

The background of the image shows a construction site at sunset. Silhouettes of several construction workers wearing hard hats are visible against a sky with soft, orange and blue clouds. The workers are positioned on a structure with vertical rebar rods. The overall scene is backlit by the setting sun, creating a warm, golden glow.

THE DEVELOPMENT DICHOTOMY

*FDI & Economic Growth in
Developed versus Developing Economies*

by Jordan Dum

Globalization

F

D

I

F



foreign

D



direct

I



investment

It can turn this



Dubai 1990

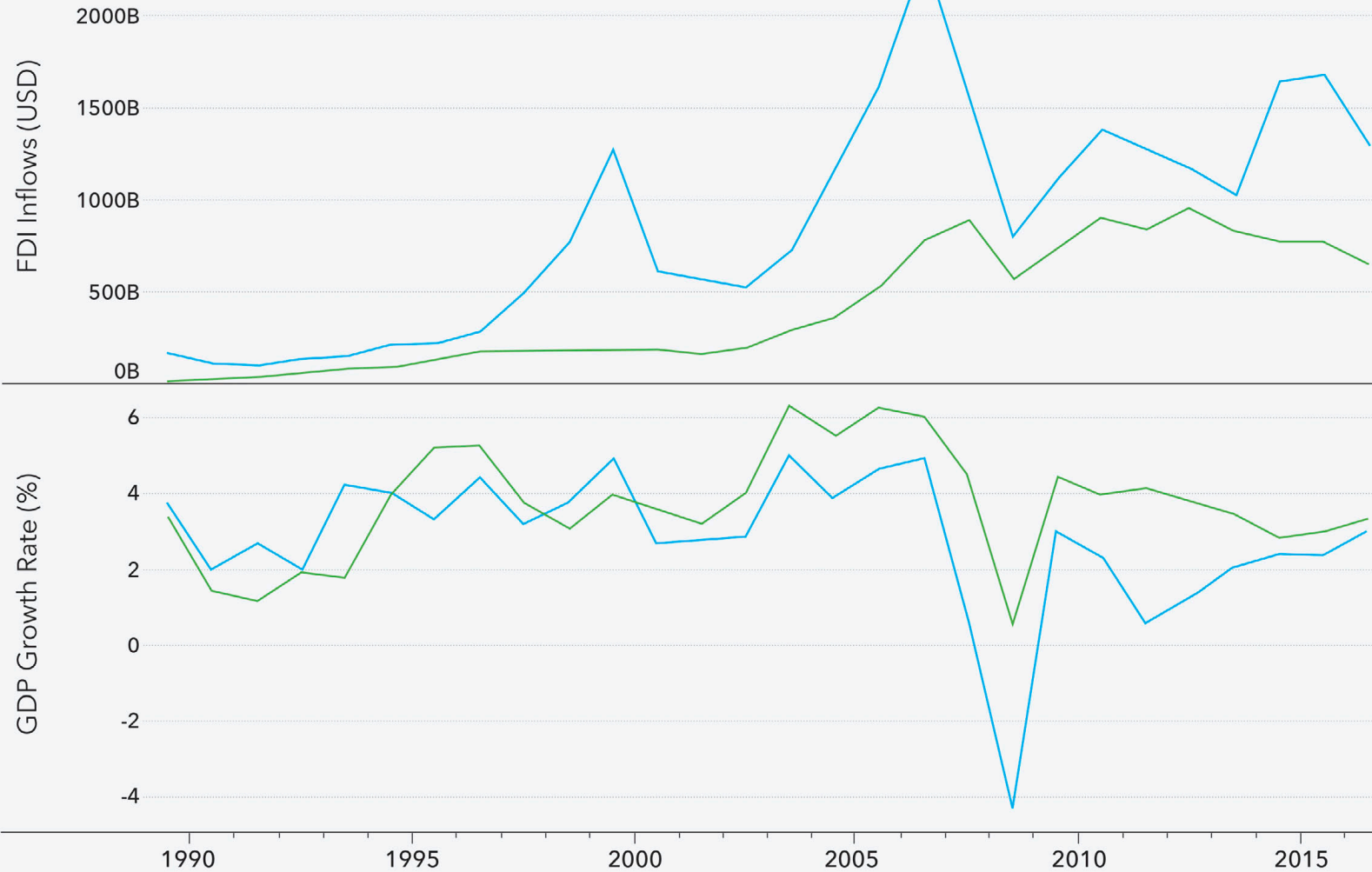
Into this.



Dubai 2019

Or can it?

FDI INFLOWS v. GDP GROWTH



Classification

Developed (DC)

Developing (LDC)

Question

Does FDI impact economic growth?

Does FDI impact

Developed & **Developing**

countries differently?

Hypothesis:

FDI **positively** effects economic growth
in **developing** economies

BUT

FDI **has no** effect on economic growth
in **developed** economies

Literature Review

Borensztein et al. (1998)

FDI's impact depends on human capital

Chowdhury & Mavrotas (2005)

Directionality of FDI depends on endogenous variables

Sabina Silajdzic & Eldin Mehic (2015)

FDI spillover hinges on level of tech innovation or R&D

Methodology

1 Split countries into developing & developed
Done based on IMF definitions

2 Divide countries by continent
In order to determine if geography plays a role

3 Choose the 10 countries with highest GDP
20 developed and 60 developing; 80 total countries

4 Use panel data 1990-2017 for an OLS model
Chose the last 27 years to demonstrate the interaction of FDI over time

COUNTRIES BY CLASSIFICATION

According to the International Monetary Fund

DEVELOPED (DC)

North America

Canada
United States

South America

Europe

Austria
Belgium
France
Germany
Italy
Netherlands
Spain
Sweden
Switzerland
United Kingdom

Asia

Hong Kong
Israel
Japan
Macao
Singapore
South Korea

Africa

Oceania

Australia
New Zealand

DEVELOPING (LDC)

North America

Costa Rica
Cuba
Dominican Republic
El Salvador
Guatemala
Honduras
Jamaica
Mexico
Panama
Trinidad & Tobago

South America

Argentina
Bolivia
Brazil
Chile
Columbia
Ecuador
Guyana
Paraguay
Peru
Uruguay

Europe

Azerbaijan
Belarus
Bosnia & Herzegovina
Bulgaria
Croatia
Hungary
Poland
Romania
Serbia
Ukraine

Asia

China
India
Indonesia
Iran
Malaysia
Russia
Saudi Arabia
Thailand
Turkey
UAE

Africa

Algeria
Angola
Egypt
Ethiopia
Ghana
Kenya
Morocco
Nigeria
South Africa
Sudan

Oceania

American Samoa
Fiji
Guam
Micronesia
N. Mariana Islands
Papua New Guinea
Samoa
Solomon Islands
Tonga
Vanuatu

LIST OF VARIABLES

Variable	Anticipated Sign	Observations	Description	Source
LN_GDP	N/A	2215	Dependent Variable: natural log of GDP	The World Bank
FDI	+	2119	1 yr lag FDI inflows in billions USD	The World Bank
HDI	+	2114	Human Development Index (scale 0-1)	UNDP
TRADE	+	1742	Trade Freedom Index (0-100)	The Heritage Foundation
PROP	+	1739	Property Rights Index (0-100)	The Heritage Foundation
TAX	+	1742	Tax Burden Index (0-100)	The Heritage Foundation
INF	-	2059	Inflation % change in CPI	The World Bank
POP	+	2268	Population in millions	The World Bank
YR	+	2349	Year (1990-2017)	N/A
SA	-	2349	South America (dummy variable)	N/A
AF	-	2349	Africa (dummy variable)	N/A
AS	-	2349	Asia (dummy variable)	N/A
EU	+	2349	Europe (dummy variable)	N/A
OC	-	2349	Oceania (dummy variable)	N/A
LDC	-	2349	Developing Countries (dummy variable)	N/A
FDI*LDC	+	2349	Developing Country FDI (slope dummy variable)	N/A

Model

DEVELOPED (DC)

$$\begin{aligned} \text{LN_GDP} = & \beta_0 + \beta_1 \text{FDI} + \beta_2 \text{HDI} + \beta_3 \text{TRADE} + \beta_4 \text{PROP} + \beta_5 \text{TAX} + \beta_6 \text{INF} + \beta_7 \text{POP} + \beta_8 \text{YR} \\ & + \beta_9 \text{SA} + \beta_{10} \text{AF} + \beta_{11} \text{AS} + \beta_{12} \text{EU} + \beta_{13} \text{OC} + \varepsilon \end{aligned}$$

DEVELOPED (DC)

$$\begin{aligned} \text{LN_GDP} = & \beta_0 + \beta_1 \text{FDI} + \beta_2 \text{HDI} + \beta_3 \text{TRADE} + \beta_4 \text{PROP} + \beta_5 \text{TAX} + \beta_6 \text{INF} + \beta_7 \text{POP} + \beta_8 \text{YR} \\ & + \beta_9 \text{SA} + \beta_{10} \text{AF} + \beta_{11} \text{AS} + \beta_{12} \text{EU} + \beta_{13} \text{OC} + \varepsilon \end{aligned}$$

AGGREGATE

$$\begin{aligned} \text{LN_GDP} = & \beta_0 + \beta_1 \text{FDI} + \beta_1 \text{FDI} * \text{LDC} + \text{LDC} + \beta_2 \text{HDI} + \beta_3 \text{TRADE} + \beta_4 \text{PROP} + \beta_5 \text{TAX} + \beta_6 \text{INF} + \beta_7 \text{POP} + \beta_8 \text{YR} \\ & + \beta_9 \text{SA} + \beta_{10} \text{AF} + \beta_{11} \text{AS} + \beta_{12} \text{EU} + \beta_{13} \text{OC} + \varepsilon \end{aligned}$$

POOLED OLS REGRESSION

Variable	DEVELOPED (DC)		DEVELOPING (LDC)		AGGREGATE	
	Parameter	VIF	Parameter	VIF	Parameter	VIF
INTERCEPT	-75.34560*** (14.6692)	0	-43.03740*** (14.6250)	0	-11.93002 (12.2960)	0
FDI	-0.00061527 (0.000443)	1.62659	0.01294*** (0.001831)	1.96070	0.00422*** (0.000715)	1.52306
HDI	0.44259 (1.4507)	3.46907	3.80921*** (0.4066)	2.42129	5.76599*** (0.4128)	4.12405
TRADE	-0.02992*** (0.007234)	1.98945	0.00931*** (0.003604)	2.40282	0.01214*** (0.003603)	2.81453
PROP	-0.00958*** (0.003514)	1.59306	0.00429** (0.002163)	1.28322	0.00089955 (0.002131)	3.11571
TAX	0.00417 (0.002723)	2.32007	-0.00211 (0.003438)	1.41113	-0.01150*** (0.002871)	2.12232
INF	-0.02022 (0.0178)	1.10908	-0.00040330 (0.000757)	1.08358	-0.00045260 (0.000805)	1.06792
POP	0.01580*** (0.000599)	2.12282	0.00185*** (0.000214)	2.68077	0.00336*** (0.000216)	2.43601
YR	0.01580*** (0.007803)	3.51873	0.03178*** (0.007423)	2.40404	0.001669*** (0.006247)	2.04493
SA	-	-	0.35599*** (0.1054)	1.65409	0.15285 (0.1098)	1.64451
AF	-	-	1.47421*** (0.1281)	2.35090	1.48560*** (0.1324)	2.29004
AS	-0.25726* (0.1324)	4.43413	1.94834*** (0.1163)	2.07563	0.84528*** (0.1055)	2.20011
EU	0.47772*** (0.1275)	5.39745	0.28585** (0.1150)	1.95506	-0.06932 (0.1036)	2.62955
OC	-0.24096 (0.1488)	2.64499	-2.79158*** (0.1439)	1.49738	-2.15341*** (0.1292)	1.55134
LDC	-	-	-	-	-1.28789*** (0.000715)	4.56175
FDI*LDC	-	-	-	-	0.00393* (0.002009)	2.08428
Adj. R-Square	0.7863		0.7091		0.7131	
F-Value	152.90		207.15		261.59	
Durbin-Watson	0.120		0.150		0.149	
Observations	455		1119		1574	
Countries	20		60		80	

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% significance level respectively.

OLS WITH AUTOREGRESSIVE ERRORS

Variable	DEVELOPED (DC)	DEVELOPING (LDC)	AGGREGATE
	Parameter	Parameter	Parameter
INTERCEPT	-10.7543 (9.4586)	-73.5466*** (7.0793)	-49.1944*** (5.8263)
FDI	0.000120 (0.0000934)	0.001609** (0.000674)	0.0000482 (0.000160)
HDI	3.6601*** (1.0768)	1.2363*** (0.2803)	1.8564*** (0.2725)
TRADE	0.002594 (0.002020)	0.000967 (0.000856)	0.001400* (0.000828)
PROP	-0.002043 (0.001660)	0.002046** (0.000851)	0.001785** (0.000818)
TAX	0.000806 (0.001488)	0.001725 (0.001553)	-0.000040 (0.001324)
INF	0.004526 (0.003583)	-0.000159 (0.000108)	-0.000193* (0.000108)
POP	0.0158*** (0.001017)	0.001498*** (0.000230)	0.002517*** (0.000219)
YR	0.0168*** (0.005126)	0.0482*** (0.003589)	0.0379*** (0.002982)
SA	-	0.1190 (0.1591)	0.1647 (0.1510)
AF	-	0.9663*** (0.1832)	1.0822*** (0.1775)
AS	-0.0514 (0.2104)	1.7648*** (0.1718)	0.7964*** (0.1501)
EU	0.5416*** (0.1742)	-0.438** (0.1767)	-0.3389** (0.1365)
OC	0.1198 (0.2302)	-3.2177*** (0.1852)	-2.7089*** (0.1664)
LDC	-	-	-4.3067*** (0.3275)
FDI*LDC	-	-	0.001613** (0.000693)
Adj. R-Square	0.9935	0.9919	0.9932
F-Value	-	-	-
Durbin-Watson	1.8171	1.9679	1.9788
Observations	455	1119	1574
Countries	20	60	80

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% significance level respectively.

For developing countries

\$1b
in FDI

=

.16%
GDP increase

For developing countries



=



For developed countries



=



For developing countries

1.00
PROP increase

=

0.2%
GDP increase

Results

A **FDI positively effects** economic growth in developing economies but shows no major impact on developed economies.

B **Human capital** is a powerful determinant of economic growth.

C **Property Rights** are a significant contributor to higher GDP.

Results

D **Population** has a strong impact on GDP

E **Location matters.** The highest to lowest GDP for developing economies: *Asia, Africa, North America, Europe & Oceania*

Hypothesis is correct

Conclusions

Endogenous variables are critical for analyzing country effects.

Data volume and granularity is needed; better measurements of smaller countries will help.

Separation is necessary by developing & developed, geography, or country to country to accurately observe FDI effects.

The background of the image shows a construction site at sunset. Silhouettes of several construction workers wearing hard hats are visible against a sky with soft, orange and blue clouds. The workers are positioned on a structure with vertical rebar, likely a concrete slab or wall. The overall mood is one of industriousness and the end of a day's work.

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