INTERNATIONAL MONETARY FUND

Fostering Export Diversification in Niger

Niger

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SIP/2023/010

***IMF Selected Issues Papers* are prepared by IMF staff as background documentation for periodic consultations with member countries.** It is based on the information available at the time it was completed on December 6, 2022. This paper is also published separately as IMF Country Report No 2023/029.

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SELECTED ISSUES PAPER

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Fostering Export Diversification in Niger
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ABSTRACT: This selected issue paper investigates the drivers of diversification and explores the potential for fostering diversification in Niger with a focus on horizontal policies. The empirical results from panel regressions indicate that reforms to enhance human capital and the quality of infrastructure, to promote digitalization, to remove barriers to trade and improve governance are likely to yield the largest gains in terms of diversification for Niger.

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SELECTED ISSUES PAPERS

Fostering Export Diversification in Niger

Niger

FOSTERING EXPORT DIVERSIFICATION IN NIGER[1]

A. Introduction

1. **Diversification in exports and in domestic production has been a long-standing issue in many developing economies.** Research has shown that diversification plays critical role in macroeconomic performance. Diversification, measured by variety of export goods or its quality, reduces macroeconomic volatility through enhancing resilience of the economy to shocks to a specific sector and/or trade partner. A series of shocks in recent years, including but not limited to the COVID-19 pandemic, Russian war in Ukraine, and climate-related shocks, have proven the criticality of fostering diversification (UNCTAD 2022).

2. **Diversification is associated with faster economic growth in low-income countries (LICs).** Increases in income per capita at an early stage of development are typically accompanied by a transformation in a country's production and export structure. This could include adoption of new products and acquisition of new trade partners, thereby enhancing the degree of diversification. Studies also find that greater diversification in both exports and output, as well as quality upgrading, could enhance growth in LICs (IMF 2014). If diversification occurs through the shift toward higher value products and increase in productivity, it would free-up resources in the economy, which could be allocated to achieve further growth.

3. **In the context of Niger, the country has remained at a low level of diversification with limited number of major trade partners (see Section II).** Despite substantial efforts to achieve transformation of the economy, as well as enhancing productivity of the agricultural sector over several years, exports of goods are concentrated in a few primary products in the natural resource and agriculture sectors, such as uranium and oil. The export structure, coupled with limited number of major trade partners, leaves the economy subject to commodity price and climate-related shocks, which are inherently volatile. While the prospective onset of crude oil exports through a new pipeline represents a favorable growth opportunity, there remains a risk of further concentration of exports unless effective efforts toward diversification are made.

4. **Against this backdrop, this selected issue paper (SIP) investigates the drivers of diversification and explores the potential for fostering diversification in Niger.** The literature has pointed out the importance of horizontal policies in fostering diversification (e.g., Giri et al. 2019; Salinas 2021). These horizontal policies include education, infrastructure, institutional quality, removal of trade barriers, and access to financing. We construct a county-by-year panel dataset and estimate panel regressions with a particular focus on horizontal policies. Based on these empirical results, we then discuss potential policies to foster diversification in Niger. Given the slow-moving

[1] Prepared By Rasmane Ouedraogo (Resident Representative) and Tomohide Mineyama (SPR). Canghao Chen (AFR) provided research assistance.

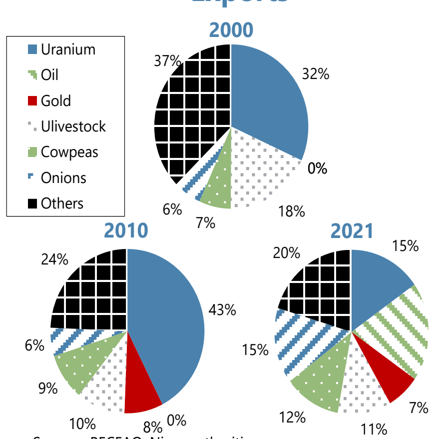
nature of the outcomes of reforms linked to these horizontal policies (e.g., education), recommendations mostly focus on medium- and long-run perspectives.

5. The remainder of the SIP is organized as follows. Section II presents stylized facts regarding export structure and degree of diversification in Niger. Section III conducts an empirical analysis to explore the driver of exports diversification in cross-country data. Section IV discusses the potential of Niger's export diversification and policy recommendations.

B. Stylized Facts

6. Niger's exports have been concentrated on a few primary products in natural resource and agriculture sectors (Figure 1). Historically, uranium had been the largest export product as Niger has one of the richest reserves of uranium in the world, located in the northern east area of the country. With the discovery of oil fields in the early 2010s, oil has become a major export product, and also benefited from the recent global price surges. Other export goods include gold, which has boomed in recent years in the Burkina-Mali-Niger triangle area, and a few agriculture and livestock products. With the limited variety of exports products, the degree of export diversification remains lower compared to the average of other WAEMU and Sub-Saharan African (SSA) countries (Figure 2). Among SSA, landlocked countries do not display a significantly different level of export diversification.

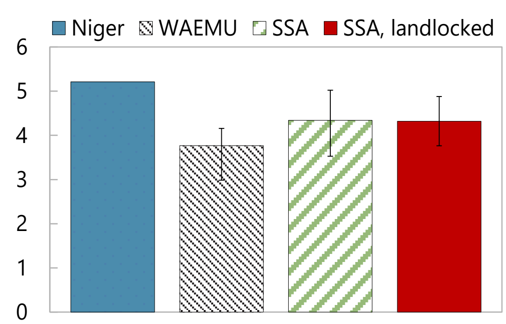
Figure 1. Niger: Composition of Goods Exports



Sources: BECEAO, Niger authorities

Figure 2. Niger: Export Diversification [1/ 2/]

(A Higher Value Indicates Lower Diversification, 2014)



Source: IMF staff calculation.

1/ The export diversification indicator was developed by IMF staff (e.g., Henn, Papageorgiou, and Spatafora, 2013).

2/ The WAEMU, SSA, and SSA landlocked countries exclude Niger. Bars show the average, whereas error bands indicate the 25 and 75 percentiles of each country group (same below).

7. There is also concentration in export partners, mainly linked to specific natural resource exports (e.g., Uranium to France) and neighboring countries (Table 1). The exports to WAEMU and other ECOWAS countries composing of a half of total exports, with Nigeria accounting for a quarter of the total exports, followed by Mali and Burkina Faso.[2]

Table 1. Niger: Top 10 Export Destinations 1/ (2016-20 Average)

Rank	Country	Export share (percent of identified export)
1	France	26.3%
2	Nigeria	25.6%
3	Mali	11.3%
4	Burkina	5.6%
5	Benin	4.0%
6	USA	3.5%
7	UAE	3.4%
8	Ghana	3.3%
9	Togo	2.0%
10	Canada	1.3%

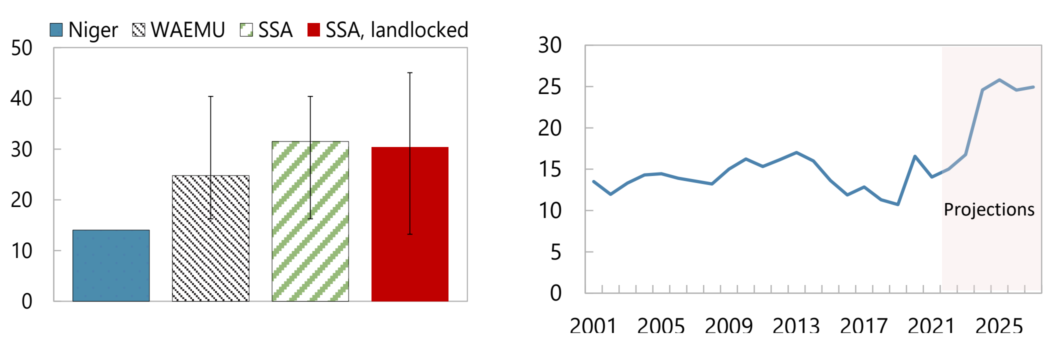
Source: BCEAO, IMF staff calculation.
1/ WAEMU and other ECOWAS countries are shaded.

8. As a consequence, the economy has been built on a narrow export base. The exports-to-GDP ratio has been among the lowest in WAEMU and Sub-Saharan African (SSA) countries (Figure 3). The ratio has been somewhat stable in the past decades, though affected by global commodity prices. This fact implies that despite the steady increase of exports in recent years, including the discovery of oil fields, its pace has not exceeded overall economic growth.

9. The onset of crude oil exports through a new pipeline is expected to ramp up exports in coming years, while perhaps increasing the risk of increasing export concentration further. The completion of a new oil pipeline through Benin is expected by late 2023, reaching its full operation in 2024. The onset of oil exports through the pipeline is expected to push the export-to-GDP ratio to around 25 percent in the medium term (Figure 3). The expected increase in oil-related revenue would also create fiscal space to increase physical and human capital spending, thereby fostering the basis for export diversification. Nevertheless, a higher degree of oil dependence would make the economy more vulnerable to global oil price fluctuations.

Figure 3. Niger: Export-to-GDP Ratio

(Percent of GDP) 1/



Source: IMF staff calculation.
1/ Left chart is the ratio in 2021.

10. Various indicators reveal dauting challenges for implementing horizontal policies to foster diversification in Niger. Key areas of horizontal policies, which would serve as a basis of fostering export diversification, including human capital development, financial sector development,

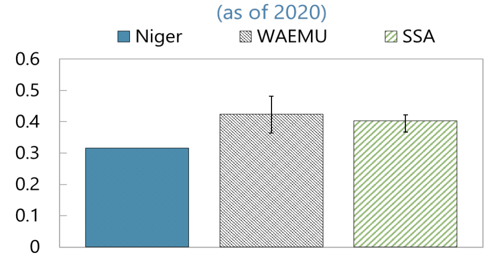
[2] Though trade with Nigeria has declined after its border closure in 2019, it resumed according to the latest available data.

trade liberalization, and infrastructure, are underdeveloped compared to other WAEMU and SSA countries (Figure 4).[3] The low level of human development is partly attributable to shorter average schooling years. The financial development index identifies Niger's limited depth of and access to financial intermediaries, as well as the lack of developed financial markets. The degree of trade openness, measured by trade regulations, taxes, tariffs, and trade agreements, also fall behind the WAEMU and SSA's average. Regarding infrastructure, digitalization and informational development, including internet access, are also key to foster trade activities. Regarding governance, regulatory quality and control of corruption in the Worldwide Governance Indicators are lower than the WAEMU's regional average and are in a similar level to the SSA average, while there are sizable confidence intervals and cross-country variations.

[3] To have quantitative indicators for more countries and dimensions, and following previous studies, we here employ data from the World Bank Human Capital Project, the financial development indicators developed by IMF staff, KOF Globalization Index, and the Worldwide Governance Indicators. Most of these data are perception based and thus more subjective than other economic indicators. Specific descriptions of indicators used are described in the figure.

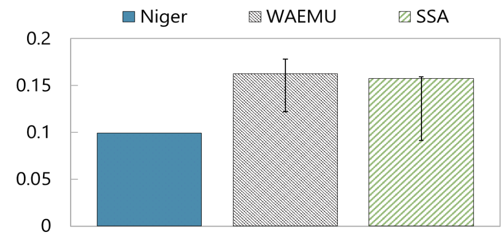
Figure 4. Niger: Selected Indicators of Horizontal Policies

Human Capital Index 1/
(as of 2020)



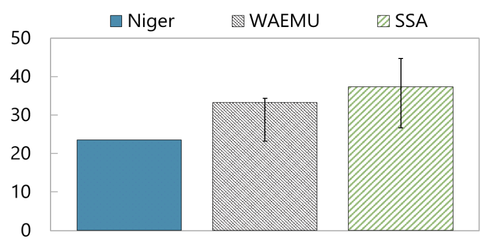
Source: World Bank Human Capital Project.
1/ The human capital index is calculated based on the probability of survival to age five, expected years of school, harmonized test scores, learning-adjusted years of school, fraction of children under five not stunted, and adult survival rate.

Financial Development 2/
(as of 2020)

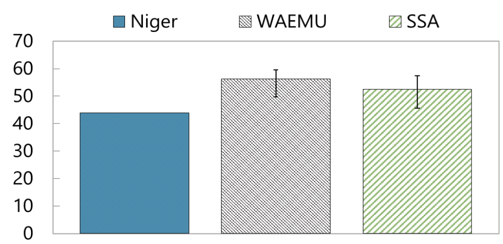


Source: IMF staff calculation, Sahay, R., et al. (2015).
2/ The financial development indicator is composed of nine indices that summarize how developed financial institutions and financial markets are in terms of their depth, access, and efficiency.

Trade Globalisation 3/ 4/
(as of 2019)

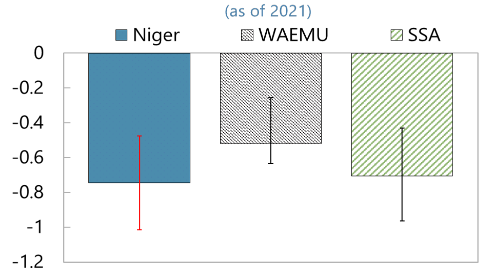


Informational Globalisation 3/ 4/
(as of 2019)

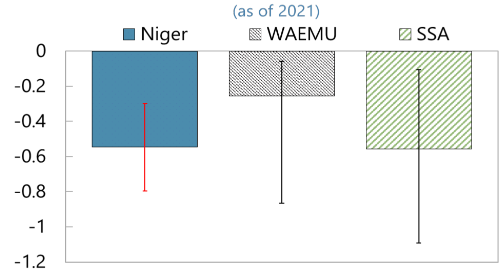


Source: KOF Globalization Index, Gygli, S., F. Haelg, N. Potrafke and J. E. Sturm (2019).
3/ The trade globalization index is calculated based on trade regulations, trade taxes, tariffs, and trade agreements. Informational globalization index is calculated based on television access, internet access, and press freedom.
4/ Use of these indicators should be considered carefully, as they include perceptions-based data. Error bands for WAEMU and SSA indicate the 25 and 75 percentiles of each country group excluding Niger.

Regulatory Quality 5/ 6/
(as of 2021)



Control of Corruption 5/ 6/
(as of 2021)



Sources: Worldwide Governance Indicators, D. Kaufmann (Natural Resource Governance Institute and Brookings Institution) and A. Kraay (World Bank), 2021.
5/ The Worldwide Governance Indicators (WGI) are a research dataset summarizing the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. These data are gathered from a number of survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms.
6/ Use of these indicators should be considered carefully, as they are derived from perceptions-based data. Error bands for Niger are for a 90 percent confidence interval. Confidence intervals for peer group averages are negligible. Error bands for WAEMU and SSA indicate the 25 and 75 percentiles of each country group excluding Niger.

C. Empirical Analysis: What Matters for Exports Diversification and Quality? An Econometric Approach

11. This section conducts an empirical analysis to explore what matters most for achieving diversified exports base. It uses econometric models to investigate the key determinants of exports diversification[4] and quality in a global sample of 151 countries covering 1980-2014.

Methodology

12. To address this question, the empirical methodology follows the literature on the determinants of exports diversification. To this end, the following equation is estimated:

$$ExpDiv_{it} = \alpha + \alpha ExpDiv_{it-1} + \beta X_{it-1} + \pi_t + \mu_i + \varepsilon_{it} \quad (1)$$

where $ExpDiv_{it}$ denotes the index of exports diversification of country i, at time t. The index of exports diversification is estimated based on various economic and financial characteristics. μ_i stands for country-fixed effects to capture time-invariant country characteristics; π_t are time-fixed effects to control for common shocks across countries; and ε_{it} is the error term. The vector X_{ijt} represents a set of control variables, including the following: natural resource rents in percentage of GDP, the size of the informal sector (in percent of GDP), the indices of financial development, trade liberalization, control of corruption, human capital, quality of trade and transport related infrastructure, quality of ICT and electricity infrastructure, investment profile, and global competitiveness. It also includes the index of state fragility and digitalization. Finally, foreign direct investment (in percent of GDP) and domestic private investment (in percent of GDP) are included in the estimates. Annex Table 2 lists all variables used in the analysis, their definition and sources, and Annex Table 3 provides the descriptive statistics.
We also explore the determinants of export quality using the following equation:

$$ExpQual_{it} = \alpha + ExpQual_{it-1} + \beta X_{it-1} + \pi_t + \mu_i + \varepsilon_{it} \quad (2)$$

With $ExpQual_{it}$ being the index of export quality of country i, at time t. The remaining control variables are as above in equation (1).

13. One important caveat is the potential for reverse causality. We use panel fixed effects to obtain the estimates. As evidenced in previous studies, this econometric model does not address the issue of reserve causality between the level of export diversification and several of the control variables, leading to endogeneity bias. To attenuate this problem, all control variables are lagged by one-year and the coefficients associated with each variable should be interpreted as correlations rather than causal effects.

[4] The index of exports concentration was rescaled to 0 to 1, with 1 being the highest level of export diversification.

Results

14. The quality of infrastructure is a significant predictor of export diversification and quality (Table 2). The coefficients associated with both the quality of trade-and transport-related infrastructure and the quality of ICT and electricity infrastructure are positive and strongly significant, suggesting that diversifying the export base is associated with improving infrastructure. An increase of the current level of quality of trade-and transport-related infrastructure of Niger (the index was 2 in 2018) to the median of the sample (2.72 in 2018) is associated with an increase in the index of export diversification by 21 percent.

Table 2. Niger: Determinants of Export Diversification

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Exports concentration index, Lagged	0.4758***	0.4649***	0.4939***	0.4883***	0.4881***	0.4790***	0.4650***	0.4701***
	(0.040)	(0.041)	(0.043)	(0.038)	(0.044)	(0.043)	(0.041)	(0.035)
Natural resources rents (% of GDP)	-0.0042***	-0.0045***	-0.0042***	-0.0043***	-0.0041***	-0.0043***	-0.0042***	-0.0043***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Informal sector size (% of GDP)	-0.0009	-0.0009	-0.0006	-0.0007	-0.0007	-0.0012*	-0.0008	-0.0003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Financial development index	0.1163***	0.0843**	0.0220	0.0569	0.0561*	0.1099***	0.0912***	0.1125***
	(0.034)	(0.034)	(0.033)	(0.035)	(0.034)	(0.035)	(0.032)	(0.035)
Quality of the regulatory system	0.0009**	0.0007	0.0008*	0.0009**	0.0010**	0.0010**	0.0005	0.0010**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Trade liberalization	0.0327***	0.0190**	0.0233*	0.0122	0.0160	0.0310**	0.0282***	0.0200*
	(0.009)	(0.009)	(0.012)	(0.011)	(0.012)	(0.013)	(0.009)	(0.011)
Control of corruption	0.1417***	0.1471***	0.1612***	0.1534***	0.1470**	0.1713***	0.1581***	0.0879**
	(0.047)	(0.051)	(0.049)	(0.053)	(0.072)	(0.059)	(0.051)	(0.036)
Human capital index		0.1560**						
		(0.076)						
Quality of trade- and transport-related infrastruct			0.0556***					
			(0.018)					
Quality of ICT and electricity infrastructure				0.0213**				
				(0.010)				
Investment profile					0.0492*			
					(0.029)			
Global competitiveness index					0.0383**			
					(0.018)			
FDI (% of GDP)						0.0061*		
						(0.003)		
Domestic private investment (% of GDP)						0.0001***		
						(0.000)		
Digitalization index							0.0013**	
							(0.001)	
State fragility index								-0.0042**
								(0.002)
Constant	0.0667	0.0502	-0.0568	0.0518	-0.0751	0.1172*	0.0495	0.1234**
	(0.052)	(0.061)	(0.073)	(0.070)	(0.121)	(0.068)	(0.057)	(0.049)
Observations	2,230	2,084	2,135	2,058	1,748	1,865	2,230	2,091
Number of countries	151	140	144	138	118	135	151	141
R-sq	0.7621	0.7596	0.7723	0.7878	0.8189	0.7467	0.7587	0.8109

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

15. The development of the financial sector is also a key factor to export diversification and quality. The empirical results show that the coefficient associated with the index of financial sector development is positive and significant In Tables 2 and 3, suggesting that a high level of financial sector development is associated with a high level of export diversification and quality. Firms, in particular new entrants and small-scale exporting companies, need to secure financing to cover the large costs of entering export markets, including information costs, compliance costs and other costs related to trade barriers such as adapting to foreign demand characteristics or tailoring exports to the tastes and standards of local consumers in new markets. For manufacturing firms, additional costs related to investments in plants, machinery or equipment required to export could require more financing from the banking sector. Quantitatively, an increase of the index of financial sector development of Niger (0.1 in 2020) to the median of the sample (0.26 in 2020) would increase the index of export diversification of the country by 9.8 percent and quality by 1.2 percent.

16. Good governance is strongly associated with a higher level of export diversification and quality. Indicators of quality of the regulatory system and control of corruption enter the regressions with the expected positive sign, confirming the important role of governance. The ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development while putting in place measures to combat corruption are essential to improve the business environment and create opportunities to exporting firms. If the indices of quality of the regulatory system and control of corruption of Niger (23 and 27.4 in 2020, respectively) increase to the median of the sample (48.6 and 49 in 2020, respectively), then its index of export diversification would increase by 12.1 and 9 percent, respectively.

17. Trade liberalization is correlated with a more diversified export basket and higher quality. Tables 2 and 3 show that the coefficient associated with trade liberalization is positive and significant, except in columns 4-5, implying that facilitating trade through more liberalization to other markets could broaden the export base and improve export quality. Dornbusch et al. (1977) established that tariff reductions by two trading countries make export baskets of both countries more diversified by expanding the set of traded goods in each country. Trade costs like tariffs and non-tariff trade barriers make some intermediate range of goods non-traded or difficult to trade. A reduction of tariff and non-tariff trade barriers means reduction of trade costs so that some of these non-traded goods can now be traded, and thus consequently expanding the export baskets of involved countries. Krugman (1979) established that opening up of trade leads to larger number of varieties being exported and imported through its pro-competitive effect. If the index of trade liberalization of Niger (23.6 in 2019) reaches the median of the sample (58 in 2019), the index of export diversification of Niger would increase by 15.4 percent and its export quality index by 2 percent.

18. A diversified export base and higher export quality are associated with enhanced human capital. The coefficient associated with the index of human capital is positive and significant in column (2) of Tables 2 and 3. Conquering new markets, creating new products and exporting higher quality of goods require innovation and skilled workforce. Furthermore, an improvement in technical skills could enhance the level of productivity and in turn lead to further expansion of the potential of exporting products. If Niger were to increase its human capital index (0.3) to the median of the sample (0.6), its index of export diversification would increase by 24.5 percent and export quality by 6.8 percent.

19. Digitalization is associated with greater diversification through greater dissemination of knowledge. As expected, the coefficients associated with index of digitalization are positive and significant in column (7) of Tables 2 and 3. Building capacity for digital development enhances the country capabilities to promote innovation, create knowledge and disseminate information, which are key to developing and exporting new products. In addition, digital networks increase communication as well as allow people, regions and nations to collaborate and share information aiming at fostering trade. If Niger were to digitalize its economy to the median of the sample (a move from 44 to 75.7 in 2019), its index of export diversification would increase by 21.6 percent and export quality by 3 percent.

20. Fragile states are more likely to have a narrow export base. The results in Table 2 show that the coefficient associated with the index of state fragility is positive. The destruction of social, human capital and physical infrastructure following outbreaks of conflict hamper economic prospects and capacity of countries to implement policies to diversify their exports. Weak institutional framework would further undermine innovation and investment into productive sectors. A reduction of the level of state fragility of Niger (19 in 2018) to the median of the sample (9 in 2018) is associated with an increase of the index of export diversification by 22 percent.

21. The dependance on natural resources is associated with a narrow export base and poor export quality. The coefficient associated with the ratio of natural resources rents to GDP is negative and strongly significant at the 1 percent level in all columns of Tables 2 and 3. This result suggests that countries with significant endowments in natural resources tend to have a low level of export diversification and poor quality of exports. These commodities are often exported in raw materials, without significant transformation into diverse products, thus limiting the export base of countries. If Niger were to reduce its reliance on natural resources (rents represented 5.2 percent of GDP in 2019) of to the median of the sample (1.7 percent of GDP in 2019), its index of export diversification would increase by 7.7 percent.

22. Improved business environment and competitiveness is correlated with export diversification. The results in column (5) of Table 2 show that the coefficients associated with investment profile and the global index of competitiveness are positive and significant, suggesting that better investment climate and enhanced competitiveness could increase export diversification. In environments with a poor investment climate, the lack of domestic competitive suppliers, combined with inefficiencies in factor markets and institutional capacity constraints, hinder economic and export diversification. Providing predictable and transparent business environment and effective enforcement of rules reduce the risks associated with testing new products and markets, enable firms to innovate and invest. Focusing on the investment climate, if Niger improves its index of investment profile (0.37 in 2018) to the median of the sample (0.4 in 2018), its index of export diversification would rise by 1 percent. Such improvement will attract foreign investment, which could further contribute to diversify exports (column 6). Furthermore, domestic investment to tackle bottlenecks on trade could reduce trade costs and help achieve more diversified export base (column 6).

Table 3. Niger: Determinants of Export Quality

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Exports quality index, Lagged	0.5651***	0.5545***	0.5638***	0.5852***	0.6890***	0.6623***	0.5525***	0.5663***
	(0.052)	(0.055)	(0.055)	(0.043)	(0.026)	(0.054)	(0.051)	(0.054)
Natural resources rents (% of GDP)	-0.0020***	-0.0022***	-0.0021***	-0.0022***	-0.0014***	-0.0014***	-0.0020***	-0.0021***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)
Informal sector size (% of GDP)	-0.0001	0.0001	-0.0001	-0.0002	-0.0002	-0.0004	-0.0001	-0.0003
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Financial development index	0.0569***	0.0352*	0.0374	0.0268	0.0269	0.0399**	0.0452**	0.0589***
	(0.020)	(0.020)	(0.027)	(0.024)	(0.019)	(0.017)	(0.020)	(0.021)
Quality of the regulatory system	0.0009***	0.0007**	0.0008**	0.0004	0.0003	0.0008**	0.0007**	0.0006**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Trade liberalization	0.0157*	0.0045	0.0199**	0.0157	0.0031	0.0193**	0.0134*	0.0199*
	(0.008)	(0.008)	(0.010)	(0.010)	(0.008)	(0.008)	(0.008)	(0.010)
Control of corruption	-0.0137	0.0000	0.0014	-0.0071	-0.0251	0.0220	-0.0039	-0.0216
	(0.030)	(0.031)	(0.033)	(0.031)	(0.029)	(0.030)	(0.030)	(0.031)
Human capital index		0.1678***						
		(0.057)						
Quality of trade- and transport-related infra			0.0137					
			(0.013)					
Quality of ICT and electricity infrastructure				0.0142**				
				(0.007)				
Investment profile					-0.0037			
					(0.017)			
Global competitiveness index					0.0121			
					(0.011)			
FDI (% of GDP)						0.0024		
						(0.004)		
Domestic private investment (% of GDP)						0.0001***		
						(0.000)		
Digitalization index							0.0007**	
							(0.000)	
State fragility index								-0.0017
								(0.001)
Constant	0.2463***	0.2023***	0.1924***	0.2121***	0.1888***	0.1256***	0.2415***	0.2510***
	(0.049)	(0.049)	(0.055)	(0.048)	(0.058)	(0.040)	(0.048)	(0.053)
Observations	2,160	2,014	2,071	1,992	1,724	1,806	2,160	2,040
Number of countries	150	139	143	137	118	134	150	141
R-sq	0.8742	0.8836	0.8803	0.8916	0.9247	0.9007	0.8732	0.8763

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

23. The size of the informal sector is insignificant once other factors are accounted for, in contrast with the conventional view that informality undermines economic and export diversification. Sub-Saharan African countries tend to present a large informal sector, ranging from 20 per cent to as high as 65 percent of the economy (Medina, Jonelis and Cangul 2017). The large informal sector presents many challenges that can reduce the production and export capacity of a country. First, the sector is characterized by low productivity, in part because it tends to attract relatively low-skill workers. Second, informal activities lack regulation and formal contracts, thus exposing employment and general activities in this sector to unpredictable shocks. Third, the informal economy is often characterized by small or undefined workplaces, unsafe and unhealthy working conditions, low or irregular incomes, and lack of access to information, markets, finance, training and technology. The products and services produced by the informal sector is of low quality, thus undermining the opportunities to export to international markets. The insignificance of the informal sector could be driven by its major opportunities given that it could serve as a fertile ground for entrepreneurship and business start-up and provides large employment for people.

D. Policy Implications

24. To diversify its economy and exports, Niger needs to embark on reforms and policies aimed at tackling its structural bottlenecks and accelerating structural transformation. There are multiple paths to successful diversification, which depends on the mix, sequencing, and timing of investments, policy reforms and institution building, and on their consistency with the underlying assets and related comparative advantages of the country. The empirical analysis provides some evidence of potential policies and reforms necessary to diversify the export basket.

25. Niger urgently needs to upgrade the human capital of its workforce, as it consistently falls short in measures of education and health outcomes. Without a concerted effort to fill these gaps as quickly as possible, human capital will remain a major constraint to structural transformation and export diversification, as the labor force will lack the basic skills required to support the development of high value-added industries. The ongoing push for school infrastructure building, the recruitment of permanent teachers and policies to promote girls' education are promising avenues in this regard. Targeted and better spending on education and health will be paramount and also help narrow social inequalities and bring the country to at least regional standards. The results could take time to materialize, though, but the costs of not acting now is higher.

26. Investing in infrastructure should also be a priority. Being a landlocked country, Niger faces significant specific constraints imposed by geography and the promotion of infrastructure aiming at facilitating trade. Spending on transportation and transit should be a priority. To achieve efficient and integrated mobility of goods and people between Niger and its neighboring countries, there is a need to reinforce the connections within existing transportation networks and corridors, create new ones, and harmonize border procedures. The envisaged construction and rehabilitation of the road network with Benin under the Millennium Challenge Corporation and ongoing rehabilitation of the trans-Saharan corridor Lagos-Alger via Zinder and Agadez are welcome. Beyond road infrastructure, investing in electricity and ICT infrastructure will lower electricity and communications costs for firms, support their competitiveness and improve resilience and reliability of supply. Enhancing competition in these sectors are urgently needed.

27. Government actions through well designed effective policy reforms and regulatory system that support a more diversified economy are particularly needed. Regulatory reforms and institutional arrangements to reduce barriers to diversification and in addressing market failures that limit the movement of resources to new activities should be promoted. In Niger, these reforms could include effective bankruptcy regimes that facilitate exit and encourage risk-taking and the lifting of investment restrictions in some sectors (for instance, telecommunications). Moreover, given the central role of economic governance in creating a fair and conducive business climate, in which competition can flourish and resources are channeled into productive uses, reforms to strengthen governance should be accelerated. Actions to combat corruption will be needed to facilitate the creation and development of businesses and products and accelerate export diversification.

28. Further improving the business environment will help attract private investment and accelerate export diversification. Important progress on upgrading the business climate has been made in Niger, but significant room for improvement remains. Clear, transparent, and predictable business regulations that provide a level playing field among investors (small and large, foreign, and domestic) are essential for economic diversification. Business regulations governing the credit market, the labor market, quality standards, the procedures and licenses required to start a business, contract enforcement and insolvency and making it easier to trade across borders could encourage investment in new activities and support export diversification. A transparent and non-discriminatory regulatory environment, including appropriate investor protection laws, can promote investment in riskier activities that have potentially long-term payoffs.

29. The African Continental Free Trade Area (AfCFTA) can be an effective mechanism to increase new market opportunities for exporting firms of Niger. The expected reduction in tariffs and non-tariffs barriers from the AfCFTA will decrease trade costs but should be accompanied by national measures to spur diversification. These measures could include enhancing productive capacity, supporting the medium and small companies to be competitive and participate in the regional and global value chains, improving access to financing, and supporting innovation and product development.

30. Promoting digitalization of processes will reduce cost of doing businesses and boost export diversification. Access to ICTs remains very low in Niger, but many opportunities and significant assets exist to strengthen ongoing efforts to improve connectivity. Among existing initiatives, The Niger 2.0 Smart Villages Project stands out. It aims to promote a promising approach to initiating digital transformation in rural and remote parts of the country. Developing digital communications systems by expanding fiber-optic broadband cabling and reducing the cost of access will lead to increased trade competitiveness and enhanced international integration.

31. Promoting peace and stability as well as addressing the sources of fragility are essential components of a diversification strategy in Niger. Political stability provides conditions for policy reforms and stable macroeconomic environment, necessary to attract investment. Niger is affected by terror attacks in recent years, but the fair elections and democratic transition in 2021 proves the strength and the maturity of the institutional framework of the country and should serve as a foundation on which to strengthen peace and stability in the country. The recent initiatives, including the reinforcement of the “Chef de file de l’opposition” position, a first since the introduction of this institution by the 2010 Constitution, and the resumption of dialogue under the National Council for Political Dialogue (CNDP), are welcome.

32. While not covered in the analytical study, vertical policies, geared towards specific sectors, can also be useful, provided they are targeted, transparent and minimize budgetary costs. Such policies could be needed to encourage the development of specific products and regions. For instance, envisaged initiative includes the upgrade of the industrial zone in Niamey and the creation of agro-business poles in all regions of Niger.

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Annex I. List of Countries

Country Name	Country Name	Country Name
Albania	France	New Zealand
Algeria	Gabon	Nicaragua
Angola	Gambia, The	Niger
Argentina	Georgia	Nigeria
Armenia	Germany	North Macedonia
Australia	Ghana	Norway
Austria	Greece	Oman
Azerbaijan	Guatemala	Pakistan
Bahamas, The	Guinea	Panama
Bahrain	Guinea-Bissau	Paraguay
Bangladesh	Hungary	Peru
Barbados	Iceland	Philippines
Belarus	India	Poland
Belgium	Indonesia	Portugal
Belize	Iran, Islamic Rep.	Qatar
Benin	Ireland	Russian Federation
Bhutan	Israel	Rwanda
Bolivia	Italy	Saudi Arabia
Bosnia and Herzegovina	Jamaica	Senegal
Botswana	Japan	Sierra Leone
Brazil	Jordan	Singapore
Brunei Darussalam	Kazakhstan	Slovak Republic
Bulgaria	Kenya	Slovenia
Burkina Faso	Korea, Rep.	South Africa
Burundi	Kuwait	Spain
Cabo Verde	Kyrgyz Republic	Sri Lanka
Cambodia	Lao PDR	St. Lucia
Cameroon	Latvia	Vincent and the Grenadine
Canada	Lebanon	Sudan
Central African Republic	Lesotho	Suriname
Chad	Liberia	Sweden
Chile	Lithuania	Switzerland
China	Luxembourg	Syrian Arab Republic
Colombia	Madagascar	Tajikistan
Congo, Rep.	Malawi	Tanzania
Costa Rica	Malaysia	Thailand
Cote d'Ivoire	Maldives	Togo
Croatia	Mali	Trinidad and Tobago
Cyprus	Malta	Tunisia
Czech Republic	Mauritania	Turkiye
Denmark	Mauritius	Uganda
Dominican Republic	Mexico	Ukraine
Ecuador	Moldova	United Arab Emirates
Egypt, Arab Rep.	Mongolia	United Kingdom
El Salvador	Morocco	United States
Equatorial Guinea	Mozambique	Uruguay
Estonia	Myanmar	Venezuela, RB
Eswatini	Namibia	Vietnam
Ethiopia	Nepal	Yemen, Rep.
Fiji	Netherlands	Zambia
Finland		

Annex II. Data Sources

Variable	Sources
Export diversification index	International Monetary Fund (IMF)
Export quality index	International Monetary Fund (IMF)
Natural resources rents (% of GDP)	World Bank's World Development Indicators (WDI)
Informal sector size (% of GDP)	World Bank's Informal Economy Database
Financial development index	International Monetary Fund (IMF)
Quality of the regulatory system	World Bank's Worldwide Governance Indicators
Trade liberalization	Gygli, S., Haelg, F., Potrafke, N. and Sturm, J-E. 2019. The KOF Globalisation Index – Revisited, *Review of International Organizations*, 14(3), 543-574
Control of corruption	World Bank's Worldwide Governance Indicators
Human capital index	World Bank's Human Capital Project
Quality of trade- and transport-related infrastructure	World Economic Forum's Global Competitiveness Report
Quality of ICT and electricity infrastructure	World Economic Forum's Global Competitiveness Report
Investment profile	International Country Risk Guide
Global competitiveness index	World Economic Forum's Global Competitiveness Report
FDI (% of GDP)	World Bank's World Development Indicators (WDI)
Domestic private investment (% of GDP)	World Bank's World Development Indicators (WDI)
Digitalization index	Gygli, S., Haelg, F., Potrafke, N. and Sturm, J-E. 2019. The KOF Globalisation Index – Revisited, *Review of International Organizations*, 14(3), 543-574
State fragility index	Polity IV Project

Annex III. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Export diversification index	2,230	0.5	0.2	0.0	1.0
Export quality index	2,185	0.8	0.2	0.2	1.1
Natural resources rents (% of GDP)	2,229	7.7	11.1	0.0	62.0
Informal sector size (% of GDP)	2,230	31.0	12.0	8.1	66.4
Financial development index	2,230	0.3	0.2	0.0	1.0
Quality of the regulatory system	1,786	52.7	27.1	0.0	100.0
Trade liberalization	2,211	55.2	23.9	1.6	97.9
Control of corruption	1,786	50.2	28.9	0.5	100.0
Human capital index	2,084	0.6	0.1	0.3	0.9
Quality of trade- and transport-related infrastructure	2,135	2.8	0.6	1.8	4.3
Quality of ICT and electricity infrastructure	2,058	3.9	1.2	1.8	6.4
Investment profile	1,837	8.7	2.1	0.0	12.0
Global competitiveness index	2,058	4.2	0.7	2.9	5.7
FDI (% of GDP)	2,225	6.0	19.6	-57.5	449.1
Domestic private investment (% of GDP)	2,028	23.1	7.2	-2.4	69.7
Digitalization index	2,230	63.1	20.3	3.4	98.6
State fragility index	2,091	8.4	6.3	0.0	24.0