



# Trends in foreign direct investment flows: a theoretical and empirical analysis

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## Abstract

This paper seeks to provide a rationale for changing trends in the flow and determinants of foreign direct investment (FDI) as a result of macro-economic and firm strategy considerations. We identify several factors that impact on such trends, and develop propositions that could explain the phenomenon generically. The study then provides preliminary empirical support for the propositions presented, and outlines the path for further research needed to investigate more causal links. The statistical analysis of investments by US multinational enterprises (MNEs) reveals significant changes in the regional distribution of FDI, and a change in some of its traditional determinants. Results show that US MNEs are now making increasing investments into Asia to exploit low wage levels and to secure entry into new markets.

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## Introduction

Foreign direct investment (FDI) has been viewed through several theoretical lenses, with researchers taking different snapshots of the phenomenon. Although prior studies have identified several factors that impact on the FDI decision of a multinational enterprise (MNE), those determinants are generally applicable only to the specific context considered, or else affect just the initial market entry. A comprehensive theoretical formulation that helps to analyze patterns of FDI across different geographical regions has proved elusive. Such FDI patterns also need to be examined over time, because factors favoring an MNE's initial investment into a country could change, prompting it to move new investments elsewhere. Several strategic considerations could motivate such shifts, such as increased competitive intensity at the original location, cost-cutting requirements which prompt the search for new low-cost production locations, or pressure to enter new markets in response to similar moves by rivals. Measures undertaken by various governments in liberalizing investment regimes also profoundly affect FDI decisions. FDI trends, hence, are a complex, multi-dimensional phenomenon, which needs to be examined from macro-economic as well as firm strategy perspectives for a more realistic analysis.

As regards the level of analysis, ideally FDI should be examined at the firm level, given that each MNE's investment decision is affected by its unique strategic objectives. But, as any analysis of

FDI trends would indicate, MNEs often invest in a particular country or region virtually en bloc, notwithstanding idiosyncratic variations in individual investment decisions. The rush amongst rivals to enter emerging markets often triggers this bandwagon effect (Knickerbocker, 1973). Shifts in FDI destinations over time can therefore be analyzed at a country level because the determinants under investigation affect all MNEs uniformly (Freeman, 1978).

Numerous surveys and publications, such as those from the UN, routinely publish aggregated data on FDI by country. These often reveal a significant increase of FDI into a particular region, with a concurrent deceleration of investments into other, formerly popular destinations, suggesting a change of FDI determinants. However, there have been few attempts to distinguish patterns in such trends, in order to encapsulate the factors responsible for those changes into a generic theoretical model. This study seeks to provide such a rationale for the changing trend of FDI flows, by proposing a theoretical framework that integrates firm strategy as well as macro-economic factors. Several propositions are developed from the model that seek to explain various aspects of the phenomenon. By analyzing US FDI into Western Europe and Asia over 20 years, 1981–2000, the paper provides preliminary empirical support for those propositions. It also provides evidence to show that some of the determinants of US FDI have changed.

### Literature review

The theory of capital movements was the earliest explanation for FDI, which was viewed as a part of portfolio investments (Iversen, 1935; Aliber, 1971). Hymer's (1960) groundbreaking contribution was the first explanation of FDI in the *industrial organization* tradition. Hymer saw FDI as a means of transferring knowledge and other firm assets, both tangible and tacit, in order to organize production abroad. Unlike portfolio investments, such transfers did not involve ownership or control being relinquished. In a similar way, Vernon (1966) used the *product life cycle* concept to theorize that firms set up production facilities abroad for products that had already been standardized and matured in the home markets. These two seminal pieces spawned numerous contributions to explain FDI and MNE activities from different theoretical bases. While Caves (1971) and Dunning (1958) saw FDI as a way of exploiting *ownership advantages*, it was seen as *risk diversification* by Rugman (1979),

and as *organizational assets and knowledge transfer* by Kogut (1983). Further, while Buckley and Casson (1976) and Hennart (1982) explained the logic for *internalizing* transactions within the MNE, Knickerbocker (1973) posited that MNEs exhibit a *bandwagon effect* when they follow their rivals into new markets as a strategic response to oligopolistic rivalry.

The *eclectic paradigm* (Dunning, 1980, 1993) provides an *ownership, location and internalization* (OLI) advantages-based framework to analyze why, and where, MNEs would invest abroad. Such investments could be: (natural) *resource-seeking, market-seeking, efficiency-seeking or strategic asset-seeking*. The *Upsaala model* (Johanson and Vahlne, 1977) posits that MNEs engage in FDI incrementally. Initially they make only small investments in geographically and culturally proximate countries, but later, as more experience accrues, larger investments are made into countries distant on both counts.

Subsequent theoretical developments explain the dynamic evolution of ownership advantages, and how MNEs transfer them through FDI. These include the *resource-based approach* (Conner, 1991; Wernerfelt, 1984), the *evolutionary perspective* (Nelson and Winter, 1982; Teece et al., 1997) and the *organizational management approach* of Prahalad and Doz (1987), Bartlett and Ghoshal (1989), and Sethi and Guisinger (2002). The main thrust of these theories is that a firm's knowledge and skills constitute tacit ownership advantages that take time to evolve. MNEs, with their ability to devise and manage complex organizational structures, sustain these advantages by leveraging them through worldwide investments.

Many of the empirical studies have focused upon the determinants of FDI, which are based in ownership advantages. Significant relationships have been found between FDI and *technological intensity* (Lall, 1980), *firm size* (Li and Guisinger, 1992), *capital intensity* (Pugel, 1981) and *product differentiation* (Caves, 1971). These studies, however, provide only the rationale and a generalized *modus operandi* for FDI, without explaining regional variations. It is the latter aspect that this study explores further.

### Studies on the 'Location' aspects of FDI

Prominent empirical studies that investigated the location advantages-based variables of the OLI triad found that market size, market growth, barriers to trade, wages, production, transportation and other costs, political stability, psychic distance, and host

government's trade and taxation regulations affected the location decisions (Dunning, 1993). None, however, identified and included *all* variables. The methodologies and foci of these studies also differed considerably. While Root and Ahmed (1978) investigated taxation and government policies, using the statutory corporate tax rate as a proxy for the effects of fiscal policies on new investors, Nigh (1985) emphasized the positive effect of political stability, and Contractor (1991) investigated the consequences of government policies on the selection of FDI location.

Using the 1977 and 1982 US Department of Commerce Benchmark Surveys, Loree and Guisinger (1995) examined the effects of policy and non-policy variables on location. They found significant positive effects for investment incentives, and negative effects for performance requirements and host country effective tax rates. The non-policy variables, namely political stability, cultural distance, GDP per capita and infrastructure, were also significant. Investigating US FDI in OPEC nations, Olibe and Crumbley (1997) found government capital expenditure highly significant and positive, but population not significant. Using agency theory, Mudambi (1999) examined how principal-agent considerations affect the role of government investment agencies in attracting investment. A comprehensive analysis of FDI volume and pattern in various countries is also contained in the Reuber *et al.* (1973) study. That study found that FDI flows into the developed countries were disproportionately high when compared to the developing countries.

Most of these studies are more relevant to initial market entry, and do not analyze FDI trends dynamically. Research on the investment development path, however, does have a longitudinal element (Dunning, 1981, 1986; Ozawa, 1992; Narula, 1996; Tolentino, 1992; Dunning and Narula, 1996). This perspective shows how the type of FDI changes with the stage of economic development of the host country. Accordingly, less developed countries attract mostly resource-seeking and efficiency-seeking FDI in product markets or labor-intensive production tasks. As these countries develop and improve their economies, technological infrastructure and technical skills of their labor force, they attract FDI in greater value-added activities. However, even this research stream does not address the regional changes in FDI trends in response to firm strategy and macro-economic factors.

## Factors causing changes in FDI trends

### 'Location' as a region

Dunning's (1980, 1998) eclectic paradigm posits generically that an MNE invests in the most advantageous location. This linkage is dyadic, between each MNE and its unique location decision within a country. However, if we consider location decisions of various MNEs collectively, in the context of the bandwagon effect, then 'location' can have a wider, regional connotation. MNEs often evaluate prospective FDI destinations on a regional, rather than single-country basis. Geographically contiguous countries are likely to have similar cultures, political and economic systems, and development levels. Such countries often constitute a regional economic grouping, with considerable uniformity in their trade and investment policies. Numerous benefits accrue to MNEs from operating in such unified markets, with common communication infrastructure, intra-regional trade without barriers, and networking opportunities. FDI into Western Europe (EU), East Asia (ASEAN), South Asia (SAARC), Eastern Europe, Latin America (e.g., MERCOSUR) and Africa (PTA), etc. has followed the same regional pattern in exploiting the advantages of economic integration outlined above and capitalizing on an international division of labor (Dunning, 1993). Hence, the current dyadic interpretation of location in the eclectic paradigm needs to encompass the broader regional context more explicitly.

This study illustrates the conceptual model by analyzing US FDI into Western Europe and Asia. This choice is not arbitrary, as US MNEs have for several decades been the world's largest FDI source (\$116.5 bn, or 27%, in 1997), except during 1985–1990, when they slipped behind Japan and UK. Western Europe and Asia, in that order, are the regions receiving the largest inward FDI (World Bank, 2001). Figure 1 provides some illustrative statistics for 1997.

**Proposition 1.** *Notwithstanding each MNE's unique FDI location decision, collectively such flows target economically and culturally integrated regions rather than specific countries.*

### The traditional determinants of FDI

The principal determinants of US FDI into Western Europe since the 1950s, as identified by the Reuber *et al.* (1973) study, were lucrative market, liberal host government policies, technological infrastructure, skilled labor and cultural proximity. Although

US MNEs might have had their idiosyncratic combinations of FDI determinants, collectively they considered some mix of traditional variables such as GNP, population, political and economic stability, infrastructure, low barriers and cultural proximity. The Reuber study and the UN surveys (World Bank, 2001) identified Western Europe as the most popular destination, because as a region it offered an optimal combination of traditional FDI determinants. This region was attractive to US MNEs for their *market-seeking* FDI, given its high GNPs and purchasing power, and hence the high wage level disadvantage stood discounted. US MNEs concurrently evaluated other potential destinations on same criteria, but other regions did not attract sizable investments until the late 1970s and 1980s. Political and economic instability, restrictive trade and investment policies, cultural distance and poor infrastructure were the causes of this differential, which negated the advantage of lower wages (UNCTAD, 1997).

**Proposition 2.** *MNE investments initially flow to the region that provides the best mix of the traditional FDI determinants.*

### Cost-reduction pressures

Large investments started flowing into Europe, in part due to a bandwagon effect, with US MNEs vying for a share of this lucrative market. Such flows intensified in later years, with considerable investments from Japan and some newly industrialized countries (UNCTAD, 1997). US MNEs had to confront intense competition, not just from rival compatriots but also from European, Japanese and East Asian firms. Those pressures tended to reduce MNEs' profit margins, necessitating cost-reduction measures, and firms therefore sought countries with lower wage levels to shift manufacturing operations. Thus, competitive intensity and the low-cost haven provided by some Asian countries together contributed to the restructuring of FDI by US MNEs. By making such *efficiency-seeking* investments in ASEAN countries and producing for their global market from there, MNEs could now exploit scale economies.

Since the late 1980s, MNEs have also made large investments in China, India and Indonesia, which are gigantic markets. These countries traditionally have had high tariff barriers to deter the entry of foreign goods. Their governments have often made an entry into their lucrative markets contingent only upon the MNEs setting up manufacturing facilities locally. From the firms' perspective, how-

ever, such investments were driven by both *market-seeking* and *efficiency-seeking* considerations, because in addition to their large market size these countries also offered lower wage and factor costs.

**Proposition 3.** *Build-up of intense competitive pressures in the original host region would cause MNEs to make efficiency-seeking investments into low-wage countries to reduce costs.*

### Liberalized investment environment

The restrictive economic policies of most developing countries in Asia, Latin America and Africa up to the early 1980s generally arose from their socialist leanings. This, together with the greater benefits of investing in Western Europe, prevented any significant FDI into Asia. However, the subsequent failure of planned economies caused widespread disenchantment with restrictive policies, and gradually these governments started opening up their economies (UNCTAD, 1997). During 1991–1996, over 100 countries made a total of 599 changes to liberalize FDI regulations, but in 1997 alone, 76 countries made 151 liberalization changes (United Nations, 1998). A large number of such countries were in Asia. Instead of the earlier hostility towards MNEs, characterized by Vernon (1973) as 'Sovereignty at Bay', governments were now setting up agencies to attract FDI (Dicken and Tickell, 1992; Mudambi, 1999). Hence the twin factors – intense competitive pressures building up in the original FDI destinations, and the concurrent widespread liberalization of economies – acted in tandem to help attract *efficiency-seeking* FDI to the ASEAN countries (UNCTAD, 1997). The impetus to economic growth provided by FDI in this region gradually caused other developing countries also to mount the liberalization bandwagon.

**Proposition 4.** *MNEs' efficiency and market-seeking investments into a region will be contingent upon the countries in that region adopting investor-friendly liberalization policies.*

### Institutional prerequisites for attracting FDI

The role of governments in providing an environment conducive to FDI cannot be over-emphasized. Foremost, they need to establish prerequisites such as a stable political and economic environment, the rule of law, and sound infrastructure. An educated and technically skilled work force, low wages, an open economy and stable currency are also essential (UNCTAD, 1997). Most of these prerequisites, which can be examined through the lens of macro-institutional economics (North, 1991), develop



incrementally, take time to bear fruit and are path-dependent, being rooted in the institutional heritage of the host country. Only countries meeting basic minimum standards on the foregoing prerequisites qualify for further evaluation by MNEs. The second stage of the selection process is when firms review, through the micro or transaction cost perspective (Williamson, 1985), issues such as project-specific incentives, tax breaks, restrictions on investment limits, majority control and profit repatriation, stipulations about local content, technology transfer and export requirements. Only a comprehensive evaluation of all these aspects can yield a holistic picture of whether the prospective FDI destination is investment-friendly or not. It will be apparent that these exacting standards are unlikely to be met by any country entirely. Developing countries, especially, cannot measure up to the same standard of prerequisites that developed countries – the FDI destinations originally favored – provided. Consequently, the MNEs could well have a different mix of FDI determinants for them. Thus, the imperative to reduce costs would force MNEs to trade-off the ideal mix in favor of low-wage benefits.

**Proposition 5.** *The optimal mix of FDI determinants for low-wage countries would be different from the mix for the developed countries – the original FDI destinations.*

### Cultural proximity

Many previous studies have found cultural proximity to the home country to be a significant determinant of FDI (Hofstede, 1983; Dunning, 1993). However, some scholars have argued that the preferences and tastes of consumers in different nations are converging to a global norm (Levitt, 1983), and hence the effect of cultural distance is likely to dilute progressively. Moreover, MNEs might also be compelled to ignore the greater cultural distance of developing countries in favor of their low-wage advantages, and opt for them as the ‘next best’ locations.

**Proposition 6.** *The factor of psychic distance will assume less importance in MNEs’ FDI decisions, all other factors being equal.*

### The investment-development cycle

FDI into the low-wage countries has also witnessed a bandwagon effect. Since MNEs cannot afford to cede new markets to their rivals, they have had to follow them into those markets. The resulting increase in economic activity has led to higher

wage levels and MNEs might start facing intense competitive pressures even in the new FDI destination. Eventually the search cycle for new locations for *efficiency-seeking* and *market-seeking* investments may be repeated. Those prospective destinations too would need first to meet prerequisites such as an investor-friendly environment, political and economic stability and sound infrastructure, etc.

Conceptually, this linkage between investment and the development level of countries is somewhat different from the Investment Development Path (Dunning, 1981, 1986). The latter describes how the type of MNE investment gradually evolves to higher levels of value-addition, as the host country develops. The Investment Development Cycle proposed by this study seeks to trace the link between the shifting trend of MNEs’ *efficiency-seeking* and *market-seeking* investments, and the global progress of liberalization and economic development of different regions.

### Generic model

The foregoing analysis is used to derive a generic descriptive model that explains the shifting trend of FDI flows. The model posits that MNEs evaluate all prospective locations for their investments through the traditionally identified FDI determinants and opt for the location offering the best fit with their firm strategy. Since other MNEs cannot afford to cede that market to their rivals, they rush in with their own investments. Such market entry need not take place on a single-country basis, due to the numerous benefits of unified markets – especially when those constitute regional economic groupings such as the EU or ASEAN. The large investment inflows due to this bandwagon effect generate intense competitive pressures among rival MNEs and emerging local players, and eventually profit margins decline. To remain competitive, MNEs are compelled to seek new FDI destinations that offer wage and factor cost reductions and also open up new markets. They relocate to those countries or regions that are liberalizing their economies and improving infrastructure. Such countries/regions are also evaluated on the same traditional FDI determinants, but firms might now accept a different mix compared to that for the original destinations. This cycle is likely to be repeated when competitive pressures start building up even in the new location, triggering the search for another prospective region for *efficiency-seeking* and *market-seeking* investments. A stylized depic-

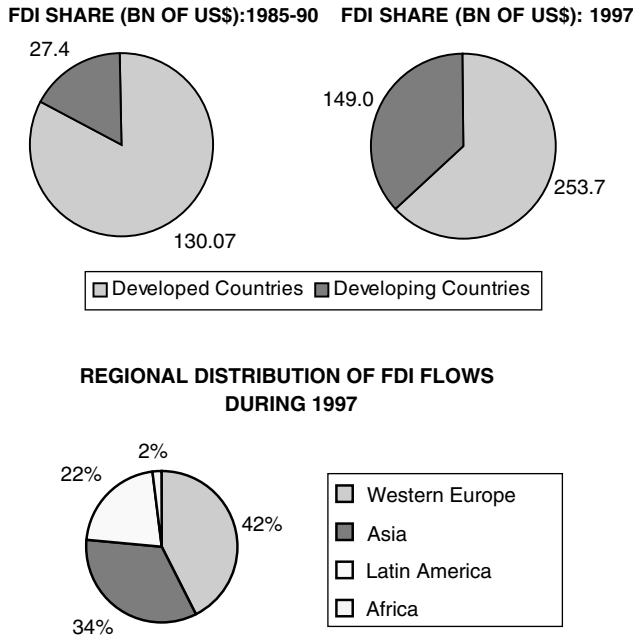


Figure 1 Illustrative statistics of FDI.

tion of the descriptive model is presented in Figure 2.

**Method**

The current study seeks to verify empirically several aspects of the proposed model, using data on US FDI in Western Europe and Asia during 1981–2000. However, given the generic nature of the propositions and their vast scope, verification of only five of the six propositions has been attempted here. For Proposition 4, only general statistics on the liberalization measures in developing countries are provided; a subsequent study will verify them using different information sources and empirical methods. This study examines the following key questions: (1) Is there a statistically significant regional pattern in the flows of US FDI to Western Europe and Asia? (2) What traditionally have been the determinants of US FDI into Western Europe? (3) Is the mix of determinants of US FDI into Asia any different from them? (4) What is the difference in the US FDI stocks and flows into the two regions over time? (5) How have the differences in political and economic stability and wage levels between the two regions affected US FDI? (6) Is cultural proximity to the USA still a significant determinant?

**Sample and data**

The sample comprised 17 West European and 11 Asian countries that had investments from US

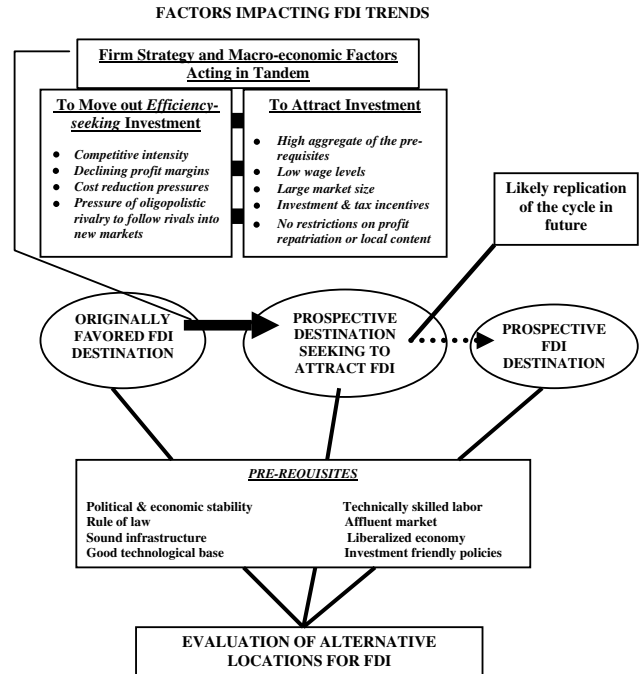


Figure 2 Factors impacting FDI trends.

MNEs. To avoid sample selection bias, all countries were included, except Luxemburg (due to missing data) and countries with negligible US FDI, clubbed by the Bureau of Economic Analysis (BEA) as ‘others’. Data were examined for 21 years (1980–2000), but 1 year’s observations were lost in order to obtain lagged variables. The main data sources were the annual reports of the US Department of Commerce (BEA, 2000), the Statistical Abstract of USA and the annual World Bank Reports (World Development Indicators 2001, CD-ROM; UNCTAD, 1997). Cultural distance measures are those developed by Hofstede (1983).

**Measures**

- **FDI stock.** Country-wise, year-end aggregated value of US FDI stock in US\$ million. Used as dependent variable in Models 1 and 4, and as control variable in other models, as a proxy for the historical position of US investments in respective countries.
- **FDI flows.** This is the main dependent variable, representing annual country-wise inflow of US FDI (US\$ million), net of outflows and re-invested earnings.
- **Dummy Europe.** A dichotomous dummy variable, taking the value of one when the country is from West Europe, and zero when it is from Asia.

- *Wages*. Country-wise average wages in the manufacturing sector.
- *Wage differential*. An interaction term that is a product of Dummy Europe and the wages variable. Tests the statistical significance of the wage differential between the regions.
- *Population*. Country-wise, year-end population, in millions. Lagged by 1 year because FDI decisions are likely to be based on the population data of the previous year.
- *GNP*. Country-wise, year-end Gross National Product in US\$ billions. Lagged by 1 year for the same reason.
- *Political and economic stability*. A composite variable on a 100-point scale, developed by the Association for Investment Management and Research (Research, 1996), on the economic, financial and political risks of countries. A higher score indicates greater stability and confidence level, and a low score *vice versa*.
- *Cultural differences*. A composite measure based on the distance of respective countries from the USA on all four dimensions of Hofstede's (1983) cultural distance measures. A low score indicates greater cultural proximity to USA, and a high score greater psychic distance.
- *Time*. Time periods from 1981 to 2000, with  $t=1$  denoting the year 1981.

### Models and analyses

The empirical tests utilized a number of multiple Ordinary Least Square (OLS) regression models.

Model 1 had the aggregate US FDI stock in respective countries, as the dependent variable. Observations were included only for 1981–1982 to get the historical position of US FDI stock, prior to the period under analysis. Hence the coefficients of the independent variables signify the historical determinants of US FDI.

Model 2 had annual US FDI flows into respective countries, over the entire 20-year period, as the dependent variable. The coefficients in this model, therefore, depict the determinants of US FDI flows during this period. Because FDI stock was *not* included, this model depicts the cumulative effect of the volume of FDI flows, *without* controlling for the annual FDI stock position.

Model 3 had annual US FDI flows into respective countries as the dependent variable, but now FDI stock is also included as a control variable. The coefficients in this model, therefore, depict the

determinants of US FDI flows during the 20-year period, duly controlling for the FDI stock. By comparing coefficients of Models 1 and 2, with those of Model 3, changes (if any) in the determinants of US FDI flows are revealed.

Models 4–6 included wage differential and Dummy Europe as the independent variables, and were intended to test whether there was any statistically significant wage differential between the two regions, both historically (prior to 1981–1982) and during the 20-year period.

### Factor analysis

The correlations matrix as well as preliminary analysis of various results indicated the presence of some collinearity. As this could possibly confound interpretation of the regression results, we utilized Principal Component Analysis (factor analysis) to obtain a set of orthogonal and non-collinear factors. The analysis identified two principal factors. The first factor, *regional characteristics*, was a combination of variables such as political and economic stability, cultural proximity, wages, etc., that differed substantially between regions. High scores on this factor were indicative of West European characteristics. The second factor was a combination of GNP and population, which we labeled *market attractiveness* as it represented both the size of the market and its affluence.

Model 7 ran OLS regression on these two factors. The study tried to investigate further the differential effect of GNP and population on FDI flows, to ascertain if the large population of potential markets (for instance China and India) might compensate for their low GNPs. Such *market-seeking* FDI, in the present times, could prove very lucrative later, as their GNPs gradually increase. Consequently, another regression was run in Model 8, on different components derived from factor analysis. The three factors were *regional characteristics*, *GNP* and *population*.

### Results and analysis

Table 1 presents the descriptive statistics and the correlations matrix. Table 2 provides the results of the initial six models that regressed FDI stock/FDI flows on various independent variables. Results of the factor analysis done to mitigate multicollinearity are shown in the Principal Component Matrix, Table 3. Results of the OLS regressions run in Models 7 and 8 on the extracted Principal Components are shown in Table 4.

**Table 1** Descriptive statistics and correlations

Variables	N	Mean	s.d.	1	2	3	4	5	6	7	8	9
1. FDI stock	560	11341.1	22851.7									
2. FDI flows	560	1055.5	3193.5	0.77**								
3. Dummy Europe	560	0.6	0.5	0.20**	0.15**							
4. Pol/Eco stability	560	80.1	6.5	0.17*	0.10*	0.22**						
5. GNP (Bn)	560	536.2	935.6	0.35**	0.17**	-0.05	0.20**					
6. Population (Mn)	560	104.9	254.6	-0.09*	0.05	-0.39**	-0.28**	0.05				
7. Cultural distance/USA	560	110.0	40.1	-0.48**	-0.36**	-0.56**	-0.21**	-0.12**	0.04			
8. Wages	560	14225.5	10783.8	0.41**	0.28**	0.60**	0.55**	0.37**	-0.36**	-0.52**		
9. Wage differential	560	11811.4	11919.9	0.34**	0.26**	0.80**	0.40**	0.07	-0.31**	-0.63**	0.88**	
10. Dummy development	560	0.6	0.5	0.32**	0.21**	0.55**	0.61**	0.30**	-0.37**	-0.65**	0.76**	0.66**

\*\*Correlation significant at 0.01 level (two-tailed).

\*Significant at 0.05 level (two-tailed).

**Table 2** Regression results of Models 1–6

Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Dependent variables					
	FDI stock (1981–1882)	FDI flows (1981–2000)	FDI flows (1981–2000)	FDI stock (1981–1982)	FDI flows (1981–2000)	FDI flows (1981–2000)
Dummy Europe	4132.39 (1.9)*	1464.88 (3.18)**	148.38 (0.399)	2454.94 (0.85)	675.77 (1.43)	226.65 (.726)
Pol–Eco stability	215.37 (1.84)*	-27.99 (-1.26)	-8.93 (-0.499)			
GNP	3.64 (4.39)***	0.390 (2.82)**	-0.442 (-4.07)***			
Population	-6.57 (-2.31)**	-1.06 (-1.89)*	0.423 (1.06)			
Wages	-0.226 (-1.17)	5.664E-02 (2.97)**	3.68E-03 (0.277)	0.507 (2.84)*	6.05E-02 (2.19)**	-4.63E-02 (-2.49)**
Wage differential				0.520 (2.48)*	4.27E-02 (1.30)	3.99E-02 (1.84)*
Cultural distance/USA	-129.46 (-6.25)***	-27.52 (-6.58)***	3.131 (0.89)			
FDI stock			0.116 (24.87)***			0.111 (26.76)***
Adjusted R <sup>2</sup>	<b>0.566</b>	<b>0.151</b>	<b>0.604</b>	<b>0.157</b>	<b>0.078</b>	<b>0.597</b>
N	56	560	560	56	560	560

t Values are in parentheses. Significance levels: \*P ≤ 0.05; \*\*P ≤ 0.01; \*\*\*P ≤ 0.001.

The bivariate correlations (see Table 1) of the main variables, FDI stock and FDI flows, are significant and in most cases have the expected sign. Correlations of other variables are also generally significant and in the expected direction, but some show signs of potential collinearity. This becomes further evident in the initial regressions performed in Models 1–6. Model 1, with FDI stock for 1981–1982 as the dependent variable, signifies the determinants of US FDI prior to the period under analysis. An examination of its coefficients

confirms all previous findings that US FDI has historically gone to Western Europe (Dummy Europe being significant and positive), to countries with high political and economic stability, and typically also with high GNPs and low populations. Cultural proximity to USA is a strong determinant, with cultural distance being negative and highly significant at the 0.001 level. Although these countries also typically have high wage levels, that coefficient is unexpectedly not significant, thus indicating possible collinearity.



**Table 3** Principal component matrix

	Components				
	Employed in Model 7		Employed in Model 8		
	1	2	1	2	3
Dummy Europe	0.906	2.576E-02	0.811	-0.387	0.118
Pol/Eco stability	0.661	-7.605E-02	0.563	0.366	-0.436
GNP (Bn)	0.331	0.737	0.225	0.875	6.95E-02
Population (Mn)	-0.430	0.694	-0.456	0.280	0.726
Cultural distance/USA	-0.691	-0.189	-0.694	6.04E-02	-0.530
Wages	0.930	4.952E-02	0.918	0.222	-3.68E-02
Wage differential	0.862	2.576E-02	0.936	-0.131	0.139

**Table 4** Results of regressions on principal components

Independent variables	Dependent variables	
	Model 7	Model 8
	FDI flows (1981–2000)	FDI flows (1981–2000)
Regional characteristics	-188.417 (-1.975)**	-151.642 (-1.607)*
Market attractiveness	-232.971 (-2.625)***	
GNP		-305.328 (-3.454)***
Population		10.232 (0.117)
FDI stock	0.114 (26.440)***	0.114 (26.212)***
Adjusted R <sup>2</sup>	0.600	0.602
N	560	560

*t* Values are in parentheses. Significance levels: \* $P \leq 0.05$ ; \*\* $P \leq 0.01$ ; \*\*\* $P \leq 0.001$ .

Model 2 has FDI flows over the entire 20-year period as the dependent variable, but does *not* control for FDI stock. It thus depicts the volume or cumulative effect of those flows, and highlights the fact that FDI stock was the main predictor of subsequent FDI flows. The coefficients expectedly indicate significantly large FDI flows still going to the West European countries, with their high GNPs, low populations and close cultural proximity to the USA. In this model the wages variable is significant and positive, thus statistically confirming the existence of high wage levels in this region. However, now political and economic stability is not significant, and an examination of the partial correlations again indicates collinearity.

Model 3 has the same variables as in Model 2, but now also includes FDI stock as the control variable. The results show that apart from FDI stock, only GNP is significant (0.001 level) and negative. This strikingly highlights the change in the trend of US FDI flows, into countries with low GNPs – by implication to Asia. This finding, notably, is contrary to all previous studies that mostly found a positive relationship between GNP (or similar variables like GDP/GDP per capita/GNP growth rate), and inward FDI (Kobrin, 1976; Root and Ahmed, 1978; Dunning, 1993). There is *a priori* no theoretical reasoning to suggest that US MNEs would prefer to invest in low GNP countries for any reasons other than low-wage advantages or market entry into large, though relatively less affluent, potential markets. A comparison of the coefficients of Models 1–3 thus reinforces the contention that once US MNEs confronted declining profits in Western Europe, the resulting cost reduction pressures impelled them to start making much more *efficiency-seeking* FDI into Asia. This comparison also supports Proposition 5, that the mix of determinants of US FDI for Asia would now be different from the mix of determinants for Western Europe. Furthermore, the cultural distance variable, which was negative and strongly significant (0.001 level) in Models 1 and 2, is not significant in Model 3. This supports Proposition 6, that cultural proximity to the USA would no longer be a significant determinant of US FDI.

To address the possible confounding of results due to collinearity in Models 4–6, we tested wages and wage differentials in separate models. Model 4 reflects the historical position on those aspects at the beginning of the period. Its coefficients show that the wage differential between high-wage Europe and low-wage Asia was statistically signifi-

cant. Further, the wages variable is positive, signifying more FDI stock in the high-wage West European countries. Dummy Europe, although positive and significant in the zero order correlations, is not significant here due to possible collinearity. Model 5 shows that more FDI flows were still going to the high-wage European countries, but wage differential was not significant (due to possible collinearity). Since this model does not control for FDI stock, it reflects the cumulative effect of flows to West Europe. We controlled for FDI stock in Model 6, which now reflects a noticeable increase in FDI flows to low-wage (Asian) countries. The wage differential variable is positive, signifying that wage levels were still higher in Europe than in Asia, and that the accelerating economic development in Asia had not closed this gap.

As indicated earlier, we extracted a set of uncorrelated factors using factor analysis (specifically the Principal Component method). In Model 7 the dependent variable FDI flows was regressed on the two extracted factors, *regional characteristics* and *market attractiveness*, with FDI stock as the control variable. Results in Table 4 show that the coefficient of *regional characteristics* is negative and significant (0.05 level), implying that significantly more US FDI flows, duly controlled for FDI stock, went to Asia during 1981–2000. It may be noted that positive values on the regional characteristics factor, which is a combination of Dummy Europe, political and economic stability, wages, wage differential and cultural distance – correlate with West European characteristics, and negative values correspond to Asian attributes. We must be careful, however, in drawing implications for cultural distance. A negative coefficient on the cultural distance from USA variable, by itself, denotes low distance, and hence greater cultural proximity to USA, while a positive coefficient signifies greater distance. Consequently, when combined with other variables in the regional characteristics factor, the effect of the negative coefficient of regional characteristics in Model 7 results in the ‘double negative’. Hence, for the cultural distance aspect, the negative coefficient of regional characteristics in this model translates into higher cultural distance from USA. This finding therefore also supports Proposition 6, that cultural proximity to USA is no longer an important consideration for US MNEs. The coefficient of the market attractiveness factor (a combination of GNP and population) is negative and significant (0.001

level), implying that the trend of FDI flows now is to regions with low market attractiveness. This reinforces the contention of the study that in response to the buildup of intense competitive pressures in Western Europe, US MNEs have been restructuring their FDI into the low GNP Asian countries (which are thus less attractive markets) primarily to take advantage of their low wage levels.

In Model 8, we extracted a different combination of components to examine the differential effect of GNP and population on FDI flows. FDI flow was regressed on regional characteristics, GNP, population and FDI stock. Coefficients of regional characteristics and GNP are both negative and significant (0.1 and 0.001 levels, respectively). This supports the results of Model 7, namely that the trend of FDI flows is more to the low GNP Asian countries after controlling for FDI stock. Population is not significant, which is unexpected, as we hypothesized that large investments should flow into populous countries such as China, India and Indonesia. On deeper reflection however, this result should not be surprising, given that disproportionately large US investments went into some relatively small Asian countries such as Singapore and Hong Kong during the 1980s. The high population countries were ‘late starters’ in the liberalization process. During the 1990s they have further liberalized their economies and improved infrastructure, and therefore the volume of US FDI into them has picked up only in the 1990s, thus possibly skewing the results.

## Discussion

The foregoing analyses of the results offer a measure of empirical support for the generic propositions developed from the conceptual model. FDI by US MNEs, the world’s largest contributor of investment funds, has generally followed a regional pattern, and the prime destination since the 1950s has been Western Europe. Countries in this region, besides benefiting from geographical contiguity and integrated infrastructure, also generally had similar political and economic systems, and were relatively close in cultural terms to the USA. Further, these countries progressively integrated themselves into an economic union, which conferred immense spin-off benefits for trade and investment. This region thus provided the best mix of the traditional determinants of US FDI, notably political and economic stability, high GNPs, sound infrastructure, technically skilled labor and cultural

proximity. Economic groupings, including ASEAN, SAARC and APEC, gradually formed in the Asian region, and these provided significant advantages and opportunities for US MNEs. Arguably, therefore, 'location' in the OLI paradigm should also encompass a 'regional' interpretation.

The proliferation of investments into Western Europe due to the bandwagon effect intensified competition tremendously, which according to most commentators caused profit margins to decline. In their quest for cost reduction measures, MNEs sought out low-wage locations, and thus made *efficiency-seeking* FDI into Asia. Undoubtedly, the substantial moves made towards liberalization and infrastructure improvement in these countries also facilitated such a move. These twin factors, therefore, acted in tandem, and caused many other US MNEs to mount the investment bandwagon into Asia in a similar fashion, even though this region did not provide the optimal mix of traditional US FDI determinants. Obviously the compelling need for low-wage locations and new markets meant that US MNEs discounted the lack of market attractiveness and the greater psychic distance of Asian countries. Thus, the study has provided a measure of empirical support for five of the six propositions. Proposition 4, pertaining to the liberalization and infrastructure improvement measures, requires another data set and a different approach to testing.

Notably, the high-wage differential between West Europe and Asia has been the most significant factor contributing to the restructuring of US FDI during 1981–2000. With population remaining non-significant in all models, the size of potential markets has not been pertinent to US MNEs' investment decisions, but that might change. Populous countries such as China and India have been further liberalizing their economies and improving infrastructure. More importantly, while most other economies have been in recession, or at best stagnant, these countries have shown impressive growth. India especially has spawned a growing and affluent middle class. The population variable is therefore unlikely to remain non-significant in these countries, if the current trend of increasing

US FDI continues there and all other factors remain the same.

The generic model also posits that the bandwagon effect of increasing FDI into these low-wage countries will also eventually generate intense competitive pressures there. With increased economic development, and the progressive upgrading of infrastructure and technical skills, wage levels are likely to increase. Firms are likely to restructure FDI yet again with more value-added and technologically intensive activities, in line with Dunning's Investment Development Path (1981, 1986). MNEs will concurrently be looking for new low-wage locations and new markets for their *efficiency-seeking* and *market-seeking* investments. This search too is likely to be on a regional, rather than a single-country basis. The prospective region, however, must first meet the prerequisites highlighted in Figure 1, such as political and economic stability, sound infrastructure and low wages, in order to replicate the cycle of Investment and (economic) Development.

## Conclusions

This study presents a generic and holistic conceptualization, bringing together both macro-economic and firm strategy factors and arguing that both aspects need consideration in tandem in order to explain the changing trends of FDI flows. We derived several generic propositions that sought to explain the phenomenon, and then empirically verified these propositions by statistically analyzing US FDI into the Western European and Asian regions over the 20-year period 1981–2000. Results show that despite the fact that the Asian region is not ideal according to the traditional determinants of US FDI, MNEs have made significant investments therein to take advantage of the low wage levels. The liberalization of these countries' economies and the improvements in their infrastructure have facilitated a shift in *efficiency-seeking* US FDI, and have contributed to a change in the FDI trend over time. This research stream now needs to investigate further the specific contents and ideal mix of prerequisites that countries seeking to attract FDI need to provide.

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