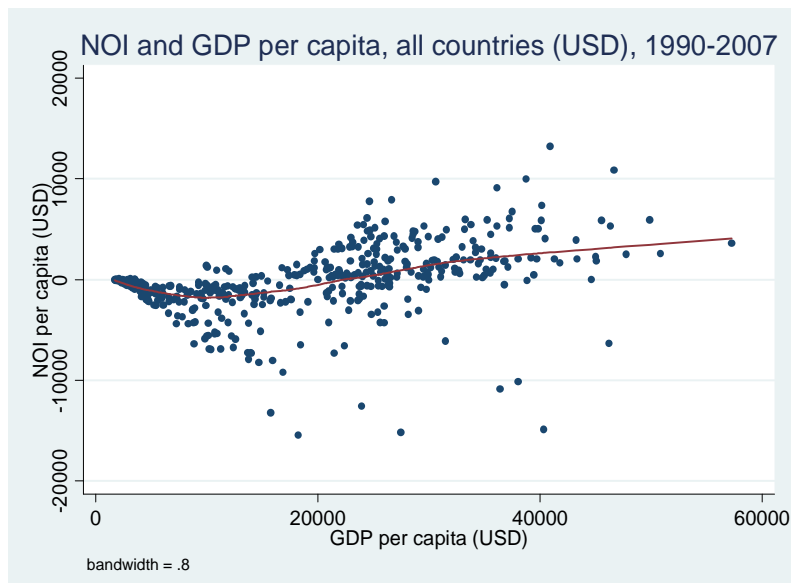
- Estimation results consistent with the IDP theory:
 - ❖ The coefficients on GDP and on GDP-squared are significant and with the expected sign: the first one is negative and the second is positive, providing evidence of the U or J-shape relationship proposed by Dunning

- The inclusion of the cubic term gdp^3 does not change this conclusion and gives a better adjustment

3. Our study

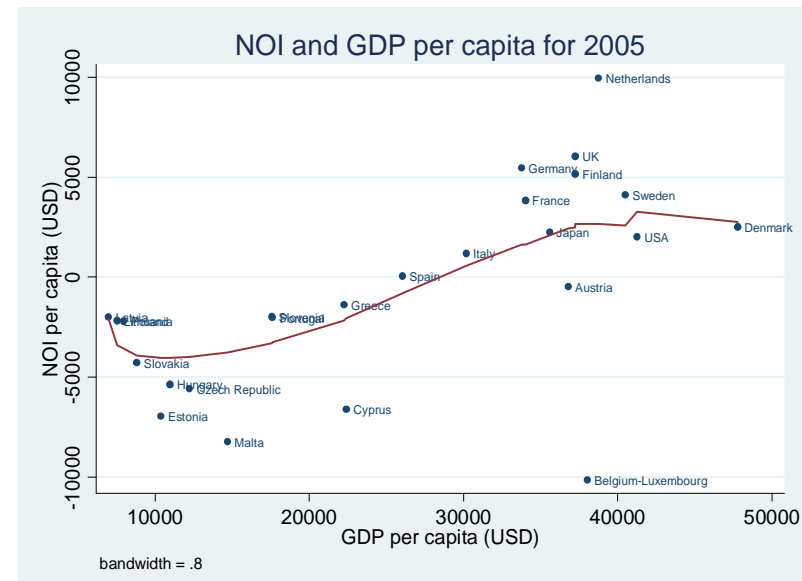
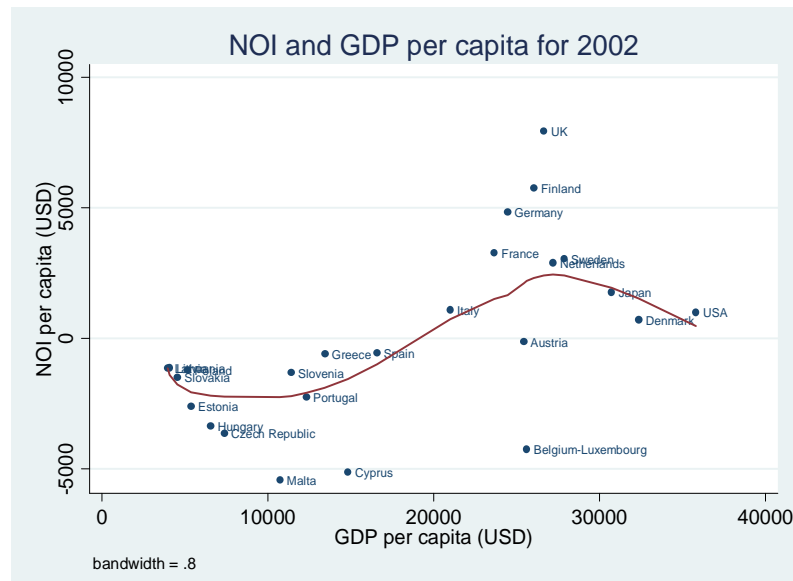
3.2 Results (2/5)

- The 1st graph includes all the countries in the period 1990-2007
- The 2nd, 3rd and 4th graphs are cross-sections for the years 1998, 2000 and 2005



3. Our study

3.2 Results (3/5)



- Any of the graphs shows a relationship between the NOI and GDP values, as predicted by the theory
- The most developed countries are located in a higher position over the line, contrarily to what occurs mostly in Central and Eastern European countries

3. Our study

3.2 Results (4/5)

- Although Portugal and the other cohesion countries behave accordingly to the theory, between 1990 and 2007, we can detect several differences in their positioning on the development path idealised by the theory
- Comparing Portugal and Spain, in spite of the fact that both countries joined the EEC in 1986, that trade and investment relations between the neighbour countries increase significantly in the last two decades and of an increasing economic integration in the context of the Iberian Market, the Spanish economy is located in the ascending phase of the cycle, reflecting the superior size of the country and its high economic performance, hence the strong affirmation capacity of its multinational firms in foreign markets
- Considering the Greek positioning on IDP, we conclude that it does not differ significantly from the Portuguese, although the NOI decrease in Greece is less pronounced than in Portugal

3. Our study

3.2 Results (5/5)

- This behaviour of the Portuguese economy deserves special attention as it does not confirm the possible inflexion of the curve, after the year 2003, that we have detected in a previous study (Fonseca *et al.*, 2007)
- It is possible to state that Portugal remains in the third stage of the path proposed by Dunning, presenting an increasingly negative NOI position, which leads to the necessity of a more favourable institutional background towards the development of comparative advantages in the national firms, as well as to the accumulation of technology and knowledge-intensive assets, that could accelerate the progression to advanced stages

4. Conclusions

- From a conceptual point of view, most of the current research's results provide support to the Investment Development Path theory: the countries represented in our study follow the pattern idealised by IDP
- However, we can detect some limitations in this study:
 - ❖ It is impossible to capture all the stages predicted theoretically, given the lack of heterogeneity between the most countries of our sample, specially the EU-15
 - ❖ The number of observations and the relatively short time period considered can make the results partly questionable
 - ❖ The absence of FDI data on industry (or sector) level



Thank you!

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