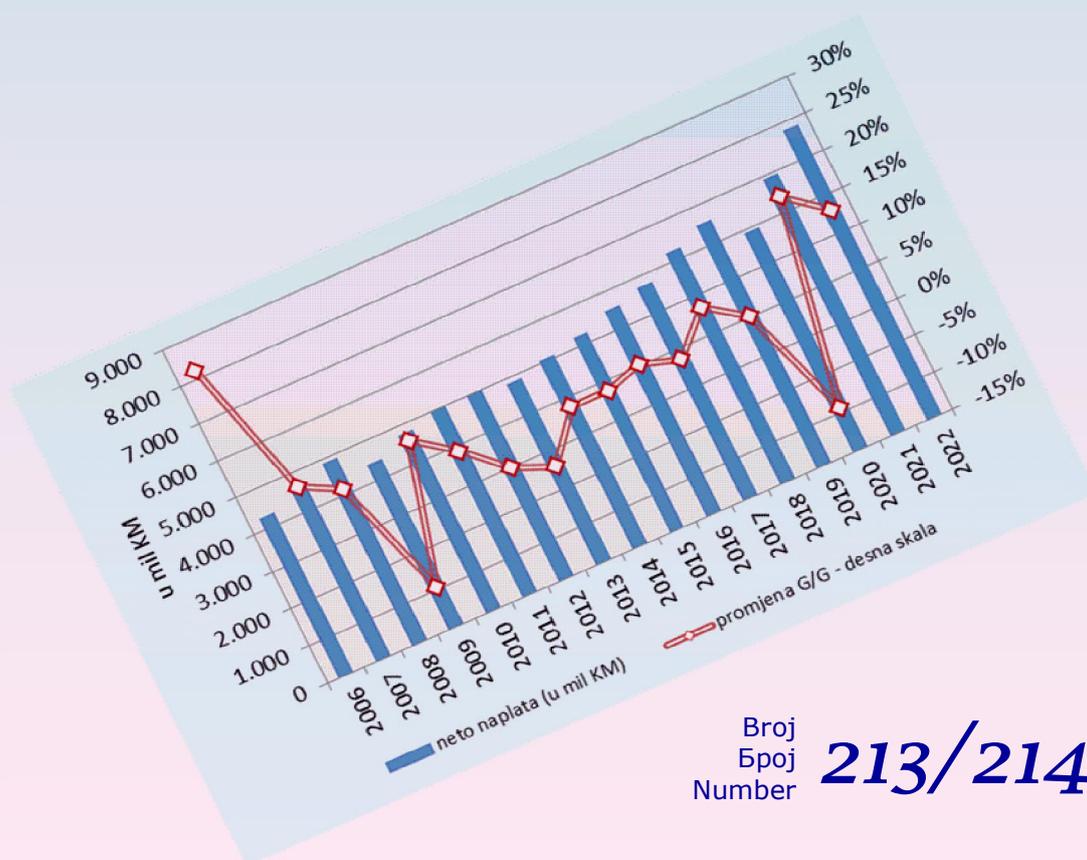




Macroeconomic Unit of the Governing Board of the Indirect Taxation Authority

ОМА Билтен



Broj
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With this issue

The positive trends in the collection of indirect taxes that were present in 2022 have continued in 2023. According to the preliminary cash flow report at Single Account of the ITA, in the first two months of 2023, the cumulative gross collection of indirect taxes was higher by 147.7 million BAM. At the same time, the refund payments were also higher by 71.4 million BAM. Finally, the net collection of indirect taxes in the first two months of 2023 was higher by 76.3 million BAM or by 6.8%, compared to the same period in 2022.

It is important to emphasize the following for the analysis of revenue collection in the first two months of 2023. The statistical basis for comparison from 2022 is lower than in the other months of 2022, not only because the collection of indirect taxes is traditionally lower in the first quarter, but also because of the fact that this is the period before the outbreak of the war in Ukraine, i.e. the post-COVID period of the recovery of economies in the world, when the markets of energy, raw materials, food and other goods were stable. However, since March 2022, due to the dramatic rise in the prices of energy and other goods on the world market, high growth rates in the collection of *ad valorem* taxes on imports (VAT, customs) have been recorded. Comparing the collection in the first two months of 2023 including inflationary effects, with the collection in the first two months of 2022, results in higher monthly growth rates of customs and VAT revenues. Stable energy prices on the world market in the first two months of 2022 have resulted in stable consumption of oil derivatives in B&H, which grew in line with the projections, and ultimately led to an increase in the collection of specific taxes (excise duties and road fees on oil derivatives) in that period in 2022. The increase in oil prices after the outbreak of the war in Ukraine has led to a decline in the consumption of oil derivatives in Bosnia and Herzegovina, which has continued in 2023, resulting in a decrease in revenues from excises and road fees in 2023, compared to the higher statistical base from the period before the outbreak of the war. The trends in revenue collection from excise taxes on tobacco products, which are levied as a mix of *ad valorem* and specific excise taxes, do not follow the trends of collection of *ad valorem* taxes and specific excise taxes on oil derivatives, because the collection of excise taxes on tobacco products depends to the greatest extent on the consumption of non-residents and business policies of two large international tobacco corporations that operate on the B&H market.

Dinka Antić, PhD
Head of Unit

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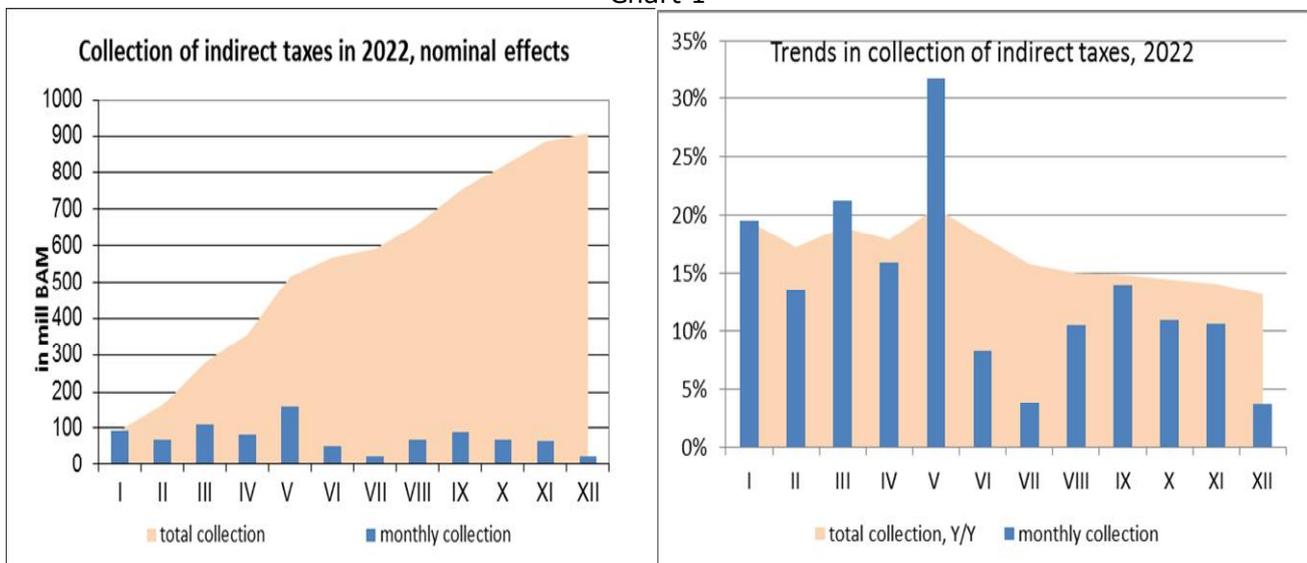
Collection of revenues from indirect taxes in 2022

(Prepared by: Dinka Antić, PhD)

Total collection

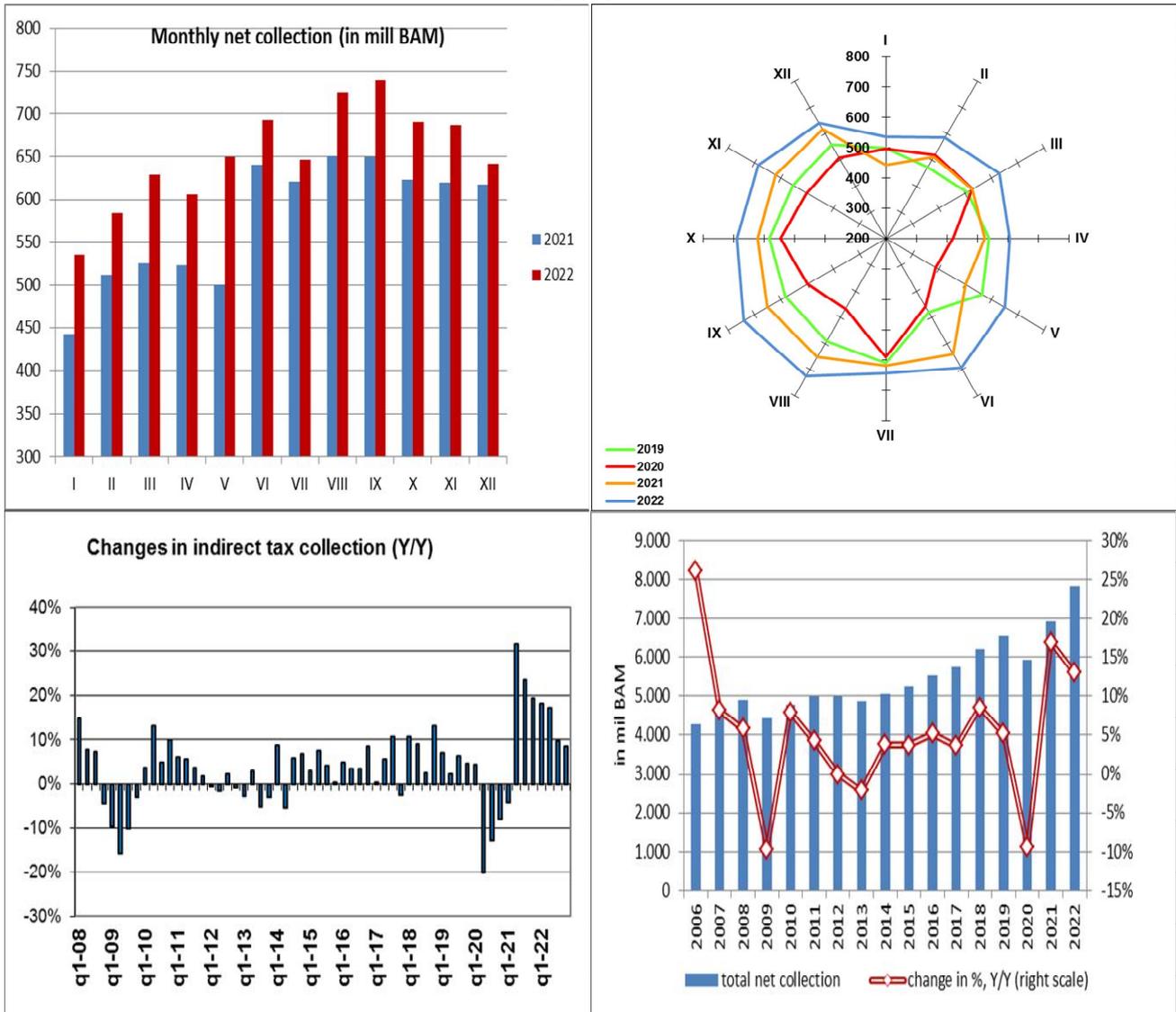
According to the cash flow report on the ITA Single Account, it was collected 850.5 million BAM of gross revenues from indirect taxes in December 2022, which is by 68.3 million BAM more than in the same month of 2021. At the same time, refunds were higher by 45.8 million BAM, reducing the effects of net collection. Ultimately, 640.2 million BAM of net indirect tax revenue was collected in December 2022, which is 3.7% more than in the same month of 2021 (Chart 1, right side, "monthly collection"). The poor growth in December collection has slowed the cumulative growth (see Chart). In 2022, the gross collection of indirect taxes was higher by 1.48 billion BAM than in 2021, while at the same time refund payments were higher by 573 million BAM. Finally, compared to 2021, **the net collection of indirect taxes in 2022 was higher by 907.4 million BAM or by 13.1%** (Chart 1, left side, "cumulative").

Chart 1



Observation of both sides of Chart 1 (absolute effects and relative ratios) shows two periods in 2022 with different trends in the collection of indirect taxes. In the first five months of 2022, high monthly rates of collection growth, even over 30%, and high monthly absolute increases of up to 160 million BAM, were achieved. The main reason for the enormously high growth rates in the first five months is the low collection in the same period of 2021, as a result of the application of restrictive measures to combat the coronavirus pandemic (Chart 2, top left). Due to the statistical base effect, as much as 56.8% of the net collection absolute increase in 2022 (or 516 million BAM) was realized in the period January-May 2022. As of June, monthly absolute increases and monthly growth rates have been decreasing, not only because of the higher statistical base from in 2021, but due to the slowdown in collection, especially in the last three months. Uneven trends in collection are not only a feature of 2022, but also of the previous three years (Chart 2, top right). There were similar monthly collection patterns in second halves, but the first half of the year was turbulent in all observed years. The first quarter and a month of June are particularly characteristic, mainly due to fluctuations in the collection of excise taxes on tobacco products.

Chart 2



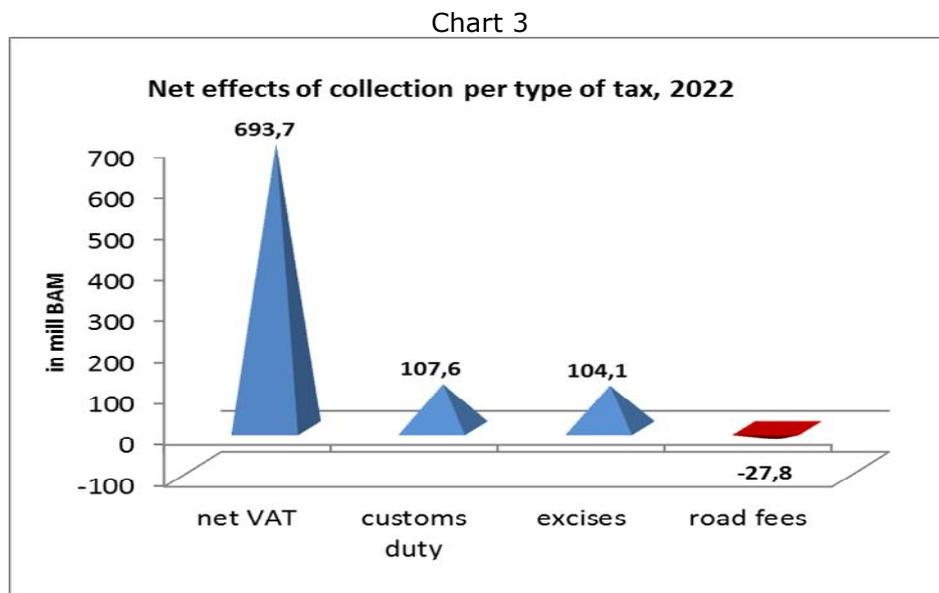
The negative effects of the coronavirus on consumption and the economy have been reflected in the collection of revenues from indirect taxes only from the end of March 2020, resulting in a higher statistical base for comparison in the first quarter of 2020, compared to the rest of the year. The cumulative effect of a higher base and lower collection due to the continued application of restrictive measures was a lower growth rate in the first quarter of 2021. A similar thing happened in 2022. The lower base in the first half of 2021, due to the application of restrictive measures against the corona virus, and the increase in collection from March 2022, as a result of the increase in the base for *ad valorem* taxes (VAT, customs) and the recovery of revenues from excises on tobacco products, brought high growth rates of revenues from indirect taxes, in the first quarter of 2022 of 18.2%, and in the second quarter of 17.1%. Already in the second half of the year, due to a higher basis for comparison and a slowdown in collection, the quarterly growth rates were halved, amounting to 9.9% in the third quarter, and 8.4% in the fourth (Chart 2, bottom left). Finally, despite the slowdown in the fourth quarter, the collection of revenues from indirect taxes in absolute terms in 2022 represents a historical maximum since the establishment of the ITA (Chart 2, bottom left).

Comparisons with projections

According to the revised revenue projections¹, prepared by the Unit in mid-October 2022, the collection of indirect taxes in 2022 is projected in the amount of 7.828 billion BAM. Given that the collection of indirect taxes amounted to 7.827 billion BAM, it can be concluded that **the projections were 99.98% accurate.**

Collection by types of revenue

An increase in December collection has improved the review of collection by types of revenue, as well (Chart 3). The largest absolute increase in 2022 was realized in VAT collection, even 693.7 million BAM, followed by customs revenue 107.6 million BAM, and revenue from excises 104.1 million BAM. On the other hand, road fee collection was 27.8 million BAM lower than in 2021. The analysis does not include unadjusted revenues by types in the amount of 31.9 million BAM.



Customs

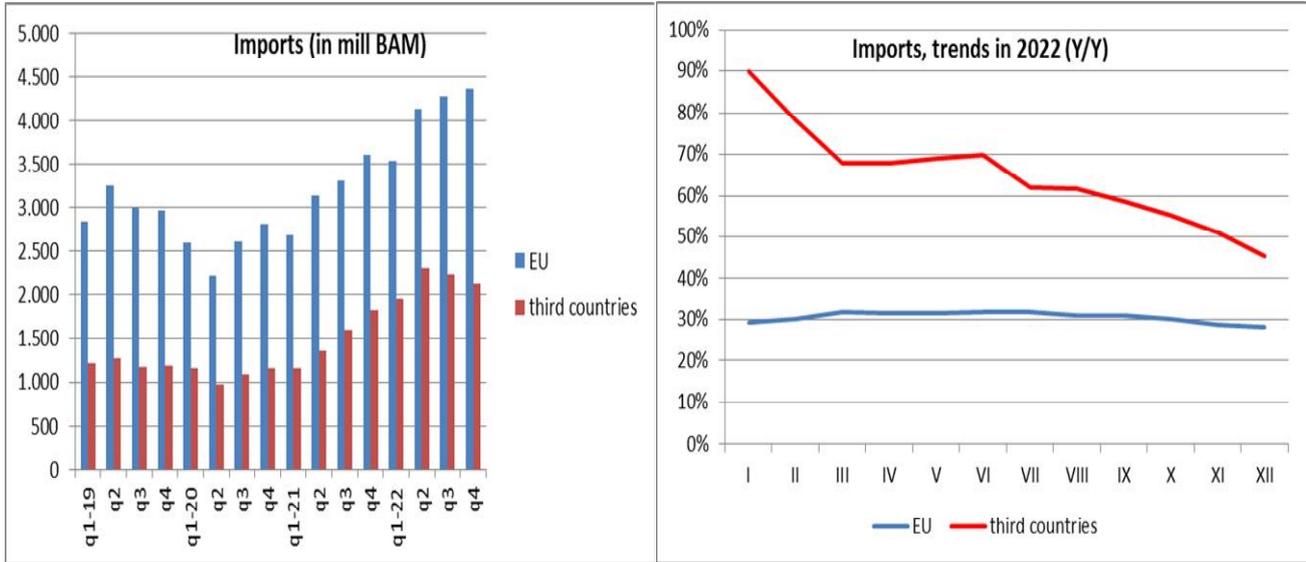
The growth in the value of imports² in 2022, which was stimulated by the strong growth in the prices of energy, food, raw materials and other goods on the world market, as well as by the growth in transportation and distribution costs, also brought an increase in the customs base, and thus in *ad valorem* revenues, such as customs and VAT. Considering the limited range of goods to which the customs regime is applied during importation, the growth of customs revenue depends on the growth of imports from the EU and from third countries. Nominally, monthly imports from the EU have increased gradually throughout the year, with slightly lower imports in August and a slowdown in the fourth quarter of 2022 (Chart 4, left). On the other hand, after several months of growth in imports from third countries, since July, there has been a noticeable slowdown in growth and a slight recovery in the fourth quarter. Chart 4, on the right, shows the dynamics of cumulative imports in 2022 compared to 2021. In 2022, imports from the EU increased by 28%, while imports from third countries increased by 45.4%.³

¹ The projections are available at: http://www.oma.uino.gov.ba/bilteni/Oma_Bilten_en_209_210.pdf

² According to the Agency for Statistics of Bosnia and Herzegovina, imports into Bosnia and Herzegovina were 32.6% higher than in 2021.

³ Source: Agency for Statistics of Bosnia and Herzegovina, calculation of the MAU by grouping of countries.

Chart 4



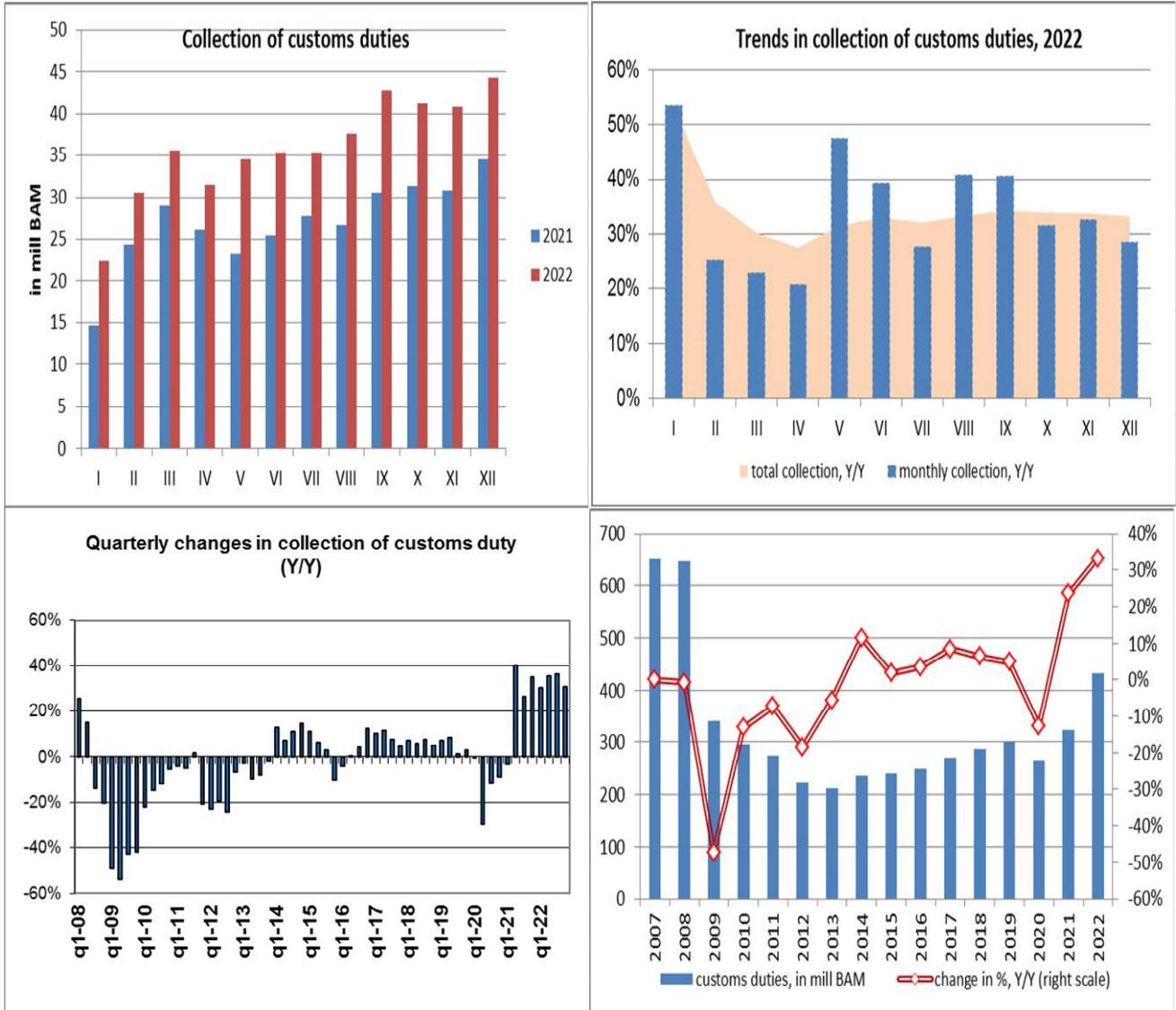
Trends in imports from the EU and third countries determine the collection of customs revenue. The growing trend of customs collection is evident (Chart 5, upper left), while the statistical base from 2021 largely determines monthly growth rates, which sometimes exceeded 50% (Chart 5, upper right). Regardless of monthly fluctuations, since May, the growth of revenue from customs duties has been stable. Despite higher statistical base from 2021, continuation of positive growth trend in the second part of the year can be connected to the increase in the prices of energy, raw materials, food and other goods on foreign markets. Quarterly comparisons show stable growth rates: 30.2% in the first quarter, slightly higher rates in the second and third quarters of 35.4% and 36.4% respectively, and 30.8% in the fourth quarter (Chart 5, bottom left).

In 2022, revenues from customs duties on imports from the EU increased by 37.3% and revenues from customs duties on imports from third countries by 30.6%. Regarding the structure of customs revenues in 2022, as much as 70.3% refers to customs duties levied on imports from third countries, 28.1% to duties levied on imports from the EU and 1.6% to duties levied on imports from CEFTA member states.⁴

Overall, a record nominal collection of customs revenue was achieved in 2022, the highest since 2008, when Bosnia and Herzegovina began the five-year reduction/abolition of customs duties according to the Stabilization and Association Agreement with the EU (Chart 5, lower right).

⁴ Source: the ITA

Chart 5

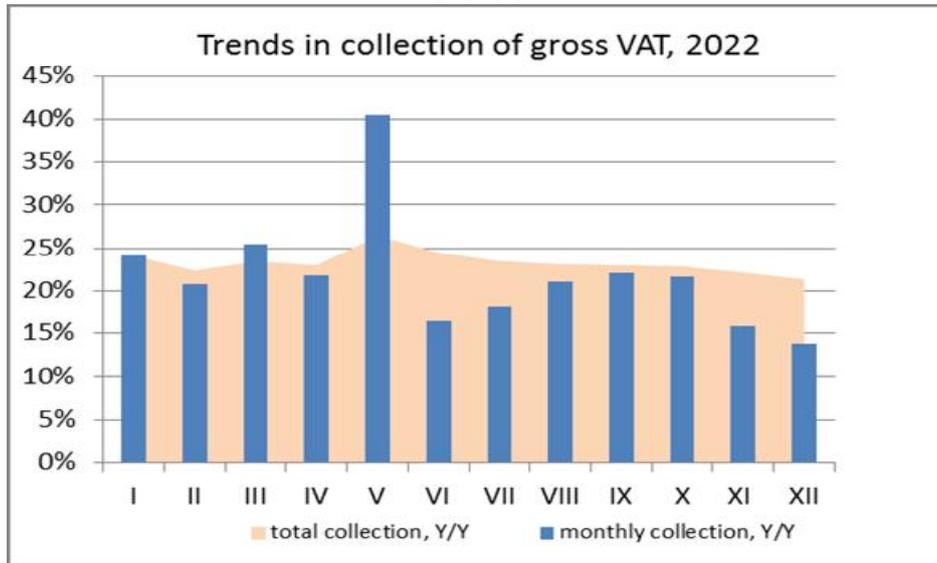


VAT

Gross VAT

The gross VAT collection was stable during 2022, but monthly fluctuations were huge, ranging from 13.5% in December to 40.5% in May. Finally, due to the downward trend at the end of the year, the cumulative growth of gross VAT remained at 21.3% (Chart 6).

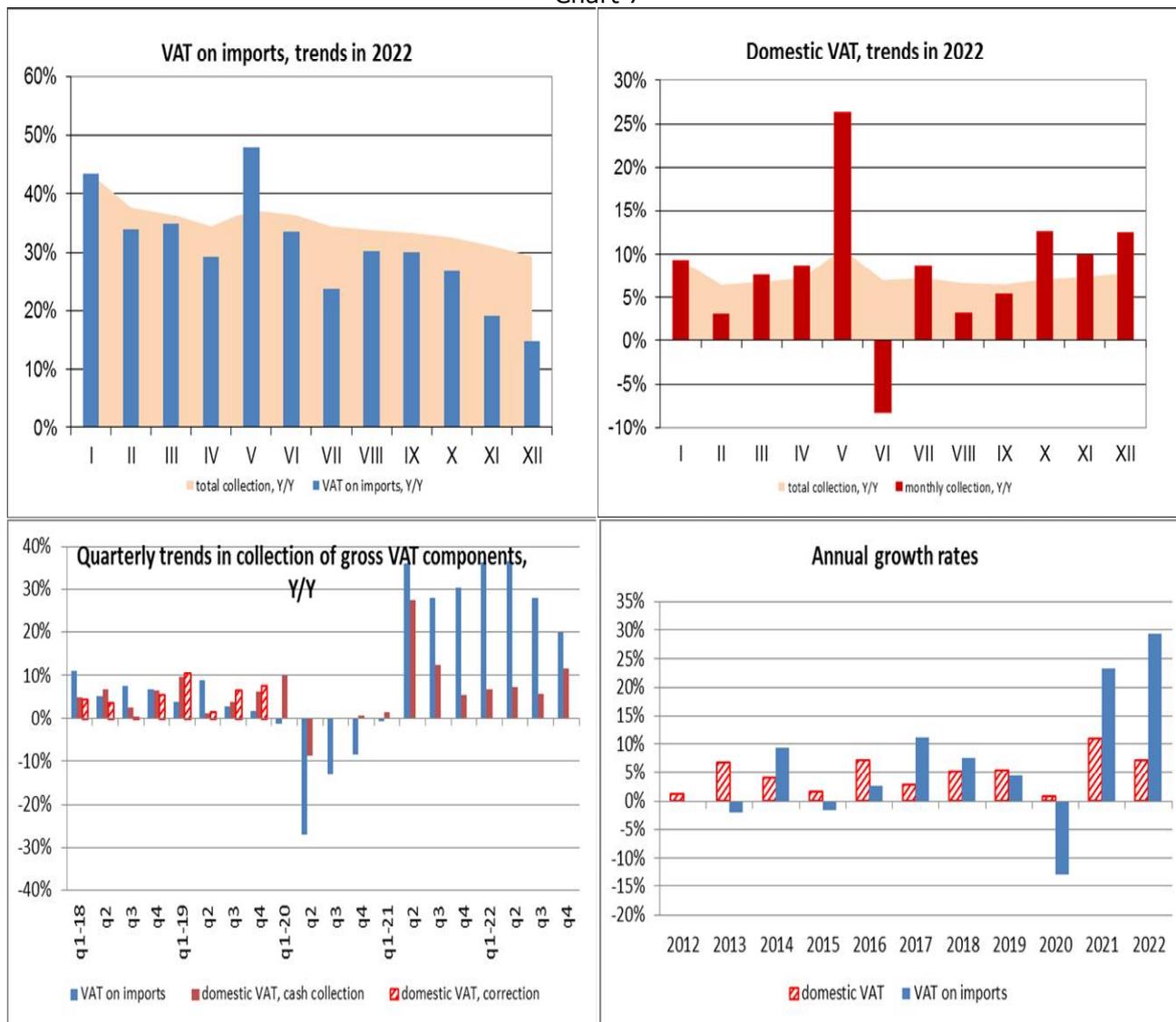
Chart 6



Analysis of trends in the structure of gross VAT collection shows the dominance of VAT on imports, which is not unexpected considering that the share of VAT on imports in gross VAT in 2022 was even 66%. This is the maximum share since the introduction of VAT, which, on the other hand, indicates the historically lowest share of domestic VAT. Despite high monthly growth rates, there was a noticeable downward trend in VAT on imports, while there were fluctuations in the collection of domestic VAT, and even a drop in revenue (Chart 7). However, the growth rates were above all projections of consumption growth in Bosnia and Herzegovina. Quarterly comparisons of the collection of gross VAT by components also points to the conclusion that the collection of VAT on imports has been slowing down. One of the reasons may be a slowdown in imports, i.e. faster price growth in the country. In the first and second quarters, VAT on imports grew by 36.4% and 36.5%, while in the third the growth rate was 28%, and in the fourth 19.9%. On the other hand, the growth rates of domestic VAT have been increasing. In contrast to VAT on imports, the range of quarterly growth rates of domestic VAT collection was very narrow, only a few percent. In the first quarter, the growth was 6.8%, in the second 7.2%, in the third 5.6%, and in the fourth 11.6%.

In contrast to quarterly trends, the annual growth rate of VAT on imports compared to previous year is very high, 29.4%, with a slowdown tendency, while the annual growth rate of domestic VAT of 7.8% is above consumption projections and with the growth tendency.

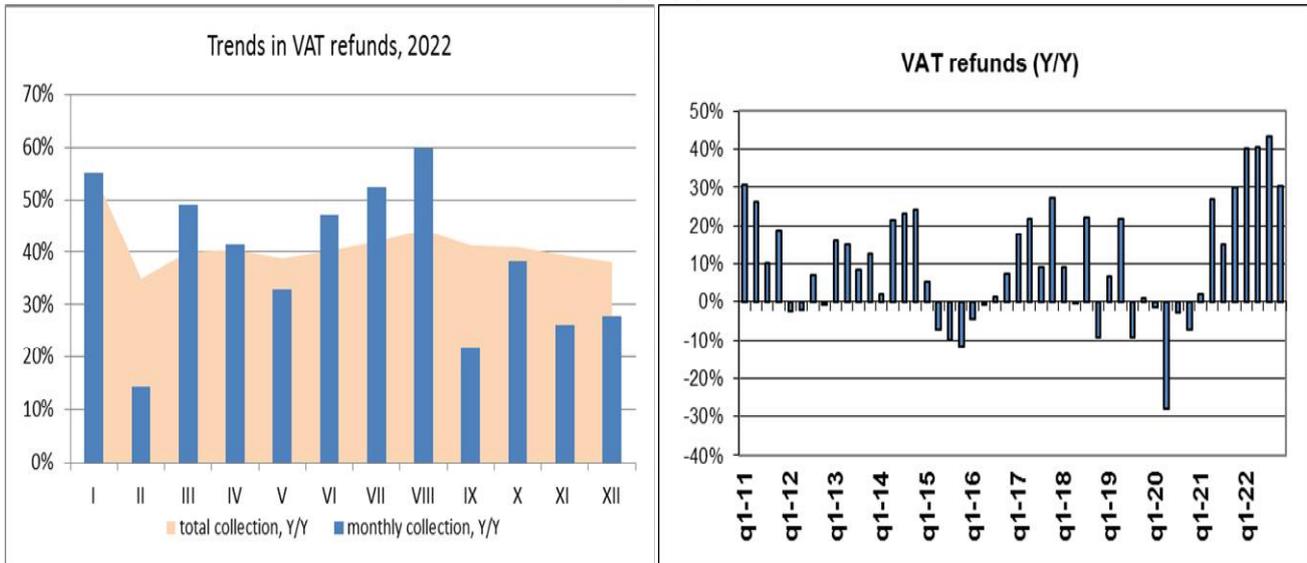
Chart 7



VAT refunds

In 2022, a strong increase in VAT refunds was also recorded as a result of the growth of exports and imports in 2022 (Chart 8, left). During the year, strong monthly oscillations were recorded, even high growth rate of 60% in August. However, this did not have a significant impact on the cumulative growth rate, which was stable for almost the entire year, amounting 38.2% at the end of the year.

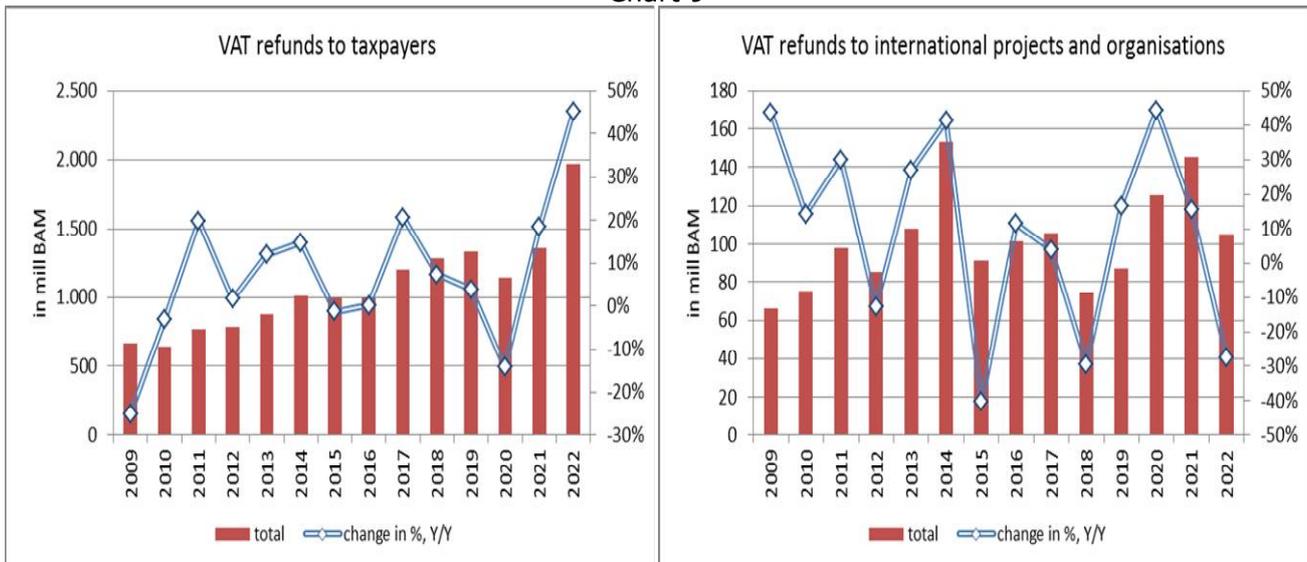
Chart 8



Quarterly comparisons of 2022 with 2019 indicate a continuous growth of refund payments starting from the second quarter of 2021, with very high rates (Chart 8, right).

An analysis of refund structure showed the growth in refund payments to taxpayers by 45%, or by 609.9 million BAM, compared to 2021. At the same time, these are record payments since the introduction of VAT. It can be noted that refund payments in 2022 were even three times higher than in 2009, and twice higher than in 2016 (Chart 9, left). On the other hand, a drop of 27.5% or 40 million BAM was recorded in refunds to international organizations and projects (Chart 9, right). The amount of payments of this refund category depends on the contracted large infrastructure projects that are financed by international financial institutions, as well as on the dynamics of the realization of already agreed projects.

Chart 9

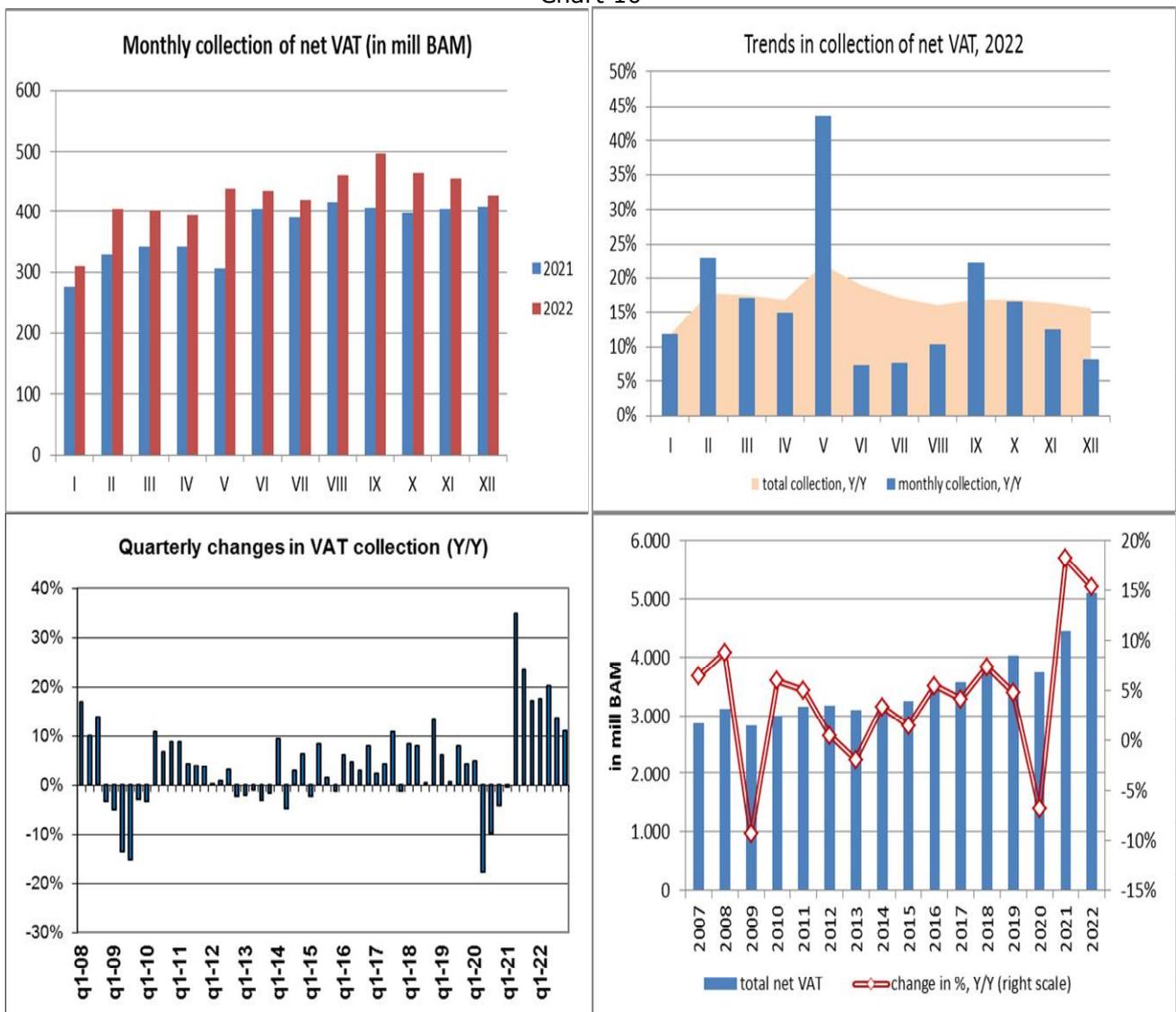


Due to the strong growth of refund payments, the share of cumulative VAT refunds in cumulative gross VAT in 2022 was 28.8%, which is 3.5 percentage points higher than the share in 2021.

Net VAT

Collection of net VAT is the result of trends in the collection of VAT on imports, domestic VAT and trends in refund payment, while growth rates also depend on the statistical base from the previous year. In the first five months of 2021, collection was lower due to coronavirus restrictions, and relaxation and abolition of the restrictions led to an increase in consumption, and thus in VAT revenues (Chart 10, top left). Collection of net VAT has gradually increased as of February, reaching its maximum in September. In the last three months, a slowing trend is evident, resulting in lower growth rates due to the higher statistical base in 2021 (Chart 10, top left). The maximal monthly growth rate was recorded in May, as much as 43.5%, due to the cumulative positive effect - growth in gross collection, both import VAT and domestic VAT, and lower refund payments. The cumulative growth rate in the second half of the year ranged from 16% to 19%, and at the end of the year, due to poorer collection in December, it decreased to 15.7% (Chart 10, top right).

Chart 10



Quarterly comparisons show high growth rates continuously from the second quarter of 2021, with a strong slowdown in the last two quarters of 2022, which was understandable due to the exhaustion of the effect of lower base for comparison from the time of the application of

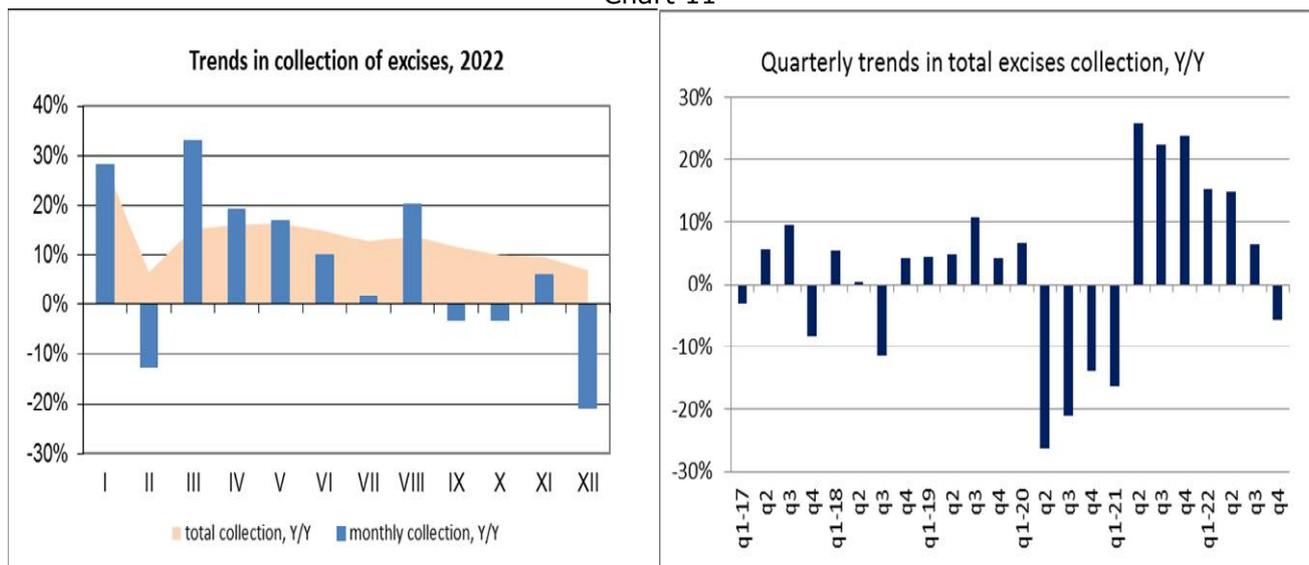
restrictions to combat coronavirus. In the first and second quarters of 2022, growth rates of 17.6% and 20.3% were achieved, respectively. In the third quarter a growth rate of 13.5% was recorded, and in the fourth 12.3% (Chart 10, bottom left). Comparisons of the nominal net collection of VAT in 2022 with previous years indicate the conclusion that the historical maximum, since the introduction of VAT, was recorded in 2022 (Chart 10, lower right).

Excises

Total excises

In contrast to the collection of VAT and customs duties, the collection of excises fluctuated strongly during 2022. Monthly growth rates have ranged from -20.9% in December to +33% in March (Chart 11, left). Despite the fluctuations, the cumulative growth rate in the first half of the year was around 15%, and in the second half of the year it fell to 7%, due to poor collection (Chart 11, left "cumulative"). High growth rates and the oscillatory trend of excise collection in 2022 were mainly the consequences of the lower statistical base from the same period in 2021 as well as the drop in oil derivative consumption following the escalation of the energy crisis in the world, which led to a strong rise in oil prices on the world market and a dramatic rise in retail prices of oil derivatives on the domestic market.

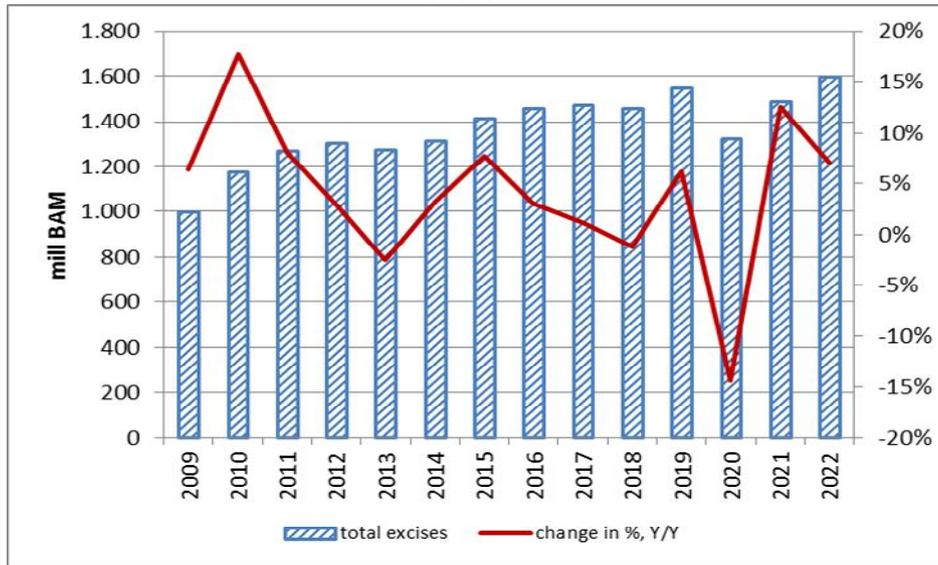
Chart 11



Quarterly comparisons show the continuation of the positive growth trend from 2021 in the first and second quarters of 2022, when growth rates of 15.3% and 14.7% were recorded, but with a significant slowdown in the third quarter when growth amounted to 6.2%. The decline in excise revenue collection at the end of the year, especially in December, brought a negative growth rate of -5.8% in the fourth quarter (Chart 11, right).

Despite the oscillatory trend and poor collection in the last months, a record collection of excise revenue was achieved in 2022. The annual growth rate in 2022 amounted to 7%, representing the highest growth rate ever, bearing in mind that the high rate achieved in 2010 was a consequence of the application of the new Law on Excise Taxes and changes in the excise policy in the taxation of cigarettes, while the high rate achieved in 2021 was a consequence of the extremely low base from 2020, when the restrictions due to the coronavirus pandemic were in force (Chart 12).

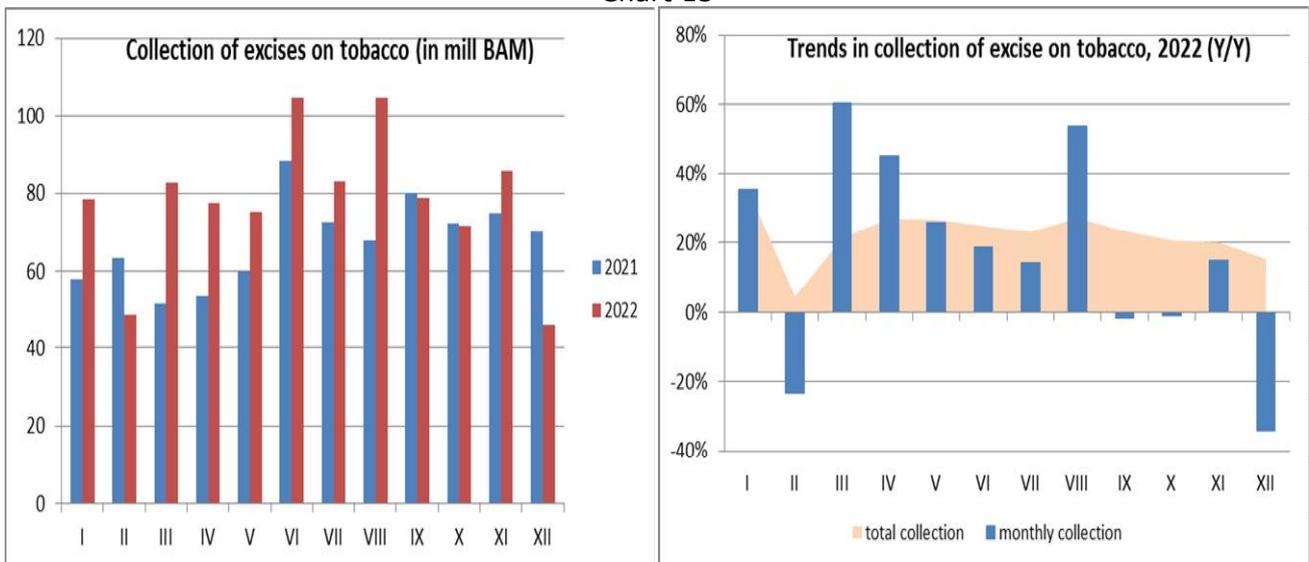
Chart 12



Excise duties on tobacco products

The trends in the collection of total excise taxes (Chart 11, left) and the trends in the collection of excises on tobacco products (Chart 13, right) are almost identical, with the fact that the monthly rates of growth or decline in revenues from excise taxes on tobacco products were higher or lower than for the total excise duty collection. Deviations in relation to trends in the collection of total excises were caused by a drop in the collection of excises on oil derivatives, which are the second most significant type of excise duty in the total excise duties collected. Although for most of the year the cumulative growth rate of excise collection was very high, even over 27%, the monthly oscillations in the collection of excise duties on tobacco products have been sharper, and the rates ranged from -34.4% in December to +60.1% in March 2022. Poorer collection of excises in the last four months of 2022 resulted in a slowdown in the cumulative growth rate, which ultimately fell to 15.4% (Chart 13, left)

Chart 13



Monthly fluctuations in the collection of excises on tobacco products have been affected by several factors. First, the observation of excise tax collection pattern on tobacco products in 2021 has showed a very low collection in the first five months, which resulted in a higher monthly growth rate in that part of 2022. Second, the announcement of an increase in cigarette prices⁵, even though it did not apply to all cigarette brands on the market, had a positive impact on revenue collection.⁶ In anticipation of higher demand for cigarettes due to the announced price increase, tobacco companies increased their requirements for issuing excise stamps before the price increase in June, which resulted in an increase in excise collection. Third, the peak of excise duty collection occurred in the summer season, in anticipation of a significant increase in the consumption of non-residents (diaspora, tourists, people in transit, cross-border consumption), despite the increase in retail prices of cigarettes.⁷

Fourth, as much as 86% of the cigarette market is held by two multinational tobacco corporations. The requirements for issuing excise stamps, and thus the collection of excise duties, depend on their business plans, the strategies on the B&H market and the estimates of future consumption. Despite this fact, it can be concluded that the business and pricing policies of tobacco companies have been carefully balanced. The price policy of maintaining the unchanged retail price of the cheapest brand of cigarettes for even seven months has prevented the migration of consumers of that category to the black market or to the use of tobacco. In the past, the increase in cigarette prices, caused by the increase in specific excise duty, has contributed greatly to the general increase in prices. However, this time, despite the increase in retail prices in the middle of the year, the weighted average price of cigarettes increased by only 0.7%, which is almost negligible compared to the growth in prices of other goods and services. On the other hand, the policy of economy of scale with moderate prices has been obviously profitable, despite the increase in input costs, bringing revenues, both to the tobacco industry, and to the Single Account of the ITA (excises and related VAT).

Fifth, an important factor that determined the overall growth rate of excise tax revenue at the end of the year was the moment of change in the excise tax collection pattern. The changes in the Law on Excises, which entered into force on August 6, 2022, with delayed implementation due to the need to change the implementing regulations, entailed a change in the method of payment of excise duties. Instead in the moment of taking over excise stamps, excise duties are being paid upon importation, in accordance with the customs debt payment deadlines. The aforementioned change initially creates a vacuum in the collection of excises of at least one month, depending on the time lag between the taking over of stamps and the import of cigarettes. Considering the complexity of the procedure for the adoption of implementing regulations,⁸ when revising the projections of revenues from indirect taxes in October, the Unit assumed that the new collection pattern would be applied from 2023, which was ultimately confirmed.

Given that the payment of excise taxes according to the old model requires the *ex-ante* engagement of large financial resources⁹, in the conditions of uncertainty regarding the beginning of the application of the new payment pattern, and with the aim of as little as possible engagement of financial resources for the payment of excise taxes, the tobacco companies changed the usual dynamics of taking over excise stamps in December 2022. The number of tranches has been reduced, and the time interval between takeovers has been increased. It can be assumed that the companies internally redistributed the available stocks of cigarettes in the

⁵ from July 1, 2022, and from July 18, 2022

⁶ It should be borne in mind that until the end of 2022, excise taxes were paid *ex ante*, before the sale of cigarettes, i.e. at the moment of receipt of excise stamps by the importer, and that the placement of imported cigarettes on the B&H market was carried out a month to a month and a half after receipt of the stamps.

⁷ 28.4% of the total excise revenue collection in 2022 was collected in the third quarter.

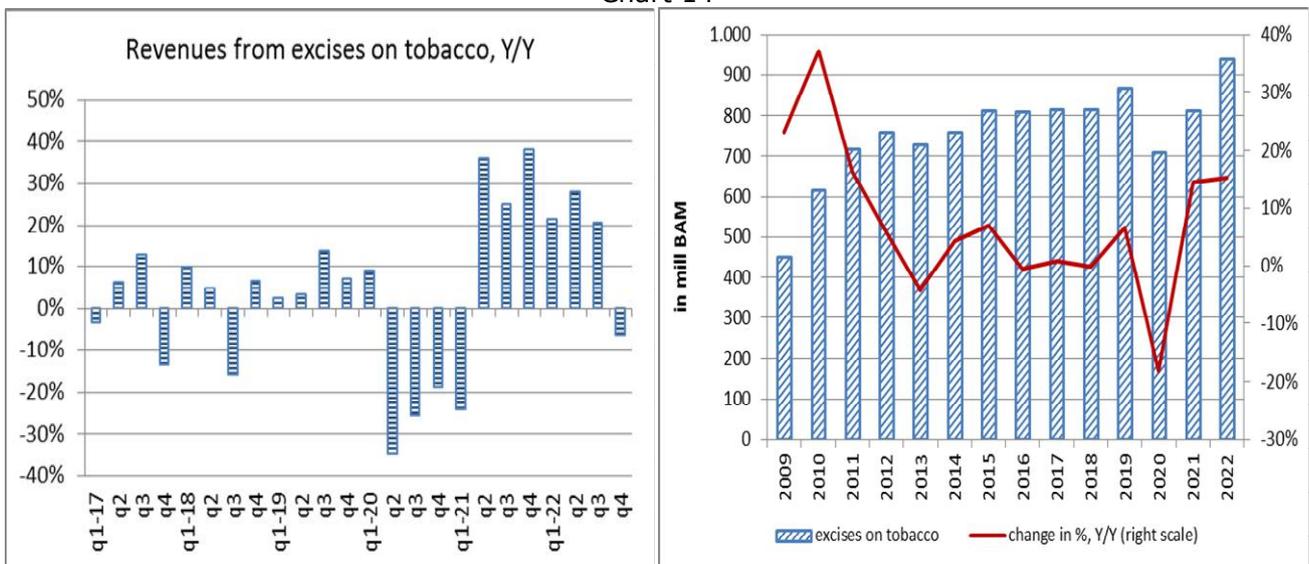
⁸ In order to implement changes to the Law on Excises ("Official Gazette of B&H" No. 50/2022), it was necessary to amend several rulebooks in a complex procedure that entails public consultations, adoption by the Governing Board of the ITA and publication in the Official Gazette of B&H.

⁹ The average monthly payment of excise duties on tobacco products in 2022 was 78 million BAM.

retail trade, transferring them from places with lower demand to places with higher demand, and thereby enabling the continuity of sales. All this resulted in lower excise collection in December 2022, so that a part of the expected loss of excise revenue, which was planned for January 2023, shifted into December 2022, thus reducing the total increase in revenues from excises on tobacco products and the growth of total indirect taxes in 2022. On the other hand, the excise losses in January 2023 will be smaller than expected.

Quarterly comparisons show the continuation of positive collection trends from the second half of 2021. In the first quarter of 2022, revenue from excise taxes on tobacco products grew by 21.3%, in the second quarter by 27.9%, and in the third quarter by 20.6%. Due to poorer collection and changes in the dynamics of taking over the excise stamps, a 6.3% drop in excise revenue was recorded in the fourth quarter (Chart 14, left).

Chart 14



Excise taxes on tobacco products were the most significant type of revenue, whose collection in 2021 failed to exceed the previous record in 2019. After two years (2020, 2021) of reduced revenue collection from excise taxes on tobacco products, in 2022, a historical maximum in collection was achieved since the establishment of the ITA, with a high growth rate of 15.4% (Chart 14, right).

Excise duties on oil derivatives

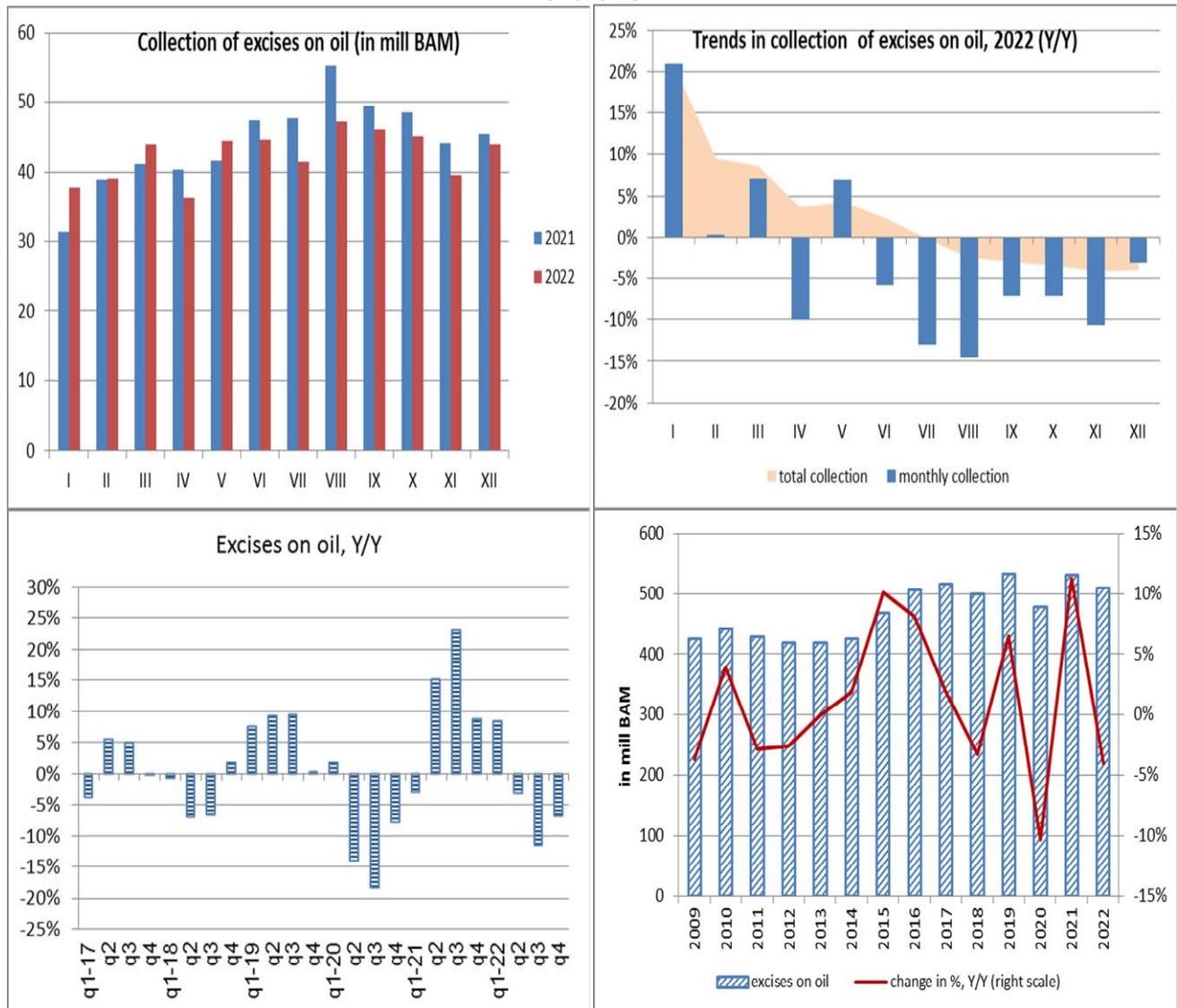
Negative trends in the collection of excise duties on oil derivatives, which have been ongoing since June, continued in December 2022. Even in nine months during 2022, the collection was lower than in the corresponding month of 2021 (Chart 15, above, left). Negative monthly growth rates sometimes reached even -15%. The highest positive growth rate of 20.9% was achieved in January, primarily due to a very low base in 2021, when the consumption of derivatives was reduced because of restrictions related to the pandemic. Positive growth rates in excise collection were also recorded in March and May, while the positive effects from the first five months were already exhausted in June. In the second half of 2022, the collection of excise duties on oil derivatives was lower by 27 million BAM or 9.3% compared to the same period in 2021. Ultimately, the collection of excises on oil derivatives in 2022 was lower by 4.1% compared to 2021 (Chart 15, right top).

Quarterly comparisons show a positive growth rate of 8.5% only in the first quarter of 2022, which represents the continuation of trends from most of 2021 (Chart 15, lower left). In the second

quarter of 2022, collection of excises fell by 3% and in the third by as much as 11.6%. In the fourth quarter, there was a 6.9% drop in collection, primarily due to a slightly higher statistical basis for comparison, but also due to the stabilization of the market and retail prices of oil derivatives.

Overall, the collection of excises on oil derivatives in 2022 fell to the level of 2017 (Chart 15, bottom right).

Chart 15



Road fee

The collection of revenues from road fees follows the collection of excises on oil derivatives, with the fact that the negative trends were slightly worse than in the case of the collection of excise duties on oil derivatives due to the different scope of the base and the calculation of excise duties and road fees. In December 2022, the negative trend in road fees collection has continued, although the drop was smaller than in previous months. At the annual level, the drop in road fee revenues amounted to 4.3% (Chart 16, left).

In 2022, 28.4 million BAM less road fees were collected compared to 2021 (Chart 17). The total collection in 2022 has fallen to the level of 2018.

Chart 16

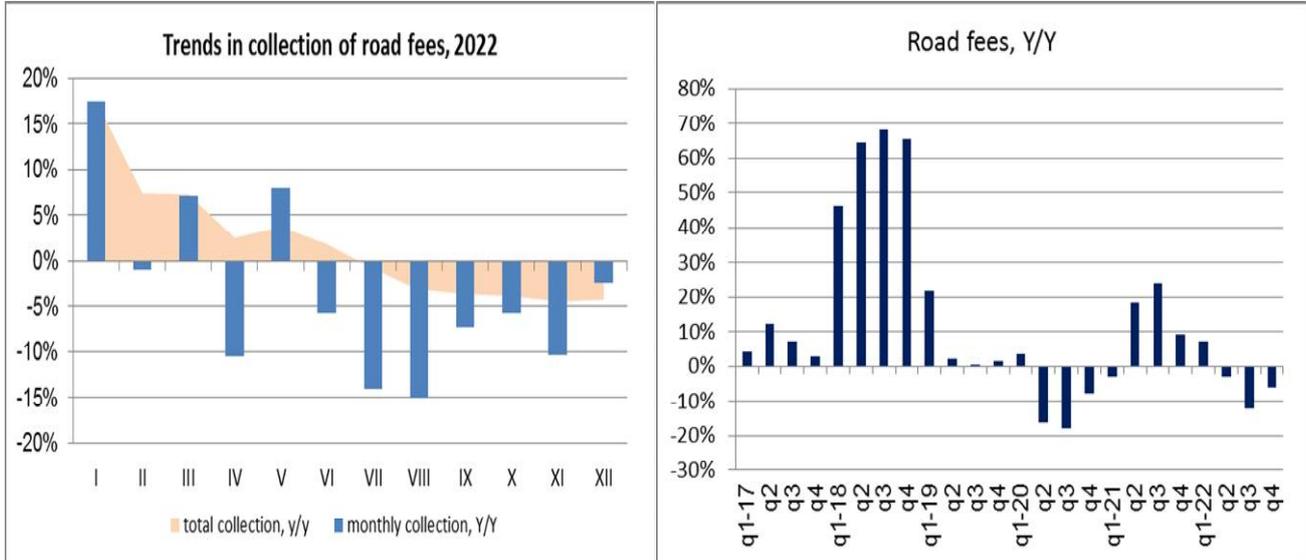


Chart 17



Excise duties on coffee

When observing the collection of excise duties on coffee during 2022, it can be concluded that positive monthly growth rates were recorded in only two months, so the drop in the cumulative growth rate of 8.7% was not surprising (Chart 18, left).

In contrast to the positive trends in most of 2021, the quarterly analysis shows negative quarterly growth rates in all quarters in 2022. In the first quarter of 2022, a 1.1% drop in collection was recorded, in the second as much as 15.3%, in the third 8.4%, and in the fourth 6.2%. (Chart 18, right).

The total collection of excise duties on coffee in 2022 is the lowest since 2010 (Chart 19). It is obvious that the great population outflow from B&H and changes in the habits of consumers are the main factors in the decline in excise duty on coffee, which cannot be compensated even by increasing the number of non-residents visiting B&H for various reasons.

Chart 18

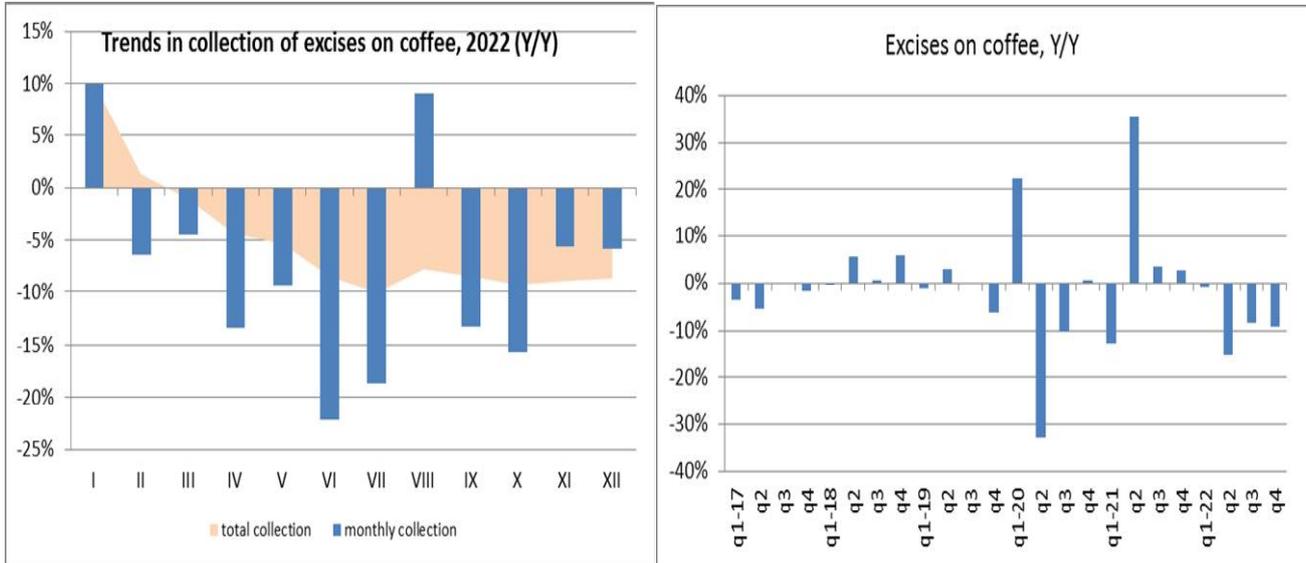
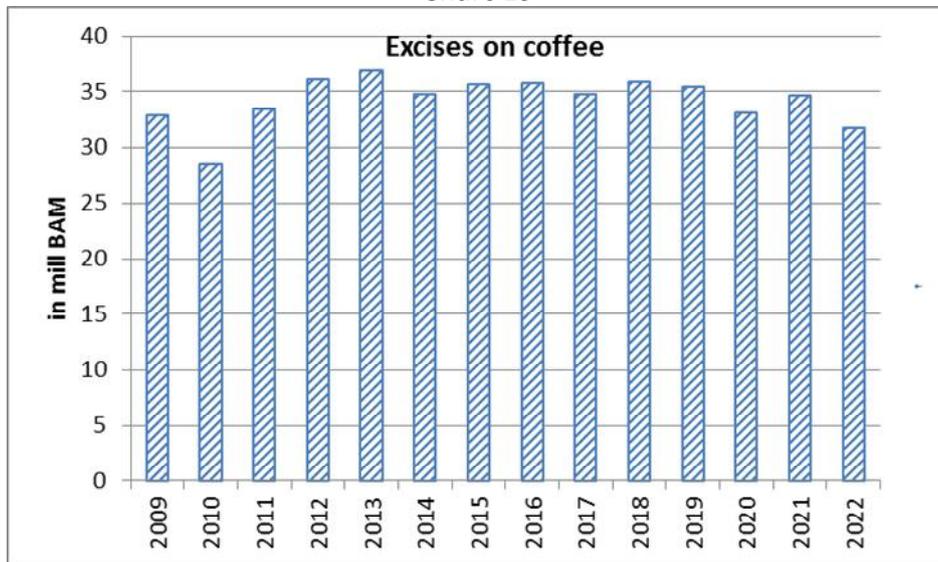


Chart 19



Excise duties on beer, wine, alcohol, alcoholic and non-alcoholic beverages

The collection of excise duties on alcohol and alcoholic beverages in 2022 was 14.3% higher than in 2021 (Chart 20). At the same time, excise taxes on this group of drinks recorded the highest collection since 2006. The collection of excise duties on non-alcoholic beverages has also continued to record a growing trend. In 2022, it was 6.5% higher than in 2021. On the other hand, the collection of excise taxes on wine in 2022 was at the level of collection in 2021. The worst situation is with excise taxes on beer, the collection of which did not even reach the level of collection in 2019, before the onset of the pandemic. In 2022, the collection of excise taxes on

beer was 1.1% lower than in 2021, with a 25.3% drop in the collection of excise taxes on domestic beers. On the other hand, the collection of excise duties on imported beers was higher by 7.9%, which was not enough for the total collection to move into the zone of positive growth.

Quarterly comparisons indicate a stable growth trend in the collection of excises on alcohol, and a significant slowdown in the growth of collection in excises on non-alcoholic beverages in the second half of 2022 (Chart 21). The worst quarterly trends were recorded in the collection of excise taxes on wine. However, it should be borne in mind that the high growth rates in the collection of excises in the first part of the year could be the result of a combination of factors - a low statistical basis for comparison and the collection of old debts, based on excise duties from previous years - rather than the result of unexpected growth in population consumption.

Chart 20

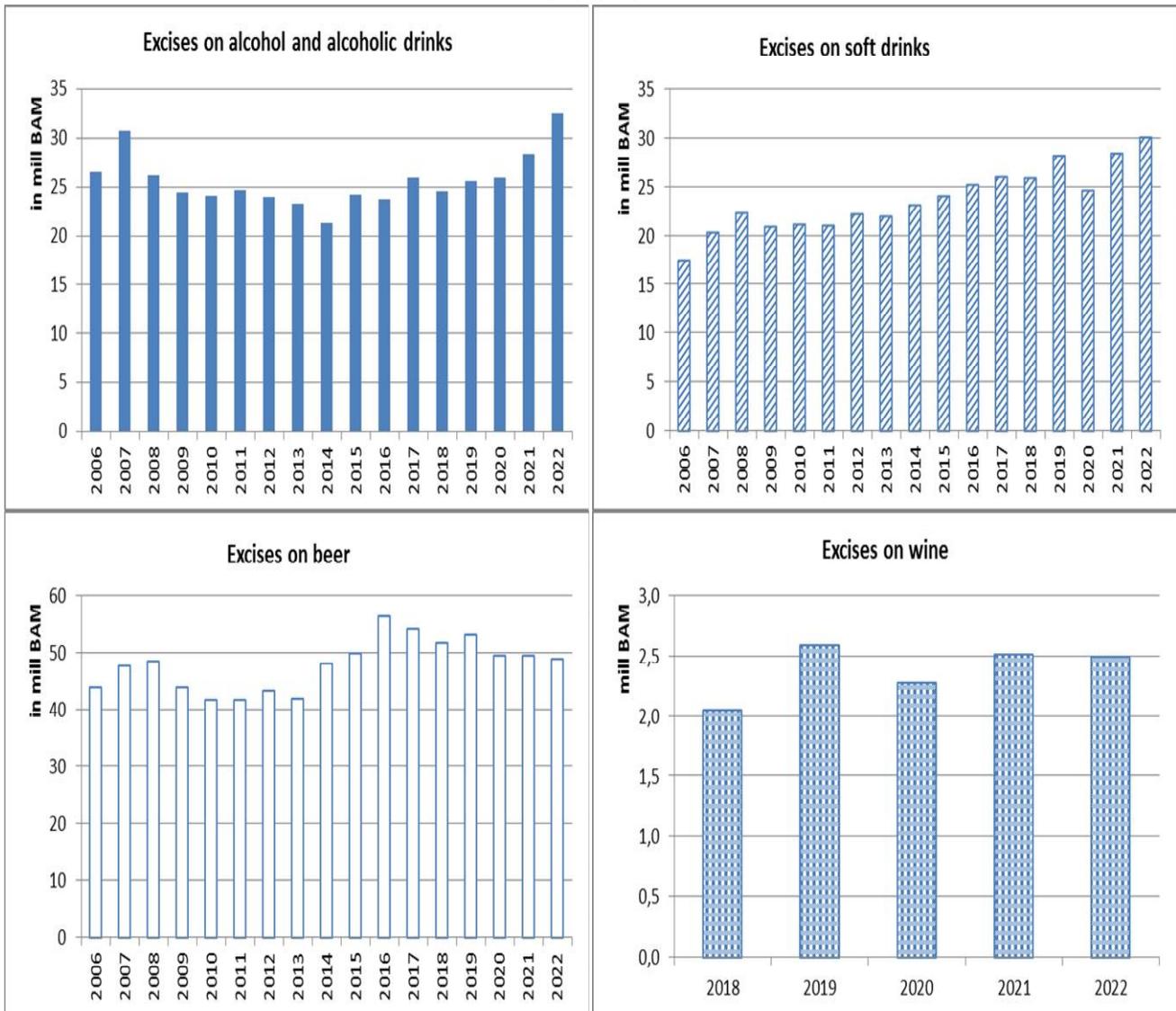
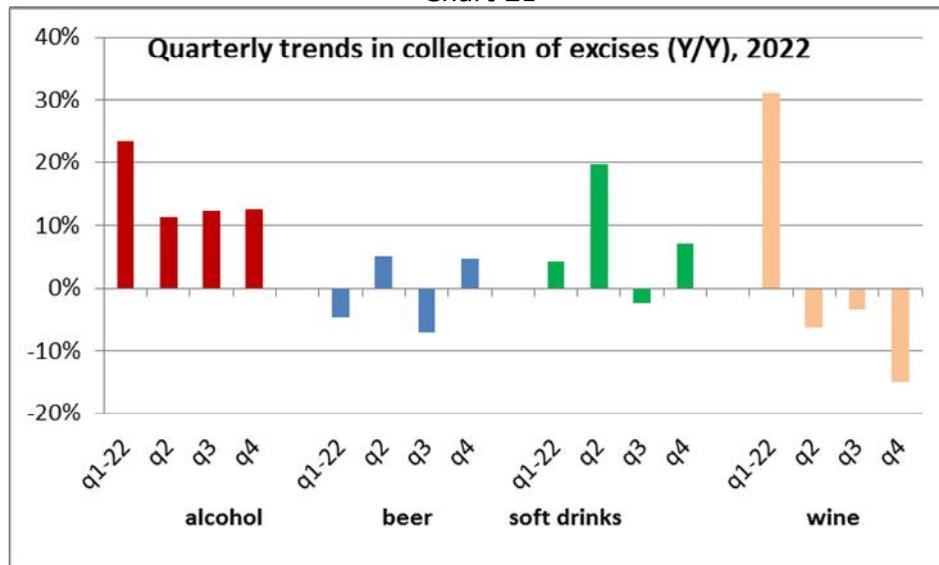


Chart 21



Archive of Bulletins:

http://www.oma.uino.gov.ba/04_objasnjenja.asp?l=e

Consumption of oil derivatives in 2022

Prepared by: Aleksandra Regoje, expert advisor - macroeconomist

Introduction

The dynamics of consumption of oil derivatives is regularly the subject of the Unit's analysis because it is extremely important for the collection of revenues from indirect taxes in Bosnia and Herzegovina (B&H). Bearing in mind that, as a result of events in Ukraine, a high inflation rate was recorded in B&H in 2022, the consumption of oil derivatives becomes even more interesting for analysis, in terms of its implications for the collection of tax revenues. Namely, the high prices of oil derivatives in 2022 had an impact on the decline in the consumption of derivatives, and thus on the lower collection of excise duties and road fees. Despite the decline in taxed quantities, there was a significant increase in VAT revenues collected on the consumption of derivatives.

This article analyzes the consumption of oil derivatives in 2022 compared to the previous three-year period, which is characterized by great turbulences in all fields of the economy, considering that it covers the period of the outbreak of the corona virus crisis, and then the crisis caused by the events in Ukraine. In Chapter 1, the factors that influence the formation of derivative prices on the B&H market are presented. Chapter 2 shows the price dynamics of oil derivatives on the B&H market and their tax burden in the period from 2019 to 2022. In Chapter 3, the trend of the consumption of derivatives in B&H is analyzed, summarizing the effects from the previous chapters. Chapter 4 of this analysis presents a brief overview of the effects of price growth and the dynamics of consumption of derivatives in 2022 on collected revenues from indirect taxes.

1. Factors influencing formation of prices of oil derivatives on the B&H market

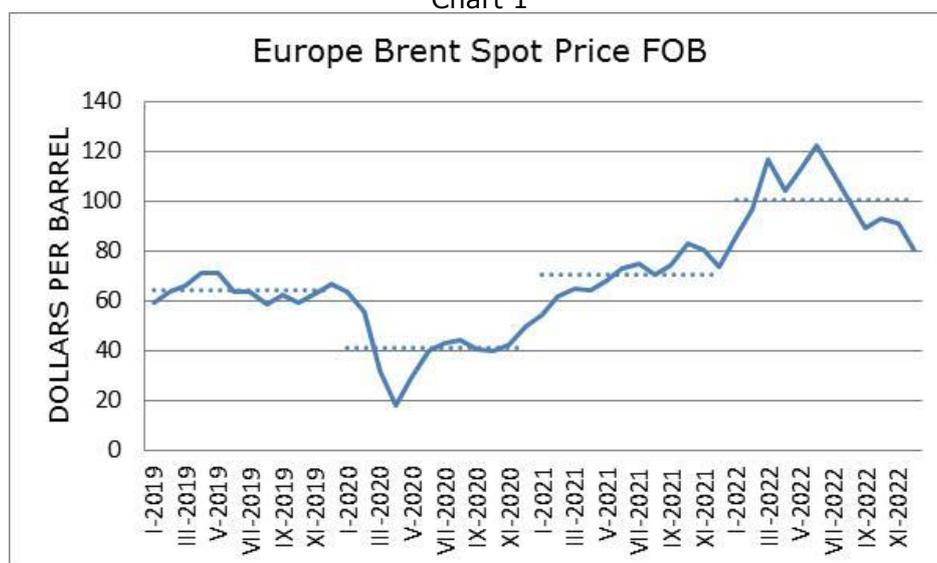
Factors influencing formation of prices of oil derivatives on the B&H market are crude oil prices, trade margins, tax rates, etc.

1.1. Crude oil prices

The crude oil prices varied significantly in the period 2019-2022. Based on data from the U.S. Energy Information Administration, Chart 1 shows the monthly prices of Brent crude oil (Europe Brent Spot Price FOB) in the specified period. The dotted lines represent annual unweighted averages of monthly data.

Crude oil prices were stable in 2019, ranging from 59.0 to 71.3 dollars per barrel (coefficient of variation 6.1%). There were huge fluctuations in 2020, due to the effects of the coronavirus pandemic (coefficient of variation 27.2%). In January 2020, the prices amounted to 63.7 dollars per barrel, which was the highest price during the year, while in April of the same year they fell to only 18.4 dollars per barrel, which has been the lowest value since 1999. By December 2020, they had risen again to 50.0 dollars per barrel. The upward trend has continued until October 2021, when crude oil prices reached 83.5 dollars per barrel, while in November and December 2021, they fell slightly to 81.1 and 74.2 dollars per barrel, respectively. In 2022, there was a significant increase in crude oil prices, as a consequence of the war events in Ukraine. In the month of June, the maximum price was recorded in the observed period 2019-2022, in the amount of 122.7 dollars per barrel. This has been also the highest price in the period after March 2012, when the price of crude oil amounted to 125.5 dollars per barrel. As of July 2022, the trend of falling crude oil prices has started again, so that in the month of December it amounted to 80.9 dollars per barrel, which was lower than the price recorded at the beginning of the year (Table 1).

Chart 1



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

Table 1. Measures of dispersion: Monthly crude oil prices (dollars per barrel), 2019-2022

	Measures of dispersion	2019	2020	2021	2022
1.	Average (unweighted)	64,4	41,8	70,7	100,8
2.	Average deviation	3,1	8,2	6,3	11,0
3.	Standard deviation	3,9	11,4	7,7	12,7
4.	Coefficient of variation (%)	6,1	27,2	10,9	12,6
5.	Min	59,0	18,4	54,8	80,9
6.	Max	71,3	63,7	83,5	122,7
7.	Range	12,3	45,3	28,8	41,8

Source: Author's calculation based on data from U.S. Energy Information Administration

1.2. Trade margins

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 derivatives¹⁰, 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 derivatives¹¹. 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.

¹⁰ 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.

¹¹ 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.

1.3. Excise tax rates

The policy of excise duties on oil derivatives in B&H is defined by the Law¹² on Excise Duties in Bosnia and Herzegovina adopted in 2009 (hereinafter referred to as „the Law”). The Law has been changed /amended four times since 2009, twice in 2014¹³, in 2017¹⁴, and in 2022¹⁵. Amendments to the Law adopted in 2014 were related to the taxation of tobacco products¹⁶ and soft drinks, beer and wine¹⁷. The amendments to Law adopted in 2017 were related to the taxation of oil derivatives. The amendments to the Law adopted in 2022 were related to the change in the collection regime of excise duties on imported tobacco products.

The changes in excise policy on oil derivatives and road tax from 2017 refer to: increase in the excise rate on heating oil from 0,30 to 0,45 BAM/l; introduction of excise tax on biofuels and bio-liquids (0,30 BAM/l); increase in the rate of earmarked road tax from 0,10 to 0,25 BAM/l (with separation of rates and funds by purpose for highways and other roads); and change in the road tax base in terms of inclusion biofuels and bio-liquids, and liquid petroleum gas for motor vehicles. As of February 2018, the excise and road fee rates listed in Table 2 have been applied.

Table 2. Excise and road fee rates according to the 2017 Law

Excise and road fee rates		Tax rate (BAM/l)		
		(1)	(2)	(3)=(1)+(2)
	Base	Excise	Road fee	Total
a)	diesel fuels and other gas oils	0,30	0,40	0,70
b)	petroleum (kerosene)	0,30		0,30
c)	motor petrol - unleaded	0,35	0,40	0,75
d)	motor petrol	0,40	0,40	0,80
e)	heating oil extra light and easy special	0,45		0,45
f)	LPG for the propulsion of motor vehicles*	0,00	0,40	0,40
g)	biofuels and bio-liquids	0,30	0,40	0,70

* Road fee on liquid petroleum gas (LPG) is expressed in BAM per kg

2. Prices of oil derivatives on the B&H market and tax burden

Chart 2 shows the price movement of oil derivatives¹⁸ on the B&H market in the period 2019-2022, by weeks. Data from the International Road Transport Union were used, taken from the website of the Foreign Trade Chamber of B&H (FTCBH).

Table 3 shows the dispersion measures of weekly prices of oil derivatives in B&H in the period from 2019 to 2022.

¹² „Official Gazette of B&H” No. 49/09

¹³ „Official Gazette of B&H” 49/14 and 60/14

¹⁴ „Official Gazette of B&H” 91/17

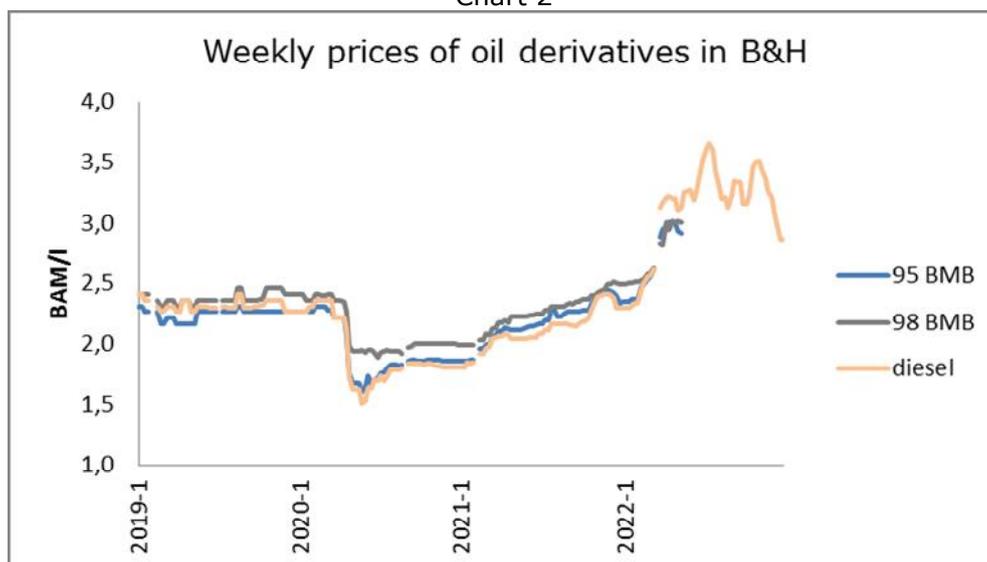
¹⁵ „Official Gazette of B&H” No. 50/22

¹⁶ „Official Gazette of B&H” No. 49/14

¹⁷ „Official Gazette of B&H” No 60/14

¹⁸ Only data for diesel fuel are shown because after the 19th week of 2022, price reporting for fuel 95 BMB and 98 BMB on the website of the FTCBH according to data from the International Road Transport Union was discontinued. Only data on the most common fuel prices for individual companies in Bosnia and Herzegovina are available.

Chart 2



Source: Author's review based on data from the International Road Transport Union, taken from the website of the Foreign Trade Chamber of Bosnia and Herzegovina, <https://www.komorabih.ba/>

After a period of extremely stable prices in 2019,¹⁹ the prices of oil derivatives on the B&H market fell sharply in the spring of 2020, as a result of the coronavirus pandemic (Chart 2). In the 21st week of 2020, the price of diesel fuel amounted to only 1.5 BAM/l, while the price of BMB-95 fuel was 1.6 BAM/l. Based on the calculated coefficients of variation, it can be concluded that, in the observed period 2019-2022, prices were most turbulent in 2020. From the 22nd week of 2020 (end of May), the prices of derivatives have recorded a stable growth trend, which has been maintained throughout the entire 2021. At the end of 2021, the prices of diesel fuel and BMB-95 amounted to 2.3 BAM/l, while the prices of BMB-98 were 2.5 BAM/l. The events in Ukraine influenced the intensification of the price growth trend in 2022. According to the latest available published data for gasoline²⁰, in the 19th week of 2022, the prices of BMB-95 fuel increased by 24.2% compared to the 1st week of 2022, reaching a high level of 2.9 BAM/l. The average price of diesel fuel reached its maximum of 3.7 BAM/l in the 28th week of 2022. After that, the prices varied strongly, and in the last week of 2022 they amounted to 2.9 BAM/l. The range²¹ of weekly diesel fuel prices in 2022 amounted to a high 1.4 BAM/l.

Table 3. Measures of dispersion: weekly prices of oil derivatives in B&H, 2009-2022

	diesel				95-BMB				98-BMB			
	2019	2020	2021	2022	2019	2020	2021	2022*	2019	2020	2021	2022*
price- unweighted average	2,32	1,92	2,12	3,10	2,24	1,94	2,18	2,67	2,38	2,09	2,26	2,72
average deviation	0,03	0,23	0,13	0,29	0,03	0,20	0,13	0,25	0,04	0,18	0,12	0,21
standard deviation	0,04	0,26	0,16	0,38	0,04	0,22	0,16	0,27	0,04	0,19	0,15	0,22
coeff. of variation %	1,89	13,67	7,51	12,09	1,96	11,62	7,48	9,93	1,88	9,31	6,65	8,02
min	2,26	1,50	1,80	2,29	2,16	1,60	1,85	2,35	2,31	1,89	1,99	2,49
max	2,41	2,36	2,40	3,66	2,31	2,31	2,44	3,01	2,46	2,41	2,51	3,02
range	0,15	0,86	0,60	1,37	0,15	0,71	0,58	0,66	0,15	0,53	0,53	0,53

Source: Author's review based on data from the International Road Transport Union, taken from the website of the Foreign Trade Chamber of Bosnia and Herzegovina

Note: 2022 data for 95-BMB and 98-BMB refer to the period from week 1 to week 19 of 2022

¹⁹ The coefficient of variation was 1.9% for the weekly prices of diesel fuel and BMB-98, and 2% for the weekly prices of BMB-95 (see Table 3).

²⁰ After the 19th week of 2022, reporting on prices for fuel 95 BMB and 98 BMB on the website of the Foreign Trade Chamber of Bosnia and Herzegovina with data from the International Road Transport Union was discontinued. Only data on the most common fuel prices for individual companies in Bosnia and Herzegovina are available.

²¹ The difference between the minimum and maximum values.

It is interesting to look at the share of VAT, excises and road fees in the average prices of derivatives by year shown in Table 4.

Table 4.
Share of taxes in the average prices of oil derivatives in Bosnia and Herzegovina, 2009-2022

	diesel				95-BMB				98-BMB			
	2019	2020	2021	2022	2019	2020	2021	2022*	2019	2020	2021	2022*
price- unweighted average	2,32	1,92	2,12	3,10	2,24	1,94	2,18	2,67	2,38	2,09	2,26	2,72
VAT	0,34	0,28	0,31	0,45	0,33	0,28	0,32	0,39	0,35	0,30	0,33	0,40
excise	0,30	0,30	0,30	0,30	0,35	0,35	0,35	0,35	0,35	0,35	0,35	0,35
road fee	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,40
average pre-tax price	1,28	0,94	1,11	1,95	1,17	0,90	1,11	1,54	1,28	1,04	1,18	1,58
taxes in average price	44,7%	51,1%	47,6%	37,1%	48,0%	53,3%	48,9%	42,6%	46,0%	50,4%	47,7%	42,1%

Notes:

* 2022 data for 95-BMB and 98-BMB refer to the period from the 1st to the 19th week of 2022 (mid-May)

** The term "taxes" in the table includes: VAT, excise duties and road fees.

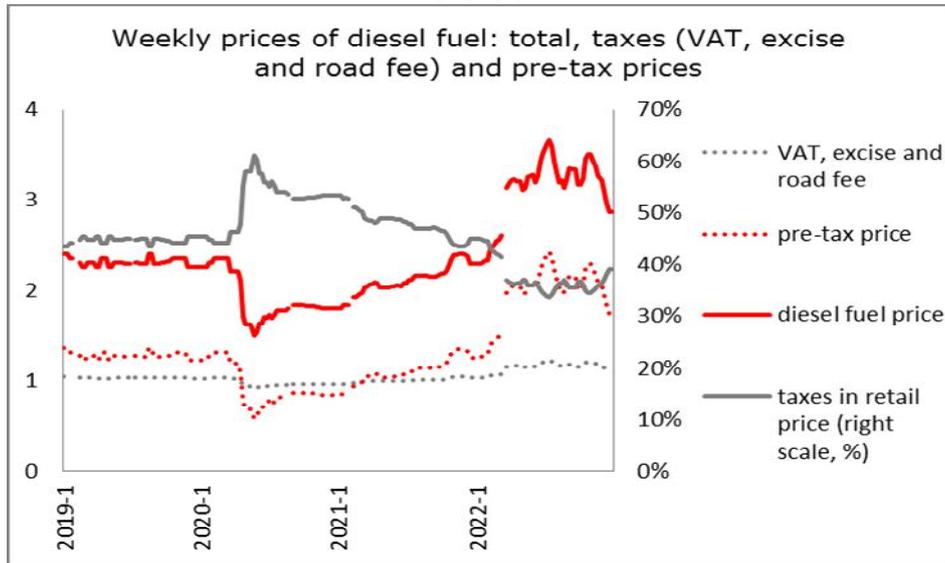
The average price implies an unweighted average of the weekly prices of derivatives based on the data of the International Road Transport Union, taken from the website of the Foreign Trade Chamber of Bosnia and Herzegovina.

Bearing in mind that VAT is an *ad valorem* tax, while the excises and road fees are specific taxes that are paid per liter of derivatives, and the fact that, considering the level of tax rates that are applied in B&H in the observed period (2019-2022) the specific taxes dominate in the retail sale price (RSP) structure, we can conclude that in 2022, when the highest average RSP of oil derivatives was recorded, the tax burden was the lowest. It should be noted that the data for gasoline (BMB-95 and BMB-98) for 2022 should be taken with a grain of salt, as they refer to the period from the beginning of the year until the 19th week of 2022. The share of taxes in the unweighted average of diesel fuel RSP amounted to 37.1% in 2022, which is lower than in previous years (see line "taxes in average price", Table 4), and by a high 14 percentage points below the share in 2020, when, due to the effects of the coronavirus, the RSP of oil derivatives was extremely low. The share of taxes in the unweighted average of gasoline RSP (BMB-95 and BMB-98) is also significantly lower for the available data in 2022 (until mid-May) than in previous years. Bearing in mind that the peak of oil derivative prices in B&H was reached in the summer of 2022, after the expiration of the period of available and processed data, it is estimated that these indicators for the level of the whole year 2022 are even lower.²²

Calculated indicators on the tax burden of average weekly diesel fuel prices are shown in Chart 3

²² The unweighted average of **monthly** prices in 2022 for the Federation of B&H for BMB-95 and BMB-98 amounts to 2.85 and 3.01 BAM/l, and according to the calculation shown in Table 4, shares of taxes in the average price for the entire year 2022 for the FB&H are 40.9% and 39.5%, respectively (Source: author's calculation based on data from the December 2022 Monthly Bulletin of Oil Product Prices, Federal Ministry of Trade)

Chart 3



Source: Author's review based on data from the International Road Transport Union, taken from the website of the Foreign Trade Chamber of Bosnia and Herzegovina

3. Consumption of oil derivatives

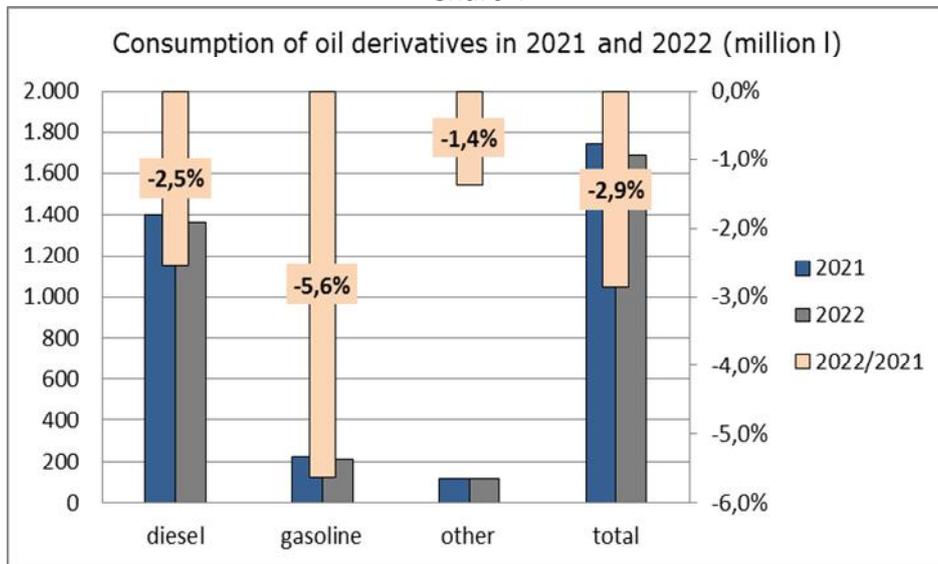
In this Chapter, a comparison of the consumption of oil derivatives in 2022 was made in relation to previous year, and then with the consumption in 2019, which is the starting year of the analyzed period. It should be noted that the term "consumption of derivatives" in this article means the quantities 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.²³

3.1. Consumption of oil derivatives in relation to 2021

Chart 4 shows the total consumption of oil derivatives in 2021 and 2022. Chart 5 shows the monthly consumption of oil derivatives in 2022 compared to the previous year.

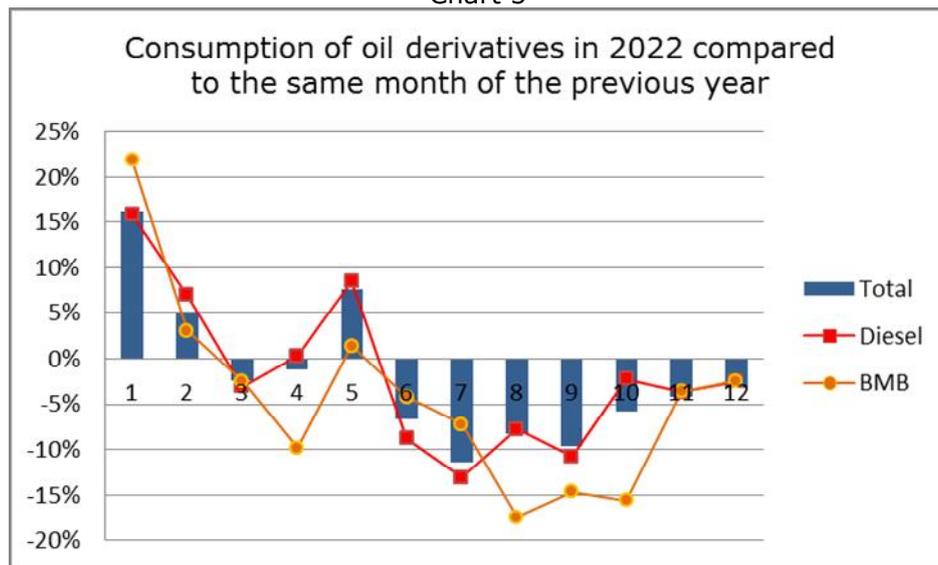
²³ The last year in which domestic derivatives were placed on the market was 2019, due to the suspension of production in the Oil Refinery Brod after the crash in October 2018.

Chart 4



Source: Author's calculation based on ITA data

Chart 5



Source: Author's calculation based on ITA data

Compared to 2021, the total consumption of oil derivatives in 2022 decreased by 2.9%. The consumption of diesel fuel fell by 2.5%, gasoline by 5.6%, and other derivatives (heating oil, kerosene and liquid petroleum gas) by 2.9% (Chart 4).

It can be concluded from Chart 5 that, after the growth in the consumption of derivatives in January and February, with the beginning of the war in Ukraine and the rise in prices on the world oil market brought a decline in consumption in March, that has lasted throughout the whole observed period with the exception of the month of May, when the achieved growth can be partly attributed to the effects of the low statistical base of the consumption of diesel fuel in the same month of the previous year. The highest rates of decline in the consumption of oil derivatives were recorded in the third quarter of 2022.

In Bulletin no. 205-206²⁴, a multiple regression model was presented, with the dependent variable (y) "diesel and gasoline consumption (in millions of liters)". The independent variables were: (1) GDP level and (2) weighted average import prices that include weighted corresponding amount of excise and road fees (BAM/l). Given that these are substitutes, the consumption of diesel fuel and gasoline was analyzed together. The following data were used for the calculation: ITA data on the consumption of oil derivatives, weighted average import prices that include weighted corresponding amount of excise and road fees, and data on the gross domestic product in B&H in the specified period. Based on the results from the presented multiple regression model and the formula for calculating elasticity of demand²⁵, it was 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 (the same level of GDP).

This article analyses how well the realized diesel and gasoline consumption in 2022 "fit" into the above model. In the absence of official data from the Agency for Statistics of B&H (BHAS), the estimated GDP growth rate for 2022 was taken (DEP, September 2022). Based on the available ITA data, the weighted average import price was calculated, which includes the weighted corresponding amount of excises and road fees. Based on these data and the regression model presented in Bulletin 205-206, the estimated diesel fuel and gasoline consumption was slightly below the amount of actually imported quantities in 2022, namely 53 million liters, which is a deviation of 3.4%.²⁶ This is a pretty low deviation, bearing in mind that the coefficient of determination of the model (R^2) amounts to 88.5%, meaning that the consumed amounts of derivatives are also determined by other factors, except for prices and GDP. Therefore, it is not surprising that **the October 2022 projections of net revenues from excises on oil derivatives and road fees²⁷ were made with a precision rate of 99.8% and 100.1%, respectively.** It should be noted that the accuracy of the projections was achieved in conditions of pronounced price turbulences on the oil derivatives market.

3.2. Consumption of oil derivatives compared to 2019

It could be seen from Chapter 2 of this article that the period 2019-2022 was extremely turbulent in terms of price movements of oil derivatives on the B&H market. The price turbulence in this period was caused by shocks on the crude oil market, while the taxation rates were stable. The consumption of oil derivatives was also very turbulent in the observed period (Chart 6). It fell sharply in 2020, despite low prices, due to lost consumption caused by coronavirus restrictive measures. In 2021, the consumption of derivatives recovered, almost reaching the pre-crisis level in 2019 (base index amounts to 99.2). In 2022, the consumption of derivatives decreased again, both in relation to the previous year and in relation to the base year 2019. The total consumption of oil derivatives (diesel, gasoline, heating oil, kerosene and liquid petroleum gas) fell by 3.7% in the period from 2019 to 2022. In the same period, the consumption of diesel fuel stagnated (insignificant growth of 0.2%), while the consumption of gasoline decreased by 13.8%. The consumption of other categories of derivatives (heating oil, kerosene and liquid petroleum gas) also decreased by 22.1%.

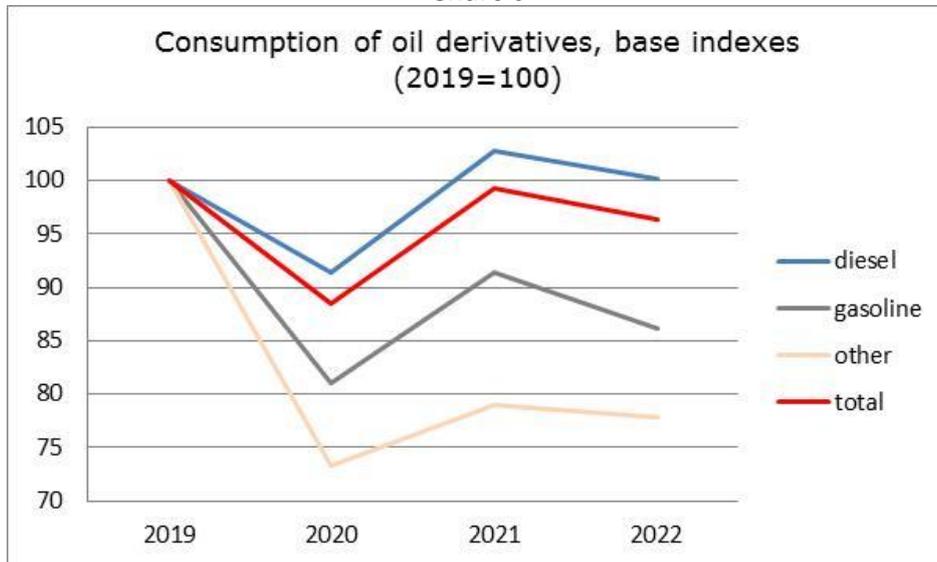
²⁴ Regoje A., " Consumption of oil derivatives in 2021 with special emphasis on the price movements and estimates of price elasticity of demand"; http://www.oma.uino.gov.ba/bilteni/Oma_Bilten_eng_205_206.pdf

²⁵ 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).

²⁶ Based on the regression model, diesel fuel and gasoline consumption would amount to 1,524 million liters, while the actual imported quantities amounted to 1,577 million.

²⁷ The total amount of excise and road fee revenue projections also takes into account other oil derivatives, which are not included in the regression model (heating oil, kerosene and liquid petroleum gas).

Chart 6



Source: Author's calculation based on ITA data

4. The effects of price growth and the dynamics of consumption of derivatives on revenues from indirect taxes

We have seen in the Chapter 2 of this article that a large increase in the prices of oil derivatives was recorded on the B&H market in 2022. The question arises as to how the rise in the prices of derivatives in 2022 affected the movement of revenues from indirect taxes.

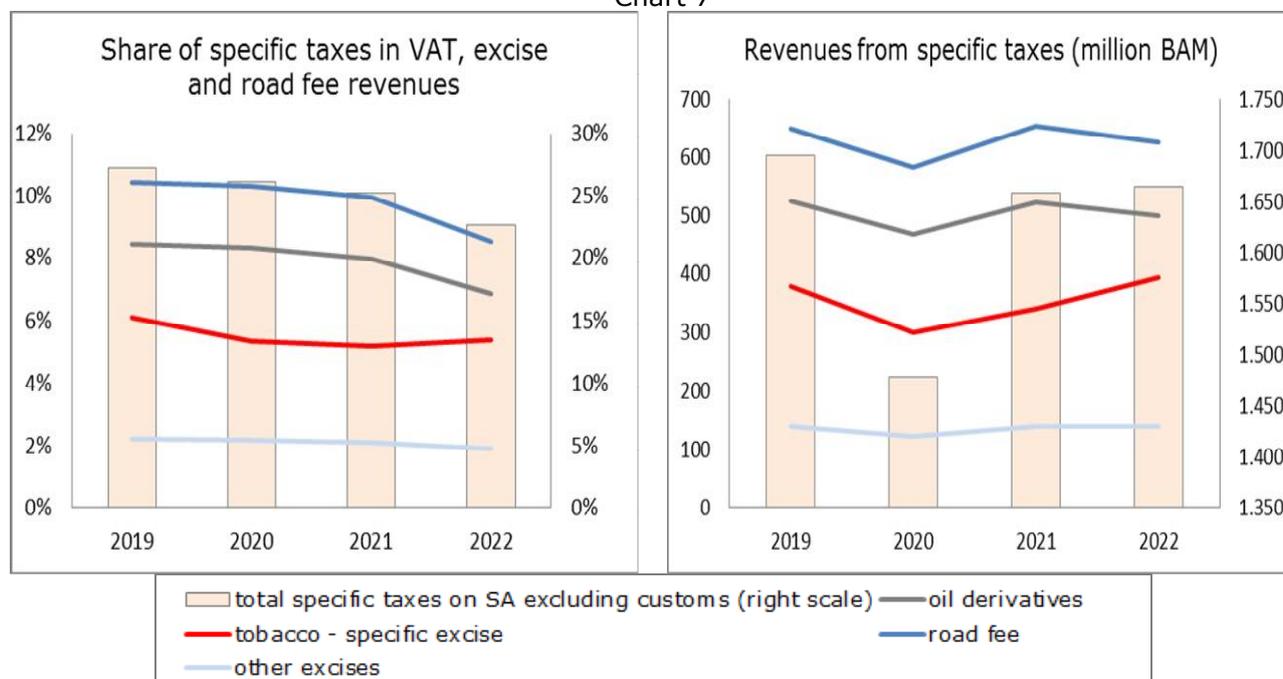
Text box 1. Effects of inflation on indirect tax revenues

Tax systems that are inflation neutral are rare. The effects of price growth on revenues from indirect taxes depend on many factors: progressivity of taxes, tax structure, the degree of indexation of the tax system, the time lag between occurrence of tax liability and the payment of the tax, the rate of inflation, the degree of elasticity, etc. Since the specific taxes in B&H are not indexed to inflation, and time lags between the occurrence of the obligation and deadlines for payment are relatively short, the effects of inflation on revenues depend mostly on the tax structure according to the type of tax base, i.e. whether the obligations are calculated by value or quantity. The tax base of taxes that are charged *ad valorem* (by value) grows along with the rise in prices, bringing higher revenues. *Ad valorem* taxes are not alone in the structure of indirect taxes in B&H. An important place also belongs to the specific taxes, charged on quantity, which are not indexed. Therefore, inflation affects the real value of revenues from indirect taxes in B&H. The effect of inflation on total revenues and government accounts in Bosnia and Herzegovina is a much more complex topic that we leave for other analyses, because in addition to indirect taxes, public revenues include direct taxes, social insurance contributions, non-tax revenues and other revenues, on which inflation has special effects. In addition, public expenditures are also increasing in conditions of rising prices of goods and services, while the effects of inflation on interest rates and repayment of debt are a special topic.

The consumption of oil derivatives has a great influence on the dynamics of revenues from indirect taxes. VAT, excises and road taxes are being collected on the import and sale of oil derivatives. Net revenues from excises on oil derivatives and road taxes accounted for 14.4% of net revenues from indirect taxes in 2022. In addition, a large share of VAT is collected on the sale of oil derivatives. After the changes in the Law on Excises, from 2018, between 180 and 200 million BAM of VAT has been collected annually only on the corresponding excises and road fees charged

on oil derivatives.²⁸ Considering the large increase in prices in 2022 and the not so significant decrease in the amount of imported derivatives, there is no doubt that there has been a significant increase in VAT revenue on the consumption of oil derivatives, compared to the previous year.²⁹

Chart 7



Source: Author's calculation based on ITA data

Text Box 1 showed that the effects of inflation on the real value of revenues from indirect taxes in B&H mostly depend on whether liabilities are calculated by value or quantity. Excise duties and road fees on oil derivatives are specific taxes, while the VAT is charged on value.

In addition to excise duties on oil derivatives, specific indirect taxes include: excise duties on tobacco (with the exception of a part of excise duty on tobacco that is charged *ad valorem*), alcohol and alcoholic beverages, non-alcoholic beverages, beer, wine, coffee, and road fees and a part of custom duties charged on quantities. Specific taxes accounted for 25.3%³⁰ of collected net revenues from VAT, excises and road fees in 2021.³¹ In 2022, that share decreased by a high 2.6 percentage points or to 22.7%. **Specific taxes (excluding customs duties) increased by only 5.8 million BAM in 2022 compared to the previous year** (Chart 7), while the absolute growth of net revenues from VAT, excises and road fees (net revenues without customs, other and unadjusted revenues) amounted to 767.9 million BAM. **The growth of total net revenues from indirect taxes amounted to 907.4 million BAM.**

²⁸ The structure of the **unweighted** average of prices is shown in Table 4. Revenue estimates cannot be prepared based on the unweighted average of prices.

²⁹ Let's take a hypothetical example, if the weighted average of diesel fuel price corresponded to the simple average of the weekly prices from Table 4, for the realized 2.5% decrease in the amount of diesel fuel in 2022 compared to the previous year, an increase in the **weighted** average of price of 8.5% would be sufficient, so that the increase in VAT revenue would compensate for the decrease in revenue from excises and road fees. Based on the data from Table 4, it can be calculated that the growth of the **simple** average of weekly prices was a high 46.5% in 2022 compared to 2021.

³⁰ Revenues from customs, other and unadjusted revenues on the ITA Single Account were not included in the calculation.

³¹ It is interesting that this share was approximately the same in 2017, before the changes in the Law on Excises, when the excise rates on derivatives and road fee were lower, and also the specific excise on cigarettes was lower (1.35 BAM/pack of cigarettes in 2017 compared to 1.65 BAM/pack of cigarettes in 2022). The collection of excises on oil derivatives and specific excise on tobacco stagnated in 2021 compared to 2017, and the growth in net road fee revenues of about 70% was sufficient to maintain the share of specific taxes at one quarter.

According to the data of the Agency for Statistics of B&H, in 2022, an average increase in price levels of 14.0% was recorded, compared to the previous year.³² The net collection of indirect taxes in 2022 increased by 13.1% compared to 2021. At the same time, VAT and customs revenues grew above the inflation rate (15.6% and 33.1%, respectively), while excise revenues grew at a rate below the inflation (7.1%), and road tax revenues recorded a decline (-4.3%). The increase in excise revenues was achieved due to the increase in revenues from excises on tobacco, while revenues from excises on oil derivatives recorded a decrease, as well as road fees (-4.3%). It should be noted that **price growth is only one of the factors affecting the collection of indirect tax revenues**. In addition to the inflation, **revenue collection is particularly influenced by: the dynamics of real macroeconomic indicators** (consumption, investment, import and export), **the effects of changes in legislation, the efficiency of collection, etc.**

Conclusions

- The factors that most influence the formation of derivative prices on the B&H market are crude oil prices, trade margins and tax rates. Crude oil prices had great turbulences in the observed period 2019-2022, which is the main cause of turbulences in the prices of oil derivatives on the B&H market, since trade margins are limited, and tax rates have not changed since February 2018 (Chapter 1).
- The prices of oil derivatives on the B&H market were extremely low in 2020, while in 2022 they skyrocketed. According to the data of the Foreign Trade Chamber of Bosnia and Herzegovina, the range between the minimum weekly price of diesel fuel in 2020 and the maximum weekly price in 2022 was even 2.16 BAM per liter. The share of taxes (VAT, excises and road fees) in the price of oil derivatives was the highest in 2020 and the lowest in 2022 (Chapter 2, Tables 3 and 4).
- The total consumption of oil derivatives on the B&H market in 2022 decreased by 2.9% compared to the previous year, while compared to 2019 it decreased by 3.7%. In the observed period, the consumption of all types of oil derivatives was below the consumption in 2019, with the exception of the consumption of diesel fuel, which exceeded that level in 2021. In 2022, it returned again to the level of 2019 (Chapter 3).
- The factor that most determines the effects of inflation on revenues from indirect taxes in B&H is the type of tax base, i.e. whether liabilities are calculated by value or quantity. The share of specific taxes in the collected net revenues from VAT, excises and road fees constantly decreased in the observed period 2019-2022, with the most pronounced decrease in 2022. **In conditions of high inflation, specific taxes have slowed down the collection of revenues from indirect taxes in 2022.** This is especially pronounced for revenues from excise duties on petroleum products and road tolls, which recorded a decline (Chapter 4).

³² BHAS, Consumer Price Index in Bosnia and Herzegovina, December 2022

Analysis of foreign trade exchange for 2022

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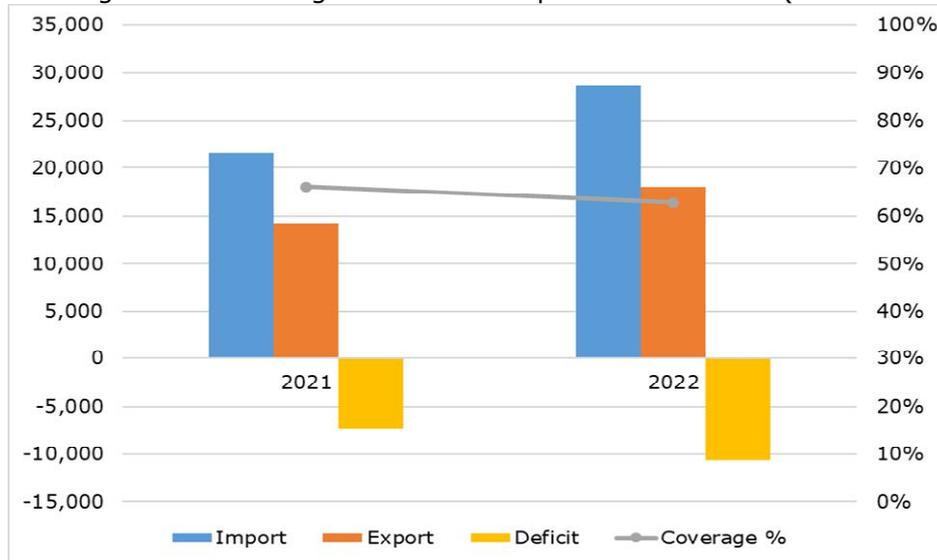
Summary

The analysis of foreign trade exchange for 2022 is a continuation of the analyses published in previous issues of the Unit's bulletin. The focus of the analysis is the annual movement of imports and exports in Bosnia and Herzegovina (hereinafter: BiH) in 2022 compared to the previous year, 2021³³. The analysis shows trends in total annual foreign trade, trends in annual trade by foreign trade regions divided into developed countries (EU³⁴, EFTA³⁵ and other developed countries³⁶) and developing countries (CEFTA³⁷, European developing countries, Asian developing countries and other developing countries³⁸). Also, the annual trends in the exchange according to the most important foreign trade partners, as well as the annual trends in the exchange according to the type of product, are shown.

1. Annual movement of foreign trade exchange

In 2022, BiH recorded an increase in the volume of foreign trade exchange compared to 2021. The increase in the volume of foreign trade was mostly influenced by the galloping global inflation caused by the unstable economy due to the war between Russia and Ukraine and the constant increase in the prices of goods and services on the international and domestic markets. Chart 1 shows the annual trend of goods exchange between BiH and abroad for the period 2021-2022. The values of imports, exports and realized deficit are shown in millions of BAM (left vertical scale), as well as the participation in the coverage of imports by exports (right vertical scale) for the specified period.

Chart 1. Foreign trade exchange of BiH for the period 2021-2022 (in millions of BAM)



Source: Agency for Statistics of BiH, MAU review

³³ Due to the emergence of the Covid-19 pandemic as well as the measures introduced to combat the spread of the virus, the 2020 is not relevant for comparison, and the analysis does not show a three-year time series that would include this year.

³⁴ 27 member states of the European Union

³⁵ Switzerland, Norway, Iceland and Liechtenstein (European Free Trade Association)

³⁶ Australia, Japan, Canada, USA, Turkey, United Kingdom and others.

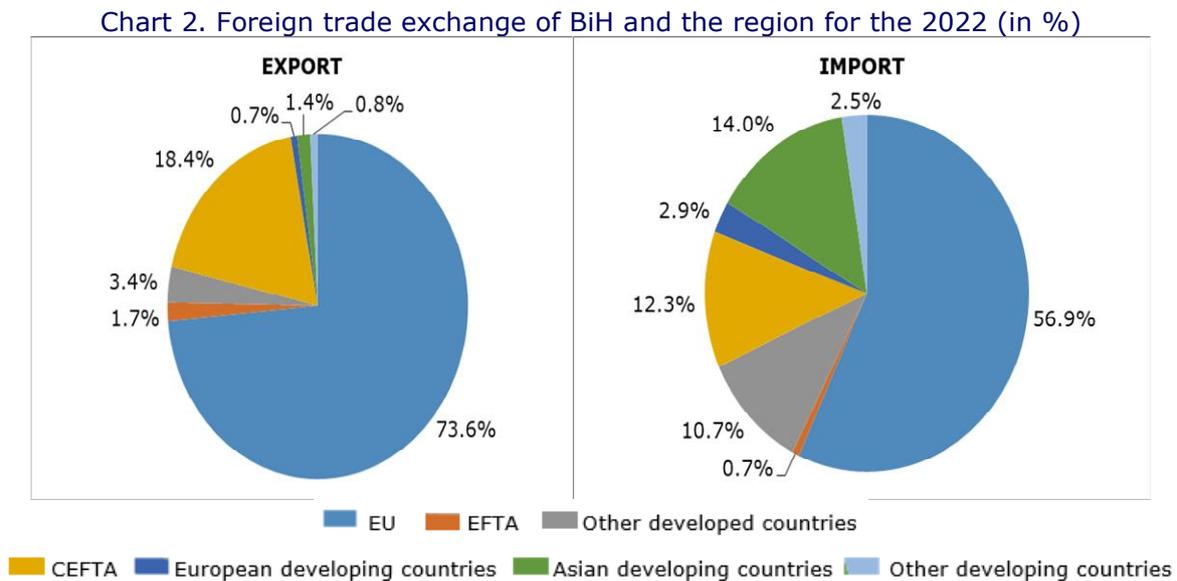
³⁷ Albania, Montenegro, North Macedonia, Moldova, Serbia, UNMIK/Kosovo (Agreement on free trade of the countries of Central Europe which also includes Bosnia and Herzegovina)

³⁸ African and American developing countries

The chart shows that imports in 2022 are higher by 32.6%, while exports are higher by 25.9% compared to 2021. Coverage of imports by exports at the annual level is 62.8% and is lower by 3.3 p.p. compared to the previous year, while the foreign trade deficit is higher by 45.5% in 2022 compared to 2021. Considering the large increase in the prices of goods and services on the world market, the fact that BiH imports more than exports, contributes to the increase in the foreign trade deficit.

2. Foreign trade exchange of BiH in 2022 according to the main regions

Chart 2 shows the percentage of participation of the main regions in foreign trade exchange with BiH in 2022.



Foreign trade exchange of BiH and developed countries:

- The EU, as the main partner of BiH in foreign trade, participates with 73.6% of exports and 56.9% of imports in 2022. Exports to EU countries in 2022 are higher by 27.2%, while imports are higher by 28.0% compared to 2021. The coverage of imports by exports in 2022 is 81.2%, which is 0.5 p.p. less compared to the coverage of imports by exports in 2021.
- In 2022, EFTA countries participate in trade with BiH with 1.7% of exports and 0.7% of imports. Exports are lower by 17.5%, while imports are higher by 12.2% compared to 2021. Coverage of imports by exports is 162.3%, which is 58.4 p.p. less compared to the coverage of imports by exports in the previous year.
- In 2022, other developed countries participate in trade with BiH with 3.4% of exports and 10.7% of imports. Exports from BiH to other developed countries that are not EU member countries and EFTA member countries in 2022 are lower by 4.4% compared to 2021, while imports from these countries to BiH in the same year are higher by 37.5% compared to the previous year. Coverage of exports by imports in 2022 is 20.1%, which is 8.8 p.p. less compared to the coverage of imports by exports in 2021.

Foreign trade exchange of BiH and developing countries:

- The CEFTA countries, of which Serbia, Montenegro and North Macedonia have the largest participation in trade with BiH, participate with 18.4% of exports and 12.3% of imports in 2022. Exports increased by 37.3%, while imports increased by 27.3% compared to the previous year. Coverage of imports by exports is 93.9%, which is 6.8 p.p. higher than in 2021.
- In 2022, BiH participates with 0.7% of exports and 2.9% of imports with other developing European countries, of which the largest foreign trade exchange refers to the country's trade with Russia. 81.9% of exports and 80.0% of imports from the total realized exchange of BiH with this group of countries refers to the exchange of goods with Russia. Exports from BiH to other developing European countries are lower by 0.4% compared to exports in 2021, while realized imports from this group of countries in 2022 are higher by 16.7% compared to the previous year. The coverage of imports by exports is 14.8%, which is 2.5 p.p. smaller compared to the coverage of imports by exports in 2021.
- In the exchange of goods with a group of developing Asian countries, of which China is the most important participant in the exchange, BiH achieved 1.4% of exports and 14.0% of imports in 2022. Of the total realized imports from this group of countries, 58.0% refers to imports from China. Exports increased by 40.8%, while imports increased by 54.3% compared to the previous year. The coverage of imports by exports is 6.2%, which is 0.6 p.p. less compared to the coverage of imports by exports in 2021.
- Other developing African and American countries participate in trade with BiH with 1.4% of exports and 2.5% of imports. Exports from BiH to these countries in 2022 are lower by 3.6%, while imports are higher by 83.5% compared to 2021. The coverage of imports by exports is 20.0%, which is by 18.1 p.p. lower than in 2021.

3. Foreign trade exchange of BiH according to the most important partners

Table 1 shows the participation in exports to the ten most important foreign trade partners of BiH in 2021 and 2022. Also, the percentage of increase/decrease in exports in 2022 compared to the previous year is shown.

Table 1. BiH exports by partners for the period 2021-2022 (in %)

BH EXPORT (% of participation)				
No.	Country	2021	2022	growth (%)
1	Croatia	13.0	14.9	43.8
2	Germany	15.0	14.8	24.7
3	Serbia	12.1	13.1	37.3
4	Italy	11.3	11.1	23.8
5	Austria	9.0	9.5	33.1
6	Slovenia	8.5	7.9	16.6
7	Montenegro	2.8	3.2	46.4
8	Netherlands	2.5	2.3	17.3
9	France	2.3	2.2	16.6
10	Hungary	1.9	2.0	34.9
	other countries	21.6	18.9	10.2
	total	100.0	100.0	

Source: Agency for Statistics of BiH, MAU review

The most important export partner of BiH, i.e. the country to which BiH exported the most in 2022, is Croatia, followed by exports to Germany. At the same time, these two countries are the most important export partners of BiH in the EU. From the group of member countries of the CEFTA region, BiH exported the most to Serbia, while the countries of the EFTA region are not among the ten largest BiH exporters in 2022. Table 1 also shows the percentage of increase/decrease in exports. The indicators presented in the table show the increase in exports to the markets of BiH's main trading partners in 2022 compared to 2021. Exports to Montenegro increased by 46.4% and to Croatia by 43.8%. This increase in exports to Croatia has placed Croatia in the position of the most important export partner of BiH in 2022, which was not the case in previous years, although Croatia was also one of the main foreign trade partners of the country in previous years. Also, significant growth in BiH exports was recorded to Serbia by 37.3%, as well as to Hungary by 34.9%, which included Hungary among the ten largest export partners of the country.

Table 2 shows the share of imports in BiH according to the country's ten most important foreign trade partners in 2021 and 2022. Also, the percentage of increase/decrease in imports in 2022, compared to the same period of the previous year, is shown.

Table 2. BiH imports by partners for the period 2021-2022 (in %)

BH IMPORT (% of participation)				
No.	Country	2021	2022	growth (%)
1	Italy	12.0	12.4	36.1
2	Serbia	11.2	10.7	26.0
3	Germany	11.9	10.5	16.6
4	Croatia	8.9	9.9	48.0
5	China	7.9	8.1	36.7
6	Turkey	5.9	5.8	31.9
7	Slovenia	4.6	3.9	13.1
8	Austria	3.8	3.5	21.8
9	USA	2.5	3.3	78.3
10	India	1.1	2.9	53.3
	other countries	30.2	29.0	27.2
	total	100.0	100.0	

Source: Agency for Statistics of BiH, MAU review

The most important partner, i.e. the country from which BiH imported the most in 2022, is Italy. At the same time, it is the most important import partner of BiH from the EU. In the same period, of the partners from the group of member countries of the CEFTA region, BiH imported the most from Serbia, while from the group of developing Asian countries the largest import to BiH was recorded from China. Table 2 also shows the percentage of increase/decrease in imports. The table shows the increase in imports to BiH from the markets of the main trading partners in 2022 compared to 2021. Imports from the USA increased the most by 78.3% and India by 53.3%, making these countries important import partners of BiH, followed by imports from Croatia by 48.0%, China by 36.7%, and Italy by 36.1%.

4. Foreign trade exchange of BiH by type of product for 2022

Table 3 shows the participation in exports of the ten most important product groups in 2021 and 2022. Also, the table shows the percentage of increase/decrease in the export of certain types of goods.

Table 3. BiH exports by product groups for the period 2021-2022 (in

EXPORT (% of participation)					
No.	code	Code description	2021	2022	change (%)
1	27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	8.6	9.9	45.6
2	76	Aluminum and aluminum products	6.6	8.8	67.8
3	94	Furniture; bed equipment and like products; lamps and other lighting fixtures	8.8	7.8	12.0
4	73	Iron and steel products	7.2	7.5	30.5
5	85	Electrical machinery and equipment and parts thereof; sound recording or reproducing apparatus; television sets, etc..	7.6	7.3	19.9
6	84	Nuclear reactors, boilers, machinery, apparatus and mechanical appliances; their parts	6.7	6.6	23.6
7	44	Wood and wood products; charcoal	6.8	6.5	21.2
8	28	Inorganic chemical products; organic and inorganic compounds of precious metals, radioactive elements, etc.	4.6	5.4	48.6
9	64	Footwear, slippers and the like; parts of these products	4.9	4.7	20.9
10	39	Plastics and plastic products	4.6	4.5	24.1
I		Total (1-10)	66.3	68.9	31.0
II		Other products	33.7	31.1	16.0
		TOTAL (I + II)	100.0	100.0	

%)

Source: Agency for Statistics of BiH, MAU review

In 2022, the ten most important export groups of products achieved an increase in exports compared to the previous year, 2021. The highest growth in exports by product group was achieved by BiH for the export of the product group code number 76 - Aluminum and aluminum products 67.8%, after which a significant increase in exports was achieved by the product group code number 28 - Inorganic and organic chemical elements and compounds, etc. 48.6%, and group code number 27 - Mineral fuels, oils, waxes, bituminous substances, etc. 45.6%.

Table 4 shows the import share of the ten most important product groups in 2021 and 2022. Also, the table shows the percentage of increase/decrease in the import of certain types of goods.

Table 4. BiH imports by product groups for the period 2021-2022 (in %)

IMPORT (% of participation)					
No.	code	Code description	2021	2022	change (%)
1	27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	11.9	16.6	83.8
2	84	Nuclear reactors, boilers, machinery, apparatus and mechanical appliances; their parts	7.8	7.2	21.3
3	85	Electrical machinery and equipment and parts thereof; sound recording or reproducing apparatus; television sets, etc.	5.9	5.8	29.7
4	39	Plastics and plastic products	6.2	5.6	18.7
5	76	Aluminum and aluminum products	3.9	5.4	82.6
6	87	Vehicles other than railway or tramway rolling-stock and parts and accessories thereof	6.2	5.4	16.0
7	72	Iron and steel	4.5	4.6	35.7
8	30	Pharmaceutical products	3.6	2.7	-0.2
9	73	Iron and steel products	3.0	2.7	16.2
10	44	Wood and wood products; charcoal	1.8	1.8	33.6
I		Total (1-10)	55.0	57.7	39.2
II		Other products	45.0	42.3	24.6
		TOTAL (I + II)	100.0	100.0	

Source: Agency for Statistics of BiH, MAU review

Among the ten most important import groups of products shown in table 4, the largest increase in imports in 2022 compared to the previous year was achieved in the group of products with code number 27 - Mineral fuels, oils, waxes, bituminous substances, etc. 83.8% and group of product with code number 76 - Aluminum and aluminum products 82.6%. The only decrease in the import of the ten most important import groups of BiH products was achieved by the product group code number 30 - Pharmaceutical products -0.2%. The import of pharmaceutical products in BiH has increased significantly in the years marked by the emergence and fight against the Covid-19. The decrease in the number of infected people and the decrease in the spread of the virus in 2022 also affected the decrease in the import of these products.

5. Conclusion

The movement, volume and structure of trade are of great importance for the country and depend on numerous factors. The movement of economic activity and the epidemiological situation in the country and the surrounding area were the main determinants of the foreign trade exchange in BiH in the previous period. Given the fact that 2020 was a crisis year in terms of the emergence of the coronavirus pandemic, broken supply chains and slow economic growth, it was not included in the annual analysis. By improving economic activity in 2021 and remediating the global economic challenges of Covid-19, which faced the world economy, the foreign trade exchange of BiH was also improved, and this year was a year of recovery and stabilization of economic trends. The beginning of the war between Russia and Ukraine at the end of February 2022 caused an increase in the import of goods to BiH, affecting the country's economy and disruptions in supply chains. Galloping inflation caused by global movements has influenced the increase in the prices of goods and services, especially energy. Although the disturbances stabilized from the beginning of 2022 until the end of the year, prices remained high, which affected the increase in the value of foreign trade in the country. Consequently, the increase in the volume of BiH's foreign trade in 2022 was not so much influenced by the increase in the quantity of goods and services as by the increase in their prices. Trade data for 2022 show that imports are still significantly higher than exports.