WHITESHIELD

Global Labour Resilience Index 2023

Methodology

IN COLLABORATION WITH

CEMS

THE GLOBAL ALLIANCE IN MANAGEMENT EDUCATION

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1. INTRODUCTION

This is the fifth edition of the Global Labour Resilience Index (GLRI) report that Whiteshield launched during the World Government Summit in Dubai in February 2023. The report highlights the need to strengthen labour market policies and institutions and calls for the support of a sustainable and inclusive approach to growth that puts the citizen at the centre of policy formulation and execution.

The GLRI provides insights into countries' capacity to absorb external shocks and mitigate their impacts on employment levels against the background of slowing productivity growth, digital and green transitions, and other evolving challenges. It ranks the labour market resilience of 136 economies in the world while highlighting their labour market resilience strengths and weaknesses.

The GLRI ranks countries based on their performance across nine dimensions and 92 indicators drawn from a wide range of international sources. The methodology was developed through extensive reviews of the economic literature and countries' experiences.[1] It is important to note that the GLRI is more concerned with identifying good practices and policies that promote labour resilience than establishing the rankings.

Adopting a comprehensive view of the drivers affecting the availability, quality, and sustainability of work, the GLRI fills an important gap by expanding the definition of workforce resilience and introducing a comparative assessment of countries on the resilience of their labour markets.[2]

This year, the GLRI introduced improvements in the data used mainly by substituting discontinued or outdated indicators or proxy data with more up-to-date and robust data. The improvements reflect not only Whiteshield's own experience and

[1] See for example:
- Grimaccia, E. and Lima, R., 2013, September. Public expenditure on education, education attainment and employment: a comparison among European countries. In XXVIII Conference of the Italian Association of Labour Economists (AIEL), Rome (pp. 1-18).
- Hijzen, A., Kappeler, A., Pak, M. and Schwellnus, C., 2018. Labour market resilience: The role of structural and macroeconomic policies. Structural Reforms: Moving the Economy Forward, pp.173-198.
- ILO, 2017. A Resilient Labour Market to Drive: Inclusive Economic Growth for All, International Labour Organization, Beirut.
- Maestas, N., Mullen, K.J. and Powell, D., 2016. The Effect of Population Aging on Economic Growth, the Labor Force and Productivity. American Economic Journal: Macroeconomics.
- McKenzie, D., 2017. How effective are active labor market policies in developing countries? A critical review of recent evidence. The World Bank Research Observer, 32(2), pp.127-154.
- Partridge, M.D., 2006. The relationship between inequality and labor market performance: Evidence from US states. Journal of Labor Research, 27(1), pp.1-20.
- OECD, 2014. Fostering Resilient Economies. OECD Publishing, Paris.

[2] Traditional definitions of labour market resilience are more restrictive than the one adopted in GLRI. The OECD, for example, defines resilient labour markets as those "that weather economic downturns with limited social costs or, more formally, limited losses in worker welfare". The definition focuses on workers, but the firm perspective is also integral to the resilience of labour markets. Moreover, the disruptive role of technological evolution is not directly addressed in this definition.
See OECD, 2012. What Makes Labour Markets Resilient during Recessions?. In OECD Employment Outlook 2012.

research but also the feedback of outside experts. A detailed account of these changes is reported below in Section 4.4.

The purpose of this document is to provide a detailed account of the conceptual framework, methods, and data sources used in establishing countries' scores and rankings in the GLRI 2023.

Section 2 presents an overview of the conceptual framework on which the GLRI was built. The methodology is detailed in Section 3. Section 4 reports on data sources and the changes that have been introduced in the 2023 edition.

2. CONCEPTUAL FRAMEWORK

Resilience can be broadly defined as the ability to face and recover from disruptions, regardless of their nature. A resilient labour market, in addition, generates sustainable demand for a wide range of occupations and supplies quality work. Resilient labour markets are inclusive, sustainable, and able to withstand shocks because of their flexibility and adaptability.

The GLRI conceptual framework rests on two core components of resilience, namely the structural and cyclical pillars, as outlined in Figure 1.

The **structural pillar** includes structural characteristics which are harder to change in the short term, i.e. demographics, country capabilities, economic development & macroeconomic stability, trade vulnerability, and inequality. These represent inherent vulnerabilities and protective factors for labour markets which can interact with disruptions to further amplify or reduce their intensity.

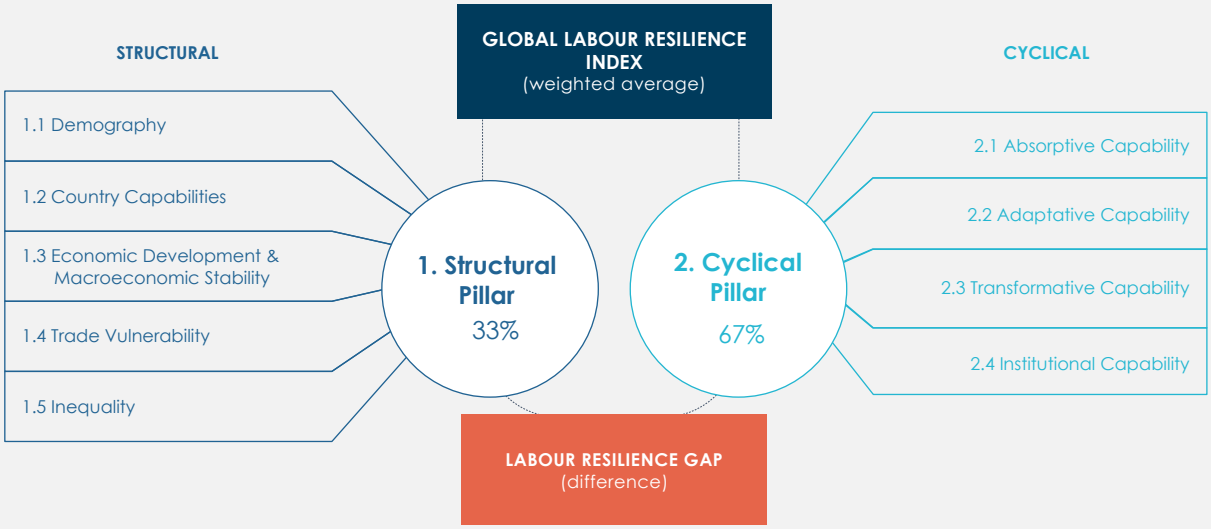
The **cyclical pillar** includes characteristics connected to the labour market that can be adjusted in the short run by the policy. Different sets of characteristics affect resilience across the stages of the "disruption cycle", i.e. the dynamical response of labour market performance to a shock (Figure 2). These influence the resilience capabilities of the labour market in each phase of the cycle. When a shock first hits the labour market, absorption capabilities determine its robustness and the extent of the downturn. Adaptive capabilities explain the recovery phase, while transformative capabilities describe how well the labour market can transform itself to enhance its performance after the recovery stage is complete. Furthermore, institutional capabilities act as a cross-cutting enabler.

Each cyclical sub-pillar, except for institutional capabilities, divides into **inputs** and **outputs**. Inputs represent policies in place having a direct impact on the setting of the labour market, such as regulation, legislation, spending, etc. Outputs are the outcomes that the labour market exhibits. Broadly speaking, they can be thought of as the result of labour policies.[3]

By measuring the gap between structural and cyclical factors, the GLRI also highlights the labour **resilience gap**. It represents the short-term improvement margin in labour resilience that countries can attain by raising their cyclical capabilities.

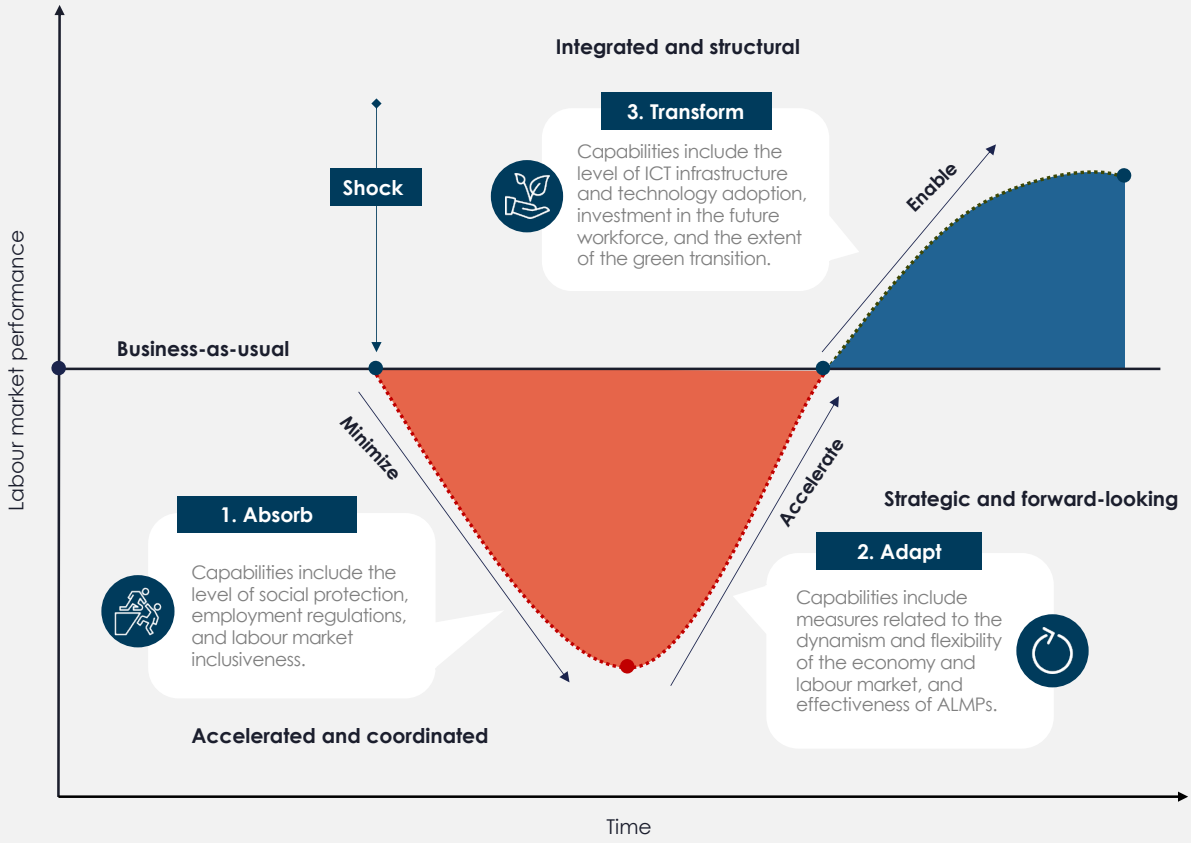
[3] Yet, there is no direct correspondence between policy inputs and outputs.

Figure 1: Framework for the Global Labour Resilience Index



Source: Whiteshield, Global Labour Resilience Index 2023.

Figure 2: Framework for the cyclical resilience



Note: Labour market performance (y-axis) includes level of employment, productivity, and wages. ALMPs (Active Labour Market Policies). Source: Whiteshield, Global Labour Resilience Index 2023.

1.1 THE STRUCTURAL PILLAR

The structural pillar has 5 sub-pillars: demographics, country capabilities, economic development & macroeconomic stability, trade vulnerability, and inequality. These sub-pillars represent the economic foundations and fundamental characteristics of a country that impact employment and resilience of labour markets. They can only be fundamentally altered by policy action in the longer-term (10+ years).

Sub-pillar 1.1: Demographics

This sub-pillar aims at assessing the impact of a country's demographic dynamics on the resilience of its labour market. The demographic sub-pillar mainly captures the impact of population age structures on labour resilience. Age structure as well as long-term demographic trends can have a major impact on the availability of adequate labour supply by affecting both labour force participation and the skills of employees, including their willingness and ability to adapt to new technologies. Population ageing can lead to a decrease in labour force participation, causing potential bottlenecks in labour supply. It can also be associated with growing skill gaps, with older generations being less well-equipped to deal with technological disruptions. Age structure is an important matter to take into consideration not only to assess the level of labour resilience but also to design effective policies, especially education and labour-market related policies.

Sub-pillar 1.2: Country Capabilities

The Economic Complexity Index included in this sub-pillar reflects the level of sophistication of an economy. Countries with more complex economies have the knowledge and abilities to develop and adopt new technologies and harness the opportunities caused by technological disruption.

Sub-pillar 1.3: Economic Development and Macroeconomic Stability

This sub-pillar captures the impact of the fundamental characteristics of an economy on its labour market resilience. The level of economic development and macroeconomic stability determines the resilience of an economy, which in turn is a major factor of labour resilience. Four variables are included in this sub-pillar: the variable measuring the level of wealth, the variable assessing the focus on services in the economy and the variable determining the dependence of the country on natural resources and the variable measuring the debt dynamics of the national government.

Economically stable, richer, resource-independent countries with a large share of services in GDP are often more

resilient to external shocks. They have the resources to develop and adopt new higher value-added technologies and are not reliant on resource extraction. They can benefit from the process of creative destruction and can exploit new opportunities created by technological disruptions rather than just be negatively impacted by their effects.

Sub-pillar 1.4: Trade Vulnerability

The extent of economic diversification and trade vulnerability affects both the economy and labour market resilience. A highly diversified economy with a diversified labour structure is less affected by cyclical changes, changing trade patterns, de-industrialization trends and external shocks in general. The trade vulnerability sub-pillar captures a positive impact through the variable measuring the level of concentration of exports and the variable measuring the diversity of exports, which defines the number of products, for which the country has a revealed comparative advantage and the overall trade position of the country through the current account variable.

Sub-pillar 1.5: Inequality

The inequality sub-pillar measures the negative impact of disparities in personal income on labour resilience. Highly unequal labour markets tend to have higher shares of precarious, low-paid, low-skilled jobs that are susceptible to technological obsolescence and other external shocks.

1.2 THE CYCLICAL PILLAR

Four sub-pillars capture key cyclical areas which impact employment and the resilience of labour markets in the short term (< 5 years). They are absorptive, adaptive, transformative, and institutional capabilities. The first three represent areas of a country's resilience during economic shocks and growth while the last acts as a cross-cutting enabler to a resilient response throughout the disruption cycle.

Sub-pillar 2.1: Absorptive capabilities

Defined as the ability to contain shocks in the labour market and minimise the damage to jobs and workers. Absorptive capabilities reflect the ability of the country to absorb labour market disruptions.

Absorptive capabilities are divided into two groups based on policy inputs and outputs.[4]

On the input side, the focus is on the underlying state of the welfare system

[4] Output variables in the sub-pillar reflect absorptive capabilities more than inputs and therefore receive greater weight.

and workers' rights. This is captured through indicators related to the coverage of welfare policies, availability of healthcare coverage and workers' rights. These factors have a positive impact on labour resilience because if a country has the fundamentals right, it should be able to divert its attention to the areas of growing concern.

Output factors include the quality of work, levels of unemployment and measurements of health. These are captured through 14 different indicators including a series of variables related to labour market participation including youth unemployment, the proportion of women in the labour market and the gender pay gap. High levels of labour market participation are associated with a well-functioning and potentially resilient labour market. Other output measurements include longevity, physical health and mental health, a country which has poor health or low life expectancy is unlikely to have a resilient workforce and without a resilient workforce there cannot be a resilient labour market.

Sub-pillar 2.2: Adaptive capabilities

Defined as the ability to recover quickly and by creating new jobs to replace the destroyed ones. Adaptive capability relates to the ability of the country to adjust to the consequences of labour market disruption which is essential for labour market recovery. It includes measures related to the dynamism and flexibility of the economy and labour market.

The adaptive capabilities input sub-pillar covers labour market policies ranging from hiring and firing legislation, the burden of taxes and the environment for entrepreneurship. These are important components of labour resilience considering their impact on incentives and disincentives to job creation and on the flexibility of the labour market, especially in times of economic downturn.

Output employment indicators measure a variety of variables representing direct determinants of labour resilience: the level of talent and skills of employees, the effectiveness of active labour market policies and the financial setting in which firms operate. Active labour market policies determine the efficiency of the job search process as well as the ability of workers to undertake professional reconversions.

Sub-pillar 2.3: Transformative capabilities

Defined as the ability to align with major future trends and turn long-term stresses into opportunities. The transformative sub-pillar aims to measure policy inputs encouraging and protecting innovation in an economy as well as outputs reflecting the level of innovation. Transformative capabilities increase innovation and subsequently levels of competitiveness and productivity, driving the resilience

of an economy and its labour market. These help the country pivot itself towards the future and ensure labour market resilience is not temporary. Although innovation can also lead to job destruction, this is usually compensated for by labour-friendly product innovations and the economic growth induced by the productivity and competitiveness gains in transformed economies.

Transformative inputs include expenditure on research and development and government vision and procurement of technology. Transformative outputs measure the level of transformative capabilities through trademark and patent applications, an estimation of the share of innovation in trade and the investment and training of the future workforce.

Sub-pillar 2.4: Institutional capabilities

The institutional capabilities sub-pillar represents a cross-cutting enabler and highlights the completeness of a country's institutions and datasets related to labour market resilience – a vital component in being able to make fact-based policy decisions.

This sub-pillar assesses the level of institutional capabilities through four metrics. Focusing on formal institutional capabilities through governance indicators and informal capabilities via measurements of social capital. The remaining component of the sub-pillar focuses on statistical capacity and fullness.

The completeness of the available GLRI data on the country (101 indicators outside of the statistics indicator) also affects the quality of the country's GLRI ranking. It is indicative of the extent to which the country's policies are evidence-based. The higher the proportion of GLRI indicators that are available for a country (out of a total of 101), the more reliable the value of that country's GLRI rank, and the higher the country's score on this dimension.

Table 1: Composition of the structural capabilities pillar

1. Structural pillar	
1.1 Demographics • Share of older population **1.2 Country capabilities** • Economic complexity **1.3 Economic Development of Macroeconomic stability** • GDP per capita • Share of services in GDP • Dependence on natural resources • Debt dynamics	**1.4 Trade Vulnerability** • Concentration of exports • Economics diversity • Current account balance **1.5 Inequality** • Income inequality

Table 2: Composition of the cyclical capabilities pillar

2. Cyclical Pillar			
INPUT		OUTPUT	
2.1 Absorptive capacity	**Support and protection of workers** • Workers' rights • Pension coverage • Unemployment coverage • Coverage of basic health services	**Quality of employment** • Hourly wages • Share of informal employment **Labour market polarisation and inequality** • Low-skilled labour • Growth of medium-skilled jobs • Labour income share • Labour income inequality	**Youth inclusiveness** • Youth unemployment • NEET **Gender inclusiveness** • Women in labour force • Gender pay gap **Health and well-being of population** • Longevity • Physical health • Mental health

2. Cyclical Pillar			
INPUT		OUTPUT	
2.2 Adaptive capacity	**Flexibility of labour policy** • Hiring and firing practices • Ease of hiring foreign labour • Effect of taxation on incentive to work **Business regulation** • Time dealing with government regulation • Domestic market competition • Trade openness • Applied tariffs • Paying taxes • Enforcing contracts • Property rights • Resolving Insolvency **Starting a business regulation** • Time to start a business • Cost to start a business **Access to finance regulation** • Ease of getting credit **Quality of infrastructure** • Logistics Performance Index	**Reallocation and flexibility mechanisms** • Active labour market policies effectiveness **Skills and adaptability** • Formal and informal education and training • Extent of staff training • High-skilled labour • Skilled labour supply • Tertiary education attainment • Skillset of graduates	**Entrepreneurship activity** • New corporate density **Access to finance** • Venture capital investments • Access to loans • Microfinance loan portfolio • Depth of financial system
2.3 Transformative capacity	**Regulation of ICT** • Future orientation of government • Cybersecurity **Expenditures on R&D** • Gross R&D expenditure • Intellectual property legislation **Intellectual property rights** • Innovation incentives • Government-funded business R&D **Investment in the future workforce** • Government expenditures on education • Tertiary education expenditure • Pupil teacher ratio • ICT infrastructure per school	**ICT infrastructure penetration** • ICT access **ICT business penetration** • ICT usage by households **Innovation environment** • Scientific and technical journal articles • Researchers in R&D • Technicians in R&D • Research institutions prominence • Industry-university collaboration	**Green transition** • Environmental goods exports and imports • Renewable energy consumption • CO2 intensity of GDP • Energy intensity • Domestic material consumption **Innovation products** • Trademark applications • International co-inventions • Patent applications

<table>
<tr><th colspan="3">2. Cyclical Pillar</th></tr>
<tr><th>INPUT</th><th colspan="2">OUTPUT</th></tr>
<tr><td></td><td>Innovation trade
• Shares of creative goods exports

Technology and digital economy
• ICT services exports
• ICT goods exports
• Medium and high-tech manufacturing value added
• Medium and high-tech exports</td><td>Education and skills of the future workforce
• Quality of vocational education
• PISA scores
• Critical thinking
• Digital skills
• STEM graduates</td></tr>
<tr><td>2.4 Institutional capacity
• Governance
• Social capital
• Statistical capacity
• GLRI statistical fullness</td><td colspan="2"></td></tr>
</table>

3. METHODOLOGY

GLRI is a summary measure, or a composite indicator, resulting from the aggregation of indicators in the structural and cyclical pillars.

The aggregation process follows an additive method, namely the composite index results from the linear summation of weighted and normalised indicators.

3.1 NORMALISATION

Normalisation aims to convert the indicators into a common measurement scale so that they can be compared. In GLRI, indicators are rescaled to have the same lower (0) and upper (100) levels as follows:

- Indicators whose covariance with labour resilience is positive are rescaled using the following formula:

$$\widehat{X}_i = 100 \cdot \frac{X_i - min(x)}{max(x) - min(x)}$$

- *E.g.:* Workers' rights, tertiary education exp. per student, high-technology net exports.

  Where $\widehat{X}_i$ and X_i are the rescaled and original values of the indicator X for country i, respectively, and $\min(x)$ and $\max(x)$ are the minimum and maximum values of X across all countries.

- Indicators whose covariance with labour resilience is negative are rescaled using the following formula:

$$\widehat{X}_i = 100 \cdot \frac{max(x) - X_i}{max(x) - min(x)}$$

E.g.: Share of the older population, youth unemployment, and gender pay gap.

Normalisation must take into account data properties. Indicators having a skewed distribution and/or displaying outliers, meaning that some countries present exceptionally high or low values compared to others, could distort GLRI. In other words, some countries would be rewarded disproportionately in the composite indicator, irrespective of other dimensions. As the intention is not to reward exceptional achievements but to assess the average of a subset of indicators, in some cases data should be adjusted before applying the Min-Max transformation.

These cases are detected based on two criteria:

- Skewness higher than 2.25 or lower than -2.5
- Kurtosis higher than 4

If at least one of the two conditions above is met, extreme values are capped at the 95th (5th) percentile of the distribution for positive (negative) skewness.

However, data may follow a highly skewed distribution which is not

necessarily driven by outliers. In such a case, the method above would distort the information contained in the data by capping a substantial number of observations to the 95th or 5th percentile. Therefore, a logarithmic transformation is applied to the following indicators to reduce skewness without distortions: GDP per capita, Tertiary education exp. per student, Labour income inequality.[5]

3.2 INDEX CALCULATION

The GLRI score of a country is the weighted average of its score on the structural (S) and cyclical (C) pillars.

$$GLRI = \frac{1}{3} \cdot S + \frac{2}{3} \cdot C$$

The structural pillar score S is the weighted average of its sub-pillars S_i, with $i = 1, \dots, 5$. The demographic sub-pillar (S_1) is weighted by 0.15, while the remaining four sub-pillars are weighted by $\frac{1-0.15}{4} \approx 0.212$, so that weights on all sub-pillars sum to one.

$$S = 0.15 \cdot S_1 + 0.212 \cdot \sum_{i=2}^{5} S_i$$

The score of any sub-pillar S_i belonging to the structural pillar is the simple average of the scores of the indicators s_j included in it, where N denotes the total number of indicators in the sub-pillar S_i.

$$S_i = \frac{1}{N} \cdot \sum_{j=1}^{N} s_j$$

The cyclical pillar score C is the weighted average of its sub-pillars C_k, with $k = 1, \dots, 4,$. The absorptive capabilities sub-pillar (C_1) is weighted by 0.35, while the remaining three sub-pillars are weighted by $\frac{1-0.35}{3} \approx 0.216$, so that weights on all sub-pillars sum to one.

$$C = 0.35 \cdot C_1 + 0.216 \cdot \sum_{k=2}^{4} C_k$$

Each cyclical sub-pillar C_k results from the weighted average of its input and output components, where Z and Q is the total number of input and output components of C_k, respectively. Note the weighting applied on C_1 is different from that on other sub-pillars.

$$C_1 = \frac{1}{4} \cdot \sum_{z}^{Z} C_{1,z}^{input} + \frac{3}{4} \cdot \sum_{q}^{Q} C_{1,q}^{output}$$

$$C_{k \neq 1} = \frac{1}{2} \cdot \sum_{z}^{Z} C_{k,z}^{input} + \frac{1}{2} \cdot \sum_{q}^{Q} C_{k,q}^{output}$$

The score of any input and output component C_i^{inp}, C_i^{out} of sub-pillars belonging to the cyclical pillar is the simple average of the scores of the indicators c included in it, where M_1 and M_2 are the total number of indicators in the sub-pillar C_i^{inp} and C_i^{out}, respectively.

$$C_i^{out} = \frac{1}{M_1} \sum_{j=1}^{M_1} c_j^{out}, \qquad C_i^{inp} = \frac{1}{M_2} \sum_{j=1}^{M_2} c_j^{inp}$$

[5] The argument of the logarithm is augmented by one to avoid undefined values.

3.3 INDICATORS WEIGHTING

As a rule, indicators have weights equal to one. However, some of them deviate from having half- and double weights. Those are reported in Table 3.

Table 3: Indicators with weights different from 1

Pillar		Sub-Pillar	Indicator	Weight
Structural	1.3	Economic Development & Macroeconomic Stability	Share of services in GDP	0.5
Cyclical	2.1.1	Absorptive (input)	Workers' rights	0.5
Cyclical	2.3.2	Transformative (output)	Environmental goods exports & imports	2
Cyclical	2.3.2	Transformative (output)	Renewable energy consumption	2
Cyclical	2.3.2	Transformative (output)	CO2 intensity of GDP	2
Cyclical	2.3.2	Transformative (output)	Energy intensity	2
Cyclical	2.3.2	Transformative (output)	Domestic material consumption	2
Cyclical	2.3.2	Transformative (output)	Quality of vocational training	0.5
Cyclical	2.3.2	Transformative (output)	PISA scores	0.5

4. DATA

A proper assessment of labour market resilience facilitates monitoring changes in resilience and adopting adequate policies. This is strongly conditioned by data quality and availability.

GLRI 2023 relies on cross-sectional data for 136 countries. It features 92 indicators, 10 of which belong to the structural pillar, and 82 to the cyclical one.

The choice of indicators is supported by empirical evidence resulting from an extensive review of the academic literature, which, for every indicator, corroborates a significant relationship with employment and productivity. Moreover, the selected set of indicators was thoroughly analysed to avoid bias and redundancy in data.

In what follows, we present data types and limitations, and provide for each indicator its description, the rationale behind its choice, and its source.

4.1 DATA TYPES

Hard data

61 country-specific variables are drawn from a set of publicly available sources taken from official or international organisations' datasets such as the World Bank Open Data, the UNESCO Institute for Statistics, OECD Data, Eurostat, ILOSTAT, the World Intellectual Property Organization, etc.

Composite indicators

13 country-specific indicators are taken from composite indicators. These are the Global Entrepreneurship Index produced by the Global Entrepreneurship Development Institute and the ICT Access Index published by the United Nations International Telecommunication Union.

Qualitative surveys

18 country-specific indicators are sourced from survey data, measuring variables for which hard data are not available. Most of them come from the World Economic Forum's Global Competitiveness Index.

4.2 DATA LIMITATIONS

GLRI is a global index. As such, it aims to include all countries around the world. However, the number of countries may vary from year to year, depending on data availability. If data are missing for more than one-third of the indicators, a country is excluded from the GLRI. In GLRI 2023, the sample size included 136 countries from a potential of 234. No data imputation methods are employed

in the case of missing data in which case they are referred to as "n.a.".[6]

GLRI uses the latest data available at the time of the year when it is updated. Since the Index is published in the first quarter, data collection is carried out in the previous semester. At that time, most of the latest available data refer to the end of the previous calendar year. For instance, GLRI 2023 is released in the first quarter of 2023; data are collected in the second half of 2022; most of the latest available data refer to 2021.

An extra indicator defined as "GLRI statistical fullness" accounts for the availability of country data and is part of the institutional capabilities sub-pillar. It ranges from 0 to 100, where countries with a full set of data score 100, while those with 2/3 of missing indicators score 0.[7]

[6] Indicators are chosen so that they are correlated within each group (sub-sub-pillar) in the sub-pillars. As such, indicators work as substitutes. If data for one indicator is missing, the average of the others still reflects the group characteristics.
E.g.: Sub-sub-pillar: Support and Protect Workers
Indicators: workers' rights, pension coverage, unemployment coverage, coverage of basic health services.
If data for pension coverage is missing, the average of the other three provides a reasonable approximation of the degree of support and protection of workers in the country.

[7] Countries with more than 2/3 of missing indicators are excluded from GLRI. If 2/3 of indicators are missing, a country is not excluded but its score in the GLRI statistical fullness indicator is zero.

4.3 THE GLRI INDICATORS : BY PILLAR AND SUB-PILLAR

Structural Pillar

Sub-pillar 1.1 Demographics

Sub-Pillar	1.1	Demographics
Indicator	1.1.01	Share of older population
Description		Ratio of people aged 65 years old and above as % of total population
Rationale		A high share of the older population as a percentage of the total population has a negative impact on labour market resilience. It can create bottlenecks for the available workforce and potential skill gaps since older generations are generally less adaptable to change and less familiar with new technologies. Both lead to a less resilient labour market.
Source	Name	Ratio of people aged 65 years old and above as % of total population.
	Dataset	The World Bank, World Bank staff estimates based on age/sex distributions of United Nations Population Division's World Population Prospects
	Latest available	2021

Sub-pillar 1.2 Country Capabilities

Sub-Pillar	1.2	Country Capabilities
Indicator	1.2.01	Economic complexity (ECI)
Description		The Economic Complexity Index (ECI) is a holistic measure of the productive capabilities of countries. In particular, the ECI looks to explain the knowledge accumulated in a population and that is expressed in the economic activities present in a country. ECI is a measure of economic complexity containing information about both the diversity of a country's export and their sophistication. Calculated based on the SITC export data.
Rationale		An increasing level of economic complexity has a positive impact on labour resilience. Economic complexity reflects the level of economic sophistication of a country and its ability to

Sub-Pillar	1.2	Country Capabilities
		use technology and engage in creative destruction processes. This allows it to offset the impact of automation on job destruction through the creation of new jobs. There is also a statistically significant negative impact of economic complexity on inequality indicating that complex economies are better suited to address the issue of polarised-labour markets and the destruction of low and medium skilled jobs induced by technological disruptions.
Source	Name	Economic Complexity Index
	Dataset	Harvard Kennedy School, Growth Lab, The Atlas of Economic Complexity
	Latest available	2020

Sub-Pillar 1.3 Economic Development & Macroeconomic Stability

Sub-Pillar	1.3	Economic Development & Macroeconomic Stability
Indicator	1.3.01	GDP per capita
Description		GDP per capita based on purchasing power parity (PPP). GDP at purchasers' prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2017 international dollars.
Rationale		The level of GDP/capita has a positive impact on labour market resilience. A lower GDP/capita reflects a lower production function thus lower labour demand and a higher unemployment rate. A high long-term unemployment rate is associated with low labour market resilience. A higher GDP/capita reflects higher economic development and sufficient resources to invest in innovation and technology and develop resilience to technological change.
Source	Name	GDP per capita, PPP (constant 2017 international $)
	Dataset	The World Bank, World Bank national accounts data, and OECD National Accounts data files
	Latest available	2021

Sub-Pillar	1.3	Economic Development & Macroeconomic Stability
Indicator	1.3.02	Share of services in economy
Description		Share of services of the GDP (%) per country. Services correspond to ISIC divisions 50-99 and they include value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services. Also includes imputed bank service charges, import duties, and any statistical discrepancies noted by national compilers as well as discrepancies arising from rescaling. Value added is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. The industrial origin of value added is determined by the International Standard Industrial Classification (ISIC), revision 3 or 4.
Rationale		The level of tertiarization of an economy has a positive impact on labour market resilience. Economies with a higher share of services as a proportion of their economy can capture the positive impact of technological disruption on job creation. As such job creation occurs mainly in services, this helps to avoid some of the negative impact of de-industrialization trends associated with technological development.
Source	Name	Services, value added (% of GDP)
	Dataset	The World Bank, World Bank national accounts data, and OECD National Accounts data files
	Latest available	2021
Indicator	1.3.03	Dependence on natural resources
Description		Total natural resources rents are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents.
Rationale		A significant dependence of a country's economy on natural resources negatively affects labour resilience, since the economy may be highly affected by external shocks such as changes in exchange rates and world commodity prices. An excessive exposure of the labour market to the developments in the natural resources markets makes it is less resilient.
Source	Name	Total natural resources rents (% of GDP)
	Dataset	Estimates based on sources and methods described in "The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium" (World Bank, 2011)
	Latest available	2020

Sub-Pillar	1.3	Economic Development & Macroeconomic Stability
Indicator	1.3.04	Debt Dynamics
Description		Index measuring the change in public debt, weighted by a country's credit rating and debt level in relation to its GDP.
Rationale		Increasing the public debt to GDP ratio has a negative impact on labour resilience. The long-term consequences are mainly associated to the sustainability of debt. These may include, among the others, currency devaluation, hyperinflation, cut to the welfare system, downsizing in the public sector, and limitations to the political sovereignty. Also, an uncontrolled expansion of debt can create market distortions, which are detrimental for economic output and productivity. However, the level of public debt is not an issue in itself it is sustainable.
Source	Name	Change in public debt, weighted by a country's credit rating and debt level in relation to its GDP
	Dataset	WEF Global Competitiveness Report 2020
	Latest available	2020

Sub-Pillar 1.4 Trade Vulnerability

Sub-Pillar	1.4	Trade Vulnerability
Indicator	1.4.01	Concentration of exports (HHI)
Description		Product concentration index for merchandise exports. The Herfindahl-Hirschman market concentration index is a measure of export concentration. A country with exports concentrated in very few markets will have an index value close to 1. Similarly, a country with a perfectly diversified export portfolio will have an index close to zero.
Rationale		The level of concentration of exports has a negative impact on labour market resilience. Less concentration allows the economy to be more resilient since it is not dependent on one or a few sectors and is less affected by the cyclical changes of sectors. It leads to a broader and more diversified structure of employment and thus a more reliable and resilient labour market. The level of export concentration impacts other GLRI indicators such as the level of economic development and economic capabilities. It should be noted that many developing

Sub-Pillar	1.4	Trade Vulnerability
		countries are particularly vulnerable to the high level of their export concentration.
Source	Name	HH export concentration index
	Dataset	UNCTAD secretariat calculations, based on UNCTAD, UNCTADStat Merchandise Trade Matrix
	Latest available	2021
Indicator	1.4.02	Economic diversity (RCAs)
Description		An indicator is taken from Economic Complexity theory. A measure of how many different types of products a country is able to make. The production of a good requires a specific set of know-how; therefore, a country's total diversity is another way of expressing the amount of collective know-how held within that country. Calculated as the number of products for which the country has Revealed Comparative Advantage.
Rationale		It positively affects labour resilience. Higher diversity means that the country is less dependent on international markets for imports, and less affected by cyclical changes in individual sectors. It leads to a broader and more diversified structure of employment and thus more reliable and resilient labour market. Diversified economies are more likely to benefit from job creation induced by technological disruptions and less impacted by job destruction induced by automation.
Source	Name	Economic diversity (RCAs)
	Dataset	Harvard Kennedy School, Growth Lab, The Atlas of Economic Complexity
	Latest available	2020
Indicator	1.4.03	Current account balance
Description		Current account balance is the 5-year average of the sum of net exports of goods and services, net primary income, and net secondary income as a percentage of GDP.
Rationale		A current account surplus has a positive impact on labour resilience. A lower level of current account reflects a lower production function thus lower labour demand and a higher unemployment rate. A high long-term unemployment rate is associated with low labour market resilience. A higher level of current account reflects higher economic development and sufficient resources to invest in innovation and technology and develop resilience to technological change.
Source	Name	Current account balance (percent of GDP)

Sub-Pillar	1.4	Trade Vulnerability
	Dataset	International Monetary Fund, Balance of Payments Statistics Yearbook and data files, and World Bank and OECD GDP estimates
	Latest available	2021

Sub-Pillar 1.5 Inequality

Sub-Pillar	1.5	Inequality
Indicator	1.5.01	Income inequality
Description		The Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative number of recipients, starting with the poorest individual or household. The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Thus, a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.
Rationale		The level of income inequality has a negative impact on labour resilience. High income inequality reflects a bi-polarized labour market between low-skilled and high-skilled workers as well as a high wage gap between both. Low-skilled, low-paid workers are less resilient to technological disruptions since their occupations are more likely to be replaced rather than complemented by technological innovation. With low levels of education, low-skilled workers are less likely to achieve job-reconversion. The effect of automation on job destruction will thus affect unequal countries more.
Source	Name	GINI index (World Bank estimate)
	Dataset	The World Bank, Development Research Group. Data is based on primary household survey data obtained from government statistical agencies and World Bank country departments
	Latest available	2020

Cyclical Pillar

Sub-Pillar 2.1 Absorptive Capabilities (inputs)

Sub-Pillar	2.1	Absorptive Capabilities (inputs)
Sub-Sub-Pillar	2.1.1	Support and Protect Workers
Indicator	2.1.1.01	Workers' rights
Description		Score adapted from the ITUC Global Rights Index, which measures the level of protection of internationally recognized core labour standards. The scale of this indicator ranges from 1 (no protection) to 7 (high protection). Dimensions of labour protection include civil rights, the right to bargain collectively, the right to strike, the right to associate freely, and the right of access to due process. The indicator does not consider firing regulations. If a country's value in this indicator is zero, then it is set as missing in the GLRI ranking, because zero values are outstanding comparing to the values of other countries. Moreover, all zero values in the source ITUC data contain the comment "Country classified ex officio by ITUC as category 5 (No guarantee of rights) on the basis of the assessment of concrete conditions in the country".
Rationale		The level of workers' rights has a positive impact on the employment rate and thus labour market resilience. In countries where there is significant protection of the rights of workers, the dismissal of an employee may cost the employer more than retraining and upskilling. Thus, workers are more resilient to job disruptions.
Source	Name	Workers' rights
	Dataset	World Economic Forum calculations based on International Trade Union Confederation, 2019 Global Rights Index
	Latest available	2019
Indicator	2.1.1.02	Pension Coverage
Description		Percentage of persons above retirement age receiving a pension.
Rationale		Higher pension coverage has a positive impact on labour market resilience. Higher pension coverage helps to maintain a middle-class standard of living, and retirement savings provide important supplementary income.

Sub-Pillar	2.1	Absorptive Capabilities (inputs)
Source	Name	Percentage of persons above retirement age receiving a pension
	Dataset	ILOSTAT database
	Latest available	2020
Indicator	2.1.1.03	Unemployment coverage
Description		Percentage of unemployed people receiving unemployment benefits
Rationale		Higher unemployment coverage has a positive impact on labour market resilience. Unemployment coverage support is an important aspect of social safety nets, it helps to sustain living standards during unemployment and smooth over shocks during a crisis
Source	Name	Percentage of unemployed people receiving unemployment benefits
	Dataset	ILOSTAT database
	Latest available	2020
Indicator	2.1.1.04	Coverage of basic health services
Description		Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, new-born and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population). The indicator is an index reported on a unitless scale of 0 to 100, which is computed as the geometric mean of 14 tracer indicators of health service coverage. The tracer indicators are as follows, organized by four components of service coverage: 1. Reproductive, maternal, new-born and child health 2. Infectious diseases 3. Noncommunicable diseases 4. Service capacity and access.
Rationale		Higher coverage of basic health services has a positive impact on labour market resilience. Health of labour force is an important factor of labour productivity.
Source	Name	Universal healthcare coverage score
	Dataset	World Bank, World Health Organization, Global Health Observatory Data
	Latest available	2019

Sub-Pillar 2.1.2 Absorptive Capabilities (outputs)

Sub-Pillar	2.1.2	Absorptive Capabilities (outputs)
Sub-Sub-Pillar	2.1.2.1	Quality of employment
Indicator	2.1.2.1.01	Hourly wages
Description		The earnings of employees relate to the gross remuneration in cash and in kind paid to employees, as a rule at regular intervals, for time worked or work done together with remuneration for time not worked, such as annual vacation, other type of paid leave or holidays. Earnings exclude employers´ contributions in respect of their employees paid to social security and pension schemes and also the benefits received by employees under these schemes. Earnings also exclude severance and termination pay. Data disaggregated by occupation are provided according to the latest version of the International Standard Classification of Occupations (ISCO).
Rationale		There is a significant positive impact of hourly earning on employment and labour market resilience. A high level of earnings strengthens the desire of people to find work and provides an additional opportunity to strengthen their skills through training in paid courses and continuous higher education which increases resilience to job disruption.
Source	Name	Average hourly earnings of employees
	Dataset	UN statistics
	Latest available	2021
Indicator	2.1.2.1.02	Share of informal employment
Description		People employed in the informal sectors expressed as a percentage of total non-agricultural employment.
Rationale		Higher share of informal economy has a negative impact on the labour resilience. The informal workers and low-income segments of the population are at the highest risk of being marginalised in a fragmented labour market. Addressing the root causes of informal employment can be an important action in improving labour market resilience.
Source	Name	Share of informal employment
	Dataset	UN statistics
	Latest available	2021
Sub-Sub-Pillar	2.1.2.2	Youth inclusiveness

Sub-Pillar	2.1.2	Absorptive Capabilities (outputs)
Indicator	2.1.2.2.01	Youth unemployment
Description		The youth unemployment rate is the number of unemployed 15-24-year-old expressed as a percentage of the youth labour force. Unemployed people are those who report that they are without work, that they are available for work and that they have taken active steps to find work in the last four weeks.
Rationale		There is a negative effect of youth unemployment rate on labour market resilience. A high youth unemployment rate is associated with low labour market resilience. Youth unemployment rate causes significant mental and material stress for those affected and their families. It is also of particular concern for policy makers, as high rates of youth unemployment rate indicate that labour markets are operating inefficiently.
Source	Name	Youth unemployment rate (% unemployment 15-24 over labour force 15-24)
	Dataset	ILOSTAT database
	Latest available	2021
Indicator	2.1.2.2.02	NEET
Description		This indicator presents the share of young people who are not in employment, education or training (NEET), as a percentage of the total number of young people in the corresponding age group, by gender. Young people in education include those attending part-time or full-time education but exclude those in non-formal education and in educational activities of very short duration. Employment is defined according to the OECD/ILO Guidelines and covers all those who have been in paid work for at least one hour in the reference week of the survey or were temporarily absent from such work. Therefore, NEET youth can be either unemployed or inactive and not involved in education or training. Young people who are neither in employment nor in education or training are at risk of becoming socially excluded – individuals with income below the poverty-line and lacking the skills to improve their economic situation.
Rationale		There is a negative effect of the share of young people who are not in employment, education or training (NEET) on labour market resilience. Young people who are neither in employment nor in education or training are at risk of becoming socially excluded – individuals with income below the poverty-line and lacking the skills to improve their economic situation.
Source	Name	Share of 18-24-year-olds population not in education and unemployed or inactive (NEET)

Sub-Pillar	2.1.2	Absorptive Capabilities (outputs)
	Dataset	ILOSTAT database
	Latest available	2021
Sub-Sub-Pillar	2.1.2.3	Labour market polarisation and inequality
Indicator	2.1.2.3.01	Low-skilled labour
Description		Low-skill occupations include jobs classified under the ISCO-88 major groups 5 and 9. That is, service workers and shop and market sales workers (group 5), and elementary occupations (group 9).
Rationale		Higher share of low-skilled occupations has a negative impact on the labour resilience. The informal workers and low-income segments of the population are at the highest risk of being marginalised in a fragilized labour market. Highly unequal labour markets tend to have higher shares of precarious, low-paid, low-skilled jobs that are susceptible to technological obsolescence and other external shocks. Low-skilled, low-paid workers are less resilient to technological disruptions since their occupations are more likely to be replaced rather than complemented by technological innovation. With low levels of education, low-skilled workers are less likely to achieve job-reconversion. The effect of automation on job destruction will thus affect unequal countries more.
Source	Name	Share of low skilled occupations
	Dataset	ILOSTAT database
	Latest available	2021
Indicator	2.1.2.3.02	Growth of medium-skilled jobs
Description		Growth of middle-skilled occupations shows a percentage change in the share of middle-skilled occupations since 2000. Middle-skill occupations include jobs classified under the ISCO-88 major groups 4, 7, and 8. That is, clerks (group 4), craft and related trades workers (group 7), and plant and machine operators and assemblers (group 8).
Rationale		Decreasing share of middle-skilled occupations has a negative impact on the labour market resilience. It reflects a polarized labour market between low-skilled and high-skilled workers as well as a high wage gap between both. Low-skilled, low-paid workers are less resilient to technological disruptions since their occupations are more likely to be replaced rather than complemented by technological innovation. With low levels of education, low-skilled workers are less likely to achieve job-

Sub-Pillar	2.1.2	Absorptive Capabilities (outputs)
		reconversion. The effect of automation on job destruction will thus affect unequal regions more.
Source	Name	Growth of middle-skilled occupations since 2000
	Dataset	ILOSTAT database
	Latest available	2022
Indicator	2.1.2.3.03	Labour income share
Description		The labour income share is calculated as the compensation of employees over total GDP.
Rationale		Higher labour income share has a positive impact on the labour resilience and reflects higher quality of jobs. There is a significant positive impact of quality of jobs on employment and labour market resilience. A high level of compensation of employees the desire of people to find work and provides an additional opportunity to strengthen their skills through training in paid courses and continuous higher education, which increases resilience to job disruption.
Source	Name	Share of labour income in GDP
	Dataset	ILOSTAT dataset
	Latest available	2019
Indicator	2.1.2.3.04	Labour income inequality
Description		It is the ratio between the bottom 50% and top 50% of the labour income distribution.
Rationale		The level of labour income inequality has a negative impact on labour market resilience. High income inequality reflects a bi-polarized labour market between low-skilled and high-skilled workers as well as a high wage gap between both. Low-skilled, low-paid workers are less resilient to technological disruptions since their occupations are more likely to be replaced rather than complemented by technological innovation. With low levels of education, low-skilled workers are less likely to achieve job-reconversion. The effect of automation on job destruction will thus affect unequal regions more.
Source	Name	Labour income inequality
	Dataset	ILOSTAT dataset
	Latest available	2019
Sub-Sub-Pillar	2.1.2.4	Gender inclusiveness
Indicator	2.1.2.4.01	Women in labour force

Sub-Pillar	2.1.2	Absorptive Capabilities (outputs)
Description		The labour force participation rate is the proportion of the population aged 15 and older that is economically active; that is all people who supply labour to produce goods and services during a specified period. The ratio of female to male labour force participation is calculated by dividing the female labour force participation rate by the male labour force participation rate and multiplying by 100.
Rationale		Significant positive impact on labour market resilience. High ratio of female to male labour force means that the country uses all its labour resources and potential. This is especially relevant in countries showing high rates of female education and yet low rates of female participation in the labour force.
Source	Name	Ratio of female to male labour force participation rate (%)
	Dataset	ILOSTAT database
	Latest available	2022
Indicator	2.1.2.4.02	Gender pay gap
Description		The gender pay gap is unadjusted and defined as the difference between median earnings women relative to median earnings of men. Data refers to full-time employees.
Rationale		There is a negative impact of gender pay gap on labour market resilience. A high gender pay gap indicates that the remunerating system is based on gender rather than talent. A labour market where positions and remunerations are not driven by talent and abilities is less resilient since it is fundamentally negatively biased.
Source	Name	Gender pay gap
	Dataset	UN statistics
	Latest available	2020
Sub-Sub-Pillar	2.1.2.5	Health and Wellbeing of Population
Indicator	2.1.2.5.01	Longevity
Description		Longevity is one of the elements of the health pillar of the Legatum Prosperity Index 2019. Longevity is the mortality rate of a country's population through different stages of life, as well as maternal mortality, and common life expectancies in later life. It is comprised of five indicators: maternal mortality, under 5 mortality rate, 5-14 mortality rate, 15-60 mortality rate and life expectancy at 60.

Sub-Pillar	2.1.2	Absorptive Capabilities (outputs)
		The Legatum Prosperity Index™ is a framework that assesses countries on the promotion of their residents' wellbeing, reflecting both economic and social aspects of it. The index goes beyond traditional macroeconomic measurements of a nation's prosperity, which rely solely on indicators of wealth such as average income per person (GDP per capita).
Rationale		A higher level of longevity has a positive impact on labour resilience. It can be attributed to a number of factors, including gains in the quality of the population's health and the quality of the healthcare provision, rising living standards, improved lifestyle and better education, as well as higher labour productivity.
Source	Name	Longevity
	Dataset	Legatum Institute
	Latest available	2021
Indicator	2.1.2.5.02	Physical health
Description		Physical health is one of the elements of the health pillar of the Legatum Prosperity Index 2019. Physical Health is defined as the level and burden of physical illness on the living population. It is comprised of five indicators: physical pain, health problems, communicable diseases, non-communicable diseases and raised blood pressure. The Legatum Prosperity Index™ is a framework that assesses countries on the promotion of their residents' wellbeing, reflecting both economic and social aspects of it. The index goes beyond traditional macroeconomic measurements of a nation's prosperity, which rely solely on indicators of wealth such as average income per person (GDP per capita).
Rationale		A higher quality of physical health has a positive impact on labour resilience. Physical health can have a significant impact on an individual's wellbeing and ability to participate effectively in the labour market.
Source	Name	Physical health
	Dataset	Legatum Institute
	Latest available	2021
Indicator	2.1.2.5.03	Mental health
Description		Mental health is one of the elements of the health pillar of the Legatum Prosperity Index 2019. Mental Health is defined as the level and burden of mental illness on the living population. It is

Sub-Pillar	2.1.2	Absorptive Capabilities (outputs)
		comprised of three indicators: emotional wellbeing, depressive disorders, suicide. The Legatum Prosperity Index™ is a framework that assesses countries on the promotion of their residents' wellbeing, reflecting both economic and social aspects of it. The index goes beyond traditional macroeconomic measurements of a nation's prosperity, which rely solely on indicators of wealth such as average income per person (GDP per capita).
Rationale		A higher quality of mental health has a positive impact on labour resilience. Mental health can have a significant impact on an individual's wellbeing and ability to participate effectively in the labour market.
Source	Name	Mental health
	Dataset	Legatum Institute
	Latest available	2021

Sub-Pillar 2.2.1 Adaptive Capabilities (inputs)

Sub-Pillar	2.2.1	Adaptive Capabilities (inputs)
Sub-Sub-Pillar	2.2.1.1	Flexibility of Labour Policy
Indicator	2.2.1.1.01	Hiring and firing practices
Description		Answer to the question: In your country, how would you characterize the hiring and firing of workers? [1 = heavily impeded by regulations; 7 = extremely flexible], 1-7 (best).
Rationale		There is a significant positive impact of hiring and firing practices on employment rate and thus labour market resilience. Greater flexibility in hiring and firing practices encourages firms to create more jobs. Moreover, it also incentivises them to innovate more and engage in the creative destructive process, ultimately creating new jobs to compensate for job destruction brought about by innovation.
Source	Name	Hiring and firing practices
	Dataset	World Economic Forum; Executive Opinion Survey
	Latest available	2019
Indicator	2.2.1.1.02	Ease of hiring foreign labour
Description		Response to the survey question "In your country, how restrictive are regulations related to the hiring of foreign labour?" [1 = highly restrictive; 7 = not restrictive at all].
Rationale		Ease of hiring foreign labour has a positive impact on labour market resilience. More lenient restrictions on the hiring of foreign labour allow companies to source and hire the best talent and spur more dynamic and innovative economies.
Source	Name	Ease of hiring foreign labour
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2019
Indicator	2.2.1.1.03	Effect of taxation on incentives to work
Description		Effect of taxation on incentives to work, measured on a scale of 1-7. In your country, to what extent do taxes reduce the incentive to work? [1 = significantly reduce the incentive to work; 7 = do not reduce incentive to work at all].
Rationale		A tax system that does not reduce the incentive to work has a positive impact on labour market resilience. A taxation system that increases the incentive to work increases labour force participation and encourages unemployed workers to reduce

Sub-Pillar	2.2.1	Adaptive Capabilities (inputs)
		the length of their job search. This increase flows from unemployment to employment and raises resilience.
Source	Name	Effect of taxation on incentives to work
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2019
Sub-Sub-Pillar	2.2.1.2	Business Regulation
Indicator	2.2.1.2.01	Time dealing with government regulations
Description		Time spent dealing with the requirements of government regulations is the proportion of senior management's time, in a typical week, that is spent dealing with the requirements imposed by government regulations (e.g., taxes, customs, labour regulations, licensing and registration, including dealings with officials, and completing forms).
Rationale		Negative impact on labour resilience. Time spent on regulation requirements distracts from business management, reduces the profits of firms and counteracts both the normal activities of existing organizations and the opening of new firms. A business-friendly environment allows a country to sustain a higher number of new businesses and is attractive to investment, which will ultimately create new jobs and increase employment thus contributing to the resilience of the labour market.
Source	Name	Time spent dealing with the requirements of government regulations (% of senior management time)
	Dataset	World Bank, Enterprise Surveys
	Latest available	2019
Indicator	2.2.1.2.02	Domestic market competition
Description		Sub-pillar of the "Product market" pillar of Global Competitiveness Index. It is calculated as the weighted average of three indicators: "Distortive effects of taxes and subsidies on competition" (survey), "Extent of market dominance" (survey), "competition in services" (survey). Indicates the competitiveness of the domestic players in the local market product space.
Rationale		Higher intensity of domestic competition has a positive impact on the labour market resilience. Higher competitiveness shows a country's ability to build a very highly skilled labour force, not only adaptable to technological disruptions but also able to innovate and lead innovation, raising competitiveness and productivity.

Sub-Pillar	2.2.1	Adaptive Capabilities (inputs)
Source	Name	Domestic market competition
	Dataset	WEF Global Competitiveness Report
	Latest available	2019
Indicator	2.2.1.2.03	Trade openness
Description		Response to the survey question "In your country, to what extent do non-tariff barriers (e.g. health and product standards, technical and labelling requirements, etc.) limit the ability of imported goods to compete in the domestic market?" [1 = strongly limit; 7 = do not limit at all]
Rationale		Prevalence of non-tariff barriers has a positive impact on the labour market resilience. Trade openness allows the economy of the country to gain competitiveness and firms from that country to increase market share compared to external competitors, thus increasing growth, job creation and labour market resilience to technological disruptions.
Source	Name	Domestic market competition
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2019
Indicator	2.2.1.2.04	Applied tariffs
Description		World Bank's methodology, according to which the average of effectively applied rates weighted by the product import shares corresponding to each partner country. Data are classified using the HS of trade at the six- or eight-digit level. Tariff line data were matched to SITC rev.3 codes to define commodity groups and import weights. To the extent possible, specific rates have been converted to their ad valorem equivalent rates and have been included in the calculation of weighted mean tariffs. Import weights were calculated using the COMTRADE database. Effectively applied tariff rates at the six- and eight-digit product level are averaged for products in each commodity group. When the effectively applied rate is unavailable, the most favoured nation rate is used instead.
Rationale		Higher weighted average applied tariff rate limits the ability of imported goods to compete in the domestic market, thus hindering competition and reducing incentives to innovate of local firms.
Source	Name	Tariff rate, applied, weighted mean, all products (%)
	Dataset	World Bank staff estimates using the World Integrated Trade Solution system, based on data from United Nations Conference on Trade and Development's Trade Analysis and Information

Sub-Pillar	2.2.1	Adaptive Capabilities (inputs)
		System (TRAINS) database and the World Trade Organization's (WTO) Integrated Data Base (IDB) and Consolidated Tariff Schedules (CTS) database
	Latest available	2020
Indicator	2.2.1.2.05	Paying taxes
Description		Records the taxes and mandatory contributions that a medium-size company must pay in a given year as well as measures of the administrative burden of paying taxes and contributions and complying with post filing procedures.
Rationale		Ease of paying taxes creates incentives for entrepreneurship - both starting a new business and hire workers, which contributes to higher business dynamism of economy and labour market. New businesses create new jobs and increase employment thus contributing to the resilience of the labour market.
Source	Name	Paying taxes score
	Dataset	World Bank, Doing Business
	Latest available	2020
Indicator	2.2.1.2.06	Enforcing contracts
Description		The enforcing contracts indicator measures the time and cost for resolving a commercial dispute through a local first-instance court, and the quality of judicial processes index, evaluating whether each economy has adopted a series of good practices that promote quality and efficiency in the court system.
Rationale		A higher quality of practices that promote quality and efficiency in the court system positively impacts the labour market resilience. It encourages entrepreneurship and increases private sector activity. A business-friendly environment allows a country to sustain a higher number of new businesses and is attractive to investment, which will ultimately create new jobs and increase employment thus contributing to the resilience of the labour market.
Source	Name	Enforcing contracts score
	Dataset	World Bank, Doing Business
	Latest available	2020
Indicator	2.2.1.2.07	Property rights
Description		Response to the survey question "In your country, to what extent are property rights, including financial assets, protected?" [1 = not at all; 7 = to a great extent] | 2018–2019 weighted average or most recent period available".

Sub-Pillar	2.2.1	Adaptive Capabilities (inputs)
Rationale		A high level of intellectual property protection positively impacts the labour market resilience. Gross R&D expenditure, government R&D expenditure and intellectual property legislation are all policy inputs encouraging and leading to more innovation. At the firm level innovation – both labour-friendly product innovation and labour-saving process innovation – is believed to have positive impact on employment. Innovation ultimately allows the firm to become more competitive, gain market share and thus create more jobs. Policy inputs that increase innovation allow the economy of the country to gain more competitiveness and firms to increase market share compared to foreign competitors, thus increasing growth, job creation and labour market resilience to technological disruptions.
Source	Name	Property rights score
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2019
Indicator	2.2.1.2.08	Resolving insolvency
Description		Studies the time, cost and outcome of insolvency proceedings involving domestic legal entities. These variables are used to calculate the recovery rate, which is recorded as cents on the dollar recovered by secured creditors through reorganization, liquidation, or debt enforcement (foreclosure or receivership) proceedings.
Rationale		A higher score on insolvency framework has a positive impact on entrepreneurial ecosystem and thus on the labour resilience. This helps to enhance business dynamics, while new businesses create new jobs and increase employment thus contributing to the resilience of the labour market.
Source	Name	Resolving insolvency
	Dataset	World Bank, Doing Business
	Latest available	2020
Sub-Sub-Pillar	2.2.1.3	Starting a Business Regulation
Indicator	2.2.1.3.01	Time to start a business
Description		Time required to start a business is the number of calendar days needed to complete the procedures to legally operate a business. If a procedure can be hastened at additional cost, the fastest procedure, independent of cost, is chosen.

Sub-Pillar	2.2.1	Adaptive Capabilities (inputs)
Rationale		A longer time to start a business has a negative impact on labour resilience. Time spent on business formation requirements constitutes a burden on business management and in particular to entrepreneurship and the starting of new firms. This harms the functioning of the labour market, as it is a barrier to the creation of new businesses, rendering it less resilient.
Source	Name	Time required to start a business (days)
	Dataset	World Bank, Doing Business
	Latest available	2020
Indicator	2.2.1.3.02	Cost to start a business
Description		Cost to register a business is normalized by presenting it as a percentage of gross national income (GNI) per capita.
Rationale		A higher cost to start a business has a negative impact on labour resilience. A high cost of opening a business discourages new business formation. This reduces employment, which makes the labour market less resilient with lower levels of job creation.
Source	Name	Cost to start a business (% GNI per capita)
	Dataset	World Bank, Doing Business
	Latest available	2020
Sub-Sub-Pillar	2.2.1.4	Access to Finance Regulation
Indicator	2.2.1.4.03	Ease of getting credit
Description		The ranking of economies on the ease of getting credit is determined by sorting their scores for getting credit. Rank: Getting Credit (1=Most Business-Friendly Regulations).
Rationale		Ease of getting credit has a positive impact on labour resilience. It helps to open new businesses, particularly creating new jobs and increasing the resilience of the labour market.
Source	Name	Ease of getting credit
	Dataset	World Bank, Doing Business
	Latest available	2020
Sub-Sub-Pillar	2.2.1.5	Quality of Infrastructure
Indicator	2.2.1.5.01	Logistics Performance index
Description		The World Bank's Logistics Performance Index (LPI) analyses countries through six indicators: The efficiency of customs and border management clearance. The quality of trade- and transport-related infrastructure.

Sub-Pillar	2.2.1	Adaptive Capabilities (inputs)
		The ease of arranging competitively priced international shipments. The competence and quality of logistics services. The ability to track and trace consignments. The frequency with which shipments reach consignees within the scheduled or expected delivery time.
Rationale		Logistics performance has a positive effect on labour resilience. Logistics performance is defined as how efficiently countries' supply chains connect businesses to the domestic and international channels of trade. Good logistics reduces the costs of trade and therefore impacting labour productivity.
Source	Name	Logistics Performance Index score, Overall (1=low to 5=high)
	Dataset	The International Bank for Reconstruction and Development/The World Bank
	Latest available	2018

Sub-Pillar 2.2.2 Adaptive Capabilities (outputs)

Sub-Pillar	2.2.2	Adaptive Capabilities (outputs)
Sub-Sub-Pillar	2.2.2.1	Reallocation and Flexibility Mechanisms
Indicator	2.2.2.1.01	ALP effectiveness
Description		Average answer to the question: In your country, to what extent do labour market policies help unemployed people to reskill and find new employment (including skills matching, retraining, etc.)? [1 = not at all; 7 = to a great extent].
Rationale		There is a significant positive impact of ALP effectiveness on labour market resilience. Active labour policies help to reduce obstacles to employment by helping the unemployed to re-enter the job market more easily through placement services, job subsidies, counselling, and job search programs. Active labour policies also allow professional reconversion and the upskilling of unemployed people through vocational training, thus helping them to become more resilient to technological disruptions.
Source	Name	Active labour market policies effectiveness
	Dataset	World Economic Forum, Executive Opinion Survey

Sub-Pillar	2.2.2	Adaptive Capabilities (outputs)
	Latest available	2019
Sub-Sub-Pillar	2.2.2.2	Skills and Adaptability
Indicator	2.2.2.2.01	Formal and informal education & training
Description		Participation in education and training is a measure of lifelong learning. The participation rate in education and training covers participation in formal and non-formal education and training. The reference period for the participation in education and training is previous 12 months.
Rationale		The level of participation in education and training has a positive impact on the resilience of the labour force as higher participation rate linked to a higher employability. In general, participation in formal and non-formal education and training increases chances to get employed in the short period of time, thus lowering both general unemployment and long-term unemployment incidence.
Source	Name	Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, both sexes (%)
	Dataset	United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics
	Latest available	2018
Indicator	2.2.2.2.02	Extent of staff training
Description		Response to the survey question "In your country, to what extent do companies invest in training and employee development?" [1 = not at all; 7 = to a great extent].
Rationale		The extent of staff training has a positive impact on the resilience of the labour market. Investing in personnel training increases the skills of workers in areas that are currently in demand in the market. Thus, workers are not only unlikely to be rendered obsolete due to the automation of their activities but will also be able to find another job more quickly if necessary. Thus, staff training makes employees more resilient to job disruption.
Source	Name	Extent of staff training
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2019
Indicator	2.2.2.2.03	High-skilled labour
Description		High-skill occupations include jobs classified under the ISCO-88 major groups 1, 2, and 3. That is, legislators, senior officials, and

Sub-Pillar	2.2.2	Adaptive Capabilities (outputs)
		managers (group 1), professionals (group 2), and technicians and associate professionals (group 3).
Rationale		Higher share of high-skill occupations has a positive impact on labour resilience. High-skilled employees are less vulnerable to labour market shocks. While low-skilled, low-paid workers are less resilient to technological disruptions since their occupations are more likely to be replaced rather than complemented by technological innovation. With low levels of education, low-skilled workers are less likely to achieve job-reconversion. The effect of automation on job destruction will thus affect unequal regions more.
Source	Name	Share of high-skilled occupations
	Dataset	ILOSTAT database
	Latest available	2022
Indicator	2.2.2.2.04	Skilled labour supply
Description		Response to the survey question "In your country, to what extent can companies find people with the skills required to fill their vacancies?" [1 = not at all; 7 = to a great extent].
Rationale		A skilled labour supply that matches the needs of the job market has a positive effect on labour market resilience. The ease of finding skilled employees, which is facilitated by effective recruitment agencies, databases and platforms on which workers can offer their services and employers can post vacancies, makes workers more mobile, and job finding easier and faster. This makes workers less threatened by job disruption.
Source	Name	Ease of finding skilled employees
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2022
Indicator	2.2.2.2.05	Tertiary education attainment
Description		The percentage of population aged 25 and over that attained or completed Doctoral, Masters or Bachelor or equivalent.
Rationale		Significant positive impact of educational attainment on labour market resilience. A higher rate of tertiary education attainment means a higher level of potential future knowledge intensive workers. A better educated workforce with a higher level of qualifications is a factor of labour resilience. More specifically, higher education increases job resilience to technological disruptions since educated, knowledge-intensive workers are less threatened by technological innovation. They are more likely to see their job complemented rather than replaced by

Sub-Pillar	2.2.2	Adaptive Capabilities (outputs)
		technology. Workforce participants with higher degrees tend to have a greater mobility, more adaptability and more ease in job-reconversion thanks to their educational background and skills in "learning to learn".
Source	Name	Educational attainment (Doctoral, Bachelor, Masters), population 25+ (%)
	Dataset	United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics
	Latest available	2021
Indicator	2.2.2.2.06	Skillset of graduates
Description		Average answer to the question: In your country, to what extent do graduating students possess the skills needed by businesses at the following levels: a, Secondary education; b, Tertiary education [1 = not at all; 7 = to a great extent].
Rationale		The skillset of graduates has a positive effect on labour market resilience. The number of skilled workers in the job market is not sufficient for labour resilience. The skills of labour supply have to match the skills required in the workplace. Skills mismatches and skills gaps lead to higher unemployment, lower productivity and longer job searches, thus reducing the resilience of the labour market.
Source	Name	Skillset of graduates
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2019
Sub-Sub-Pillar	2.2.2.3	Entrepreneurship Activity
Indicator	2.2.2.3.01	New corporate density
Description		New businesses registered divided by population *1000. New businesses registered are the number of new limited liability corporations registered in the calendar year.
Rationale		A higher level of business creation has a positive impact on labour resilience. New businesses create new jobs and increase employment thus contributing to the resilience of the labour market.
Source	Name	New businesses registered per 1000 pop.
	Dataset	World Bank Entrepreneurship Survey
	Latest available	2020

Sub-Pillar	2.2.2	Adaptive Capabilities (outputs)
Sub-Sub-Pillar	2.2.2.4	Access to Finance
Indicator	2.2.2.4.01	Venture capital investments
Description		Number of venture capital deals invested in(per billion PPP$ GDP, three-year average). Refinitiv Eikon data on private equity deals, per deal, with information on the location of the firm investing in a venture capital (VC) deal, among other details. The data represent the three-year average of 2018–20 deals invested in and are reported per billion PPP$ GDP.
Rationale		Venture capital availability has a positive impact on labour resilience. Venture capital investments help to open new businesses, particularly in innovative sectors of the economy, creating new jobs and increasing the resilience of the labour market.
Source	Name	Venture capital investors, deals/bn PPP$ GDP
	Dataset	Global Innovation Index, Refinitiv (a London Stock Exchange Group (LSEG) business) Eikon (private equity screener), International Monetary Fund, World Economic Outlook Database
	Latest available	2021
Indicator	2.2.2.4.02	Access to loans
Description		Answer to the question "In your country, how easy is it for businesses to obtain a bank loan?" [1 = extremely difficult; 7 = extremely easy].
Rationale		Ease of access to loan financing has a positive impact on labour resilience. Access to capital allows companies to invest in R&D and expansion, which provides both technological progress and job creation. This helps counteract digital job disruption.
Source	Name	Ease of access to loans
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2018
Indicator	2.2.2.4.03	Microfinance loan portfolio
Description		Combined gross loan balances per microfinance institution (current US$), divided by GDP (current US$) and multiplied by 100.
Rationale		A high proportion of microfinance loan portfolio has a positive impact on labour resilience. Access to capital thought microfinance institutions allows firms to invest in business development and expansion, providing both technological progress and job creation, which counteracts job disruption.

Sub-Pillar	2.2.2	Adaptive Capabilities (outputs)
Source	Name	Combined gross loan balances per microfinance institution (current US$), divided by GDP (current US$) and multiplied by 100
	Dataset	Global Innovation Index, Microfinance Information Exchange, MIX Market database; International Monetary Fund, World Economic Outlook
	Latest available	2020
Indicator	2.2.2.4.04	Depth of financial system
Description		Sub-pillar of the "Financial systems" pillar of the Global Competitiveness index. Financial depth captures the financial sector relative to the economy. It is the size of banks, other financial institutions, and financial markets in a country, taken together and compared to a measure of economic output.
Rationale		Higher scores on depth of financial system provide better opportunities and access to finance and hence increase entrepreneurial dynamism which positively impacts jobs creation and labour resilience.
Source	Name	Depth of financial system
	Dataset	World Economic Forum, Global Competitiveness Report
	Latest available	2019

Sub-Pillar 2.3.1 Transformative Capabilities (inputs)

Sub-Pillar	2.3.1	Transformative Capabilities (inputs)
Sub-Sub-Pillar	2.3.1.1	Regulation of ICT
Indicator	2.3.1.1.01	Future orientation of government
Description		Sub-pillar of the "Institutions" pillar of the Global Competitiveness index. It consists of two parts. First part is the average score of the following four EOS questions: In your country, how fast is the legal framework of your country in adapting to digital business models (e.g., e-commerce, sharing economy, fintech, etc.)? [1 = not fast at all; 7 = very fast]; In your country, to what extent does the government ensure a stable policy environment for doing business?; In your country, to what extent does the government respond effectively to change (e.g., technological changes, societal and demographic trends, security and economic challenges)?; In your country, to what extent does

Sub-Pillar	2.3.1	Transformative Capabilities (inputs)
		the government have a long-term vision in place? For the last three questions, the answer ranges from 1 [not at all] to 7 [to a great extent]. The second part is the average of two indicators: "Energy efficiency regulation" (assesses a country's policies and regulations to promote energy efficiency), "Renewable energy regulation" (assesses a country's policies and regulations to promote renewable energies) and "Environment-related treaties in force" (Total number of ratified environmental treaties).
Rationale		Future oriented governments are more prepared to meet future opportunities offered by Fourth Industrial Revolution and thus will be more resilient to support and protect employment and provide best opportunities for the labour force to grow in the future.
Source	Name	Average score on four EOS questions on future orientation of government and three commitments to sustainability indicators
	Dataset	World Economic Forum, Global Competitiveness Report
	Latest available	2019
Indicator	2.3.1.1.02	Cybersecurity
Description		The Global Cybersecurity Index (GCI) is a trusted reference that measures the commitment of countries to cybersecurity at a global level – to raise awareness of the importance and different dimensions of the issue. As cybersecurity has a broad field of application, cutting across many industries and various sectors, each country's level of development or engagement is assessed along five pillars – (i) Legal Measures, (ii) Technical Measures, (iii) Organizational Measures, (iv) Capacity Building, and (v) Cooperation – and then aggregated into an overall score.
Rationale		With an increasing ICT penetration, governments and businesses need to adopt more increased cyber protection. Cyber security, highlighted by COVID-19 crisis has become an essential part of resilient technology infrastructure.
Source	Name	Global Cybersecurity Index
	Dataset	International Telecommunication Union
	Latest available	2020
Sub-Sub-Pillar	2.3.1.3	Expenditure on R&D
Indicator	2.3.1.3.01	GERD
Description		Gross domestic expenditure on research and development (R&D), expressed as a percentage of GDP. This includes both capital and current expenditures in the four main sectors:

Sub-Pillar	2.3.1	Transformative Capabilities (inputs)
		business enterprise, government, higher education and private non-profit. R&D covers basic research, applied research, and experimental development.
Rationale		There is a significant positive impact of R&D expenditure on labour market resilience. Gross R&D expenditure is a policy input, encouraging and leading to further innovation.
Source	Name	Gross R&D expenditure (% GDP)
	Dataset	United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics
	Latest available	2020
Sub-Sub-Pillar	2.3.1.4	IP Legislation
Indicator	2.3.1.4.01	Intellectual Property Rights
Description		The IPRI scores the underlining institutions of a strong property rights regime: the legal and political environment, physical property rights, and intellectual property rights. It is the world's only index entirely dedicated to the measurement of intellectual and physical property rights.
Rationale		A high level of intellectual property protection positively impacts the labour market resilience. Gross R&D expenditure, government R&D expenditure and intellectual property legislation are all policy inputs encouraging and leading to more innovation. At the firm level innovation – both labour-friendly product innovation and labour-saving process innovation – is believed to have positive impact on employment. Innovation ultimately allows the firm to become more competitive, gain market share and thus create more jobs. Policy inputs that increase innovation allow the economy of the country to gain more competitiveness and firms to increase market share compared to foreign competitors, thus increasing growth, job creation and labour market resilience to technological disruptions.
Source	Name	Intellectual property rights score
	Dataset	Property Rights Alliance
	Latest available	2020
Sub-Sub-Pillar	2.3.1.5	Innovation Incentives
Indicator	2.3.1.5.01	Other R&D incentives
Description		Government-funded business R&D is the component of BERD that companies attribute to direct government (central, regional

Sub-Pillar	2.3.1	Transformative Capabilities (inputs)
		or local) funding when describing the sources of funds for intramural R&D expenditures. It includes grants, some types of loans and procurement, but not R&D tax incentives or equity investments as in the case of public corporations. Business-funded R&D in the higher education and government sectors (in the form of grants, donations and contracts) is the domestic business enterprise sector's contribution to intramural R&D expenditures in those sectors.
Rationale		Direct government funding of BERD has a positive impact on the labour resilience. It helps to unleash innovation in firms. At the firm level, innovation – both labour-friendly product innovations and labour-saving process innovation – is believed to have positive impact on employment. Innovation ultimately allows the firm to become more competitive, gain market share and thus create more jobs.
Source	Name	Direct government funding of BERD as a % of GDP - OECD
	Dataset	OECD statistics
	Latest available	2019
Sub-Sub-Pillar	2.3.1.4	Investment in the future of workforce
Indicator	2.3.1.4.01	Government expenditures on education
Description		General government expenditure on education (current, capital, and transfers) is expressed as a percentage of GDP. It includes expenditure funded by transfers from international sources to government.
Rationale		There is a significant positive impact of government education expenditure on the employment rate and thus labour market resilience. It is important to consider this variable because tertiary education attainment and quality alone are not sufficient measures. Public investments in the whole educational system matter to achieve a more educated and more resilient labour market.
Source	Name	Government expenditure on education (% GDP)
	Dataset	United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics
	Latest available	2021
Indicator	2.3.1.4.02	Tertiary education expenditures per student
Description		This is the sum of two indicators: Initial government funding per tertiary student (PPP$) and Initial household funding per tertiary student (PPP$). Initial government funding per tertiary student

Sub-Pillar	2.3.1	Transformative Capabilities (inputs)
		(PPP$) is the total general (local, regional and central) government expenditure (current and capital) on a tertiary education minus international transfers to government for education, divided by the number of students enrolled at tertiary level of education expressed at purchasing power parity (PPP$). Initial household funding per tertiary student (PPP$) is the total payments of households (pupils, students and their families) for educational institutions (such as for tuition fees, exam and registration fees, contribution to Parent-Teacher associations or other school funds, and fees for canteen, boarding and transport), plus purchases outside of educational institutions (such as for uniforms, textbooks, teaching materials, or private classes), minus government education transfers to households (such as scholarships or other education-specific financial aid) expressed at purchasing power parity (PPP$).
Rationale		The level of government and household tertiary education expenditure has a positive impact on the resilience of the labour force as higher government and household contribution to tertiary education is linked to higher enrolment, attainment and quality of higher tertiary education, which is linked with a higher employability, because jobs requiring tertiary education are less threatened by the risk of automation and are more adaptable to a technology-rich workplace.
Source	Name	Initial government and household funding per tertiary student, PPP$
	Dataset	United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics
	Latest available	2020
Indicator	2.3.1.4.03	Pupil-teacher ratio
Description		Ratio of students in secondary schooling to the number of teachers on a headcount basis.
Rationale		Availability of teaching staff is an important aspect of education. The higher the pupil-teacher ratio is associated with the higher level of quality and access to education for children.
Source	Name	Pupil-teacher ratio (secondary)
	Dataset	United Nations Educational, Scientific and Cultural Organization (UNESCO)
	Latest available	2018
Indicator	2.3.1.4.04	ICT infrastructure per school

Sub-Pillar	2.3.1	Transformative Capabilities (inputs)
Description		Percentage of public schools with Internet access for student use.
Rationale		There is a significant positive impact of internet access at schools on labour market resilience. ICT infrastructure allows the pupil easier access to technology and enhance digital skills.
Source	Name	Percentage of public schools with Internet access for student use
	Dataset	UN SDG, United Nations Educational, Scientific and Cultural Organization (UNESCO)
	Latest available	2021

Sub-Pillar 2.3.2 Transformative Capabilities (outputs)

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
Sub-Sub-Pillar	2.3.2.1	ICT Business Penetration
Indicator	2.3.2.1.01	ICT usage
Description		ICT usage by households calculated as an average of 3 indicators: percentage of individuals using the Internet, fixed-broadband subscriptions per 100 inhabitants and active mobile - broadband subscriptions per 100 inhabitants.
Rationale		ICT usage by households has a positive impact on the labour resilience. Households that were able to adopt ICT into daily operations are more flexible in the labour market, can more easily find a job and seek for a better one especially in the time of shock in labour market, e.g. COVID-19.
Source	Name	ICT usage by households
	Dataset	Whiteshield elaboration based on the United Nations International Telecommunication Union (UN ITU) methodology
	Latest available	2021
Sub-Sub-Pillar	2.3.2.2	ICT Infrastructure Penetration
Indicator	2.3.2.2.01	ICT access (ICT Development Index)
Description		Average of 5 indicators: percentage of households with a computer, percentage of households with internet access, Fixed-telephone subscriptions per 100 inhabitants, Mobile-

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
		cellular telephone subscriptions per 100 inhabitants, International Internet bandwidth (bit/s) per Internet user.
Rationale		ICT access has a positive impact on labour market resilience, because it allows the population greater access to technology, making citizens more familiar with technological innovations, enabling their adoption and use, including professionally.
Source	Name	ICT access index
	Dataset	Whiteshield calculations based on the United Nations International Telecommunication Union (UN ITU) methodology
	Latest available	2021
Sub-Sub-Pillar	2.3.2.3	Innovation Environment
Indicator	2.3.2.3.01	Scientific and technical journal articles
Description		Number of scientific and technical journal articles divided by population size*1000. Scientific and technical journal articles refer to the number of scientific and engineering articles published in the following fields: physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and technology, and earth and space sciences.
Rationale		There is a significant positive impact of scientific R&D publications on labour market resilience. A high number of scientific and technical journal articles reflect the knowledge intensity within a country and its potential to be an innovation leader. This increases both the dynamism of the economy and labour resilience.
Source	Name	Scientific and technical journal articles per 1000 pop.
	Dataset	World Bank, National Science Foundation, Science and Engineering Indicators
	Latest available	2018
Indicator	2.3.2.3.02	Researchers in R&D
Description		The number of researchers engaged in research & development (R&D), expressed per million of population. Researchers are professionals who conduct research and improve or develop concepts, theories, models, techniques, instrumentation, and software of operational methods. R&D covers basic research, applied research, and experimental development.
Rationale		The number of R&D research personnel in a country has a positive effect on labour resilience. Firstly, a high number of researchers in R&D reflects a source of employment for a significant number of people in the economy, which illustrates

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
		one of the ways R&D can allow an economy to create new jobs. Secondly, a high number of researchers in R&D allow the country to reach a higher level of innovation, which creates further employment opportunities in new areas, increasing labour force resilience.
Source	Name	Researchers in R&D per 1 million pop.
	Dataset	United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics
	Latest available	2020
Indicator	2.3.2.3.03	Technicians in R&D
Description		Technicians in R&D per 1 million. pop.| Last available to 2020 Description: The number of technicians participating in research & development (R&D), expressed per million of population. Technicians and equivalent staff are people who perform scientific and technical tasks involving the application of concepts and operational methods, normally under the supervision of researchers. R&D covers basic research, applied research, and experimental development.
Rationale		The number of technical R&D staff in a country has a positive effect on labour resilience. Firstly, a high number of technicians in R&D reflects a source of employment for a significant number of people in the economy, which illustrates one of the ways R&D can allow an economy to create new jobs. Moreover, a high number of technicians in R&D allow the country to reach a higher level of innovation, which further creates employment opportunities
Source	Name	Technicians in R&D per 1 million. pop.
	Dataset	United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics
	Latest available	2020
Indicator	2.3.2.3.04	Research institutions prominence
Description		In your country, how do you assess the quality of scientific research institutions? [1 = extremely poor—among the worst in the world; 7 = extremely good—among the best in the world]
Rationale		High quality research institutions drive innovation in an economy as well as outputs reflecting the level of innovation. Innovation increases levels of competitiveness and productivity, driving the resilience of an economy and its labour market. Although innovation can also lead to job destruction, this is usually compensated for by labour-friendly product innovations and the

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
		economic growth induced by the productivity and competitiveness gains in innovative economies.
Source	Name	Research institutions prominence
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2017
Indicator	2.3.2.3.05	Industry-university collaboration
Description		In your country, to what extent do business and universities collaborate on research and development (R&D)? [1 = do not collaborate at all; 7 = collaborate extensively].
Rationale		Industry-university collaboration could enhance innovation through knowledge and technology exchange. Businesses can participate in university research and get an access to innovative developments, while universities benefit from funding of innovative projects.
Source	Name	Industry-university collaboration
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2018
Sub-Sub-Pillar	2.3.2.4	Innovation Trade
Indicator	2.3.2.4.01	Share of creative goods exports
Description		Creative goods exports as percentage of total goods exports.
Rationale		Creative goods exports as percentage of total goods exports. Rationale: There is a significant positive impact of creative goods exports on labour market resilience. Creative goods reflect higher levels of product innovation (as explained previously labour-friendly both at the firm, sector and overall economy level), leading to the creation of new jobs. They are also dependent on creativity, a human attribute difficult to automate, making jobs involved in creative products more resilient.
Source	Name	Shares of creative goods exports (% of total good exports)
	Dataset	United Nations Conference on Trade and Developments UNCTADstat database, International Monetary Fund, Balance of Payments Statistics Yearbook and data files
	Latest available	2021
Sub-Sub-Pillar	2.3.2.5	Technology and Digital Economy
Indicator	2.3.2.5.01	ICT goods export

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
Description		Information and communication technology goods include computers and peripheral equipment, communication equipment, consumer electronic equipment, electronic components, and other information and technology goods (miscellaneous).
Rationale		Information and Communication Technology goods have a positive impact on labour resilience. The indicator reflects the degree of usage of technology in the economy. A technologically rich business environment reflects a potential position as a leader in new technologies increasing, the global competitiveness of the country and thus employment growth. Moreover, it is also correlated with a high share of ICT-intensive sectors which are more likely to create new jobs in the future economy.
Source	Name	ICT goods export (% of corresponding total goods)
	Dataset	United Nations Conference on Trade and Developments UNCTADstat database, International Monetary Fund, Balance of Payments Statistics Yearbook and data files
	Latest available	2020
Indicator	2.3.2.5.02	ICT services export
Description		Communications, computer, information, and other services cover international telecommunications; computer data; news-related service transactions between residents and non-residents; construction services; royalties and license fees; miscellaneous business, professional, and technical services; personal, cultural, and recreational services; manufacturing services on physical inputs owned by others; and maintenance and repair services and government services not included elsewhere.
Rationale		Information and Communication Technology services have a positive impact on labour resilience. The indicator reflects the degree of usage of technology in the economy. A technologically rich business environment reflects a potential position as a leader in new technologies increasing, the global competitiveness of the country and thus employment growth. Moreover, it is also correlated with a high share of ICT-intensive sectors which are more likely to create new jobs in the future economy.
Source	Name	ICT services export (% of corresponding total services export)

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
	Dataset	United Nations Conference on Trade and Developments UNCTADstat database, International Monetary Fund, Balance of Payments Statistics Yearbook and data files
	Latest available	2020
Indicator	2.3.2.5.03	Medium & high-tech manufacturing value added
Description		The proportion of medium and high-tech industry value added in total value added of manufacturing
Rationale		There is positive impact of medium and high-tech industry on labour resilience. Non-routine cognitive jobs in medium and high-tech manufacturing are more resilient to technological disruptions since technological innovations in these jobs tend to be complementary and not substitutional and these workers will be able to adapt to incorporate these innovations and use them to increase their productivity.
Source	Name	Medium & high-tech mfg in MVA
	Dataset	World Bank, United Nations Industrial Development Organization (UNIDO), Competitive Industrial Performance (CIP) database
	Latest available	2019
Indicator	2.3.2.5.04	Medium and high-tech exports
Description		Medium and high-technology exports are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery.
Rationale		There is positive impact of high-tech industry on labour resilience. Non-routine cognitive jobs in medium and high-tech manufacturing are more resilient to technological disruptions since technological innovations in these jobs tend to be complementary and not substitutional and these workers will be able to adapt to incorporate these innovations and use them to increase their productivity.
Source	Name	Medium and high-tech exports (% manufactured exports)
	Dataset	United Nations, Comtrade database through the WITS platform
	Latest available	2019
Sub-Sub-Pillar	2.3.2.6	Green transition
Indicator	2.3.2.6.01	Environmental goods exports & imports
Description		It is calculated by summing the 2016-2021average of yearly export and import values (US$ billion) of environmental goods.
Rationale		

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
Source	Name	Environmental goods exports & imports
	Dataset	ICT Trade Map
	Latest available	2021
Indicator	2.3.2.6.02	Renewable energy consumption
Description		Share of renewable energy in the total final energy consumption.
Rationale		The impact of environmental issues on jobs and labour markets is not a distant future. Climate change is already impacting labour productivity. Therefore, renewable energy adoption is an essential factor of green transition and thus positively impacts labour resilience and its transition toward more sustainable path.
Source	Name	Renewable energy share in the total final energy consumption (%), UN SDG
	Dataset	UN SDG
	Latest available	2019
Indicator	2.3.2.6.03	CO2 intensity of GDP
Description		Carbon dioxide emissions are those stemming from the burning of fossil fuels and the manufacture of cement. They include carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring.
Rationale		The lower reliance of the economy on traditional energy forms represents higher energy efficiency and greater shift toward sustainable energy. It is also highly correlated with innovation, where new technologies are implemented to reduce energy intensity of the economy.
Source	Name	CO2 emissions (kg per 2017 PPP $ of GDP)
	Dataset	World Bank, Climate Watch. 2020. GHG Emissions. Washington, DC: World Resources Institute
	Latest available	2019
Indicator	2.3.2.6.04	Energy intensity
Description		Energy intensity level of primary energy is the ratio between energy supply and gross domestic product measured at purchasing power parity. Energy intensity is an indication of how much energy is used to produce one unit of economic output. Lower ratio indicates that less energy is used to produce one unit of output.
Rationale		The lower energy intensity represents higher energy efficiency and greater shift toward sustainable energy. It is also highly

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
		correlated with innovation, where new technologies are implemented to reduce energy intensity of the economy.
Source	Name	Energy intensity measured in terms of primary energy and GDP: Megajoules per USD constant 2011 PPP GDP
	Dataset	World Bank, Sustainable Energy for All (SE4ALL) database from the SE4ALL Global Tracking Framework led jointly by the World Bank, International Energy Agency, and the Energy Sector Management Assistance Program
	Latest available	2019
Indicator	2.3.2.6.05	Domestic material consumption
Description		Domestic material consumption (DMC) per unit of gross domestic product (GDP), measured in kilograms per constant 2010 US$, (ALP, total or no breakdown) is a production-side measure of the use of materials within an economy. A country's DMC may therefore be lower if it outsources a lot of production.
Rationale		The lower domestic material consumption represents higher efficiency of material use and greater shift toward sustainable energy. It is also highly correlated with innovation, where new technologies are implemented to reduce material consumption.
Source	Name	Domestic material consumption per unit of GDP, by type of raw material (kilograms per constant 2010 United States dollars)
	Dataset	UN SDG
	Latest available	2019
Sub-Sub-Pillar	2.3.2.7	Innovation Products
Indicator	2.3.2.7.01	Trademark applications
Description		Number of trademark applications divided by population size*1000. Trademark applications filed are applications to register a trademark with a national or regional Intellectual Property (IP) office. A trademark is a distinctive sign which identifies certain goods or services as those produced or provided by a specific person or enterprise. A trademark provides protection to the owner of the mark by ensuring the exclusive right to use it to identify goods or services, or to authorize another to use it in return for payment. The period of protection varies, but a trademark can be renewed indefinitely beyond the time limit on payment of additional fees.
Rationale		There is a significant positive impact of trademarks applications on labour market resilience. Trademark applications reflect higher product innovation which (as explained previously) is

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
		labour-friendly both at the firm, sector and overall economy level, leading to the creation of new jobs.
Source	Name	Trademark applications per 1000 pop., sum of resident and non-residents
	Dataset	World Intellectual Property Organization (WIPO)
	Latest available	2020
Indicator	2.3.2.7.02	International co-inventions
Description		Number of patent families per million population with co-inventors located abroad filed in at least two of the major 5 (IP5) offices in the World: the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), and the United States Patent and Trademark Office (USPTO). Data are extracted from the PATSTAT database by earliest filing date and inventor country, using fractional counts. Population figures are from the World Bank.
Rationale		A higher number of international co-inventions has a positive impact on labour resilience. International co-inventions help to widen technological collaboration network and lead to higher effectiveness of innovation development.
Source	Name	Number of patent families per million population with co-inventors located abroad
	Dataset	World Economic Forum, OECD, STI Micro-data Lab: Intellectual Property database
	Latest available	2019
Indicator	2.3.2.7.03	Patent applications
Description		Number of patent applications of residents and non-residents divided by population size*1000. Patent applications are worldwide patent applications filed through the Patent Cooperation Treaty procedure or with a national patent office for exclusive rights to an invention: a product or process that provides a new way of doing something or offers a new technical solution to a problem. A patent provides protection for the invention to the owner of the patent for a limited period, generally 20 years.
Rationale		There is a significant positive impact of patent applications on labour market resilience. This reflects higher levels of product innovation which (as explained previously) is labour-friendly both

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
		at the firm, sector, and overall economy level, leading to the creation of new jobs.
Source	Name	Patent applications per 1000 pop., sum of resident and non-residents
	Dataset	World Intellectual Property Organization (WIPO)
	Latest available	2020
Sub-Sub-Pillar	2.3.2.8	Education and Skills of the Future
Indicator	2.3.2.8.01	Quality of vocational education
Description		Response to the survey question "In your country, how do you assess the quality of vocational training?" [1 = extremely poor; among the worst in the world; 7 = excellent; among the best in the world].
Rationale		Significant positive impact of quality of vocational training on labour market resilience. High quality of vocational training allows for the training of specialized workers according to the evolving needs of the labour market. When well implemented, these programs help to avoid skill gaps between employees' competencies and employers' needs, thus increasing the resilience of the labour market through increased productivity, sustainability, and suitability in the labour force. It is also an efficient pathway to help the unemployed to re-orient themselves and find new jobs thus increasing labour mobility and professional reconversion opportunities.
Source	Name	Quality of vocational training
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2019
Indicator	2.3.2.8.02	PISA score
Description		Average scores of 15-year-old students on the PISA (Program for International Students Assessment) science, mathematics and reading literacy scale.
Rationale		PISA score has a positive effect on labour market resilience. PISA scores reflect the quality of the pre-tertiary educational system. Studies confirm that focusing on tertiary education is not sufficient to measure educational outcomes. The quality of education and thus of workers' skills is linked to high quality secondary education as a first step to high employability and resilience in the workforce.
Source	Name	PISA average scales in reading, mathematics, and science
	Dataset	NCES, National Centre for Education Statistics

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
	Latest available	2018
Indicator	2.3.2.8.03	Critical thinking
Description		Response to the survey question "In your country, how do you assess the style of teaching?" [1 = frontal, teacher based, and focused on memorizing; 7 = encourages creative and critical individual thinking].
Rationale		The level of critical thinking has a positive impact on the resilience of the labour force. Teaching which includes the development of critical thinking in students contributes to a person's ability to correctly assess various situations and efficiently adapt to a changing environment, including the situation in the labour market. People with developed critical thinking better understand what skills are currently needed in the labour market and can accordingly work on developing the necessary skills, making them more resilient to job disruptions. Critical thinking is also one of the human attributes, which is most difficult to automate, increasing the potential resilience of those who have this skill.
Source	Name	Critical thinking in teaching
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2019
Indicator	2.3.2.8.04	Digital skills
Description		Response to the survey question "In your country, to what extent does the active population possess sufficient digital skills (e.g. computer skills, basic coding, digital reading)?" [1 =not all; 7 = to a great extent].
Rationale		There is a significant positive impact of digital skills on labour market resilience. People with a high level of digital skills are less threatened by technological innovation. They are more likely to be complemented rather than replaced by technology. They have a greater adaptability to a technology-rich environment.
Source	Name	Digital skills among active population
	Dataset	World Economic Forum, Executive Opinion Survey
	Latest available	2019
Indicator	2.3.2.8.05	STEM graduates
Description		Percentage of persons who, during the reference academic year, have successfully completed a Science, Technology, Engineering or Mathematics tertiary education program, both sexes (%).

Sub-Pillar	2.3.2	Transformative Capabilities (outputs)
Rationale		The percentage of STEM graduates has a positive effect on labour market resilience. People who have graduated from these programs are in the most demand in the labour market. These people are at less risk from the effects of digital disruption.
Source	Name	Percentage of graduates from Science, Technology, Engineering and Mathematics programs in tertiary education (%)
	Dataset	United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics
	Latest available	2020

Sub-Pillar 2.4 Institutional Capabilities – cross-cutting driver

Sub-Pillar	2.4	Institutional Capabilities – cross-cutting driver
Indicator	2.4.01	World Governance Index
Description		Governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored, and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them. The Worldwide Governance Indicators (WGI) report on six broad dimensions of governance for over 215 countries and territories over the period 1996-2018: (I) Voice and Accountability; (II) Political Stability and Absence of Violence; (III) Government Effectiveness; (IV) Regulatory Quality; (V) Rule of Law; and (VI) Control of Corruption. The WGI are composite governance indicators based on over 30 underlying data sources. These data sources are rescaled and combined to create the six aggregate indicators using a statistical methodology known as an unobserved components model. A key feature of the methodology is that it generates margins of error for each governance estimate. These margins of error need to be taken into account when making comparisons across countries and over time.
Rationale		Higher score on World Governance Index has a positive impact on the labour resilience. Labour resilience policies both at the regional and city level, including reconfiguring the social contract in a more sustainable manner could be built only by

Sub-Pillar	2.4	Institutional Capabilities – cross-cutting driver
		effective governments with a capacity to effectively formulate and implement sound policies and respect of citizens and the state for the institutions that govern economic and social interactions among them.
Source	Name	World Governance Index
	Dataset	Worldwide Governance Indicators (www.govindicators.org), The World Bank. Calculated by Whiteshield based on the Worldbank methodology
	Latest available	2019
Indicator	2.4.02	Statistical Capacity
Description		Statistical Capacity is a nation's ability to collect, analyse, and disseminate high-quality data about its population and economy. Quality statistics are essential for all stages of evidence-based decision-making. The 2019 scores provide individual country and aggregate country group scores for the overall Statistical Capacity Indicator (SCI) average, three categories (Methodology, Source Data, and Periodicity), and 25 individual indicators.
Rationale		Quality of the statistics has a positive effect on labour resilience. It is essential for all stages of evidence-based decision-making Countries which have improved the quality and availability of statistics relevant to labour market resilience are aware of the need to refine how they measure the drivers of labour market resilience and labour market outcomes.
Source	Name	Statistical capacity score
	Dataset	Data on Statistical Capacity, World Bank
	Latest available	2020
Indicator	2.4.03	Social Capital
Description		Social capital is one of the pillars of the Legatum Prosperity Index 2019. The Legatum Prosperity Index™ is a framework that assesses countries on the promotion of their residents' wellbeing, reflecting both economic and social aspects of it. The index goes beyond traditional macroeconomic measurements of a nation's prosperity, which rely solely on indicators of wealth such as average income per person (GDP per capita). The Social Capital pillar measures the strength of personal and social relationships, social norms, and civic participation in a country.
Rationale		Social capital has a positive effect on the labour market resilience. Higher social capital reflects high institutional trust which directly impact the prosperity of the nation. In particular, it

Sub-Pillar	2.4	Institutional Capabilities – cross-cutting driver
		is evident from the Covid-19 crisis that institutional trust and strong social networks play an important role to sustain and recover from the crisis and ensure future growth.
Source	Name	Social capital pillar score
	Dataset	Legatum Institute
	Latest available	2021
Indicator	2.4.04	GLRI statistical fullness
Description		Share of the number of country indicators for the GLRI available out of the total number of indicators.
Rationale		The completeness of available data on the country directly affects the quality of the country's GLRI ranking. It is also indicative of the extent of evidence-based policy making. The statistics indicator is added to the index as a weighting factor: the more information, which is available about the country, the more reliable the value of the country's GLRI rank and the higher the country in the ranking.
Source	Name	Statistical fullness
	Dataset	Whiteshield calculations
	Latest available	2022

4.4 DIFFERENCES FROM PREVIOUS GLRI EDITIONS

Every year the data sources on which GLRI relies are subject to changes. For instance, indicators are being discontinued, become outdated, and are calculated differently (e.g., based on new methods).

Therefore, in 2023 some modifications were put in place. These respond to the need of preserving data availability and phasing out obsolescent data because of the mutation in data sources.

10 outdated indicators were excluded in GLRI 2023 (Table 4), other 7 were replaced by comparable ones which are regularly updated (Table 5). Other minor changes are listed in Table 6.

Table 4: Indicators excluded as their latest availability goes back to 2017 or earlier

Indicator	Action
Quality of working environment	Removed
GEI attitudes & perceptions subindex	
Internet & telephony competition laws	
Government procurement of technology	
ICTs & business model creation	
ICTs & org. model creation	
Robot adoption rate	
Green patent applications	
Quality of educational system	
High-technology net exports	

Table 5: Indicators replaced by similar ones which are regularly updated

Indicator	Action
Quality of earnings (OECD)	Replaced by "Hourly wages" (ILO)
Applied tariffs (WEF)	Replaced by "Applied tariffs" (The World Bank)
Intensity of local competition (WEF)	Replaced by "Domestic market competition" (WEF)
ICT access (INU)	Re-calculated by Whiteshield for last years according to INU methodology
ICT usage by firms (WEF)	Replaced by "ICT usage" (Whiteshield's elaboration based on WEF data)
Quality of research institutions (WEF)	Replaced by "Research institutions prominence" (WEF)
Venture capital investments (GII)	Changed to "Venture capital investors, deals/bn PPP$ GDP" (GII)

Table 6: Other changes

Indicator	Action
Environmental goods exports & imports	Calculated as the 2016-2021 average (was the 2008-2013 average)
Low-skilled labour, High-skilled labour, and Growth in medium jobs (ILO)	Drawn from labour force surveys (ILO), previously were based on ILO estimates
Tertiary education attainment	New countries available
ICT services export	New data available up to 2021 (was up to 2017)
World Governance Index	Not released anymore since 2018. Calculated by Whiteshield based on the World Bank methodology
Share of creative goods export	New data available up to 2021 (was up to 2017)
Insolvency framework	Renamed to "Resolving insolvency"
High-tech exports (% of mfg exports)	Renamed to "Medium and high-tech exports"
Energy intensity	Measured in 2017 PPP$ instead of 2011 PPP$
New corporate registrations	Renamed to "New corporate density
Pupil-teacher ratio	UNESCO breaks it up in "trained pupil-teacher ratio" and "qualified" pupil-teacher ratio. Since none corresponds to the original indicator, it is not being updated

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