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## Host Country Effects of Foreign Direct Investment

The Case of Developing and Transition Economies

Thesis defense by Andreas Johnson  
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## Trends in the world economy

Globalization / internationalization:

- Increasing trade flows
- More foreign direct investment (FDI)
- Migration of people
- Tourism

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## Five centuries of growth in intercontinental trade compared to growth of GDP

Source Brakman, 2004

Trade before the 19<sup>th</sup> century mainly between non-competing goods like coffee, thee, sugar, spices: luxury goods with no local alternative

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## World trade in % GDP (prices 1990)

Figuur 3. Wereldhandel in % BBP (in prijzen 1990)<sup>24</sup> Source Brakman, 2004

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## German export by distance

Source Brakman, 2003

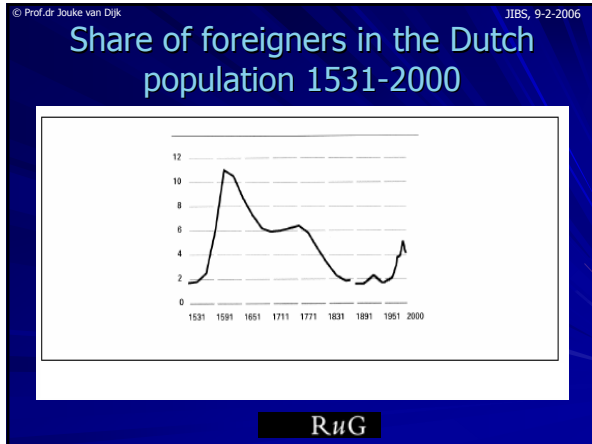
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## Intercontinental emigration from Europe 1846-1939 (mainly to US)

Figuur 4a. Intercontinentale emigratie vanuit Europa, 1846 – 1939 (jaarlijks gemiddelde, in duizenden personen)

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### Foreign Direct Investment

- FDI = an investor has acquired 10% or more of the voting power of a firm located in a foreign economy
- Increase over time:  
1980 FDI 6% of world GDP, 2003 23%
- Explanation:
  - Increasing interconnectedness of countries: decrease in transport and communication costs
  - Globalization
  - Liberalization of FDI regimes / corruption
- Greenfield versus Brownfield FDI

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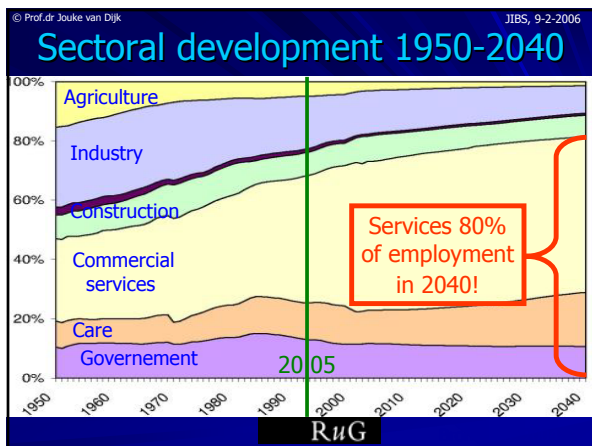
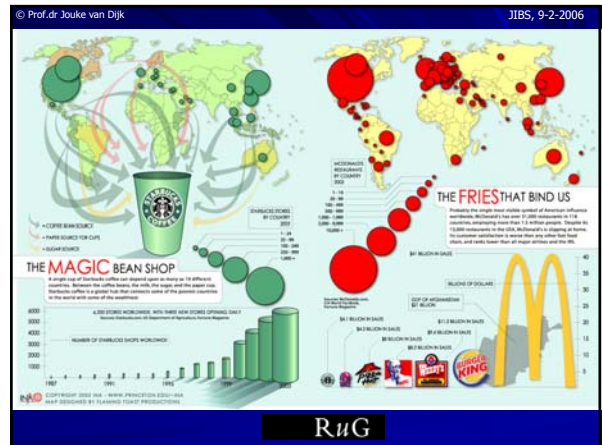
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### Capital flows since 1870 (share of GDP)

	VK	VS	Argentinië	Frankrijk	Duitsland	Italië	Japan	Alle Landen
1870-1913	4.6	0.8	12.5	1.9	1.6	1.5	1.5	3.5
1919-1939	1.9	1.0	3.4	1.7	1.7	2.1	1.2	2.1
1947-1973	1.0	0.5	3.1	1.0	1.5	1.8	1.1	1.6
1974-1996	2.0	1.3	2.0	0.8	2.4	1.5	2.0	2.3

Source Brakman, 2004

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## Back to the thesis:

Host Country Effects of Foreign Direct Investment:  
The Case of **Developing and Transition Economies**

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## Major research questions / chapters

1. Introduction: theory and trends
2. Host country determinants of FDI inflows
3. The relationship between host country corruption and FDI inflows
3. The effects of FDI inflows on host country economic growth
5. The relationship between FDI and exports

→ Trends and theories in FDI

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## FDI Data

- Two sources
  1. Balance of payment statistics
  2. Firm surveys
- Hardly data on bilateral flows and per sector
- Quality of the data improved over time: see ratio inward / outward table 6
- Most problematic countries: Iraq, Libya, Sierra Leone and (former Dutch) Suriname

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## Share of total inward FDI Stock

	1980	1990	1995	2000	2003
Developed economies	56.4	71.8	68.0	65.9	69.2
Developing economies	43.6	28.2	30.6	31.9	27.7
<i>Least developed economies</i>	0.6	0.5	0.6	0.6	0.7
<i>Central and Eastern Europe</i>	..	0.1	1.3	2.2	3.2

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## Inward stocks of FDI (millions of USD)

Region	1980	1990	2000	Change 1980-2003
World total	692 714	1 950 303	8 245 074	1.090%
Developed countries	390 740	1 399 509	5 701 633	1.359%
Developing countries	301 794	547 965	2 280 171	655%
<i>Least developed economies</i>	4 119	8 949	56 821	1.279%
<i>Central and Eastern Europe</i>	..	2 828	263 270	>9.000%

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## Table 4. Ten most important host and source countries stock FDI 2003

Host	Inward (%GDP)	Source	Outward (%GDP)
USA	1 553 955 18.8 (32.2)	USA	2 069 013 25.2 (32.2)
<i>China</i>	876 519 10.6 (3.7)	UK	1 128 584 13.8 (4.6)
United Kin.	672 015 8.2 (4.6)	France	643 398 7.8 (4.3)
Germany	544 604 6.6 (6.0)	Germany	622 499 7.6 (6.0)
France	433 521 5.3 (4.3)	Netherlands	384 404 4.7 (1.2)
Netherlands	336 149 4.1 (1.2)	<i>China</i>	373 104 4.6 (3.7)
Canada	275 779 3.3 (2.2)	Switzerland	344 104 4.2 (0.8)
Spain	230 332 2.8 (1.9)	Japan	335 500 4.1 (13.5)
Ireland	193 442 2.3 (0.3)	Canada	307 855 3.8 (2.2)
Australia	174 240 2.1 (1.2)	Italy	238 877 2.9 (3.5)
<b>Sum</b>	<b>5 290 556 64.1 (57.6)</b>	<b>Sum</b>	<b>6 447 338 78.7 (72.0)</b>

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## Home country of the world's 100 largest non-financial MNE's

Number in 1990		Number in 2002	
USA	27	USA	27
France	14	France	14
Japan	12	Germany	13
UK	12	UK	12
Germany	9	Japan	7
Switzerland	6	Netherlands	5
Sweden	5	Switzerland	5
Netherlands	4	Canada	4
Italy	4	Italy	3
Canada	3	Spain	3
Australia	2	Australia	2
Belgium	2	Finland	2
Other	2	Other	7

MNE's account for 2/3 of world exports! 102 104

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## Inward and outward stocks of FDI as share of GDP in 2003, USD

Individual economies / country groups	Inward	Outward
Netherlands	65.6	75.0
Sweden	47.5	62.7
United Kingdom	37.4	62.7
Germany	22.6	25.8
USA	14.1	18.8
Russia	12.1	11.9
Japan	2.1	7.8
South East Asia	34.6	15.9
Western Europe	33.0	41.2
South America	30.4	10.5
Africa	25.3	6.6
Central and Eastern Europe	23.7	6.0
Developing economies	31.4	12.2
Least developed economies	24.5	2.7
Developed economies	20.7	26.4

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## Inward and outward stocks of FDI per capita, USD 2002

Individual economies / regions	Inward	Outward
Netherlands	19 603	21 575
Sweden	13 218	16 177
United Kingdom	9 594	15 557
Germany	6 446	7 515
USA	5 220	6 381
Japan	615	2 393
Russia	357	331
EU-15	7 228	8 947
Central Eastern Europe	1 974	107
South America	737	280
South East Asia	371	152
CIS	302	179
Africa	188	44

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- ## Trends FBI
- Strong increase over time since 1980 + >1000%
  - Mainly between developed countries with the same economic structure: 10 countries take 64% of inward and 79% of outward
  - Share in total inward FDI of developing countries decreases 44% (1980) 28% (2003)
  - The tertiary sector has become increasingly important for FDI inflows
  - Multi National Enterprise MNE's dominate
  - Eastern Europe strong growth since 1990
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- ## Theories of FDI (1)
- Traditional theories: Smith, Ricardo, Heckscher-Ohlin-Samuelson
  - Early theories '50 / '60 only focus on capital flows
  - Capital markets approach: FDI should flow to locations where the financial return on investment is highest
  - Multinational Enterprises (MNE): product life cycle approach (Vernon 1966): production moves during the cycle to low wage countries
  - This theory can not explain why flows are mainly between developed countries
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## Theories of FDI (2)

OLI-paradigm: firm specific advantages

Channel for serving foreign market	Ownership advantage	Internationalisation advantage	Location advantage in foreign country
FDI	Yes	Yes	Yes
Exports	Yes	Yes	No
Licensing	Yes	No	No

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## Theories of FDI (3)

- Investment development path (IDP) theory
- FDI and new trade theory
  - modified by incorporating MNE's
- Horizontal and vertical FDI
  - Horizontal: MNE replicates the same activities in different geographical location
  - Vertical: MNE locates production stages according to factor costs
- Knowledge capital: intangible assets, patents, skilled personal, trademarks, brand name

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## Host country effects of FDI inflows

- Positive:
  - Access to export markets
  - Creation of tax revenues
  - Improvement of balance of payments
- Negative:
  - Increase domestic competition forcing local firms out of business
  - Environmental degradation
- This book:
  - Technology spillovers
  - Employment effects
  - Institutions: reduction transaction cost → corruption

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## Focus of the thesis

- Inward FDI → effects on host country
- Analysis of aggregated data at the country level and not of firm level data of MNE's
- Special attention for developing and transition countries

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## Questions

Theories are switching more and more to explanations originating from the behaviour of Multi National Enterprises (MNE's)

But: you analyse data on the macro-level of countries

→ How do you motivate this choice?

Focus on developing and transition countries with relative low share of FDI and specific characteristics

→ Is the theoretical framework specific enough for these countries

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## Outline of the thesis: four empirical chapters

1. Determinants of FDI inflows to the transition economies in Eastern Europe
2. Effect of corruption on host country volume of FDI inflows
3. Does FDI has a positive effect on the rate of economic growth in host countries?
4. Analyses the relationship between FDI and exports using East Asia as the region of study

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## CHAPTER 2

### FDI Inflows to the Transition Economies in Eastern Europe: Magnitude and Determinants

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## Why transition economies?

- Special countries due to institutional changes after 1990
- Countries were “developed” with heavy industry focusing on military and investment goods rather than on consumer goods or services
- Domestic savings too small → FDI welcome
- FDI generates technical spillovers

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## Transition economies?

- Distinction between:
  - CEE (Central and Eastern Europe)
  - CIS (Commonwealth of Independent States)
- **Is this distinction OK for the present analysis?** What are the criteria?
- Or: (see table 2.2 and 2.3) Macedonia, Romania, Albania to CIS and Kazakhstan en Azerbaijan tot CEE?

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## Research questions

- Central question: which economies have been most successful in attracting FDI?
- What are the factors determining the volume of FDI?
  - Market seeking? (horizontal FDI)
  - Efficiency seeking? (vertical FDI)
  - Resource seeking?
- **OLI paradigm really appropriate for the present analysis of FDI at macro level?**

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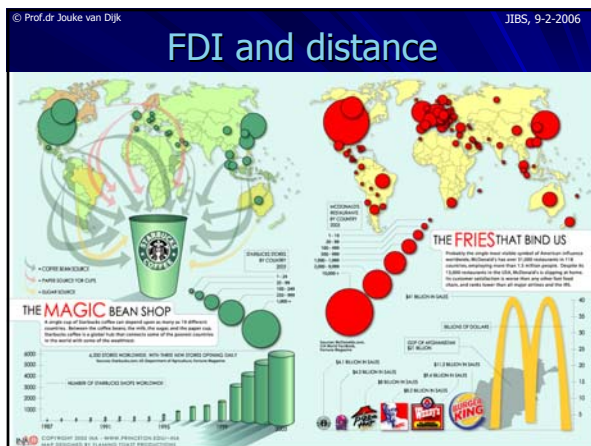
## Geographical sources of FDI

- From table 2.4 it is clear that there are clear bilateral flows, e.g. Sweden and Finland to Baltics and US/UK in oil states
- Japan invest in Asia?!

**Questions:**

- Do you take this into account in your empirical analysis by the variable distance?
- Exclude the countries who get most FDI from US?

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## Distance: questions

- Market seeking negative related with distance? To neighbors you can easily export, but for far away you have to open your own factory abroad
- Efficiency seeking negative with distance? Sometimes shipping cost are very low and mainly on-off, not so much distance. When wage cost are very low (China, India) this easily offsets shipping cost for many goods (trade costs)
- When resources are close by you take that! Does an insignificant or negative coefficient for distance really permit the conclusion “resource seeking”?
- How does distance to Brussels cover the many bilateral flows with close by countries?

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## Table 3.2, p.52

- Theorie:
  - GDP measures size of the market
  - GDP per capita measures "quality" of demand
- High correlation (0.95) between FDI **per capita** and GDP **per capita** for CEE
- No correlation between FDI **per capita** and GDP **absolute**
- BUT: in regression analysis FDI **absolute** is the dependent variable?
- WHY is this variable not included in table 3.2, p.52?
- **Question:** please explain the use of GDP absolute instead of per capita

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## Transition specific determinants

- **Why** use an index and not the underlying variables? Than you probably get a better explanation
- You choose for the index while the correlation with private share in GDP is 0.85. Stating "that our transition progress measure is reasonable as a proxy for transition" you justify this. BUT: **why** this choice and not the other way around?

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## Empirical analysis: variables (tab 4.1)

- Dependent variable: **absolute** inflow FDI
- Explanatory variables:
  - POP: market size (not GDP = POP\*GDPPC?)
  - GDP **per capita**: market size, not quality?
  - WAGE: share labor cost in GDP, does this reflect labor cost or (also) labor intensity?  
Relation labor cost / wage with GDPPC?  
Correlation is negative for all and for CIS, but positive or CEE
  - OIL / OILPROD: why not only OILPROD?
  - PRIMMETH = 1 for which countries?
  - DIST & OIL do not vary over time, can you do this for WAGE and CORRUPT?

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## Empirical results

- Distance interferes with GDPPC and OIL and WAGE??
- In table 4.5 full model CEE GDPPC becomes significant **negative** where it is positive in 4.4 and all other specifications. No attention in the text: it is the expected sign (p.35).
- Explanation? Proxy low labour cost?

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## Conclusions chapter 2

- POP & GDPPC: market seeking? Not always!
- WAGE is very often negative significant although with limited number of observations: evidence for efficiency seeking?
- OIL (why not tried OILPROD?) in CIS and all positive: evidence for resource seeking?
- Transition specific variables are important

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## Efficiency & Resource seeking FDI

- Efficiency: only variable WAGE as proxy for labour costs and than you loose many observations due to lack of data
- Resources: only variable OIL / OILPROD
- **Question:** can you really distinguish between market, efficiency and resource seeking with the latter operationalized with only these variables?

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# CHAPTER 3

## Bureaucratic Corruption, MNEs and FDI

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## Introduction

- Relation between host country corruption and FDI inflow: until now not many studies and inconclusive results
- Corruption: political corruption versus **bureaucratic corruption** affecting the profitability of MNE's
- Theoretical framework: transaction cost theory
- Formal and transparent institutions reduce **transaction costs**
- Corruption is an informal non-transparent institution that leads to uncertainty and distrust and increases transaction costs (not always!)
- Transparency International: Corruption Perception Index

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## Modeling MNEs, bureaucrats and bureaucratic corruption

- Objective theoretical model: development of a model that provides a microeconomic foundation for an analysis of the relationship between bureaucratic corruption and FDI inflow
- Model leads to testable hypothesis
- Data for developed and developing countries (China is excluded from the analysis although in the top of countries for inward and outward FDI)

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## Government policies for reducing corruption

- Legal punishment: by making legal punishment more severe, government increases the expected cost of engaging in corruption thereby reducing the expected net payoff of corruption. This can be achieved **without creating any additional costs** for the host country government
- **True?** Also the chance of being arrested counts and to increase this chance will require (substantial) amounts of money!
- Increase salaries government employees
- Making the decision process more transparent

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## Empirical model

- Compare chapter 2: size of GDP and GDP per capita no difference? **Why** choice for GDP and not POP + GDPPC?
- **Why** NATRES instead of OIL?
- Degree of openness: **why** not in chapter 2
- Nice result: a decrease in the TI index of one implies a increase of FDI inflows of around 1400 millions of USD. How does this relate to the cost of reducing corruption or the effects of other variables (change openness), raise salaries government employees?
- Wage (efficiency seeking) works very strong and overrules all other variables including corruption with limited data set: is the result reliable?

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## Discussion

- Corruption leads to lower FDI because corruption leads to uncertainty and extra costs: confirmed for developing countries but not for developed countries
- **Compare results chapter 2:** corruption hypothesis confirmed for CEE, but not for CIS countries. Is this consistent with the findings in this chapter?
- Table 4.3 chapter 2: positive (although insignificant) effect of corruption on FDI. Can this finding be interpreted as "when the official institutions are very bureaucratic with lengthy procedures etc. corruption can be efficient and stimulate FDI?"

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# CHAPTER 4

## The Effects of FDI Inflows on Host Country Economic Growth

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- ### Introduction
- Growth theory: Solow model
  - Endogenous growth theory: focus on relation technology and growth Romer / Lucas
  - FDI by MNE can result in technology spillovers to domestic firms, but no clear empirical evidence until now
  - Possible effect may differ by type of host country
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- ### Two aims of this chapter
1. Does FDI has a positive effect on host country economic growth using **macro** level data?
  2. Is there a difference in the growth enhancing ability of FDI inflows between **developed** and **developing** countries?
    - Is there a **threshold** level of technology that needs to be achieve for positive effects of FDI?
    - What is the **causality** between FDI and economic growth
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- ### Possible effects
- Tangible resources: physical and financial capital – no permanent effect on growth?
  - Knowledge capital: intangible assets like brand name, human capital, patents, trademark and technologies
  - Embodied (coded) – disembodied (tacit)
  - Greenfield – Brownfield FDI
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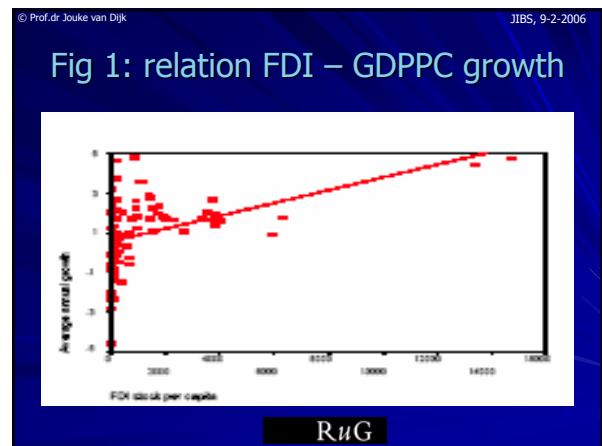
### Host country conditions for realising the growth enhancing potential of FDI inflows

Theoretical model and discussion: not clear what type of economy has the best potential to benefit from FDI

Table 2, p. 137

Condition host country	Type of economy	
	Developed	Developing
Level of technology ( <i>AHC</i> )	High	Low
Absorptive capacity of firms ( $\gamma$ )	High	Low
Per capita stock of capital ( <i>KHC</i> )	Large	Small

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Table 4 Average annual growth 1980 to 2002

High growth		Low growth economies	
China	8.2	Congo, Dem. Rep.	-4.6
Korea	5.7	Liberia	-2.8
Botswana	4.8	Sierra Leone	-2.8
Thailand	4.6	Saudi Arabia	-2.5
St Kitts and Nevis	4.6	Haiti	-2.4
Singapore	4.4	Ivory Coast	-2.3
Antigua and Barbuda	4.1	United Arab Emirates	-2.1
Cyprus	4.0	Niger	-2.0
Hong Kong	4.0	Madagascar	-2.0
Malta	3.8	Venezuela	-1.5

Is this a representative set of countries to draw tentative conclusions from?

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Table 4 Average annual growth 1980 to 2002

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Thailand	4.6	Saudi Arabia	-2.5
St Kitts and Nevis	4.6	Haiti	-2.4
Singapore	4.4	Ivory Coast	-2.3
Antigua and Barbuda	4.1	United Arab Emirates	-2.1
Cyprus	4.0	Niger	-2.0
Hong Kong	4.0	Madagascar	-2.0
Malta	3.8	Venezuela	-1.5

The countries are not included in the regression analysis: why here and not there?

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- ### Empirical regression results
- 90 countries: developed (22) and developing (68)
  - Time series analysis 1980 - 2002 does not work in practice – theoretical arguments?
  - Cross-section analysis:?
  - Dependent variable: growth of real GDP per capita over the whole period
  - FDI: average stock of inward FDI as share in GDP during the whole period; Justification? Why FDI per capita (better results!) only in appendix?
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- ### Other variables
- DOMestic INVestment
  - SCHOOL1980: initial level of human capital; Is this a good indicator for absorptive capacity for the next 22 years?
  - GDP1980: indicator convergence/divergence or also threshold level of technology?
  - Regional dummies for African sub-Saharan and East Asian countries: what does it explain?
  - WAR: dummy yes/no; why not years of WAR?
  - Interaction FDI\*SCHOOL1980; why not DOMINV\*SCHOOL1980?
  - Economic Freedom Index (EFI1980): to control for host country institutions; also indicator for absorptive capacity?
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- ### Outcomes Cross-section analysis
- Developed countries: no significant coefficients at all without Ireland! Is there something wrong with the specification?
  - Role of intra-industry trade?
  - For developing countries FDI and DOMINV work fine, but the following questions:
    - GDP1980 not significant in Eq. (3) but it comes up in (7) with other dummies etc. Interpretation of convergence correct? Or threshold effect?
    - Eq (6): interaction FDI\*SCHOOL1980 significant: what does it tell without the main effects of FDI and SCHOOL1980 in the equation
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- ### Outcomes Panel data analysis
- Hardly any difference with cross-section!
  - Only differences:
    - For developing: WAR negative effect significant
    - For developed: DOMINV positive significant
  - Any explanation for this disappointing result?
  - Is there empirical evidence for a threshold level of technology needed for positive effects of FDI?
  - Why no formal test on causality?
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# CHAPTER 5

## FDI and Exports: the Case of the High Performing East Asian Economies

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- ### Introduction
- Is FDI a substitute for export from the home country to serve demand in the host country?
  - Does FDI generate export in a complementary relationship because of extra imports of intermediate goods? Or via export to third countries of final goods produced with low in the host country of FDI
  - Or does export stimulate FDI (causality question)
  - Inward FDI versus outward FDI
  - Empirical analysis on "high performing Asian economies". Japan is excluded, but China and Singapore are included although these two countries are outliers in earlier chapters. Why included here?
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### The relationship between FDI and trade

Form of FDI	Primary relationship
Horizontal	Substitutional
Vertical	Complementary
Knowledge	Complementary or Substitutional
-capital	
Export platform	Complementary (inward FDI and – host country exports are complementary)

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- ### The data
- Until now most studies are based on firm (MNE's) level data and firm level theories
  - This study: analysis of FDI inflows and FDI outflows and host country exports aggregated data
  - However: MNE's account for two-third of world exports
  - Is analysis on macro data instead of micro (firm level) data indeed the preferred option?
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### East Asia share of world trade and world FDI in %

Share of	1970	1985	1995	2002
world exports	3.5	7.1	12.2	18.8
world imports	2.8	4.8	10.1	11.0
Share of world outward FDI flows	<0.1	4.4	11.9	5.6
Share of world inward FDI flows	3.8	7.7	21.0	11.3

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- ### Country level data
- Outward FDI almost all from Hong Kong and Singapore
  - Taiwan: outward FDI > inward FDI
  - No information at all about origin/destination of exports / imports and inward / outward FDI: can you really do without this?
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## Empirical analysis

- Dependent variable: EXP per capita
- Independent variables:
  - FDI IN: if positive evidence for export platform, if n.s. market seeking
  - FDI OUT: positive FDI complement export, negative FDI substitute export
- Unit root test indicate non-stationary → analyses on first differences

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## Empirical results

- From table 8 analysis for 8 countries you conclude FDI IN has a significant positive effect on export.
- **Is this true?** Only Singapore and Taiwan show a significant positive effect and Thailand has a significant negative effect
- Table 9 with the panel data is more convincing: evidence for export platform FDI
- Table 11 for EU-15: FDI IN not significant, but FDI OUT significant negative → FDI outflows complement exports. **Why no Granger causality test for EU-countries?**

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No more questions!

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## Host Country Effects of Foreign Direct Investment

The Case of Developing and Transition Economies

Thesis defense by Andreas Johnson  
JIBS, Jönköping, Sweden, February 9, 2006

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