

Diversification of the Angolan economy

Angola has the second most concentrated economy in the world, oil representing more than 97 per cent of its exports in 2011. Concentration has increased since independence in 1975, and since the end of the civil war in 2002. This policy brief takes a look at the current state of diversification in Angola and its evolution in the decades going back to independence. It discusses economic and political effects of diversification, and diversification policy in the Angolan context. While diversification may have desirable effects on key challenges facing resource rich countries, diversifying resource rich economies is not straightforward.

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Diversification refers to how evenly economic activity is distributed across an underlying set of categories. In this brief, we focus on diversification of exports across product categories with some reflections on the diversification of production. Diversification can also be calculated for imports, employment, public revenues and expenditure, investment and more, referring to their distribution across products, sectors, countries, functional sources and other categories.

Diversification is typically measured through concentration indices taken from the inequality and industrial organization literature. The Theil, Herfindahl and Gini indices are the

most common; higher values on these indices indicate more concentration, i.e. less diversification. In addition, we use the number of products a country exports as a simple measure of diversification. Diversification indices presented here are based on trade data from the Base pour l'Analyse du Commerce International (Baci), which are based on UN Comtrade data. These data break down bilateral trade volumes between countries according to the product classification of the 6-digit harmonized system (hs6). This gives us data on export value disaggregated into 5111 product categories, which we have used to compute export diversification indices for Angola and other countries.

Angola - second most concentrated economy in the world

The concentration of the Angolan economy is extremely high. In fact, Angola has the second most concentrated economy in the world in terms of exports, beaten only by Iraq. The top half of Table 1 presents the ten most concentrated economies of the world, the bottom half the ten most diversified economies. As the top of the table indicates, the most concentrated economies tend to be oil producing ones in Asia, Africa and Latin America. Among the least concentrated

economies from the bottom of the table, we find a number of developed European countries, the most diversified being Italy, Germany and Austria, and also the United States and China. In the table, countries are ordered by their score on the Theil index, but the ranking does not change much if we instead use the Herfindahl or Gini indices. Iraq and Angola remain the most concentrated, and the same countries tend to be among the most diversified. The picture changes a bit more if countries are ordered by the number of products they export. This tends to push smaller and poorer countries towards the high end of concentration.

Table 1. Ten most concentrated and ten most diversified economies in the world, 2011

Country	Export products	Theil index	Herfindahl index	Gini index
Iraq	668	8.480577	.9878063	.9982079
Angola	680	8.354405	.9464675	.9978949
Chad	152	8.259516	.9091074	.9917966
Eritrea	158	8.020873	.9165822	.9864095
Sudan	569	7.958477	.824419	.9951745
Venezuela	2029	7.832878	.7315947	.9978372
Azerbaijan	1450	7.777124	.7717369	.9958887
Gabon	612	7.739021	.6910733	.9957256
Congo	552	7.738413	.7334283	.9940432
Equatorial Guinea	271	7.668503	.6006376	.9920844
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Czech Republic	4553	2.369045	.0072619	.8830778
United States	4939	2.33323	.0115188	.8749446
Turkey	4521	2.180637	.0054508	.8693475
Spain	4739	2.171961	.0094431	.8466359
Poland	4560	2.156763	.004799	.8715453
China	4895	2.154203	.0089939	.8453763
France	4801	2.146459	.0100328	.8488799
Austria	4595	1.9556	.0036046	.855015
Germany	4812	1.896379	.0060665	.82263
Italy	4783	1.745633	.004665	.8148357

Source: Authors' calculations

The high level of concentration in Angola reflects an economy that revolves almost completely around oil. Table 2 shows the ten product categories with the highest export values in 2011, with values in 1998 for comparison in the last column. Crude oil completely dwarfs the other products, with exports of almost 50 billion USD in 2011 compared to exports in the millions for the other product categories. What there is of exports in other

categories tends to be dominated by raw and base materials and distillates of petroleum. There is little in terms of other processed exports on any major scale. Consistent with this pattern, only four Angolan companies made it onto a 2010 list of the 500 largest non-financial corporations in Africa in term of revenues; oil companies Sonangol and Total E & P Angola, and mining companies Endiama and Catoca

Table 2. Top ten Angolan exports, 2011

Product name	Export value 2011 (1000 USD)	Export value 1998 (1000 USD)
Petroleum oils, oils from bituminous minerals, crude	49014632.00	2577355.75
Oils petroleum, bituminous, distillates, except crude	635807.13	66699.49
Diamonds (jewellery) unworked or simply sawn, cleaved	213688.70	.
Propane, liquefied	199047.17	376.47
Butanes, liquefied	51826.68	212.74
Ferrous waste or scrap, nes	48420.45	.
Petroleum gases & gaseous hydrocarbons nes, liquefied	35005.72	42149.45
Granite, crude or roughly trimmed	25768.87	489.57
Shrimps and prawns, frozen	9404.28	21202.32
Copper/copper alloy waste or scrap	8853.39	214.12
Total exports	50386640.00	2754535.25

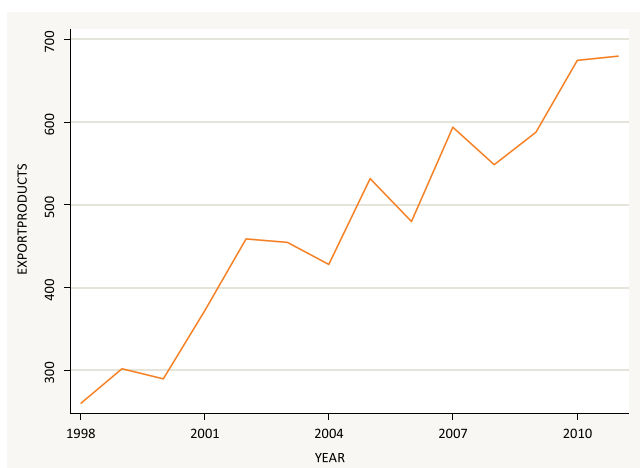
Source: Baci

It is not that surprising that other industries have trouble being competitive in an oil rich economy. A hugely profitable oil sector tends to drive up factor prices and/or currencies, leaving other industries at a considerable cost disadvantage internationally. But even for an oil country, the concentration of the Angolan economy seems high. A closer look at the evolution of exports over the last decades provides some clues as to why, as well as some nuances in the overall picture of extreme concentration.

Concentration increased after the end of the civil war

The end of a civil war is likely to improve the overall business environment in a country. There are some indications that this also happened in Angola after the civil war ended in 2002. The number of export products has risen steadily since the end of the war, from around 450 active export lines in 2002 to 680 products in 2011. Some industries also saw considerable increases in export volumes in the period after the civil war.

Figure 1. Number of products exported from Angola, 1998-2011



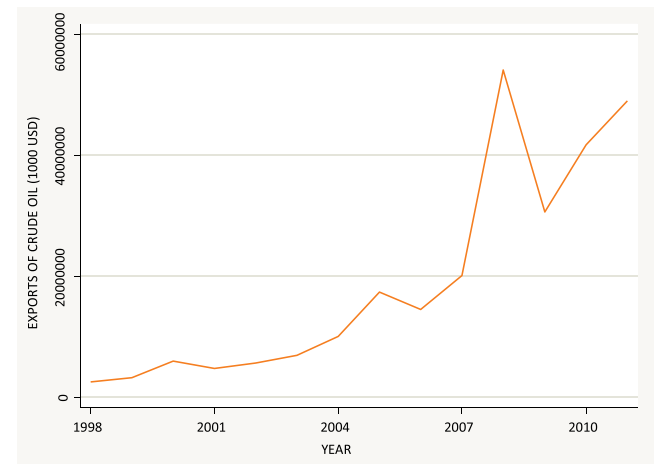
Source: Authors' calculations

However, though more products are being exported from Angola, export volumes of new products remain at low levels, in relative and absolute terms. And at the same time, Angola has experienced a considerable increase in export revenues from oil. Figure 2 documents the increase in the period after the civil war, reflecting high oil prices and the phasing in of oil production from deep-water reservoirs. The rise in oil exports in this period is behind what has been term the “mini golden age” in Angola, where economic growth was in the double digits in the period 2002-2008.

The increase in oil export since 2002 dominated any increase in the number or volume of other products, leading to an overall increase in concentration of exports. This overall increase is shown in Figure 3 for the Theil index of concentration (whose scale is on the left vertical axis) and the Gini index (scale on the right vertical axis). While Angola was already highly

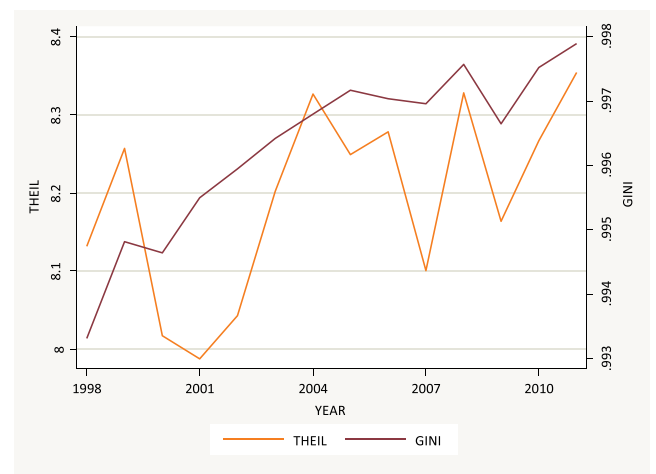
concentrated at the end of the civil war, concentration has risen even from this high level, leading to the current extreme level of industrial concentration in Angola.

Figure 2. Exports of crude oil from Angola, 1998-2011



Source: Baci

Figure 3. Theil and Gini indices for Angola, 1998-2011



Source: Authors' calculations

Concentration has been increasing since independence

The increasing concentration of the Angolan economy in recent years has added to a more long-term process of concentration and de-industrialization that has been ongoing since independence in 1975. It seems obvious that diversification of the Angolan economy was far greater at the time of independence than today, even though the lack of detailed exports data prevents the calculation of indices comparable to those used above. Before independence, agriculture dominated the Angolan economy, particularly coffee of which Angola was the fourth largest producer in the world. Coffee was the largest export until overtaken by oil in 1973, when oil represented 30 per cent of total export earnings. Until 1975, Angola was a net exporter of food, particularly maize, and had a stable fishing industry. In the early 70s, Angola was also the world's fourth largest exporter of diamonds, with an annual production of around 2 million carats, and a major exporter of iron ore. Angola also had a manufacturing industry based on simple technologies, in food, textiles, paper, glass and other products.

With independence in 1975 came a number of events and changes which led to a decline in agriculture and manufacturing production and exports. With the exodus of Portuguese settlers after independence substantial technical and management capacity and expertise was lost. The internal military conflict was associated with immense human, material and financial losses, leading to rural exodus to the cities, destruction of infrastructure and degradation of public services. And a socialist, centrally planned economic system imposed a series of distortions and led to a poor allocation of resources and factors of production. As infrastructure and the security in rural areas deteriorated, agricultural exports - which flourished during the 1960s and the early years of the 70s - virtually disappeared and food production declined rapidly. Economic distortions, inflation, mismanagement and unproductive investment, led to falling productivity and the decline of the manufacturing sector. While market reforms started to be introduced in the late 1980s and early 1990s, the return of civil war after the 1992 elections reduced their effect. The decline in agriculture and manufacturing in the first two decades of independence all happened against the backdrop of increasing reliance on oil exports.

Why diversify?

Avoiding the Dutch disease is the most common argument behind diversification of economies concentrated in primary products like petroleum or minerals. Natural resources like oil tend to crowd out manufacturing activity in a country, which may lead to the loss of technological progress and to lower growth prospects. Diversification is seen as a way of preventing such decreases in productivity by broadening a country's economic base. Other economic arguments for diversification are reduction in volatility and vulnerability to deteriorating terms of trade that comes from reliance on a single industry.

However, even with costs in terms of forgone productivity gains, and increased volatility and vulnerability, it is not obvious that countries benefit from diversification rather than concentrating their inputs on the hugely lucrative oil sector. Some degree of Dutch disease, volatility and vulnerability may be optimal. While empirical results show that richer countries are more highly diversified, it is unclear what the causal relation is between income and diversification, or if indeed there is one.

The main problem facing resource rich countries like Angola may be political rather than economic, however. Institutional dysfunctions, in particular a lack of democratic accountability, create problems of patronage and rent-seeking. Public resources are used to shore up the power of the ruling elite to secure their continued access to rents from petroleum resources, rather than invested in economically sound activities that would improve development outcomes for the Angolan population. For diversification, the important question to ask is therefore whether a more diversified economy would also improve prospects for democracy. For this reason, political effects of diversification have been a main focus of the recent CEIC-CMI project on diversification of the Angolan economy.

The project has provided an analysis of possible mechanisms through which diversification can affect prospects for democracy. A more diversified economy likely has a less unified elite, and citizens who have better outside employment options and hence less to lose from challenging the elite. On the other hand, diversified economies may experience fewer economic crises in which opportunity costs of challenging power are lower, and hence see fewer transitions from authoritarianism to democracy. Our empirical analysis suggests that the former mechanisms are more important; we find a significant and sizeable positive effect of diversification on democracy. This indicates that less concentrated economic power in a society leads to more widely distributed political power. An important effect of diversification is therefore that, at least in principle, it can improve chances of democracy.

Policies of diversification in Angola

Its potentially benign effects notwithstanding, diversification has been given little explicit attention in official Angolan policy up until quite recently. A thorough examination of official policy documents and economic plans have revealed that diversification was at best indirectly addressed up until the last 2000s. The National Medium Term Plan 2009-2013, however, explicitly sees diversification as an objective, arguing for the importance of diversification at sectoral and provincial levels with priority to development of sectors related to natural resources, water, food, "habitat", transport and logistics. Diversification was further discussed in the National Plan 2009, indirectly in the National Plan 2010-2011, and some attention to the development of sectors outside of oil has been given in a subsequent presidential address on the state of the nation to the National Assembly.

The limited attention given to diversification in Angola raises questions of how to approach the issue of industrial policy in the country. There are a number of conventional constraints to diversification, such as a lack of human capital, weak infrastructure, high costs of doing business, and high currency rates. Angola suffers from a number of these, as reflected in indicators of its business environment. Each of the constraints can in principle be addressed through general or more sector specific interventions. For instance, interventions can focus on human capital, infrastructure or regulatory requirements of specific industries, or on more general improvements in education, infrastructure and regulation that would benefit a number of industries. Sector specific interventions can also aim for a more or less radical departure from the current industrial structure; local content policies related to the petroleum industry represent a more narrow approach than for instance policies related to agriculture or manufacturing.

Our analysis indicates that diversification may have desirable effects on key challenges facing resource rich countries. However, it also suggests that diversifying resource rich economies through conventional means is not straightforward. While diversification improves chances of democracy in a country, it also undermines the power of the elite. Reforming domestic industrial policy to the detriment of the elite is likely to be difficult, and measures to increase diversification may be resisted, undermined, perverted, or captured by elites in these countries. In addition to the conventional constraints, there are also political constraints to diversification. Designing policies for diversification without analysing the political constraints to diversification may lead to the wrong policy prescriptions.

The distinction between more or less narrow specific and general industrial policies highlight an important dilemma or trade-off in this respect. Policies that aim to more substantially broaden the economic base will undermine the elite's hold on power, and are hence less likely to be implemented. An elite is likely to favour local content policies which are related to the development of a sector under their control, over improvements in conditions for other industries, or in the general business climate. The contrast between the relatively passive role played by the Angolan government in developing industries outside of petroleum and its active emphasis on local content fits this political economy observation.

Conclusion

Angola is a success in developing its oil resources, but not in turning its oil resources into development. Improved government accountability is needed to reduce problems of poverty and inequality. Our analysis suggests that diversification of the economy improves chances of democracy, that less concentrated economic power in a society leads to more widely distributed political power. Diversification efforts therefore appear important in concentrated countries like Angola, but further analysis is needed to understand what types of industrial policy are the most appropriate under imperfect governance. However, our analysis also indicates that a focus on diversification may not be an easy way to address the key problems of development in Angola. There may be other and more effective policies for improving accountability.

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Given the political constraints to diversification, and since Angola has the geological conditions to become the largest oil producer in Sub-Saharan Africa, it is perhaps unlikely that the country will see substantial diversification in the coming years. To improve prospects of democracy and development through diversification, some form of external change could be needed that reduces oil rents, and hence elite incentives and means to cling to power. Changes in the elite's structural composition and interests

may have a similar impact on the potential for diversification. More analysis is needed to understand factors influencing these political preconditions and constraints.

A highly concentrated economy will experience larger fluctuations in economic activities and income. This also affects the situation of poor households, who potentially face a high level of risk to their income and livelihoods in an economy with substantial fluctuations. Further analysis at the micro level is needed to understand how this affects households and whether and how households cope with fluctuations through diversification at the household level, by spreading activity across different occupations and income sources.

Further reading

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