



# Creative and Cultural Industries in Belarus: Pathways to Growth

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**JEL codes:** O11, O15, O30, Z10.

## **Abstract**

*Currently, there's no legal national definition of creative and cultural sector in Belarus though in the worldwide context these economic activities are among the most actively developing, promising and contributing to Sustainable Development Goals. This paper is an attempt, based on international experience, to identify the creative and cultural economic activities in Belarus and to assess their size and development trends from the perspectives of output, employment (including regional dimension) and trade, based on open-source data for 2016-2023 period, as well as their impact on economic growth using "Input-Output" and CGE model calculations based on 2020 data. The assessed size of the creative and cultural sector in Belarus in 2023 was 5.9% of GDP and 5.8% of employment, excluding the IT sector, the figures were 2.1% and 3.6% respectively. Growth of expenditure on the creative and cultural sector significantly and positively influences gross output and to a lesser extent gross value added, but creative and cultural sector expansion without sustaining structural transformation can lead to mixed results, particularly, the redistribution of resources in favor of more developed sector such as IT may lead to a decline of gross output. Creative and cultural sector development in Belarus was uneven: it grew mostly due to IT during the period considered, while other activities were either growing at slower pace (advertisement and market studies, other professional, scientific and technical activities) or stagnating (architecture and technical analysis; publishing activities; mass media and cultural activities); from a regional perspective, Minsk dominated across all indicators. The majority of creative and cultural sector's activities appeared vulnerable to shocks of COVID-19 and increasing domestic and geopolitical instability. Besides external factors, the difference in development of creative and cultural sector's activities in Belarus was due not only to the absence of a common legal framework, but also to differences in institutional conditions and the extent of state intervention*

In recent years, the challenge of stimulating sustainable and high-quality economic growth in Belarus has become increasingly acute and relevant in the context of overcoming the consequences of domestic and foreign policy crises. Many studies and debates have been devoted to potential sources and ways of strengthening the growth of the Belarusian economy at both the macro and sectoral levels. One layer of economic activity that has undeservedly received little attention, yet has potential both for its own development and for supporting the development of other sectors of the country's economy, is the creative and cultural sector.

There is no universal definition capturing the essence of the creative economy and the creative and cultural sector. J. Howkins, one of the founders of creative-economy research, defines the creative economy in his book 'The Creative Economy: How People Make Money from Ideas' (2001) as a system of production, exchange and use of creative products, where a creative product is understood as an economic good, service or experience whose main economic value is based on creativity [18]. The United Nations Conference on Trade and Development (hereinafter, UNCTAD) defines creative industries as cycles of creation, production and distribution of goods and services whose creation is based on intellectual capital, and notes that the concept of the creative economy is closely linked to the 'knowledge economy' – a key driver of endogenous growth through investment in human capital. The term 'creativity' itself is based on the interaction of human imagination, ideas, intellectual property, knowledge and technology [8]. As for national definitions of the terms 'creative sector'/'creative industries', one of the first countries to develop its own interpretation was the United Kingdom: in 1998, the Department for Culture, Media and Sport defined creative industries as those based on individual creativity, skill and talent, with the potential to create wealth and jobs through the generation and exploitation of intellectual property. Under this definition, creative industries most often encompass the following types of economic activity: advertising, architecture, art and antiques, crafts, design, fashion, film, interactive leisure software (e. g. video games), music, performing arts, publishing, software, television and radio [52]. The original definition of the creative sector adopted in the United Kingdom was subsequently adapted by many other countries. An important feature and vulnerability of estimating the size of the creative sector is that *every country that enshrines a definition of the creative sector in its legislation includes activities based on its own cultural, socio-economic and traditional characteristics* [55].1885255

The phenomenon of the creative economy and the activity of the creative and cultural sector in the context of socio-economic life are not new and have been present throughout the history of human society. The man-made environment has, in one way or another, been designed by architects, artists and designers; education, literature and the media; music, theatre and film, software and the internet; television and advertising – all of these things, an integral part of everyday life, are the result of creative activity. Today, the creative and cultural sector accounts for a substantial share of global value added and workplaces, and it also plays an important role in global production chains. Its importance is recognised both by the governments of many countries and by international institutions. UNCTAD declared 2021 the International Year of Creative Economy for Sustainable Development and noted that the development of the creative economy could become a foundation for sustainable growth in developing countries [52].<sup>52</sup>

The economic properties of the creative and cultural sector of the economy have distinctive features. In a global context, the creative and cultural sector grows faster than other areas of economic activity, is less exposed to crisis shocks owing to its capacity for rapid adaptation, is a source of innovation, and exerts a significant influence on development trends in other sectors of the economy. Being shaped by culture, time, and current economic and social challenges, creative products and services have not only a direct economic impact (through the income the sector generates) and an indirect one (through stimulating economic growth on both the supply and demand sides, and ensuring evolutionary development) [13], but also a knock-on impact, since they influence public opinion, become a means of intra- and inter-cultural communication, strengthen national identity, and raise the country's visibility within the international community. Supporting the development of the creative and cultural sector contributes to achieving the Sustainable Development Goals (SDGs), UN General Assembly Resolution 74/198 notes that the creative and cultural industries contribute to achieving the SDGs, including: eradicating poverty; ensuring gender equality; ensuring decent work and economic growth; developing industry, innovation and infrastructure; reducing inequality; sustainable cities; ensuring sustainable consumption and production patterns; peaceful and inclusive societies; and means of implementation and global partnership [52]. Creative industries are promoters of digitalisation, which became especially apparent during the COVID-19 pandemic, when the creative and cultural industries were able to strengthen their resilience through the use of modern technologies

[21]. Work in the creative and cultural sector most often requires higher education, and wage levels in it tend to be above average; jobs in the creative and cultural sector are characterised by tolerance towards the most vulnerable groups of the population – women, young people, people with disabilities, and people of non-traditional sexual orientation. The growth of the creative and cultural sector contributes to the development of regional economies and increases their attractiveness: workers in the sector are more mobile than others and generate additional demand for more modern goods and services, which stimulates the development of related economic activities in the regions and, as a result, raises their standard of living [14]. The sphere of creativity and culture can thus become one of the areas of economic activity that absorbs labour released in the course of economic reforms and contributes to more efficient labour redistribution (reallocation).13522114

Owing to its specific properties, the development of the creative and cultural sector can also contribute to reinforcing negative trends. The production of creative goods and services is associated with high market volatility and unpredictable demand, which in turn makes it harder for creative businesses to access sources of financing. Despite its significant contribution to combating unemployment, the creative sector most often creates jobs characterised by temporary employment and irregular forms of work [54]. In some branches of the creative and cultural sector, there may be increased market concentration, which can both create barriers to entry for new, smaller players and undermine inclusiveness, as well as reduce the diversity and quality of the goods and services on offer and slow the development of innovation [8]. The labour market in the creative sphere is characterised by a chronic oversupply of labour and a high share of self-employment. Uneven development of creative industries across regions can lead to increased income inequality, and representatives of the creative and cultural sector, despite demonstrating inclusiveness and equality, are often accused of elitism [55].54855

At present, the concept of the creative and cultural sector is not enshrined in Belarusian legislation, whereas official national definitions exist in almost all neighbouring countries, with the exception of Poland, where the Statistical Office instead identifies statistical indicators for the creative and cultural sector's activities as a separate section. Among CIS countries, the creative and cultural sector has also found its place in the legislation of Kazakhstan, Kyrgyzstan and Uzbekistan. In 2015–2018, Belarus took part in the 'Culture and Creativity' programme, whose aim was to assess the state of the country's

main creative and cultural sector activities in order to advance the idea that legislative recognition and legal support for the sector's development are necessary and merit attention. Following the project, the Ministry of Culture developed a legislative framework, which was not adopted as law, since it lacked an economic component for which the Ministry of Economy should be responsible and which did not take part in the project [15]. Accordingly, the research base on Belarus's creative and cultural sector is very small and fragmentary [3; 10; 17]. The main aim of this study is therefore to build a unified understanding and assess the impact of Belarus's creative and cultural sector on the country's economic development and its development prospects, in line with the following objectives: to assess the size of Belarus's creative and cultural sector and identify the main development trends of its activities in terms of output, employment and the state of international trade; to assess the impact of the creative and cultural sector on the country's economic development; to analyse the reasons for the success or failure of the development of creative and cultural economic activities, and the institutional and socio-economic obstacles currently in place; and to identify further directions for supporting the development of the creative and cultural sector and the research needed for this purpose.

The development potential of the creative and cultural sector in Belarus is supported by the high level of development of human capital, which, alongside creativity, is the sector's main productive resource. Despite the negative 'brain drain' trends that intensified after the 2020 protests and the start of Russia's war against Ukraine, the quality of human capital remains high. Thus, according to the Human Capital Index, in 2023 Belarus ranked 65th out of 193 countries in terms of human capital development and was placed in the cluster of countries with a very high level; among CIS countries, Belarus ranked third, behind Russia (56th) and Kazakhstan (67th). But among Belarus's neighbouring countries, only Ukraine (100th place) ranks lower on this index [19]. In the Global Innovation Index calculated by the World Intellectual Property Organization (WIPO), for the 'Human capital and research' sub-component, Belarus ranked 43rd out of 133 countries in 2024, although the country's position has been deteriorating over the past two years [16]. In the Global Talent Competitiveness Index, calculated by the INSEAD Business School, Belarus ranked 57th out of 134 countries in 2023, with only Russia (52nd) being behind among CIS countries [50].191650

Owing to the absence of a national definition of the creative and cultural sector in Belarus, this study uses definitions enshrined in the legislation of neighbouring and CIS countries (given in Appendix A) to identify its constituent activities. According to most of them, the creative and cultural sector comprises economic activities whose main feature is the use of creative abilities, talent, intellectual property and cultural heritage (Kyrgyzstan), and which are oriented towards the development, creation, sale, promotion and distribution of goods and services with a cultural and/or creative component and economic value. In some countries (Latvia, Ukraine), the creative and cultural sector's creation of wealth (value added) and workplaces is also noted.

Assessing the size of the creative and cultural sector in Belarus is complicated by the fact that, due to the absence of a national definition, no corresponding statistics are collected, and the data that are publicly available are not highly detailed (the list of economic activities under NACE Rev. 2<sup>1</sup> that can be considered creative, and the level of detail of the available data, are given in Appendix B). It should also be noted that products and services of the creative and cultural sector are present, to a greater or lesser extent, in all spheres of economic activity, and activities that are essentially creative may include non-creative transactions, so an accurate estimate of the size of the creative and cultural sector is only possible with highly detailed data. Given the limited information available, data on economic activities that fall wholly or partly under the definition of the creative and cultural sector can be used as an approximate calculation of the size and share of Belarus's creative and cultural sector, and accordingly of the number of people employed in it. Owing to the impossibility of isolating data on the production of creative goods and education in the sphere of culture, the main focus is on creative services.

The following items were therefore adopted as creative and cultural activities under the NACE Rev. 2 classification.

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<sup>1</sup> The data presented is in accordance with [28] which is developed following NACE Rev. 2 classification; hereinafter, the mention of the international standard is used.

**Table 1. Sectors and types of economic activity (hereinafter, economic activities) adopted as constituents of Belarus's creative and cultural sector<sup>1</sup>**

| <b>NACE section</b>                                 | <b>Subsection, type of economic activity</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| J Information and communication <sup>2</sup>        | <p>JA Publishing, audio and video recording, reproduction and broadcasting, of which creative:<sup>3</sup></p> <p>J58 Publishing activities;</p> <p>J59 Motion picture, video and television programme production, sound recording and music;</p> <p>J60 Programming and broadcasting activities;</p> <p>JC Information technology and information service activities:</p> <p>J62 Computer programming, consultancy and related activities;</p> <p>J63 Information service activities;</p> |
| M Professional, scientific and technical activities | <p>MA Activities in the field of law, accounting, management, architecture, engineering surveys, technical testing and analysis, of which creative:</p> <p>M71 Architectural and engineering activities; technical testing and analysis;</p> <p>MC Other professional, scientific and technical activities, of which creative:</p> <p>M73 Advertising and market research;</p> <p>M74 Other professional, scientific and technical activities;<sup>4</sup></p>                             |
| R Creativity, sport, entertainment and recreation   | <p>R90 Creative, arts and entertainment activities;</p> <p>R91 Libraries, archives, museums and other cultural activities.</p>                                                                                                                                                                                                                                                                                                                                                             |

Source: author's compilation based on [28].

To analyse the scale, structure and dynamics of Belarus's creative and cultural sector in terms of output and employment, national accounts and employment data by type of economic activity published by Belstat were used, both at the national level and broken

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<sup>2</sup> Starting from 2023, Belstat no longer publishes detailed statistics by subsection and type of economic activity for Section J 'Information and communication'. The 2023 figures are estimates, derived on the assumption that the output structure in current and constant prices for this section did not change in 2023 compared with 2022. Under this assumption, the resulting volume and price indices, when the subsection data are summed, deviate only slightly from the actual figures for the section as a whole. Source of actual data: Belstat.

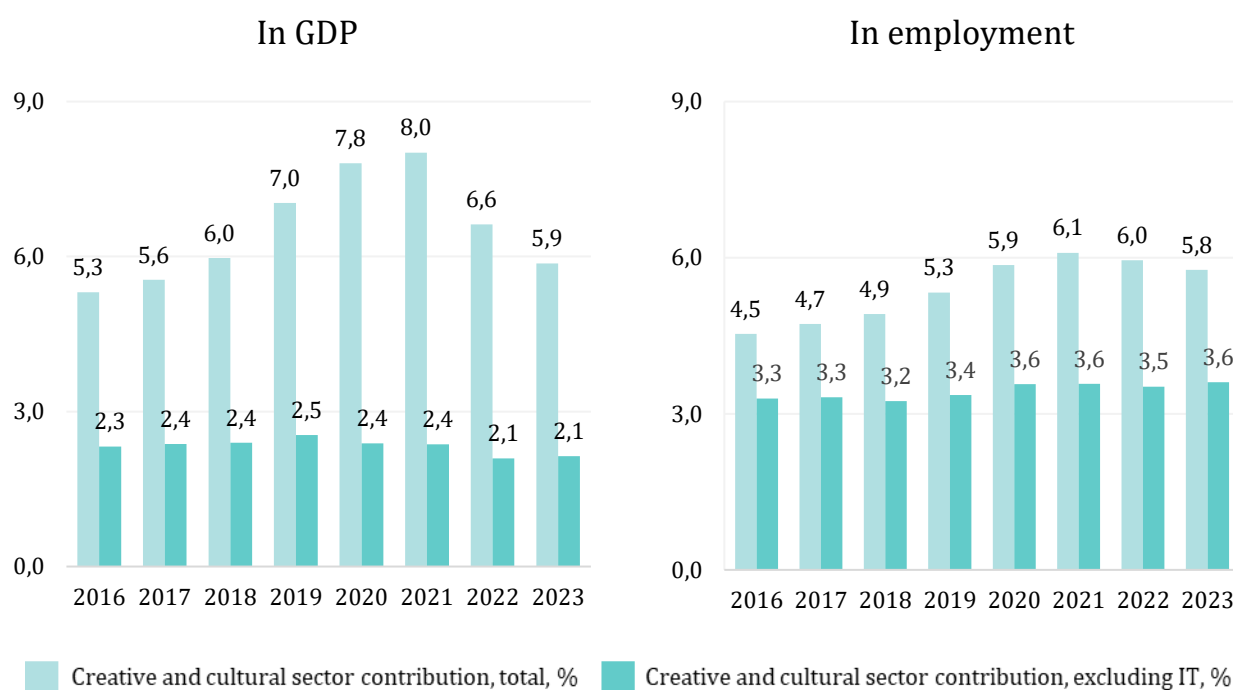
<sup>3</sup> The number of employed persons in subsections JA and JC for 2022 is an estimate. Source of actual data: Belstat.

<sup>4</sup> This activity combines such areas of economic activity as specialised design work, photography, written and oral translation, and other types of professional, scientific and technical activity. Source: [28].

down by region. Considering the limited scope and level of detail of the publicly available data, it should be noted that some values are approximate.

**As in many other countries around the world, the creative and cultural sector occupies an important place in Belarus's economy, but its development over time has been uneven.** Creative and cultural economic activities make a certain contribution to Belarusian output: in 2016, the creative and cultural sector accounted for 5.3% of GDP, whereas in 2021 it was 8.0%; in 2023, the size of the creative and cultural sector was BYN 12.8 billion, or 5.9% of GDP.

**Fig. 1. Shares of Belarus's creative and cultural sector in GDP and employment**



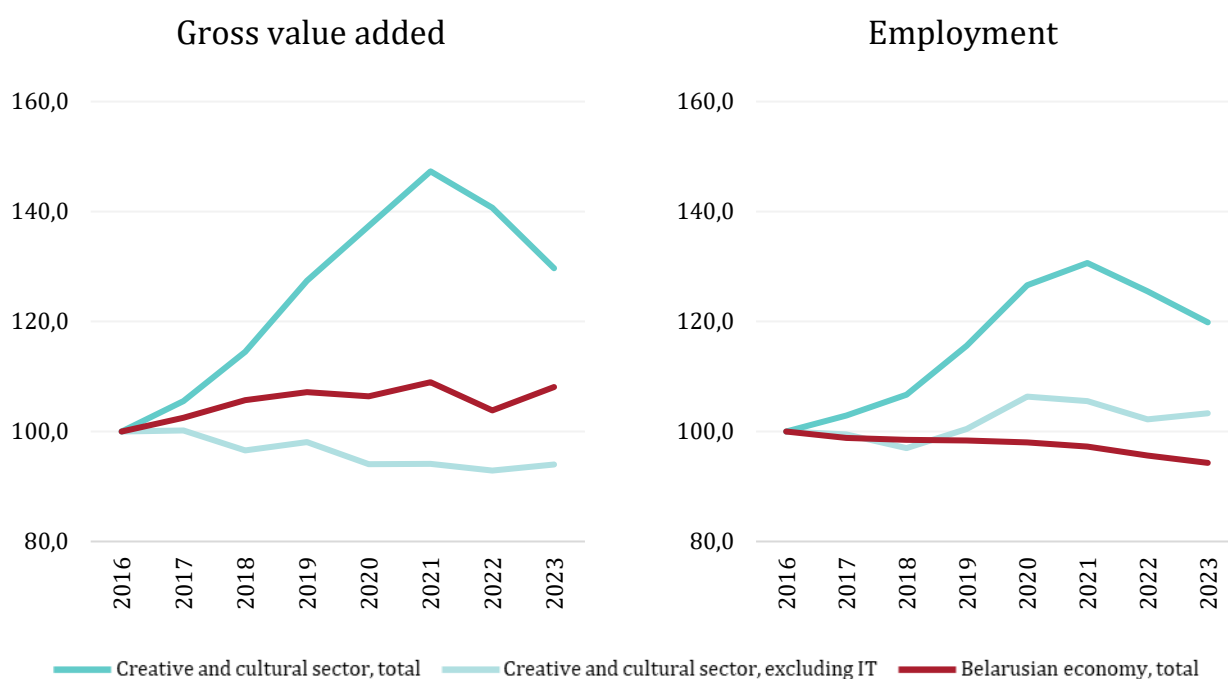
Source: author's compilation based on Belstat data.

By comparison, UNCTAD notes that in 2021 the creative and cultural sector's share of global GDP was 3.1%. The share of employment in Belarus's creative and cultural sector is also growing: whereas in 2016 it accounted for 4.5%<sup>5</sup> of all those employed in the economy, by 2021 the sector's employment share had already risen to 6.1%, before falling to 6.0% in 2022 and continuing this trend in 2023, standing in absolute terms at

<sup>5</sup> When calculating the number of persons employed in the creative and cultural sector, owing to the lack of publicly available data for the economic activities with codes M71, M73 and M74, the estimate was based on the assumption that labour productivity in current prices for the abovementioned economic activities is equal to the average figure for the subsection to which they belong under the NACE Rev. 2 classification.

239,500 persons, or 5.8% of total employment; by comparison, UNCTAD estimates that in 2021 the creative and cultural sector employed 6.2% of employment worldwide. It is worth noting that, in Belarus's case, a significant part of the creative and cultural sector is made up of the information technology sector (hereinafter, the IT sector<sup>6</sup>), whose rapid expansion largely explains the growth of Belarus's creative and cultural sector. But even excluding the IT sector, it turns out that the creative and cultural sector's share of total employment is gradually rising: it stood at 3.3% in 2016, 3.4% in 2019, and 3.6% in 2021; in 2023 it stood at 149,800 persons, or 3.6% of total employment. At the same time, in terms of output, the share of the creative and cultural sector excluding IT grew until 2020, after which it gradually declined: it stood at 2.3% of GDP in 2016, 2.6% in 2019, and 2.1% in 2023.

**Fig. 2. Growth rates of output and employment in the creative and cultural sector compared with overall growth of the Belarusian economy (base index, 2016=100), %**

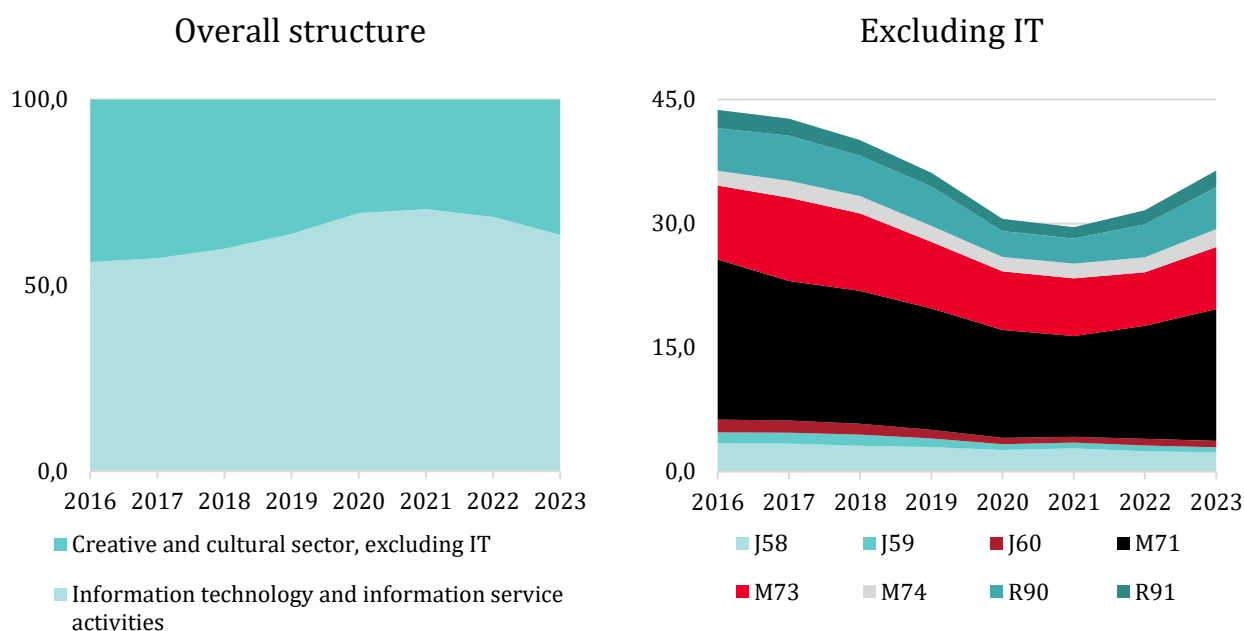


Source: author's compilation based on Belstat data.

<sup>6</sup> Here and throughout the text, the IT sector (IT) refers to sector JC 'Information technology and information service activities'. This should also include economic activity J60 'Publishing of software, including computer games'; however, owing to the absence of separate statistics by activity and the impossibility of isolating its share within the 'Publishing activities' economic activity (see Appendix B), this economic activity is not counted as IT in this study.

The overall development trend of Belarus's creative and cultural sector partly follows global patterns. On the whole, creative industries show faster growth than the Belarusian economy: whereas the economy as a whole grew by 8.1% over 2016–2023, the creative and cultural sector grew by 29.7%. However, as noted above, this growth was achieved through strong IT growth: excluding this sector, it turns out that Belarus's creative and cultural sector is stagnating – its decline over the same period was 6.0%. At the same time, the trend in employment in the creative and cultural sphere, unlike the situation in the economy as a whole, is positive: whereas overall employment fell by 5.7% over 2016–2023, employment in the creative and cultural sector including IT grew by 19.9%, and excluding IT by 3.3%.

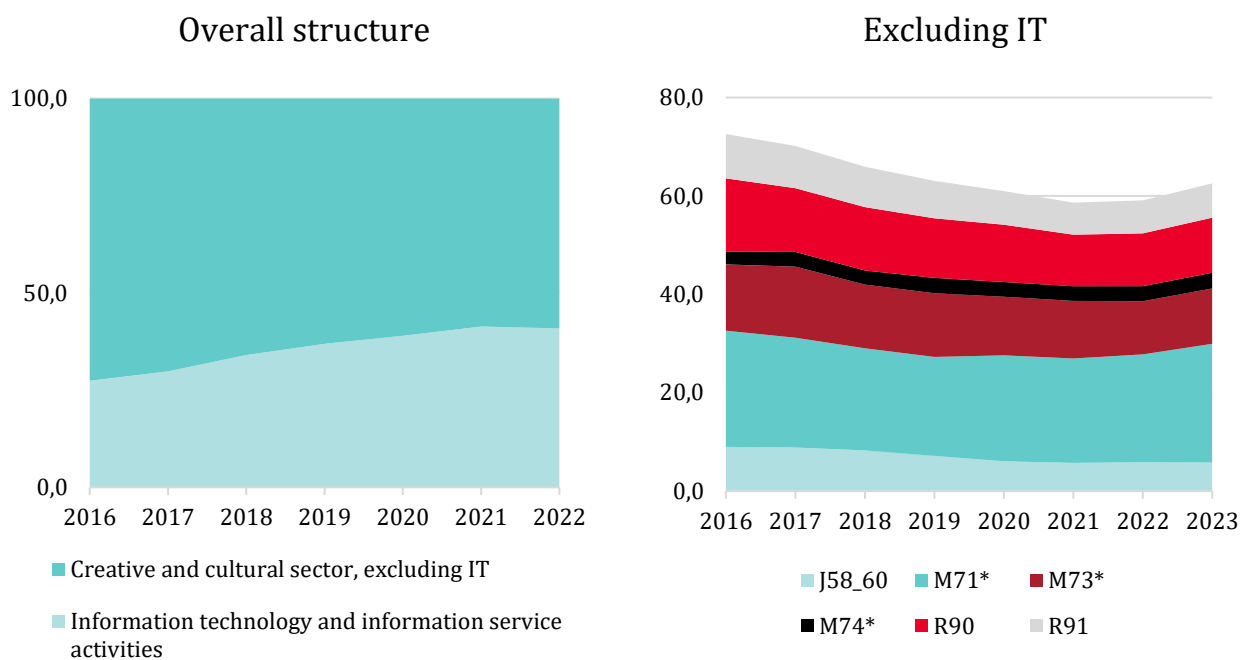
**Fig. 3. Structure of output of Belarus's creative and cultural sector by type of economic activity, %**



*Note. Legend: J58 – Publishing activities; J59 – Motion picture, video and television programme production, sound recording and music; J60 – Programming and broadcasting activities; M71 – Architectural and engineering activities; technical testing and analysis; M73 – Advertising and market research; M74 – Other professional, scientific and technical activities; R90 – Creative, arts and entertainment activities; R91 – Libraries, archives, museums and other cultural activities.*

*Source: author's compilation based on Belstat data.*

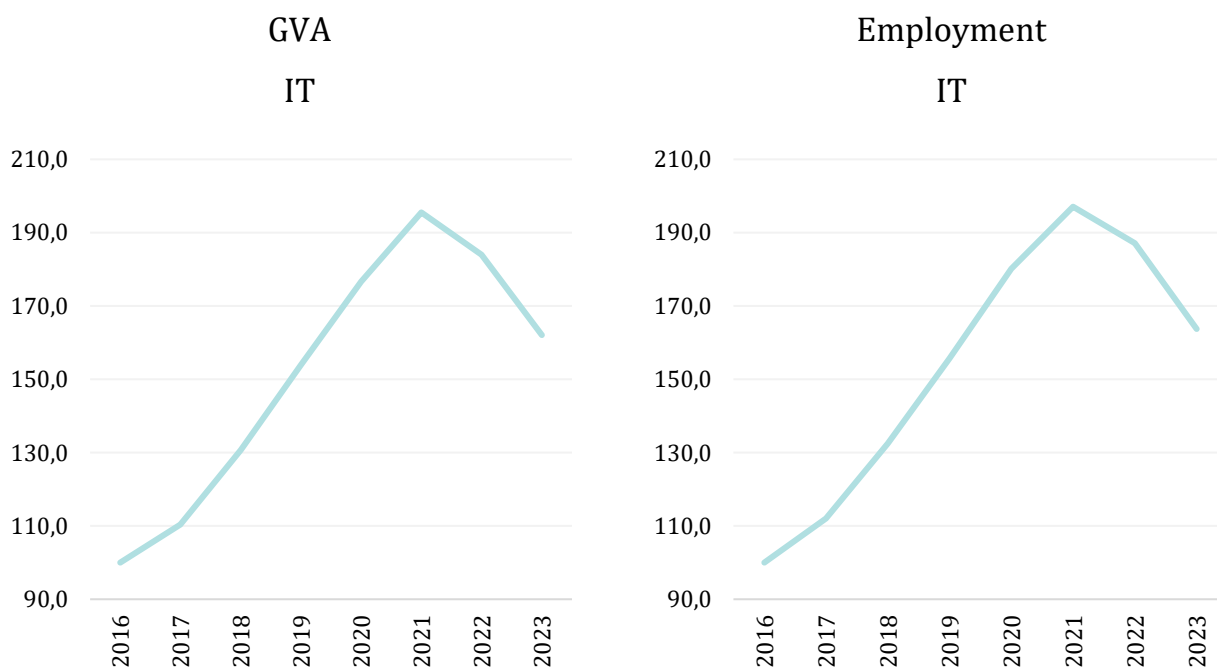
**Fig. 4. Structure of employment in Belarus's creative and cultural sector by type of economic activity, %**

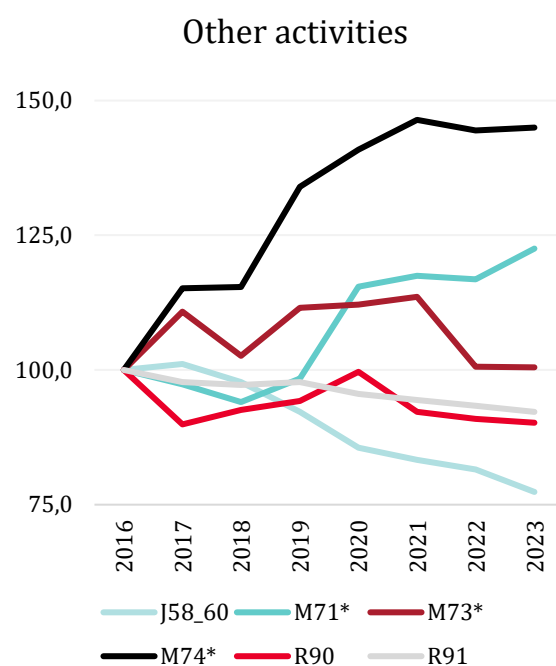
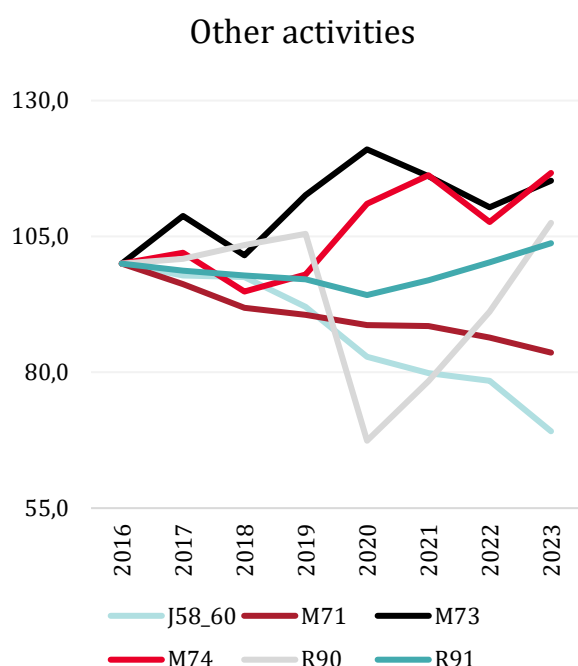


*Notes. 1. Legend: J58\_60 – Publishing, audio and video recording, reproduction and broadcasting; M71 – Architectural and engineering activities; technical testing and analysis; M73 – Advertising and market research; M74 – Other professional, scientific and technical activities; R90 – Creative, arts and entertainment activities; R91 – Libraries, archives, museums and other cultural activities. 2. \* – estimated value.*

*Source: own compilation based on Belstat data.*

**Fig. 5. Growth rates of GVA and employment in Belarus's creative and cultural sector activities, base index (2016=100), %**





Notes: 1. Legend: J58\_60 – Publishing, audio and video recording, reproduction and broadcasting; M71 – Architectural and engineering activities; technical testing and analysis; M73 – Advertising and market research; M74 – Other professional, scientific and technical activities; R90 – Creative, arts and entertainment activities; R91 – Libraries, archives, museums and other cultural activities. 2. \* – estimated value.

Source: own compilation based on Belstat data.

The structure of Belarus's creative and cultural sector is also changing over time. As noted earlier, the largest activity, both in terms of contribution to GDP and to employment, is IT: in 2023, it accounted for 63.6% of the creative and cultural sector's total GVA (+12.1 pp. compared with 2016) and 40.9% of all employment in the creative and cultural sector (+10.0 pp. compared with 2016). The IT sector is also the only activity within the creative and cultural sector whose shares of GVA and employment grew significantly over the period under review. In absolute terms, the increase in GVA in constant prices was 62.1%, and in employment 63.7%. However, the trend shows that after 2022 the IT sector has been losing ground across all indicators.

The second largest activity in Belarus's creative and cultural sector is 'Architectural and engineering activities; technical testing and analysis' (M71), which share of the sector's GVA in 2023 was 15.9%, with an estimated employment share of 24.1%; however, this activity is losing share in output (–3.4 pp. in the GVA structure), while adding 0.5 pp. to the creative and cultural sector's employment structure. In absolute terms, over the period under review, the real volume of output in this activity fell by 16.4%, while its estimated employment grew by 22.5%.

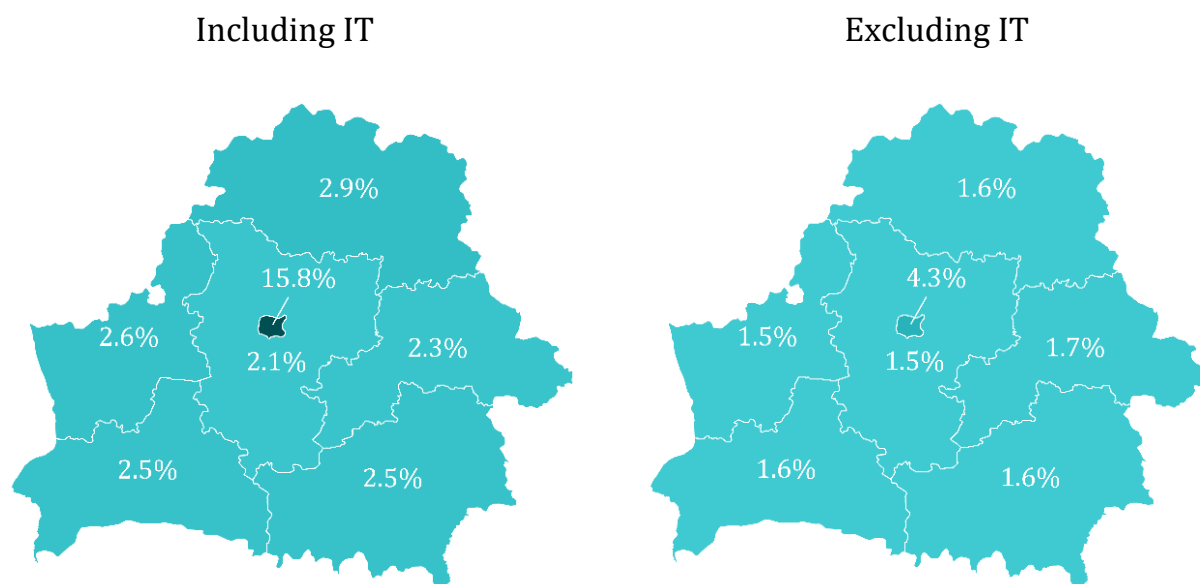
Rounding out the top three is 'Advertising and market research' (M73), which accounted for 7.5% of GVA and 11.3% of employment in the creative and cultural sector in 2023; however, this activity too lost 1.4 pp. of its GVA share and 2.2 pp. of its employment share compared with 2016. Over the period under review, output in this activity grew by 15.2% in real terms, while employment increased by 0.5%.

The cultural sector, comprising 'Creative, arts and entertainment activities' and 'Libraries, archives, museums and other cultural activities' (R90, R91), accounted for 7.1% of GVA (−0.3 pp. from the 2016 level) and 18.1% of employment (−5.8 pp. from the 2016 level) in the creative and cultural sector in 2023. Output in the cultural activities grew by 7.5% over the period under review, while employment fell by 9.8%.

The comparatively small activity 'Other professional, scientific and technical activities' (M74) is developing promisingly nowadays, being the only one not losing share in either the GVA or the employment structure of the creative and cultural sector. In 2023, it accounted for 2.1% of GVA (+0.4 pp. compared with 2016) and 3.2% of employment (+0.6 pp. compared with 2016) in the creative and cultural sector. In terms of output growth, the activity developed fairly successfully until 2022; however, over 2016–2023 as a whole, real GVA growth in the activity was 16.7%. In terms of estimated employment, this activity trails only the IT sector in growth rate, where growth over the period was 45.0%, which may point to growing interest among Belarusians in creative activity as a profession.

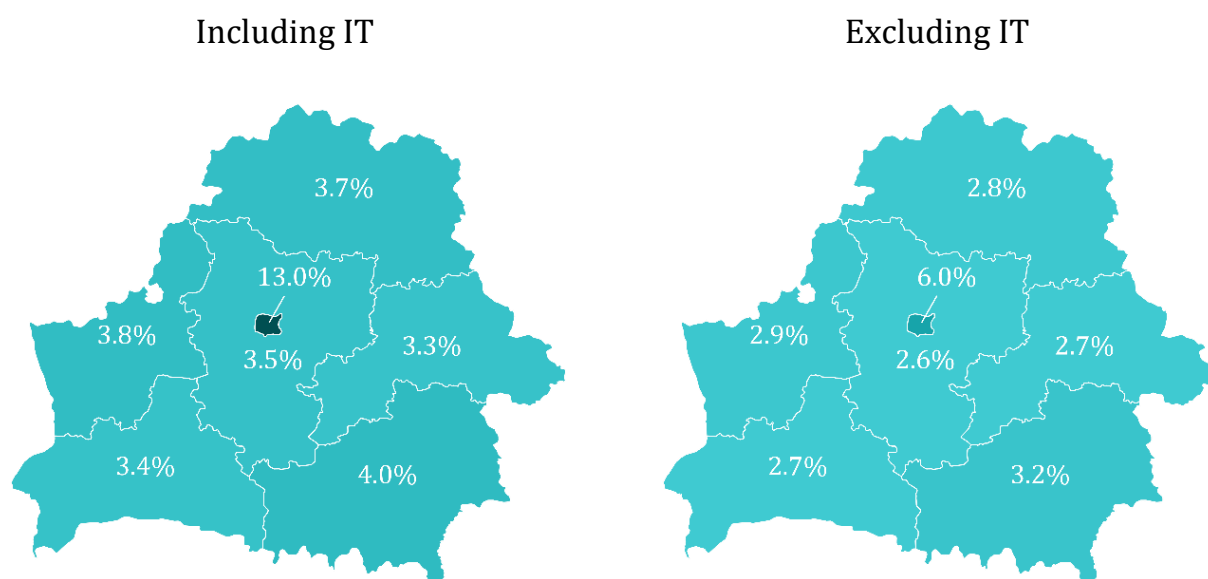
The most stagnant activity in Belarus's creative and cultural sector is 'Publishing, audio and video recording, reproduction and broadcasting' (J58\_60): over 2016–2023, it lost 30.9% of its output and 22.6% of its employees. Its losses in GVA share within the creative and cultural sector over this period amounted to 2.6 pp., and in employment share to 3.2 pp., with the result that in 2023 the activity accounted for 3.7% of GVA and 5.8% of employment in the creative and cultural sector.

**Fig. 6. Share of creative and cultural sector GVA in the GVA of the country's regions in 2023**



*Source: author's compilation based on Belstat data.*

**Fig. 7. Share of creative and cultural sector employment in total regional employment in 2023, %**

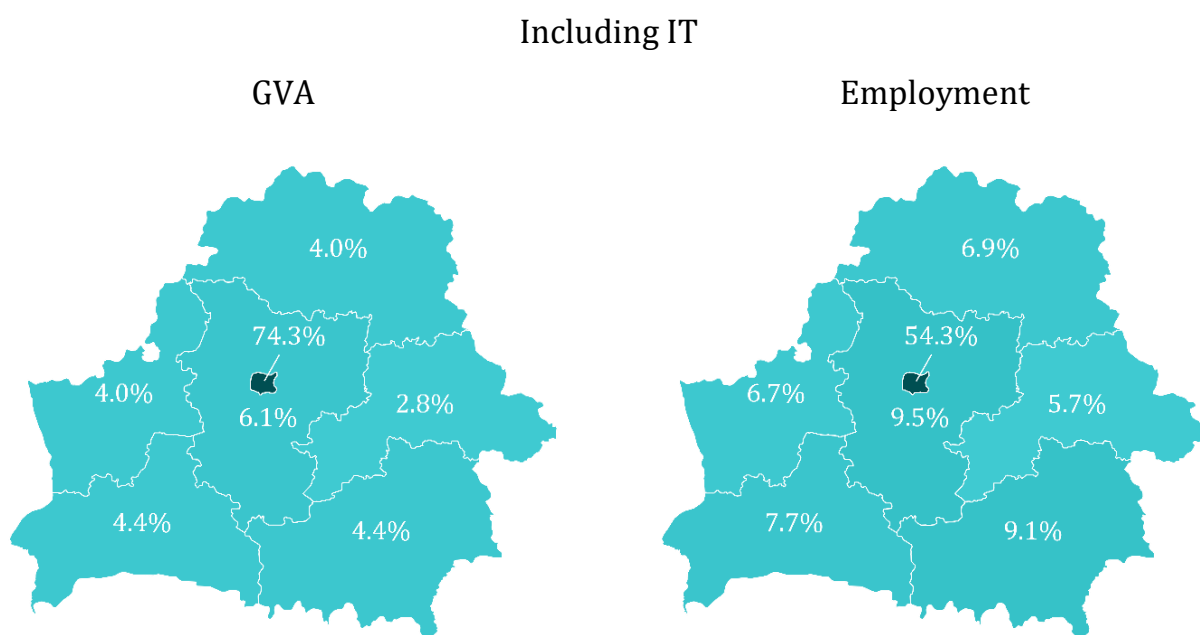


*Source: author's compilation based on Belstat data.*

The development of the creative and cultural sector in Belarus is also uneven from a regional perspective. Creative and cultural activities have a significant advantage in Minsk City: in 2023, the creative and cultural sector accounted for 15.8% of the city's GVA

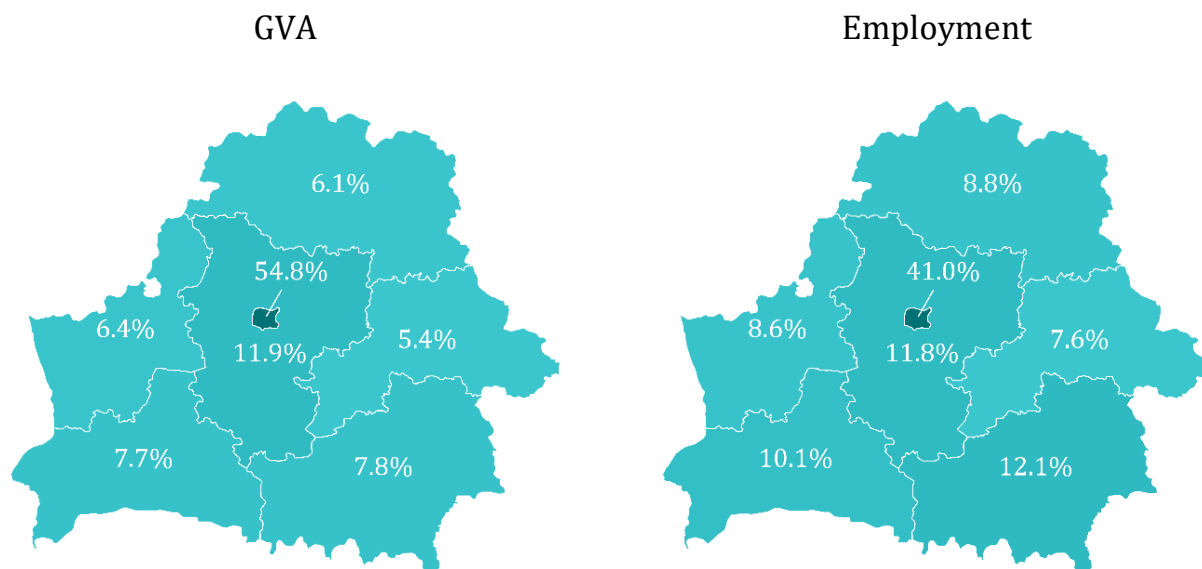
(+1.9 pp. from the 2016 level) and 12.8% of employment<sup>7</sup> (+2.8 pp. to the 2016 level), including, excluding the IT sector, 4.3% of the city's GVA (−0.24 pp. from the 2016 level) and 6.0% of the city's employment (−0.1 pp. from the 2016 level). In the regions, the distribution of creative and cultural sector activities was more even, and over the period under review they accounted for no more than 3% of GDP and 4% of employment, or, excluding IT, no more than 2% of regional GVA and 3% of regional employment. In 2023, the largest share of the creative and cultural sector by GVA was in Vitebsk Region – 2.9% (+0.35 pp. to the 2016 level), and by number employed – in Gomel Region – 3.95% (+0.64 pp. to the 2016 level); excluding IT, by GVA – Mogilev Region – 1.66% of GVA (−0.14 pp. from the 2016 level), and by employment – Gomel Region – 3.2% of employment (+0.35 pp. to the 2016 level).

**Fig. 8. Distribution of creative and cultural sector GVA and employment across Belarus's regions in 2023**



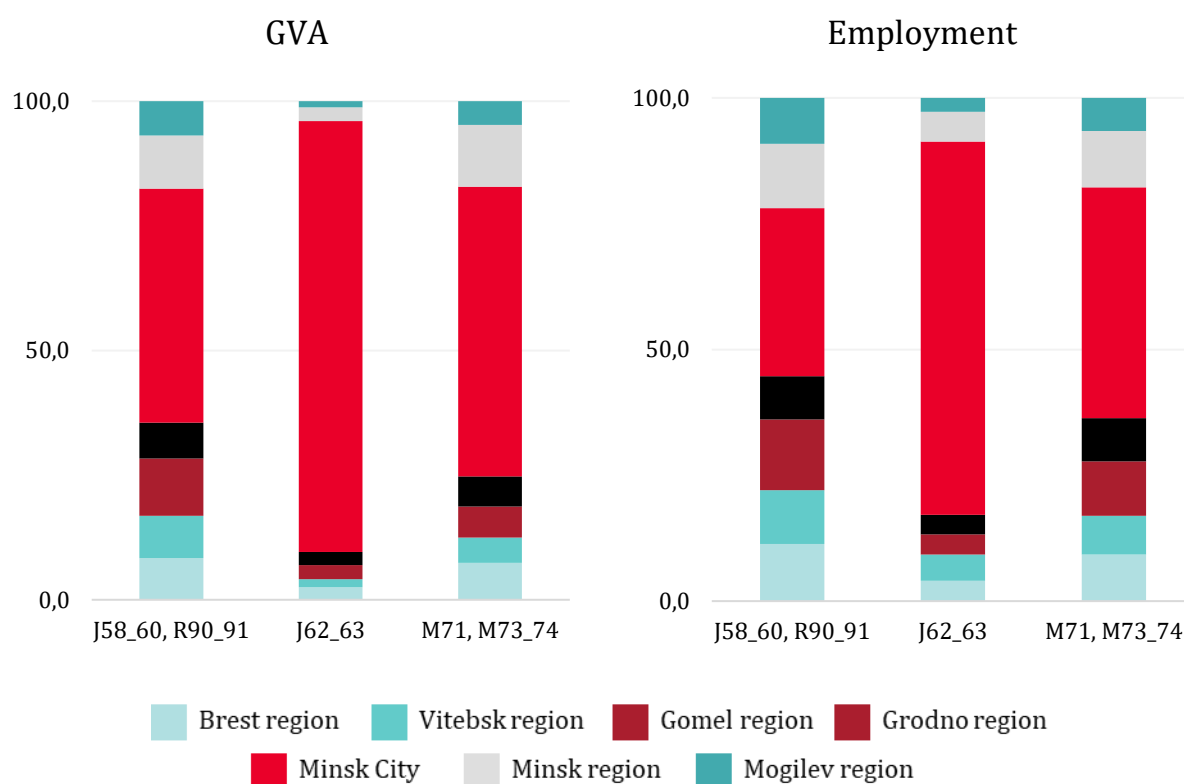
<sup>7</sup> Due to the lack of detailed regional employment statistics, employment in the economic activities 'Architectural and engineering activities; technical testing and analysis', 'Advertising and market research' and 'Other professional, scientific and technical activities' by region was calculated using the same principle used to estimate employment in the creative and cultural sector in overall, as a proxy estimate based on the assumption that regional labour productivity within the sections to which the abovementioned economic activities belong is the same for all economic activities within the region's section. As a result, the value of the absolute employment indicator, calculated as the sum across regions, differs from the originally obtained value; however, the difference is not critical, and in terms of dynamics the sum of the regional estimates follows the same trend as the overall indicator. Calculated based on Belstat data.

Excluding IT



Source: author's compilation based on Belstat data.

**Fig. 9. Distribution of GVA and employment of creative and cultural sector activities across Belarus's regions in 2023**



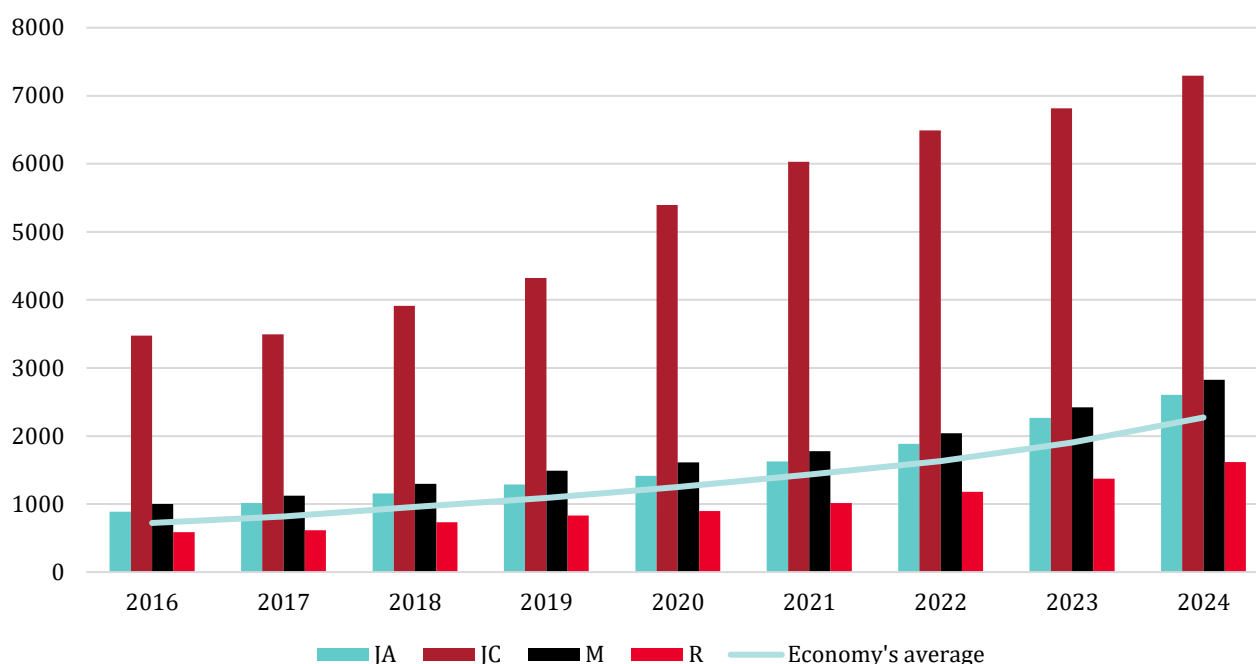
*Note. Legend: J58\_60 – Publishing, audio and video recording, reproduction and broadcasting; J62\_63 – IT and information service activities; M71 – Architectural and engineering activities; technical testing and analysis; M73 – Advertising and market research; M74 – Other professional, scientific and technical activities; R90 – Creative, arts and entertainment activities; R91 – Libraries, archives, museums and other cultural activities.*

Source: author's compilation based on Belstat data.

Thus, the concentration of Belarus's creative and cultural sector took place in Minsk City and intensified until 2021; whereas in 2016 Minsk City accounted for 71.2% of GVA and 51.8% of employment in the country's creative and cultural sector, by 2021 these figures were 79.2% and 55.8% respectively; in 2022–2023 there was a decline in Minsk City's share, linked to the outflow of creative and cultural sector workers caused by intensifying geopolitical instability. The concentration of the IT sector in Minsk City is most pronounced: in 2023 it accounted for 86.4% of the sector's output and 74.2% of its employment nationwide, but despite its dominance in Minsk City and the correspondingly more modest shares of other creative and cultural sector activities, Minsk City also predominates in other creative and cultural sector activities. Excluding the IT sector, in 2023 Minsk City accounted for 54.8% of output (a value similar to that of 2016) and 41% of employment (–1.7 pp. compared with 2016) in the sphere of culture and creativity, including 46.9% of output and 33.4% of employment in publishing and cultural activities, and 58.1% of output and 45.8% of employment in architecture, advertising, and professional, technical and scientific activities. This significantly exceeds Minsk City's overall economic indicators: thus, in 2023, Minsk City accounted for 31.1% of the country's GVA and 24.9% of total employment in the economy.

**The distribution of wages in Belarus's creative and cultural sector is also uneven.** Detailed wage statistics for the above-mentioned activities are limited in the public domain, so, as a guide to the dynamics of relative average wage changes for some activities, wage values were taken from the NACE Rev. 2 sections to which the creative and cultural activities belong.

**Fig. 10. Nominal gross average monthly wage by economic activity to which creative and cultural sector activities belong, 2016–2024, BYN**



*Note. Legend: JA – section 'Publishing, audio and video recording, reproduction and broadcasting'; JC – section 'Information technology and information service activities'; M – section 'Professional, scientific and technical activities'; R – section 'Creativity, sport, entertainment and recreation'.*

*Source: author's compilation based on Belstat data.*

The average wage in Belarus's creative and cultural sector exceeds the national average, with the exception of the cultural activities. IT sector workers receive the highest wages: in 2024, the average wage in the section 'Information technology and information service activities' was 3.2 times the economy-wide average, and this gap has been narrowing slowly over time. The average wage of workers in the section 'Publishing, audio and video recording, reproduction and broadcasting' in 2024 was 14.7% above the economy-wide average.

In activities linked to scientific, professional and creative work, wages over the period under review also exceeded the national average, but grew more slowly: for example, whereas the average wage in 'Professional, scientific and technical activities' exceeded the national average by 38.7% in 2016, by 2024 this had narrowed to 24.3%.

The cultural activities were unattractive in terms of average earnings over 2016–2024: their wages were below the national average and grew more slowly over time. Whereas in 2016 the average wage in the section 'Creativity, sport, entertainment and recreation' was 80.9% of the national average wage, by 2023 it was 71.2%.

**The development of trade in creative goods and services in Belarus also has its own features.** To analyse the dynamics and structure of trade in creative goods and the dynamics of trade in creative services, given the low level of detail in the publicly available data from national statistical offices, available data published by UNCTAD were used, together with Belarus's foreign trade data published by the National Bank of the Republic of Belarus (hereinafter, NBRB), as well as some data on trade in individual goods and services published by the World Trade Organization (hereinafter, WTO). It should be noted that the definition of creative goods and services adopted by UNCTAD may differ from the one adopted above.

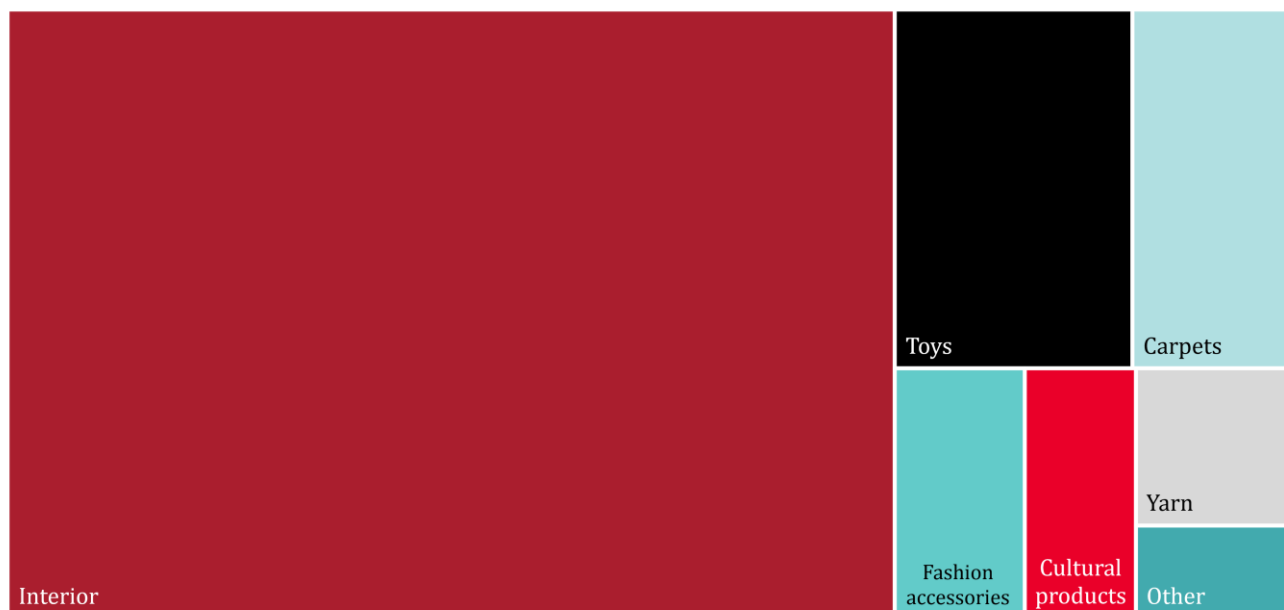
**Fig. 11. Key indicators of Belarus's international trade in creative goods, 2016–2021, %**



*Source: author's compilation based on UNCTAD and NBRB data.*

Belarus is a net exporter of creative goods – the country's trade balance was positive throughout the period under review and stood at USD 272 million in 2021. Belarus's share of world exports of creative goods that year was 0.123% and grew over the period under review. Belarus accounted for 0.094% of world imports of creative goods in 2021, and this share has been slowly declining since 2020. The share of creative goods in Belarus's total goods exports is relatively small: in 2021 it was 2.91%, though with a slow upward trend; the share of creative goods imports in Belarus's total goods imports was 1.38% in 2021, and, as with exports, had shown a slow positive trend until 2020.

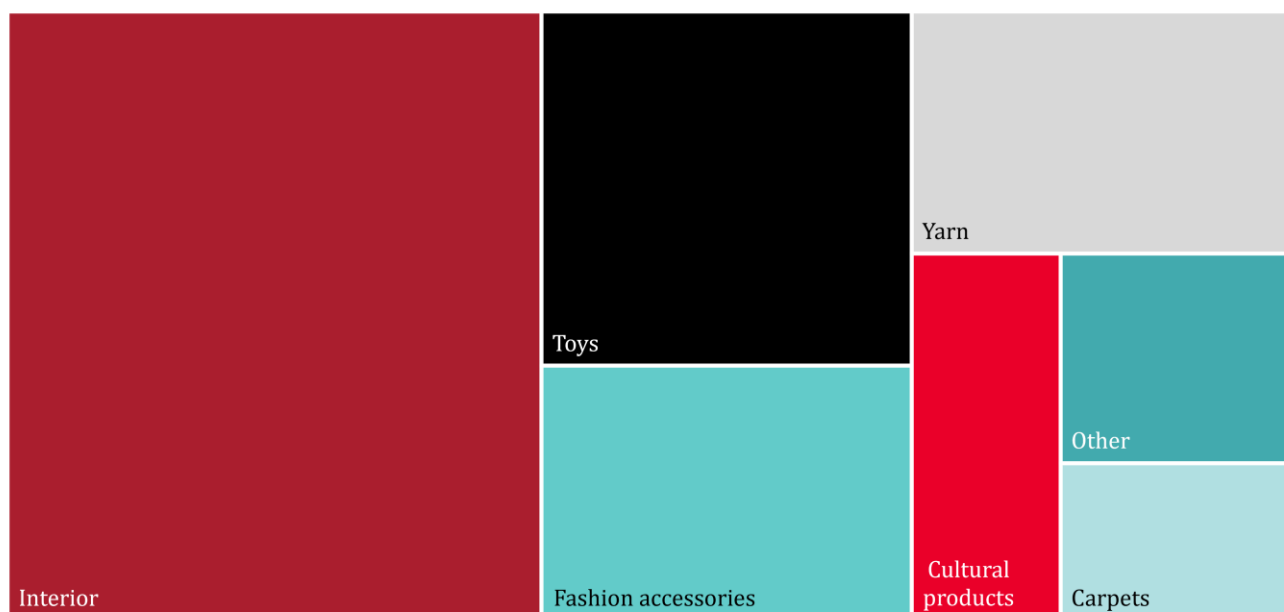
**Fig. 12. Structure of Belarus's exports of creative goods in 2021, %**



*Note: The 'Cultural goods' section includes the product groups 'Books and publishing', 'Music, performing and visual arts', and 'Cultural and natural heritage'; the 'Other' section contains the product groups 'Audiovisual, multimedia and photography', 'Jewellery', 'Wickerware', 'Architecture' and 'Software, video games and recorded media', which were included in it due to their small shares in the structure.*

*Source: author's compilation based on UNCTAD data.*

**Fig. 13. Structure of Belarus's imports of creative goods in 2021, %**



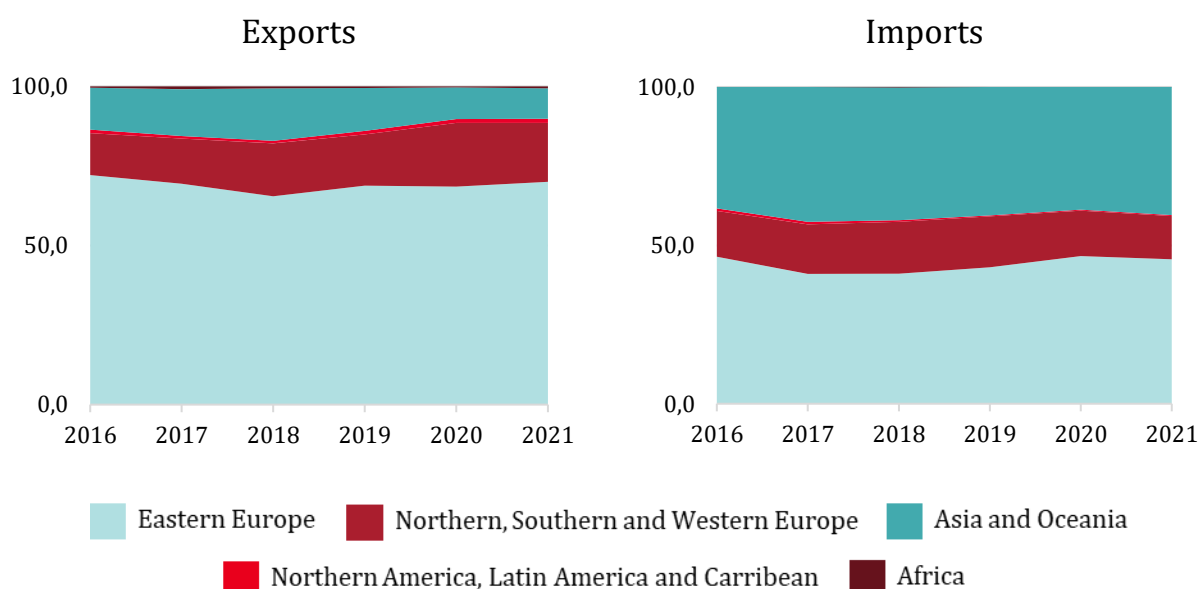
*Note: The 'Cultural goods' section includes the product groups 'Books and publishing', 'Music, performing and visual arts', and 'Cultural and natural heritage'; the 'Other' section contains the product groups 'Audiovisual, multimedia and photography', 'Jewellery', 'Wickerware', 'Architecture' and 'Software, video games and recorded media', which were included in it due to their small shares in the structure.*

*Source: author's compilation based on UNCTAD data.*

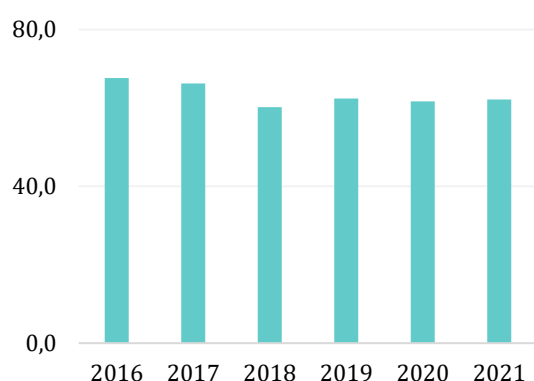
Handicraft and design products have an absolute advantage in the structure of Belarus's exports and imports of creative goods: in 2021, they accounted for 95.3% of exports and 87.0% of imports of Belarusian creative goods. The most popular export and import item among creative goods is interior products – 68.8% of exports and 41.3% of imports of creative goods over the period concerned; the second most popular item is toys (10.9% of exports and 16.7% of imports). The top three export items for creative goods include carpets (7.4%), while for imports it is fashion accessories (12.0%). Cultural products, comprising the categories 'Books and publishing', 'Music, performing and visual arts', and 'Cultural and natural heritage', accounted for 3.5% of exports and 6.9% of imports of creative goods in 2021. The 'Software, video games and recorded media' item shows a substantial excess of the import share over the export share: exports from Belarus in 2021 accounted for 1.1% of total creative goods exports, whereas the import share of creative goods in this category was 6.1%.

UNCTAD does not publish a breakdown of exports and imports of creative goods by individual trading partner country; however, an analysis of the structure by geographical region can help identify the countries that are Belarus's main trading partners in creative goods trade.

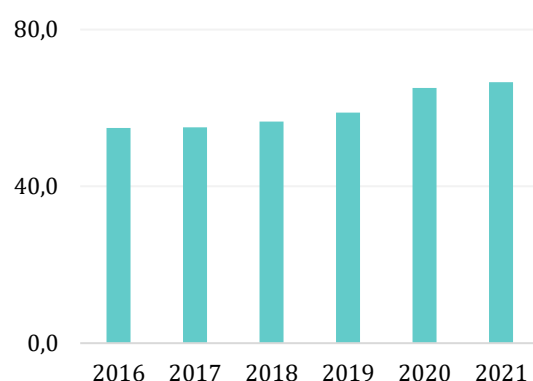
**Fig. 14. Structure of Belarus's exports and imports of creative goods by geographical region, 2016–2021, %**



Share of exports to BRICS countries



Share of imports from BRICS countries



Source: author's compilation based on UNCTAD data.

Belarus's exports of creative goods are not very diversified, but the export structure is slowly changing over time. The region playing the dominant role in the structure of creative goods exports is Eastern Europe, which accounted for 70.0% of creative goods exports in 2021 (–2.2 pp. compared with 2016). Over the period under review, the share of exports to other European countries grew actively: their share of creative goods exports in 2021 was 18.6% (+5.4 pp. compared with 2016). The Asian region is also a major trading partner: in 2021 it accounted for 9.6% of creative goods exports (–3.6 pp. compared with 2016). Exports to the rest of the world in 2021 amounted to 1.9% (+0.4 pp. compared with 2016). Given that exports to BRICS countries amounted to 62.2%, there is reason to believe that most of Belarus's creative goods exports go to Russia.

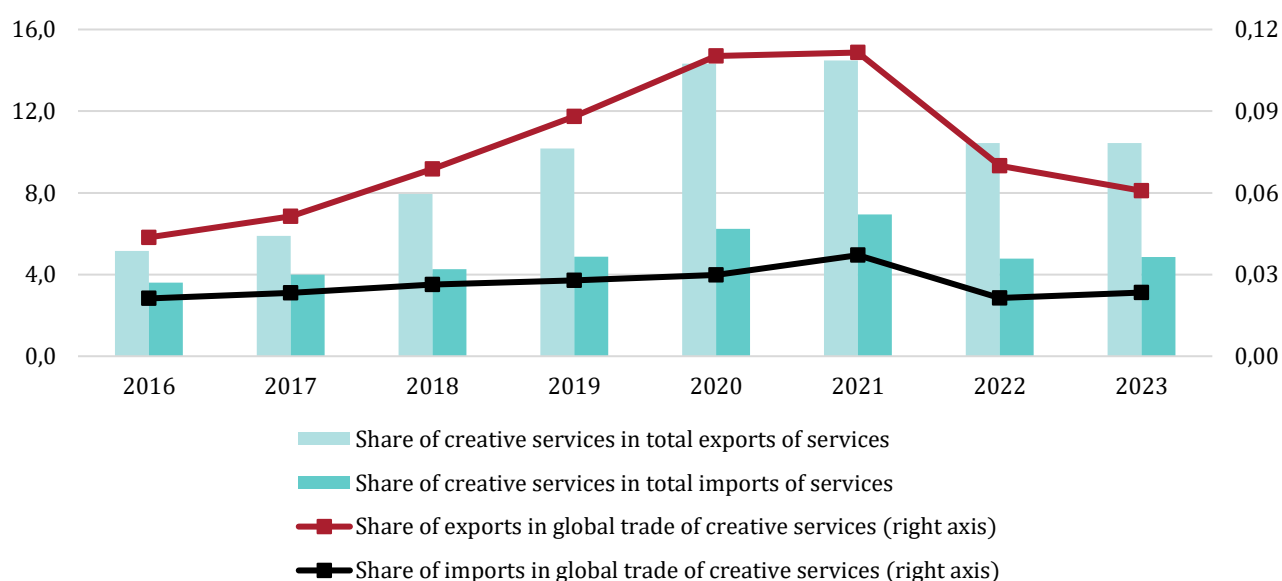
Belarus's imports of creative goods are more diversified geographically, but less dynamic in structure. Unlike the export structure, in 2021 Eastern Europe and Asia had almost equal weight, accounting for 45.6% (–0.7 pp. compared with 2016) and 40.4% (+2.1 pp. compared with 2016) of creative goods imports to Belarus respectively. The rest of Europe accounted for 13.6% of imports (–0.9 pp. compared with 2016), and all other countries for 0.3% (–0.4 pp. compared with 2016). In 2021, imports from BRICS countries amounted to 66.6% of total creative goods imports (+11.7 pp. compared with 2016), and based on the above results it can be assumed that the main importing countries of creative goods into Belarus were Russia and China.

Unlike trade in creative goods, UNCTAD does not provide a breakdown of trade in creative services by type of service and trading partner for individual countries, and notes

that the database on trade in creative services is experimental. Under the EBOPS classification, UNCTAD defines the following services as creative:

- SH2 Licenses for the use of outcomes of research and development;
- SH3 Licenses to reproduce or distribute computer software;
- SH4 Licenses to reproduce or distribute audio-visual and related products;
- SI21 Computer services, software;
- SI3 Information services;
- SJ1 Research and development (R&D) services;
- SJ22 Advertising, market research, and public opinion polling services;
- SJ311 Architectural services;
- SK1 Audiovisual and related services;
- SK23 Other personal, cultural, and recreational services: heritage and recreational services.

**Fig. 15. Key indicators of Belarus's trade in creative services, 2016–2023, %**



Source: own compilation based on UNCTAD and NBRB data.

According to UNCTAD data, Belarus has been a net seller of creative services since 2013, and by 2022 the positive trade balance had shown an upward trend; in 2023, Belarus's trade balance in creative services was USD 611 million, compared with USD 1,091 million in 2021. Belarus's share of world exports of creative services grew until 2022: in 2016, Belarus accounted for 0.04% of world exports of creative services, whereas in 2021 it was 0.11%; but by 2023 it had fallen to 0.06%. At the same time, the

share of Belarus's imports of creative services in world imports of creative services remains almost unchanged, fluctuating within the range of 0.02–0.04%<sup>8</sup>. The share of creative exports in Belarus's total services exports is also growing rapidly: whereas in 2016 the share of creative services exports was 5.15%, by 2021 it was 14.4%, though it fell to 11.0% in 2022. The share of creative services imports in the country's total services imports also grew, but at a slower pace: in 2016 the share of creative services in total services imports was 3.6%, in 2021 it was 7.0%; by 2023 it had fallen to 4.9%.

The growth in exports of creative services was presumably linked primarily to growth in trade in IT services; detailed statistics for Belarus are not published, but according to WTO data, export volumes of services under 'SI2 Computer services' grew at the fastest pace until 2021. A. Luzgina (2023) notes that exports from the Hi-Tech Park (hereinafter, HTP) reached a third of the country's total services exports in 2021, with the main target markets being Western countries and the USA [24]. From WTO open data on Belarus, it is possible to determine the shares of individual types of services in creative services exports: for example, in 2021, exports of 'SI3 Information services' accounted for 1.8% of creative services exports (–1.3 pp. from the 2016 level), 'SJ1 R&D services' for 2.9% (–3.6 pp. from the 2016 level), and 'SK1 Audiovisual and related services' for 1.3% (–1.0 pp. from the 2016 level).

As for imports of creative services to Belarus, it is difficult, based on the available data, to determine the dominant type of service: imports of services under sections that include subsections designated by UNCTAD as creative exceed UNCTAD's estimate for each section, and import volumes under these sections are similar. Based on WTO data, it is possible to determine the shares of imports under the abovementioned types of creative services: in 2021, imports of 'SI3 Information services' accounted for 2.8% of Belarus's creative services imports (–2.3 pp. from the 2016 level); 'SJ1 R&D services' for 0.5% (–0.8 pp. from the 2016 level); 'SK1 Audiovisual and related services' for 4.8% (–6.0 pp. from the 2016 level). It is also difficult to identify the dominant countries importing creative services into Belarus.

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<sup>8</sup> As an estimate, the value of world imports of creative services was taken as the sum of creative services imports across countries. It should be noted that the resulting figure may be understated due to the absence of data for some countries. Source: author's calculations based on UNCTAD data.

Given the above, one topical question is how the development of the creative and cultural sector in Belarus might affect the overall development of the country's economy. For assessment an Input-Output model was used, based on the example presented in a study by the Kyiv School of Economics [29]. This model makes it possible to determine how an increase in spending in a particular sector of the economy directly and indirectly affects economic growth, since the existence of linkages between sectors of the economy means that a direct increase in spending on an activity can indirectly affect an increase in intermediate consumption in related activities (indirect effect); wage growth in the sector can lead to increased household consumption of goods and services from other sectors (induced effect). The calculations used data from Belarus's 2020<sup>9</sup> Input-Output table. The full calculation methodology is presented in Appendix C.

The resulting multiplier estimates for Belarus's creative and cultural sector activities are as follows.

**Table 2. Expenditure multipliers in Belarus's creative and cultural sector in 2020**

|                                                                                                                   | Output multiplier |         | Gross value added multiplier |         | GVA effect (BYN per BYN 1 increase in consumption expenditure) |
|-------------------------------------------------------------------------------------------------------------------|-------------------|---------|------------------------------|---------|----------------------------------------------------------------|
|                                                                                                                   | Type I            | Type II | Type I                       | Type II |                                                                |
| Creative and cultural sector                                                                                      | 1.34              | 2.77    | 1.10                         | 1.20    | 0.97                                                           |
| Publishing services                                                                                               | 1.82              | 2.85    | 1.08                         | 1.11    | 0.59                                                           |
| Motion picture, video and television programme production services, sound recording and music production services | 1.82              | 2.77    | 1.01                         | 1.03    | 0.59                                                           |
| Radio and television broadcasting services                                                                        | 1.91              | 3.30    | 1.01                         | 1.02    | 0.51                                                           |
| Computer programming, consultancy and related services                                                            | 1.15              | 2.80    | 1.08                         | 1.18    | 1.07                                                           |
| Information service activities                                                                                    | 1.53              | 2.55    | 1.06                         | 1.11    | 0.78                                                           |
| Architectural and engineering services; technical testing and analysis services                                   | 1.28              | 2.62    | 1.06                         | 1.10    | 0.91                                                           |

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<sup>9</sup> The latest Input-Output table data were published by Belstat in 2021; however, the latest data present final calculations of direct and total input coefficients for goods and services only, from which it is not possible to obtain the original values of intermediate consumption, output and gross value added. Since the author's calculations involve aggregating data for non-target areas of economic activity, the study uses the latest published available data. Since 2022, Belstat has not published Input-Output table data.

|                                                                  |      |      |      |      |      |
|------------------------------------------------------------------|------|------|------|------|------|
| Advertising and market research services                         | 2.00 | 2.91 | 1.12 | 1.22 | 0.61 |
| Other professional, scientific and technical services            | 1.38 | 2.03 | 1.03 | 1.04 | 0.83 |
| Arts, entertainment and recreation services                      | 1.43 | 2.70 | 1.05 | 1.07 | 0.81 |
| Library, archive, museum and other cultural institution services | 1.48 | 3.23 | 1.02 | 1.02 | 0.74 |

*Source: author's compilation based on Belstat data.*

**According to the calculations, a BYN 1 increase in demand for Belarus's creative and cultural sector goods and services raises the Belarusian economy's gross output by BYN 2.77.** The indirect effect of the increase in direct expenditure is BYN 0.34, and the effect of increased household spending (induced effect) is BYN 1.43. The activities with the largest induced effect are 'Library, archive, museum and other cultural institution services' (BYN 1.75), 'Computer programming, consultancy and related services' (BYN 1.64), and 'Radio and television broadcasting services' (BYN 1.38); those with the largest indirect effect are 'Advertising and market research services' (BYN 1.00), 'Radio and television broadcasting services' (BYN 0.91), and 'Motion picture, video and television programme production services' (BYN 0.82). The effects obtained are broadly realistic. The largest induced effects are observed in activities oriented towards the end user: 96.7% of the services provided by libraries, archives, museums and other cultural institutions, and 70.7% of television and radio broadcasting services, were used by final consumers. Indirect effects were largest for activities directly or indirectly linked to market promotion of goods and services.

**The estimated impact of growth in demand for Belarus's creative and cultural sector goods and services on gross value added is far more modest: a BYN 1 increase in the creative and cultural sector's gross value added leads to a BYN 1.20 increase in total value added.** For every BYN 1 of direct effect, there is BYN 0.10 each of indirect and induced effect. Such low values may be explained by the fact that gross output of Belarus's creative and cultural sector amounts to 81% of gross value added, and the sector itself has weak inter-sectoral linkages. As for the GVA multiplier, the activities with the largest induced effect are 'Computer programming, consultancy and related services' and 'Advertising and market research services' (BYN 0.10), while the induced effect for the other creative and cultural activities does not exceed BYN 0.04;

the largest indirect effect is found for 'Advertising and market research services' (BYN 0.12) and 'Computer programming, consultancy and related services' and 'Publishing services' (BYN 0.08). The largest gross value added effect is shown by the creative and cultural activities that are more export oriented.

**A BYN 1 increase in spending on consumption of creative and cultural sector services leads to a BYN 0.97 increase in GVA.** The largest GVA effect is shown by 'Computer programming, consultancy and related services' (BYN 1.07), 'Architectural and engineering services; technical testing and analysis services' (BYN 0.91), and 'Other professional, scientific and technical services' (BYN 0.83). Notably, the cultural activities - 'Arts, entertainment and recreation services' and 'Library, museum and other cultural institution services' - despite modest GVA multiplier values, show fairly high GVA effect figures (BYN 0.81 and 0.74 respectively).

**Additional calculations were carried out on the impact of the development of the creative sector on the development of the Belarusian economy using a CGE model.** Computable general equilibrium (CGE) models based on empirical data, unlike Input-Output models, make it possible to assess the impact of external shocks on the overall state of the economy while taking into account the non-linearity of the relationships between its sectors. A brief description of the model is presented in Appendix D. The model was developed based on the methodology in [7; 29].

The calculation using the CGE model is carried out on the basis of a social accounting matrix (SAM), which is a square-form transformation of the Input-Output table, including accounts for economic agents – producers of goods and services, households, government, savings and investment, the rest of the world – and factors of production – labour and capital – as well as tax accounts. As a rule, building a SAM requires additional data beyond the Input-Output tables. In this study, the SAM likewise uses data from the 2020 Input-Output table together with additional data from Belstat, the NBRB, the WTO, the IMF, and Gitab.

The simulation results presented in this study are illustrative in nature and are intended to demonstrate the potential character of economic changes depending on various stylised assumptions regarding each of the creative activities. Changes in real GDP and household welfare are presented as the target indicators.

The following scenarios were modelled for each creative activity.

*A. Growth in labour productivity.* This scenario assesses the impact of a 5% increase in labour productivity in each of the creative and cultural activities.

*B. Growth in consumer interest owing to rising household incomes.* To support demand for creative and cultural services, the government increases transfers to households by 1%, and in each case households increase the share of their consumption spent on creative and cultural services by 5%.

*C. Change in terms of trade.* The world export price for the services of each creative and cultural activity rises by 10%.

The simulation results are presented as follows.

**Table 3. Results of the CGE model simulations**

| Activity                                                                                                          | Scenario A      |               | Scenario B      |               | Scenario C      |               |
|-------------------------------------------------------------------------------------------------------------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|
|                                                                                                                   | $\Delta$ GDP, % | $\Delta$ U, % | $\Delta$ GDP, % | $\Delta$ U, % | $\Delta$ GDP, % | $\Delta$ U, % |
| Publishing services                                                                                               | 0.010           | 0.009         | 0.010           | 0.149         | -0.005          | 0.008         |
| Motion picture, video and television programme production services, sound recording and music production services | 0.003           | 0.003         | 0.012           | 0.181         | -0.001          | 0.001         |
| Radio and television broadcasting services                                                                        | 0.003           | 0.002         | 0.012           | 0.179         | -0.001          | 0.000         |
| Computer programming, consultancy and related services                                                            | -0.152          | 0.273         | 0.031           | 0.961         | -1.718          | 0.679         |
| Information service activities                                                                                    | 0.016           | 0.020         | 0.014           | 0.230         | -0.007          | 0.011         |
| Architectural and engineering services; technical testing and analysis services                                   | 0.057           | 0.024         | 0.014           | 0.248         | -0.007          | 0.007         |
| Advertising and market research services                                                                          | 0.026           | 0.031         | 0.010           | 0.146         | -0.092          | 0.093         |
| Other professional, scientific and technical services                                                             | 0.015           | 0.008         | 0.011           | 0.174         | 0.001           | 0.002         |
| Arts, entertainment and recreation services                                                                       | 0.011           | 0.006         | 0.014           | 0.249         | -0.000          | 0.000         |
| Library, archive, museum and other cultural institution services                                                  | 0.006           | 0.001         | 0.010           | 0.149         | -0.000          | 0.000         |

Source: author's compilation based on Belstat data and other sources of statistical data mentioned above.

**According to the results of the simulations carried out using the CGE model, a shock to creative goods and services can have varying and mixed effects on real GDP growth.** In the case of labour productivity growth in each of the creative activities, the largest effect is observed in services oriented towards other industries: architectural

and engineering services; technical testing and analysis services (0.057%) and advertising and market research services (0.026%), whereas labour productivity growth in activities oriented towards final consumption has a more modest impact on output owing to smaller multiplier effects and a comparatively small market size. At first glance, the negative impact on output of productivity growth in IT services (-0.152%) may seem contradictory; however, a more detailed analysis of the shock shows that, owing to the sector's growing attractiveness, there is significant drawing away of resources from other activities, ultimately leading to a fall in their output that is not offset by IT output growth, which to some extent reflects the Belarusian economy's exposure to 'Dutch disease'.

The largest effect on economic growth comes from the change in the structure of final consumption, which is to be expected, since almost all of Belarus's creative activities, apart from IT, are oriented towards domestic consumption. Subsidised consumption has a more significant effect on the growth of household welfare owing to the rise in their incomes; however, it is interesting to note that, when households' preference for creative-activity services and their incomes rise simultaneously, welfare increases by more than from the income rise alone. The IT activity shows the largest effect both in terms of real GDP growth and welfare, probably owing to economies of scale. Among the other creative and cultural activities, the largest effect is shown by arts, entertainment and recreation services (the second largest effect on household welfare, at 0.249%), architectural and engineering services; technical testing and analysis services (a 0.248% increase in household welfare), and information service activities (a 0.230% increase in household welfare) – the effect of each of these creative and cultural activities amounts to 0.014% of GDP.

Analysis of export potential, in turn, gives seemingly mixed results at first glance. As expected, the largest effect in the case of rising export prices is shown by the creative and cultural activities in which the export component carries significant weight in the activity's total output; however, the expansion of IT exports once again demonstrates the Belarusian economy's exposure to 'Dutch disease' in the case of IT: when world export prices for IT rise, resources begin to flow towards it with a significant rise in the cost of labour, and the explosive growth of IT does not offset the fall in output in other activities, leading to a significant fall in gross output. In most of Belarus's creative activities, a rise

in world export prices leads to a small fall in GDP, which is a consequence of small production capacities that limit existing export opportunities. The only creative activity in which a rise in world export prices leads to a small increase in GDP is other professional, scientific and technical services, probably primarily owing to the intermediate-consumption effect, towards which this activity is oriented.

From the above analysis, taking into account the limitations of the method, it can be concluded that the creative and cultural sector in Belarus has a fairly substantial impact on the country's overall economic development, especially in terms of increasing demand from households. Thus, in 2020 the total estimated impact of the creative and cultural sector on gross output in absolute terms was BYN 14.5 billion, with an additional indirect impact of BYN 5 billion and an induced impact of BYN 20.59 billion; the direct impact on gross value added was BYN 11.69 billion (8.9% of GVA), the indirect impact BYN 0.9 billion (0.69% of GVA), and the induced impact BYN 0.92 billion (0.7% of GVA). The main consumers of Belarus's creative and cultural sector services are final consumers; the first and third largest activities in the creative and cultural sector – IT and advertising respectively – are export oriented. At the same time, extending the analysis with the CGE model simulation results shows that there are certain limits to the extensive physical expansion of the creative and cultural sector. These are linked primarily to the small initial size (apart from IT) and limitations in the quantity and quality of resources, so in the cases considered above, simple expansion of the creative and cultural sector without structural transformation and capacity building, particularly of its export component, can lead to a trade-off between income and output. At the same time, in the case of the IT activity, further uncontrolled expansion could lead to a problem of 'economic specialisation' due to an excessive inflow of resources into the sector, creating risks of undermining growth in the economy as a whole. However, as mentioned earlier, in addition to its direct economic impact, the creative and cultural sector has an invaluable influence on innovative development and the accumulation of the country's cultural and intellectual capital. A scaling-up of the creative and cultural sector therefore requires a balanced, ecosystem-based approach founded on investment in human capital, technology and infrastructure, the promotion of openness and free flow of ideas and knowledge, and the consistent and sustainable development of the domestic market.

The absence of a definition of the creative and cultural sector in Belarusian legislation also leads not only to uncertainty in approaches to its assessment, but also to the absence of common approaches to ensuring its balanced development, which significantly affects the economic indicators of the creative sphere and cultural industries. Additional factors that promote or constrain the development of the creative and cultural sector are examined in more detail below.

The successful development of the IT sector in Belarus as a whole, and of its creative component in particular, is a vivid example of how the state recognised the potential of digital industry growth and development and its impact on overall economic growth, and accordingly created favourable conditions for this for some time. In 2005, the Hi-Tech Park (HTP) was established in Minsk City, representing a special legal regime for companies operating in information technology whose activities correspond, according to the classification, to one or more of over 40 types of economic activity, including those that may fall under the understanding of creative (software development, fundamental and applied research, experimental development in the natural and technical sciences). Under Decree of the President of the Republic of Belarus of 21 December 2017 No. 8, the HTP's special legal status is retained until 1 January 2049. HTP residents have certain tax benefits (on income, VAT, the offshore levy, customs duties, property tax, etc.) [41]; until 2021, employees of HTP resident companies paid personal income tax at a reduced rate of 9%, but will be required to pay the general rate of 13% until 2028 [32]. Attractive business conditions and a certain lack of state interference in the IT sector's activities significantly contributed to its rapid growth; however, as structural statistics show, this growth was concentrated mainly in Minsk City, where IT accounts for up to 80% of output and more than 50% of employment in the creative and cultural sector. By comparison, in the regions, IT sector indicators are among the largest but not dominant, reaching no more than 45% of GVA (in Vitebsk and Grodno regions) and no more than 25% of employment (Minsk region) in the regions' creative and cultural sectors. It is also worth noting that the IT sector received a boost during the COVID-19 pandemic owing to strong growth in demand for digital products and services, so during the pandemic and domestic political instability the sector saw no decline in either output or employment. However, the beginning of Russia's war against Ukraine and Belarus's inclusion on Western and US sanctions

lists caused a mass outflow of companies and IT specialists abroad and, accordingly, a fall in output and employment levels.

No special conditions were created in Belarus for the development of professional activities such as architecture and technical analysis, advertising and public opinion research, and other professional, scientific and technical activities. For some types of professional activity, individuals can register as self-employed (translation, photography, graphic and interior design)<sup>10</sup>. No tax benefits or preferences for these creative and cultural sector activities were introduced during the period under review. In turn, since 2022 a tax on advertisement placement has been introduced, which is paid by advertising agencies placing advertisements on behalf of non-residents of the country. The proceeds from this tax are allocated to meet the needs of state media [40], which, other things being equal, in a certain way undermines competitive conditions for private media organisations and reflects the state's policy priorities regarding this activity, examined in more detail below. The professional activities were presumably resilient to the COVID-19 pandemic; however, output in the advertising industry began to decline after 2020, and in other professional activities in 2022, reflecting a certain vulnerability to external shocks. The architecture and technical analysis activity did not experience a sharp decline during the pandemic and destabilisation period; however, as noted above, its output gradually declined throughout the period under review, presumably mainly owing to a reduction in output in the construction industry.

The development of the cultural industry, publishing and media in Belarus can best be described by the word 'despite'. Considering that the country's socio-cultural context took shape amid a complex historical dualistic legacy, and prior to the domestic political destabilisation of 2020, 'two Belaruses' had formed in the public cultural space: 'state Belarus' and 'people's Belarus', between which there was a divide, though in the pre-pandemic period it was not clear-cut. Whereas the traditional culture of 'state Belarus' was perceived as 'kolkhoz-style, gaudy, low-quality', the emerging 'state counterculture' developed projects that corresponded both to national tradition and to contemporary socio-public challenges (for example, the activity of state theatres). The culture of

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<sup>10</sup> According to the List of Activities Permitted to be Carried Out as Independent Professional Activity, as of 20.11.2024. Source: Ministry of Taxes and Duties of the Republic of Belarus.

'people's Belarus', in turn, was heterogeneous in composition and oriented towards different target audiences. 'Alternative pro-Belarusian culture' primarily raised questions of national self-determination and was aimed more at concerned citizens with a pro-national stance; 'active urban culture' mainly represented the interests of business and cultural figures, though the focus of its events was on issues unrelated to national thought [12]. The COVID-19 pandemic and the political events of 2020 substantially changed the operating conditions for cultural organisations, publishers and media, and the overall result was intensified censorship, gradual state monopolisation of the cultural space with restrictions on the 'state counterculture' and the displacement of 'people's Belarus' culture abroad, pressure on cultural figures and journalists, publishers and non-state media, and cultural institutions, followed by the increase of artificial barriers to their activity within the country [49; 56].

Cultural, publishing and media activities in Belarus have the following features and operating conditions.

1) The overwhelming majority of cultural and media institutions are state-owned: for example, the state owns all professional theatres and circuses, most museums (only 4 out of 157 are private<sup>11</sup>) and concert organisations; a significant number of internet and TV/radio media outlets are also state-owned (86% and 54% respectively) [47]; in 2023, 6 out of the 10 largest publishers of printed matter were also state-owned [29].

2) Cultural, publishing and media activities are subject to extensive state regulation. Besides the Code of the Republic of Belarus on Culture, the main current documents setting out priorities for the development of the cultural industry are the Concept for the Development of the National Cultural Space in All Spheres of Society for 2024–2026 and the State Programme 'Culture of Belarus' for 2021–2025 [38; 44]. A distinctive feature of these documents is that cultural activity is expected, among other things, to foster 'patriotism, respect for state symbols, and orientation towards traditional values', while the influence of cultural globalisation and its 'Westernisation', with the corresponding 'imposition of values', are classed as negative trends and described as 'alien to Belarusian society'. This approach to the cultural industry significantly limits both opportunities for cultural self-expression and the ability to take

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<sup>11</sup> As of 23.07.2024. Source: Register of Museums of the Republic of Belarus.

account of contemporary socio-cultural trends. On the other hand, the supply of goods and services does not always match consumer demand and is not sufficiently competitive on the international market<sup>12</sup>: for example, the State Programme 'Culture of Belarus' for 2021–2025 lists the low competitiveness of cultural products and the low profitability of domestic cinema among the problems in the development of culture and creativity.

3) There are some special tax benefits and preferences for the above listed activities, but far fewer than for the IT industry. Cultural organisations can obtain income tax benefits, but only on income earned from cultural activity; VAT benefits are provided on the sale of goods and services, as well as on the free receipt of cultural valuables, goods and services, and intellectual-property items and rights by cultural organisations and state broadcasting companies; there are exemptions from property tax and land tax for historical and cultural valuables; and workers in some creative and cultural spheres can obtain a deduction against the professional-income tax [51; 53]. However, given the state's dominance in the abovementioned activities, state support for these areas has been and remains comparatively small. The share of consolidated budget expenditure on culture was 1.4%<sup>13</sup> in 2016; but in the subsequent edition, the indicator was removed from the source in question. A similar indicator was used as a proxy for the size of expenditure on culture and media – the share of consolidated budget expenditure on sport, culture and media. Whereas this indicator was 3.5% in 2018, by 2021 it was 2.9%<sup>14</sup>, and, despite the high degree of state regulation, its share is the smallest of all areas of social sphere expenditure, indicating that the development of these activities is not a priority. The culture industries were among those most vulnerable to the COVID-19 pandemic, yet the state took no specific measures to support them [45]. 45

4) Some legislative initiatives restrict the ability of private organisations and individuals to carry out cultural activity. For example, in 2024, activities such as

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<sup>12</sup> According to Input-Output table data, in 2020, 6% of the GVA of the economic activity 'Motion picture, video, sound recording and music production services' was directed to final exports, as was 17% of the GVA of 'Publishing services', and 1% each of the GVA of 'Radio and television broadcasting services', 'Creative, recreation and entertainment services' and 'Library, archive, museum and other cultural institution services'. Source: Belstat.

<sup>13</sup> According to the statistical booklet 'Culture of the Republic of Belarus, 2017'. Source: Belstat.

<sup>14</sup> Since 2022, data on the expenditure of the consolidated budget of the Republic of Belarus by area have not been published. Source: own calculations based on the statistical compendium 'Belarus in Figures, 2022', Belstat.

performing arts and the organisation of cultural and entertainment events were removed from the list of activities permitted for individual entrepreneurs [31]. Since 2022, all organisers of cultural and entertainment events have been required to register in the relevant Register, with possible grounds for refusal of registration including 'the low artistic level of the cultural and entertainment events held by the organiser' or the presence of administrative or criminal liability on the part of the manager under articles most often used to charge participants in protests against the falsification of the 2020 presidential election results, while organisers that are state owned or have a state ownership stake are not included in the Register [42].

5) Growing reputational risks. In connection with Belarus's complicity in Russia's war against Ukraine and the consequences of the suspension of cooperation or withdrawal of foreign companies, a law was adopted in 2023 that in fact permits the import and use of intellectual property items, including audiovisual products, without the permission of copyright holders from so-called 'unfriendly' countries [43]. Since copyright and its protection lie at the heart of the creative and cultural sector, the legalisation of 'grey imports' makes the prospect of resuming legal cooperation with foreign rights holders of creative and cultural goods and services in the future unclear.

The abovementioned conditions for the cultural activities, media and publishing indicate that the state regards these types of economic activity not as commercial industries but as a means of educating citizens and communicating the official position, while at the same time undermining competitive conditions for private organisations and individuals or restricting their scope for activity. Given that, on the one hand, current legislation protects the activity of the state sector in this sphere and creates unequal competitive conditions for private organisations or limits the possibility of their lawful economic activity, while, on the other hand, it fails to fully satisfy user demand, forcing the creation of goods and services to be oriented towards certain legislatively prescribed development directions rather than consumer demand, and ultimately reducing the supply of cultural goods and services, which are of poorer quality and competitiveness and do not fully meet the expectations of final consumers. In addition to reducing economic potential, the measures under consideration limit the scope for non-economic influence and the development of public opinion and culture, which, including in the

context of Russification, could lead to the destruction and degradation of the national creative and cultural space.

In sum, the results of the attempt to assess the size and dynamics of Belarus's creative and cultural sector in 2016–2023 indicate that it is unbalanced, with growth driven mainly by IT. Activities linked to architecture, advertising, professional activity, publishing, media and the arts are, at best, growing more slowly (scientific, technical and professional activity) or are in decline (architectural activity and technical analysis, publishing activity and the cultural industry). There is an imbalance in wages depending on the activity, and Minsk City dominates the regional structure. Although Belarus was a net seller of creative goods and services over the period under review, foreign trade in creative goods was poorly diversified geographically, with Russia most likely the main trading partner. Trade in creative services is closely linked to the IT industry, while the professional and artistic activities occupy a small share, partly explained by their low competitiveness. The modest growth of the share of creative services imports in total services imports may, to some extent, indicate a small market capacity for creative services in Belarus. Nevertheless, it was established that the development of the creative and cultural sector makes a significant contribution to economic development, since it has not only a direct economic impact but also an indirect one, as it is a source of innovation and positively affects the development of related economic activities, and, given the high quality of human capital, deserves attention and support for its development. The development paths of the activities identified in this study as creative and cultural were largely shaped by institutional conditions, and in recent years also by external shocks: some activities were seriously affected by the consequences of the COVID-19 pandemic, and domestic and geopolitical instability carry long-term negative consequences for the creative and cultural sector. Institutional conditions for the creative activities varied: for example, the successful development of the IT sector was due, among other things, to favourable legislative conditions and a certain non-interference by the state in the HTP's activities; the architecture and technical analysis, advertising and market research, and professional, scientific and technical activities had no special preferences or support, but neither did they experience strong state interference; publishing, media and the cultural sphere, despite some tax preferences, are

characterised both by a large share of state institutions on the supply side and by high state regulation, which has intensified since 2020.

This study is a first attempt to identify and assess the size and impact of Belarus's creative and cultural sector on the country's economic development, and to identify general development trends and the factors constraining it. It was carried out on the basis of numerous assumptions and limitations and serves as a foundation for the further development of research into Belarus's creative and cultural sector. Besides the necessary conditions for offsetting the consequences of external shocks by ending geopolitical instability in the region and the persecution of citizens and businesses for their political views, it is necessary first of all to understand the creative and cultural sector not only as a means of influencing society or a source of preserving national culture and traditions, but also its commercial and competitive potential; and for a fuller understanding of the scale and impact of the creative and cultural sector on economic development and further support for its development, the following steps and areas of necessary measures and research should be identified.

1) Definition a national term for the creative and cultural sector of the economy based on international experience and the domestic context, not only from the standpoint of economic feasibility but also taking into account the country's socio-cultural context.

2) Identification of the activities as the creative and cultural sector in accordance with the national definition, and collecting and publishing detailed corresponding statistics on the number of organisations, output, employment, international trade and economic performance, including a breakdown by organisation ownership type, employee gender and region, for a more detailed and in-depth study of the creative and cultural sector's impact on the country's economic development and its contribution to achieving the SDGs, as well as research of the specific factors influencing the development of the country's creative and cultural sector.

3) Revision of the current legislation, taking into account successful international experience and an assessment of the value of the creative and cultural sector, in order to create a safe and competitive environment for the sector's economic agents, regardless of the ownership form of the business entity or the country's region, with guarantees of copyright protection and equal access to sources of financing and state support depending on the potential demand for the creative and cultural goods and services

offered among final consumers, their alignment with priority directions for the activity's development, and their expected competitiveness on domestic and foreign markets. Priority directions for the sector's development should be recommendatory rather than mandatory in nature and should take into account the interests and expectations of the target audience, domestic and global trends, and the preservation and development of national culture and traditions (for the cultural activities). Consideration should be given to the possibility of applying the experience of the HTP's successful development to the creative and cultural sector as a whole to support the promotion of competitive creative and cultural goods and services on international markets.

4) Study of existing financing opportunities for representatives of the creative and cultural sphere with a view to improving legislation and ensuring access to financing that takes account of the specific nature of the sector's activity.

5) Development of a research base and collecting data to study consumption, interests and preferences regarding creative and cultural sector goods and services among users (households and organisations), and tracking trends over time.

6) Assessment of the size of the Belarusian creative and cultural sector abroad, mainly in the countries that have become most popular destinations for the emigration of creative and cultural sector representatives since 2020, and studying the experience of the Belarusian diaspora employed in this sphere, and the reasons for the success or failure of their activity in the creative and cultural sphere.

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**Table A1. Definitions of the creative and cultural sector (creative and cultural industries) term in the legislation of selected countries**

| Country    | National definition                                                                                                                                                                                                                                                                                                                                                                            | Source                                                                                                                                                                                                                                                                               |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lithuania  | <i>'Cultural and creative industries'</i> means cross-sectoral economic activities based on cultural content and creativity, resulting in the creation of tangible products and intangible intellectual or cultural services of cultural, creative, social, or economic value.                                                                                                                 | Republic of Lithuania Law on The Cultural Policy Framework: June 18, 2024, No XIV-2762                                                                                                                                                                                               |
| Latvia     | <i>Cultural and Creative Industries</i> are activities, based on individual and collective creativity, skills and talents, which by way of generating and utilizing intellectual property, are able to increase welfare and create jobs. Creative industries generate, develop, produce, utilize, display, disseminate, and preserve products of economic, cultural and/or recreational value. | Ministry of Culture of the Republic of Latvia: the term was for the first time included in the Guidelines for the State Cultural Policy of Latvia for 2006 – 2015 and was reviewed while preparing the Information Report on creative industries and their policy in Latvia in 2008. |
| Ukraine    | <i>"Creative industries"</i> is types of economic activity that aim to create added value and jobs through cultural (artistic) and/or creative expression.                                                                                                                                                                                                                                     | Law of Ukraine 'On Culture', as last amended on 6 October 2024, No. 3792-IX                                                                                                                                                                                                          |
| Russia     | <i>A creative industry</i> is an economic activity directly linked to the creation, promotion and/or realisation of a creative product that possesses uniqueness and economic value.                                                                                                                                                                                                           | Federal Law 'On the Development of Cultural (Creative) Industries in the Russian Federation' of 8 August 2024, No. 330-FZ                                                                                                                                                            |
| Kazakhstan | <i>Creative industries</i> – industries involved in the creation, production, reproduction and mass distribution of the creative activity results by individuals or legal entities                                                                                                                                                                                                             | Law 'On Culture' of the Republic of Kazakhstan of 15 December 2007, No. 207, as last amended on 8 June 2024                                                                                                                                                                          |
| Kyrgyzstan | <i>The creative industry</i> is type of the economic activity based on creativity and creation of products of intellectual property with use of talent, innovations, technologies, cultural heritage of which goods, the                                                                                                                                                                       | About the Park of the creative industries: Law of The Kyrgyz Republic, August 8, 2022 No 88                                                                                                                                                                                          |

| Country    | National definition                                                                                                                                                                                                                                                                            | Source                                                                                |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|            | work, service having economic value are result.                                                                                                                                                                                                                                                |                                                                                       |
| Uzbekistan | <i>The creative industry</i> is the set of the types of economic activity connected with creation, production, storage, distribution and promotion of goods (works, services) based on the priority of creativity, mental abilities, and also intellectual property and having economic value. | About creative economy: Law of The Republic of Uzbekistan, October 3, 2024 No ZRU-970 |

Source: author's compilation based on [1; 2; 22; 27; 35; 36; 46].

**Table A2. Types of economic activity included in the creative and cultural sector by selected countries under their legislation**

| Type of economic activity                                                                | Lithuania | Latvia | Ukraine | Russia | Kazakhstan | Kyrgyzstan | Uzbekistan |
|------------------------------------------------------------------------------------------|-----------|--------|---------|--------|------------|------------|------------|
| Manufacture of jewellery, bijouterie and related articles                                | +         |        | +       | +      | +          | +          |            |
| Manufacture of musical instruments                                                       |           |        | +       | +      |            | +          |            |
| Fashion activities                                                                       |           |        |         | +      | +          |            | +          |
| Manufacture of games and toys                                                            | +         |        |         | +      |            | +          |            |
| Gastronomy activities                                                                    |           |        |         | +      |            |            |            |
| Craft activities                                                                         | +         |        |         | +      | +          | +          | +          |
| Publishing of books, newspapers, periodicals and other publishing activities             | +         | +      | +       | +      |            | +          | +          |
| Publishing of computer games and/or software                                             | +         | +      | +       | +      | +          | +          | +          |
| Production, editing, distribution and screening of video films and television programmes | +         | +      | +       | +      | +          | +          | +          |
| Publishing of sound recordings and music                                                 | +         | +      | +       | +      | +          | +          | +          |
| Radio and television broadcasting activities                                             | +         | +      | +       | +      | +          |            | +          |
| Computer programming and consultancy services                                            | +         | +      | +       | +      | +          | +          | +          |
| Activities of news agencies and public relations                                         | +         |        | +       | +      |            |            | +          |
| Architectural activities                                                                 | +         | +      | +       | +      | +          | +          | +          |
| Research activities in the social sciences and humanities                                | +         |        | +       |        |            |            |            |
| Activities of advertising agencies and media advertising placement intermediation        | +         | +      | +       | +      |            | +          | +          |

| Type of economic activity                                                                                                | Lithuania | Latvia | Ukraine | Russia | Kazakhstan | Kyrgyzstan | Uzbekistan |
|--------------------------------------------------------------------------------------------------------------------------|-----------|--------|---------|--------|------------|------------|------------|
| Other professional services<br>(design, photography, translation)                                                        | +         | +      | +       | +      | +          | +          | +          |
| Education in the sphere of culture                                                                                       | +         | +      | +       | +      |            | +          | +          |
| Theatre and concert activities,<br>their support activities, and the<br>operation of theatres and concert<br>halls       | +         | +      | +       | +      | +          | +          | +          |
| Arts activities                                                                                                          | +         | +      | +       | +      | +          | +          | +          |
| Activities of libraries, archives,<br>museums, historical and cultural<br>valuables, and entertainment<br>establishments | +         | +      | +       | +      | +          | +          | +          |

*Notes. 1. Category names are generalised and do not reflect the exact names of economic activities under the NACE Rev. 2 classification. 2. The list is presented without certain economic activities whose inclusion in the creative and cultural sector is a unique practice of individual countries.*

*Source: author's compilation based on [1; 2; 4; 27; 33; 34; 37].*

**Table B1. List of Belarus's economic activities under the NACE Rev. 2 classification that may fall under the definition of the creative and cultural sector**

| NACE code | Name                                                                       | Availability of publicly accessible data |            |
|-----------|----------------------------------------------------------------------------|------------------------------------------|------------|
|           |                                                                            | GVA                                      | Employment |
| 32.1      | Manufacture of jewellery, bijouterie and related articles                  | –                                        | –          |
| 32.2      | Manufacture of musical instruments                                         | –                                        | –          |
| 32.4      | Manufacture of games and toys                                              | –                                        | –          |
| 58.1      | Publishing of books, periodicals and other publishing activities*          | +                                        | +          |
| 58.2      | Software publishing, incl. computer games*                                 |                                          |            |
| 59.1      | Motion picture, video and television programme activities *                | +                                        | +          |
| 59.2      | Sound recording and music publishing activities*                           |                                          |            |
| 60.1      | Radio broadcasting*                                                        | +                                        | +          |
| 60.2      | Television programming and broadcasting activities*                        |                                          |            |
| 62.0      | Computer programming, consultancy and related activities*                  | +                                        | +          |
| 63.1      | Data processing, hosting and related activities; web portals*              | +                                        |            |
| 63.91     | News agency activities*                                                    |                                          |            |
| 71.1      | Architectural and engineering activities and related technical consultancy | +                                        | –          |
| 72.2      | Research and experimental development on social sciences and humanities    | –                                        | –          |
| 73.1      | Advertising                                                                | +                                        | –          |
| 73.2      | Market research and public opinion polling                                 |                                          | –          |
| 74.1      | Specialised design activities                                              | –                                        | –          |
| 74.2      | Photographic activities                                                    | –                                        | –          |
| 74.3      | Translation and interpretation activities                                  | –                                        | –          |
| 85.52     | Cultural education                                                         | –                                        | –          |
| 90.0      | Creative, arts and entertainment activities                                | +                                        | +          |
| 91.0      | Libraries, archives, museums and other cultural activities                 | +                                        | +          |

Notes: 1. Where certain economic activities are combined, this means that the data for them are aggregated, with no separate data available for each one. 2. \* – statistics for the economic activity are published up to and including 2022.

Source: own compilation based on [28] and Belstat data.

## Methodology the Input-Output model calculation

The methodology presented here was prepared based on [11; 29].

The Input-Output tables at basic prices published by Belstat have three quadrants – the intermediate consumption quadrant, the final consumption quadrant, and the gross output quadrant – and are presented as follows.

**Table C1. Structure of the Input-Output table**

|                                       | Industry 1 | Industry n | Final consumption expenditure | Use of goods and services |
|---------------------------------------|------------|------------|-------------------------------|---------------------------|
| Industry 1                            | $a_{11}$   | $a_{1n}$   | $F_1$                         | $X_1$                     |
| Industry n                            | $a_{n1}$   | $a_{nn}$   | $F_n$                         | $X_n$                     |
| Net expenditure on goods and services | $T_1$      | $T_n$      | –                             | –                         |
| Gross value added                     | $Y_1$      | $Y_n$      | –                             | –                         |
| Gross output                          | $X_1$      | $X_n$      | –                             | –                         |

Source: own compilation based on [11; 29].

The columns of the table represent the industries consuming goods and services, and the rows represent the supplying industries; accordingly, the value  $a_{ij}, i = \overline{1, n}, j = \overline{1, n}$  reflects the intermediate consumption of industry i's output by industry j at basic prices. Accordingly, the sum of the intermediate consumption elements by column reflects the volume of output used by industries in their own production, while the sum of the elements by row reflects the volume of output produced by industries and consumed by other industries in their own production. The intermediate consumption elements form the first quadrant – the intermediate consumption matrix. By adding to the economy's sectors' intermediate consumption expenditure the net expenditure on goods and services used, which includes transport and trade margins as well as taxes on goods and services used less subsidies, an estimate of consumption at purchaser prices is obtained.

The second quadrant – the final consumption expenditure quadrant – includes the expenditure of final consumers – households, government and non-profit organisations – gross fixed capital formation, changes in inventories, and exports of goods and services.

The sum of the output of the economy's industries used in intermediate consumption and final consumption expenditure gives the total use of goods and services of the economy's industries.

The third quadrant – the gross-output quadrant – is represented by the elements of gross value added, including: employee compensation, taxes on production and imports less subsidies, consumption of fixed capital, and net profit and net mixed income. The volume of use by the economy's sectors of goods and services from other sectors of the economy for their own production, plus gross value added, reflects the gross output of the economy's sectors at basic prices.

To calculate the total cost coefficients – the output multipliers – it is needed to note their division into two types. Type I, in terms of the total cost effect, implies the influence of the direct and indirect effects of an increase in production costs; Type II, in addition to the direct and indirect effects, also takes into account the induced effect – the impact of an increase in household spending on consumption of goods and services:

$$Total\ cost\ effect_I = \frac{Direct\ effect + Indirect\ effect}{Direct\ effect}; \quad (1)$$

$$Total\ cost\ effect_{II} = Total\ cost\ effect_I + \frac{Induced\ effect}{Direct\ effect}. \quad (2)$$

The direct-cost matrices take the following form:

$$\text{Type I: } A = \begin{pmatrix} a_{ii} & a_{ij} \\ a_{ji} & a_{jj} \end{pmatrix}, \quad (3)$$

where the elements of the matrix reflect the share of intermediate consumption of industry  $i$ 's output in the gross output of industry  $j$ ;

$$\text{Type II: } A = \begin{pmatrix} a_{ii} & a_{ij} & a_{ih} \\ a_{ji} & a_{jj} & a_{jh} \\ a_{hi} & a_{hj} & a_{hh} \end{pmatrix}, \quad (4)$$

where household indicators are added to intermediate consumption: in column  $h$ , households' final expenditure, and in row  $h$ , compensation of employees. Accordingly, the elements of the final household expenditure column reflect the share of total household expenditure spent on consuming the output of each sector of the economy, while the elements of the row reflect the share of wages paid to employees in the sectors of the economy in total output. The intersection of the household expenditure column and the

wage share row –  $a_{hh}$  – is by default equal to 0. Thus, the direct effect, or the direct cost coefficient of production for industry  $j$ , is calculated as the sum of the intermediate consumption elements of industry  $j$ , and for Type II excluding employee compensation.

The following calculation steps are identical for both types of multiplier. According to the Leontief model, total output  $X$  consists of intermediate consumption  $AX$  and final consumption expenditure  $F$ , and in matrix form takes the following form:

$$X = AX + F, \quad (5)$$

$$F = X - AX, \quad (6)$$

$$F = X(E - A), \quad (7)$$

$$X = (E - A)^{-1}F, \quad (8)$$

where  $E$  is the identity matrix. The final consumption multiplier matrix, or the inverse Leontief matrix denotes as  $L = (E - A)^{-1}$  and reflects the exogenous total effect of the impact of a change in demand on the output of the economy's industries. Accordingly, the total effect, or the industry's output multiplier, shows by how many monetary units the economy's gross output increases when the industry's production costs increase by one monetary unit, and is calculated as the sum of the elements of column  $j$  of the multiplier matrix, for the Type II multiplier excluding the compensation of employees elements:

$$X_{mult} = \sum_{n=1}^j l_{ij}. \quad (9)$$

Let us assume that  $y_j = \frac{Y_j}{X_j}$  reflects the share of gross value added in the gross output of industry  $j$ . Then the gross value added multiplier of industry  $j$  is calculated as follows:

$$Y_{mult} = \frac{\sum_{n=1}^j l_{ij} y_i}{y_j}, \quad (10)$$

and reflects the change in the industry's gross value added given a one monetary unit increase in gross value added across all sectors of the economy. Accordingly, the gross value added effect takes the following form:

$$Y_e = \sum_{n=1}^j l_{ij} y_i, \quad (11)$$

and denotes the number of monetary units added to total gross value added when demand for industry  $j$ 's output increases by one monetary unit.

The results of the Input-Output model calculations should be treated with caution, as they involve certain assumptions and limitations: 1) the relationships between industries' intermediate consumption, final consumption and supply are linear; 2) all sectors of the economy use the same production technology; 3) the calculation results reflect only the direct economic effect and do not provide an assessment of indirect effects, such as the spillover of technology and innovation or the growth of cultural value.

## Fundamentals of CGE modelling

The CGE model relies on the assumption of market equilibrium and is aimed at analysing long-term changes in the economy resulting from external shocks. In the system, resources are limited, and economic agents compete for them; markets are assumed to be competitive. This appendix presents a description of the model's main equations.

### Activities

This sector produces goods and services consumed by producing industries, households and government, as well as goods and services acquired as part of investment demand and supplied for export. The function for the intermediate consumption of product  $i$  by industry  $j$  is described by a Leontief production function:

$$IO_{i,j} = \theta_{i,j}^{IO} q_j^{IO}, \quad (12)$$

where  $\theta_{i,j}^{IO}$  is the share of product  $i$  used in the intermediate consumption of industry  $j$ , and  $q_j^{IO}$  is the total volume of intermediate consumption by industry  $j$ .

Condition for the correspondence of industry  $j$ 's intermediate consumption to the sum of all components of industry  $j$ 's intermediate consumption:

$$p_j^{IO} q_j^{IO} = \sum_{i=1}^N p_i IO_{i,j}, \quad (13)$$

where  $p_j^{IO}$  is the price of intermediate consumption in industry  $j$  (equal to 1 in the initial state),

$p_i$  is the sale price of product  $i$  (equal to 1 in the initial state).

Intermediate consumption in the output of industry  $j$  – the Leontief function:

$$q_j^{int} = \theta_j^{int} q_j^A, \quad (14)$$

where  $\theta_j^{int}$  is the share of intermediate consumption in the output of industry  $j$ , and  $q_j^A$  is the output volume of industry  $j$ .

Value added in the output of industry  $j$  – the Leontief function:

$$q_j^{VA} = \theta_j^{VA} q_j^A, \quad (15)$$

$\theta_j^{VA}$  is the share of value added in the output of industry  $j$ .

Breakeven condition for industry  $j$ 's output:

$$(1 - t_j^A) p_j^A q_j^A = p_j^{VA} q_j^{VA} + p_j^{IO} q_j^{IO}, \quad (16)$$

where  $t_j^A$  is the production tax rate in industry  $j$ .

## Factors market

In the factors market, factors of production – labour and capital – are accumulated and subsequently redistributed among the industries of activities sector. The sector accumulates income received from the factors of production and redistributes it between households and government. The sector also interacts with the external sector through transfers of factors of production.

The distribution of the use of factors of production in industry  $j$  is based on a CES production function. The condition for maximising the efficiency of labour use in industry  $j$ :

$$L_j = \frac{q_j}{A_j} \left( \frac{\delta_j}{w_L} \right)^{\varepsilon_j} \left[ \delta_j^{\varepsilon_j} w_L^{1-\varepsilon_j} + (1 - \delta_j)^{\varepsilon_j} w_K^{1-\varepsilon_j} \right]^{\frac{\varepsilon_j}{1-\varepsilon_j}}, \quad (17)$$

the condition for maximising the efficiency of capital use in industry  $j$ :

$$K_j = \frac{q_j}{A_j} \left( \frac{1 - \delta_j}{w_K} \right)^{\varepsilon_j} \left[ \delta_j^{\varepsilon_j} w_L^{1-\varepsilon_j} + (1 - \delta_j)^{\varepsilon_j} w_K^{1-\varepsilon_j} \right]^{\frac{\varepsilon_j}{1-\varepsilon_j}}, \quad (18)$$

where  $L_j$  is the volume of labour used by industry  $j$ ,

$w_L$  is the price of labour (equal to 1 in the initial state),

$K_j$  is the volume of capital used by industry  $j$ ,

$w_K$  is the price of capital (equal to 1 in the initial state),

$\varepsilon_i$  is the elasticity of substitution of factors.

Breakeven condition for the factors of production:

$$p_j^{VA} q_j^{VA} = w_L L_j + w_K K_j, \quad (19)$$

## Commodities market

The commodities market supplies goods and services both for intermediate consumption of activities sector and for final consumption by households, government, and investment demand, and also supplies goods and services for export and places imported goods and services on the market.

Condition for the allocation of product  $i$  produced by industry  $j$ :

$$q_i^D = \sum_{j=1}^N \theta_{j,i} q_j^A, \quad (20)$$

Condition for setting the price of product  $i$  produced by industry  $j$ :

$$p_i^D = \sum_{j=1}^N \theta_{j,i} p_j^A, \quad (21)$$

where  $\theta_{j,i}$  is the allocation coefficient.

## External sector

The external sector purchases the country's exports and supplies imported goods and services to the country, is linked to the factors sector, households and government through bilateral transfers, and forms savings in the savings and investment sector.

The export price of product  $i$  is set as follows:

$$p_i^E = \overline{pw_i^E} EXR, \quad (22)$$

where  $\overline{pw_i^E}$  is the world export price of product  $i$  (equal to 1 in the initial state),

$EXR$  is the exchange rate (units of foreign currency per unit of domestic currency, equal to 1 in the initial state).

The distribution of produced output between exports and domestic consumption is described by a CET function. The condition for maximising the efficiency of exports of product  $i$  is accordingly defined as:

$$E_i = \frac{q_i^D}{A_i^E} \left( \frac{\delta_i^E}{p_i^E} \right)^{\varepsilon_i^E} \left[ \delta_i^{E\varepsilon_i^E} p_i^{E1-\varepsilon_i^E} + (1 - \delta_i^E)^{\varepsilon_i^E} p_i^{DD1-\varepsilon_i^E} \right]^{\frac{\varepsilon_i^E}{1-\varepsilon_i^E}}, \quad (23)$$

the condition for maximising the efficiency of the allocation of domestic consumption of product  $i$  is defined as:

$$q_i^{DD} = \frac{q_i^D}{A_i^E} \left( \frac{1 - \delta_i^E}{p_i^{DD}} \right)^{\varepsilon_i^E} \left[ \delta_i^E \varepsilon_i^E p_i^{E1 - \varepsilon_i^E} + (1 - \delta_i^E)^{\varepsilon_i^E} p_i^{DD1 - \varepsilon_i^E} \right]^{\frac{\varepsilon_i^E}{1 - \varepsilon_i^E}}, \quad (24)$$

where  $\delta_i^E$  is the export share in finished output,

$A_i^E$  is the export efficiency parameter,

$\varepsilon_i^E$  is the elasticity of technical substitution for exports,

$p_i^{DD}$  is the price of domestic consumption of product  $i$  produced in the country.

Breakeven condition for domestically produced commodity  $i$ :

$$p_i^D q_i^D = p_i^E E_i + p_i^{DD} q_i^{DD}. \quad (25)$$

Import prices are set as follows:

$$p_i^M = (1 + t_i^M) \overline{p w_i^M} EXR, \quad (26)$$

$\overline{p w_i^M}$  is the world import price of product  $i$  (equal to 1 in the initial state),

$t_i^M$  is the import tax rate on product  $i$ .

Trade and transport margins are accounted for in the final sale prices of product  $i$ :

$$p^{margin} = \sum_{i=1}^N sh_i^{margin} p_i, \quad (27)$$

where  $sh_i^{margin}$  is the share of trade and transport costs generated by demand for product  $i$ .

The distribution of consumed output between imports and domestic consumption is described by an Armington function. The condition for maximising the efficiency of the allocation of imports of product  $i$ :

$$M_i = \frac{q_i}{A_i^M} \left( \frac{\delta_i^M}{p_i^M} \right)^{\varepsilon_i^M} \left[ \delta_i^M \varepsilon_i^M p_i^{M1 - \varepsilon_i^M} + (1 - \delta_i^M)^{\varepsilon_i^M} \left( (1 + t_i^c) p_i^{DD1 - \varepsilon_i^M} \right) \right]^{\frac{\varepsilon_i^M}{1 - \varepsilon_i^M}}, \quad (28)$$

the condition for maximising the efficiency of the allocation of domestic consumption:

$$q_i^{DD} = \frac{q_i}{A_i^M} \left( \frac{1 - \delta_i^M}{(1 + t_i^c) p_i^{DD}} \right)^{\varepsilon_i^M} \left[ \delta_i^M \varepsilon_i^M p_i^{M1 - \varepsilon_i^M} + (1 - \delta_i^M)^{\varepsilon_i^M} \left( (1 + t_i^c) p_i^{DD1 - \varepsilon_i^M} \right) \right]^{\frac{\varepsilon_i^M}{1 - \varepsilon_i^M}}, \quad (29)$$

where  $\delta_i^M$  is the import share in consumed output,

$A_i^M$  is the import efficiency parameter,

$\varepsilon_i^M$  is the elasticity of technical substitution for imports,

$t_i^C$  is the sales tax rate on product  $i$ .

Commodity  $i$ 's domestic consumption breakeven condition:

$$p_i q_i = p^{margin} t_i^{margin} q_i + p_i^M M_i + (1 + t_i^C) p_i^{DD} q_i^{DD}, \quad (30)$$

where  $t_i^{margin}$  is the trade and transport cost rate for product  $i$ .

Trade balance equation:

$$\begin{aligned} M_i \overline{pw_i^M} EXR + trf^{RoWLab} EXR + trf^{RoWCap} EXR + trf^{RoWHH} EXR + trf^{RoWGov} EXR = \\ E_i \overline{pw_i^E} EXR + trf^{LabRoW} EXR + trf^{CapRoW} EXR + trf^{HHRoW} EXR + trf^{GovRoW} EXR + \overline{S^{RoW}} EXR, \end{aligned} \quad (31)$$

where  $trf^{RoWLab}$ ,  $trf^{RoWCap}$ ,  $trf^{RoWHH}$ ,  $trf^{RoWGov}$  are the transfers of factors of production (labour and capital) from the economy to the external sector, and transfers to the external sector from the households and government,

$trf^{LabRoW}$ ,  $trf^{CapRoW}$ ,  $trf^{HHRoW}$ ,  $trf^{GovRoW}$  are transfers of factors of production (labour and capital) from the external sector to the households and government respectively,

$\overline{S^{RoW}}$  is the external sector's savings in the savings and investment sector, a fixed value.

## Households

Households are the owners of labour and capital. Households' gross income consists of wages, rent, net transfers from the external sector, and transfers from government:

$$\begin{aligned} Y^{HH} = w_L \bar{L} + trf^{LabRoW} EXR - trf^{RowLab} EXR + \\ + sh^{CapHH} (w_K \bar{K} + trf^{CapRoW} EXR - trf^{RowCap} EXR) + \\ + trf^{HHRow} EXR - trf^{RowHH} EXR + \\ + trf^{HHGov} CPI, \end{aligned} \quad (32)$$

where  $\bar{L}$  is the labour supply in the economy,

$sh^{CapHH}$  is the household share in the distribution of rent,

$\bar{K}$  is the capital supply in the economy, a fixed value,

$trf^{HHGov}$  is government transfers to households.

Households' income is allocated to consumption, savings and income tax. The function for households' consumption of product  $i$ :

$$p_i h_i = \alpha_i^{HH} (1 - t^{YHH}) (1 - mps) Y^{HH}, \quad (33)$$

where  $h_i$  is the volume of final household consumption of product  $i$ ,

$\alpha_i^{HH}$  is the share of income spent by households on product  $i$ ,

$mps$  is households' marginal propensity to save,

$t^{YHH}$  is the income tax rate.

Households' savings function:

$$S^{HH} = mps (1 - t^{YHH}) Y^{HH}. \quad (34)$$

The change in the consumer price level in the economy is described by the following equation:

$$CPI = \sum_{i=1}^N \gamma_i^{CPI} p_i, \quad (35)$$

where  $\gamma_i^{CPI}$  is the share of product  $i$ 's contribution to the overall change in consumer prices in the economy.

The Cobb-Douglas function describing households' welfare:

$$U = \prod_{i=1}^N h_i^{\alpha_i^{HH}}. \quad (36)$$

## Government

Government's income consists of tax revenue from producers, sellers and households, capital rent, and net transfers from the rest of the world sector:

$$\begin{aligned} Y^{Gov} = & t^{YHH} Y^{HH} + \sum_{i=1}^N t_i^M M_i \overline{pw_i^M} EXR + \sum_{j=1}^N t_j^A p_j^A q_j^A + \sum_{i=1}^N t_i^C p_i^{DD} q_i^{DD} + \\ & + sh^{CapGov} (w_K \overline{K} + trf^{CapRow} EXR - trf^{RowCap} EXR) + \\ & + trf^{GovRow} EXR - trf^{RowGov} EXR - \\ & - trf^{HHGov} CPI, \end{aligned} \quad (37)$$

where  $sh^{CapGov}$  is the government's share in the distribution of capital rent.

Government's income is allocated to consumption and savings. The function for government consumption of product  $i$ :

$$p_i g_i = \alpha_i^{Gov} (Y^{Gov} - \overline{S^{Gov}} CPI), \quad (38)$$

where is  $g_i$  the volume of final government consumption of product  $i$ ,  
 $\alpha_i^{Gov}$  is the share of income spent by government on product  $i$ ,  
 $\overline{S^{Gov}}$  is government savings, which has a fixed value.

## Savings and investment sector

The savings and investment sector accumulates the savings of households, government and the external sector and invests them in capital formation. The function for investment in the acquisition of product  $i$  for capital formation takes the following form:

$$p_i inv_i = \alpha_i^{inv} \left( S^{HH} + \overline{S^{Gov}} + \overline{S^{RoW}} EXR \right), \quad (39)$$

where  $inv_i$  is the volume of product  $i$  acquired for capital formation,  
 $\alpha_i^{inv}$  is the share of investment spent on acquiring product  $i$  for capital formation.

## Market equilibrium

Equilibrium equation for the market of product  $i$ :

$$\sum_{j=1}^N IO_{i,j} + h_i + g_i + inv_i = q_i, \quad (40)$$

Equilibrium equation for the labour market:

$$\sum_{j=1}^N L_j = \overline{L}, \quad (41)$$

Equilibrium equation for the capital market:

$$\sum_{j=1}^N K_j = \overline{K}. \quad (42)$$

The limitations of the model presented are its static nature, as in the case of the Input-Output model, and the impossibility of interpreting the effects of external shocks over time. Also, the final results depend on the chosen year and on the quality and completeness of the input data. Despite the non-linearity of the relationships between sectors of the economy, the CGE model is unable to capture the indirect impact of changes or to assess the non-economic externalities of the creative and cultural sector.