



Macroeconomic Unit of the Governing Board of the Indirect Taxation Authority

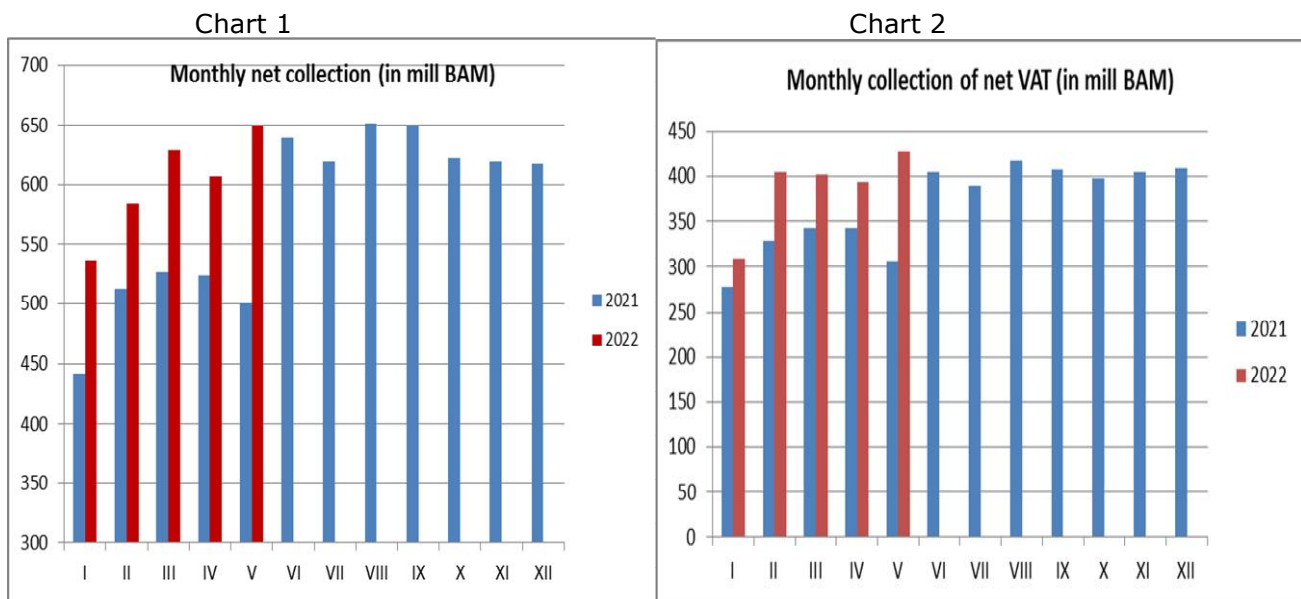
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With this issue

According to the ITA preliminary cash flow report on the Single Account, net collection of indirect taxes in May 2022 was higher by 158.6 million BAM compared to the same month in 2021, representing an increase of 31.7%. In the period January-May 2022, the absolute increase in net collection of indirect taxes amounted to 515.4 million BAM, which is a growth of 20.6%. A significant factor in the high collection growth is a statistical base for comparisons from 2021 (Charts 1 and 2, "2021"). Due to restrictive anti-covid measures in the first five months of 2021, the collection of indirect taxes was significantly lower than in the rest of the year. Because of the increase in the statistical base, lower monthly growth rates of indirect taxes can be expected in the coming months.



The bulletin provides an analysis of the consumption of oil derivatives in B&H, which has been completed before the outbreak of the war in Ukraine, based on then available data until the end of 2021. The price elasticity of demand for diesel fuel and gasoline on the B&H market was estimated based on the regression model. It should be noted that, in the period after finishing the analysis, and before its publication, there was a huge jump in oil prices on the world market, and thus in the prices of oil derivatives in B&H. Therefore, we point out that the analysis will be continued in one of the next issues of the bulletin, after the data on the consumption of oil derivatives in B&H and on the dynamics of national accounts in the turbulent year - 2022 are available.

Dinka Antić, PhD
Head of Unit

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Technical design: Sulejman Hasanović, IT expert
Reader/translator: Darija Komlenović, professor

Taxes on oil derivatives in B&H in the light of the theory and practice of taxation

(Author: Dinka Antić, PhD)

Rising oil prices on the world market, caused by political crises and strained relations between world powers, has led to a sharp rise in oil derivative prices in Bosnia and Herzegovina, and, consequently, prices of other goods and services, in which cost price the cost of energy has a greater or lesser share. Rising inflation and uncertainty about calming political crises have prompted the business community, experts and academics to propose solutions to mitigate the negative effects of rising oil prices on B&H's economy and the standards of its citizens. Some of the initiatives emphasize that the purpose of excise duties on oil derivatives is "unclear", i.e. that they are used inappropriately, to finance budget expenditures, instead of financing the construction of the road network. Other initiatives include the temporary abolition of excise duties on oil derivatives, supported by the introduction of differentiated VAT rates. In any case, in order to offer a quality proposal, it is necessary to know in depth the theory of taxation, taxonomy of earmarked taxes, the emergence and role of excise duties on oil derivatives in modern tax systems.

TAXATION OF OIL DERIVATIVES IN B&H

Revenues from excises on oil derivatives in B&H represented budget revenues at all levels of government, both before the reform of indirect taxes and after the establishment of the Indirect Taxation Authority ("ITA").

Current taxation policy of oil derivatives in B&H includes collection of the following taxes (Table 1):

Table 1: Taxes on oil derivatives in B&H

Type of tax	Type of oil derivative (l)		
	Diesel	Unleaded gasoline	Heating oil
excise	0,30 BAM	0,35 BAM	0,30 BAM
road fee (budgetary)	0,15 BAM	0,15 BAM	-
road fee (earmarked)	0,25 BAM	0,25 BAM	-
VAT	17%	17%	17%

Source: Law on Excise Duties in B&H ("Official Gazette of B&H No. 49/09, 49/14, 60/14 and 91/17)

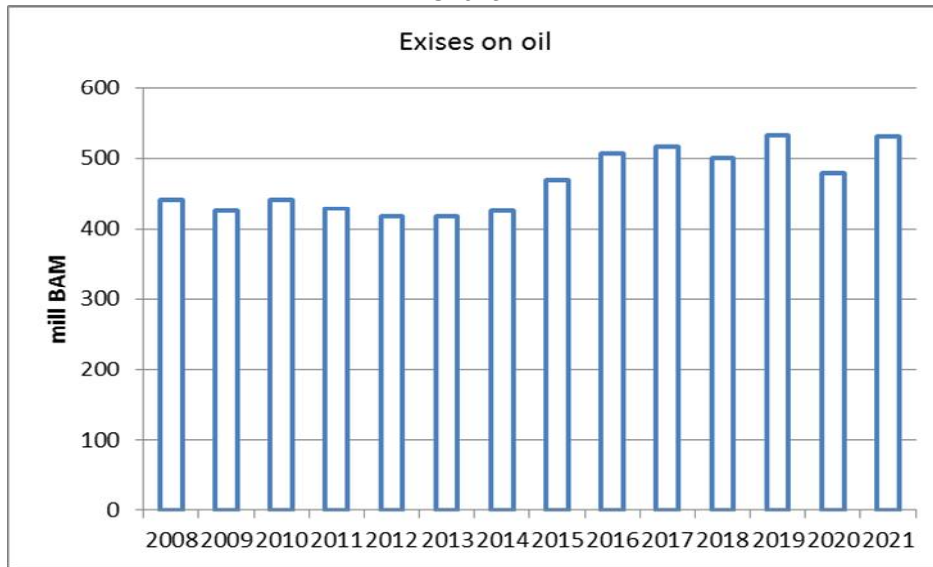
Although the concept of distribution of indirect taxes in B&H implies the collection at the level of B&H and daily transfers¹ of indirect taxes from the ITA Single Account to the budgets of the entities and Brčko District, it can be said that budget revenues are the following: VAT, excises and road fees of 0.15 BAM/l. Excise duties on oil derivatives (see Chart 1) and part of the road fee for budgets are distributed to the entities and the Brčko District together with VAT, other excises², customs and other indirect taxes³.

¹ The concept implies that the analytical tax structure of indirect taxes can be seen only from the ITA report, while the same in the reports of the entities and the Brčko District are recognized only by the synthetic line called "indirect taxes". It is opposite in the case of direct taxes and social contributions, which are the sole responsibility of the entities and the District. In order to understand the analytical structure of direct taxes in B&H, it is necessary to consolidate the analytical tax structures of the entities and the Brčko District.

² Excise taxes on tobacco products, coffee, beer, wine, alcohol, alcoholic and non-alcoholic beverages.

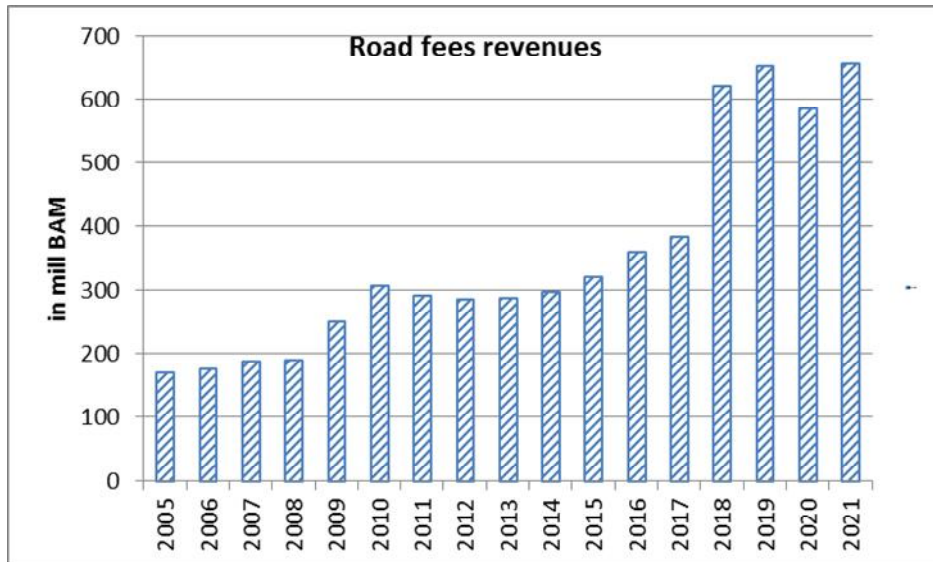
³ Budgetary road fee and excise duties on oil derivatives are distributed to the entities and the Brčko District together with other indirect taxes according to distribution coefficients, which are calculated for the entities based on the share of final consumption from VAT returns, while Brčko District, has a share coefficient of 3.55, in accordance with the High Representative's Decision dated June 1st, 2007

Chart 1



The earmarked road fee doesn't belong to this concept of distribution. The earmarked road fee for highways amounted to 0.10 BAM/l in the period from July 1st, 2009 to January 31st, 2018. Regarding the structure of the road fee revenues until January 31st, 2018, 40% of the road fee revenues were earmarked revenues, and other 60% were allocated to finance the budgets. By increasing the rate of earmarked road fee as of February 1st, 2018, the share of earmarked revenues in the total road fee collection has increased to 62.5%. Although the overview of the annual road fee collection indicates high nominal amounts of revenues, the ratios of budgetary and earmarked road fees should always be borne in mind, and the fact that road fees are allocated⁴ to the entities and Brčko District (see Chart 2), which ultimately does not provide high monthly transfers.

Chart 2



⁴ According to the Decision of the Governing Board of the Indirect Taxation Authority, the temporary methodology for distribution of earmarked road fee revenues implies the following: after allocating 10% for settlements after adopting the final methodology, the 90% of the remaining of road fee revenues is distributed as follows: 59% to the Federation of B&H, 39% to the Republika Srpska and 2% to the Brčko District.

Starting from the public controversy and initiatives for changes in the taxation policy of oil derivatives in B&H, the following chapters will analyse characteristics of the policy in the light of tax theory and the practice of modern tax systems.

EARMARKED CHARACTER OF THE ROAD TAX AND COLLECTION EFFECTS

The division of taxes into general and earmarked is important for the purpose of analysis of the earmarked character of the road fees collected in B&H on oil derivatives, such as diesel and gasoline. The division into general (or non-destined) and earmarked (or destined) taxes is based on the criterion of the purpose of tax revenue. If tax revenues are intended in advance to finance a particular type of expenditure, such taxes are called *earmarked taxes*, and if the purpose of the tax is not known in advance, such taxes are included in *general taxes*. Non-destined character of taxes as public revenues is a significant characteristic of taxes and what makes them unique in comparison with other public revenues. The basic characteristics of taxes are derivativeness, coercion, absence of direct compensation and serving to finance public needs. It is about the so-called non-affectation of taxes (Jelčić et al., 2008), i.e. their non-earmarked character. In modern tax systems, most of the tax revenues collected are not earmarked, which means that they are not predestined for a specific purpose during the introduction into the tax system. Non-destined character of taxes is in line with the characteristic of taxes to serve to finance public needs, because, given the wide range of public needs, linking tax collection to certain purposes would jeopardize the financing of needs where it is not possible to provide a direct source of funding, and which are of general importance, such as defence, public order, justice, social, educational, cultural and sport's needs, economic interventions, etc.

Introduction of the earmarked taxes is most often initiated for political (pre-election), economic or social reasons. It is also possible that the duration of the collection of earmarked taxes will be limited according to the needs to finance certain expenditures or infrastructure works (e.g. construction of highways). In the case of earmarked taxes, the principle of tax affectation is applied, i.e. the connection of certain revenues with certain budget expenditures. According to the IMF definition (IMF, 2007), earmarked taxes (appropriated taxes) are taxes which are collected for certain expenditure programs, often through extra-budgetary funds, and then delivered to users (agencies, institutions, individuals, companies) through earmarked (unconditional or conditional) transfers. Conversely, general taxes are collected in one pool from which governments are financed according to a certain allocation formula. In the professional literature, earmarked taxes are also called "hypothecated" taxes⁵ and are defined as income from certain taxes for special purposes. The term "hypothecated" is quite adequate to the essence of earmarked taxes, since the revenues from these taxes are *de facto* reserved only for certain purposes.

According to IBFD (2005) hypothecating or earmarking "... is used in the public finance context to refer to the raising of revenue from a particular source and dedicating this to a particular public expenditures. Hypothecated taxes are therefore taxes used for specific purposes such as payroll taxes used to finance special insurance systems, motor vehicle tax (the revenue of which is used for the maintenance of roads) and various forms of anti-pollution measures (e.g. energy tax). While the concept of a hypothecated tax is related to that of a user charge they are not identical, e.g. not all user charges are earmarked for specific expenditure⁶ not to all hypothecated taxes reflect a link between the benefit provided and the expenditure concerned.

Taxonomy of earmarked taxes

For the analysis of earmarked taxes, their relationship with the expenditures financed by them is important. Bird (2005) defined three aspects of this relationship:

⁵ The term "hypothecation" in English is a compound consisting of two words "hypothetical dedication".

⁶ Meaning *user charges for services rendered as a non-tax revenue*

- the degree of specificity of expenditures (i.e. whether there are specific types of expenditures, programs, projects or the taxes are used to finance all the expenditures);
- the strength of the link between earmarked tax and expenditure;
- the existence of benefits for the taxpayer.

Based on three aspects of the relationship, Bird has developed eight types of earmarked taxes, which are grouped into "good", "bad" and "irrelevant".

Table 2: Variations of earmarked taxes

Type	Specific expenditure?	Strength of the link	Benefit for the taxpayer	Example of tax
A	Yes	Tight	Yes	Tax for public enterprises
B	Yes	Loose	Yes	Gasoline tax and road finance
C	No	Tight	Yes	Social security
D	No	Loose	Yes	Tobacco tax and health finance
E	Yes	Tight	No	Environmental taxes and clean-up programs
F	Yes	Loose	No	Payroll tax and health finance
G	No	Tight	No	Revenue sharing to localities
H	No	Loose	No	Lottery revenues to health

Source: Bird, R.M., Jun, J. (2005). "Earmarking in Theory and Korean Practice". Asian Excise Tax Conference. Singapore, March 2-4, 2005, ITP Paper 0513, June 2005, p.p. 3 -18.

Given the economic implications of earmarked taxes, Bird pointed out two approaches when defining earmarked taxes:

- substantive approach,
- symbolic approach.

The substantive approach implies that the earmarked tax is the only or dominant source of revenue for the user, which implies the existence of a direct and strong link between taxes and expenditures (types "A", "C", "E" and "G"). In this group, "good" earmarked taxes include types "A" and "C" due to the obvious benefits for final consumers, and "bad" types "E" and "G" due to the possibility of directing revenues based on political goals. The symbolic approach implies situations when earmarked taxes cannot significantly affect the total allocation for expenditures due to which earmarked taxes were introduced, since they represent only one of the sources for financing certain expenditures or expenditures as a whole. Due to the lack of a link between taxes and expenditures, these taxes (types "B", "D", "F" and "H") become economically irrelevant.

Effects of earmarked taxes

Democratic systems seek to ensure that tax revenues, as payments from citizens and companies, are used to meet the public interest. Taxpayers can indirectly influence the purpose of spending the collected tax revenues, through public budget debates or the election of their political representatives to parliaments that vote on budgets. Implementation of activities in the public interest, especially those related to spending public money (taxes), must be carried out according to modern principles of public finance - publicity, accountability, transparency, economy, efficiency and effectiveness, and is subject to supervision and protection of democratic institutions (parliaments), independent public monitors (audits) and civil society. Economic theorists do not have a unified opinion regarding the effects of earmarked taxes. Proponents of the introduction of earmarked taxes point out that their basic quality is the existence of a link between taxes and the benefits for the taxpayer or the final consumer, which cannot be found in traditional taxation. Another characteristic is the existence of a link between earmarked tax and expenditure, not only

in terms of directing the revenue collected. Unlike the management of budget revenues and expenditures, where decisions on taxes and decisions on expenditures are made by different actors and where citizens often do not have insight into the actual costs of expenditures, programs and projects, in the case of earmarked taxes, the decision on the allocation of taxes is related to the decision on the use of collected revenues, especially when the allocation of taxes determines the amount of investment in certain expenditures. A strong link in the process of deciding on earmarked taxes and expenditures, especially if based on law, produces positive effects on the efficiency of the allocation of public funds in the case of weak fiscal discipline of the government. Limiting the spending of certain revenues only to certain expenditures and programs, if they are adequately selected, can accelerate certain reforms in the country, investments in infrastructure and similar uses, and at the same time prevent the shift of earmarked funds into public consumption. On the other hand, in the absence of adequate programs that would be financed from earmarked taxes, which could bring a greater degree of meeting the citizens' needs and higher employment, the increased tax burden becomes economically irrational, inefficient and detrimental to economic growth.

Opponents of earmarked taxes believe that limiting the power of governments to decide on the amount and structure of expenditures leads to budgetary rigidity. The government is becoming inflexible because it is unable to:

- react quickly to adverse current economic trends by changing the structure of expenditures;
- respond adequately to changing priorities in meeting the needs of citizens;
- implement certain institutional and structural reforms and programs that require changes in fund allocation.

In addition, earmarked taxes increase the risk of moral hazard. Secure and stable financing can weaken financial discipline and fiscal responsibility of earmarked tax revenue users, and lead to irrational spending of public funds.

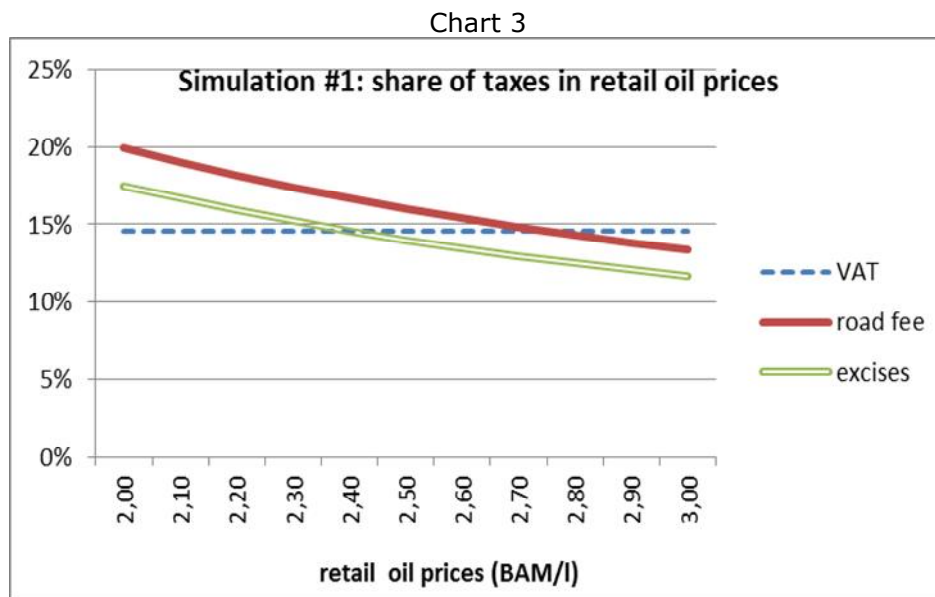
If we apply all the above to the energy taxation in B&H, we can conclude that the road fee from the price of oil derivatives (0.25 BAM/l as of February 1, 2018.) is *de facto* an earmarked hypothecated tax, which serves as a guarantee to international financial institutions financing the construction of highways that loans will be repaid. For the analysis of the role and effects of earmarked road fee in the tax system of B&H, the important aspect is that it is an economically irrelevant tax (type "B"), since the level of collected revenues is insufficient to finance the expenditures for which the tax is intended (highway network).

When analysing the effects of using road fee revenues, it should be borne in mind that it is a matter of financing capital investments of a great value. On the other hand, the slow mobilization of road fee revenues hinders the accumulation of a large amount of funds, especially in the period 2010-2017, when the average monthly collection was about 8 million BAM, before distribution to the entities. In order to contract large and complex infrastructure projects and to implement them, it is necessary to quickly mobilize large financial resources, which would not be possible if such expenditures were financed only from current tax revenues (i.e. road fees). Also, financing of expenditures for the maintenance of already built sections of highways and main roads, as well as road infrastructure (bridges, overpasses, underpasses, tunnels) is often neglected. Over time, maintenance costs impose additional burden on capital expenditures, as well as on operating budgets, if they require the recruitment of new staff and additional material expenditures. In B&H, an additional problem for the efficiency of the use of earmarked road fee revenues is the complex and fragmented system of road fee-financed agencies (entity, cantonal), and then the classification of agencies within the entities by type of road (for highways, other roads), which leads to a loss of synergistic effect and dilution of the total expected road fee collection effect.

STRUCTURE OF TAXES ON OIL DERIVATIVES AND INFLATION

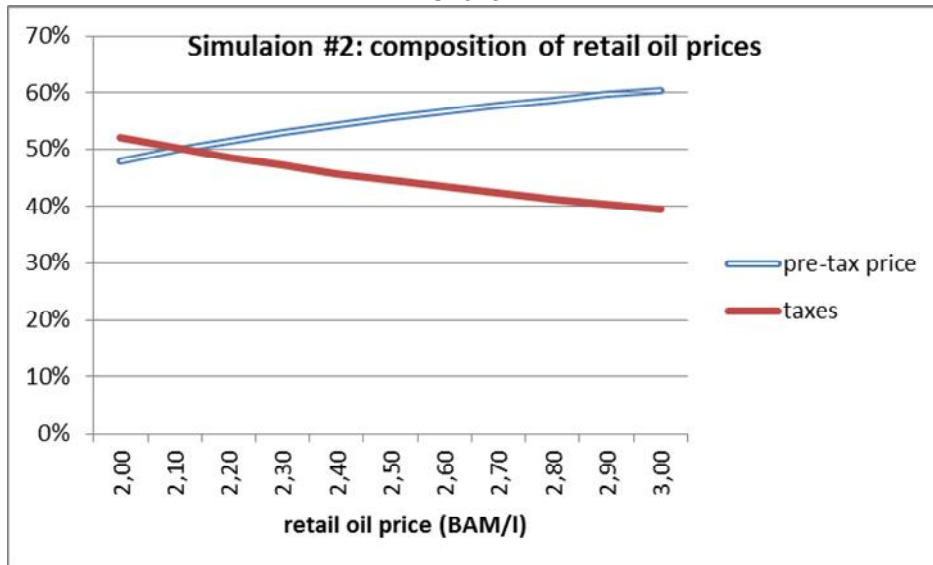
Classification of taxes according to the manner of presenting the base on *ad valorem* and specific taxes is important for the analysis of excise policy in the field of taxation of oil derivatives. In the case of *ad valorem* tax, the base is expressed in monetary units, and tax liability is determined as a percentage. On the other hand, in the case of specific taxes, the tax base is expressed in units of measurement (kilograms, pieces, litres, alcohol content, etc.), and the tax rate is in fact the absolute amount (monetary amount) per unit of measure. The advantage of specific taxes is the stability of collection, even in times of recession and declining economic activity and income. However, a major disadvantage is the loss of the real value of tax due to inflation or currency devaluation. This is not the case with *ad valorem* taxes which follow the growth of inflation, because of the increase in base due to revaluation or indexation.

The policy of taxation of oil derivatives in B&H includes both types of taxes. As an *ad valorem* tax, VAT is levied on the retail price which includes all taxes (RSP), while the excises on oil derivatives and both types of the road fee (budgetary and earmarked) are specific taxes. Due to the *ad valorem* nature of the VAT, the share of collected VAT in the retail price remains constant in the conditions of rising oil prices (Chart 3). However, due to the fact that the level of excise and road fee on oil derivatives is determined in nominal terms, their share decreases with the growth of retail selling prices (Chart 3).



The consequence of different nature of the tax on oil derivatives at the time of rising inflation is maintenance the real value of collected revenues from VAT and reduction of the real value of collected revenues from road fees and excises. Decrease in the share of specific taxes in the structure of the retail price of oil derivatives leads to a change in the structure of the selling price, in the sense that the share of taxes in the retail price decreases with increasing prices, while the share of so-called price before tax (which includes cost price and margin / profit) increases (Chart 4).

Chart 4



From the above analysis, and in the light of some initiatives to change the policy of taxation of oil derivatives, the following can be concluded. At the time of inflation, the real value of collected revenues from excises and road fee is lost, although there is a public perception that the state still "gets its share", in terms of taxes, at the expense of customers. However, the state loses at the time of inflation due to the specific nature of excises and road fees, because, due to rising prices of goods and services, it can provide less public goods and perform fewer public services or it cannot ensure the quality of services as before the outbreak of inflation. The situation with the financing of capital investments is especially bad, e.g. from road fee revenues, because due to the growth of input prices, it is not possible to implement investments at the planned volume or according to the planned dynamics. For these reasons, some countries⁷ resort to revaluation or indexation of specific taxes in order to maintain the real value of revenues.

The growth of VAT revenues only to a lesser extent reduces the loss of real value of specific excise duties and road fees, but not entirely. Thus, for example, in the case of an increase in retail prices by 0.10 BAM per l, 0.01 BAM per l refers to the growth of VAT revenues, and 0.09 BAM per l to the increase in the price before tax (Chart 5).

⁷ See the example of Serbia in excise taxation.

Chart 5

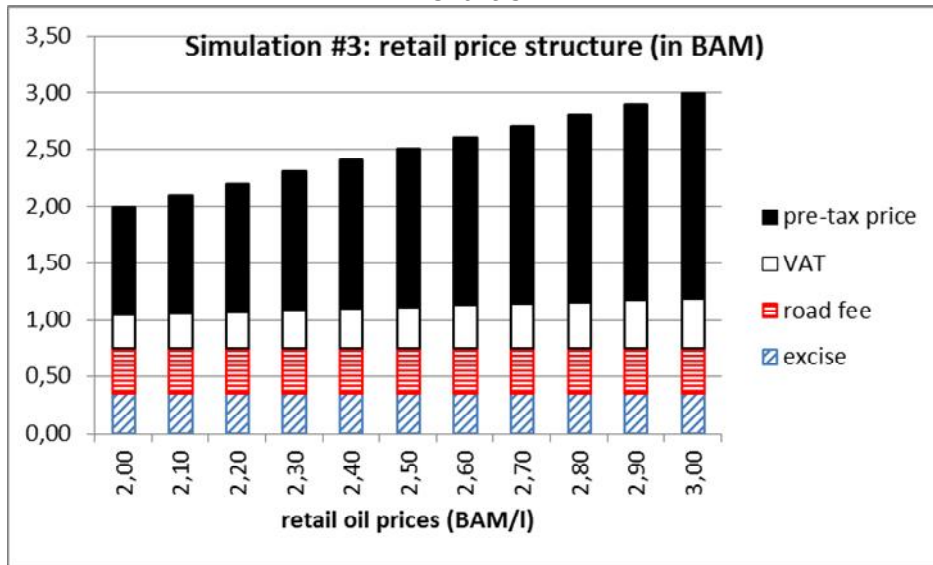
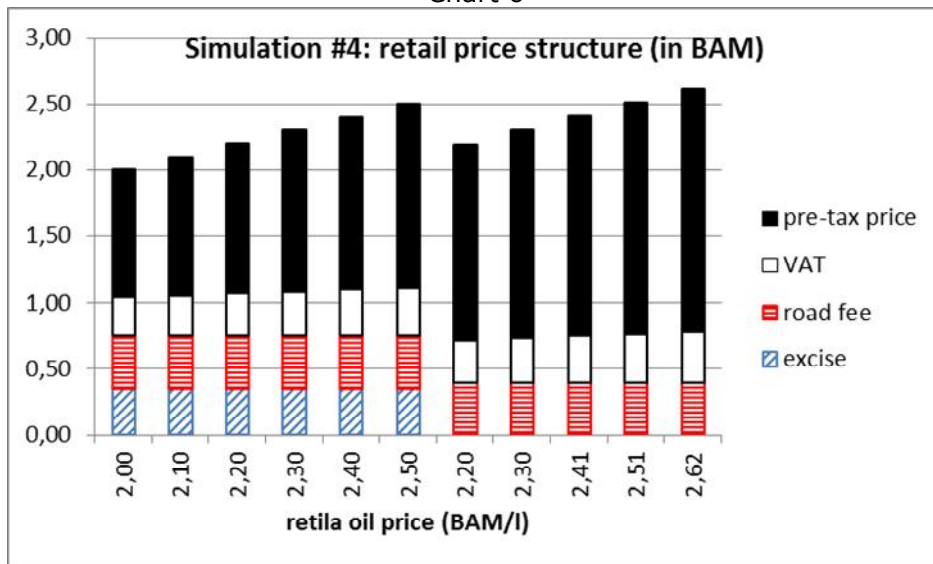


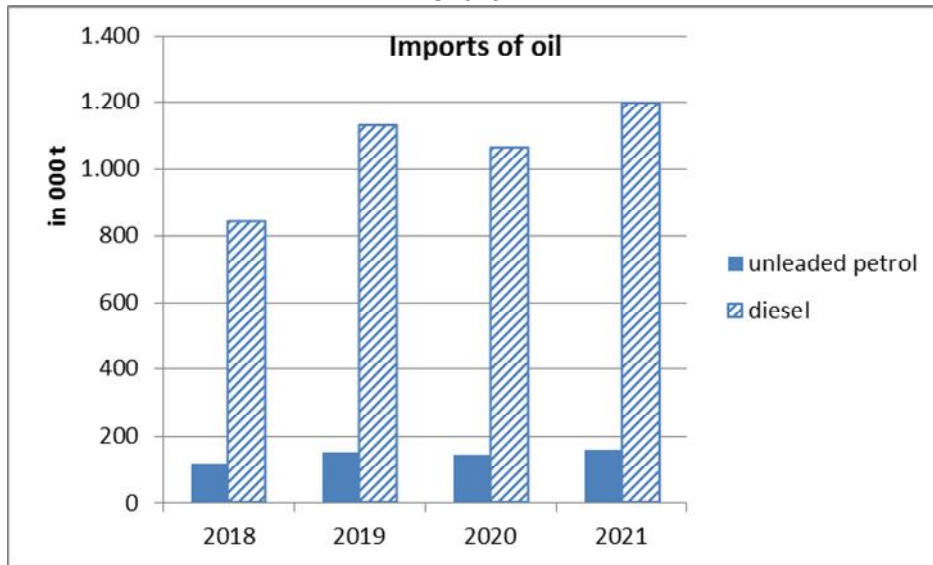
Chart 6



This should be borne in mind when analysing initiatives to temporarily abolish excise duties, because continued growth in input prices of oil / oil derivatives would soon nullify the achieved price reduction (Chart 6), while the government would irreversibly lose significant revenues that could otherwise be used for intervention in affected sectors and entities.

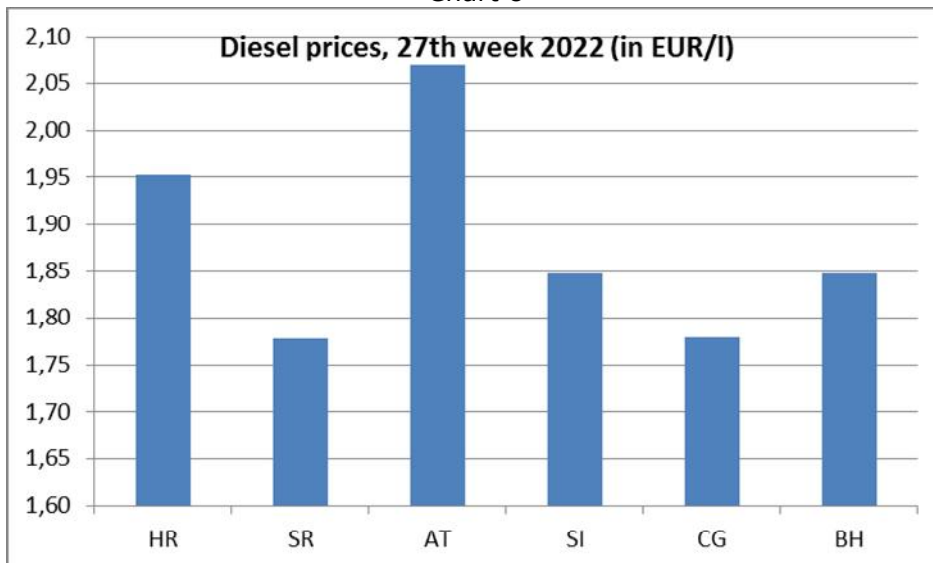
When creating an excise policy in BiH, two phenomena should be kept in mind. First, social stratification of the population results in higher-income consumption is price inelastic, resulting in increased consumption of oil derivatives even when retail prices rise.

Chart 7



The ITA data on imported quantities of oil derivatives in the last four years (Chart 7) show growth in both diesel and unleaded gasoline, regardless of crises, coronavirus pandemics, emigration and other negative external and internal factors. Another specificity is the tax competitiveness of B&H in the field of taxation of oil derivatives (lowest VAT rate, lowest excise taxes) in relation to EU member states and neighbouring countries, which results in lower prices of derivatives (Chart 8).

Chart 8



Data source: International Road Transport Union (Foreign Trade Chamber of Bosnia and Herzegovina, www.komorabih.ba)
Exchange rate: Central Bank of B&H.

Due to its price competitiveness, B&H has a chance to become a transit route to the EU or the East, but also as a destination for tourists, diaspora and people in the border area. All this has a positive effect on the consumption growth of other products and services, and thus revenues from VAT and excise duties on oil derivatives, tobacco products, etc. Abolishing excise duties on oil derivatives in such circumstances would mean giving up significant revenues that could otherwise be targeted through the budget to certain categories of users for public purposes during the

energy crisis, e.g. for subsidizing public transport, transport of students, heating of social institutions and hospitals, subsidizing energy costs of producers of essential food products, farmers, etc. On the other hand, **one should keep in mind the shock that will result from the reintroduction of excise duties**, regarding the growth of retail prices after the excise-free period, as well as the usual practice of traders when increasing taxes to always increase retail prices by a higher amount than the additional tax.

Given the mix of *ad valorem* and specific taxes, when redesigning the excise policy on oil derivatives, **it is necessary to consider the integral effect of individual tax measures**. Thus, an eventual introduction of a differentiated VAT rate on basic food items would inevitably result in an increase in the higher VAT rate on other goods and services, including oil derivatives, which in EU member states goes up to 27%. Taxing oil derivatives at a higher VAT rate would further aggravate the situation, due to rising tax burdens and retail prices of derivatives, and therefore neutralize the effects of a possible abolition of excise duties.

PURPOSE OF EXCISE DUTIES ON OIL DERIVATIVES

Excise taxes collected in B&H on various products are not earmarked taxes, but general taxes for budget financing. Given the dilemmas regarding the (un)purposed spending of excise revenues on oil derivatives in B&H, it should be emphasized that the Law on Excise Duties does not prescribe the purpose of using excise revenues, but only of the earmarked road fee of 0.25 BAM /l. In order to understand the role of excise duties on oil derivatives, it is necessary to explain the evolution of that tax and modern tax practice.

Excises are individual (special) sales taxes on certain products. They are one of the oldest forms of taxation. The development of society, especially the emergence of money and the development of trade in the early Middle Ages influenced the expansion of excise duties in trading and maritime states of that time. The expansion of excise taxation was also affected by the characteristics of this form of taxation. Excise taxation is relatively simple for tax authorities, since the subject of taxation is limited to the turnover of certain types of goods. Excise duties have been imposed for centuries to ensure fairness and equity in taxation, as well as for the taxation of luxury goods.⁸ The scope of excise taxation has evolved in parallel with the development of society and the economy. In the golden age of excise development, individual taxes were levied on rare and expensive products imported from overseas countries, such as sugar, salt, spices, tea, matches or light fixtures. With the development of international trade and transport, rare goods have become accessible to the majority of the population (sugar, tea, spices) or the demand for certain products has become insignificant from the aspect of taxation (matches, candles). On the other hand, the taxation of tobacco products, alcohol and alcoholic beverages, beer and wine has remained until today. The industrial revolution has led to new inventions and technological progress, which influenced the emergence of new excise products, such as oil derivatives and electricity. Modern countries have largely retained traditional limited excise systems, taxing a maximum of 10-15 product groups.⁹ Initially, excises on oil derivatives had had an earmarked nature, as they served to finance the construction of a road network that was still in its infancy. With the introduction of

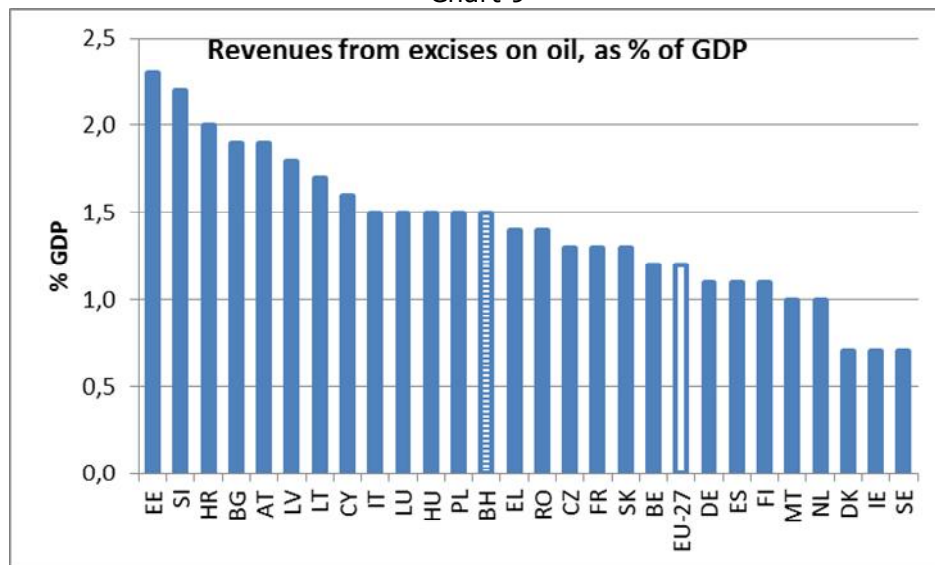
⁸ J.S.Mill has also advocated the introduction of excise duties on luxury goods. He singled out the "snobbish" goods, that the rich spend on, as the most desirable goods for excise taxation, more because of the public opinion that this is expected of them because of their status, and less because of the need. See: Ekelund, R.B. Jr., Hébert, R.F. (2007). "A History of Economic Theory and Method", 5th edition, Waveland Press, Inc., Illinois, USA, 2007., p. 198. (cit. J.S.Mill, "Principles of Political Economy", Robson (ed.), p. 872).

⁹ Cnossen distinguishes between excise systems in terms of coverage of goods. "Limited excise systems" consist of excise duties on traditional goods, such as tobacco, alcoholic beverages or motor fuel. They may contain a maximum of 10-15 product groups, which are interconnected (e.g. different types of fuel). "Intermediate excise systems" contain 15 to 30 product groups, while "extended excise systems" contain more than 30 product groups, covering a wide range of production activities in a given country. See: Thuronyi V. (ed.), "Tax Law Design and Drafting", volume 1; International Monetary Fund, 1996 (Ben J.M. Terra, Chapter 8, "Excises", p. 3, cit. Cnossen, Excise Systems 1, 1977).

generous tax forms, such as income tax and sales tax, later VAT, the share of excises in the structure of tax revenues has decreased significantly over time. Along with the reduced financial significance of excises in the tax structure, there was a **change in the focus of excise taxation**. Considering that the necessary generosity and stability of revenue is ensured by taxing income and consumption with sales tax, and later with VAT, the fiscal authorities of modern countries strive to achieve broader socio-economic goals by applying excise taxes. Excise taxes are being introduced today **more as a repressive measure in order to discourage certain activities**, and less in order to generate revenue. Revenues from excises are directed to neutralize or mitigate the negative consequences of the use of excise goods (so-called externalities), for example, in the case of oil derivatives, to preserve the environment and reduce the consequences of pollution caused by the use of oil derivatives. Taxes used to correct negative externalities are called environmental or „green“ taxes, which, together with the penalties paid by polluters, represent corrective taxes that equalize marginal private and social taxes. Corrective taxes (IBFD, 2005) are taxes that seek to improve market efficiency by encouraging economic agents to take into account social costs (or “negative externalities”).

"Green taxes" in the EU include the following categories: taxes on energy, transport, pollution and resources. In addition, environmental taxes, or popularly called "eco-taxes", include various forms of tax reliefs for environmentally responsible entities. Data show that these are significant amounts, because environmental taxes on energy in the EU-27 account for 4.6% of total EY-27 tax revenues, or 1.8% of EY-27 GDP.¹⁰ It should be borne in mind that the EU also taxes gas, electricity, coke and coal. However, the share of green taxes collected on motor fuels is also significant, 3% of total tax revenues, or 1.2% of GDP of the Union (Chart 9¹¹).

Chart 9



Source: EU - European Commission. (2021). "Taxation Structures", edition 2021; B&H – author's calculation.

Regarding the amount of revenues from excises on motor fuels, measured in percentages of GDP, B&H is in the middle of the list of EU member states, with 1.5% of GDP¹² in 2019, and 1.4% of

¹⁰ Data for 2019. Source: European Commission. (2021). "Taxation Structures", edition 2021.

¹¹ Abbreviations for member states in charts are common in the EU publications: AT-Austria, BE-Belgium, BG-Bulgaria, CZ-Czech Republic, CY-Cyprus, DE-Germany, DK-Denmark, EE-Estonia, EL-Greece, ES -Spain, FI-Finland, FR-France, GB-United Kingdom, HR-Croatia, HU-Hungary, IE-Ireland, IT-Italy, LV-Latvia, LT-Lithuania, LU-Luxembourg, MT-Malta, NL -Netherlands, PL-Poland, PT-Portugal, RO-Romania, SE-Sweden, SI-Slovenia, SK-Slovakia.

¹² Source for GDP in 2019: Agency for Statistics of B&H.

GDP¹³ in 2021. For comparison, road fee revenues in both years amounted to 1.8% of the country's GDP.

It can be concluded that in modern economies the primary goal of collecting excise duties on oil derivatives is to deter consumers and producers from using fossil fuels that pollute the environment and redirect them to clean technologies and environmentally friendly energy sources such as electricity, wind and solar energy and bio-energy from waste. With this in mind, one cannot object to the unintended nature of spending excises on oil derivatives in B&H in terms of financing the budget, and not building a road network. However, given the policy of the EU in the field of energy and energy crisis, which is also affecting B&H, a new energy strategy needs to be considered in B&H, which should encourage the shift from fossil fuels to environmentally friendly fuels. The change of excise policy, in line with the new policy of energy taxation in the EU¹⁴, which includes differentiated taxation in favour of clean energy, along with changing budget priorities, in terms of paying subsidies and stimulating investment in clean energy production for which B&H has resources (water, wind, sun, bio-waste), can have a long-term positive effect on the energy balance in B&H and, consequently, reduction the demand for oil derivatives.

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¹³ Source for GDP in 2021: Directorate for Economic Planning of B&H.

¹⁴ European Commission. (2021). Proposal for a Council Directive restructuring the Union framework for the taxation of energy products and electricity (recast). COM(2021) 563 final 2021/0213 (CNS). Brussels, July 14, 2021.

Consumption of oil derivatives in 2021 with special emphasis on the price movements and estimates of price elasticity of demand

Prepared by: Aleksandra Regoje, expert advisor – macroeconomist

Introduction

The dynamics of consumption of oil derivatives is extremely important for the collection of revenues from indirect taxes in B&H. Revenues from excises on oil derivatives and road fees accounted for 17% of net revenues from indirect taxes in 2021. With the corresponding VAT revenues, this percentage amounted to almost 20% of net revenues from indirect taxes. This article analyses the consumption of oil derivatives in B&H, with special emphasis to the movement of their prices. The first part of the article presents the movement of prices of diesel fuel and gasoline in 2021, with a review of the dynamics of crude oil prices. Since 2020 cannot be a reference year for comparison - due to the effects of coronavirus, a comparison of prices from 2021 was made not only with 2020, but also with 2019, when oil prices were relatively stable. In the second part of the article, a comparison of the consumption of oil derivatives in 2021 was made in relation to the consumption ten years ago (2011), and then with the consumption in 2019 and 2020. The third part of the article presents the results of multiple regression analysis where the dependent variable is the consumption of diesel fuel and gasoline together, while the independent variables are (1) weighted derivative prices and (2) GDP level. Based on the regression model, the price elasticity of demand for diesel fuel and gasoline was estimated, and a simulation of annual effects on the collection of revenues from indirect taxes at different rates of price growth was performed. Given that the annual elasticity may deviate from the average, and that long-term levels of price elasticity of fuel demand are generally higher, a simulation of annual effects on revenue collection at different levels of price elasticity of diesel and gasoline demand was presented at the end of the article.

1. Prices

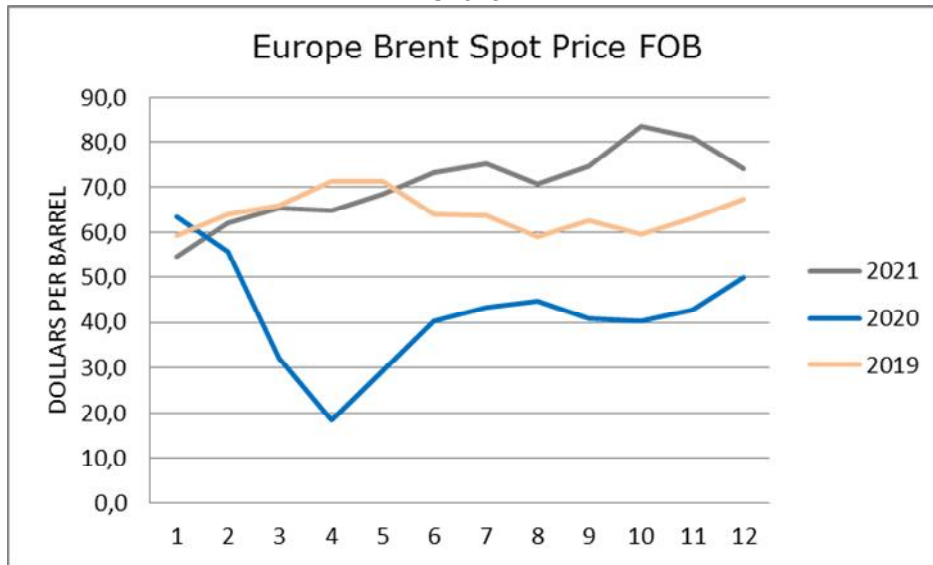
Factors influencing the formation of prices of derivatives on the B&H market are primarily the crude oil prices, trade margins and the level of tax rates.

1.1. Crude oil prices in the period 2019-2021

The price of crude oil fluctuated significantly in the period 2019-2021 (Chart 1).

According to the US Energy Information Administration, Europe Brent Spot Price (FOB) prices were stable in 2019, ranging from 59 to 71.3 dollars per barrel. They had huge fluctuations in 2020, due to the effects of the corona virus pandemic. In January 2020, they amounted to 63.7 dollars per barrel, which is the highest price during the year, while in April of the same year they fell to only 18.4 dollars per barrel, reaching the lowest value since 1999. By December 2020, they had risen again to 50.0 dollars per barrel. The growth trend continued until October 2021, when crude oil prices reached 83.5 dollars per barrel, which is the maximum in the period 2019-2021. In November and December 2021, they fell slightly to 81.1 and 74.2 dollars per barrel, respectively.

Chart 1



Source: Author's presentation based on the U.S. Energy Information Administration, www.eia.gov

1.2. Prices of oil derivatives on the B&H market

In April 2021, the Government of the Federation of B&H adopted a Decision on prescribing measures of direct price control by determining the maximum amount of margins for oil derivatives¹⁵, which prescribed the maximum amount of margins in absolute amount of 0.06 BAM/l to those who perform the activity of wholesale of oil derivatives, and 0.25 BAM/l to those who perform retail trade of oil derivatives. The Government of the Republic of Srpska adopted, also in April 2021, the Decree on determining the margin that is applied when forming the prices of oil derivatives¹⁶. The Decree prescribes the maximum amount of margin for entrepreneurs engaged in the activity of trade in oil derivatives in the same amounts as in FB&H: 0.06 BAM/l in wholesale trade and 0.25 BAM/l in retail trade. The mentioned measures of the entity governments did not restrain the growth of prices of oil derivatives on the B&H market due to the strong growth of oil prices on the world market, which affects the formation of prices on our market.

The dynamics of prices of oil derivatives on the B&H market in 2021 by weeks is presented below. Data from the International Road Transport Union, taken from the website of the Foreign Trade Chamber of B&H¹⁷, were used. Since the whole year 2020 cannot be a reference for comparison, due to the effects of coronavirus that have occurred since the spring of 2020, data for 2021 are compared with 2020 and the previous year - 2019, when oil derivative prices were relatively stable.

¹⁵ The Decision was published on April 2, 2021 in the Official Gazette of the Federation of BiH No. 26/21, with entering into force the day following the day of publication.

¹⁶ The Decision was published on April 6, 2021 in the Official Gazette of RS No. 30/21, with entering into force on the eighth day from the date of publication.

¹⁷ <https://www.komorabih.ba/sektori-i-sluzbe/transport-i-komunikacije/cijene-goriva/>

Chart 2



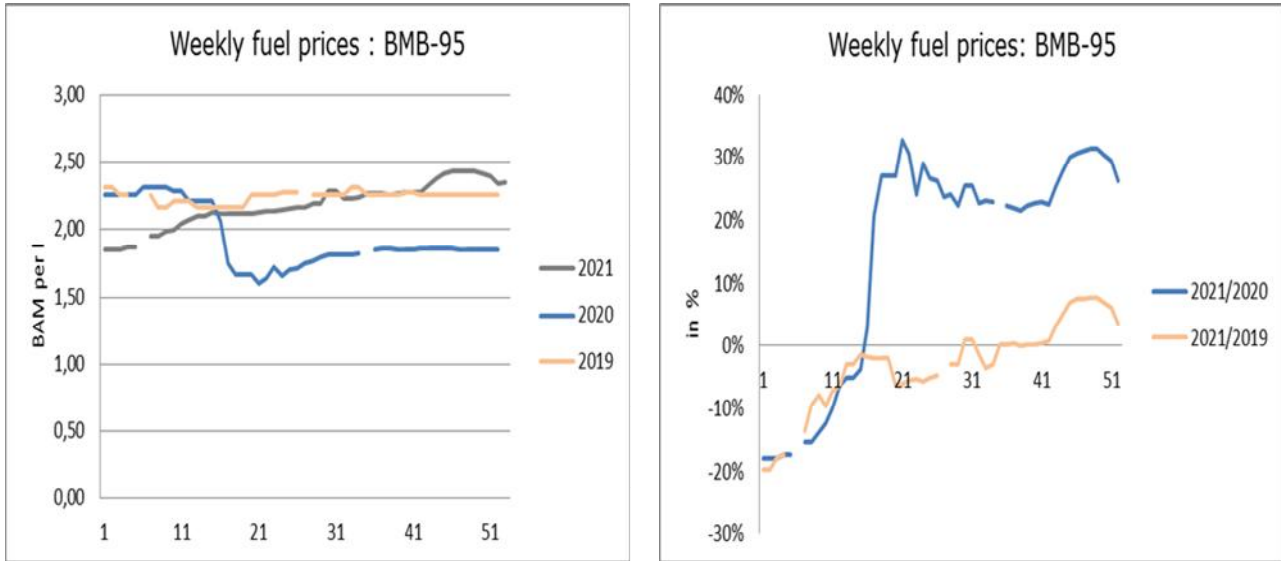
Source: Review of the author based on data from the International Road Transport Union, taken from the website of the Foreign Trade Chamber of B&H, <https://www.komorabih.ba/>

Until the 17th week (April), **diesel fuel prices** in 2021 were below prices in 2020 and 2019. From the 17th to the 45th week they were above prices in 2020, and below prices in 2019, while from the 45th week (November) they were above prices in both years: 2020 and 2019 (Chart 2).

Diesel fuel prices were stable in 2019, and weekly averages ranged between 2.26 BAM/l and 2.41 BAM/l. Prices were stable until the end of the 16th week of 2020. From the 1st to the 6th week of 2020, they ranged from 2.26 BAM/l to 2.36 BAM/l, while from the 7th to the end of the 16th week they fell from 2.36 BAM/l to 2.11 BAM/l. In the 17th week of 2020, they fell to only 1.7 BAM/l, and in the 21st week they reached a level of only 1.5 BAM/l. As of the 22nd week of 2020, the trend of rising diesel fuel prices has started again, and in the last week they reached the level of 1.8 BAM/l. In 2021, the prices of diesel fuel increased in the largest number of weeks. When comparing the prices in the first and last week of 2021, it can be concluded that, at the level of the year, they increased by as much as 27.4%, from 1.8 BAM/l to 2.3 BAM/l.

BMB 95 fuel prices had a similar trend in the period 2019-2021. The year 2019 was stable in terms of prices, which ranged between 2.16 BAM/l and 2.31 BAM/l. In the first 9 weeks of 2020, the stability of BMB 95 fuel prices was maintained (2.26-2.31 BAM/L). From the 10th week, with the appearance of the corona virus, there was a downward trend in prices. The decline was initially mild, to 2.06 BAM/l in the 16th week, and then sharp, to 1.6 BAM/l in the 21st week. From the 22nd week of 2020 (May), the trend of rising prices has started again, which, with a few minor exceptions, lasted almost until the end of 2021. In the last week of 2021, the prices of BMB 95 fuel amounted to 2.35 BAM/l, which is above the highest weekly level in 2019.

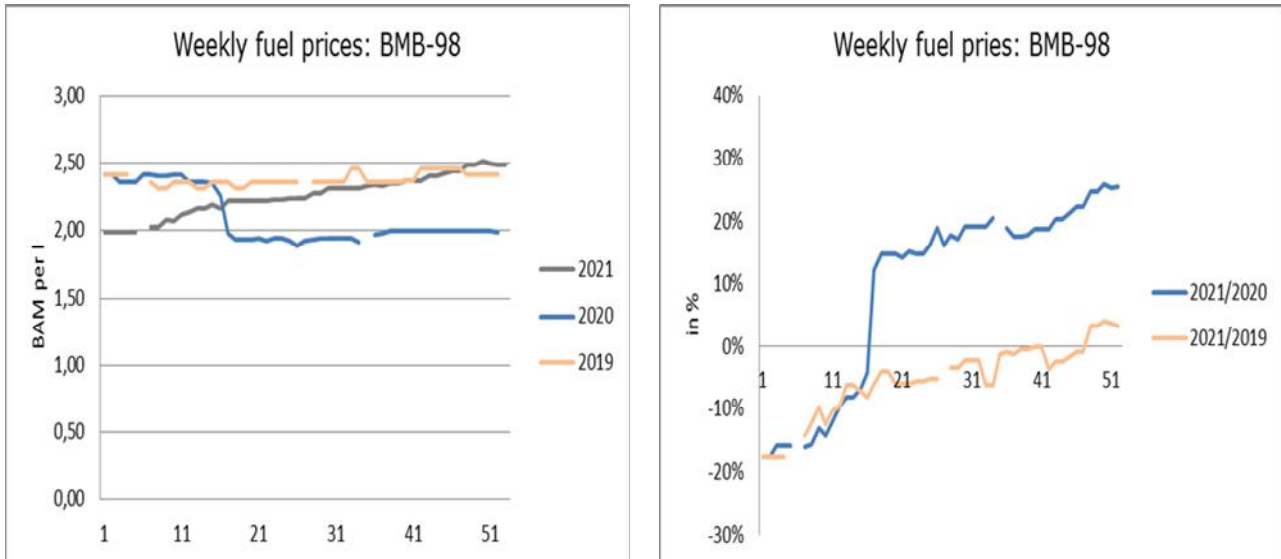
Chart 3



Source: Review of the author based on data from the International Road Transport Union, downloaded from the website of the Foreign Trade Chamber of B&H, <https://www.komorabih.ba/>

The prices of **BMB 98 fuel** are characterized by similar trends: stability in 2019, and all until the 11th week of 2020 (range between 2.31 and 2.46 BAM/l); the trend of decrease as of 12th week of 2020 to as much as 1.89 BAM/l in the 26th week of 2020, and a new growth trend to as much as 2.49 BAM/l in the last week of 2021.

Chart 4



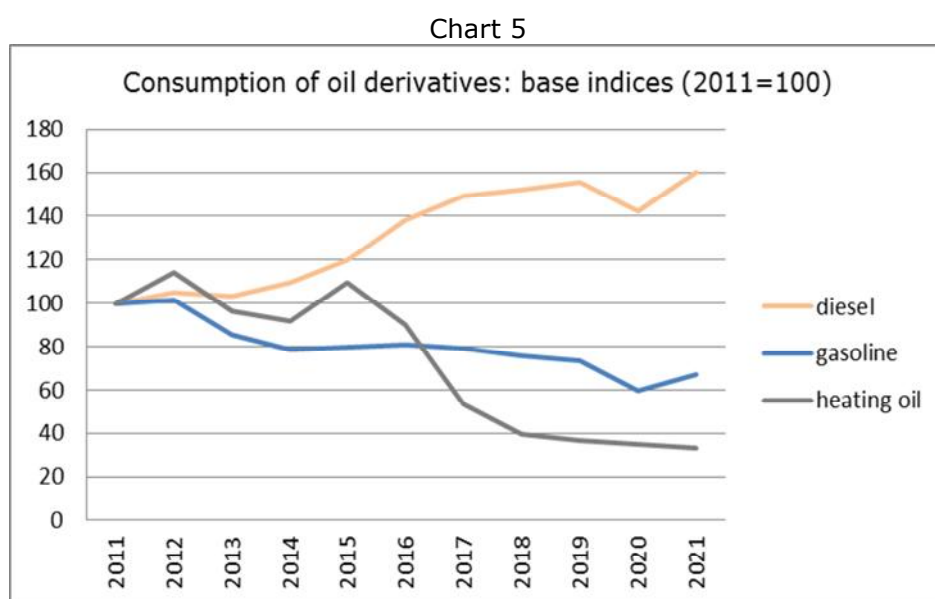
Source: Review of the author based on data from the International Road Transport Union, downloaded from the website of the Foreign Trade Chamber of B&H, <https://www.komorabih.ba/>

2. Consumption of derivatives in 2021

In this part, a comparison of the consumption of oil derivatives in 2021 was made in relation to the base year 2011, and then with the consumption in 2019 and 2020. It should be noted that the term "consumption of derivatives" in this article means the quantities calculated by the author, and that they include the amount of imported oil derivatives and the amount of domestic oil derivatives placed on the market. Quantities of domestic derivatives from excise declarations were taken with a time lag of m-1, so that the base would be correctly presented in accordance with the provisions of the Law on Excises Duties in B&H, referring to the occurrence of the obligation to calculate and pay excise duty.

2.1. Consumption of oil derivatives compared to 2011

Consumption of oil derivatives in relation to the base year- 2011 is shown in Chart 5.



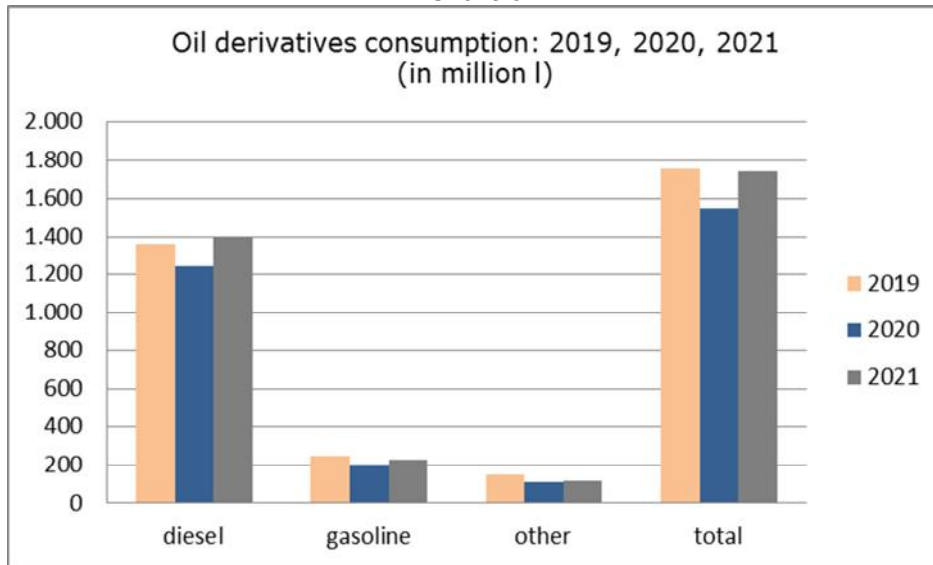
Source: Author's calculation based on the ITA data

In the period from 2011 to 2021, the total consumption of oil derivatives (diesel, gasoline, heating oil, kerosene and liquefied petroleum gas) increased by 27.2%. In the same period, the consumption of diesel fuel increased by as much as 59.9%, while the consumption of gasoline decreased by 32.8%, and heating oil by as much as 66.5%. The decline in the fuel oil component was the result of effective control activities of the ITA and measures of the entity governments, as well as reducing the gap between diesel and gasoline prices on the one hand and heating oil on the other, with the start of new legislation in 2018. The reasons for the growth of diesel fuel and the decline of gasoline in the structure of consumption of oil derivatives can be found in changes in consumption preferences.

2.2. Consumption of oil derivatives in relation to 2019 and 2020

Chart 6 shows the consumption of oil derivatives in 2021 and in the previous two years. Due to the part of lost consumption in 2020 caused by the effects of the corona virus, that year cannot be a reference for comparison. Therefore, in addition to 2020, consumption in 2021 was compared with 2019, as well.

Chart 6



Source: Author's calculation based on the ITA data

Thus, compared to 2020, the total consumption of oil derivatives increased by as much as 12.2%. The growth of consumption of diesel fuel and gasoline was approximately at the same level, 12.5% and 12.8% respectively. Consumption of heating oil and liquefied petroleum gas, on the other hand, fell by 4.3% and 9.6%, respectively. Due to the extremely low base in 2020 the consumption of kerosene increased by a huge 145.4%. Compared to 2019, consumption in 2021 increased only in the case of diesel fuel by 2.8%, while consumption of other categories of derivatives decreased: gasoline by 8.7%, heating oil by 9.2%, kerosene by 29.7% and liquefied petroleum gas by 28.2%. Given the huge weight of diesel fuel in total consumption, consumption of total oil derivatives in 2021 fell by only 0.8%.

3. Elasticity of demand for oil derivatives in B&H

The calculation of the elasticity of demand for oil derivatives in B&H, i.e. the demand for diesel and gasoline, is presented below. Since these are substitutes, the consumption of diesel fuel and gasoline was analysed together. The following data were used for the calculation: the ITA data on the consumption of derivatives, the weighted import prices that include weighted corresponding amount of excise and road fees¹⁸, and data on gross domestic product in B&H in the specified period¹⁹. Annual data for the period from 2005 to 2021 were analysed, with the exception of 2020, which is considered non-reference due to the effects of coronavirus. A multiple regression model was created, where the dependent variable (y) is "diesel and gasoline consumption (in millions of liters)". The results of the regression analysis are shown in equation (1) in Table 1. The coefficient of determination R^2 is significant and amounts 88.54%. It means that the variability of diesel and gasoline consumption explained by GDP and price dynamics in this regression model amount that percentage. The p-value of the GDP variable is zero, and of the weighted prices variable is 0.01, which means that both independent variables are important for the model (both variables are significant at the 5% confidence level).²⁰

¹⁸ The regression model uses that data series (author's calculation based on the ITA data) because data on market prices before 2019 are not available on the website of the Foreign Trade Chamber of B&H.

¹⁹ Data from the Agency for Statistics of BiH for the period 2005-2020, and the projection of the DEP for 2021 (September 2021).

²⁰ The P-value is the lowest level of significance at which we can reject the null hypothesis. The null hypothesis is a supported hypothesis that is held to be true, as long as there is insufficient evidence to the contrary (in our case, the null hypothesis assumes that the independent variable has no effect on the dependent one).

Table 1.

Variable	
Intercept	718,2754
GDP (in million BAM)	0,0329
weighted import prices that include weighted corresponding amount of excise and road fees (BAM/l)	-166,9622
R ²	88,54%
R ² adjusted	86,78%
Standard error	63,76
F- test	50,21
Observations	16
Significance level	0,05

Based on the results from the presented multiple regression model and the formula for calculating the elasticity of demand²¹, it can be calculated that the average elasticity of demand for oil derivatives (diesel and gasoline) in B&H in the period 2005-2021 was around -0.2469%. This means that a price increase of 10% would lead to a decrease in the consumption of diesel fuel and gasoline by about 2.469%, with other factors unchanged.⁷

3.1. Results of simulation based on static model - effects of growth of derivative prices on revenues

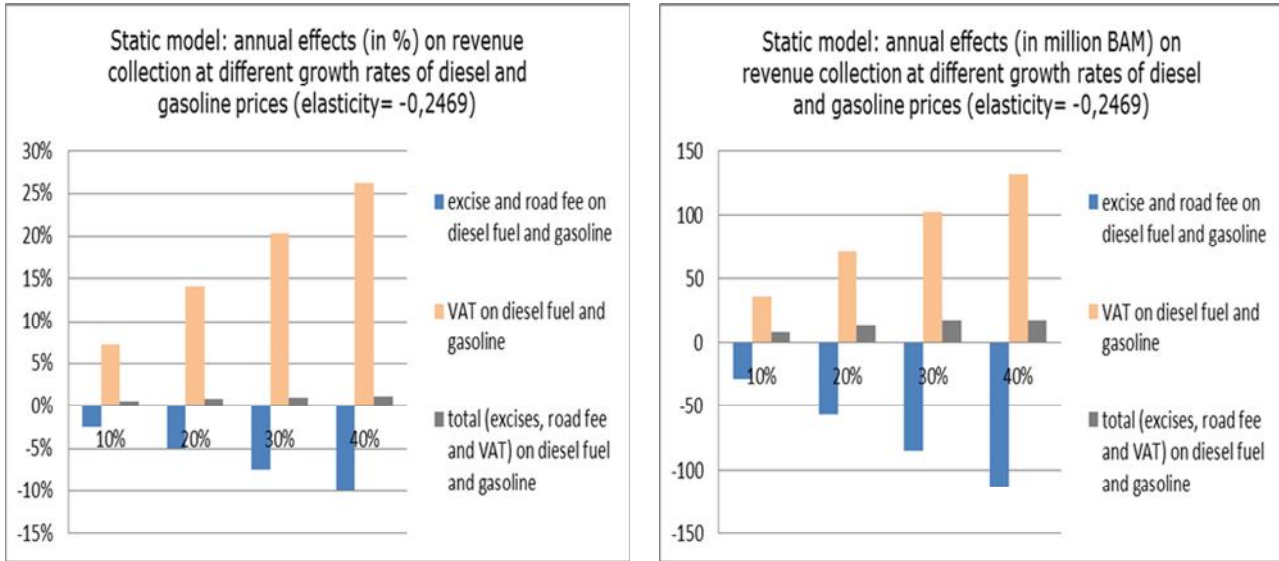
The results of the simulation based on **static model** are presented below. The following data were used:

- 1) consumption of diesel fuel and gasoline in 2021 (the ITA data);
- 2) average of weekly prices of diesel fuel and gasoline on the B&H market (data from the International Road Transport Union, downloaded from the website of the Foreign Trade Chamber of B&H);
- 3) elasticity, calculated based on the regression model presented above.

The assumption is that the calculated price elasticity from the regression model based on available data on weighted import prices of diesel fuel and gasoline (which include the weighted corresponding amount of excise and road fees) can be applied to a simulation that use market prices of diesel fuel and gasoline.

²¹ Elasticity was calculated on the basis of the formula for calculating elasticity using a regression model (the ratio of average prices and quantities from the observed period multiplied by the coefficient for the variable "prices" from the regression model).

Chart 7



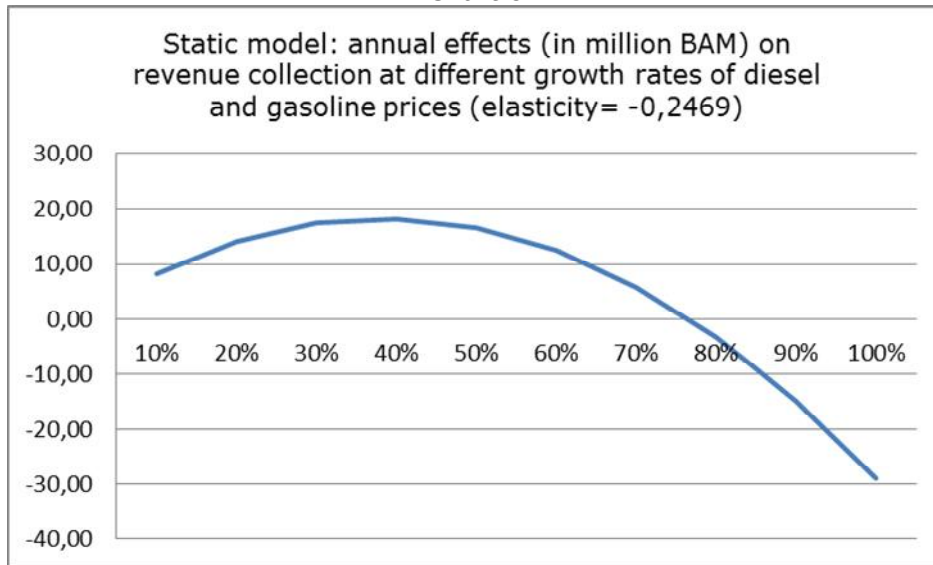
Source: Author's calculation based on the regression model (Table 1) and data on consumption of derivatives (ITA) and prices in 2021 (International Road Transport Union, downloaded from the website of the Foreign Trade Chamber of B&H)

The static model implies that all other factors in the economy remain unchanged. In our regression model, that is the amount of GDP. The x-axis of Chart 7 presents different arbitrary growth rates of diesel and gasoline prices compared to the 2021 averages. The effects on the collection of revenues from indirect taxes (in % left, in million BAM right) are presented on the y axis. It can be concluded from the Chart that, according to the presented static model, the negative effects of falling quantities on the collection of excise duties on diesel fuel and gasoline and road fees would be offset by positive effects in the form of higher collection of the associated VAT revenues, so that the overall effects would be approximately neutral (in the range of 0-20 million BAM, with the price increase in the range of 1-75%). This is expected given the inelasticity of demand for derivatives and the fact that excise duties on oil derivatives and road fee are levied on quantity, and VAT on value, which in this case increases more than the decline in consumption quantity. According to the simulation, the overall effects would move into the negative zone at the level of price increase above 76% (Chart 8).

These effects refer exclusively to the corresponding revenues from the consumption of diesel fuel and gasoline.²² It should be borne in mind the important fact that, given the unchanged limited disposable income of the population, the demand for other goods could fall with rising prices of derivatives, and this would be reflected in a reduction in the collection of VAT on other basis.

²² The effects of taxes on heating oil, kerosene and liquefied petroleum gas are not included.

Chart 8



Source: Author's calculation based on the regression model (Table 1) and data on consumption of derivatives (ITA) and prices in 2021 (International Road Transport Union, downloaded from the website of the Foreign Trade Chamber of B&H)

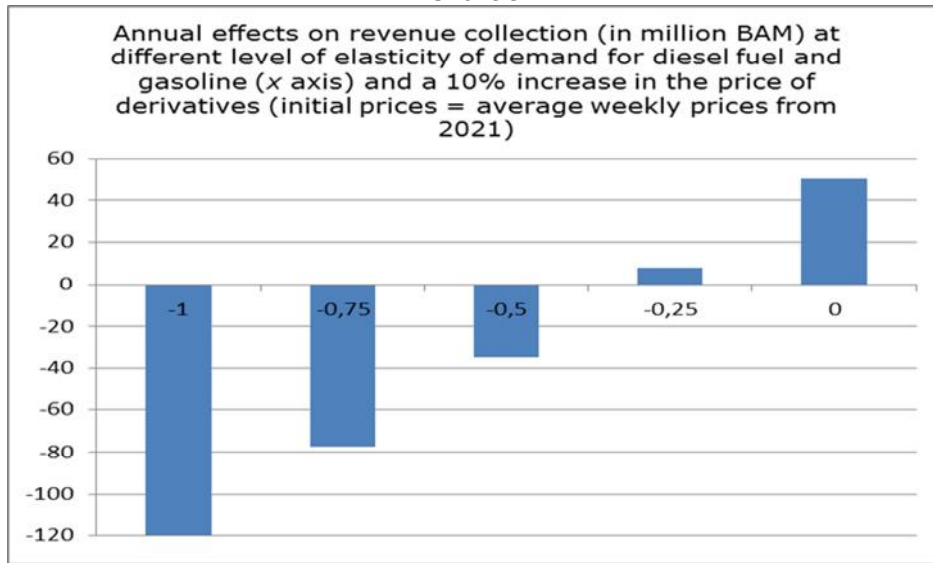
3.2. Results of simulation based on static model - effects of the increase in derivative prices on revenues at different levels of elasticity of demand

The effects on revenues shown in Chart 7 were calculated based on the average elasticity from the regression model for the period 2005-2021. It should be noted that the annual elasticity may deviate from the average, and according to some research (Goodwin et al., 2004)²³ **the long-term price elasticity of fuel consumption is higher than the short-term** (on average about -0.6).

Therefore, the effects on revenues at different levels of elasticity of demand are presented below (Chart 9). The overall effects in our simulation would be greater and positive if the initial prices of diesel fuel and gasoline were higher, and if the elasticity of demand was closer to zero. In the hypothetical conditions of completely inelastic demand (elasticity = 0), the collection of excises and road fees would remain the same with the increase in prices, while, due to the higher taxed value, the collection of VAT would increase. In such conditions, a price increase of 10% would lead to unchanged collection of excises and road fees, and an increase in corresponding VAT revenues by 10%, so the total related revenues would increase by 3% or by 50.3 million BAM. The other extreme would be unit elasticity (elasticity = -1), when, according to our model, a price increase of 10% would lead to a decrease in diesel and gasoline (and excise and road fees) by the same percentage, a decrease in VAT revenues by 1%, and the decline in total revenues by 7.3% or by 120 million BAM.

²³ Goodwin P., Hanly M. and Dargay J. (2004) Elasticities of Road Traffic and Fuel Consumption with Respect to Price and Income: A Review, Transport Reviews

Chart 9



Source: Author's calculation based on the regression model (Table 1) and data on consumption of derivatives (ITA) and prices in 2021 (International Road Transport Union, downloaded from the website of the Foreign Trade Chamber of B&H)

4. Conclusions

From this article we can draw the following conclusions:

- Weekly prices of diesel fuel and gasoline on the B&H market had a growing trend from the beginning to the end of 2021, and annual averages of weekly prices were below the 2019 average and above the 2020 average.
- Total consumption of oil derivatives in 2021 increased by as much as 12.2% compared to 2020 (with approximately equal growth rates of diesel fuel and gasoline consumption), and decreased by 0.8% compared to 2019, where diesel consumption increased by 2.8% and gasoline consumption decreased by 8.7%).
- Based on the results from the created model of multiple regression in the period 2005-2021, the average elasticity of demand for diesel fuel and gasoline (together) was calculated in the amount of -0.2469%.
- It is calculated that, in the event of an increase in diesel and gasoline prices compared to the 2021 average, **along with other unchanged conditions** (GDP), the negative effects on the collection of excise duties on diesel and gasoline and road fees due to falling quantities would be offset by positive effects in the form of higher collection of the corresponding VAT revenues, so that the overall effects would be approximately neutral (growth of 0-20 million BAM with price increase up to 75%, with the shift of effects to the negative zone with price increase above that level).
- Based on researches of other authors, according to which long-term elasticity is higher than short-term, the overall effects on long-term revenue collection would be negative even at low growth rates of diesel fuel and gasoline prices.

Analysis of collection of revenues from excise duties on beer

(Author: Mirjana Popović, expert advisor - macroeconomist)

1. Beer taxation policy in B&H

Excise products in Bosnia and Herzegovina (hereinafter: B&H) and the policy of their taxation are defined by the Law on Excise Duties in B&H from 2009 (hereinafter: the Law)²⁴. This Law has been amended three times since 2009, twice in 2014 and once in 2017. The amendments to the Law from 2014 referred to the taxation of tobacco products²⁵ and non-alcoholic beverages, beer and wine²⁶, while the amendments to the 2017 Act related to the taxation of petroleum products²⁷. Revenues based on excises are paid to the Single Account of the Indirect Taxation Authority, and their allocation is done in accordance with the Law on Payments to the Single Account and Allocation of Revenues²⁸. In addition to value added tax, beer is additionally taxed in Bosnia and Herzegovina and the European Union. Beer is considered to be a refreshing sparkling drink obtained from water, barley malt, yeast, unsweetened cereals and hops, regardless of the alcohol concentration in the beer. The goals of applying excise duties on beer, as well as the goals of applying excise duties on other excise products, are to reduce beer consumption for health, social and economic reasons of consumers, to reduce all external²⁹ costs incurred by increased alcohol consumption, and a reduction in overall social³⁰ costs. Taxes and revenues on alcohol vary considerably from country to country so there is no single opinion or rule on the amount of excise duty on beer. Given that, the differences in the applied excise rates by individual countries are large, this indicates a difference in the establishment of the taxation system. Although beer taxation, as mentioned, generates social, health and economic aspects, the main goal of introducing excise taxes can be attributed to increasing public revenues, and mainly economic or fiscal effects are the main reasons for introducing these taxes.

An overview of the changes in the legislation in the field of beer that have been in force since September 1, 2014 is presented below.

The coverage of excise products according to the amended Law is shown in Frame 1.

²⁴ "Official Gazette of B&H", No. 49/09

²⁵ "Official Gazette of B&H", No. 49/14

²⁶ "Official Gazette of B&H", No. 60/14

²⁷ "Official Gazette of B&H", No. 91/17

²⁸ "Official Gazette of B&H", No. 55/04 and 34/07

²⁹ External costs can be all indirect costs caused by alcohol consumption and thus beer, such as car accidents caused by drunk driving in which another person may be injured, damage to someone else's property or violence.

³⁰ Indirect external or total social costs can be medical treatment of problems caused by alcohol covered by public funds, and the impact on the tax system, as alcohol consumption can have consequences for consumer income and consumption.

Frame 1. Excise products

Article 4.
(Excise duties products)

- a) petroleum products;
- b) tobacco products;
- c) non-alcoholic beverages
- d) alcohol, alcoholic beverages and fruit natural brandy;
- e) **beer** and wine;
- f) coffee;
- g) biofuels and bioliquids.

Source: Law on Excise Duties in B&H³¹

Article 18 of the Law defines the amounts of excise duty on non-alcoholic beverages, beer and wine. The excise rate on beer was changed from 0.20 BAM/l to 0.25 BAM/l. An overview of excise rates according to current legislation is presented in Frame 2.

Frame 2. Amounts of excise duty on beer

Article 18.
(Excise taxes on non-alcoholic beverages, beer and wine)

- a) non-alcoholic beverages 0,10 BAM
- b) beer 0,25 BAM**
- c) wine 0,25 BAM

Source: Law on Excise Duties in B&H³²

As of September 1, 2014, with the amendments to the Law on Excise Duties, B&H introduced differentiated rates of excise duties on beer. In accordance with the amendments to the Law, the excise duties on beer is paid 0.25 BAM/l. Exceptionally, a beer producer whose average production in the previous three years is less than 400,000 hl pays excise duty 0.20 BAM/l, as well as beer importers, provided that the beer is procured from a producer whose average production in the previous three years is less than 400,000 hl. By amending the Law, the previous standard excise rate of 0.20 BAM/l has become a lower rate. Having in mind the legal threshold of annual production, and other conditions for exercising the right to a lower excise rate, it was expected that the lower rate would be applied to domestic beers and higher to imported beers, which would put domestic beer producers in a more favorable position. However, the production volume of Banja Luka Brewery, as the largest industrial beer producer in B&H, very quickly exceeded the prescribed threshold for applying a lower excise rate, putting this brewery in an unequal position compared to other domestic competition.

In particular, in the conditions of the negative consequences of the corona virus pandemic, which additionally made business more difficult for business entities from B&H, Banja Luka Brewery had a decline in volume in 2020, achieving production of less than 400,000 hl. The calculation of the excise duties on beer is prescribed in more detail to the Article 22a³³ and 23³⁴ Rulebook on Amendments to the Rulebook on Application of the Law on Excise Duties in B&H³⁵.

³¹ "Official Gazette of B&H", No. 49/09

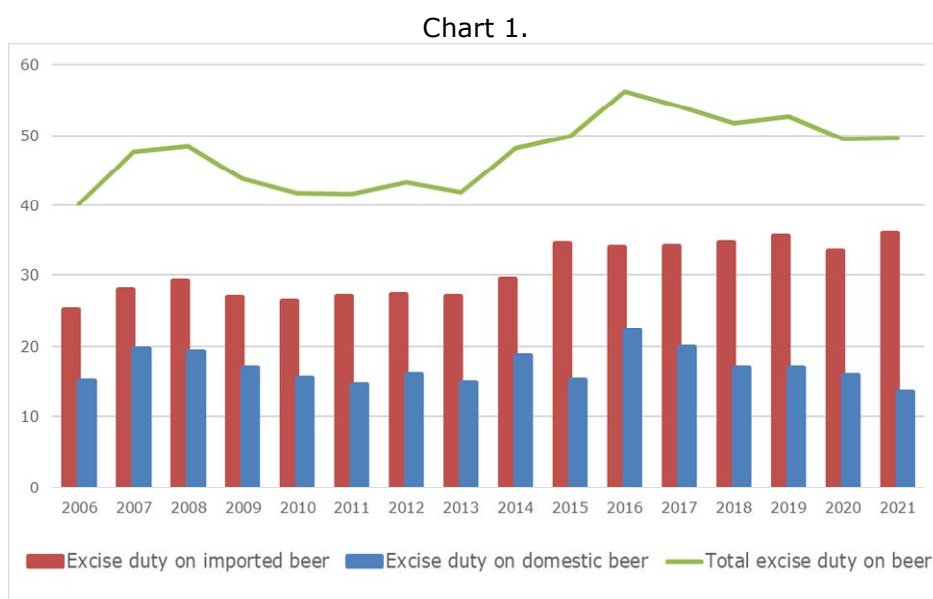
³² "Official Gazette of B&H", No. 49/09, change No. 60/14

³³ Article 22a. of the Rulebook defines the right to calculate excise duty in the amount of 0.20 BAM/l to beer producers who in their records reported an average annual production of less than 400,000 hl at the level of the previous three calendar years. A beer producer, for whom less than three years have elapsed since the beginning of beer production, determines

2. Annual trends of revenues from excise duties on beer

Although total revenues from excise duties have a significant share in total revenues from indirect taxes and gross domestic product, total revenues from excise duties on beer participate from 3.3% to 5.2% in total revenues from excise duties annually in the period 2006-2021.

Chart 1 shows the movement of annual collection of revenues from excise duties on beer during the period 2006-2021, in millions of BAM (left vertical scale). The annual collection of total revenues from excise duties on beer in the observed period is presented, as well as the annual collection of revenues from excise duties divided by components - revenues from excise duties on imported beer and revenues from excise duties on domestic beer.



Source: Data from the Indirect Taxation Authority of B&H, OMA overview

The annual trend in the collection of total revenues from excise duties on beer in the presented period was marked by global factors such as two shocks, and amendments to the Act. Thus, the trend of total revenues from excise duties on beer was influenced by the global economic and financial crisis, which can be characterized as the first significant shock in the observed fifteen-year period, followed in 2014 by changes in legislation and after that, the Covid-19 pandemic as the second global shock which affected the collection of these revenues.

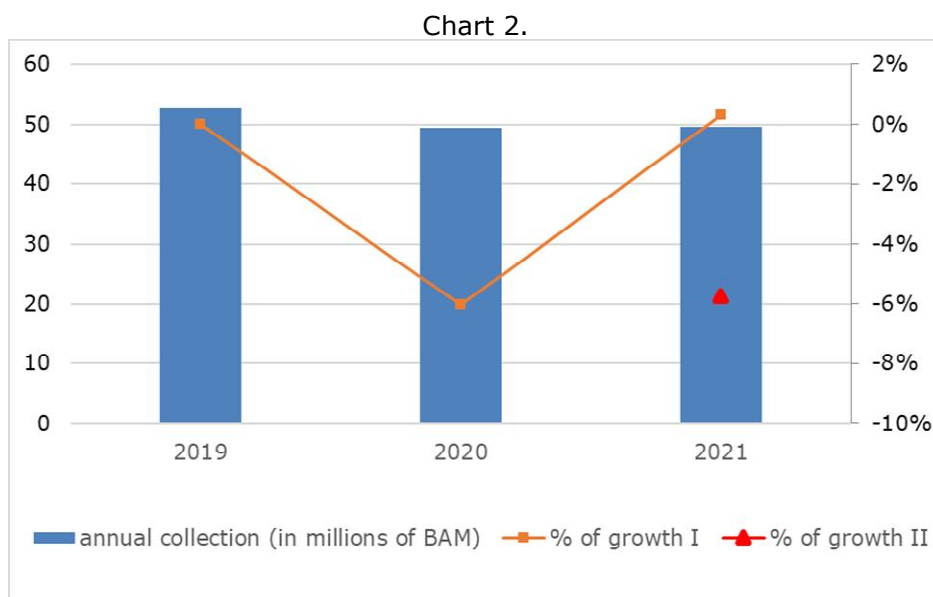
the average annual production based on the number of calendar years in which he performed production. If the control of the stated data determines that the producer was not entitled to a lower rate of excise, he is obliged to pay the difference in excise of 0.05 BAM/l on the amount of beer taxed for excise for which a lower rate was used, with legal default interest.

³⁴ Article 23 of the Rulebook defines the calculation of excise duty on imported products. The beer importer has the right to apply a lower rate of excise duty in the amount of 0.20 BAM/l, provided that in the customs procedure he submits a statement of the producer. The authority responsible for calculating and collecting excise duty of the exporting country should certify this statement about the quantities of beer produced in hectoliters in the previous three calendar years. Based on the data, the customs office records and certifies the accepted documents with an indication of the calendar year for which the document is valid, after which it keeps the original, and hands a certified copy to the importer, which the importer submits for inspection in all subsequent imports of beer from that producer. If the subsequent control determines the inaccuracy of the data in the statement of the producer on the basis of which the right to a lower rate of excise is realized, the importer is obliged to pay the difference in excise of 0.05 BAM/l for the quantity of imported beer for which incorrect data are given.

³⁵ "Official Gazette of B&H", No. 74/14

2.1. Annual trends in total revenues from excise duties on beer

Given the relevance of the second shock from which the global world economy, as well as the B&H economy is still recovering, and which was caused by the Covid-19 pandemic, as well as the measures to combat the spread of the virus, the focus of the annual analysis is the three-year period 2019-2021 (Chart 2). The chart shows the trend of three-year collection of total revenues from excise duties on beer, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale)³⁶.



Source: Data from the Indirect Taxation Authority of B&H, OMA overview

In 2020, there was a declining trend in the collection of total revenues from excise duties on beer compared to 2019 by 6.0% (Chart 2, % of growth I). A slight recovery of these revenues by 0.3% was recorded in 2021 compared to 2020 (Chart 2, % of growth I), while the negative trend was continued compared to 2019, and these revenues in 2021 are 5.7% below collection in 2019 (Chart 2, % of growth II). Nominal collection of total revenues from excise duties on beer in 2021 is at the level of collection in 2014, when excise rates were increased, i.e. when a differentiated excise tax was introduced depending on the annual beer production.

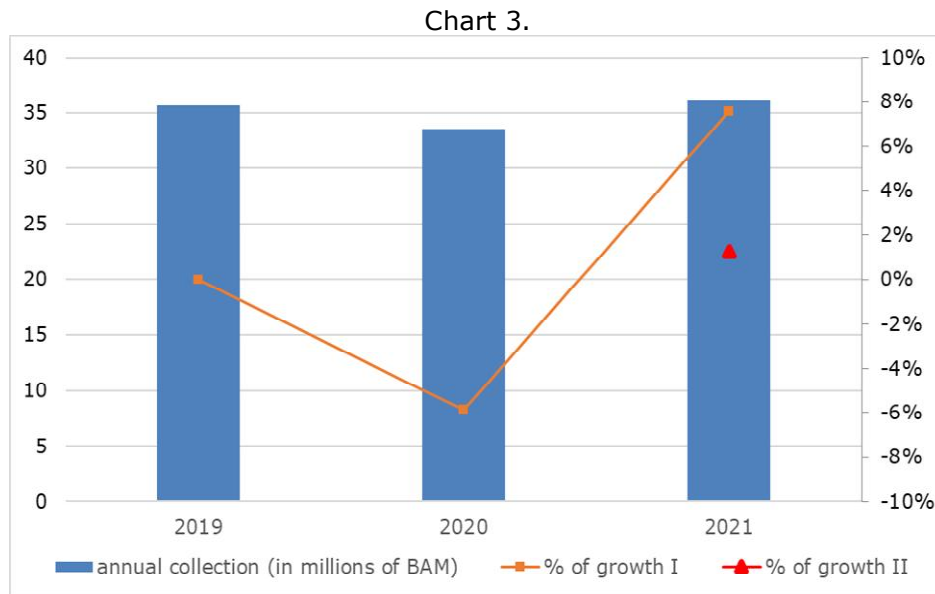
In addition to the movement of total revenues from excise duties on beer in the three-year period, the analysis of revenues from excise duties on beer by components (import and domestic excise duties) in the same period is presented below, which provides a more detailed picture of consumer preferences and other external factors.

2.2. Annual trends in revenues from excise duties on imported beer

The amount of beer imported to B&H is significantly higher than the amount of beer produced in B&H. The largest quantities of beer are imported from Serbia and Croatia. Chart 3 shows the trend

³⁶ 2019 used as a base

of three-year collection of revenues from excise duties on imported beer, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale)³⁷.



Source: Data from the Indirect Taxation Authority of B&H, OMA overview

The appearance of the corona virus, uncertainty about the unknown virus, and measures introduced to combat the spread of the virus as well as hesitation from consumption, led to a decline in revenues from excise duties on imported beer in 2020 by 5.9% compared to 2019 (chart 3, % of growth I). The easing of measures and the opening of borders has led to a historic maximum in the collection of revenues from excise duties on imported beer in 2021, which is 7.6% higher than in the previous 2020 (Chart 3, % of growth I), and which is 1,3% higher compared to the 2019 (Chart 3, % of growth II).

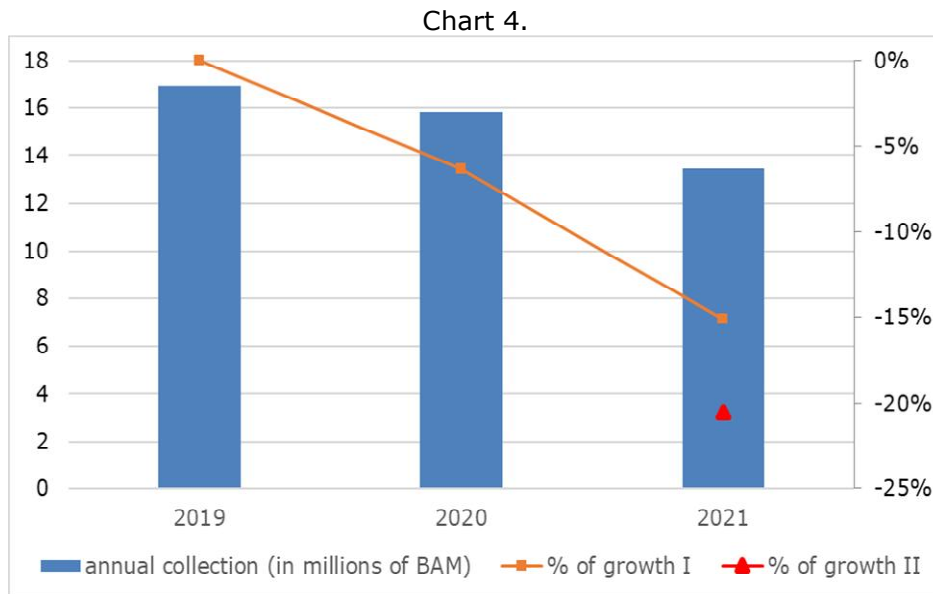
The main reason for the increase in revenues from excise duties on imported beer in recent years can be attributed to consumer preferences, a wide range of imported beer, and lower prices of imported beer as unfair competition compared to domestic producers. Years ago, and before the current inflation at the global level, there was a decline in imported beer prices, although market conditions were not conducive to this decline.

2.3. *Annual trends in revenues from excise duties on domestic beer*

Among other raw materials, water quality is of great importance for the production of quality beer, so B&H has the prerequisites for good quality of this product. Also, there are significant potentials for innovation in the value chain of beer production in the country, especially in the technological process of production. Breweries operating in B&H are mostly of the industrial type and have their own laboratories and development teams. However, recently, there are more small craft breweries that are becoming increasingly popular in the domestic market due to the quality, different flavors, different bitterness, and differences in the quantity of alcohol compared to industrial beer. Regardless of that, revenues from excise duties on domestic beer in the three-year period, 2019-2021, tend to fall. Chart 4 shows the trend of three-year collection of excise revenues on domestic

³⁷ 2019 used as a base

beer, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale)³⁸.



Thus, in 2021, the collection of revenues from excise duties on domestic beer was lower by 15.1% compared to the previous 2020 (Chart 4, % of growth I), and lower by 20.5% compared to 2019 (Chart 4, % of growth II). In 2020, revenues from excise duties on domestic beer were lower by 6.4% compared to 2019 (Chart 4, % of growth I). The main reason for the decline in revenues from excise duties on domestic beer, in recent years, is the decline in the volume of domestic beer production as well as the decline in its consumption by the domestic population. The cause of the decline in domestic beer consumption is the habits and preferences of consumers, despite many campaigns under the slogan "buy domestic", especially during the most rigorous measures introduced to combat the spread of coronavirus. The trend of craft beer, which is growing in popularity on the European and world markets, has not established a wide distribution network in B&H, and thus increased sales of its product, which would increase these revenues.

3. Quarterly trends of revenues from excise duties on beer

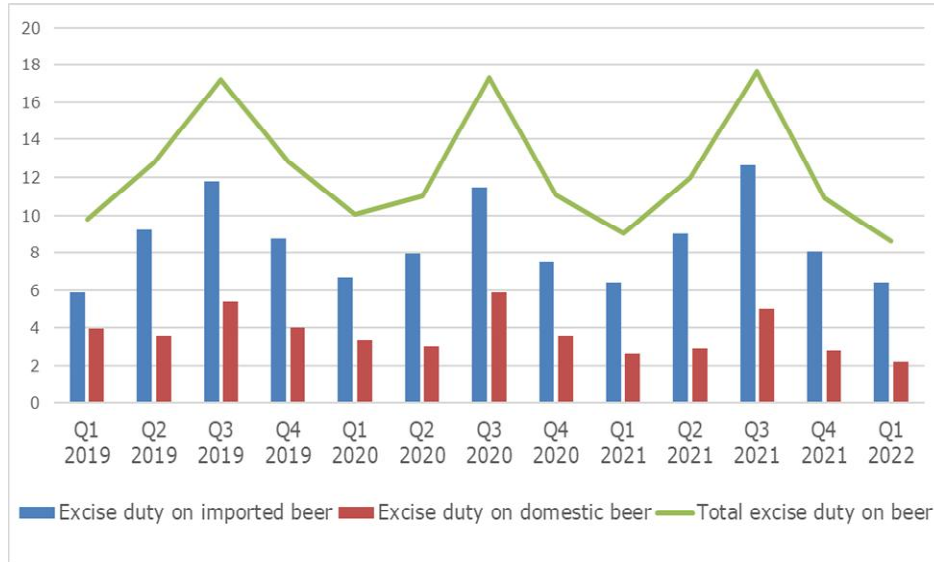
The goals of the quarterly analysis of revenues from excise duties on beer are multiple. Impact of the pandemic and the impact of measures taken to combat the spread of the virus on the collection of total revenues from excise duties on beer and the collection of revenues from excise duties on beer by components. Also, the goals of the analysis are to understand the current situation, consumer preferences, seasonal impact on sales, i.e. beer consumption, and future expectations while maintaining existing policies.

Chart 5 shows the quarterly movement of revenues from excise duties on beer for the mentioned period in millions of BAM (left vertical scale). Quarterly dynamics of movement of total revenues from excise duties on beer, as well as revenues from excise duties on beer by components -

³⁸ 2019 used as a base

revenues from excise duties on imported beer and revenues from excise duties on domestic beer, is shown for the period from the first quarter (Q1) 2019 to the first quarter (Q1) 2022³⁹.

Chart 5.



Source: Data from the Indirect Taxation Authority of B&H, OMA overview

The data show a seasonal trend in the collection of total revenues from excise duties on beer, which is a consequence of weather conditions, and the highest consumption of beer was recorded in the third quarters, i.e. in the summer months. As beer is the most popular alcoholic beverage in the world and, after water and tea, it is the third most popular beverage in general, it can be seen from the chart that it is most consumed in B&H when temperatures are high, and the population has a greater need for refreshment. After the previous two seasons were hit by pandemic waves and occasional closures as a result of measures to fight the coronavirus, it is expected that beer sales will be higher this summer, which will increase revenues from excise duties on beer in the third quarter of this year.

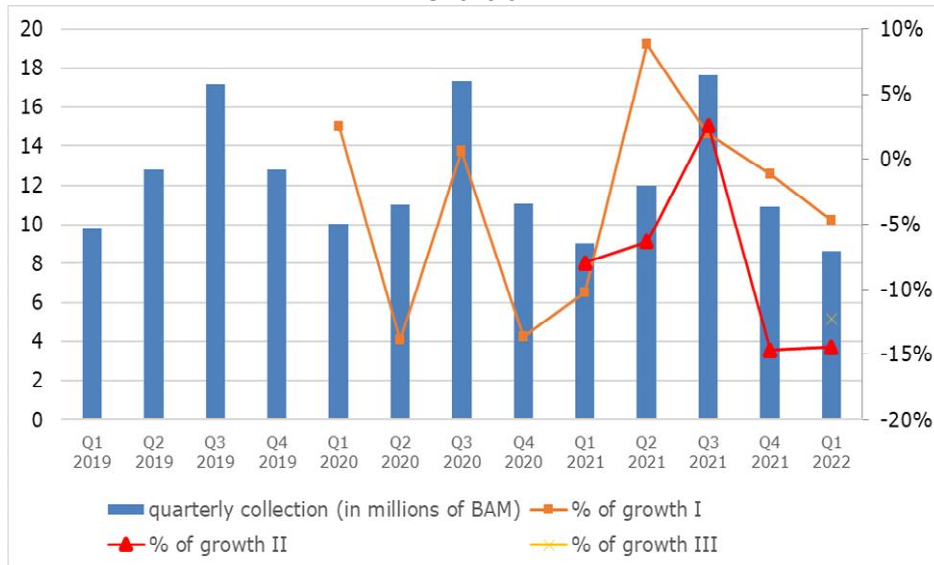
3.1. Quarterly trends of total revenues from excise duties on beer

Chart 6 shows the quarterly trend of collection of total revenues from excise duties on beer, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale), for the period Q1 2019 - Q1 2022⁴⁰.

³⁹ Latest available data

⁴⁰ 2019 used as a base

Chart 6.



Source: Data from the Indirect Taxation Authority of B&H, OMA overview

By analyzing the quarterly trends of total revenues from excise duties on beer in the first quarters of the observed four years, the highest collection was recorded in the first quarter of 2020, which is 2.6% higher compared to the same period in 2019 (Chart 6, % of growth I).

In the first quarter of 2021, these revenues decreased by 10.3% compared to the same period in 2020 (Chart 6, % of growth I). The first quarter of 2020, as the period of the beginning of the Covid-19 pandemic in B&H, in which rigorous measures to combat the spread of the virus have not yet been introduced, had a growing trend. The virus causing a decline in these revenues has interrupted such a trend. In the first quarter of 2022, there was a decrease in the collection of total revenues from excise duties on beer by 4.7% compared to the first quarter of 2021 (Chart 6, % of growth I). There was also decrease by 14.5% compared to the first quarter of 2020 (Chart 6, % of growth II), and by 12.2% compared to the first quarter of 2019 (Chart 6, % of growth III).

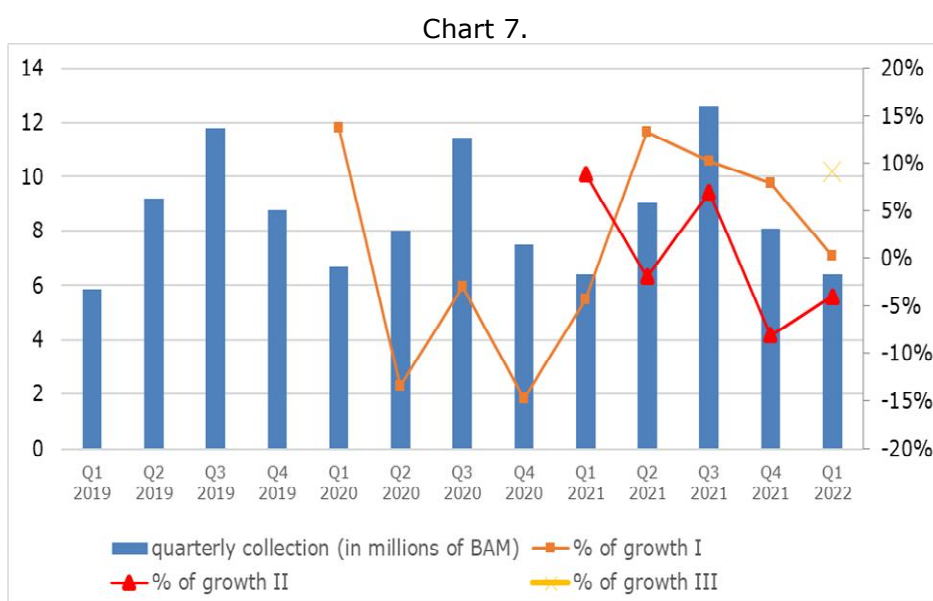
As a cause of measures in the fight against the pandemic, the collection of total revenues from excise duties on beer in second quarters recorded the largest decline of 13.9% in the second quarter of 2020 compared to the second quarter of the previous year (Chart 6, % of growth I). The decline was recorded in the quarter in which measures to restrict and stop the operation of catering facilities, bans and restrictions on movement and gatherings were the most rigorous and significantly affected the collection of these revenues. The second quarter of 2021 recorded a recovery in the collection of total revenues from excise duties on beer at the quarterly level compared to the same period of 2020 by 8.8%, but compared to the same period before the pandemic it is still down by 6.3% (Chart 6, % of growth II).

The movement of total revenues from excise duties on beer in the third quarters in the observed three years has a growing trend. Although these revenues, due to their seasonal nature, are the highest in the third quarters, their collection in the third quarter of 2020 indicates a rapid recovery from measures to combat the pandemic when it comes to this excise product. Thus, the total revenues from excise duties on beer in the third quarter of 2020 were 0.6% higher compared to the same period in 2019 (Chart 6, % of growth I). In the third quarter of 2021 they were higher by 1.9% compared to the third quarter of 2020 (Chart 6, % of growth I), or 2.6% higher compared to the third quarter of 2019 (Chart 6, % of growth II).

In the fourth quarters of the last three years, the movement of total revenues from excise duties on beer is declining, and their collection in the fourth quarter of 2020 is 13.7% lower than in the fourth quarter of 2019 (Chart 6, % of growth I). In the fourth quarter of 2021 it was 1.2% lower compared to the same period in 2020 (Chart 6, % of growth I), and 14.7% lower compared to the same period in 2019 (Chart 6, % of growth II).

3.2. Quarterly trends of revenues from excise duties on imported beer

Chart 7 shows the quarterly trend of collection of revenues from excise duties on imported beer, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale), for the period Q1 2019 - Q1 2022⁴¹.



Source: Data from the Indirect Taxation Authority of B&H, OMA overview

The seasonal character also influences the trend in the collection of revenues from excise duties on imported beer on a quarterly basis in the observed period. Thus, in the observed time period, the collection of revenues from excise duties on imported beer in the first quarters was the highest in 2020, i.e. in the period before the "lockdown", by 13.7% higher than in the first quarter of 2019 (Chart 7, % of growth I), and 4.5% higher than in the first quarter of 2021. In the first quarter of 2022, the collection of excise revenues on imported beer was 0.3% higher than in the first quarter of 2021 (Chart 7, % of growth I). It was 9.2% higher than in the first quarter of 2019 (Chart 7, % of growth III), while compared to the same period in 2020 it is lower by 4.0% (Chart 7, % of growth II).

In second quarters, the largest decline in revenues from excise duties on imported beer was recorded in the second quarter of 2020 by 13.5% compared to the second quarter of 2019 (Chart 7, % of growth I), as a result of Covid-19 measures. Collection of revenues from excise duties on imported beer in the second quarter of 2021 is 13.3% higher than in the second quarter of 2020 (Chart 7, % of growth I), while compared to the second quarter of 2019 it is lower by 2.0% (Chart 7, % of growth II) which indicates a gradual recovery from shock.

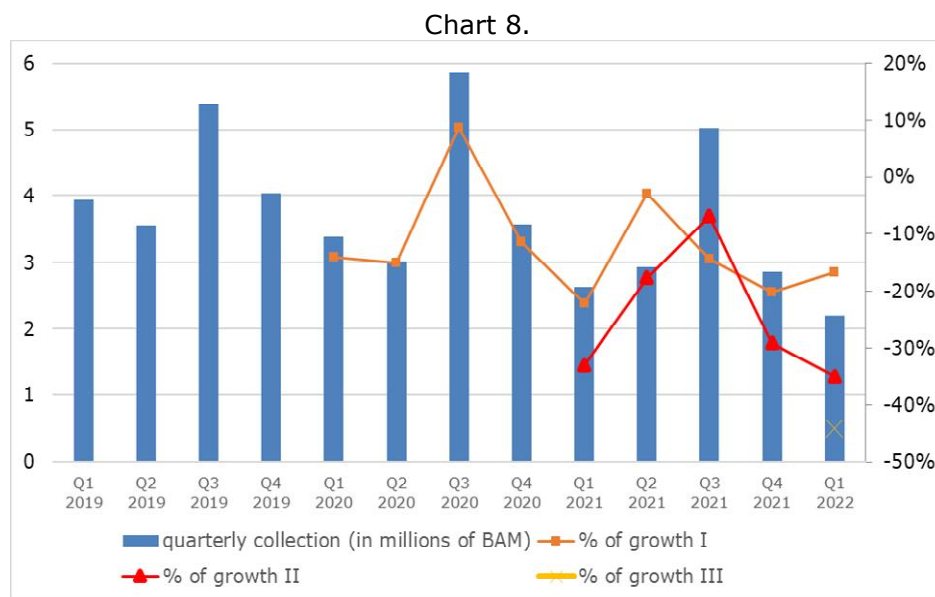
⁴¹ 2019 used as a base

In the third quarter of 2020, the movement of excise revenues on imported beer decreased by 3.0% compared to the same quarter in 2019 (Chart 7, % of growth I), while in the third quarter of 2021 the most significant quarterly collection of these revenues was recorded. Thus, the collection of revenues from excise duties on imported beer in the third quarter of 2021 is higher by 10.3% compared to the third quarter of 2020 (Chart 7, % of growth I), and it is 6.9% higher compared to third quarter of 2019 (Chart 7, % of growth II).

In the fourth quarters, the lowest collection of excise revenues on imported beer was recorded in 2020, when compared to the fourth quarter of 2019, the collection was lower by 14.8% (Chart 7, % of growth I). The collection in the fourth quarter of 2021 increased by 7.9% compared to the fourth quarter of 2020 (Chart 7, % of growth I), but compared to the fourth quarter of 2019, the collection of these revenues decreased by 8.1% (Chart 7, % of growth II).

3.3. Quarterly trends of revenues from excise duties on domestic beer

Quarterly collection of excise revenues on domestic beer is also seasonally affected with the consequences of the Covid-19 shock. Chart 8 shows the quarterly trend in the collection of revenues from excise duties on domestic beer, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale), for the period Q1 2019 - Q1 2022⁴².



Source: Data from the Indirect Taxation Authority of B&H, OMA overview

In the observed period, the collection of revenues from excise duties on domestic beer in the first quarters is the highest in 2019, after which there is a constant decrease in the collection of these revenues. Thus, revenues from excise duties on domestic beer in the first quarter of 2020 were 14.1% lower than in the first quarter of 2019 (Chart 8, % of growth I). In the first quarter of 2021, these revenues decreased by 22.0% compared to the first quarter of 2020 (Chart 8, % of growth I), and by 33.0% compared to the first quarter of 2019 (Chart 8, % of growth II). The first quarter of the current year is characterized by a significant decline in the collection of revenues from excise duties on domestic beer, 16.6% compared to the first quarter of 2021

⁴² 2019 used as a base

(Chart 8, % of growth I). It also declined by 35% compared to the first quarter of 2020 (Chart 8, % of growth II), and 44.1% compared to the first quarter of 2019 (Chart 8, % of growth III).

Revenues from excise duties on domestic beer collected in second quarters were also the highest in 2019, after which they were lower by 15.0% in the second quarter of 2020 (Chart 8, % of growth I), and lower in the second quarter of 2021 by 17.6% (Chart 8, % of growth II). Given that domestic beer and the closure of borders and the reduction of foreign trade did not affect the reduction of consumption, reasons such as "lockdown", i.e. closure in the country, especially restaurants where beer is the best-selling alcoholic beverage, as well as hesitation of the population from consumption, have significantly affected the reduction of domestic beer consumption. Although in 2021 the economy recovered in all fields with the normal functioning of catering facilities and retail chains, the continued reduction in revenues from excise duties on domestic beer is attributed to consumer preferences and lower prices of imported beer, which gives domestic brewers unfair competition.

Revenues from excise duties on domestic beer in the third quarters in the observed period had a growth trend in 2020 by 8.6% compared to the third quarter of 2019 (Chart 8, % of growth I). In the third quarter of 2021, the recorded collection of these revenues decreased by 14.3% compared to the same period in 2020 (Chart 8, % of growth I), and by 6.9% compared to the same period in 2019 (Chart 8, % of growth II).

Also in the fourth quarters, revenues from excise duties on domestic beer are the highest in 2019. Thus, these revenues are 12.8% higher compared to the fourth quarter of 2020, and 41.0% higher compared to the fourth quarter of 2021.

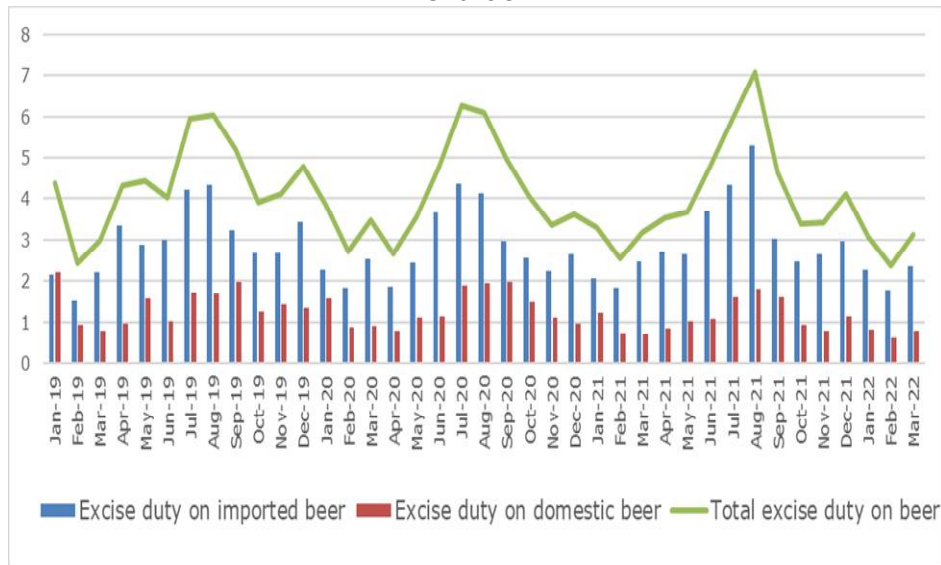
4. Monthly trends of revenues from excise duties on beer

Given the presence of the second shock from which the global economy and the economy of B&H is still recovering, which is caused by the Covid-19 pandemic, and measures to combat the spread of the virus, the analysis shows the monthly movement of revenues from excise duties on beer. This trend is shown for the period before the pandemic, the period during the pandemic and the period after the occurrence of the pandemic. Also, the analysis covers the period of the beginning of the crisis caused by the war in Ukraine, which began at the end of February 2022, as well as the period of galloping inflation at the global level, which was largely reflected in B&H. In accordance with the above, the monthly dynamics of the movement of revenues from excise duties on beer is shown for the period from January 2019 to March 2022⁴³. The goals of the monthly analysis of beer excise revenues are analysis of the impact of external factors such as pandemics and measures to combat the pandemic, the war between Russia and Ukraine, inflation, understanding the current situation, understanding consumer preferences, and analysis of seasonal impact on beer consumption.

Chart 9 shows the monthly movement of revenues from excise duties on beer for the specified period, in millions of BAM (left vertical scale). The monthly movement of the total collection of revenues from excise duties on beer in the observed period is shown, as well as the monthly movement of the collection of revenues from excise duties, broken down by components.

⁴³ Latest available data

Chart 9.



Source: Data from the Indirect Taxation Authority of B&H, OMA overview

As with the quarterly data, the chart shows that the highest collection of total revenues from excise duties on beer on a monthly basis is in the summer months. Due to the weather conditions, the highest consumption of beer is in the period from June to September, after which the consumption decreases slightly until December, when there was an increase in these revenues due to the New Year and Christmas holidays. Increased consumption of non-residents, increased number of tourists and diaspora, B&H citizens temporarily working abroad, organizing celebrations, creating stocks for the January holidays, are the main reasons contributing to increased revenues from excise duties on beer in December.

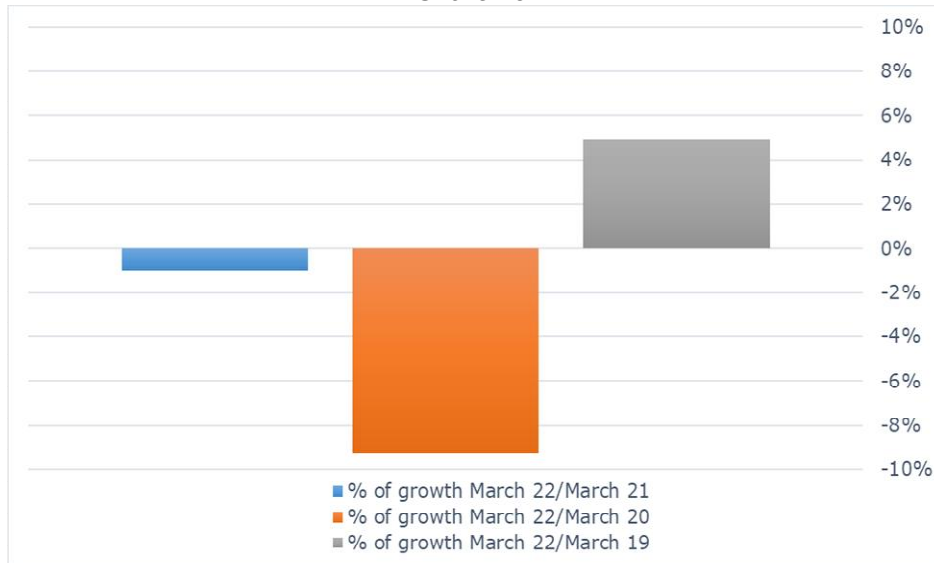
In the observed period, the highest collection of total revenues from excise duties on beer on a monthly basis was recorded in August 2021, and these revenues are 16.1% higher compared to the same month in 2020 and 17.0% higher compared to the same month in 2019 (Chart 9)

Monthly data on collection of revenues from excise duties on imported beer shown in Chart 9 are the highest in August 2021. They are 27.8% higher compared to the same month in 2020, and 24.8% higher compared to August 2019.

The highest revenues from excise duties on domestic beer on a monthly basis were recorded in January 2019, which is the only month in the observed period in which the collection of revenues from excise duties on domestic beer was higher than the collection of revenues from excise duties on imported beer by 4.1%. After this period, revenues from excise duties on domestic beer began to decline relative to revenues from excise duties on imported beer.

Given that monthly data on collected revenues from excise duties on beer are available at the end of March this year until the preparation of this analysis, which was marked by the war in Ukraine and current inflation at the global level, Chart 10 shows their impact on excise revenues on beer through the growth rate of these revenues.

Chart 10.



Source: Data from the Indirect Taxation Authority of B&H, OMA overview

Total revenues from excise duties on beer in March 2022 were 1.0% lower than in March 2021 (Chart 10, % of growth March 22/March 21); 9.3% lower than in March 2020 (Chart 10, % of growth March 22/March 20); while compared to March 2019 they are higher by 4.9% (Chart 10, % of growth March 22/March 19).

Given the beginning of the war in Ukraine, the current inflation at the global level, which largely affects B&H, it is uncertain how the new crisis will affect the collection of revenues from excise duties on beer in the future. It is expected that the escalation of the conflict between Russia and Ukraine will affect the increase in the price of barley, which has reached a historical maximum, because Ukraine is among the top five world producers of barley, accounting for 18% of total world barley production. Since barley accounts for 30% of raw material costs in beer production and many brewers still use barley stocks from the previous harvest season that they procured before inflation peaked, there were no significant disruptions in supply chains in the first three months of this year. For example, in countries with larger barley producers such as India, if there are disruptions in supply chains, beer prices may move in line with local barley prices because their breweries mainly supply barley locally, while the European market is largely depending on barley from Ukraine.

One of the significant consequences of the war in Ukraine has already resulted in a sharp increase in crude oil on the world market, which had a direct impact on bottling costs because crude oil is a significant component of raw materials in packaging production. The current situation also has a negative impact on domestic breweries through rising prices for packaging and packaging materials, and creates an additional problem for domestic beer producers who face high packaging costs due to increased inflation in glass prices. Given that the emerging crisis could lead to inflationary pressures and disruptions in supply chains at the global level and in the country, the trend in the collection of revenues from excise duties on beer will be the subject of analysis in the future.

Analysis of collection of revenues from excise duties on non-alcoholic beverages

(Author: Mirjana Popović, expert advisor - macroeconomist)

1. Non-alcoholic beverage taxation policy in Bosnia and Herzegovina

Non-alcoholic beverages in Bosnia and Herzegovina (hereinafter: B&H) are subject to value added tax and excise duty. In terms of the Law on Excise Duties in B&H (hereinafter: the Law)⁴⁴ defining excise products and the policy of their taxation, non-alcoholic beverages are considered refreshing non-alcoholic beverages from fruit juice, fruit base, plant extracts, cereals and whey, artificial refreshing non-alcoholic beverages and low-energy refreshing non-alcoholic beverages⁴⁵. Revenues from excises on non-alcoholic beverages are paid into the Single Account of the Indirect Taxation Authority, and their allocation is done in accordance with the Law on Payments to the Single Account and Allocation of Revenues⁴⁶.

An overview of current excise products according to the Law is presented in Frame 1, while an overview of excise rates according to current legislation is presented in Frame 2.

Frame 1.

Article 4. (Excise duties products)
a) petroleum products;
b) tobacco products;
c) non-alcoholic beverages
d) alcohol, alcoholic beverages and fruit natural brandy;
e) beer and wine;
f) coffee;
g) biofuels and bioliquids.

Source: Law on Excise Duties in B&H

Frame 2.

Article 18. (Excise taxes on non-alcoholic beverages, beer and wine)
a) non-alcoholic beverages 0,10 BAM
b) beer 0,25 BAM
c) wine 0,25 BAM

Source: Law on Excise Duties in B&H

⁴⁴ "Official Gazette of B&H", no. 49/09, 49/14, 60/14 and 91/17.

⁴⁵ In terms of the Law, non-alcoholic beverages are not considered natural mineral, carbonated and non-carbonated waters, domestic and imported spring waters, 100% natural juices from fruits and vegetables and their mixtures. Fruit and vegetable juices and mixtures thereof, with or without added water, whether or not containing added sugar, with or without preservatives. Also juices with or without CO₂, with or without artificial colors, with or without artificial flavors and other artificial additives, with an actual and declared content of 50% or more of fruits and / or vegetables in the dry matter. Syrups, powders and lozenges intended for the preparation of non-alcoholic beverages by dilution in water are also not subject to additional excise taxation.

⁴⁶ "Official Gazette of B&H", no. 55/04 i 34/07.

The basic goals of the application of excise duties on excise products should be viewed in the context of what government policies are trying to achieve by introducing or implementing them. Excise duty is applied to various excise products, i.e. products that are considered luxury or products that are considered harmful to the health of the population and the environment. Excise products as well as the amount of excise duty on excise goods vary from country to country and from product to product, so there is no single opinion or rule on the amount of excise duty on non-alcoholic beverages. The differences in the applied excise rates by individual countries are large, which indicates differences in the establishment of the taxation system. The main goals of the application of excise duty on certain non-alcoholic beverages are to reduce the consumption of these products for health, social and economic reasons of consumers, i.e. to reduce the observed damage from consumption or increase public revenues, or both. Also, additional reasons for the application of excise duties on certain products are the reduction of all external and total social costs incurred by increased consumption of excise products. External and total social costs can be all indirect costs caused by the consumption of excise products, such as medical treatment of problems caused by the consumption of non-alcoholic beverages that are subject to excise taxation. For example, sugary non-alcoholic beverages that are additionally taxed in B&H contribute to overweight and obesity, which further cause heart disease, diabetes and other serious non-communicable diseases. Reducing the consumption of such beverages improves health, and excise taxation is one of the tools to achieve that. The importance of taxing sugar-sweetened non-alcoholic beverages has become even greater due to the Covid-19 pandemic because research has shown that people who are overweight or obese or suffer from diabetes and heart disease are more likely to develop severe cases of Covid-19. The costs of treatment are largely financed from public funds, which affect the tax system, as the consumption of excisable products can have consequences for consumer income and consumption. For these reasons, excise duties on sugar-sweetened non-alcoholic beverages bring a triple victory for the country because taxes on these non-alcoholic beverages not only generate income but also improve health, while reducing long-term health costs and productivity loss due to diseases associated with overweight and obesity.

2. Annual trends of revenues from excise duties on non-alcoholic beverages

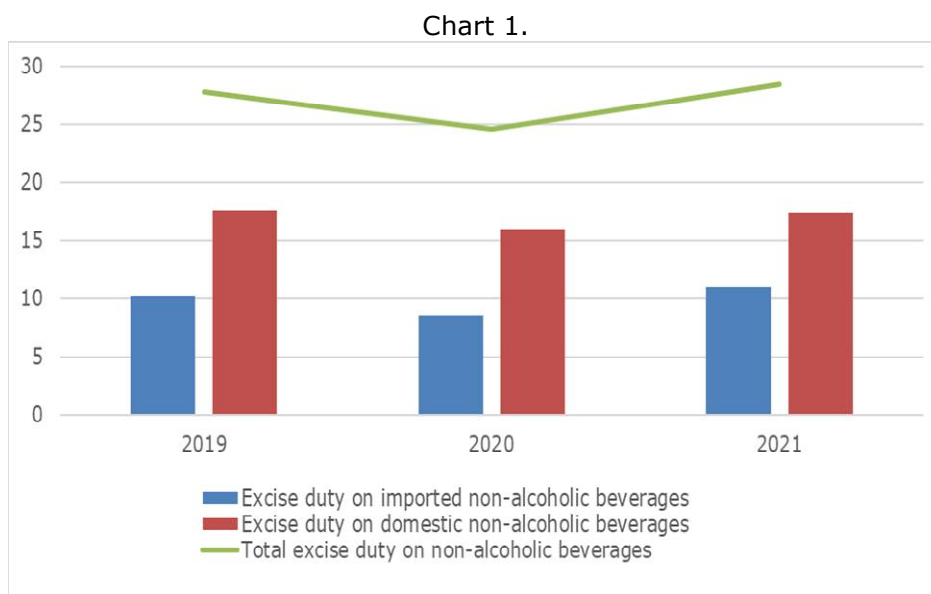
Although the application of excise duties generates social, health and economic aspects, i.e. the effect of reducing demand and consumption of any excise product, the main goal of introducing excise duties can be attributed to increasing public revenues, and mainly economic or fiscal effects are the main reasons for introducing these taxes. However, excise duties on non-alcoholic beverages have a low effect in terms of increasing revenue, and may result in negative economic benefits. Thus, in the period 2019-2021, total revenues from excise duties on non-alcoholic beverages account for 1.8% to 1.9% of total revenues from excise duties on an annual basis, and from the point of view of increasing revenues, non-alcoholic beverages are not an ideal excise product.

In terms of health benefits, the intention to introduce excise duties on non-alcoholic beverages for health reasons is to reduce the consumption of high-calorie non-alcoholic beverages. However, trends in the market of non-alcoholic beverages in B&H show that discriminatory taxes on non-alcoholic beverages in the observed period do not have a significant impact on reducing consumption of these products. These excise policies do not provide many answers to improve health because these types of beverages can be easily replaced with other forms of calories other than excise products.

However, in the observed period, the emergence of the Covid-19 pandemic had the greatest negative impact on the non-alcoholic beverages market in B&H, which caused many other negative economic consequences, both in the country and globally. The first cases of coronavirus in B&H were recorded in March 2020, after which dramatic changes in consumer behavior began.

Events, travel and many other activities have stalled, and key changes in consumer behavior have taken place, after which beverage companies have worked globally to mitigate the impact of measures introduced to combat the spread of the coronavirus. In the period of the most rigorous measures introduced in the fight against the spread of the virus, the sale of non-alcoholic beverages, i.e. the collection of total revenues from excise duties on non-alcoholic beverages, is declining. During this period, the population procured supplies and the supply of non-alcoholic beverages was mostly trade, but the pandemic reoriented the population to higher consumption of "healthy" beverages, such as water, various types of isotonic, coffee, tea and natural juices that are not excise products. Also, the ban on gatherings, closures and limited operation of catering facilities have had an impact on reducing the consumption of non-alcoholic beverages. This impact was not as much as the impact on alcohol consumption, as non-alcoholic consumption opportunities are less social than alcoholic consumption opportunities and non-alcoholic consumption outside the home is more easily replaced by home consumption. Also, the Covid-19 pandemic is witnessing a serious impact on consumer behavior and includes various safety standards, measurements and quality checks, with the aim of increasing consumer confidence. The Covid-19 situation has increased sales of products that provide functional benefits, such as products to improve health and boost immunity, and demand for high-sugar carbonated beverages has fallen sharply in both out-of-store and retail channels. The pandemic has also reshaped the demand for package size in 2020, as consumers have shifted to larger or multiple packages because they are more cost-effective and reduce the need for more frequent purchases. The increase in demand for functional beverages that would complement health is driving the non-alcoholic beverages market in the year of the pandemic, and reducing the demand for non-alcoholic beverages that are subject to excise taxation. Thus, in the years of the pandemic, increasing health awareness and demand for products aimed at preserving and improving health, have largely negatively affected the market of carbonated high-calorie non-alcoholic beverages that are subject to excise tax.

Chart 1 shows the movement of annual collection of revenues from excise duties on non-alcoholic beverages during the period 2019-2021, in millions of BAM (left vertical scale). The annual collection of total revenues from excise duties on non-alcoholic beverages in the observed period is presented, as well as the annual collection of revenues from excise duties divided by components - revenues from excise duties on imported non-alcoholic beverages and revenues from excise duties on domestic non-alcoholic beverages.

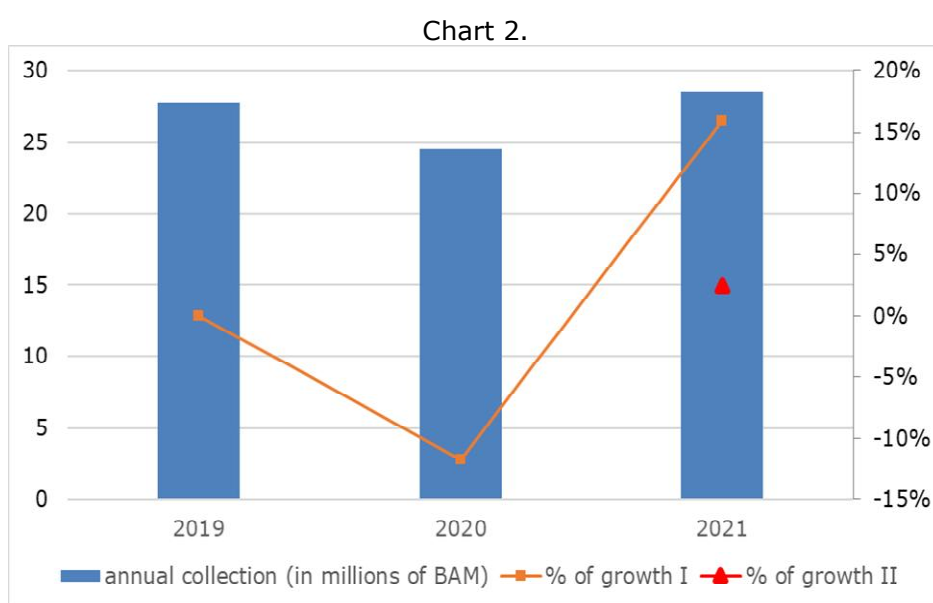


Source: Data from the Indirect Taxation Authority of B&H, MAU overview

The annual trend in the collection of total revenues from excise duties on non-alcoholic beverages in the presented three-year period was marked by the emergence of the Covid-19 pandemic at the global level and measures to combat the spread of the virus. The decline in total revenues from excise duties on non-alcoholic beverages in 2020 was more influenced by the decline in revenues from excise duties on imported non-alcoholic beverages than collected revenues from excise duties on domestic non-alcoholic beverages, as a result of closing borders, and a more detailed analysis follows.

2.1. Annual trends in total revenues from excise duties on non-alcoholic beverages

Chart 2 shows the trend of three-year collection of total revenues from excise duties on non-alcoholic beverages, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale)⁴⁷.



Source: Data from the Indirect Taxation Authority of B&H, MAU overview

In 2020, there was a declining trend in the collection of total revenues from excise duties on non-alcoholic beverages compared to 2019 by 11.7% (Chart 2, % of growth I). A significant recovery in the collection of these revenues by 15.9% was recorded in 2021 compared to 2020 (Chart 2, % of growth I), while compared to 2019 there was an increase in revenues from excise duties on non-alcoholic beverages by 2.4% (Chart 2, % of growth II).

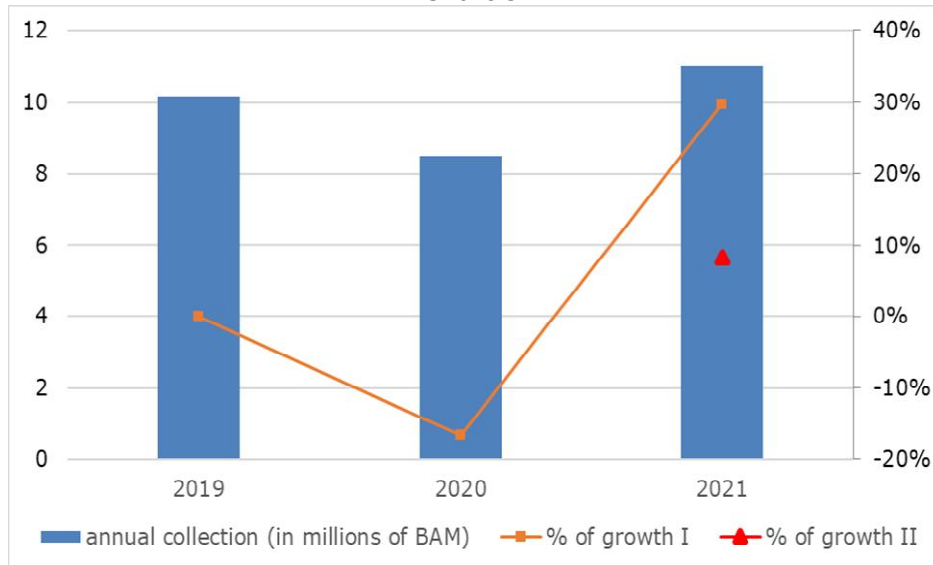
In addition to the movement of total revenues from excise duties on non-alcoholic beverages in the three-year period, the following is an analysis of the movement of revenues from excise duties on non-alcoholic beverages by components - import and domestic excise in the same period, which provides a more detailed picture of consumer preferences and other external factors.

2.2. Annual trends in revenues from excise duties on imported non-alcoholic beverages

Chart 3 shows the trend of three-year collection of revenues from excise duties on imported non-alcoholic beverages, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale)⁴⁸.

⁴⁷ 2019 used as a base

Chart 3.



Source: Data from the Indirect Taxation Authority of B&H, MAU overview

The emergence of coronavirus, uncertainty about the unknown virus, hesitation from consumption, and measures introduced to combat the spread of the virus, led to a decline in revenues from excise duties on imported non-alcoholic beverages in 2020 by 16.6% compared to 2019 (Chart 3, % of growth I). The easing of measures and the opening of borders has led to a historic maximum in the collection of revenues from excise duties on imported non-alcoholic beverages in 2021, which is 29.8% higher than in 2020 (Chart 3, % of growth I), and 8.3% higher than in the year before the pandemic, i.e. in 2019 (Chart 3, % of growth II).

The main reasons for the increase in revenues from excise duties on non-alcoholic beverages from imports in 2021 can be attributed to consumer preferences, a wide range of excise non-alcoholic beverages from imports, as well as growing marketing that allows great popularity, recognition and visibility of world famous non-alcoholic beverages brands.

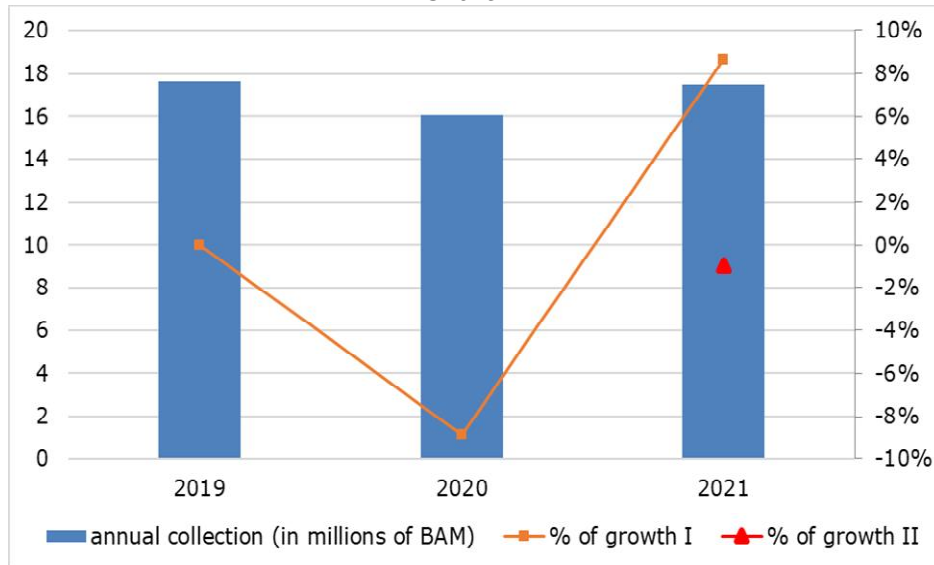
2.3. Annual trends in revenues from excise duties on domestic non-alcoholic beverages

Chart 4 shows the trend of three-year collection of excise revenues on domestic non-alcoholic beverages, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale)⁴⁹.

⁴⁸ 2019 used as a base

⁴⁹ 2019 used as a base

Chart 4.



Source: Data from the Indirect Taxation Authority of B&H, MAU overview

Thus, in 2021, the collection of revenues from excise duties on domestic non-alcoholic beverages was higher by 8.6% compared to 2020 (Chart 4, % of growth I), and lower by 1.0% compared to 2019 (Chart 4, % of growth II). In 2020, revenues from excise duties on domestic non-alcoholic beverages were lower by 8.8% compared to 2019 (Chart 4, % of growth I), as a result of lower consumption of domestic non-alcoholic beverages compared to imported non-alcoholic beverages.

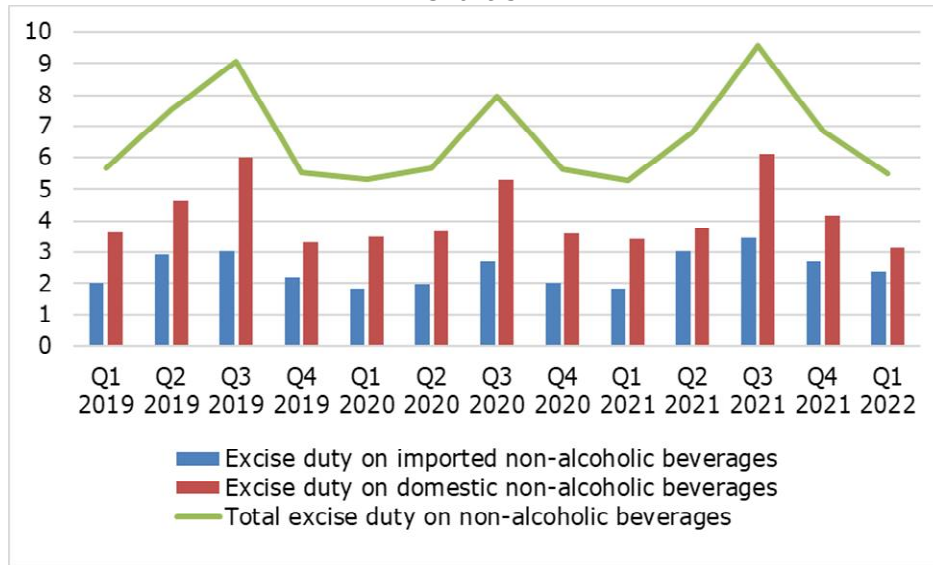
3. Quarterly trends of revenues from excise duties on non-alcoholic beverages

The goals of the quarterly analysis of revenues from excise duties on non-alcoholic beverages are multiple. Impact of the pandemic and the impact of measures taken to combat the spread of the virus on the collection of total revenues from excise duties on non-alcoholic beverages and the collection of revenues from excise duties on non-alcoholic beverages by components. Also, the goals of the analysis are to understand the current situation, as well as future expectations while maintaining existing policies. The quarterly analysis shows the trend in the collection of revenues from excise duties on non-alcoholic beverages for the first quarter of the current year, which was marked by the beginning of the war between Russia and Ukraine, and inflation at the global level.

Chart 5 shows the quarterly movement of revenues from excise duties on non-alcoholic beverages for the listed period in millions of BAM (left vertical scale). Quarterly dynamics of total revenues from excise duties on non-alcoholic beverages, as well as revenues from excise duties on non-alcoholic beverages by components - revenues from excise duties on imported non-alcoholic beverages and revenues from excise duties on domestic non-alcoholic beverages, is shown for the period from the first quarter (Q1) of 2019 until the first quarter (Q1) of 2022⁵⁰.

⁵⁰ Latest available data

Chart 5.



Source: Data from the Indirect Taxation Authority of B&H, MAU overview

The data give a picture of the impact of the seasonal trend in the collection of total excise revenues on non-alcoholic beverages due to weather conditions, and the highest consumption of non-alcoholic beverages is recorded in the third quarters, i.e. in the summer months. After the previous two seasons were hit by pandemic waves and occasional closures as a result of measures to combat the coronavirus, it is expected that this summer the consumption of non-alcoholic beverages which are subject to excise duties, will be higher. This would increase excise revenues on non-alcoholic beverages in the third quarter of the current year. A detailed quarterly analysis of the collection of these revenues is given below.

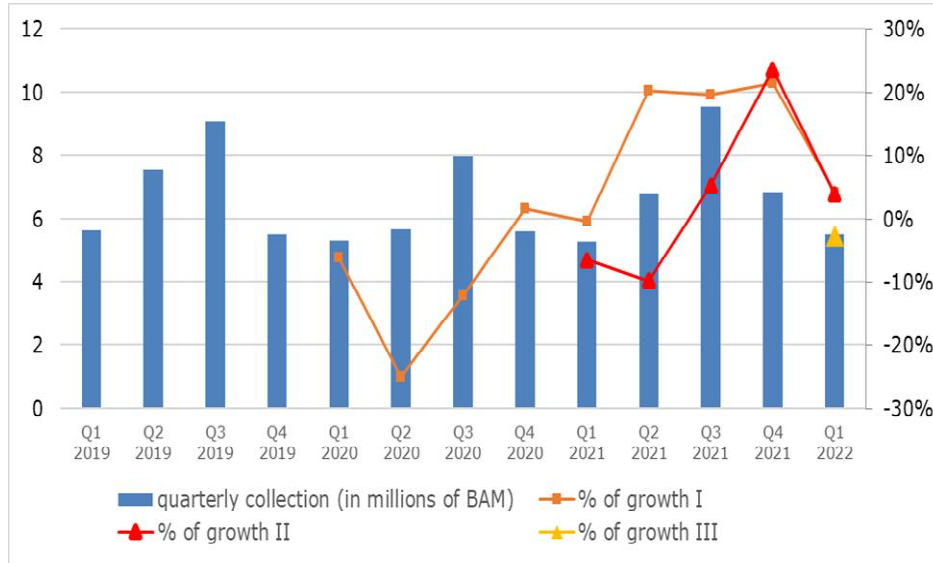
3.1. Quarterly trends of total revenues from excise duties on non-alcoholic beverages

Chart 6 shows the quarterly trend of collection of total revenues from excise duties on non-alcoholic beverages, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale), for the period Q1 2019 - Q1 2022⁵¹.

By analyzing the quarterly trends in total revenues from excise duties on non-alcoholic beverages in the first quarters of the observed four years, the highest collection was recorded in the first quarter of 2019. Compared to that period, the collection of these revenues in the first quarter of 2020 is lower by 6.2% (Chart 6, % of growth I). Collection of these revenues in the first quarter of 2021 remained at the level of collection in the first quarter of 2020, while in the same quarter of 2022 there was an increase in total revenues from excise duties on non-alcoholic beverages by 4.2% compared to the first quarter of 2021 (Chart 6, % of growth I). Compared to the first quarter of 2020, collection of these revenues in the first quarter of 2022 is higher by 3.9% (Chart 6, % of growth II). However, compared to the first quarter of 2019, 2.6% less total revenues from excise duties on non-alcoholic beverages were collected in the first quarter of the current year (Chart 6, % of growth III).

⁵¹ 2019 used as a base

Chart 6.



Source: Data from the Indirect Taxation Authority of B&H, MAU overview

Due to rigorous measures introduced in the fight against the spread of coronavirus, the observed trend in the collection of total revenues from excise duties on non-alcoholic beverages in the second quarters decreased by 25.0% in the second quarter of 2020 compared to the second quarter of 2019 (Chart 6, % of growth I). In the second quarter of 2021, there was a recovery in the collection of these revenues on a quarterly basis compared to the same period 2020 by 20.3% (Chart 6, % of growth I), but compared to the same period before the pandemic is still declining by 9.8% (Chart 6, % of growth II).

The seasonal impact of the collection of total revenues from excise duties on non-alcoholic beverages resulted in the largest collection of these revenues in the third quarters. Thus, the highest quarterly collection of total revenues from excise duties on non-alcoholic beverages was recorded in the third quarter of 2021, which is 19.7% higher than in the third quarter of 2020 (Chart 6, % of growth I), and 5.2% higher compared to the third quarter of 2019 (Chart 6, % of growth II).

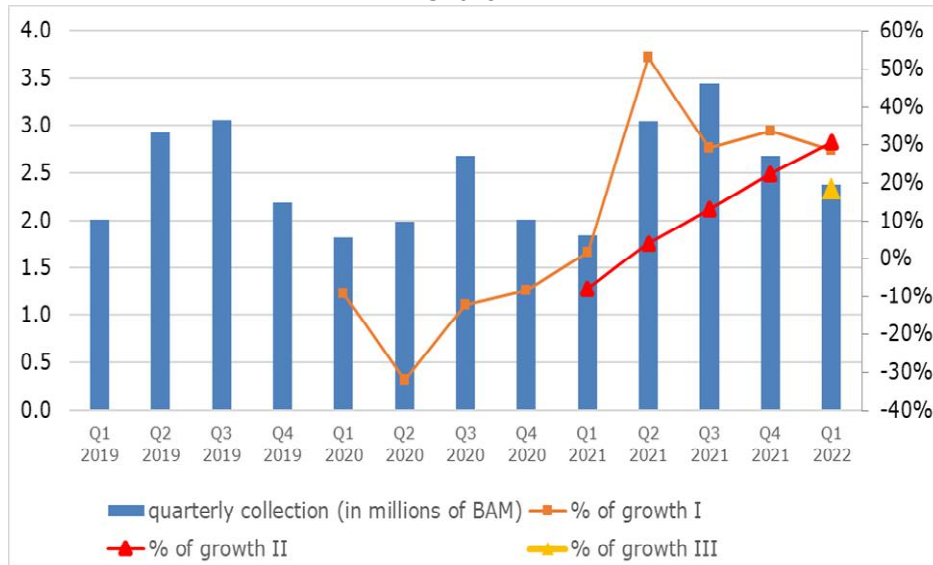
In the fourth quarters of the observed three years, the collection of total revenues from excise duties on non-alcoholic beverages has a growth trend. Thus, in the fourth quarter of 2021, 21.5% more of these revenues were collected compared to the fourth quarter of 2020 (Chart 6, % of growth I), and 23.6% more than in the same quarter of 2019 (Chart 6, % of growth II).

3.2. Quarterly trends of revenues from excise duties on imported non-alcoholic beverages

Chart 7 shows the quarterly trend of collection of revenues from excise duties on imported non-alcoholic beverages, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale), for the period Q1 2019 - Q1 2022⁵².

⁵² 2019 used as a base

Chart 7.



Source: Data from the Indirect Taxation Authority of B&H, MAU overview

Collected revenues from excise duties on imported non-alcoholic beverages in the first quarters were the highest in 2022. These revenues were 28.5% higher than in the first quarter of 2021 (Chart 7, % of growth I), 30.5% higher compared to the first quarter of 2020 (Chart 7, % of growth II), and 18.4% higher than in the first quarter of 2019 (Chart 7, % of growth III).

Closing borders, restricting and banning the operation of catering and trade facilities, and hesitating the population from consumption, resulted in a significant reduction in revenues from excise duties on imported non-alcoholic beverages in the second quarter of 2020. Thus, as a result of measures introduced in the fight against the pandemic, this quarter recorded a decline in excise revenues on imported non-alcoholic beverages by 32.1% compared to the same quarter in 2019 (Chart 7, % of growth I). The easing of measures affected the recovery in the collection of these revenues. In the second quarter of 2021 there was an increase in the collection of revenues from excise duties on imported non-alcoholic beverages by 53.0% compared to the second quarter of 2020 (Chart 7, % of growth I), and by 3.9% compared to the second quarter of 2019 (Chart 7, % of growth II).

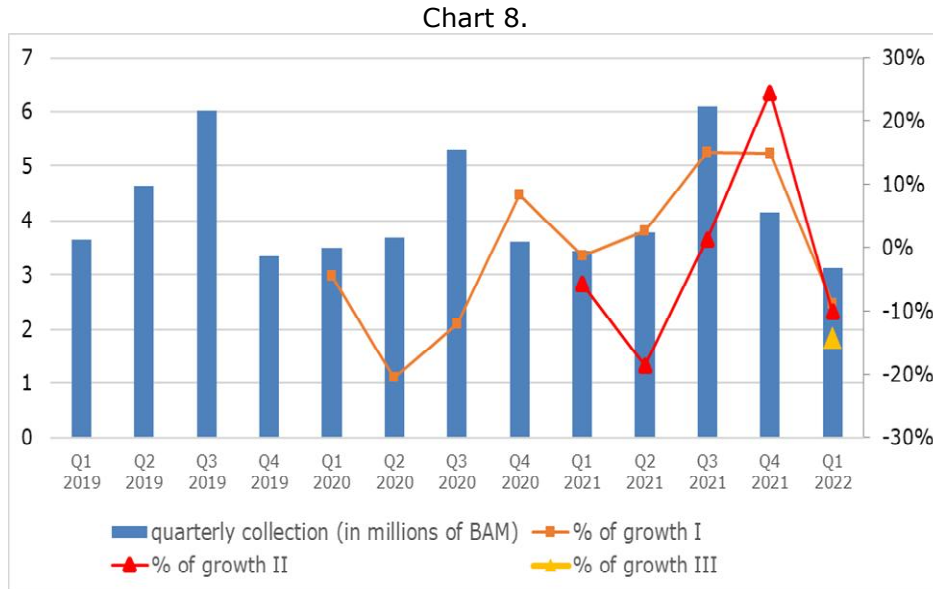
In the third quarter of 2021, a record collection of revenues from excise duties on imported non-alcoholic beverages was recorded in the observed period. In this quarter, the collection of these revenues is higher by 29.0% compared to the third quarter of 2020 (Chart 7, % of growth I), i.e. higher by 13.1% compared to the third quarter of 2019 (Chart 7, % of growth II).

The highest collection of excise revenues on imported non-alcoholic beverages in the fourth quarter was recorded in 2021, which is 33.4% higher compared to the fourth quarter of 2020 (Chart 7, % of growth I), while compared to the fourth quarter of 2019, it increased by 22.6% (Chart 7, % of growth II).

3.3. Quarterly trends of revenues from excise duties on domestic non-alcoholic beverages

Quarterly collection of excise revenues on domestic non-alcoholic beverages is also under seasonal impact with the consequences of the Covid-19 shock. Although the collection of these revenues did not largely depend on closing borders and restricting foreign trade, "lockdown" and other measures in the country had the effect of reducing it. Chart 8 shows the quarterly trend of

collection of excise revenues on domestic non-alcoholic beverages, in millions of BAM (left vertical scale), and the annual growth rate of these revenues (right vertical scale), for the period Q1 2019 - Q1 2022⁵³.



Source: Data from the Indirect Taxation Authority of B&H, MAU overview

Unlike the collection of excise revenues on imported non-alcoholic beverages, the collection of excise revenues on domestic non-alcoholic beverages in the first quarters is the lowest in 2022. Thus, the collection of these revenues in the first quarter of 2022 was 8.9% lower than in the first quarter of 2021 (Chart 8, % of growth I), 10.1% lower than in the first quarter of 2020 (Chart 8, % of growth II), and 14.2% lower compared to the first quarter of 2019 (Chart 8, % of growth III).

The new inflation has led to an increase in the prices of domestic non-alcoholic beverages which are subject to excise duty and which have been equalized in price or exceeded the prices of competitors from imports, which has shifted consumer preferences to the consumption of imported non-alcoholic beverages.

Revenues from excises on domestic non-alcoholic beverages collected in second quarters were the highest in 2019, after which they were lower by 20.6% in the second quarter of 2020 (Chart 8, % of growth I), and lower by 18.5% in the second quarter of 2021 (Chart 8, % of growth II). Given that closing borders and reducing foreign trade did not have a key impact on reducing consumption of domestic non-alcoholic beverages in the second quarter of 2020, measures such as the closure and restriction of catering and trade facilities reduced the consumption of domestic non-alcoholic beverages in this period.

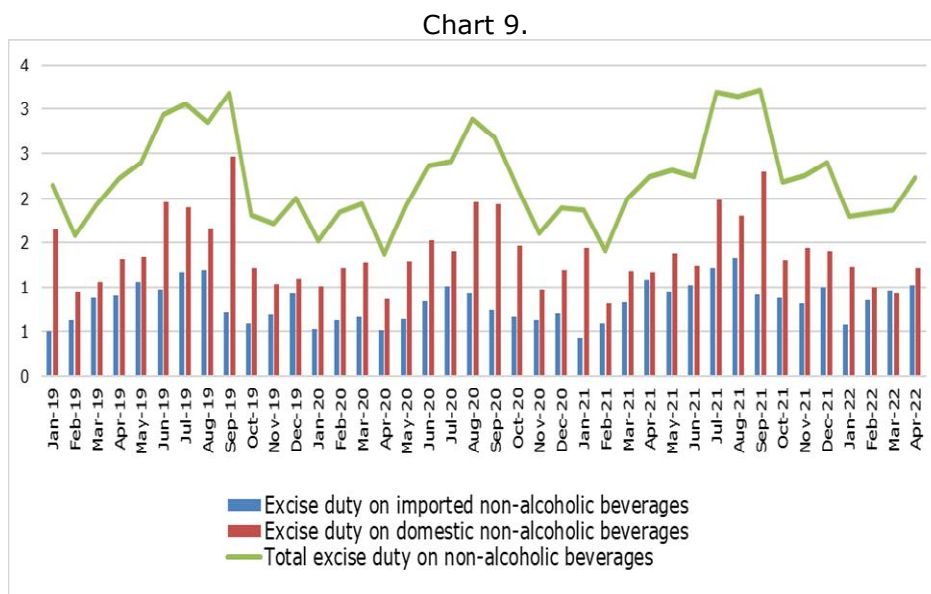
Revenues from excise duties on domestic non-alcoholic beverages in the third quarter of 2021 increased by 15.1% compared to the third quarter of 2020 (Chart 8, % of growth I), and by 1.3% compared to the third quarter of 2019 (Chart 8, % of growth II). Also in the fourth quarters, revenues from excise duties on domestic non-alcoholic beverages were the highest in 2021, and were 14.9% higher than in the fourth quarter of 2020 (Chart 8, % of growth I) and 24.5% higher compared to the fourth quarter of 2019 (Chart 8, % of growth II).

⁵³ 2019 used as a base

4. Monthly trends of revenues from excise duties on non-alcoholic beverages

Chart 9 shows the monthly movement of revenues from excise duties on non-alcoholic beverages for the period before the outbreak of the Covid-19 pandemic, the period during the outbreak of the Covid-19 pandemic and the period after the outbreak of the Covid-19 pandemic. The analysis also covers the period of the beginning of the crisis caused by the war in Ukraine, which began at the end of February 2022, as well as the period of galloping inflation at the global level, which greatly affected the economy of B&H. Thus, the monthly trends of revenues from excise duties on non-alcoholic beverages are shown for the period from January 2019 to April 2022⁵⁴. The aim of the analysis is to understand the current situation, seasonal impact on the consumption of non-alcoholic beverages, consumer preferences, the impact of external factors such as pandemics and measures to combat the pandemic, the war between Russia and Ukraine, and current inflation.

Chart 9 shows the monthly trends of revenues from excise duties on non-alcoholic beverages for the specified period, in millions of BAM (left vertical scale). The monthly trends of the collection of total revenues from excise duties on non-alcoholic beverages in the observed period of time is shown, as well as the monthly trends of the collection of revenues from excise duties on non-alcoholic beverages divided by components - import and domestic excise duties.



As with the quarterly data, the chart shows that the highest collection of total revenues from excise duties on non-alcoholic beverages on a monthly basis is in the summer months. Due to weather conditions, the highest consumption of non-alcoholic beverages is in the period from June to September, after which consumption decreases slightly until December, when a slight increase in these revenues was recorded because of increased consumption during the holidays.

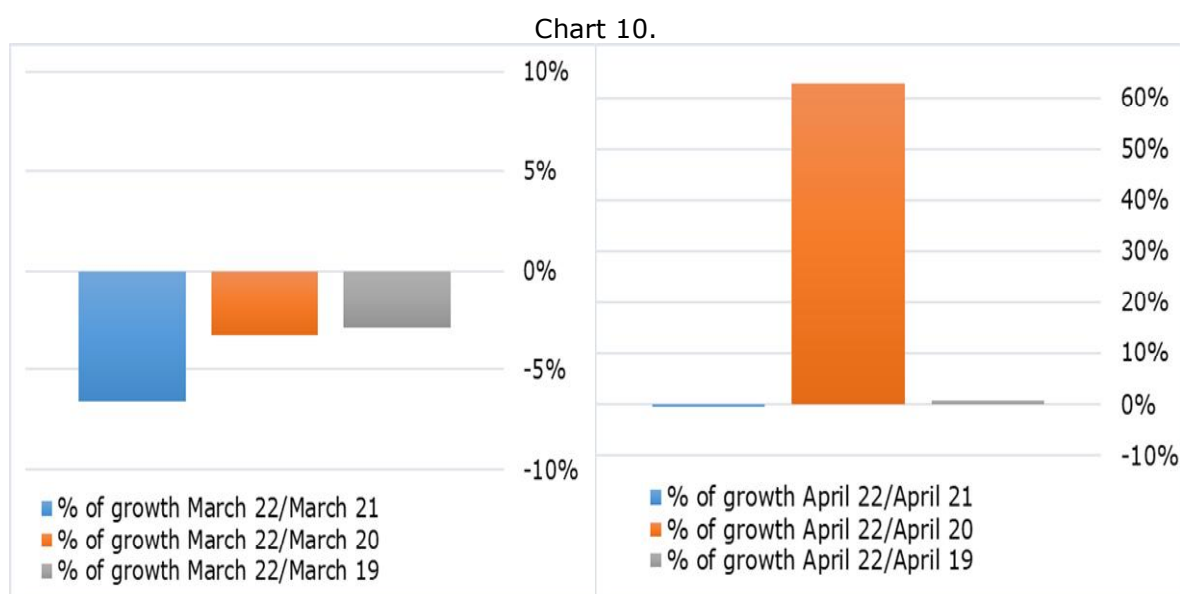
In the observed time period, the highest collection of total revenues from excise duties on non-alcoholic beverages on a monthly basis was recorded in September 2021, in which these revenues were 19.8% higher compared to the same month in 2020, and 1.2% higher compared to September 2019 (Chart 9).

⁵⁴ Latest available data

Monthly data on collection of revenues from excise duties on imported non-alcoholic beverages shown in Chart 9 are the highest in August 2021, which are 44.5% higher compared to the same month in 2020, and 12.6% higher compared to August 2019 (Chart 9).

The highest revenues from excise duties on domestic non-alcoholic beverages on a monthly basis were recorded in September 2019, and were 27.0% higher than in September 2020, and 6.9% higher than in September 2021 (Chart 9).

Until the preparation of this analysis, monthly data on collected revenues from excise duties on non-alcoholic beverages are available with April of the current year. The months of April and May this year were marked by the war in Ukraine and inflation. Chart 10 shows the impact of the new situation on the trend of collection of total revenues from excise duties on non-alcoholic beverages through the growth rate of these revenues.

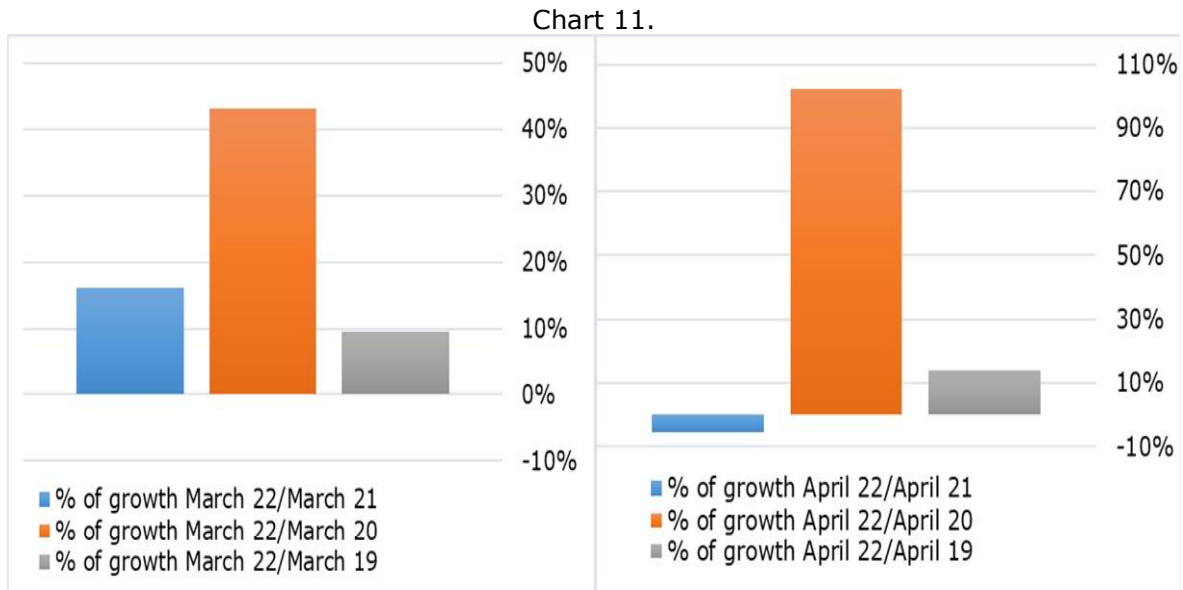


Source: Data from the Indirect Taxation Authority of B&H, MAU overview

March 2022 is characterized by a decrease in the collection of total revenues from excise duties on non-alcoholic beverages compared to the same month in the previous three years. Thus, these revenues in March 2022 were 6.6% lower than in March 2021 (Chart 10, % of growth March 22/March 21), 3.3% lower than in March 2020 (Chart 10, % of growth March 22/March 20), and 2.8% lower compared to March 2019 (Chart 10, % of growth March 22/March 19).

In April of the current year, the collection of total revenues from excise duties on non-alcoholic beverages remained at the level of last year's collection in the same month (Chart 10, % of growth April 22/April 21), while compared to April 2020, the collection of these revenues increased by 63.0% (Chart 10, % of growth April 22/April 20). Given that April 2020 is the month in which all regular life flows stopped as a result of the Covid-19 shock, it is not adequate for comparison. Also, in April of the current year, total revenues from excise duties on non-alcoholic beverages remained at the level of collection from April 2019, more precisely these revenues are higher by 0.8% (Chart 10, % of growth April 22/April 19).

Chart 11 shows the monthly trend in the collection of revenues from excise duties on imported non-alcoholic beverages through the growth rate of these revenues.

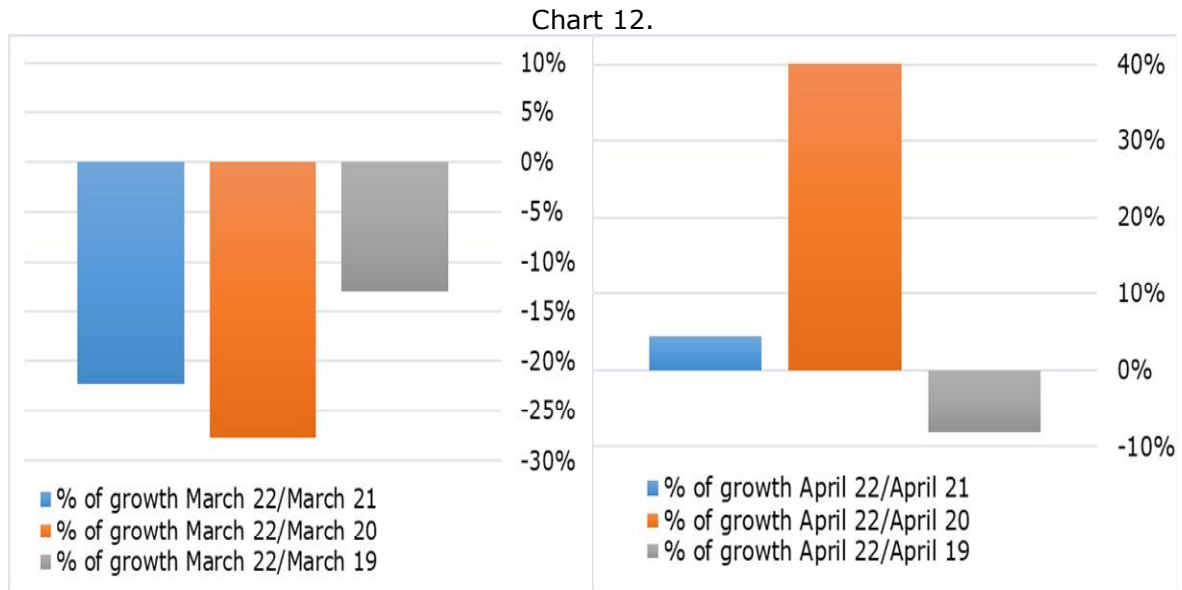


Source: Data from the Indirect Taxation Authority of B&H, MAU overview

The monthly collection of revenues from excise duties on imported non-alcoholic beverages increased in March this year compared to the same month in the previous three years. Current external factors did not affect the reduction of consumption of imported non-alcoholic beverages on the one hand, while on the other hand, the increase in world prices for these products caused by inflation ensured an increase in revenues from excise duties on imported non-alcoholic beverages. Thus, these revenues in March 2022 were 16.0% higher than in March 2021 (Chart 11, % of growth March 22/March 21), 43.0% higher than in March 2020 (Chart 11, % of growth March 22/March 20), and 9.5% higher compared to March 2019 (Chart 11, % of growth March 22/March 19).

Revenues from excise duties on imported non-alcoholic beverages collected in April this year decreased by 5.8% compared to April last year (Chart 11, % of growth April 22/April 21), while compared to April 2020 they increased by 102.2% (Chart 11, % of growth April 22/April 20). As the months of March and April 2020 were affected by the most rigorous Covid-19 measures, these measures had a major impact on significantly reducing the collection of excise revenues on imported non-alcoholic beverages. Compared to April 2019, in April 2021, 14.1% more of these revenues were collected (Chart 11, % of growth April 22/April 19).

Chart 12 shows the monthly trend in the collection of revenues from excise duties on domestic non-alcoholic beverages through the growth rate of these revenues.



Source: Data from the Indirect Taxation Authority of B&H, MAU overview

Collection of revenues from excise duties on domestic non-alcoholic beverages in March of the current year is declining compared to the same month in the previous three years. Thus, the collection of these revenues in March 2022 was 22.3% lower compared to March 2021 (Chart 12, % of growth March 22/March 21), 27.7% lower compared to March 2020 (Chart 12, % of growth March 22/March 20), and 13.1% lower than in March 2019 (Chart 12, % of growth March 22/March 19).

In April of the current year, the collection of revenues from excise duties on domestic non-alcoholic beverages was 4.5% higher than in April of the previous year (Chart 12, % of growth April 22/April 21), and 40.1% higher than in April 2020 (Chart 12, % of growth April 22/April 20). Compared to the same month in the year before the pandemic, the collection of these revenues decreased by 8.1% (Chart 12, % of growth April 22/April 19).

This decrease in consumption of domestic non-alcoholic beverages is due to consumer preferences, unfair competition and prices of certain imported non-alcoholic beverages that are subject to excise duties, compared to the prices of non-alcoholic beverages of domestic producers that are equal in price or exceed the prices of imported non-alcoholic beverages. It is certain that the crisis caused by the beginning of the war between Russia and Ukraine resulted in a sharp increase in crude oil prices on the world market, which had a direct impact on bottling costs because crude oil is a significant component of raw materials in packaging production. This situation negatively affects domestic producers of non-alcoholic beverages, creating an additional problem for them in dealing with high packaging costs due to increased inflation and rising prices of packaging materials. However, the increase in the prices of domestic non-alcoholic beverages caused by inflation did not ensure an increase in excise revenues on these beverages. It resulted in a reduction in consumption and thus a decrease in excise revenues. The emerging crisis could lead to inflationary pressures and disruptions in supply chains globally and domestically. Although it is predicted that the global market of non-alcoholic beverages will grow in the future⁵⁵, which could lead to a higher volume of non-alcoholic beverages, which are subject to excise duties, this increase, could further affect the increase in excise revenues on imported non-alcoholic

⁵⁵ Compound Annual Growth Rate (CAGR)

beverages, while the collection of excise revenues on domestic non-alcoholic beverages recorded a negative trend. This negative trend is indicated by this analysis.