

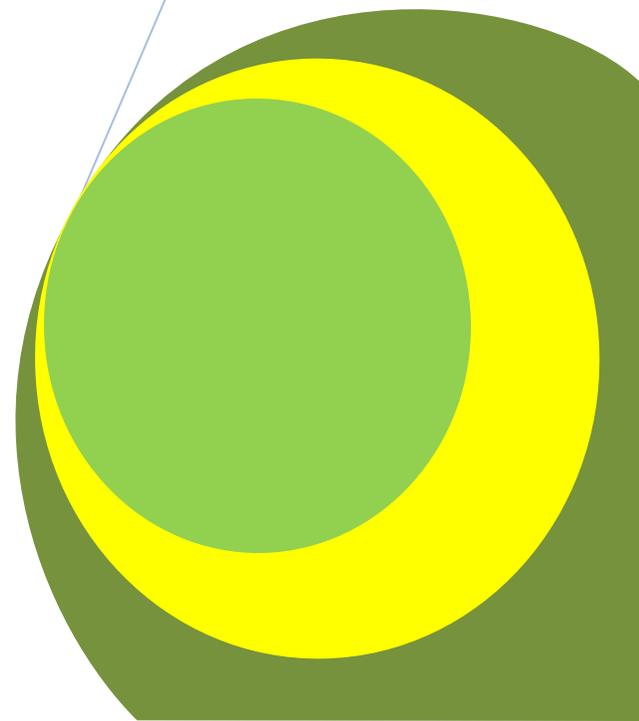
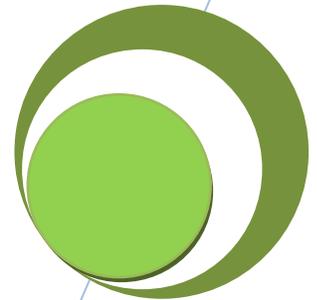
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## Intra-Sectoral Competitiveness of Angola

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*Research Article*

# Intra-Sectoral Competitiveness of Angola

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**ABSTRACT**

The study investigated intra-sectoral competitiveness of Angola. Using Balassa (1965) index measure, competitiveness was identified in Angola's 12 sectors. The most competitive sector was found to be textiles with 121 product lines with revealed comparative advantage (RCA)  $\geq 1$ . It is followed by metals sector with 50 product lines in it. The third competitive sector is chemicals and allied industries with 48 product lines. The least competitive sector is transportation with only two product lines. It is followed by miscellaneous sector with only four product lines. There was no competitiveness recorded in the following sectors: animal and animal products; vegetable products; and foot wear/head gear. Angola's competitiveness is heavily concentrated in textiles yet it does not generate much in exports revenues which mainly come from oil and diamonds. The recommendation is that Angola should diversify its economy and improve competitiveness in individual sectors.

**Keywords:** Intra-sectoral competitiveness revealed comparative advantage, Balassa Index, exports.

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**INTRODUCTION**

Competitiveness, comparative advantage and globalization are topical issues in international trade. Looking at the chronological record of international trade one can see that it is full of flaws with supply bottlenecks and unfamiliar risks (Gesper & Carr, 2006). This paper addresses the issue of competitiveness. It builds on the study done by Nyengerai et al (2013). In that study they identified products in which Angola has comparative advantage. The study was very comprehensive but it did not identify sectors in which Angola has comparative advantage. This paper looks at that gap and intends to investigate intra-sectoral competitiveness of Angola.

**An Overview Of Literature On Competitiveness**

President's Commission on Industrial Competitiveness (1985) defines competitiveness as the extent a country under trade without restrictions is able to produce products and services that are of a nature acceptable in the international markets at the same time playing a role of increasing real income of its people. This definition has been widely cited by various authors who have written on competitiveness. According to Taner et al (2000) a nation is competitive if its firms can produce output that is almost equal or above their competitors abroad. Its focus is therefore on productivity and efficient utilization of endowments. Scott and Lodge (1985) define competitiveness as the ability of a nation to produce a product or a service and be able to avail it in the international market thereby earning profits on it resources. Competitiveness is an extension of the principle of comparative advantage (Bank of England, 1982; Durand & Giomo, 1987).

Kogut (1991) believes a nation's competitiveness can clearly elaborate its capabilities with reference to its technology and the principles of organization. Technology and the principles of organizations have a higher chance of diffusion within a nation than they have between nations. That discussion on competitiveness should form part of comparative management and institutions among nations. According to Anderton and Dunnet (1987) and Fagerby (1988), they attribute competitiveness of a country as influenced by its advantage on its price of its products and services in global markets. Competitiveness of a nation depends on price and non-price factors. Price competitiveness can be achieved through devaluation in the short run. Non-price competitiveness is achieved by the country through increased productivity.

In measuring competitiveness, one has to look at the relative competitive positions which enable researchers to quantify them. These may include international costs differentials or sometimes just relative changes in measures .

The OECD calculates indicators of overall competitiveness taking into account of the mean (average) measure of nation's competitive position on their local markets and on their international markets. Other measures of competitiveness employ bilateral or multilateral export weighting patterns. In this case, the assumption is that in each market, the competitors of a particular country are the local producers in that market and that competitiveness between nations is determined by their own markets (Durand et al., 1992).

According to the World Economic Forum (1990), there are eight factors that are taken into account to measure competitiveness. These factors are domestic economy; internationalization; government; finance; infrastructure; management; science and technology; and the quality of its people. Domestic economy refers to the fact that if there is stiff competition in the local economy, the local firms will become competitive and will produce efficiently and they are likely to venture into the international markets. On internationalization, it is premised on that export-led competitiveness brings expansion of the local economy and efficient allocation of resources. On government, it involves minimum interventions and policies which create conducive environment for firms to produce and export. On finance, this relates to a well-integrated financial system which enhances competitiveness. On infrastructure, it involves its development and includes availability of natural endowments which can be exploited. Management refers to the ability to respond to changes which take place in the global markets. On science and technology, competitiveness is enhanced when innovations lead to mass production at lower costs. Quality of people simply refers to the ability of the nation's work force to adapt and be productive.

Porter (1990) has explained that competitiveness is measured in two ways. The first involves that there must be a substantial and the ability to continue to export to a number of countries. The second aspect involves outward foreign investment on the basis of labour skills and assets which have been created in the home country. According to the Bank of England (1982), competitiveness especially in the manufacturing sector ought to be measured in the context of relative export prices, relative export ability and on account of labour costs.

Porter (1990) has also propounded a diamond model of a nation's competitiveness that takes into an account four main factors in either promoting or hindering competitive advantage. These include: demand conditions; endowment conditions, ancillary industries; and firms strategies towards competition. However, other authors such as Dunning (1990) have strongly criticized Porter's model as it lacks a link between transnational corporations and the country's diamond.

## METHODOLOGY

This paper employs the method developed by Balassa (1965), the revealed comparative advantage (RCA). According to Lipsey et al (1991), most of the studies utilize indices for any study relating to competitiveness. It is justified as appropriate methodology by Wu and Chen (2004) in that it is an important technique in a competitive market economy that shows competitiveness as demonstrated in export portfolio.

Where (Balassa, 1965):

$$RCA = \left( \frac{X_{i,j}}{X_{W,j}} \right) / \left( \frac{X_{i,tot}}{X_{W,tot}} \right)$$

Where:

$X_{i,j}$  represents country i's exports of product j;  
 $X_{i,tot}$  represents country i's total exports;  
 $X_{W,j}$  represents the world's (all countries) export of product j; and  
 $X_{W,tot}$  represents total exports in the world.

An RCA of equal and greater than 1 demonstrates that the country has revealed comparative advantage, in other words, the country is relatively specialized in producing and exporting the product line under consideration. An RCA closer to 0 demonstrates that the country has a lower revealed comparative advantage and is not specialized in the product line (Balassa, 1965; Krugell & Matthee, 2009).

## Data Used

Export data for Angola and world exports data used in this paper was obtained from International Trade Centre.

## RESULTS AND DISCUSSION

There are 351 product lines in Angola with  $RCA \geq 1$  and are in the following sectors: foodstuffs; mineral products; chemicals and allied industries; plastics/rubber; raw hides, skins, leather and furs; wood and woods products; textiles; stone/glass; metals; and machinery/electrical. There are three sectors in which there are no product lines with  $RCA \geq 1$ . These included: animal and animal products; vegetable products; and foot wear/head gear. There are 15 distinct sectors as classified by World Trade Organization and International Trade Centre. The first two digits of a product code represent the sector in which a product belongs. Table 1 shows sectors with their products with  $RCA \geq 1$ .

**Table 1: Sector and the number of product lines with  $RCA \geq 1$**

Sector code	Sector description	Number of product lines with $RCA \geq 1$
01-05	Animal and animal products	0
06-15	Vegetable products	0
16-24	Foodstuffs	20
25-27	Mineral products	28
28-38	Chemicals and allied industries	48
39-40	Plastics/Rubber	15
41-43	Raw hides, skins, leather and furs	9
44-49	Wood and woods products	18
50-63	Textiles	121
64-67	Foot wear / Head gear	0
68-71	Stone/Glass	24
72-83	Metals	50
84-85	Machinery/Electrical	12
86-89	Transportation	2
90-97	Miscellaneous	4

Source: Results of the study.

In table 1, textile sector is the most competitive sector in Angola. It has 121 product lines with  $RCA > 1$ . It is followed by metals sector with 50 product lines in it with an  $RCA \geq 1$ . The third place is occupied by chemicals and allied industries sector with 48 product lines with an  $RCA \geq 1$ . The fourth competitive sector is mineral products with 28 product lines with an  $RCA \geq 1$ . The fifth competitive sector is stone/glass with an  $RCA \geq 1$  in 24 product lines. The least competitive sector is transportation with an  $RCA \geq 1$  in only two product lines. It is followed by miscellaneous sector with only four product lines with an  $RCA \geq 1$ . The following sectors are not competitive at all based on the fact they have no product lines with an  $RCA \geq 1$ . These sectors are: animal and animal products; vegetable products; and foot wear/head gear. Table 2 shows the top 3 product lines in foodstuffs sector with  $RCA \geq 1$ .

**Table 2: Top 3 product lines in foodstuffs sector with an  $RCA > 1$**

Product Code	Product description	RCA in 2008 $\geq 1$	RCA in 2009 $\geq 1$	RCA in 2010 $\geq 1$	RCA average for 3 years
230690	Vegetable oil-cake and other solid residues	41.17175	77.91788	41.01254	53.36739
200791	Citrus based jams jellies marmalade	15.1306	20.10977	17.14538	17.46192
240310	Cigarette or pipe tobacco and tobacco substitutes	11.30556	12.86065	10.39809	11.52143

Source: Results of the study.

In table 2, vegetable oil-cake and other solid residues have the highest RCA index of 53.4 in the foodstuffs sector. They are followed by citrus-based jam jellies marmalade with an RCA index of 17.5. The third place is occupied by cigarette or pipe tobacco and tobacco substitute with an RCA index of 11.5. Table 3 shows top 3 product lines in mineral sector with  $RCA \geq 1$

**Table 3: Top 3 product lines in mineral products sector**

Product Code	Product description	RCA 2008 ≥1	RCA 2009 ≥1	RCA 2010 ≥1	RCA average for 3 years
251512	Marble and travertine in blocks	30.50271	35.87583	38.10943	34.82933
271290	Mineral waxes	14.37806	42.87357	29.14369	28.79844
271210	Petroleum jelly	26.68752	36.16589	23.016	28.62310

Source: *Results of the study.*

In table 3, the product line with the highest RCA index is marble and travertine in blocks. It has an index of 34.8. It is followed by mineral waxes with an index of 28.8. In the third place is petroleum jelly with an index of 28.6. Table 4 shows top 5 products in the chemicals and allied industries with RCA≥1.

**Table4: Top 5 product lines in chemicals and allied industries sector with RCA≥1**

Product Code	Product description	RCA 2008 ≥1	RCA 2009 ≥1	RCA 2010 ≥1	RCA average for 3 years
380700	Wood tar, tar oils, creosote, naphtha, veg. pitches	54.41604	226.1907	201.7655	160.7907
281420	Ammonia in aqueous solution	38.1639	76.95905	104.309	73.14397
293354	Derivatives malonylurea (barbituric acid)	48.98288	69.59266	94.85766	71.1444
381700	Mixed alkylbenzenes and mixed alkyl naphthalenes	29.70048	49.75997	39.11116	39.52387
291250	Cyclic polymers of aldehydes	16.72202	32.578	31.18655	26.82886

Source: *Results of the study.*

In table 4, wood tar, tar oils, creosote, naphtha, veg. pitches in the chemicals and allied industries sector has the highest index in this sector of 160.8. It is followed by ammonia in aqueous solution with an index of 73.1. The third position is occupied by derivatives malonylurea (barbituric acid) with an index of 71.1. Mixed alkylbenzenes and mixed alkyl naphthalenes with an index 39.5 is the fourth. In the fifth place is cyclic polymers of aldehydes with an index of 26.8. Table 5 shows top 3-product line in plastic/rubber sector with RCA≥1.

**Table 5: Top 3 product lines in plastic/rubber sector with RCA≥1**

Product Code	Product description	RCA 2008 ≥1	RCA 2009 ≥1	RCA 2010 ≥1	RCA average for 3 years
390750	Ackydresin, in primary forms	7.18286	12.53773	10.04852	9.923039
391721	Tube, pipe or hose, rigid of polyethylene	2.225432	4.074501	3.326385	3.208772
392094	Sheet/film not cellural/reif. Plastic	2.175611	2.975915	1.933287	2.361604

Source: *Results of the study.*

In table 5, ackydresin, in primary forms in the plastic/rubber sector has the highest RCA in this sector with an index of 9.9. It is followed by tube, pipe or hose, rigid of polyethylene with RCA index of 3.2. In the third place is sheet/film not cellural/reif. Plastic with RCA index of 2.4. Table 6 shows top 3 products in raw hides, skins, leather and furs sector with RCA≥1.

**Table 6: Top 3 product lines in raw hides, skins, leather, and furs sector with RCA $\geq$ 1**

Product Code	Product description	RCA in 2008 $\geq$ 1	RCA in 2009 $\geq$ 1	RCA in 2010 $\geq$ 1	RCA average for 3 years
410419	Tanned/crust hides and skins of goats/kids, without wool	27.13507	47.22567	35.02711	36.46262
410530	Tanned/crust skins of sheep/lambs, without wool on	2.656477	5.502239	3.622931	3.927216
410621	Tanned/crust hides and skins of goats/kids, without wool/hair on	3.012227	3.321003	4.002248	3.445159

Source: Results of the study.

In table 6, tanned/crust hides and skins of goats/kids, without wool in raw hides, skins, leather and furs sector has the highest RCA in this sector with index of 36.5. It is followed by tanned/crust skins of sheep/lambs, without wool on with RCA index of 3.9. In the third place is tanned/crust hides and skins of goats/kids, without wool/hair on with RCA index of 3.4. Table 7 shows top 3 product lines in wood and wood product sector with RCA $\geq$ 1.

**Table7: Top 3 product lines in wood and wood products sector with RCA $\geq$ 1**

Product Code	Product description	RCA in 2008 $\geq$ 1	RCA in 2009 $\geq$ 1	RCA in 2010 $\geq$ 1	RCA average for 3 years
480210	Paper, hand-made, uncoated	8.849922	18.30223	19.20618	15.45278
480254	Paper and paper board, not cont. fibres obt. By a mech./chem.-chem process	11.31422	16.22855	13.70892	13.75056
480269	Uncoated paper and paper board and non-perforated punch cards and punch tape	7.482654	11.67001	10.001	9.71789

Source: Results of the study.

In table 7, paper, hand-made, uncoated in the wood and wood product sector has the highest RCA in this sector with an index of 15.5. It is followed by Paper and paperboard, not cont. fibres obt. By a mech./chem.-chem process with RCA index of 13.8. Uncoated paper, paperboard, non-perforated punch cards and punch tape are the third with an index of 9.7. Table 8 shows top 10 product lines in the textiles sector with RCA $\geq$ 1.

**Table 8: Top 10 product lines in textiles sector**

Product Code	Product description	RCA in 2008 ≥1	RCA in 2009 ≥1	RCA in 2010 ≥1	RCA average for 3 years
570190	Carpets of materials, knitted	154.4577	190.5369	136.7276	160.5741
520548	Combed mult cotton yarn	111.3896	224.0798	125.7195	153.7297
581100	Quitted textile products in piece (not embroidered)	141.743	144.2763	155.6061	147.2085
530110	Flax fibre raw or retted	13.46803	100.2341	97.30028	70.33414
550820	Sewing thread of artificial staple fibres	62.59593	81.69428	61.83857	68.70959
540500	Artificial monofilament >67 dtex t<1mm, strip straw	42.14381	81.25133	73.0028	70.33414
540332	Yarn, viscose rayon, single >120 turn/m not retail	48.45865	72.69175	50.60151	57.25064
630291	Toilet or kitchen linen, of cotton	36.06022	59.04798	44.50012	46.53611
630299	Toilet or kitchen linen, of material	38.44314	56.35261	44.29694	46.36423
520544	Cotton yarn >85% multiple combed 192-125 dtex, not retail	30.1733	46.24961	45.06436	40.49576

Source: Results of the study.

In table 8, carpets of materials, knitted product line has the highest RCA in the textiles sector with an index of 160.6. It is followed by combed multi cotton yarn with an RCA of 153.7. The third product line is quitted textile products in piece (not embroidered) with an index of 147.2. In fourth place is flax fibre raw or retted with an index of 70.3. The fifth place is occupied by sewing thread of artificial staple fibres with an index of 57.3. Table 9 shows top 3 product lines in the stone/glass sector with  $RCA \geq 1$ .

**Table 9: Top 3 product lines in Stone/Glass sector with  $RCA \geq 1$** 

Product Code	Product description	RCA in 2008 >1	RCA in 2009 >1	RCA in 2010 >1	RCA average for 3 years
690710	Unglazed ceramic mosaic tiles <7cm wide	103.32	165.5728	112.7904	127.2277
690810	Glazed ceramic tiles, cubes and similar <7cm wide	90.54633	109.7544	111.4965	103.9324
701391	Glassware except kitchen, tableware, of lead crystal	96.88676	115.378	88.49935	100.2547

Source: Results of the study.

In table 9, unglazed ceramic mosaic tiles <7cm wide product line has the highest RCA in stone/glass sector with an index of 127.2. It is followed by glazed ceramic tiles, cubes and similar <7cm wide with RCA index of 103.9. The third place is occupied by glassware except kitchen, tableware, of lead crystal with an index of 100.3. Table 10 shows top 5 product lines in the metals sector with  $RCA \geq 1$ .

**Table10: Top 5 product lines in metals sector with  $RCA \geq 1$**

Product Code	Product description	RCA in 2008 $\geq 1$	RCA in 2009 $\geq 1$	RCA in 2010 $\geq 1$	RCA average for 3 years
760320	Powders/fakes, aluminium, of lamellar structure	129.1099	241.3813	165.8641	178.7851
740911	Plate, sheet, strip, refined copper, coil $t > 0.15\text{mm}$	40.23463	84.8634	50.23458	58.44412
721310	Hot rolled bar/rod grooved iron or non-alloy steel in irregular coils	26.28232	63.2355	44.98067	44.83283
720826	Flat rid prod/coils $> 4.75$	20.29372	48.37826	27.55068	32.07422
750890	Articles of nickel	18.71631	27.7465	23.77394	23.41225

Source: Results of the study.

In table 10, powders/fakes, aluminium, of lamellar structure product line has the highest RCA in metals sector with an index of 178.8. It is followed by plate, sheet, strip, refined copper, coil  $t > 0.15\text{mm}$  with an index of 58.4. Hot rolled bar/rod grooved iron or non-alloy steel in irregular coils is the third with an index of 44.8. Table 11 shows top 3 product lines in machinery/electric sector with  $RCA \geq 1$

**Table11: Top 3 product lines in machinery/electrical sector with  $RCA \geq 1$**

Product Code	Product description	RCA in 2008 $\geq 1$	RCA in 2009 $\geq 1$	RCA in 2010 $\geq 1$	RCA average for 3 years
854411	Insulated winding wire of copper	10.27243	20.66872	12.95783	14.63290
854420	Co-axial cable and other co-axial electric conductor	8.377955	15.96665	14.26901	12.8712
851610	Electric instant, storage and immersion	6.452082	10.27106	8.511083	8.411408

Source: Results of the study.

Insulated winding wire of copper product line in table 11 has the highest RCA in machinery/electrical sector with an index of 14.6. It is followed by co-axial cable and other co-axial electric conductor with an index of 12.9. The third place is occupied by electric instant, storage and immersion with an index of 8.4. Table 12 shows 2 product lines with  $RCA \geq 1$ .

**Table 12: 2 product lines in transport sector with  $RCA \geq 1$**

Product Code	Product description	RCA in 2008 $\geq 1$	RCA in 2009 $\geq 1$	RCA in 2010 $\geq 1$	RCA average for 3 years
870990	Work truck parts	0.929233	1.471664	1.452799	1.284566
871640	Trailers, semi trailers	0.612896	1.392409	1.261314	1.088873

Source: Results of the study.

In table 12, there are only 2 product lines in the transport sector with  $RCA \geq 1$ . The first one is work truck parts with an index of 1.3. It is followed by trailers, semi trailers with an index of 1.1. Table 13 shows 4 product lines in the miscellaneous sector with  $RCA \geq 1$ .

**Table 13: 4 product lines in the miscellaneous sector with  $RCA \geq 1$**

Product Code	Product description	RCA in 2008 $\geq 1$	RCA in 2009 $\geq 1$	RCA in 2010 $\geq 1$	RCA average for 3 years
950310	Electric trains, train sets etc	0.413959	17.18755	2.380507	6.660672
902830	Electricity supply, production and calibrating meters	2.358958	3.137157	2.67006	2.722041
940360	Furniture, wooden	2.144623	3.303763	2.492426	2.646937
960899	Duplicating stylos, pen/pencil holders, pen parts	1.01007	1.682842	1.268866	1.320572

Source: Results of the study.

In table 13, Electric trains, train sets product line has the highest RCA in the miscellaneous with an index of 6.7. There are only 4 product lines in this sector. Electricity supply, production and calibrating meters product line is the second with an index of 2.7. In the third position is furniture, wooden with an index of 2.6. It is followed by duplicating stylos, pen/pencil holders, pen parts with an index of 1.3.

Textile sector is the most competitive sector in Angola. It accounts 34.5% of all product lines in which Angola has revealed comparative advantage. It is followed by metals sector which accounts for 14.2%. In the third place of competitiveness are chemicals and allied products which accounts for 13.7%. The three sectors account for 62.4%. This leaves 37.65% the remaining 9 sectors. It appears there is no relationship between competitiveness of a sector and higher revenues from exports. Over 90% of Angola's export revenues are derived from oil and diamond export. With substantial of those revenues being derived from oil. Oil and diamond do not fall in the textile sectors. It is therefore possible for a country to be competitive in a particular sector and then not generate sufficient export revenues if the products are of lower values. Therefore, it pays much more if a country is competitive in a sector in which it has products with high value.

Further, the textile sector is the most vulnerable due to competition from countries such as China which produces them and exports at a very low prices. Without any tariff protection, such countries can destabilize the textiles sector. There are many countries whose textile industries have closed due to cheap imports and also from competition from second hand clothing.

## CONCLUSIONS AND RECOMMENDATIONS

Competitiveness is concentrated in the textile sector in Angola. Oil and diamond constitute more than 90% of Angola's export revenues but these products do not fall in the textiles sector. There are other three sectors in which Angola is not competitive at all. It is recommended that Angola should strive to diversify and move away from textile concentration, as it is the most vulnerable from cheap imports abroad including second hand clothing.

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