



THE SIGNIFICANCE OF THE TOBACCO PRODUCT MANUFACTURING TO POLAND'S ECONOMY



CASE – Centrum Analiz Społeczno-Ekonomicznych
CASE – Center for Social and Economic Research



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INFORMATION ICONS

In order to facilitate quick retrieval of the most important information, the report uses three types of icons. Their presence on a page margin indicates the occurrence of the relevant type of information in the text.



Data

Information that indicate significant absolute data – for example production of tobacco products in a given year, or percentage data – for example, the share of revenues from VAT on tobacco products in the state’s total revenues from VAT.



Trend

A change in the phenomenon under study over time – for example, a change in tax revenues or of consumption of tobacco products. Growth, decrease and stagnation are different types of trends.



Important fact

Important information of another type.

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Abbreviations and Acronyms

British American Tobacco	BAT
Business Centre Club	BCC
Police Central Bureau of Investigation	CBŚP
Public Opinion Research Center	CBOS
Computable general equilibrium	CGE
Full-time equivalent	FTE
Statistics Poland	GUS
Imperial Tobacco	IT
Institute of Agricultural and Food Economics	IERiGŻ
Japan Tobacco International	JTI
National Revenue Administration	KAS
National Agriculture Support Center	KOWR
National Union of Tobacco Growers	KZPT
Finance Ministry	MF
Ministry of Agriculture and Rural Development	MRiRW
UN Food and Agriculture Organization	FAOSTAT
Philip Morris International	PMI
personal income tax	PIT
corporate income tax	CIT
value-added tax	VAT
Polish Chamber of Trade	PIH
Polish Classification of Activities 2007	PKD
Polish Union of Tobacco Growers	PZPT
tobacco intermediary entities	PPT
gross domestic product	GDP
extended producer liability	ROP
World Health Organization	WHO
European Union	EU

Executive Summary

This report, prepared by a team of economists from CASE – Center for Social and Economic Research, is a continuation of the 2018 analysis *The significance of the tobacco product manufacturing to Poland's economy* commissioned by JTI Polska Sp. z o.o. The purpose of the research whose results are presented in this report is to assess the economic significance, challenges and development prospects of the tobacco product manufacturing, trade and distribution sector in Poland. In the report we analyze a cross-section of the tobacco industry and its significance for the economy as a whole. We also present the significant barriers to the sector's growth, i.e. the illicit market, costs of compliance and regulatory uncertainty, and we also model the long-term macroeconomic effects of potential changes in the industry. To the best of our knowledge, at the moment this is the most comprehensive economic study of the sector.

Key information and conclusions:

- The tobacco sector is an important part of the Polish economy. The estimated **value of tobacco products manufactured in 2019 was PLN 45.9 billion**.¹
- The tobacco product manufacturing chain includes agriculture, tobacco buying organizations, raw tobacco processors, tobacco product manufacturers and the distribution and sales. Value is added at each step of the chain and it covers the wages and company profits. In 2019 the sector generated **PLN 10.9 billion of value added**, of which PLN 6.8 billion was created directly in the tobacco processing and tobacco product manufacturing and the remaining part was generated in other involved sectors. This means that about 0.5% of all income in the Polish economy (measured as GDP) and 2.2% of added value of the Polish industry in 2019 was created in the tobacco sector.
- The tobacco sector makes a **significant contribution to the stock of domestic physical capital**, thus contributing to long-term economic growth. In 2018 investments in the tobacco industry constituted 1.3% of total industrial investment in Poland. From 2014 to 2018, investment outlays in the sector grew by about 124% (i.e. growth from PLN 600 million to PLN 1.4 billion), significantly faster than the average for all industry. We estimate that in 2019 investment outlays in the tobacco sector were about PLN 1.3 billion.
- Poland is **EU's second-largest producer of cigarettes** and the third by volume in production of smoking tobacco. In 2010 Poland produced about 144 billion cigarettes, exceeding 213 billion in 2019, an increase of about 47% (an average of 5.3% a year).

¹ Expressed in prices including domestic taxes on tobacco products.

- Tobacco manufacturing is export-oriented. **Four out of every five cigarettes produced in Poland are exported.** About 88% of the value added created in the production chain of tobacco products is generated in exported output. **The total value of tobacco product exports and unprocessed tobacco in 2019 was PLN 15.9 billion.** In the past decade, such exports have clearly grown: by 10.2% in relation to 2018 and as much as by 232% in relation to 2010. Cigarette exports account for 84.8% of export value. More than 93% of the sector's output goes to the EU market.
- **In 2019 the estimated value of the domestic tobacco product market stood at PLN 32.6 billion.** The majority was accounted for by traditional tobacco products, but the electronic cigarette market grew dynamically, as did the market for innovative products, meaning tobacco heating systems, offered in Poland by two tobacco companies.
- **The estimated total tax revenue from production and sale of tobacco products stood at PLN 28.7 billion in 2019.** Total income from excise tax on ready tobacco products was about PLN 20.9 billion; excise tax on raw tobacco boosted the budget by another PLN 800 million.² VAT revenue from final tobacco products³ stood at PLN 6.4 billion in 2019. Total revenue from income tax levied on employees of the tobacco product manufacturing and related sectors is estimated at PLN 168.5 million. Total revenue from corporate income tax on profits earned in the entire chain of tobacco product manufacturing and distribution was about PLN 384 million.
- **We estimate the number of full-time jobs that exist thanks to the tobacco sector, both directly and in related sectors, at 33,300, full time equivalent.** This figure includes the full-time jobs in manufacturing of tobacco products, materials and machinery to produce them, tobacco cultivation and the wholesale and retail trade sector. The number of people in 2019 whose job was connected to tobacco cultivation, manufacturing and distribution of tobacco products, is **estimated at more than 600,000.**
- The illicit market, meaning the smuggling, production and trade of illegal products is negatively affecting both tax revenue and the operations of tobacco product manufacturers. After the period of the greatest expansion of the illicit market in 2010-2015, when it reached as much as 19% of the size of the legal market, this value fell in 2019 to about 9.9%, but even so it was estimated at PLN 3.31 billion in market value and it was responsible for PLN 2.65 billion in lost budget revenues. **Among the numerous proposed instruments to fight the illicit market, the most effective seem to be: a rational and predictable excise policy; tightening and effectively imposing fines; further improvement in the efficiency of law enforcement; and coordination among the various services.**

² Revenue from excise tax on raw tobacco in 2019 was estimated based on partial data.

³ Cigarettes and smoking tobacco.

- The greatest challenges facing the tobacco sector remain, aside from a possible decline in demand, the costs of compliance with domestic and EU law, and regulatory uncertainty, which includes the growth in number of laws enacted in recent years. From the sector's perspective, changes in excise tax are particularly important, as are successive EU regulations. To maintain the sector's development and investment potential, **regulatory changes should be introduced in a clear and predictable manner, ideally for the long term.**
- **Simulations we conducted using a general equilibrium model indicate a significant influence of potential future changes in the tobacco sector on the entire Polish economy.** In particular, the scenarios for the sector in which export demand increases, and investments and productivity grow, point to significant growth in the main macroeconomic variables, including GDP as a whole, wages and household consumption (for example, growth in foreign demand for Polish tobacco products by 10% would bring GDP growth of about PLN 1.2 billion). The opposite effect would be brought by the scenarios of decline in export demand, a halt to investment activity, growth in excise tax or compliance costs (in this final scenario, if production costs grow by 10%, Polish GDP would fall by PLN 1.4 billion).

24,000–25,000 tonnes

is the estimated harvest of raw tobacco in Poland in 2019.



213 billion

cigarettes were manufactured in Poland in 2019, making it the EU's second-largest producer.

80%

of cigarettes manufactured in Poland are exported, mainly within the EU.

The total value of tobacco product and unprocessed tobacco exports in 2019 was PLN 15.9 billion, up 232% from the 2010 level.



PLN 28.7 billion

of revenue was generated for the Polish budget by production and consumption of tobacco products in 2019.

This was 10.6% of total tax revenue.

Excise brought in PLN 21.7 billion, VAT PLN 6.4 billion, personal income tax about PLN 168.5 million and corporate income tax about PLN 384 million.

600,000

jobs are wholly or partially related to the tobacco industry, which translates into the equivalent of 33,300 full-time jobs.



INTRODUCTION



Introduction

This report builds on research conducted in 2018, commissioned by JTI Polska Sp. z o.o., on the effect of tobacco product manufacturing on the Polish economy. The analysis covers the segment's entire value chain, beginning with cultivation, through tobacco processing and manufacturing of tobacco products, ending with the processes of distribution and sales of final products. The research included a meticulous, in-depth analysis of the current situation and a discussion of the most important issues in the area of the illicit market and regulatory challenges – both current (including the functioning of certain regulations) and future.

The report describes the economic significance of tobacco product manufacturing. Both the earlier and the current version were prepared using advanced, rigorous research methods. We conducted a detailed analysis of the statistical data describing the economic situation in agriculture, the manufacturing industry and trade, supplemented with knowledge gained during interviews with stakeholders. Additionally, the research is complemented by simulations using a computable general equilibrium (CGE) model. At the same time, we must stress that the scope of the report does not include analysis of questions related to consumption of tobacco products, in particular the health effects or social costs.

To analyze the statistical data we used the most important and broadest reports available on the market, including yearbooks and specialized bulletins from Statistics Poland, analyses by the Institute of Agricultural and Food Economics, publications from the Ministry of Agriculture and Rural Development and data published by the UN Food and Agriculture Organization (FAOSTAT). The analysis was supplemented by information received in detailed interviews with representatives of the Development Ministry, Finance Ministry, Police Central Bureau of Investigation and tobacco growers' groups, as well as distributors, representatives of manufacturers and the tobacco product distribution segment.

This qualitative and quantitative information allowed us to assess the significance of the tobacco sector for GDP, trade, tax revenue and the labor market. To analyze the multiplier effects in scenarios for changes in the tobacco sector for the entire Polish economy, we used a computable general equilibrium model, a mathematical description of the behavior of economic agents and the dependencies between them in the economy, which takes into account complicated inter-sector connections, including the tobacco product manufacturing chain. This analysis allowed us to track the effects of potential (scenario) changes in the tobacco sector for the entire economy and their quantification in the form of basic macro-economic indicators.

The structure of this report fits with the methodological approach of the previous version of the research. The first part describes the characteristics of the tobacco sector through a detailed description of the value chain and its key entities, and presents the most important tendencies observed in the sector at the moment. The second and third parts concern the market for tobacco products in Poland and the markets for innovative products and electronic cigarettes. Later sections concentrate on the tobacco sector's influence on the

Polish economy, including on trade, budget revenues and the labor market. The penultimate chapter contains an analysis of issues that are significant both today and in the context of future development: the illicit market and its significance for the sector, and the regulatory challenges and uncertainties, which may affect the growth of the sector. The report closes with a chapter presenting the results of economic modeling, which portrays the sector's effects on the Polish economy in various scenarios for its development.



A photograph of a tobacco field. The plants are arranged in neat rows, stretching into the distance. The leaves are large and green, with some showing signs of being harvested or damaged. The ground is sandy and light-colored. In the foreground, there is a patch of green grass. The sky is overcast with grey clouds. A semi-transparent grey box is overlaid on the top left of the image, containing the chapter title.

CHAPTER 1

POLAND'S TOBACCO SECTOR

Poland's Tobacco Sector

Tobacco Cultivation

Tobacco came to Poland from Turkey in the twilight of the 16th century, in the form of seeds brought from Constantinople by Zygmunt Uchmański to Anna Jagiellonka, sister of King Sigismund III Vasa.¹ The Polish word *tytoń* also has its roots in Turkey; it derives from the Turkish word *tütün*, and in 16th-century Polish the two words were pronounced much more similarly than today; variants included *tytuń*, *tutuń*, and *tutun*.² Poles took up the habit of consuming tobacco from the Germans and the French in about 1580. It came from both domestic crops and imports. Since the 18th century, consumption and production of tobacco has also constituted an important source of government revenue.³

Tobacco cultivation is covered by a range of regulations to limit the illicit trade by eliminating illegal trade in tobacco and illegal production of and trade in tobacco products. Tobacco is bought from planters through so-called tobacco intermediary entities (in Polish: *pośredniczące podmioty tytoniowe*, PPTs), introduced in 2013 as a result of the imposition of an excise tax on raw tobacco, which are registered with the National Revenue Administration (KAS) and the Finance Ministry.⁴ As part of the introduction at the end of 2017 of the so-called tobacco legislative package (see Chapter 7), the National Agriculture Support Center was required to perform monitoring of domestic tobacco plantations, as well as processes of production and sale of raw materials.

A significant proportion of tobacco farms are small; the Institute of Agricultural and Food Economics and Statistics Poland (GUS) indicate that in 2017 tobacco was cultivated on about 6,200 farms, with an average cultivated area of 2.09 hectares. On more than 40% of farms, the area was less than 1 hectare. Tobacco growers most often band together in producer groups,⁵ and the interests of growers are represented by unions – both nationwide and regional (e.g. in Kielce and Leżajsk). The largest nationwide groups are

1 A. Grzybowski (2006), "Historia tytoniu w Polsce" (History of Tobacco in Poland), *Herba Polonica*, vol. 52(4), pp. 148–150, <http://www.herbapolonica.pl/magazines-files/251324-Grzybowski.pdf> [accessed Feb. 11, 2020].

2 W. Boryś (2005), *Słownik etymologiczny języka polskiego* (Etymological dictionary of the Polish language), Kraków, Wydawnictwo Literackie, p. 659, ISBN 83-08-03648-1.

3 Based on CASE – Center for Social and Economic Research (2018), *The significance of the tobacco product manufacturing to Poland's economy*, Warsaw, p. 17.

4 The list currently includes 14 entities, of which two are registered as "foreign represented", and the rest have domestic status. The full list as of February 10, 2020 is available at the register of tobacco intermediary entities, <https://www.gov.pl/web/kas/rejestr-posredniczacych-podmiotow-tytoniowych> [accessed February 11, 2020].

5 Interestingly, tobacco growers in Poland seem to be a very well organized group: out of 963 agricultural producers' groups bringing together about 14,200 members, nine groups of tobacco producers include about 3,900 growers, which as of June 2018 accounted for 28% of all members of agricultural producers' organizations. (Rynek wyrobów tytoniowych, stan i perspektywy (The tobacco market: state of play and prospects), M. Bodyl (ed.), Institute of Agricultural and Food Economics, Warsaw 2018, No. 6, p. 18).

the National Union of Tobacco Growers (KZPT) in Lublin and the Polish Union of Tobacco Growers (PZPT) in Kraków.

Tobacco is a thermophilic plant that adapts easily to its environment. Significantly, tobacco cultivation succeeds on poorer quality soils, where more demanding plants cannot grow.⁶ At the same time, tobacco cultivation is very labor-intensive and requires specialized knowledge and significant quantities of pesticides.⁷ Tobacco farms are equipped with various facilities, primarily drying barns (essential for preparing the crop). In Poland several varieties are cultivated, and their product structure depends on climatic and soil conditions. Domestic cultivation is dominated by light tobaccos – Virginia (70% of cultivation) and Burley (more than 26%). Tobacco farms are spread across five regions: 1) Lublin-Podkarpackie, 2) Świętokrzyskie-Małopolska, 3) Kujawy-Pomerania, 4) Mazury and 5) Lower Silesia.⁸

TABLE 1: AREA SOWN IN TOBACCO

	2017	2018	2019
Total in Poland (hectares)	12,885	16,387	12,910
Lower Silesia	9	0	0
Kujawy-Pomerania	554	665	563
Lublin	8,294	11,037	9,394
Lubuskie	5	0	0
Łódź	0	0	0
Małopolska	1,127	679	837
Mazovia	703	328	35
Opole	0	2	67
Podkarpackie	1,008	1,641	389
Podlaskie	242	910	802
Pomerania	137	43	65
Silesia	0	15	0
Świętokrzyskie	793	973	758
Warmia-Mazury	13	87	0
Wielkopolska	0	8	0
West Pomerania	0	0	0

Source: Statistics Poland, Użytkowanie gruntów i powierzchnia zasiewów w latach 2018 i 2017 (Land usage and sowing area in 2018 and 2017) (GUS 2017c; GUS 2018b, GUS 2019g).

6 <https://www.rynek-rolny.pl/artukul/uprawa-tytoniu-w-polsce-wszystko-co-powinienes-wiedziec.html> [accessed February 11, 2020].

7 T. Doroszevska, *Metodyka integrowanej ochrony roślin dla uprawy tytoniu* (Methods of integrated crop protection for tobacco cultivation), State Research Institute, Puławy 2012 and P. Taylor, *Smoke Ring: The Politics of Tobacco*, Panos Briefing Paper, London, September 1994.

8 Based on a publication of the Institute of Agricultural and Food Economics (2018), *Rynek wyrobów tytoniowych, stan i perspektywy* (The tobacco market: state of play and prospects), M. Bodyl (ed.), No. 6, p. 12.

FIGURE 1: AREA SOWN IN TOBACCO IN 2019



Source: Statistics Poland, Użytkowanie gruntów i powierzchnia zasiewów w latach 2019 (Land usage and sowing area in 2019) (GUS 2019g).

By region, in 2017 the greatest number of farms operated in Lublin province (3,100), Małopolska (almost 700), Świętokrzyskie (about 600), Kujawy-Pomerania (about 400) and Podkarpackie (300).⁹ But the number of farms is subject to significant volatility. According to the Ministry of Agriculture and Rural Development, in 2018 there were 4,600 active farms, and the most recent PZPT estimates indicate that in 2019 about 6,000 were registered.¹⁰

⁹ Ibidem.

¹⁰ Authors' consultations with representatives of the Polish Union of Tobacco Growers, March 9, 2020. The data are highly uncertain.

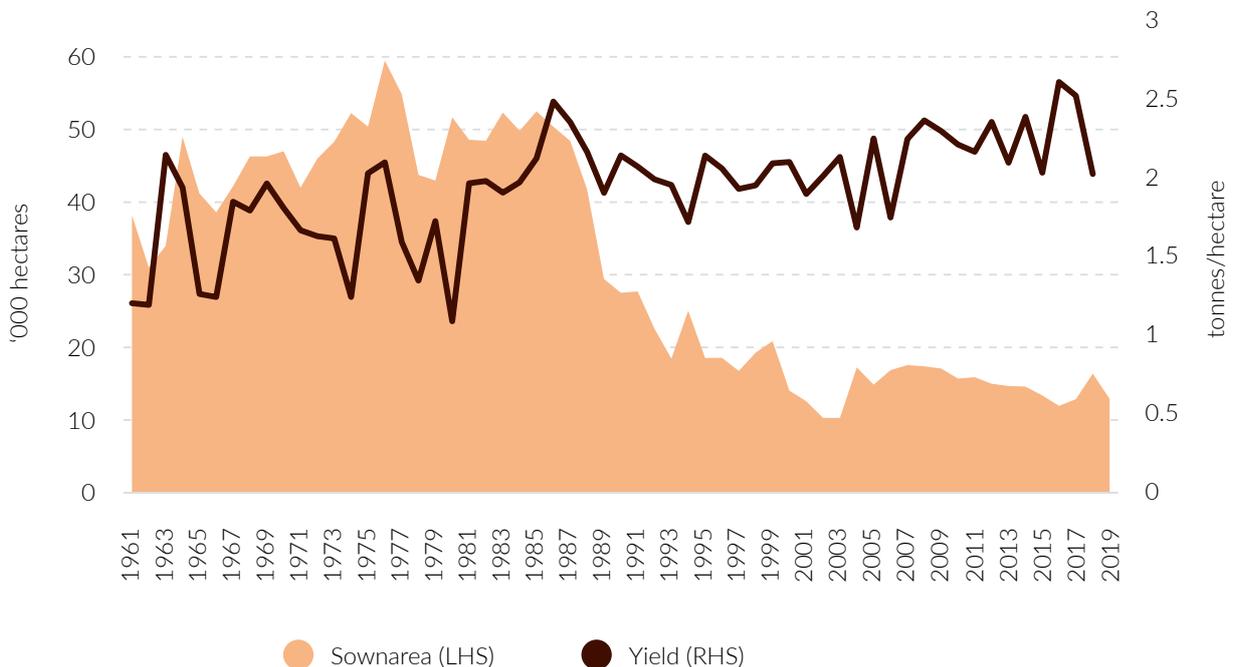
Total domestic cultivation of tobacco is significantly lower than in the past, even though tobacco remains a traditional crop in Poland. In the record year of 1976 it covered roughly 60,000 hectares, dropping to around 18,500 in 1993, and a long-time low of 10,000 in 2002. In 2018 about 16,000 hectares of tobacco were under cultivation, and in 2019 less than 13,000 (Figure 2).

Historically, tobacco cultivation has been marked by growing productivity. That has meant a trend of growing yields since the 1960s, allowing a slight cushioning of the drop in production caused by smaller sowing areas. Domestic production has held steady since 2007 at more than 30,000 tonnes including 33,200 tonnes in 2018. According to the PZPT, in 2019 the harvest shrank to 24,000-25,000 tonnes.¹¹



FIGURE 2: SOWN AREA, YIELDS AND PRODUCTION OF UNPROCESSED TOBACCO

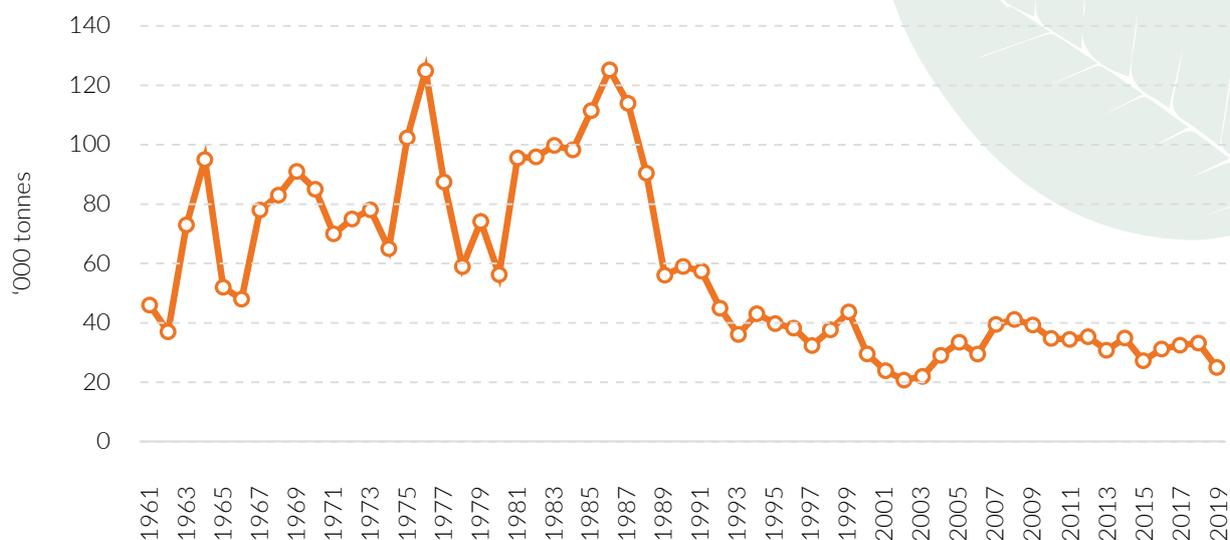
Panel A. Sown area and yields



RHS – right hand-side, LHS – left hand-side

11 Authors' consultations with a representative of the Polish Union of Tobacco Growers, March 9, 2020.

Panel B. Production of unprocessed tobacco



Source: FAOSTAT, Statistics Poland; 2019 estimate based on information from the Polish Union of Tobacco Growers.

Crop yields depend on weather and climate conditions. Insofar as Poland usually has agro-climatic conditions that support tobacco cultivation, the current weather anomalies may have a negative effect on the crop.¹² In future years, the tobacco cultivation sector may also be negatively affected by the relative fragmentation of farming and insufficient technology. On the other hand, positive effects may come from factors such as tighter collaboration among growers and coordination of actions, and developing inter-sector organizations that bring together numerous entities from the entire production chain and strengthen the position of domestic producers of raw tobacco.¹³

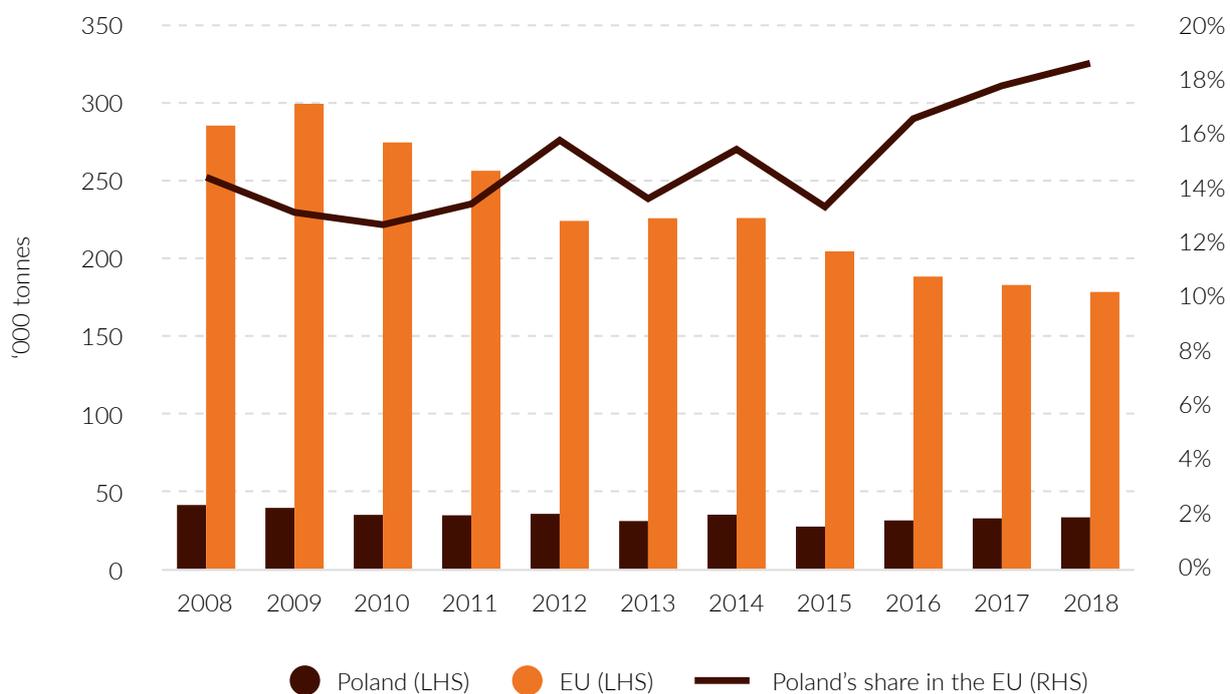
In the context of declining production in the EU (Figure 3), Poland is becoming an ever more important producer. **In 2018, output of tobacco not processed in Poland constituted 18.6% of EU production, and in 2016-2018 we were second in the EU on this measure.** The share of Polish crops in total EU sown area is also remaining at a similar level. In 2018 Italy, the EU leader in production of unprocessed tobacco, provided 33.2% of the raw product (see Table 2 for data from 2010-2018).



12 Authors' consultations with representatives of the Ministry of Agriculture and Rural Development, March 11, 2020.

13 Authors' consultations with representatives of the Ministry of Agriculture and Rural Development, March 11, 2020.

FIGURE 3: DOMESTIC PRODUCTION OF UNPROCESSED TOBACCO IN THE CONTEXT OF THE EU



RHS – right hand-side, LHS – left hand-side.

Source: FAOSTAT.

TABLE 2: POLAND IN THE EU CONTEXT – POLAND'S SHARE IN EU UNPROCESSED TOBACCO PRODUCTION

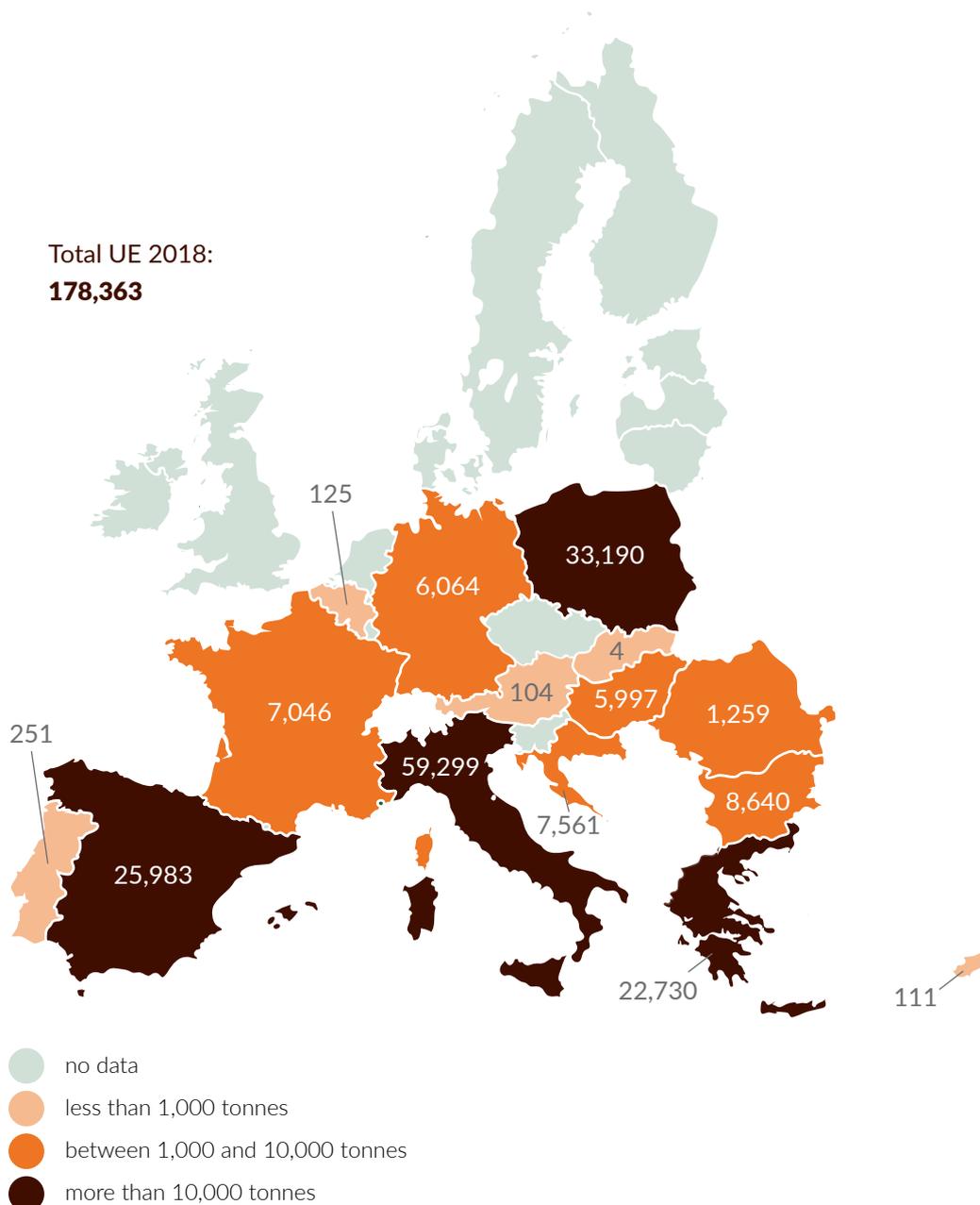
Year	Polish share in EU production (%)	Poland's rank
2010	13	3
2011	14.1	3
2012	14.4	2
2013	15.4	4
2014	15.4	4
2015	16	3
2016	16.6	2
2017	17.8	2
2018	18.6	2

Source: CASE based on Statistics Poland data.

According to FAOSTAT, the largest areas of tobacco cultivation in 2018 were in Italy (more than 17,000 hectares), Poland and Greece (16,400 and 16,100 respectively). In terms of yields, Cyprus ranked first in 2018, with more than 43,000 hectograms per hectare, followed by Italy about 34,500 hectograms and Spain (about 30,000). In terms of yield Poland came in eighth, with yields of slightly more than 20,000 hectograms per hectare.

Poland is the second-largest producer of raw tobacco in the EU.

FIGURE 4: PRODUCTION OF RAW TOBACCO, 2018 (TONNES)



Source: CASE based on FAOSTAT data.



The profitability of tobacco cultivation is declining in Poland, as in other EU countries, in particular after the withdrawal of subsidies for farmers in 2015,¹⁴ which coincided with growth in costs of agricultural labor.¹⁵ Both the environmental conditions and the dynamics of the labor market meant that Poland and other countries in the bloc aren't globally competitive as a tobacco producer. Still, despite the lack of a price advantage over non-European crops, Polish tobacco meets strict quality standards in terms of moisture, color and nicotine content, as well as pesticide use, employment conditions and environmental protection regulations. Additionally, Polish growers can seek subsidies from the Ministry of Agriculture and Rural Development,¹⁶ even though as a result of reforms to the Common Agricultural Policy EU financing for tobacco production was eliminated.

Tobacco Processing: Tobacco Product Manufacturing

Tobacco leaves are classified on the basis of quality and dimensions. Next the crop is baled and transported to the collection point, where it is sold on. Processing of harvested tobacco leaves is a multi-stage process, including deveining, establishing the proper moisture level, fermentation, preparation of cut tobacco and finally storage in preparation for sale to further participants in the production process.¹⁷

Before the changes to the excise tax and the imposition of excise on raw tobacco, growers had the right to sell their products to any buyer, but after January 1, 2013 raw tobacco can be acquired only by tobacco intermediary entities (PPTs) are on the official list.¹⁸ The most important PPTs are Universal Leaf Tobacco Poland, operating since 1997 in Jędrzejów, Świętokrzyskie province, and BFT Sp. z o.o. in Zawada, Podkarpackie. Other intermediaries

14 The withdrawal of subsidies for tobacco farming is part of the EU's agriculture reform. Additional factors limiting tobacco cultivation in the EU are customs duties on unprocessed tobacco imported from third countries (at the level of 11.2%, or zero for certain economies) and EU health policy, which aims to limit tobacco consumption.

15 P. Otto (2019), "Tytoniowe wymieranie. Rolnikom już nie opłacają się uprawy" ("Tobacco dying out: Cultivation no longer pays for farmers"), October 8, 2019; <https://serwisy.gazetaprawna.pl/rolnictwo/artykuly/1433794,tytoniowe-pola-e-papierosy-ue.html> [accessed February 12, 2020].

16 To limit the negative effects of the reduction of assistance to the sector, in 2015-2020 support for domestic tobacco production was continued, but only in a form not linked to current production. The transitional support shrinks each year, i.e. the acceptable level in percentage terms in relation to assistance accepted in 2013 is reduced by 5 percentage points each year, starting from 75% in 2015, to 50% in 2020.

17 For more details on cultivation, preparation of freshly harvested leaves for drying and the drying processes themselves, see: J. Tomiło, D. Dzik, R. Polak (2014), "Wybrane aspekty uprawy i przygotowania tytoniu do przetwórstwa na przykładzie odmiany Virginia" (Selected aspects of cultivation and preparation of tobacco for processing based on the Virginia variety), *Motorol. Commission of motorization and energetics in agriculture*, Vol. 16(1), pp. 147-152.

18 Article 2 point 23b Act of December 6, 2008 on excise tax, *Journal of laws Dz.U.* 2019.0.864, as amended, states: "tobacco intermediary entity: an entity with its residence or headquarters on Polish territory, a foreign company with a branch based on Polish territory, created under the conditions and rules described in the act of March 6, 2018 on the rules for foreign companies' and other foreign persons' participation in economic activity on the territory of the Republic of Poland, or a foreign company which has designated an entity representing it on Polish territory, conducting business operations in the area of raw tobacco, which has been recorded in the register of tobacco intermediary entities."

include Philip Morris Products SA, Philip Morris Polska Tobacco Sp. z o.o. and British American Tobacco Polska Sp. z o.o.¹⁹

According to information from the National Tobacco Industry Association in Warsaw, which brings together Poland's largest tobacco manufacturing companies,²⁰ Poland is the EU leader in tobacco processing and manufacturing of final tobacco products. The top four global tobacco companies operating in Poland have production facilities here. The Agriculture Ministry's list dated August 24, 2016 contains 47 companies, with declared production capacity of 265.5 billion cigarettes, cigars and cigarillos, and 171,800 tonnes of smoking tobacco;²¹ at the moment the list of entities licensed to operate as tobacco product manufacturers includes 52 companies.²²

The tobacco product manufacturing segment is dominated by top global companies; alphabetically, they are British American Tobacco (BAT), Imperial Tobacco, Japan Tobacco International (JTI) and Philip Morris International (PMI). The total declared production capacity of their Polish factories is about 245 billion cigarettes a year.²³ PMI's production facilities are located in Kraków, BAT is in Augustów, Imperial Tobacco has factories in Tarnowo Podgórne near Poznań and in Radom, and JTI's production complex is in Stary Gostków, near Łódź, where it produces traditional cigarettes, smoking tobacco and other products, as well as liquids for electronic cigarettes. JTI is also the only tobacco company to produce innovative heated tobacco products in Poland.²⁴ In addition to their factories, the international companies have offices and subsidiaries in other locations: Philip Morris Polska Distribution Sp. z o.o. is in Kraków with an additional office in Warsaw and distribution centers around the country; Kraków is also home to Philip Morris Polska Tobacco Sp. z o.o. and a regional shared services center, PMI Service Center Europe Sp. z o.o.²⁵ BAT, JTI and Imperial Tobacco also have offices in Warsaw, and JTI has a Global Business Service Center in Warsaw. In addition to processors, this point in the chain also includes makers of intermediate goods (filters, packaging, tubes and other products used in both traditional cigarettes and innovative products) and investment goods used in production processes, makers of final tobacco products and entities that provide support services for the industry and support its operations in the areas of accounting (finance) and administration (e.g. HR and IT). The leader of the market for tobacco product packaging is Amcor Specialty Cartons, which has a factory in Łódź, Amcor Tobacco Packaging, making specialized packages for the tobacco industry;

19 The complete list of PPTs is available on the website of the Ministry of Agriculture and Rural Development: <https://www.gov.pl/web/kas/rejestr-posredniczacych-podmiotow-tytoniowych>; current as of 10 February 2020 [accessed February 24, 2020].

20 Philip Morris, Japan Tobacco International, British American Tobacco and Imperial Tobacco.

21 Based on a publication from the Institute of Agricultural and Food Economics (2018), Rynek wyrobów tytoniowych, stan i perspektywy (The tobacco market: state of play and prospects), M. Bodyl (ed.), No. 6, p. 15.

22 The Agriculture and Rural Development Ministry's register of tobacco product manufacturers (Wykaz podmiotów posiadających uprawnienia do wykonywania działalności gospodarczej w zakresie wytwarzania wyrobów tytoniowych), <https://www.gov.pl/web/rolnictwo/rejestr-producentow-wyrobow-tytoniowych> [accessed February 12, 2020].

23 Based on the Agriculture and Rural Development Ministry's register of tobacco product manufacturers, <https://www.gov.pl/web/rolnictwo/rejestr-producentow-wyrobow-tytoniowych>, [accessed February 12, 2020], and a publication from the Institute of Agricultural and Food Economics (2018), Rynek wyrobów tytoniowych, stan i perspektywy (The tobacco market: state of play and prospects), M. Bodyl (ed.), No. 6, p. 16.

24 <https://www.jti.com/pl/our-views/inwestycje-jti-polska> [accessed February 12, 2020].

25 <https://www.pmi.com/markets/poland/pl/about-us/overview> [accessed February 12, 2020].

AR Carton Kraków Sp. z o.o. in Stanisławice, provides packaging to clients including BAT, JTI and PMI.²⁶ Another key entity engaged indirectly in tobacco product manufacturing is International Tobacco Machinery Polska SA, operating in Radom since 1991 and specializing in developing innovative solutions in the areas of tobacco heating systems, filters, tobacco recovery technologies and logistical solutions.²⁷

The last decade has brought 47% growth in cigarette production: in 2010 output was slightly more than 144 billion, and in 2019 it exceeded 213 billion. The sector's processing capacity is strongly dependent on the volume of raw-materials imports, and predominantly oriented toward export of manufactured products. Output of the entire category of tobacco products has shown similar tendencies, while the changes observed were stronger – **from 2010 to 2018 production grew by 66%** (Figure 5).

From 144 billion to 213 billion: that's the growth in cigarette production in 2010-2019.



Output growth in the sector is accompanied by modernization of the production process and the introduction of innovative solutions. For example, during the past decade JTI expanded and revamped its cigarette factory in Stary Gostków. From 2009 to 2017 the complex added two facilities, producing components for tobacco product manufacturing (from 2014) and smoking tobacco and other products (2017).²⁸ The newest investment is a unit making innovative heated tobacco (2018).²⁹ More than 80% of production from these facilities is designated for export or for intra-EU supply; in total the unit sells its products to 70 countries.³⁰



Investment activity has been high throughout the industry since 2014 (Figure 6), and the majority of investments are in expansion of production capital: in 2017 91.9% of funds were invested in machinery and equipment, and the value of investment outlays in 2017 exceeded amortization write-downs by 2.3 times.³¹ The newest data published by Statistics Poland indicate that total investment outlays by the tobacco processing segment in 2018 stood at PLN 1.4 billion.³² Based on partial data, we estimate that **in 2019 the segment's investment outlays could have been slightly lower at about PLN 1.3 billion.**³³



26 <https://ar-carton-krakow.pl/o-nas/> [accessed February 12, 2020].

27 <https://www.itmgroup.eu/pl/kontakt/itm-poland> [accessed February 12, 2020].

28 Based on the JTI website: <https://www.jti.com/pl/our-views/inwestycje-jti-polska> [accessed February 13, 2020].

29 "Japan Tobacco zainwestuje w Polsce 100 mln dolarów" (Japan Tobacco to invest \$100 million in Poland), June 5, 2018, <http://www.portalspozywczy.pl/alkohole-uzywki/wiadomosci/japan-tobacco-zainwestuje-w-polsce-100-mln-dolarow,159258.html>;

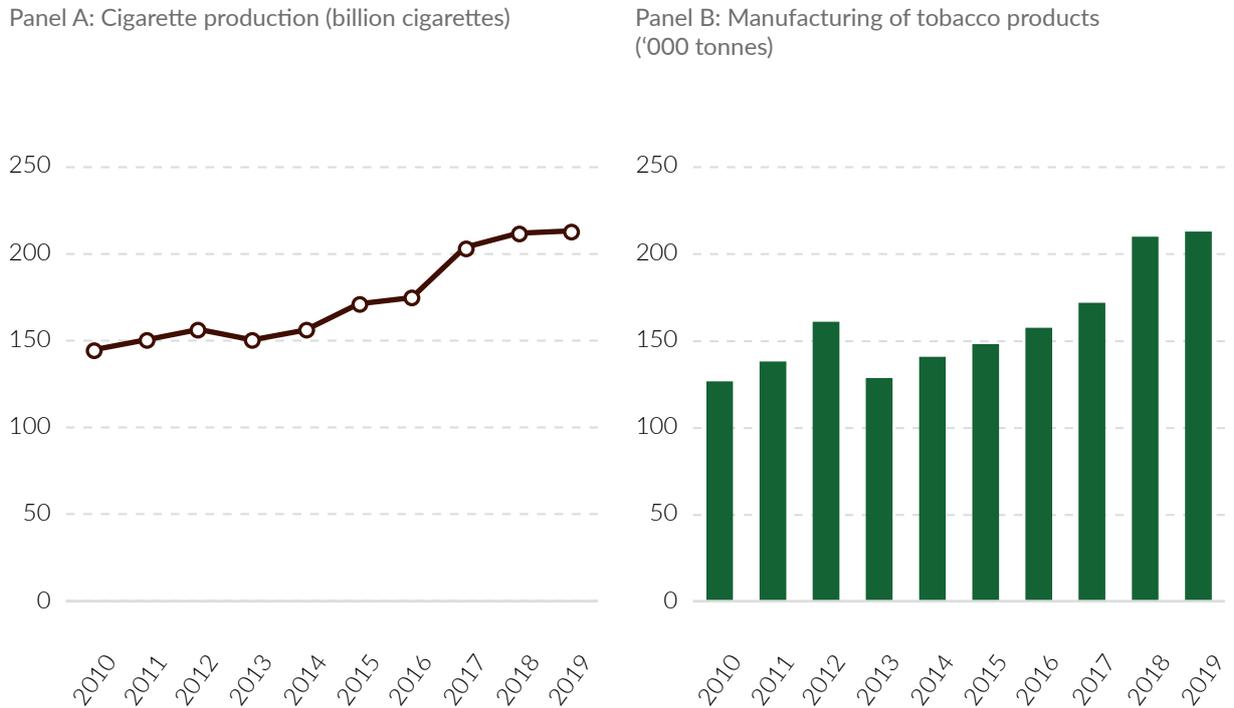
30 Authors' consultations with industry representatives, March 19, 2020.

31 Based on a publication of the Institute of Agricultural and Food Economics (2018), Rynek wyrobów tytoniowych, stan i perspektywy (The tobacco market: state of play and prospects), M. Bodyl (ed.), No. 6, p. 31.

32 Statistics Poland, Statistical Bulletin No. 1/2020, Warsaw, February 2020.

33 Authors' estimate based on Statistics Poland data published in Statistical Bulletin 1/2020, Warsaw, February 2020.

FIGURE 5: MANUFACTURING OF TOBACCO PRODUCTS IN POLAND



Source: Statistical Yearbook of Industry (GUS 2010b, 2011b, 2012b, 2013b, 2014b, 2015b, 2016b, 2017a, 2018c), Production of major industrial products in 2018 (GUS 2019b) and Production of major industrial products in December 2019 (GUS 2020b).

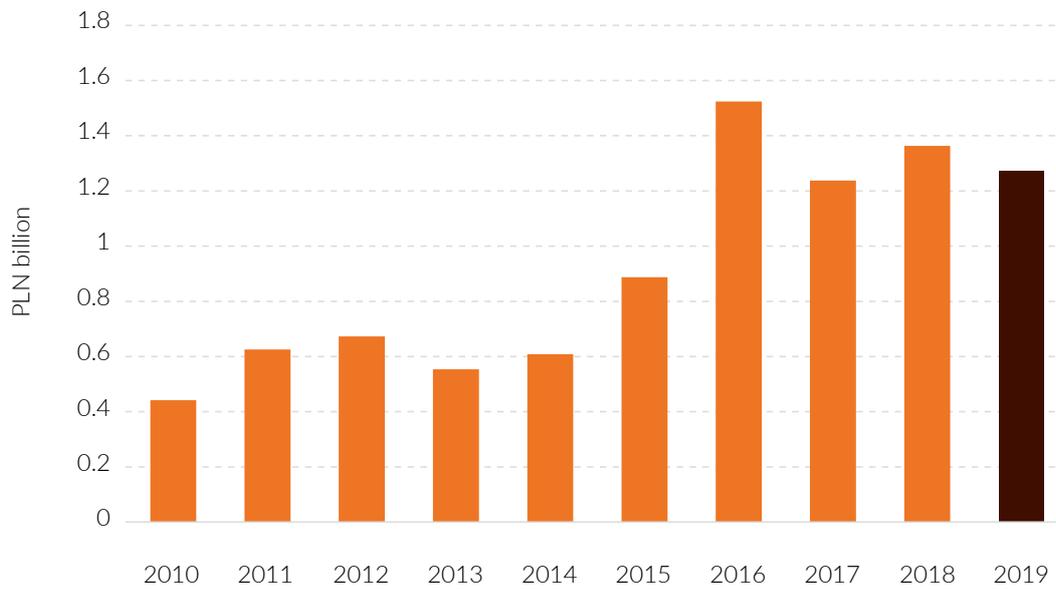
CASE estimates for 2019 are for “total tobacco products.”

No data for 2019 concerning total tobacco products, available only for the category of cigarettes (total tobacco products includes, according to the Statistics Poland classification, cigarettes with tobacco and with mixtures of tobacco and substitutes, and smoking tobacco).

One consequence of the changes in the domestic tobacco industry and the trends observed abroad is Poland’s relatively strong position in the European Union in manufacturing of tobacco products and smoking tobacco. Available Eurostat data indicate that **Poland’s share of EU cigarette production by volume was 30% in 2018**, 4 percentage points lower than Germany, the market leader (Figures 7 and 8). With 25.7% of the EU market, Poland was also a significant producer of cigarettes by value of sold production. In this case the difference between the Polish and German economies was slightly smaller, at 2.6 percentage points. In the smoking tobacco segment (Figure 9) in 2018, Poland had the third-largest share in the EU market, at 19%. The Netherlands had a marginally stronger position (20% of the market). But the segment was dominated by Germany, with 42% of production.

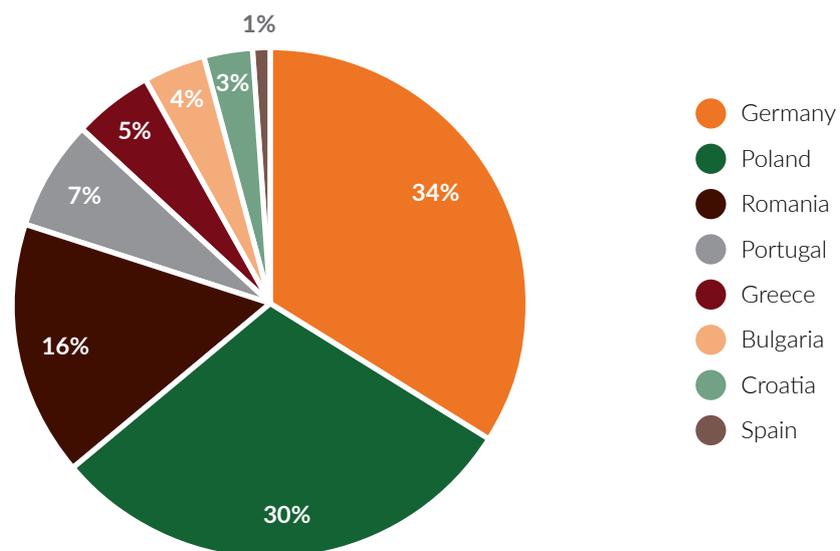


FIGURE 6: INVESTMENT OUTLAYS IN THE TOBACCO PROCESSING INDUSTRY



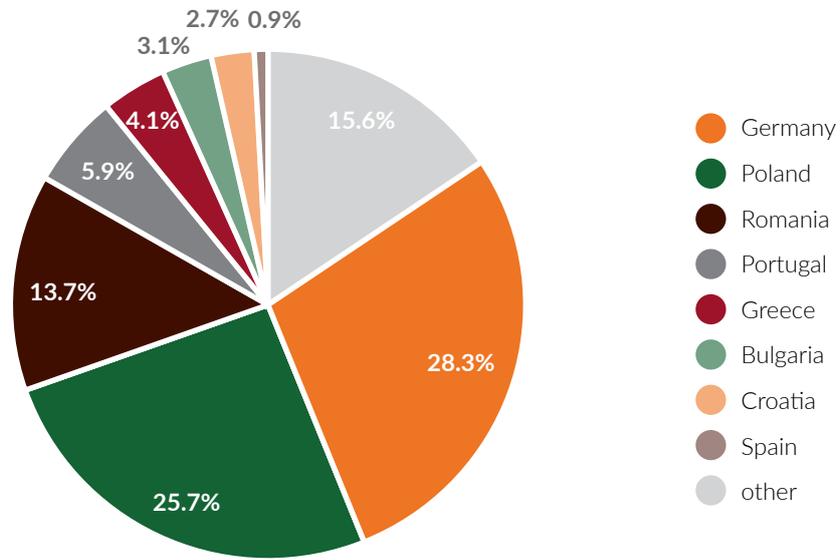
Source: Calculations based on Statistics Poland data (2010b, 2011b, 2012b, 2013b, 2014b, 2015b, 2016b, 2017a, 2018c). Data for 2019 are CASE estimates, and thus are shown in a darker color.

FIGURE 7: VOLUME OF EU CIGARETTE PRODUCTION BY COUNTRY, 2018



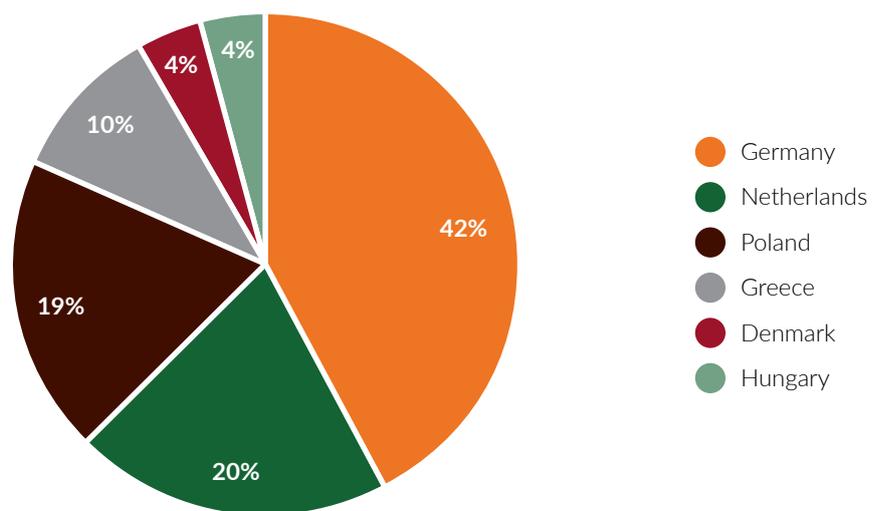
Source: Calculations based on Eurostat data.

FIGURE 8: VALUE OF EU CIGARETTE PRODUCTION BY COUNTRY, 2018



Source: Calculations based on Eurostat data.

FIGURE 9: VOLUME OF EU SMOKING TOBACCO PRODUCTION BY COUNTRY, 2018



Source: Calculations based on Eurostat data.

Distribution and sales

Tobacco products are sold in Poland at newsstands, kiosks, general and specialized stores (e.g. tobacco boutiques), specialized stands (“islands”) in larger shopping centers, super- and hypermarkets, gas stations and restaurants and bars. Consumers make purchases at a variety of sales points. According to 2017 data, as many as 74% of people surveyed mentioned grocery stores (including supermarkets or hypermarkets, which noted growth of 12 percentage points over 2015), and 52% mentioned kiosks – the two most commonly named types of retailer. The latest estimates on the number of sales points indicate about 100,000 entities employing a total of about 500,000 workers. **Tobacco products are a very important element of their product range, because they pull clients into stores, increasing sales of other products and driving turnover.**³⁴ Retail sales points are supplied by wholesalers, which numbered about 400 in 2019; including branches, there were almost 900 in the country.³⁵



³⁴ Authors' consultations with representatives of the Polish Chamber of Trade, March 16, 2020.

³⁵ Consultations with industry representatives, April 30, 2020.





CHAPTER 2
THE TOBACCO PRODUCT
MARKET IN POLAND

The Tobacco Product Market in Poland

Market for Traditional Tobacco Products

On the basis of excise tax revenue data, the volume of domestic production and average cigarette prices, **we estimate that the domestic market is worth PLN 32.6 billion.**



Available data on cigarette consumption indicate a drop over the past decade. For example, according to Statistics Poland, in 2010 cigarette consumption was 1,805 per capita, which corresponds to total consumption of 70 billion cigarettes; in 2015 it was 1,466 and 56 billion, and in 2018 just 1,156 and 44 billion. Factors that may be driving this are the growing popularity of healthy lifestyles, bans on smoking in public places and price growth.



However, analysis of recent years shows that in 2018 per capita consumption was about 12.5% higher than in the previous year. In turn, data from tobacco product manufacturers indicate growth in production of cigarettes for the domestic market in 2019, along with growth in cigarette imports, which may indicate a further increase in domestic consumption in this period. Reasons for the change include an inflow of economic migrants, and the effects of limiting the illicit market.³⁶

Estimates of the percentage of Poles who smoke come from surveys, so there is uncertainty due to differences in research methods. According to CBOS research, in 2019 smokers made up 26% of the population. Smoking is more widespread among men (31% in 2019) than women (21%).³⁷ Residents of smaller towns were more likely to say they smoke regularly, as were those with lower social, vocational and wealth status and lower education levels. Alongside cigarettes, the most widespread form of tobacco product consumption was rolling tobacco: in 2019, 5.8% of those surveyed said they use it.³⁸

Since 2012 the share of tobacco products and alcoholic beverages in Statistics Poland's inflation basket ranged from 6.12% in 2012 to 6.56% (in 2014 and 2016). The latest data, from 2019, put the share of these products in the basket at 6.37%.³⁹

Aside from the market for traditional tobacco products, we can observe growth in the innovative products segment. Also notable is the fast growth in the electronic cigarette seg-

36 <https://www.pb.pl/polacy-pala-coraz-wiecej-981793> [accessed February 18, 2020].

37 "Palenie papierosów" (Cigarette smoking), K. Świerczewski, CBOS – Komunikat z badań, nr 104/2019, August 2019, p. 2, ISSN 2353-5822.

38 Authors' analysis based on CBOS research: Konsumpcja nikotyny. Raport z badań ilościowych dla Biura ds. Substancji Chemicznych (Nicotine consumption: A report from quantitative research from the Chemical Substances Office), Warsaw, October 2019, p. 7.)

39 Tobacco products are grouped together with alcoholic beverages; according to <https://stooq.pl/n/?f=1279933> [accessed February 18, 2020].

ment: according to the newest available data, their users make up 2.3% of adult Poles.⁴⁰ The relatively strong position of traditional cigarettes relative to their electronic equivalents and heated tobacco products may result from social factors, such as familiarity with tobacco smoking and the long tradition of it, and the relative novelty and limited availability of electronic cigarettes and innovative products. At the time the analysis was conducted for the purposes of this report, comprehensive data allowing reliable long-term comparisons are still available only to a very limited extent.

The Polish Market for Innovative Products and E-cigarettes

Over the past decade, alongside traditional cigarettes, two other market segments have also grown: electronic cigarettes (e-cigarettes) and the liquids they use, and so-called innovative tobacco products, meaning heated tobacco products. Electronic cigarettes, along with a very broad range of liquids used in them, are produced by a growing number of companies including JTI Polska and the Polish group CHIC – Europe’s largest maker of these products (now a subsidiary of British American Tobacco). It must be added that the category of e-cigarettes is very fragmented in terms of the number of producers; medium-sized producers dominate, and data on them are exceptionally hard to access. Innovative products are sold in Poland by PMI and BAT.

The growth of the electronic cigarette market in terms of sales has been very dynamic in recent years. **The segment of electronic cigarettes and related products more than tripled, from PLN 430 million in 2013 to PLN 1.55 billion in 2018.**⁴¹ But since 2015 the number of users has remained relatively unchanged, indicating that the market may have become saturated, and industry representatives note that in the longer term the market may also shrink.⁴²



Data on e-cigarette sales and trends on this market are highly variable and uncertain. For example, the latest CBOS analysis indicates that average consumption of e-cigarette liquids per user in 2019 was 90 ml per month, or about 10 ml less than in 2018; in 2019 about 32.2% of smokers also consumed less than 50 ml of liquids per month (compared with 24.1% in 2018). Looking at combined spending on electronic cigarette liquids and spare parts for e-cigarettes, the average consumer spent PLN 69 a month in 2019, compared with PLN 103 in 2018, or 33% less.⁴³

In 2017-2018 significant sales growth was also noted in the heated tobacco product segment (according to Euromonitor International data, sales grew by 381%, from PLN 66.1



40 CBOS research: Konsumpcja nikotyny. Raport z badań ilościowych dla Biura ds. Substancji Chemicznych (Nicotine consumption: A report from quantitative research for the Chemical Substances Office), Warsaw, October 2019, p. 8.

41 Market research provider, Euromonitor International.

42 Authors’ consultations with industry representatives, March 10, 2020.

43 Calculations based on CBOS research, Konsumpcja nikotyny. Raport z badań ilościowych dla Biura ds. Substancji Chemicznych (Nicotine consumption: A report from quantitative research from the Chemical Substances Office), Warsaw, October 2019, pp. 14-15.

million in 2017 to PLN 318.2 million in 2018)⁴⁴. According to data published in a 2020 PMI report, the share of this company's innovative product in the Polish tobacco product market in 2019 was 2.2% (up from 1.6% the previous year).⁴⁵

Sales at physical retailers were the basic distribution channel for electronic cigarettes and related products (e.g. liquids or spare parts) in 2013-2016,⁴⁶ and since 2017 the only channel.⁴⁷ In this context the most important points were specialist stores (93.3% of sales in 2019) and traditional grocery stores and hypermarkets (6.7%) Sales of innovative products took place only at physical retailers, among which the most important included specialist tobacco stores, and kiosks and newsstands, which accounted for 35.1% and 37.8% of the total value of sales of such products in 2018. Another relatively important distribution channel was specialist islands in shopping centers offering tobacco heating systems (16.6% in 2018).⁴⁸

44 Market research provider, Euromonitor International.

45 <https://philipmorrisinternational.gcs-web.com/static-files/fce588e1-64a4-4c5c-8c62-834263948994> [accessed February 18, 2020].

46 From 83% to 88% of total sales on the Polish market by value.

47 Within the meaning of Article 7f., "Distance sales, including cross-border distance sales, are forbidden for 1) tobacco products; 2) electronic cigarettes, spare containers and their parts," in Act of November 9 1995 on protection of health against the consequences of tobacco and tobacco product usage, Journal of Laws Dz.U. 1996 No. 10 position 55 as amended (specifically the amendment of September 8, 2016).

48 Market research provider, Euromonitor International.



CHAPTER 3
THE INDUSTRY'S SHARE
IN GDP

The Industry's Share in GDP

Tobacco Cultivation

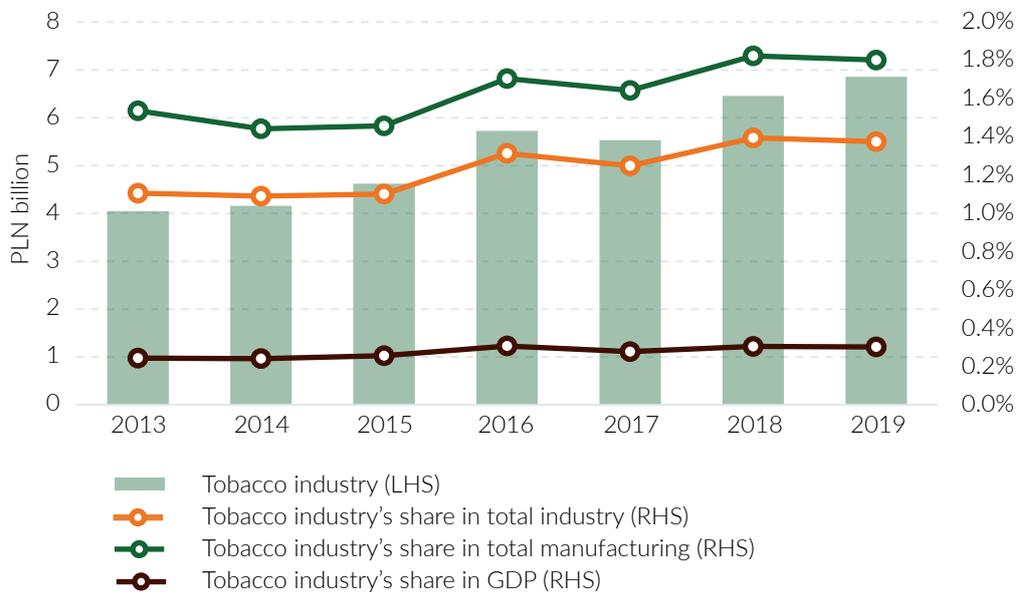
According to Statistics Poland, the average tobacco purchase price in 2018 was PLN 9.56 per kilogram, and PLN 8.50 in 2019.⁴⁹ According to Statistics Poland data the 2018 harvest was 33,200 tonnes, which based on the average price gives a value of PLN 317.7 million. On this basis, we estimate that **value added in tobacco cultivation was PLN 118.8 million in 2018, and close to PLN 120 million in 2019.**⁵⁰ The value added in tobacco cultivation accounts for 0.3% of total value added in agriculture.



Tobacco Processing and Tobacco Product Manufacturing

On the basis of available data on the legal tobacco product market and the balance of foreign trade, we estimate the value of 2019 tobacco product output in Poland, in purchase prices (taking into account taxes and transportation margins) at PLN 45.9 billion.

FIGURE 10: GROSS VALUE ADDED IN THE TOBACCO INDUSTRY



RHS – right hand-side, LHS – left hand-side. Source: Calculations based on data from the Statistical Yearbook of Industry, 2014-2018, Statistics Poland (2013b, 2014b, 2015b, 2016b, 2017a, 2018c) and Statistical Yearbook of Poland, GUS (2019e). Data for 2019: CASE estimate.

49 Authors' consultations with representatives of the Polish Union of Tobacco Growers, March 9, 2020.

50 CASE estimate based on foreign-trade data.

Value added is the most commonly used measure of a sector's contribution to a country's GDP, which measures income on all factors of production (primarily labor, capital, land and natural resources). From the statistical point of view, we measure value added as the difference between the sales value of goods and services and the costs of materials, components and raw commodities used for their production and delivery.

The value of tobacco product output in Poland in 2019 is estimated at PLN 45.9 billion.

Statistics Poland data indicate that the tobacco industry's share in total value added in the economy grew in the period under analysis, which indicates growth in the sector's role in the creation of income in Poland (Figure 10). In 2018 the tobacco processing and tobacco product manufacturing sector's value added totaled PLN 6.4 billion.⁵¹ We estimate that in 2019 this value reached PLN 6.9 billion, i.e. about 0.3% of GDP.



As mentioned earlier, the tobacco sector also created income in related sectors, such as agriculture, manufacturing and logistics. Total value added including these relations was estimated at PLN 10.9 billion in 2019, of which the majority (88%) was generated in exports of tobacco products. Value added in the entire production chain in 2019 was about 2.8% of value added in manufacturing, 2.2% of value added in industry and about 0.5% of Polish gross domestic product.

In the context of the tobacco industry's position against the backdrop of manufacturing as a whole, the high value of investments in recent years was significant. From 2014 to 2018 investment outlays in tobacco processing grew on the order of 124% (i.e. from PLN 600 million to PLN 1.4 billion), compared with 37.4% in manufacturing as a whole (from PLN 49.3 billion in 2014 to PLN 67.1 billion in 2018). On the basis of available information for the first three quarters of 2019, we estimate that in the entire year the segment's investment outlays could be slightly lower, at about PLN 1.3 billion.⁵²

Significant investment outlays allow factories to be well equipped with productive capital, which contributes to the tobacco sector's relatively high labor productivity. This is supported by employees' high qualifications in various specialties. Additionally, research and development work on innovative products (including heated tobacco products, electronic cigarettes and liquids for them) contribute over the long term to raising the level of innovation in the Polish economy and increasing human capital resources. In this context it is worth recalling the dynamically growing research facilities of the e-Smoking Institute, part of British American Tobacco's e-Smoking World, Europe's first research center working on electronic cigarettes. Japan Tobacco International in turn is the only company among large tobacco companies to make heated tobacco products in Poland.

124% growth in investment outlays in 2014-2019 (from PLN 600 million to PLN 1.4 billion).

⁵¹ Statistics Poland, Statistical Bulletin 1/2020, Warsaw, February 2020.

⁵² Authors' estimate based on Statistics Poland data from Statistical Bulletin 1/2020, Warsaw, February 2020.

The activity of tobacco producers translates into demand for factors of production, intermediate goods and services used in industrial processes. A significant portion of that demand is met by the domestic market, which provides not only support in financial management, administration and logistics (e.g. JTI's Global Business Service Center and Philip Morris International's Service Center Europe), but also specialized packaging and machinery (offered on the Polish market by Amcor Specialty Cartons Polska Sp. z o.o. and International Tobacco Machinery Poland Sp. z o.o.).

CHAPTER 4
INTERNATIONAL TRADE



International Trade

The tobacco and tobacco product manufacturing sector is highly export-oriented. Of about 213 billion cigarettes produced in Poland in 2019, an estimated 170 billion was exported (79.8%).⁵³ And thus approximately four out of five cigarettes produced in Poland are exported. With stable domestic demand, in recent years **export growth has been the main factor responsible for the increase in domestic cigarette production**. In 2010-2019,⁵⁴ cumulative growth in cigarette production was about 47.3%; during the same period, exports approximately doubled (and thus the contribution of exports to the pace of production growth was about 58.7 percentage points, and that of domestic consumption, 11.2 percentage points). Imports are insignificant, estimated at about 6.1 billion cigarettes in 2019.

Four out of five cigarettes produced in Poland are exported.



The total value of exports of tobacco products and unprocessed tobacco in 2019 was PLN 15.9 billion. This value is 10.2% higher than the previous year, and as much as 232% higher than in 2010. A significant proportion of export revenues comes from cigarette sales – in 2019 this was 84.8% of total export value. The second largest category is the smoking tobacco (12.4%). Compared with the growth in the tobacco product sector, exports of unprocessed tobacco are insignificant (about 2.2% of the sector's total export value in 2019), and such exports, in contrast to the sector's largest product categories, have not exhibited a growth trend in recent years.



The significance of total exports of unprocessed tobacco and tobacco products also shows their growing share in Poland's total exports (growth from 1% in 2010 to 1.5% in 2019), and also the aggregate category of food (processed and unprocessed), beverages and tobacco (growth from 10.7% in 2010 to 14.6% in 2019). The pace of growth in exports of tobacco and tobacco products in 2010-2019 was more than two times higher than the pace of growth in total exports.

The majority of Polish tobacco and tobacco product exports go to EU markets. In 2019 the EU's share in total exports was 93.1%. Poland's largest trading partners, in descending order, are Germany, the Netherlands, Italy, the UK and Belgium. For unprocessed tobacco, the significance of EU countries in exports is smaller, at about 69.8%, and the largest recipients are Italy, Germany, Belgium, the United Arab Emirates, Turkey and Russia.

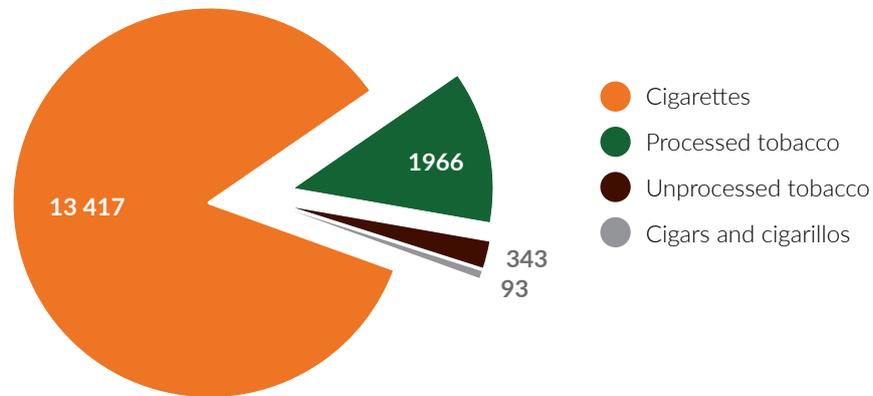


The value of total imports of unprocessed tobacco and tobacco products was PLN 3.7 billion in 2019. The structure of imports by product is different from that of exports: in 2019, 69% was imports of unprocessed tobacco used as a raw material for tobacco products;

⁵³ Statistics Poland data, estimate of 2019 international trade, based on available 11-month data.

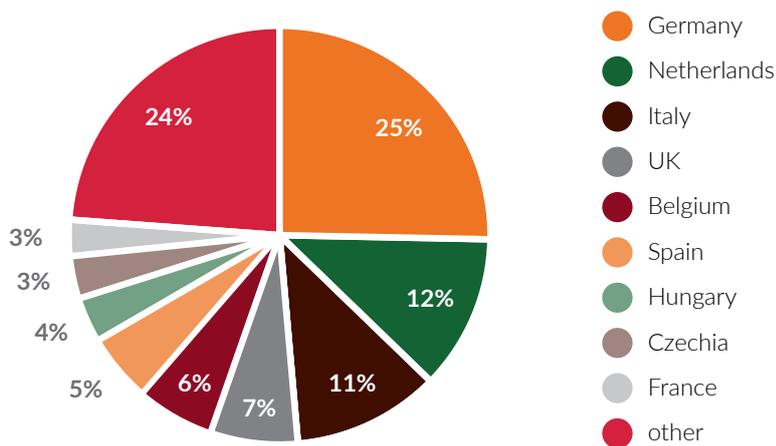
⁵⁴ This analytical horizon leaves out 2009, when global trade fell significantly as a result of the global financial crises, which would distort average export dynamics.

FIGURE 11: THE POLISH TOBACCO SECTOR'S EXPORTS BY PRODUCT, PLN MILLION, 2019



Source: Authors' calculations based on Statistics Poland data for 2019.

FIGURE 12: GEOGRAPHICAL STRUCTURE OF THE POLISH TOBACCO SECTOR'S EXPORTS IN 2019



Source: Author's calculations based on Eurostat data for 2019.

24.2% was imports of processed tobacco, and only 6.7% was imports of cigarettes, cigars and cigarillos. Unprocessed tobacco came primarily from Brazil, Germany, India, China and Mozambique.⁵⁵ The Polish tobacco sector posted a surplus in international trade of PLN 12 billion in 2019.

⁵⁵ Ministry of Agriculture and Rural Development (2019), Zintegrowany system rolniczej informacji rynkowej(Integrated agricultural market information system: The Tobacco Market), No. 1; published May 16, 2019. Data for August 2018-March 2019.

CHAPTER 5

TAX REVENUES



Tax Revenues

The entire tobacco sector, from agriculture through sales and distribution of tobacco products, generates very high tax revenues, mainly through excise tax and VAT. Budget revenues come both from corporate income tax on companies in the production chain and personal income tax on workers' compensation. This chapter presents estimates of tax revenues and their share in budget revenues by type of tax. It is rounded out by an analysis of combined budget revenues from tobacco and their share in total budget revenues.



Consumption Taxes (VAT and Excise Tax)

Excise Tax

The table of excise tax rates in 2019 included three categories of final tobacco products, i.e. cigarettes, smoking tobacco, and cigars and cigarettes. Excise tax was also collected on raw tobacco, an intermediate product. Innovative products and liquids were transitionally assigned a zero rate. Additionally, cigarettes were covered by the so-called minimum excise, amounting to 100% of excise calculated on the weighted average retail sales price of cigarettes from the previous year. In other words, in a case where the tax calculated according to the rate was lower than the weighted average price of cigarettes, the minimum excise was applied, which in 2019 was PLN 427.25 on 1,000 cigarettes.⁵⁶

Total income from excise taxes on final tobacco products in 2019 was PLN 20.9 billion. Additionally, revenue from excise tax on raw tobacco added about PLN 800 million to the budget.⁵⁷ The share of tobacco products and raw tobacco in total budget revenues from excise tax was about 30.3%.⁵⁸

PLN 20.9 billion was the total revenue from excise tax on tobacco products.

Since 2010 there has been growth in the excise tax burden on tobacco products, which resulted from EU regulations. A European Council directive⁵⁹ required Poland to increase excise tax to a minimum of EUR 90 per 1,000 cigarettes and achieve a minimum 60% of the retail price. Though EU regulations called for an adjustment period of seven years (ending in 2018), Poland achieved the minimum excise tax already in 2014. However, it must

⁵⁶ The basis for calculation is the weighted average price of cigarettes for the first 10 months (January-October) of the previous year.

⁵⁷ Revenue from excise tax on raw tobacco in December 2019 was estimated, as this data was not available at the time of writing.

⁵⁸ Revenue estimates based on data from January-November 2019, taking into account the shift of revenue related to the increase in excise rates as of January 2020.

⁵⁹ Council Directive 2011/64/UE of June 21, 2011.

be stressed that during the period of excise tax growth from 2012 to 2014, excise tax revenues fell, and growth in the tax burden contributed to growth in the illicit market (cf. Chapter 7).

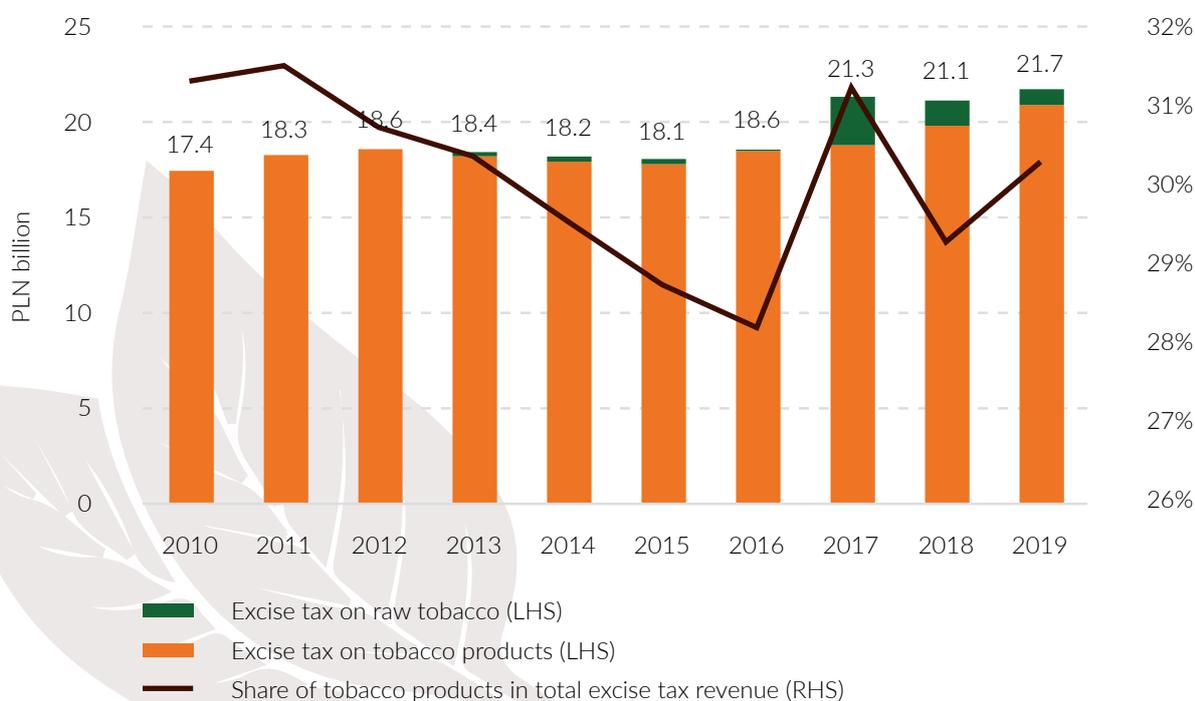
The containment of the illicit market, stabilization of the legal cigarette market and growth of tax revenues in later years was driven by factors including a freeze on excise rates starting in 2015.

During the period of excise tax growth from 2012 to 2014, excise tax revenues fell.



One of the tobacco sector's main policy requests is for a predictable tax environment, which will allow companies to plan ahead, preventing situations such as the one in 2019 when rather than the announced 3% increase, excise tax was increased by as much as 10%. Sector representatives believe that an alternative to leaps in excise tax could be the introduction of an excise roadmap, covering e.g. a 3-year time horizon, in which potential increases are planned and known in advance. Such an approach would have benefits including allowing stabilization of the legal market, counteracting inflation, and growth in budget revenues.

FIGURE 13: REVENUE FROM EXCISE TAX ON TOBACCO PRODUCTS



RHS – right hand-side, LHS – left hand-side.

Source: CASE, based on Finance Ministry data. Data for raw tobacco excise tax revenues for 2019 are estimates.

VAT

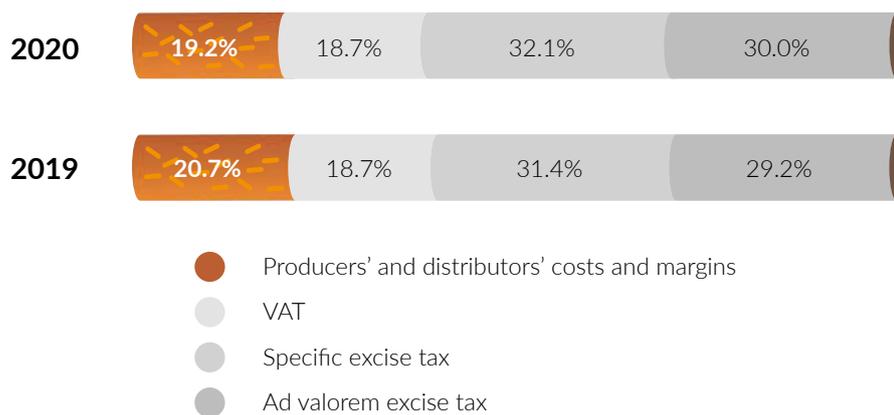
VAT revenue from final tobacco products was PLN 6.42 billion in 2019. The relationship of revenues to the value added in the sector was very high, even though 80% of the sector's production was exported, and subject to consumption taxes abroad. The high VAT revenue arises from the formula for estimating tax obligations. Excise tax is part of the basis for VAT calculation, so the real VAT rate – understood as the relationship between the VAT burden and the price of the product less tax – was very high, at 90.5%.⁶⁰ In the case of other consumer goods subject to the basic VAT rate and not subject to excise tax, this ratio was lower by 69.5 percentage points.



The share of VAT in the gross price of cigarettes, similarly to that of other goods subject to the standard VAT rate, was 18.7%. The share of VAT and excise tax (60.7%) in the weighted average price of cigarettes totaled 79.3% in 2019. In 2020, because of an increase in excise tax rates, this share is significantly higher, at 80.8% (Figure 14). The share of taxes in smoking tobacco was even greater than for cigarettes, at 80.4% in 2019. That means that during the reference period, the effective tax rate on the net value of cigarettes was about 384%, and for smoking tobacco about 410%. In other words, the value of the excise tax and VAT imposed was about four times higher than the net price of tobacco products.

The consumption-tax burden translated into total revenue of about PLN 27.3 billion in 2019, accounting for 10.6% of total revenue from such taxes.

FIGURE 14: COMPONENTS OF THE WEIGHTED AVERAGE PRICE OF CIGARETTES

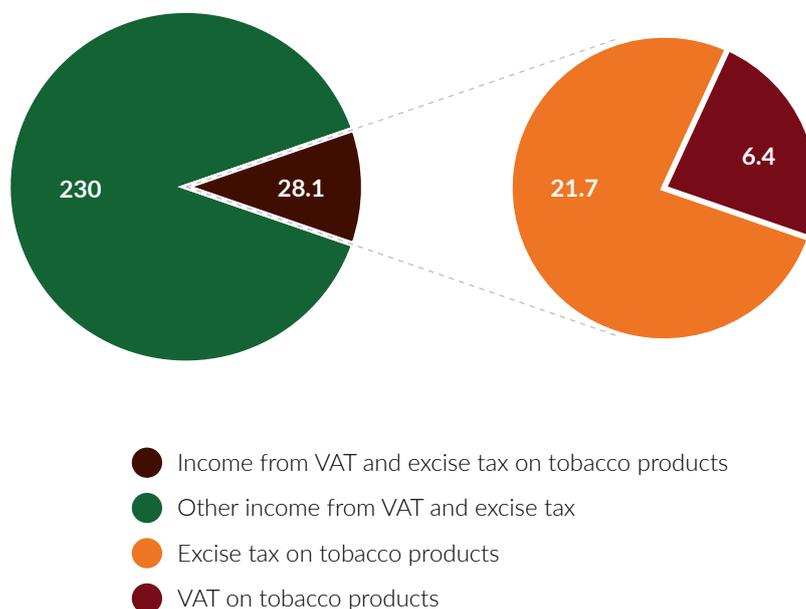


Rounded to the nearest 0.1%. Estimate using the forecast average price of cigarettes in 2020 assuming the tax is fully passed on to the consumer. Otherwise the share of taxes in the weighted average price would be higher.

Source: Authors' calculations based on tax rates in force (Finance Ministry, 2020).

⁶⁰ Estimate for the weighted average cigarette price.

FIGURE 15: STRUCTURE OF REVENUES FROM EXCISE TAX AND VAT, 2019 (PLN BILLION)



Source: CASE based on Finance Ministry data.

Income Taxes (Personal and Corporate)

The significant value of production designated for exports and of intermediate consumption of domestic goods, as well as the high average compensation in the sector, translate into relatively⁶¹ high income tax revenues. Assuming 33,300 full-time jobs in the tobacco product value chain, we estimate total revenue from personal income tax at **PLN 168.5 million**.⁶² About half of this revenue went to the central-government budget; 38.16% went to municipalities, 10.26% to counties and 1.6% to provinces.

Corporate income tax revenue from companies in the tobacco processing industry reached about PLN 305 million in 2018. Revenue from large enterprises manufacturing intermediate goods and tobacco product manufacturing equipment, meanwhile, was about PLN 29 million.⁶³ Because a significant portion of the tobacco product value chain is accounted for by the margins on transportation, supply and distribution, a portion of the corporate income tax is generated by trade and distribution. Assuming margins on sales of tobacco products similar to those of other products, we estimate that CIT receipts were about PLN 50 mil-

61 In relation to value added.

62 Revenue estimated based on estimated employment in the value chain (presented in Chapter 61) and average compensation for the industries (Source: *Zatrudnienie i wynagrodzenia w gospodarce narodowej w I-III kwartale 2019 r.*).

63 Source: Finance Ministry, data from tax returns according to Article 27b in the Act of February 15 1992 on tax on legal persons (Journal of laws Dz.U. 2017 position 2343, as amended) and in the Act of November 24, 2017 amending the act on income tax on legal persons (Journal of Laws Dz.U. 2017 position 2369).

lion.⁶⁴ Combined revenue from CIT was about PLN 384 million, of which about PLN 256 million went to the central government, and PLN 77 million to local governments.

Total Tax Revenue

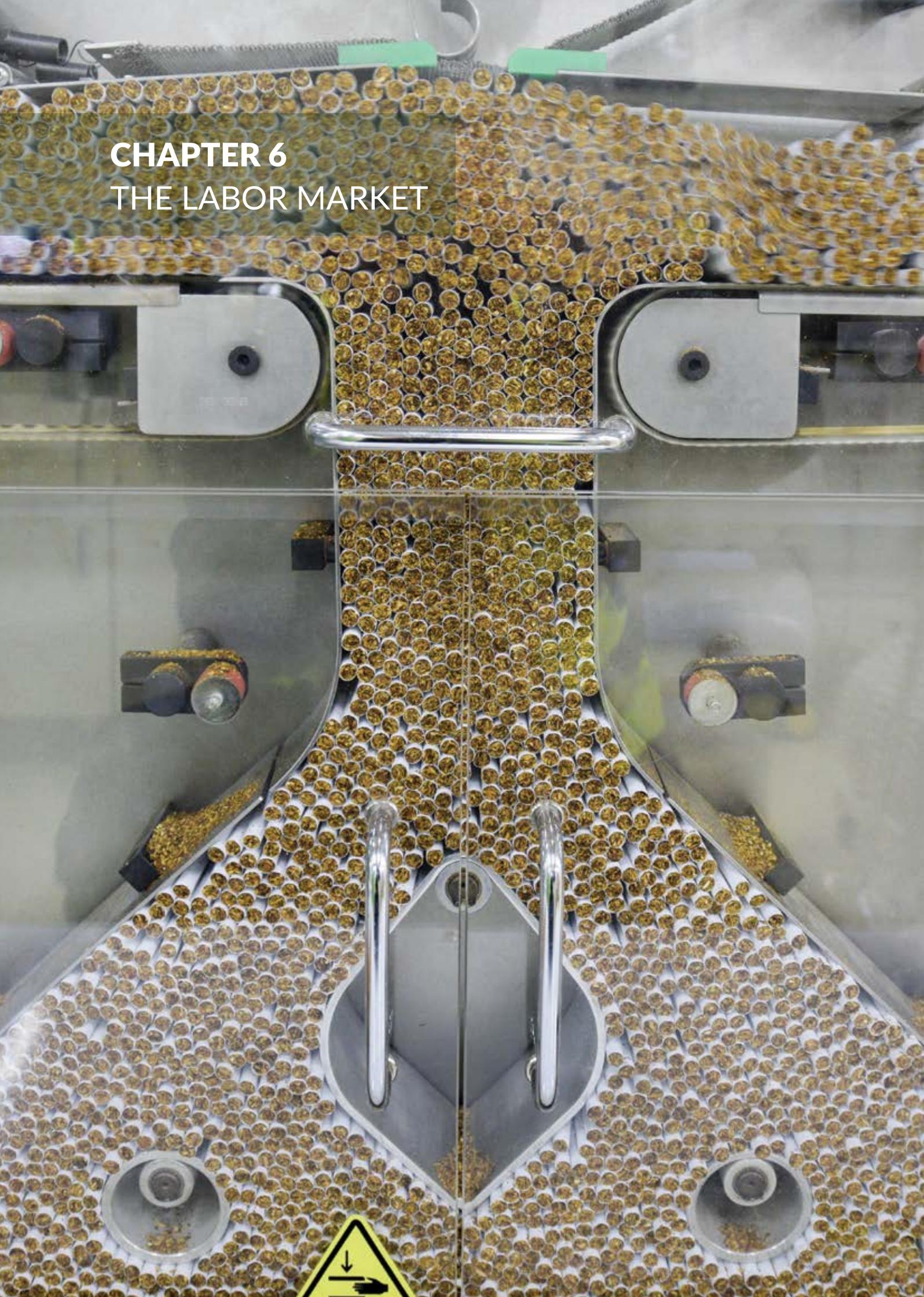
The estimated total tax revenues on production and sale of tobacco products in 2019 was PLN 28.7 billion. That constituted 7.8% of total budget tax revenue.

In 2019 the tobacco sector brought in total budget revenues of PLN 28.7 billion.

⁶⁴ Estimated based on the share of tobacco product sales in the value of retail trade, and Finance Ministry data.

CHAPTER 6

THE LABOR MARKET



The Labor Market

The labor market related to the tobacco sector includes numerous subcategories, in which we can distinguish a four-stage value chain. It comprises growers (tobacco cultivation), tobacco processing firms, manufacturers of tobacco products and the trade and distribution sector. The tobacco industry also uses the services of other sectors, including IT, finance and HR management, employing qualified specialists in tobacco firms, in growing operations and in distribution. With such a broad network of interactions on the labor market, estimating the number of jobs generated by the tobacco industry, broadly understood, is difficult. According to the estimates presented in the previous edition of the report, the number of employees directly and indirectly connected with tobacco cultivation, manufacturing and distribution of tobacco products was about 560,000 in 2016. Taking into account employment growth in the Polish economy,⁶⁵ in 2019 this number may have exceeded 600,000.

These calculations include individuals whose work is related in any way to the tobacco sector. For example, it includes trade, where sale of tobacco products is only part of the operations of the enterprises. The estimate of jobs created by the sector in manufacturing of tobacco and related sectors in 2019

was the equivalent of 33,300 full-time jobs.⁶⁶ This estimate was arrived at on the basis of statistical data on production volume, value added and employment in the agriculture, trade and production sectors.

The tobacco sector created about 33,300 full-time jobs in 2019. More than 600,000 employees had some relationship to the sector that year.

Tobacco Cultivation

Estimates of the number of people employed in tobacco cultivation vary widely depending on the information source. According to information from the 2018 CASE report, there were 11,000 farms cultivating tobacco in 2017, which translates into about 50,000 people (both seasonal and year-round).⁶⁷ Available information for 2019 indicates a significant decrease in the number of farms cultivating tobacco in recent years, to 6,000.⁶⁸ The number of farms fell by about 51% in 2012-2018, while simultaneously the average farm size grew from 1.6 hectares to 2.3 hectares.⁶⁹ Along with the fall in the number of farms, the number of

⁶⁵ Statistics Poland data on total employment in the economy, available through the 3rd quarter of 2019.

⁶⁶ Measured as full-time equivalent to ease comparisons; 0.5 FTE is one person working half-time; 1 FTE is one person working full time.

⁶⁷ CASE (2018), The significance of the tobacco product manufacturing to Poland's economy, Warsaw, p. 49.

⁶⁸ Authors' consultations with representatives of the PZPT, March 9, 2020. Other estimates range widely, from 5,000 to 10,000 farms.

⁶⁹ Information and estimates from the authors' consultations with representatives of the Agriculture Ministry, March 11, 2020.

jobs also declined, to about 40,000.⁷⁰ However, it must be borne in mind that this number includes all seasonal and part-time workers. **Our estimate of employment in tobacco cultivation is the equivalent of about 4,000 full-time jobs in 2019.**



The most important centers of tobacco cultivation (primarily the Virginia and Burley varieties) are Lublin, Małopolska, Podlasie, Świętokrzyskie, Kujawy-Pomerania and Podkarpackie provinces. However, regardless of the number of farms cultivating tobacco, an important factor reducing the attractiveness of this crop is its declining profitability and the uncertainty of future demand for tobacco products.

Domestic tobacco cultivation is primarily by smaller farms, for which operations in other areas are unprofitable. Tobacco cultivation also requires specialized knowledge and is very labor- and cost-intensive. At the moment the EU doesn't give member states the ability to directly support the tobacco production process. But the negative effects of limiting EU aid⁷¹ are to a certain degree mitigated by the ability to indirectly support growers from domestic funds, e.g. through subsidies in the Rural Development Programme, subsidies for interest on bank loans to finance investments in farms and special units, and single area payments. The newest solution (from mid-2019) is the ability to receive a one-off payment from the Agency for Restructuring and Modernisation of Agriculture as a financial assistance⁷² for certain groups of tobacco producers⁷³ and producers of raw tobacco.⁷⁴



Tobacco Processing. Manufacturing of Tobacco Products

The available labor market data indicate that tobacco product manufacturing and tobacco processing are a relatively significant area of the economy. In 2018 employment in the tobacco industry was 0.28% of total employment in manufacturing industry.⁷⁵ **Employment in this sector is gradually growing as a result of its dynamic pace of development.** Since 2016 it had grown significantly faster than the average in other areas of industry (Figure 16), where a weakening in employment growth has coincided with a clear slow-



70 This size derives from a level of 7,000 farms, according to L. Talaśka-Klich (2019) "Plantatorzy tytoniu nie chcą wypaść z rynku, ale produkcja wciąż jest bardzo pracochłonna" (Tobacco growers don't want to drop off the market, but production remains very labor-intensive), July 11, 2019, <https://pomorska.pl/plantatorzy-tytoniu-nie-chca-wypasc-z-rynku-ale-produkcja-wciaz-jest-bardzo-pracochlonna/ar/c8-14267407> [accessed February 5, 2020].

71 Based on a letter from the Minister of Agriculture (K. Jurgiel) to the Speaker of the Sejm (M. Kuchciński) dated November 16, 2017, document No. RR.pr.058.17.2017, <http://orka2.sejm.gov.pl/INT8.nsf/klucz/658C47F1/%24FILE/i16661-o1.pdf> [accessed February 5, 2020].

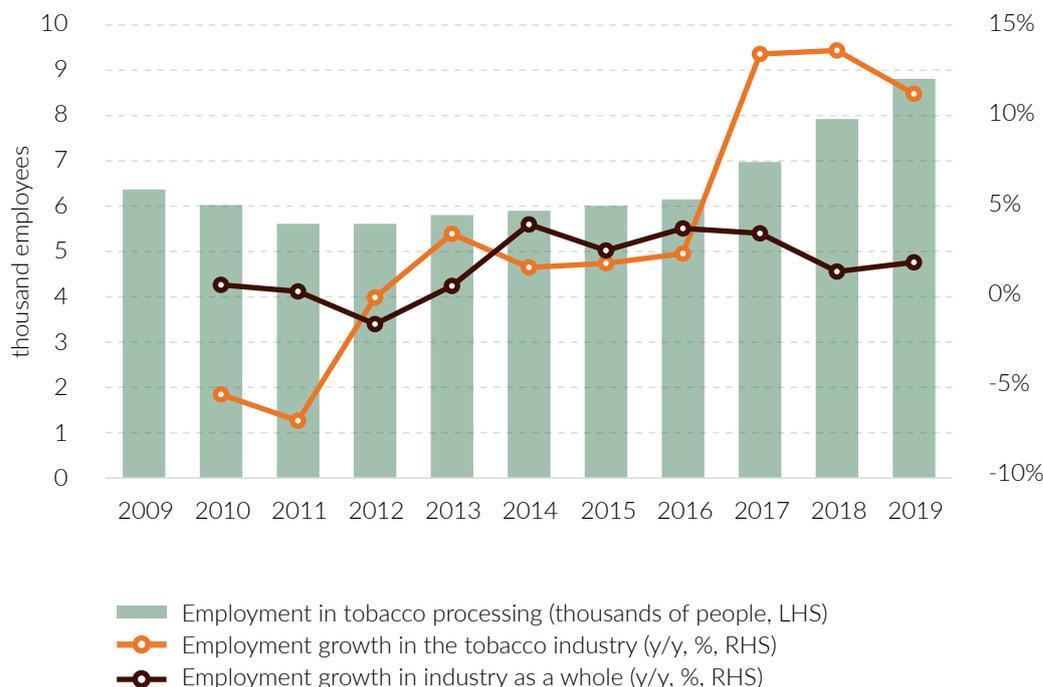
72 I.e. the ability to grant financial assistance to an agricultural producer or group of producers of raw tobacco who in 2014-2017 did not receive payments for sales of tobacco as a result of a declaration of bankruptcy or the commencement of secondary bankruptcy proceedings, or the opening of restructuring proceedings, or the opening of liquidation against the entity to which the tobacco was sold.

73 On the de minimis principle: the maximum amount of assistance in agriculture for a single beneficiary is EUR 20,000.

74 On general principles: the maximum amount of assistance is EUR 200,000 per beneficiary.

75 The highest share of workers in the manufacturing industry was noted in 2018, at 0.28%, and the lowest in 2011, at 0.23% (authors' calculations based on Statistics Poland data: Employment in national economy, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018).

FIGURE 16: EMPLOYMENT IN THE TOBACCO PROCESSING INDUSTRY



RHS – right hand-side, LHS – left hand-side.

Source: Authors' calculations based on Statistics Poland data: Employment in national economy, 2009-2018 (GUS 2010a, 2011a, 2012a, 2013a, 2014a, 2015a, 2016a, 2017a, i 2018a) and Statistics Poland employment data for 2019.

down since that time of the pace of production growth (resulting from factors including a drop in new orders⁷⁶).

Official data on tobacco processing and manufacturing of tobacco products may not reflect the precise level of employment due to the role of support operations, e.g. HR services, financial settlements, logistics, research and development, maintaining IT infrastructure and administration, broadly understood. Taking this broad view, the industry provides employment to a much larger number of specialists. Taking into account the four largest companies, i.e. Philip Morris International,⁷⁷ British American Tobacco,⁷⁸ Japan International Tobacco⁷⁹

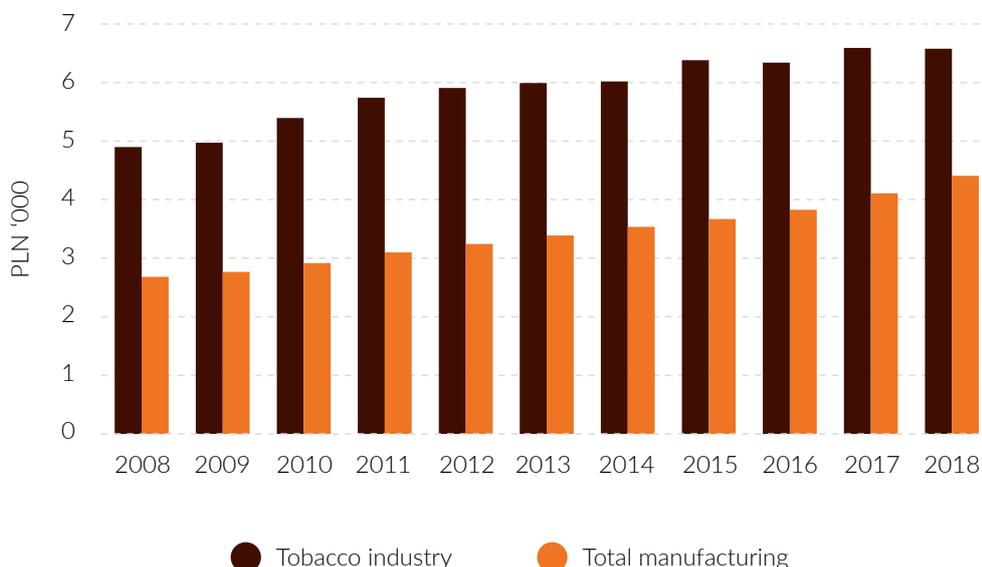
76 According to the IHS Markit Purchasing Managers' Index for Polish industry; the PMI is based on a survey concerning a wide spectrum of economic conditions: <https://ihsmarkit.com/products/pmi-faq.html> [accessed February 17, 2020].

77 According to the company's website 3,500 people are employed: <https://pracodawcy.pracuj.pl/philip-morris-international,10277> [accessed February 5, 2020].

78 According to the company's website, 900 people are employed in the sales office, 1,400 in the factory in Augustów and about 1,250 in CHIC, which works on innovative tobacco products: <http://pracawbat.pl/o-nas/> [accessed February 5, 2020] and <https://www.esmokingworld.com/pl/kariera> [accessed February 5, 2020].

79 According to the company's website, 2,200 people are employed, of whom more than 1,500 are workers in the Stary Gostków factory, <https://www.jti.com/pl/europe/poland> [accessed February 5, 2020].

FIGURE 17: AVERAGE GROSS MONTHLY COMPENSATION IN THE TOBACCO INDUSTRY COMPARED WITH MANUFACTURING



Source: Based on the Statistical Yearbook of Industry, 2008-2017 (GUS 2009, 2010b, 2011b, 2012b, 2013b, 2014b, 2015b, 2016b, 2017a, 2018c).

and Imperial Tobacco,⁸⁰ the total number of employees can be estimated at around 11,000, 25% higher than estimates from 2016-2017.⁸¹ Additionally, the tobacco industry indirectly generates jobs in other branches of the economy, e.g. production of packaging (such as Amcor Specialty Cartons Polska⁸² in Łódź) and in the sector producing machines used to manufacture tobacco products (e.g. International Tobacco Machinery Poland in Radom⁸³) and in processing of raw tobacco. Support operations make a significant contribution to growth in total employment, an example of which is Japan Tobacco International's newest investment in Warsaw, the Global Business Service Center; it will eventually employ about 850 people, responsible for supporting processes, among others, in finance, marketing and sales, research and development.⁸⁴ We estimate the total number of jobs in the tobacco

80 According to the company's website 1,750 people are employed: <https://imperial-tobacco.pl/imperial-tobacco/imperial-tobacco-w-polsce/> [accessed February 5, 2020].

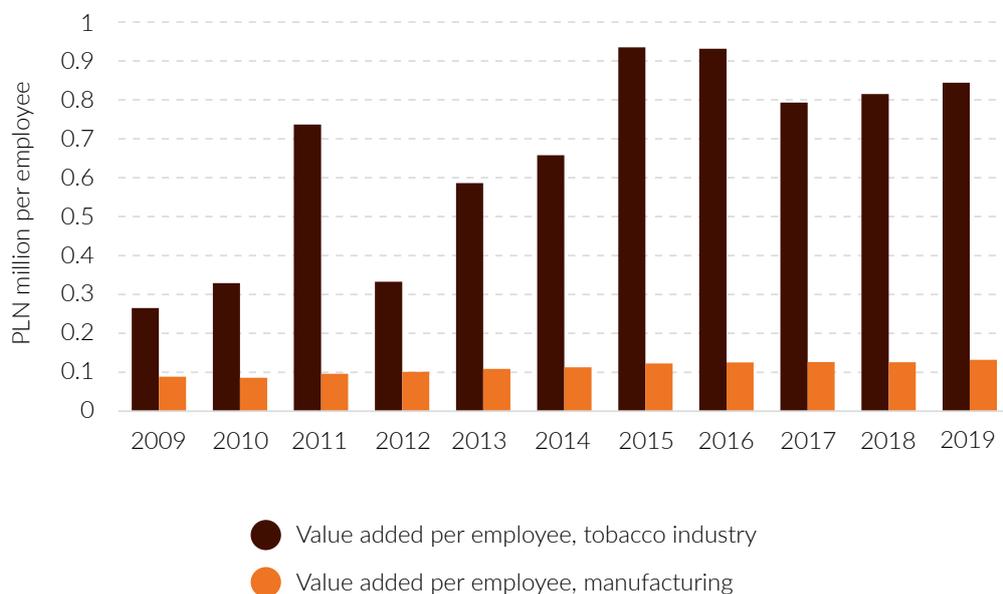
81 In the previous edition, employment was estimated at 8,800 employees: CASE (2018) *The Significance of the Tobacco Product Manufacturing to Poland's Economy*, Warsaw, p. 50.

82 Polish branches of companies employ a total of 800 workers in four production facilities: three in Łódź (of which one belongs to the Tobacco product group, which processes packaging for the tobacco industry, and the remainder supply the food and beverage industry), and one in Złotów, in Wielkopolska, https://www.biurokarier.p.lodz.pl/pracodawca,700/amcor_tobacco_packaging_poland.html [accessed February 5, 2020].

83 According to the company's website 410 people are employed: <https://kariera.itmgroup.pl/> [accessed February 5, 2020].

84 As of November 4, 2019, <https://wgospodarce.pl/informacje/70584-jti-z-nowa-inwestycja-w-polsce> [accessed February 17, 2020].

FIGURE 18: THE TOBACCO SECTOR'S PRODUCTIVITY COMPARED WITH MANUFACTURING AS A WHOLE



Source: Based on the Statistical Yearbook of Industry, 2009-2018 (GUS 2010b, 2011b, 2012b, 2013b, 2014b, 2015b, 2016b, 2017a, 2018c). Forecasts for 2018-2019 based on Statistics Poland forecasts and Eastern Europe Consensus Forecasts – A Digest of Economic Forecasts, Consensus Economics Inc. 2019.

industry in Poland, in the broad view, at about 12,300 people. **The average gross monthly salary in the tobacco processing industry exceeded the average for manufacturing industry in 2008-2018** (Figure 18), but this gap is slowly narrowing. The latest statistical data indicate that average gross compensation in tobacco production in 2018 was 149% of the average for manufacturing industry, compared with 165% in 2015.

Higher salaries in the tobacco industry are accompanied by higher labor productivity (Figure 18).⁸⁵ **In 2009-2019, value added per employee in the tobacco industry was an average of 5.6 times greater than in manufacturing industry as a whole.** The differences in productivity in the sector result from factors including the significantly higher level of productive capital (e.g. higher value of machinery and equipment) per employee than in other industries. For companies in manufacturing industry as a whole, in 2018 for each employee there was an average of PLN 300,000 worth of fixed assets, and in the tobacco industry, PLN 1.4 million, or more than four times more.⁸⁶

85 Estimated as the ratio of value added created by a given industry divided by the level of employment for a given period.

86 Calculated on the basis of Statistics Poland data (2019d).

Distribution and sales

The available data on employment in sales and distribution for 2016 suggested that about 500,000 people worked in retail stores and wholesalers that dealt in tobacco products. Taking into account the growth in employment in the trade sector, a comparable estimate for 2019 would be 545,000 people.^{87;88} **We estimate the number of full-time positions created by sales and distribution of tobacco products at 16,900.**



87 To estimate the change in employment, data were used on growth in employment in wholesale and retail trade from 2016 to 2019, taken from the Statistics Poland Statistical Bulletin.

88 Polish Chamber of Trade, from an April 26, 2019 publication, <http://www.portalspozywczy.pl/alkohole-uzywki/wiadomosci/pih-przedsiębiorcy-pytaja-jak-przygotowac-sie-do-sprzedazy-wyrobow-tytoniowych,170872.html> [accessed February 6, 2020] and consultations with industry representatives, April 10, 2020.





CHAPTER 7
CHALLENGES FOR
THE TOBACCO INDUSTRY

Challenges for the Tobacco Industry

The Illicit Market

The illicit market in Poland comprises two phenomena: first, the smuggling of cigarettes and other tobacco products to Poland (primarily from outside the EU) and the illegal sale of these products in the country,⁸⁹ and second, the illegal manufacturing of tobacco products (which also means the violation of intellectual property rights through trademark theft) and their sale without the required excise bands. Illegal manufacturing of tobacco products in Poland, based on both domestic and foreign tobacco (acquired e.g. from Bulgaria),⁹⁰ is targeted at western European countries, where the prices of tobacco products are significantly higher than on our market (such markets are mainly the UK and Ireland⁹¹). The availability of Polish tobacco for purchase was restricted in 2013 by the imposition of the system of registration of trade and the excise tax, but the system is not completely watertight. In turn, in the case of smuggling of tobacco products, whether to the Polish market or to western European countries (in this case the port in Gdynia is a strategic point for the transit of illegal products)⁹² the most important problem remains illegal transportation across the border, particularly in places where inspections are more difficult.⁹³



A significant reason for the existence of the illicit market is the high price of tobacco products, related to the significant taxation of these products. As mentioned above, according to the available information, VAT and excise tax together account for more than 80% of the price of a pack of cigarettes.⁹⁴ According to estimates cited in the 2018 CASE report, the illicit market in the tobacco-product segment grew dynamically in 2006-2013,⁹⁵ which was related to the price growth spurred by the dynamically growing excise tax and the temporary popularity of rolling cigarettes at the point of sale (e.g. from low-taxed so-called party cigars).⁹⁶ The jump in excise tax in 2010-2014 preceded the period of the greatest growth (according to available Almares estimates) in the scale of the illicit market: 19% in the second quarter of 2015. In later years this scale shrank to a full-year average of 9.9% in 2019. That year a small increase was noted in the illicit market from quarter to quarter: from 9.4% in the

89 For the Polish market, this illicit trade channel is definitely more sensitive than illegal cigarette production in the country; J. Fundowicz, K. Łapiński, B. Wyżnikiewicz (2018), Szara strefa 2018 (The Illicit Economy, 2018), Institute for Economic Forecasting and Analysis.

90 Authors' consultations with representatives of the Central Bureau of Investigation, March 5, 2020.

91 Ibidem.

92 Ibidem.

93 Authors' consultations with the National Revenue Administration, February 26, 2020.

94 J. Fundowicz, K. Łapiński, B. Wyżnikiewicz (2018), Szara strefa 2018 (The Illicit Economy, 2018), Institute for Economic Forecasting and Analysis, p. 27.

95 CASE (2018), The Significance of the Tobacco Product Manufacturing to Poland's Economy, Warsaw, pp. 55-56.

96 M.R. Bodył (2018), "Szara strefa w branży tytoniowej," (The Illicit Economy in the tobacco industry) Roczniki Ekonomii i Zarządzania, Vol. 10(46), No. 2.

second quarter, to 9.9% in the third and 10.4% in the fourth.⁹⁷ These calculations, conducted using the *Empty Discarded Pack Collection* method, apply only to cigarettes, disregarding other tobacco products, so the research may underestimate the illicit market. However, it appears that cigarettes are its most important component.

We estimate the value of the illicit market in 2019 at about PLN 3.31 billion. The lost government revenues could account to PLN 2.65 billion.⁹⁸ That means growth in the value of the illicit market from PLN 3.22 billion in 2018, and lost budget revenues of about PLN 2.57 billion.⁹⁹ In relation to previous years, the BCC estimated annual budget losses in the period when the illicit market was at its largest (2010-2015) at about PLN 6-7 billion.¹⁰⁰ EY suggests that in 2015 the public purse may have lost PLN 6.5 billion (PLN 5.2 billion from excise tax and PLN 1.2 billion from VAT). As KPMG estimates indicate, in later years lost budget revenue could be PLN 3.42 billion (2016) and PLN 2.67 billion (2017).¹⁰¹

We estimate the value of the illicit market in 2019 at about PLN 3.31 billion. The lost government revenues could account to PLN 2.65 billion.

Figure 19 illustrates the data on the illicit market against the backdrop of the legal market and budget revenues from excise tax. Taking into account only the changes in the tax burden¹⁰² – in particular the increase of excise tax in 2020 – it must be noted that the level of taxation which EU countries were obligated to impose by 2018, Poland introduced four years earlier. The sharp growth in the fiscal burden in the tobacco sector, estimated at 45%,¹⁰³ could be

97 According to KPMG, in 2014-2015 the share of the illicit market in consumption of tobacco products in Poland grew from 15.1% to 16.8%, and its later decline was “only” to 12.1%. Despite a reduction by 4 percentage points over three years, the significance of the illicit economy in tobacco in Poland is decidedly larger than the EU average (8.7% in 2017), according to Union of Entrepreneurs and Employers (2018), *Szara strefa rynku wyrobów tytoniowych. Diagnoza, propozycje rozwiązań* (The illicit market in tobacco products: diagnosis and proposed solutions), pp. 9, 13, <https://zpp.net.pl/wp-content/uploads/2018/12/Szara-strefa-wyrob-proc-C3%B3w-tytoniowych-wersja-elektroniczna.pdf> [accessed February 3, 2020].

98 Assuming that domestic sales in 2019 were about 44.9 billion cigarettes, the illicit market was at an average annual level of 9.9% of the value of sales in the sector (based on Almares data) and that the fiscal burden constitutes about 79.3% of the price of a package of cigarettes.

99 Authors’ estimate based on similar assumptions as for 2019.

100 Business Centre Club (2018), “Kolejne kroki w walce z szarą strefą w branży tytoniowej. Jak utrzymać dobry trend?” (Further steps in the fight against the illicit market in the tobacco industry: How can we maintain the positive trend?) The article didn’t provide the method for estimating the budget losses.

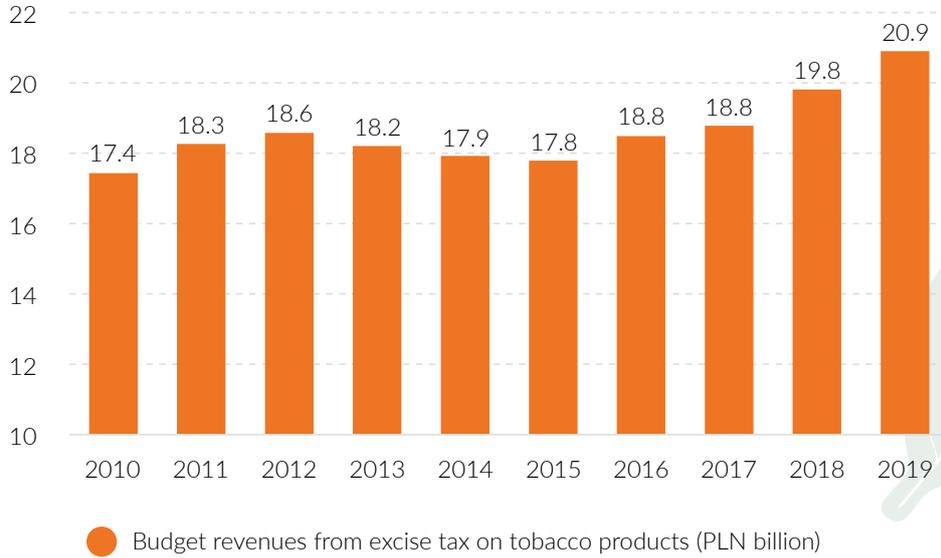
101 KPMG (2017), *Project Sun. A Study of the Illicit Cigarette Market in the European Union, Norway and Switzerland, 2016 Results*, p. 127. With an average exchange rate of PLN 4.3625 and 4.2576 to the euro in 2016 and 2017 (authors’ calculations, weighted average annual exchange rates according to the National Bank of Poland, https://www.nbp.pl/home.aspx?f=/kursy/arch_a.html) [accessed January 29, 2019].

102 Here we concentrate primarily on excise tax (tax revenues are covered in more detail in Chapter 5), as since 2011 the VAT rate on tobacco products has been 23%, and the share of VAT in the retail price of tobacco products is small, and seems not to affect the scale of the illicit market, as per *Polityka Insight* (2016), *Szara strefa wyrobów tytoniowych w Polsce. Rozmiar szkód i metody redukcji* (The illicit market for tobacco products in Poland: Scale of harm and methods of reduction), report commissioned by JTI Polska, <https://www.jti.com/sites/default/files/local-files/pl/polish/documents/related-documents/Szara-strefa-wyrob-C3%B3w-tytoniowych-w-Polsce.-Rozmiar-szk%C3%B3d-i-metody-redukcji.pdf> p. 14 [accessed January 29, 2019].

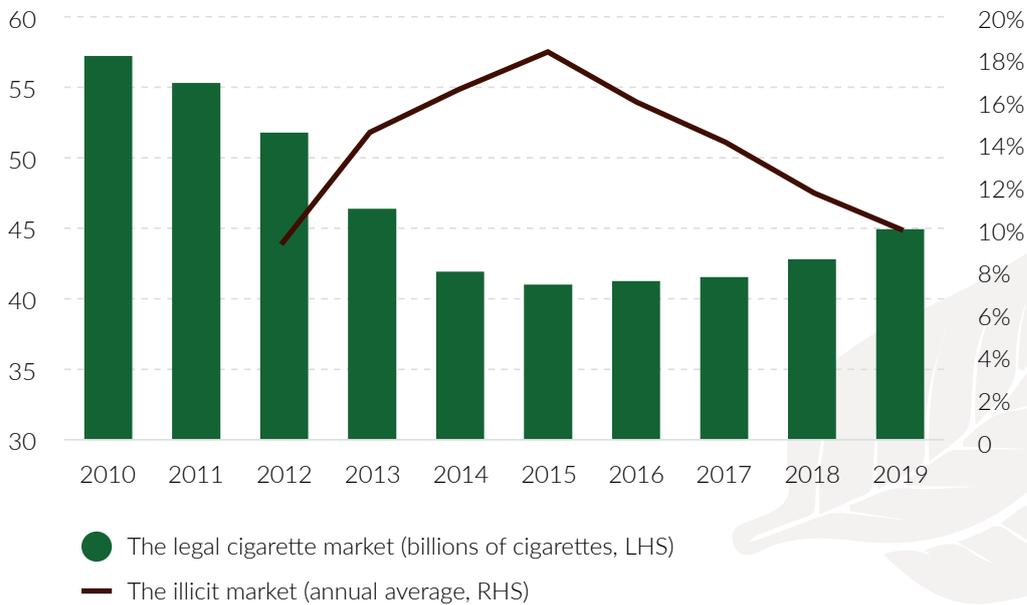
103 S. Parulski, M. Marczak, M. Zientara (2018), “Pakiet tytoniowy – walka z czarnym rynkiem papierosów” (The tobacco legislative package – the fight with the black market for cigarettes), *Przegląd Podatkowy* 3/2018, p. 28.

FIGURE 19: THE LEGAL MARKET, BUDGET REVENUES AND THE ILLICIT MARKET

Panel A: Excise tax revenue from final tobacco products



Panel B: The legal cigarette market compared with the illicit market



RHS – right hand-side, LHS – left hand-side

Source: OpenBIZ (2020) (the legal market); authors' estimates on the basis of Finance Ministry data (budget revenues from excise tax); ALMARES (2018, 2019), Fundowicz et al (2018, the illicit market).

one of the potential factors contributing to the 27% growth in the illicit market.¹⁰⁴ Simultaneously, a corresponding growth in excise revenues was not observed. These began to

grow only in 2015, after the announcement of a moratorium on excise tax. The overlapping of periods of a decline in the illicit market with periods in which tax moratoria were in effect thus allows us to suppose that a rational and predictable excise policy has an additional influence on the size of the legal market and budget revenues, and a negative effect on the size of the illicit market. Such a connection is also indicated by CASE research.¹⁰⁵

Sharp growth in the tax burden could have contributed to an increase in the illicit market in 2010-2014.

The decline in the illicit market in recent years may be attributed at least in part to the lack of increases in excise tax until 2019, and to introduction of legal changes. It was also connected with higher detection of illegal activity and operations by the investigative services. In 2019, 20 entities producing illegal tobacco products were liquidated, as were 20 cut tobacco factories. In the same year, the CBŚP seized 211.75 million illegal cigarettes and 324,000 kg of cut tobacco.¹⁰⁶ In the context of these illegal operations it is important that organized groups learn quickly and adapt to new legal conditions, changing their operational models¹⁰⁷ or migrating their operations to western Europe, e.g. to Germany or Spain.¹⁰⁸

Additionally, taking a broad view of the actions of law enforcement,¹⁰⁹ in 2019 there were 72,800 seizures of illegal cigarettes and 4,482 seizures of illegal tobacco, which translated into 474 million seized cigarettes and 588,000 kg of seized tobacco (Figure 20). In comparison with 2017 the number of seizures of illegal cigarettes fell significantly (by 43%), while the volume of seizures fell by significantly less (13%). In the case of illegal tobacco, 2017-2019 saw growth both in the number (by 7%) and the volume of seizures (by 17%). The higher figures for volume than for number of seizures in both groups of illegal products may attest to the consolidation of the criminal groups that produce them. Improving operations to counteract illegal production and smuggling of tobacco products remains a goal of the government.¹¹⁰

104 Demand for tobacco products, including tobacco, varies depending on the country's economic situation. The World Health Organization (WHO) indicates that demand for tobacco products, first of all cigarettes, is more sensitive to price changes in economies characterized by low or average income than in developed economies: for example for the U.S., price elasticity of demand was -0.37 [Franz, 2008], while in Bulgaria it was -0.8 [Sayginsoy, 2002]. In this case consumption could be shifted to cheaper products (e.g. fake or smuggled).

105 CASE (2015), *Usprawnienie systemu opodatkowania papierosów w Polsce. Mapa drogowa finansów publicznych* (Improving Taxation of Cigarettes in Poland: A Public finance Roadmap).

106 CBŚP operational report for 2019, p. 7.

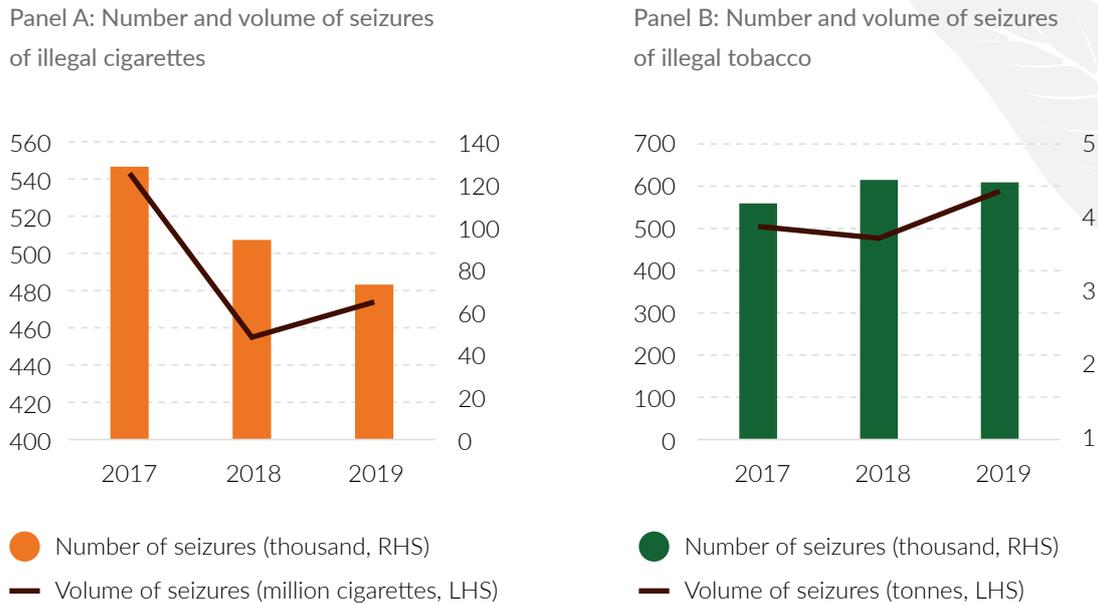
107 According to CBŚP representatives, in recent years there has been a change in the way illegal factories work, with larger sites broken up into smaller units so that the production of illegal cut tobacco, production of cigarettes and their storage and preparation for distribution takes place in various locations as part of the same group (consultations from March 5, 2020).

108 Authors' consultations with the CBŚP, March 5, 2020.

109 Including customs, police and border guards.

110 Authors' consultations with representatives of the National Revenue Administration, February 26, 2020.

FIGURE 20: SEIZURES OF ILLEGAL CIGARETTES AND TOBACCO



RHS – right hand-side, LHS – left hand-side.

Source: Authors' consultations with representatives of JTI Polska, March 9, 2020; calculations based on Finance Ministry data provided by JTI Polska, CASE calculations.

The current law on excise tax calls for the taxation of e-cigarette liquids as of July 1, 2020 in the amount of PLN 0.55 per milliliter of fluid (a 10% higher value than in the draft amendment from 2018-19). Taking into account the share of the illicit market in the consumption of innovative products and e-cigarettes, and the current state of technology, both smuggling and illegal production of e-cigarette liquids may be much harder for customs services to detect than in the traditional product segment. This is because these products largely lack identifying characteristics, particularly visually. Detecting them requires specialized equipment and trained personnel; the costs of maintaining these resources, in light of the small scale of the issue, is considered too high.¹¹¹ It is also worth noting that fighting illegal activity and conducting effective inspections are hindered by factors such as the development, despite prohibitions, of illegal online trade (in particular purchases from foreign websites), bazaar trade, the broad availability of ingredients allowing users to create their own liquids and the ability to easily transport them across borders. From the regulator's perspective, the

111 R. Żydok et al (2017), Skutki opodatkowania akcyzą płynów do e-papierosów. Analiza w kontekście projektu ustawy o zmianie ustawy o podatku akcyzowym z dnia 14 czerwca 2017 r. (The effects of excise taxation of e-cigarette liquids: An analysis in the context of the June 14, 2017 bill amending the excise tax act), Republican Foundation, commissioned by British American Tobacco Polska and CHIC, pp. 27-28, as quoted in: Finance Ministry, Ocena skutków regulacji "Projekt ustawy o zmianie ustawy o podatku akcyzowym", (Assessment of the regulatory impact of the bill amending the excise tax act), <http://legislacja.rcl.gov.pl/docs//2/12299602/12440494/12440495/dokument295685.pdf> [accessed June 28, 2017].

greatest challenge is small shipments from e-commerce platforms in China which are not subject to inspections (e.g. AliExpress). On the other hand, illegal innovative products don't constitute a potential threat; the technology for producing tobacco for heating systems is a serious barrier to entry for potential illegal producers (both in terms of production costs and the ability to introduce illegal products into trade later).¹¹²

Even though many solutions have been introduced recently that have contributed to reducing the illicit market, some of them may have the opposite effect. **The ban on production and sale of menthol cigarettes starting May 20, 2020, based on the Tobacco Directive and Polish regulations, may provide a stimulus for the illicit market, some sources say.** Introducing this regulation was justified by EU requirements¹¹³ and may translate into a significant reduction in budget revenues,¹¹⁴ as these products account for an estimated 30% of Poland's legal cigarette market, according to available data.¹¹⁵ The ban on menthol cigarettes is also a challenge for the trade segment, particularly for small shops, as such cigarettes have a particularly high share of the market, according to available estimates.¹¹⁶ Additionally, the limits on the availability of menthol cigarettes may lead some consumers to shift into the illicit market, and growth in smuggling activity from non-EU countries, in particular in the east of the country. Significantly, the industry expects that the accompanying increase in the excise tax burden may contribute all the more so to an increase in the illicit market.¹¹⁷ The results of quantitative research conducted by the Consumers Forum show that almost 90% of menthol cigarette smokers don't plan to quit smoking; about half will switch to traditional cigarettes, only 16% will move to alternative products and 20% stated that they will look for these products in the illicit market.¹¹⁸ The national regulator states that withdrawing these products won't be a problem and the threat is being blown out of proportion: they're not attractive for illegal producers due to the higher technological requirements and the low potential return on investment.¹¹⁹ What's more, flavored cigarette users have low potential to enter the illegal market; it is more likely that they will migrate to the niche of innovative products and electronic cigarettes.¹²⁰ Even so, it cannot be ruled out that the emergence on the market of such a large gap of 30%, will encourage organized criminal groups to adjust their operations to fill it.



112 Authors' consultations with representatives of the National Revenue Administration, February 26, 2020.

113 The Tobacco Directive introduces a requirement for tobacco pack size due to the need to include warnings on the harmfulness of cigarette smoking. The ban on sales in slim packs also arises from the fact that they hold 10 cigarettes, making them more financially accessible for young people and people with limited incomes, according to: European Commission (2016), 10 key changes for tobacco products sold in the EU; https://ec.europa.eu/commission/presscorner/detail/en/IP_16_1762 [accessed January 29, 2020].

114 According to one estimate, this may be as much as PLN 9 billion, according to: <https://zdrowie.wprost.pl/zdrowie/10285230/papierosy-mentolowe-znikna-ze-sklepow-palacze-juz-teraz-maja-problem.html> [accessed January 29, 2020].

115 J. Fundowicz, K. Łapiński, B. Wyżnikiewicz, D. Wyżnikiewicz (2019), The Illicit Economy 2019, Institute for Economic Forecasting and Analysis, p. 36.

116 As established by the authors with Polish Chamber of Trade representatives on March 16, 2020 it amounts to 30%.

117 Authors' consultations with producer representatives, March 19, 2020.

118 Raport z ogólnopolskiego badania na temat postaw Polaków wobec zakazu sprzedaży papierosów mentolowych i z kapsułką (Report from nationwide research on Poles' attitudes toward the ban on sales of menthol and capsule cigarettes), March 2020, Consumers Forum: https://zakazmentoli.pl/wp-content/uploads/2020/03/ForumKonsument%C3%B3w_zakazmentoli_raport_marzec2020.pdf [accessed March 10, 2020].

119 Authors' consultations with CBŚP representatives, March 5, 2020.

120 Authors' consultations with representatives of the National Revenue Administration, February 26, 2020.

Actions limiting the illicit market have comprised changes at the legislative and operating levels and in many cases were very positively evaluated by industry representatives.¹²¹

- Coordination has been strengthened between independent services and state institutions.
- The National Revenue Administration was created¹²² (March 1, 2017).
- Cooperation has been tightened, coordination improved, between the CBŚP and its foreign counterparts.¹²³
- The SENT system of monitoring road freight transportation was implemented,¹²⁴ as were changes tightening the tax system in the context of illegal trade in raw tobacco.
- Protection of competition was strengthened, as was support for legally operating entities; the illegal market for raw materials was restricted (as part of the tobacco legislative package¹²⁵) and the tax system was tightened.¹²⁶
- The system for tracking tobacco cultivation and production of raw tobacco was improved: farmers who cultivate, produce or trade in tobacco are obligated to register with the National Agriculture Support Center, which is intended to limit supplies to illegal cigarette producers. If the system were downgraded or loosened, it could lead to growth in the illicit market.¹²⁷
- The newest solution is the Track & Trace system, which obligates all participants in the supply chain (including producers, distributors, transportation companies and retail points) to register with it and to track product movements. The system imposes a registration obligation at the moment when an entity becomes aware of each pack-

121 Authors' consultations with producer representatives, March 13, 2020.

122 It must be added that while the work with the KAS on limiting the illicit market was assessed very positively, the lengthy and bureaucratized processes of inspecting and auditing producers carried out by the KAS were assessed negatively, and were a factor endangering the sector's confidence in government representatives (consultations with producer representatives, March 13, 2020).

123 Work with the services in the UK, one of the most important markets for cigarettes produced illegally in Poland, is assessed particularly well. Cooperation between Polish and foreign services also helps limit illegal production in countries where organized groups are transferring their activities from Poland (according to information from consultations with CBŚP representatives on March 5, 2020).

124 The system introduced on the basis of the Act of March 9, 2017 on the system of road and rail monitoring of freight transportation and trade in heating fuels (Journal of Laws Dz.U. 2017 position 708) requires that companies performing domestic and transit freight transportation are required to register their loads in an electronic registry, continually updating them. This makes it possible to confirm the legality of shipments, which potentially limits the movement and smuggling of tobacco products, not only within the country but also transit from outside the EU to western Europe, according to: J. Fundowicz, K. Łapiński, B. Wyżnikiewicz, D. Wyżnikiewicz (2019), *The Illicit Economy 2019*, Institute for Economic Forecasting and Analysis.

125 The tobacco legislative package, in force since December 15, 2017, includes changes in the Act of December 6, 2008 on excise tax (Journal of Laws Dz. U. 2009, nr 3, position 11, as amended) and in the Act of March 11, 2004 on the organization of certain agricultural markets (Journal of Laws Dz. U. 2017.0.1006).

126 Act of October 27, 2017 amending the act on excise tax and the act on organization of certain agricultural markets, Journal of laws Dz. U. 2017 position 2216.

127 J. Fundowicz, K. Łapiński, B. Wyżnikiewicz, D. Wyżnikiewicz (2019), *The Illicit Economy 2019*, Institute for Economic Forecasting and Analysis, p. 35.

aging unit, as well as tracking the movement of these packages until the moment when the entity ceases to be in possession of the product.¹²⁸

Further actions aimed at counteracting the illicit market include the 2019 bill that calls for changes in procedures for cigarette production machines seized from illegal factories. Proposals include mandatory destruction of raw tobacco and of machinery for tobacco product manufacturing,¹²⁹ broadening solutions used thus far which call for courts to declare the forfeiture¹³⁰ of tobacco products to the State Treasury and their destruction.¹³¹ As Fundowicz et al note, if a court ruling is not issued, such assets are not currently automatically destroyed, but are put up for auction through the tax office. Significantly, such machines most often cannot be used by legal producers, so after the auction the assets most likely go back into the illicit market.¹³²

An important step to further limit the illicit market in tobacco products would be more effective action to eliminate illegal trade, which takes place at outdoor markets, bazaars and other widely known public places (e.g. next to train and bus stations). The most recognized locations where bazaar trade in illegal tobacco products have local government law-enforcement patrols. Because both the national police and the National Revenue Administration concentrate mainly on the broad-scale fight against illegal factories and contraband, using local law enforcement to fight illegal trade in public areas seems like a promising idea, particularly in the context of the discussion on whether such forces should be maintained (according to Interior Ministry data, over just a few years more than 100 such units have been disbanded, with the number falling from 596 in 2012 to 488 in 2018).

A local patrol can operate more effectively if it receives authority similar to that of the national police (including the ability to conduct undercover buys). Implementation of this idea would be intended to increase tax revenues, including from income tax (an important element of local governments' finances), and improve market conditions by restricting illegal competition.¹³³ Another idea to be considered is that the excise tax due on products seized by local patrols would go to local budgets. However, this would also require effective collection from criminals of the amounts due. Additionally, it is essential to hold liable the managers of outdoor markets where trade in illegal tobacco products is common.

128 According to M. Ptaszyński, Śledzenie wyrobów tytoniowych (Tracking tobacco products), Polish Chamber of Trade, http://www.pih.org.pl/images/dokumenty/system_track_and_trace_PIH.pdf [accessed January 30, 2020].

129 According to the Opinion of February 22, 2019 on the bill amending the Tax Penal Code, <https://radalegis-lacyjna.gov.pl/dokumenty/opinia-z-22-lutego-2019-r-o-projekcie-ustawy-o-zmianie-ustawy-kodeks-karny-skarbowy> [accessed January 31, 2020].

130 The court orders the forfeiture based on Article 30 (Causes for ordering forfeiture) of the Act of September 10, 1999, the Tax Penal Code, Journal of Laws Dz. U. 2020.0.19.

131 Article 31 § 6, Act of September 10, 1999, the Tax Penal Code, Journal of Laws Dz.U. 2020.0.19.

132 Based on J. Fundowicz, K. Łapiński, B. Wyżnikiewicz, D. Wyżnikiewicz (2019), The Illicit Economy 2019, Institute for Economic Forecasting and Analysis, p. 36.

133 Authors' consultations with representatives of the National Revenue Administration, February 26, 2020.

Regulatory Challenges

The most important regulatory challenges facing the tobacco sector include the volatility of EU and domestic law and the high implementation costs of regulatory changes. Unexpected changes in the law affecting the tobacco sector make it difficult to develop medium- and long-term business operations strategies and constitute a significant, systemic barrier to economic development,¹³⁴ negatively affecting producers' confidence in legislators¹³⁵ and making it necessary to revise budgets and to review the profitability of investments that have already begun.¹³⁶ **Sharp growth in the volume of laws implemented was particularly noticeable in 2015-2016 and 2018-2019.** This was also accompanied by a shortening in the amount of time spent drafting laws: in recent years it has ranged between 77 days (2016) and 106 days (2017); in 2018 it was 99 days.¹³⁷



A particularly important area of regulation for the tobacco products industry is the excise tax. An example of regulatory uncertainty was the unexpected introduction at the end of 2019 of a 10% increase in excise tax rather than the earlier announced 3%. This sort of regulatory uncertainty increases operating costs and risk, and significant growth in excise tax may bring lower revenue than forecast, simultaneously leading to an increase in the size of the illicit market.¹³⁸ As a result, it would be desirable to take steps toward increasing legal certainty, including by creating an excise roadmap, a method of planning and communicating changes in excise tax over a longer time horizon.

Another example of legal and operational volatility is the process of implementing the Track & Trace system, which required all entities in the production and supply chain to register by May 20, 2019. The system is based on tracking the trade in tobacco products on EU territory (packs and packages) through all participants in trade. Delays in the legislative work in 2019 increased the legal risk for entities in the sector and delayed meeting of EU deadlines and adjustment processes.¹³⁹

Management of the system is a challenge both for regulators and for participants in trade, particularly in light of the lack of technical preparation of participants in the supply chain.¹⁴⁰ In the retail sector, it was necessary to enable the electronic registration of more than

134 Examples of empirical research on the effects of institutional stability (including in particular regulatory and legal stability) on economic growth: H. Jalilian, C. Kirkpatrick, D. Parker (2007), "The Impact of Regulation on Economic Growth in Developing Countries: A Cross-Country Analysis," *World Development*, vol. 35 (1), pp. 87–103; N. Berggren, A. Bergh, C. Bjørnskov (2012), "The Growth Effects of Institutional Instability," *Journal of Institutional Economics*, 8(2), pp. 187–224; N. Berggren, A. Bergh, C. Bjørnskov (2015), "What matters for growth in Europe? Institutions versus policies, quality versus instability," *Journal of Economic Policy Reform*, 18:1, pp. 69–88.

135 Authors' consultations with producer representatives, March 13, 2020.

136 Based on authors' consultations with industry representatives, March 10, 2020.

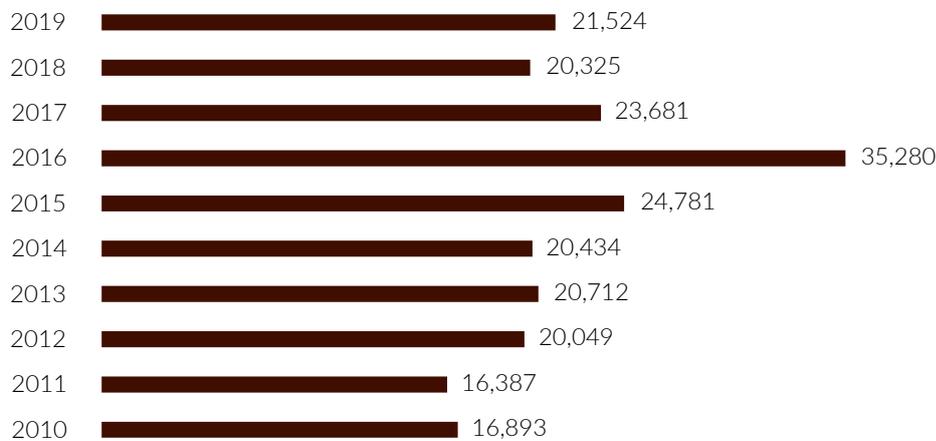
137 Counting from the moment the bill was introduced in the Sejm to signature by the President (according to Grant Thornton, *Barometr stabilności otoczenia prawnego w Polsce (Legal Environment Stability Barometer)*, <https://barometrprawa.pl/#obadaniu> [accessed January 31, 2020].

138 Consultations with producers, March 19, 2020.

139 According to available information, on March 11, 2019 company representatives were calling for an acceleration of work on the act so that the Track & Trace system operator could be designated by April 15, 2019; according to: "Prezydent podpisał nowelizację ustawy tytoniowej. Branża zdąży, czy w kioskach zabraknie papierosów?" (President signs tobacco act amendments: Will the industry make it on time, or will there be shortages?), *Wiadomości Handlowe*, April 3, 2019, <https://www.wiadomoscihandlowe.pl/artykuly/prezydent-podpisał-nowele-ustawy-tytoniowej-branza,53642/1> [accessed February 13, 2020].

140 Authors' consultations with producer representatives, March 13, 2020.

FIGURE 21: PAGES OF LEGAL ACTS TAKING EFFECT BY YEAR, 2010-2019



Source: Calculations based on data from the Legal Environment Stability Barometer, Grant Thornton, <https://barometrprawa.pl> [accessed January 31, 2020].

100,000 entities (mainly stores) in a relatively short time,¹⁴¹ which threatened to destabilize the legal tobacco product market.¹⁴² The currently perceived failings in the system seem to financially and organizationally burden the entire tobacco product supply chain, while failing to aid in the reduction of the illicit trade.¹⁴³ Another problem is the frequent changes in the specifications of the system at the EU level, which require additional investments of time and money from domestic companies.¹⁴⁴

The reasons for the volatility of the legal system in Poland can be sought primarily in the low quality of the laws, which drives a spiral of amendments and corrections. The role of public consultations is small; typical attendance of Polish citizens at the European Commission's consultations on excise tax on tobacco products and the possibility of taxing innovative products was very low (5% of participants from Poland¹⁴⁵ compared with 42.5% from

141 The legislative delays increased the risk that not all participants in the supply chain would have the opportunity to register before May 20, 2019, which would make their operations illegal; per M. Janik, "Zaniepokojeni palacze kłębią się w sklepach. PWPW uspokaja, że zdąży na czas," (Nervous smokers congregate in stores; PWPW reassures them it will be ready on time), April 30, 2019: <https://innpoland.pl/152073,system-sledzenia-ruchu-i-pochodzenia-wyrobow-tytoniowych-moze-sie-opoznic> [accessed February 13, 2020].

142 Polish Chamber of Trade (2018), "Polska Izba Handlu apeluje do premiera o przyspieszenie prac nad unijnym systemem śledzenia papierosów" (Polish Chamber of Trade calls on the Prime Minister to speed up work on the EU cigarette tracing system); December 10, 2018, <http://www.pih.org.pl/index.php/1875-polska-izba-handlu-apeluje-do-premiera-o-przyspieszenie-prac-nad-unijnym-systemem-sledzenia-papierosow> [accessed February 13, 2020].

143 Based on the authors' consultations with representatives of TTI Poland Sp. z o. o., February 25, 2020.

144 Based on consultations with industry representatives, April 30, 2020.

145 Refers to the total participation of Polish entities; for answers submitted by institutions, this indicator was higher, at 8.3%.

Germany¹⁴⁶). In turn, the act increasing the excise rates was adopted in Poland avoiding public consultations completely.^{147, 148} Another frequent problem is imprecise translations into Polish when transposing European law. Furthermore, Polish legislators often decide to introduce broader legal changes than the minimum required by the EU.¹⁴⁹

Regulatory challenges occur at each stage of tobacco production, from cultivation through sales and distribution. In the case of growers, their policy proposals include mechanisms to stabilize the volume of tobacco production, such as multi-year contracts with purchasers or simplification of the administrative obligations related to preparing documentation for the National Agriculture Support Center (KOWR). For growers another significant problem is the lack of workers and growing costs of retaining those already employed. The growers' proposals also include the introduction of financial support (in the form of subsidies) on a *de minimis* basis, which would ease the burden of growing labor costs. An additional (or alternative) solution proposed by these groups would be subsidies for tobacco curing processes that use cutting-edge, renewable technologies.¹⁵⁰ In the process of creating the budget for the 2021-27 Common Agricultural Policy, Poland is seeking to broaden the list of products that can be the subject of direct production-related support to include tobacco, by including the sector on the list of those for which sectoral intervention and design of financial mechanisms assisting the creation of inter-sector organizations supporting growers are permissible.¹⁵¹

A future challenge for the industry will be the introduction of the Directive of the European Parliament and of the Council on the reduction of the impact of certain plastic products on

146 Result of public consultations conducted by the European Commission on excise on tobacco products and the possibility of taxing innovative products; summary report: <https://circabc.europa.eu/sd/a/219ac8de-4d12-48b0-a84e-90c412c390cc/Tobacco%20public%20consultation%202018%20-%20Summary%20Report.pdf> [accessed February 13, 2020].

147 Bill amending the amendment to the excise tax (nr RM-10-177-18), p. 3, <http://bip.kprm.gov.pl/download/75/42496/RM-10-177-18.pdf> [accessed February 4, 2020].

148 A bill amending the excise tax law introduced in parliament on 20 November 2018 by the Prime Minister (nr RM-10-177-18) states: "This bill thus takes into account the needs of those companies which, without having the necessary experience, want to conduct business legally, i.e. in accordance with the requirements of the excise tax regulations, and need additional time to adjust their operations to the new legal regime" (p. 2 of the explanatory memorandum of the bill). Later in the document, in the predicted effects of the law, it is confirmed that "In accordance with point 6 it is estimated that in the period of extension of the zero-rate, budget inflows will be reduced by about PLN 113 million, so this amount will be the real benefit for the entities. Thus assuming that tax costs are not borne during the time the positive rates are imposed on consumers, these will be additional funds that can be spent for corporate development (p. 5 of the explanatory memorandum). The document did not indicate any economic estimating techniques used to arrive at these amounts. <http://bip.kprm.gov.pl/download/75/42496/RM-10-177-18.pdf> [accessed February 4, 2020].

149 Based on Grant Thornton, Polska liderem produkcji prawa w Unii Europejskiej. Barometr stabilności otoczenia prawnego w polskiej gospodarce (Poland leads the EU in production of laws: Legal environment stability barometer), 2016 edition, slides 10-11, <https://static.pb.pl/atta/2912-raport-gt-barometr-stabilnosc-otoczenia-prawnego-2016.pdf.pdf> [accessed January 31, 2020].

150 L. Talańska-Klich (2019), "Plantatorzy tytoniu nie chcą wypaść z rynku, ale produkcja wciąż jest bardzo pracochłonna" (Tobacco growers don't want to drop out of the market, but production remains very labor-intensive), July 11, 2019, <https://pomorska.pl/plantatorzy-tytoniu-nie-chca-wypasc-z-rynku-ale-produkcja-wciaz-jest-bardzo-pracochlonna/ar/c8-14267407> [accessed February 5, 2020].

151 Answer by Agriculture Minister J.K. Ardanowski to question No. 9919 of October 10, 2019; document No. RR.pr.058.6.2019, <http://orka2.sejm.gov.pl/INT8.nsf/klucz/ATTBHDJL9/%24FILE/z09919-o1.pdf> [accessed March 2, 2020].

the environment,¹⁵² which covers cigarette filters. A sensitive point in the directive is “extended producer responsibility,” which requires manufacturers of tobacco products to cover the costs of environmental cleanup of cigarette butts. As industry representatives point out, the method of estimating the costs of cleanup on public property will be key. Despite the work that has been commenced and initial consultations, at the moment there are no binding decisions on the final form of the regulations or the process of operationalizing them. At the same time, the initial financial burdens on the industry are calculated in the millions of euros.¹⁵³

The current and future regulatory challenges and threats observed in the sector are partly the result of legislative actions at the EU level. Although the level of minimum EU requirements is beyond the competence of a domestic legislator, the effectiveness of their application, and thus the maintenance of liquidity of the industry’s operations, depends on Polish legislators and law enforcement.

152 Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment, <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019L0904&from=EN> [accessed February 10, 2020].

153 Authors’ consultations with industry representatives, March 10, March 13 and April 20, 2020.



CHAPTER 8
MULTIPLIER EFFECTS
OF THE TOBACCO SECTOR:
LONG-TERM EFFECT
ON THE POLISH ECONOMY



Multiplier Effects of the Tobacco Sector: Long-Term Effect on the Polish Economy

This report presents the functioning of the tobacco sector and the chain of production and supply of tobacco products. Estimates have been prepared of the sector's contributions to the creation of gross domestic product, total investments in productive capital in the Polish economy, the share of the sector in international trade as well as the level of employment in the sector and related ones. In the last part of the report we attempt to focus on the effects of potential positive and negative changes in the sector in relation to the Polish economy as a whole, understood as changes in the most important macroeconomic values.

For this purpose we used a computable general equilibrium (CGE) model for an open economy. This model comprises more than 1,000 equations describing the functioning of the main branches of the Polish economy, and taking into account the most important inter-sector connections. It models decisions of economic entities acting in the real economy, and assumes that agents (households, enterprises and the public sector) behave rationally, i.e. households optimize consumption decisions, companies maximize profits and the government sector collects taxes and implements budget spending. All of these entities participate in markets for goods and services, taking decisions based on the prices those markets set. These prices in turn act to balance supply and demand. (More details on the operation of the CGE model are provided in the Appendix.)

The model also takes into account the connections between production chains of goods and services in the Polish economy and their connections with foreign economies via export and import of both final and intermediate goods. Because of this, the results of the changes taking place in the tobacco sector include not only the direct effect on this sector, but also sectoral and macroeconomic changes. For example, the effects of growth in demand for the tobacco sector's products result in growth in its output. Nevertheless, in light of the limited labor and capital resources in the economy, there must be an adjustment of wages for the purpose of attracting workers, while investments in productive capital in the tobacco sector deliver higher returns. This change will act on other productive sectors through growth in demand for intermediate goods used in the manufacturing of tobacco products. Simultaneously, certain other sectors reduce production because of the growing prices of factors of production. Changes in the macroeconomic variables shown by the model take into account all of the above adjustments, and many more.

All of the shocks to the economy are analyzed over the long-term perspective, which the model assumes to be two years after the introduction of the changes. This perspective gives a snapshot of the state of the economy after adjustment to shocks occurring in the tobacco sector and its surroundings.

We analyze the following scenarios of changes in the tobacco product manufacturing sector:

1. 10% growth (or decline) in productive capital

Sustained growth in the level of capital over the long term refers to a situation in which entities in the tobacco sector expect further growth of the industry (e.g. resulting from the relocation of tobacco product manufacturing from abroad to Poland), and as a result they continue their active policy of investing in productive capital in this sector. Taking as our point of departure the value of fixed assets in the tobacco sector in 2018 (the most recent available data), this means one-off growth in investments by about PLN 1 billion, which roughly corresponds to the average annual scale of investments observed in the sector over the last decade. Thus, such a scenario can be understood as maintaining the current scale of investment in later years. A drop in the level of productive capital describes a situation in which investments in the sector are limited as a result of the sector's uncertain prospects, and existing capital is gradually depreciated.

2. 10% growth (or a 10% drop) in export demand for tobacco products

Growth in export demand for tobacco products from Poland may be caused e.g. by companies' policy on relocating production to Poland and a drop in production in other countries. This policy may result e.g. from Poland's continued wage and price competitiveness in relation to other EU countries. 10% growth would correspond to the increase in exports observed in 2019 in the tobacco sector and can be understood as maintaining current growth trends in later years. In turn, a drop in exports may be caused by declining demand for tobacco products on the markets of Poland's main trading partners.

3. 10% growth (or a 10% drop) in total factor productivity

Growth in productivity means the costs of manufacturing tobacco products decline or the volume of production increases, while employment and capital remain constant. Productivity growth may take place e.g. in the implementation of innovations for processes improving tobacco product manufacturing or product innovations, e.g. related to innovative tobacco products, translating into higher value added. The scale of this disruption would be equivalent to about 0,8 billion PLN of cost savings in 2019. A drop in productivity in turn could take place as a result of increasing costs of compliance with tobacco product laws.

4. Growth in combined excise tax and VAT on tobacco products by 10 percentage points (or alternatively growth in taxation of exports by 3 percentage points)

We analyze two scenarios for growth in taxes. In the first, the change applies only to the domestic market, which corresponds to tendencies observed in the Polish economy. In the second scenario, increased tax on exports would reflect an increase in taxation on consumption of tobacco products in Poland's main trading partners. In light of the low likelihood of a decline in taxes we have excluded it from this analysis.

Changes in the main macroeconomic variables caused by the disruptions presented in scenarios 1-4 are shown in Figure 20. These changes must be understood as departures from the reference scenario, assuming a lack of additional changes with respect to business as usual. These departures apply to the observed levels of the macroeconomic variables, i.e. a PLN 1 billion increase in GDP should be understood as a long-term increase in the level of GDP by this amount.

The results of the simulation are presented below. In scenario 1, growth of productive capital in the tobacco sector translates first and foremost into growth in output and a drop in producer prices of tobacco products. The price drop increases competitiveness abroad and causes, first and foremost, growth in exports of tobacco products, growth in total exports by PLN 0.7 billion (all values expressed in constant prices) and a drop in imports. In light of the relatively fixed demand for tobacco products, a drop in prices also leads to an increase in consumption of other goods thanks to growth in real household income, also supported by growth in nominal household income.¹⁵⁴ Total individual consumption grows by PLN 0.3 billion. As a result of economic expansion, total investment also grows. The combined effect of increasing the level of capital by 10% is connected with an increase of GDP by PLN 1.1 billion. A drop in the stock of capital by 10% results in a drop in GDP on a similar scale over the long term, and the mechanism described above works in the opposite direction.

In Scenario 2 we analyze growth in external demand for tobacco products by 10%. This growth is connected with an increase in domestic GDP by PLN 1.2 billion. In light of limited domestic resources of the factors of production (in particular the supply of labor) and the adjustments to the level of the current account, growth in external demand will lead primarily to growth in compensation and returns on capital, which in turn will negatively affect the competitiveness of the remaining sectors and limit their exports. As a result, the effect of this scenario on total Polish exports is close to neutral. Growth in real domestic incomes from labor and capital causes significant growth in individual consumption, by PLN 1.1 billion. In turn, growth in demand for capital causes growth of investment by about PLN 0.3 billion. A drop in export demand causes the opposite effect and will negatively affect the level of domestic GDP.

In Scenario 3 we simulate growth in total factor productivity by 10%. Such growth means that with constant employment and capital levels or with constant total costs of production, the output of tobacco manufacturing grows by 10%. This type of change translates into a drop in producer prices for tobacco products, which in turn supports exports. Total domestic exports of goods and services grow by PLN 0.5 billion as a result of these changes. As a result of the drop in prices of tobacco products and growth in real household incomes, similarly as in Scenario 1, household consumption grows by PLN 0.8 billion. In Scenario 3 the expected growth in GDP is PLN 1.5 billion, and in the case of a drop in productivity, a drop in GDP of a similar scale is simulated.

¹⁵⁴ Income from labor also grows in light of the growth in labor productivity. Income from capital falls slightly because in light of the growth in volume, the costs of using it drop.

In Scenario 4 we increase the tax burden on tobacco product consumption. The growth in taxation translates into a drop in real consumer income and a decline in consumption not only of tobacco products, but also of other consumer goods. The drop in total individual consumption amounts to PLN 153 million in a situation where the change in taxes applies only to the domestic market and PLN 147 million when tobacco products are also subject to higher taxes on foreign markets. In the first option, the drop in domestic demand through the change in the relationship of producer prices leads to growth in exports by PLN 76 million and a drop in total GDP by PLN 105 million. The drop in GDP is primarily a result of an increase within the economy of average tax burdens, which disrupt relative prices and reduce the effectiveness of resource allocation. In the second option, where exports are also taxed, the drop is the main factor driving the fall in GDP: the decline in exports amounts to PLN 296 million, and the total drop in GDP is PLN 459 million. In both options we also observe a reduction in imports.

FIGURE 22: MACROECONOMIC EFFECTS OF THE SCENARIOS (PLN MILLION, CONSTANT PRICES)



Source: Based on our CGE model simulations. Values show the difference between the scenario being analyzed and the scenario without the disruption.

CONCLUSIONS



Conclusions

The research conducted for the purposes of this report indicates the great significance of the tobacco product manufacturing sector for the Polish economy. The production chain of tobacco products includes agriculture, tobacco-buying organizations, processors of raw tobacco, factories making tobacco products and the logistics and trade sector. In the entire chain in 2019, PLN 10.9 billion of value was added, or about 0.5% of GDP, meaning approximately 0.5% of all income in the Polish economy in that year. These values also translate into a significant number of jobs, which the tobacco sector creates directly and in related industries: in 2019 this was about 33,300 full-time jobs. At all stages of production and distribution, more than 600,000 people could have been engaged in 2019.

The value of the tobacco industry's output was PLN 45.9 billion in 2019. This has been growing consistently in recent years, mainly due to fast-growing exports. Four of every five cigarettes produced in Poland are exported, and in 2019 Poland was the second-largest manufacturer of tobacco products in Europe. The fast production growth is made possible by factors including growing production capacity, which in turn supports uninterrupted investment activity in the sector. We estimate the tobacco sector's total investments in 2019 at PLN 1.3 billion.

Tobacco products are an important source of tax revenue, including both revenue from excise tax and VAT on the sale of tobacco products, but also revenue from income tax on companies and on individuals employed in the production chain. Total tax revenue from production and sale of tobacco products was PLN 27.1 billion in 2019.

In the next few years, the sector's development will depend on a range of regulatory challenges. We are observing growth in exports of tobacco products and the dynamically growing segment of innovative products, which makes possible the continuation of investment, growth in output and revenues. The growth of the tobacco industry has a positive effect on other sectors, including agriculture, construction and machinery. However, regulatory uncertainty, increasing compliance costs and finally a drop in demand may lead to limitations on the growth prospects, a drop in investment and limits on the economic benefits of tobacco product manufacturing.

Our simulations performed using a general equilibrium model indicate significant effects of potential future changes in the tobacco sector on the entire Polish economy. In particular, the scenarios for the where export demand increases, and investments and productivity grow, point to significant growth in the main macroeconomic variables, including GDP, wages and household consumption. The opposite effect will be delivered by scenarios of a decline in export growth, a halt in investment activity, growth in excise tax or growth in compliance costs.

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APPENDIX: THE CGE MODEL



Appendix: the CGE Model

Our CGE model is based on a range of assumptions concerning the behavior of actors in the economy, including the assumption that households optimize their decisions on consumption of goods and services and participation in the labor market, taking into account their income from labor and capital with the prices of goods and services in the economy. Companies decide on the level of production of goods and services, the degree of engagement of labor and capital, the size of supplies to domestic and foreign markets and the level of investment, based on relative prices of goods and services and the prevailing costs of labor and capital. The CGE model also takes into account the government sector, which makes decisions on taxes, subsidies and redistribution, and is also a purchaser of goods and services.

The CGE model takes into account the dependencies among these entities, which participate in the circulation of the economy. These dependencies include equilibrium conditions of markets for goods and services (consumption, investment, intermediate and foreign demands are equal to the supply of goods and services), as well as markets for factors of production (demand for labor is equal to the supply of labor, and demand for capital is equal to capital resources). Value added generated in enterprises constitutes compensation for use of the factors of production, which after taxation become household net income. In turn, spending by households and other agents on goods and services constitutes revenue of enterprises. One very important attribute of the CGE model is its detailed modeling of intermediate and investment demand. This allows the model to take into account inter-sector flows within the chain of production of final goods, such as tobacco products. The model also takes into account trade and transportation margins, i.e. the interdependencies of the sectors of retail and wholesale trade, transportation and production, including tobacco. Simultaneously, we also used information on the sectoral structure of investment goods, i.e. the bundle of capital goods, which are used in the creation of each sector's productive capital.

All of the simulations were performed in a long term setting. Over the long term capital adjusts to interest rates, the ratio of investment to capital is fixed; the overall level of employment is fixed and wages adjust; and government expenditures are a function of consumption.

The simulations are to be understood as multiplier studies, i.e. each scenario analyses the effect of a single shock to the tobacco sector. The effects of multiple simultaneous shocks are additive and scaling, i.e. if the reader wishes to assess the effect of a greater shock than the one described, all results must be multiplied by the multiple of the shock adopted in the simulations. The combined effect of all shocks simultaneously will be close to the sum of the results of individual shocks.

Most of the information used in the model comes from the most recent available input-output tables published by Eurostat and Statistics Poland, including information on intermediate consumption, final demand, usage of factors of production, trade and transportation margins, taxation, subsidies for production and products and the detailed structure of inter-

national trade. These tables are available for 2015 but all of the numerical values presented in the results of the simulations were scaled to correspond to the value of GDP for 2019. The model contains data for the entire Polish economy, divided into 63 production sectors (including agriculture, mining, energy and public utility companies) and services. The model also uses a range of elasticities describing supply and demand in the economy, which were taken from the literature.