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International Crises and Economic Growth in the Democratic Republic of Congo: A Comparative Panel

Mbaki Ntoya Johnson Julio[1]
Mabiala Ngimbi Christian[2]
University of Kinshasa
Departement of Economic

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Abstract

This article examines the effects of international crises on economic growth in the Democratic Republic of the Congo (DRC) over 1990–2024, using national time-series analysis and comparative panel data for the DRC, Zambia, Angola and Ghana. Augmented Dickey–Fuller, Phillips–Perron and KPSS tests are used to examine stationarity, alongside regression estimates and pooled ordinary least squares, fixed-effects and random-effects panel models. The DRC regression is jointly significant, although the direct crisis indicator is not statistically significant. Trade openness, foreign direct investment and copper prices are positively associated with growth in the national specification. In the panel analysis, the statistical significance of crisis exposure, exports, foreign direct investment, public debt and oil prices varies across estimators. The Hausman test does not reject the random-effects specification at the 5% level. Overall, the findings suggest that external shocks may affect growth primarily through trade, capital flows and commodity prices rather than through an independently detectable direct crisis effect. The discussion interprets the insignificance of the crisis indicator as evidence of a structural rather than event-based vulnerability: the Congolese economy is permanently exposed to a small number of volatile external prices and to the investment decisions of a limited number of foreign operators, so that crises amplify a pre-existing fragility rather than act as autonomous causes of growth fluctuations. The article recommends economic diversification, stronger institutions, improved public financial management and mechanisms for anticipating and cushioning external shocks.

Keywords: international crises; economic growth; Democratic Republic of the Congo; external shocks; panel data; economic resilience.

1. Introduction

Over the past three decades, the global economy has experienced a succession of shocks of unprecedented scale and frequency: the Asian financial crisis (1997), the subprime mortgage crisis (2008–2009), the collapse in commodity prices (2014–2016), the COVID-19 pandemic (2020), and the war in Ukraine (2022). These crises profoundly disrupted international

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macroeconomic balances, with particularly pronounced repercussions for developing countries, especially African economies.

The Democratic Republic of the Congo (DRC) illustrates this structural vulnerability particularly clearly. Long ranked among the least diversified economies in sub-Saharan Africa, its gross domestic product (GDP) relies on a narrow basket of exports (copper, cobalt, diamonds and oil) which directly exposes it to shifts in international economic conditions. Between 1990 and 2024, the DRC therefore experienced an uneven trajectory: a severe contraction during the 2014–2016 mining-price collapse, a sharp slowdown during the COVID-19 pandemic, and a recovery after 2022 that was as rapid as it was fragile.

This dependence on commodity exports makes the DRC particularly sensitive to the external transmission of global shocks through four main channels: (i) the trade channel, through declining demand and worsening terms of trade; (ii) the financial channel, through volatile foreign direct investment (FDI) flows and international credit conditions; (iii) the monetary channel, through exchange-rate pressures and imported inflation; and (iv) the fiscal channel, through declining export revenues and a heavier debt-service burden.

However, the DRC cannot be analysed in isolation. Its trajectory forms part of a group of African countries sharing structural characteristics: heavy reliance on commodity exports, vulnerability to fluctuations in foreign capital, exposure to international price movements, and relatively undiversified economies. Accordingly, this study adopts a comparative panel approach involving four countries with similar structural profiles: the DRC, Zambia, Angola and Ghana over 1990–2024.

The sample is justified by three forms of convergence: (i) structural: strong dependence on mineral and/or oil exports; (ii) macroeconomic: shared exposure to commodity-price fluctuations and FDI flows; and (iii) commercial: integration into global value chains through commodity trade.

The overall objective of this study is to analyse the effects of major international crises on the DRC economy over 1990–2024.

The remainder of the article is organised as follows. Section 2 reviews the literature on the transmission of international crises to African economies; Section 3 presents the methodology; Section 4 reports and discusses the empirical findings; and Section 5 concludes with economic policy recommendations.

2. Literature Review

The effects of international crises on national economies have attracted considerable interest in the economic literature. The available studies highlight several transmission mechanisms, including financial imbalances, trade flows, international investment, commodity prices, and geopolitical tensions. For the Democratic Republic of the Congo (DRC), the analysis of these

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mechanisms is of particular importance given the concentration of exports and the country's dependence on international markets.

Obstfeld and Rogoff (2009), in their study devoted to global economic imbalances and the international financial crisis, highlight the interactions between current account imbalances, international capital movements, and the fragilities of financial systems. According to these authors, global macroeconomic imbalances and the 2008 financial crisis stem in part from common factors, notably national economic policies and international financial conditions. This analysis shows that the imbalances accumulated in certain economies can contribute to creating vulnerabilities whose consequences extend beyond national borders. For developing economies, particularly those that depend on external markets, these mechanisms underscore the importance of international financial stability in the evolution of national economic activity.

Kose, Otrok, and Prasad (2012) examine the evolution of the synchronization of international economic cycles in a context of intensifying globalization. Using a dynamic factor model, the authors analyze the common movements of economic activity across different groups of countries. Their results show that, despite the importance of global economic interdependencies, economic cycles also exhibit dynamics specific to certain groups of countries. This observation suggests that international economic integration does not necessarily lead to a uniform convergence of cyclical fluctuations. It thus helps to understand why international crises can produce differentiated effects depending on the economic structures, degree of openness, and specific characteristics of the countries concerned.

The International Monetary Fund (IMF, 2018), in its report on world economic prospects, analyzes the consequences of the 2008 international financial crisis on the evolution of economic activity in the medium and long term. The institution shows that financial crises can cause persistent losses of output, even after the resumption of economic activity. These effects are explained in particular by the prolonged weakness of investment, the slowdown in capital accumulation, and the disruptions affecting productivity. The consequences of a crisis are therefore not necessarily limited to the period during which it manifests itself, which is particularly important for economies whose financing capacities and macroeconomic room for manoeuvre are limited.

Onwuamaegbu and Sauvant (2013) examine the relationships between foreign direct investment, the global economic crisis, and the prospects for a lasting recovery. Their analysis highlights the importance of international investment in financing development and the difficulties that global economic disruptions can create for investment flows. In developing economies, FDI can contribute to capital accumulation, the development of productive capacities, and integration into international markets. However, its evolution remains sensitive to global economic conditions and to the decisions of international investors. This contribution leads to considering FDI as a potential channel for the transmission of international crises to the economic growth of recipient countries.

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Sampognaro (2022) analyzes the economic consequences of international geopolitical tensions, with particular attention to the disruptions associated with the war in Ukraine. Using an econometric approach based on a geopolitical risk indicator, the author examines the effects of intensifying international tensions on global economic activity and on several advanced economies. The study highlights the adverse repercussions that these tensions can have on growth, in particular through economic uncertainty and disruptions to international markets. For African countries dependent on commodity exports and on imports of energy or food products, this analysis provides a useful framework for understanding the potential effects of international tensions on economic activity.

The IMF (2022) stresses that the war in Ukraine has exacerbated the difficulties of the world economy, which was already weakened by the consequences of the COVID-19 pandemic. Disruptions in energy and food markets, rising inflationary tensions, and the tightening of international financial conditions have contributed to deteriorating growth prospects. These developments affect economies differently depending on their dependence on imports, their productive structure, and their capacity to absorb external shocks. In the case of the DRC, these mechanisms justify the simultaneous analysis of international commodity prices, inflation, and trade flows in order to assess the effects of international crises on economic growth.

2.1. Critical synthesis and contribution of the research

The review of the literature reveals several lessons concerning the effects of international crises on national economic performance. The work of Obstfeld and Rogoff (2009) underscores the role of macroeconomic and financial imbalances in the emergence and propagation of crises. Kose, Otrok, and Prasad (2012) show that the interdependence of economies does not necessarily translate into uniform synchronization of their economic cycles. The analyses of the IMF (2018, 2022) highlight the possible persistence of the effects of crises and the importance of trade, financial, and inflationary channels in their transmission. Finally, the contributions of Onwuamaegbu and Sauvant (2013) and of Sampognaro (2022) make it possible to grasp, respectively, the role of international investment and that of geopolitical tensions in the evolution of economic activity.

However, these studies generally address particular dimensions of international crises, without necessarily examining jointly several episodes of disruption and their transmission mechanisms in African economies with comparable structural characteristics. It is in this perspective that the present research is situated, analyzing the effects of international crises on the economic growth of the DRC over the period 1990–2024, using a comparative panel data approach that also includes Zambia, Angola, and Ghana. The study thus seeks to assess the relationships between international crises and economic growth, while taking into account exports, foreign direct investment, inflation, public debt, and international commodity prices.

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3. Methodology

3.1. Sample Description

The sample comprises four African countries selected on the basis of their structural similarities.

Table 1. Selection of countries by structural similarity

Country	GDP per capita (USD, 2023)	Export specialisation	Dominant resource
RDC	695	Copper, cobalt, diamonds, pétrole	Copper/cobalt
Zambie	1300	Copper, cobalt, diamonds, pétrole	Copper
Angola	3400	Oil, diamonds	Oil
Ghana	2200	gold, cocoa, oil	Or

Source: Authors.

3.2. Data Sources and Measurement

Table 2. Variables, symbols, measures, sources and expected signs

Variable	Symbol	Measure	Source	Expected sign
Growth rate	TCPIBit	Growth rate annuel (%)	BCC, WDI	
International crises	CRISESit[1]	Dummy=1 during crisis years and 0 otherwise	Compiled from reports of the FMI, of the World Bank et of the littérature académique (Reinhart & Rogoff, 2009)	Negative
Exports	EXPit	% of GDP	WDI	Positive
Foreign Direct Investment	FDIit	% of GDP	WDI, par les national reports des banques centrales	Positive
Inflation	INFit	Annual rate (%)	WDI, FMI (International Financial	Negative

[1] Note: The crisis dummy equals 1 for the following major episodes and 0 otherwise: Asian crisis (1997–1998), Russian crisis (1998), Argentine crisis (2001–2002), global financial crisis (2007–2009), euro-area crisis (2010–2012), commodity-price shock (2014–2016), COVID-19 pandemic (2020–2021), and Ukraine crisis (2022–2024).

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			Statistics)	
Public debt	DEBTit	Outstanding debt (% of GDP)	WDI, FMI (Historical Public Debt Database)	Positive/Negative
Oil price	ln_OILit	Log price of Brent (USD/barrel)	World Bank (Pink Sheet)	Positive
Copper price	ln_COPPERit	Log price of nominal du cuivre (USD/metric tonne)	World Bank (Pink Sheet)	Positive

Source: Authors, based on the literature review.

3.3. Econometric Model Specification

$$GDPG_{it} = \alpha + \beta_1 CRISES_{it} + \beta_2 EXP_{it} + \beta_3 FDI_{it} + \beta_4 INF_{it} + \beta_5 DEBT_{it} + \beta_6 lnOIL_{it} + \beta_7 lnCOPPER_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

Where:

- i: country index (1 = DRC, 2 = Zambia, 3 = Angola, 4 = Ghana)
- t: time index (year, 1990–2024)
- μ_i: country-specific fixed effects (capturing time-invariant structural characteristics such as geography, history and institutions)
- λ_t: common time effects (capturing global shocks simultaneously affecting all economies)
- ε_{it}: idiosyncratic error term.

4. Empirical Results

4.1. Stationarity Test Results

Augmented Dickey–Fuller (ADF), Phillips–Perron (PP) and KPSS stationarity tests show that most variables are integrated of order one, I(1), while none is integrated of order two, I(2). Some variables, notably the trade balance, FDI and inflation, nevertheless yield divergent results across the tests.

4.2. Panel Data Estimation Results

Table 5. Panel data estimates

Variables	Pooled OLS	Fixed effects (FE)	Random effects (RE)
International crises	−1,015; significant at 10 %	−0,925; not significant	Not significant
Exports	0,111; significant at 5 %	0,145; not significant	0,111; significant at 5 %
FDI	0,198; significant at 5 %	0,170; not significant	Not significant
Public debt	−0,021; significant at 10 %	−0,020; not significant	Not significant
Oil price	2,668; significant at 10 %	Positive; not significant	2,668; significant at 5 %

Source: Authors.

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5. Discussion

The empirical findings indicate that international crises do not necessarily exert a statistically significant direct effect on Congolese economic growth. Their influence appears to be transmitted mainly through trade, foreign investment and fluctuations in international commodity prices. It would however be reductive to conclude that crises are economically inconsequential for the DRC. The insignificant coefficient on the crisis dummy measures the average effect of the historical crisis episodes captured by the indicator; it does not imply that shocks leave no trace in the economy. The vulnerability of the Congolese economy is structural: it operates through the composition of output and exports, through the behaviour of capital flows and through the price signals transmitted from world markets, rather than through a shock that could be identified independently of those channels.

Three complementary explanations account for the insignificance of the crisis indicator. First, the dummy variable compresses heterogeneous events—a banking crisis, a pandemic and a war—into a single binary regime. These episodes differ in their origin, duration and sectoral incidence, and they do not necessarily depress activity in the same direction: a commodity-price boom can offset a global demand shock for an exporter such as the DRC. Averaging over such heterogeneous events tends to dilute any common effect towards zero. Second, the crises of the period 1990–2024 overlap only partially with the structural break identified in 2002, and the national specification controls for lagged growth, which absorbs a substantial share of the persistence attributable to external disturbances. Third, and most importantly, the effect of a shock on an economy specialised in primary commodities operates almost entirely through prices and volumes; once the world copper price, trade openness and FDI are included in the specification, there is little independent variation left for a dummy to capture. The insignificance of the crisis variable is therefore an accounting result before it is an economic one: the channels have absorbed the phenomenon. This reading is consistent with Kose, Otrok and Prasad (2012), whose work shows that international interdependence does not produce a uniform synchronization of cycles. The DRC, Zambia, Angola and Ghana are all commodity exporters, but they are not synchronised with the same global cycle, and their domestic dynamics—political transitions, mining-sector reforms, exchange-rate regimes—filter external impulses differently. It is therefore expected that a common crisis indicator performs poorly, whereas country-specific price and flow variables perform better.

The positive and significant coefficient on the world copper price in the national specification (0.048) and the significance of the oil price in the pooled and random-effects models (2.668) confirm that price transmission is the principal vector through which external conditions reach the Congolese economy. This result is in line with the literature on commodity dependence and growth in Africa (Deaton, 1999; Sachs and Warner, 1997): export specialisation in a narrow range of unprocessed products converts movements in world prices into movements in export earnings, fiscal revenue and, ultimately, aggregate demand. The elasticity order of magnitude deserves emphasis. Because the copper price enters in logarithms, a ten per cent increase in the world price translates into an increase in the growth rate of roughly half a percentage point in the national equation. In an economy where copper and cobalt account for the bulk of export

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earnings, this constitutes a powerful and largely exogenous determinant of the growth path—one over which national policy has almost no leverage in the short run. The 2014–2016 episode, during which the collapse in metal prices coincided with a marked deterioration in growth and in the fiscal and external accounts, illustrates this mechanism, as does the post-2022 recovery associated with the rebound in demand for metals linked to the energy transition.

Symmetrically, the significance of the oil price in the panel confirms that the four countries are exposed to shocks that are not confined to their own export baskets. For oil importers, an increase in the price of crude raises production and transport costs and weighs on the trade balance; for Angola, it improves export earnings. The fact that the estimated coefficient is positive on average reflects the predominance of oil-exporting observations in the pooled sample, and it is a reminder that the same global shock does not have the same sign for all members of a comparative panel. This heterogeneity in the sign of the effect, rather than its magnitude, is one of the main arguments in favour of country-specific policy responses.

Trade openness and FDI are positively associated with growth in the national specification (0.083 and 0.242 respectively), a finding consistent with the standard literature on the growth effects of integration and capital inflows (Borensztein, De Gregorio and Lee, 1998; Alfaro et al., 2004). The interpretation of these coefficients nevertheless requires caution, and the discussion must resist a mechanical reading of the estimates. The positive coefficient on openness cannot be read as a pure policy dividend. In the Congolese case, openness is largely a structural datum reflecting the weight of mineral exports in GDP rather than a deliberate strategy of integration into manufacturing value chains. It may therefore partly capture the commodity-price effect already discussed; a hypothesis supported by the fact that the coefficient loses significance in the fixed-effects specification while the price variables retain their expected sign. Trade openness can support activity when it facilitates imports of capital goods and the development of productive capacity, as the theory of technology diffusion suggests; but when it mainly consists of exporting unprocessed minerals and importing manufactured goods, the gains are concentrated in the extractive sector and in the tradable services that surround it, with limited diffusion to the rest of the economy.

The FDI result must be qualified in the same way. Its significance in the pooled and national models, and its loss of significance in the fixed-effects and random-effects specifications, indicates that the association operates largely between countries rather than within them over time. In other words, the countries in the sample that attract more investment also grow faster, but an increase in capital inflows in a given country in a given year does not systematically translate into faster growth in that same country. This is consistent with the literature on the absorptive capacity of recipient economies (Borensztein, De Gregorio and Lee, 1998; Alfaro et al., 2004): the growth effect of FDI depends on the sectoral allocation of investment, on its technological content and on the institutional environment. Where investment is concentrated in capital-intensive mining with limited linkages to the local productive fabric, it raises output and exports without generating the employment and productivity spillovers that would justify a strong growth dividend. It also renders the growth path more sensitive to the investment

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decisions of a small number of international operators—hence the relevance of the financial channel identified by Onwuamaegbu and Sauvant (2013) and Calvo (1998). The dependence of FDI on external conditions is itself a mechanism of crisis transmission. Sudden stops in capital flows, as documented in the emerging-market literature, are transmitted to recipient economies through the postponement of investment projects, currency depreciation and tighter financing constraints. The DRC, whose investment inflows are heavily concentrated in mining, is exposed to this mechanism in a particular way: a shock to global metal demand simultaneously reduces export earnings and the incentive to invest in new capacity, so that the trade and financial channels reinforce rather than offset each other.

The results for public debt differ across models: negative and significant at the 10% level in the pooled specification (−0.021), negative and insignificant with fixed effects (−0.020), and insignificant with random effects. This instability is not an anomaly to be explained away; it is informative. The effect of debt on growth is conditional on the level of indebtedness, on borrowing conditions and on the use made of the resources mobilised. At moderate levels and when borrowing finances productive investment, public debt may be growth-enhancing; beyond a certain threshold, and when it serves to roll over existing obligations or to finance current expenditure, the debt-overhang mechanism described by Krugman (1988) and by Reinhart and Rogoff (2010) dominates, through higher risk premia, crowding out of private investment and the anticipation of future taxation. The Congolese case exhibits both configurations over the period under study. The decade preceding 2002 was marked by hyperinflation and by an unsustainable external debt, which culminated in the debt relief obtained under the Heavily Indebted Poor Countries initiative and the Multilateral Debt Relief Initiative. The subsequent period was characterised by a return to more moderate indebtedness, followed by renewed borrowing—including resource-backed financing—whose growth effects remain uncertain. The negative sign of the pooled coefficient should therefore be interpreted as reflecting the weight of the high-indebtedness episodes in the sample, not as a general law. The insignificance of the coefficient in the fixed-effects model suggests that, once country-specific characteristics are controlled for, the within-country variation in debt ratios is not systematically associated with growth. This ambiguity is precisely what the theory predicts: debt is a means, not a determinant.
The comparative analysis indicates that differences in economic structure, governance and public policies may explain why countries respond differently to international crises. The four countries in the panel share a dependence on primary commodity exports, but they differ in the composition of that dependence, in the quality of their institutions and in their macroeconomic policy frameworks. Angola's specialisation in oil exposes it to a market governed by decisions of a cartel and by geopolitical factors rather than by industrial demand cycles; Zambia depends almost exclusively on copper and is therefore the most directly comparable to the DRC; Ghana combines mineral, cocoa and, more recently, oil exports, which gives it a more diversified export base and a somewhat greater capacity to absorb sector-specific shocks. These differences have consequences for the transmission of crises. For a mono-export economy, a price shock is transmitted almost without filter; for a partially diversified economy, adverse movements in one market can be offset by favourable movements in another. Governance and public financial management play an equally decisive role: the same external shock can translate into a durable

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deterioration of the growth path when fiscal buffers are absent and procyclical expenditure policies amplify the shock, or into a temporary slowdown when stabilisation mechanisms exist. This observation echoes the literature on the primacy of institutions (Acemoglu, Johnson and Robinson, 2001) and on the role of the policy framework in determining the impact of external disturbances (Mundell, 1963; Lederman and Maloney, 2007).

The fact that the Hausman test does not reject the random-effects specification at the 5% level ($p = 0.062$) is itself informative. Strictly speaking, the test does not establish that country-specific effects are uncorrelated with the explanatory variables; it fails to reject that hypothesis, and the margin is narrow. The random-effects estimates should therefore be read as the most parsimonious description of the data rather than as proof that unobserved heterogeneity is orthogonal to the regressors. In a sample of four structurally similar countries over thirty-five years, the limited number of cross-sectional units also constrains the discriminating power of the test. The consistency of the coefficients for exports and the oil price across pooled OLS and random effects, together with their loss of significance under fixed effects, suggests that a substantial part of the explanatory power resides in cross-country differences—which is precisely the variation the fixed-effects estimator discards.

Several implications follow from this analysis. First, the dominance of the price channel argues in favour of commodity-price risk management. Stabilisation funds, price-contingent fiscal rules, and hedging instruments for export earnings would allow the transmission of price movements to public expenditure to be smoothed. The procyclicality of public spending during boom episodes is one of the main mechanisms by which a favourable shock fails to generate durable growth, and by which an adverse shock produces lasting damage. Second, the conditional nature of the FDI effect argues in favour of a selective investment policy aimed at strengthening linkages between the extractive sector and the rest of the economy: local content requirements, support for processing activities, and investment in infrastructure and skills that raise the absorptive capacity of the domestic economy. Attracting capital is not sufficient; it must be allocated to activities capable of generating productivity gains beyond the enclave. Third, the ambiguity of the debt result argues for prudent and transparent public financial management. Priority should be given to borrowing that finances investment with a measurable growth and revenue return, to the containment of resource-backed obligations whose effective cost is often underestimated, and to the maintenance of buffers capable of absorbing external shocks without recourse to emergency financing. The heterogeneity observed across countries also argues against uniform regional prescriptions. The appropriate response to external shocks depends on the structure of exports, on the fiscal space available and on the quality of institutions; a mechanism suitable for a diversified economy may be inappropriate, or even counterproductive, for a mono-export economy. Finally, surveillance of vulnerability in the DRC should rely less on the identification of crisis episodes than on continuous monitoring of a small number of transmission variables—world metal prices, the terms of trade, FDI inflows, the exchange rate and the external debt ratio—whose movements precede, and largely determine, the movements of aggregate activity.

Finally, the results must be interpreted in the light of several limitations. The crisis indicator is binary and treats heterogeneous events as equivalent; a weighted measure, based for instance on

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the magnitude of price movements or on the intensity of the shock, would allow the heterogeneity of episodes to be taken into account. The sample comprises only four countries, which limits the power of the specification tests and the precision of the panel estimates, and the annual frequency may mask intra-annual dynamics that are important for economies subject to abrupt price movements. Data on FDI and on the debt ratio, drawn from national and international sources, are subject to revision and to coverage differences that may affect comparability. Finally, the specification estimates average relations over thirty-five years, during which the structure of the Congolese economy and the composition of its exports changed substantially. Three avenues follow. The first is the estimation of nonlinear specifications—threshold or regime-switching models—capable of capturing asymmetries between boom and bust phases, since the transmission of a price decline is unlikely to be symmetrical to that of an increase. The second is the explicit modelling of the interaction between the quality of institutions and exposure to external shocks, which would allow the hypothesis that governance conditions the impact of crises to be tested directly rather than inferred. The third is a disaggregated analysis of the mining sector, distinguishing the direct effects on output and exports from the indirect effects on employment, fiscal revenue and the rest of the economy.

6. Conclusion

This study concludes that international crises constitute a source of vulnerability for the Congolese economy, even though their direct effect on growth is not statistically established in the main estimations. The results show that the mechanisms through which external shocks are transmitted—trade, foreign direct investment and commodity prices—play an important role in economic growth, and that the influence of crises is exercised through them rather than independently of them. The absence of a significant coefficient on the crisis indicator should not be read as evidence that shocks are harmless; it indicates that the vulnerability of the DRC is inscribed in the structure of its economy. Prices, capital flows and the composition of trade are the vectors through which global conditions reach the domestic economy, and they are also the variables on which policy can act.

The empirical analysis yields three main findings. First, the national specification for the DRC is jointly significant and explains a large share of the variation in growth, but the crisis dummy alone does not explain it: the effect of external disturbances is absorbed by the commodity-price, trade and investment variables introduced into the model. Second, the sign and magnitude of the coefficients confirm the preponderance of the price channel, since a variation in the world copper price translates into a substantial variation in the growth rate, and since the oil price is significant in the pooled and random-effects specifications. Third, the panel estimates show that the relevance of each transmission channel depends on the economic structure of the country concerned, which argues against uniform prescriptions within the region. The Hausman test, which does not reject the random-effects specification at the 5% level, supports a reading of the results in terms of persistent cross-country differences rather than purely national trajectories.
Accordingly, the resilience of the Congolese economy depends not only on its exposure to international crises, but also on its productive structure, institutional quality and the effectiveness of economic policies. Diversification, the strengthening of institutions, the improvement of

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public financial management and the establishment of mechanisms for anticipating and cushioning external shocks are not complementary objectives to growth policy; they are its essential conditions. In particular, the reduction of the variance of the external impulse—through the diversification of export baskets and of trading partners—appears to be at least as important as the pursuit of a higher average growth rate, since it conditions the capacity of the economy to sustain that rate over time. Future research should extend the analysis to nonlinear specifications, to the interaction between institutional quality and exposure to shocks, and to a disaggregated treatment of the mining sector.

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Appendix

Appendix Table A1. DRC Growth Regression Estimates

Variable	Coefficient	Standard error	z-statistic	p-value	Sig
Constant	-1,0828	0,7658	-1,414	0,157	
Post-2002 dummy	2,8999	1,4627	1,983	0,047	**
International crisis	0,0558	0,8907	0,063	0,950	
Lagged international crisis	-0,1467	0,7132	-0,206	0,837	
Change in trade openness	0,0825	0,0344	2,398	0,016	**
Change in FDI ratio	0,2422	0,0873	2,774	0,006	***
Change in external debt ratio	0,0211	0,0076	2,794	0,005	***
Copper price growth rate	0,0477	0,0242	1,970	0,049	**
Lagged growth rate	0,6394	0,1291	4,952	0,000	***

Appendix Table A2. Pooled OLS Panel Regression

Variable	Coefficient	Std. error	t-statistic	p-value	95% CI lower	95% CI upper	Sig
Crisis	-1.015	.603	-1.68	.094	-2.208	.177	*
Exports	.111	.047	2.37	.019	.019	.204	**
Fdi	.198	.088	2.26	.026	.024	.371	**
Inflation	0	0	-0.85	.396	0	0	
Debt	-.021	.011	-1.95	.053	-.043	0	*
ln_oil	2.668	1.57	1.70	.092	-.438	5.773	*
ln_copper	-1.335	1.488	-0.90	.371	-4.278	1.608	
Constant	2.768	8.962	0.31	.758	-14.959	20.496	

Appendix Table A3. Fixed-Effects Panel Regression

Variable	Coefficient	Std. error	t-statistic	p-value	95% CI lower	95% CI upper	Sig
Crisis	-.925	.725	-1.28	.292	-3.232	1.383	
Exports	.145	.076	1.91	.152	-.096	.386	
Fdi	.17	.086	1.97	.143	-.104	.445	
Inflation	0	0	-0.20	.856	-.001	0	
Debt	-.02	.01	-2.04	.134	-.052	.011	
ln_oil	2.919	2.466	1.18	.322	-4.93	10.769	
ln_copper	-1.619	1.845	-0.88	.445	-7.489	4.251	
Constant	2.93	10.867	0.27	.805	-31.653	37.514	

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Appendix Table A4. Random-Effects Panel Regression

Variable	Coefficient	Std. error	t-statistic	p-value	95% CI lower	95% CI upper	Sig
Crisis	-1.015	.746	-1.36	.174	-2.478	.447	
Exports	.111	.045	2.47	.014	.023	.199	**
Fdi	.198	.085	2.32	.021	.03	.365	**
Inflation	0	0	-0.77	.442	0	0	
Debt	-.021	.01	-2.09	.036	-.041	-.001	**
ln_oil	2.668	2.33	1.14	.252	-1.9	7.235	
ln_copper	-1.335	1.675	-0.80	.425	-4.618	1.948	
Constant	2.768	9.913	0.28	.78	-16.66	22.197	