

Title: Analysis of the impact of crude oil price fluctuations on the trade balance of African countries

Name: FRANCIS AIDOO



INTRODUCTION AND MOTIVATION

- Oil is vital for every economy, so its price volatility affects numerous macroeconomic variables.
- Many researchers and decision-makers have shown interest in the macroeconomic impacts of oil price shocks, focusing on the responses of inflation, economic growth, unemployment, and stock market issues.
- However, research has shown that trade balance is the primary channel through which economic shocks affect various economies.
- Surprisingly, little research has been done on the relationship between trade balance and oil prices, especially in Africa, and the few done are mostly country-specific
- Moreover, conclusions on various research done on advanced economies may not hold for African countries due to specific characteristics such as:
 - Low level of integration in the global financial market.
 - Primary commodities exported by African oil importers tend to correlate positively with oil prices.
 - African oil exporters imports refined petroleum products because of the deplorable condition of oil refineries.

In the face of global competition, maintaining economic stability has become essential for policymakers in African countries; therefore, analysing the impact of crude oil price fluctuations on the trade balance is needed, and this research seeks to fill this gap.

This research also contributes to the methodology by addressing the empirical problem of cross-section dependence(CSD). Most past research ignores the possibility of CSD, which might make their results inconsistent.

This research, however, adopts an econometric model technique that considers dynamics, heterogeneity and cross-sectional dependence in the panel estimation.

- Does the source of shocks affect its impact on the trade balance?

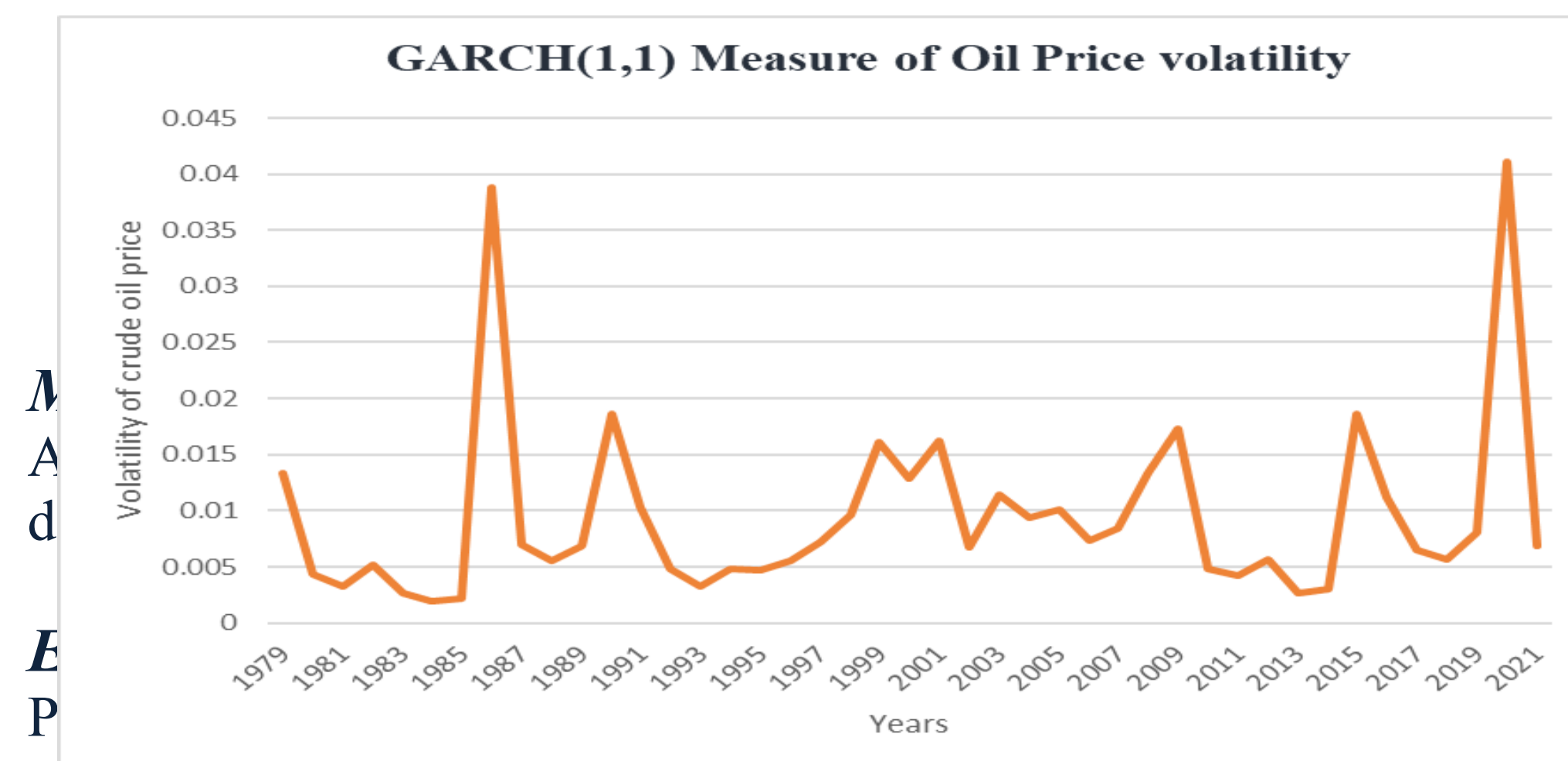
METHODOLOGY

A symmetric and asymmetric model were used to analyse the impact of crude oil price fluctuations without persistence on the trade balance of African countries.

Measuring oil price volatility

The GARCH(1,1) modelling technique measures oil price volatility by considering the fluctuations' persistence.

AR(1) model was used as the mean equation.



- Consistent and efficient because traditional panel estimation is inconsistent with large T

However, it does not consider cross-sectional dependence, so that the



Summary of the Methodology

	African Countries		Exporting countries		Importing countries	
	PMG	CCEMG	PMG	CCEMG	PMG	CCEMG
Oil price	2.7*	15.0*	1.9*	3.1*	2.9*	0.2*
OP +	0.3*	0.6	0.2*	-0.7	0.1*	0.05
OP -	0.3*	-0.7	0.7*	1.5	0.1*	-0.01
OPV	-4.5	-62.5*	-25.1*	-24.8	3.1	-57.5*
S shock	0.2*	3.1	0.4*	-0.02	0.2*	0.07*
D shock	-0.1*	-0.3	-0.18*	0.1	-0.2*	-0.08*
M shock	-0.2*	1.3**	-0.2*	2.1**	-0.1*	0.02

Major Findings

- Oil price changes improve the trade balance
- Negative shocks have more impact than positive shocks
- Oil price volatility hurts the trade balance
- Demand, supply and oil-specific shocks have impacts on the trade balance

CONCLUSIONS

Policymakers shouldn't worry about oil price changes because the non-oil trade balance is enough to counteract the negative impacts of oil price changes. Therefore, invest more in the non-oil export sector. However, high oil price volatility hurts the trade balance. Therefore, techniques like

- Prioritise strategies to reduce oil dependence, like investing in oil substitutes.
- Fiscal adjustment to reduce high dependence on oil export revenue, such as improving the tax system.
- Implement price smoothing measures and hedges against