Impact of Foreign Direct Investment on Environmental Sustainability: Evidence from South Africa

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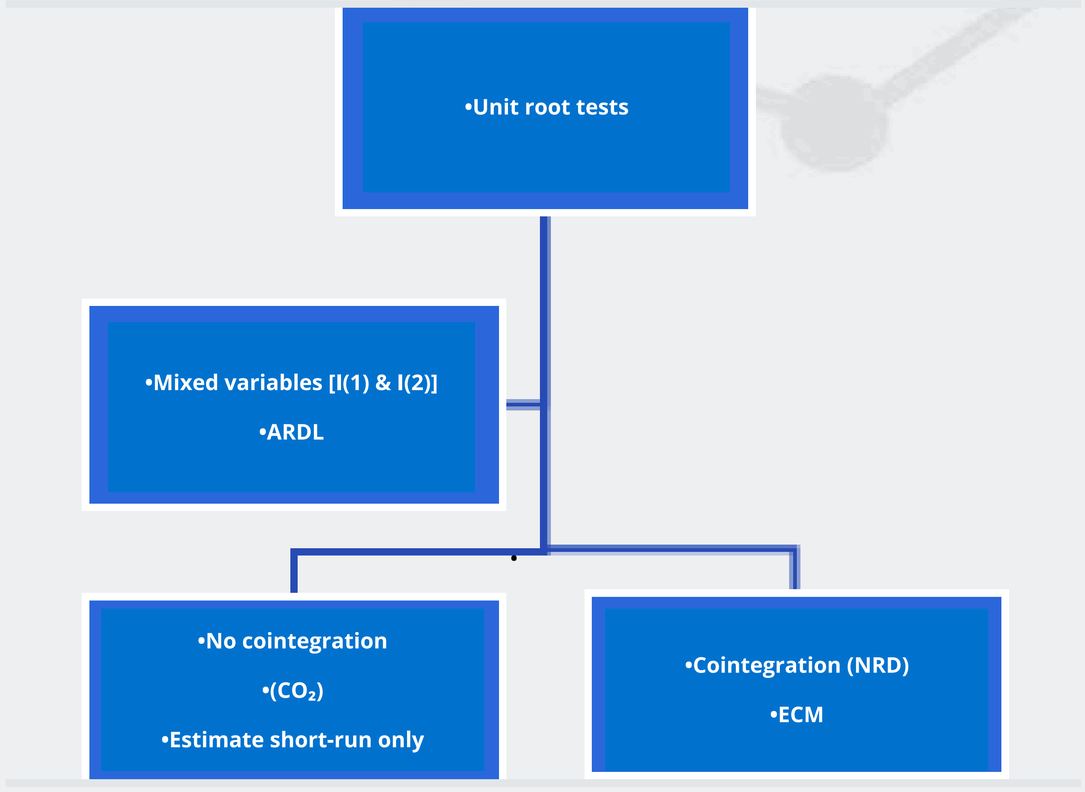
Introduction

- Undeniable importance of FDI as a source of capital for promoting economic growth in developing economies
- Owing to its natural resources, Africa occupies an increasingly central position in the global political economy
- SA – natural resource-rich country contributing to its economic growth and sustainable development
- Poverty & inequality are high with poor segment of the population highly dependent on natural resources for their livelihood
- Increasing concerns about FDI's negative effects on the environment and resource exploitation on host economies – a policy dilemma
- South Africa is the highest carbon dioxide (CO_2) emitter in Africa

Methods

- Employs ARDL model to analyze time series data spanning 1971-2016 from World Bank
- CO2 emissions and natural resource depletion (NRD) as proxies for environmental sustainability
- The tests done confirmed appropriateness of ARDL



Results

Table 1: Long & short-run coefficients for ARDL (NRD)

Variable	Long-run		Short-run	
	Coef.	P>|t|	Coef.	P>|t|
FDI	0.845484	0.079*	0.412	0.003***
GDP	0.339421	0.704	-0.773	0.001***
INV	0.281982	0.031**	0.293	0.000***
MANF	-0.56236	0.427	0.253	0.002***
POP	4.448456	0.202	23.588	0.034**
URB	-2.1212	0.337	9.626	0.002***
ECM_{t-1}	N/A	N/A	-0.649	0.001***

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Table 2: Short-run coefficients for ARDL (CO_2))

Variable	Short-run	
	Coef.	P>|t|
FDI	-0.585	0.000***
GDP	0.932	0.010*
MANF	-0.379	0.004***
POP	5.234	0.087*
URB	-4.229	0.021**

Discussion

- With NRD as the dependent variable, FDI was found to have a negative impact on the environment both in the short and long run – exploitation of the country`s natural resources (FDI & domestic investments are channelled towards sectors that lead to depletion of the country`s natural resources)
- Manufacturing and urbanization positively affected NRD
- FDI was found to be promoting environmental sustainability when CO_2 was used as the dependent variable – validating the "pollution halo" effect
- GDP & POP positively increased CO_2 emissions while manufacturing and urbanization negatively impacted on CO_2

Conclusion

- FDI is key for promoting economic growth in South Africa however the trade-offs between growth and degradation has to be carefully managed
- Importance of proper channelling of FDI to sectors which are not detrimental to the environment
- Channel FDI in areas where it has a role to play (+ve) – CO_2 emissions

Table 3: Long & short-run coefficients for ARDL (NRD)

	NRD MODEL		CO_2 MODEL	
Test	Statistic	Decision	Statistic	Decision
Breusch–Godfrey Serial Correlation	0.1389	Accept H_0 of no serial correlation	0.2979	Accept H_0 of no serial correlation
Durbin–Watson	2.1066	Accept H_0 of no serial correlation	2.1193	Accept H_0 of no serial correlation
White Heteroskedasticity	0.4625	Accept H_0 of homoskedasticity (no heteroskedasticity)	0.4265	Accept H_0 of homoskedasticity (no heteroskedasticity)
Jarque–Bera test	5.567*	Accept H_0 of normality (at 5% sig. level)	1.029	Accept H_0 of normality

The environment is "bleeding", we need to take action now otherwise we would have failed the future generation!