



# Mining in the Western Balkans: Who Really Profits?

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## CHAPTER 3

# MINING IN THE WESTERN BALKANS: WHO REALLY PROFITS?<sup>1</sup>



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<sup>1</sup> This chapter reports monetary values in the currency in which the original data are expressed, either EUR or USD. As the EUR/USD exchange rate was close to parity at the time of writing, no conversion into a common currency was applied.

# INTRODUCTION

In recent years, the mining sector in the Western Balkans has moved to the forefront of public and policy debates, driven by several large extraction projects across the region. The most prominent examples include Rio Tinto's proposed Jadar lithium mine in Serbia, the proposed Lopare lithium project in Bosnia and Herzegovina, the operating Rupice mine (silver, gold, zinc) in Bosnia and Herzegovina, and the Chinese-owned copper and gold operations in Serbia's Bor region. At the same time, earlier attempts to develop large-scale mines have faced strong local resistance – most notably in the south-east of North Macedonia, where plans for a large copper-gold project were eventually halted following sustained protests. These developments have rekindled longstanding questions about who really benefits from mining in the region, and at what economic, social, and environmental cost.

This chapter aims to contribute to that debate by examining the economic significance of the mining sector in the six Western Balkan economies – Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia. First, we analyze available macroeconomic data on mining – including value added, employment, investment, and wages – to assess the overall size and significance of the sector in each economy and in the region as a whole. We then disaggregate to the firm level, drawing on company financial statements to document how many firms operate in the sector, what their financial results are, how many workers they employ, how much they pay in wages, how much they contribute in taxes, and how much profit accrues to their owners. Finally, we complement this quantitative analysis with four case studies of major mining projects in the region.

This chapter aims not only to quantify the economic importance of mining but also to examine its distributional dimension – specifically, the share of value captured by owners (through profits), by workers (through wages) and by the state (through taxes) – to determine who really benefits from mining in the Western Balkans. By documenting both the economic importance of mining and who really benefits from it, we aim to complement debates that focus primarily on environmental impacts, democratic accountability, and the political instrumentalisation of mining projects.

## MACROECONOMIC ANALYSIS

### OVERVIEW

The macroeconomic analysis reviews the main trends in the mining sector in the Western Balkans over the past 10–15 years. The data come from the Annual Database of the Vienna Institute for International Economic Studies (wiiw Annual Database) and refer to NACE sector B (Mining and Quarrying), which includes oil and gas extraction. We document trends in value

added, employment, wages and investment, to highlight the key developments in the mining sector in the six economies.

The mining sector in the Western Balkans remains relatively small and, in most countries, has generally been declining in economic importance over the past decade. Limited investment, depleted reserves, and structural shifts toward services and manufacturing have contributed to a downward trend in both output and employment across much of the region.

The structure of the mining sector in the region is highly heterogeneous, reflecting differences in natural endowments and historical development paths. With regard to oil and gas, Albania stands out as the region's only significant crude oil producer, with petroleum accounting for an important share of the sector's value added. Serbia also produces small amounts of oil and natural gas, while hydrocarbon output in the remaining Western Balkan countries is negligible.

Mineral and metal mining also shows wide variations across the region. Albania's mining sector is anchored by chromite production, alongside smaller outputs of copper, nickel, and limestone. Bosnia and Herzegovina and Kosovo remain heavily coal-based, with more limited metal mining, whereas North Macedonia and Montenegro rely primarily on metals and industrial minerals such as copper, gold, lead-zinc, and bauxite. Serbia has one of the most diversified mining sectors in the region, with copper and lignite as its dominant subsectors. It also holds significant lithium potential associated with the controversial Jadar project, which is currently suspended.

## VALUE ADDED

Across the Western Balkans, the mining and quarrying sector accounts for between 1% and 3% of GDP, being usually among the five smallest of the roughly 20 NACE sectors, but with a share of GDP several times larger than the average EU country<sup>2</sup> In Albania, Bosnia and Herzegovina, Montenegro, and North Macedonia, its share is approximately 1%, while in Kosovo it is about 1.5%. Serbia is the only country with a noticeably higher share, at approximately 3%.

In Albania, Bosnia and Herzegovina, and Kosovo, the mining share has gradually eroded as other sectors – particularly services – have expanded more rapidly. Albania experienced a short-term increase around 2012–2014, driven by growing oil production and a major expansion in investment and output at the Bulqizë chromium mine.<sup>3</sup> However, this boost turned proved temporary: with the subsequent decline in commodity prices, the mining sector's share of val-

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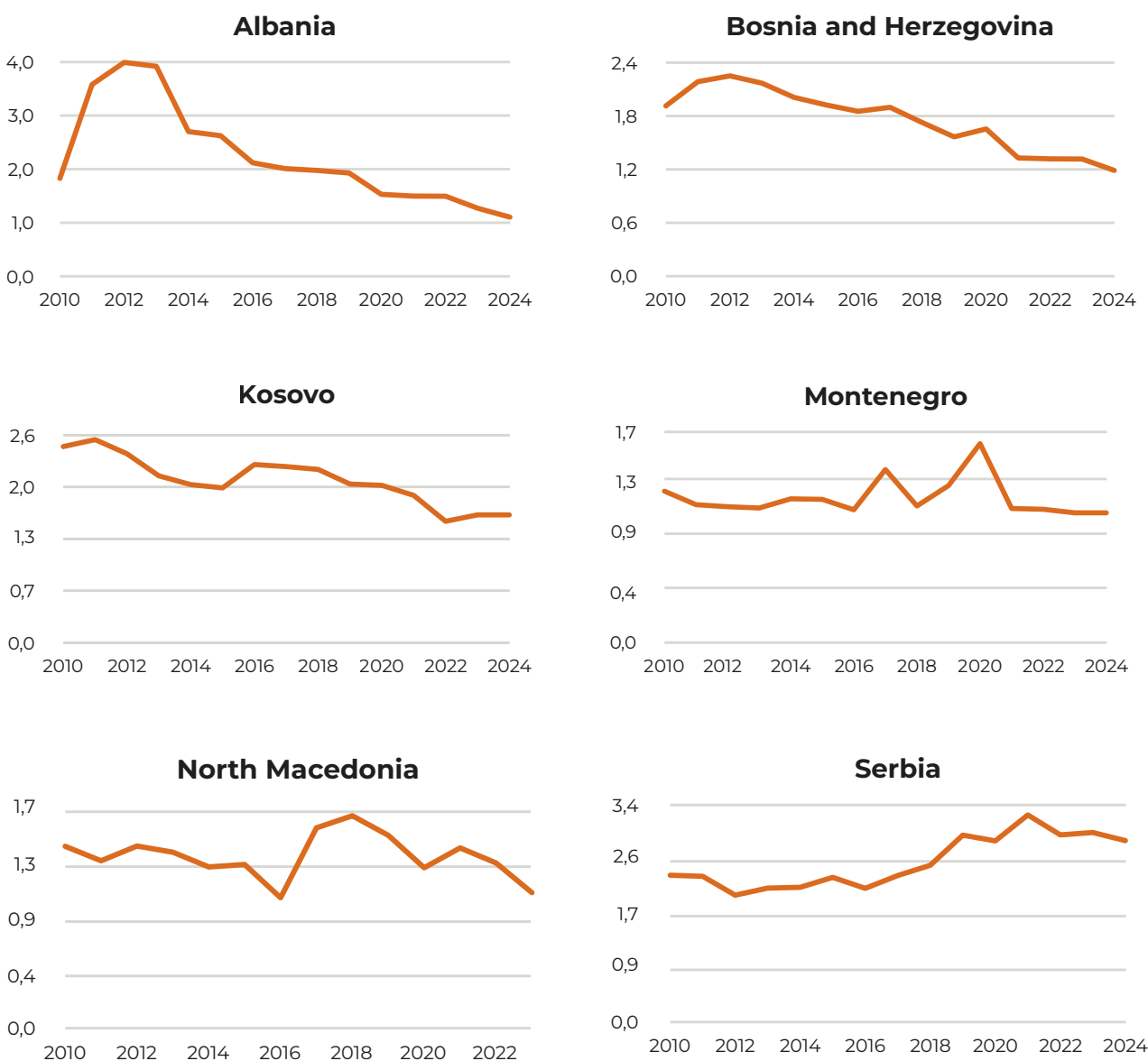
<sup>2</sup> OECD (2025). Enhancing Regional Mining Ecosystems in the European Union. [https://www.oecd.org/en/publications/enhancing-regional-mining-ecosystems-in-the-european-union\\_97ba1224-en/full-report/strengths-and-challenges-in-eu-mining-regions\\_49afad58.html](https://www.oecd.org/en/publications/enhancing-regional-mining-ecosystems-in-the-european-union_97ba1224-en/full-report/strengths-and-challenges-in-eu-mining-regions_49afad58.html)

<sup>3</sup> EITI. (2015). Albania 2013–2014 EITI Report. <https://eiti.org/documents/albania-2013-2014-eiti-report>

ue added resumed its downward trend.<sup>4</sup> In Montenegro and North Macedonia, the share remained mostly stable but is relatively small (slightly above 1% of GDP) throughout the period.

Serbia stands out as the only Western Balkan country where the mining sector has recently shown a moderate upward trend. The sector's share of GDP has increased from 2.3% in 2010 to around 3% in recent years, reflecting increased production in copper mining largely driven by the revitalization of RTB Bor following its acquisition by Chinese investors.<sup>5</sup>

**Figure 1. Value added in the mining and quarrying sector in the Western Balkan economies, the 2010-2024, % of GDP**



Source: wiiw Annual Database. Data for North Macedonia available until 2023.

<sup>4</sup> Tirana Times. (2015). Mining royalty dropped by 30% in 2014. <https://www.tiranatimes.com/mining-royalty-dropped-by-30-in-2014/>

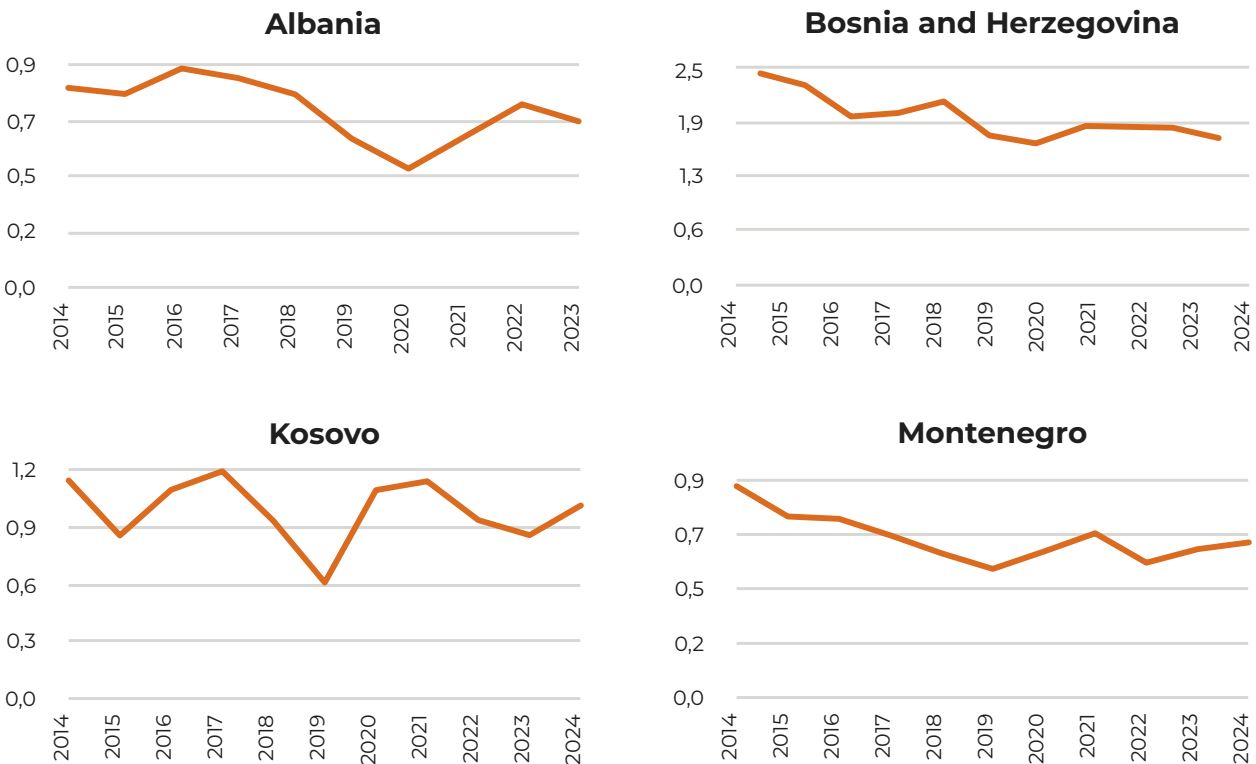
<sup>5</sup> Serbia Business. (2025). Serbia's mining moment: Incentives vs. obstacles for international operators. <https://serbia-business.eu/serbias-mining-moment-incentives-vs-obstacles-for-international-operators/>

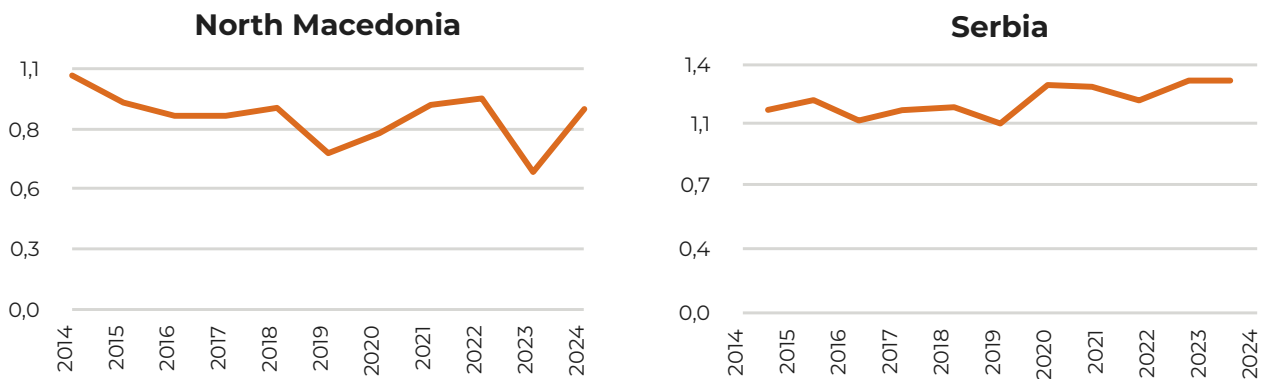
# EMPLOYMENT

Employment patterns reflect the declining economic importance of the mining sector. The sector accounts for a very small share of total employment across the region, typically around 1%. Bosnia and Herzegovina maintains a slightly larger share (1.7% in 2024) due to the higher number of employees in the state-owned coal mines, but even there the overall trend points downward.

Employment shares have fallen in all Western Balkan economies except Serbia. The largest decline has been in Bosnia and Herzegovina, where the share fell from 2.4% in 2014 to 1.7% in 2024. Serbia is the only country where there is a modest upward trend – from 1.1% in 2014 to 1.3% in 2024 – broadly consistent with the Chinese takeover and expansion of operations at the Bor mine. However, the increase in employment has been smaller than the increase in value added. In recent years the employment share (around 1.3%) has remained well below the value-added share (around 3%), indicating that mining in Serbia is highly capital intensive, with high value added per worker and relatively limited direct job creation.

**Figure 2. Employment in the mining sector in the Western Balkan economies, 2014-2024 (% of total employment)**

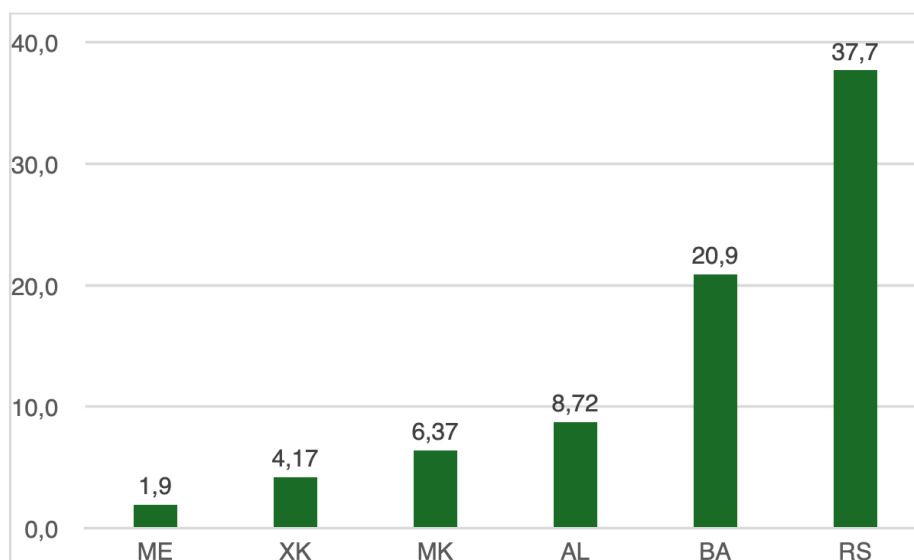




Source: wiiw Annual Database

The sector employs relatively few workers in most economies – in the low thousands. Montenegro has around 2,000 employees, Kosovo about 4,000, North Macedonia around 6,000, and Albania around 9,000. Bosnia and Herzegovina has roughly 21,000 mining workers, while Serbia has around 38,000 (Figure 3).

**Figure 3. Employment in the mining sector in the Western Balkan economies in 2024 (thousands of employees)**

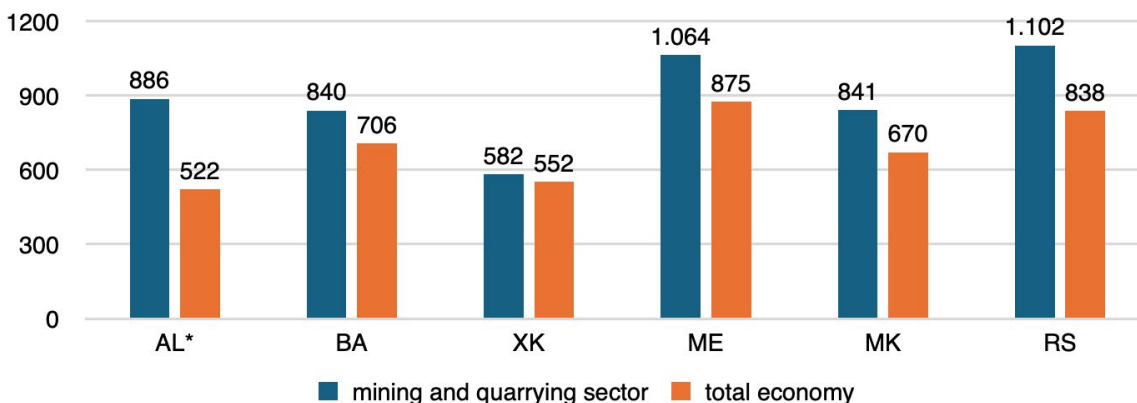


Note: The latest available data for Albania refer to 2023. Source: wiiw Annual Database

## WAGES

Wages in the mining sector are moderately to significantly above the national average across the Western Balkans. The wage premium ranges from around 5% in Kosovo to almost 70% in Albania, and stands at 20–30% in the remaining four economies (Figure 4). This premium, which is also common outside the region, largely reflects the specific working conditions in the sector, including elevated occupational safety risks, exposure to hazardous environments, and the physical intensity of mining operations.

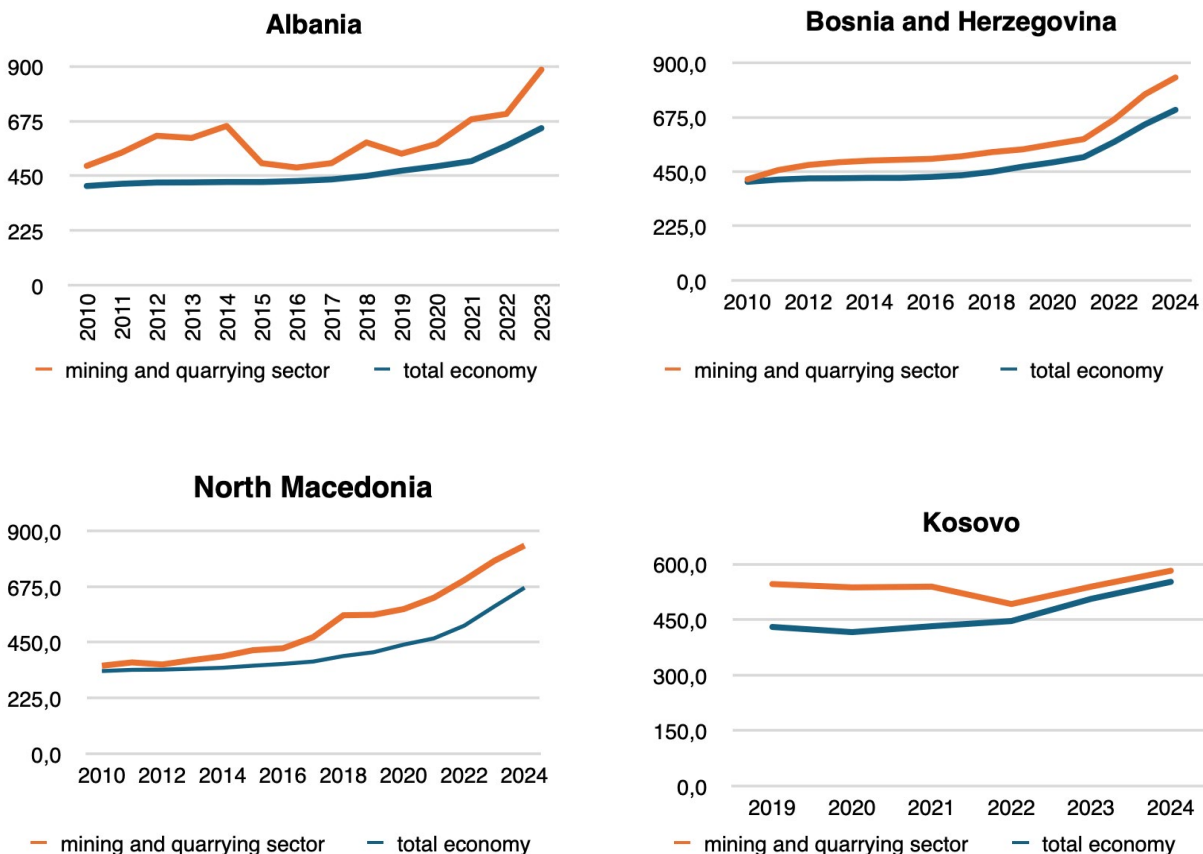
**Figure 4. Net wages in the mining and quarrying sector in 2024 (EUR)**

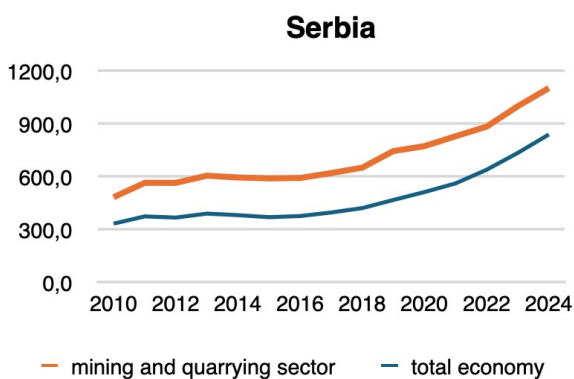
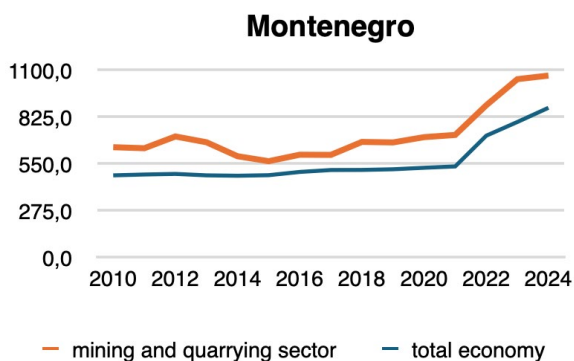


Note: The latest available data for Albania refer to 2023. Source: wiiw Annual Database

Wages in the mining sector have increased steadily over the past decade, broadly consistent with the upward trend in economy-wide wages. The cumulative increase ranges from around 70% in Bosnia and Herzegovina to around 150% in Serbia. However, mining wages have grown faster than average economy-wide wages only in Bosnia and Herzegovina and North Macedonia.

**Figure 5. Net monthly wages in the mining and quarrying sector, 2010-2024 (EUR)**



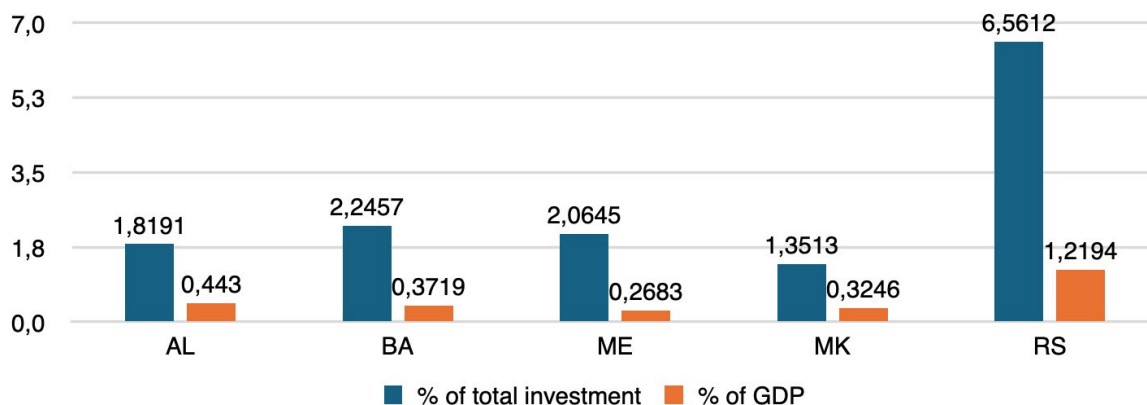


Source: wiiw Annual Database

## INVESTMENT

Investment patterns across the Western Balkans are consistent with the picture of mining as having relatively modest economic importance in the region, although investment shares are somewhat higher because of the sector's high capital intensity. Available data suggest that the mining sector remains a limited contributor to capital formation across the region – mining-related fixed investments in the region accounts for around 2% of total investment and roughly 0.5% of GDP, with Serbia as a notable exception. In Serbia, mining investment accounts for around 7% of total investment and about 1.2% of GDP in 2024 (Figure 6), reflecting substantial capital inflows tied to the operations of Zijin Mining and the company's revitalization of the copper mining complex.

**Figure 6. Gross fixed investment in the mining and quarrying sector, latest available year**



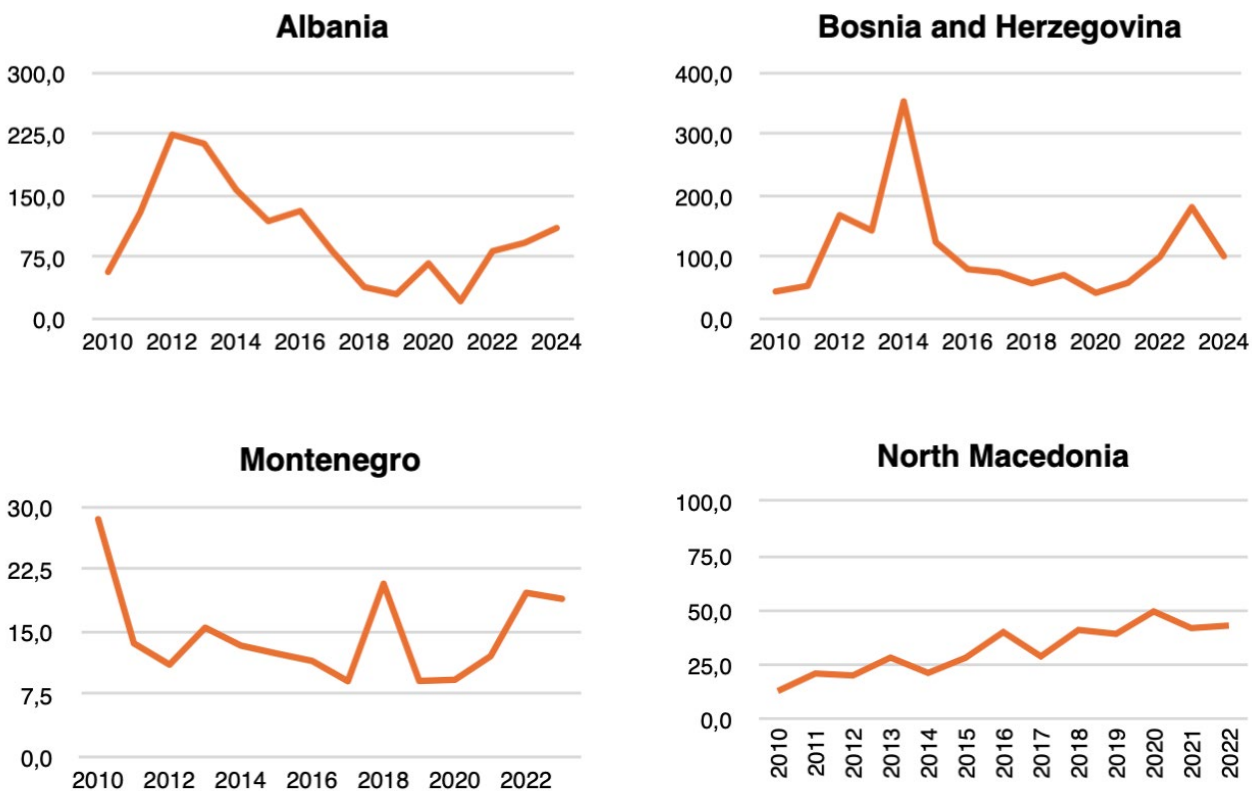
Note: Latest available year refers to 2022 for North Macedonia, 2023 for Montenegro, and 2024 for Albania, Bosnia and Herzegovina and Serbia. Source: wiiw Annual Database and National Statistical Offices.

Nominal investment in the mining sector has remained low and declined in most countries over time. There have been occasional spikes linked to specific projects or commodity-price surges. In Albania, mining investment in 2024 amounted to around €110 million, having remained below this level for most of the preceding decade. Larger inflows were recorded only during 2012–2014, when major projects – particularly at the Bulqizë chromium mine – temporarily pushed annual investment above €200 million. Bosnia and Herzegovina shows a similar

pattern, with investment now around €100 million and fluctuating around that amount for most of the period, except for a spike to about €350 million in 2014, linked to investment in new coal-mining capacity. In Montenegro, mining investment has generally remained at or below €20 million per year, while in North Macedonia it has hovered around €40 million (Figure 7).

Serbia is again the only clear exception. After 2020, investment in mining surged as the Chinese company Zijin Mining Group expanded copper production and exploration following its acquisition of the Bor complex in 2018. Between 2018 and 2024, the company invested around \$2.5 billion (approximately €2.3 billion)<sup>6</sup> in its copper-mining operations in Serbia. Official data indicate mining investment of about €1 billion across the whole sector in 2024.

**Figure 7. Gross fixed investment in the mining sector, 2010-2024 (EUR million)**



<sup>6</sup> BalkanEngineer.com. (2024). The investments of the Chinese company Zijin Mining Group in Serbia reached 2.3 billion euros. <https://balkanengineer.com/news/investments-chinese-company-zijin-mining-group-serbia-reached>



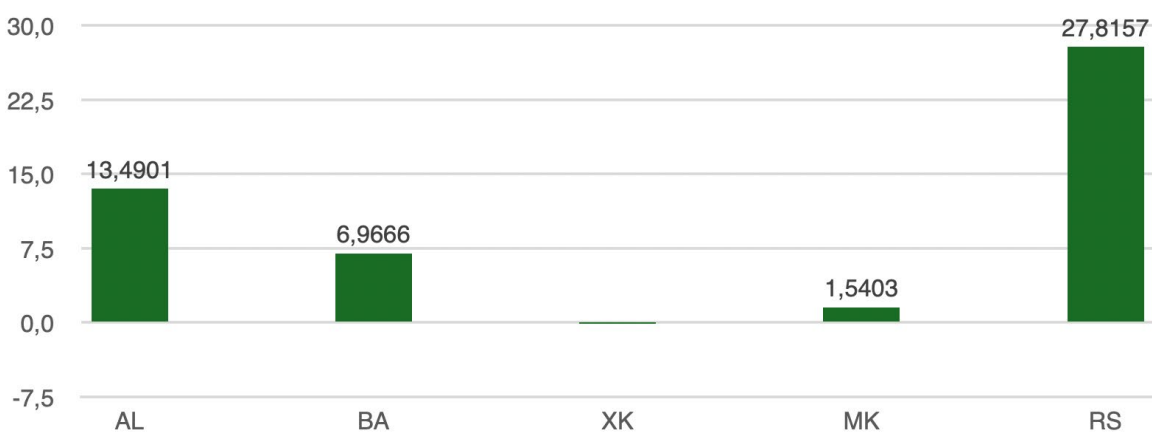
Note: Kosovo does not publish data on investment by sectors. Source: wiiw Annual Database and National Statistical Offices.

## FOREIGN DIRECT INVESTMENT

Mining’s share is somewhat more pronounced in foreign direct investment than in GDP or employment. In 2024, Serbia recorded 28% of its FDI inflows in the mining and quarrying sector. As discussed previously, this is primarily driven by Chinese investment in copper mining: Zijin Mining has been investing consistently since 2018, and according to publicly available reports, its cumulative investment in Serbian mining operations had reached around €2.3 billion by 2024. Overall, Serbia remains by a wide margin the leading destination for mining-sector FDI in the region.

Other Western Balkan economies have much smaller mining-related FDI shares, though some remain significant. In Albania, the share of FDI inflows going to mining and quarrying was around 13.5% in 2024, largely owing to AlbChrome, the country’s main chromium and ferrochrome producer, which has reportedly invested more than €43 million over the past five years. In Bosnia and Herzegovina, sectoral breakdowns show a more modest share of FDI flows into mining – around 7% of total FDI inflows in 2024. In Kosovo and North Macedonia, mining-sector FDI remains very limited, at below 2% of total FDI inflows.

**Figure 8. FDI in the mining and quarrying sector in 2024 (% of total FDI inflows)**

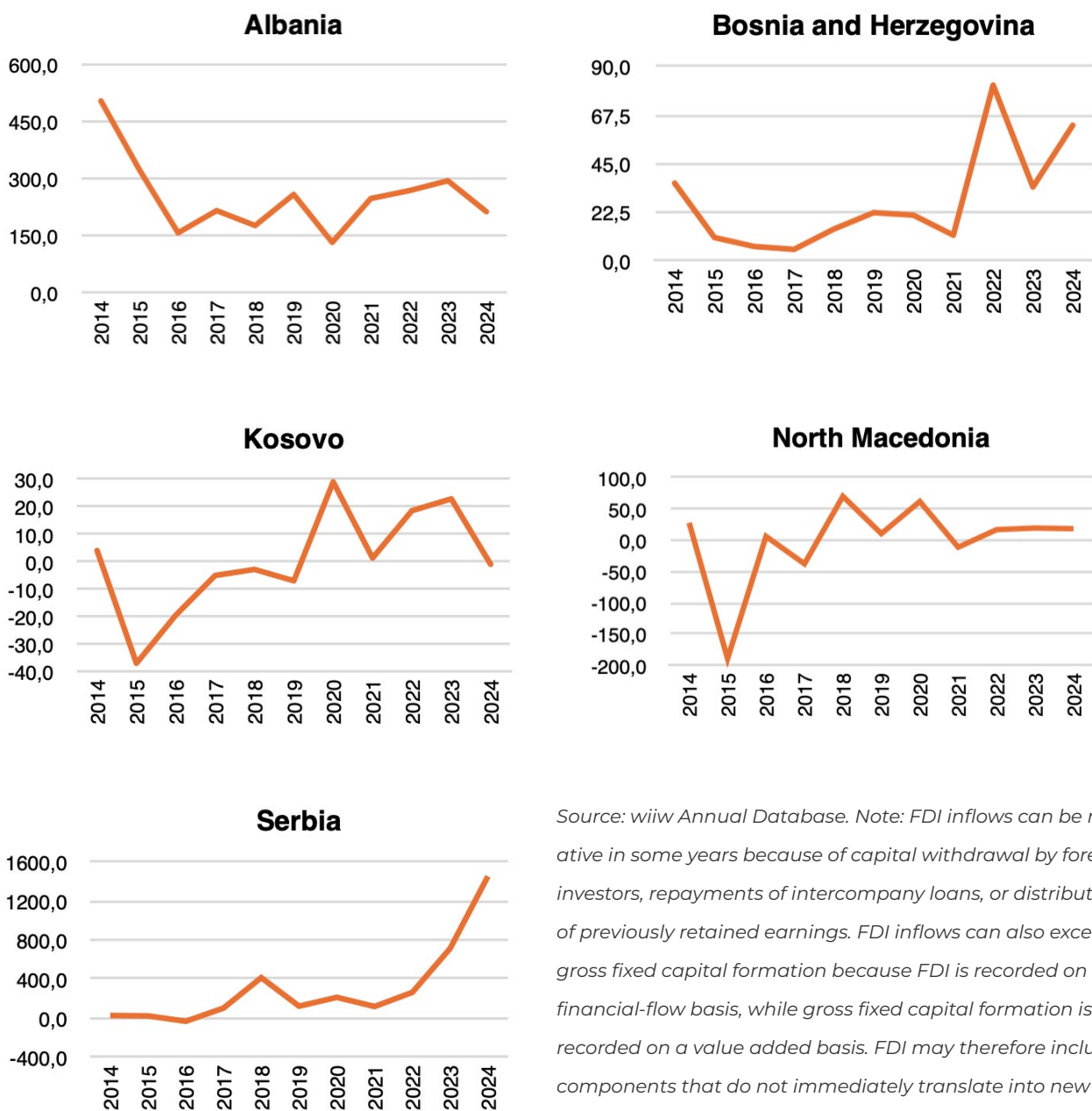


Source: wiiw Annual Database.

**Nominal FDI inflows into mining over time follow trends similar to those observed for total investment.** In Albania, inflows have declined over the past decade and in recent years have stabilized at around €200 million per year. In Bosnia and Herzegovina, FDI in mining has increased somewhat but remains low, at around €50 million annually in recent years. Kosovo's inflows fluctuate, but generally lie in the €10–20 million range, with a North Macedonia showing a similarly modest and variable pattern.

Serbia is again the main exception. FDI inflows into mining ranged between €100 and €200 million per year until 2022, before surging in recent years to reach approximately €1.5 billion in 2024.

**Figure 9. FDI in the mining and quarrying sector, 2014-2024 (EUR million)**



Source: wiiw Annual Database. Note: FDI inflows can be negative in some years because of capital withdrawal by foreign investors, repayments of intercompany loans, or distribution of previously retained earnings. FDI inflows can also exceed gross fixed capital formation because FDI is recorded on a financial-flow basis, while gross fixed capital formation is recorded on a value added basis. FDI may therefore include components that do not immediately translate into new value added, such as acquisitions of existing assets and intercompany debt flows.

# FIRM-LEVEL ANALYSIS

## INTRODUCTION

This section analyzes available firm-level data on medium and large companies operating in the mining sector in the Western Balkans, to examine how the sector operates. The analysis covers company numbers, employment, total and average wages, profitability, tax payments, ownership structure, and mineral types extracted. The data used here come from the annual financial statements that companies submit to central registries in their countries.

Firm-level data are available for four of the six Western Balkan economies – Bosnia and Herzegovina, Montenegro, North Macedonia and Serbia. The sample includes medium and large enterprises, meaning that small and micro companies are excluded. The data exclude oil and gas and focus only on mining. In practice, we include firms classified in the US SIC system as: Metal Mining, Anthracite Mining, Bituminous Coal and Lignite Mining, and Mining and Quarrying of Non-Metallic Minerals (Except Fuels). Our analysis focuses on 2022, the year for which we have the best and most comparable coverage across the four countries. We therefore do not analyze trends over time, as historical data are less complete and of lower quality. The results are presented country by country, providing a cross-country snapshot of the mining sector based on a common set of indicators.

## BOSNIA AND HERZEGOVINA

The mining sector in Bosnia and Herzegovina is dominated by domestically owned coal mines, closely linked to state-owned power utilities. In 2022, it comprised 63 medium and large companies, of which 38% were domestically owned and 22% foreign-owned, with ownership information unavailable for the remaining 40%. The largest employers were domestic firms. Most foreign owners came from other European countries; companies with known ownership included only two smaller Russian-owned firms and no Chinese-owned companies, and the largest foreign-owned mine was controlled by a company based in Luxembourg. By number of firms, the sector was dominated by producers of non-metallic minerals, accounting for 67% of all companies, followed by coal mines (17%) and metal mines (16%). However, coal mines were by far the largest employers, accounting for more than 60% of total employment in the sector, and the major coal mines were domestically owned and typically integrated with state-owned power utilities.

Altogether, these companies employed 9,477 workers – roughly half of the mining employment reported in the macroeconomic data, which likely reflects the exclusion of numerous small firms predominantly engaged in the extraction of construction materials (stone, sand, gravel). These companies spent a total of \$153.4 million on employee compensation<sup>7</sup>, corre-

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<sup>7</sup> Wage data in the firm-level analysis include labor taxes, i.e. refer to the gross wage, unless specified otherwise.

sponding to an average gross monthly salary of \$1,349, which is consistent with the macroeconomic data. The sector paid around \$1.9 million in taxes and recorded an aggregate loss after tax of \$28.3 million in 2022. This loss stems entirely from the state-owned coal mines, which have long operated at a deficit, being required to supply electricity at regulated, low prices and operate under non-market conditions that prevent them from covering costs from operating revenues.

If the coal mines are excluded, the remaining mines are highly profitable, with a total net profit after tax of around \$20 million, compared with total employee costs of about \$44 million and tax payments of around \$1.4 million. The simple average EBIT margin across firms was 13%, indicating that many companies operate with healthy operating margins and that the negative aggregate result for the sector is driven by a small number of loss-making coal mines.

**Table 1. Snapshot of the mining sector in Bosnia and Herzegovina in 2022**

Number of companies	<b>63</b>
Ownership	<b>38% domestic, 22% foreign, 40% no info</b>
Types of mines	<b>67% W-metallic, 17% coal, 16% metals</b>
Total employees	<b>9477</b>
Total employee compensation	<b>\$153.4 m</b>
Average gross monthly salary	<b>\$1,349</b>
Total taxes paid	<b>\$1.9 m</b>
Total profit after taxes	<b>- \$28.3 M</b>
EBIT margin (simple average)	<b>13%</b>

Source: Annual financial statements submitted to national business registries.

## MONTENEGRO

The mining sector in Montenegro is also dominated by a domestically owned coal mine, closely integrated with the state-owned power utility and its only coal-fired thermal power plant. The sector is small, reflecting the country's size: in 2022 it comprised 13 medium and large companies, of which 31% were domestically owned and 23% foreign-owned, while for the remaining 46% ownership information was not available. By number of firms, the sector is dominated by producers of non-metallic minerals, which accounted for 83% of all companies, with coal and metal mines each accounting for around 8%. However, the main coal mine dominated the aggregate picture, employing more than half of all workers in the sector and generating more than half of total profits.

Altogether, these 13 firms employed 1,913 workers in 2022 – the same number as in the macro analysis. They spent around \$30 million on employee compensation, which corresponds to

an average gross monthly wage of \$1,307, very close to the figure obtained from the macro data. The sector paid approximately \$4.4 million in taxes and generated a net profit after tax of about \$17 million. Profitability indicators are relatively strong: the simple average EBIT margin across firms was 24%, suggesting that many of the companies operate with healthy operating margins and that, unlike in Bosnia and Herzegovina, the sector as a whole was clearly profitable.

**Table 2. Snapshot of the mining sector in Montenegro in 2022**

Number of companies	<b>13</b>
Ownership	<b>31% domestic, 23% foreign, 46% unknown</b>
Types of mines	<b>83% non-metallic, 8% coal, 8% metal</b>
Total employees	<b>1,913</b>
Total employee compensation	<b>\$30 m</b>
Average gross monthly salary	<b>\$1,307</b>
Total taxes paid	<b>\$4.4 m</b>
Total profit after taxes	<b>\$17 M</b>
EBIT margin (simple average)	<b>24%</b>

Source: Annual financial statements submitted to national business registries.

## NORTH MACEDONIA

The mining sector in North Macedonia is slightly more diversified than Bosnia and Herzegovina and Montenegro, with metal mines dominating. There is no single dominant mine; instead, there are several sizeable operations, mostly in metals, some domestically owned and others foreign-owned. In 2022, there were 51 medium and large companies operating in mining, of which 65% were domestically owned and 14% foreign-owned, while for the remaining 21% ownership information was not available. Despite the numerical dominance of domestic firms, the largest mine in the country by number of employees is foreign-owned (Bulgarian), as was the third largest (Greek-owned). By number of firms, the sector was dominated by producers of non-metallic minerals (80%), with metal mines accounting for 16% and coal mines for only 4%. However, this masks the underlying structure, as roughly two-thirds of all employees worked in metal mines.

Altogether, these companies employed 3,493 workers – more than half the employment figure reported in the macroeconomic data, which likely reflects the exclusion of micro and small firms from this part of the analysis. The companies spent around \$53 million on employee compensation, corresponding to an average gross monthly wage of \$1,265 (consistent with the macroeconomic data). The sector paid about \$10 million in taxes and generated a net profit after tax of about \$86 million in 2022 – substantially exceeding total employee compen-

sation. Profitability was strong: the simple average EBIT margin across firms is 23%, indicating that mining companies in North Macedonia generally operated with high operating margins and that the sector as a whole was clearly profitable.

**Table 3. Snapshot of the mining sector in North Macedonia in 2022**

Number of companies	<b>51</b>
Ownership	<b>65% domestic, 14% foreign, 21% unknown</b>
Types of mines	<b>80% non-metallic, 4% coal, 16% metal</b>
Total employees	<b>3,493</b>
Total employee compensation	<b>\$53 m</b>
Average gross monthly salary	<b>\$1,265</b>
Total taxes paid	<b>\$10 m</b>
Total profit after taxes	<b>\$86 M</b>
EBIT margin (simple average)	<b>23%</b>

*Source: Annual financial statements submitted to national business registries.*

## SERBIA

The mining sector in Serbia is the most diversified in the region, both by ownership and types of mines, although activity is still heavily concentrated in a few large operations. In 2022, the sector comprised 91 medium and large companies, of which 65% were domestically owned and 23% foreign-owned, with ownership information unavailable for the remaining 12%. By number of firms, non-metallic minerals dominated (85% of all companies), while metal mines accounted for 11% and coal mines for 4%. However, metals and coal clearly dominated in economic terms. Two large Chinese-owned metal mines form the core of the sector, while coal mining – mostly in domestic hands – also accounts for a substantial share of employment and output. By contrast, the numerous non-metallic mineral producers are small by employment and other key indicators.

Altogether, these 91 companies employed 17,568 workers – less than half the employment figure in the macroeconomic data, owing to the exclusion of oil and gas extraction from the firm-level sample, which is more significant in Serbia than elsewhere. The companies spent around \$285 million on employee compensation in 2022, corresponding to an average gross monthly wage of \$1,351 – consistent with other economies in the region and with the macroeconomic data. The sector paid about \$49 million in taxes and generated an exceptionally high net profit after tax of \$907 million. The average EBIT margin across firms was 15%, indicating robust profitability overall, with profitability concentrated primarily in metal mining.

The largest mines record far higher profitability than the sector average. The biggest mine –

the Chinese-owned Čukaru Peki – reported an EBIT margin of around 74% in 2022, while RTB Bor, also Chinese-owned and the second largest, had an EBIT margin of about 42%. In other words, their annual operating profits amounted to roughly three quarters and two fifths of their sales – a exceptionally high profitability. On the other hand, the two big state-owned coal mines operated at a loss in 2022, for similar reasons to those in Bosnia and Herzegovina.

**Table 4. Snapshot of the mining sector in Serbia in 2022**

Number of companies	<b>91</b>
Ownership	<b>65% domestic, 23% foreign, 12% unknown</b>
Types of mines	<b>85% non-metallic, 4% coal, 11% metal</b>
Total employees	<b>17,568</b>
Total employee compensation	<b>\$285 m</b>
Average gross monthly salary	<b>\$1,351</b>
Total taxes paid	<b>\$49 m</b>
Total profit after taxes	<b>\$907 M</b>
EBIT margin (simple average)	<b>15%</b>

Source: Annual financial statements submitted to national business registries.

## SUMMARY OF THE FIRM-LEVEL ANALYSIS, OR WHO GAINS THE MOST?

The firm-level data confirm that mining in the Western Balkans employs relatively few workers, pays wages somewhat above the national average, and – in most cases – generates sizeable profits for their owners, while contributing relatively modest amounts in taxes.

**Table 5. Comparison of salaries, taxes, and profits of mining companies in the Western Balkans in 2022**

Country	Employee compensation (USD million)	State taxes (USD million)	Owners' profits (USD million)
Bosnia and Herzegovina	153.4	1.9	-28.3
Montenegro	30.0	4.4	17.0
North Macedonia	53.0	10.0	86.0
Serbia	285.0	49.0	907.0
<b>Total</b>	<b>521.4</b>	<b>65.3</b>	<b>981.7</b>

Source: Annual financial statements submitted to national business registries.

In Bosnia and Herzegovina, the sector paid \$153.4 million in wages, contributed only \$1.9 million in taxes, and recorded an aggregate loss of \$28.3 million, due entirely to loss-making state-owned coal mines. If these state-owned mines were excluded, the sector was highly profitable, generating net profits of \$20 million, with total employee compensation of \$44 million and tax payments of around \$1.4 million.

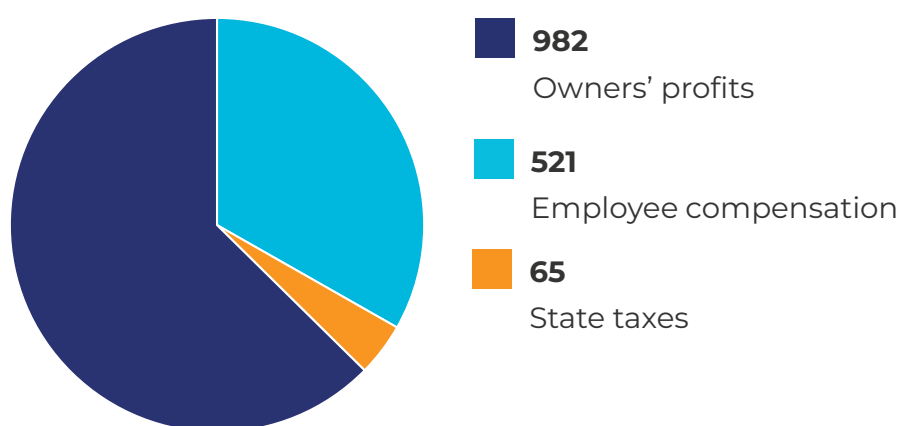
In Montenegro, employee compensation amounted to \$30 million, compared with \$4.4 million in taxes and \$17 million in net profits, so workers receive a somewhat larger share of the value added than owners, while the state gained relatively little.

In North Macedonia, the picture is starker: \$53 million in employee compensation and \$10 million in taxes compare with \$86 million in net profits, meaning that owners capture a clearly larger share than workers or the state.

Finally, in Serbia the imbalance was most pronounced – the sector paid \$285 million in employee compensation and \$49 million in taxes, but generated \$907 million in net profits, implying that the bulk of the gains accrued to owners, particularly in the large foreign-owned metal mines.

At the regional level, profits were almost twice as large as the total wage bill and around fifteen times higher than tax payments. The medium and large mining companies in these four economies paid \$521.4 million in wages in 2022, contributed \$65.3 million in taxes, and generated \$981.7 million in net profits (Figure 10).

**Figure 10. Distribution of value added generated by the medium and large mining companies in the four Western Balkan economies in this analysis, 2022 (USD million)**



Source: Annual financial statements submitted to national business registries.

This pattern indicates that, where mining is profitable in the Western Balkans, the sector primarily benefits its owners – often foreign – while workers and especially the state capture a much smaller share of the value added.

# CASE STUDY ANALYSIS

This section presents four case studies of major mining projects in the region. Specifically, we examine two already operational projects in the metal extraction sector: the Rupice mine in Bosnia and Herzegovina, which contains silver, gold, lead, zinc, copper, antimony, and other critical raw materials; and the Bor mining and smelting complex in eastern Serbia, which primarily produces copper and gold. We also analyze two planned but not yet operational projects focused on the extraction and processing of lithium: the Jadar project in Serbia and the Lopare project in Bosnia and Herzegovina.

Each case study includes a brief historical overview and an assessment of economic contributions, outcomes, and profitability. We also discuss the main criticisms and controversies associated with these projects. The case studies reinforce the findings of the preceding sections. In particular, the evidence suggests that mining companies contribute relatively modest amounts in taxes, wages, and social contributions, while royalty payments are particularly low across all four cases. At the same time, these projects generate very high profits and feature projected breakeven periods of only a few years, raising important questions about the distribution of economic benefits and the long-term development impact of large-scale mining investments in the region.

## RUPICE – DUNDEE/ADRIATIC METALS

The Rupice mine in Bosnia and Herzegovina, which contains silver, gold, lead, zinc, copper, antimony, and other critical raw materials, is a particularly difficult case to assess in socioeconomic terms. On the one hand, it records some of the strongest performance indicators in the region, as measured by its contribution to municipal and national GDP, and its operating company Adriatic Metals (recently purchased by Dundee) has devoted considerable effort to enhancing its public profile and presenting itself as a responsible local community partner. On the other hand, it stands accused of having obtained substantially preferential royalty rates at several key stages of the approval process.

### Overview

In the spring of 2013, the Bosnian mining company MM Project (later renamed “Eastern Mining”) acquired an existing lead, zinc, and baryte mine in the small town of Vareš, located in the Zenica-Doboj canton of the Federation of Bosnia and Herzegovina, with a population of around 8,000. The company was a subsidiary of Balkan Mining Pty, a mining company owned by Miloš Bošnjaković, an Australian businessman of Bosnian origin. In March 2013, MM Project obtained mining rights for 116.8 hectares – about 3% of the area eventually covered by the project. In 2017, MM Project (by then renamed Eastern Mining) was acquired by the British-Australian company Adriatic Metals, which shortly afterwards purchased a five-times-larger piece of land (584 hectares) and launched the prospecting stage of the project. The third (and largest) batch of 3,200 hectares was purchased in 2020, complemented by a final acquisition of an

additional 128 hectares in 2022, amounting to a total of around 4,000 hectares. While deforestation and other preparatory work had been underway since 2021, the excavations began in early 2024, and the mine began commercial production in July 2025. The CEO of Adriatic Metals was Paul Cronin, a British former director of a similar mining project in Spain. The company was simultaneously conducting mining operations in Raška, Serbia. In June 2025, Adriatic Metals was acquired by major Canadian mining company Dundee Precious Metals.

The expected quantity of extracted minerals is estimated at 800,000 tonnes per year, predominantly high grade. Adriatic Metals has built a preprocessing plant near the mine producing silver, lead, and zinc concentrates. The preprocessed materials are transported from Vareš to an export harbor in Croatia, after which they are shipped towards European metal smelters in Germany, Scandinavia and other European countries.

## **Contributions**

Dundee/Adriatic Metals plans to invest \$250 million over the course of the mining operations, with operations estimated to last between five and ten years. According to company estimates, the project aims to account for about 2% of the country's GDP. This appears unrealistic, given that the entire mining sector is currently contributing just around 1% of GDP, unless their value-added estimates refer to cumulative output over the full operational period compared with a single year of GDP. The project provides around 300 direct jobs (projected to rise to 700), three quarters of which go to local residents. The company also cites approximately 1,000 indirect jobs supported by it, in hospitality and other services. Two thirds of suppliers – comprising nearly a thousand companies – are national and more than a third are from the Zenica-Doboj canton. One in three employees is female, twice the industry average and three times the national average. Wages are reported to be 54% higher than the industry average, corresponding to approximately \$1,300 per month net. Given that three quarters of workers are younger than 30, the project claims to be helping reduce brain drain – an assertion bolstered by reports that the number of kindergarten pupils in Vareš has multiplied over the past few years.

In addition to the direct contributions of the project, Dundee/Adriatic Metals has invested considerable effort in cultivating a positive image as a socially responsible company. From 2018 to 2023, it donated \$260,000 for community support activities and \$92,000 for infrastructure improvements. These contributions have included a company-funded mining class at the local high school, free English lessons, and dozens of donations to cultural organizations, women's NGOs, sports events, clubs, communities, and scouts, including funding for the expansion of the local kindergarten.

## **Profits and Criticisms**

Each of the four stages of land acquisition described earlier was marred by controversy. Combined with the substantial profits Dundee is projected to generate, this raises serious questions about the net socioeconomic impact of the mine on the local community and the country.

The concession fees paid for land acquisition have been criticized in two respects. First, the initial two land purchases, amounting to a combined one quarter of the total size, were made at a fee of 1,500 Bosnian convertible marks (KM), or \$900 per hectare – approximately one seventh of the generally applied rate for such projects (10,000 KM). This discount is estimated to have cost Bosnian taxpayers five million KM (around \$3 million). Second, the remaining two purchases, including the third (largest) one, were lowered further to 150 KM (\$90) per hectare. This maneuver required an amendment to royalty legislation, successfully lobbied through by Paul Cronin, by self-admission, under which royalties are now charged only during active extraction, on a per-tonne basis. While the per-tonne rate has indeed been raised by almost three times to compensate for the de facto abolition of the lump-sum rate, the new methodology has raised concerns about transparency and foregone revenues.

By its own estimate, Dundee will contribute \$177 million in corporate tax and social contribution payments and \$23 million in royalty payments over the course of the mining operations. However, these contributions are dwarfed by projected post-tax earnings of \$1.06 billion, according to a 2021 feasibility study, which also estimated a breakeven point of only 0.7 years after the start of excavations. If these estimates prove correct, Adriatic Metals will have already recouped its capital investment of \$168 million, supplemented by an additional \$7 million from the European Bank for Reconstruction and Development (EBRD) awarded based on the assessed strategic value of the project.

At the same time, the wages for the workers are likely to be even smaller than both taxes and profits. If the average net wage is – as announced – 54% higher than the industry average, i.e., \$1,300 per month, that is approximately \$1,900 gross, which is \$22,800 per year per worker. If the mine employs 500 workers (assuming an average of the current and projected workforce), that is equal to \$11.4 million total salaries per year. Even if the mine operates for 10 years, this would still amount to only \$110.4 million – a fraction of the company's profits. Even if the number of workers increases to the full 700 projected by the company, the overall picture would not change substantially.

The expected profits are thus likely to dwarf both wages and taxes – \$1 billion of post-tax profits compared with \$200 million government revenues and \$110 million total wages and a few hundred thousand in social contributions. This means that most of the economic value that the mine will create will accrue to the company's owners rather than to the community or the state. In fact, the projected profitability of this project exceeds – by several orders of magnitude – the already-sizeable profitability of the private mining sector in the country.

It is unclear, however, whether the company would have proceeded with the project under less favorable conditions. Mr. Bošnjaković, who exited the project when his company was acquired by Adriatic Metals, and who is otherwise critical of the project in its current form, admits that Adriatic Metals would never have gone forward with the third (largest) stage of land acquisition had no preferential treatment been offered, which would have deprived Vareš of the socioeconomic benefits it has received over the past several years and is expected to receive in the coming years.

## JADAR – RIO TINTO

The Jadar mine, which contains battery-grade lithium and borates, would be by far the most expensive mining project in the region, with the highest potential for socioeconomic gains but also the greatest risk of disproportionate profit accumulation amid legal and regulatory confusion. It is also particularly difficult to analyze given the uncertainty of its execution, timeline, and financial structure. As one of the largest FDIs in the region's history, it holds significant potential for local and national fiscal revenue and employment growth. However, the lack of transparency around royalty rates and taxation mechanisms, compounded by the Serbian government's documented governance deficits and poor anti-corruption record have raised concerns about preferential treatment for investors and diminished socioeconomic benefits.

### Overview

The Jadar mine is a proposed project for the extraction and processing of lithium and borate in the Jadar Valley, located near the city of Loznica in the western part of Serbia. Rio Tinto, the world's second-largest mining corporation, a British-Australian company, first publicly announced the Jadar idea after discovery and exploration work in the early 2000s, which was later complemented by extensive technical documentation and feasibility studies through 2020–2022. Rio Tinto has targeted battery-grade lithium carbonate production of roughly 55,000–58,000 tonnes per year, comprising an integrated mine, concentrator, and processing complex.

The project footprint defined in the spatial plan and other company materials covers several scales: a central project footprint (surface plant and facilities) of roughly 220–260 hectares, and a broader Special Purpose Area covering about 2,030 hectares when infrastructure corridors and buffer zones are included. The spatial plan was initially adopted in 2020 and revoked in early 2022 after major protests. In the summer of 2024, the Serbian Constitutional Court declared the revocation unconstitutional, and an EU-Serbian strategic partnership was signed shortly afterwards, followed by an EU announcement in June 2025 listing the project among 13 key strategic mining projects outside EU borders boosted the Jadar Mine's prospects. However, given the repeated delays and lack of final approval by national institutions, the execution of the project and its potential start dates remain uncertain, with both the government and the company expressing hopes for an early 2028 construction start date.

### Contributions

Since the project is still in its planning stages, any socioeconomic contributions must be considered separately for the construction phase and for eventual operations. While it is difficult to estimate the exact construction time, a 2023 feasibility study commissioned by Rio Tinto projects roughly 1,300 permanent operational jobs directly at the site, with several thousand additional (2,500–3,300) indirect jobs across the wider economy (e.g. supply chain, services, and induced spending). If one considers the 1,300 jobs at the site, and assumes a monthly gross wage of around \$2,000 (slightly above the wage level at the Rupice mine, and above

the average wage in mining in Serbia), that implies a monthly wage bill of \$2.6 million, or \$31.2 million annually.

Overall, the feasibility study estimates a net total economy-wide job uplift of around 4,500 jobs when multipliers are included. Even accepting this generous estimate, it falls far short of the 20,000 jobs pledged by Serbian Parliament Speaker Ana Brnabić earlier this year.

There is much less clarity regarding direct fiscal revenues. The Serbian government typically charges royalties of 5% on annual revenues for metal ores, alongside a standard corporate tax rate of 15%. On this basis, the feasibility study estimates total government receipts (royalties, corporate tax, withholding tax, property tax, and personal income tax) at over \$200 million per year once initial government incentives expire and the project is fully operational. The study breaks these down at approximately \$95 million corporate income tax, \$55 million in royalties, \$28 million in dividend withholding tax, \$5–6 million property tax to Loznica, and additional municipal receipts — with the municipality of Loznica forecast to receive around \$18 million per year, approximately 40% of royalty-based revenues.

In the meantime, however, Rio Tinto has invested considerable effort in improving its significantly damaged reputation in the country amid major public opposition. It has committed to a Jadar Development Fund of approximately \$5.5 million per year for at least 10 years to support local economic development initiatives, alongside commitments to training, local procurement, and community programs.

## **Profits and Criticisms**

Rio Tinto has estimated capital costs in the region of \$2.5–3 billion, based on detailed technical reports describing the deposit and its potential production profile. These would make the project one of the largest one-off FDIs in the history of Serbia and the Western Balkans. About a fifth of these upfront expenses (\$550 million) have reportedly already been incurred for exploration and feasibility studies over the past two decades.

Profit estimates vary widely between Rio Tinto's projections and those of activists or other independent researchers, partly due to different assumptions about lithium prices, which are prone to fluctuation and have recently been declining, and partly due to the opacity of fiscal revenue projections discussed above. Using the feasibility study data – if the corporate tax revenues are \$95 million, with the Serbian corporate tax rate of 15%, this implies that profits before tax are around \$630 million per year, or approximately \$535 million after corporate tax. Alternative estimates by critics of the project question the fiscal revenues, which they place significantly lower, partly under the assumption that value-added processing will occur outside Serbia. If these estimates prove more accurate, this would imply higher annual profits, potentially by another several hundred million dollars.

Overall, the feasibility study commissioned by Rio Tinto indicates gross salaries for workers of around \$30 million per year, government revenues of around \$200 million, social contributions of \$6 million and profits after taxes of \$535 million. In other words, the owners' share would be

twice that remaining in the community through workers' wages and state taxes. This is largely consistent with the current asymmetrical income distribution in the mining sector in Serbia, as well as the profit distribution pattern of the country's largest mines.

## LOPARE – ARCORE

The Lopare mine, which contains lithium carbonate, magnesium, potassium, and boron, is currently awaiting permit approval. Significant uncertainty surrounds its feasibility, potential implementation, and applicable royalty fees. The project company, Arcore, has completed discovery work and established a partnership for conversion of extracted materials in Germany. Arcore has indicated a potential investment of several hundred million dollars and the potential creation of several thousand jobs, but concerns about preferential government treatment during the exploration and the permit-application stages have already been raised.

### Overview

Arcore is a “junior mining” company, solely dedicated to the exploration and extraction of raw material. It is based in Switzerland but has a same-named subsidiary in Bosnia and Herzegovina and is currently active only on this project. Having acquired the exploration permit in 2018 and completed discovery work by late 2023, it applied for an operations permit in February 2025. The proposed mining area is 25 km<sup>2</sup> and is located in Republika Srpska, 140 kilometres north of Sarajevo and 24 kilometres from Tuzla. The nearest town, Lopare, has a population of around 3,000.

The discovery work, conducted by the mineral resource consulting company CSA Global, identified reported resources of 1.5 million tonnes of lithium carbonate equivalent (LCE), 14 million tonnes of boron (B<sub>2</sub>O<sub>3</sub>), 35 million tonnes of potash (KCl), and 94 million tonnes of magnesium sulfate (MgSO<sub>4</sub>). The total value of these resources is around \$68 billion at current prices<sup>8</sup>, though it should be noted that this estimate ignores many factors such as recovery rates, processing losses, ore quality and marketability, price volatility, operating costs, infrastructure, and transport needs. Even if all these factors reduce gross revenues to half this figure, the implied resource value would still be around \$30 billion. If the ore is exploited over the announced 50-year operational period, annual gross revenues amount to around \$600 million.

According to Arcore, the minerals are located relatively close to the surface in layers 100-200 metres thick and would be mined by open-pit mining, which is criticized by environmental activists as a very damaging extraction method. The company expects to receive approval to begin the extraction in late 2026. It has already formed a partnership with Rock Tech, a cleantech company with operations in Canada and Germany, whose German facility would process the extracted minerals should the project be approved.

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<sup>8</sup> The price of lithium is approximately \$12,000 per tonne (t), the price of potash is approximately \$350 per t, the price of boron is approximately \$1,000 per t, and magnesium sulfate is \$260 per t. Multiplying the quantities by these prices results in approximately \$68 billion.

## Contributions

Since the application for the permit was submitted only recently, little detail is available on the project's potential implementation or its implications for the local community. While there is no formal feasibility study, Arcore has pledged to create around 1,000 jobs directly and 3,000-5,000 jobs indirectly – which appears to be a significant overestimate, given that it exceeds Lopare's entire current population. These figures should be understood in the context of the company's projected 50-year operational period. Assuming 1,000 workers employed in the mine, with a gross salary of \$1,900 per month (assuming the same salary levels as the Rupice mine), that yields an annual wage bill of \$22.8 million, less than 4% of the potential annual gross sales.

As for royalty payments, Bosnia and Herzegovina's laws stipulate that in an "extremely under-developed" area such as the Lopare region, 90% of royalty revenues would accrue directly to the municipality. Arcore has suggested royalties of around \$7 million per year; under this scenario, the \$6.2 million flowing to the municipality would double its total annual budget. In the absence of a feasibility study, remaining contributions are difficult to estimate.

## Profits and Criticisms

In the absence of a feasibility study, one approach is to benchmark Lopare against Serbia's Jadar project. Jadar estimates 2.3 million tonnes of lithium carbonate over a projected 40-year mine life; Lopare estimates 1.5 million tonnes over 50 years – placing Lopare at roughly half of Jadar's annual lithium carbonate production. If Jadar is projected to generate net profits of around \$535 million per year according to Rio Tinto's own feasibility study, this would suggest annual profits for the Rupice mine in the range of \$200-300 million – broadly consistent with the earlier estimate of \$600 million in annual gross sales. Applying BiH's corporate income tax rate of 10% to these profit estimates implies a corporate tax liability of approximately \$20-30 million per year.

Comparing projected profits with estimated salaries, royalties and corporate taxes yields a distributional picture similar to – and potentially even more lopsided than – that observed for the other mines examined in this chapter. Projected annual profits of \$200-300 million dwarf the annual wage bill of €23 million, royalties of \$7 million and corporate income of €20-30 million.

Amid the uncertainty around Arcore's contributions, concerns have mounted in Bosnia and Herzegovina, not least due to perceptions about substantially undervalued royalty fees in the largest ongoing mineral extraction project in the country (see section on Rupice – Dundee/Adriatic Metals). While the relevant legislation is set at the entity level – with Lopare under Republika Srpska's jurisdiction and Rupice under the Federation's – both cases share major similarities regarding asserted strategic importance of the minerals, underdeveloped local economies, and the lack of trust in local, entity-level, and national authorities, all of which raise concerns about preferential treatment for Arcore.

These fears only been compounded by the apparent permissive approach authorities have taken toward the company so far. By law, the deadline for submitting the permit application should have been February 2024, that is, two years after the exploration work had begun. Critics argue that the reasons for the one-year postponement by Republika Srpska's Ministry of Energy were political, as the government might have wanted to avoid any public backlash ahead of local elections. In any case, the postponement is seen as having given the company additional time to prepare its application and increase the likelihood of success. Similar criticisms have been raised regarding the exploration work, as Republika Srpska's national assembly amended its relevant laws shortly prior to it. The changes resulted in a 50-fold increase in the permitted extraction volume for metallic minerals and allowing exploration to proceed without clear legal or socioeconomic parameters governing a potential collaboration, while bypassing municipalities in the decision-making process.

Despite the lack of a feasibility study, the available evidence suggests that the socioeconomic profile of the Lopare-Arcore project is likely to resemble that of the previous two cases. The mine is likely to generate substantial profits for its owners, which would substantially exceed wages for its approximately 1,000 workers and modest fiscal revenues for the authorities (relative to the accumulated profit).

## **BOR – ZIJIN**

The Bor mine is a mining-and-smelting complex primarily producing copper and gold located in the small city of Bor (population 41,000) in eastern Serbia. Operational for more than a century, the mine has been owned by the Chinese company Zijin Mining Group since 2018. It is the largest project in the country's sizeable mining sector.

### **Overview**

Mining at Bor is a long-established activity. The first systematic geological exploration in the Bor area began in the late 19th century and the modern mining-and-smelting complex developed through the 20th century under successive owners and subsequently state ownership as Rudarsko-topioničarski basen (RTB) Bor – a household name in former Yugoslavia with tens of thousands of employees at its historical peak in the mid-20th century.

After a period of decline and struggles in the post-socialist transition period, ownership of the complex changed fundamentally in 2018, when Zijin Mining Group was designated as strategic partner and acquired a 63% stake in RTB Bor, ushering in an era of growing Chinese investment in the country. The deal, finalized in late 2018, saw Zijin pledge to invest in the complex, settle its existing debts, and retain local employment levels. The reconstructed and expanded complex re-opened in 2021.

Alongside the acquisition of RTB Bor, Zijin expanded in the same geological district through the Čukaru Peki copper-gold mine, a separate and newer operation located near Bor. The deposit was identified through exploration in the 2010s and later passed through a sequence of

ownership changes before coming under full Zijin control. Čukaru Peki is widely regarded as one of the richest copper–gold deposits in Europe, offering both a high-grade initial mining zone and a much larger deeper resource base supporting production over many years.

According to Zijin’s own published data, Čukaru Peki was the larger of the two by mineral resources, producing more copper and gold in 2024. The total available resources at these two mines amount to around 11.5 million tonnes of copper and 383 tonnes of gold; among them, Čukaru Peki contains 7.5 million tonnes of copper and 250 tonnes of gold.

## **Contributions, Profits and Criticisms**

As both companies have been operating for some time, their financial statements are available. Based on financial statements for 2022, Bor employs far more workers (5,945) than Čukaru Peki (846), although both report similar operating revenues of around \$1 billion. Their cost structures differ sharply: Bor records much higher material costs (\$284 million) and staff costs (\$95 million), whereas Čukaru Peki reports very low material costs (\$38 million) and far lower staff costs (\$20 million). Corporate taxes are modest in both cases – particularly at Čukaru Peki (\$14 million) compared with Bor (\$27 million) – despite Čukaru Peki’s substantially larger profit after tax (\$682 million compared with \$271 million). This disparity is likely attributable to tax exemptions. Overall, while both mines are profitable, Čukaru Peki reveals an even bigger asymmetry between corporate profits and state and wage contributions than in our remaining case studies, while this disparity is considerably lower for Bor.

Zijin has publicly stated its intention to modernize smelting and processing, rather than merely extracting ore, with the aim of capturing more value locally. The post-2018 upgrades were explicitly presented as increasing cathode and refinery output rather than merely exporting raw concentrate – a central element of the bid to national authorities and a feature distinguishing Zijin’s approach from most other major mining projects in the region.

Over the past seven years, Zijin has announced multiple community and social initiatives in Bor. Examples included donations for local infrastructure, such as a reported \$1.2 million donation for a water-supply project in the nearby village of Metovnica, and scholarship and education programs. The latter include a multi-year commitment to the “For a Better Future” education project budgeted in the hundreds of thousands of euros, and several smaller community grants and charitable donations. Revenues at Bor have tripled since 2021, ranging between hundreds of millions and one billion dollars in peak years.

Overall, the lack of reported royalty discounts or other preferential treatment, and the government’s retained one-third stake in the management structure, distinguish Bor from many other major mining projects in the region. However, the considerable profits flowing to Zijin reflect deeper structural and legislative shortcomings that deprive municipal and national budgets of substantial additional revenues.

**Table 6 – Overview of the case studies**

Mine	Company	Stage	Location	Political context	Main materials	Scope of work
Jadar	Rio Tinto (British-Australian), since initial prospecting in early 2000s	Planned (paused by the company)	Western Serbia	Supported by government, EBRD, and EU (2025 Strategic Partnership)	Lithium	Extraction and processing
Bor	Zijin (Chinese), since 2018	Operational (long-standing)	Eastern Serbia	Supported and co-owned by government	Copper and gold	Extraction and processing (smelting)
Lopar	Arcore (Swiss), since prospecting approval in 2018	Planned (application for operations permit submitted in February 2025)	Bosnia and Herzegovina – Republika Srpska	Tentatively supported by national government; mixed signals from opposition-party mayor	Various CRMs	Extraction
Rupice	Dundee (Canadian), since 2025; Adriatic Metals (British-Australian), 2017-2025	Ongoing (since 2024, prospecting since 2017)	Bosnia and Herzegovina – Federation	Supported by national and local government	Various CRMs	Extraction and pre-processing

**Table 7 – Cost-benefit assessment of the case studies**

Mine	Capital investment	Revenues	Royalty fees	Tax contributions	Direct job creation	Total wages per year	Net profits	Break-even time
Jadar	\$2.5–3.0 b	≈ \$1.1b/year	≈ \$55m/year	≈ \$145–150m/year	≈ 1,300	≈ €31.2m/	≈ \$535m/	4,7 - 5,7 years
Bor (including Čukaru Peki)	n/a	≈ \$2.0b/year	n/a	≈ \$41.5m/year	6,791	≈ \$114.9m/year	≈ \$953.2–300m/year	n/a
Lopar	\$0.4–0.6 b	≈ \$600m/year	≈ \$7m/year	≈ \$20–30m/year	≈ 1,000	≈ €22.8m/year	≈ \$200–300m/	≈ 2 years
Rupice	\$250 m	n/a	\$23m (total)	\$177m (total)	300–700	≈ €6.8–16.0m/year	\$1.06b (total)	0,7 years

Note: All figures are estimates or projections, except for Bor, where they are drawn from official annual financial statements. Figures for Rupice are shown for the total lifetime of the project in line with the relevant feasibility study.

# CONCLUSIONS AND RECOMMENDATIONS

The analysis presented in this chapter shows that the mining sector in the Western Balkans plays a relatively minor role in the region's economies. At the same time, the value added it generates is highly skewed in its distribution. The proverbial canaries in Western Balkan mines sing big disparities, as most of the value generated takes the form of large profits for private – often foreign – companies, while workers and the state retain only a marginal share. This resembles a neo-colonial pattern: natural resources generate very large profits for private investors, but comparatively little for workers, municipalities, and the state, alongside serious concerns about the destruction of nature and the inhabitability of entire regions. Our findings may, if anything, paint too positive a picture. Our estimates do not account for the significant social and environmental costs of large-scale mining projects – from the degradation of land and water to the disruption of agriculture and local livelihoods. These costs are substantial and are largely borne by local communities, which often receive little or no compensation.

At the same time, mining cannot be dismissed entirely. It is an extremely broad sector producing a wide range of materials and must not be reduced to controversial large-scale projects. Despite its capital-intensive nature, mining remains one of the few sources of formal employment in some small towns and remote areas. Moreover, with the expansion of green technologies, global demand for critical raw materials is rising rapidly. The key challenge, therefore, is not whether mining should continue, but how it should be organized and for whose benefit. A different approach is needed – the following measures could help ensure a more balanced distribution of the economic value generated by mining in the Western Balkans.

First, governments should explore more active involvement in mining, including direct public investment, so that a larger share of the value generated is retained by the society. This would represent a fundamental reconsideration of the prevailing model of granting access to natural resources almost exclusively to private – often foreign – companies. Where full public ownership is not feasible, public–private partnerships should be considered, with the state retaining a substantial stake – potentially close to one half – and meaningful decision-making power, such as a golden share. Supporting domestic companies to participate and co-invest in mining projects should also be a policy priority, although this might be difficult for some critical minerals which require niche expertise and track record. At the same time, unprofitable state-owned coal mines, especially in Bosnia and Herzegovina, ought to be gradually phased out as part of a broader decarbonisation strategy and efforts to reduce air pollution. This process should not be abrupt, given their role in the electricity system and in local employment, and should be accompanied by sustained state investment in renewable energy and alternative employment opportunities in more productive sectors.

Second, the fiscal regime governing mining needs to be rebalanced. Royalty rates should be higher and designed to increase in line with commodity prices, with a strong minimum rate.. In addition, governments should consider introducing more progressive taxation, particularly mechanisms that capture windfall profits in periods of exceptionally high returns. If some of

the planned mining projects are as large and economically valuable as investors claim, they could provide an opportunity for the state to capture a larger share of the value generated and use these revenues to support broader structural reform in the Western Balkan countries, helping them move away from their outdated low-tax growth models established during the post-socialist transition.

Third, alternative forms of economic organisation, ownership and management should be considered. Employee and community ownership arrangements deserve particular attention. If local communities held a meaningful stake in new mining projects and shared in the huge profits they are expected to generate, that would not only ensure a fairer distribution of income and wealth, but could also help build broader social support for these projects, particularly in areas most directly affected.

Fourth, specific measures ought to be taken to maximise the domestic value of large-scale mining projects. These include hiring a predominantly domestic workforce but also ensuring that a larger share of the (higher-grade) processing of the minerals, which tends to generate far larger revenues than the raw extraction, is conducted locally.

Fourth, where people are displaced or otherwise adversely affected, adequate and enforceable compensation must be guaranteed. This includes not only one-off payments, but also long-term mechanisms that reflect the permanent loss of land, livelihoods, and environmental quality.

Finally, on top of these policy recommendations, governments should also commission their own cost-benefit studies to enable a more balanced assessment of the socioeconomic implications of these projects, rather than blindly relying on those conducted by the interested companies, which carry the risk of bias and inflated estimates. Independent analysis would also help generate a Laffer curve of company profitability, enabling governments to strategize around how high their proposed royalty rates can go without causing the investors to lose interest – a point almost certainly not reached by the current arrangements documented in the four case studies.

The overall verdict of this chapter is that mining carries some socioeconomic potential for the Western Balkans, but one that current approaches to planned large-scale projects stop far short of realising. Ultimately, while neither the overall size of the mining sector nor the ambition of the four case studies is negligible, mining must not be framed as existential for the future development of Western Balkan economies. Instead, any policy choices in this area must be made holistically and with full consideration of their environmental, political, and other implications, with economic arguments serving as complementary, rather than as a definitive basis for either endorsement or dismissal.

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**The Balkans in Europe Policy Advisory Group (BiEPAG)** is a group of policy analysts, scholars, and researchers established as a joint initiative of the European Fund for the Balkans and the Centre for Southeast European Studies at the University of Graz. It works to advance the European integration of the Western Balkans and to support the development of democratic, open, and resilient societies across the region. BiEPAG brings together leading experts from the Western Balkans and across Europe, recognised for their expertise and in-depth understanding of the region and the political, economic, and social processes shaping its future.

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