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PANORAMA

Race for market share in Africa: the European pack is catching up with the French breakaway

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In December 2013, the New Economic Partnership Forum was held in Paris with the aim of reviving trade between France and Africa. At the end of this Forum, then-President François Hollande announced the ambitious goal of doubling trade between France and Africa over five years. A few months later, the drop in oil prices extinguished all hope of achieving this objective and reduced the total value of trade (sum of imports and exports) between these two zones from 73 billion US dollars in 2013 to 54 billion USD last year. In 2017, France also lost its status of leading European supplier to Africa to Germany. This observation symbolises the continued erosion of French companies' market share in Africa: exports accounted for almost 11% of flows to Africa at the beginning of the millennium, but halved by 2017 (5.5%).

The analysis of trade flows by sector in this study reveals that the loss of French influence is not only attributable to China: other major emerging countries, as well as some European neighbours, have entered the African market. If slowing French export performance – particularly in key areas, such as the automotive, pharmaceutical, and capital goods sectors – is not specific to trade with Africa, France's sharp loss of market share is alarming. Although the activity of many countries in Africa is recovering from the impact of external shocks in 2016, this study also focuses on identifying markets where trade potential can be further tapped. In addition to the East and Southern African markets, with which trade flows are relatively weak, our analysis, based on a gravity model, also reveals that France's export performance towards Algeria and Morocco is well below its potential.

coface FOR TRADE

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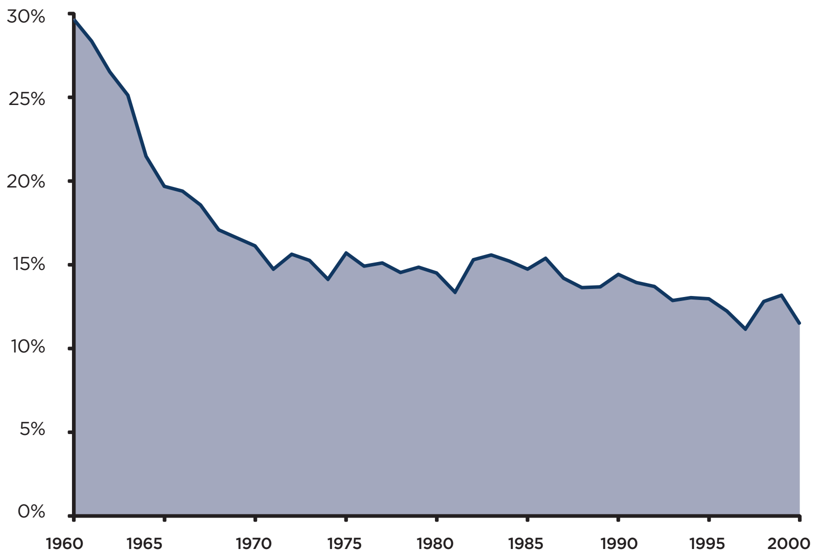
1 60 YEARS OF TRADE RELATIONS

Commercial ties between France and its former colonies in Africa have followed a very clear trend since the latter gained their independence in the 1950s-1960s period (**Chart 1**). Between 1960 and 1970, France's share of foreign trade with Africa halved, before settling at around 15% for almost the following two decades. From the end of the 1980s, France's share of trade with Africa slowly began to erode again, mainly as a result of the gradual decline of African exports to France. However, the share of French exports to Africa remained relatively stable.

Chart 1:
France's share in total merchandise trade with Africa



Sources: IMF Direction of Trade Statistics, Coface

It was only from the beginning of the 21st century that the rapid growth rates experienced by many African countries boosted Africa's trade flows, particularly with France. Between 2001 and 2011, the value of Franco-African trade increased by a factor of 2.6, to over 77 billion USD (**Chart 2a**). However, from 2011, the value of merchandise trade between France and its African partners stagnated, before dropping slightly, and then collapsing in 2015 and 2016 along with oil prices. The rebound in 2017 was, again, largely attributable to increasing oil prices.

Since the beginning of the millennium, France's trade balance with Africa has generally been in surplus – the balance only showed a deficit on two occasions (2008 and 2012), and in each case this was due to historically high oil prices (**Chart 2b**). Indeed, the widening of existing trade deficits with oil-exporting countries, such as Nigeria, Angola, Ghana, Congo (Brazzaville), and Equatorial Guinea, was enough to erase the surpluses maintained with nearly forty African countries. In 2017, trade surplus halved after reaching a record 6 billion USD in 2015 and 2016. This development is partly explained by the widening of the deficits with Libya and Nigeria, which both benefited from the rise in oil prices, and increased their export volumes in line with the increase in their domestic production. The 20%-plus reduction in the trade surplus with Algeria, the main positive contributor to France's overall balance on the continent, also explains this trend.

Chart 2a:
France - Africa: Total merchandise trade
(in billion USD)

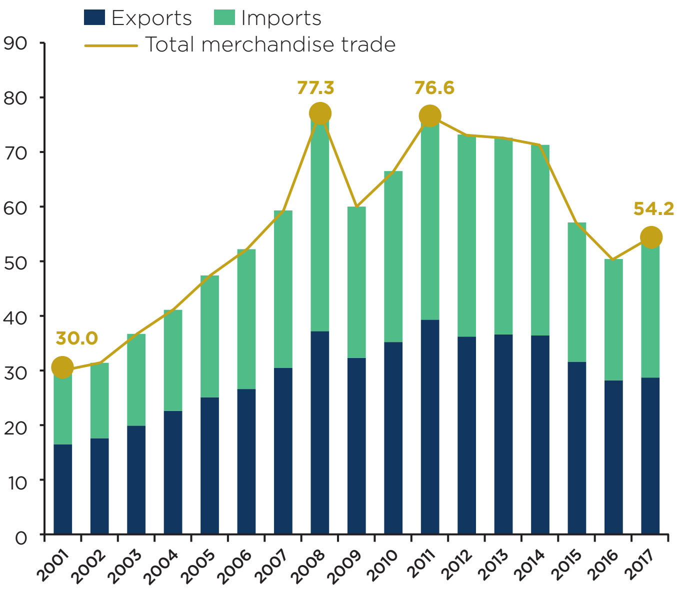
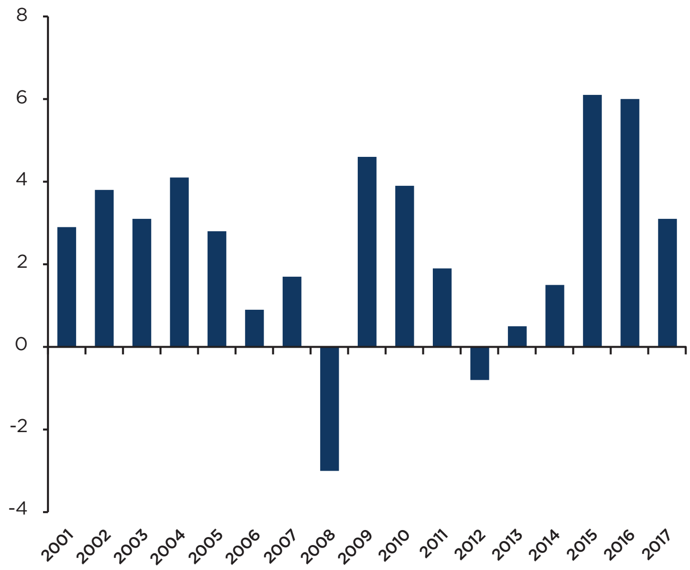


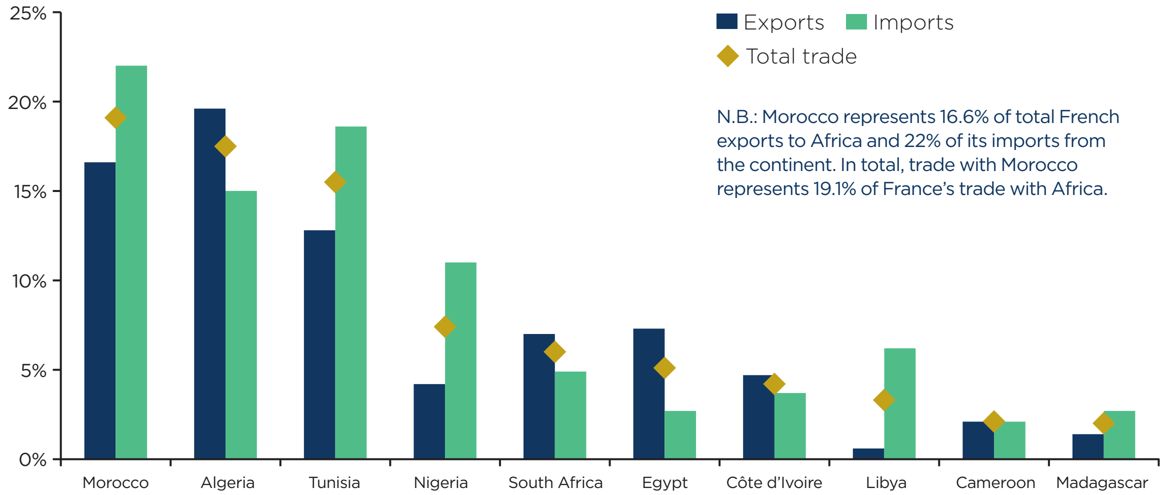
Chart 2b:
France - Africa: Trade balance
(in billion USD)



Sources: International Trade Centre (ITC), Coface

As **Chart 3** suggests, Franco-African trade flow behaviour is largely driven by trade with the Maghreb region (Algeria, Morocco, Tunisia). In 2017, these three countries accounted for about 50% of France's total trade with Africa. Despite various political and economic crises since 2011, the other two North African countries, Egypt and Libya, were still high on France's list of trading partners in 2017. In sub-Saharan Africa, Nigeria and South Africa – two of the continent's three largest economies (alongside Egypt) – are respectively France's fourth and fifth largest trading partners. Nigeria's rank, along with that of Libya, is primarily due to its role as a supplier of crude oil. Côte d'Ivoire and Cameroon, the two largest economies of French-speaking West Africa, are also among the top ten trading partners. More surprisingly, Madagascar also ranked as one of France's top trading partners in 2017 – this is mainly attributable to the rise in vanilla prices, which soared following a major drought in the country (the world's largest producer) in 2016 and, most importantly, Cyclone Enawo the following year.

Chart 3:
France's exports/imports with its main trading partners in Africa
(in % of total trade with Africa)

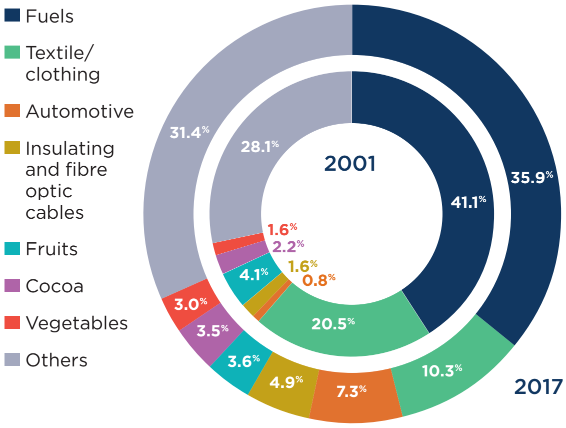


Sources: International Trade Centre (ITC), Coface

Trade balance trends are so sensitive to fluctuations in oil prices because they represent over a third of French imports from Africa (**Chart 4**). When oil prices peaked in 2008 and 2012, the value of this trade represented over 60%. The arrival of French car manufacturers (PSA, Renault) in Morocco explains the increase in import flows of vehicles and spare parts from Africa, which currently exceed 7% of trade compared to under 1% a decade ago. It should be noted that imports from South Africa, where the largest international manufacturers (Ford, Volkswagen, Toyota, Nissan, Renault, etc.) have operations, also contribute to this trend. The dynamics of textiles and clothing imports, mainly from North Africa, Mauritius, and Madagascar, follow a completely different path to that of the automotive sector. While the value of this trade remains relatively stable, their proportion in African flows towards France is declining. In addition to agricultural products, France is also a major importer of insulating and fibre optic cables, mainly from Tunisia and Morocco.

In parallel, the sectoral structure of French exports to Africa is relatively similar to that of the rest of the world. The five main export sectors are effectively the same: machinery, electrical and electronic equipment, pharmaceuticals, aeronautics, and automotive (**Charts 5a and 5b**). However, the share of these last two sectors in French flows to Africa is slightly lower: for both this continent and the rest of the world, these five sectors represent almost half of exports.

Chart 4:
French imports from Africa, by sector, 2001 vs 2017



N.B.: The inner ring presents the sectoral breakdown for the year 2001, and the outer ring the breakdown for the year 2017.

Sources: International Trade Centre (ITC), Coface

These sectors are followed by exports of fuel – mainly refined petroleum products, such as heavy fuel oil or petrol – and cereals (about 90% wheat) of which the portion in flows to Africa is much higher than to the rest of the world.

Chart 5a:
France's exports to Africa, by sector

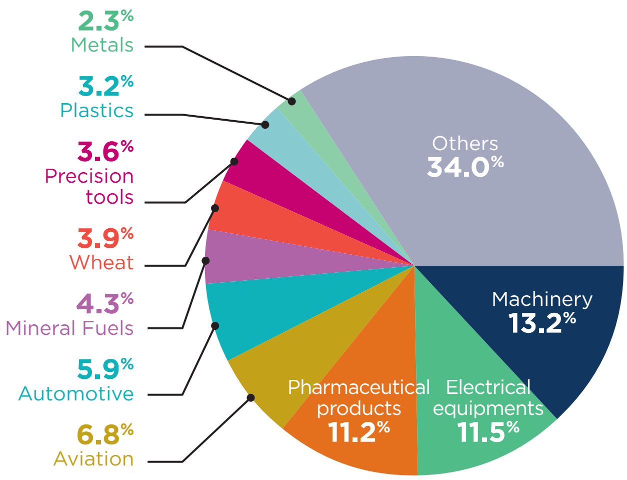
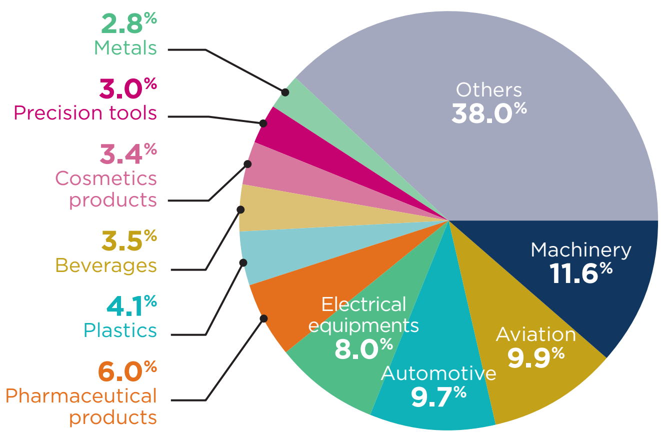


Chart 5b:
France's exports to world, by sector



Sources: International Trade Centre (ITC), Coface

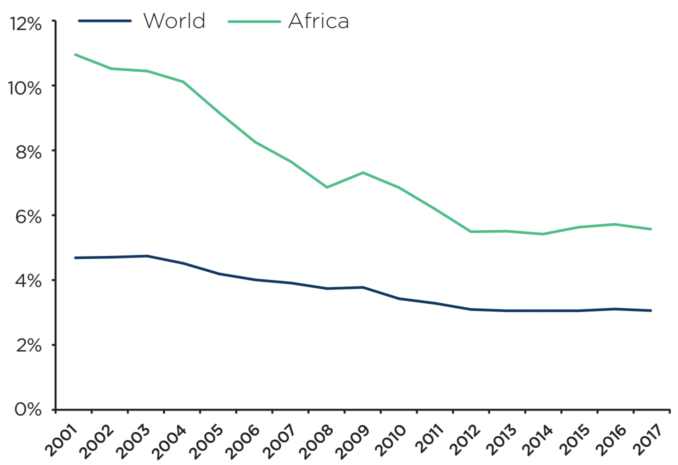
2 FRANCE'S CONSIDERABLE LOSS OF MARKET SHARE IN MOST KEY SECTORS...

Despite the increase in the value of exports to Africa, France's market share has halved since 2000, dropping from 11% to 5.5% in 2017 (**Chart 6**). Although this mixed performance coincides with a general drop in France's export market share in world trade (from 4.7% in 2001 to 3% today), the loss of market share in Africa is significantly higher.

At the same time, China's growth has been dramatic. Its weight in exports to Africa has increased from 3% in 2001 to almost 18% today, overtaking France, which had been the main exporter since 2007. While the market share of other major European economies, such as Germany, Italy, and the United Kingdom, has also fallen since 2000, the drop is much less pronounced (**Chart 7**) – Germany even became Africa's leading European supplier in 2017.

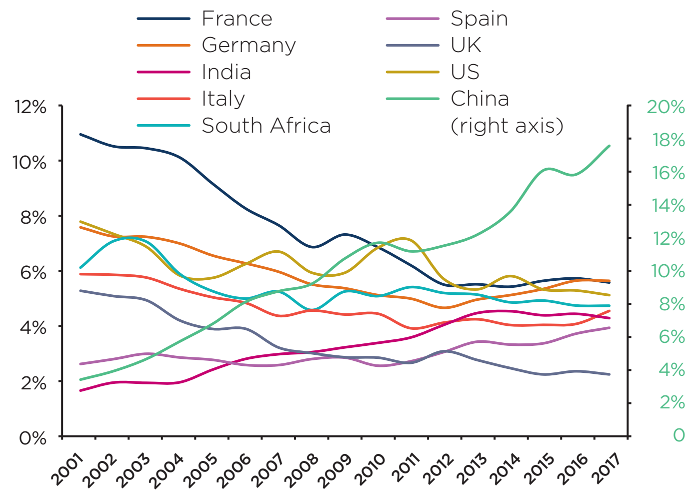
The market share in exports to Africa of other emerging countries such as India and Turkey, as well as European economies such as Spain, have made an appreciable increase (1-3 percentage points) thanks to significant gains focused on certain areas, such as the machinery and automotive sectors.

Chart 6:
France's market shares



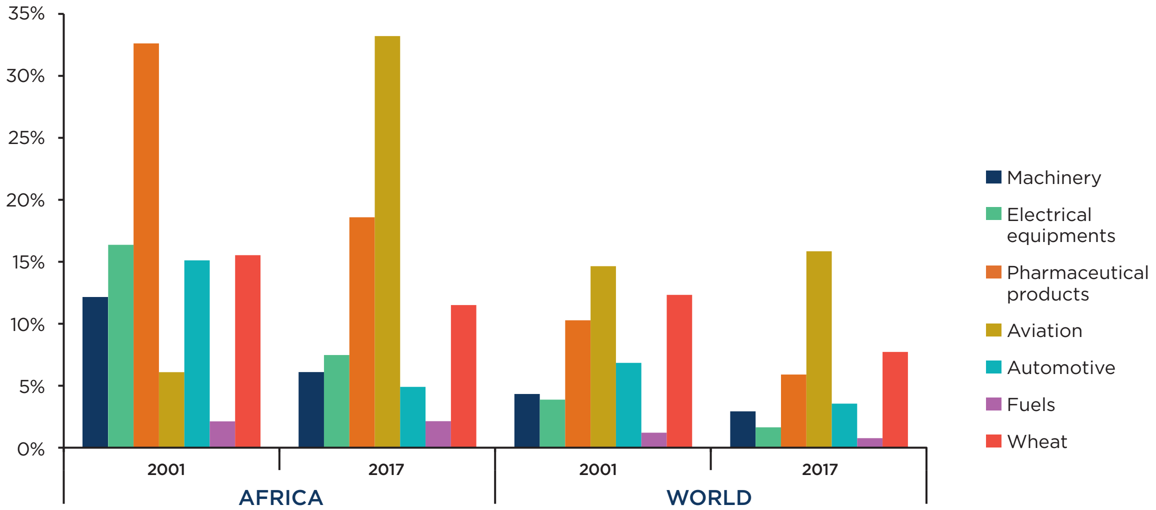
Sources: International Trade Centre (ITC), Coface

Chart 7:
Export shares in Africa



Sources: International Trade Centre (ITC), Coface

Chart 8:
France's market shares by sector



Sources: International Trade Centre (ITC), Coface

France's loss of market share in Africa is attributable to all of the country's aforementioned main export sectors (**Chart 8**), with the notable exception of aeronautics[1]: despite volatile flows that depend on the value of the various orders, on the whole, this sector has recorded good export performance over the past two decades. Unlike pharmaceutical, automotive, machinery, and electrical and electronic equipment exports, which were affected in the early 2000s, wheat sales to the continent were dynamic up to 2013, but then declined. Although the decline began later on, France's market share in this sector in 2017 was lower than that of 2001.

These sectoral trends are in line with those of France's trade with the rest of the world, where its market share in its key export sectors has also gradually decreased since the early 2000s (**Chart 8**). However, in each of these sectors, market share losses have been much greater in Africa than on the global level.

Primarily, the capital goods sector, in which this study makes a distinction between machinery and electrical and electronic equipment[2], illustrates China's strong growth in world trade and trade with Africa.

In relation to machinery, all developed countries – with the exception of Germany, whose market share has remained stable at 12% – have lost a considerable amount of their market share to China, which has gained about 15 percentage points and is now the world's leading machinery exporter (**Chart 9**). Although France has been less affected by Chinese growth on world markets than other countries (e.g. the United States), its market share in exports to Africa still halved from 12% to 6%. Other European powers, such as Italy and Germany, have suffered more, notably as a result of competition from Turkey and Spain – both of whom are more successful on this market than at world level – and especially China, whose market share has increased eight-fold to a quarter of total machinery exports.

Chart 9:
Change in machinery exports' market shares
(2001-2017)
(percentage points)

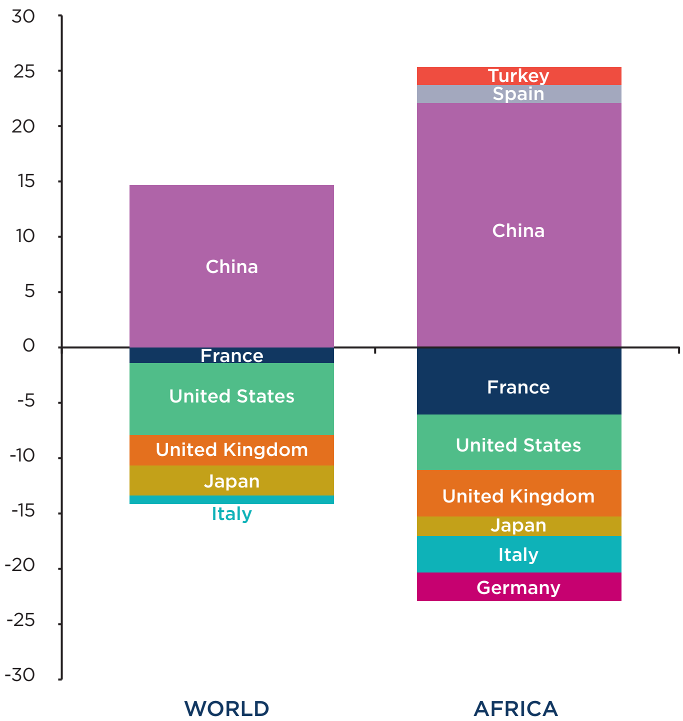
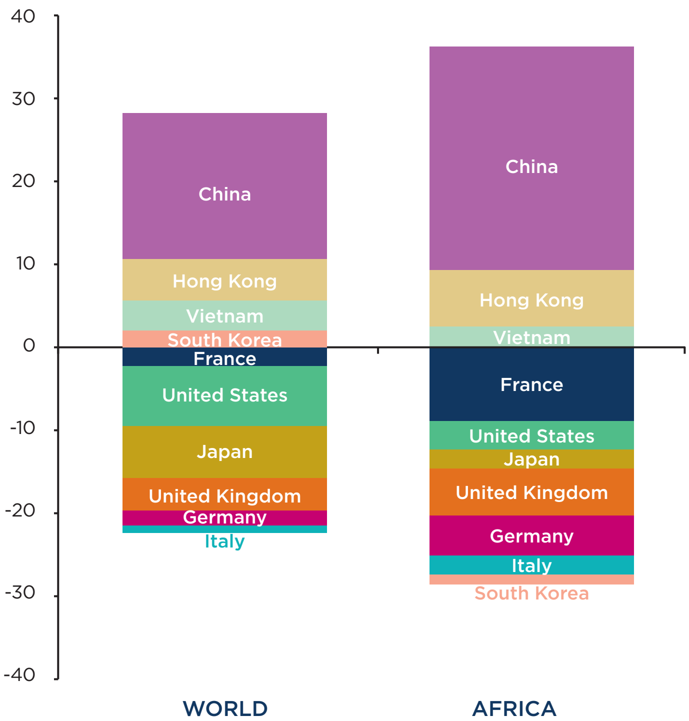


Chart 10:
Change in electrical machinery and equipment exports' market shares
(2001-2017)
(percentage points)



Sources: International Trade Centre (ITC), Coface

1 This includes fuels, where France's market share has remained marginal at 1-2%. As such, this study has focused on analysing the other main sectors.

2 This distinction corresponds to Chapters 84 and 85 of the Harmonised Commodity Description and Coding System.

The picture is similar for electrical and electronic devices, a segment in which France was the leader in Africa until 2006, despite limited global weight (less than 4% of market share). China's growth in this segment has been spectacular too, especially in Africa: from 6% to 23% of global market share and from 7% to over a third of inbound flows on the continent (**Chart 10**). China's growth is even stronger if we include Hong Kong (whose exports are primarily products imported from China), which has become the world's second-largest exporter of electrical and electronic equipment, with around 10% market share both in Africa and the rest of the world[3].

France's market share in the pharmaceutical sector, in which France had a particularly dominant position in Africa in the early 2000s (nearly a third of the market), has almost halved since then. Although France has mainly lost market share worldwide to other European economies, such as Switzerland, Germany, and Belgium, India is a new player that now seems to be an unstoppable force on the African market (**Chart 11**). While the country remains a relatively marginal player worldwide, with less than 2% of the market (despite a slight increase over the period), its weight in pharmaceutical exports to Africa rose from 5% to 18% between 2001 and 2017. This is mainly due to India's specialisation in the low-cost generic pharmaceuticals segment in which it is the world leader with 20% market share. Giants, such as Sun Pharmaceutical, Cipla, and Dr Reddy's, allow it to enjoy a privileged position in developing countries. Strengthened partnerships in the sector with several African countries has also contributed to India's growth on the continent. Similarly, China, which strongly developed its generic pharmaceutical industry over the period, has become the sixth biggest player on the African market, with a 4.4% share of the market, three times more than its global share.

Chart 11:
Change in pharmaceuticals exports' market shares
(2001-2017)
(percentage points)

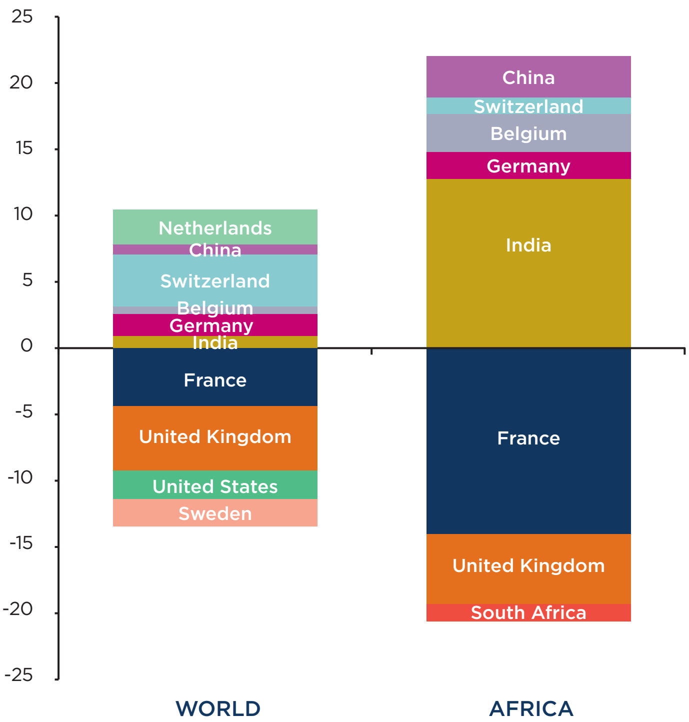
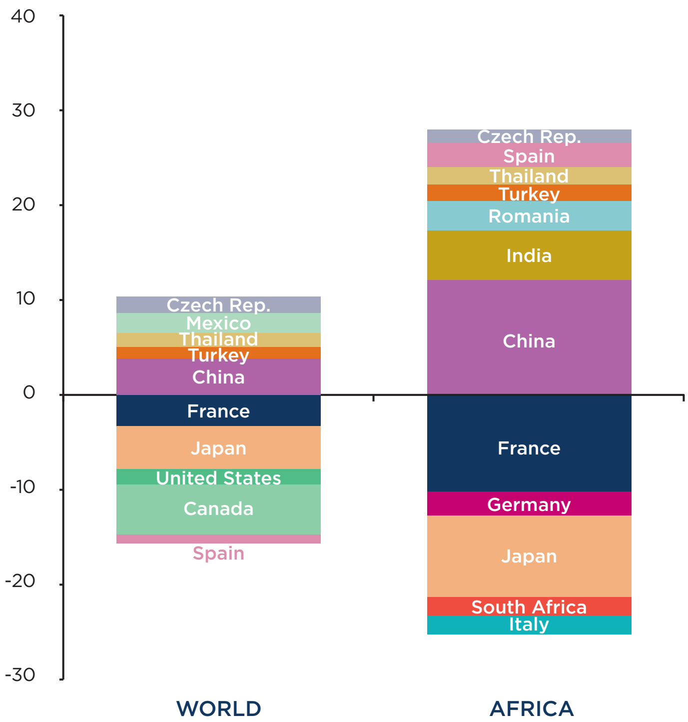


Chart 12:
Change in automotive exports' market shares
(2001-2017)
(percentage points)



Sources: International Trade Centre (ITC), Coface

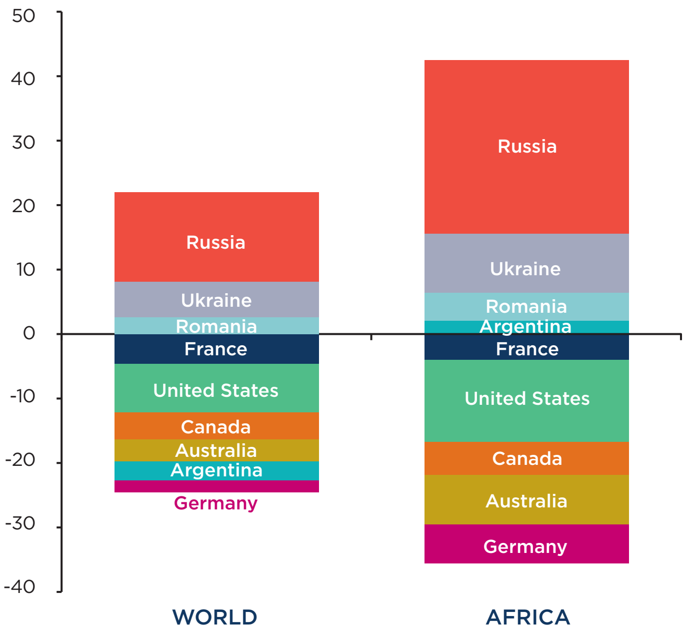
3 The other major player in the sector, Vietnam, quintupled its market share between 2011, when it was less than 1%, and 2017.

Similar to its Japanese and Canadian counterparts, the French automotive sector recorded significant global market share losses, falling from fifth to seventh largest exporter, now behind Mexico and China. Other emerging countries, such as Turkey, the Czech Republic, and Thailand, have also gained market share since the early 2000s (**Chart 12**). The gradual reorganisation of production chains in the sector has reduced the weight of all developed economies, with the notable exception of Germany (18%), which remained world leader over the period.

The sector's dynamics are relatively similar in Africa – however, France has experienced more difficulties, falling from third to seventh place, and today holds three times less market share in 2017 (5%) than in 2001. As with the global picture, these market shares were won by the countries mentioned above, with the exception of Mexico, which mainly exports to North America. China's growth was especially strong in Africa, particularly in the motorcycle and auto parts segments. In addition, India, whose share of world exports is still marginal, has become the continent's fourth largest automotive supplier, mainly in motor vehicles. Other European countries, such as Romania and Spain, have also increased their weight in automotive exports to Africa, both for motor vehicles and components.

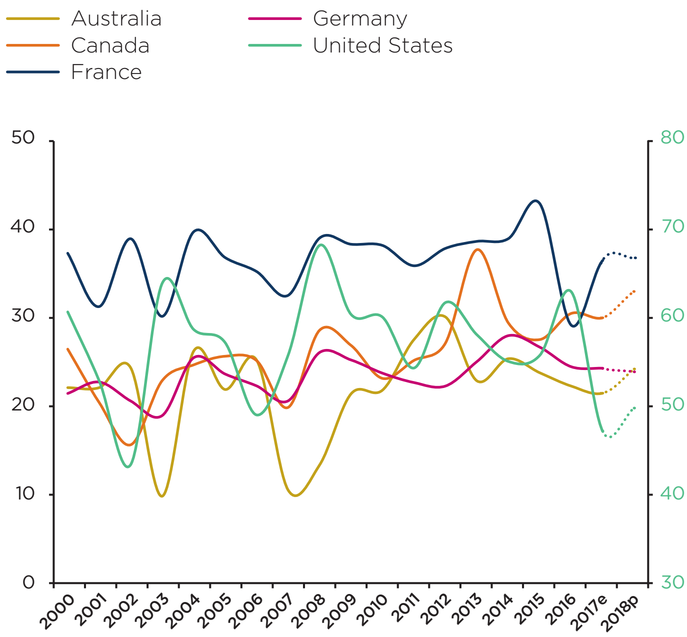
In recent years, like other major exporters of wheat (United States, Canada, Australia), France has lost market share worldwide to Eastern European countries, such as Romania, Ukraine, and especially Russia, which gained over 10 points of market share over the period studied (**Chart 13**). On the African market, the trend is even more pronounced: these three countries supplied over 40% of wheat bought by African countries, against 3% in 2001, when wheat flows from these countries were particularly low, and 10% on average between 2002 and 2004.

Chart 13:
Change in wheat exports' market shares (2001-2017)
(percentage points)



Sources: International Trade Centre (ITC) , Coface

Chart 14a:
Wheat production in countries with market share losses in Africa
(million tons)

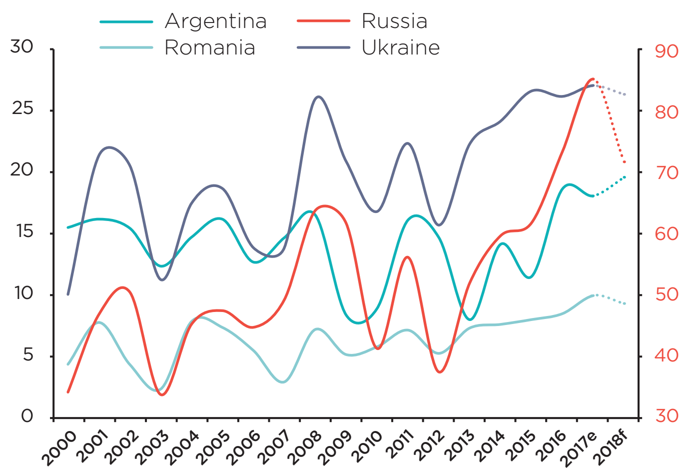


Sources: FAO, European Commission, USDA

This significant growth – which has been particularly strong since 2013, when these countries still had a combined market share of 15% in Africa – can be explained by two main factors: i) the sharp rise in production over the last four years (**Charts 14a and 14b**), particularly in Russia, where harvests have been consistently higher than those in the United States since 2014, and ii) the sharp depreciation of their currencies since 2013 (**Chart 15**), reflected in a depreciation of their real effective exchange rate[4]. For example, the combination of the depreciation of the peso and good harvests in 2016 and 2017 in Argentina allowed the country to regain market share in Africa in 2017, after four years of near-zero flows.

4 The real effective exchange rate (REER), calculated based on a currency's exchange rate and the inflation of an economy compared to that of all of its partners, is intended to assess the competitiveness of a country in terms of price or cost compared to its major competitors on international markets.

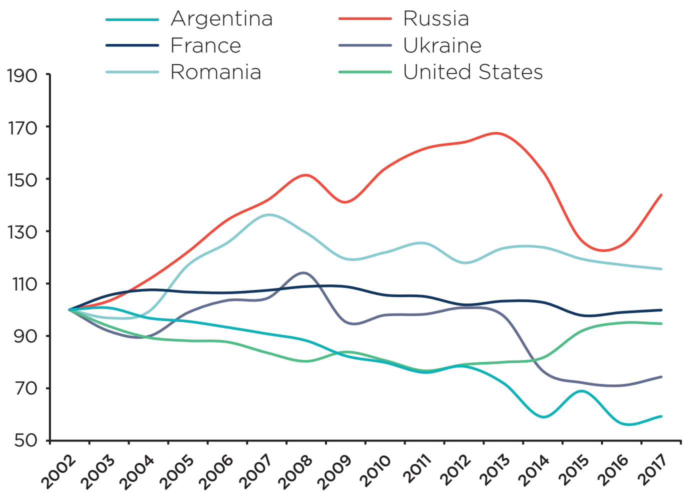
Chart 14b:
Wheat production in countries with market share gains in Africa (million tons)



e: estimate f: forecast

Sources: FAO, European Commission, USDA

Chart 15:
Real effective exchange rate (100 = 2002)

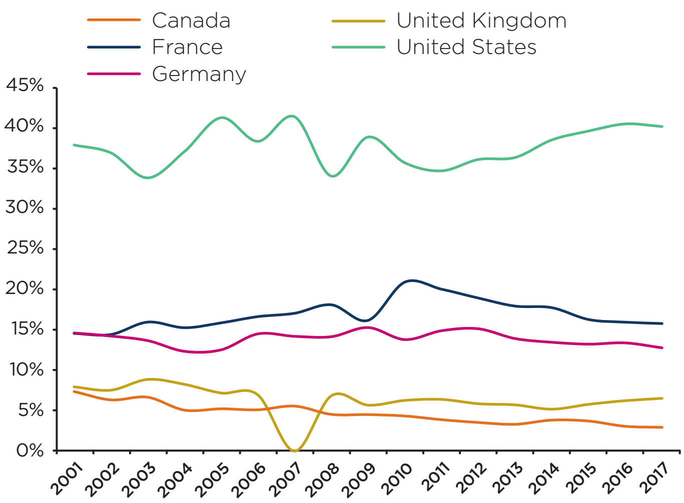


Sources: BIS, World Bank

The sharp drop in France's market share in wheat exports to Africa is partly due to a very poor harvest, combined with Russia's exceptional production in 2016 and 2017. Despite strong improvements in France's 2017 and 2018 harvests, competition from Central and Eastern Europe will remain strong, with production levels similar to those of 2017 – with the exception of Russia, whose harvest is expected to return to 2015 levels.

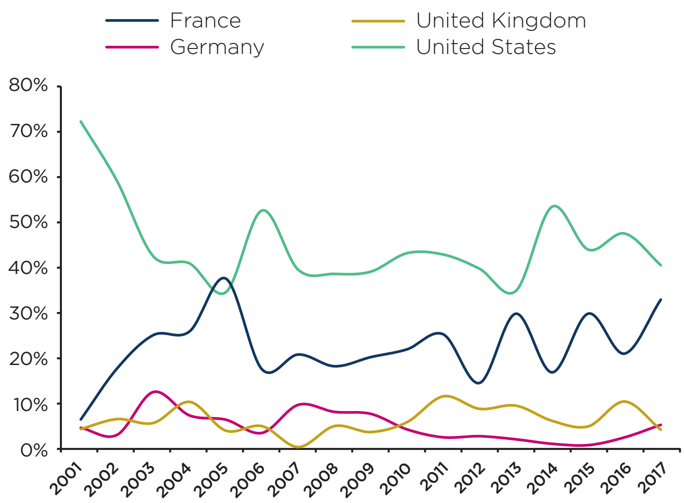
In this overall negative picture for key French sectors, aeronautics is an exception. Worldwide, its market share remained above 15% throughout the period, despite a downward trend since the 2011 peak, losing market share to the United States (**Chart 16a**). The latter largely dominates the sector, along with France, Germany, and the United Kingdom: their combined market share remained stable at around 75% over the period. The landscape is fairly similar in Africa, where these four actors comprise about 80% of aeronautical exports, the difference being that France's market share is significantly higher in Africa than worldwide: 25% on average over the past fifteen years (**Chart 16b**).

Chart 16a:
Aviation exports' market shares in Africa



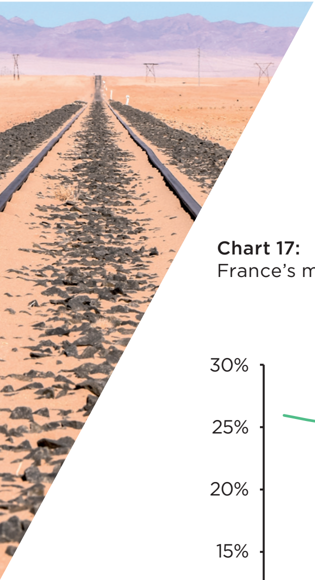
Sources: International Trade Centre (ITC), Coface

Chart 16b:
Aviation exports' market shares worldwide



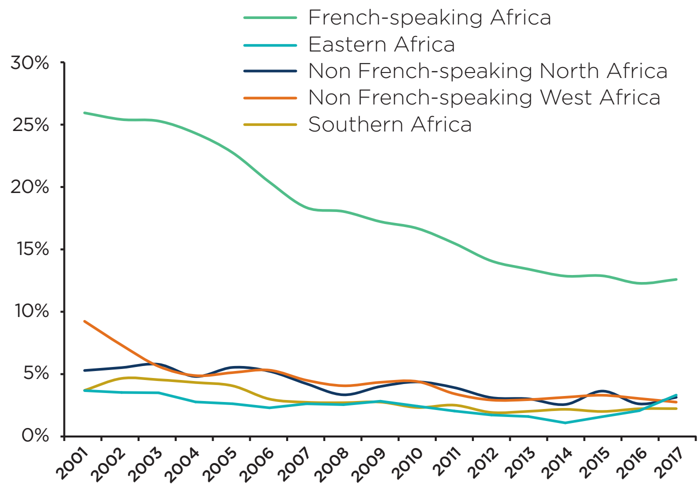
Sources: International Trade Centre (ITC), Coface

In light of the analysis of our exports to Africa as a whole, it appears that France has lost market share in all of its key export sectors – with the exception of aeronautics, where it has managed to maintain its dominant position. However, market share dynamics are not homogeneous across the continent, and vary across regions and countries.



3 ... PARTICULARLY STRONG IN FRENCH-SPEAKING AFRICA

Chart 17:
France's market shares in Africa by region



Sources: International Trade Centre (ITC), Coface

Increased competition, particularly in French-speaking African countries

In the early 2000s, French exports accounted for over a quarter of inbound flows in French-speaking Africa, with nearly half of the market share in Gabon and the Central African Republic. In 2017, France's market share was just 12% (**Chart 17**). This fall is widespread: its market share fell in all French-speaking African countries between 2001 and 2016[5]. France also lost market share in non-French speaking North and West African countries (e.g. Egypt, Nigeria, Ghana) where its share has always been much lower[6]. As with the trend observed in French exports to Africa as a whole, the fall is mainly attributable to key export sectors.

As such, France suffered a sharp loss of its market share in machinery exports to French-speaking Africa, losing nearly 20 percentage points in all countries across the region (including in Algeria, Morocco, Côte d'Ivoire, and Cameroon), and up to almost 25 points in Senegal. Market share was mainly lost to China, which recorded considerable market share gains (between 15 and 20 percentage points and up to 24 points in Cameroon) in all countries of the region, in line with the trend for the entire continent. In North Africa, particularly in Algeria and Morocco, France's loss of market share can also be explained by the growth of Turkey and Spain. Spain has strongly reinforced its commercial ties with Morocco[7], becoming the country's main supplier of capital goods. In West Africa, while France's loss of market share in the sector is mainly attributable to China, Belgian competition has also increased in some countries, such as Guinea, Mauritania, Burkina Faso, and the Central African Republic.

Similarly, France's loss of market share in electrical and electronic appliances is at about 15 points in North Africa and 20 points in West Africa. For the continent as a whole, this loss of market share is attributable to the rapid growth of China in the sector, with market share gains resembling that of machinery in most French-speaking African countries. In West Africa, China's market uptake is even more impressive if we include Hong Kong, which has established itself as a major player with market share gains of around 10 points. In this respect, Benin (which has significantly increased purchases from Argentina, Canada, the United States), and the Central African Republic (Germany, United States, and Italy) is an exception to China's unstoppable advance.

While France had considerable market share in the pharmaceutical industry in French-speaking African countries in the early 2000s - ranging from about 50% in the Democratic Republic of Congo (DRC), Madagascar, and North Africa to nearly 80% in Côte d'Ivoire, Cameroon, and Togo - market share has fallen sharply since then. Although market share losses represent about 20 points in all of these countries, it has been lost to different players in different regions. In North Africa, France lost market share to its main European competitors in the sector, such as Switzerland, Germany, Belgium, and the United Kingdom.

5 Market share data for 2017 is slightly overestimated for France due to a lack of available data for some partners in African countries for 2017 at the time of writing.

6 In the early 2000s, French market share was between 3% and 8%, excluding exceptional sales, such as the sale of cruise ships in Liberia in 2001 and 2002.

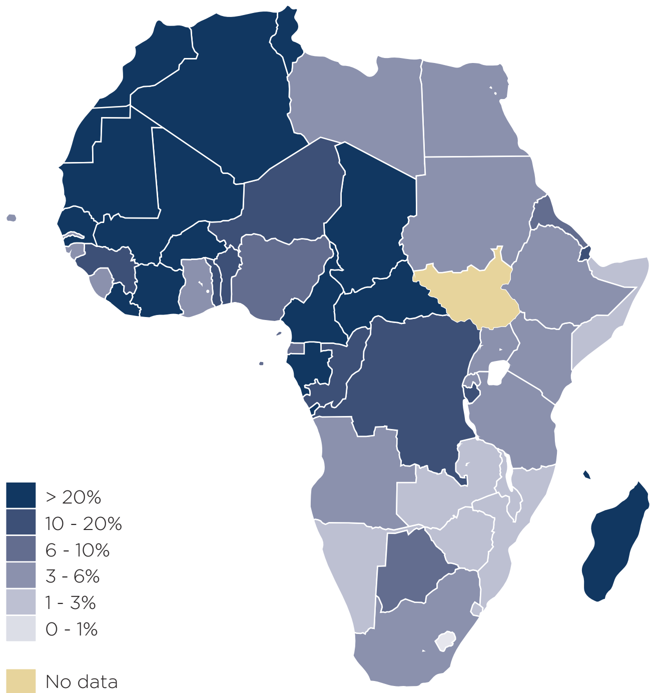
7 Tozy, S., London, M. & Trifaia, A., 2018. *The new Mediterranean routes.* [Online] Available at: http://www.coface.com/News-Publications/News/New-Mediterranean-trade-routes-will-be-through-the-South-and-East-of-the-region [Accessed 15 June 2018].

Conversely, while Belgium's market share in Cameroon, Côte d'Ivoire, the DRC, Togo, Burkina Faso, and the Central African Republic grew strongly, other players – such as China, and especially India – were particularly successful in French-speaking Africa and the rest of the continent over the period. As such, France sharply lost market share in the pharmaceutical sector in Ghana to India and Belgium.

Market share losses to Germany, South Korea, and India were significant in the automotive sector, particularly in North Africa. This was also the case for capital goods, and Spain's share in automotive exports to Morocco significantly increased. In the other French-speaking countries where France's market share in this sector has fallen sharply (e.g. Senegal, Cameroon, Congo, Mali, Togo, Guinea, Benin, and Madagascar), this trend is mainly explained by Chinese competition, especially in the spare parts segment. The United States (Senegal, Cameroon, Benin) and Belgium (Senegal, Guinea, Madagascar) also gained market share in some French-speaking African countries, but to a lesser extent. Outside of French-speaking Africa, the trend was similar. In Nigeria, market share dropped from 15% to 1%, both in the spare parts segment (China) and in vehicles (United States, India).

Finally, market share in wheat exports are also decreasing in Algeria, Morocco, Senegal, DRC, and Mauritania. As for the continent as a whole, France has mainly lost its market share to Eastern European countries, such as Ukraine, Romania, Poland, and, in particular, Russia. The Algerian market is an exception to this, in that the France's loss of market share is attributable to Canada and the United States, as well as Argentine producers, who entered the Senegalese market in 2017. Outside French-speaking Africa, France also lost market share on the major Egyptian market[8] to Russian and Ukrainian competition.

Map 1a:
France's market share in 2001



Map 1b:
France's market share in 2016

Sources: International Trade Centre (ITC), Coface

8 Egypt and Algeria were respectively the world's second and third largest wheat importers in 2017, behind Indonesia.

Presence in Southern and East Africa still very marginal

France's market share was already very low in East Africa (Somalia, Eritrea, Ethiopia, Sudan, Kenya, Tanzania, Uganda) in the early 2000s and has since stagnated (**Maps 1a and 1b**). With the exception of Ethiopia (market share of 5% in 2016 and 10% in 2017 thanks to Airbus A350 sales to Ethiopian Airlines), exports account for less than 3% of inbound flows in East African countries. China is the main supplier of countries in this region (20-50% market share), ahead of India which has a market share of between 5% and 15% depending on the country.

Finally, trade with Southern Africa is largely dominated by South Africa due to the substantial difference in scale between the South African economy and that of its neighbours. France's market share in South Africa fell slightly over the period: after remaining between 4% and 5% up to 2005, it is now less than 3%. This loss of market share is mainly due to the automotive sector and, more specifically, to the motor vehicle segment, where the French share in South African imports has fallen from 10% in 2004 to 2% today, largely as a result of gains made by India (+15 points over the period). The development of local production in this sector, mentioned above, is another factor explaining the drop in the value of exports since 2005. Aside from South Africa, French market share remained marginal in this region, being less than or equal to 1% in all other Southern African countries. South Africa is the main supplier of these countries - with a market share of over 80% in landlocked countries in its territory (Lesotho and Swaziland) - ahead of China and India, whose exports account for 20% of inbound flows to Malawi and Mozambique, both of which are the countries that depend the least on South Africa.

4 SCOPE FOR IMPROVEMENT ON CERTAIN MARKETS

In view of the loss of market share in key economic sectors across the continent, we have used a gravity model to attempt to identify the markets on which trade gains could allow France to win back market share in Africa. Gravity models are often used in economics to explain foreign trade. Like Newton's Law of Universal Gravitation, which describes the force exerted by two bodies on one another as the product of their mass divided by the square of the distance separating them, gravity models applied to international economies explain trade between two countries by the sum of their economic size (measured by GDP) divided by the distance between these two countries. In other words, a gravity model will indicate that trade between two countries is denser if they are geographically close together and are of significant economic size.

$$X_{ij} = \frac{Y_i^a \, Y_j^b}{d_{ij}^c} \times G \quad (1)$$

Where:
X_{ij}: Exports from country i to country j
Y_i: GDP of country i
Y_j: GDP of country j
d_{ij}: Distance between the two countries
a, b, c: strictly positive real numbers.

Here, only French exports are taken into consideration. Therefore, the French GDP is not included in the equation: this remains constant whatever the importing country.

However, other variables are added:

- *language*: a dummy variable[9] taking the value 1 if French is the importing country's official language, 0 otherwise.
- *legal*: a dummy variable taking the value 1 if the importing country has a legal system of French origin[10], 0 otherwise. This variable is used as a proxy for the legal system.
- *crisis*: a dummy variable taking the value 1 if the year studied is after 2007, 0 otherwise. This variable makes it possible to isolate a possible difference in behaviour of post-crisis subprime exports.

After estimating the model, we obtain the following equation:

$$X_{ijt} = \frac{Y_{jt}^{0,89} \times 3,90^{language_{jt}} \times 1,63^{legal_{jt}}}{d_{ij}^{1,01} \times 1,51^{crisis_t}} \times \propto_{it} \quad (2)$$

9 In general, a dummy variable is a variable that takes the value 0 or 1.

10 La Porta, R. Lopez-de-Silanes, F., & Shleifer, A., 2008. "The Economic Consequences of Legal Origins." *Journal of Economic Literature*, 46 (2): 285-332. The authors identify five possible legal system origins: French, English, German, Scandinavian, and Socialist.

The GDP and distance coefficients are therefore elasticities[11]. Therefore, if the importing country's GDP increases by 1%, French exports to this country will increase by 0.89%, *ceteris paribus*[12]. Similarly, the further away a country is from France, the less it will import goods from France: if the distance increases by 1%, exports fall by 1.01% on average. The interpretation of dummy variables is slightly different: if country j's official language is French, it will import on average 3.9 times more French goods than a country with another official language. Similarly, having a legal system of French origin increases exports from France to this country by 63%. The crisis dummy variable indicates that, on average, French exports to Africa since the 2008 crisis represent 66% of their pre-crisis level, all other things being equal.

This econometric model makes it possible to calculate France's export potential to African countries and to compare it with actual trade. The goal is to identify to which African countries, exports are below potential. Indeed, it makes it possible to determine a trade benchmark to which actual trade can be compared, allowing us to see where French exports are below their potential, and thus in which markets France could gain market share.

Insert:

Does France trade differently with Africa and the rest of the world?

Our goal was to compare all French exports with French exports to Africa, and see if the latter presented any particularities. To achieve this, we made an estimate using the model below, taking all of France's trading partners into consideration. The following equation is obtained:

$$X_{ijt} = \frac{Y_{jt}^{0,99} \ x\ 4{,}81^{language_{jt}} \ x\ 1{,}15^{legal_{jt}} \ x\ 1{,}43^{EU_{jt}}}{d_{ij}^{0,64} \ x\ 1{,}56^{crisis_t}} \ x \ \propto_{it} \quad (3)$$

The "EU" variable was added to model the difference in behaviour of French exports to other European Union countries. Since the EU is France's largest trading partner, not including this variable could bias the other coefficients. On average, French exports to other EU members are 43% higher than the rest of the world, all other things being equal.

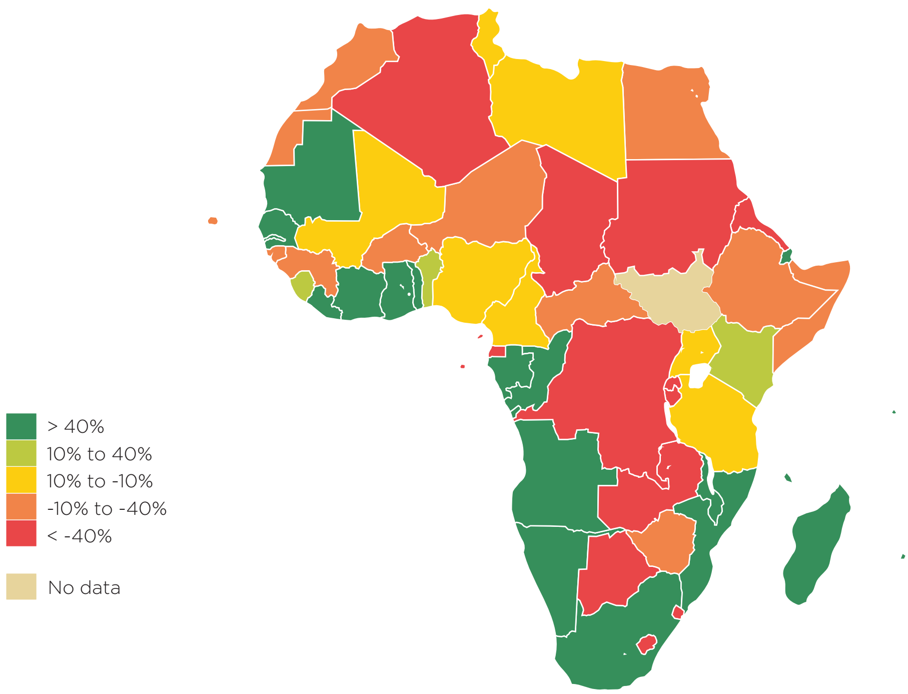
By comparing the coefficients of the other variables with those in (2), differences between the two models are revealed, confirming the hypothesis that Africa has a special place in French exports.

First, the language variable's coefficient is lower for Africa: the impact of language on the country's imports is 20% lower, i.e. speaking French results in an increase in imports that is 20% lower if the country is located in Africa, *ceteris paribus*. Second, the impact of the origin of the legal system is 40% higher in Africa than in the rest of the world. On the other hand, the effect of the subprime crisis on French exports does not vary much, regardless of whether the importing country is in Africa or not – however, it is slightly lower in Africa. Finally, imports are less GDP-sensitive in Africa than in the rest of the world: all other things being equal, a GDP increase of 1% will result in a 10-point increase in imports in Africa (0.89% against 0.99%). However, geographical distance penalises French exports to Africa more than the rest of the world by 37 percentage points: if the distance increases by 1%, French exports will decrease by 1.01% in Africa, while the decrease will only be 0.64% if all the trading partners of France are taken into account.

11 Elasticity is the percentage change in one variable following a 1% change in another variable.
12 Latin phrase meaning *all things being equal.*

The results of our analysis (**Map 2**) suggest that there is a potential gain of around 21% for French exports in Africa in 2017. Such a gain is the equivalent to one and a half points more market share for France, which would return it to pre-crisis levels. For half (27) of the 53 countries analysed, exports are actually lower than their potential level estimated by our model. For these countries, a deficiency in export performance can be suspected. This includes some countries where export volumes are still relatively low, mainly in East Africa (10% below potential[13]) and, to a lesser extent, in Southern Africa: Uganda (2% below potential), Rwanda (-89%[14]), Ethiopia (-31%), Botswana (-71%) and Zambia (-53%). In some of the countries of these two regions, such as Zimbabwe (-40%), Eritrea (-89%), Sudan (-71%), and Somalia (-25%), the underperforming exports of French companies compared to estimations can be attributed to political risk, which is not taken into account in our econometric estimation, but which can have a non-negligible impact on companies' behaviour. This explanation can also apply to Egypt, where the observed performance fell below its potential level in 2012.

Map 2:
Difference between potential exports and actual exports
(as a percentage of potential exports)



Note: Countries in red are those for which actual exports is more than 40% below potential exports.

Sources: Douanes, CEPII, Coface

13 Difference between actual and potential export (estimated by model) expressed as a percentage.

14 The minus sign indicates that French exports to a given country are x% below the potential level. In the case of Rwanda, this means that French exports are 89% below the potential identified by the model.

In addition to East and Southern African countries, where the existence of scope for improvement is not surprising given the marginal French presence, market shares could be regained in Morocco (-29%) and Algeria (-53%). These countries are already among France's main trading partners, but the size of these markets and their proximity to France could justify an improvement in exports. Our model also suggests that some of the French-speaking African markets, especially in the Sahelian belt (Mali, Burkina Faso, Niger, Chad), could be targeted by French companies. Overall, French exports to French-speaking Africa are 26% below theoretical levels.

Although this exercise allows us to identify potential gains in market share, it does not allow us to highlight the sectors that can benefit from them. However, both French exports to the world and French exports to Africa are structurally similar, it is possible to deduce that these sectors would be the main beneficiaries. In particular, aeronautics and the automobile sector, the weights of which are relatively low in Franco-African trade, could be the main winners. Some current development plans (Burkina Faso, Niger, and Ethiopia) generating demand for capital goods could also boost exports of electrical machinery and appliances to these countries. A decision support tool for prospective markets developed by the French Treasury[15] also identifies these product categories as areas for improvement in Algeria and Morocco. The pharmaceutical and automotive sectors in Algeria, as well as the chemicals sector in Morocco, are also sectors with major scope for improvement.

The gravity model is not a bearer of bad news. In many cases, French exports exceed the level predicted by the model, notably in some of the continent's largest economies: South Africa (301%), Nigeria (5%), and Angola (51%). The relatively lower importance of the weight of GDP in our model is a factor explaining this result in these non-Francophone countries that have rather different legal systems. The observed level is also aligned with or above estimated export potential for other economies not sharing the same language, or a French legal system, such as Ghana (134%), Kenya (21%), Mozambique (97%), Malawi (130%), and Namibia (162%). Non-French-speaking countries with a legal system originating from a country other than France are not the only ones represented in this category, which also includes Mauritania (410%), Togo (365%), the Democratic Republic of Congo (165%), Côte d'Ivoire (52%), Gabon (86%), and Cameroon (3%). An observed level of exports that is higher than that estimated by the model shows a privileged relationship. Such a result probably means that other determinants that were not retained have a positive impact on French exports to these African countries.

15 DG Trésor, 2017. Trésor-Éco n° 212 - Potentiels de commerce : quelle stratégie pour le commerce extérieur ?. [Online] Available at: https://www.tresor.economie.gouv.fr/Articles/2017/12/20/tresor-eco-n-212-potentiels-de-commerce-quelle-strategie-pour-le-commerce-exterieur [Accessed 15 June 2018].

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