

# Econ 280 - Computation project

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## 1 Research Question and main result

**Paper:** Alfaro, Laura & Chanda, Areendam & Kalemli-Ozcan, Sebnem & Sayek, Selin, 2004. "FDI and economic growth: the role of local financial markets," Journal of International Economics, Elsevier, vol. 64(1), pages 89-112, October

**Research Question and main result:** The paper examines whether higher financial development (e.g., credit availability, market liquidity) amplifies FDI's impact on growth, i.e. whether countries with better financial systems can exploit FDI more efficiently. The paper has the following main results:

1. FDI alone plays an ambiguous role in contributing to the country's economic growth.
2. However, countries with well-developed financial markets gain significantly from FDI. In addition, the results are robust to different measures of financial markets development as well as different measures of economic growth.

## 2 Extension of the paper

The original analysis uses panel data from 1975–1995. I propose to extend their results by estimating the same regressions for 1996–2015 and examining whether the findings from the earlier period still hold over the subsequent two decades. I also add institutional quality as a control in the below regressions. I use Stata for extending the results, the code for which can be found in the Github repository.

The results from Table 6 of the paper are extended by estimating the following 7 regressions for a panel data (annual frequency) for 56 countries between 1996-2015 :

**Regressions (1)- (6):**

$$GROWTH_i = \beta_0 + \beta_1 FDI_i + \beta_2 FDI_i * FINANCE_i + \beta_3 FINANCE_i + \beta_4 CONTROLS_i + \epsilon_i$$

**Regression (7):**

$$GROWTH_i = \beta_0 + \beta_1 FDI_i + \beta_2 FDI_i * PRIVCR_i + \beta_3 PRIVCR_i + \beta_4 FDI_i * SCHOOLING_i + \beta_5 SCHOOLING_i + \beta_6 CONTROLS_i + \epsilon_i$$

**Dependent variable:** Year-on-Year real per capita GDP growth for country i

**Key Independent variable:** FDI as a share of GDP for country i

**Finance:** Co-variates/Interaction term: Liquid liabilities of the financial system (LLY), Commercial-central bank assets (BTOT), Private sector credit (PRIVCR), Bank credit (BANKCR), Stock market liquidity (SVALT), Capitalization (SCAPT)

**Controls:** Initial GDP, Schooling, population growth, Government consumption, regional dummy (1: If country in Sub-Saharan Africa, 0 otherwise), institutional quality, inflation and trade volume

### 3 Extension results

The below table has the extension results (consistent with Table 6 from the original paper). Here are the main findings from the extension:

1. Unlike before, FDI on its own now has a clear, statistically significant effect on growth; its standalone impact is no longer ambiguous, marking a departure from the previous result.
2. Moreover, well-developed financial markets continue to strengthen the growth effects of FDI, as reflected in the significant coefficients on the interaction terms. The results are robust to different measures of financial markets development as well as different measures of economic growth.

Figure 1: Growth and FDI—robustness: Regression with financial development interaction terms (extended results for 1996-2015)

Interaction terms with FDI/GDP		1996-2015						Schooling & PRIVCR
		BTOT	BANKCR	LLY	PRIVCR	SCAPT	SVALT	
		1	2	3	4	5	6	7
Period		1996-2015	1996-2015	1996-2015	1996-2015	1996-2015	1996-2015	1996-2015
n		889	889	887	889	807	834	889
F-stat		24.79	27.30	26.66	27.41	28.06	27.58	27.41
R-squared		26.7%	26.2%	27.5%	26.1%	28.5%	25.7%	26.1%
log (initial GDP)	coeff	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	std error	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	t-stat	-2.61	-2.64	-3.14	-2.44	-2.69	-1.64	-2.44
Investment/GDP	coeff	0.19	0.19	0.19	0.18	0.21	0.23	0.18
	std error	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	t-stat	7.88	8.84	9.19	8.95	10.32	10.44	8.95
FDI/GDP	coeff	1.23	0.12	0.20	0.13	-0.03	-0.01	0.13
	std error	0.27	0.03	0.05	0.03	0.01	0.01	0.03
	t-stat	4.48	4.41	3.62	4.47	-3.48	-0.88	4.47
FDI/GDP * financial markets	coeff	-1.28	-0.05	-0.09	-0.06	0.10	0.07	-0.06
	std error	0.28	0.01	0.02	0.01	0.02	0.03	0.01
	t-stat	-4.51	-4.54	-3.79	-4.66	4.18	2.33	-4.66
Financial markets	coeff	0.03	-0.01	0.00	-0.01	-0.01	-0.01	-0.01
	std error	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	t-stat	1.62	-1.87	-1.15	-1.64	-1.78	-2.22	-1.64
FDI/GDP * Schooling	coeff							0.00
	std error							0.01
	t-stat							0.22
Schooling	coeff	-0.01	0.00	0.00	0.00	0.00	0.00	-0.58
	std error	0.01	0.01	0.01	0.01	0.01	0.01	0.16
	t-stat	-0.99	0.06	0.11	0.22	-0.34	-0.50	-3.65
Population growth	coeff	-0.45	-0.59	-0.54	-0.58	-0.64	-0.53	-0.15
	std error	0.17	0.16	0.16	0.16	0.16	0.17	0.02
	t-stat	-2.59	-3.72	-3.43	-3.65	-4.10	-3.19	-6.00
Government consumption	coeff	-0.13	-0.14	-0.15	-0.15	-0.12	-0.14	0.00
	std error	0.03	0.03	0.03	0.02	0.03	0.03	0.01
	t-stat	-3.96	-5.59	-5.84	-6.00	-4.44	-4.78	0.21
Sub-Saharan Africa dummy	coeff	-0.01	0.00	0.00	0.00	0.01	0.00	0.01
	std error	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	t-stat	-1.14	-0.12	-0.22	0.21	1.40	0.66	1.66
Institutional quality	coeff	0.02	0.01	0.01	0.01	0.01	0.01	-0.02
	std error	0.01	0.01	0.01	0.01	0.01	0.01	0.03
	t-stat	2.43	1.67	1.48	1.66	1.21	1.29	-0.88
Inflation	coeff	-0.01	-0.02	-0.02	-0.02	-0.02	-0.01	0.00
	std error	0.03	0.03	0.03	0.03	0.03	0.03	0.00
	t-stat	-0.33	-0.86	-0.68	-0.88	-0.63	-0.34	-0.92
Trade volume	coeff	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	std error	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	t-stat	0.44	-0.40	-0.91	-0.92	-0.65	-0.29	

Note: Green highlights statistical significance