Political Stability and FDI in SADC: A Love-Hate Relationship

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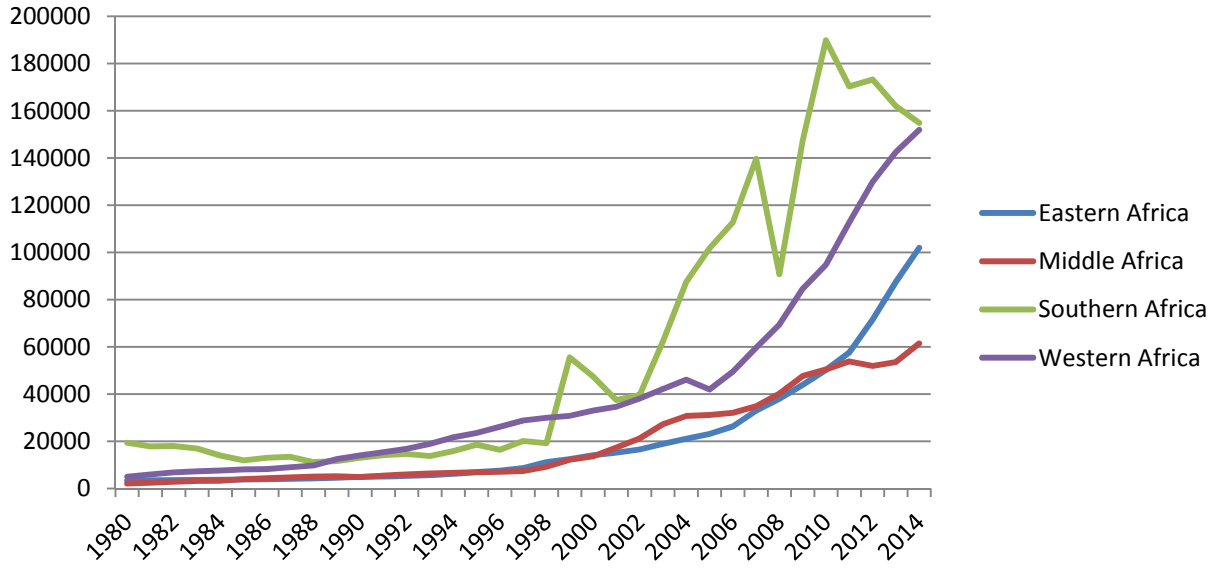
Outline

- Background
- Data and Methodology
- Empirical Results
- Discussion
- Policy Implications

FDI in Africa and the SADC

- Surge of FDI in Africa in past 20 years
  - Concentrated in the primary sector
  - Southern Africa has the largest share, esp. SAR
- Political stability is a major concern for investors



Empirical Framework

- Dependent variable
  - FDI inflows per capita (World Bank)
- Explanatory variables
  - World Governance Indicators:
    - Voice and Accountability
    - ***Political Stability and Lack of Violence***
    - Government Effectiveness
    - Regulatory Quality
    - Rule of Law
    - Control of Corruption
- Control variables
  - Natural resource rents
  - GDP growth ↔ Market size
  - Inflation ↔ Macroeconomic stability, Exchange rate volatility
  - Price level ↔ Labor costs
  - ODA ↔ Credibility, partnership

Mostly logs were used

Various standard control variables not included due to co-linearity

Econometric models

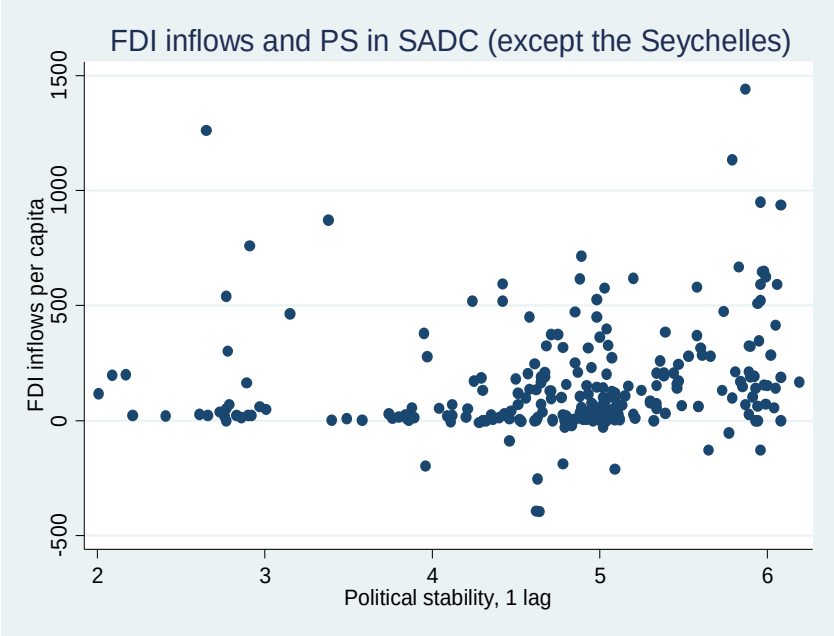
- Various specifications of the estimation models were tested: control variables were used in both their aggregate form (usually % of GDP) and in their per-capita form, whenever possible.
- Considering that FDI is less volatile than other kinds of investments, such as portfolio, and thereby decisions are taken considering both the status-quo and recent developments alike, both contemporaneous and one-year lagged WGIs were employed.
- In the regression discontinuity design model, only observations with PS > -1.0 were included.

Method	Model	Significance	Sign
OLS	$y = \alpha + \beta_1 X + \beta_{2\ldots n} Z + \varepsilon$	○	+
Fixed-effects (FE) GLS	$y_{it} = \alpha + \beta_1 X_{it} + \beta_{2\ldots n} Z_{it} + \lambda_{it} + \varepsilon_{it}$	◆	-/0
Quadratic OLS	$y = \alpha + \beta_1 X + \beta_2 X^2 + \beta_{3\ldots n} Z + \varepsilon$	○	
Quadratic FE GLS	$y = \alpha + \beta_1 X + \beta_2 X^2 + \beta_{3\ldots n} Z + \lambda_{it} + \varepsilon$	○	
2SLS IV OLS	$y = \alpha + \beta_1 PS + \beta_{2\ldots n} Z + \varepsilon$ $PS = \alpha + \beta_1 NR + \beta_{2\ldots n} Z + \varepsilon$	○	+
2SLS IV FE GLS	$y_{it} = \alpha + \beta_1 X_{it} + \beta_{2\ldots n} Z_{it} + \lambda_{it} + \varepsilon_{it}$ $PS_{it} = \alpha + \beta_1 NR_{it} + \beta_{2\ldots n} Z_{it} + \lambda_{it} + \varepsilon_{it}$	◆	-/+
3SLS IV	$y = \alpha + \beta_1 PS + \beta_2 NR + \varepsilon$ $PS = \alpha + \beta_1 NR + \beta_2 GDPpc + \varepsilon$	○	+
GMM (Arellano-Bond)	$y_{it} = \alpha_{it} + \beta_1 L_k.y_{it} + \beta_2 PS_{it} + \beta_3 L_k.PS_{it} + \beta_{4\ldots n} Z_{it} + \varepsilon_{it}$	○	+
Quadratic GMM (A.-Bond)	$y_{it} = \alpha_{it} + \beta_1 L_k.y_{it} + \beta_2 PS_{it} + \beta_2 PS_{it}^2 + \beta_3 L_k.PS_{it} + \beta_3 L_k.PS_{it}^2 + \beta_{4\ldots n} Z_{it} + \varepsilon_{it}$	○	

Linear results: seeming discrepancies

Weighted Least Squares	
VARIABLES	FDI
Price level	-1.588**
	(0.709)
GDP growth per cap	-0.000106
	(0.0114)
Inflation rate	0.000388**
	(0.000169)
ln ODA per capita	0.346***
	(0.126)
ln Nat. res. per capita	0.0485
	(0.0568)
Lag1Political Stability	0.0780***
	(0.0263)
Constant	5.044***
	(0.310)
Observations	237
R-squared	0.191

Fixed Effects GLS	
VARIABLES	FDI
Price level	-1.942***
	(0.405)
GDP growth per cap	0.0207**
	(0.00831)
Inflation rate	0.000545***
	(0.000201)
ln ODA per capita	0.168***
	(0.0564)
ln Nat. res. per capita	0.189***
	(0.0610)
Lag1Political Stability	-0.367***
	(0.118)
Constant	7.226***
	(0.527)
Observations	237
R-squared	0.274
Number of country	14



Quadratic equations

- Solving the model yields the following estimation:

$$\text{FDI inflows per capita} = 7.976 - 0.989 \times PS + 0.125 \times PS^2 + x + e$$

- Differentiating with respect to PS yields:

$$(\text{FDI inflows per capita})' = -0.989 + 2 \times 0.125 \times PS$$

- The FOC suggests that for a PS value larger than 3.956 in its converted non-negative form, which corresponds to -1.044 in its original WB form (3.956 – 5), there is a positive linear relationship.
- For values smaller than -1.044, the FDI-PS relationship is negative.
- Observations with a value below this cutoff are essentially restricted to the DRC in the entire period, Angola until 2002, and Zimbabwe between 1999 and 2010.

Endogeneity Issues: 2SLS IV

IV OLS REG for all observations,
Instrument: nat. resources as % of GDP

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1) FDI inflows per capita	(2) FDI inflows per capita	(3) FDI inflows per capita	(4) FDI inflows per capita	(5) FDI inflows per capita
psnew	0.239**	0.230*	0.251*	0.231*	0.228**
	(0.119)	(0.119)	(0.130)	(0.119)	(0.113)
lnodapc		0.126**	0.124**	0.171***	0.172***
		(0.0515)	(0.0522)	(0.0472)	(0.0470)
inflation			0.000166	0.000160	0.000158
			(0.000121)	(0.000114)	(0.000110)
pricelev				-1.337***	-1.317***
				(0.327)	(0.307)
gdpgrwthpercap					-0.00202
					(0.00950)
Constant	5.088***	4.670***	4.568***	5.047***	5.054***
	(0.574)	(0.509)	(0.555)	(0.468)	(0.450)
Observations	252	251	251	251	251
R-squared				0.084	0.086

FE IV, significant results only,
IV: nat. res. per capita (not log)

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

	all observations	PS>-1.0 only
VARIABLES	FDI inflows per capita	FDI inflows per capita
psnew	-0.446***	
	(0.165)	
psnew		1.341**
		(0.655)
Constant	8.374***	-1.032
	(0.792)	(3.598)
Observations	252	113
Number of country	14	11

Robustness checks: GMM and 3SLS

Arellano-Bong system GMM for PS>-1.0 observations

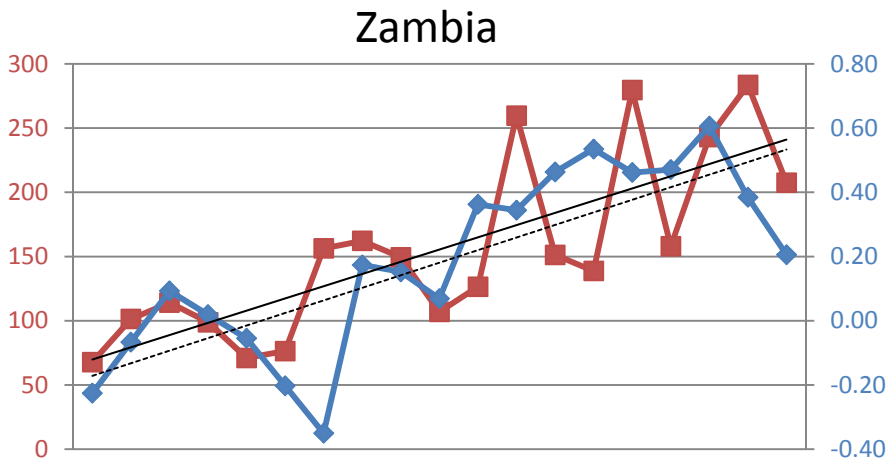
VARIABLES	(1) 0 lags lnFDI	(2) 1 lag lnFDI	(3) 2 lags lnFDI	(4) 3 lags lnFDI
L.lnFDI	0.218	0.150		
	(0.213)	(0.189)		
L2.lnFDI			0.0159	
			(0.196)	
L3.lnFDI				-0.0380
				(0.183)
psnew	0.209	0.0852	0.520***	0.285**
	(0.167)	(0.159)	(0.170)	(0.135)
natrescpc	0.000286*	0.000320**	0.000326***	0.000369**
	(0.000145)	(0.000136)	(0.000118)	(0.000142)
Constant	3.762***	4.865***	3.344***	4.966***
	(1.181)	(1.285)	(1.093)	(1.225)
Observations	108	108	104	98
Number of country	11	11	11	11

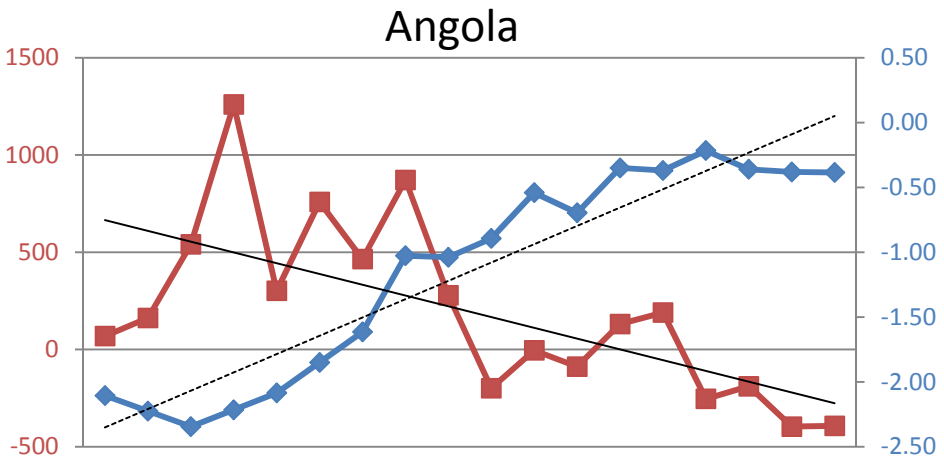
3SLS

VARIABLES	(1) lnfdipcpositive400	(2) psnewlag1
psnewlag1	0.351***	
	(0.0760)	
natrescpc	-0.000113*	-0.000340***
	(6.19e-05)	(7.26e-05)
gdpppppc		0.000117***
		(1.08e-05)
Constant	4.596***	4.359***
	(0.373)	(0.0713)
Observations	238	238
R-squared	-0.163	0.350

Discussion

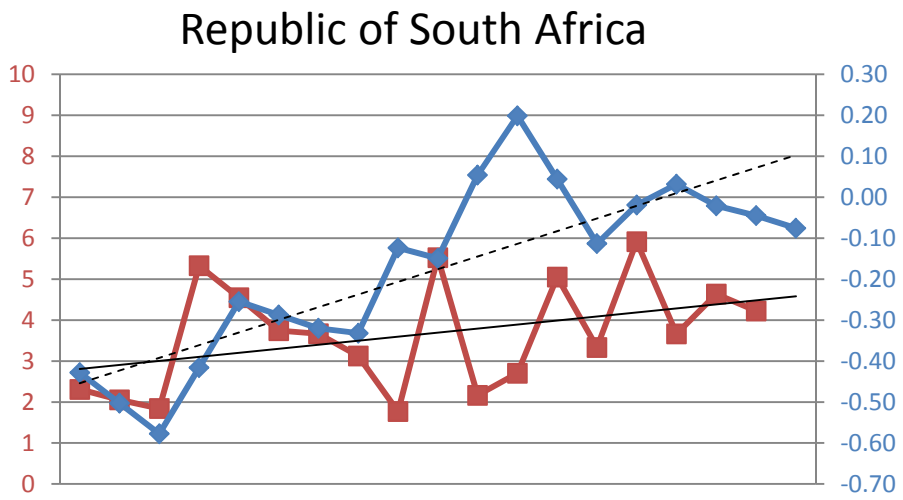
- Political Stability is an important factor for attracting FDI
  - Convincing results for 2 and 3 period lag GMM and FE models: causal effects exist.
- However, only after a cutoff point of about -1.0
  - There is a U-curve
  - Angola, DRC and Zimbabwe (in some periods) are below that cutoff
- Natural resources related to PS, but not directly to FDI in most cases
  - Except in natural resource-dependent countries: DRC (40% dependency), Angola (35%, highest per-capita)
- Compare Zambia and Angola: Zambia is consistently above the cutoff, Angola is below. Red= FDI, Blue =PS

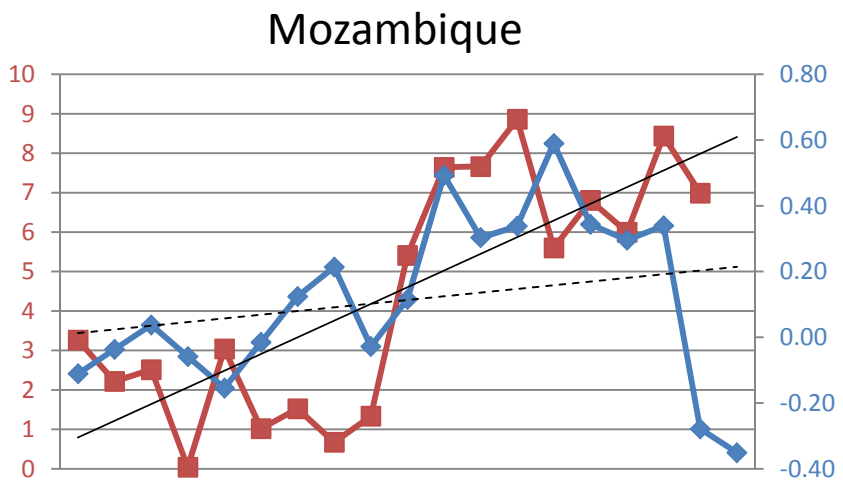




Policy implications

- Since a Political Stability index of under -1.0 essentially translates into the presence of a conflict, avoiding conflict is critical for attracting FDI in SADC.





Thank you!

References

- SADC map retrieved from: <http://ec.europa.eu/eurostat/documents/46346/48072/sadc.png/88a08eb4-e937-47fc-97d1-f9730beb3ecd?t=1401890217425>
- Data sourced from the World Bank and the UNCTAD, 2015