Algeria's Manufacturing Sector

Few Avenues to Diversification

Sebastian Bustos & Muhammed Ali Yildirim

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Sadat Tower, Tenth Floor P.O.B 55-215, Leon Street, Ras Beirut, Lebanon

T: + 961 1 79 93 01 F: + 961 1 79 93 02 info@lcps-lebanon.org www.lcps-lebanon.org

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Sebastian Bustos

Sebastian Bustos is a PhD candidate in public policy at Harvard University and a doctoral fellow at the Center for International Development at Harvard University. Bustos's research focuses on how international competition impacts local markets and the benefits and challenges presented by multinational corporations operating in developing countries. He holds a master's degree in public administration and international development from Harvard University and a BS in economics and business from the University of Chile.

Muhammed Ali Yildirim

Muhammed A. Yıldırım is an assistant professor of economics at Koç University in Istanbul and an associate at the Center for International Development at Harvard University. He specializes in studying network and spillover effects in a multitude of research areas including industrial policy, international trade, productivity, and economic growth. Yıldırım is a co-author of *The Atlas of Economic Complexity* and contributes to the back end of the associated website, which contains millions of data visualizations on the industrial structure of various countries. He obtained his PhD in applied physics from Harvard University and a BS degree from the California Institute of Technology.

An overview of Algeria

Algeria's position in the product space suggests that the country's future path for development should focus on new opportunities in the chemical and food clusters. Table 1 lists target sectors that the methodology identifies as strategic for Algeria's future development.¹

Given Algeria's geographic location and the products in which it already has a competitive presence, the community with the greatest number of target products is the foodstuff cluster, with 20 products (HS2:16-24). Following closely is chemicals & allied industries (with a total of 17 products, HS2:28-38), which is somewhat expected for a big oil producer. While products in the foodstuff community are closer in distance in terms of productive knowledge and capabilities of the country, the products under chemicals & allied industry have a higher Product Complexity Index (PCI). Therefore, developing these would have a larger impact on Algeria's average complexity. As can be seen in the table, the country currently has a very small presence in target communities.

Table 1 Summary of target sectors

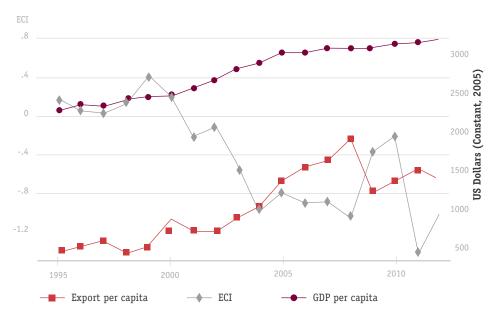
Inorganic Chem, Precious Metal Compounds, Isotopes 5 106 B Preps. of Vegs, Fruits, Nuts, Etc. 4 53 B Plastic and Articles Thereof 4 536 B Corganic Chemicals 3 91 B Pertilizers 3 75 B Everages, Spirits and Vinegar 3 88 B Preps. of Cereals, Flour, Starch or Milk 3 48 B Machinery and Mechanical Appliances, Computers, 2 1956 B Boilers, Nuclear Reactors Optical, Photo/Cinematographic, Medical Instruments 2 488 B and Accessories Rocoa and Cocoa Preps 2 39 B Ships/Boats and Floating Structures 2 91 B Soaps, Waxes, Candles 2 72 B Soaps, Waxes, Candles 2 53 B Mool, Animal Hair, Yarns, Woven Fabrics 1 14 B Ed. Prep of Meat, Fish, Crustaceans, Etc. 1 44 B Electrial Machinery 1 1913 B Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B Worn Clothing, Rags	HS2	Product name	Product Targets	Product World Exports
Plastic and Articles Thereof 3 Oils and Resinoids, Perfumery, Cosmetics 3 Organic Chemicals 3 408 B 31 Fertilizers 3 75 B 22 Misc. Edible Preparations 3 57 B 22 Beverages, Spirits and Vinegar 3 88 B 19 Preps. of Cereals, Flour, Starch or Milk 3 48 B 84 Machinery and Mechanical Appliances, Computers, Boilers, Nuclear Reactors 90 Optical, Photo/Cinematographic, Medical Instruments 2 488 B and Accessories 18 Cocoa and Cocoa Preps 2 39 B 89 Ships/Boats and Floating Structures 2 91 B 23 Food Industries Residue and Animal Feed 2 72 B 34 Soaps, Waxes, Candles 51 Wool, Animal Hair, Yarns, Woven Fabrics 1 14 B 16 Ed. Prep of Meat, Fish, Crustaceans, Etc. 1 44 B 85 Electrial Machinery 1 1913 B 63 Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B	28	Inorganic Chem, Precious Metal Compounds, Isotopes	5	106 B
Oils and Resinoids, Perfumery, Cosmetics Organic Chemicals Fertilizers Misc. Edible Preparations Beverages, Spirits and Vinegar Preps. of Cereals, Flour, Starch or Milk Machinery and Mechanical Appliances, Computers, Boilers, Nuclear Reactors Optical, Photo/Cinematographic, Medical Instruments Accessories Cocoa and Cocoa Preps Ships/Boats and Floating Structures Ships/Boats and Floating Structures Soaps, Waxes, Candles Mool, Animal Hair, Yarns, Woven Fabrics Ed. Prep of Meat, Fish, Crustaceans, Etc. Made-Up Text. Articles Nesoi, Needlecraft Sets,	20	Preps. of Vegs, Fruits, Nuts, Etc.	4	53 B
Organic Chemicals Fertilizers Misc. Edible Preparations Beverages, Spirits and Vinegar Preps. of Cereals, Flour, Starch or Milk Machinery and Mechanical Appliances, Computers, Boilers, Nuclear Reactors Optical, Photo/Cinematographic, Medical Instruments Cocoa and Cocoa Preps Ships/Boats and Floating Structures Ships/Boats and Floating Structures Soaps, Waxes, Candles Mool, Animal Hair, Yarns, Woven Fabrics Made-Up Text. Articles Nesoi, Needlecraft Sets, Made-Up Text. Articles Nesoi, Needlecraft Sets, A 88 B 48 B 408 B 409 B	39	Plastic and Articles Thereof	4	536 B
31Fertilizers375 B21Misc. Edible Preparations357 B22Beverages, Spirits and Vinegar388 B19Preps. of Cereals, Flour, Starch or Milk348 B84Machinery and Mechanical Appliances, Computers, Boilers, Nuclear Reactors21956 B90Optical, Photo/Cinematographic, Medical Instruments2488 Band Accessories239 B18Cocoa and Cocoa Preps239 B89Ships/Boats and Floating Structures291 B23Food Industries Residue and Animal Feed272 B34Soaps, Waxes, Candles253 B51Wool, Animal Hair, Yarns, Woven Fabrics114 B16Ed. Prep of Meat, Fish, Crustaceans, Etc.144 B85Electrial Machinery11913 B63Made-Up Text. Articles Nesoi, Needlecraft Sets,151 B	33	Oils and Resinoids, Perfumery, Cosmetics	3	91 B
Misc. Edible Preparations 22 Beverages, Spirits and Vinegar 3 88 B 19 Preps. of Cereals, Flour, Starch or Milk 3 48 B 84 Machinery and Mechanical Appliances, Computers, Boilers, Nuclear Reactors 90 Optical, Photo/Cinematographic, Medical Instruments and Accessories 18 Cocoa and Cocoa Preps 2 39 B 89 Ships/Boats and Floating Structures 2 91 B 23 Food Industries Residue and Animal Feed 2 72 B 34 Soaps, Waxes, Candles 2 53 B 51 Wool, Animal Hair, Yarns, Woven Fabrics 1 14 B 16 Ed. Prep of Meat, Fish, Crustaceans, Etc. 1 44 B 85 Electrial Machinery 1 1913 B 63 Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B	29	Organic Chemicals	3	408 B
Beverages, Spirits and Vinegar Preps. of Cereals, Flour, Starch or Milk Machinery and Mechanical Appliances, Computers, Boilers, Nuclear Reactors Optical, Photo/Cinematographic, Medical Instruments Cocoa and Cocoa Preps Ships/Boats and Floating Structures Food Industries Residue and Animal Feed Soaps, Waxes, Candles Soaps, Waxes, Candles Ed. Prep of Meat, Fish, Crustaceans, Etc. Make B Base Base B Base Base B Base Base B Base Base B Base B Base	31	Fertilizers	3	75 B
Preps. of Cereals, Flour, Starch or Milk Machinery and Mechanical Appliances, Computers, Boilers, Nuclear Reactors Optical, Photo/Cinematographic, Medical Instruments 2 A88 B and Accessories Cocoa and Cocoa Preps Ships/Boats and Floating Structures Food Industries Residue and Animal Feed Soaps, Waxes, Candles Soaps, Waxes, Candles Mool, Animal Hair, Yarns, Woven Fabrics Mool, Animal Hair, Yarns, Woven Fabrics Ed. Prep of Meat, Fish, Crustaceans, Etc. Made-Up Text. Articles Nesoi, Needlecraft Sets, Made-Up Text. Articles Nesoi, Needlecraft Sets,	21	Misc. Edible Preparations	3	57 B
Machinery and Mechanical Appliances, Computers, 2 1956 B Boilers, Nuclear Reactors 90 Optical, Photo/Cinematographic, Medical Instruments 2 488 B and Accessories 18 Cocoa and Cocoa Preps 2 39 B 89 Ships/Boats and Floating Structures 2 91 B 23 Food Industries Residue and Animal Feed 2 72 B 34 Soaps, Waxes, Candles 2 53 B 51 Wool, Animal Hair, Yarns, Woven Fabrics 1 14 B 16 Ed. Prep of Meat, Fish, Crustaceans, Etc. 1 44 B 85 Electrial Machinery 1 1913 B 63 Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B	22	Beverages, Spirits and Vinegar	3	88 B
Boilers, Nuclear Reactors 90 Optical, Photo/Cinematographic, Medical Instruments 2 488 B and Accessories 18 Cocoa and Cocoa Preps 2 39 B 89 Ships/Boats and Floating Structures 2 91 B 23 Food Industries Residue and Animal Feed 2 72 B 34 Soaps, Waxes, Candles 2 53 B 51 Wool, Animal Hair, Yarns, Woven Fabrics 1 14 B 16 Ed. Prep of Meat, Fish, Crustaceans, Etc. 1 44 B 85 Electrial Machinery 1 1913 B 63 Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B	19	Preps. of Cereals, Flour, Starch or Milk	3	48 B
90 Optical, Photo/Cinematographic, Medical Instruments 2 and Accessories 18 Cocoa and Cocoa Preps 2 39 B 89 Ships/Boats and Floating Structures 2 91 B 23 Food Industries Residue and Animal Feed 2 72 B 34 Soaps, Waxes, Candles 2 53 B 51 Wool, Animal Hair, Yarns, Woven Fabrics 1 14 B 16 Ed. Prep of Meat, Fish, Crustaceans, Etc. 1 44 B 85 Electrial Machinery 1 1913 B 63 Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B	84	Machinery and Mechanical Appliances, Computers,	2	1956 B
and Accessories 18 Cocoa and Cocoa Preps 2 39 B 89 Ships/Boats and Floating Structures 2 91 B 23 Food Industries Residue and Animal Feed 2 72 B 34 Soaps, Waxes, Candles 51 Wool, Animal Hair, Yarns, Woven Fabrics 1 14 B 16 Ed. Prep of Meat, Fish, Crustaceans, Etc. 1 44 B 85 Electrial Machinery 1 1913 B 63 Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B		Boilers, Nuclear Reactors		
18 Cocoa and Cocoa Preps 2 39 B 89 Ships/Boats and Floating Structures 2 91 B 23 Food Industries Residue and Animal Feed 2 72 B 34 Soaps, Waxes, Candles 51 Wool, Animal Hair, Yarns, Woven Fabrics 1 14 B 16 Ed. Prep of Meat, Fish, Crustaceans, Etc. 1 44 B 85 Electrial Machinery 1 1913 B 63 Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B	90	Optical, Photo/Cinematographic, Medical Instruments	2	488 B
89 Ships/Boats and Floating Structures 2 91 B 23 Food Industries Residue and Animal Feed 2 72 B 34 Soaps, Waxes, Candles 2 53 B 51 Wool, Animal Hair, Yarns, Woven Fabrics 1 14 B 16 Ed. Prep of Meat, Fish, Crustaceans, Etc. 1 44 B 85 Electrial Machinery 1 1913 B 63 Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B		and Accessories		
Food Industries Residue and Animal Feed 2 72 B Soaps, Waxes, Candles 2 53 B Wool, Animal Hair, Yarns, Woven Fabrics 1 14 B Ed. Prep of Meat, Fish, Crustaceans, Etc. 1 44 B Electrial Machinery 1 1913 B Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B	18	Cocoa and Cocoa Preps	2	39 B
34Soaps, Waxes, Candles253 B51Wool, Animal Hair, Yarns, Woven Fabrics114 B16Ed. Prep of Meat, Fish, Crustaceans, Etc.144 B85Electrial Machinery11913 B63Made-Up Text. Articles Nesoi, Needlecraft Sets,151 B	89	Ships/Boats and Floating Structures	2	91 B
51Wool, Animal Hair, Yarns, Woven Fabrics114 B16Ed. Prep of Meat, Fish, Crustaceans, Etc.144 B85Electrial Machinery11913 B63Made-Up Text. Articles Nesoi, Needlecraft Sets,151 B	23	Food Industries Residue and Animal Feed	2	72 B
16Ed. Prep of Meat, Fish, Crustaceans, Etc.144 B85Electrial Machinery11913 B63Made-Up Text. Articles Nesoi, Needlecraft Sets,151 B	34	Soaps, Waxes, Candles	2	53 B
85 Electrial Machinery 1 1913 B 63 Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B	51	Wool, Animal Hair, Yarns, Woven Fabrics	1	14 B
63 Made-Up Text. Articles Nesoi, Needlecraft Sets, 1 51 B	16	Ed. Prep of Meat, Fish, Crustaceans, Etc.	1	44 B
•	85	Electrial Machinery	1	1913 B
Worn Clothing, Rags	63	Made-Up Text. Articles Nesoi, Needlecraft Sets,	1	51 B
		Worn Clothing, Rags		

Please see the introduction for a detailed methodology. http://www.lcps-lebanon.org/publication.php?id=294&category=90 0&year=2017

1100	D 1 4	_	Product World
HS2	Product name	Targets	Exports
97	Works of Art, Collectors' Pieces, Antiques	1	21 B
17	Sugars and Confectionery	1	16 B
32	Putty and Inks, Dyes, Pigments, Paints and Putty	1	75 B
52	Cotton, Yarns, Woven Fabrics Thereof	1	61 B
94	Furniture, Bedding, Lighting, Prefabricated Buildings	1	186 B
24	Tobacco and Manuf. Tobacco Subs.	1	40 B

K =thousand, M =million, B =billion

Figure 1 Evolution of Tunisia's complexity, GDP and exports



Note Own calculation using HS4-level trade data from United Nations COMTRADE, and the World Development Indicators from the World Bank Database.

Algeria's GDP per capita has doubled since 1995, reaching almost \$3,200 in 2012 (figure 1). Exports per capita, on the other hand, increased rapidly, peaking in 2008, before settling around \$1,500 in 2012. Despite increases in exports, Algeria has not diversified significantly away from oil and gas, which is reflected in its falling Economic Complexity Index (ECI). As mentioned in the methodology section, ECI is unique to a country-year and summarizes how complex its product mix is. Although ECI has no absolute interpretation, but rather is used to rank countries according to the complexity of their export basket, the sharp decrease seen in this value over the years indicates that the average complexity of Algeria's products has diminished. As will be shown in the following section, Algeria's product space is not highly diversified and has a high dependency on natural resources, making it difficult for the country to develop more complex products.

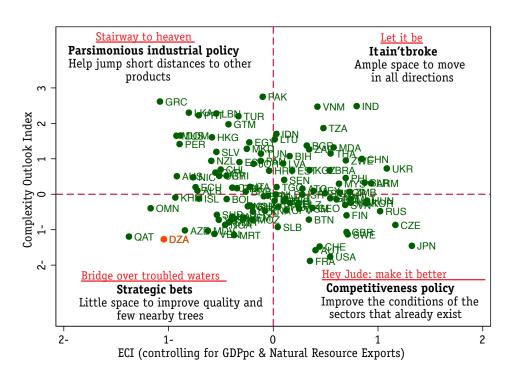


Figure 2 Summary of Algeria in the Product Space

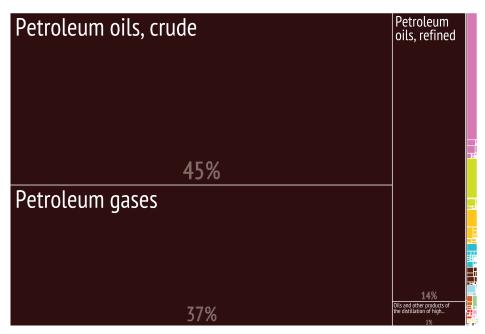
Note Own calculation using HS4-level trade data from United Nations COMTRADE, and World Development Indicators from the World Bank Database.

Given Algeria's high dependency on natural resources and the fact that these do not offer the country many opportunities to diversify to other products, Algeria is on a bridge over troubled waters and its way out of this situation requires making strategic bets. The figure above shows the position of countries in terms of ECI (after controlling for the effect of income and natural resources) and countries' positions relative to complex products on the product space. As can be seen in the figure, not only is Algeria's average complexity low (ECI is lower than the mean country), the few nearby opportunities in its product space (reflected by a low Complexity Outlook Index [COI]) locate the country in the lower left quadrant, calling for strategic bets or industrial policy 'in the large'. For countries in this quadrant, redeploying productive knowledge that already exists within the country into other more complex products would be hard. The current position implies that, unaided, the economy is unlikely to diversify. It justifies the adoption of proactive industrial policies entailing a number of new industries or products, call them strategic bets, at which to target public inputs. The aim of such support is to provide temporary public support that will attract and facilitate private investment in new products and sectors.

Algeria's Productive Structure

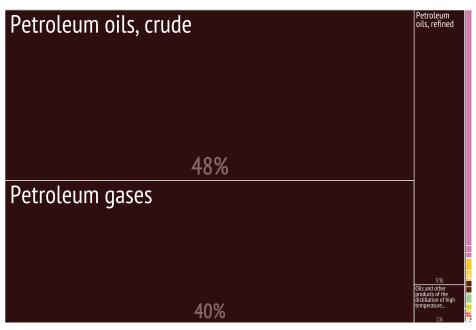
Figure 3 Algeria's detailed trade structure in 2012 and evolution of exports per capita of Algeria (1995-2012)

a Exports of Algeria



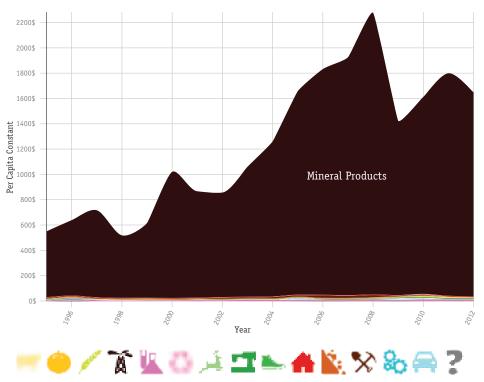
Algeria exports totaling under \$?? billion

b Net exports of Algeria



Algeria exports totaling approximately \$1.3 billion

C Evolution of exports

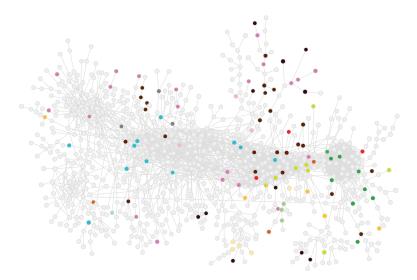


Note Own calculation using HS4-level trade data from United Nations COMTRADE. Products are colored according to the communities that they belong to according to the above legend.

In 2012, Algeria's exports totaled some \$70 billion, increasing its exports per capita from about \$500 in 1995 to above \$1,600 in 2012 (after peaking in 2008 at over \$2,200). Algeria's export basket consists almost entirely of petroleum oils (crude and refined) and gases, accounting for 97% of the country's total exports (figure 3a). Algeria's export concentration is not unusual among resource exporters, but, as can be seen in figure 3c, mineral products have gained importance in the export basket since 1995, which has, in turn, decreased its average complexity. This is worrisome since countries whose export baskets are more complex than what their income would suggest have generally tended to grow faster.

Figure 4 Algeria on the product space

a 1995



b 2012



Note Own calculation using HS4-level trade data from United Nations COMTRADE. Node size is proportional to world trade. Solid colored nodes indicate the products in which Algeria is competitive in world markets (i.e. RCA> 1). The nodes are colored according to the communities that they belong to.

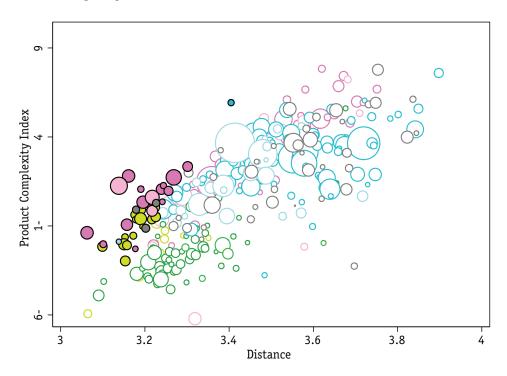
In order to get a sense of the type of productive knowledge present in Algeria and what may be nearby, its product space is analyzed in addition to its change from 1995 to 2012 (figure 4a and 4b). The color nodes represent products that Algeria currently exports with revealed comparative advantage (RCA greater than one). The pale nodes are those in which Algeria does not have a significant presence (RCA less than one). The color of each node corresponds to its 'community'—a grouping of products requiring related productive knowledge, similar to the notion of a sector—while node size reflects the market share of the product in total world exports.

As mentioned in the methodology section, a general feature of the product space is that products in some communities naturally cluster more than others. For example, most machinery products (blue) cluster in the center of the product space; chemicals (purple) in the bottom left; electronics (light blue) in the top left; home office products (red) in the center right; and textiles (green) form a densely connected cluster in the far right of the product space. When products such as those in the textiles community are tightly interconnected, this suggests that they share a large amount of the requisite inputs needed in their production process. On the other hand, many natural resource products (brown) and agricultural products (yellow) tend to be less inter-connected and more peripheral in the product space. This suggests that the inputs required for the production of these foods are less central to the production of many other goods.

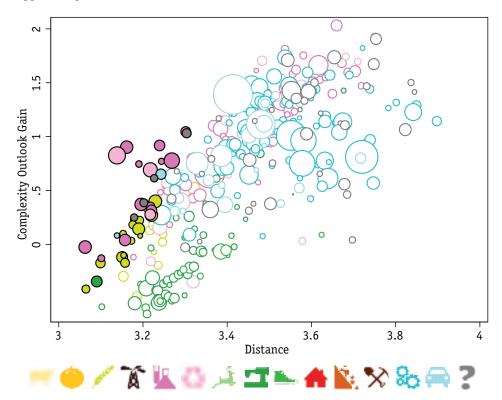
The most striking feature of Algeria's position in the product space is that it does not have products in the high complexity regions of the map that could be used as an anchor to diversify into higher complexity products. Additionally, the country lost its comparative advantage in many products between 1995 and 2012. This could be attributed to a number of factors. First, Algeria's over-reliance on its oil industry might have hindered the development of other industries, as the talent that otherwise would have been employed in different industries were drawn into the oil industry. Another possible explanation is that these developments might be associated with Dutch disease. Finally, Algeria might have been stagnant in industries it dominated in 1995, whereas the world grew, causing it to lose its comparative advantage.

Figure 5 Recommendations - Strategic bets for Algeria

a Product Complexity Index



b Opportunity Gain Index



Note Own calculation using HS4-level trade data from United Nations COMTRADE. Node size is proportional to world trade. Solid colored nodes indicate the strategic bets. The nodes are colored according to the communities that they belong to.

The product space analyzed above provides clues about what new products are feasible given Algeria's constraints and what could increase the average complexity of a country's production. In figure 5a and 5b, the ease of moving into a product (captured by the distance variable) and the attractiveness of the product (captured by PCI or Complexity Outlook Gain [COG] variables) are depicted. PCI affects the immediate complexity of the country, whereas COG quantifies how much the country's position in the product space would improve relative to more complex products if the country starts making a specific product. It can be thought of as how strategic or connected a product is, and therefore, how developing the capacity to produce such a product would facilitate future diversification in the country. Hence, higher values of PCI or COG are better for the country. According to this view, countries will optimize between the attractiveness of a product versus the ease of conquering a product. Therefore, the most attractive corner is the northwest part of the graph. Using these criteria, it is possible to identify frontier products that Algeria can target with its industrial policy.

Figures 5a and 5b highlight products that are most attractive based on PCI and COG, respectively. A detailed description of the products in our target list is provided in table 2. This methodology is used to define frontier products, i.e. strategic bets in Algeria to target with its industrial policy.

From the figures above it is possible to see that target products are mainly in the chemical or food clusters. As a group, chemical cluster products are relatively close to products made in Algeria and are of higher complexity (PCI or oppgain). This is expected given that the product space captures part of the input-output relationships between industries. Therefore, countries that are big oil producers can move down in the supply chain to chemicals.

There are also several opportunities in the food industry. Algeria is geographically close to the tropical products of sub-Saharan Africa as well as other crops from fertile Mediterranean countries. The products highlighted are also close in the product space to industries in the food cluster that the country already produces. Algeria can use these properties to its advantage, however, these products have lower PCI or COG than those of the chemical clusters, making them less desirable. The distance and PCI or COG are the driving variables that are used in order to identify strategic opportunities. By considering the tradeoff between existing productive knowledge (distance), complexity of a new product, and future diversification possibilities that the new productive knowledge will bring, a country is more likely to be successful in diversifying its product space.

Table 2 Recommendations for Algeria - PCI

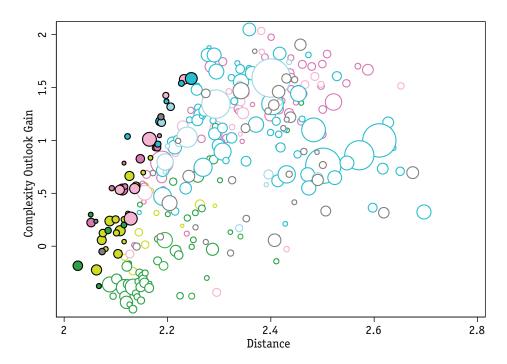
Table 2	Recommendations for Algeria - PCI							
HS4	Product name	RCA- 2012	Distance	PCI	Target rank	World Trade (\$)	Top Importers	Top Exporters
2901	Acyclic hydrocarbons	0.0	3.2	1.8	1	30 B	CHN BEL USA	NLD KOR JPN
3901	Polymers of ethylene, in primary forms	0.0	3.1	1.3	2	70 B	CHN DEU USA	SAU USA BEL
2815	Sodium hydroxide; potassium hydroxide;	0.0	3.2	1.1	3	5 B	AUS BRA USA	USA CHN DEU
	peroxides of sodium or potassium							
9406	Prefabricated buildings	0.3	3.2	-0.1	4	7 B	DEU NOR AUS	CHN DEU NLD
3102	Mineral or chemical fertilizers,	0.5	3.1	-1.4	5	30 B	USA IND BRA	RUS CHN UKR
	nitrogenous							
3402	Cleaning products	0.0	3.2	0.3	5	29 B	DEU FRA GBR	DEU USA FRA
1704	Confectionery sugar	0.0	3.2	-0.4	7	9 B	USA DEU GBR	DEU CHN NLD
3902	Polymers of propylene or of other	0.0	3.2	0.6	8	42 B	CHN DEU TUR	SAU KOR BEL
	olefins, in primary forms							
3105	Mineral or chemical fertilizers, mixed	0.0	3.2	-0.9	9	24 B	IND BRA THA	RUS USA CHN
2103	Sauces and seasonings	0.0	3.2	-0.1	10	10 B	USA GBR FRA	USA NLD DEU
2104	Soups and broths	0.0	3.2	-0.4	10	3 B	USA GBR MEX	USA DEU CAN
3305	Hair products	0.0	3.2	0.4	12	12 B	USA JPN GBR	DEU FRA THA
1806	Cocoa powder, sweetened	0.0	3.2	0.1	13	23 B	USA FRA DEU	DEU BEL ITA
1904	Cereal foods	0.0	3.2	-0.6	14	5 B	USA CAN FRA	DEU USA GBR
1905	Bread, pastry, cakes, biscuits and other	0.1	3.2	-0.6	15	27 B	USA GBR FRA	DEU BEL FRA
	baked goods							
2844	Radioactive chemical elements and	0.0	3.2	1.1	17	19 B	USA GBR FRA	GBR KAZ RUS
	radioactive isotopes							
8904	Tugs and pusher craft	0.0	3.1	-1.9	17	3 B	SGP ARE JPN	IND RUS ESP
3401	Soap	0.0	3.1	-2.0	17	6 B	USA CAN FRA	IDN DEU USA
2301	Flour or meal for animal feed	0.0	3.2	-1.6	19	6 B	CHN DEU NOR	PER CHL USA
2009	Fruit juices	0.1	3.1	-2.2	20	15 B	USA DEU NLD	BRA CHN NLD
2809	Diphosphorus pentaoxide; phosphoric	0.0	3.2	1.3	21	5 B	IND NLD IDN	MAR USA CHN
	acid; polyphosphoric acids							
2306	Cotton seed oilcake	0.0	3.2	-1.6	22	7 B	USA NLD ESP	CAN UKR IDN
2402	Cigars	0.0	3.2	-2.0	22	22 B	ITA FRA JPN	DEU NLD POL
3917	Tubes, pipes and hoses and fittings	0.0	3.2	-0.2	24	21 B	USA DEU MEX	DEU USA CHN
2106	Food preparations not elsewhere specified	0.0	3.2	0.1	24	31 B	USA GBR DEU	USA DEU NLD
9014	Direction finding compasses	0.1	3.2	0.3	26	7 B	USA GBR DEU	USA FRA GBR
2902	Cyclic hydrocarbons	0.0	3.3	1.7	27	53 B	CHN BEL TWN	KOR JPN NLD
2007	Jams, jellies	0.0	3.2	-1.0	28	2 B	USA DEU FRA	FRA DEU BEL
2203	Beer	0.0	3.2	-0.6	29	12 B	USA FRA GBR	MEX NLD DEU
2008	Fruit, nuts and edible plants preserved	0.0	3.2	-2.1	30	13 B	USA DEU JPN	CHN USA THA
	with sugar							
9015	Surveying, hydrographic, oceanographic, hydrological, meteorological or geophysical instruments and appliances	0.0	3.2	-1.1	31	9 B	USA CHN GBR	USA FRA GBR

HS4	Product name	RCA- 2012	Distance	PCI	Target rank	World Trade(\$)	Top Importers	Top Exporters
8401	Nuclear reactors and related equipment	0.0	3.4	5.9	32	5 B	FRA UKR CHN	RUS SWE DEU
1901	Malt extract	0.0	3.2	-0.5	33	15 B	CHN GBR USA	NLD FRA DEU
2835	Phosphinates and phosphonates	0.0	3.2	0.4	33	4 B	USA DEU FRA	CHN DEU USA
2909	Ethers	0.0	3.3	2.3	35	16 B	NLD SGP VEN	USA NLD SAU
3208	Paints and varnishes, nonaqueous	0.0	3.3	1.0	35	13 B	RUS CHN DEU	DEU JPN USA
3301	Essential oils	0.0	3.2	-2.3	37	4 B	USA FRA GBR	IND USA CHN
1604	Prepared or preserved fish	0.1	3.2	-3.0	37	16 B	USA JPN ITA	THA CHN ECU
2836	Carbonates; peroxocarbonates	0.1	3.2	-0.0	39	6 B	MEX KOR IDN	USA CHN DEU
	(percarbonates); commercial ammonium							
	carbonate containing ammonium							
	carbamate							
2002	Tomatoes, prepared or preserved	0.0	3.2	-3.0	40	4 B	GBR DEU JPN	ITA CHN USA
3307	Shaving products	0.0	3.3	1.0	41	10 B	DEU GBR USA	DEU GBR CHN
2204	Wine of fresh grapes	0.1	3.2	-0.6	42	32 B	USA GBR DEU	FRA ITA ESP
1801	Cocoa beans, whole	0.0	3.1	-5.9	43	9 B	NLD BRB USA	CIV GHA NGA
5201	Cotton raw	0.0	3.1	-4.9	44	21 B	CHN IDN TUR	USA IND AUS
9701	Paintings, drawings and pastels done by hand	0.0	3.3	2.0	44	13 B	GBR USA CHE	USA FRA GBR
2208	Alcoholic preps for beverages	0.0	3.2	-0.8	46	28 B	USA CHN RUS	GBR FRA USA
6305	Sacks and bags, used for packing goods	0.0	3.1	-4.1	47	4 B	USA JPN DEU	CHN IND TUR
3904	Polymers of vinyl chloride or of other	0.0	3.3	0.4	48	19 B	CHN DEU IND	USA DEU FRA
	halogenated olefins, in primary forms							
8544	Insulated wire; optical fiber cables	0.0	3.2	-0.1	49	101 B	USA DEU JPN	CHN MEX USA
8905	Floating or submersible drilling plat- forms	0.0	3.2	-0.3	50	18 B	IND SGP USA	KOR SGP BRA

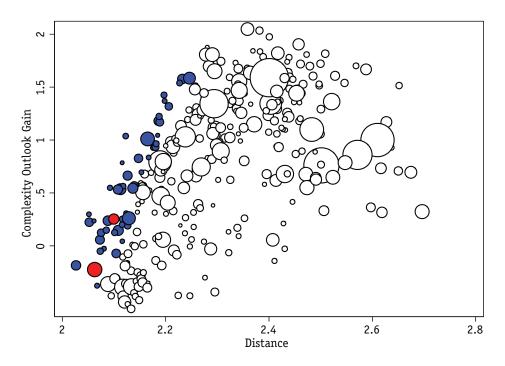
K =thousand, M =million, B =billion

Figure 6 Strategic bets for Algeria in year 2000

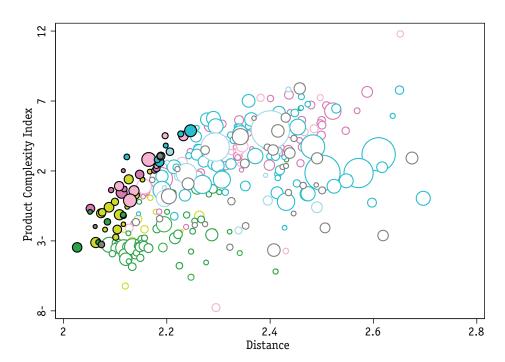
a Opportunity Gain Index



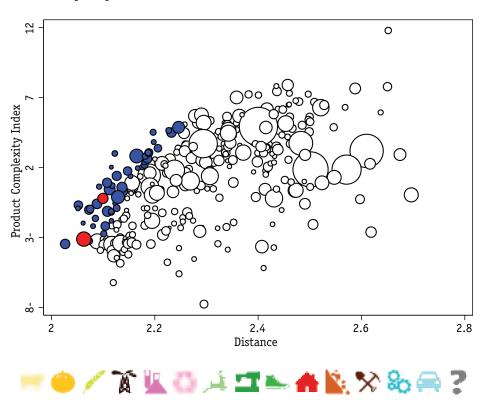
b Opportunity Gain Index



C Product Complexity Index



d Product Complexity Index



Note Own calculation using HS4-level trade data from United Nations COMTRADE. Node size is proportional to world trade. The nodes are colored according to the communities that they belong to in (a) and (c). In figures (b) and (d), Red nodes are conquered by Algeria and were also in our target list, Blue nodes are not conquered by Algeria and were in our target list. Finally, Yellow nodes are conquered but were not in the target list.

The previous exercise is then repeated for the year 2000 to identify target products given a hybrid rank that combines the ease and attractiveness of a product, in order to compare it to data from 2010. The idea is to identify sectors that, although attractive, where not developed, potentially because of constraints or market failures. In figures 6a and 6c, target product nodes are colored according to product communities. Highlighted in red and blue are products that Algeria was not making in year 2000 but are part of identified target products. Those in red are products that Algeria has conquered (i.e., achieved RCA > 1) by year 2010 and in blue, products that Algeria failed to conquer. Highlighted in yellow are products that Algeria conquered but were outside the target group.

As mentioned previously, Algeria occupies a peripheral position on the product space, which suggests that it will be difficult for the country to move into a new product. This is confirmed by our methodology: Among the non-natural resource based or non-geographical products, Algeria added only two new products to its export basket between 2000-2012: Conveyor or transmission belts of vulcanized rubber (4010) and Raw sugar, cane (1701). Nevertheless, there are 28 products identified that have high attractiveness, which were not developed in Algeria by 2010. These are interpreted as missed opportunities. These blue products warrant special attention as they might also hint to the presence of market failures in the country. As can be seen in figures 6a and 6c, while there are products from the textile, food, and mechanical communities, most of them are in the chemical cluster. A detailed description of these products is provided in table 3.

From the table it is possible to see that even though they do not reach our benchmark RCA>1, there are a few products identified that increased their revealed comparative advantage value significantly. Nevertheless these are very few. Five products reached an RCA value of 0.7: Agricultural, forestry machinery for soil preparation (8432), polymers of ethylene in primary forms (3901), Waters flavored or sweetened (2202), ethyl alcohol > 80% by volume (2207), and raw sugar, cane (1701). The majority of the products identified either decreased their RCA from 2000 to 2010, or remained with a RCA value of zero.

Table 3 Strategic bets for Algeria in year 2000

HS4	Product name	RCA- 2000	RCA- 2010	Distance	PCI	COG	World Trade(\$)	Target rank
8432	Agricultural, forestry machinery for soil	0.0	0.9	2.1	3.0	1.0	2 B	1
	preparation							
3814	Organic composite solvents and thinners	0.0	0.3	2.1	2.0	0.8	707 M	2
2815	Sodium hydroxide; potassium hydroxide;	0.0	0.1	2.1	0.6	0.5	2 B	3
	peroxides of sodium or potassium							
3105	Mineral or chemical fertilizers, mixed	0.0	0.1	2.1	-0.7	0.2	6 B	4
6309	Used clothes and textiles	8.0	0.0	2.1	-0.9	0.3	1 B	4
3917	Tubes, pipes and hoses and fittings	0.0	0.1	2.1	0.9	0.5	7 B	6
3808	Insecticides, rodenticides, fungicides, herbicides	0.1	0.0	2.1	0.4	0.5	11 B	7
1905	Bread, pastry, cakes, biscuits and other baked goods	0.1	0.1	2.1	-0.6	0.2	8 B	8
9703	Original sculptures and statuary	0.2	0.0	2.1	-2.0	0.2	780 M	9
3209	Paints and varnishes, aqueous	0.0	0.0	2.1	0.7	0.6	2 B	10
4010	Conveyor or transmission belts of vulcanized	0.0	0.0	2.2	4.5	1.4	2 B	11
	rubber							
1806	Cocoa powder, sweetened	0.1	0.0	2.1	1.4	0.7	7 B	13
2009	Fruit juices	0.5	0.1	2.1	-1.0	0.1	6 B	13
2202	Waters flavored or sweetened	0.5	2.9	2.1	-0.2	0.3	4 B	13
1704	Confectionery sugar	0.0	0.0	2.1	-1.0	0.1	4 B	15
5101	Wool	0.0	0.1	2.1	-1.6	0.1	3 B	16
8546	Electrical insulators of any material	0.0	0.0	2.2	3.8	1.4	1 B	17
3901	Polymers of ethylene, in primary forms	0.0	0.7	2.2	2.8	1.0	20 B	18
3208	Paints and varnishes, nonaqueous	0.0	0.1	2.1	1.7	0.8	6 B	18
8417	Industrial or laboratory furnaces and ovens,	0.9	0.0	2.2	4.6	1.5	2 B	20
	including incinerators							
9306	Bombs, grenades, torpedoes, mines, missiles and similar munitions of war	0.0	0.0	2.2	3.1	1.2	2 B	20
2306	Cotton seed oilcake	0.0	0.0	2.1	-2.2	-0.0	1 B	22
5201	Cotton raw	0.6	0.0	2.0	-3.5	-0.2	7 B	23
5702	Carpets, woven, not tufted or flocked, hand-woven rugs	0.1	0.0	2.1	-1.1	0.2	2 B	23
2106	Food preparations not elsewhere specified	0.1	0.0	2.1	-1.1	0.1	9 B	25
4002	Synthetic rubber	0.0	0.0	2.2	4.5	1.6	8 B	26
2849	Carbides	0.0	0.0	2.2	3.1	1.0	781 M	26
8502	Electric generating sets and rotary converters	0.1	0.1	2.2	2.6	1.2	6 B	28
8903	Yachts	0.0	0.0	2.2	3.1	1.2	5 B	29
1701	Raw sugar, cane	0.0	2.5	2.1	-3.1	-0.2	9 B	30
2101	Extracts of coffee, tea or mate	0.0	0.0	2.1	-1.2	0.3	2 B	31
9706	Antiques older than one hundred years	0.3	0.0	2.1	-3.3	-0.1	3 B	32
3904	Polymers of vinyl chloride or of other	0.0	0.0	2.1	0.6	0.5	9 B	33
	halogenated olefins, in primary forms							

HS4	Product name	RCA- 2000	RCA- 2010	Distance	PCI	COG	World Trade(\$)	Target rank
2301	Flour or meal for animal feed	0.0	0.0	2.1	-2.7	0.1	2 B	34
6305	Sacks and bags, used for packing goods	0.1	0.1	2.1	-3.1	-0.4	1 B	35
2104	Soups and broths	0.0	0.0	2.1	-0.6	0.3	1 B	36
8402	Steam or other vapor generating boilers	0.0	0.0	2.2	2.8	1.0	2 B	37
8607	Parts of railway locomotives	0.0	0.0	2.2	3.4	1.3	4 B	38
8455	Metal-rolling mills	0.0	0.0	2.2	4.7	1.6	2 B	39
2105	Ice cream	0.0	0.0	2.2	1.4	0.7	1 B	40
3922	Baths, shower baths, sinks, washbasins, bidets,	0.0	0.0	2.2	2.4	1.0	1 B	40
	lavatory pans, seats and covers							
2203	Beer	0.0	0.0	2.1	0.3	0.6	5 B	42
8419	Machinery, plant or laboratory equipment	0.3	0.0	2.2	4.9	1.6	14 B	43
	involving a change of temperature such as							
	heating, cooking, roasting							
1604	Prepared or preserved fish	0.1	0.1	2.1	-2.2	-0.1	6 B	44
1601	Sausages	0.0	0.0	2.2	2.0	0.8	1 B	45
2207	Ethyl alcohol > 80% by volume	0.0	0.7	2.1	-1.8	0.0	1 B	46
3923	Packing of goods	0.3	0.1	2.1	-0.1	0.3	17 B	47
2835	Phosphinates and phosphonates	0.0	0.0	2.2	2.0	0.9	2 B	48
3506	Glues and adhesives	0.3	0.0	2.2	2.2	0.9	3 B	49
2103	Sauces and seasonings	0.0	0.1	2.1	-0.9	0.2	3 B	50

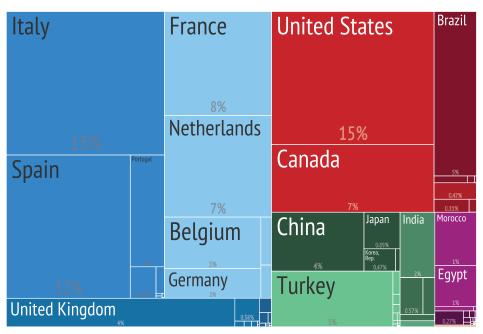
K =thousand, M =million, B =billion

Algeria's Export Destinations

Lastly, possible markets for Algerian exports are analyzed, as can be observed in figure 7a. Not surprisingly, Algeria's export partners are mainly oil importers. Additionally, most of them are geographically close. The two major destinations of Algeria's exports are Italy and the United States (both accounting for 15%), followed by Spain and France (12% and 8% each, respectively). Figure 7b shows that exports to Southern Europe as well as Northern American countries have risen, although exports to all destinations suffered a fall following 2008.

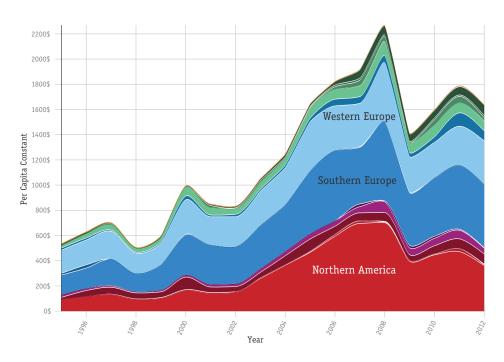
Figure 7 Trade partners of Algeria (2012)

a Export destinations



Jordanian exports totaling under \$????? billion

b Evolution of export destinations



Note Own calculation using HS4-level trade data from United Nations COMTRADE. Products are colored according to the communities that they belong according to the following legend:



When taking into account the current trade of countries in eligible products versus potential, it is possible to identify top export destinations for Algeria. Table 4 presents potential trade in those export destination countries as well as potential of other countries included in this report. From the table it follows that Algeria's trade with the other countries included in the report is healthy and that its greatest trade potential countries are mainly in Europe.

Table 4 Trade potential

Importer	Trade Health	Number of Eligible Products	Potential in Eligible Products (\$)	Current Trade in Eligible Products (\$)	Total Trade (\$)
ARE	2.0	5	34 K	4 M	20 M
BEL	0.6	11	16 M	11 M	22 M
DEU	0.3	5	3 M	14 M	32 M
EGY	26.3	6	0 K	5 M	6 M
FRA	0.8	21	3 M	135 M	149 M
GBR	0.3	12	4 M	7 M	13 M
JOR	360.5	1	0 K	2 M	2 M
KWT	0.0	4	127 K	11 K	7 M
LBN	2.4	1	0 K	6 K	11 M
LBY	25.9	6	0 K	4 M	7 M
SAU	10.5	2	0 K	4 M	5 M
SWE	0.6	2	5 M	3 M	4 M
TUN	10.6	8	0 K	18 M	22 M
TUR	1.8	7	236 K	8 M	23 M
YEM	15.9	2	0 K	699 K	764 K

K = thousand, M = million, B = billion

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