



IT RESEARCH UKRAINE 2023: ADAPTABILITY AND RESILIENCE AMIDST WAR



IT RESEARCH UKRAINE

The only comprehensive and detailed study of the tech industry in Ukraine during the war, which will provide an understanding of the current market situation today and a forecast for the future development of the industry in order to:



implement changes and make informed business decisions based on precise analytical data



optimize business processes and investments



select the right trajectory for company growth



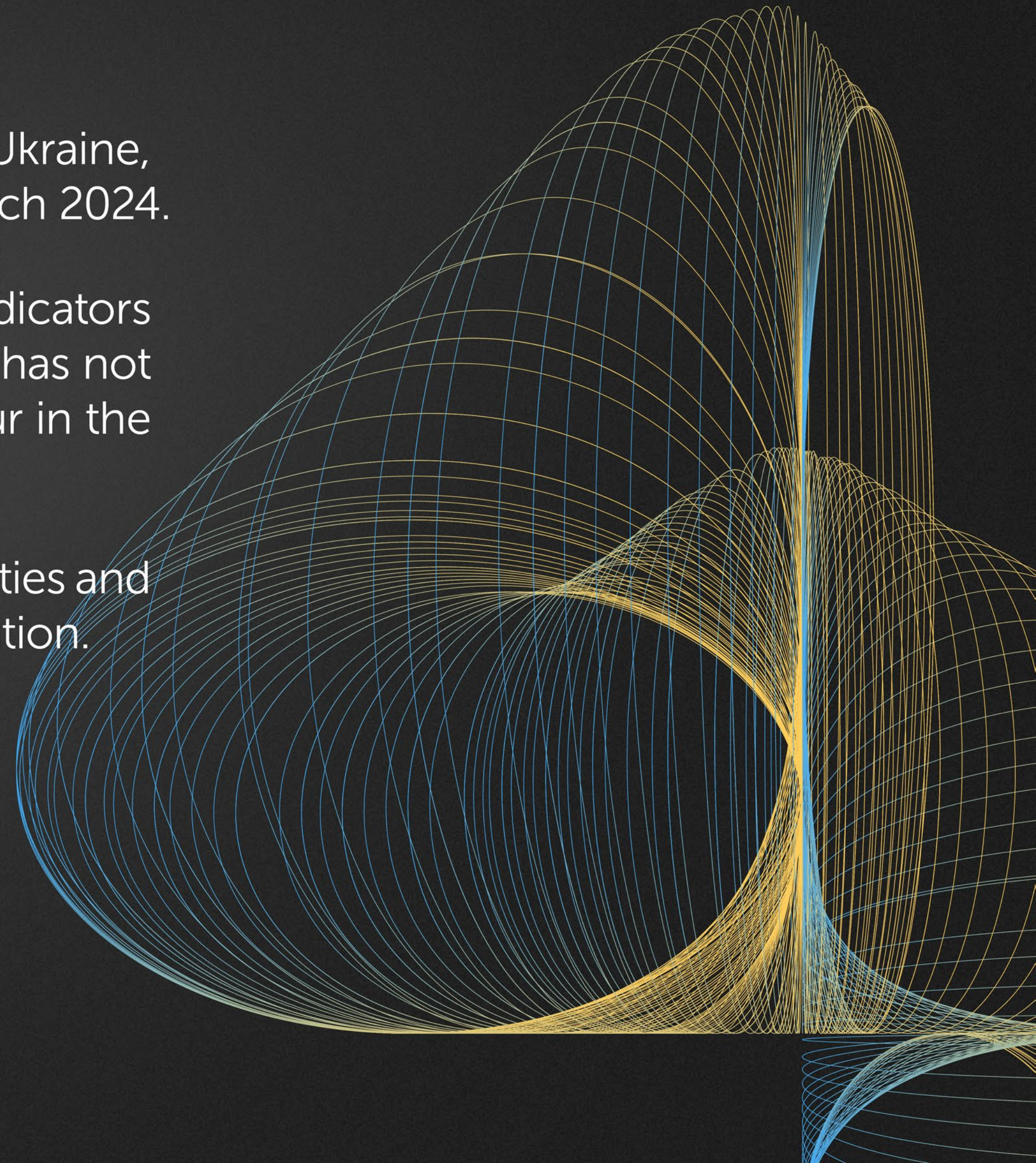
evaluate potential risks and prepare for new challenges



According to the response from State Statistics Service of Ukraine, official data for Ukraine's GDP in 2023 will be published by March 2024.

As of the data collection and preparation of macroeconomic indicators calculation and research report publication, the reporting year has not concluded. Consequently, changes and adjustments may occur in the balance of payments.

Properly calculating the economic impact of the industry's activities and all derived indicators is impossible for year-over-year representation.



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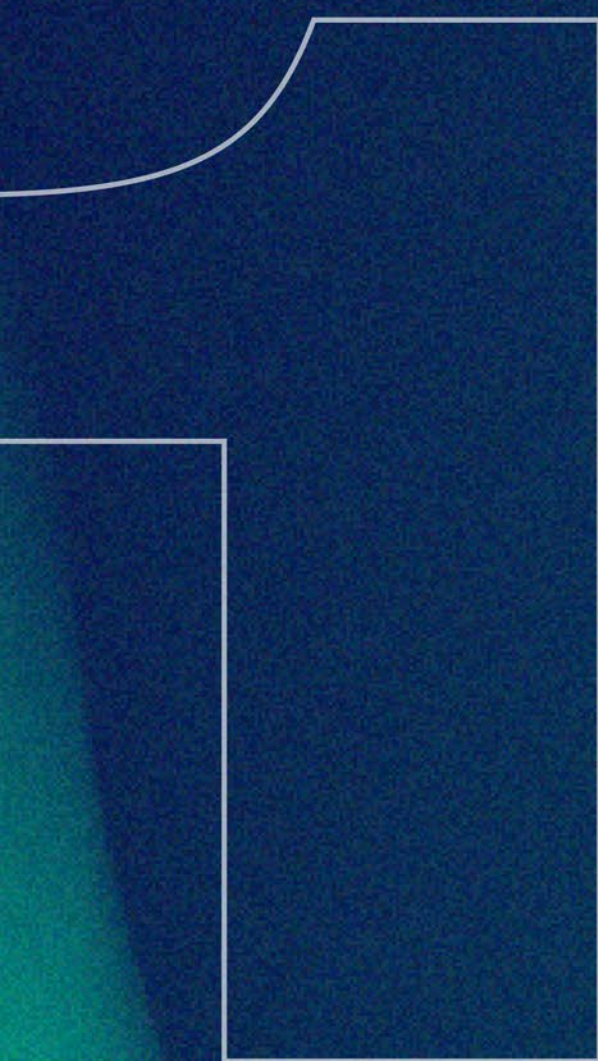
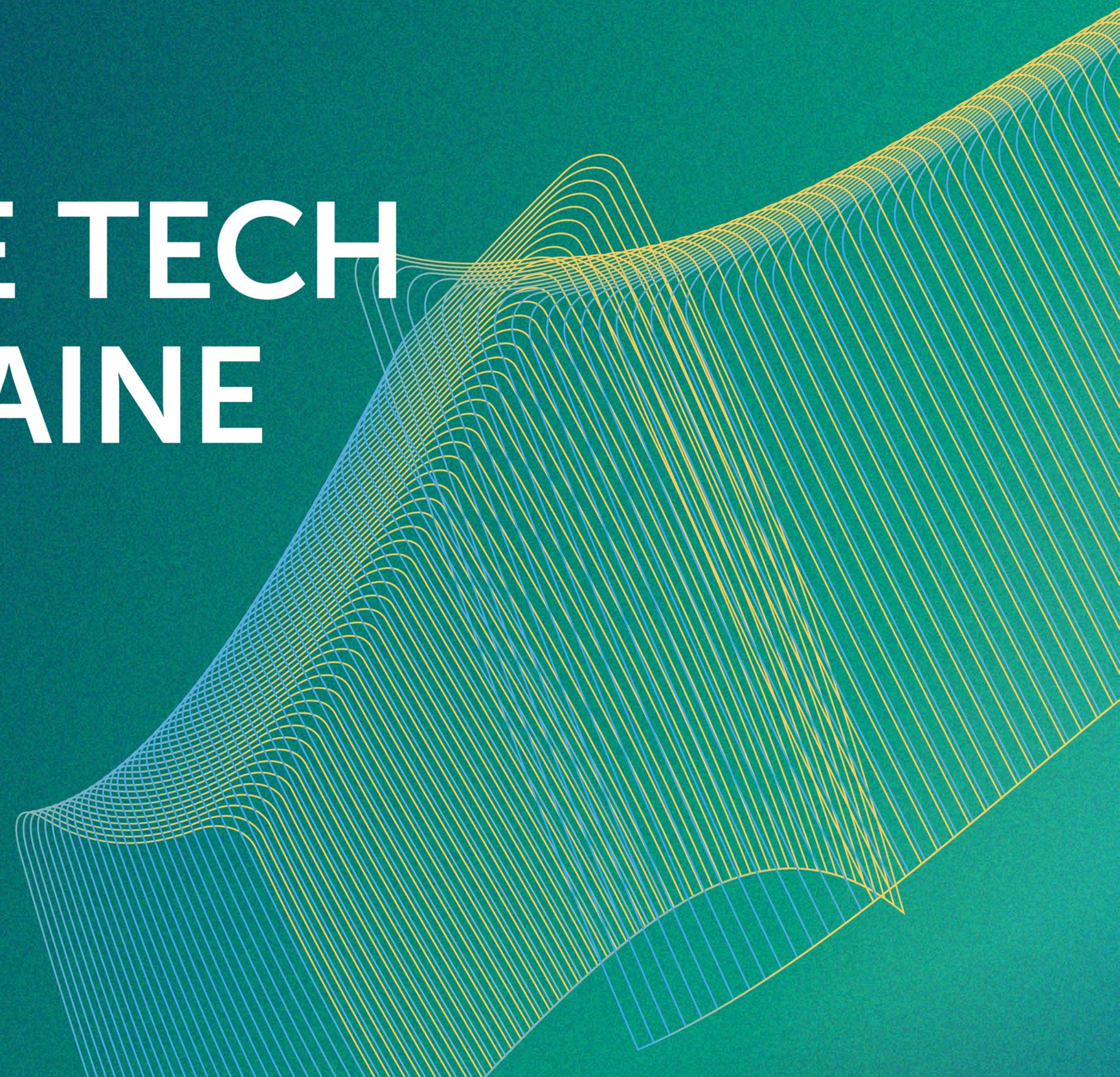
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OVERVIEW OF THE TECH INDUSTRY IN UKRAINE



1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.1 Key Indicators

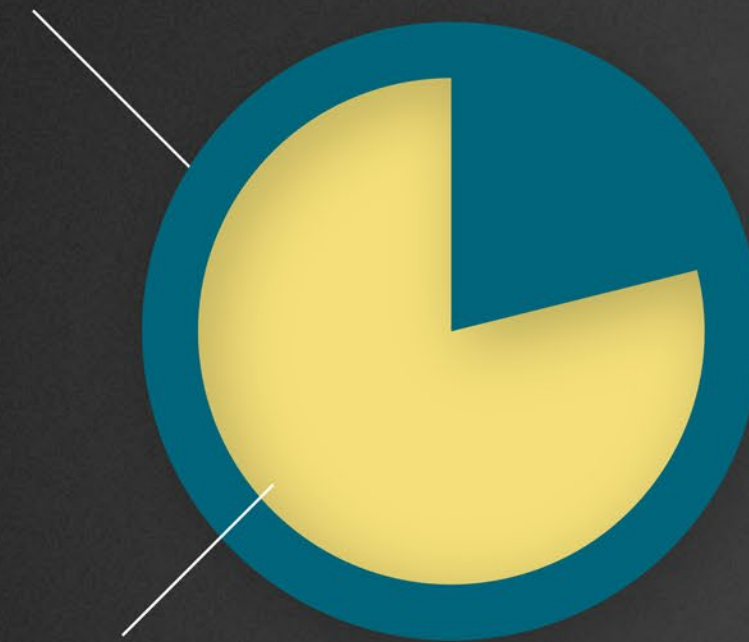
Ukraine's tech potential redefines global market

307 K

tech specialists

2 150

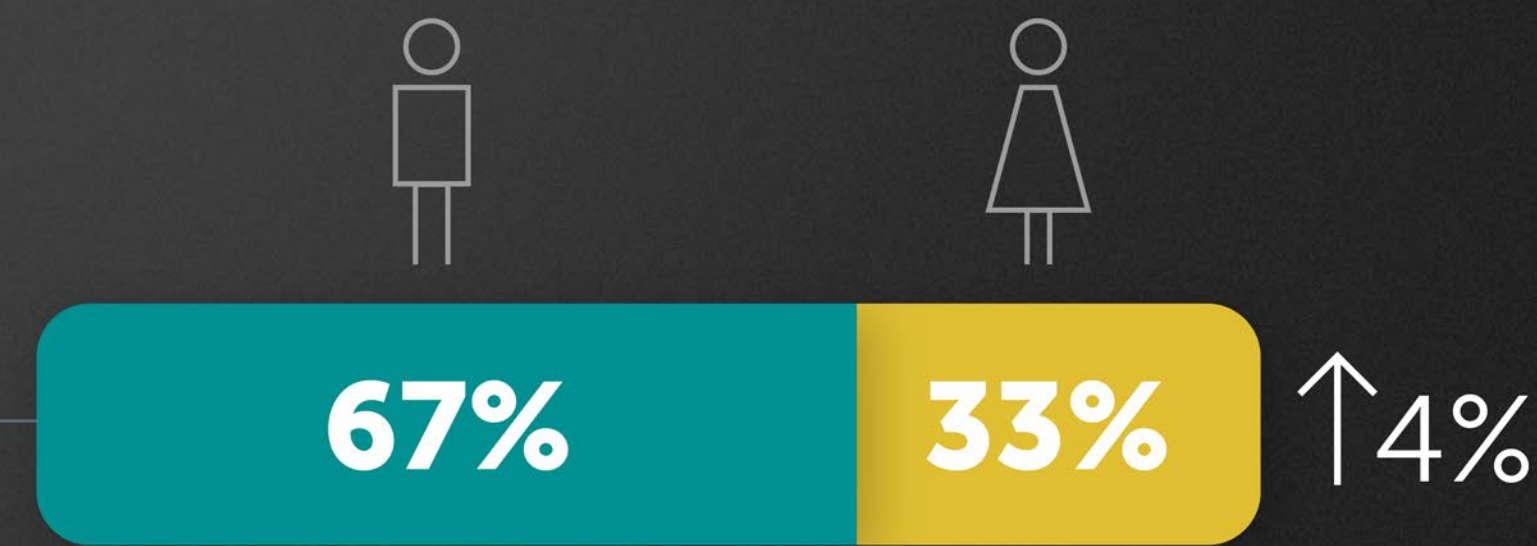
active verified tech companies in Ukraine*



among technical specialists, every fifth individual is a woman

242 K***

based in Ukraine



29% women in C-level positions

* Tech companies are companies that provide information and computer services, including the delivery of software products, consulting services related to software development, software testing, business analysis, and other types of consulting services related to information or computer technologies. The following types of companies are excluded from consideration: internet service providers, computer hardware stores, and institutions that involve tech specialists in their activities but whose end product is not the aforementioned services. For calculation and verification purposes, the focus is on active tech companies based on the indication of a single commercial brand or name. Therefore, if a company is registered as several LLCs, it is counted as one unit. This approach is also applied to large service companies, taking into account products that are fully or partially part of the business.

** As of August 2023.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.1 Key Indicators



* As of August 2023.

** As of May 2022.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.2 Tech Industry: A Key Driver of the Economy

The tech industry's role in Ukraine's economy



\$12.74 billion

Total economic effect of Ukraine's tech industry*



\$7.96 billion

tech industry turnover in 2022



\$585 million

Taxes paid by representatives of the tech industry to budgets at various levels for the year 2022**



\$238 million

Direct tech investments in Ukraine in 2022***

* The total economic effect of the tech industry consists of a direct effect - the gross value added (GVA) of the industry: the difference between the proceeds from the sale of tech services and products and the operating expenses of companies, as well as an indirect effect: additional GVA generated by related sectors of the economy.

** 21.4 billion UAH, according to the State Tax Service, based on the NBU exchange rate of 36.56 UAH per USD (calculated on October 2, 2023).

*** Net inflow of foreign investments, including reinvestment, according to the NBU data.

Data for 2022. See Slide 3.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

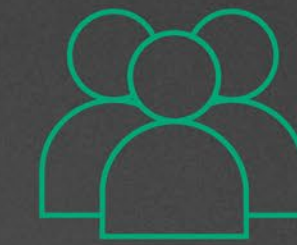
1.2 Tech Industry: A Key Driver of the Economy

The tech industry's role in Ukraine's economy



4.9 %

The share of the tech industry in Ukraine's GDP



2.7

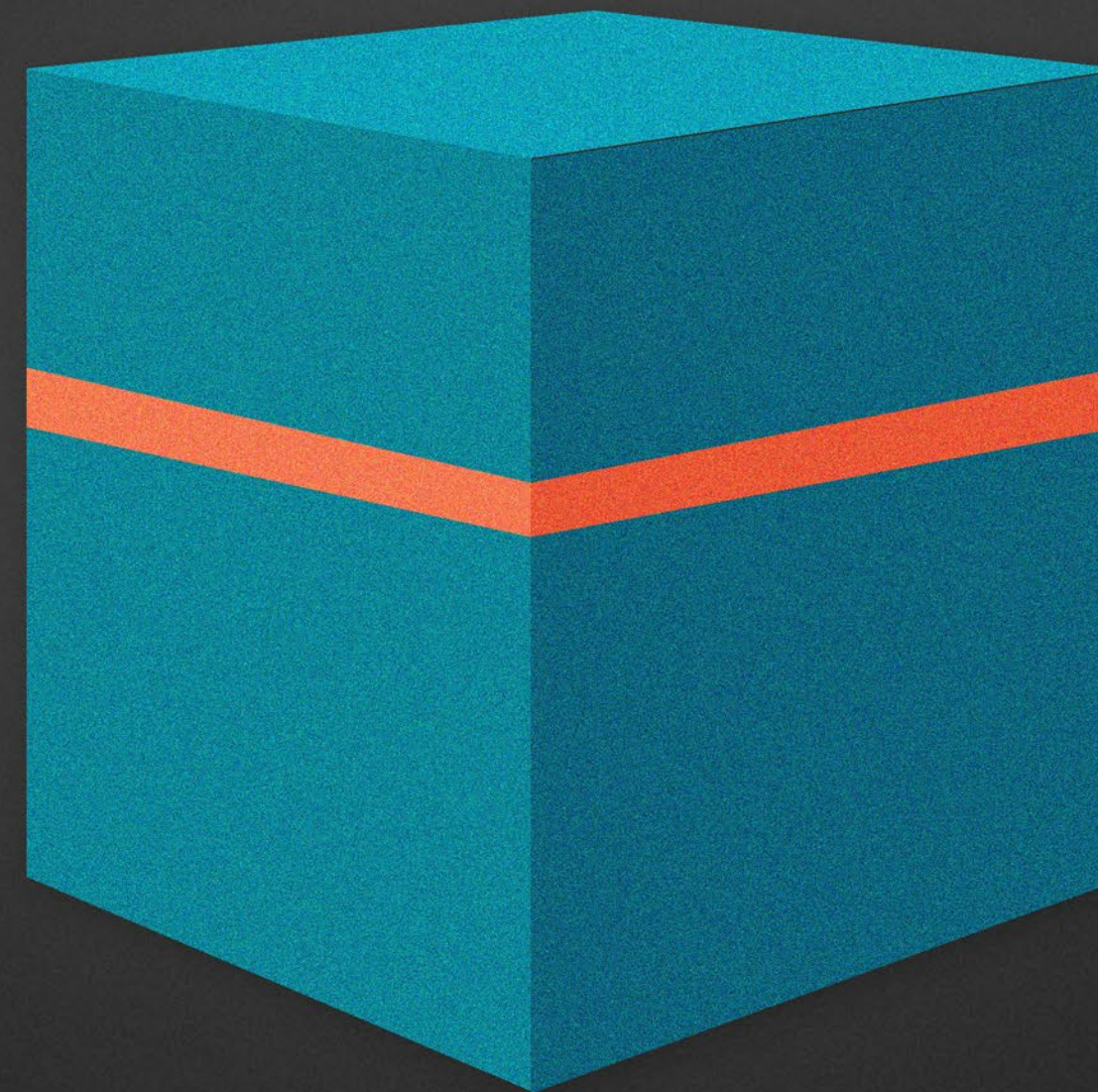
jobs creates a company by hiring one tech specialist

\$5.5 billion*

Contribution of the tech industry to Gross Value Added (GVA**)

\$130.6 billion***

Total GVA of Ukraine



\$161 billion

Nominal GDP of Ukraine in 2022

* 201.1 billion UAH, at the exchange rate of the National Bank of Ukraine (NBU) 36.56 UAH per USD (calculated on October 2, 2023).

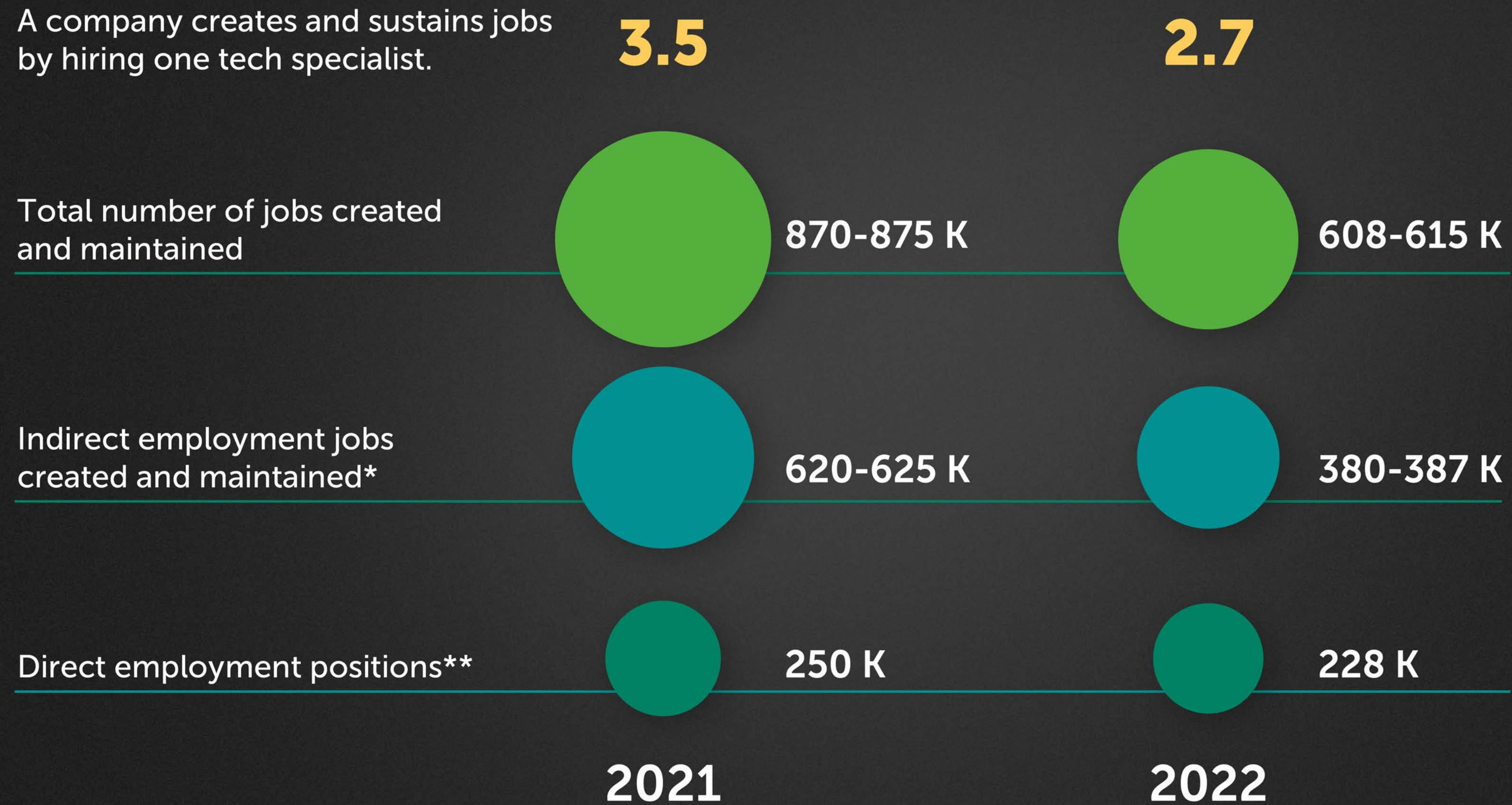
** Gross value added (GVA) of the industry: the difference between the proceeds from the sale of tech services and products and the operating expenses of companies. Drives direct economic effect.

*** 4.78 trillion UAH, at the exchange rate of NBU 36.56 UAH per USD (calculated on October 2, 2023). Data for 2022. See Slide 3.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.2 Tech Industry: A Key Driver of the Economy

Dynamics of job creation and preservation by the tech industry



* Indirect employment positions are created through additional sales, income, and employment generated by entrepreneurial activities supplying goods and services necessary for the functioning and production of products in the tech industry. Additionally, they result from the induced effect: additional employment created by consumer spending earned through direct or indirect economic activities within the tech industry and related sectors benefiting from additional consumption.

** Direct employment positions – jobs for specialists directly employed in tech companies and self-employed in the field (freelancers).

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.2 Tech Industry: A Key Driver of the Economy

Dynamics of the Ukrainian tech industry

Tech industry's impressive performance in tough conditions

Turnover of the tech industry

2021

\$7.89 billion

2022

\$7.97 billion ↑0.9%

Forecast
for 2023

\$8.0 billion ↑0.45%

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.2 Tech Industry: A Key Driver of the Economy

Dynamics of the Ukrainian tech industry

Export revenue volume

2021

\$6.94 billion

2022

\$7.35 billion

Forecast
for 2023

\$6.78 - \$7.18 billion

41.5%

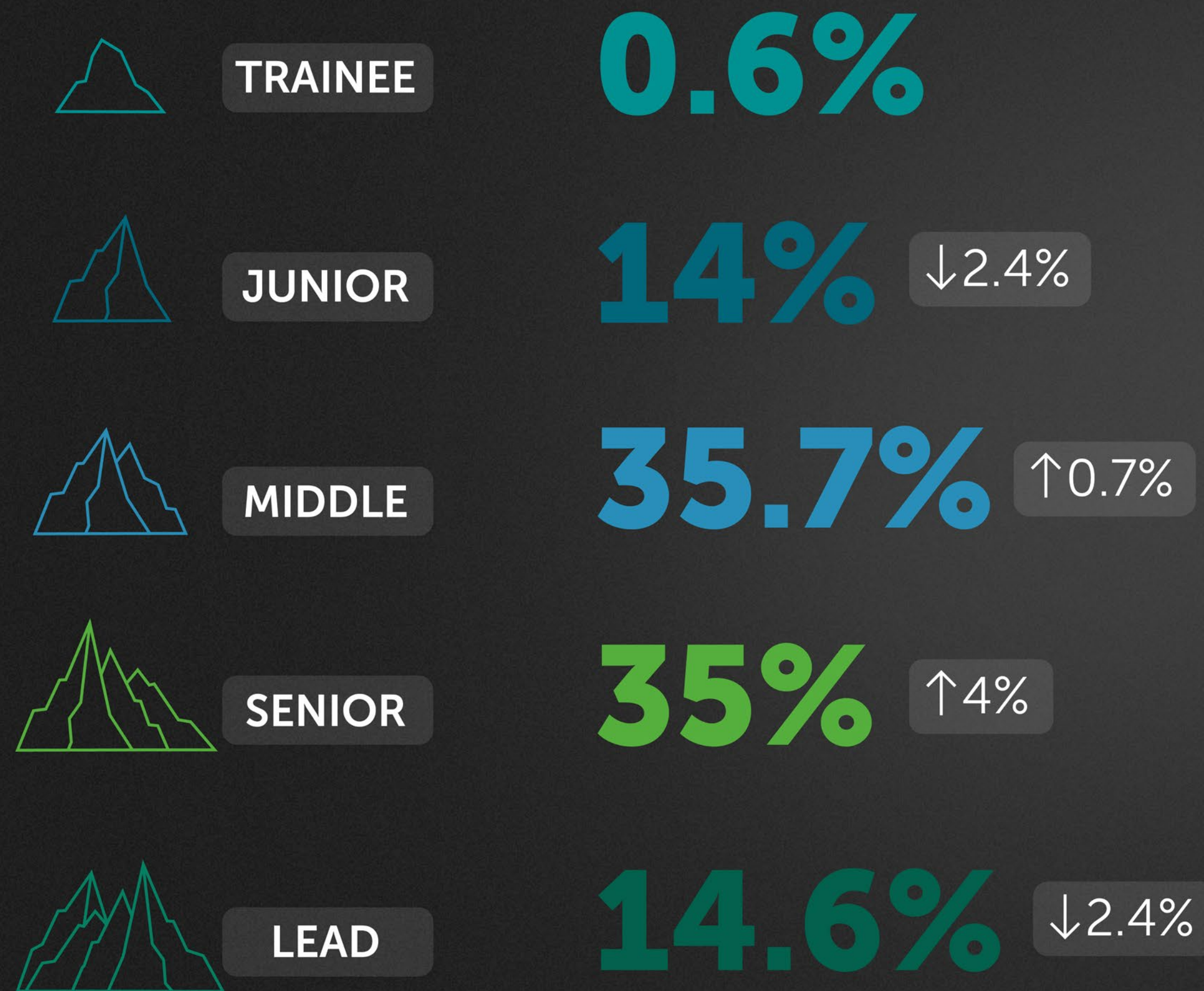
Computer services make up a significant portion of the total export structure of all services and remain a key sector ensuring foreign currency inflow into the economy despite the crisis.

* According to NBU data as of November 30, 2023.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.3 Tech Talent Pool

Ukraine is rich in highly skilled technical talents who drive the global technology market. 42.6% have general work experience in the tech industry of more than 6 years, with 7.8% having over 15 years of experience.



59.8%

of all tech specialists in Ukraine have technical specializations

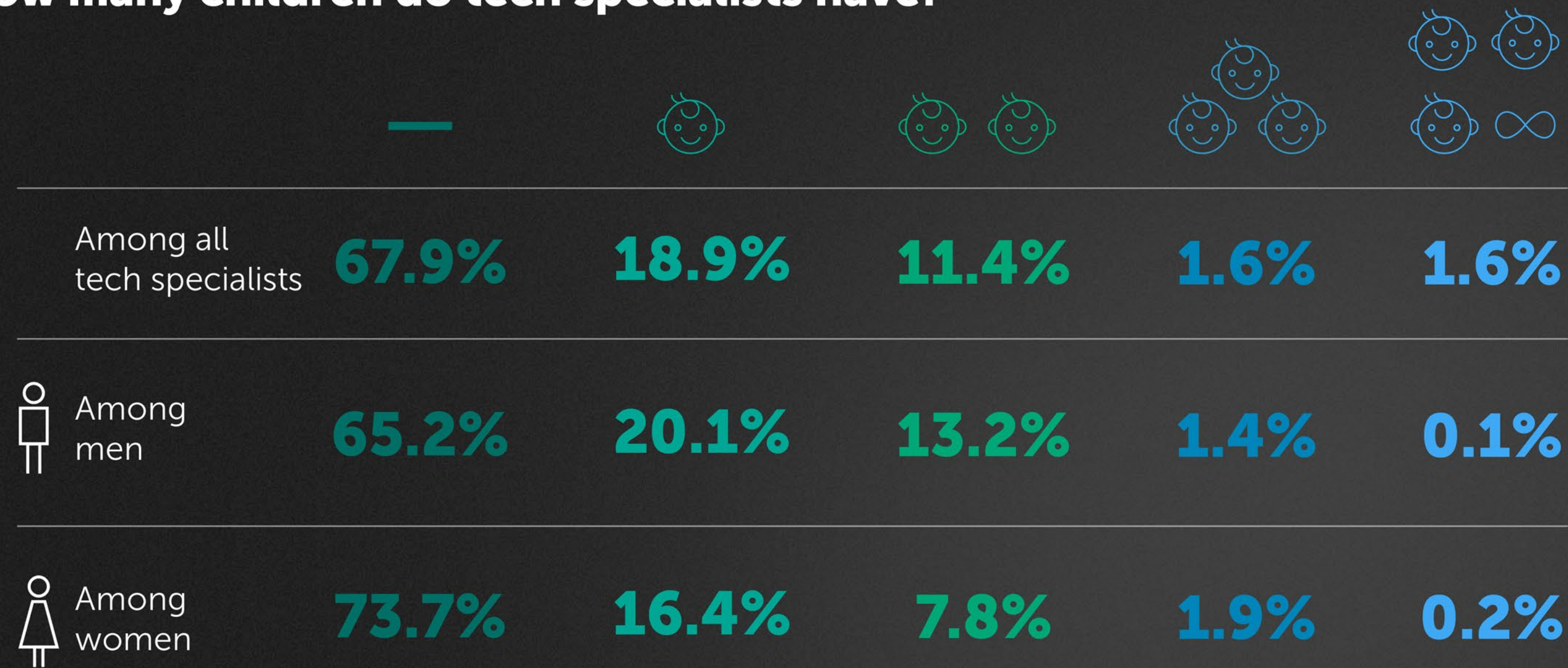
>83%

of the entire pool of technical talents consists of specialists with qualifications at the Middle, Senior, and Lead levels

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.3 Tech Talent Pool

How many children do tech specialists have?



The majority of tech specialists fall within the age range of 26 to 35 years old.

Among tech specialists, 32.1% have children, with 58.8% having one child, and 5.6% being parents of three or more children.

Average age of a tech specialist

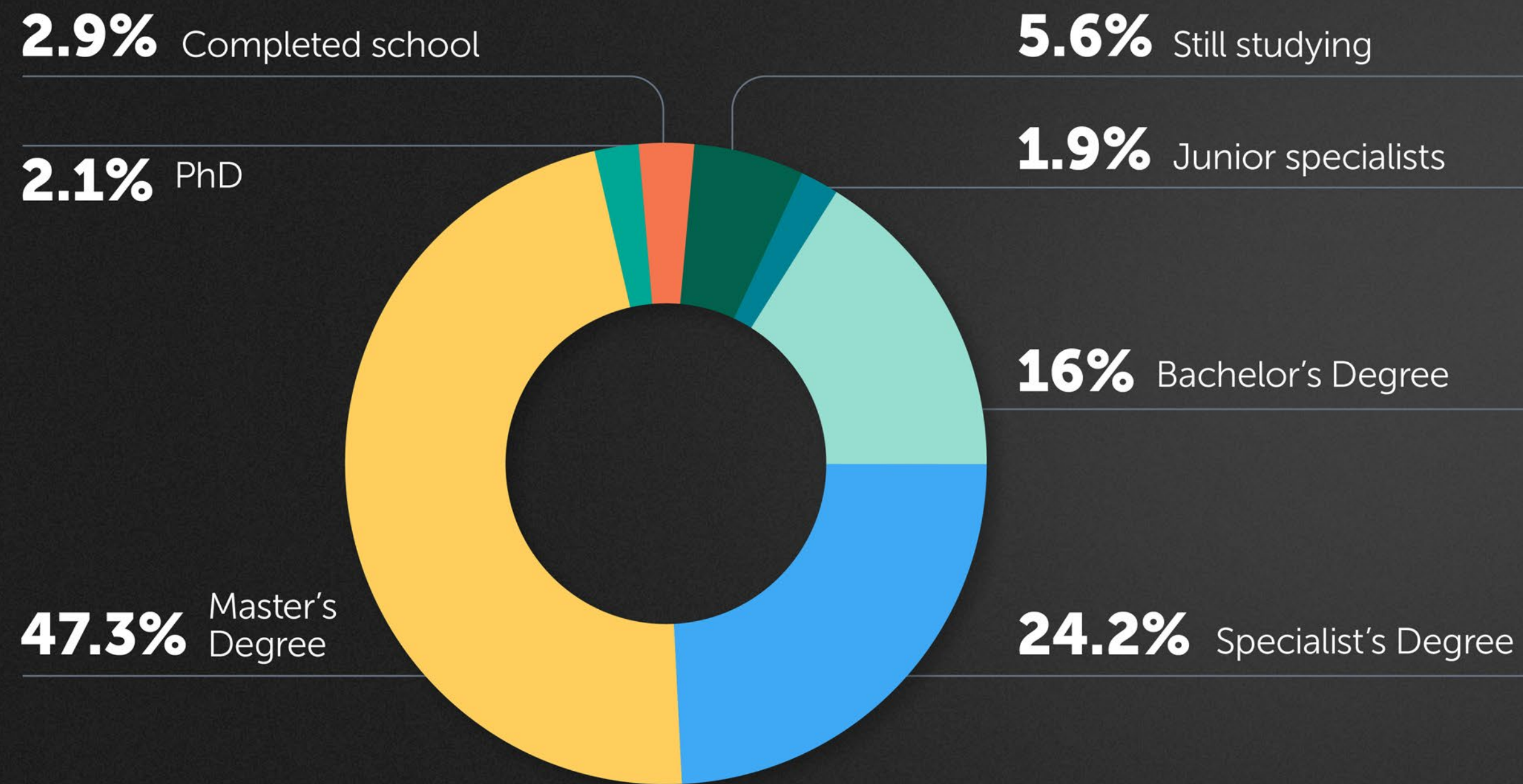


1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

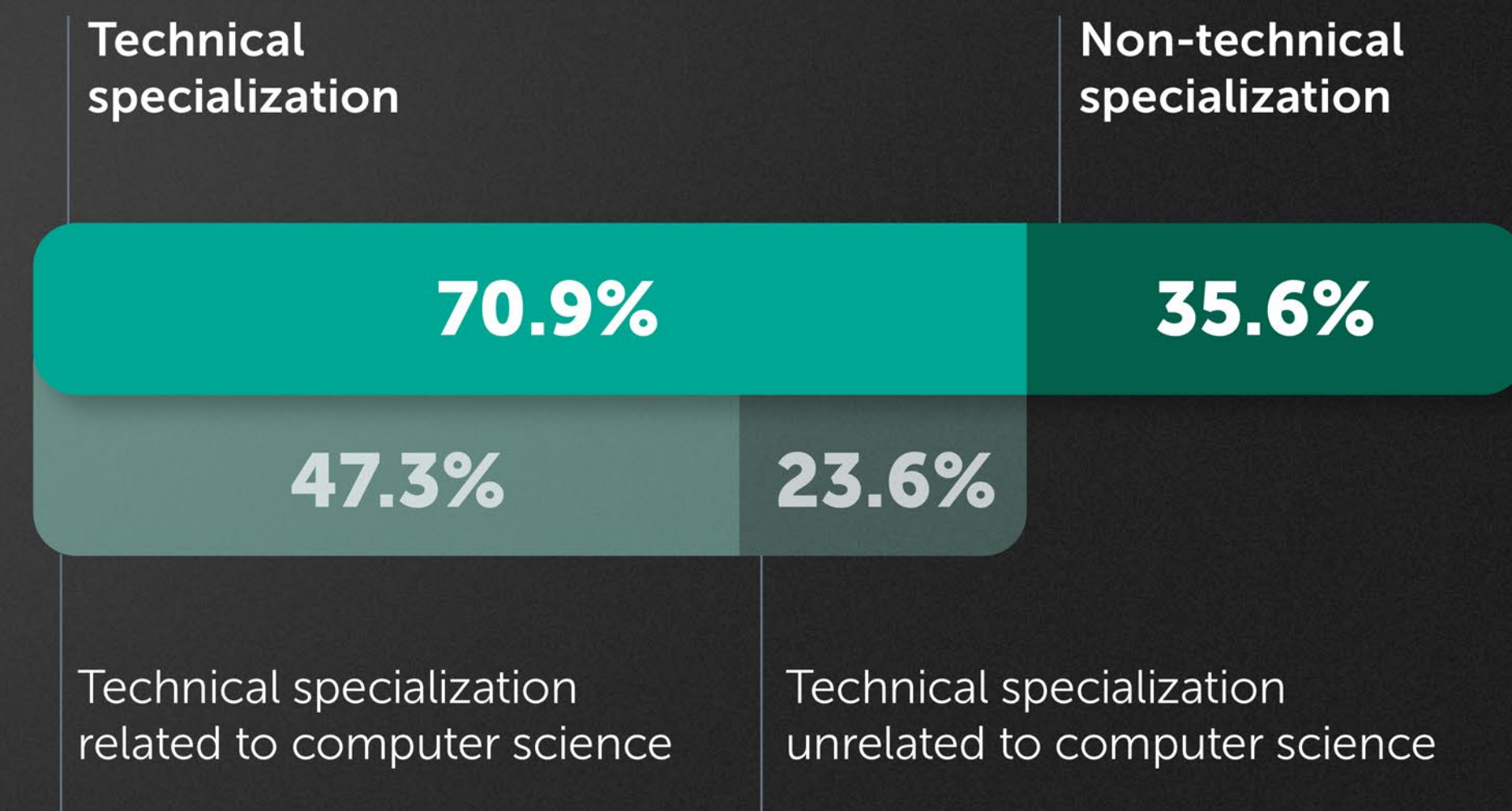
1.3 Tech Talent Pool

Almost half of those employed in the tech industry have obtained or are pursuing technical education related to computer science.

Education level



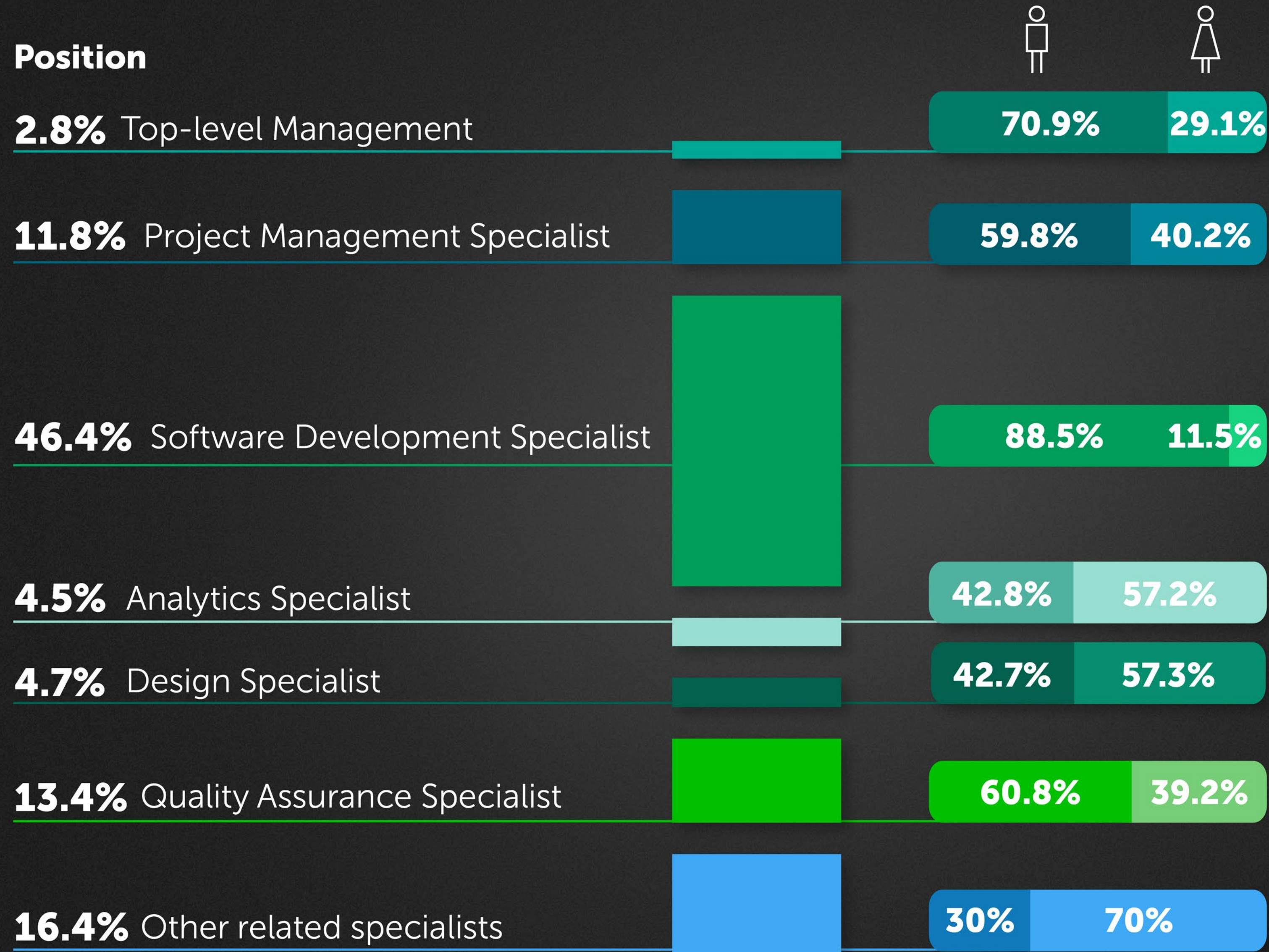
Educational specialization of tech specialists*



* Respondents had the option to choose more than one answer.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.3 Tech Talent Pool



Almost half of all tech specialists work in the position of Software Development Specialist, and their share has decreased by 4% compared to the previous year.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.4 Professional Profile of Tech Specialists

Almost half of tech specialists started working or interning at a tech company during their studies, typically beginning around the third year of university.

Internship start in a tech company during

4% the first year of university

6.9% the second year of university

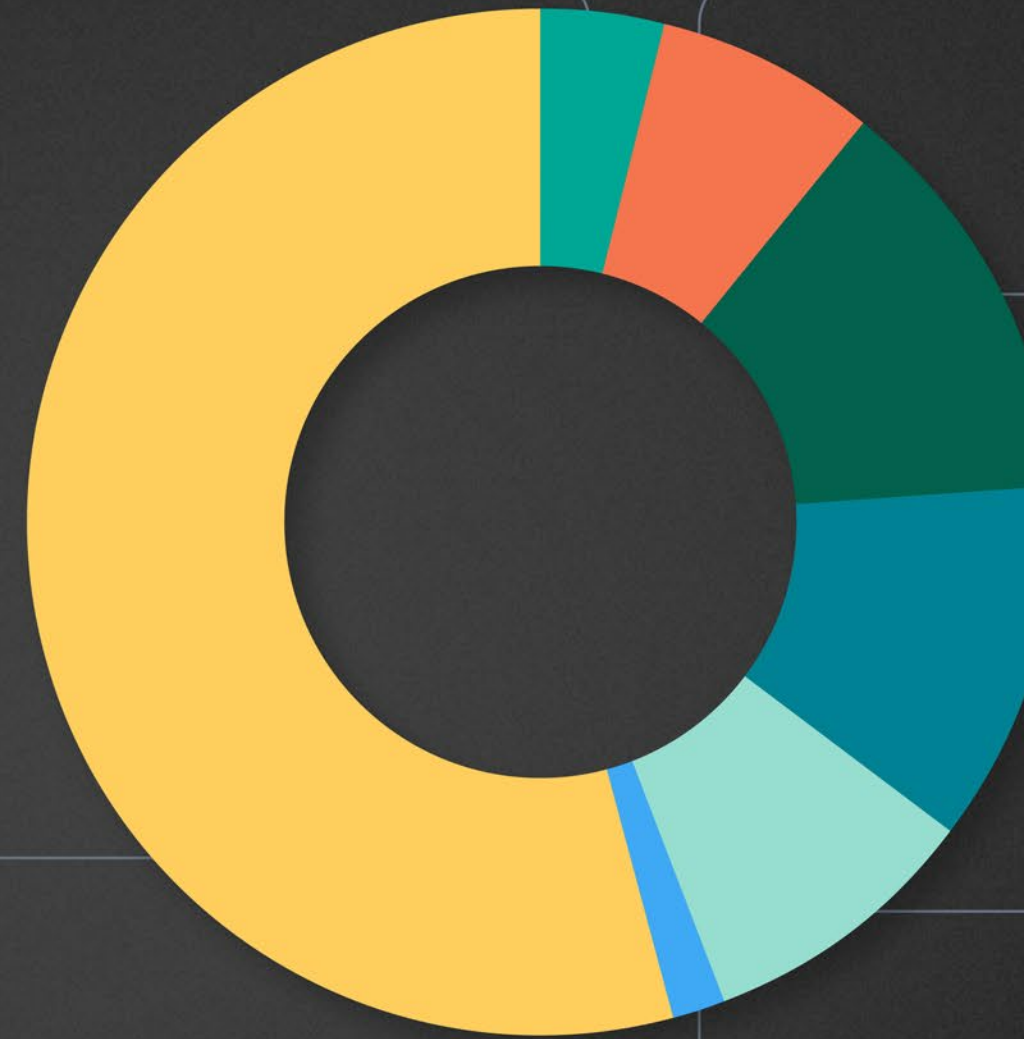
13.1% the third year of university

11.3% the fourth year of university

8.9% the fifth year of university

1.9% the sixth year of university

53.9% Did not work or intern during their studies



Work experience in tech



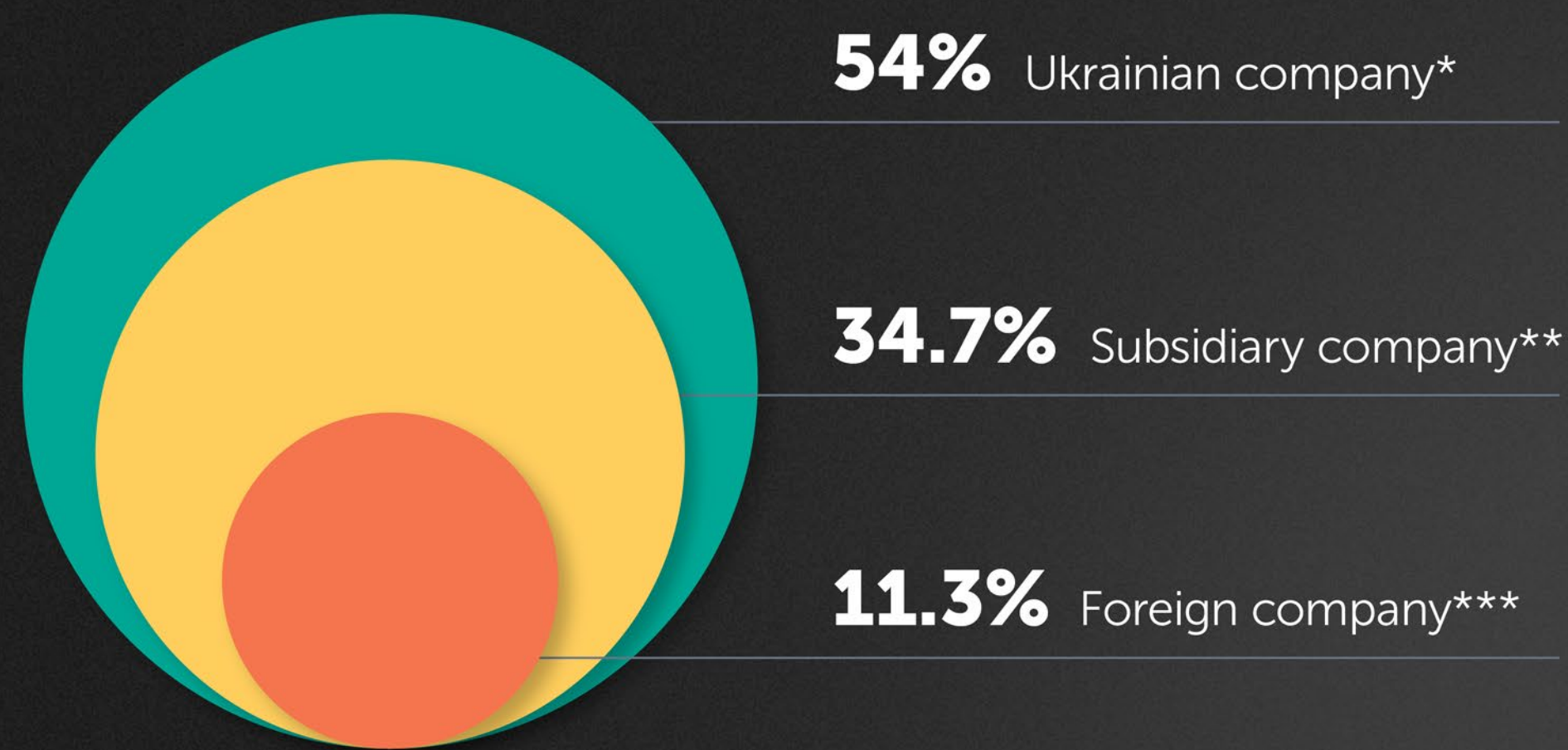
1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.4 Professional Profile of Tech Specialists

The share of tech specialists working in large companies has increased by **6.4%**. This year, **40.4%** are employed in large companies, compared to **34%** in 2022.

50%+ Half of tech specialists work in companies of Ukrainian origin.

Company origin



2023 **10%** are freelancers

2022 **4%** are freelancers

Company size



* Founded in Ukraine.

** Founded abroad, with a presence in Ukraine.

*** Founded abroad, with no presence in Ukraine.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.4 Professional Profile of Tech Specialists

6%

of tech specialists were unemployed at the time of the study

1%

found their first job in the tech industry in 2023

47.7%

of tech specialists noted that their work has changed

34.3%

Moved to another project within the company

33.4%

Changed their workplace

27.5%

Changed their position within the company

12.0%

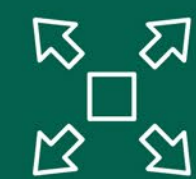
Moved to the bench (on standby)

5.9%

Transitioned to part-time employment

Other changes accounted for 10.9%:

- Increased workload
- Decreased workload
- Reduction in compensation / freezing of salary reviews
- Found a new job
- Transitioned to remote work
- Took a sabbatical / maternity leave
- Were mobilized into the Ukrainian Armed Forces

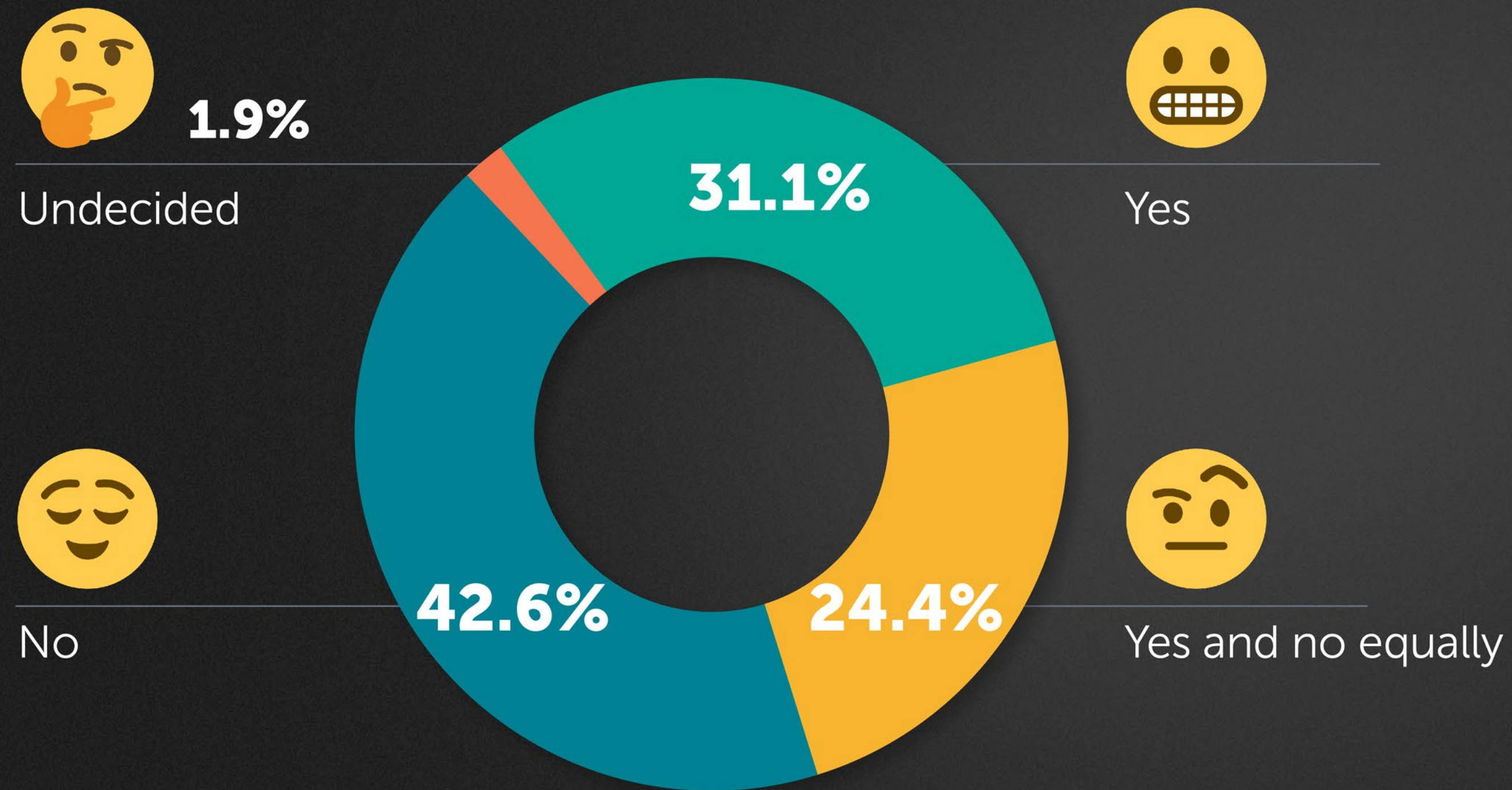


In the extended version of IT Research Ukraine, gain access to detailed data on the changes in the work of tech specialists, including the percentage of those who were in unpaid reserve and how many tech specialists were able to return to work in 2023.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.4 Professional Profile of Tech Specialists

Do tech specialists worry about the possibility of losing their jobs?



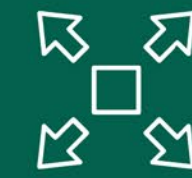
1/3

of tech specialists are concerned about losing their jobs this year. There is more anxiety among those who have already been on standby.



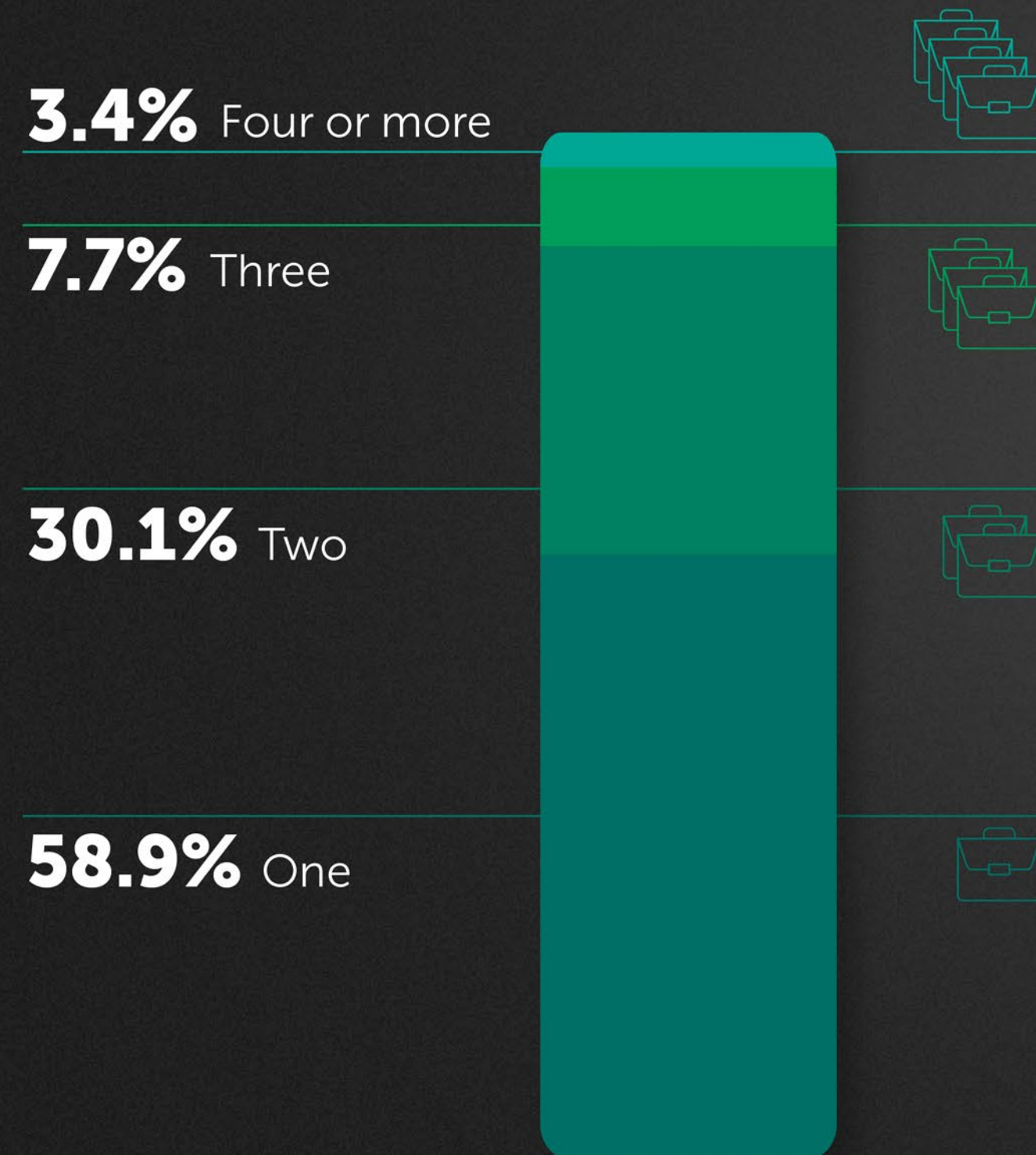
1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.4 Professional Profile of Tech Specialists

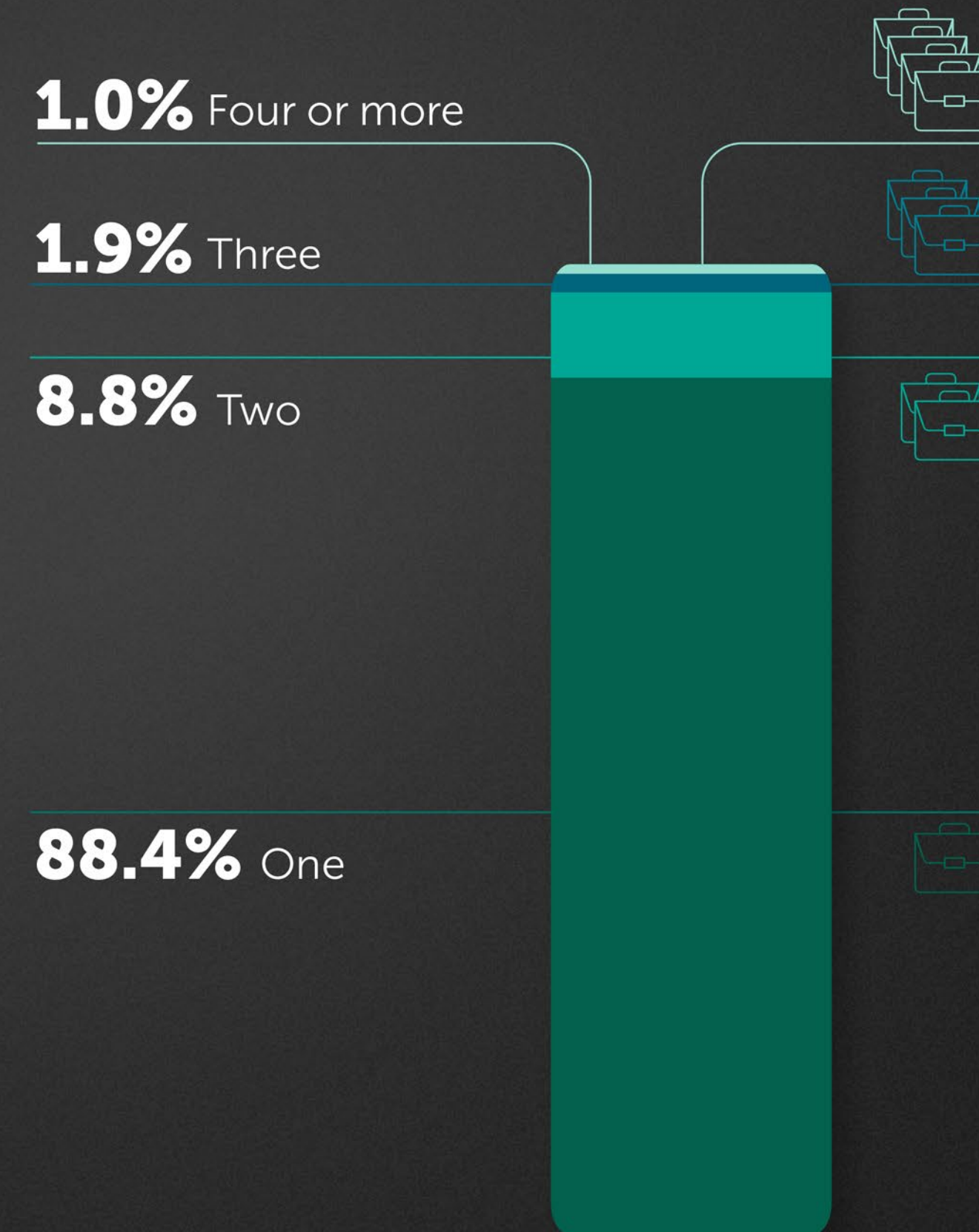


Discover the percentage of tech specialists who simultaneously held multiple jobs and the duration of this experience in the extended version of IT Research Ukraine.

The number of companies / freelance projects that tech specialists worked for simultaneously



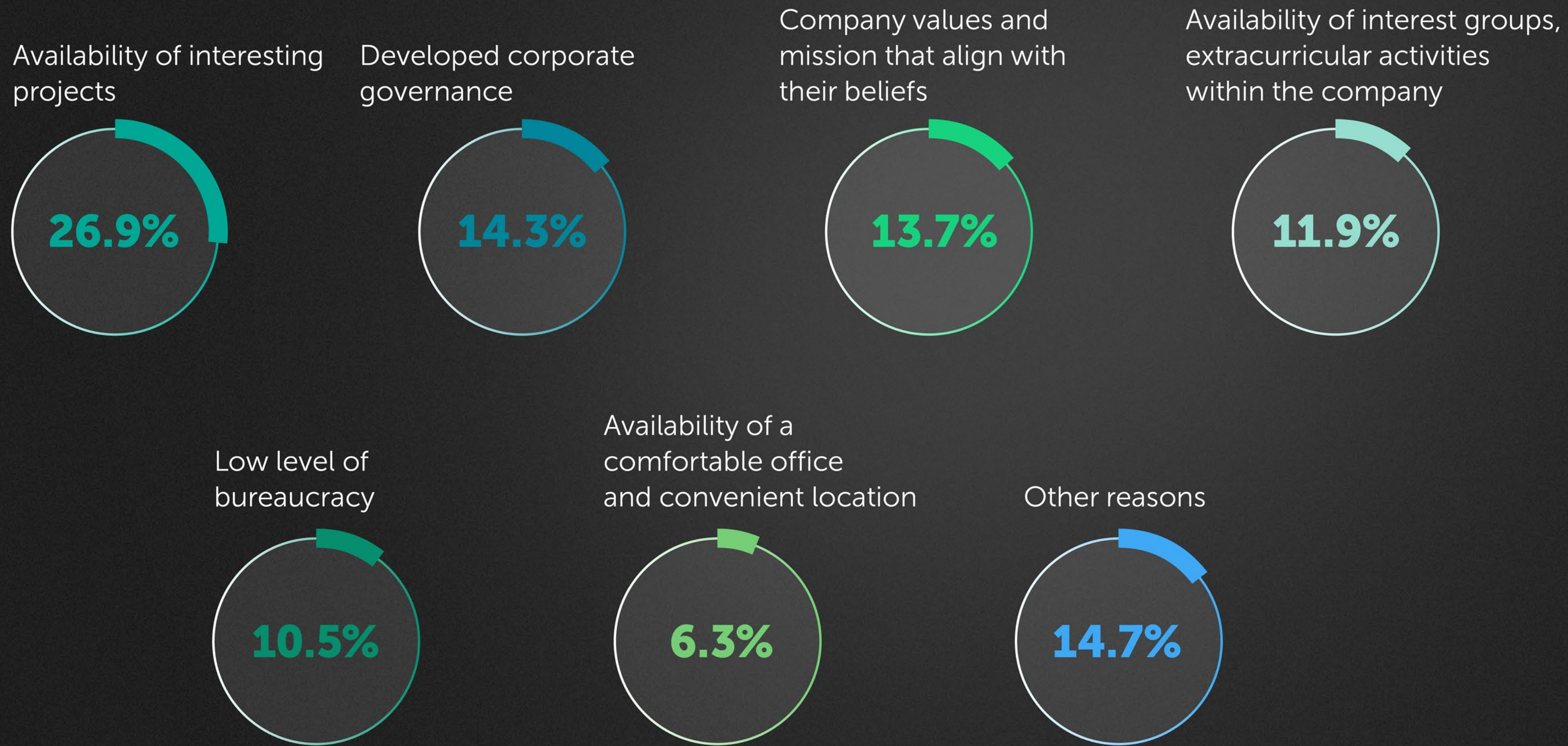
The number of companies / freelance projects that tech specialists continue to work for simultaneously



1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.4 Professional Profile of Tech Specialists

What is missing within the company to provide additional motivation for tech specialists to engage in long-term collaboration?

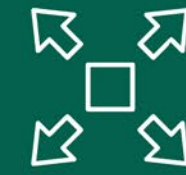


41.4%

of tech specialists claim that the company provides them with everything necessary to continue working in the company.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.5 Income and Expenses of Tech Specialists



In the extended version of IT Research Ukraine, obtain data on how many tech specialists undergone a financial reward review in 2023, the median salary increase, and more detailed analytics on income changes in the tech industry.

How have incomes changed over the past year?

54% of tech specialists have undergone a financial reward review in the past year*

42% consider their financial reward sufficient



* Among those for whom such a review is stipulated in the contract; in 5.9%, a planned review of financial compensation is not provided for by the contract.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.5 Income and Expenses of Tech Specialists

\$2 630

Median income of individuals engaged in the tech sector in Ukraine

\$2 360

in 2022



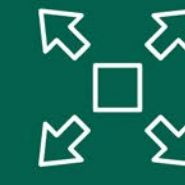
\$4 217

tech specialists' income



\$2 322

non-tech specialists' income



Learn more about the specific compensation ranges for 100+ positions in the tech industry – get access to the IT RESEARCH: SALARY REPORT.

Are tech specialists ready for a potential decrease in financial compensation?

Yes

19.0%

Equally yes and no

18.9%

No

62.1%

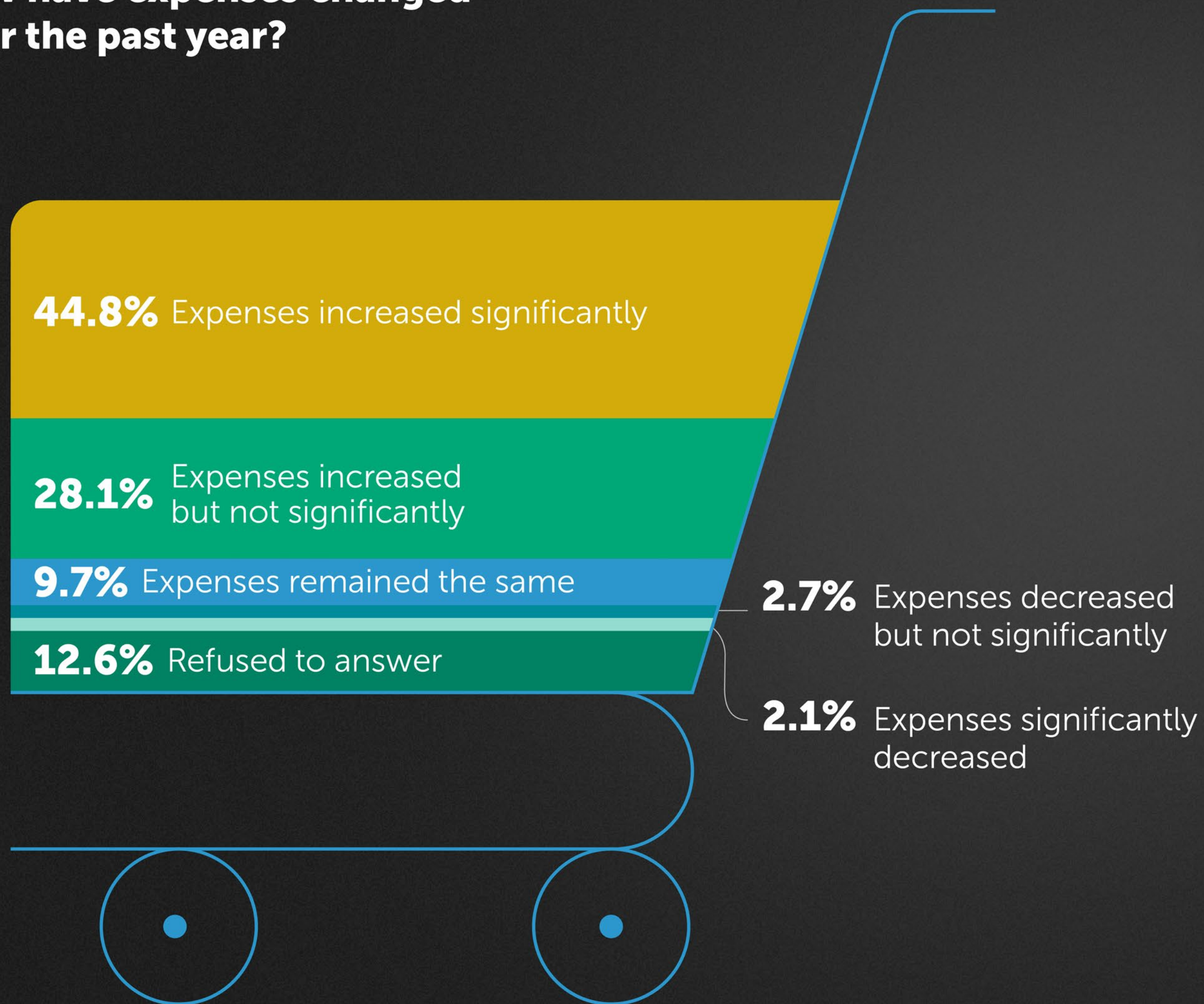
* Technical specialists include: Software Development Specialist (Software Engineer / Web Developer (Frontend / Backend / Full Stack), DevOps Engineer, Mobile Developer, Data Scientist / Machine Learning Engineer, Solution Architect, Database Administrator (DBA), Blockchain Developer, etc.), Quality Assurance Specialists (QA (manual, automation), QA Lead).

** Non-technical specialists include: Top-level Management, Project Management Specialist (PM, Delivery Manager, Team Lead, Product Manager, Scrum Master, etc.), Analytics Specialists (Business Analyst, Web Data Analyst), Design Specialists (Web-designer, UI / UX Specialist, Graphic Design Specialist), and other related Specialists (HR, Marketing Manager, SEO Specialist, Recruiter, Sales Manager, Technical Writer, Finance Analyst, PR Manager, etc.).

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.5 Income and Expenses of Tech Specialists

How have expenses changed over the past year?



72.9%

tech specialists indicate that their expenses increased in 2023 compared to 62% last year.

The largest portion of income goes towards basic necessities such as housing and food. The remaining expenses typically account for no more than 25% on average.

More than 80% of tech specialists have the capacity to save, with an average of a quarter of their income being set aside. Every tenth individual manages to save more than half of their monthly earnings.


1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.5 Income and Expenses of Tech Specialists

Monthly expenses breakdown

213 K+

of tech specialists allocate a portion of their budget to charity.* This is +4.6% compared to 2022.

 **~38%** **Basic needs** [food, housing, clothing, debt repayment]

 **~16%** **Additional needs** [leisure, hobbies, transportation, etc.]

 **~11%** **Charity**

 **~26%** **Savings**

 **~9%** **Other**

93.6% of tech specialists allocate a portion of their budget to charity

6.8% among them donate more than a quarter of their income



\$264 average monthly charitable donation of a tech specialist

* Among all tech specialists in Ukraine.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.6 Employment Forms of Tech Specialists

Employment forms



Obtain more detailed information about the legalization of tech specialists abroad and the percentage of specialists in various job categories who are planning or already engaged in this matter in the extended version of IT Research Ukraine.

In 2023, the structure of employment forms for tech specialists changed. The number of Individual Entrepreneurs decreased by

9.4%

compared to the previous year, notably due to the transition to gig contracts.

1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.6 Employment Forms of Tech Specialists

Tech specialists' engagement in companies by business model type

More than 51% of Ukraine's tech specialists work in service companies.

UKRAINE

2% Startup

1% Other

Outstaffing

8%

Mixed

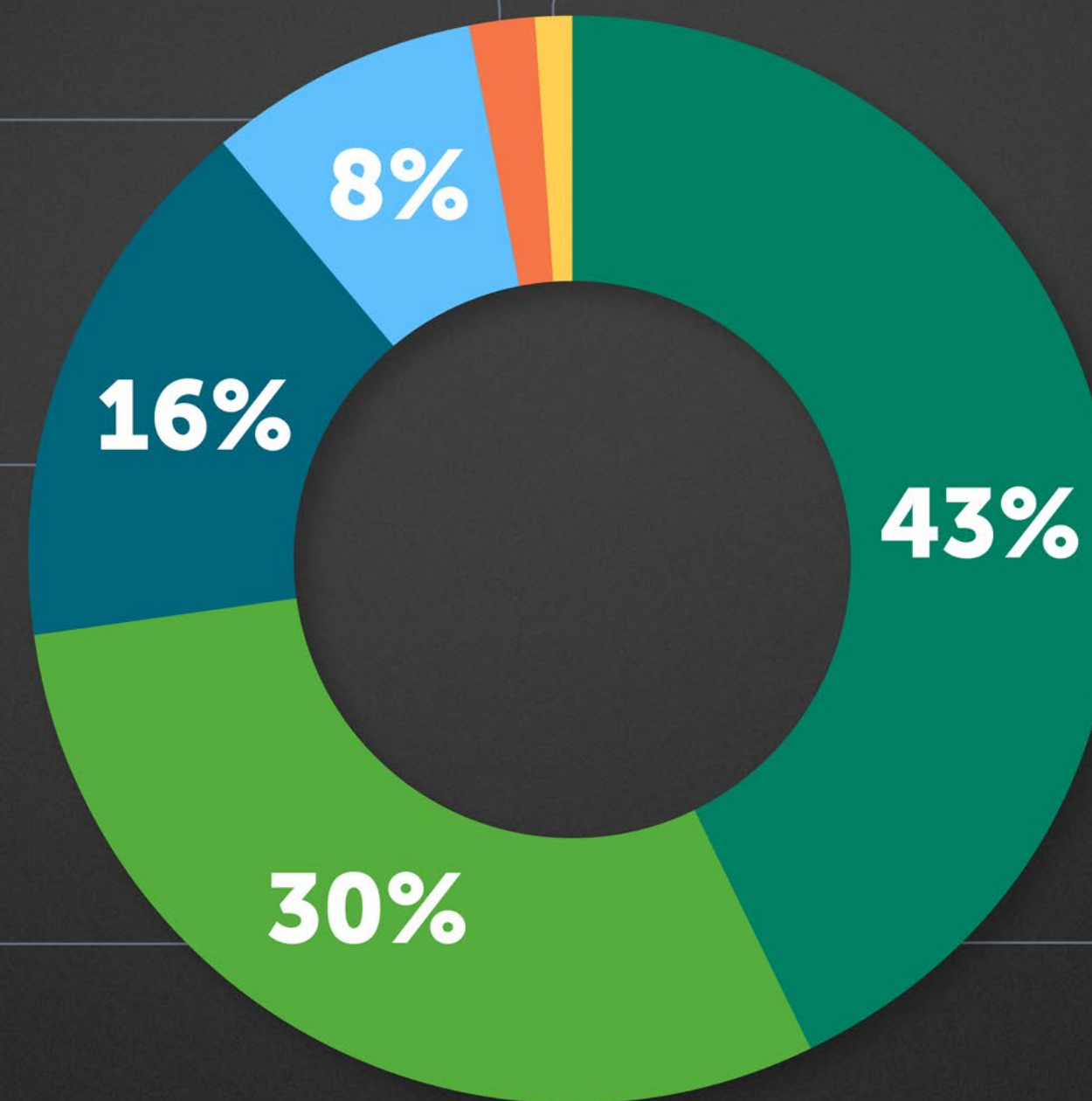
16%

43%

Product

30%

Outsourcing

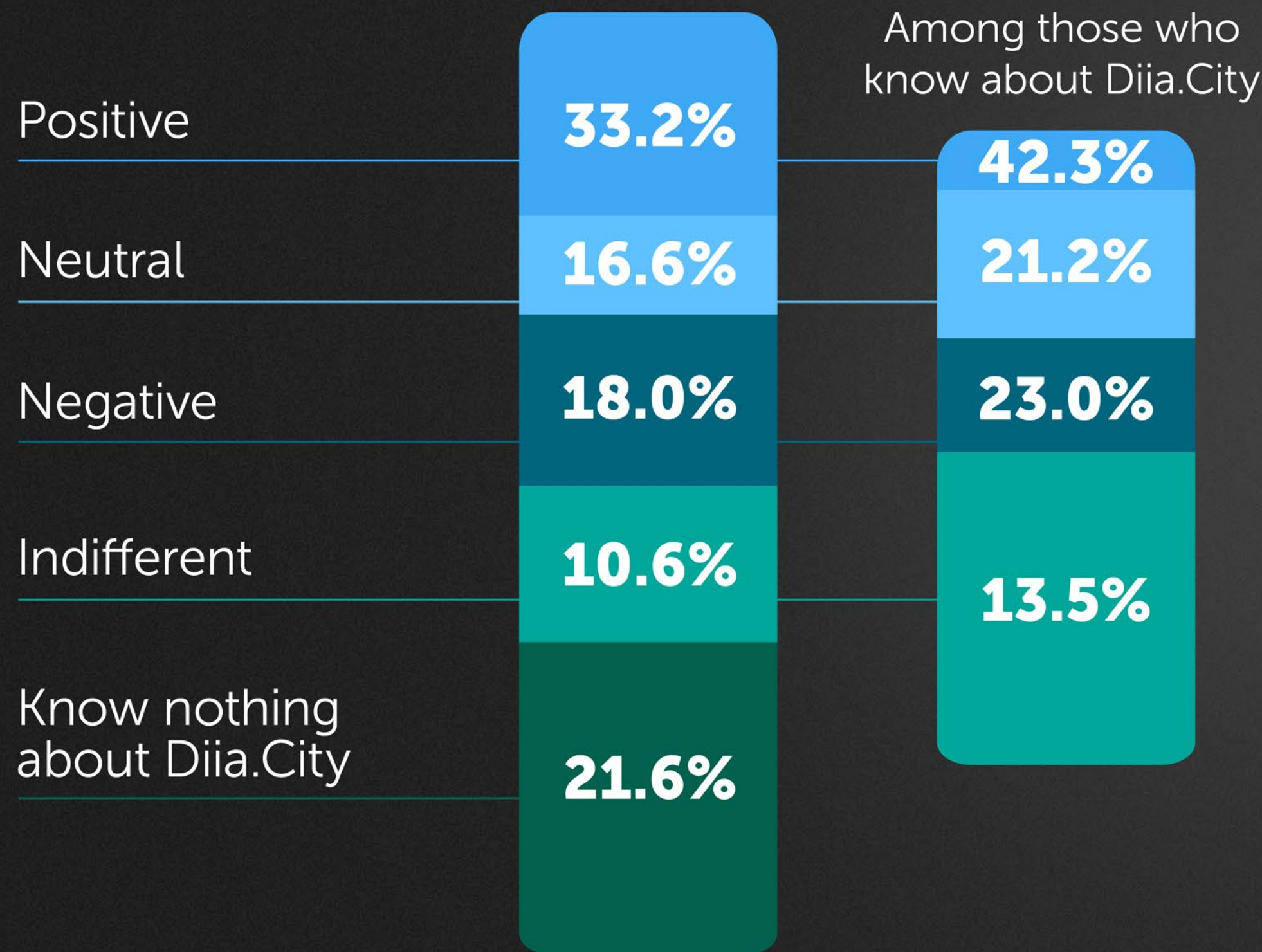


1. OVERVIEW OF THE TECH INDUSTRY IN UKRAINE

1.7 Attitudes of Tech Specialists Towards Government Initiatives and Programs

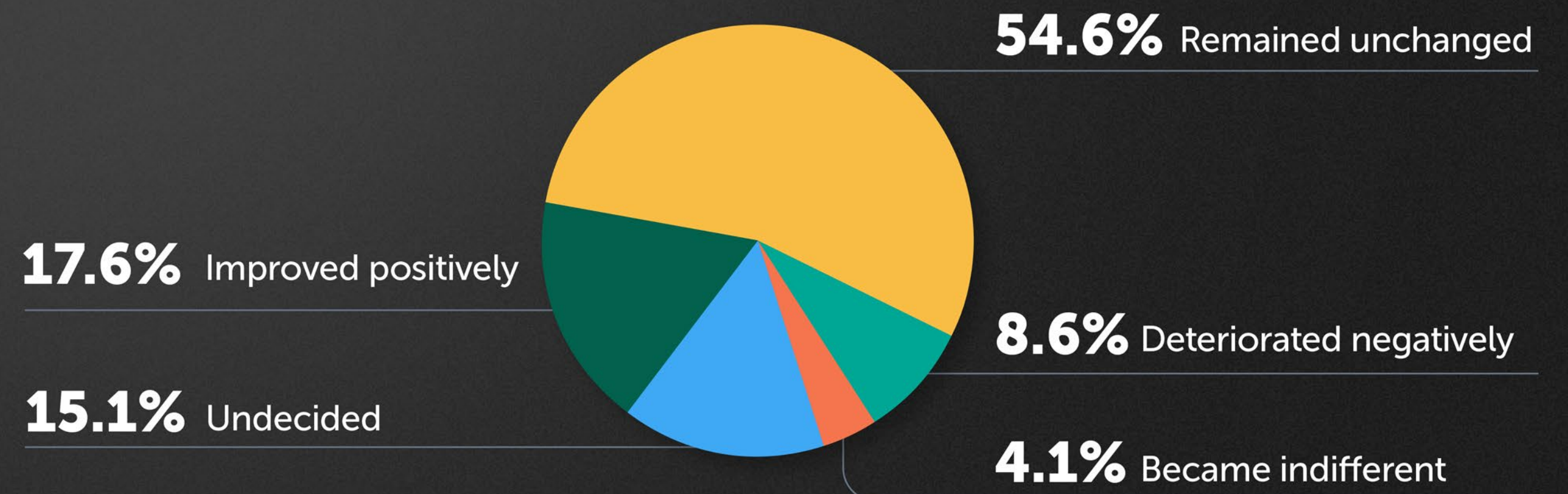
The attitude towards the project is mostly positive or neutral. 17% of tech specialist have changed their attitude from the moment of the establishment of Diia.City to a positive view of this initiative.

Tech specialists' attitude towards Diia.City



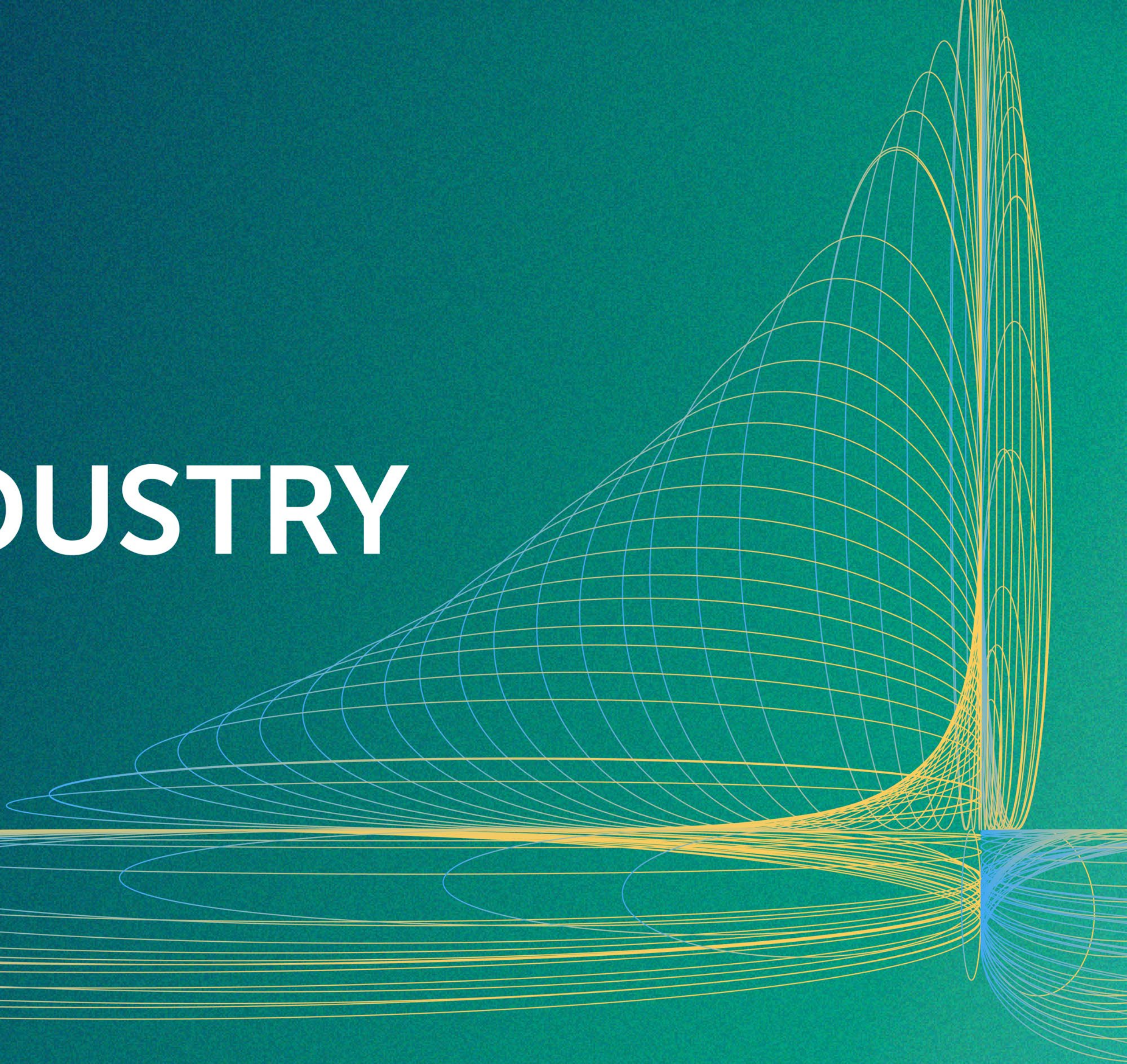
4 out of 5 tech specialists are aware of the unique legal and tax environment for the development of tech businesses in Diia.City*.

How have the opinions of tech professionals about Diia.City changed since its founding?



* As of the end of November 2023, over 700 companies are residents of Diia.City, employing nearly 56 thousand professionals.

LOCAL TECH INDUSTRY DISTINCTIONS



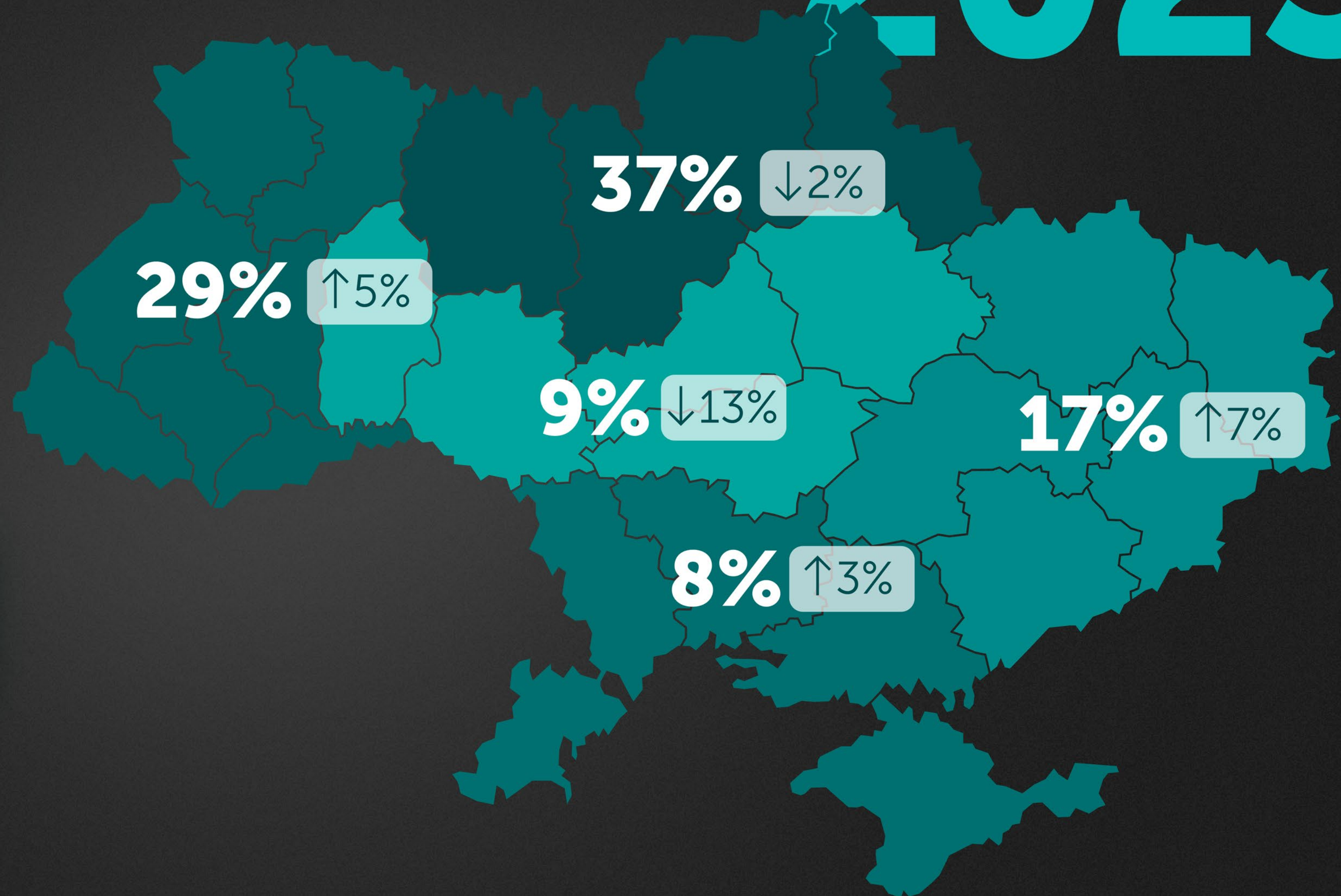
2. LOCAL TECH INDUSTRY DISTINCTIONS

2.1 Technical Talent Pool. Regional Specifics

2023

More than **1/3** of industry specialists reside in the North, while over **1/4** are in the West.

In 2023, the number of tech professionals in the West of Ukraine increased compared to the previous year, according to IT Research Resilience data **24%**



Join the Lviv IT Cluster to be the first to access the most comprehensive tech industry research.

* Central – Vinnytsia, Kirovohrad, Khmelnytskyi, Cherkasy, Poltava regions
North – Kyiv city and the region, Zhytomyr, Chernihiv, Sumy regions
West – Lviv, Ivano-Frankivsk, Zakarpattia, Ternopil, Chernivtsi, Rivne, Volyn regions
South – Odesa, Mykolaiv, Kherson regions
East – Kharkiv, Dnipropetrovsk, Zaporizhia, Donetsk regions.

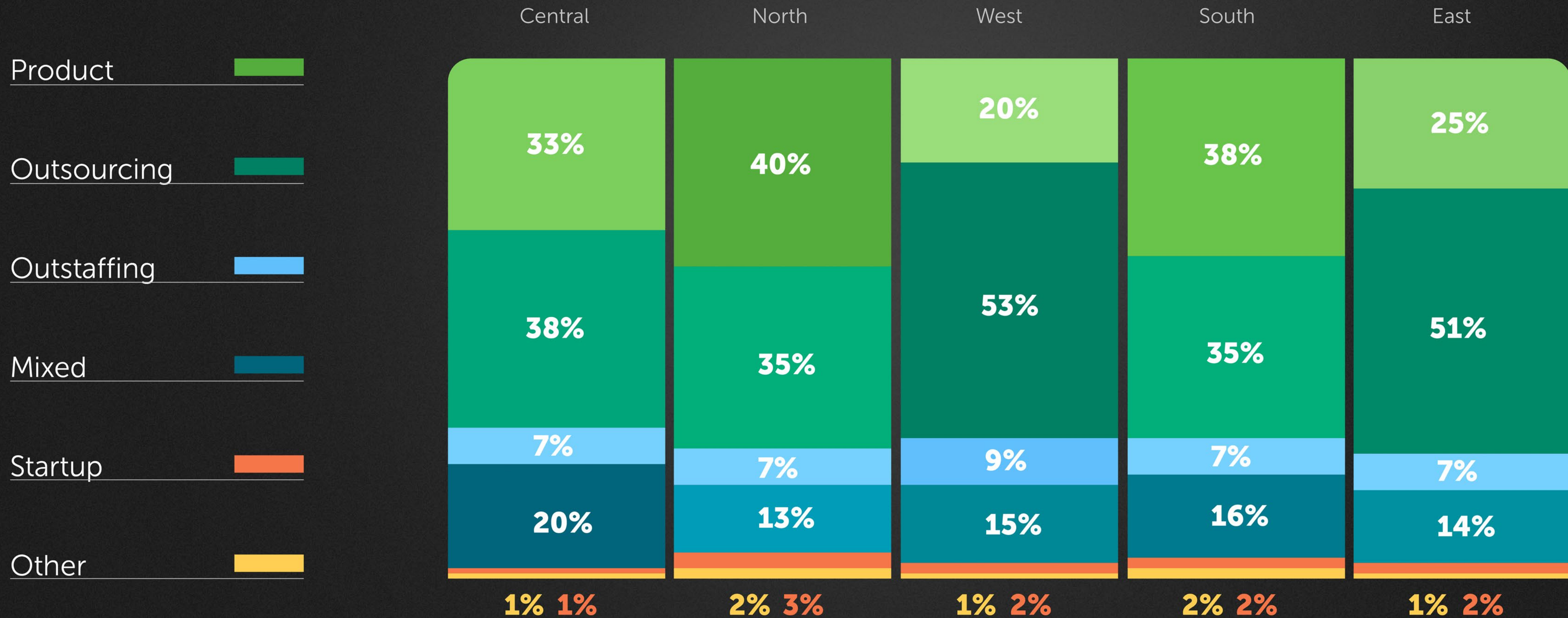
** Assessment of the actual number of tech specialists based in the regions as of August 2023.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.1 Technical Talent Pool. Regional Specifics

Tech specialists' engagement in companies by business model type

Regional differences are evident: the highest proportion of employment in product companies is found in the Northern and Southern macroregions. Tech specialists in western regions are more frequently involved in service companies.



2. LOCAL TECH INDUSTRY DISTINCTIONS

2.2 Northern Macroregion

Kyiv Hub



\$256.01 M*

Total taxes paid by tech companies in the region in 2022.**



2.8 jobs

are created and sustained by a tech company when hiring one tech industry specialist in Kyiv region.

Kyiv Hub has managed to maintain its position as the tech industry leader, both in terms of the number of direct employment positions and the number of preserved and created jobs in other industries.

Kyiv and the Kyiv region remain key leaders in the Ukrainian market.

The growth in tax revenues from tech companies in the Kyiv region in 2022 was 12% higher than in 2021.



40.1%

The share of the hub in the structure of the nominal turnover of the industry in 2022.***



230-233 K

The total number of jobs created and saved by the local tech industry in 2022.****

* 9,359 billion UAH, according to State Tax Service of Ukraine data, at the NBU exchange rate of UAH 36.56, as of the time of calculation on October 2, 2023.

** The total amount of taxes includes the following types of taxes: Individual Entrepreneurs Single Tax, Legal Entities Single Tax, Personal Income Tax, the Value-Added Tax (VAT) overall, Military Levy, Tax on Income of Legal Entities and other taxes.

*** The indicator takes into account the tax residency of tech market participants within the location. Source: analytics from the research agency Fama, calculation base – estimation of the number of registered participants in regional tech markets in 2022 according to the State Tax Service of Ukraine, and the State Statistics Service of Ukraine data.

**** The indicator is a local summary of the created and sustained jobs of direct and indirect employment, considering the induced effect in the reporting year.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.2 Northern Macroregion

Kyiv Hub



\$154.64 M

Taxes paid by tech companies in the region for the first half of 2023.*



85 606 ↑6.1%

Number of Individual Entrepreneurs (IE) in the tech industry.**



26.2% (as of July 1, 2023)

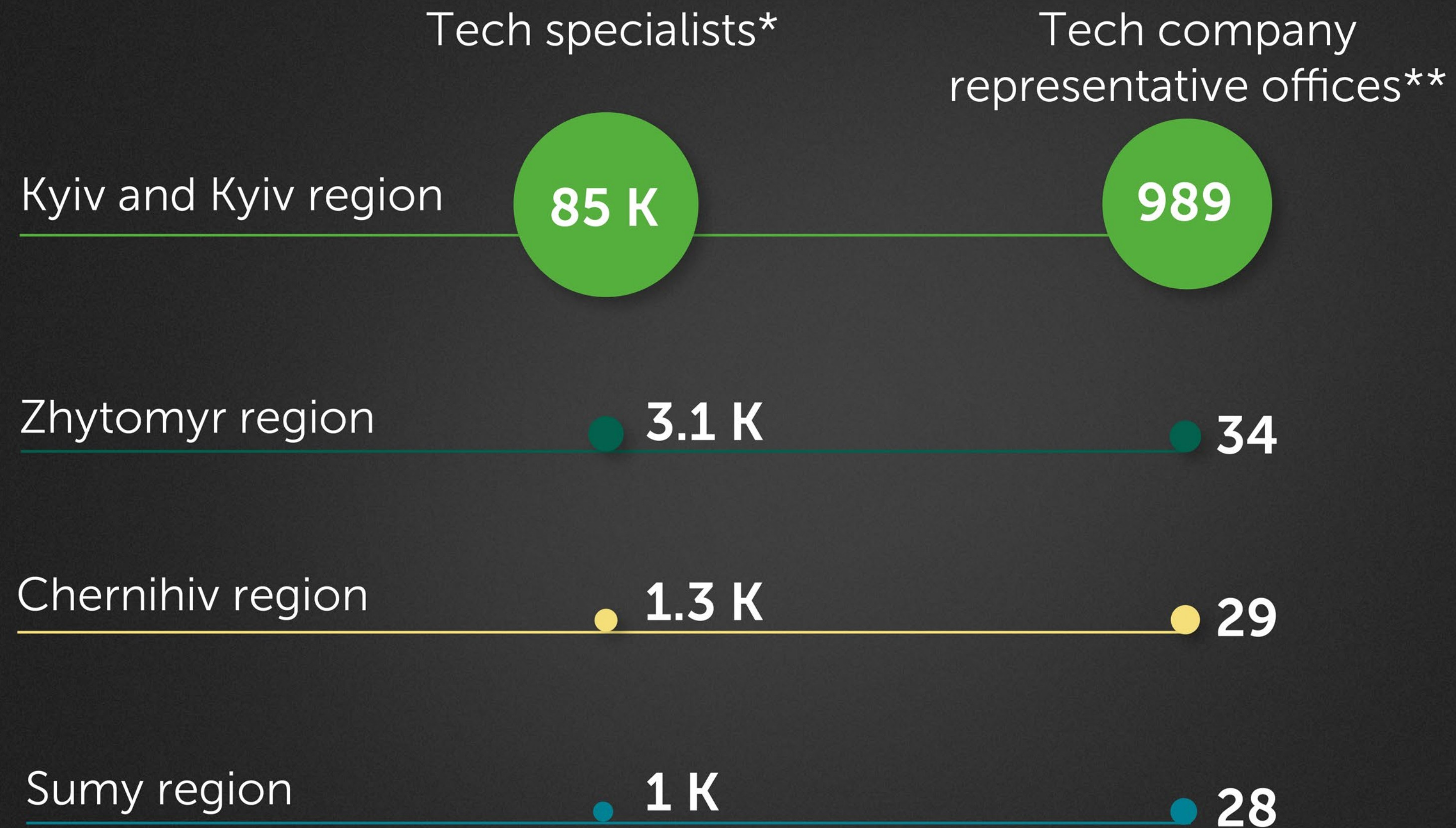
Share of the Individual Entrepreneurs Single Tax from the tech industry in the city's overall Individual Entrepreneurs Single Tax payment.

* 5.654 billion UAH, according to State Tax Service of Ukraine data, at the NBU exchange rate of UAH 36.56, as of the time of calculation on October 2, 2023.

** The Classification of Types of Economic Activity (KVED) codes taken into account in the calculation are: 58.21, 58.29, 62.01, 62.02, 62.03, 62.09, 63.11, 63.12. The indicator, calculated based on the number of Individual Entrepreneurs (as of July 1, 2023), reflects the number of specialists working in the selected KVED codes and may also include freelancers and specialists providing tech services in related industries.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.2 Northern Macroregion



* Estimation of the actual number of specialists in the region as of August 2023.

** The number of verified active tech companies that meet at least two of the following criteria: presence of a public name, existence of a website, presence of at least three employees, (preferably) physical representation in the form of an office or coworking space, active public communication on the website and/or social networks, published job vacancies in the last six months, responsiveness to inquiries, and answering calls and/or emails.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.3 Western Macroregion

Lviv Hub



\$59.45 M*

Total taxes paid by tech companies in the region in 2022.**



3.1 jobs

are created and sustained by a tech company when hiring one tech industry specialist in Lviv region.



14%

The share of the hub in the structure of the nominal turnover of the industry in 2022.***



122-124 K

The total number of jobs created and saved by the local tech industry in 2022.****

The war has reshaped the regional structure of Ukraine's tech industry: Lviv region has become a focal point for relocation and now holds the second position in terms of the number of employed professionals.

The growth in tax revenues from tech companies in the Lviv region in 2022 was 27.4% higher than in 2021.

* 2.173 billion UAH, according to State Tax Service of Ukraine data, at the NBU exchange rate of UAH 36.56, as of the time of calculation on October 2, 2023.

** The total amount of taxes includes the following types of taxes: Individual Entrepreneurs Single Tax, Legal Entities Single Tax, Personal Income Tax, the Value-Added Tax (VAT) overall, Military Levy, Tax on Income of Legal Entities and other taxes.

*** The indicator takes into account the tax residency of tech market participants within the location. Source: analytics from the research agency Fama, calculation base – estimation of the number of registered participants in regional tech markets in 2022 according to the State Tax Service of Ukraine, and the State Statistics Service of Ukraine data.

**** The indicator is a local summary of the created and sustained jobs of direct and indirect employment, considering the induced effect in the reporting year.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.3 Western Macroregion

Lviv Hub



\$34.55 M

Taxes paid by tech companies in the region for the first half of 2023.*



31 023 ↑7.8%

Number of Individual Entrepreneurs (IE) in the tech industry.**



47% (as of July 1, 2023)

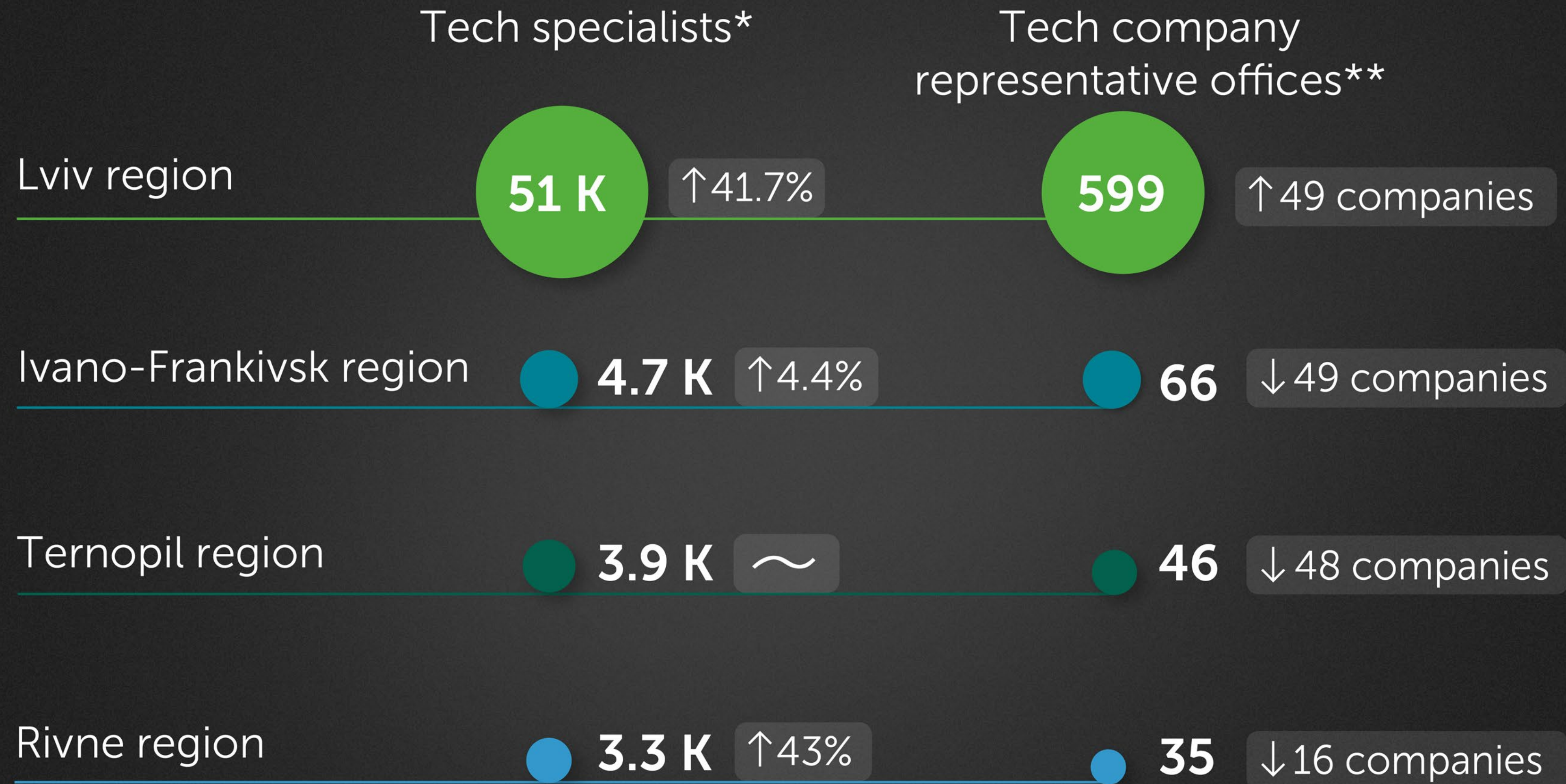
Share of the Individual Entrepreneurs Single Tax from the tech industry in the city's overall Individual Entrepreneurs Single Tax payment.

* 1.263 billion UAH, according to State Tax Service of Ukraine data, at the NBU exchange rate of UAH 36.56, as of the time of calculation on October 2, 2023.

** The Classification of Types of Economic Activity (KVED) codes taken into account in the calculation are: 58.21, 58.29, 62.01, 62.02, 62.03, 62.09, 63.11, 63.12. The indicator, calculated based on the number of Individual Entrepreneurs (as of July 1, 2023), reflects the number of specialists working in the selected KVED codes and may also include freelancers and specialists providing tech services in related industries.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.3 Western Macroregion



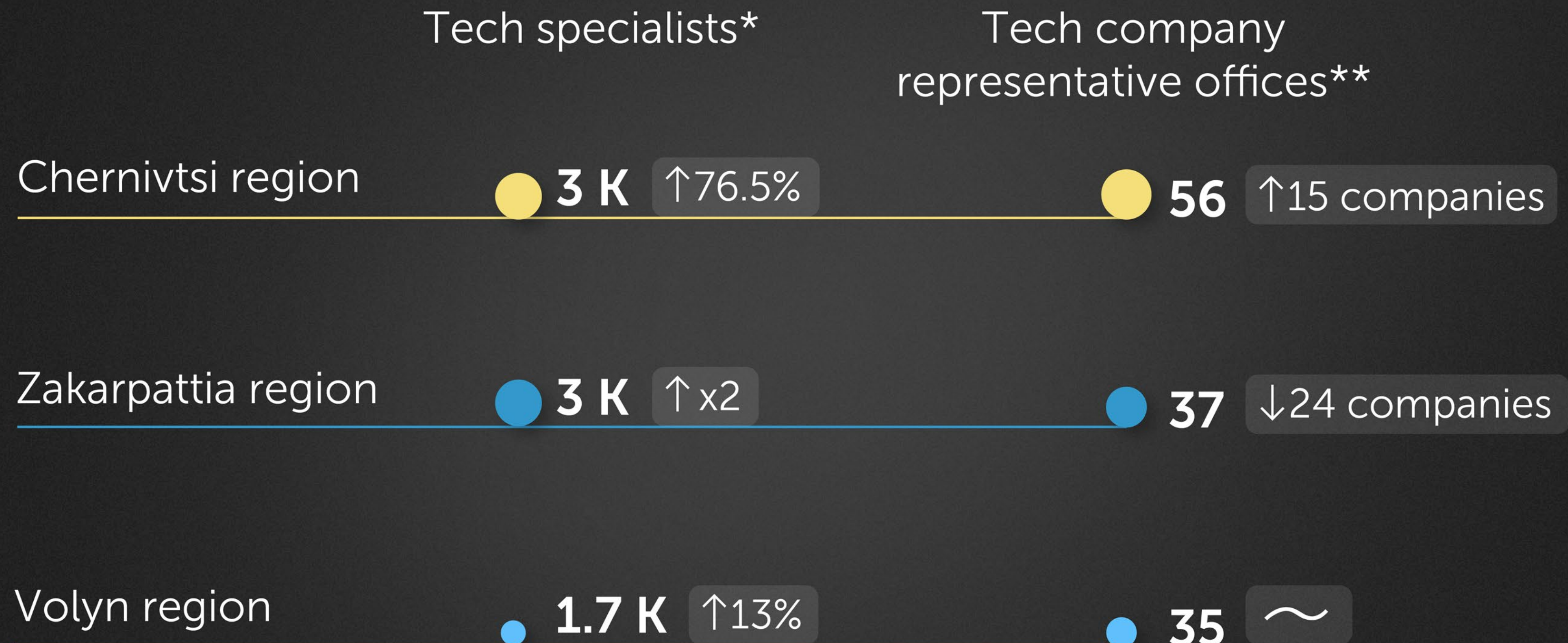
* Estimation of the actual number of specialists in the region as of August 2023.

** The number of verified active tech companies that meet at least two of the following criteria: presence of a public name, existence of a website, presence of at least three employees, (preferably) physical representation in the form of an office or coworking space, active public communication on the website and/or social networks, published job vacancies in the last six months, responsiveness to inquiries, and answering calls and/or emails.

*** The dynamics of the number of company representations in 2023 compared to 2022 are calculated based on the data from the IT Research Resilience study.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.3 Western Macroregion



* Estimation of the actual number of specialists in the region as of August 2023.

** The number of verified active tech companies that meet at least two of the following criteria: presence of a public name, existence of a website, presence of at least three employees, (preferably) physical representation in the form of an office or coworking space, active public communication on the website and/or social networks, published job vacancies in the last six months, responsiveness to inquiries, and answering calls and/or emails.

*** The dynamics of the number of company representations in 2023 compared to 2022 are calculated based on the data from the IT Research Resilience study.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.4 Eastern Macroregion

Kharkiv Hub



\$68.33 M*

Total taxes paid by tech companies in the region in 2022.**



2.2 jobs

are created and sustained by a tech company when hiring one tech industry specialist in Kharkiv region.

Businesses and specialist relocation posed one of the greatest challenges for the Kharkiv region in 2022.

However, based on the tax payments to various levels of local budgets, tech specialists from the Kharkiv region did not change their registration. This is evident from the receipts of the Single Tax, which in 2023 remain at the same level as in 2022.

The increase in tax revenues from tech companies in the Kharkiv region in 2022 amounted to 17.8%, surpassing the figures from 2021.



15.6%

The share of the hub in the structure of the nominal turnover of the industry in 2022.***

* 2.498 billion UAH, according to State Tax Service of Ukraine data, at the NBU exchange rate of UAH 36.56, as of the time of calculation on October 2, 2023.

** The total amount of taxes includes the following types of taxes: Individual Entrepreneurs Single Tax, Legal Entities Single Tax, Personal Income Tax, the Value-Added Tax (VAT) overall, Military Levy, Tax on Income of Legal Entities and other taxes.

*** The indicator takes into account the tax residency of tech market participants within the location. Source: analytics from the research agency Fama, calculation base – estimation of the number of registered participants in regional tech markets in 2022 according to the State Tax Service of Ukraine, and the State Statistics Service of Ukraine data.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.4 Eastern Macroregion

Kharkiv Hub



\$28.84 M

Taxes paid by tech companies
in the region for the first half of 2023.*



35 679 ↑11.1%

Number of Individual Entrepreneurs (IE)
in the tech industry.**



50.7% (as of July 1, 2023)

Share of the Individual Entrepreneurs Single
Tax from the tech industry in the city's overall
Individual Entrepreneurs Single Tax payment.

* 1.054 billion UAH, according to State Tax Service of Ukraine data, at the NBU exchange rate of UAH 36.56, as of the time of calculation on October 2, 2023.

** The Classification of Types of Economic Activity (KVED) codes taken into account in the calculation are: 58.21, 58.29, 62.01, 62.02, 62.03, 62.09, 63.11, 63.12. The indicator, calculated based on the number of Individual Entrepreneurs (as of July 1, 2023), reflects the number of specialists working in the selected KVED codes and may also include freelancers and specialists providing tech services in related industries.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.4 Eastern Macroregion

Dnipro Hub

Due to extensive internal migration, business relocations, and the disruption of universities in the eastern regions, Dnipro saw a growth of over 30% in tech industry employment in 2022.



\$38.4 M*

Total taxes paid by tech companies in the region in 2022.**



7.5%

The share of the hub in the structure of the nominal turnover of the industry in 2022.***



2.7 jobs

are created and sustained by a tech company when hiring one tech industry specialist in Dnipro region.



60-61 K

The total number of jobs created and saved by the local tech industry in 2022.****

* 1.404 billion UAH, according to State Tax Service of Ukraine data, at the NBU exchange rate of UAH 36.56, as of the time of calculation on October 2, 2023.

** The total amount of taxes includes the following types of taxes: Individual Entrepreneurs Single Tax, Legal Entities Single Tax, Personal Income Tax, the Value-Added Tax (VAT) overall, Military Levy, Tax on Income of Legal Entities and other taxes.

*** The indicator takes into account the tax residency of tech market participants within the location. Source: analytics from the research agency Fama, calculation base – estimation of the number of registered participants in regional tech markets in 2022 according to the State Tax Service of Ukraine, and the State Statistics Service of Ukraine data.

**** The indicator is a local summary of the created and sustained jobs of direct and indirect employment, considering the induced effect in the reporting year.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.4 Eastern Macroregion

Dnipro Hub



\$24.25 M

Taxes paid by tech companies in the region for the first half of 2023.*



23 243 ↑15.4%

Number of Individual Entrepreneurs (IE) in the tech industry.**



39.1% (as of July 1, 2023)

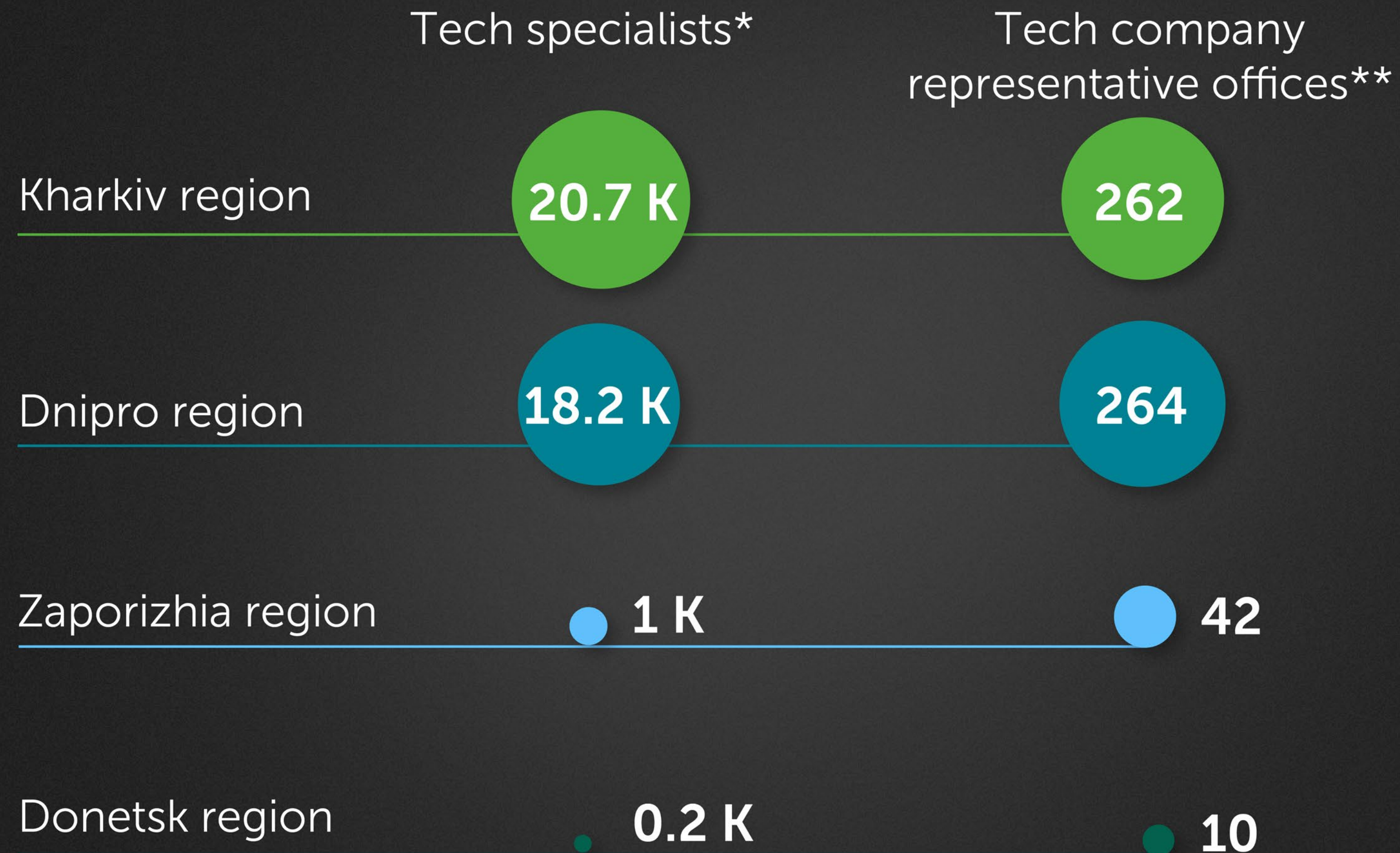
Share of the Individual Entrepreneurs Single Tax from the tech industry in the city's overall Individual Entrepreneurs Single Tax payment.

* 1.054 billion UAH, according to State Tax Service of Ukraine data, at the NBU exchange rate of UAH 36.56, as of the time of calculation on October 2, 2023.

** The Classification of Types of Economic Activity (KVED) codes taken into account in the calculation are: 58.21, 58.29, 62.01, 62.02, 62.03, 62.09, 63.11, 63.12. The indicator, calculated based on the number of Individual Entrepreneurs (as of July 1, 2023), reflects the number of specialists working in the selected KVED codes and may also include freelancers and specialists providing tech services in related industries.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.4 Eastern Macroregion



* Estimation of the actual number of specialists in the region as of August 2023.

** The number of verified active tech companies that meet at least two of the following criteria: presence of a public name, existence of a website, presence of at least three employees, (preferably) physical representation in the form of an office or coworking space, active public communication on the website and/or social networks, published job vacancies in the last six months, responsiveness to inquiries, and answering calls and/or emails.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.5 Southern Macroregion

Odesa Hub

Cumulative tax revenues indicate a growing trend in the tech industry in the Odesa region in 2022. The increase in tax revenues from tech companies in the Odesa region in 2022 amounted to 18.7% more than in 2021.



\$27.15 M*

Total taxes paid by tech companies in the region in 2022.**



5%

The share of the hub in the structure of the nominal turnover of the industry in 2022.***



2.5 jobs

are created and sustained by a tech company when hiring one tech industry specialist in Odesa region.



33-34 K

The total number of jobs created and saved by the local tech industry in 2022.****

* 0.992 billion UAH, according to State Tax Service of Ukraine data, at the NBU exchange rate of UAH 36.56, as of the time of calculation on October 2, 2023.

** The total amount of taxes includes the following types of taxes: Individual Entrepreneurs Single Tax, Legal Entities Single Tax, Personal Income Tax, the Value-Added Tax (VAT) overall, Military Levy, Tax on Income of Legal Entities and other taxes.

*** The indicator takes into account the tax residency of tech market participants within the location. Source: analytics from the research agency Fama, calculation base – estimation of the number of registered participants in regional tech markets in 2022 according to the State Tax Service of Ukraine, and the State Statistics Service of Ukraine data.

**** The indicator is a local summary of the created and sustained jobs of direct and indirect employment, considering the induced effect in the reporting year.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.5 Southern Macroregion

Odesa Hub



\$12.36 M

Taxes paid by tech companies
in the region for the first half of 2023.*



14 210 ↑17.8%

Number of Individual Entrepreneurs (IE)
in the tech industry.**



26.5% (as of July 1, 2023)

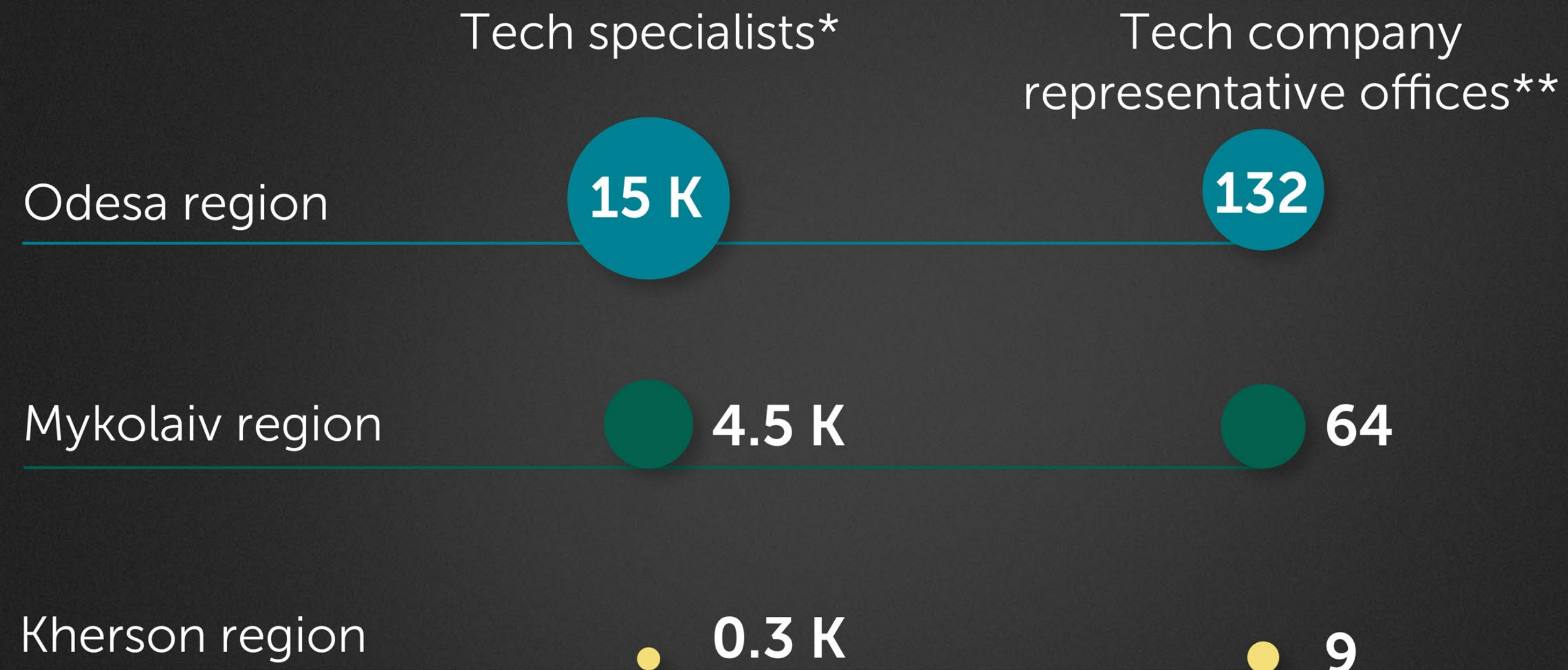
Share of the Individual Entrepreneurs Single
Tax from the tech industry in the city's overall
Individual Entrepreneurs Single Tax payment.

* 0.452 billion UAH, according to State Tax Service of Ukraine data, at the NBU exchange rate of UAH 36.56, as of the time of calculation on October 2, 2023.

** The Classification of Types of Economic Activity (KVED) codes taken into account in the calculation are: 58.21, 58.29, 62.01, 62.02, 62.03, 62.09, 63.11, 63.12. The indicator, calculated based on the number of Individual Entrepreneurs (as of July 1, 2023), reflects the number of specialists working in the selected KVED codes and may also include freelancers and specialists providing tech services in related industries.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.5 Southern Macroregion

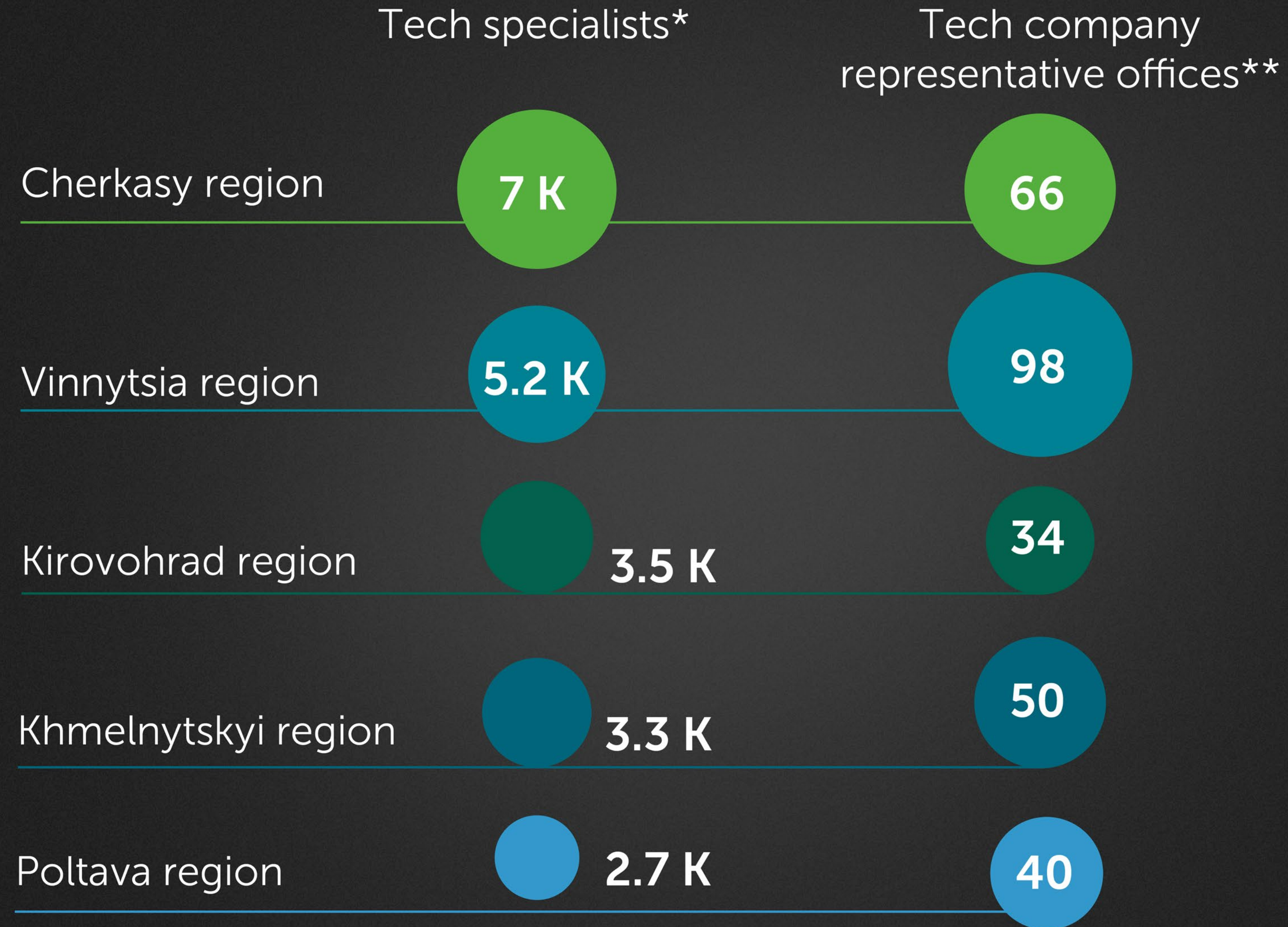


* Estimation of the actual number of specialists in the region as of August 2023.

** The number of verified active tech companies that meet at least two of the following criteria: presence of a public name, existence of a website, presence of at least three employees, (preferably) physical representation in the form of an office or coworking space, active public communication on the website and/or social networks, published job vacancies in the last six months, responsiveness to inquiries, and answering calls and/or emails.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.6 Central Macroregion

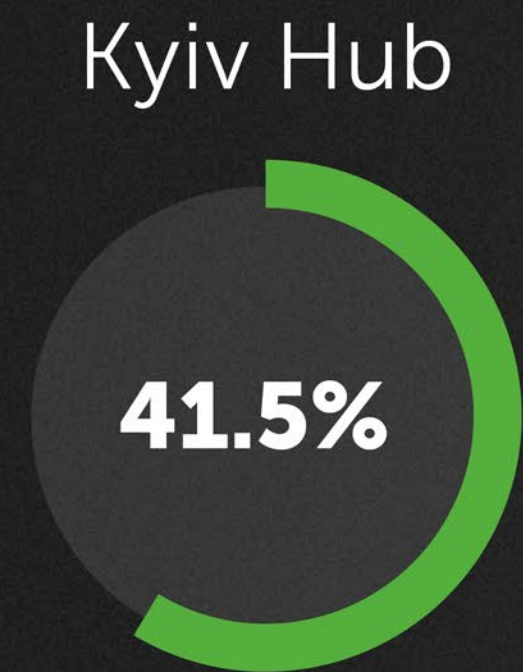


* Estimation of the actual number of specialists in the region as of August 2023.

** The number of verified active tech companies that meet at least two of the following criteria: presence of a public name, existence of a website, presence of at least three employees, (preferably) physical representation in the form of an office or coworking space, active public communication on the website and/or social networks, published job vacancies in the last six months, responsiveness to inquiries, and answering calls and/or emails.

2. LOCAL TECH INDUSTRY DISTINCTIONS

2.7 Shares of the Largest Tech Hubs in the Structure of the Temporary Direct Economic Impact of the Tech Industry, Adjusted for Migration in 2022



Indicator of the temporary direct economic impact of the tech industry, adjusted for migration.

The approach to calculating the proportions of contributions from regional markets to the formation of the national direct economic impact of the industry is based on the actual presence of tech specialists in tech hubs. Unlike the calculation of the share of nominal turnover based on tax residency, this indicator takes into account the direct effect on local economies, including through local consumption. Thus, the consequences of relocations and the specifics of the tech industry functioning in wartime conditions are considered.*

* Source: the research agency Fama analytics, calculation base – estimation of the number of actual participants in regional tech markets in 2022 according to the IT Research Resilience data, the State Tax Service of Ukraine, the State Statistics Service of Ukraine, and the World Bank data.

WARTIME ECONOMY

33



3. WARTIME ECONOMY

3.1 Business Activity, Revenues, and Expenditures of Companies

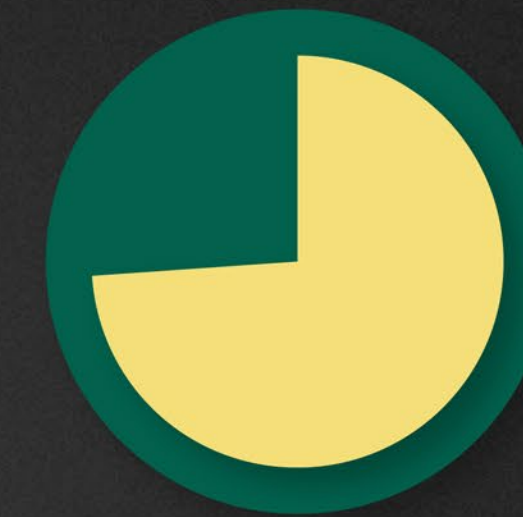
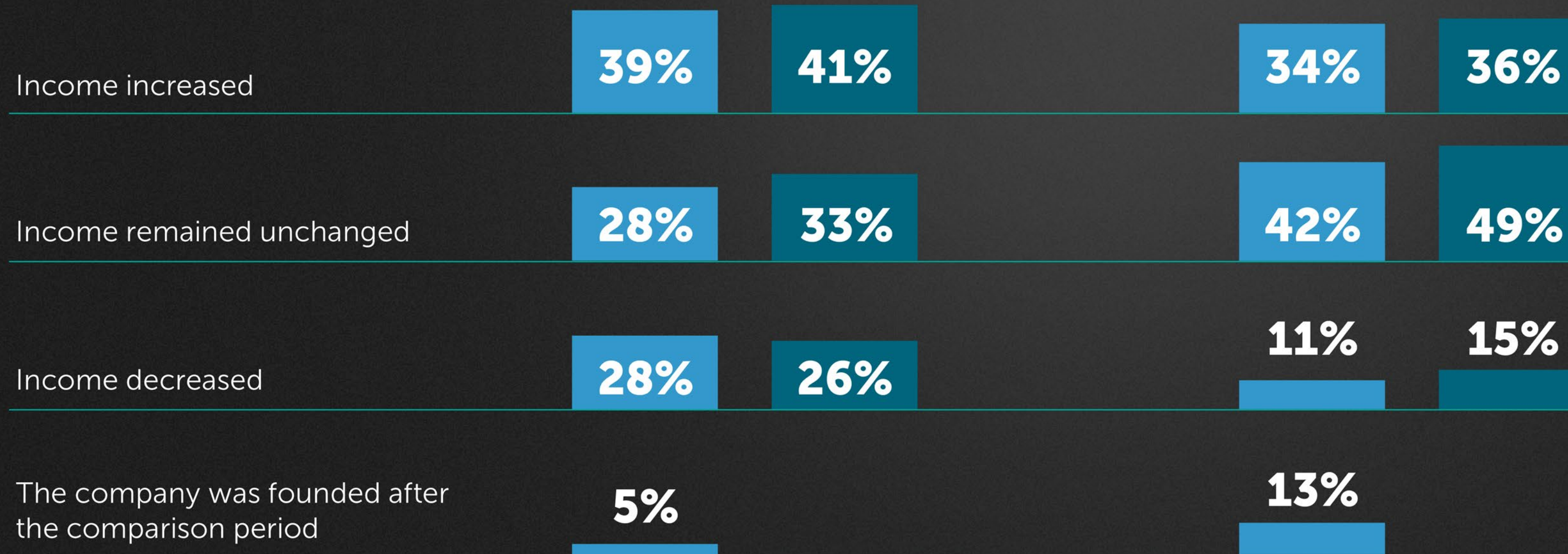
Changes in companies' revenues as of the second quarter of 2023 depending on the diversification of the geographical scope of operational activities compared to the results for the period



Company's Ukrainian business



Company's foreign business

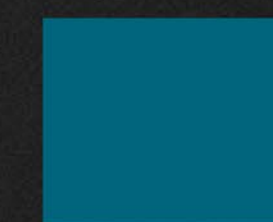


74%

In the majority of companies, the income in 2023 either remained unchanged or increased compared to the previous year.



compared to 2021



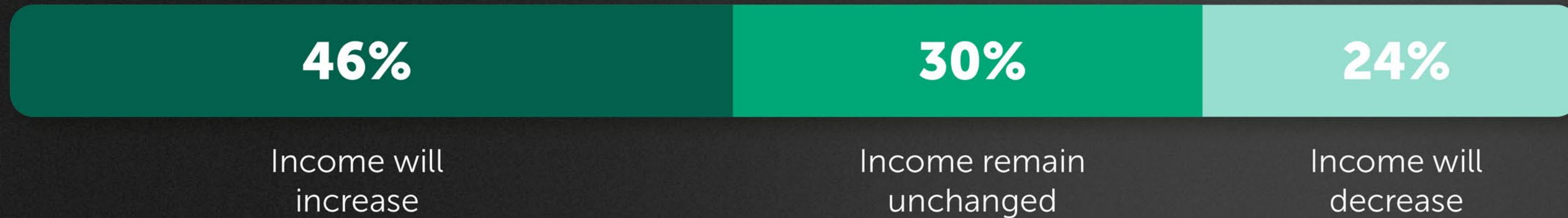
compared to 2022

3. WARTIME ECONOMY

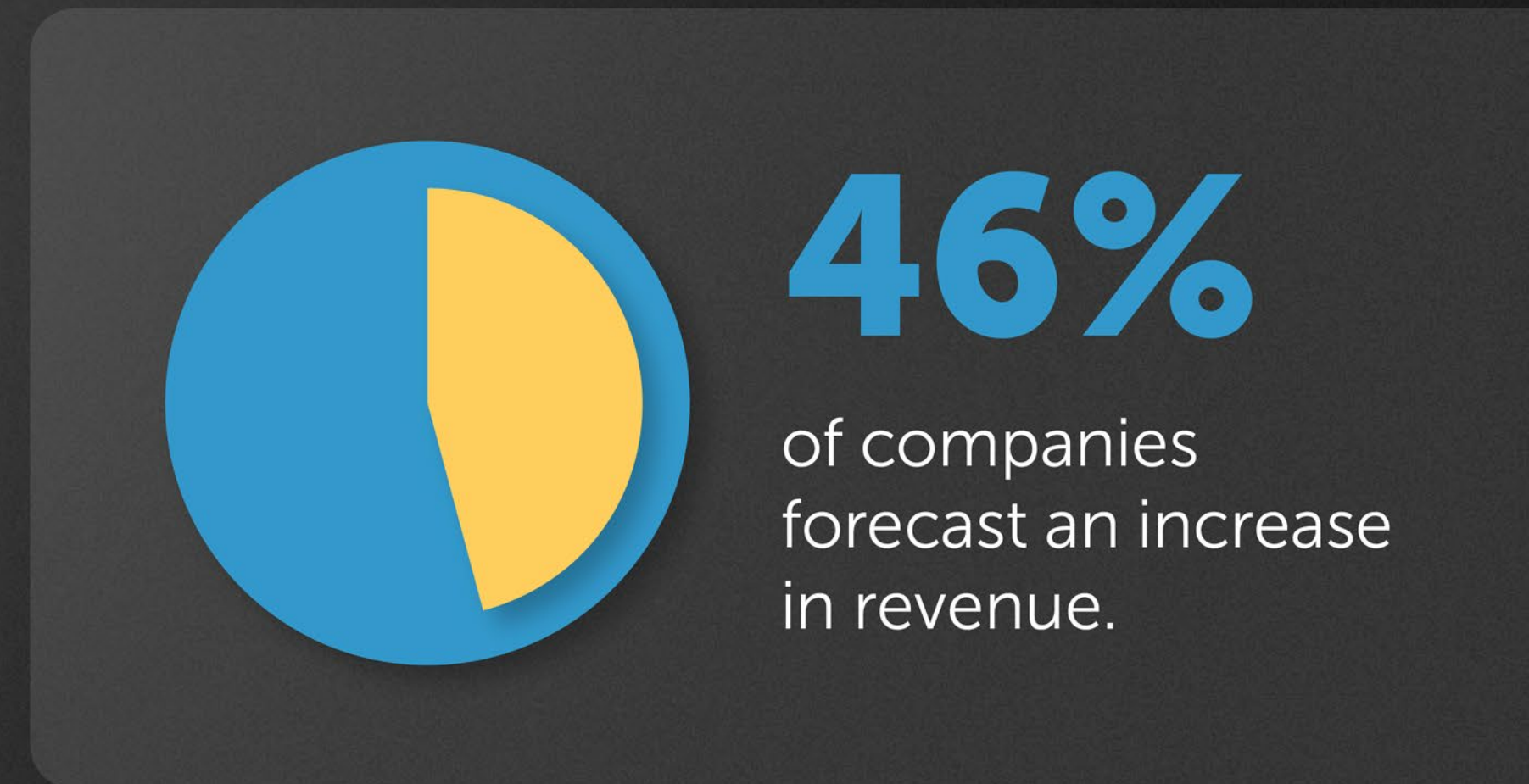
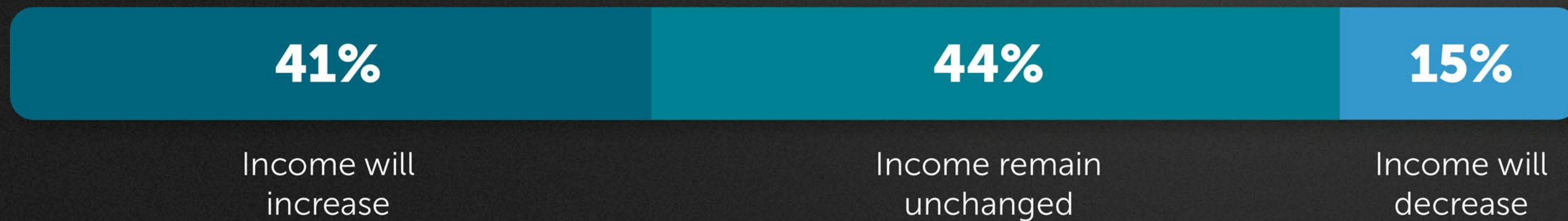
3.1 Business Activity, Revenues, and Expenditures of Companies

CEOs' projection for the company's revenue at the close of 2023

Company's Ukrainian business



Company's foreign business

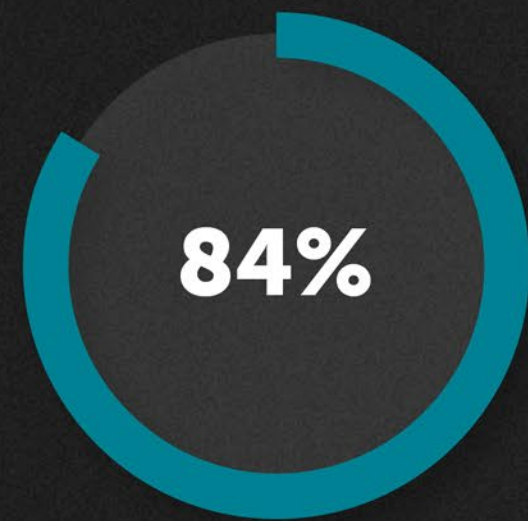


3. WARTIME ECONOMY

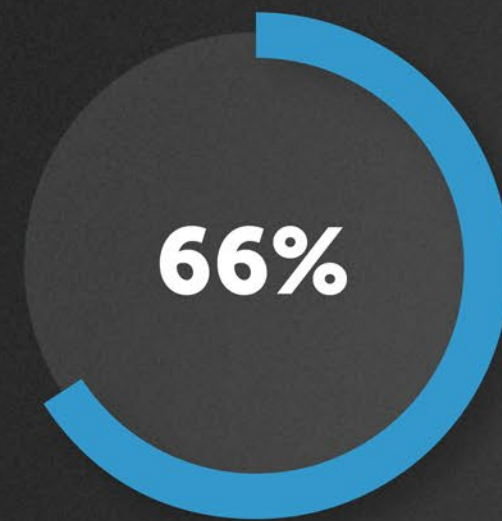
3.1 Business Activity, Revenues, and Expenditures of Companies

Tech companies are engaged in various projects*

Existing long-term projects
(lasting a year and more)



Existing short-term projects
(lasting less than a year)



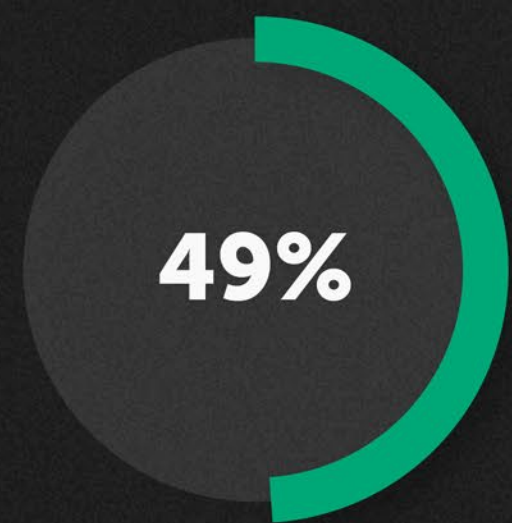
Active projects are almost completed, and there are no new ones.



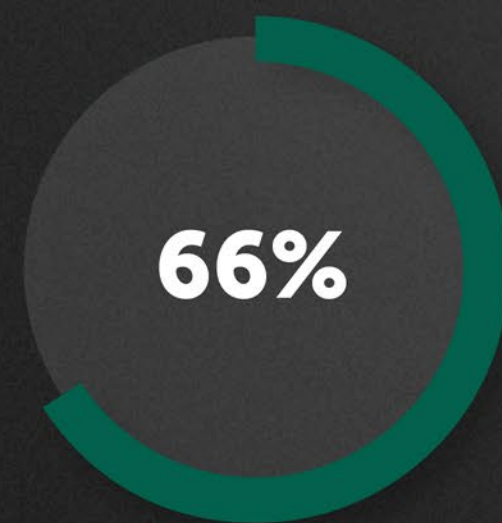
27%

of companies report an increase in the number of new potential projects.

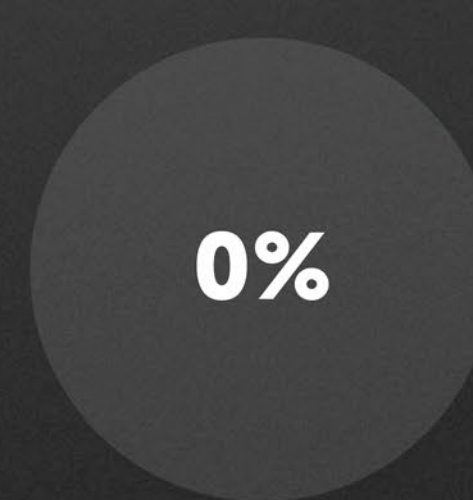
Existing potential long-term projects or leads
(lasting a year and more)



Existing potential short-term projects or leads
(lasting less than a year)



The company has no active projects at all
(no clients)



* Respondents could choose multiple answer options.

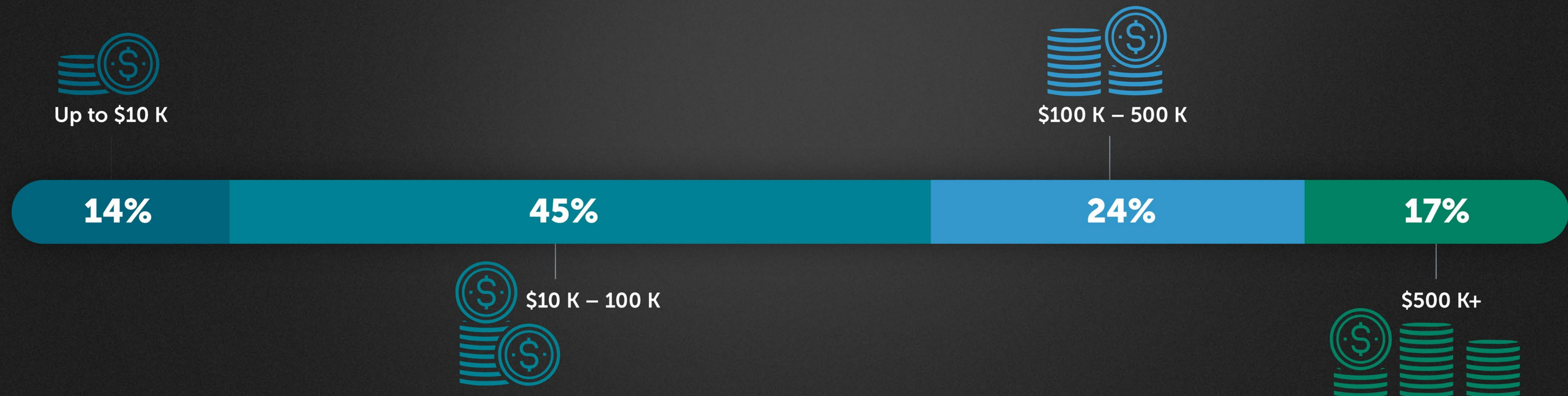
3. WARTIME ECONOMY

3.1 Business Activity, Revenues, and Expenditures of Companies

92%

of companies financially support the implementation of projects that bring us closer to victory (wartime projects).*

Funds allocated by tech companies to wartime projects



* By wartime projects, we mean financial support for the Armed Forces of Ukraine or Territorial Defense, humanitarian missions, equipment procurement, etc.

3. WARTIME ECONOMY

3.2 Employees and Contractors: Demand for Talent, Hiring, and Reserves

85%

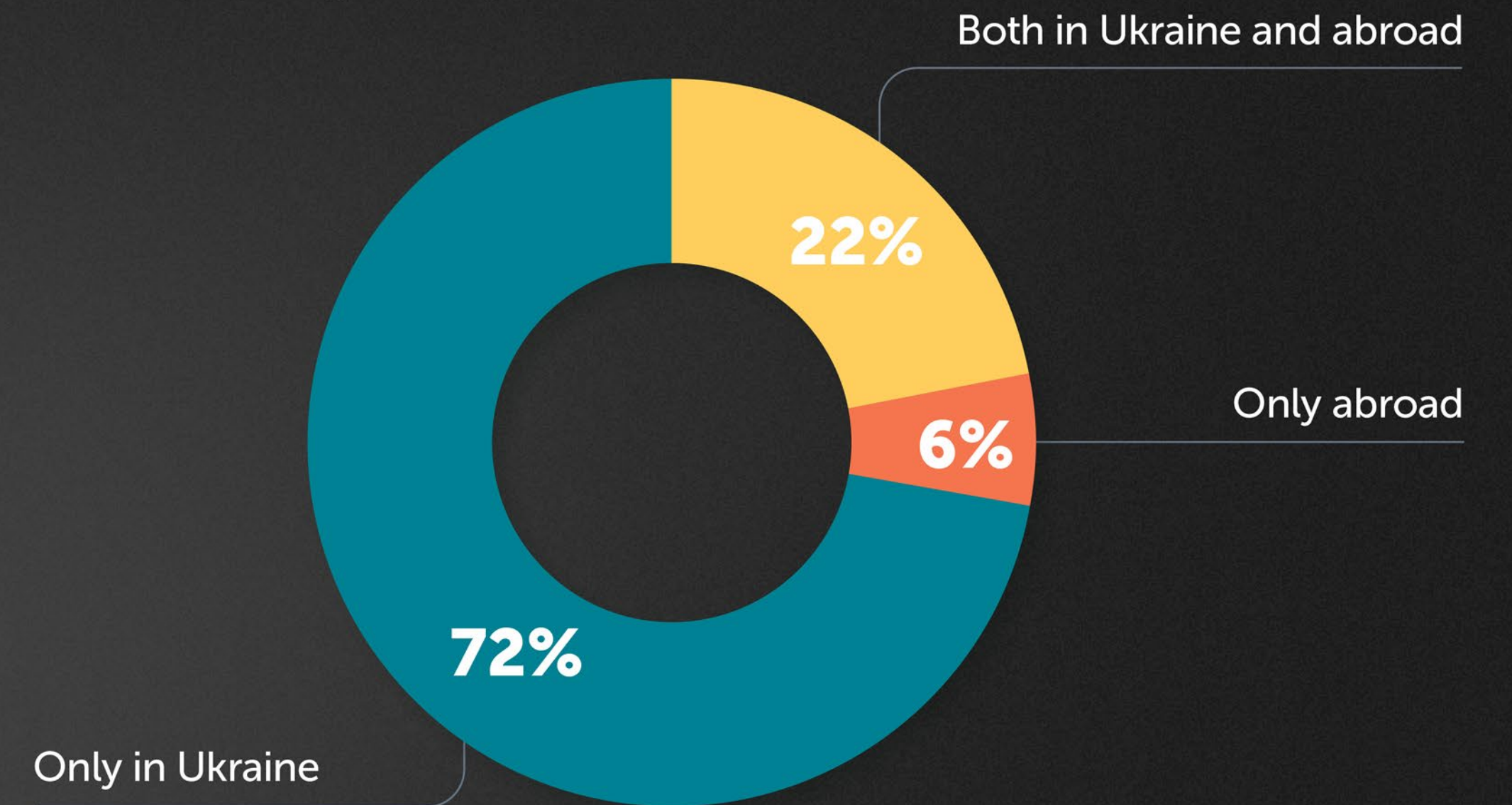
of companies continue hiring for open positions.* **56%** of them are actively seeking candidates from external sources.

Change in the company's staff size over the course of a year

How has the company's retention rate changed compared to the same period in 2022?

	in Ukraine	abroad	
Increased	34.5%	39.6%	34.0%
Remained unchanged	27.3%	50%	45.7%
Decreased	38.2%	10.4%	20.2%

Hiring geography



85%

Median value for the staff retention indicator.

10%

Median value for the employee turnover indicator.

* As of the study period.

3. WARTIME ECONOMY

3.2 Employees and Contractors: Demand for Talent, Hiring, and Reserves



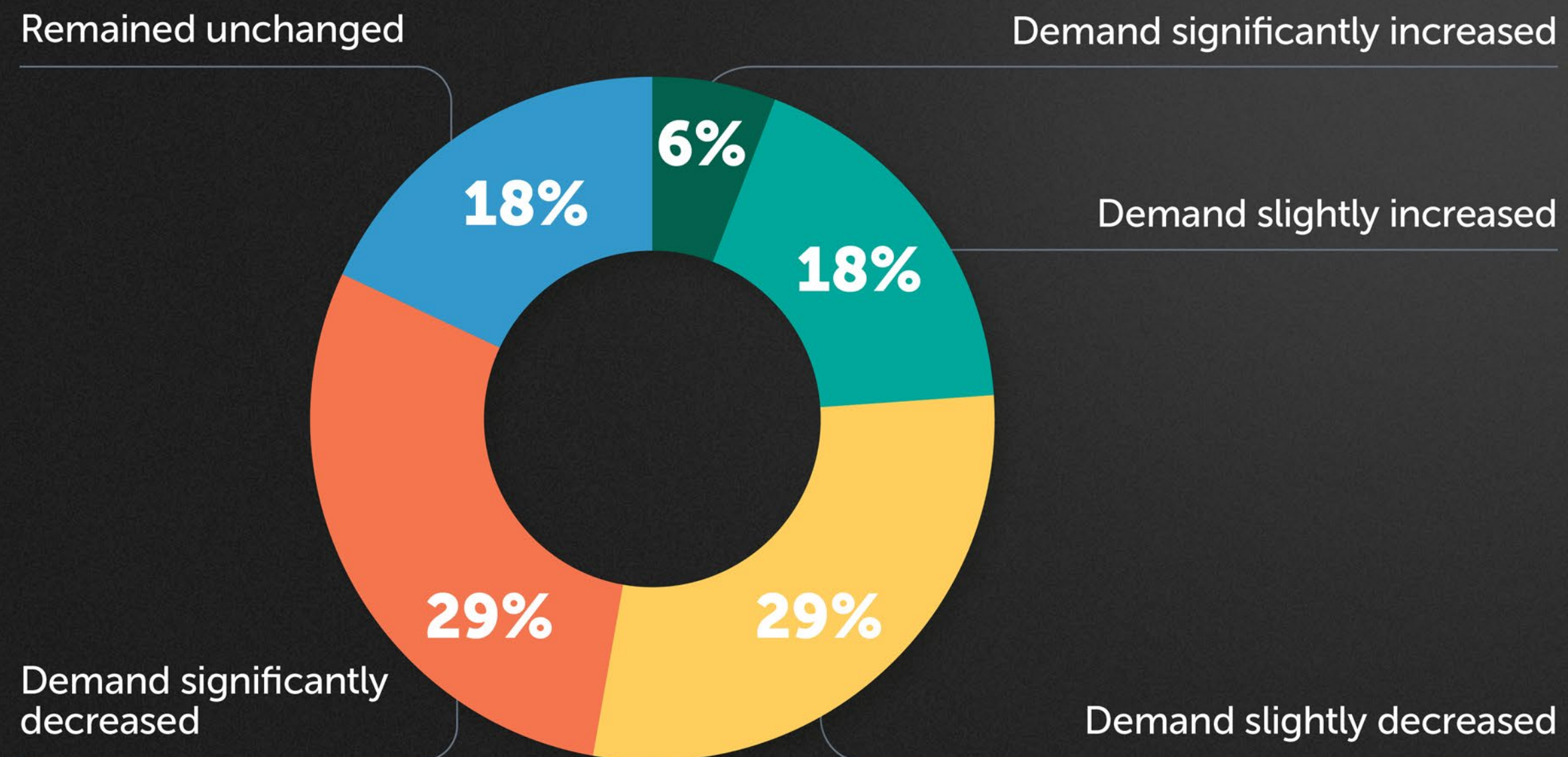
56%

of HR professionals indicated that companies are hiring specialists with junior-level qualifications.

57%

of the companies had employees in reserve as of the survey period.

Change in demand for talent over the past year:



Compensation terms for professionals transferred to the bench*:

Fully paid bench

57%

Partially paid bench

27%

Unpaid bench

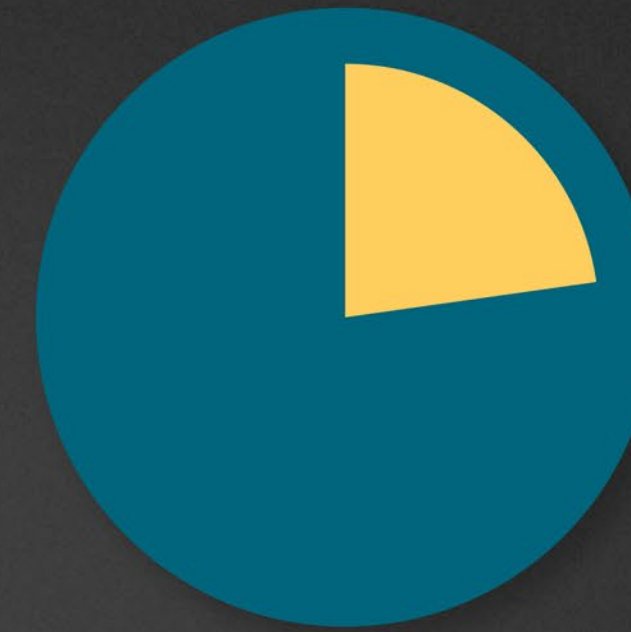
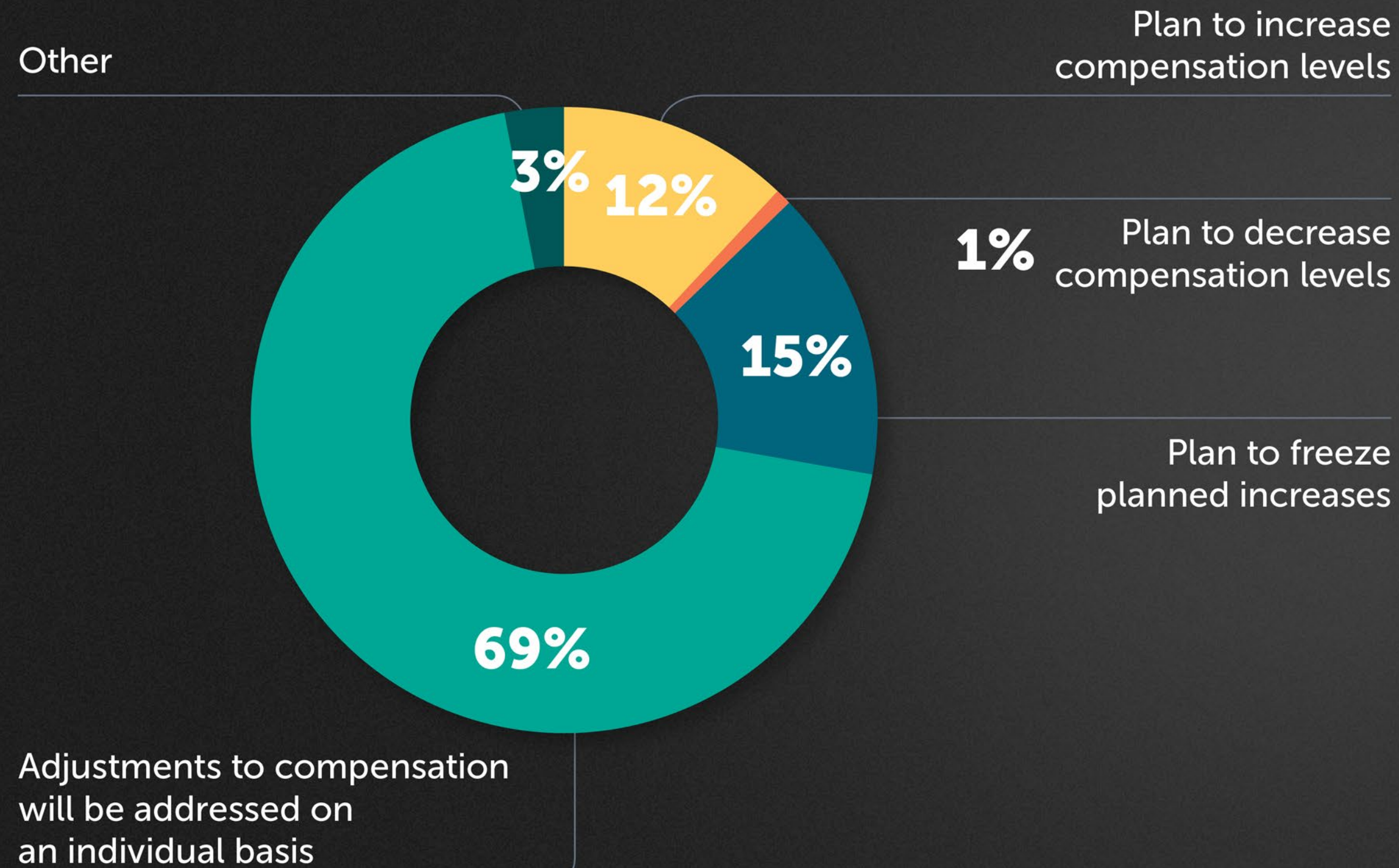
29%

* Respondents could choose multiple answers.

3. WARTIME ECONOMY

3.3 Changes in Compensation Policy

Changes in compensation policies across companies*



23%

of tech companies have changed their short-term payment system (bonuses).

17%

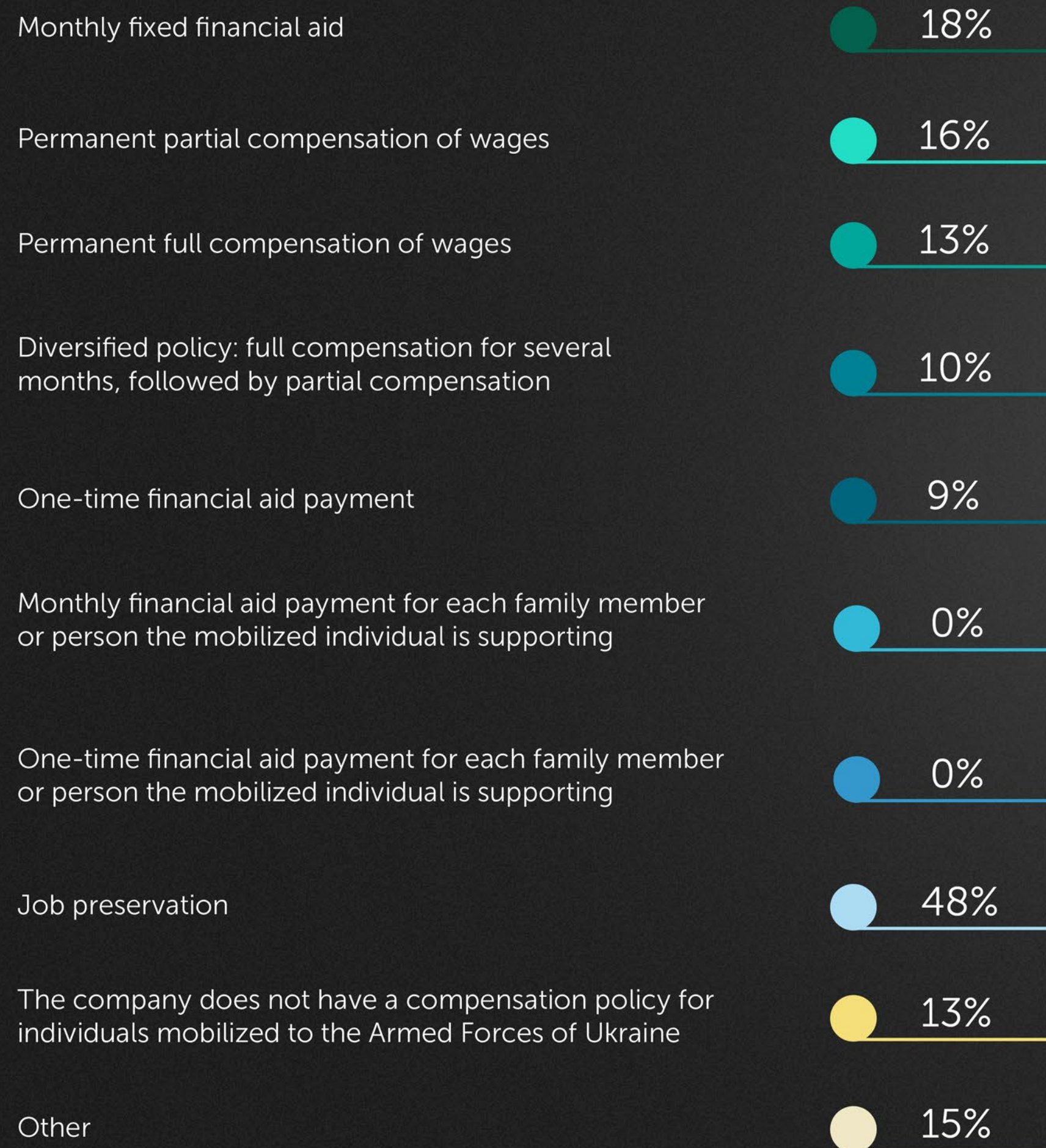
of tech companies have frozen planned compensation increases in the last six months.

* Among those who declared plans to change the compensation policy.

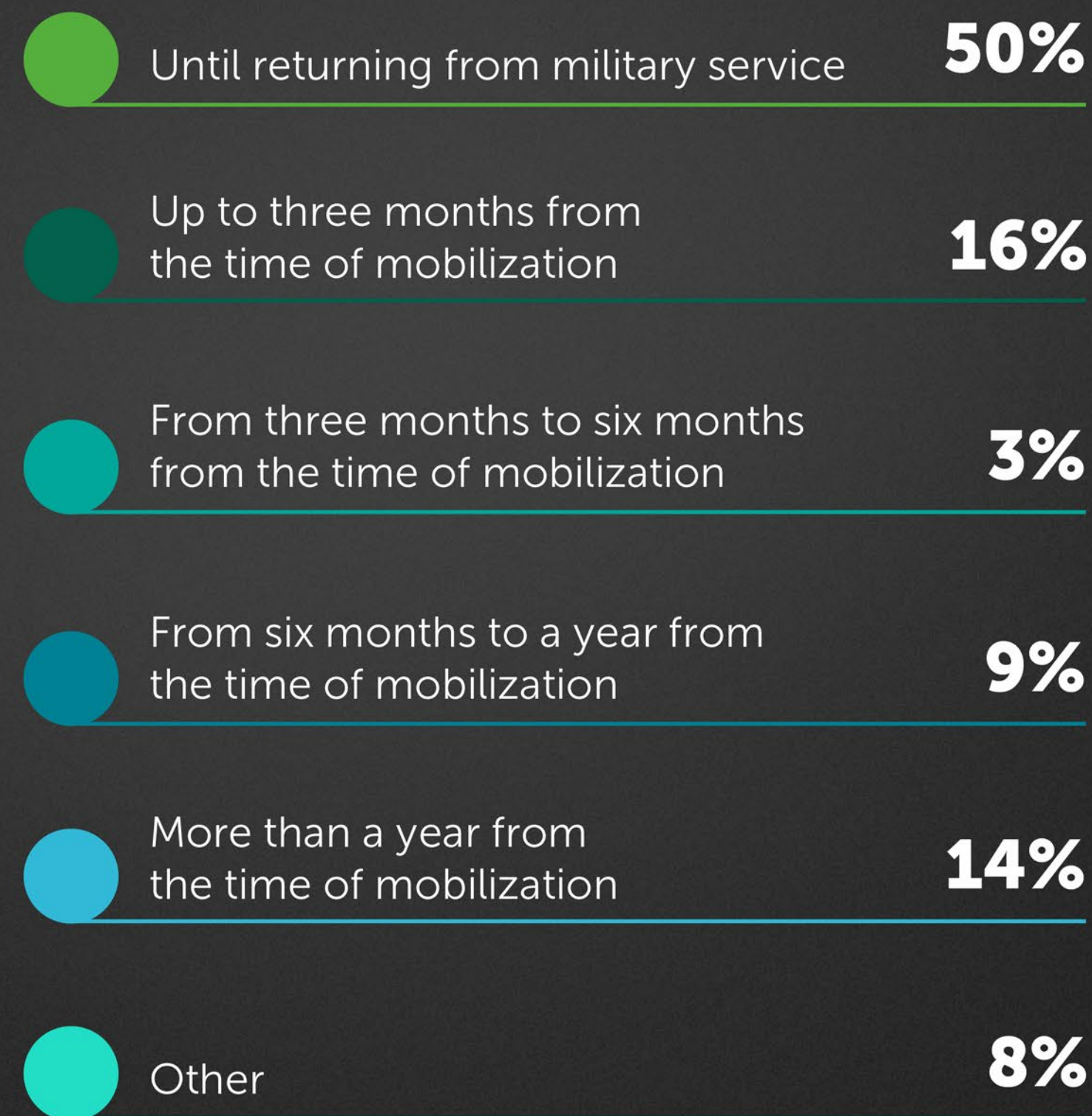
3. WARTIME ECONOMY

3.3 Changes in Compensation Policy

Features of the compensation policy for personnel mobilized in the Armed Forces of Ukraine*



Duration of the period during which the company makes payments under the military leave package from the time of mobilization**



* Respondents could choose multiple answers.
 ** Among those who have such expenses.

2/3

of the surveyed companies have mobilized specialists in their staff. Their proportion generally does not exceed **5%** of the headcount.

48%

of the companies ensure job retention.

Companies support their employees mobilized to the Armed Forces of Ukraine by ensuring job retention, providing a fixed amount, or partial compensation of their remuneration.

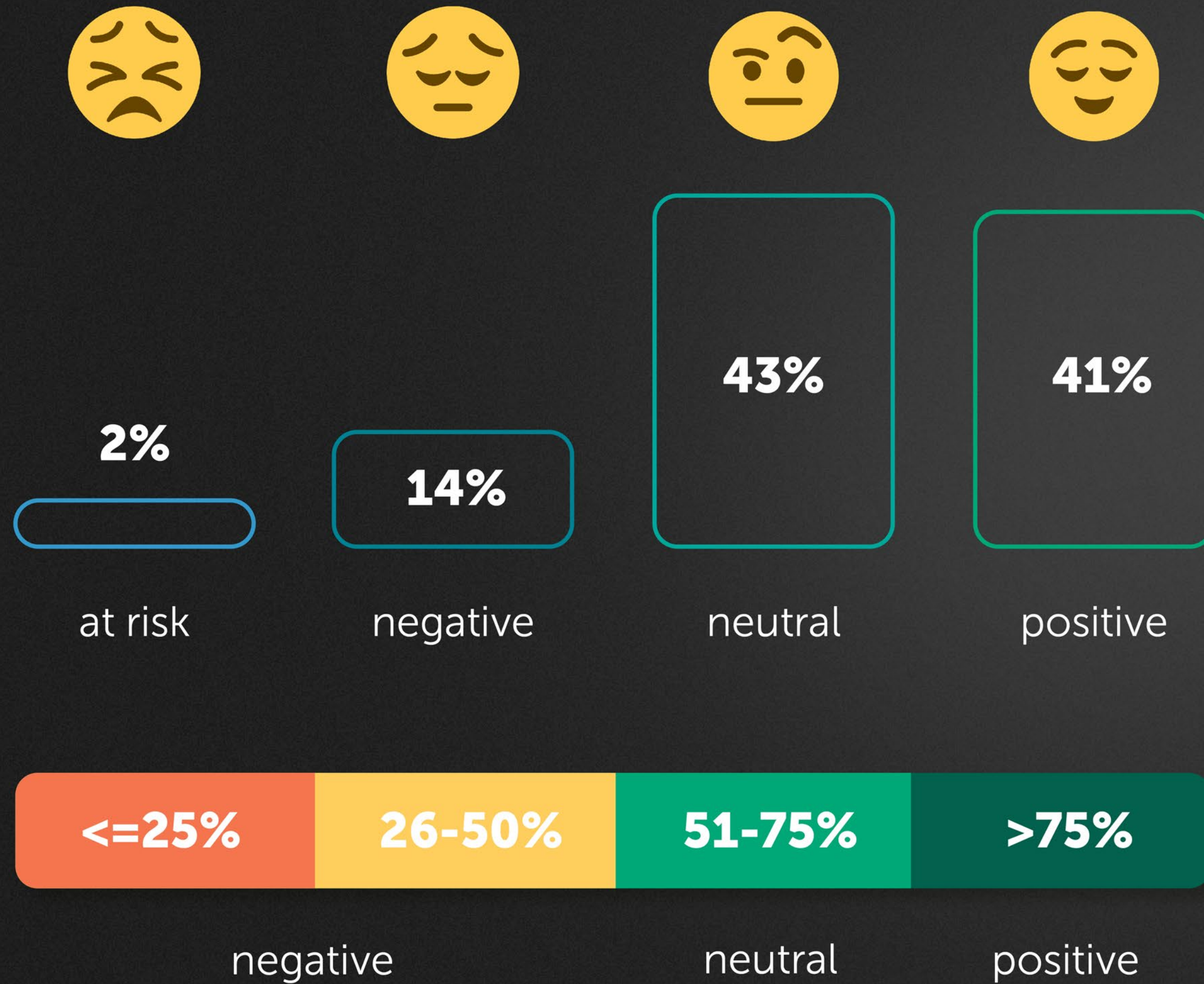
Among companies providing a fixed amount to mobilized employees, the average amount is

\$1 000 per month.

3. WARTIME ECONOMY

3.4 Company Health According to CEO Assessments

"Company health" assessment by the CEO



41%

CEOs assess the company's health positively. **Last year, this figure was 78%.**

"Company Health"

A comprehensive indicator that includes business activity, financial metrics, overall team well-being, social responsibility, and more. Those who rate 75% or higher are classified as "positive health condition", while those rating below 75% fall into "neutral" or "negative" category.

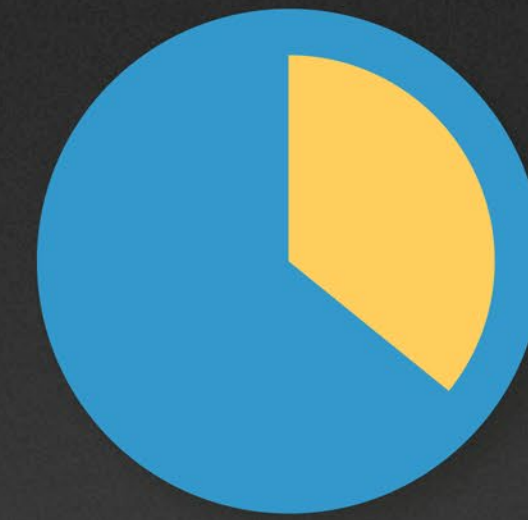
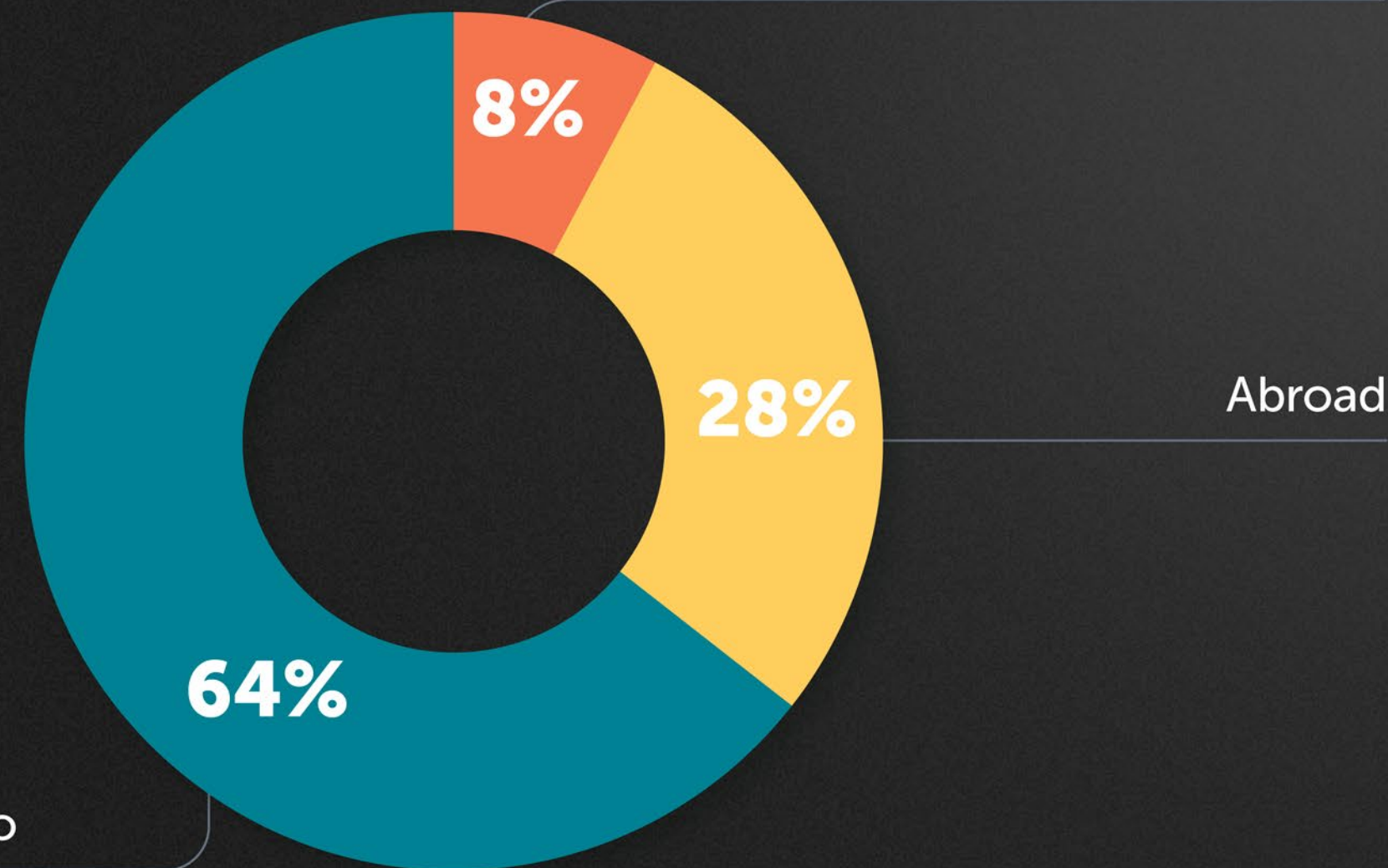
3. WARTIME ECONOMY

3.5 Plans for Opening Offices in Ukraine and Abroad

5%

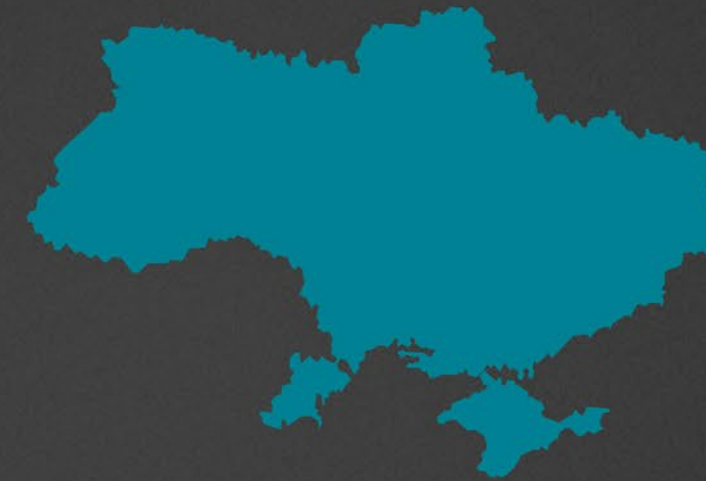
of CEOs have plans to close an office in Ukraine.

Plans to open a new representative office in the short-term perspective



36%

of tech company CEOs plan to open new offices in the coming year. The most popular choice for a new location is Poland.



In Ukraine

Kyiv, Lviv, Ivano-Frankivsk, Vinnytsia, Mykolaiv



Abroad

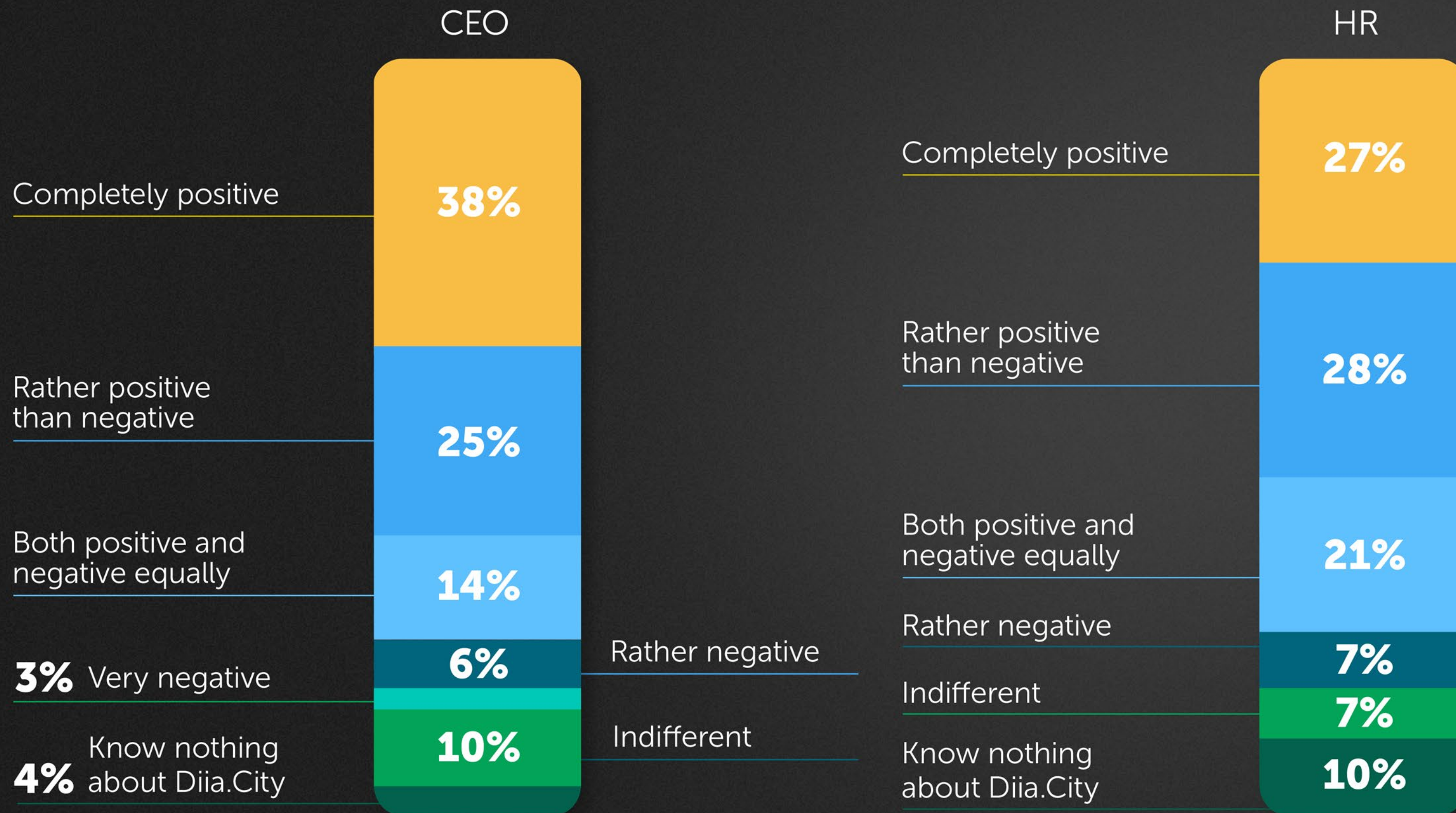
- | | | |
|-----------|-----------------|--------------|
| 3% | ■ Poland | Central Asia |
| 3% | ■ USA | UAE |
| 2% | ■ Europe | Saudi Arabia |
| 2% | ■ Portugal | Argentina |
| 1% | ■ Great Britain | Canada |
| | France | Cyprus |
| | Austria | |
| | Czech Republic | |
| | Germany | |
| | Spain | |

3. WARTIME ECONOMY

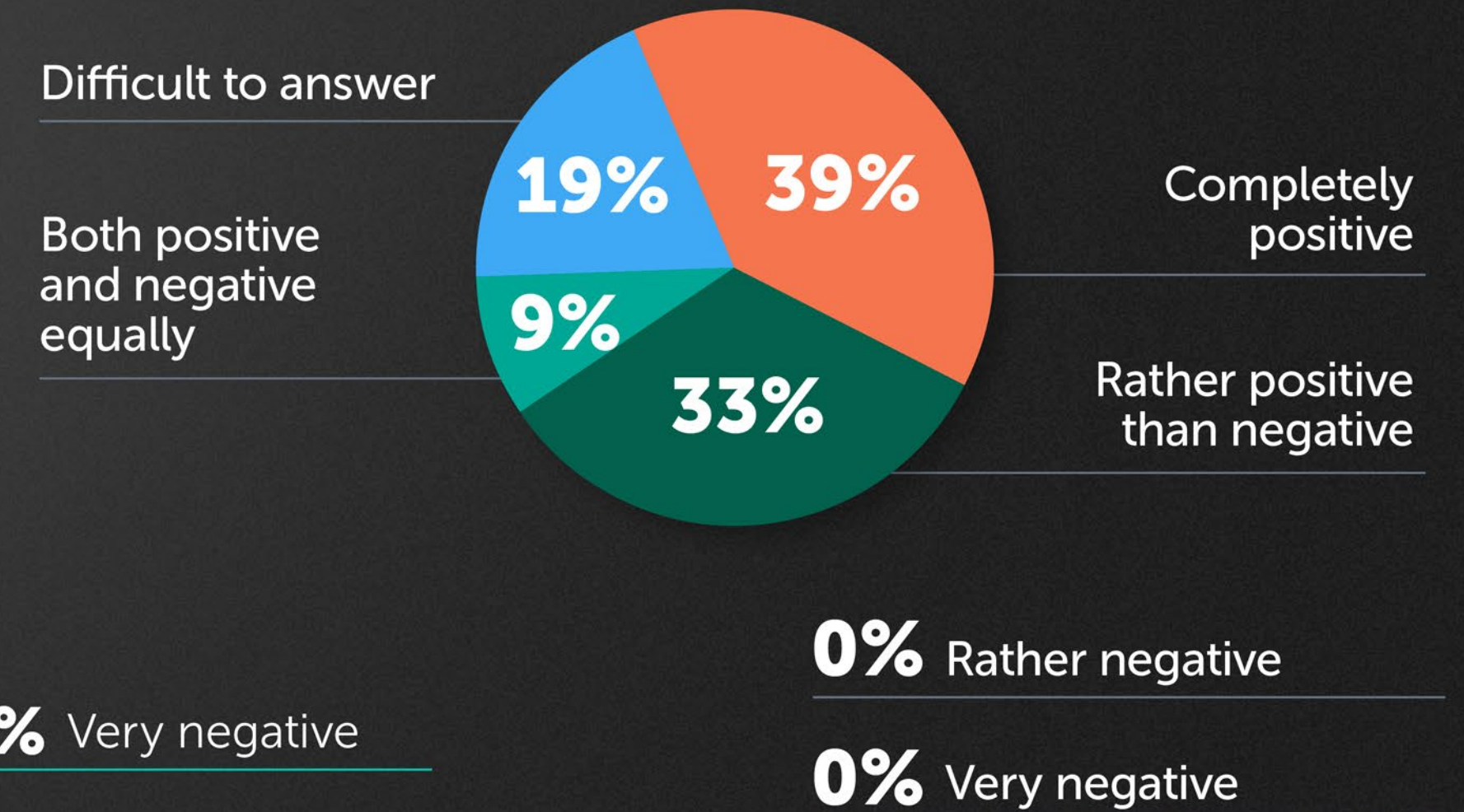
3.6 Attitudes of CEOs and HR Professionals in Tech Companies Towards Government Initiatives and Programs

As of the end of November 2023, over 700 companies are residents of Diia.City, employing nearly 56 thousand professionals.

Attitudes towards Diia.City



How do CEOs assess the impact of residency in Diia.City on the development of their company?*



* Among the surveyed CEOs who have a company-resident of Diia.City in their business structure.

MIGRATION ATTITUDES OF TECH SPECIALISTS



4. MIGRATION ATTITUDES OF TECH SPECIALISTS

4.1 Movement Vectors



A significant portion of migration occurs within the same region. The most common departures were from the **Kyiv, Lviv, Kharkiv regions**.

Additionally, 9% left from Ivano-Frankivsk.

The outflow from western regions and the influx into the Kyiv and Kharkiv regions indicate **a trend of internally displaced tech specialists returning home because the situation has become controlled and more stable.**

4. MIGRATION ATTITUDES OF TECH SPECIALISTS

4.1 Movement Vectors

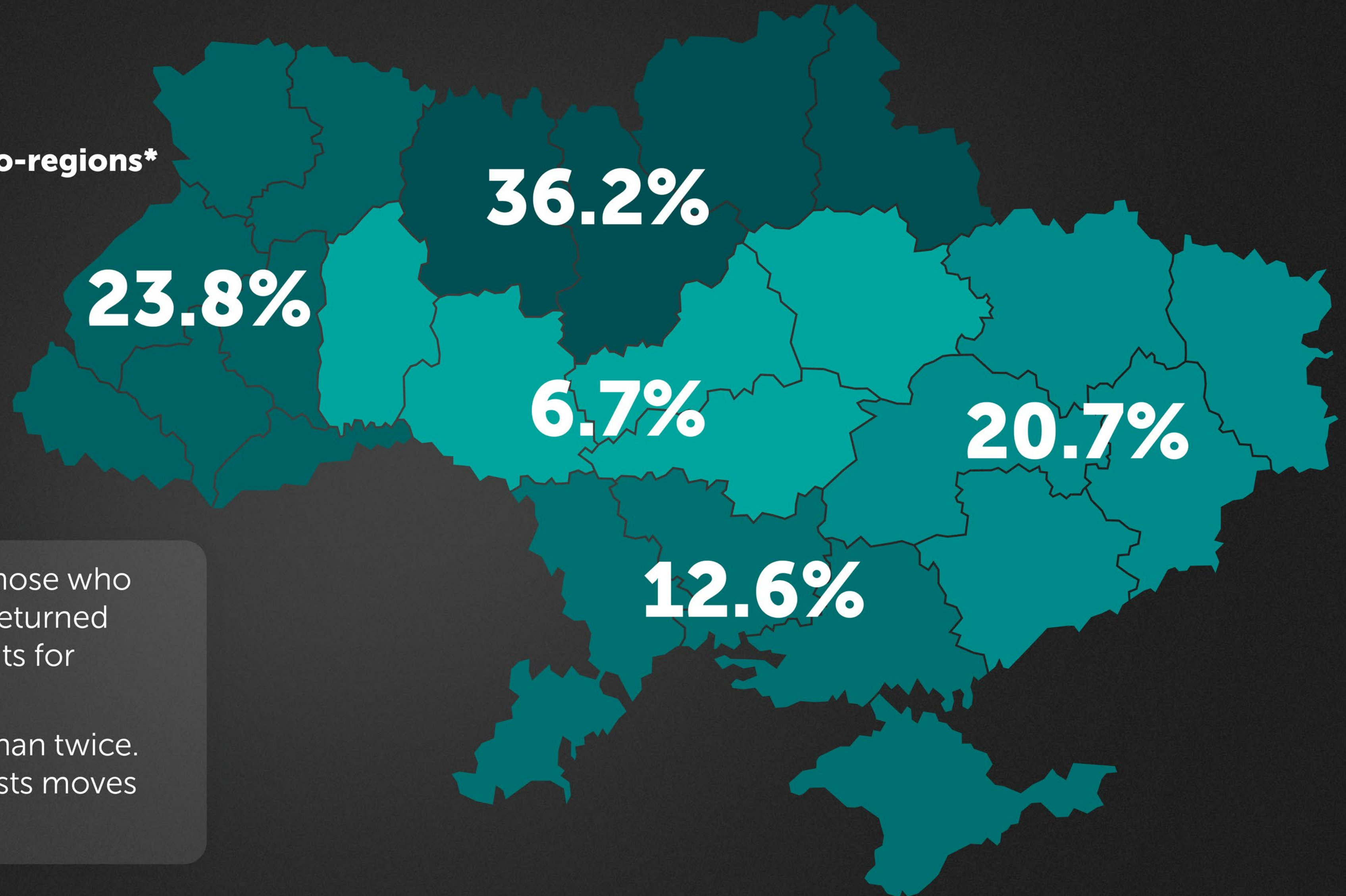
Relocation by macro-regions*

1/4

of tech specialists changed their place of residence last year.

Every fifth tech specialist among those who changed their place of residence returned from abroad this year. This accounts for approximately 5% of the total.

On average, they move no more than twice. One out of every five tech specialists moves three times or more.

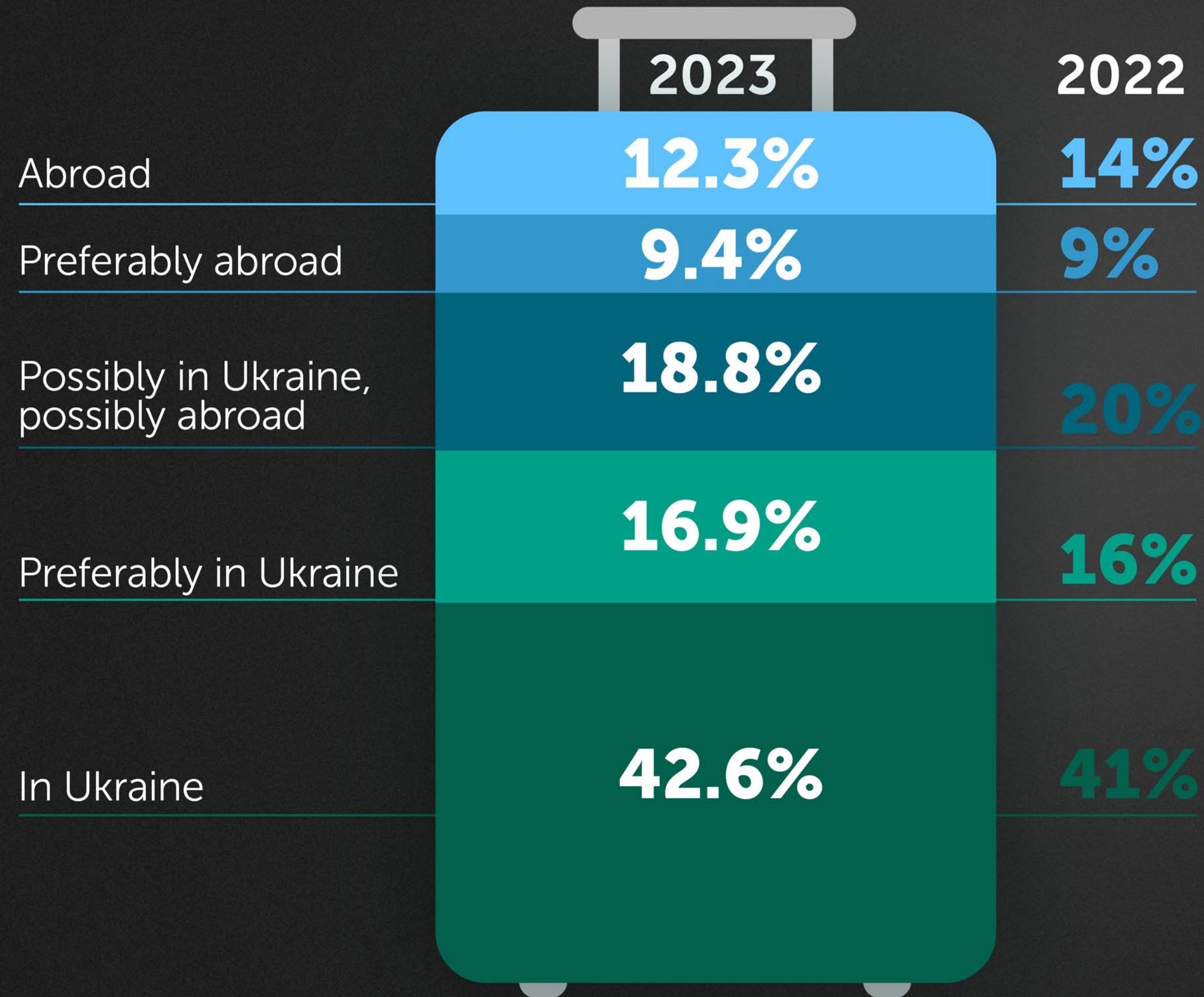


* among those who changed their place of residence.

4. MIGRATION ATTITUDES OF TECH SPECIALISTS

4.2 Overall Migration Attitudes

If you had no limitations in choosing a place of residence, where would you like to live?



59.5%

of tech specialists want to live in Ukraine (+2.5% compared to 2022).

8%

of tech specialists plan to change their place of residence within this year, while another third are undecided. Among those who have changed their place of residence, the percentage willing to move further is significantly higher than those who have not relocated.




4. MIGRATION ATTITUDES OF TECH SPECIALISTS

4.2 Overall Migration Attitudes

Specialists who are planning to relocate or are undecided were asked to choose their desired destinations. More than half of them indicated that they want to move abroad.

9 K - 11 K or 4% of tech specialists in Ukraine may potentially move abroad during this year.

Where would you like to relocate?*

		Among those who are planning to relocate	Among those who are undecided
 Abroad	57.8%	47.6%	60.7%
 To another region / city / village in Ukraine	32.7%	42.2%	29.9%
 To their home region / city / village in Ukraine	19.3%	24.6%	17.8%

* Relocation directions among those who plan to change their place of residence or are still hesitating.

4. MIGRATION ATTITUDES OF TECH SPECIALISTS

4.3 Migration Decision-Changing Factors

The tech industry continues to work towards Ukraine's collective victory in the full-scale war.

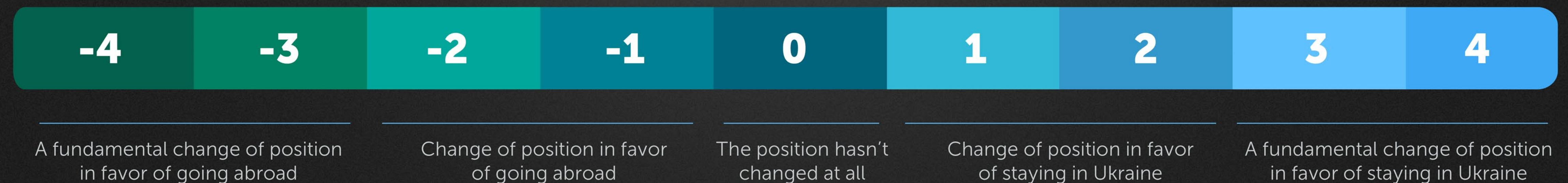
Migration attitudes represent the tech market's responses to possible events.

Tech specialists were presented with a list of conditions over a one-year time frame. Based on their assessment of each of these conditions, we explored the overall migration inclination and identified strategies for the future.

Migration balancer

Migration balancer indicates the change of the overall migration attitudes depending on the suggested scenarios in favor of living in Ukraine or moving abroad. The indicator is calculated separately for each respondent but is given as an average group value for each scenario / factor.

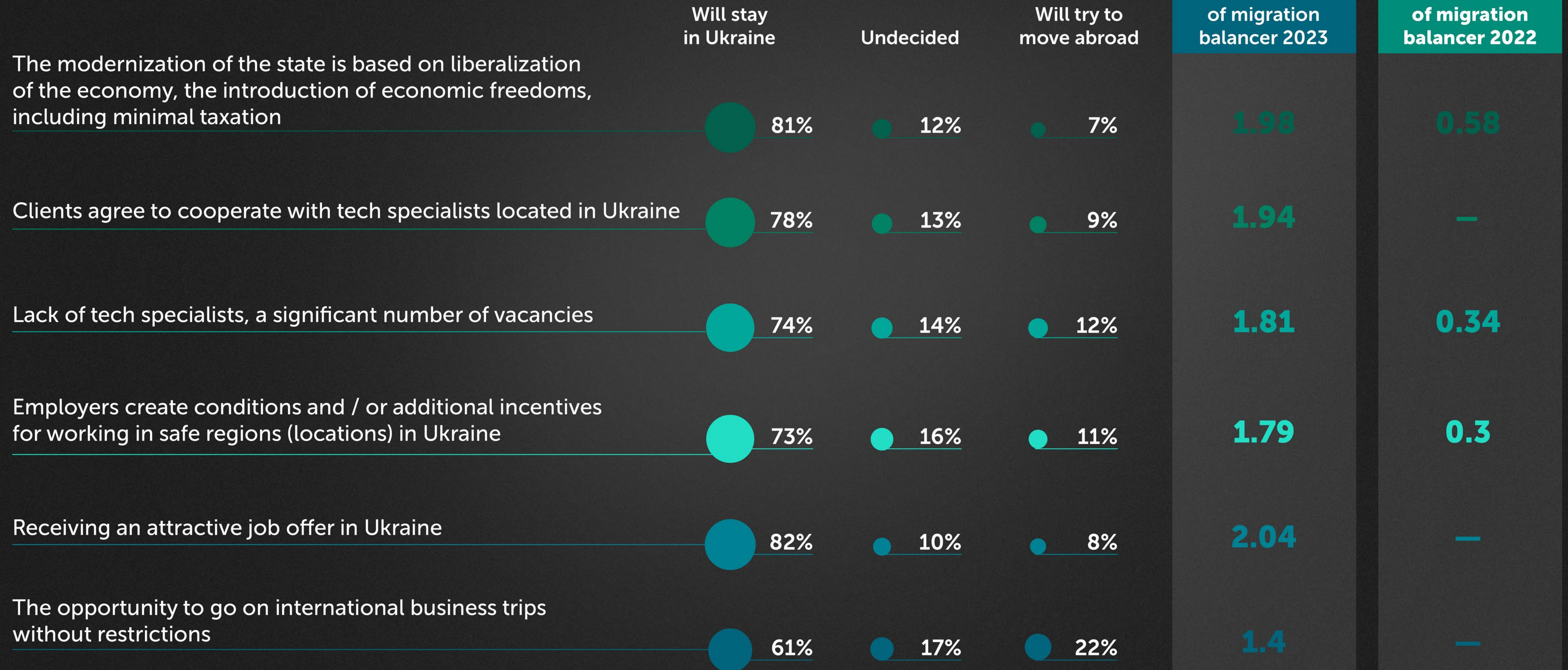
The indicator varies from -4 to +4.



4. MIGRATION ATTITUDES OF TECH SPECIALISTS

4.3 Migration Decision-Changing Factors

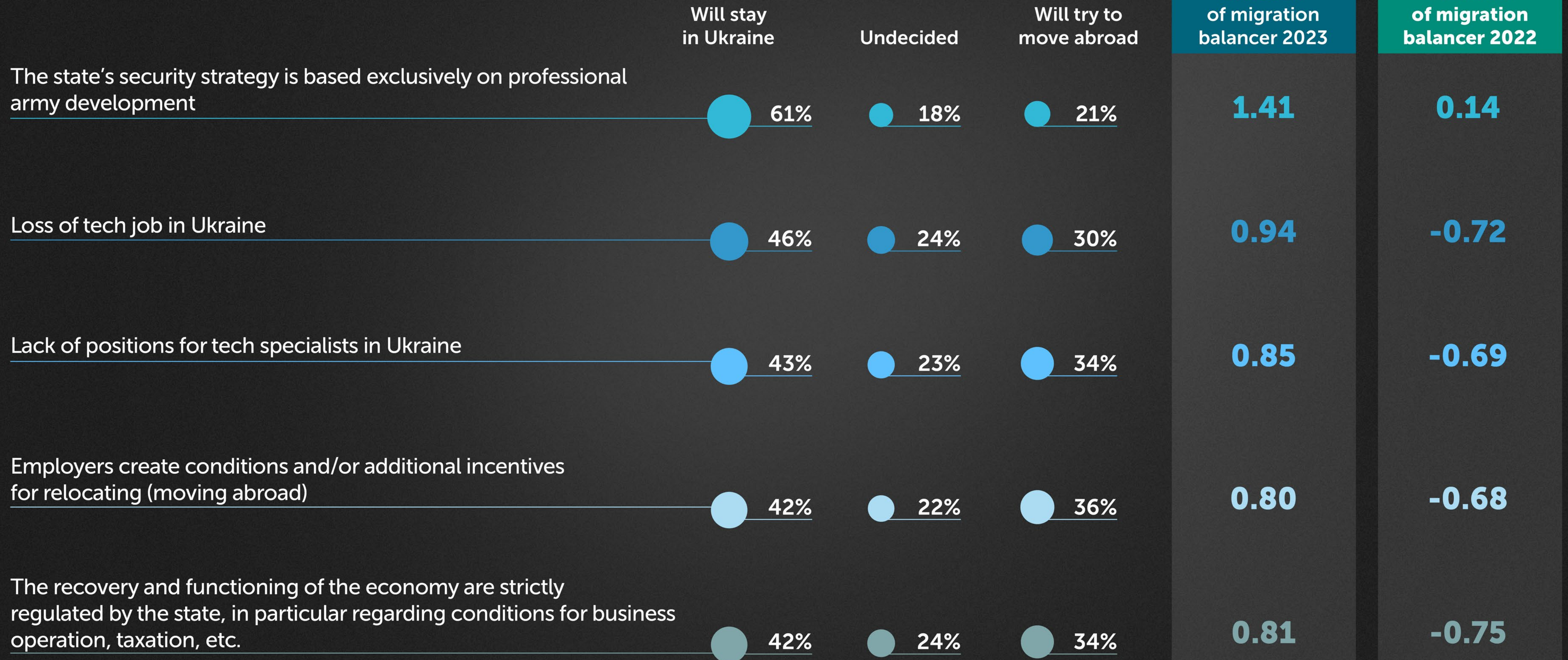
Factors relating to individual choices to stay in Ukraine



4. MIGRATION ATTITUDES OF TECH SPECIALISTS

4.3 Migration Decision-Changing Factors

Factors relating to individual choices to stay in Ukraine



4. MIGRATION ATTITUDES OF TECH SPECIALISTS

4.4 Future Scenarios

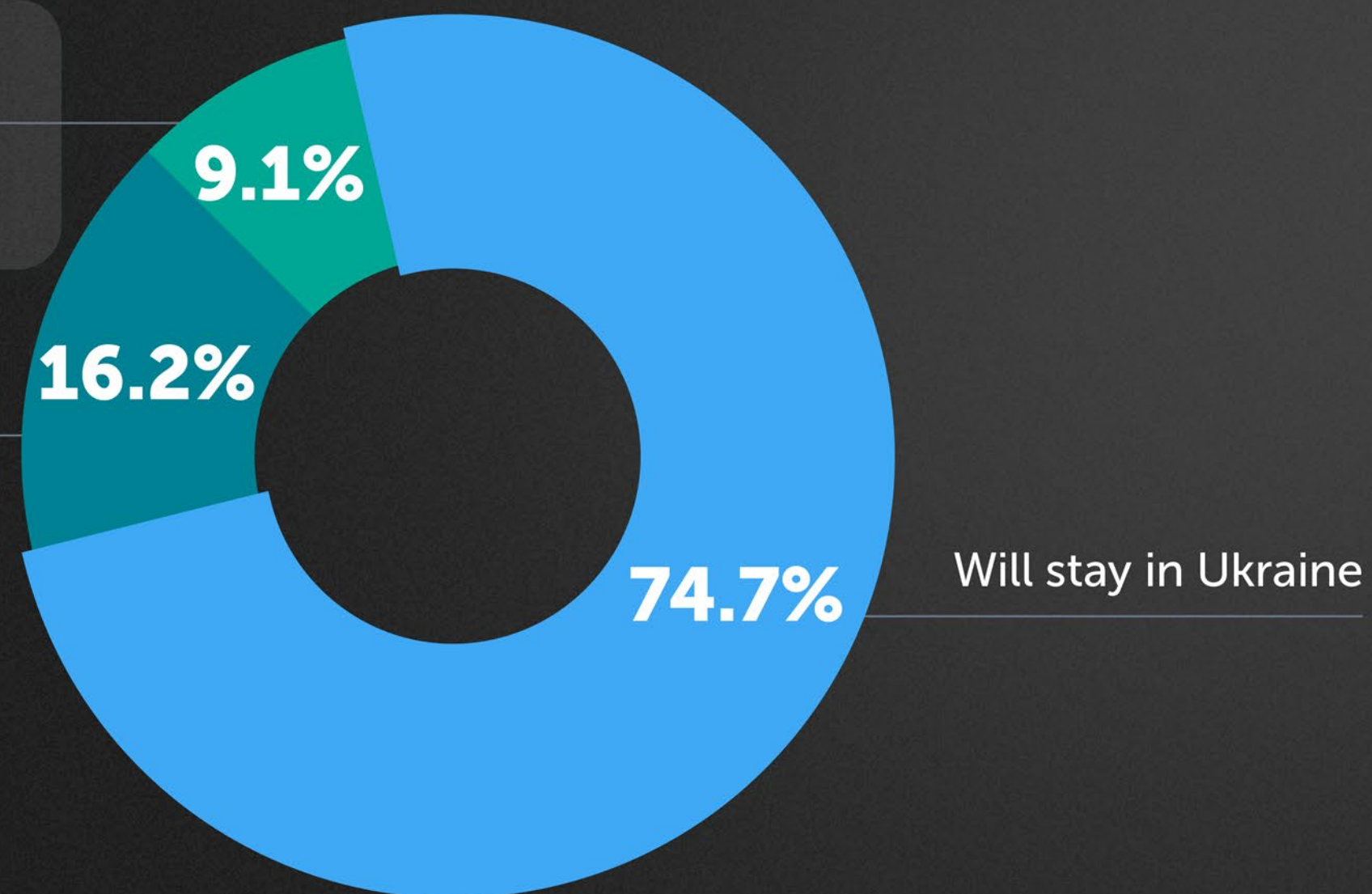
Even in the most positive scenario, there is a risk of losing human capital. However, compared to 2022, the projected outflow volume is 2% smaller.

FAVORABLE SCENARIO

Will try to go abroad

 **22 K**

Haven't decided



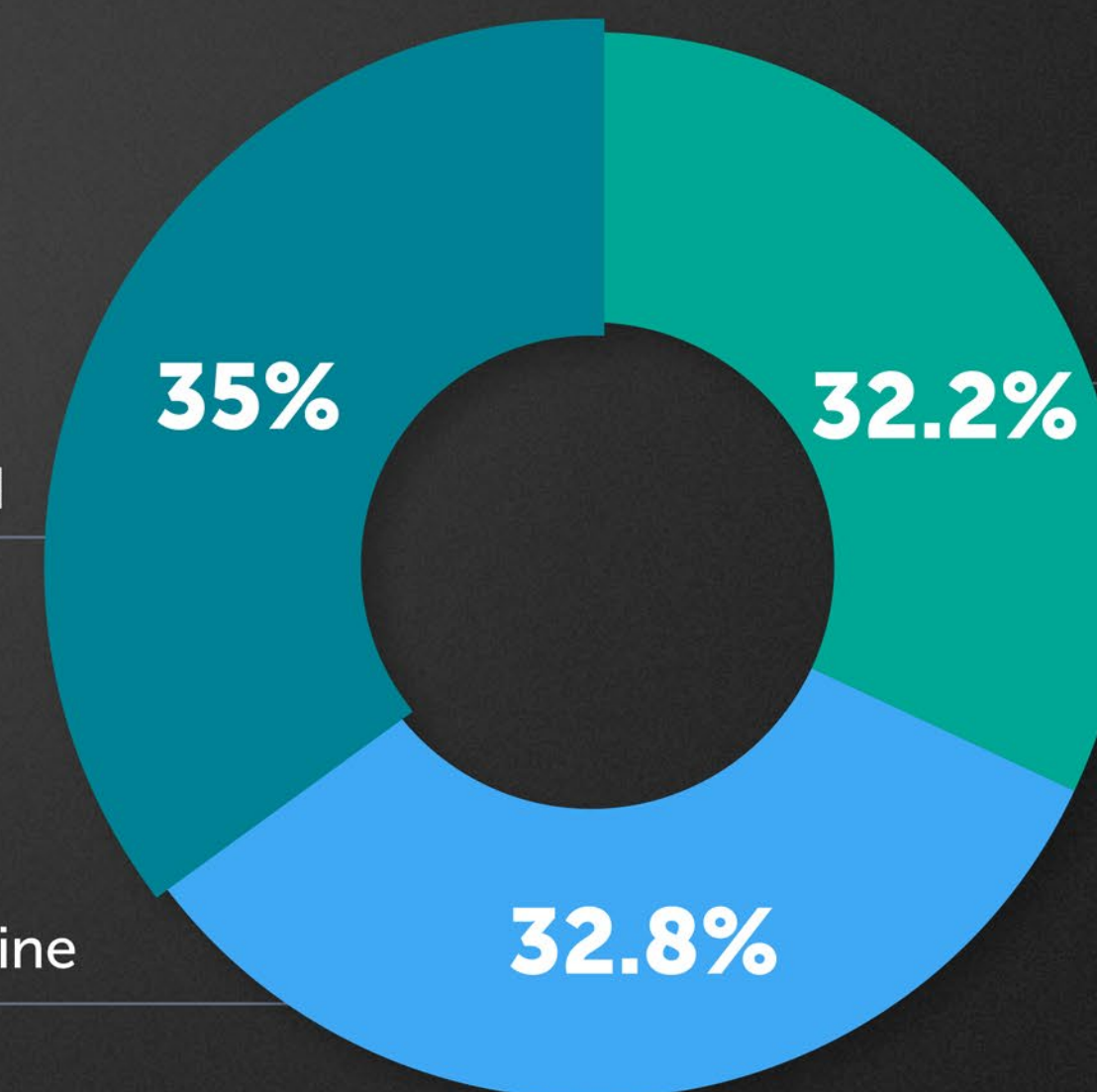
UNFAVORABLE SCENARIO

Will try to go abroad

 **78 K**

Haven't decided

Will stay in Ukraine



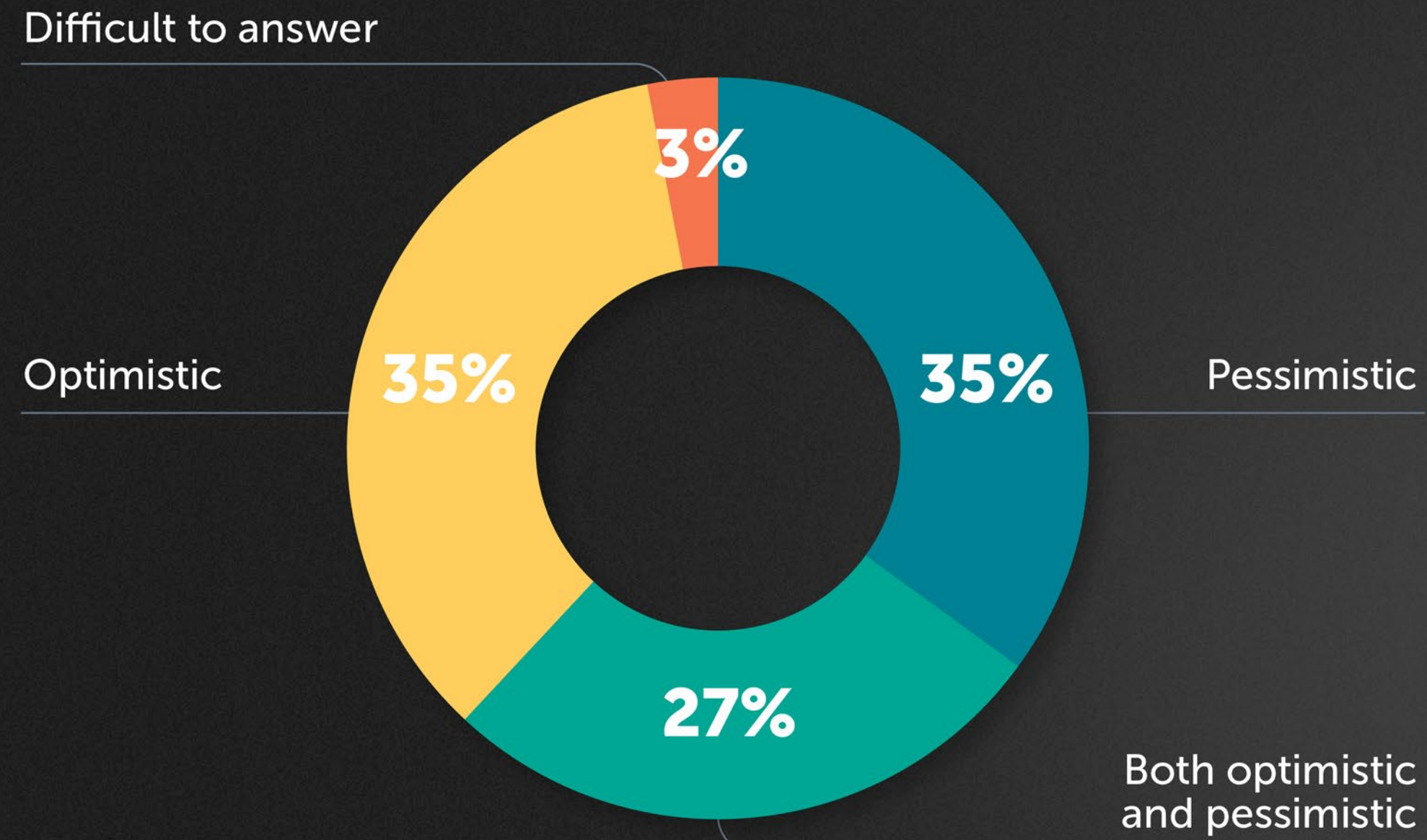
ECONOMIC EXPECTATIONS AND FORECASTS FROM TECH MARKET PLAYERS



5. ECONOMIC EXPECTATIONS AND FORECASTS FROM TECH MARKET PLAYERS

5.1 Expectations of Tech Specialists

Forecasts for the state of the tech industry in a year



35%

tech specialists remain optimistic about Ukraine's tech industry economic future

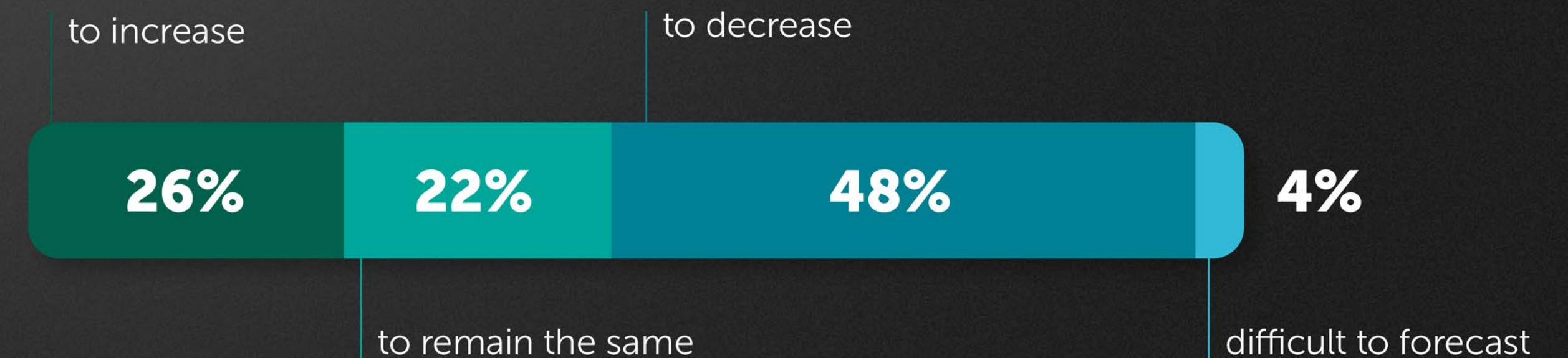
64%

were optimistic in 2022

Over the next 12 months, tech specialists expect a median salary



Forecasts on the number of vacancies in Ukraine's tech market in a year

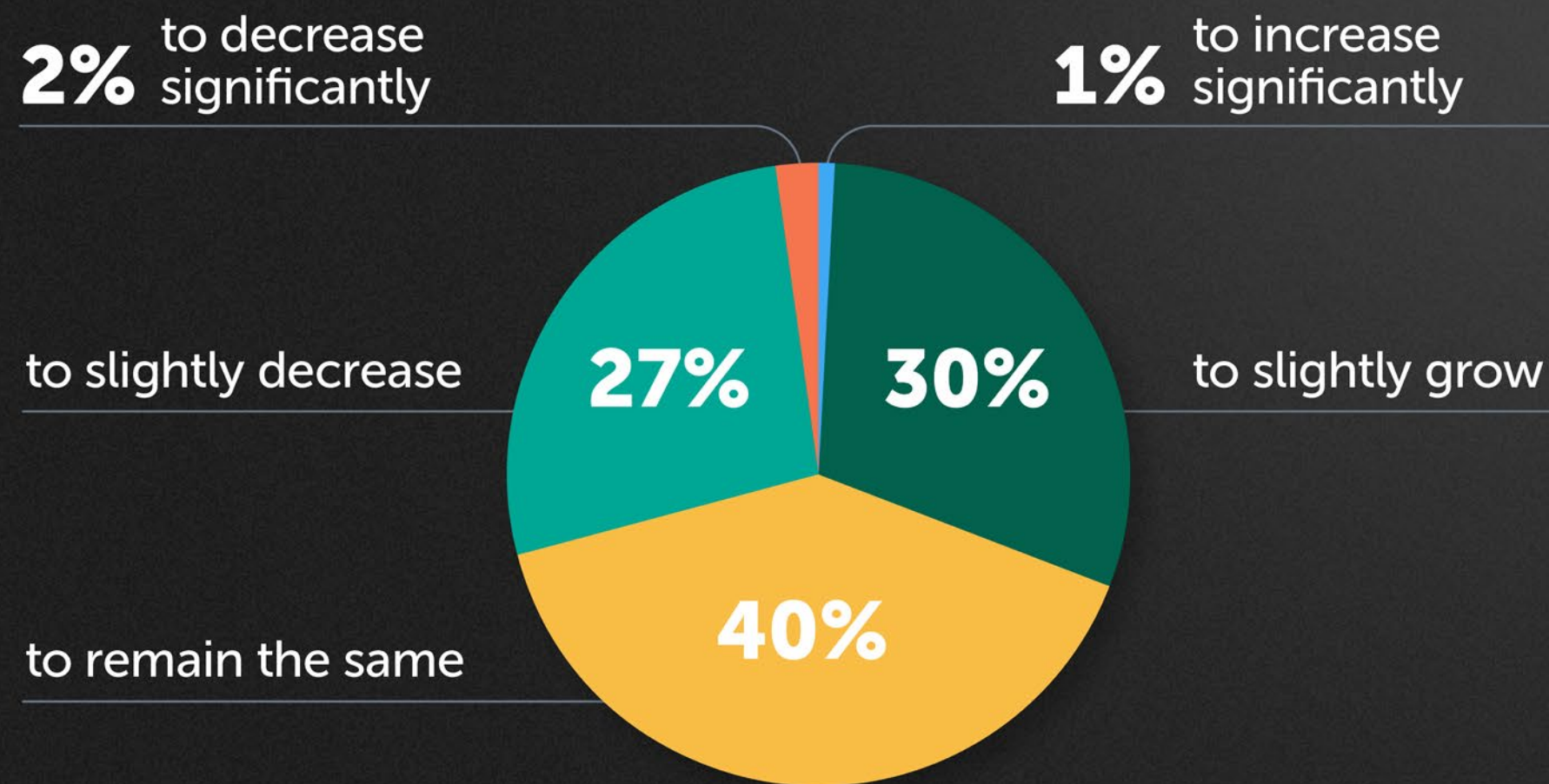


5. ECONOMIC EXPECTATIONS AND FORECASTS FROM TECH MARKET PLAYERS

5.2 CEO's Expectations

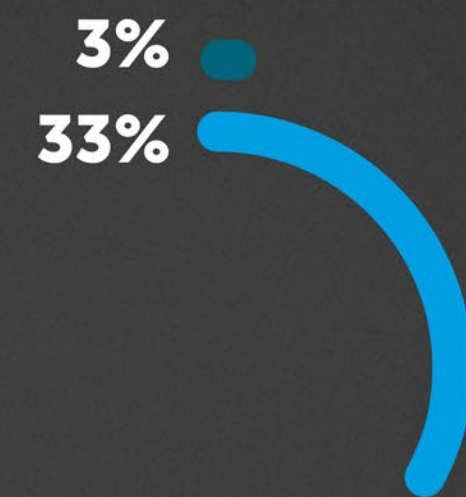
Short-term forecasts of tech companies' CEOs are moderately optimistic, and long-term ones are strongly optimistic.

Over the next 12 months, CEOs expect median salary in Ukraine's tech industry

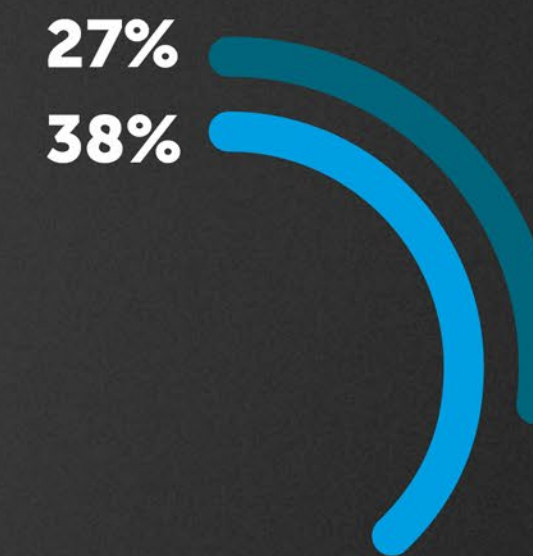


CEOs' forecasts for the growth of the tech industry in Ukraine

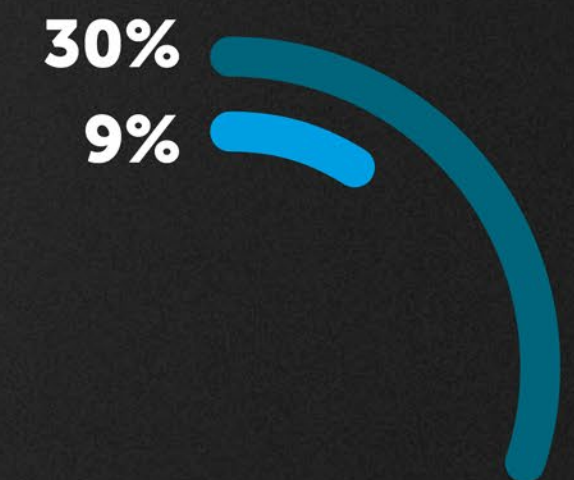
The industry will grow significantly



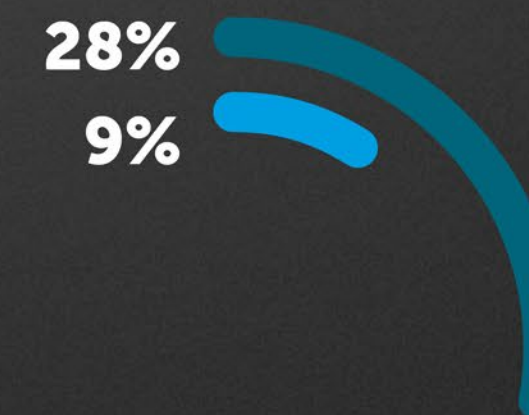
The industry will slightly grow



There will be no major changes



The industry will slightly lose ground



The industry will lose ground



● in a year
● over the next 5 years

5. ECONOMIC EXPECTATIONS AND FORECASTS FROM TECH MARKET PLAYERS

5.3 Expectations of HR Specialists

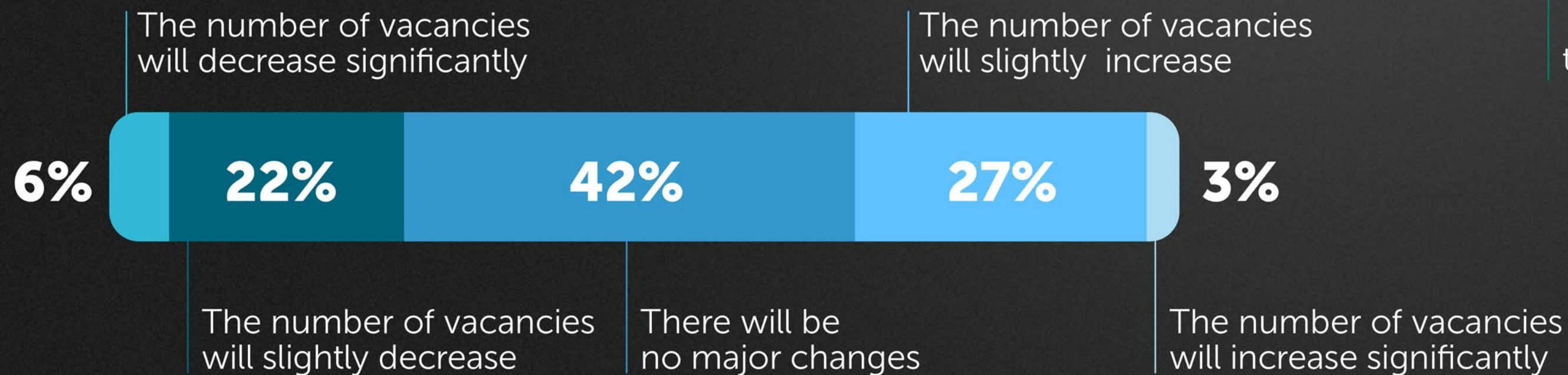
Over the next 12 months, HR specialists expect median salary in Ukraine's tech industry



Over the next 12 months, candidates' salary expectations



Forecasts for the tech job market in a year





The USAID Competitive Economy Program in Ukraine (USAID CEP) supports Ukrainian businesses with the goal of providing assistance to competitive industries and firms in Ukrainian and international markets. The program aims to foster a more favorable business environment and enable Ukrainian companies to benefit from international trade.



The research agency Fama provided the collection and analysis of key data within the sociological part.



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