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Global Trends in Tobacco Production and Trade

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Executive Summary

Over the past two decades, global patterns in tobacco production and trade have shifted dramatically. While research by tobacco control groups and public health organizations has focused on tobacco production and elucidated several key trends driving these shifts, considerably less is known about patterns of tobacco trade. Understanding the global tobacco economy—and the major players in it—depends on developing a more complete knowledge of all stages of the tobacco supply chain, including production of tobacco, trade of unmanufactured tobacco leaf, processing of tobacco leaf into various tobacco products, and trade and consumption of manufactured tobacco products. As with many other commodities, tobacco has its own unique and evolving supply chain. This report focuses on understanding patterns in production and trade of unmanufactured tobacco leaf.

The report begins by noting key trends in tobacco production over the past two decades. It is clear that tobacco production has shifted from high-income countries in Europe and North America to low- and middle-income countries in Africa, Asia, and South America. Even so, a handful of countries—including China, Brazil, India, and the United States—have remained the world's top producers over the investigated period. Over time, however, production in the United States has decreased significantly, leaving the three major emerging economies—China, Brazil, and India—to dominate global tobacco production. Collectively, these three countries now produce almost two-thirds of the world's supply of tobacco leaf.

The report then provides an overview of concurrent trends in the global tobacco trade. In doing so, several key trends become evident:

- The regional shifts in global tobacco production are at least partly reflected in changing patterns of global tobacco trade.
- Three major economies, also the world's three biggest players in production—China, Brazil, and India—play a prominent and distinct role in the global supply of tobacco. Relative to Brazil, the bulk of production in China and India is destined for their own domestic markets (a large consumer base at the global level). Both countries have managed to capture added links of the tobacco value chain beyond production and moving into manufacturing. Other low- and middle-income tobacco-producing countries appear eager to follow suit.
- A more detailed country-by-country analysis of tobacco exports and imports suggests that, for instance, China is an increasingly significant importer, perhaps indicating that trade between low- and middle-income countries (e.g., from Brazil to China) is on the rise.
- High-income countries in North America and Europe have generally remained top importers of unmanufactured tobacco. Notably, Belgium-Luxembourg ranked as the top importer of unmanufactured tobacco and ranked as the sixth highest exporter of unmanufactured tobacco in 2016, both of which represent large increases from 1996. The drivers behind this growth are likely to be complex and multifactorial, as discussed in the report.

The brief closes by exploring the implications of these trends for the future of tobacco control efforts.

As a first of its kind from the Foundation for a Smoke-Free World (herein referred to as "the Foundation" or "FSFW"), this report is intended to provide a preliminary overview of emerging global trends in tobacco production and trade. Future reports will further the analysis to potentially include manufactured tobacco products, a breakdown on tobacco production by leaf type, and related projections on the expansion into other types of tobacco products as data become available. For example, the consumption growth in harm-reduction products globally (e.g., e-cigarettes) could already be having some effects on production and trade flows of tobacco leaf varieties as they gain market share (e.g., Nicotiana rustica, which reportedly has a higher concentration of nicotine).

Introduction

During the past two decades, significant changes have occurred in the global production and trade of tobacco. Although changes in the global production of tobacco during this time have been well studied, considerably less is known about changes in the global trade and flow of tobacco. This report represents a preliminary attempt to address that imbalance. It opens with a brief note on methods and then summarizes key trends in the global production of tobacco. It then explores key trends in the global trade of tobacco and places a special emphasis on how shifts in the tobacco trade at least partly mirror those in tobacco production, highlighting the potential outsized role of major emerging economies and "South-South" transactions. It then closes by examining the implications of these trends for tobacco control efforts.

Methodological note

All tobacco production data used in this report refer to crop production data obtained from FAOSTAT, the statistical database of the Food and Agriculture Organization (FAO) of the United Nations (UN).[1] FAO defines tobacco (FAOSTAT Commodity List code 0826) as "unmanufactured dry tobacco, including refuse that is not stemmed or stripped, or is partly or wholly stemmed or stripped." FAOSTAT obtains its data from FAO member countries through questionnaires, national publications, or country websites.

All tobacco trade data were obtained from the Base Pour L'Analyse du Commerce International (BACI), a world trade database developed by the Centre d'Études Prospectives et d'Informations Internationales, the leading French institute for international economics.[2] BACI applies an original methodology to reconcile discrepancies between declarations of exporter and importer countries in UN Comtrade data. Both UN Comtrade and BACI define tobacco in accordance with the Harmonized System (HS) commodity classification scheme. Unmanufactured tobacco trade data in this report refer to "tobacco, unmanufactured; tobacco refuse" (HS-4 code 2401), using the 1992 version of the HS commodity classification scheme for maximum time availability. It should be noted that the definitions of these two commodity categories correspond exactly, although data collection and processing methods differ between the two sources. Drawing on data from BACI, FAOSTAT, or a combination thereof, graphs and maps were created using Stata/SE 15.1 for PC.

It is worth noting that this report focuses on unmanufactured tobacco or tobacco leaf as it represents the upstream segment of the tobacco industry value chain, the primary focus of the Foundation's Agricultural Transformation Initiative (herein referred to as "the ATI").

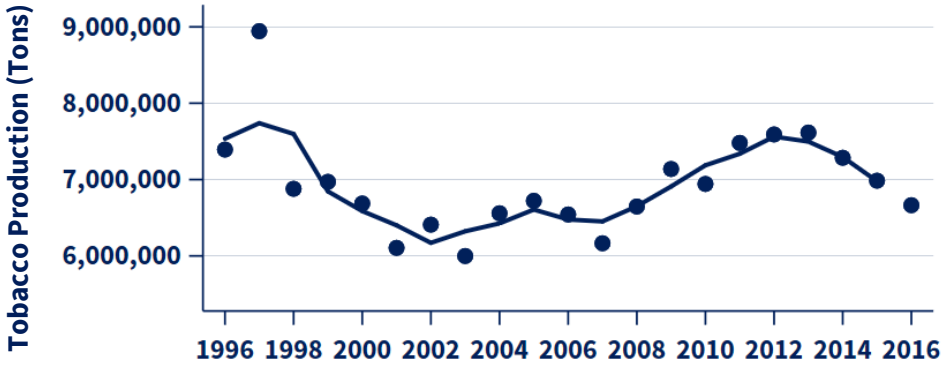
Patterns in global tobacco production

In recent decades, global tobacco production has been characterized by significant year-to-year variations (Figure 1). Consider that annual global tobacco production increased from just under 7.4 million (m) tons in 1996 to nearly 8.9m tons in 1997 before it declined to approximately 6.9m tons in 1998.[1] Despite these significant year-to-year variations, the longer-term trend in global tobacco production appears to be flat. If we exclude the nearly 8.9m tons produced in 1997 as a one-in-two-decades outlier, then annual output remained between 6.0 and 7.6m tons over the past two decades.[1,i]

Figure 1

Global tobacco production in tons from 1996 to 2016.

The trend line represents a three-year moving average.



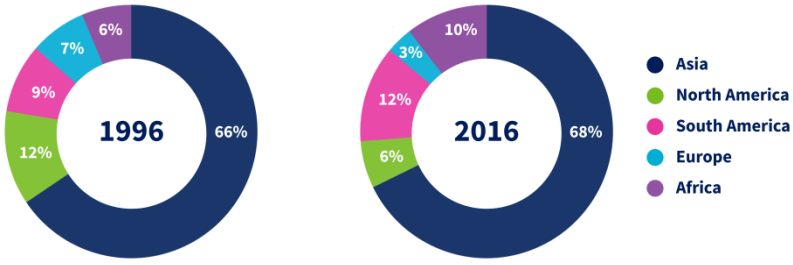
Source: *The graph was created by authors using data from FAOSTAT.*[1]

Analyzing tobacco production at the regional level reveals a clear shift from high-income continents like Europe and North America to low- and middle-income continents like Africa, Asia,[ii] and South America in recent decades (Figure 2).[1] Between 1996 and 2016, the collective share of global production by Europe and North America more than halved from 19.2% to 9.4%, while that of Africa, Asia, and South America increased from 80.7% to 90.5%.[1]

Figure 2

The percentage of global tobacco production by region in 1996 and 2016.

In recent decades, the percentage of global tobacco production in Europe and North America (including the Caribbean and Central America) has shrunk while that of Africa, Asia (including Oceania), and South America has grown.



Source: *The graph was created by authors using data from FAOSTAT.*[1,iii]

[i] If we consider world population growth during this period, this implies that per capita tobacco production has been declining throughout this period.

[ii] Asia includes Oceania. Tobacco production in Oceania is negligible relative to all other regions. Oceania includes Micronesia, Fiji, and all of Polynesia except for New Zealand.

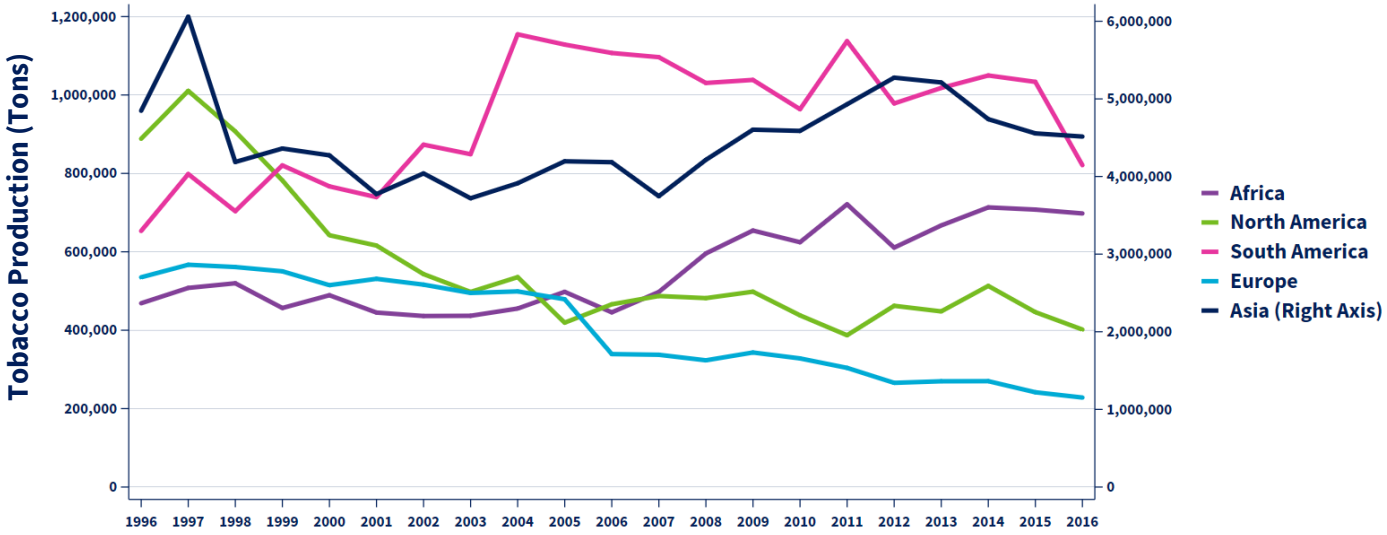
[iii] Figures may not add up to 100% due to rounding.

Absolute levels of production (Figure 3) have changed similarly over time. Between 1996 and 2016, tobacco production dropped from 535,000 tons to 228,000 tons in Europe and from 888,000 tons to 402,000 tons in North America over the same period.[1] This reflects a decline in excess of 50% in output across both continents. During the same period, tobacco production increased from 469,000 tons to 698,000 tons in Africa, representing a rise of 49%, and from 653,000 tons to 821,000 tons in South America, representing a 26% rise.[1] Tobacco production decreased marginally from 4.84m tons to 4.51m tons in Asia over the same period.[1]

Figure 3

Trends in tobacco production in tons by region from 1996 to 2016.

Tobacco production shifted from high-income continents like Europe and North America (including the Caribbean and Central America) to low- and middle-income continents like Africa, Asia, and South America.



Source: *The graph was created by authors using data from FAOSTAT.*[1]

The increases in production have been largely driven by China, Brazil, and sub-Saharan Africa—which, as of 2016, became home to five of the top tobacco-producing countries in the world, including Zimbabwe (6th), Zambia (7th), Tanzania (9th), Mozambique (11th), and Malawi (13th).[1] In these countries, tobacco is a major cash crop, providing much-needed contributions to local economies. In 2016, for instance, tobacco exports contributed 59% of Malawi's total merchandise export earnings, making it the most tobacco-dependent country in the world.[2,iv]

Throughout this time, four countries have remained the world's top producers of tobacco: Brazil, India, China, and the United States.[1] The contribution of the United States, however, has fallen over time. Although still ranked as the fourth largest global producer, it now produces about 4% of the world's tobacco, compared to about 42% produced by China, 11% by India, and 10% by Brazil.[1]

[iv] The data were drawn from the BACI trade database and calculated as: export value from tobacco in 2016/total export value in 2016 = 550,148,000/932,203,000 = .59.

Trends in global tobacco trade

Regional shifts in global tobacco trade from high-income to low- and middle-income countries and the outsized role played by major economies.

Between 1996 and 2016, the quantity of tobacco leaf traded globally increased from 2.16m tons to 2.35m tons, reflecting an average increase of approximately 0.02m tons per year (Figure 4).[2] Exports of unmanufactured tobacco represent one of the earliest links in the tobacco value chain and begin with the growth of tobacco leaf, which is increasingly concentrated in low- and middle-income countries.[3] This tobacco is then processed, manufactured, distributed, and sold as finished tobacco products.

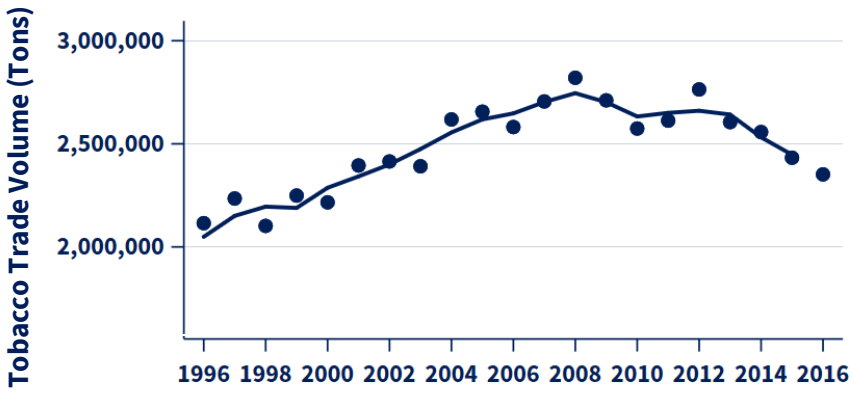
In recent decades, regional shifts in tobacco production from Europe and North America to Africa, Asia, and South America have been partly reflected in trade patterns (Figure 5).[2] The decline in tobacco production in North America has been followed by a decline in tobacco exports from the region, with exports falling from 345,000 tons in 1996 to 209,000 tons in 2016.[2] The reasons for this decline appear to be multifactorial. In the United States, for instance, it is likely rooted in the fact that the amount of tobacco in an American-made cigarette is now 40% less than it was just a few decades ago, that growing tobacco is more expensive relative to other countries owing to the federal price support program, and that demand has dropped significantly as a result of the 1998 Master Settlement Agreement between cigarette manufacturers and states' attorneys general.[4]

The increase in African and South American production has been followed by corresponding hikes in tobacco exports from those regions. Tobacco exports from Africa rose from 355,306 tons in 1996 to 434,799 tons in 2016, while in South America they rose from 377,273 tons to 602,671 tons over the same period.[2] These increases are largely driven by a handful of countries in these regions, including Brazil and the African "Big Five" consisting of Zimbabwe, Zambia, Tanzania, Mozambique, and Malawi.[2]

Figure 4

Global tobacco trade of unmanufactured tobacco in tons from 1996 to 2016.

The trend line represents a three-year moving average.

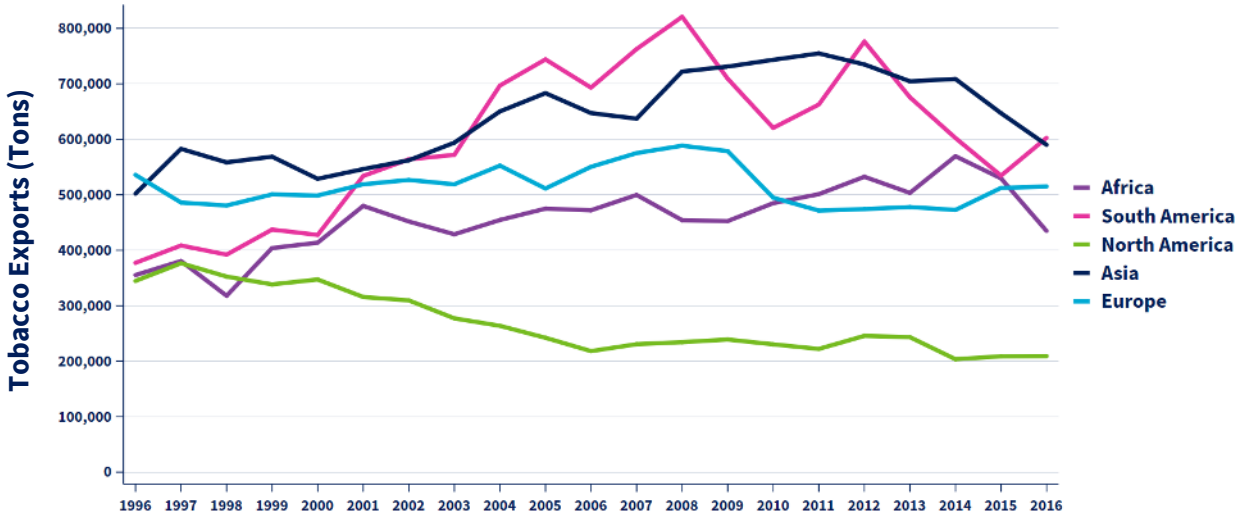


Source: *The graph was created by authors using data from BACI.[2]*

Figure 5

Trends in tobacco exports in tons by region from 1996 to 2016.

Tobacco exports from North America (including the Caribbean and Central America) have declined while those from Africa and South America have risen. Tobacco exports from Asia have marginally increased, while those from Europe have remained steady.



Source: *The graph was created by authors using data from BACI.*[2]

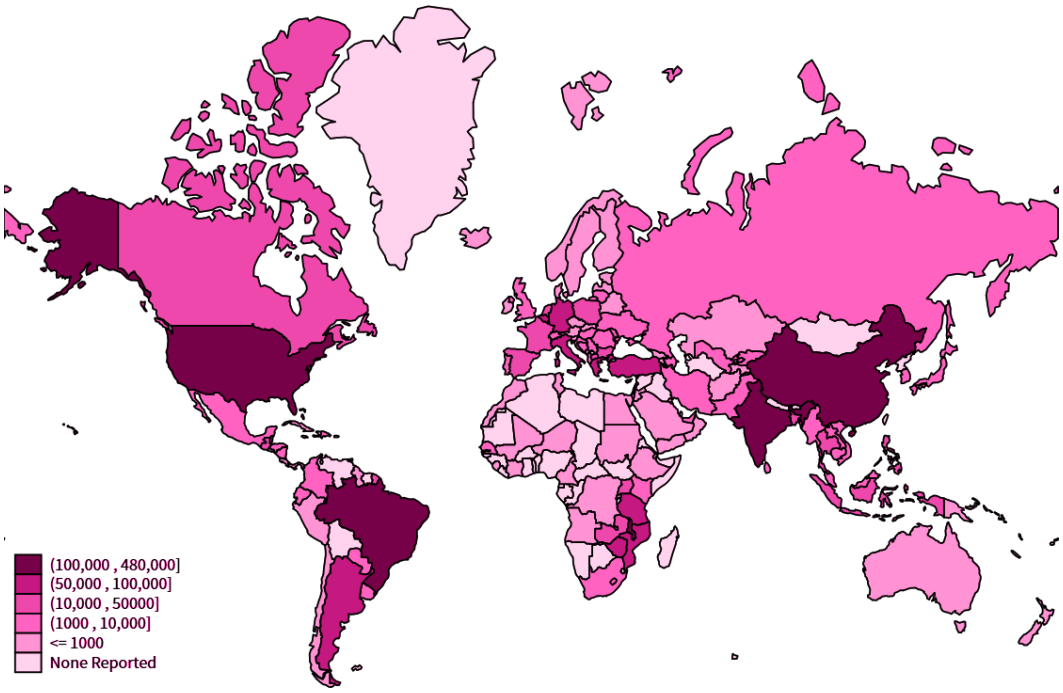
Analyzing trends at the country level reveals that, unsurprisingly, the world's major tobacco producers are also the world's top tobacco exporters (Figure 6). Chief among these are Brazil, China, and India (Table 1). Brazil has remained the largest exporter of tobacco throughout the investigated period, while China has risen in rank from ninth in 1996 to third in 2016.[2] Meanwhile, India has quickly risen from eighth in 1996 to second in 2016.[2]

The significance of the United States as an exporter, meanwhile, has steadily declined over time. In 1996, the United States exported 248,939 tons of tobacco, making it the second-largest tobacco exporter that year (surpassed only by Brazil).[2] By 2006, that figure had fallen to 170,604 tons, making it the third-largest tobacco exporter (surpassed by both Brazil and Malawi).[2] By 2016, exports had fallen further to 152,392 tons, making it the fourth-largest tobacco exporter that year, and surpassed by Brazil, India, and China.[2] Coupled with Malawi, these countries now represent the five largest tobacco exporters in the world.[2]

Figure 6

Amount of tobacco exported by countries around the world in tons in 2016.

The greatest exporters of tobacco were, in order of quantity exported, Brazil, India, China, the United States, and Malawi. Brazil has remained the top exporter throughout the investigated period, while China and India have overtaken Malawi and the United States in recent years.



Source: *The illustration was created by authors using data from BACI.*[2]

Table 1:

Top tobacco-exporting countries by quantity in 1996, 2006, and 2016.

1996		2006		2016	
Country	Quantity (tons)	Country	Quantity (tons)	Country	Quantity (tons)
Brazil	293,093	Brazil	567,270	Brazil	478,857
USA	248,939	Malawi	184,310	India	204,307
Zimbabwe	171,702	USA	170,604	China	161,515
Turkey	158,632	China	159,512	USA	152,392
Italy	143,644	India	157,841	Malawi	125,789
Greece	139,570	Turkey	127,780	Belgium-Luxembourg	93,929
Malawi	107,322	Argentina	103,536	Argentina	92,961
India	95,695	Italy	103,391	Zimbabwe	88,204
China	74,005	Greece	91,844	Tanzania	79,835
Argentina	57,455	Zimbabwe	65,639	Italy	75,307
Total (worldwide)	2,020,682	Total (worldwide)	2,445,725	Total (worldwide)	2,399,690

Source: *The table was created by authors using data from BACI.*[2]

Brazil

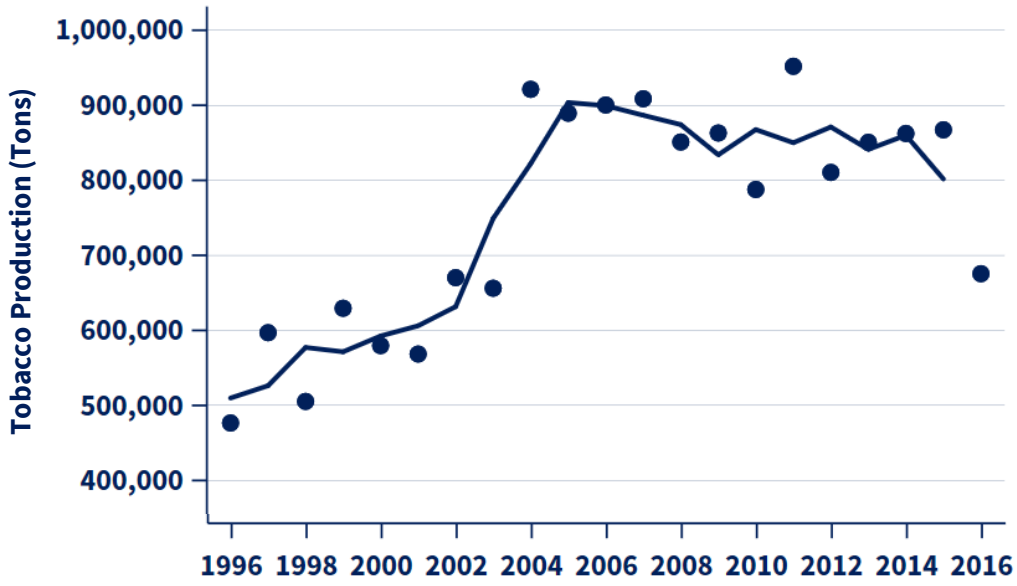
In 1996, Brazil produced more than 477,000 tons of tobacco and exported 294,000 tons (62%) of it.[1,2] Near its peak in 2007, it produced more than 909,000 tons and exported more than 633,000 tons (70%).[1,2] Since then, production has fluctuated between 676,000 and 952,000 tons, while exports have fluctuated between 460,000 and 688,000 tons.[1,2] The overall trend for both production and exports, however, has been upward, with the country producing approximately 17,000 additional tons per annum while exporting approximately 12,000 additional tons of tobacco per annum over the past two decades (Figures 7 and 8).[v]

The scale at which Brazil exports tobacco is particularly noteworthy. For the past two decades, it has been the leading exporter of tobacco and, in recent years, has accounted for roughly one-fifth of all tobacco exports.[2] In 2016, the top destinations for these exports were Belgium-Luxembourg[vi] (78,219 tons), the United States (53,388 tons), China (42,631 tons), Russia (32,140 tons), and Germany (18,286 tons) (Figure 9).

Figure 7

Tons of tobacco produced by Brazil from 1996 to 2016.

The trend line represents a three-year moving average.



Source: *The graph was created by authors using data from FAOSTAT.[1]*

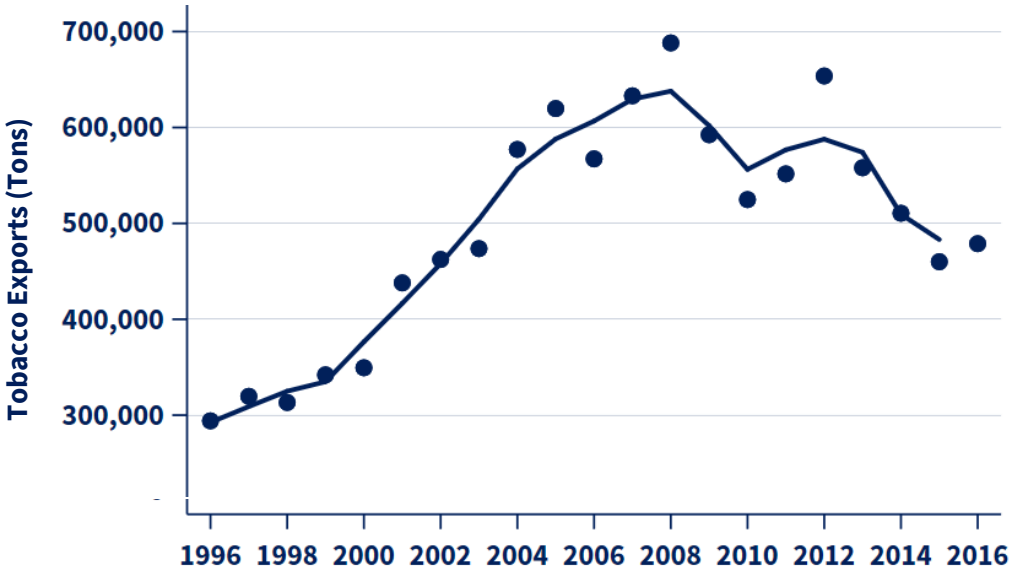
[v] As estimated by simple linear regressions calculated by authors.

[vi] The dataset refers to the countries of Belgium and Luxemburg as one entity. As a result, we are unable to distinguish between exports to one country versus the other. Presumably, the large number of exports to "Belgium-Luxemburg" observed in the data predominantly consists of exports to Belgium (given that it is home to the port of Antwerp) as opposed to land-locked Luxembourg.

Figure 8

Tons of tobacco exported by Brazil from 1996 to 2016.

The trend line represents a three-year moving average.

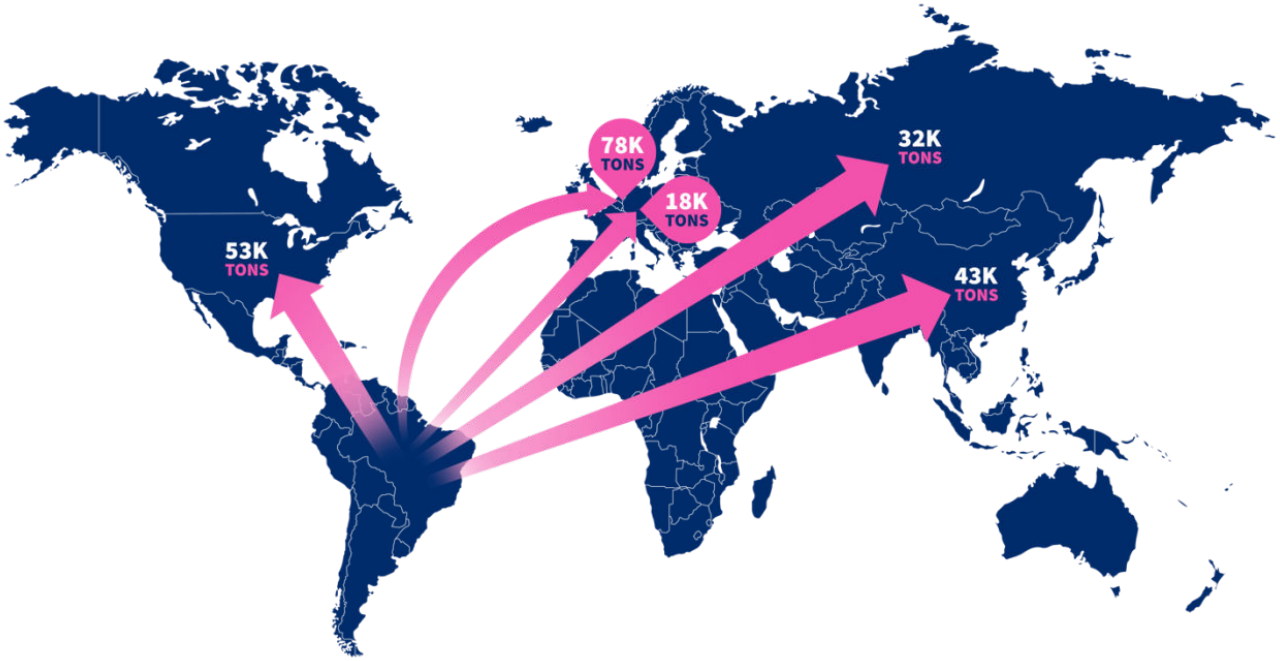


Source: *The graph was created by the authors using data from BACI.*[2]

Figure 9

Top destinations of tobacco exports from Brazil in 2016.

The top destinations of Brazil's exports were, in order of quantity exported, Belgium-Luxembourg (78,219 tons), the United States (53,388 tons), China (42,631 tons), Russia (32,140 tons) and Germany (18,286 tons).



Source: *The illustration was created by authors using data from BACI.*[2]

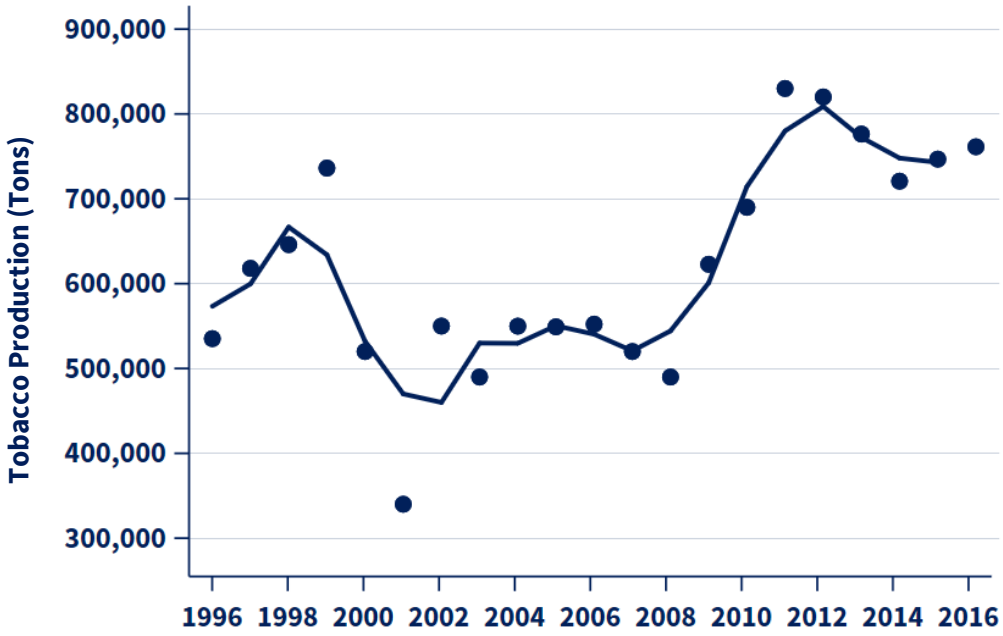
India

In 1996, India produced more than 535,000 tons of tobacco, while 96,000 tons (18%) were exported.[1, 2] Despite sizeable fluctuations in production and exports over time, the overall trends have been upward. Production has grown by approximately 12,000 tons annually and exports by approximately 7,000 tons annually over the past two decades (Figures 10 and 11).[vii] Most recently, in 2016, the country produced more than 761,000 tons and exported more than 204,000 tons of tobacco.[1, 2]

Figure 10

Tons of tobacco produced by India from 1996 to 2016

The line represents a three-year moving average.



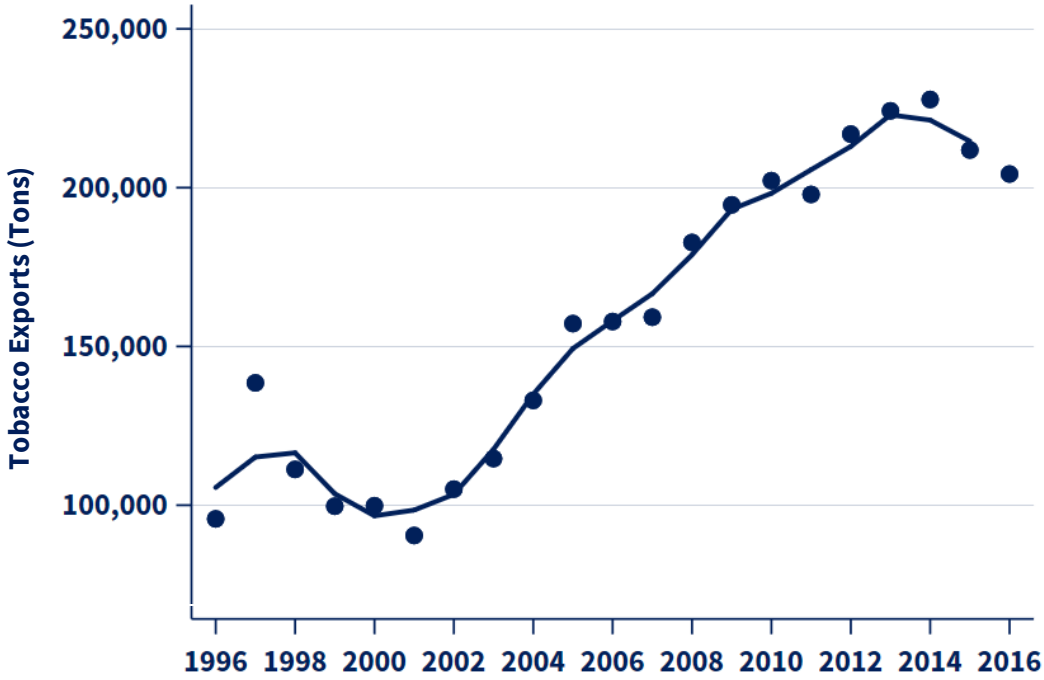
Source: *The graph was created by authors using data from FAOSTAT.[1]*

[vii] As estimated by simple linear regression calculated by the authors.

Figure 11

Tons of tobacco exported by India from 1996 to 2016.

The trend line represents a three-year moving average.



Source: *The graph was created by authors using data from BACI.*[2]

China

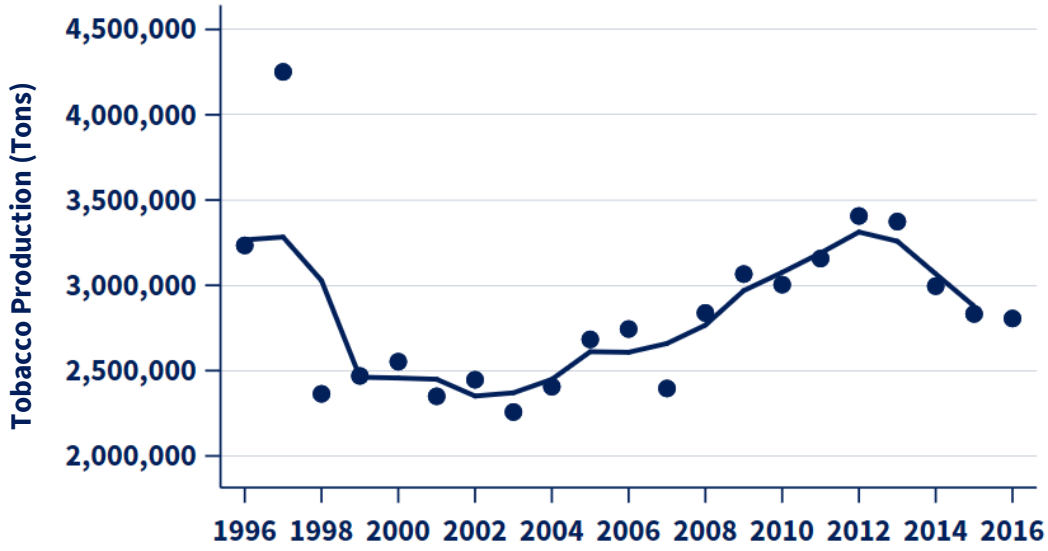
In 1996, China produced 3,234,000 tons but exported only 74,000 tons of tobacco—some 2% of its crop. The following year, production spiked to 4,251,000 tons, but exports again remained at about 2% with more than 91,000 tons shipped abroad. In 1998, production plummeted to 2,364,000 tons, but it has been trending upward ever since, and then declined since 2012. During this time, the share of its crop that was exported has remained between 5% and 8%.[viii] Overall, China has produced approximately 11,300 more tons of tobacco per annum and exported approximately 5,400 more tons of tobacco annually over the past two decades (Figures 12 and 13).[ix]

[viii] As calculated by authors using data from FAOSTAT and BACI.
[ix] As estimated by simple linear regression calculated by the authors.

Figure 12

Tons of tobacco produced by China from 1996 to 2016.

The trend line represents a three-year moving average.

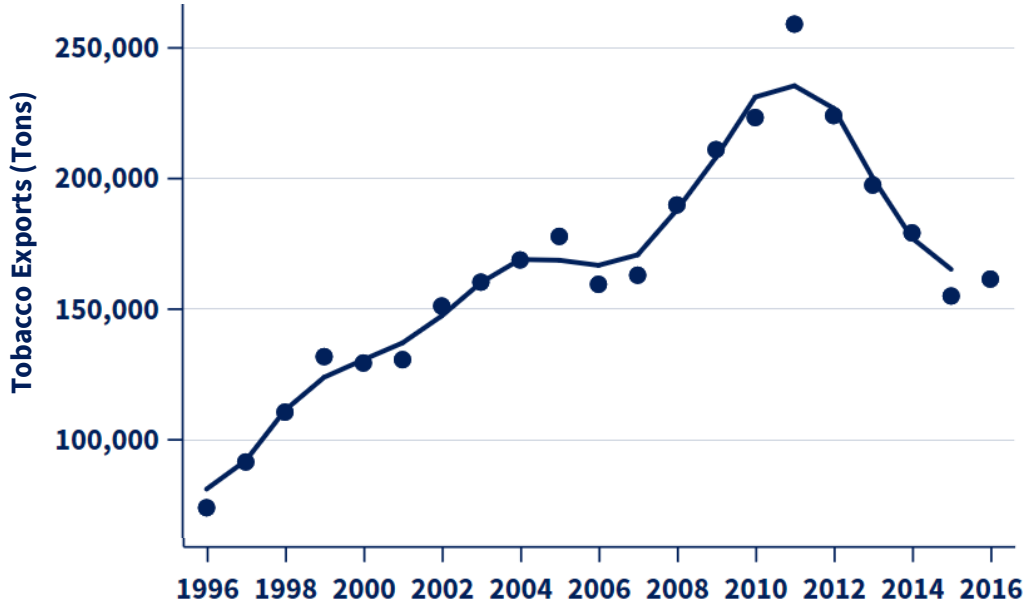


Source: *The graph was created by authors using data from FAOSTAT.*[1]

Figure 13

Tons of tobacco exported by China from 1996 to 2016.

The trend line represents a three-year moving average.



Source: *The graph was created by authors using data from BACI.*[2]

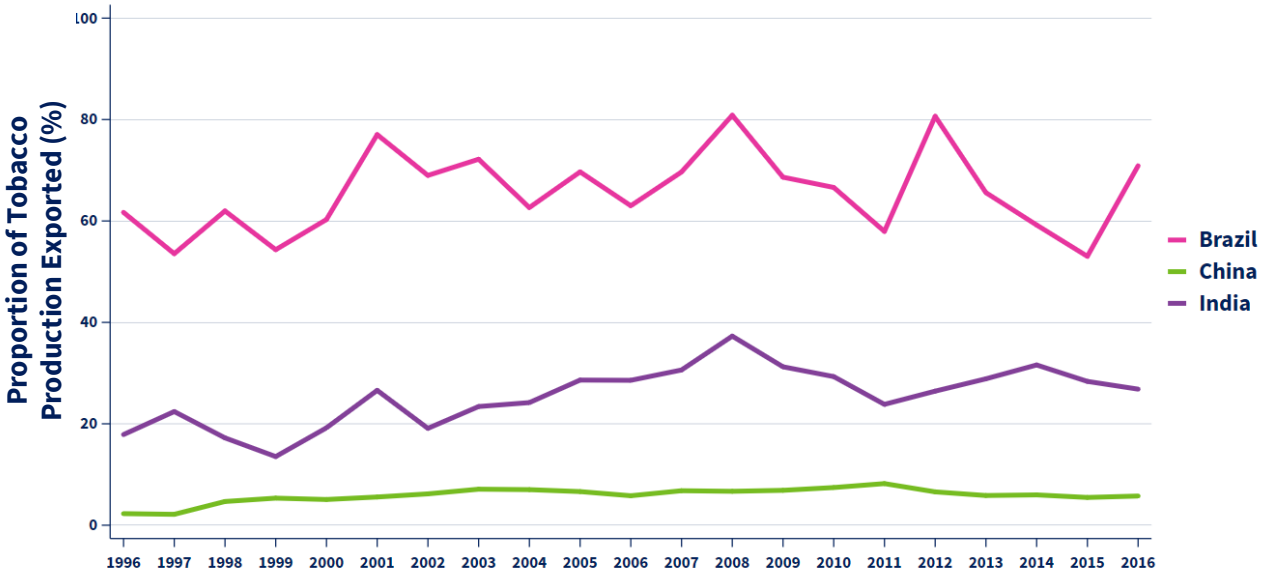
Capture of the tobacco value chain within major emerging economies

Although both tobacco production and exports have increased in these three major emerging economies, only Brazil appears to export the bulk of tobacco leaf it produces. Between 1996 and 2016, Brazil exported anywhere between 53% and 81% of its tobacco leaf (Figure 14). In contrast, China exports only a nominal amount of the tobacco it produces—no more than 8% in recent years.[1, 2, x] Similarly, India exports only a fraction of the tobacco it produces, and never more than 37% of its crop in recent decades.[1, 2, xi]

The relatively modest share of tobacco exported by China and India shows the extent to which the capacity of local tobacco manufacturing has grown over time to supply a large and growing domestic market in both countries. Instead of simply growing tobacco leaf, both countries have managed to capture the more lucrative downstream components of the tobacco value chain: manufacturing, distribution, and sales. In doing so, they have managed to grow their industries and contribute to overall economic growth, creating jobs and income in this sector, as explained below.

Figure 14

Share of tobacco production exported in tons by Brazil, China, and India from 1996 to 2016.



Source: *The graph was created by authors using data from FAOSTAT and BACI.*[1,2]

In China, the tobacco sector is dominated by a single company, the China National Tobacco Corporation (or China Tobacco, as it is commonly known). As a state-owned enterprise, China Tobacco enjoys a monopoly over the enormous domestic market, where a full 40% of the world's cigarettes are consumed.[5] Unsurprisingly, therefore, China Tobacco is the world's largest manufacturer of tobacco products, accounting for 38% of the world's cigarette production.[6] China Tobacco has approximately 130 tobacco manufacturing facilities, employs 510,000 people across 33 provinces, and contributes 7% to 11% of annual government tax revenues.[7]

[x] As calculated by authors using data from FAOSTAT and BACI.
[xi] As calculated by authors using data from FAOSTAT and BACI.

In India, on the other hand, the tobacco manufacturing landscape is far more diverse, including part publicly owned companies such as ITC Limited, which employs 26,000 staff at five factories and three leaf-threshing plants spanning across six states.[8] Other joint ventures include Godfrey Phillips India (a partnership between the Modi Group and Philip Morris International) and VST Industries, among many other smaller domestic companies.

In keeping with this trend, several of the top tobacco-producing and exporting countries in sub-Saharan Africa are following suit. Governments and related stakeholders in these countries are eager to capture additional links of the tobacco value chain and either have already expanded or are monitoring opportunities to expand domestic capacity to include processing and manufacturing of tobacco-related products.[9,10,11,12,13,14]

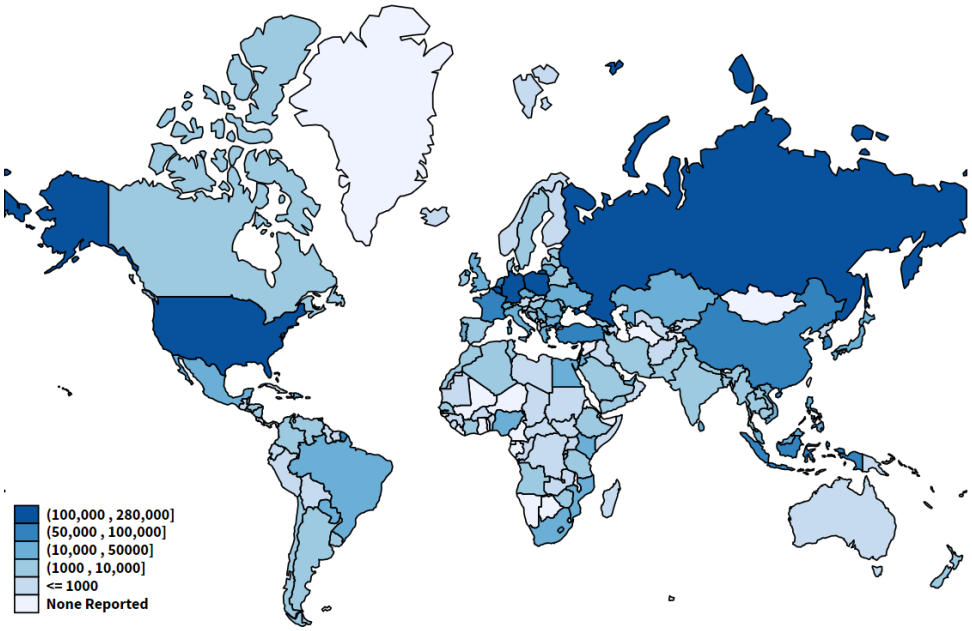
Tobacco importers

The top importers of unmanufactured tobacco are found in high-income continents: North America and Europe (Figure 15).[2] More specifically, the United States along with European countries such as Belgium-Luxembourg, Germany, and Russia have generally remained top importers in recent years (Table 2).[2]

Figure 15

Amount of tobacco imported by countries around the world in tons in 2016.

The greatest importers of tobacco were, in order of quantity imported, Belgium-Luxembourg, Russia, Germany, the United States, Poland, Indonesia, and China.



Source: *The image was created by authors using data from BACI.*[2]

Within these countries, however, there have been significant shifts (Table 2). For example, tobacco imports to the United States have declined from 331,091 tons in 1996 to 153,602 tons in 2016, while tobacco imports to Belgium-Luxembourg have increased from 59,573 tons in 1996 to 278,037 tons in 2016, an amount almost five times higher (see Table 2). In 2016, Belgium-Luxembourg ranked as the top importer of unmanufactured tobacco and ranked as the sixth highest exporter of unmanufactured tobacco. It did not rank among the top 15 importers or exporters of manufactured tobacco (cigarettes). Box 1, below, offers a possible explanation for this.

Table 2

Top tobacco-importing countries by quantity in 1996, 2006, and 2016

1996		2006		2016	
Country	Quantity (tons)	Country	Quantity (tons)	Country	Quantity (tons)
USA	331,091	Russia	266,783	Belgium-Luxembourg	278,037
Germany	195,475	USA	249,326	Russia	181,038
United Kingdom	173,757	Germany	199,782	Germany	159,216
Russia	118,134	Belgium-Luxembourg	166,524	USA	153,602
Netherlands	101,006	Netherlands	124,844	Poland	104,836
Japan	91,849	Egypt	98,423	Indonesia	92,892
France	63,361	France	81,684	China	89,801
Belgium-Luxembourg	59,573	Philippines	78,904	Netherlands	77,397
Spain	53,686	Ukraine	72,973	Turkey	76,323
Turkey	48,367	Poland	66,328	France	62,339
Total (worldwide)	2,010,881	Total (worldwide)	2,484,724	Total (worldwide)	2,209,553

Source: *The table was created by authors using data from BACI.*[2]

Box 1

The special case of Belgium-Luxembourg

The substantial growth in the import of unmanufactured tobacco in Belgium-Luxembourg merits a more granular analysis. Between 1996 and 2016, the country moved from eighth to first in unmanufactured tobacco imports globally, with the bulk of its imports originating—in order of amount—from Brazil, Malawi, Tanzania, Italy, and India.[2] The drivers behind this growth are complex and multifactorial, including its function as a "virtual free zone," logistical attractiveness and associated custom efficiencies, large warehouse facilities, well-established tobacco traders at the port, and the creation of the European Union (which widened and enlarged regional accessibility for those trading through the port; see below for further details).[15,16,17,xii]

Historically, the port of Antwerp is home to some of the largest and most sophisticated tobacco leaf and cigarette warehouses in the world.[16] As a result, markets and distribution networks built around the tobacco trade are well established.[16] Such logistical capabilities make the port of Antwerp particularly attractive to those in the tobacco trade and likely allow the port—at least in the context of tobacco—to outcompete the port of Rotterdam in the Netherlands.[16,xiii]

Moreover, the establishment of the European Union as a free trade bloc ushered in a suite of regulatory changes that further advantaged the port of Antwerp. One of these regulatory changes included, for instance, the expansion of a transit regime that suspended duties, excise, and value-added tax on goods transiting through the territory (customs, duties, and taxes are still levied, however, upon arrival at the final destination).[16] This may partially explain the rapid growth in imports to Belgium-Luxembourg over the past two decades.

One unintended consequence of the free-transit regime in the European Union was that it created a strong incentive for fraud and smuggling. The incentive is that diverting imports intended for outside of the European Union for sale within the territory could be exceptionally profitable since the products would be intended for duty-free transit under the European regime but illicitly sold for the duty-paid price within the territory.[16] Although the scale and scope of such fraud, smuggling, and diversion of unmanufactured tobacco is poorly studied, and the analysis is dated, such deceit has been well documented in the past for cigarettes within Europe.[16] A study by the European Parliament, for instance, estimated that approximately 60 billion cigarettes were illicitly sold in this manner within Europe each year during the 1990s.[16] The sum represented a loss of nearly USD $6 billion annually.[16] Cigarettes were a particularly attractive item for such diversion given that they are relatively light to carry and subject to a large tax.

Only a handful of studies have focused on smuggling of the minimally processed form of tobacco, known as cut tobacco, within Europe. Much of this work was carried out by the Transcrime Research and commissioned by major tobacco companies with an interest in curbing smuggling within the region. They found that an estimated 48.2% of cut tobacco consumed in 2015 within a 15-country bloc in Eastern Europe was illicitly traded, resulting in approximately €1 billion in lost revenue.[18] Others have also reported large seizures of illicit raw or cut tobacco in Bulgaria, Cyprus, Denmark, Hungary, Ireland, Poland, the Netherlands, and Slovakia between 2006 and 2013.[19,20] The Director for Policy at the European Anti-Fraud Office noted that the illicit trade in cut tobacco is still a current and growing problem, especially in central and eastern Europe where tobacco regulation is weak and porous surrounding tobacco growing and trading.[21,22]

Illicit trade also occurs is other parts of the world. Outside of Europe, a handful of studies have examined the flow of illicit tobacco leaf in African countries, Australia, and New Zealand. In Africa, the bulk of these studies detailed the smuggling of tobacco leaf among Malawi, Zambia, and neighboring countries.[23,24,25,26,27,28,29] Much of this activity appears to be the result of likely perverse incentives created by arbitrage opportunities between the leaf-buying, auction, and taxing systems of neighboring countries.[24,29] Almost 15% of the tobacco leaf on the Zambian market in 2005, for instance, had been smuggled from neighboring Malawi.[29] In Australia, cut tobacco appears to be both smuggled into the country and grown on farms illegally.[30] Experts estimate that in Australia approximately 1.4 billion cigarette equivalents in illicit cut tobacco (chop-chop) was consumed in 2017.[30] In New Zealand, an average of 2,319 kg of loose-leaf tobacco was detained per year between 2010 and 2013, with an estimated average of 9,541 to 25,019 kg per year smuggled into the country.[31]

It is important to stress that although the potential flow of illicit tobacco questions the accuracy of the available data on legal trade flows, little is known about the volume at which this may be occurring on a global scale. It will likely require a separate study to help quantify and therefore is beyond the scope of this paper.

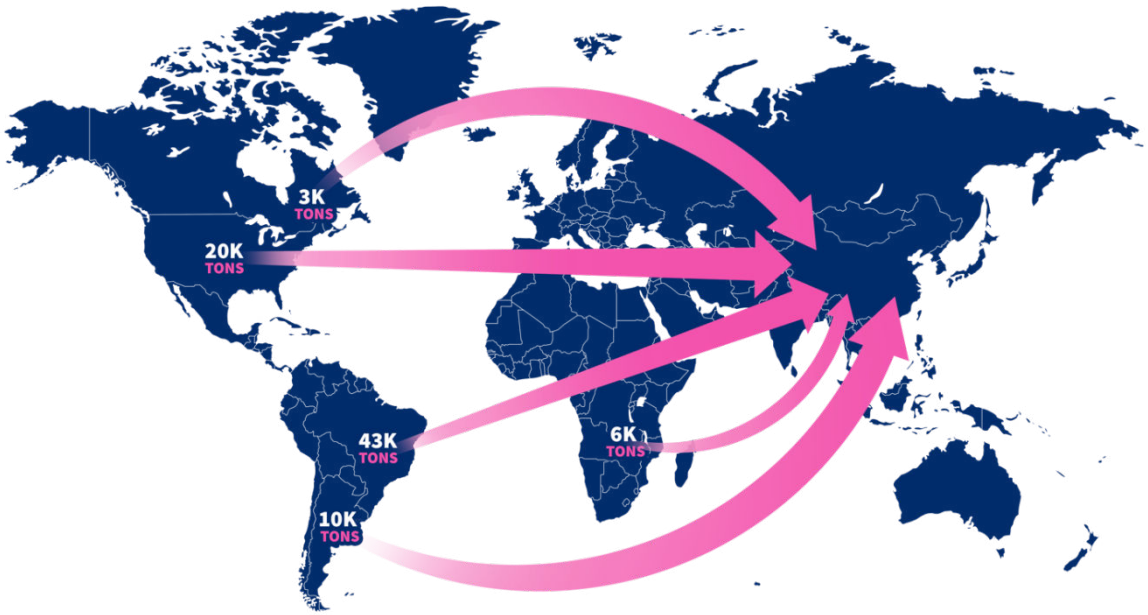
[xii] Antwerp is a transit port and a" virtual free zone," which means that it offers a wide range of procedures to avoid direct import duties and levies. Benefits are accrued from bonded customs warehousing, inward processing, and extended gate where goods can be temporarily stored.

[xiii] As context, the ports of Antwerp and Rotterdam are the fourth and 17th busiest in the world and the first and second busiest in Europe, respectively. Every year, 32 different countries route more than one million tons of goods via Antwerp.

Figure 16

Top origins of tobacco imports to China in 2016.

The top origins of imports were, in order of quantity imported, Brazil (42,631 tons), the United States (19,897 tons), Argentina (9,702 tons), Zambia (6,475 tons), and Canada (3,010 tons).



Source: *The image was created by authors using data from BACI.*[2]

It is also important to note that a subset of low- and middle-income countries, including China and Indonesia, have become significant importers of unmanufactured tobacco. Between 1996 and 2016, tobacco imports by China roughly quintupled from 17,993 to 89,801 tons, making it the seventh-largest tobacco importer in the world in 2016.[2] Similarly, between 1996 and 2016, tobacco imports by Indonesia more than doubled from 42,934 tons to 92,892 tons, making it the sixth-largest tobacco importer in the world in 2016.[2] As China has grown as a significant importer of tobacco, Brazil has benefited as its top trading partner. In 2016, China imported 42,631 tons of Brazilian tobacco (Figure 16). In addition to Brazil, China's other sources of tobacco imports are the United States, Canada, and other low- and middle-income countries such as Argentina (9,702 tons) and Zambia (6,475 tons). This suggests an increase in tobacco trade flows within and among low- and middle-income countries (often referred to" South-South" trade).

Conclusion

This analysis has revealed several key trends in tobacco production and trade over the past two decades.

- First, there has been a notable shift in global tobacco production from countries in Europe and North America to countries in Africa, Asia, and South America. Between 1996 and 2016, the global share of tobacco production by Europe and North America more than halved, from 19.2% to 9.4%, while that of Africa, Asia, and South America increased from 80.7% to 90.5%.
- Second, three major emerging economies—Brazil, India, and China—have steadily dominated global tobacco production over the period analyzed. In 2016, Brazil, India, and China produced almost 64% of the world's tobacco (about 42% by China, 11% by India, and 10% by Brazil). The United States was once a dominant producer (and is still ranked fourth in the world), but its share of global tobacco production has fallen to about 4%.
- Third, Brazil, India, and China also play an outsized role in the global trade of tobacco—but not in proportion to their production. Currently, about 20% of the world's traded tobacco comes from Brazil, 9% from India, 7% from China, and 7% from the United States. While Brazil exports most of the tobacco leaf that it produces, China and India export relatively small shares, suggesting that they have managed to capture added links of the value chain beyond primary production. Other low- and middle-income countries appear eager to follow suit.
- Finally, China has become an increasingly significant importer of tobacco, most of which comes from Brazil. This is perhaps an indicator that trade between low- and middle-income countries is on the rise.

This analysis of tobacco production and trade has clearly underscored the growing role of major emerging economies in the global tobacco economy. Brazil maintains a dominant exporter role while China has become both a significant importer and exporter of tobacco. Trade between the two countries—perhaps a harbinger of increased trade between low- and middle-income countries more generally—is on the rise, with China and India playing increasingly important roles downstream in the global value chain.

These trends may have important implications for tobacco control efforts. They highlight, for example, the widening gulf in tobacco control incentives between high-income countries and low- and middle-income countries. As tobacco production and exports dwindle in high-income countries, the health burden of smoking is increasingly becoming the only tobacco-related concern. In contrast, as tobacco production and exports rise in low- and middle-income countries, some may argue that the negative economic externalities from the health consequences of smoking are at least partially offset by the economic benefits of tobacco production and manufacturing. Although these arguments can be simultaneously engaging and contentious, a coherent and persuasive policy response is required that will both push and pull countries away from tobacco production, manufacturing, and consumption. Most importantly, additional research into the dynamics of global trade in tobacco, including the movement of manufactured tobacco and implications for tobacco control efforts, is needed.

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