

23rd Annual Conference on Global Economic Analysis

"Global Economic Analysis Beyond 2020"

Macroeconomic and distributional consequences of premature deindustrialization in Chad: A CGE analysis

Christian Otchia
Nagoya University
Email: cotchia@gmail.com

June 17-19, 2020

Motivation

- Deindustrialization

- ✓ Rapid deindustrialization despite substantial economic growth and high demand for manufacturing good
- ✓ Premature deindustrialization and the decreasing role of manufacturing

- 2030 vision the Chad we want

- ✓ Chad has identified 37 priority actions to diversify their economy and foreign trade.
- ✓ Two and a half years after the launch of the NDP 2017-2021, it has been noted that only 9 of the 37 priority actions have been implemented.
- ✓ New opportunities created by the continental context marked by the creation of the free trade area

Objectives

- What are the alternative development strategies for Chad?
 - ✓ Agriculture-led growth
 - ✓ Industry-led growth
 - ✓ Service-led growth

- Possible contributions
 - ✓ Develop a new SAM
 - ✓ Provide an ex-ante evaluation of the government development plan

Model and Data

- Recursive Dynamic CGE model (IFPRI)
 - ✓ Standard IFPRI CGE model (Thurlow, J. (2004) and Diao, X. et al. (2012))
 - ✓ Source of growth: Increased labor supply, expansion of agricultural land, capital accumulation, and productivity growth
- Closure rules
 - ✓ Flexible exchange rate
 - ✓ Government balance: direct tax rate on household
 - ✓ Savings-driven investment
 - ✓ Labor is assumed perfectly mobile between sectors

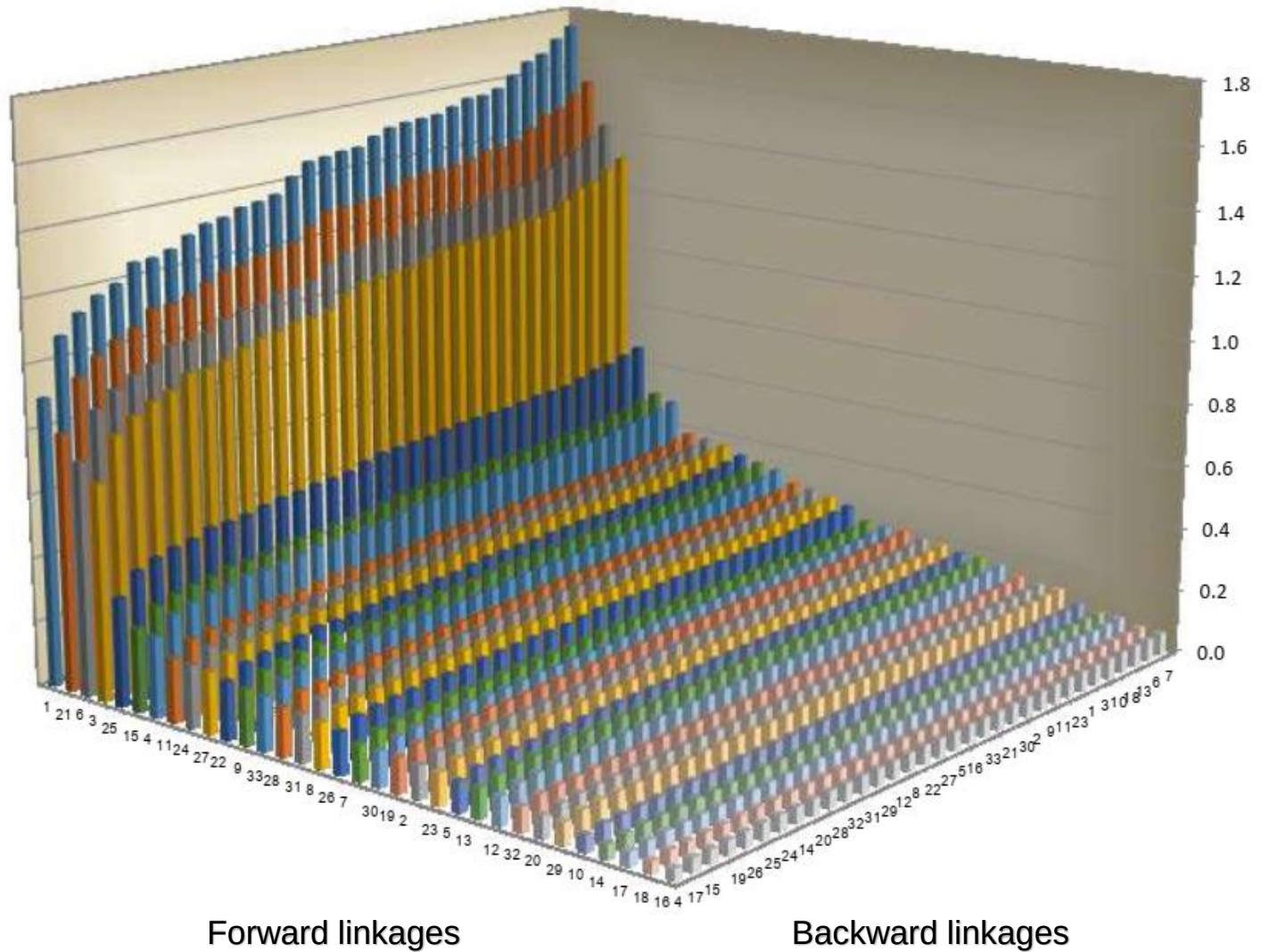
Results

Table 1. Structure of domestic value-added in total production and exports

	Production	Value added	Export	Imports	Export intensity	Import penetration ratio
Food crops	14.37	19.99	9.26	0.99	10.32	1.27
Cash crops	0.90	1.20	4.36	0.00	77.81	0.00
Livestock, forestry, fishing products	10.68	14.65	15.44	0.27	23.14	0.46
Hydrocarbons	11.92	6.22	62.80	0.00	84.36	0.00
Other extractive industries	0.75	0.93	0.00	0.83	0.01	16.85
Meat and fish processing	9.46	6.04	0.02	1.53	0.03	2.93
Oil	0.89	0.08	0.01	1.85	0.12	27.94
Products of cereal processing	1.04	0.38	0.00	0.46	0.00	8.84
Beverages products	1.71	1.08	0.00	1.15	0.00	10.87
Tobacco products	0.14	0.09	0.03	1.52	3.47	66.89
Other agri-food products	2.06	1.45	0.00	7.57	0.01	40.97
Manufacture of textiles and leather	0.96	0.22	3.44	2.43	57.35	31.79
Wood and furniture	0.55	0.40	0.00	0.21	0.01	6.63
Paper and printed products	0.07	0.06	0.01	1.06	1.77	73.92
Refined petroleum	2.98	0.88	0.28	7.40	1.49	31.53
Manufacture of chemicals and chemical products	0.01	0.02	0.00	7.25	3.81	97.89
Other non-metallic mineral products and construction materials	0.08	0.03	0.00	1.16	0.00	68.86
Manufacture of transport equipment and other manufacturing	0.11	0.03	0.00	33.89	0.00	98.20
Electricity, gas and water	0.61	0.17	0.00	0.08	0.00	1.92
Construction: building houses factories offices and roads	2.40	1.77	0.00	0.00	0.00	0.00
Wholesale and retail trade	13.06	17.74	0.00	0.00	0.00	0.00
Repair	1.82	2.09	1.50	0.05	13.23	0.53
Hotel and restaurants	0.78	0.44	1.14	0.17	23.39	3.88
Transports	3.03	1.89	0.56	14.62	2.96	46.79
Information and communication	4.13	5.05	1.14	0.66	4.41	2.80
Other Financial Intermediation	1.07	1.19	0.00	0.44	0.00	6.81
Real estate activities	1.73	2.38	0.01	0.00	0.11	0.00
Other Business Services	2.51	2.29	0.00	14.41	0.00	52.06
Other government services	4.57	4.03	0.00	0.00	0.00	0.00
Education	1.73	2.28	0.00	0.00	0.00	0.00
Human health and social work	2.09	2.80	0.00	0.00	0.00	0.00
Veterinary services	0.15	0.19	0.00	0.00	0.00	0.00
Private households with employed persons	1.63	1.93	0.00	0.00	0.00	0.00

Results

Figure 1. Visualization of the economic structure of Chad



Scenarios

- Agricultural-led growth
 - ✓ Driven by food crops, cash crops, and livestock
 - ✓ 6% agricultural growth (CAADP targets)

- Industry-led growth
 - ✓ Agro-industry sectors
 - ✓ Labor productivity improvement

- Sector-led growth
 - ✓ Private services
 - ✓ Labor productivity improvement

- Combined scenario

Results

Table 4: Baseline Scenarios and Options for Accelerated Growth

		Scenarios of growth induced by:				
		Base	Agriculture	Industries	Services	Combined
1. Growth rates, 2019-2030 (%)						
GDP		4.14	4.99	5.32	6.84	8.64
Primary		3.67	5.36	4.84	5.58	7.39
	Agriculture	4.32	6.26	5.48	5.93	8.03
	Mining Operations	0.4	-1.14	0.79	3.62	3.27
Secondary		4.44	5.13	6.70	6.76	9.80
	Manufacturing Industries	4.4	5.13	6.70	6.74	9.79
	Other manufacturing industries	3.4	3.06	4.90	6.75	9.28
	Other Industries	6.5	5.28	5.85	12.50	13.73
Tertiary		4.43	4.56	5.05	7.92	9.15
	Private services	4.4	4.53	5.18	8.48	9.90
	Utilities	4.5	4.64	4.66	5.98	6.44
2. Sectoral share in 2030						
GDP		100	100	100	100	100
Primary		38.4	40.25	36.52	33.43	33.53
	Agriculture	32.2	37.13	32.73	28.98	30.04
	Mining Operations	6.2	3.12	3.79	4.44	3.49
Secondary		9.8	9.89	11.37	9.64	11.05
	Manufacturing Industries	9.7	9.86	11.34	9.58	10.99
	Other manufacturing industries	1.5	1.19	1.42	1.47	1.59
	Other Industries	0.0	0.03	0.03	0.06	0.05
Tertiary		42.2	40.04	40.81	47.41	44.49
	Private services	31.8	30.06	31.18	37.99	36.37
	Utilities	10.4	9.98	9.63	9.42	8.12

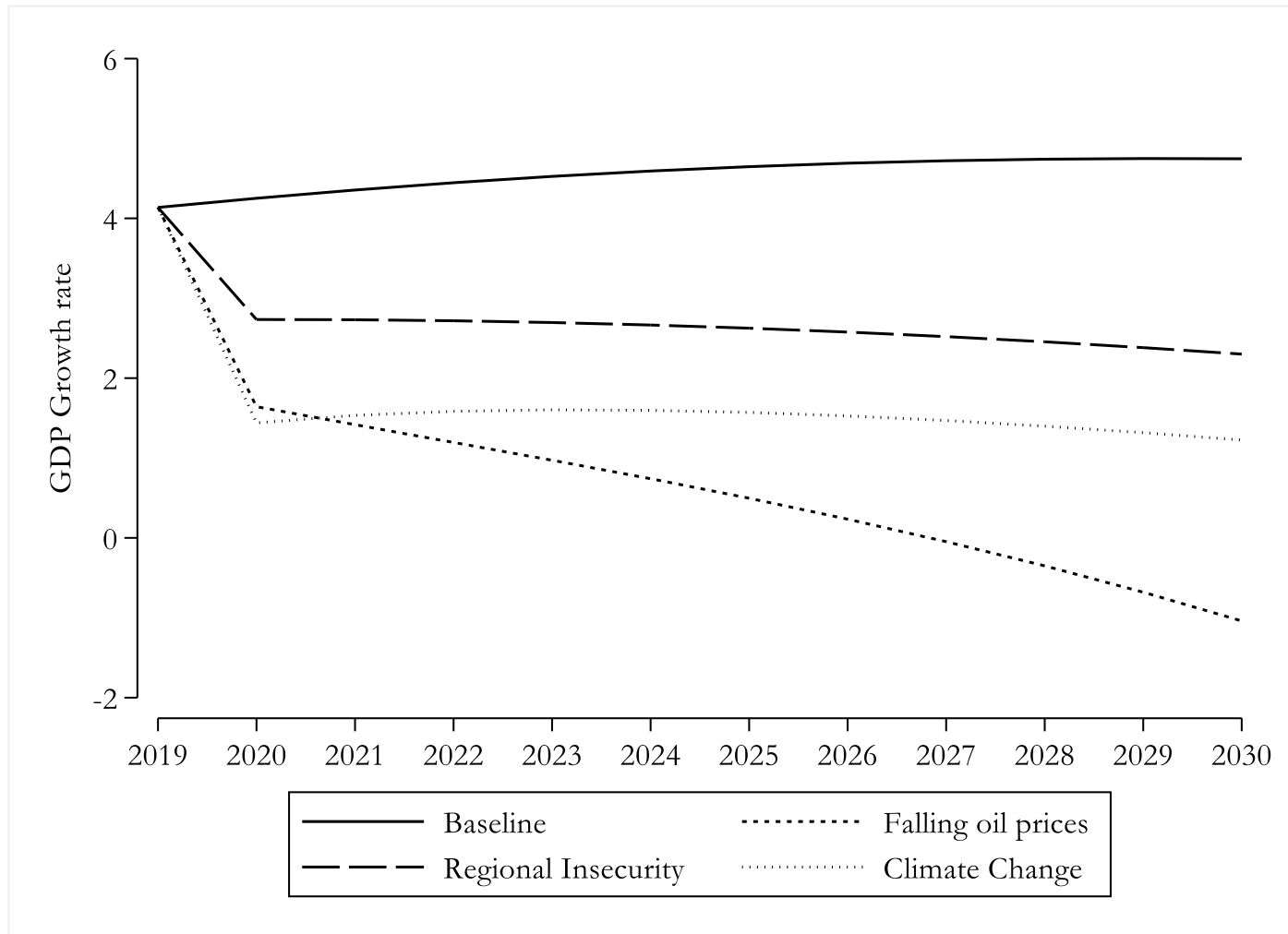
Results

Table 7: Incidence of Poverty (%)

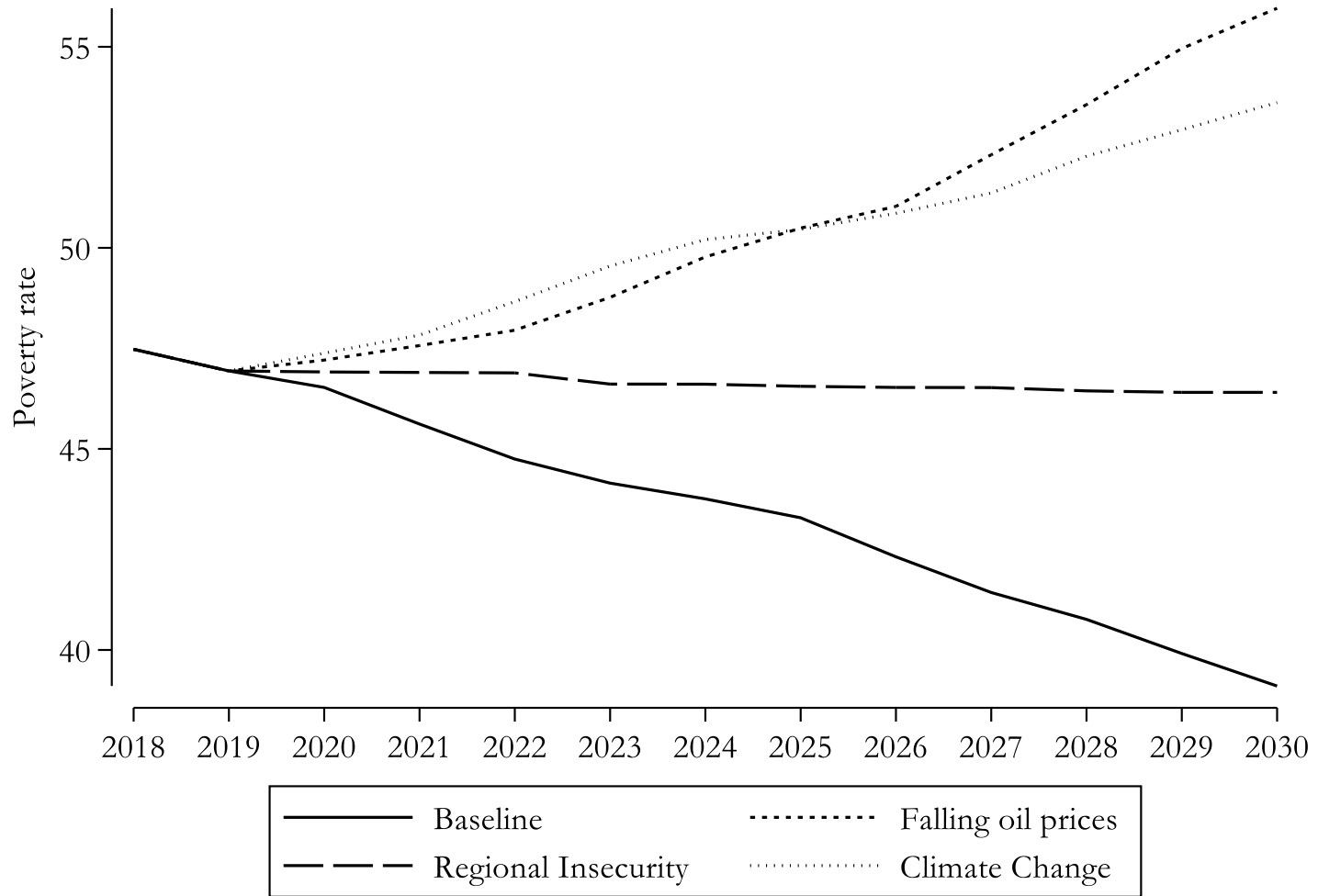
	Baseline	Agriculture	Industry	Service	Combined
2018	47.5	47.5	47.5	47.5	47.5
2019	46.9	46.9	46.9	46.9	46.9
2020	46.5	46.3	46.1	46.0	45.1
2021	45.6	45.1	44.8	44.5	43.8
2022	44.7	44.4	44.0	43.7	42.2
2023	44.1	43.8	43.4	42.6	40.3
2024	43.8	43.1	42.5	41.0	38.1
2025	43.3	42.1	41.3	39.7	35.9
2026	42.3	41.0	40.3	38.0	33.9
2027	41.4	40.2	39.4	36.3	31.6
2028	40.8	39.1	38.1	34.8	28.8
2029	39.9	38.0	37.4	33.1	27.0
2030	39.1	37.2	35.9	31.3	24.5

Pessimist scenarios

Figure 1-2: Projection of the Chadian economy: Basic and pessimistic scenarios



Pessimist scenarios



Conclusion

■ Multisectoral growth strategy

- ✓ The picture that emerges from this analysis is that accelerated growth in one sector alone did not lead to a significant increase in per capita income and therefore did not lead to the achievement of the targets on schedule.
- ✓ On the other hand, combined growth (better, a multi-sectoral approach) across sectors will be necessary to achieve middle-income country status during the period 2019-2030, or even emerging industrial economy status under certain conditions.
- ✓ To sustain such levels of growth, factor contributions show that factor productivity has a fairly large share, while labor, land and capital factors have seen their shares decline over time.
- ✓ Hence the importance of focusing on innovation and technology adoption in the production process and even on improving efficiency in the use of production inputs.