Discussion of

Fire-sale FDI? The impact of financial crises on foreign direct investment by Olga Bogach and Ilan Noy

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Outline

> Brief summary of the paper

> Comments

- Two things that are hard to interpret
- Five things that might improve the paper

> Conclusion

Summary of Paper

> The authors "*empirically and thoroughly examine the Fire-Sale FDI hypothesis and describe the pattern of FDI inflows surrounding financial crises*"
  - Krugman (2000) draws attention to the phenomenon of a fire-sale FDI: "The Asian financial crisis, although marked by massive flight of short-term capital and large-scale sell-offs of foreign equity holdings, has at the same time a wave of inward direct investment. "

> Paper:
  - Focuses on FDI flows around financial crises
  - Examines different measures of FDI (including M&A, greenfield, horizontal, vertical)
  - Uses Reinhart & Rogoff crisis dates and types; includes many control variables as well
  - Tests the Fire-Sale FDI Hypothesis: In Arellano-Bond Difference GMM regressions of FDI (measured various ways). A crisis indicator variable should be positive and significant for the hypothesis to hold.

> Findings
  - The coefficient on the crisis indicator is
    - Insignificant (slightly more than half the time)
    - When significant, negative
    - Never positive and significant

> Paper concludes: "*We do not find evidence of Fire-Sale FDI. On the contrary, financial crises are shown to affect FDI flows and M&A activity adversely.*"

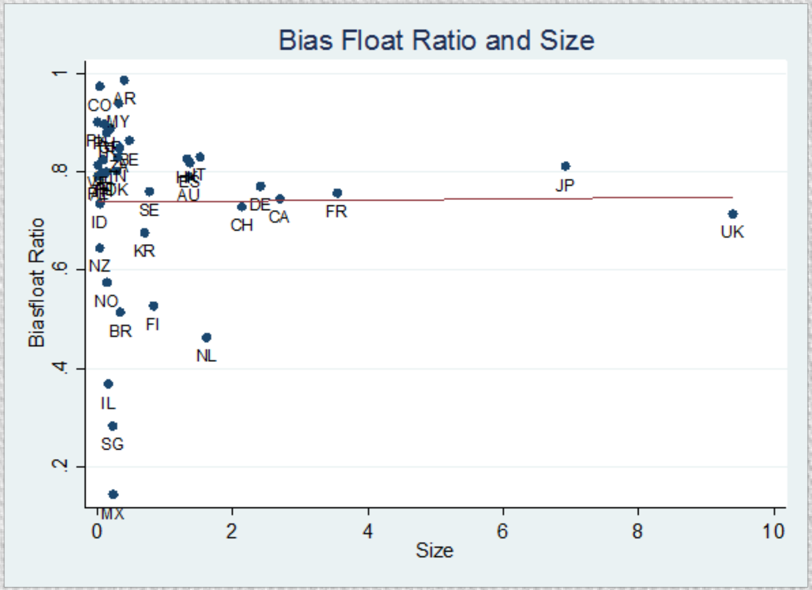
Comments: (1) Scale Factor?

> The dependent variable is measured in US dollars (not scaled).
- Yes, I recognize that this is done in the trade/gravity literature.
- In the portfolio allocation literature,
  - We tend to use relative holdings (holdings in *x* as a proportion of overall portfolio) over relative size (size of destination market x relative to world market). See Burger Warnock & Warnock (2012).
  - When not scaled properly, the depvar has a size bias and the significance of variables associated with size (even if controlled for size, as done in gravity regressions) tends to be overstated.
    - See Ammer, Holland, Smith, & F Warnock (2012 NBER WP 17839) for examples and Bekaert, Siegal, & Wang (2012) for careful econometric analysis.

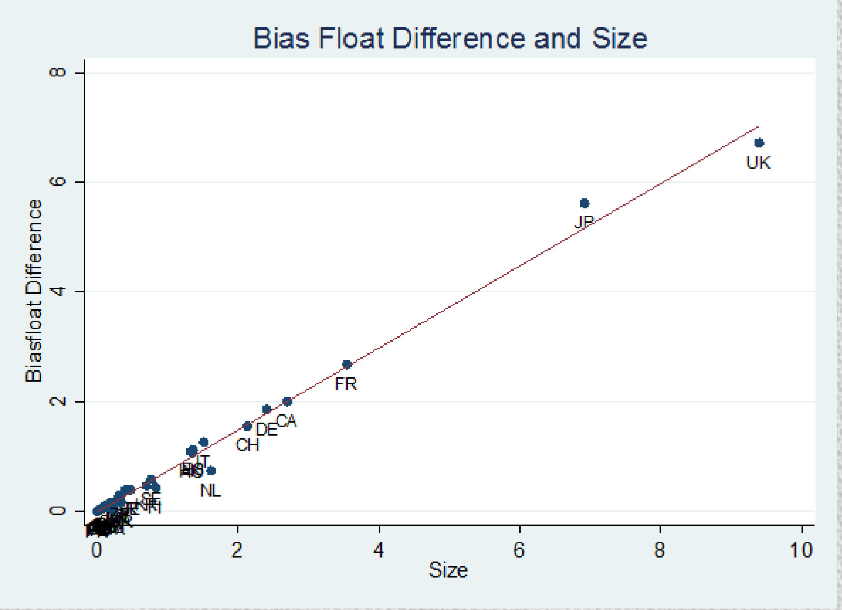
> A reasonable response to this point is "Scaling isn't done in the FDI literature."
- True, but it wasn't always done in the portfolio literature and now some past results published in top journals (eg, RFS) are being overturned.

Scaling Equity Investment

A depvar without a size bias



A depvar with a size bias



Source: Ammer, Holland, Smith, and F Warnock (2012)

Depvars with a size bias include investment (dollar amount), investment (as a percent of the portfolio), and even a "bias difference" measure (scaled holdings minus scaled destination size).

Comments: (2) A comparable mix of countries?

> *"Blonigen and Wang (2005) and Noy and Vu (2007) argue that mixing wealthy and poor countries is inappropriate in empirical FDI studies….We therefore focus only on developing/emerging markets."*

- The paper's sample of developing/emerging countries includes South Korea (per capita GDP of US$29,000), many with per capita GDP around US$15,000, and plenty at less than US$2,000 (e.g. Ghana, Kenya, Zambia, Myanmar, Zimbabwe)
- Also, in these countries, were legal barriers to FDI binding? If so, did the paper control for this?

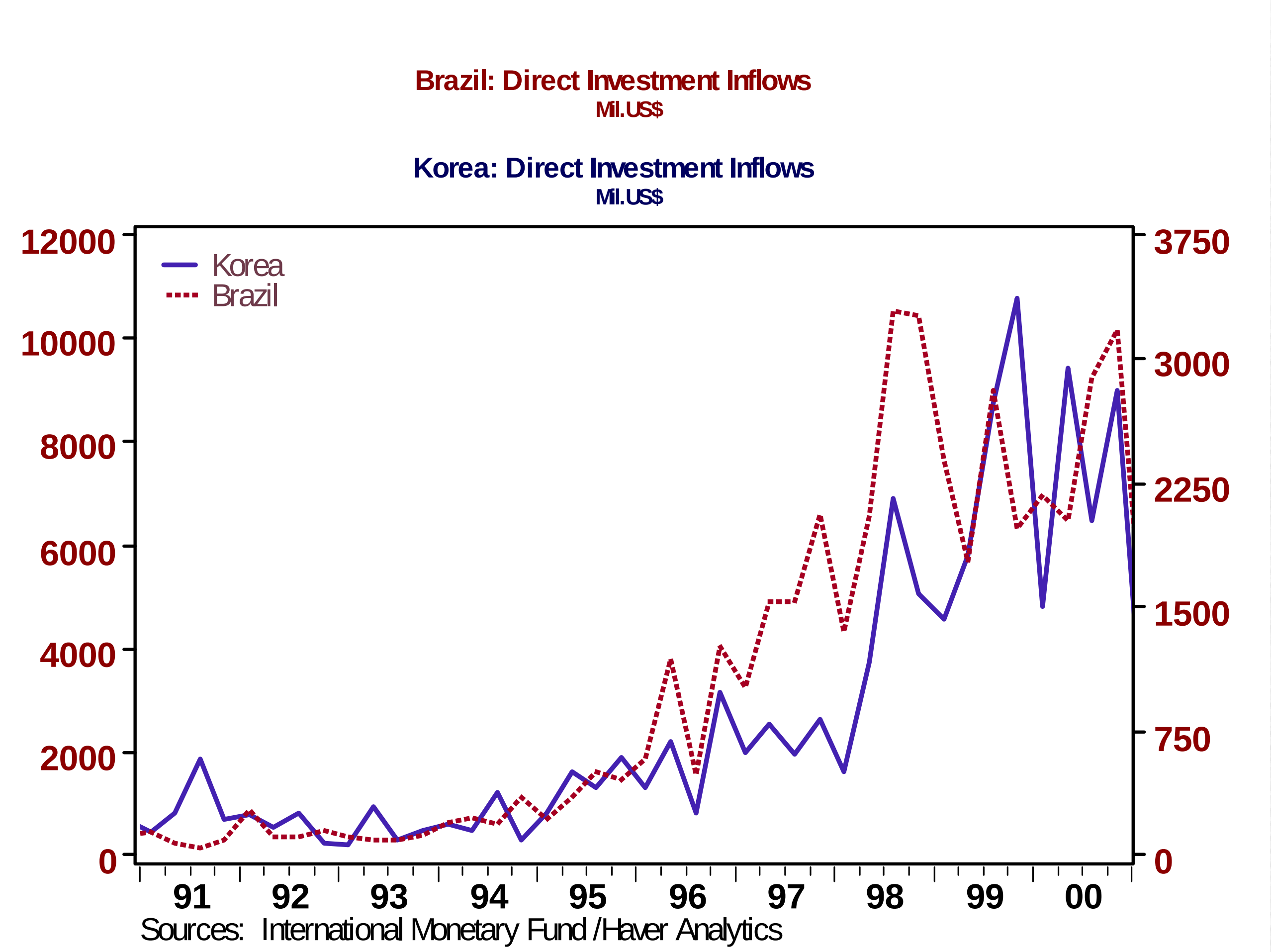
Comments: (3) How to deal with crises?

- Point 1: "*We follow Krugman in arguing that in order to formulate a clear hypothesis on the impact of financial crises on FDI, one needs to <u>understand the fundamental mechanisms that cause and shape the evolution</u> of financial crises.*"

- Point 2: "*In empirical terms, this means we need to control for the type of crisis a country experiences when evaluating crisis impact on FDI.*"

- A referee might think that Point 1 suggests a need to model crises and, if so, would not think controlling for them using dummy variables is sufficient.

Comments: (4) Reconcile results with simple evidence.



There are plenty of examples of crises (eg, Asian financial crisis 97/98, Brazilian crisis that began summer of ‘98) in which FDI inflows surged. Some case studies might make the reader more comfortable with results that are counter to this.

Comments: (5) In a fire sale, things are cheap.

> There are many theories of why we might see fire-sale FDI. But one reason must be that from the perspective of a potential acquirer the foreign companies are suddenly cheap. How?

- Through a sharp exchange rate depreciation.
- Through a sharp decline in firm value.
  - Krugman (2000): "In a proximate sense there is, of course, no mystery about that change in conditions. In 1997 South Korea's currency lost half its value against the dollar, and its stock market lost 40 percent of its value in domestic currency. <u>Thus the price of South Korean corporations to foreign buyers in effect fell by 70 percent</u>, in some cases producing what appeared to be spectacular bargains."

- Based on this simple reasoning, it would be interesting if the "Currency crisis" and "Stock Market crisis" indicators were negative and significant. But they were not negative and significant in any of the regressions.

Comments: (6) Reconcile findings with the literature.

> Previous results must be tackled squarely, else the reader does not know what to think about the current paper.

- Aguiar and Gopinath (REStat 2005) on M&A activity: "foreign acquisitions *increased by 91%* in East Asia between 1996 and 1998."
- Krugman (2000) suggests evidence of fire-sale FDI.
- The results in the current paper "directly contradict Krugman's Fire-sale FDI hypothesis".

> Be true to Krugman (2000).

- Current paper, quoting Krugman: "What we need—surprise—is more research."
- Krugman: "So, does the foreign purchase of Asian assets represent the transfer of control to efficient owners who were previously unable to buy at a reasonable price? Or does it represent sales to inefficient owners who happen to have cash? Alas, probably some of both. What we need—surprise–is more research."

Krugman wanted more research to delve into the issue of whether Fire-Sale FDI is good (transfer of control to efficient owners at a low price) or bad (sales to inefficient owners who have cash). This suggests a firm-level study. Can the current country-level study address this?

Comments: (7) How do we think about crisis dummies in the regressions?

Myanmar was in an “infl crisis” 17 of 21 years.

Myanmar/Burma(1948)										
Gold standard	Currency crises	Currency debaseme	Inflation crises	Currency crises	Inflation crises	Stock mkt crashes	Debt Crises Domestic	External	Banking crises	Tally
1	2	3	4	5	6	7	8	9	10	11
0	-13.8		17.6	0	0		0	0	0	0
0	5.4		**24.0**	0	1		0	0	0	1
0	2.4		**23.8**	0	1		0	0	0	1
0	-7.6		**21.9**	0	1		0	0	0	1
0	-0.5		**29.1**	0	1		0	0	0	1
0	4.0		**22.3**	0	1		0	0	0	1
0	0.1		**33.6**	0	1		0	0	0	1
0	-5.9		**22.4**	0	1		0	0	0	1
0	-1.8		**28.9**	0	1		0	0	0	1
0	3.4		**20.0**	0	1		0	0	1	2
0	6.6		**33.9**	0	1		0	0	1	2
0	-4.2		**49.1**	0	1		0	0	1	2
0	2.6		10.9	0	0		0	0	1	1
0	5.3		-1.7	0	0		0	0	1	1
0	3.7		**34.5**	0	1		0	0	1	2
0	-7.6		**58.1**	0	1		0	**1**	1	3
0	-8.5		**24.9**	0	1		0	**1**	1	3
0	-4.3		3.8	0	0		0	**1**	0	1
0	8.7		10.1	0	0		0	**1**	0	1
0	-5.0		**26.3**	0	1		0	**1**	0	2
0	-4.8		**32.9**	0	1		0	**1**	0	2
0	2.6		**22.5**	0	1		0	**1**	0	2
0	-1.7		7.8		0		0	**1**	0	1
0	-3.2		7.80		0		0	**1**	0	

Banking Crisis

Annual infl above 20%

Default Rescheduling on Foreign Debt

Source: Reinhart&Rogoff Varieties of Crises 1800-2010.xls

…and Kenya was in stock market crisis 13 out of 19 years.

Kenya (1963)										
Gold standard	Currency crises	Currency debasement	Inflation crises	Currency crises	Inflation crises	Stock mkt crash	Debt Crises Domestic	External	Banking crises	Tally
1	2	3	4	5	6	7	8	9	10	11
0	2.9		13.0	0	0	0	0	0	**1**	1
0	12.6		4.8	0	0	0	0	0	**1**	1
0	**16.1**		7.6	1	0	0	0	0	**1**	2
0	11.5		11.2	0	0	**1**	0	0	0	1
0	**16.6**		19.1	1	0	**1**	0	0	0	2
0	**29.0**		27.3	1	1	**1**	0	0	**1**	4
0	**88.2**		46.0	1	1	0	0	0	**1**	3
0	-34.2		28.8	0	1	0	0	**1**	**1**	3
0	24.8		1.6	0	0	**1**	0	**1**	**1**	3
0	-1.6		8.9	0	0	**1**	0	**1**	0	2
0	13.9		11.9	0	0	**1**	0	**1**	0	2
0	-1.2		6.7	0	0	**1**	0	**1**	0	2
0	**17.8**		5.8	1	0	**1**	0	**1**	0	3
0	7.0		10.0	0	0	**1**	0	**1**	0	2
0	0.7		5.8	0	0	**1**	0	**1**	0	2
0	-1.9		2.0	0	0	**1**	0	**1**	0	2
0	-1.2		9.8	0	0	0	0	**1**	0	1
0	1.6		11.6	0	0	0	0	0	0	0
0	-6.4		10.3	0	0	0	0	0	0	0
0	-4.1		14.5	0	0	0	0	0	0	0
0	-9.7		9.8	0	0	**1**	0	0	0	1
0	24.0		13.1	1	0	**1**	0	0	0	2
0	-2.4		11.8	0	0		0	0	0	0
0	-3.90		8.0	0	0		0	0	0	0

…and Mexico was in some sort of crisis almost every year until 2001.

Mexico (1821)										
Gold standard	Currency crises	Currency debasement	Inflation crises	Currency crises	Inflation crises	Stock mkt crashes	Debt Crises Domestic	External	Banking crises	Tally
1	2	3	4	5	6	7	8	9	10	11
0	**139.3**		**131.8**	1	1	0	0	**1**	0	3
0	3.2		**114.2**	0	1	0	0	**1**	0	2
0	**15.8**		**20.0**	1	1	0	0	**1**	0	3
0	11.5		**26.7**	0	1	0	0	**1**	0	2
0	4.3		**22.7**	0	1	0	0	0	0	1
0	1.4		15.5	0	0	0	0	0	0	0
0	-0.3	**1000 to 1**	9.8	0	0	0	0	0	0	0
0	**71.4**		7.0	1	0	**1**	0	0	1	3
0	**43.5**		**35.0**	1	1	**1**	0	0	1	4
0	2.7		**34.4**	0	1	**1**	0	0	1	3
0	3.0		**20.6**	0	1	0	0	0	1	2
0	**22.0**		15.9	1	0	**1**	0	0	1	3
0	-3.6		16.6	0	0	0	0	0	1	1
0	0.6		9.5	0	0	**1**	0	0	1	2
0	-4.5		6.4	0	0	0	0	0	0	0
0	12.8		5.0	0	0	0	0	0	0	0
0	9.0		4.5	0	0	0	0	0	0	0
0	0.3		4.7	0	0	0	0	0	0	0
0	-4.3		4.0	0	0	0	0	0	0	0
0	1.0		3.6	0	0	0	0	0	0	0
0	-0.1		4.0	0	0	0	0	0	0	0
0	24.6		5.1	1	0	**1**	0	0	0	2
0	-3.5		5.3	0	0		0	0	0	0
0	-2.10		4.6	0	0		0	0	0	0

Note: The Asian Financial Crisis seems well identified by the currency crisis indicator. Yet currency crises are never significant in the paper.

	Korea (1945)										
	Gold standard	Currency crises	Currency debaseme	Inflation crises	Currency crises	Inflation crises	Stock mkt crash	Debt Crises Domestic	External	Banking crises	Tally
	1	2	3	4	5	6	7	8	9	10	11
	0	-8.0		3.1	0	0	0	0	0	1	1
	0	-13.7		7.1	0	0	0	0	0	1	1
	0	-0.7		5.7	0	0	**1**	0	0	0	1
	0	5.4		8.6	0	0	**1**	0	0	0	1
	0	6.2		9.3	0	0	**1**	0	0	0	1
	0	3.6		6.2	0	0	0	0	0	0	0
	0	2.5		4.8	0	0	0	0	0	0	0
	0	-2.4		6.3	0	0	0	0	0	0	0
	0	-1.8		4.5	0	0	**1**	0	0	0	1
	0	9.0		4.9	0	0	**1**	0	0	0	1
1997	0	**100.8**		4.4	1	0	**1**	0	0	1	3
	0	-29.0		7.5	0	0	0	0	0	1	1
	0	-5.5		0.8	0	0	0	0	0	1	1
	0	11.1		2.3	0	0	**1**	0	0	1	2
	0	3.9		4.1	0	0	0	0	0	1	1
	0	-9.7		2.7	0	0	0	0	0	1	1
	0	0.5		3.6	0	0	0	0	0	0	0
	0	-13.2		3.6	0	0	0	0	0	0	0
	0	-2.3		2.7	0	0	0	0	0	0	0
	0	-8.1		2.2	0	0	0	0	0	0	0
	0	0.7		2.5	0	0	0	0	0	0	0
	0	34.5		4.7	1	0	**1**	0	0	0	2
		-7.5		2.8	0	0		0	0	0	0
		-1.7		2.9	0	0		0	0	0	0

Bottom line: For many countries in the paper, most crises seem more like episodes of instability (which would naturally deter FDI). Are we really capturing the "fire sale" notion?

Conclusion

> A few things are not easy to interpret by those unacquainted with this literature.

> More importantly
- A referee will likely pick up the disconnect between some statements and the implementation.
- Previous literature (and simple "facts" readers might have in their mind) should be tackled more directly.
- Are the crises really crises, or just episodes of instability (which would deter FDI)?

> Topic is clearly important. I enjoyed (and learned a lot) reading the paper.