

Global Labour Resilience Index 2023

Uneven recovery

IN COLLABORATION WITH



THE GLOBAL ALLIANCE IN MANAGEMENT EDUCATION

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FOREWORD



By Sir Christopher A. Pissarides, Regius Professor of Economics at the London School of Economics, Whiteshield Special Advisor and Director, Global Labour Resilience Index Advisor and recipient of the 2010 Nobel Prize in Economics

COVID-19 shook labour markets the world over. The resulting effect has been intense and its impact affected countries irrespective of their levels of economic development. However, the post-pandemic labour markets recovery process is far from monolithic. As a matter of observation, countries are manifesting divergent recovery paths with some - mostly developed

- rapidly returning to pre-crisis levels of employment, while others - mostly developing countries - are still suffering from relatively large and persistent employment deficits.

These asymmetric labour market consequences can be partly ascribed to different health and economic support measures that governments have introduced. The other part is attributed to structural factors that have either facilitated or impeded recovery. What are the key factors that allow labour markets to recover from shocks faster than others, and successfully transform in the face of rising technological disruptions? Whiteshield's "Global Labour Resilience Index 2023" aims to provide insight on the level of preparedness of labour markets to cope with the occurrence as well as the consequences resulting from short and long-term shocks.

This year's index builds on a substantial number of indicators that can enable a targeted diagnosis of labour markets readiness. Equally relevant, the index can help inform effective approaches to building resilience and capabilities to successfully absorb shocks, while continuously adapting and transforming.

The future of work remains uncertain. However, today's leaders and policymakers must act and prepare as best as they can for their societies and economies to navigate an unknowable future.

From technology to climate change, the need to align labour markets with the trends of the future is more pressing than ever. Technology has been and will likely continue to accelerate its disruption of economies and citizens' lives through relentless digitalisation and transformation of government

service delivery. The greening of our economies also requires changes in employment and labour reallocation strategies and policies.

Sizeable challenges will continue to face governments and labour markets across the globe. This 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.

ADVISORY BOARD TO GLOBAL LABOUR RESILIENCE INDEX

The GLRI Advisory Board was formed to provide guidance on the methodology and research applied to the Global Labour Resilience Index, ensure consistency of the findings and support in the dissemination of results. The Advisory Board is a select group of leading international practitioners and experts with unique knowledge and skills in the areas of economic and labour policy and technological

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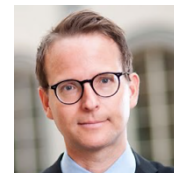


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The current edition builds on Whiteshield’s proprietary Global Labour Resilience Index (GLRI) and Knowledge Mapping models and was authored by a number of Whiteshield senior executives and data science experts comprising Fadi Farra, Managing Partner and Director; Raed Safadi, Chief Economist; Bassam El Khoury, Partner and Head of Whiteshield Institute; Tom Flynn, Partner; Amira Bensebaa, Principal; Andrea Gurgone, Senior Data Scientist, and Elena Balter, Economic Modelling Lead.

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PREFACE

UNLOCKING CITIZENS' RESILIENCE

The history of mankind's evolution seems to point in a direction of increasing structure and, along with it, increasing sophistication. The apparent order inherent to this structure is often described as a source of predictable behaviour that can pave the way to efficiency gains and higher productivity. However, orderly behaviour is illusory, as the world we inhabit is a complex system where it is forbiddingly challenging to accurately predict the occurrence of negative events and shocks. As a matter of observation, shocks are, for the most part, pathologically random and riddled with dynamic feedback effects. Attempts at explaining the occurrence of random shocks drove social scientists to identify various catalysts, including wars, fires, droughts, fluctuations in commodity prices, disruptions to value chains, and government policies.

Negative events are multi-faceted and encompass aspects of an economic, environmental, and social nature. Labour markets at any scale are not immune to such shocks and, more often than not, may cause individuals to re-evaluate key life-long decisions, including the extent to which they

invest in human capital, geographies to which they could relocate, and duration for which they remain active in the labour market. Such decisions carry lasting effects, not only on the individual, but also on the aggregate economy. The uniqueness of each individual will cause them to react differently to the same adverse event. Moreover, the same individual may exhibit different reactions depending on when the shock occurs during his or her lifetime. Realising that all actions and decisions are undertaken by individuals, it becomes clear that the path toward building a resilient labour market depends fundamentally on a policy framework that is citizen-centric.

More specifically, a top-down siloed approach to developing labour policies must be supplanted with a distributed model that directly involves citizens. Furthermore, the new paradigm of building resilient labour markets must part way with its traditional short-term vision and embrace a longer-term view of the impact of formulated policies. Indeed, the notion of labour resilience is inherently a temporal one as it refers to the ability of the labour market to absorb shocks and

recover with minimal disruptions. Lastly, labour resilience calls for a more targeted usage of technology that significantly enhances workers' productivity, elevates the nimbleness of their capabilities, and helps them nurture versatile skillsets to protect them from adverse macroeconomic occurrences.

It is an unfortunate reality that most governments still think of the economy in purely aggregate terms, and assume that citizens are monolithic beings. To initiate a meaningful shift in how public policy is formulated and implemented, Whiteshield published its "Quantum Governance" framework to highlight the critical role that citizens and residents play. The implication for labour markets consists in recognising that different people have different policy absorption capacities, and that any additional investment in formulating or introducing new policies must be measured in tandem with the absorptive capacity of the people.

The new approach of continuously improving labour market absorptive capacity and its resilience calls for a governance model that strengthens the direct participation of and benefits to citizens. This is not just a matter of enacting policies that protect workers from potential job losses but also, importantly, adopting a policy framework that allows workers to share in the

benefits accruing from growth in productivity. Indeed, digitalisation and the transition to a greener economy should not be a blessing to some (high-skilled) workers and a curse to others. Policy can and should ensure that such shocks, and others, provide new opportunities for a more inclusive productivity growth by, for example, reducing the costs of acquiring new skills, facilitating entrepreneurship, and providing access to financial markets. The underlying principle is to embed the social contract with policy levers that both protect and empower workers. Proper training, upskilling, and re-skilling are critical components in empowering workers and turning the challenges they face into new and more productive opportunities. This calls for a systematic appraisal of key skills needed to shape the future state of human capital. To support this endeavour, Whiteshield recently launched its Whiteshield Labour Navigator (WLN).

WLN identifies the latest trends in labour markets through its rich array of live information on demands for jobs, and the skills required to perform them. It offers intelligence that exploits data science and analytics to help make data-driven decisions based on the current tendencies in the labour market. The merit of WLN's novel approach lies in its ability to capture, in real time, the new types of jobs that are

emerging, the tasks to be performed, and the skills needed.

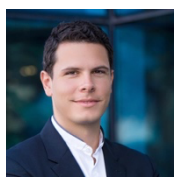
WLN complements the wider GLRI framework on two fronts. First, it helps develop an understanding of the adaptive capabilities of the labour market (sub-pillar 2.2). For instance, the level of talent and the skillset of employees can be inferred from the analysis of the labour demand in a particular country.

Second, the trends emerging from WLN are correlated to a country's transformative capabilities (sub-pillar 2.3). For instance, changes in the sectorial or occupational labour demand may signal that a structural transformation in a country's economy is underway. Screening the labour market through the WLN helps infer the movements in labour resilience.

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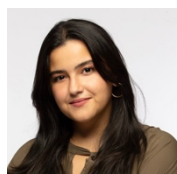
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KEY FINDINGS

Building resilience fosters development and lessens inequalities

KEY GLRI 2023 INSIGHTS

The pandemic recovery of labour markets is worsening inequalities...

Almost half of the top 50 performing countries are in Europe while almost half of the bottom 50 are in Sub-Saharan Africa.

This divergence is driven in part by countries' abilities to provide stimulus support as well as by the quality of their labour market policies and institutions.



Resilience is a catalyst for sustainable economic development...



Countries equipped with better absorptive capabilities succeeded in avoiding major disruptions in their labour market.

Proactive government policies and strategies should allow people and firms to cope with future shocks and recover quickly.

... And calls for a stronger focus on the citizen:

A citizen-centric approach strengthens the direct participation of citizens and allows workers to benefit better from growth in productivity.

A worker-centric approach would help upskill and prepare the workforce to navigate disruptions caused by digital transformation and the transition to green economies.



Building resilient labour markets is a catalyst for robust, inclusive and sustainable economic development

Countries need to build their labour market resilience to achieve inclusive growth and prosperity.

A resilient labour market generates sustainable demand for a wide range of occupations and supplies quality work.

Resilient labour markets are a catalyst for economic development

Labour market resilience is a strong predictor of vulnerability and shapes countries' ability to absorb shocks and recover.

Building resilient labour markets requires proactive government policies for people and firms to cope with shocks without long-term consequences.

Improving labour market resilience calls for a governance model that strengthens the direct participation of and benefits to citizens.

Not only it should protect workers from potential job losses but also enable them to share in the benefits accruing from growth in productivity.

A two-speed post pandemic recovery of global labour markets is underway and is worsening inequalities

Countries are manifesting divergent recovery paths with some –mostly developed– rapidly returning to pre-crisis levels of employment while others –mostly developing countries– still suffering from relatively large and persistent employment deficits.

Resilience is not just about how labour markets respond and recover from short-term shocks such as COVID-19, it is also about countries' ability to prepare for the future of work.

Labour market resilience is highest in Western and Northern Europe

The digital transformation of labour markets will continue to accelerate and test resilience. Governments and policymakers must respond to this by equipping their labour force with the right skills, capabilities and knowledge and turn this transformation into an opportunity. The green transition offers a substantial opportunity for labour markets and must be at the heart of

economic growth plans. Failing to align labour markets with these trends will reduce resilience, increase vulnerabilities, and jeopardise growth.

Labour market resilience is still the highest in Western and Northern Europe

In the aftermath of the COVID-19 pandemic, labour markets in Europe have maintained the highest levels of resilience. The Top 10 GLRI 2023 rankings remain dominated by countries in mainland Western and Northern Europe (Figures 1 and 2), excluding Singapore. These European countries (Denmark, Switzerland, Germany, the Netherlands, Sweden, Luxembourg, Finland, Austria, and Norway) exhibit some noteworthy similarities.

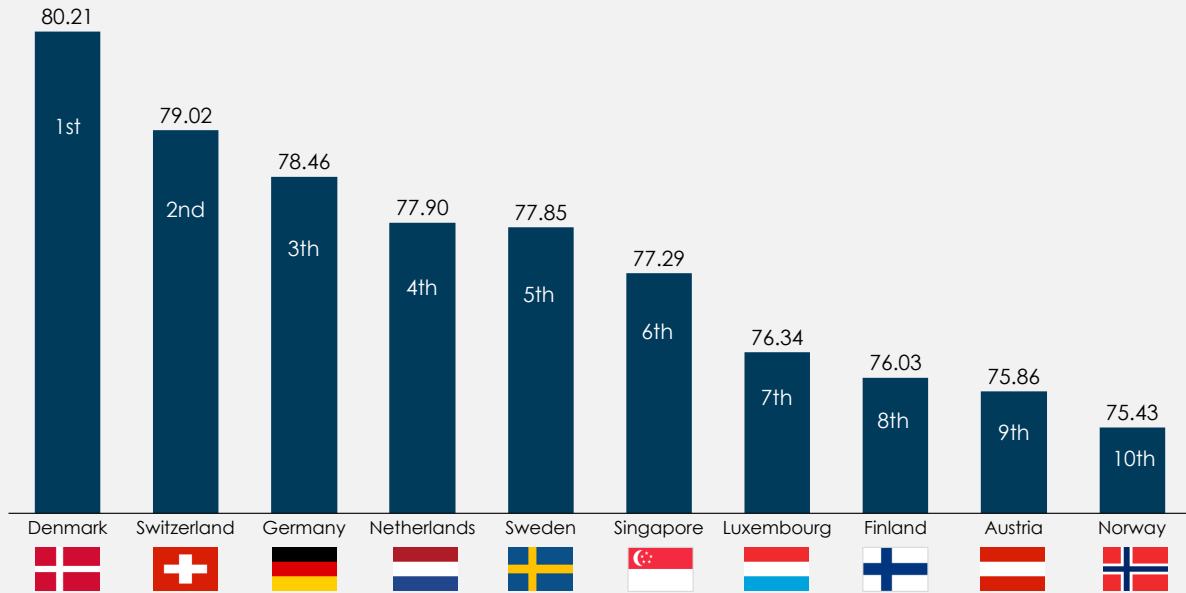
They are all advanced and democratic countries with comprehensive and deep-rooted systems of social protection. Beyond the unemployed, social protection

extends widely to the vulnerable segments of the population and includes strong workers' rights, extensive pension, unemployment, and health coverages.

The European countries in the Top 10 GLRI 2023 are characterised by a stable macroeconomic environment, strong educational systems, inclusive labour markets, and high levels of innovation. They are technologically sophisticated, open economies, with a large number of trading partners and deep integration into global value chains. Moreover, they share common cultural traits, which could have influenced the evolution of their respective societies and institutions.

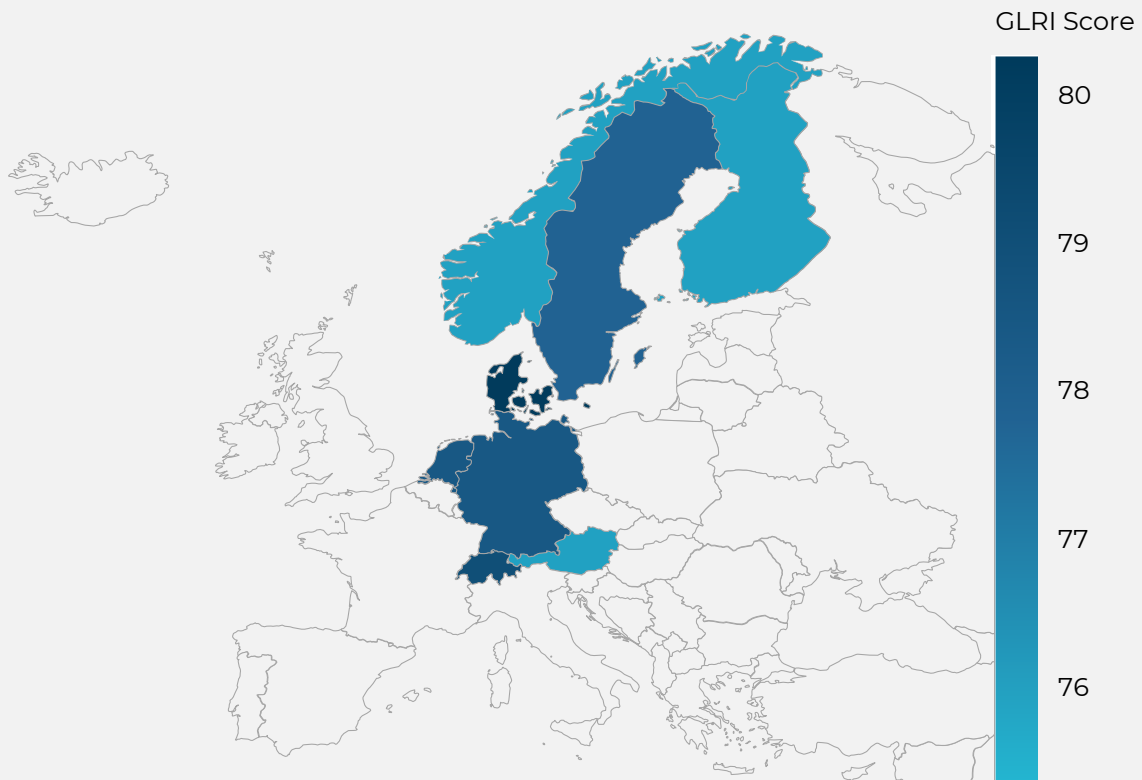
Institutional capabilities are among the best and most effective tools to steer a country through tough times, such as the COVID-19 crisis, or to prepare it for longer-term structural challenges, such as the digital and green transformations

Figure 1: Global Labour Resilience Index 2023 Top 10



Source: Whiteshield, Global Labour Resilience Index 2023.

Figure 2: GLRI 2023 in the top 10 European countries



Source: Whiteshield, Global Labour Resilience Index 2023.

The most labour resilient countries achieve a healthy balance across all the pillars

The most resilient labour markets exhibit strong outcomes in both their structural and cyclical pillars.

Seven out of the 10 top performing countries score the highest on the structural pillar. Such a result is usually harder to replicate for low performing countries, since structural sub-pillars require a longer time horizon to improve.

51% of the top 50 countries are in Europe

Focusing on the three best performing countries in GLRI 2023:

1. Denmark ranks 4th in the structural and 1st in the cyclical pillar. It stands out as the topmost performer in the absorptive and institutional capabilities.
2. Switzerland excels on the structural pillar for country capabilities¹ (ranked 2nd) and on the cyclical pillar for transformative (2nd) and

¹ Country capabilities reflect the level of sophistication of an economy. More complex economies have the knowledge and abilities to develop and adopt new technologies and

adaptive (3rd) capabilities, making its labour market one of the best suited to sustain the challenges of digital and green transformation.

3. Germany ranks 1st overall in the structural pillar owing to its top performance against trade vulnerability and for its highly sophisticated economy. Furthermore, it is the second-best country in absorptive capabilities.

Global labour markets are experiencing an uneven recovery

Adaptive capabilities in the GLRI framework reflect a country's capacity to recover from the trough of the pandemic shock and build their labour markets to pre-COVID-19 levels. Better adaptive capabilities pave the way for faster recovery in employment.

60% of the bottom 50 countries are in Sub-Saharan Africa

The recovery in employment is not uniform across countries. Figure 3 compares the adaptive capability

harness the opportunities caused by technological disruption.

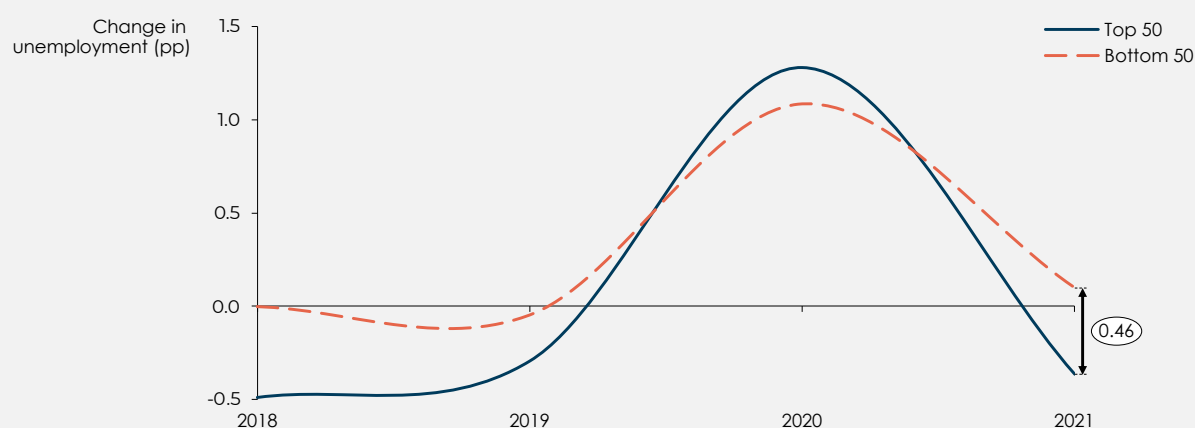
of the top 50 performers with that of the bottom 50. On average, the top performers have managed to reduce their unemployment rates in 2021 at a faster pace than their underperforming counterparts.

There are also notable differences at the regional and income levels. All the top 50 performers belong to the high and upper-middle-income

groups, while the 50 lowest scoring countries are all in the upper-middle or lower-income groups.

It is noteworthy that regional differences exist as about half (51%) of the top 50 performing countries are in Europe, while 60% of the 50 lowest performing countries are in Sub-Saharan Africa.

Figure 3: Change in the unemployment rate for the top and bottom 50 countries by adaptive capabilities



Note: The change in unemployment is measured in percentage points (pp) as the difference in the unemployment rate from the previous year
Source: Whiteshield and [15].

Effective health policies are necessary to safeguard labour resilience

The ability of labour markets to absorb and recover from the COVID-19 shock is strongly associated with a country's health

policies, including their ability to procure and roll out vaccines.

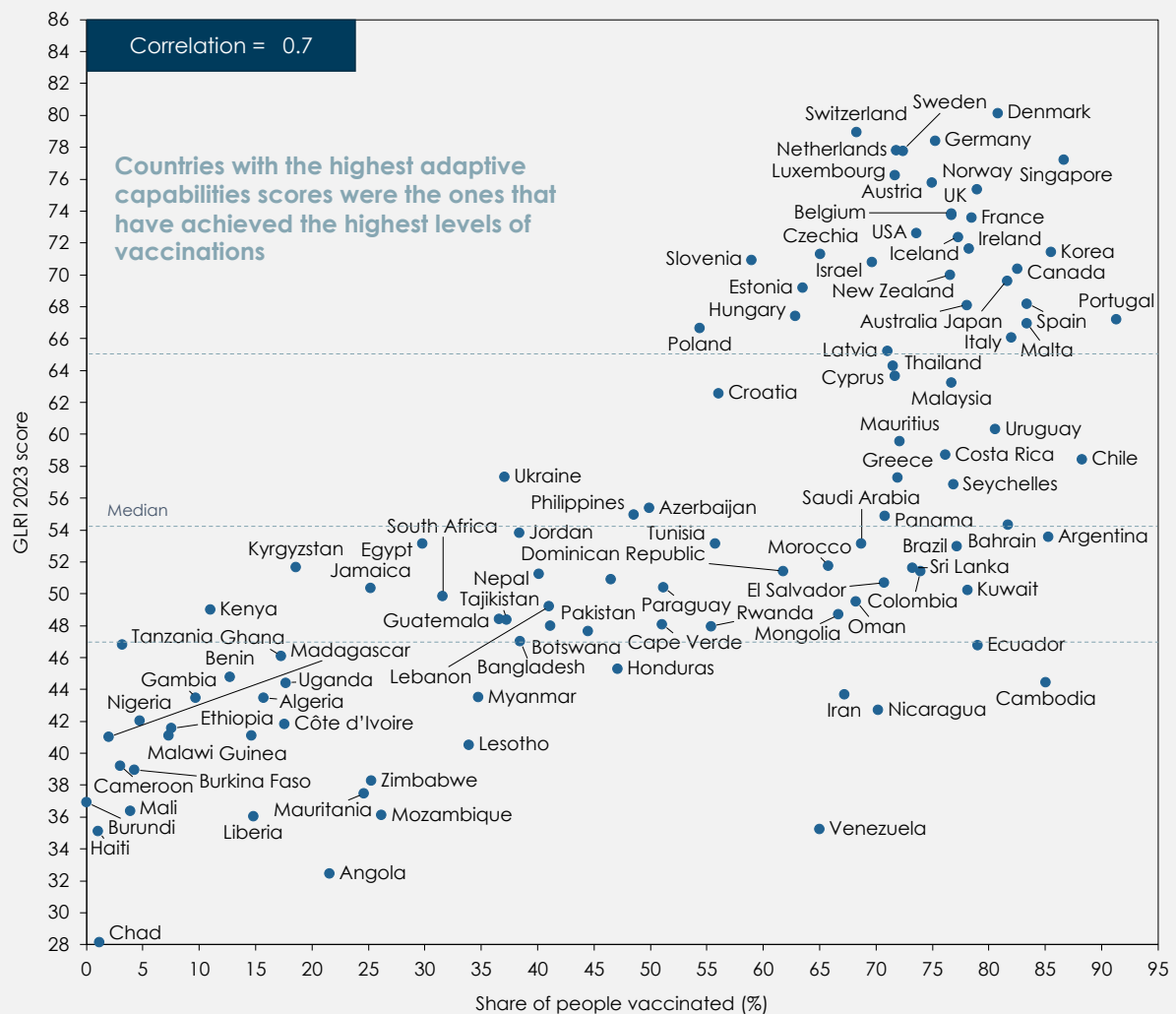
Although having a resilient labour market does not necessarily imply effective health policies, the latter are needed to avoid deterioration in labour resilience. Therefore,

resilient countries took advantage of their existing capabilities and proceeded to introduce incisive health measures to protect workers and safeguard labour markets. Figure 4 shows that countries with the highest adaptive capabilities scores were the ones that have achieved the highest levels of vaccinations thereby reducing risks of contamination among workers

allowing firms to go back to business as usual and restore their operations faster.

The rolling-out of the vaccination campaign in 2021 was crucial. Reducing contagion in the workplace and reducing infections among workers allow firms to go back to business as usual and fully restore their operations faster.

Figure 4: GLRI score and share of vaccinated population by the end of 2021



Note: Share of people with at least one dose of vaccine against COVID-19 by 31st December 2021. The dashed lines mark the first, second (median), and third quartile.

Source: Whiteshield and [4].

Labour resilience is not converging across countries...

A shift is underway in the distribution of the GLRI scores. Although the median scores are about the same, the latest results suggest that the distribution is wider than in the past (Figure 5). In other words, no convergence across countries has occurred in the past years. Indeed, while top-performing countries are gradually increasing their scores, the rest do not exhibit any pronounced dynamics. This suggests a move towards a decoupled system that in the present context reflects, inter alia, pre-existing vulnerabilities, fewer resources for fiscal stimulus, and vaccine rollout.

Countries with strong absorptive capabilities are more resilient

The shift became evident in the GLRI 2023 release that builds on data from the aftermath of the COVID-19 pandemic. Our findings suggest that the change in scores is

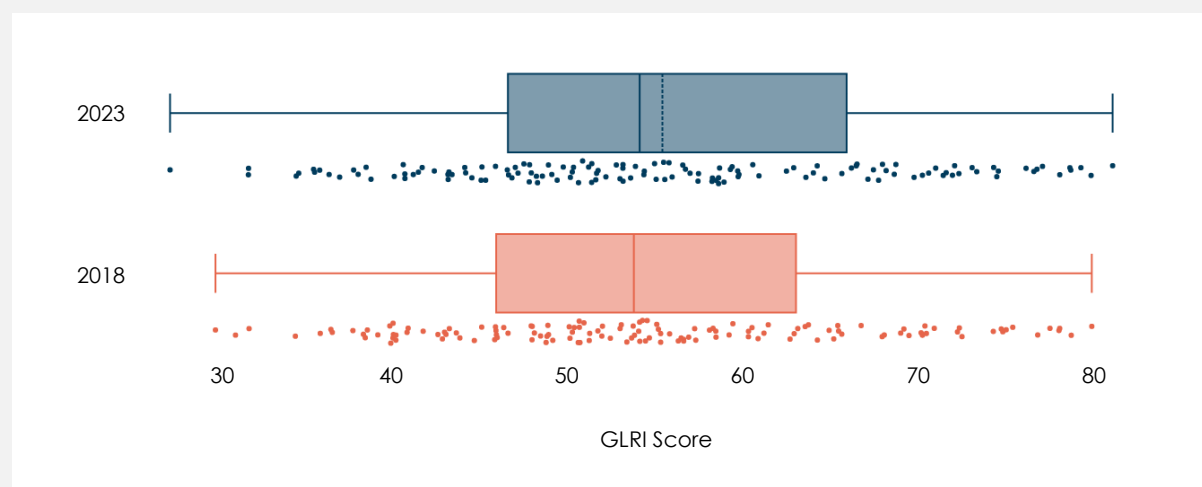
explained especially by changes in the absorptive and transformative capabilities.

Countries equipped with better absorptive capabilities succeeded in avoiding major disruptions in their labour market following the outbreak of the pandemic and, consequently, allowed them to start the recovery ahead of others. Moreover, these countries have been more successful in harnessing the powers of technology.

The other group of countries experienced severe labour market disruptions following the outbreak of COVID-19 on account of their lower absorptive capabilities. Thereafter, their labour market resilience is being tested against their ability to respond to the ongoing technological transformation, thus increasing the risk of being left behind by top performers.

Due to slower recovery, countries not closing the gap may be exposed to further shocks at a time when their labour market has not fully recovered. Moreover, failure to enhance transformative capabilities may inhibit a country's ability to take full advantage of the ongoing digital transformation.

Figure 5: Distribution of GLRI scores



Note: Box plots of 2023 and 2018 GLRI scores. The left and right ends of a box represent the first and third quartiles, the inner vertical solid line marks the median, and the inner vertical dashed line marks the mean. Whiskers cover ± 1.5 times the interquartile range.
Source: Whiteshield, Global Labour Resilience Index 2023.

... and across regions

The resilience of Europe's and Asia's labour markets has been improving, while it has stagnated in North America. Other regions have experienced a worsening resilience, thus failing to catch up with the leaders. Table below presents an overview of the regional growth rates in the GLRI over the past five years.

In Europe, 35 out of 37 countries show a positive average GLRI growth rate over the last five years. The second-best performing region is Central Asia and South Caucasus, which records the same growth rate as Europe. The two regions have

improved both pillars: Europe boosted cyclical resilience substantially, and the structural one marginally, while Central Asia and South Caucasus strongly improved both pillars. East Asia and Pacific, and South Asia have also been increasing their resilience over time, mostly driven by the cyclical sub-pillar.

Other regions show no progress in closing the resilience gap. The worst performing region is Latin America & Caribbean, where 17 out of 21 countries are showing negative growth in resilience, following a substantial deterioration in their cyclical sub-pillar.

Table 1: GLRI 2023 regional ranking

Region	Regional Rank	2023 GLRI regional score	Growth rate
North America	1	71.5	0.0%
Europe	2	67.8	0.5%
East Asia & Pacific	3	60.1	0.2%
Central Asia and South Caucasus	4	55.8	0.5%
Middle East & North Africa	5	53.0	-0.3%
South Asia	6	50.7	0.3%
Latin America & Caribbean	7	50.2	-0.5%
Sub-Saharan Africa	8	42.2	-0.3%

Note: The ranking is based on "2023 GLRI regional score" obtained from the unweighted average of scores for countries belonging to the same region. Source: Whiteshield, Global Labour Resilience Index 2023.

Labour resilience is strongly correlated with income status

Where matters concern income groups, the high-income group is the only one that has exhibited growth in their resilience scores, leaving all the other groups lying further away (Table 2).

capita (Figure 6). In other words, more developed countries are likely to have more resilient labour markets.

This suggests that a healthy labour market is a necessary condition to thrive and achieve prosperity. Therefore, enhancing labour resilience fosters growth in developing and emerging countries.

However, a small number of high-income countries are underperforming in labour resilience compared to their level of economic development (those below the median line in Figure 6). This is mainly driven by increasing inequality between income level.

Top performers are all high-income countries

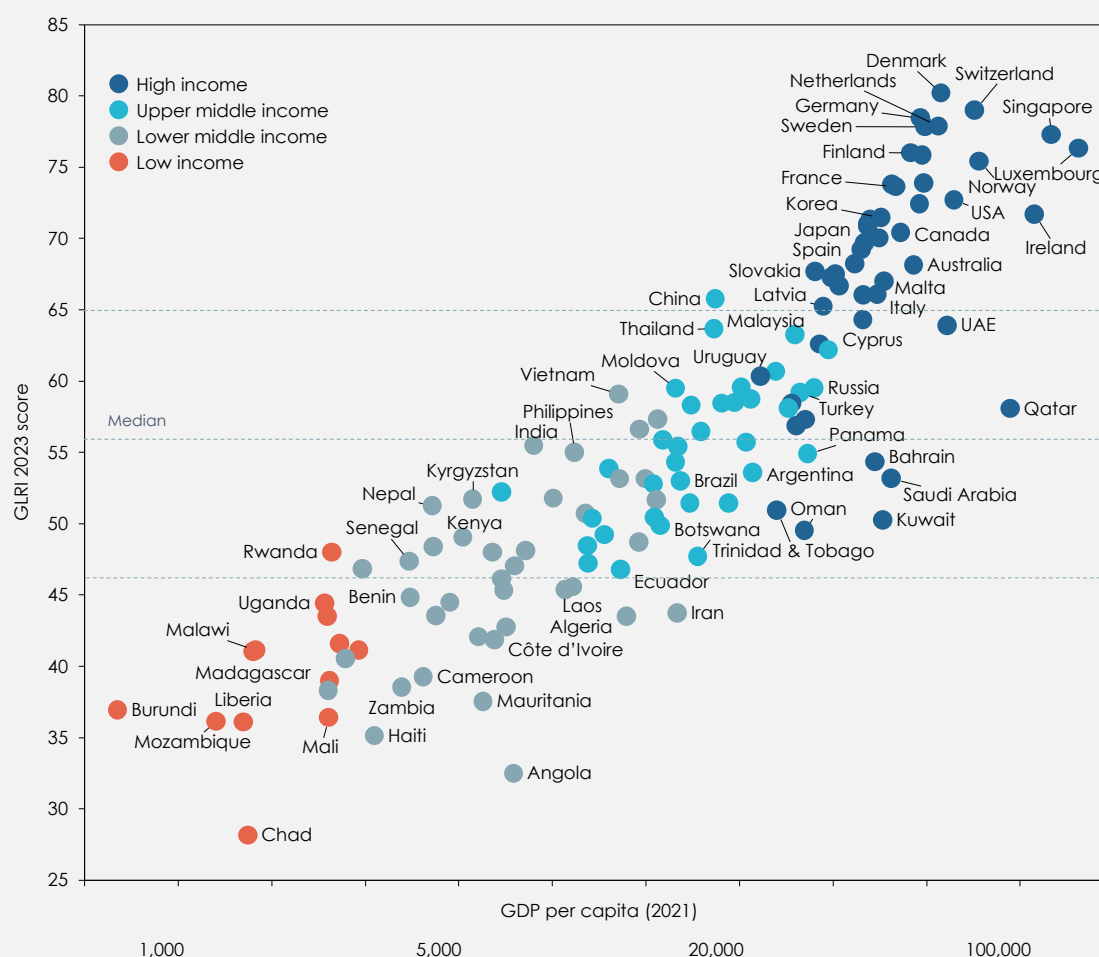
Income groups remain a good overall indicator of labour market resilience, with a strong correlation between GLRI scores and GDP per

Table 2: Average growth rate of GLRI by income group

Income Group	Group Rank	2023 GLRI income group score	Growth rate
High income	1	67.8	0.3%
Upper middle income	2	54.0	-0.1%
Lower middle income	3	47.3	-0.3%
Low income	4	40.6	-0.2%

Note: The ranking is based on the "2023 GLRI income group score" obtained from the unweighted average of scores for countries belonging to the same income group. Source: Whiteshield and [11].

Figure 6: GLRI 2023 performance vs. GDP per capita



Note: GDP per capita PPP in 2017 international dollars, logarithmic scale. The dashed lines mark the first, second (median), and third quartiles. Coloured markers distinguish the different income groups based on the World Bank classification [8]. Source: Whiteshield and [12].

COVID-19 and digitalisation have accelerated the transition to high-skilled labour

COVID-19 has accelerated the shift to automation and digital transformation, and reduced the demand for middle-skilled workers.²

70% of countries had an increase in demand for high-skilled jobs

While countries work to enhance their transformative capability by investing in Information and Communications Technology (ICT), education, and skills to keep pace with the ongoing structural changes, the growth of middle-skilled occupations remains in negative territory. This is a global ongoing trend that affects two-

thirds of the countries included in GLRI 2023, 86% of the top 50 countries by GDP per capita, and all countries in the GLRI Top 10.

During COVID-19, there was a decline in the demand for low-skill jobs and an increase in the demand of high-skilled jobs in about 70% of the countries, suggesting that the pandemic has accelerated the shift towards high-skilled labour. The trend is more pronounced in countries with higher labour market resilience. A higher share of high-skilled labour enhances a country's labour market resilience.

Highly skilled workers are less affected by automation compared to low-skilled ones. The upgrade is happening mostly in developed countries that are striving to shape the workforce for future developments, while the policies put in place in less advanced countries need to be reinforced. This is evident in Figure 7 (a) that shows a trend increase in high-skill jobs and a decrease in low- and middle-skill jobs occurring in the top 50 GLRI scoring countries.

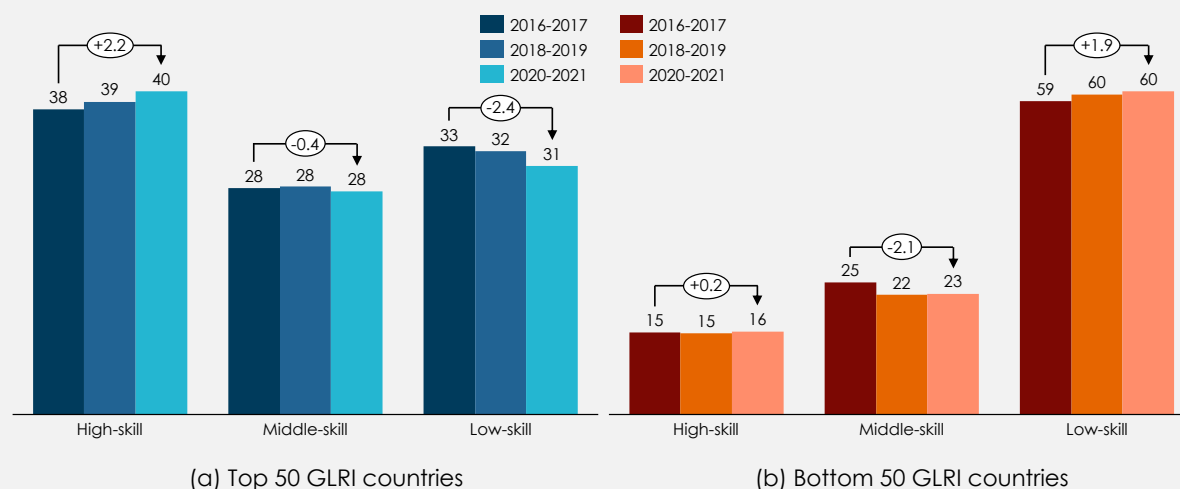
² Middle-skilled workers are those performing routine jobs, either manual or cognitive, which typically require an intermediate level of education, i.e., technical education and training above high school but less than a Bachelor's degree.

Middle-skilled workers are generally employed in middle-skill occupations, namely those requiring an intermediate skill

and education level (e.g. dental assistants, plumbers, and police officers).

For a more detailed definition, readers are referred to: Holzer, H.J. and Lerman, R.J., 2009. The future of middle-skill jobs (Vol. 41). Washington, DC, USA: Brookings, Center on Children and Families.

Figure 7: Average shares of labour in high-, medium-, and low-skills groups for top (a) and bottom (b) 50 GLRI performers in 2016-2021



Note: The skill group “not elsewhere specified” is not represented. Source: Whiteshield based on [3].

The transformation of labour markets may put a strain on absorptive capabilities

When countries transition from middle- to high-skills occupations, their welfare and labour resilience will improve. However, resilience could be jeopardised if middle-skills jobs are downgraded to low-skill ones or are vanishing.

This can be observed in countries with lower labour market resilience. As shown in Figure 7 (b) for bottom-ranked countries, middle-skilled labour is shifting mostly towards the low-skills end.

The ongoing technology-driven global trend is responsible for the displacement of routine workers, who are typically employed in middle-skill occupations.

Technology-induced redundancies impair labour markets if middle-skill occupations are excessively exposed to automation. For instance, outsourced middle-skill jobs may disappear in developing countries because of increasing automation in developed ones.

In low labour resilience countries, where the share of high-skill labour is comparatively low, the relatively limited access to education, along with absence of or inadequate skill upscaling programmes, vocational training, and social safety nets, make workers more likely to transition from mid- to low-skill jobs. In such cases, absorption capabilities become weaker, since low-skilled, low-paid workers are more vulnerable to labour market disruptions.

Ageing demographics could undermine structural resilience

In all advanced economies, fertility rates are declining, and life expectancy at birth is higher than in lower-income countries. This poses numerous challenges across multiple sectors including labour supply, healthcare services, pensions, and others. Policymakers have different options at their disposal to tackle these issues.

One is to keep the workforce active for longer, and in productive roles and sectors. Suitable tools include lifelong learning, incentivising older people to stay in the labour market through taxes or pension reforms, and upskilling or reskilling.

Another option is to attract young and skilled workers from abroad.

Countries such as Denmark and Germany are working to simplify the legislation for hiring people from outside the EU. Smaller labour markets, like those of Singapore and Luxembourg, already rely largely on the support of a foreign workforce.

Resilience in North America is stagnating

Despite it being the best region in GLRI 2023, resilience in North America is stagnating. The average growth rate in the region's resilience score over the last five years has been close to zero.

Income inequality is the largest barrier hindering the US from improving its structural resilience. Indeed, the US ranks 94th in income inequality, worse than any European country. In Canada, the indicator that is the most responsible for lack of improvement in the structural pillar is the dependence on natural resources (ranks 70th).

INTRODUCTION

A tale of structural and cyclical enablement

CHALLENGES AHEAD FOR LABOUR MARKET RESILIENCE

The post-pandemic economic recovery that started in 2022 is now facing headwinds. Supply-demand imbalances that were once on the decline due to the loosening of COVID-19 restrictions have re-surfaced following the Russian-Ukrainian war. The war's devastating impact has been fast compounding, causing a tragic humanitarian crisis and ushering in a new wave of supply disruptions, propelling food and energy prices and threatening to derail an already fragile recovery. Furthermore, labour shortages in several major economies have put significant upward pressure on wages and aggravated the inflationary macro environment. It is noteworthy that these events are unfolding at a time when pandemic-induced extraordinary policy support initiatives are being retracted and supplanted by monetary policy tightening measures. The world economy looks like it is headed for “stagflation”, a period of slow growth and even higher inflation.

A typical response to this unfolding scenario would be to launch countercyclical policy measures to support economic activity. However, the fight against inflation,

coupled with limited fiscal space, is pushing developed countries to withdraw policy support in unison, inducing a spill-over effect to emerging and developing countries and adding to the risks of a globally synchronised economic slowdown.

Against this backdrop, it is crucial for policymakers not to lose sight of maintaining their efforts to enhance the resilience of their labour markets. They should continue to promote the reskilling of their workforce amidst ongoing digital transformations and prepare them to drive the greening of their economies. The key challenge is to increase labour market participation rates by addressing the persistent mismatch between job requirements and workers' preferences and skills. In no small part, the success of building a resilient labour market hinges on policy actions that strive to limit losses in employment during economic downturns and prevent cyclical increases in joblessness from becoming structural.

THE GLRI FRAMEWORK

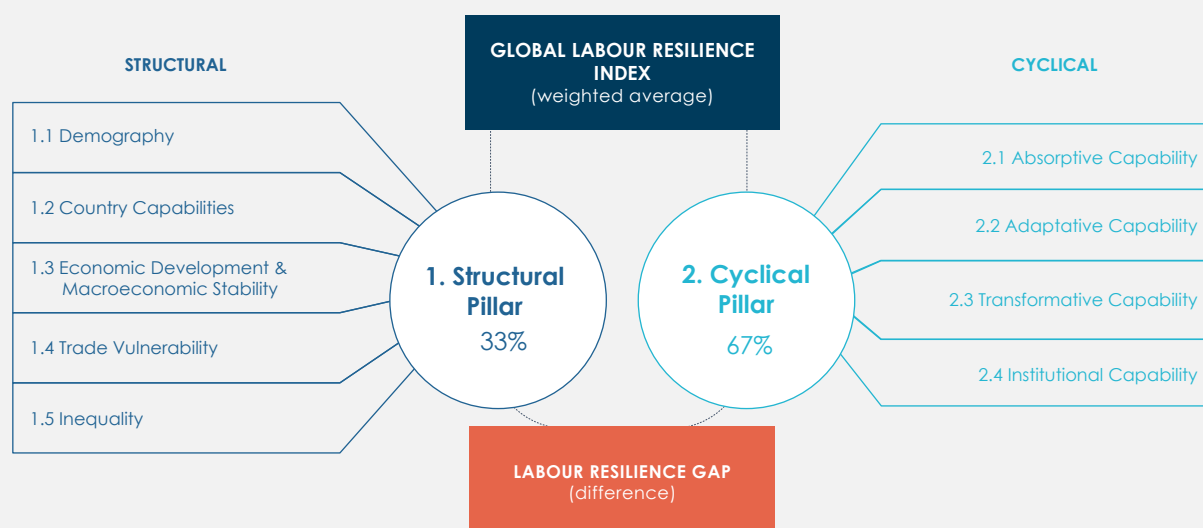
The Global Labour Resilience Index (GLRI) Report is an annual publication that ranks countries on the resilience of their labour markets and provides policy guidance on how to enhance it.

The GLRI 2023 builds on its resilience capabilities framework (Figure 8). It emphasises the capabilities required for countries to better prepare for short-term shocks (e.g., COVID-19) as well as long-term transformations (e.g., technological disruptions, green transition).

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. Full details about the methodology employed in the 2023 edition can be found in a separate document³

A resilient labour market is defined as one that generates sustainable

Figure 8: Framework for the Global Labour Resilience Index



Source: Whiteshield, Global Labour Resilience Index 2023.

A capabilities-based approach to resilience

Resilience can be defined as the ability to face and recover from disruptions, regardless of their nature. The GLRI is focused on two aspects of resilience: structural and cyclical (Figure 8).

The structural pillar measures the risk exposure of a country

The structural pillar assesses a country's intrinsic vulnerabilities, or protective factors, which can interact with disruptions to further amplify or reduce their intensity. These factors tend to be harder to change in the short-term, and

³ Whiteshield, 2023. Global Labour Resilience Index 2023: Methodology.

include e.g., demographics, the level of economic development and macroeconomic stability, country capabilities, trade vulnerability, and inequality.

The cyclical capabilities pillar measures the strength of labour markets' response to disruptions

The cyclical pillar focuses more on how the policies in place can alter the level of disruption experienced by a given labour market. The pillar is divided into four sub-categories of capabilities.

The first three are:

- **Absorptive capability** defined as the ability to contain the shock and minimise the damage on jobs and workers.
- **Adaptive capability** defined as the ability to recover quickly and

rapidly create new jobs to replace the destroyed ones.

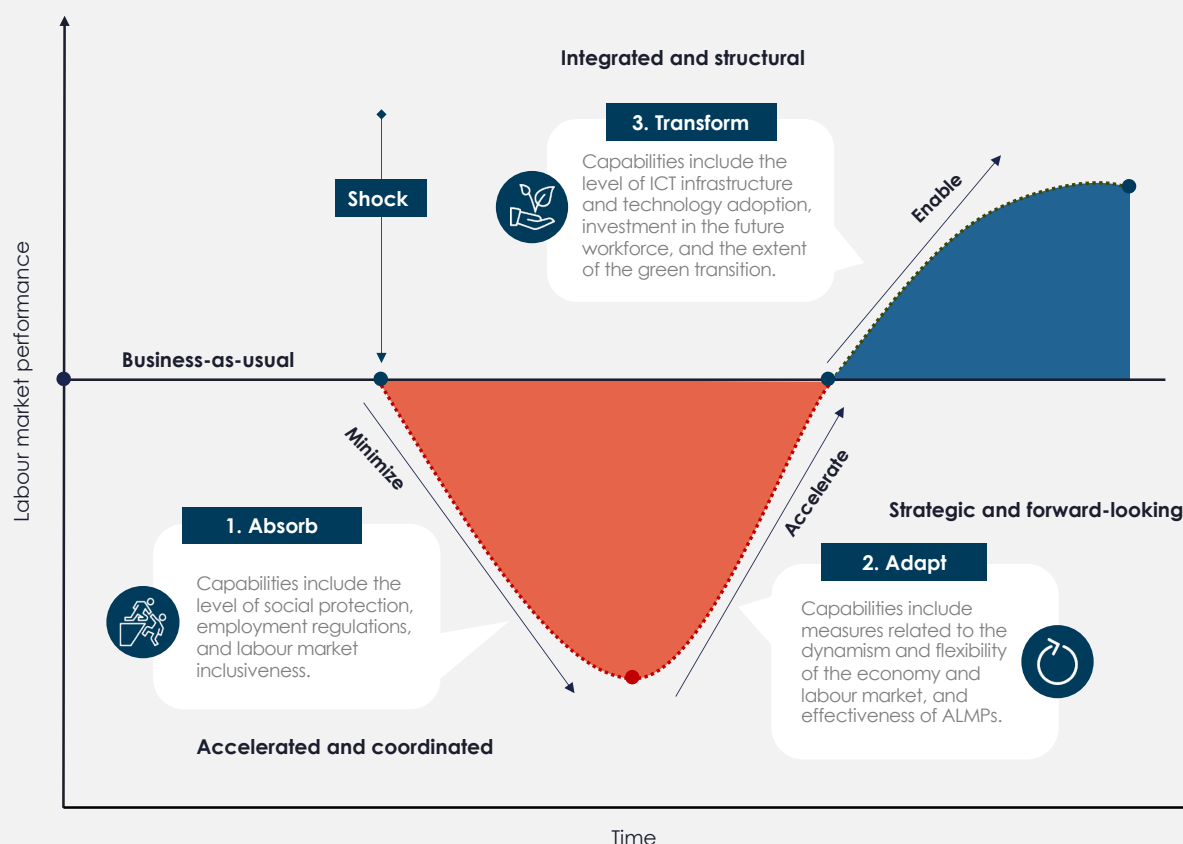
- **Transformative capability** defined as the ability to align with major future trends and turn long-term stresses into opportunities.

Each of the three sub-pillars will be more important during the different stages of the disruption cycle and depending on the type of disruption (Figure 9).

The fourth sub-pillar, institutional capability, acts as a cross-cutting enabler to a resilient response against all types of disruptions and throughout all phases of the crisis.

The composition of sub-pillars is provided in Figures 10 and 11. Readers can find further details about indicators in the methodology accompanying document (see footnote 3).

Figure 9: 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.

Figure 10: Composition of the structural capabilities pillar

1. Structural pillar	
<p>1.1 Demographics</p> <ul style="list-style-type: none"> • Share of older population 	<p>1.4 Trade Vulnerability</p> <ul style="list-style-type: none"> • Concentration of exports • Economics diversity • Current account balance
<p>1.2 Country capabilities</p> <ul style="list-style-type: none"> • Economic complexity 	<p>1.5 Inequality</p> <ul style="list-style-type: none"> • Income inequality
<p>1.3 Economic Development of Macroeconomic stability</p> <ul style="list-style-type: none"> • GDP per capita • Share of services in GDP • Dependence on natural resources • Debt dynamics 	

Source: Whiteshield, 2023. Global Labour Resilience Index 2023: Methodology.

Figure 11: Composition of the cyclical capabilities pillar

2. Cyclical Pillar			
INPUT		OUTPUT	
<p>2.1 Absorptive capacity</p>	<p>Support and protection of workers</p> <ul style="list-style-type: none"> • Workers' rights • Pension coverage • Unemployment coverage • Coverage of basic health services 	<p>Quality of employment</p> <ul style="list-style-type: none"> • Hourly wages • Share of informal employment <p>Labour market polarisation and inequality</p> <ul style="list-style-type: none"> • Low-skilled labour • Growth of medium-skilled jobs • Labour income share • Labour income inequality 	<p>Youth inclusiveness</p> <ul style="list-style-type: none"> • Youth unemployment • NEET <p>Gender inclusiveness</p> <ul style="list-style-type: none"> • Women in labour force • Gender pay gap <p>Health and well-being of population</p> <ul style="list-style-type: none"> • Longevity • Physical health • Mental health
<p>2.2 Adaptive capacity</p>	<p>Flexibility of labour policy</p> <ul style="list-style-type: none"> • Hiring and firing practices • Ease of hiring foreign labour • Effect of taxation on incentive to work <p>Business regulation</p> <ul style="list-style-type: none"> • Time dealing with government regulation • Domestic market competition • Trade openness • Applied tariffs • Paying taxes • Enforcing contracts • Property rights • Resolving Insolvency <p>Starting a business regulation</p> <ul style="list-style-type: none"> • Time to start a business • Cost to start a business <p>Access to finance regulation</p> <ul style="list-style-type: none"> • Ease of getting credit <p>Quality of infrastructure</p> <ul style="list-style-type: none"> • Logistics Performance Index 	<p>Reallocation and flexibility mechanisms</p> <ul style="list-style-type: none"> • Active labour market policies effectiveness <p>Skills and adaptability</p> <ul style="list-style-type: none"> • Formal and informal education and training • Extent of staff training • High-skilled labour • Skilled labour supply • Tertiary education attainment • Skillset of graduates 	<p>Entrepreneurship activity</p> <ul style="list-style-type: none"> • New corporate density <p>Access to finance</p> <ul style="list-style-type: none"> • Venture capital investments • Access to loans • Microfinance loan portfolio • Depth of financial system

2. Cyclical Pillar			
INPUT		OUTPUT	
<p>2.3 Transformative capacity</p>	<p>Regulation of ICT</p> <ul style="list-style-type: none"> • Future orientation of government • Cybersecurity <p>Expenditures on R&D</p> <ul style="list-style-type: none"> • Gross R&D expenditure • Intellectual property legislation <p>Intellectual property rights</p> <ul style="list-style-type: none"> • Innovation incentives • Government-funded business R&D <p>Investment in the future workforce</p> <ul style="list-style-type: none"> • Government expenditures on education • Tertiary education expenditure • Pupil teacher ratio • ICT infrastructure per school 	<p>ICT infrastructure penetration</p> <ul style="list-style-type: none"> • ICT access <p>ICT business penetration</p> <ul style="list-style-type: none"> • ICT usage by households <p>Innovation environment</p> <ul style="list-style-type: none"> • Scientific and technical journal articles • Researchers in R&D • Technicians in R&D • Research institutions prominence • Industry-university collaboration <p>Innovation trade</p> <ul style="list-style-type: none"> • Shares of creative goods exports <p>Technology and digital economy</p> <ul style="list-style-type: none"> • ICT services exports • ICT goods exports • Medium and high-tech manufacturing value added • Medium and high-tech exports 	<p>Green transition</p> <ul style="list-style-type: none"> • Environmental goods exports and imports • Renewable energy consumption • CO2 intensity of GDP • Energy intensity • Domestic material consumption <p>Innovation products</p> <ul style="list-style-type: none"> • Trademark applications • International co-inventions • Patent applications <p>Education and skills of the future workforce</p> <ul style="list-style-type: none"> • Quality of vocational education • PISA scores • Critical thinking • Digital skills • STEM graduates
<p>2.4 Institutional capacity</p>	<ul style="list-style-type: none"> • Governance • Social capital • Statistical capacity • GLRI statistical fullness 		

Note: Not in Education, Employment, or Training (NEET), Programme for International Student Assessment (PISA), Science, Technology, Engineering, and Mathematics (STEM).
Source: Whiteshield, 2023. Global Labour Resilience Index 2023: Methodology.

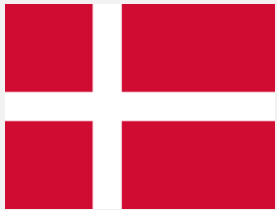
TOP 10 COUNTRIES

Labour markets are bouncing back

WHO ARE THE TOP 10?

WHO ARE THEY?

The top 10 are predominantly European nations except for Singapore



Denmark has the world's most resilient labour market



2. Switzerland



5. Sweden



8. Finland



3. Germany



6. Singapore



9. Austria



4. Netherlands



7. Luxembourg



10. Norway

OVERVIEW OF THE TOP 10 SCORING COUNTRIES

This section examines countries with the ten most resilient labour markets. Also, it shows some of the best and most innovative practices being used to enhance labour

market resilience. An overall comparison of the two foundational pillars is presented in Figures 12 and 13.

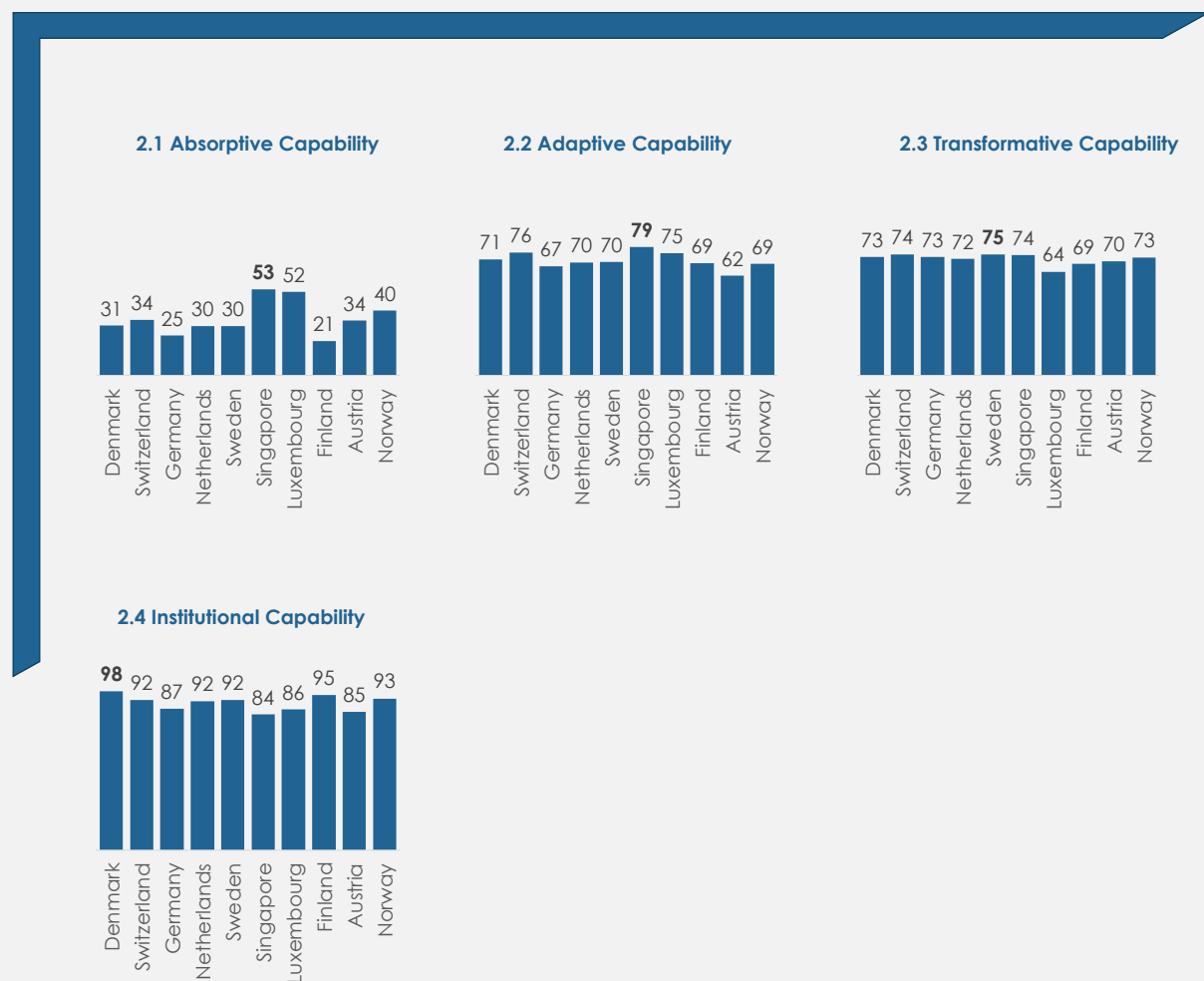
Figure 12: Structural performance of GLRI 2023 top 10 countries



Note: Data on income inequality (Gini Index, The World Bank, World Development Indicators) for Singapore are missing. Therefore, the structural pillar score for Singapore results from the weighted average of sub-pillars scores 1.1-1.4.

Source: Whiteshield, Global Labour Resilience Index 2023.

Figure 13: Cyclical performance of GLRI 2023 top 10 countries



Source: Whiteshield, Global Labour Resilience Index 2023.

Labour markets are bouncing back in the aftermath of COVID-19

While absorptive capabilities reduced the impact of the COVID-19 shock for the top 10 GLRI 2023 countries, adaptive capabilities are key to ensure a rapid recovery of the labour market following a disruption.

The top 10 GLRI countries show good adaptive capabilities, where even the worst two of them are in the top 25: these are Austria (23rd) and Germany (17th). Even so, their lag is offset by relatively higher scores in the structural pillar.

In 2020, the top 10 countries were responsible for **22%** of exports

The pattern in the unemployment rate signals that labour markets in top countries are bouncing back. The unemployment rate peaked in the second half of 2020 for most of the top 10 countries, declined in 2021, and returned to its pre-crisis level or below in 2022. For OECD

countries, it dropped from 8.6% in Q2 2020 to 4.9% in Q2 2022.

Against a backdrop of tight labour markets, some critical observations remain, and most notably, the widespread skills shortage.

The leaderboard is dominated by countries with open, trade-oriented economies...

Countries from Northwest Europe hold nine out of the top 10 slots. They are characterised by a high level of economic development, a stable macroeconomic environment, strong educational systems, and high levels of innovation. In 2020, the top 10 countries were responsible for 22% of the global exports of goods and services. They are technologically sophisticated open economies with multiple trading partners. They have an average rank of 15th on the country capabilities sub-pillar, and 19th on the trade vulnerability -with Germany leading (1st) and Norway showing room for improvement (50th).

... strong social protection

The top 10 GLRI countries are all advanced and democratic countries with effective and comprehensive social protection schemes. Beyond the unemployed, social protection extends widely to the vulnerable segments of the

population, and includes strong workers' rights, extensive pension, unemployment, and health coverage.

Inclusive labour markets in the top 10 countries reinforce social protection. A labour market is inclusive when everyone can participate in the workforce, including vulnerable and disadvantaged people, receive a fair remuneration, be protected, and have a voice.

... and great institutional capabilities that enable cyclical resilience

All the top 10 countries are among the first 15 by institutional capabilities and eight of them are among the first 10.

Institutional capabilities matter to steer a country through difficult times, such as the COVID-19 crisis, or to prepare them for longer-term structural challenges, such as the digital and green transformations. All the top 10 countries rank high on the World Governance Index and in terms of social capital. This indicates their high potential to make shared and timely decisions for absorbing shocks, and adapting and transforming their economies.

The nine European countries in the top 10 share common cultural traits and a long history of adopting and

improving social protection programmes and institutions.

Population ageing presents challenges to structural resilience

Demographics remains a non-negligible contributor to structural resilience. All top scoring countries are advanced economies with ageing populations, where fertility rates are declining, and life expectancy is higher than in lower-income countries. This implies a smaller and older workforce. It poses numerous challenges, including higher welfare costs, downward pressure on tax revenues, wider skills shortage, and higher labour costs.

Policymakers have a number of options at their disposal to tackle labour market-related issues. One option is to keep the workforce active in productive roles and sectors for longer. Suitable tools include lifelong learning, incentivising older people to stay in the labour market through taxes or pension reform, and upskilling or reskilling.

Another is to attract young and skilled workers from abroad. Countries such as Denmark and Germany are working to simplify the legislation for hiring people from outside the EU. Smaller labour markets, like those of Singapore and

Luxembourg, already rely on the support of a foreign workforce.

Higher education and vocational training keep workers in qualified occupations

Labour has been following a common trend in developed countries, known as “polarisation”, by increasingly moving from middle-towards low- and high-skill occupations.

Research points to automation as the major driver of this trend: jobs of middle-skilled workers are easier to automate compared to those of high- or low-skilled workers, as middle-skill jobs are typically characterised by routine tasks.

The top 10 GLRI countries are the most affected by polarisation, displaying an average 10% decrease in the share of middle-skill occupations in the last twenty years (from 30% to 20%). In contrast, it dropped by about 5% in the top 50 countries.

A side effect of polarisation is the deterioration in the absorption capability of the labour market, and consequently in its resilience. This follows the transition of middle-

skilled workers to low-skill jobs, which are more vulnerable to economic and technological disruptions. Middle-skilled workers are more likely to transition toward low-skill occupations because, unlike for high-skilled jobs, such a transition does not require upskilling.

Policy interventions can reverse this trend by facilitating the transition from middle- to high-skill jobs, rather than the opposite, or by keeping workers in middle-skill occupations.

Countries in the top 10 have actively pursued this by investing in education and skills to keep pace with the ongoing structural changes.

Vocational education and training systems proved effective against the transition towards low-skill occupations.

These programmes are particularly successful in Norway, Sweden, Germany, and Denmark. Here, the propensity for middle-skilled workers to move to high- or low-skill occupations is roughly the same, rather than being biased towards the low end.⁴

⁴ Green, A. 2019. What is happening to middle skill workers?. OECD Social, Employment and Migration Working Papers,

No. 230, OECD Publishing, Paris, <https://doi.org/10.1787/a934f8fa-en>

ANALYSIS OF THE TOP 10 SCORING COUNTRIES

The composition of the top 10 countries has remained remarkably stable over the last five years, with Luxembourg as the new entrant to

the top 10 and Belgium exiting the group. Table 3 presents an overview of the top 10 countries in the GLRI 2023.

Table 3: Global Labour Resilience Index 2023 for the top 10 countries

Country	Rank GLRI 2023	Score GLRI 2023	Rank Structural Pillar	Score Structural Pillar	Rank Cyclical Pillar	Score Cyclical Pillar	GLRI Rank Trend
Denmark	1	80.2	4	78.5	1	81.1	3
Switzerland	2	79.0	12	76.3	2	80.4	-1
Germany	3	78.5	1	80.6	7	77.4	-1
Netherlands	4	77.9	7	77.7	4	78.0	-1
Sweden	5	77.8	6	77.7	5	77.9	1
Singapore	6	77.3	9	76.9	6	77.5	-1
Luxembourg	7	76.3	10	76.9	9	76.1	3
Finland	8	76.0	18	73.5	8	77.3	0
Austria	9	75.89	3	78.8	12	74.4	-2
Norway	10	75.4	31	69.2	3	78.5	1

Note: GLRI Rank Trend refers to the five years change in the GLRI rank, where positive (negative) values correspond to gains (losses) of places in the ranking.

Source: Whiteshield, Global Labour Resilience Index 2023.

DENMARK

Denmark ranks first with an improvement of three places

Denmark ranks first in this year's GLRI, an improvement of three places compared to the GLRI 2018. It ranks 4th on the structural pillar and 1st on the cyclical.

... with continued progress in its structural resilience

The country shows considerable advances in the structural pillar. It experienced a four-rank improvement over the last five years and a two-rank improvement compared to last year. Its GDP grew at an average rate of 1.58% in 2018-2021 [11] despite the COVID-19 shock. Improvements have occurred on all sub-pillars except trade vulnerability (4th) compared to GLRI 2018. The economic complexity advanced by three places, now ranked 23rd; the

country moved four places forward on economic development and macroeconomic stability (9th); inequality standing decreased by one, bringing the country to the 12th position.

Outstanding cyclical resilience shielded the country from shocks

Denmark has a balanced performance across the cyclical resilience capabilities and excels in some, such as absorptive capability and institutional capabilities. Absorptive capabilities, whose rank improved by seven compared to 2018, supported the labour market to mitigate the impact of the COVID-19 pandemic in 2021. The country has a strong welfare support system and ranks highly on welfare coverage.

It is the best country for pension coverage and the 8th for unemployment coverage. Workers benefit from satisfactory hourly wages, a low gender pay gap, and low-income inequality.

Denmark shows a good performance on adaptive capability indicators (7th), which signal how well a country can adapt to shocks. Businesses enjoy a prominent environment to grow and flourish, especially with low costs to start a business. Additional strengths include the effectiveness of active labour market policies, the

extent of staff training, a good skillset of graduates, and the depth of the financial system.

The 4th place on transformative capabilities implies a strong capability to align to ongoing environmental and technological trends, with a high score in education and research and development-related indicators. The country invests heavily in the future workforce, shown in its spending on tertiary education per student, but also in outcome metrics such as critical thinking and the quality of vocational training. Moreover, digital transformation is satisfactorily supported by widespread ICT usage and the highest number of ICT infrastructures per school.

Strong institutions can drive the industrial and green transformations

Denmark's first position on institutional capability reflects the country's capability to face the challenges posed by the green and digital transformation. Good governance (2nd) and the highest social capital support the resilience of the labour market through an agile decision-making process, strong social norms, and diffused civic participation. In 2022, the Government and the Parliament agreed upon the first package of a comprehensive reform agenda to

prepare the labour market for future challenges (Box 1).

Timely interventions and a successful vaccination campaign accompanied the reopening of the economy

The reopening of the economy was accompanied by a testing and tracing strategy, targeted lockdowns, and a successful vaccination campaign. About

80.5% of the population received at least one dose of the vaccine by the end of 2021 [4] - the rollout was one of the fastest in the EU. At the same time, fiscal and monetary responses guaranteed credit and liquidity to firms and protected households through policies such as wage compensation schemes. These actions protected the economy from a deep contraction and resulted in one of the best performances in the EU.

Box 1: A reform to face new challenges on the labour market



DENMARK

A REFORM AGENDA FOR THE LABOUR MARKET

A new reform agenda for the Danish economy was agreed to expand the labour force in the medium term

OBJECTIVES

1. Increase the labour supply. Not only higher employment is desirable, also it reduces welfare expenditure and increases the tax revenues.
2. Enable the country to adapt to the rapid changes in the labour market, such as the green transition and technological change.
3. Adapt the skills of the workforce and meet the needs of companies.

KEY INSIGHTS

The first reform package (2022) seeks to:

1. Decrease the time needed by new graduates to join the workforce by reducing their unemployment benefits.
2. Protect long-term employed workers that lose their job by strengthening income support.
3. Incentivize seniors to contribute to the labour market by revising downwards social pensions.

Source: Ministry of Finance, 2022. *Denmark's National Reform Programme 2022*. April 2022. The Danish Government, Copenhagen.

SWITZERLAND

Switzerland exhibits high cyclical resilience

Switzerland ranks second in GLRI 2023. It is a top performer (2nd) on the cyclical pillar, achieving considerable results across all sub-pillars. The country ranks 4th on absorptive, 3rd on adaptive, 2nd on transformative, and 5th on institutional capabilities.

But ranks only 12th on the structural one

Despite the excellent performance in the cyclical pillar, the country ranks 12th on structural resilience. It has made progress, but there is still room for improvement on trade vulnerability and inequality.

A sophisticated economy that fully exploits state-of-the-art technology

Switzerland's remarkable 2nd rank in economic complexity reveals that the country has mastered a unique know-how in producing goods and services, relying on the most advanced technology.

... and a stable and wealthy nation that benefits from a strong trading position

Switzerland is a champion of macroeconomic stability. It has one of the lowest government debt-to-

GDP ratios [9], and one of the highest GDP per capita across OECD countries. Services contribute 71% to the country's GDP [14] (ranks 8th). Switzerland has a high share of GDP in goods and services exports and trades mostly in high-value goods and services [10]. It is one the leading nations for the export and import of services, where gold and ICT services make up respectively 15% and 13% of the country's export volume [2].

However, the export structure and limited product diversity could lead to labour market vulnerabilities

The country is a small open economy. Around 50% of its export is directed to three countries: the US (24.5%), Germany (17.1%), and China (5.7%). However, the high concentration of product exports, where the country ranks 75th, the lack of economic diversity (49th), and the dependency on a few end markets may expose workers of selected industries to disruptions in international trade.

The country presents a divide in labour productivity between a few large firms that invest in R&D, and many smaller ones that do not. Limited trade opportunities and access of EU workers to Switzerland present challenges to smaller firms that find it harder to import parts and components, and labour, and export final products (Box 2). Trade

vulnerability may weaken because of the consequent reduction in economic diversity, and the

increasing reliance of the economy on a few large industries.

Box 2: The lost trade framework



SWITZERLAND

TRADE WITH THE EU MAY GROW WEAK

In 2021, Switzerland ended 7-year talks to re-negotiate a framework agreement for trade with the EU

CONTEXT

1. The European Single Market (ESM) includes the 27 member states of the EU and extends to Switzerland through bilateral agreements.
2. It guarantees the free movement of goods, capital, persons, and the freedom to establish and provide services.
3. Participating in the ESM translates into gains in productivity and greater welfare.
4. The future access to the ESM may be compromised without a framework agreement for trade.
5. The main points of contentions are about:
 - Access to the Swiss labour market by EU workers
 - Protection of higher wages for Swiss workers
 - The right of EU workers to claim Swiss welfare benefits
 - State aid rules

KEY INSIGHTS

- Limited access to the ESM may hamper the productivity of Swiss firms.
- As about 25% of Switzerland's workforce is made of EU citizens, it might become more difficult finding workers with the right skills.
- The economic diversity of Switzerland may deteriorate, as it becomes more difficult to import and export goods and services.
- The economy may become more reliant on a few industries and their end markets.

Source: European Commission, Directorate-General for Trade. https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/switzerland_en.

GERMANY

Germany keeps the record for the best performer in structural resilience

The country proved itself again as the leader in structural resilience (1st). Its key structural strengths are a highly sophisticated economy that can produce a wide variety of goods, including complex ones (3rd for country capabilities), and the lowest trade vulnerability (ranking 1st) in our study. Compared to five years ago, all indicators in the structural pillars have improved, except the dependence on natural resources (-5) and income inequality (-9).

However, Germany's cyclical resilience has slipped

Although Germany's cyclical resilience score remains high, it is exhibiting a downward trend. Compared to 2018, Germany lost two positions in the ranking. Two sub-pillars are mostly affected: the adaptive (17th) and transformative (5th) capability. The adaptive one relates to the ability of the country to adjust to the consequences of labour market disruption, while the transformative one measures a country's capabilities to innovate.

A skills shortage affects adaptive capabilities

Several indicators for adaptive capabilities highlight a shortage of qualified labour. The last has shown a negative trend since 2009 but suffered a substantial worsening in 2021 and 2022. The economic contraction associated with the COVID-19 pandemic has temporarily reduced the need for skilled labour but has also given rise to a structural shift in the labour market that has amplified its effect since mid-2021. The job vacancy rate, which before the outbreak of the pandemic was 3.3% in Q4 2019, stood at an unprecedented 4.5% in Q2 2022, well above the 3% EU27 average [1]. The pandemic certainly contributed to the labour shortage. Factors such as limitations to mobility and migration, uncertain employment and career prospects, and income insecurity pushed workers to move permanently to other sectors or out of the labour force. This trend is adding to the challenges of population aging. The qualified workforce shrinks year after year with the retirement of older workers. The government is working to offset the trend with a more relaxed immigration policy (Box 3) and increases in the minimum wage.

... while lags in digital adoption and green transition are slowing down the economic transformation

Germany is among the leaders in transformative capabilities (5th).

However, the country's efforts have been losing momentum in the last five years. This can be attributed to two factors. First, there is a lag in the adoption of digital technologies by German firms. Although all measures indicate that Germany ranks high, its performance lags its OECD peers. Adopting digital technologies such as cloud services would enhance productivity. Further, there is a direct relationship between skills shortage and digital adoption.

The second factor links to the green transition. Although Germany has committed to a decarbonisation plan, the dependency on brown energy is still prevalent. It is reflected in a low ranking in renewable energy consumption (85th place), CO₂ intensity in GDP (58th), and energy intensity (28th). However, the German government intervened in

2022 with substantial amendments to its energy policy to further green the energy mix and phase-out coal.

Germany stands out amongst the top 10 for its positive resilience gap

Unlike many other top 10 nations, Germany has a positive resilience gap (1st on structural resilience vs. 7th on cyclical). Making improvements to the cyclical dimension of resilience can boost labour market performance and requires relatively simple policy changes. In Germany, the lowest three cyclical indicators that are candidates for improvement are the growth of middle-skilled occupations (93rd), reduction in the cost to start new businesses (74th), and increasing the consumption share of renewable energy (85th).

Box 3: Promoting immigration against the skills shortage



GERMANY

THE SKILLED IMMIGRATION ACT

The 2021 Skilled Immigration Act lays the foundations for the German Strategy to counteract the skills shortage

OBJECTIVES

1. Reduce the skills shortage that the country faces through immigration from non-EU countries.
2. Support skills development by easing immigration requirements for foreign students and trainees.
3. Facilitate access to the labour market of skilled professionals and make it easier for firms to recruit.

KEY INSIGHTS

The Skilled Immigration Act in force since March 2021 removes constraints that made it difficult to access the country from outside the EU. For instance:

- VISAs are no longer listed to a list of in-shortage professions.
- Firms have a fast-track procedure for hiring immigrants and do not need to prioritize local jobseekers over foreigners anymore.
- Immigrants with vocational training are considered skilled workers.
- It is now easier to come to Germany to look for a job or training.
- Permanent settlement permits are granted subject to less restrictive conditions.

Source: Federal Ministry for Economic Affairs and Climate Action. Make it Germany. <https://www.make-it-in-germany.com/en/>.

NETHERLANDS

The Netherlands is a small trading nation and an international logistic hub

The Netherlands is a small open economy, whose exports to GDP ratio totals 83% in 2021 [10]. The country acts as an international logistic hub. Moreover, 74% of the value of Netherlands' exports is destined to Europe [16]. According to figures from Statistics Netherlands [7], about 1/3 of jobs are engaged in trade directly, and another 1.3 million jobs indirectly. Furthermore, jobs in some sectors rely heavily on trade, for instance, in agriculture, where workers work for 57% of their weekly hours for exports.

The Netherlands shows a balance between its structural and cyclical resilience

The country ranks 7th and 4th on the structural and cyclical pillars, respectively, and 4th overall. This is similar to Sweden (6th and 5th), which shares the same GLRI score (79.5).

... but not enough to compete with the first three countries

Despite being in the top 10 and doing well on average, the Netherlands does not stand out in any sub-pillar, except for the 3rd position by trade vulnerability. Also,

it cannot outdo the first three countries in GLRI 2023 in any pillar or sub-pillar.

The Netherlands has experienced a reduction in its resilience

The country has slipped by one place in the last five years, and hence finds itself fourth in the GLRI ranking. It lost two places in the structural resilience compared to GLRI 2022. This is due to its relatively lower score in economic complexity compared to the other top 10 countries. The Netherlands also exhibits relatively slow growth rates in middle-skilled jobs, ease of getting credit, as well as renewable energy consumption.

SWEDEN

Sweden climbs up the GLRI ranking and reduces the resilience gap

After maintaining a stable rank of sixth place in the last five years, Sweden has moved up one position in GLRI 2023. Despite being 5th, Sweden's score is close to the Netherlands, which ranks fourth.

The country has decreased the resilience gap compared to previous years, ranking 6th on the structural pillar and 5th on the cyclical one. The resilience gap is the difference between the ranks on the cyclical and the structural pillars. Countries with negative

resilience gaps will find it harder to boost labour market resilience without addressing the long-term structural challenges in their economy and labour market.

Structural gains result mainly from the low increase in the share of the older population

Compared to other countries in the top 10, Sweden has the third oldest population. However, it displays the lowest increase in the share of the population aged 65 and above, where the highest is Singapore. Since the oldest share of the population of other countries is growing faster, Sweden gained seven positions in the demographics sup-pillar compared to five years ago. Nevertheless, it still ranks 121st by demographics. As with many European nations, the elderly population is limiting structural resilience. To counteract, the country must consider policy mechanisms to help it attract younger workers.

Minor gains in sub-pillars resulted in the fifth position in the cyclical resilience ranking

Sweden has performed well in the cyclical pillar over the last years, frequently ranking 7th in the standings. In GLRI 2023, it has further improved cyclical resilience and achieved the 5th position. It was earned through small improvements in sub-pillars: +1 in the

absorptive and institutional capability, and +3 on the transformative sub-pillar. The adaptive capability remains unchanged. The main improvements are in unemployment coverage, reduction of labour income inequality, better mental health, the rising prominence of research institutions, and more efficient domestic material consumption.

High labour market protection may prevent further progress in adaptive capabilities

Sweden features one of the best support and protection systems for workers, which drives its absorptive capability input. The country ranks 1st on workers' rights and pension coverage, and 3rd by coverage of basic health services.

However, on the adaptive sub-pillar, labour policies are among the least flexible. On the one hand, the current setting adds to the absorptive capabilities by protecting insiders and permanent contracts; on the other, it prevents improvements in the adaptive capability. Advancements in the adaptive sub-pillar, where Sweden ranks 9th, are hindered by the rigidity of labour policy. In fact, the country ranks 96th, 88th, and 101st in hiring and firing practices, ease of hiring foreign labour, and the effect of

taxation on the incentive to work, respectively.

The labour market has not yet fully absorbed the COVID-19 shock

Although real GDP overtook the pre-pandemic level, the same is not true for the unemployment rate, which remains higher at 7.5% in 2021. This reflects in the absorptive capability output, where youth unemployment and the growth of middle-skilled jobs are worrying. Broadly speaking, low-skilled, immigrants, temporary, and other vulnerable workers are the most affected.

Structural reform of the labour market is coming into effect in 2022

Beyond an imbalance in the protection of permanent jobs, the Swedish labour market displays a skill mismatch problem, where unemployment combines with unfilled vacancies. Therefore, companies struggle to recruit workers with the right skills. To address these issues and to enhance the flexibility of the labour market, the parliament voted for substantial changes to the Swedish Employment Law. The new framework will come into effect in 2022. It aims to reduce the workers' protection for permanent contracts and increase it for temporary workers. Also, it will enhance training and upskilling opportunities, and

strengthen unemployment coverage.

Alignment with future labour market trends is clear to see

Sweden is a champion of transformative capabilities, where it ranks 1st. This indicates an alignment with future trends and resilience to changes needed to keep up with technological and sustainable progress. It excels in R&D, international co-inventions, and digital skills. Digital skills are a core component of labour market resilience, given the transition towards a digital-first approach in many aspects of our lives. Careers in digital marketing and programming are in high demand in 2023, and a digitally capable workforce is an asset.

SINGAPORE

Singapore is the only non-European nation to rank in the top 10

Singapore is the smallest of the four Asian Tiger. It has a population of 5.8 million people, and the world's second highest GDP per capita (PPP, constant 2017 international dollars) [12]. Singapore's ranking of sixth has fallen by one position over the last five years. However, it continues to be the only non-European / non-OECD nation within the top 10.

It embodies the pros and cons of labour market resilience in a small country

Singapore is a small island. As such, it exemplifies the benefits and drawbacks of very small countries. On the one hand, the governability and flexibility in revising or adopting new policies allow for better performance on the cyclical pillar. On the other, it exposes the economy to structural vulnerabilities, such as trade or lack of diversity. Overall, the labour market resilience shows a substantial dynamism that may cause small countries to climb or fall on the GLRI ranking quicker than larger ones.

The dependence on other countries for trade, labour, and investment hampers resilience

The resilience of the labour market shows some vulnerabilities. These result from the high degree of openness and the limited size of the domestic market. In other words, the country is exposed to external forces and highly dependent on foreign countries for trade, workforce, and investment. For example, the country has an export share of GDP of 184.8% [10].

Throughout 2021, the government has taken steps to improve labour market opportunities available to Singaporeans. The salary threshold

for foreign workers has risen in recent years, making it more difficult to employ them.

An unbalanced cyclical profile leaves the country vulnerable to shocks

The country has an uneven performance across cyclical resilience capabilities. It ranks 16th on absorptive, 1st on adaptive, 3rd on transformative, and 15th on institutional sub-pillar.

Its low rank on absorption capability is due to the negative growth of middle-skilled jobs, the lack of a state unemployment insurance system, and low levels of pension coverage.

Adaptive capabilities give momentum to the economic recovery

The country's highest performance is on adaptive capabilities, where Singapore ranks 1st. It excels on several indicators, some of which reflect its strong trading position (trade openness, applied tariffs, and venture capital investments). Others relate to the regulation of the labour market (hiring and firing practices, effect of taxation on incentive to work, etc), the effectiveness of the court system (enforcing contracts), and domestic market competition.

Adaptive capabilities are crucial in helping countries bounce back from the immediate effects of labour market shocks. The economic recovery from the COVID-19 shock attests to it: the GDP at the end of 2021 was 3% higher than its pre-pandemic level, while it has grown by 7% compared to 2020 [12].

Innovation and investment are helping prepare for the future of work

On transformative capabilities, the enhanced innovation environment makes the country's labour market more immune to future shocks related to digital disruptions and robotisation. Several categories of indicators contribute to the third place in the transformative sub-pillar.

Among these, the top ones are related to Intellectual Property Legislation, the education and skills of the future workforce, innovation products, technology & the digital economy, and ICT infrastructures penetration.

... but there is a lack of environmentally sustainable growth

Singapore is not fully aligned with the need for a sustainable approach to growth. Its economy is still reliant on traditional forms of energy (ranks 128th on the use of

renewable energy), although, it has a low CO₂ and energy intensity. Ranking 3rd on transformative capabilities demonstrates the potential for the country to lead the way in designing sustainable solutions to the world's greatest challenge.

LUXEMBOURG

Luxembourg climbs the leaderboard to 7th place

Despite it being a small landlocked country of about 645,000 citizens, Luxembourg has one of the highest GDPs per capita in the world [12] and has a high-value services export industry [2]. Luxembourg's dynamic labour market has improved its resilience over the past five years, moving from 10th to 7th in the GLRI ranking.

A large foreign workforce helps reduce demographic pressures

The country ranks 10th on the structural pillar. It gained two places in the past five years, thanks to improvements in the demographic sub-pillar - its elderly population has grown at a lower rate than in other countries. The country has the second youngest population of those in the top 10, coming second to Singapore. It is likely due to the highest growth rate of the population across Europe, which results from a large inflow of

migrants. The foreign workforce reflects this fact. Consider that in 2019, 47% of the population was foreign-born [6]. Of these, 72% participate in the labour force. The country ranks low in income inequality (51st out of 139).

Population benefits from a high quality of earnings and a low gender pay gap

Luxembourg has a more favourable position in the cyclical pillar of the index where it ranks 9th. It is among the top performers in absorptive capabilities. The labour market demonstrates a range of inclusive qualities, including its high levels of pension coverage, high ranking wages, a small share of low-skill labour, and a low gender pay gap. These are complemented by flexible labour policies, which gave the country a buffer during the COVID-19 crisis.

While adaptive capabilities are improving, change is needed to capture the benefits of digitisation

Luxembourg performs well on the adaptive sup-pillar. This is due to the high-skilled labour force, prime entrepreneurship activity, and easy access to loans. The country has a high level of trade openness and performs well on applied tariffs. However, it has not grasped the potential of the digital age on its trade economy. For ICT services

and goods exports, there is room for improvement as the country ranks 101st and 51st respectively. Luxembourg ranks highly on the future orientation of the government, innovation in products and environment, and an investment in the future workforce.

FINLAND

Finland maintains its 8th place ranking

In the last five years, Finland's ranking has ranged between the 10th and 8th place. In the GLRI 2023, it ranks 8th. The country has experienced a two-place increase in its structural rank, now ranking 18th. The cyclical rank remained unchanged (8th).

A complex picture of resilience

Despite the two-position change in its structural position, the country experienced a decline in the sub-pillars of demographics, country capabilities, and inequality, making improvements only on economic development and macroeconomic stability and trade vulnerability.

An ageing population poses challenges

Finland's population pyramid is older than that of the rest of the top 10, with the percentage of the

population aged over 65 at 22.9%, compared to an average of 19.1% amongst the top 10 [13]. The reason for its older population pyramid is related to its significantly shorter baby boom compared to its peers. These signs of demographic decline suggest that Finland's policymakers should be thinking about ways to boost their working age population and drive skill regeneration.

One area where Finland has been strong for several years is its commitment to lifelong learning and adult education. Boosting the skills of older workers is essential to keep them within the labour market. Finland launched a lifelong learning reform called 'continuous learning', the idea of which is to ensure that reskilling and upskilling occurs throughout an individual's life rather than at period points in time.

... and so does polarisation and youth unemployment

The country has also registered an increase in absorptive capabilities following improvements in the mental and physical health of the population. However, the growth of youth unemployment, and a negative trend in middle-skilled occupation, combined with an increasing share of low-skill and decreasing high-skill labour (increased polarisation), risk undermining its absorptive resilience. Finland is among the top

countries in transformative capabilities thanks to a favourable innovation environment, considerable export of ICT services, innovation products, and excellent education of the future workforce.

AUSTRIA

Austria's ranking slips from the 7th place to the 9th

Two places were lost compared to GLRI 2018. In the 2023 release, Austria ranks 3rd on the structural pillar, but 12th on the cyclical one. The country swapped one place in the structural ranking (it was 4th) for one in the cyclical (was 11th).

The structural resilience is sound, supported by trade and country capabilities

Austria is a small country with a population of 9 million. Its export-oriented economy has a high degree of sophistication and high productivity. Its structural resilience (3rd) follows from country capabilities and trade positioning. Austria ranks 7th on country capabilities, highlighting its high levels of economic complexity. It is a landlocked country that shares borders with several countries, including its main trading partner Germany. In 2020, 30% of Austrian products (by value) were exported to Germany and 41% of imports

came from Germany [16]. Whilst a large proportion of trade occurs between the two countries, Austria benefits from a diverse export profile, which improves resilience by reducing dependence on a small number of markets that could be prone to simultaneous shocks.

The structural rank benefits from the faster increase of the older population in other countries

In the GLRI 2023, Austria earned an additional place in the structural pillar, moving to 3rd. This results from an improvement in the demographics sub-pillar. Like Sweden, the share of the older population is still increasing, but at a lower rate than in other countries. Consequently, the country's relative position in the structural pillar has improved.

A positive resilience rank gap shows room for cyclical improvements

Austria's best cyclical performance is found in the absorptive capability sub-pillar, where the country ranks 7th. The country ranks 1st on measurements of welfare coverage (unemployment and pension) and workers' rights. Austria is one of only two countries in the top 10 to exhibit a positive resilience gap. Namely, it ranks higher on the structural rather than the cyclical pillar. As a result, the country could improve its overall labour resilience in the short term if it

takes steps to improve cyclical resilience.

... but the low-hanging fruit was not picked

The worsening in the cyclical pillar prevents an advantage in the positive resilience rank. It results from the mild deterioration of several indicators in the absorptive, adaptive, and institutional capability. On the contrary, the transformative capability gained three places.

Labour market recovery is clear, but boosting business growth and flexibility of labour policy can speed up this process

Over the last few months, the country's adaptive capability has played the biggest role in supporting the labour market back to the status quo. Austria ranks 23rd on adaptive capabilities.

The country must improve its performance in adaptive capabilities through mechanisms to support business growth and entrepreneurship. The country's performance on the time and cost to start a business are an area for improvement. Providing favourable growth conditions is especially important as business creation is one of the most vital ways to help a labour market recover and bring

sustainable employment opportunities.

Recovery and business creation can be further supported by simpler hiring and firing practices, ease of hiring foreign labour, and incentives to work.

NORWAY

Small overall gains in labour market resilience have been driven by cyclical improvements

Over the last five years, Norway has improved its rank from 11th to 10th. In the same period, the country's position in the standings has displayed little variability. Cyclical resilience helped the country achieve its status in the top 10 in the GLRI 2023. It has performed particularly well in the support and protection of workers and has the best mix of indicators in the adaptive capability output, especially because of the excellent training and skillset of its workforce. The most evident weaknesses are the decrement in middle-skill jobs and modest trade openness.

There is still a significant gap to the frontier

Norway ranks 31st in the structural pillar. By far, it is the worst

performance among the top 10 countries. There are two major weaknesses in the structural pillar. The first is the high concentration of product exports. As about 30% of the value of Norway's gross export is on minerals (crude oil, refined petroleum, etc) [2], the structure of the economy and employment is highly dependent on it. The second one is still related to oil, but the weak link is its reliance on natural resources (ranks 103rd), which makes its labour market more vulnerable to shocks, such as a collapse in oil prices and a political need to move to sustainable practices. However, compared to other oil-dependent nations, Norway finds itself less exposed to risk due to its large sovereign wealth funds (Government Pension Fund of Norway). In November 2019, the fund was given the mandate to invest in unlisted renewable energy infrastructure, i.e., infrastructure for the production, transmission, distribution, and storage of energy from renewable sources. In 2021, it was estimated that the 'oil fund' is worth more than \$1.4 trillion. The fund holds stakes in more than 9,000 global companies, owning 1.5% of all listed stocks – this diversified portfolio is expected to enable Norway to continue to thrive in a world without oil [5].

REGIONAL RESULTS

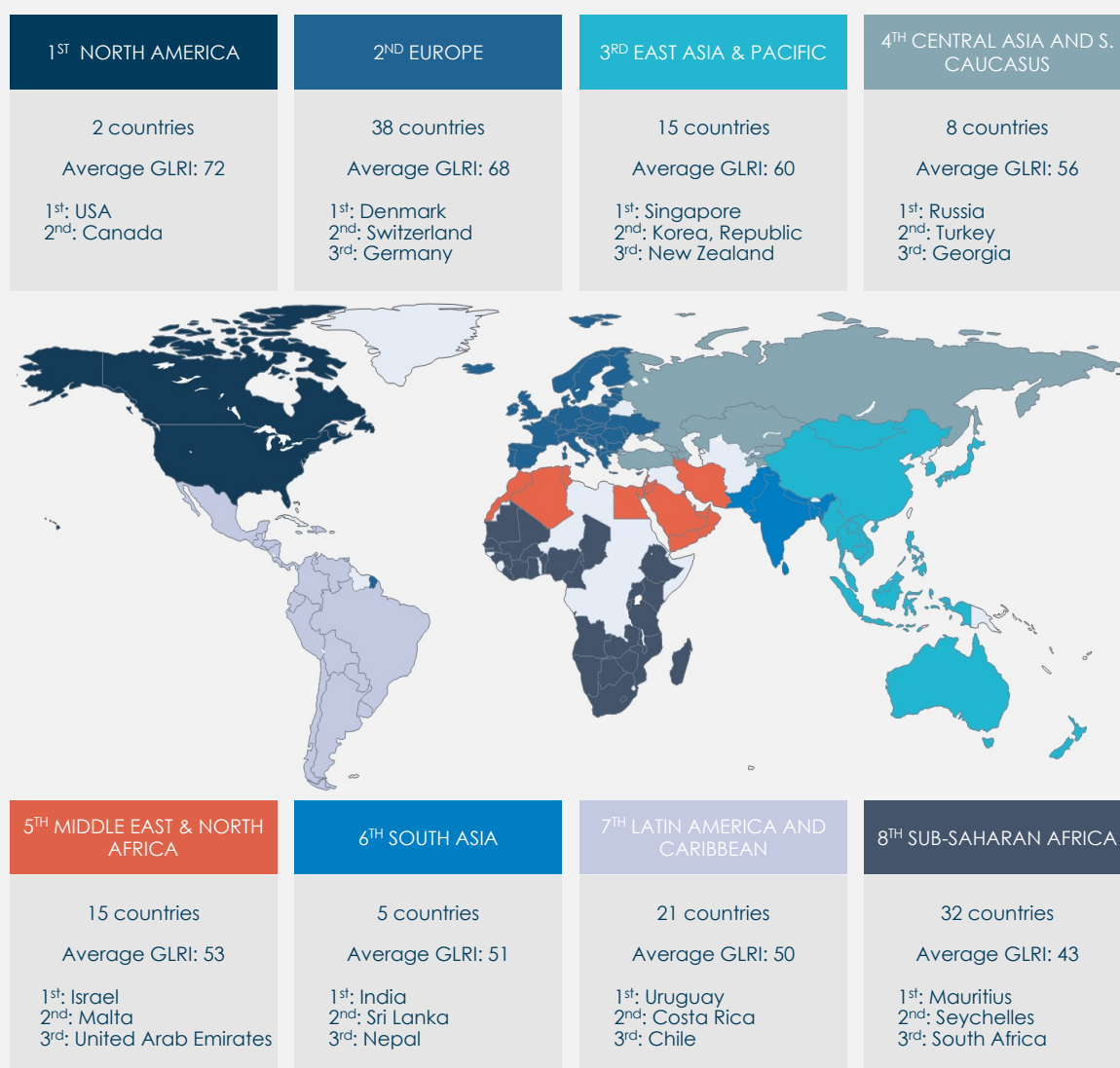
Resilience improves in Asia and Europe

OVERVIEW OF THE REGIONAL RESULTS

Regional results analysis captures the GLRI 2023 performance in world regions. Figure 14 shows the top 3 countries of each region, and their position in the GLRI 2023 ranking, and reveals the disparities in labour market resilience across the world.

Table 4 compares the regional results by sub-pillar. Case studies demonstrating the strengths and weaknesses of a country from each region are provided throughout this section.

Figure 14: Labour resilience in world regions



Source: Whiteshield, Global Labour Resilience Index 2023.

Table 4: GLRI 2023 by region

Region	Number of countries	Average GLRI country rank by region	Average GLRI Score (1-100)	Average Structural Rank	Average Cyclical Rank	Average Labour Resilience Rank Gap
North America	2	18	72	28	18	-11
Europe	37	28	68	30	30	-1
East Asia & Pacific	15	53	60	51	54	3
Central Asia & S. Caucasus	8	62	56	69	62	-7
Middle East & North Africa	16	75	53	73	75	3
Latin America & Caribbean	21	84	50	88	82	-5
South Asia	5	84	51	54	95	41
Sub-Saharan Africa	32	111	43	111	108	-3

Source: Whiteshield, Global Labour Resilience Index 2023.

North America is the regional leader

Even though Europe still dominates the list of top 10 countries (9 out of 10 countries in the top 10 list are European), the regional leader is North America. This outcome is counterintuitive, given that both the US and Canada are absent from the Top 10 and Top-20 respectively. Moreover, during the last five years, North America has lost four ranks in the GLRI, mainly because of a deterioration in the cyclical pillar. However, its performance became more balanced as the gap between structural and cyclical pillars shortened from -15 to -10.5.

South Asia finally overtakes Latin America & Caribbean in the GLRI region ranking, driven by a significant jump in the cyclical rank.

The structure of the regional ranking in other regions remains the same as five years ago. Both South Asia and Central Asia improved their average GLRI ranks by five and four ranks respectively, compared to five years ago. On the other hand, Latin America has dropped by five ranks and North America by four.

The ‘success’ of North America is driven by its internal regional equality and small number of countries included

Europe remains the region that has achieved the best balance between the two pillars. Its regional underperformance relative to North America can be explained by the larger number of European countries in the region, and the significant inter-country inequalities.

The highest internal inequality is estimated in Middle East and North

Africa (115 ranks difference between Israel and Yemen). Significant interregional inequality is also found in East Asia and Pacific (106 ranks difference between Singapore and Myanmar), Latin America (90 ranks difference between Uruguay and Haiti) and the Sub-Saharan region (82 ranks difference between Mauritius and Chad).

Europe remains the best in achieving a balance between the two pillars

The internal regional labour resilience inequality is moderately going down in some regions

In the Sub-Sahara region, the internal inequality dropped from 92 ranks in GLRI 2018 to 82 in the GLRI 2023. In Europe, it declined from 88 ranks to 75 ranks in the same period. Only South Asia has significantly increased its internal inequality from 31 to 38.

NORTH AMERICA

Resilience in North America is stagnating

North America includes two countries with relatively similar labour resilience profiles: the US ranks 14th while Canada ranks 21st. Canada has fallen by five ranks relative to last year, mostly because of the cyclical pillar (down by three ranks) Over the same period, its structural rank has equally improved. Both changes have led to significant fall in the labour resilience gap, and more balanced resilience. The United States experienced similar changes, but to a lesser extent: the changes in structural and cyclical pillars were -1 and +1 ranks, respectively.

Despite the reduction in the resilience gap, both countries continue to have difficulties with utilising short-term measures to improve their labour market resilience. This applies in particular to Canada, whose resilience gap is still -15, the lowest gap in the top 21 countries, after Norway and Iceland.

Since last year, both the US and Canada have managed to reduce their youth unemployment rates. At the same time, the US increased its import tariffs from an average of 1.6% in 2019 to 13.4% in 2020, and

thereafter reduced them back to an average of 1.5%. Both countries have also managed to increase their exports and imports of environmental goods and services, and reduced their energy intensity.

Canada continues to be relatively more exposed to external shocks

In 2020, Canada increased its dependence on natural resources by 0.3pp from 1.9% to 2.2% of GDP and became more affected by external shocks. That diminished its structural resilience. Its current account has improved since last year. Gini index also shows that the inequality problem in the country is sizeable and affects the structural resilience. From the cyclical point of view, Canada's weaknesses appear mostly in the growth of middle-skill jobs, entrepreneurship activity, and green transition indicators.

... while the US shows mixed results on several fronts

The US resilience gap is -6, but its inequality is twice as big as its Canadian counterpart. The US current account also underperforms that of Canada. Regarding the dependence of natural resources, the US performs much better than Canada, and has succeeded in reducing this dependence by 0.1pp from 0.6% to 0.5% of GDP since last year. It should also be noted that

the US is one of three countries in the top-15 that increased its services share of the economy during the pandemic, registering the largest such growth at 2.8 pp. On the cyclical pillar front, US falls behind in terms of workers' rights, growth in medium jobs, mental health, green transitions indicators as well as STEM graduates.

EUROPE

Europe remains a regional heavyweight in the labour resilience ranking

Europe performs well across both the structural and cyclical pillars. Over the past five years, Denmark has managed to climb the ranks from fourth to first. At the same time, Norway entered the Top 10, while Belgium exited.

In the last five years, the region increased its overall GLRI rank, mainly driven by improvement in the cyclical pillar

The major improvements were registered by Hungary, Lithuania, and Ukraine.⁵ At the same time, major deterioration (by more than 10 ranks) occurred in the structural pillars of Belgium, Estonia, and

Serbia. Across the European region, the inter-country inequality in ranking decreased because of the significant progress in bottom ranked countries. For example, Bosnia, the lowest ranking European country, improved its rank by 12. Improvements surpassing five ranks occurred in Ukraine, Moldova, Greece, Hungary, and Lithuania.

9 out of the top 10 countries are in Europe

Many non-top 10 ranked European countries perform within the top 10 at the sub-pillar level

For instance, Belgium (11th) ranks 3rd in absorptive capability and 8th in economic development, the UK (12th) ranks 10th in country capabilities and 5th in adaptive capabilities, France (13th) is 9th in both trade vulnerability and transformative capability, Iceland (14th) is 8th in inequality, absorptive capability and institutional capability, Ireland (16th) is 7th in

⁵ The indicators capture the situation in the country before the war.

economic development, Czechia (18th) is 4th in the income equality and 6th in economic capabilities, Slovenia (19th) is 2nd in the equality, Spain (25th) is 6th in trade vulnerability and Slovakia (27th) is 1st in equality.

Compared to last year, significant movement was registered across European countries on their structural pillar

For example, Belgium and Estonia have experienced a higher level of export concentration -- by 0.35 and 0.4 respectively, and have fallen in ranks by 87 and 104. At the same time, Ireland has experienced significant improvement - by 34 ranks - in the current account indicator, while Austria and Iceland have dropped by 12 and 18 ranks.

Denmark has reduced its dependence on natural resources, and its rank has climbed by 15; Norway's rank improved by 12, the UK by 13 while Sweden's has fallen by 13. These big changes in the rankings of developed countries reflect the impact of external shocks like COVID-19 pandemic and deep changes in macroeconomic policies.

Over the past five years, major improvements were achieved by some bottom-ranked European countries, and bottom- and middle-

ranked European countries experienced significant drops

Croatia, Cyprus, and Moldova improved their economic development scores and consequently moved up the ranks by 15, 14, and 30 respectively. In contrast, Belgium, Iceland, and Estonia experienced a deterioration in their trade vulnerability scores, and consequently fell by more than 20 ranks. Montenegro, Serbia, Bulgaria, and the UK have experienced a deterioration in their income inequality scores, leading each country to fall by more than 20 ranks.

Bottom-ranked European countries made significant improvements in their cyclical pillar

Greece's scores on the transformative capability pillar improved its standing by 48 ranks. Romania and Bulgaria also experienced similar progress and improved their rankings by 20 and 27, respectively. Lithuania and Latvia improved their scores in the institutional capability, moving up the ranks by 39 and 38, respectively. Where matters concern individual indicators, the Netherlands experienced a deterioration in entrepreneurship activity since last year (19 ranks down), while Luxembourg improved its ranking in the share of patents by 10.

EAST ASIA & PACIFIC

Singapore and Korea are the only EAP countries that are in the top 20

Overall, the East Asia & Pacific region performs third in the regional ranking with a good balance between the structural and cyclical pillars. Five out of 15 countries are high-income countries that are in the list of the top 30.

5 out of 15

East Asian and Pacific countries are in the top 30

Japan has fallen outside of the top 20

The EAP region has not exhibited any major change in either its structural or cyclical pillar. However, Japan has slipped by five ranks overall and three ranks in both its structural and cyclical pillars. This

was mainly due to a deterioration in educational spending and the share of high-skilled labour. In the structural pillar, Japan has increased its dependence on natural resources by almost five times, and lowered its economic complexity and export diversification.

Korea has moved up three ranks and made it to the top 20

Mostly on account of improvements in its cyclical pillar, where it gained three ranks while its structural pillar has dropped by six ranks because of the significant increase in Korea's dependence on natural resources. Other large changes in the ranking have taken place in Malaysia, which has lost eight ranks, Philippines and Mongolia have each lost seven ranks, while Vietnam improved by seven ranks.

East Asia & Pacific countries perform well mostly in the cyclical sub-pillars

The region scored high in several cyclical sub pillars including country capabilities (average rank 52), trade vulnerability (average rank 53) and absorptive capability (average rank 53). Korea is ranked 4th in country capabilities and 7th in transformative capability, New Zealand is ranked 6th in adaptive capability pillar, and 7th in institutional capability, Japan is ranked 1st in country capabilities,

Australia is ranked 8th in adaptive capability and China is ranked 5th in trade vulnerability.

Large improvements in the structural pillar can be found in Myanmar that has managed to lower its inequality by almost 20% compared to the data used in the GLRI 2022.

CENTRAL ASIA & SOUTH CAUCASUS

Russia, Turkey, and Georgia lead the region in rankings

Russia (45th), Turkey (47th), and Georgia (53rd) are the labour market resilience leaders in the Central Asia and South Caucasus region. Over the last five years, this region has moved up in the ranking by four places owing to improvements in its structural pillar. As a result, the region's resilience gap was reduced from -14 to -7.

Turkey and Kyrgyzstan scores have experienced the largest changes since last year

Turkey has improved by 10 ranks and Kyrgyzstan's rank has dropped by 12; those of Georgia and Kazakhstan have also moved down by five ranks. This has occurred following changes in the structural

pillar scores. Turkey, on the other hand, saw its score on the cyclical pillar pull up its rank by 15.

The region moved
up the ranking by
4 places over
the past 5 years

Over the last five years, Azerbaijan has managed to improve its rank by 30 places, and Tajikistan by 11. Azerbaijan has improved its scores in both pillars. The country has improved its performance mainly in the country capabilities and trade vulnerability pillars, where it has moved up by 26 and 27 ranks. The fall of Kyrgyzstan's resilience by 11 ranks was mostly the result of changes in economic development and transformative capability sub-pillars.

MIDDLE EAST & NORTH AFRICA

Since 2018, the region's performance on both pillars continues to slip

Youth under 30 constitutes more than **55%** of the MENA region population

The region has experienced a decline in its structural pillar by two ranks and cyclical pillars by one rank owing to the relatively large changes in most countries' positions in both pillars, especially the structural pillar. For example, Qatar's and Bahrain's ranks in the structural pillar slipped by 20 ranks, and Iran's by 15. The UAE is the only country in the region that has

managed to improve its ranking in its structural pillar.

In the cyclical pillar, Bahrain and Tunisia have significantly improved their positions (by 12 and 13 ranks correspondingly), while Oman and Lebanon slipped by 12 and 15 ranks, respectively.

Youth unemployment in most of the countries has increased

Almost all the countries in the region have struggled to improve their youth unemployment rates. At the same time, the share of labour income in almost all the countries has increased and labour policies like staff training have strengthened.

The region performs best in the demographic sub-pillar

Young population aged under 30 constitutes more than 55% of the population in the region. The UAE is ranked first, and Qatar second in the demographic sub-pillar. The region is ranked, on average, relatively high in inequality, adaptive capability, and transformative capability sub-pillars.

Best performers in other sub-pillars are Malta in terms of its economic development (ranked 5th) and the UAE in equality (ranked 6th).

SOUTH ASIA

South Asia moves ahead of Latin America

Over the last five years, South Asia has managed to significantly improve its labour resilience policies, and has thus improved its ranking in the cyclical pillar by six places, while its ranking in the structural pillar has remained the same. These developments have led to the reduction in the resilience gap between regions from 47 to 42.

Over the past 5 years,
South Asia
improved its
cyclical pillar ranking
by **6 places**

India leads the region with the best performance in the structural pillar, with a rank of 20 in the trade

vulnerability, and 48 in the country capabilities sub-pillars. Overall, the region has a young population, but not younger than the Middle East, with relatively high income equality.

Most of the countries in the region have improved their performance in both pillars

Almost all the countries in the region have improved their structural ranks (except for India) and cyclical ranks (except for Pakistan). Nepal's structural ranking slipped by nine places as a result of a deterioration in its trade vulnerability. India, on the other hand, has improved its cyclical performance by seven positions because of improvements in its adaptive capability.

Despite progress, countries' performance in the cyclical pillar remains low

All the countries in the region have improved their cyclical performance, but nonetheless - with the exception of Sri Lanka - remain in the low performing countries' group. The countries in the region have improved their pension coverage, high-technology exports, and patents. At the same time, their youth unemployment has significantly increased as compared to 2018.

LATIN AMERICA & CARIBBEAN

The region has significantly reduced its resilience gap in the last five years

The Latin America and Caribbean regional ranking is below that of South Asia, mostly because of the former's deterioration in its cyclical pillar that has experienced a fall from 75th rank to 82nd rank. Given that short-term policies in the region outperform long-term factors of resilience, these changes have led to the shortening of the labour resilience gap between cyclical and structural pillars.

Uruguay is the region's leading country in rankings (43rd globally), followed by Costa Rica (49th) and Chile (51st). The region performs well in demography, country capabilities, absorptive capability, and institutional capability sub-pillars. At the same time, it is significantly behind in income inequality; however, Argentina, Brazil, Dominican Republic, and Paraguay show progress on the inequality front.

Panama has achieved the best performance in the structural pillar

When compared to its regional peers, Panama achieved the best performance in country capabilities and trade vulnerabilities. As a result, Panama gained 29 places in the rankings. It is worthwhile to note that this does not necessarily translate into actual progress; indeed, Panama's absolute values of the corresponding indicators have declined, but by relatively less in absolute terms than in other countries in the region.

Latin America & Caribbean witnessed a deterioration in their cyclical pillars

During the same period, Colombia slipped by 23 ranks (the largest fall in the region) because of its negative dynamics across almost all its structural indicators, with the exception of trade vulnerability.

SUB-SAHARAN AFRICA

The region's performance remains unchanged

This region has the second highest number of countries included (after Europe) and the lowest performance across the GLRI. Despite this fact, the structural and cyclical pillars in the region have almost the same rank, which indicates a balance between short-term and long-term policies. The region's performance in the last five years has slightly improved in the cyclical pillar.

Mauritius performs best in the region

The region is led by Mauritius (rank 44 globally) and three-fourth of the countries are ranked beyond 100. In some sub-pillars, some countries perform relatively well (with the rank below 40). These include Mauritius and Rwanda in economic development (ranks 37 and 31, respectively); Seychelles, Guinea, and Mauritania in the equality sub-pillar (ranks 35, 20 and 38, respectively); Mauritius in adaptive capability and institutional capability (ranks 29 and 27,

respectively). Overall, the lowest performances are in country capabilities and absorptive capability.

75% of Sub-Saharan African countries are ranked **beyond 100**

Over the last five years, Benin is the only country that has achieved a high improvement of 14 places in its rankings. At the same time Cape Verde went down by 13 ranks, and Mali by 10. Major improvements in the structural pillar were seen in the Seychelles (29 ranks up), Benin, and Guinea (22 ranks up). Major deteriorations took place in Tanzania (37 ranks down), Mali (34 ranks down), and Burkina Faso (31 rank down). No large changes can be found in the cyclical, except for Cape Verde (16 ranks down) and Lesotho (13 ranks down).

ROAD TO RESILIENCE

Resilience potential remains the highest in Pakistan and India

RESILIENCE POTENTIAL

The Labour Resilience Gap measures the difference in ranks between the cyclical and the structural pillar. Countries with a positive labour market resilience gap – meaning they rank better on the structural than the cyclical pillar

– have potential to strengthen their labour market resilience in the shorter term through targeted policy interventions. Table 5 ranks the top 30 countries in order of their labour resilience gap. It is interesting to note that low income and lower middle-income countries make up almost two-thirds of the countries in the list.

Table 5: The top 30 countries with a Labour Resilience Gap

Country	Rank	Labour Resilience Gap (Cyclical rank – Structural rank)
Pakistan	1	65
India	2	55
Lebanon	3	55
Egypt	4	50
Myanmar	5	50
Bosnia-Herzegovina	6	40
Ethiopia	7	40
Bangladesh	8	39
Nepal	9	38
Gambia	10	35
Tunisia	11	34
Dominican Republic	12	32
Guatemala	13	32
Haiti	14	31
Jordan	15	30
El Salvador	16	30
Thailand	17	30
Kenya	18	28
Philippines	19	28
Tajikistan	20	28
China	21	26
Mexico	22	26
Côte d'Ivoire	23	25
Yemen	24	25
Indonesia	25	24
Morocco	26	24
Turkey	27	24
Czechia	28	23
Guinea	29	23
Croatia	30	23

Source: Whiteshield, Global Labour Resilience Index 2023.

Pakistan shows the largest growth potential in resilience

Pakistan has the highest level of labour market resilience potential. It ranks 96th in labour resilience, but 46th in the structural pillar. Its high resilience potential follows from the 111th position in the cyclical pillar, which allows ample leeway for policy to close the gap.

Fulfilling Pakistan's resilience potential requires a challenging policy agenda

Policy interventions to reinforce Pakistan's cyclical performance would reduce the distance between the two pillars and reinforce its resilience.

Pakistan has the highest level of labour market resilience potential

Crucial improvements are needed in absorptive (126th) and institutional (101st) capabilities, and also in adaptive (98th) and transformational capabilities (93rd). To this end, Pakistan could consider policies targeted at increasing the inclusiveness of its labour market, extending pension and health

services coverage, training labour and boosting tertiary education, reducing informal employment and taxes, improving logistics schemes, and accelerating entrepreneurship activities through investments and access to loans for businesses. Higher levels of R&D investments should also be considered.

Most of top GLRI performers show a negative resilience gap, except for Germany and Austria

Among the top 10 ranked countries, only Germany and Austria display high GLRI scores and positive resilience gaps (Figure 15). Both countries can improve their labour resilience by focusing on shorter-term policies targeting the cyclical pillar.

For the other countries in the top 10 list, especially Switzerland and Finland, renewed efforts at addressing longer term policies in the structural pillar could be prioritised.

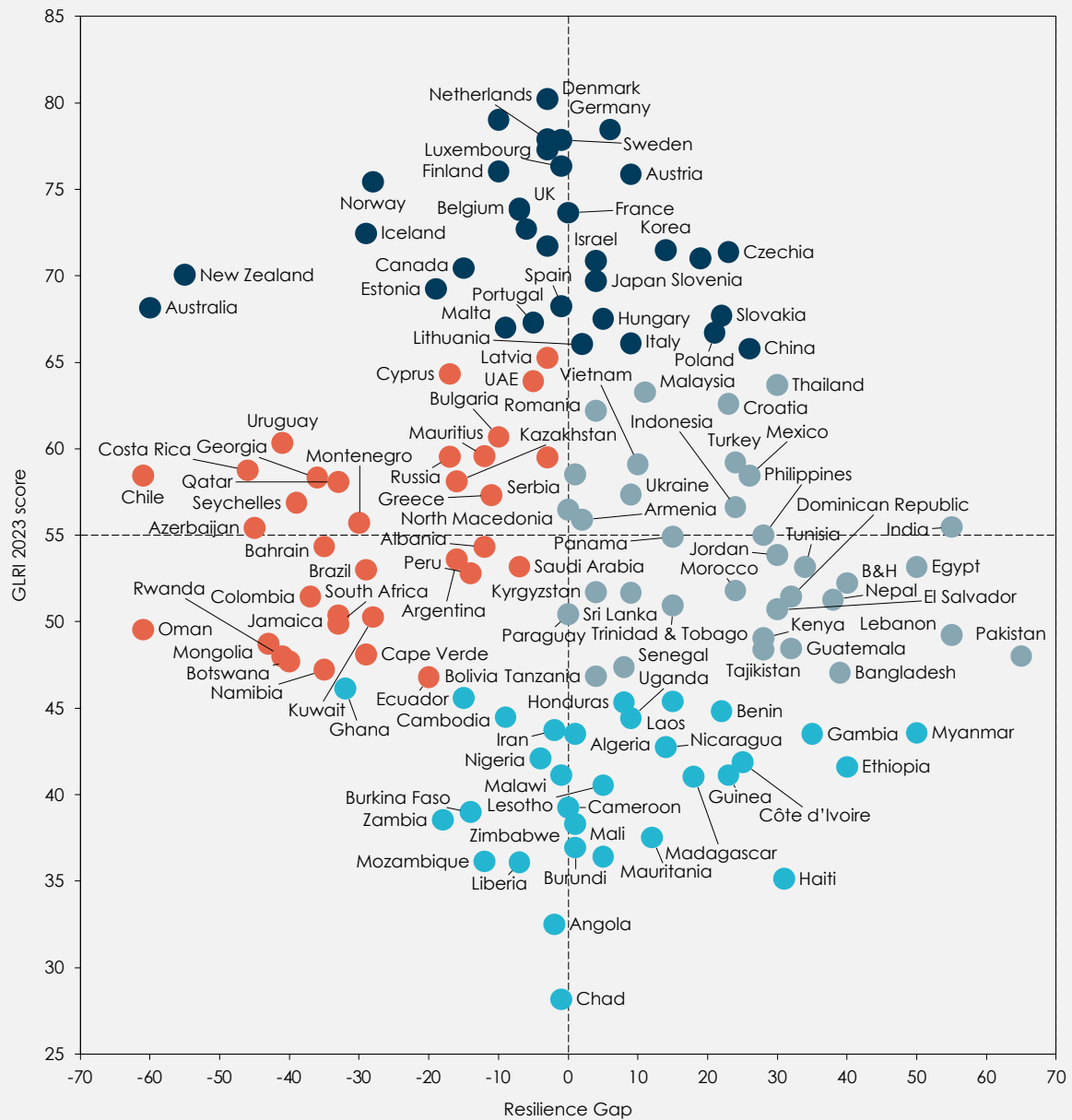
Policies addressing cyclical resilience can bring South Korea, Czechia, and Slovenia among the top 10 GLRI countries

Among the best GLRI performers outside the top 10, Czechia, Slovenia, and South Korea have the most promising growth potential. While they rank respectively 8th, 2nd, and 5th in the structural pillar, they

have a positive resilience gap of 14, 23, and 19, respectively. Policy interventions targeted at raising their cyclical resilience would pave

the way for these countries to climb the ranks and join the list of the top 10 most labour resilient countries.

Figure 15: Resilience gap and GLRI score



Median GLRI performance with positive resilience gap	High GLRI performers with mainly negative resilience gap
Median GLRI performers with negative resilience gap	Low GLRI performance with mainly positive resilience gap

Note: The horizontal dashed line indicates the median GLRI score, while the vertical one indicates zero resilience gap.

Source: Whiteshield, Global Labour Resilience Index 2023.

PATHWAYS TO RESILIENCE

Improving labour market resilience is not an easy task. It requires a systematic, joint-up approach to policymaking that addresses complex interconnected policy domains and balances trade-offs. Nonetheless, many countries have managed to strengthen their labour market resilience over the last ten years by advancing their structural and/or cyclical capabilities or both (Figure 16).

Three distinct paths can be identified to advance labour market resilience: the structural, cyclical, and balanced path. Countries looking to improve their labour market resilience should define their preferred path, which should be selected keeping their structural characteristics and strategic priorities in mind.

The structural path: Countries following the structural path focus on reducing their inherent vulnerabilities by reinforcing economic foundations. This is achieved by developing greater economic diversity and complexity, growing the economy and enhancing macroeconomic stability, reducing trade vulnerability, and mitigating inequality.

The UAE and Saudi Arabia proved to be the most successful among those countries, following the structural path over the last decade. The UAE moved from the bottom to the top-right part of the diagram in Figure 16. It became a resilience leader, i.e., it reached above average scores in cyclical and structural resilience.

Saudi Arabia, which started from a worse position than the UAE in 2013, is rapidly progressing and directing itself towards the 'resilience leader' in the region. At the same time, Saudi Arabia is still progressing within the resilience potential category, being below average in both pillars.

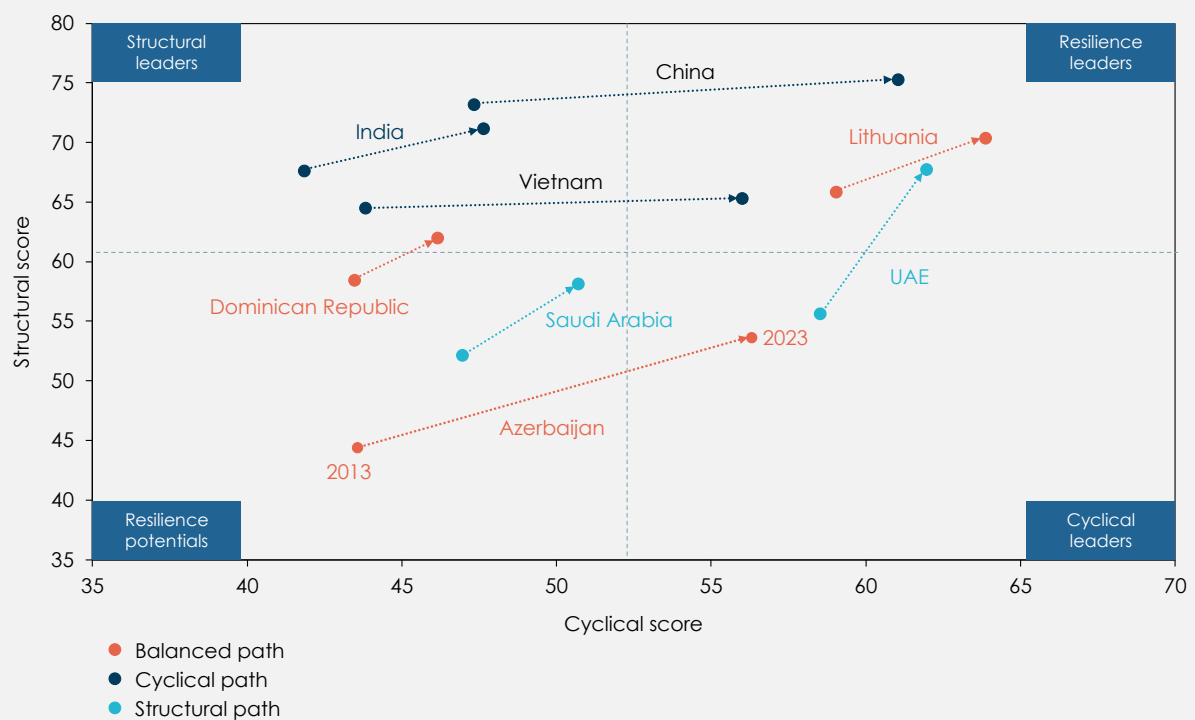
The cyclical path: Most of the countries that have achieved significant progress in labour resilience do it along the cyclical path of development. Specifically, China, India, and Vietnam have made substantial improvements over the last decade by implementing shorter-term policies for cyclical resilience before building longer-term structural resilience. Remarkably, China raised its cyclical score by 29% between 2013 and 2023.

The equilibrium or balanced path: Balancing between advancing structural and cyclical resilience is

the best strategy for some countries to shift faster towards greater overall labour resilience. The pathway was followed successfully by Lithuania, which consolidated its position as a resilience leader. The Dominican Republic achieved the 'Structural

Leaders' in its region, after starting on the bottom-left part of the diagram in Figure 16. Azerbaijan obtained the highest gain by recording an astonishing +21% growth in structural resilience and +29% in the cyclical one.

Figure 16: Pathways to resilience 2013-2023



Note: The dashed horizontal and vertical lines represent, respectively the average structural and cyclical scores.
Source: Whiteshield, Global Labour Resilience Index 2023.

CONCLUSION

The path forward will require a more pronounced focus on citizen centricity

Resiliency matters

A resilient labour market is one that can fulfil the dual mission of generating sustainable demand for a wide range of occupations on one hand, and continuously supplying quality work on the other. Resilient labour markets are inclusive, sustainable, and able to withstand shocks because of their flexibility and adaptability.

The last two years have tested the limits of labour markets resilience, and the global labour force would have been in a worse position if it were not for the unprecedented government support.

An uneven recovery is taking place

Our insight show that the ten most resilient countries continue to improve their labour resilience profile. As their performance stayed balanced across all pillars, they were better equipped to endure the pandemic shock and initiate a faster recovery.

In contrast to the top performers, other countries have faced more pronounced obstacles on their road to recovery. In particular, the labour markets of lower-income and Sub-Saharan African countries are struggling to return to their pre-pandemic levels of employment. Not only is their adaptive capability

severely impeded, but cyclical and structural resilience leave significant room for improvement. Policies should be oriented to strengthen cyclical resilience in the short and medium run. It is worth noting that the gap to developed countries may continue to widen if policies fall short of improving cyclical and structural resilience.

More holistically, there appears to be a few concerning trends at the regional and income group levels. While countries in Europe and, to a lesser extent, Asia, show growth of resilience, other regions are stagnating (North America) or even regressing. In that regard, Latin America & Caribbean hold the worst growth rate. Among income groups, only high-income countries are showing growth in their resilience.

If these trends are confirmed, we may be witnessing a decoupling process, where some countries stall or regress, while others boost resilience and progress. This is particularly important because resilience is not just about how labour markets respond and recover in the face of short-term shocks, but also about how well prepared they are to address future challenges.

Resilience calls for a more pronounced focus on the citizen

The world is witnessing an accelerated transition to high-skilled labour, and this trend is particularly apparent in higher resilience countries. Governments and policymakers of top performing countries have successfully managed to equip their labour force with the right skills and capabilities. However, such improvements need to be maintained and continuously applied, especially in light of mounting challenges such as skills shortage in places like Germany.

Contrary to their top-performing counterparts, low-performing countries are yet to plan and implement a successful transition to high-skilled labour. Instead, these countries are witnessing a shift from middle- to low-skill jobs. In no small part, this reveals the failure to address structural changes in the economy. Furthermore, it exposes the less skilled to the threat of technological displacement, which, in turn, contributes to a lowering of their labour resilience profile.

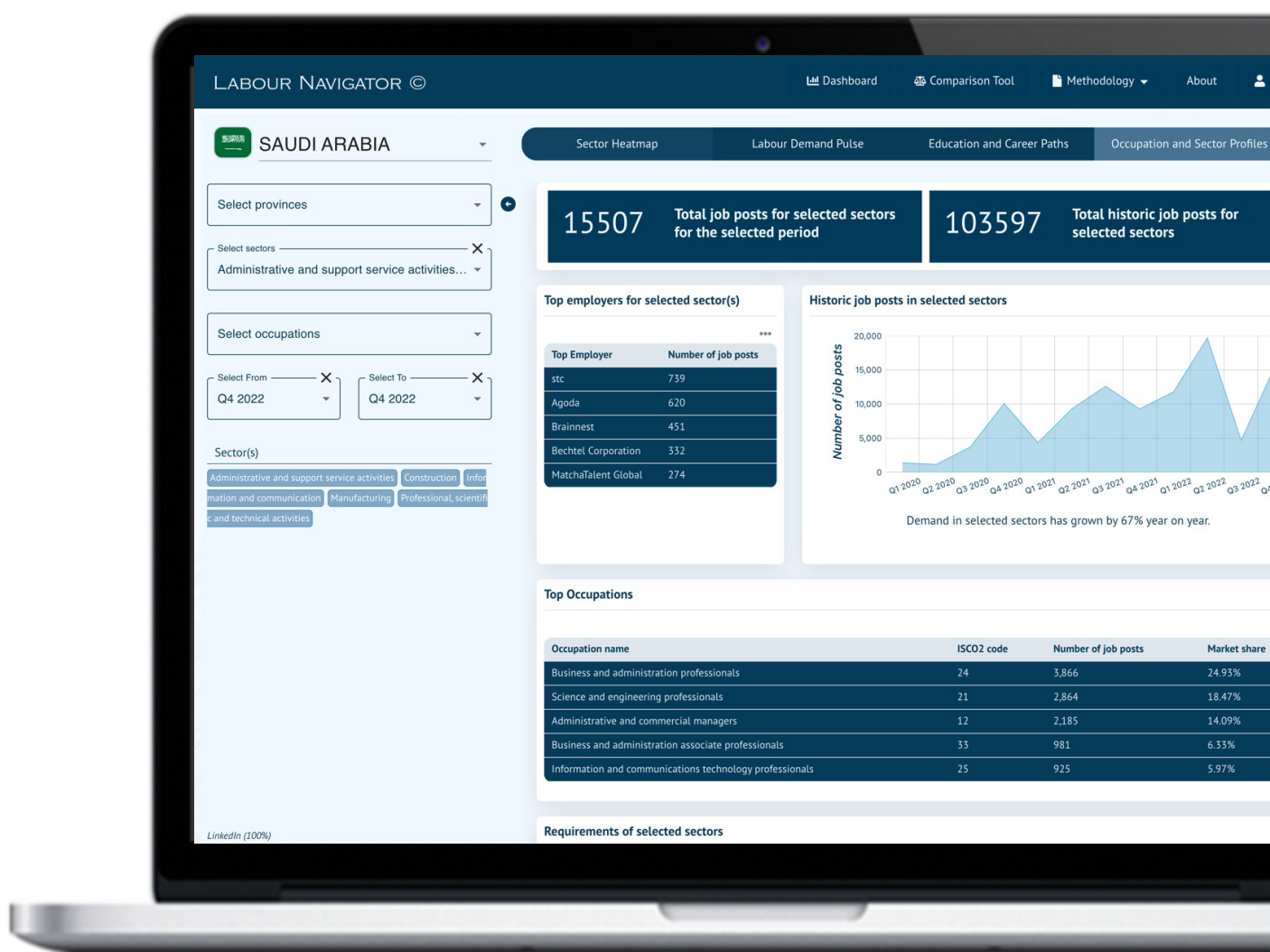
Policies to counteract such a trend must consider the absorptive capacity of the people. The traditional approach of formulating policies in isolation of the individuals they are meant to impact can only

have a limited influence on building resilient markets. Instead, a more pronounced focus on the citizen and the worker would help improve the condition of the future workforce through targeted training, upskilling, and re-skilling. To do so, a systematic appraisal of key skills is needed to effectively shape the future state of human capital.

Whiteshield's labour navigator tool helps identify the latest trends in labour markets

As an advocate of citizen-centric policy formulation, Whiteshield developed its Whiteshield Labour Navigator tool to help identify the latest trends in labour markets through its rich array of live information on demands for jobs, and the skills required to perform them. Most importantly, the intelligence it offers can be used to make data-driven decisions based on the current tendencies in the labour market. The merit of this novel approach lies in its ability to capture, in real time, the new types of jobs that are emerging, the tasks to be performed, and the skills needed.

WHITESHIELD'S LABOUR NAVIGATOR TOOL HELPS IDENTIFY THE LATEST TRENDS IN LABOUR MARKETS



GLOBAL RANKINGS

GLOBAL RANKING

Table 6: Full GLRI 2023 Results by Country

Country	GLRI Rank	GLRI Score (0 to 100)	1. Structural Rank	Structural Score (0 to 100)	2. Cyclical Rank	Cyclical Score (0 to 100)	Trend 2018 - 2023
Denmark	1	80	4	78	1	81	3
Switzerland	2	79	12	76	2	80	-1
Germany	3	78	1	81	7	77	-1
Netherlands	4	78	7	78	4	78	-1
Sweden	5	78	6	78	5	78	1
Singapore	6	77	9	77	6	77	-1
Luxembourg	7	76	10	77	9	76	3
Finland	8	76	18	73	8	77	0
Austria	9	76	3	79	12	74	-2
Norway	10	75	31	69	3	79	1
Belgium	11	74	20	73	13	74	-2
UK	12	74	21	73	14	74	2
France	13	74	15	75	15	73	0
USA	14	73	23	73	17	73	-2
Iceland	15	72	40	68	11	75	2
Ireland	16	72	22	73	19	71	0
Korea	17	71	8	77	22	69	3
Czechia	18	71	2	79	25	67	4
Slovenia	19	71	5	78	24	68	0
Israel	20	71	17	73	21	70	1
Canada	21	70	33	69	18	71	-6
New Zealand	22	70	65	61	10	75	1
Japan	23	70	19	73	23	68	-5
Estonia	24	69	39	68	20	70	2
Spain	25	68	27	72	26	67	2
Australia	26	68	76	59	16	73	-1
Slovakia	27	68	11	77	33	63	3
Hungary	28	68	24	73	29	65	5
Portugal	29	67	32	69	27	67	-1
Malta	30	67	37	68	28	66	-6
Poland	31	67	14	75	35	62	-2
Italy	32	66	25	72	34	63	0
Lithuania	33	66	29	70	31	64	6
China	34	66	13	75	39	61	0
Latvia	35	65	35	68	32	64	2
Cyprus	36	64	47	65	30	64	2
UAE	37	64	41	68	36	62	-1
Thailand	38	64	16	74	46	59	-3
Malaysia	39	63	30	70	41	60	-8

Country	GLRI Rank	GLRI Score (0 to 100)	1. Structural Rank	Structural Score (0 to 100)	2. Cyclical Rank	Cyclical Score (0 to 100)	Trend 2018 - 2023
Croatia	40	63	26	72	49	58	0
Romania	41	62	38	68	42	59	0
Bulgaria	42	61	53	64	43	59	0
Uruguay	43	60	78	58	37	61	6
Mauritius	44	60	59	61	47	59	0
Russia	45	60	62	61	45	59	9
Moldova	46	60	54	64	51	57	7
Turkey	47	59	34	69	58	55	9
Vietnam	48	59	44	65	54	56	7
Costa Rica	49	59	86	56	40	60	-6
Serbia	50	59	55	64	56	56	-5
Chile	51	58	99	53	38	61	-4
Mexico	52	58	36	68	62	53	-4
Georgia	53	58	80	57	44	59	-1
Kazakhstan	54	58	68	60	52	57	-4
Qatar	55	58	81	57	48	59	-9
Ukraine	56	57	52	64	61	54	8
Greece	57	57	66	60	55	56	5
Seychelles	58	57	89	56	50	57	-7
Indonesia	59	57	43	66	67	52	1
North Macedonia	60	56	60	61	60	54	1
Armenia	61	56	61	61	63	53	5
Montenegro	62	56	87	56	57	56	-3
India	63	55	28	71	83	48	4
Azerbaijan	64	55	98	54	53	56	30
Philippines	65	55	45	65	73	50	-7
Panama	66	55	56	63	71	51	-3
Bahrain	67	54	94	54	59	54	5
Albania	68	54	77	58	65	52	3
Jordan	69	54	48	65	78	48	-4
Argentina	70	54	82	57	66	52	0
Saudi Arabia	71	53	79	58	72	51	-3
Egypt	72	53	42	67	92	46	3
Tunisia	73	53	50	64	84	48	10
Brazil	74	53	93	54	64	52	3
Peru	75	53	84	56	70	51	-6
Bosnia-Herzegovina	76	52	51	64	91	46	12
Morocco	77	52	63	61	87	47	2
Kyrgyzstan	78	52	75	59	79	48	-21
Sri Lanka	79	52	72	59	81	48	8
Dominican Republic	80	51	58	62	90	46	0
Colombia	81	51	106	52	69	51	-8

Country	GLRI Rank	GLRI Score (0 to 100)	1. Structural Rank	Structural Score (0 to 100)	2. Cyclical Rank	Cyclical Score (0 to 100)	Trend 2018 - 2023
Nepal	82	51	57	63	95	46	9
Trinidad & Tobago	83	51	74	59	89	47	-5
El Salvador	84	51	64	61	94	46	-8
Paraguay	85	50	85	56	85	48	4
Jamaica	86	50	107	52	74	50	-5
Kuwait	87	50	104	53	76	49	-3
South Africa	88	50	108	51	75	49	2
Oman	89	50	129	45	68	52	-3
Lebanon	90	49	49	64	104	42	-16
Kenya	91	49	69	60	97	44	2
Mongolia	92	49	120	48	77	49	-7
Guatemala	93	48	70	59	102	43	-1
Tajikistan	94	48	73	59	101	43	11
Cape Verde	95	48	115	49	86	47	-13
Pakistan	96	48	46	65	111	40	8
Rwanda	97	48	121	48	80	48	0
Botswana	98	48	122	48	82	48	-3
Senegal	99	47	91	55	99	43	1
Namibia	100	47	123	47	88	47	6
Bangladesh	101	47	67	60	106	41	1
Tanzania	102	47	96	54	100	43	-4
Ecuador	103	47	116	49	96	45	-7
Ghana	104	46	125	47	93	46	-5
Bolivia	105	46	113	50	98	44	-4
Laos	106	45	92	55	107	40	2
Honduras	107	45	97	54	105	41	-4
Benin	108	45	90	56	112	39	14
Cambodia	109	44	112	50	103	42	0
Uganda	110	44	100	53	109	40	0
Iran	111	44	110	51	108	40	2
Myanmar	112	44	71	59	121	36	2
Algeria	113	44	109	51	110	40	-2
Gambia	114	44	83	57	118	37	-2
Nicaragua	115	43	101	53	115	38	-8
Nigeria	116	42	117	49	113	38	4
Côte d'Ivoire	117	42	95	54	120	36	1
Ethiopia	118	42	88	56	128	34	-2
Guinea	119	41	102	53	125	35	5
Malawi	120	41	118	49	117	37	1
Madagascar	121	41	105	52	123	36	2
Lesotho	122	41	114	50	119	36	-7
Cameroon	123	39	124	47	124	36	6
Burkina Faso	124	39	130	42	116	38	-7
Zambia	125	39	132	39	114	38	1

Country	GLRI Rank	GLRI Score (0 to 100)	1. Structural Rank	Structural Score (0 to 100)	2. Cyclical Rank	Cyclical Score (0 to 100)	Trend 2018 - 2023
Zimbabwe	126	38	126	46	127	35	1
Mauritania	127	38	119	49	131	32	1
Burundi	128	37	128	45	129	33	4
Mali	129	36	127	46	132	32	-10
Mozambique	130	36	134	37	122	36	1
Liberia	131	36	133	38	126	35	-6
Venezuela	132	35	131	41	130	32	-2
Haiti	133	35	103	53	134	26	0
Angola	134	32	135	35	133	31	0
Yemen	135	32	111	51	136	23	0
Chad	136	28	136	34	135	25	0

Table 7: Structural capability sub-pillar scores by country

Country	Structural Rank	Structural Score (0 to 100)	1.1 Demographics Rank	1.1 Demographics Score	1.2 Country capabilities Rank	1.2 Country Capabilities Score	1.3 Economic development Rank	1.3 Economic development Score	1.4 Trade vulnerability Rank	1.4 Trade vulnerability Score	1.5 Inequality Rank	1.5 Inequality Score
Germany	1	81	131	25	3	94	15	91	1	98	33	79
Czechia	2	79	119	30	6	90	24	88	18	79	4	95
Austria	3	79	114	34	7	88	14	91	8	85	23	82
Denmark	4	78	118	31	23	77	9	92	4	90	12	89
Slovenia	5	78	127	27	11	85	23	88	21	78	2	97
Sweden	6	78	121	30	8	86	16	91	12	83	19	85
Netherlands	7	78	120	30	30	74	6	93	3	92	18	85
Korea	8	77	102	45	4	94	18	89	26	71	31	79
Singapore	9	77	90	53	5	92	2	97	33	68	N/A	N/A
Luxembourg	10	77	91	52	26	76	1	100	22	77	51	72
Slovakia	11	77	105	42	13	83	26	88	45	61	1	100
Switzerland	12	76	112	34	2	97	4	95	35	68	46	75
China	13	75	84	60	17	80	41	80	5	89	78	62
Poland	14	75	111	34	27	75	29	86	7	86	23	82
France	15	75	125	28	18	80	11	92	9	84	36	77
Thailand	16	74	89	56	25	77	46	76	11	83	58	70
Israel	17	73	85	59	21	77	13	92	24	74	80	61
Finland	18	73	133	21	14	83	17	90	28	70	12	89
Japan	19	73	136	0	1	100	22	88	17	80	43	76
Belgium	20	73	115	33	22	77	8	92	46	60	10	90
UK	21	73	110	36	10	85	12	92	27	70	60	70
Ireland	22	73	94	51	15	81	7	93	70	51	25	81
USA	23	73	104	43	12	84	3	95	19	79	94	54
Hungary	24	73	122	30	9	85	36	81	25	72	22	83
Italy	25	72	135	19	16	81	34	82	2	93	62	70
Croatia	26	72	128	26	33	70	35	81	13	82	16	86
Spain	27	72	117	31	34	70	30	85	6	88	52	72
India	28	71	55	80	48	63	60	68	20	79	65	69
Lithuania	29	70	126	28	31	72	19	89	14	82	63	70
Malaysia	30	70	60	78	24	77	43	78	39	65	92	55
Norway	31	69	107	40	38	68	33	82	50	59	12	89

Country	Structural Rank	Structural Score (0 to 100)	1.1 Demographics Rank	1.1 Demographics Score	1.2 Country capabilities Rank	1.2 Country Capabilities Score	1.3 Economic development Rank	1.3 Economic development Score	1.4 Trade vulnerability Rank	1.4 Trade vulnerability Score	1.5 Inequality Rank	1.5 Inequality Score
Portugal	32	69	134	20	35	70	40	80	10	84	40	76
Canada	33	69	109	37	44	66	21	89	34	68	48	75
Turkey	34	69	75	71	42	67	57	71	15	82	95	53
Latvia	35	68	124	28	36	69	27	87	23	75	54	72
Mexico	36	68	64	77	20	79	38	81	40	64	109	44
Malta	37	68	130	25	28	75	5	94	58	55	29	80
Romania	38	68	116	33	19	80	39	81	36	67	57	71
Estonia	39	68	123	29	29	74	25	88	55	57	27	81
Iceland	40	68	99	46	51	60	10	92	88	42	8	93
UAE	41	68	1	100	107	39	50	74	94	41	6	93
Egypt	42	67	48	85	72	52	84	60	37	66	32	79
Indonesia	43	66	54	81	70	53	61	68	31	68	74	65
Vietnam	44	65	69	75	55	58	86	60	32	68	65	69
Philippines	45	65	50	84	32	71	52	73	72	51	96	52
Pakistan	46	65	37	89	91	44	93	57	53	57	20	84
Cyprus	47	65	92	51	47	63	28	86	100	40	30	80
Jordan	48	65	35	90	61	56	72	64	80	47	49	74
Lebanon	49	64	65	76	49	61	62	68	90	42	34	78
Tunisia	50	64	74	72	45	64	79	62	69	51	40	76
Bosnia-Herzegovina	51	64	108	37	37	68	64	68	38	65	44	75
Ukraine	52	64	106	42	52	60	95	57	42	62	5	94
Bulgaria	53	64	129	26	40	67	42	79	16	81	88	57
Moldova	54	64	87	58	66	53	66	67	81	46	6	93
Serbia	55	64	113	34	39	68	67	67	30	69	54	72
Panama	56	63	71	73	41	67	32	83	44	61	119	33
Nepal	57	63	52	84	64	54	87	59	79	47	40	76
Dominican Republic	58	62	62	77	65	54	69	66	49	59	86	59
Mauritius	59	61	88	57	69	53	37	81	75	49	71	66
North Macedonia	60	61	93	51	60	56	63	68	60	54	44	75
Armenia	61	61	83	60	81	49	90	59	86	43	3	95
Russia	62	61	98	47	54	58	74	64	41	64	68	68

Country	Structural Rank	Structural Score (0 to 100)	1.1 Demographics Rank	1.1 Demographics Score	1.2 Country capabilities Rank	1.2 Country Capabilities Score	1.3 Economic development Rank	1.3 Economic development Score	1.4 Trade vulnerability Rank	1.4 Trade vulnerability Score	1.5 Inequality Rank	1.5 Inequality Score
Morocco	63	61	66	76	83	48	56	71	57	56	85	59
El Salvador	64	61	72	73	63	55	78	62	52	57	82	61
New Zealand	65	61	103	44	56	58	20	89	61	54	N/A	N/A
Greece	66	60	132	22	53	59	49	75	51	58	46	75
Bangladesh	67	60	47	86	97	42	80	62	95	41	36	77
Kazakhstan	68	60	68	75	84	48	97	56	109	37	15	88
Kenya	69	60	11	96	94	44	85	60	59	55	90	56
Guatemala	70	59	45	86	85	47	71	64	29	70	116	37
Myanmar	71	59	53	82	113	37	102	52	66	52	26	81
Sri Lanka	72	59	81	63	76	50	70	65	47	60	84	60
Tajikistan	73	59	29	93	98	42	117	44	64	52	50	73
Trinidad & Tobago	74	59	82	62	58	57	53	72	68	52	N/A	N/A
Kyrgyzstan	75	59	41	87	57	57	127	32	101	39	17	85
Australia	76	59	101	45	95	44	44	77	71	51	52	72
Albania	77	58	95	49	78	50	81	62	78	48	27	81
Uruguay	78	58	96	49	68	53	45	77	63	53	87	57
Saudi Arabia	79	58	34	92	43	67	83	61	98	40	N/A	N/A
Georgia	80	57	97	48	71	53	65	68	84	44	54	72
Qatar	81	57	2	98	74	51	59	68	99	40	N/A	N/A
Argentina	82	57	80	63	79	50	75	64	54	57	96	52
Gambia	83	57	10	96	110	38	106	50	91	42	67	68
Peru	84	56	73	72	112	37	48	75	62	54	105	48
Paraguay	85	56	58	80	87	47	76	63	74	49	101	49
Costa Rica	86	56	79	66	50	60	55	71	65	52	118	34
Montenegro	87	56	100	46	46	63	68	67	115	34	71	66
Ethiopia	88	56	32	92	105	40	112	47	97	41	58	70
Seychelles	89	56	70	74	93	44	51	74	134	15	35	78
Benin	90	56	28	93	103	41	98	55	111	36	76	63
Senegal	91	55	23	94	101	41	109	49	93	42	77	63
Laos	92	55	36	89	92	44	105	50	92	42	82	61
Brazil	93	54	78	69	62	55	91	58	48	59	117	35
Bahrain	94	54	18	95	59	56	92	57	107	37	N/A	N/A
Côte d'Ivoire	95	54	19	95	129	27	96	56	102	39	73	65

Country	Structural Rank	Structural Score (0 to 100)	1.1 Demographics Rank	1.1 Demographics Score	1.2 Country capabilities Rank	1.2 Country Capabilities Score	1.3 Economic development Rank	1.3 Economic development Score	1.4 Trade vulnerability Rank	1.4 Trade vulnerability Score	1.5 Inequality Rank	1.5 Inequality Score
Tanzania	96	54	14	96	119	35	113	45	73	50	89	57
Honduras	97	54	44	87	100	41	82	61	67	52	115	37
Azerbaijan	98	54	59	79	127	29	124	37	105	38	9	91
Chile	99	53	86	59	80	49	47	76	104	38	107	45
Uganda	100	53	3	98	90	45	116	44	96	41	100	51
Nicaragua	101	53	51	84	109	38	100	53	56	57	111	42
Guinea	102	53	21	94	133	16	111	47	112	36	20	84
Haiti	103	53	46	86	104	41	94	57	114	35	92	55
Kuwait	104	53	31	93	89	46	77	63	110	37	N/A	N/A
Madagascar	105	52	24	94	111	38	115	45	83	45	99	51
Colombia	106	52	77	71	67	53	54	71	76	48	124	22
Jamaica	107	52	76	71	86	47	73	64	106	38	110	44
South Africa	108	51	49	85	73	51	58	70	43	61	127	0
Algeria	109	51	57	80	115	36	118	43	132	17	11	89
Iran	110	51	56	80	88	46	122	38	89	42	91	56
Yemen	111	51	20	94	116	36	119	43	122	27	70	66
Cambodia	112	50	42	87	77	50	99	55	117	34	N/A	N/A
Bolivia	113	50	61	77	117	36	104	50	85	44	103	49
Lesotho	114	50	43	87	108	39	110	48	103	39	107	45
Cape Verde	115	49	40	87	75	50	114	45	125	24	98	52
Ecuador	116	49	63	77	126	32	89	59	77	48	113	39
Nigeria	117	49	16	95	132	19	103	51	123	25	60	70
Malawi	118	49	13	96	121	35	108	49	131	17	79	62
Mauritania	119	49	27	94	128	29	120	40	129	19	38	76
Mongolia	120	48	38	89	118	35	128	32	126	22	39	76
Rwanda	121	48	25	94	99	41	107	49	127	21	104	48
Botswana	122	48	39	88	122	35	31	84	128	19	122	24
Namibia	123	47	33	92	96	44	88	59	82	46	126	10
Cameroon	124	47	15	95	131	22	101	53	108	37	112	41
Ghana	125	47	26	94	124	34	126	36	116	34	101	49
Zimbabwe	126	46	22	94	120	35	121	40	87	43	120	32
Mali	127	46	8	96	125	34	133	27	130	18	69	68
Burundi	128	45	7	96	102	41	132	28	135	14	80	61

Country	Structural Rank	Structural Score (0 to 100)	1.1 Demographics Rank	1.1 Demographics Score	1.2 Country capabilities Rank	1.2 Country Capabilities Score	1.3 Economic development Rank	1.3 Economic development Score	1.4 Trade vulnerability Rank	1.4 Trade vulnerability Score	1.5 Inequality Rank	1.5 Inequality Score
Oman	129	45	12	96	82	49	123	38	121	29	N/A	N/A
Burkina Faso	130	42	6	96	106	40	134	26	124	24	113	39
Venezuela	131	41	67	75	130	27	125	37	119	31	106	46
Zambia	132	39	4	97	114	37	130	29	113	36	125	15
Liberia	133	38	30	93	134	9	135	21	133	15	63	70
Mozambique	134	37	17	95	123	35	136	20	120	30	123	23
Angola	135	35	5	97	135	4	129	30	118	31	121	29
Chad	136	34	9	96	136	0	131	29	136	0	75	64

Table 8: Cyclical capability sub-pillar scores by country

Country	Cyclical Rank	Cyclical Score (0 to 100)	2.1 Absorptive Capability Rank	2.1 Absorptive Capability Score	2.2 Adaptive Capability Rank	2.2 Adaptive Capability Score	2.3 Transformative Capability Rank	2.3 Transformative Capability Score	2.4 Institutional Capability Rank	2.4 Institutional Capability Score
Denmark	1	81	1	82	7	71	4	73	1	98
Switzerland	2	80	4	80	3	76	2	74	5	92
Norway	3	79	5	79	12	69	6	73	3	93
Netherlands	4	78	6	79	10	70	8	72	6	92
Sweden	5	78	14	76	9	70	1	75	4	92
Singapore	6	77	16	75	1	79	3	74	15	84
Germany	7	77	2	81	17	67	5	73	9	87
Finland	8	77	13	76	11	69	12	69	2	95
Luxembourg	9	76	9	78	4	75	18	64	10	86
New Zealand	10	75	12	77	6	72	24	60	7	90
Iceland	11	75	8	78	18	65	16	66	8	87
Austria	12	74	7	78	23	62	10	70	12	85
Belgium	13	74	3	80	21	63	13	68	18	82
UK	14	74	17	74	5	74	15	67	17	82
France	15	73	10	77	22	63	9	70	22	79
Australia	16	73	15	76	8	70	31	58	11	86
USA	17	73	25	70	2	77	11	70	33	76
Canada	18	71	18	74	14	68	23	60	16	83
Ireland	19	71	11	77	24	61	30	59	14	85
Estonia	20	70	34	68	15	67	26	60	13	85
Israel	21	70	26	70	13	68	14	68	37	72
Korea	22	69	28	69	30	60	7	72	39	72
Japan	23	68	21	72	26	61	17	64	36	73
Slovenia	24	68	20	73	43	54	19	61	23	79
Czechia	25	67	19	74	41	54	22	60	26	78
Spain	26	67	27	70	34	58	28	59	25	78
Portugal	27	67	30	69	33	58	27	59	24	78
Malta	28	66	22	71	28	61	34	53	30	77
Hungary	29	65	37	67	44	53	20	61	31	77
Cyprus	30	64	31	69	19	65	41	50	42	71
Lithuania	31	64	38	67	38	56	39	52	20	79

Country	Cyclical Rank	Cyclical Score (0 to 100)	2.1 Absorptive Capability Rank	2.1 Absorptive Capability Score	2.2 Adaptive Capability Rank	2.2 Adaptive Capability Score	2.3 Transformative Capability Rank	2.3 Transformative Capability Score	2.4 Institutional Capability Rank	2.4 Institutional Capability Score
Latvia	32	64	48	64	37	56	35	53	19	82
Slovakia	33	63	33	68	49	51	36	53	29	78
Italy	34	63	24	70	56	49	29	59	43	70
Poland	35	62	36	67	63	48	33	57	34	75
UAE	36	62	67	58	16	67	25	60	49	66
Uruguay	37	61	35	68	82	44	38	52	28	78
Chile	38	61	49	63	31	60	76	40	21	79
China	39	61	41	67	36	56	21	60	75	58
Costa Rica	40	60	50	63	62	48	40	52	32	76
Malaysia	41	60	74	55	25	61	32	57	45	70
Romania	42	59	39	67	69	47	51	46	38	72
Bulgaria	43	59	32	68	61	48	63	43	44	70
Georgia	44	59	53	62	42	54	62	43	35	74
Russia	45	59	29	69	47	52	44	48	71	60
Thailand	46	59	42	66	46	52	61	43	46	69
Mauritius	47	59	85	52	29	61	46	47	27	78
Qatar	48	59	60	59	20	64	45	48	59	63
Croatia	49	58	44	66	77	45	56	45	40	72
Seychelles	50	57	N/A	N/A	54	50	43	48	82	53
Moldova	51	57	43	66	64	48	59	44	50	66
Kazakhstan	52	57	23	70	45	53	85	37	64	61
Azerbaijan	53	56	40	67	32	59	66	42	89	51
Vietnam	54	56	47	64	80	45	50	47	57	64
Greece	55	56	55	61	73	46	48	47	48	66
Serbia	56	56	57	60	57	49	52	46	51	65
Montenegro	57	56	56	61	35	57	71	42	67	60
Turkey	58	55	64	58	55	49	42	49	72	60
Bahrain	59	54	65	58	27	61	69	42	81	54
North Macedonia	60	54	58	60	51	50	55	45	73	58
Ukraine	61	54	46	65	72	46	70	42	77	56
Mexico	62	53	59	59	75	46	58	45	61	61
Armenia	63	53	79	54	48	52	64	43	58	64
Brazil	64	52	68	58	111	37	47	47	55	65

Country	Cyclical Rank	Cyclical Score (0 to 100)	2.1 Absorptive Capability Rank	2.1 Absorptive Capability Score	2.2 Adaptive Capability Rank	2.2 Adaptive Capability Score	2.3 Transformative Capability Rank	2.3 Transformative Capability Score	2.4 Institutional Capability Rank	2.4 Institutional Capability Score
Albania	65	52	73	55	76	46	74	41	52	65
Argentina	66	52	51	62	114	36	81	38	53	65
Indonesia	67	52	100	48	60	49	65	43	41	71
Oman	68	52	77	54	39	55	49	47	91	50
Colombia	69	51	69	57	83	44	89	35	56	64
Peru	70	51	52	62	85	43	87	36	79	56
Panama	71	51	71	57	84	44	79	40	70	60
Saudi Arabia	72	51	98	48	40	54	37	53	95	50
Philippines	73	50	88	52	70	47	78	40	66	60
Jamaica	74	50	72	55	58	49	73	41	94	50
South Africa	75	49	96	48	67	47	97	33	47	69
Kuwait	76	49	83	53	50	50	60	44	99	47
Mongolia	77	49	63	58	94	41	122	26	54	65
Jordan	78	48	108	46	52	50	83	38	60	62
Kyrgyzstan	79	48	54	62	87	43	113	28	83	52
Rwanda	80	48	105	47	59	49	86	37	62	61
Sri Lanka	81	48	91	50	88	42	82	38	63	61
Botswana	82	48	114	42	68	47	57	45	68	60
India	83	48	111	44	66	47	75	41	69	60
Tunisia	84	48	90	50	91	41	53	45	88	51
Paraguay	85	48	61	59	89	42	103	31	87	52
Cape Verde	86	47	89	51	65	47	95	34	78	56
Morocco	87	47	93	50	78	45	54	45	98	48
Namibia	88	47	84	53	71	46	88	36	92	50
Trinidad & Tobago	89	47	45	65	81	44	120	26	111	42
Dominican Republic	90	46	97	48	90	42	72	41	85	52
Bosnia-Herzegovina	91	46	70	57	105	38	101	32	93	50
Egypt	92	46	104	47	100	40	67	42	80	55
Ghana	93	46	102	47	97	40	90	35	65	61
El Salvador	94	46	75	55	110	37	114	28	74	58
Nepal	95	46	78	54	95	41	106	30	86	52

Country	Cyclical Rank	Cyclical Score (0 to 100)	2.1 Absorptive Capability Rank	2.1 Absorptive Capability Score	2.2 Adaptive Capability Rank	2.2 Adaptive Capability Score	2.3 Transformative Capability Rank	2.3 Transformative Capability Score	2.4 Institutional Capability Rank	2.4 Institutional Capability Score
Ecuador	96	45	66	58	123	33	105	31	84	52
Kenya	97	44	107	46	79	45	84	37	103	45
Bolivia	98	44	62	58	116	36	116	27	106	44
Senegal	99	43	110	44	106	38	96	34	76	56
Tanzania	100	43	106	46	93	41	91	35	96	49
Tajikistan	101	43	86	52	74	46	107	30	114	39
Guatemala	102	43	101	47	96	40	104	31	90	50
Cambodia	103	42	76	55	112	37	126	24	105	44
Lebanon	104	42	95	48	53	50	68	42	132	22
Honduras	105	41	94	49	108	38	108	30	104	44
Bangladesh	106	41	99	48	118	36	100	32	110	42
Laos	107	40	92	50	101	39	112	28	115	39
Iran	108	40	103	47	120	35	98	33	112	41
Uganda	109	40	119	41	113	37	99	33	97	49
Algeria	110	40	87	52	109	37	118	27	121	35
Pakistan	111	40	126	38	98	40	93	34	101	47
Benin	112	39	116	42	104	39	77	40	119	35
Nigeria	113	38	112	44	102	39	102	32	122	35
Zambia	114	38	122	41	92	41	121	26	109	43
Nicaragua	115	38	81	54	117	36	123	26	130	26
Burkina Faso	116	38	118	41	126	31	110	29	102	47
Malawi	117	37	115	42	121	34	117	27	108	43
Gambia	118	37	134	32	107	38	94	34	100	47
Lesotho	119	36	124	39	103	39	125	25	116	38
Côte d'Ivoire	120	36	133	34	115	36	80	40	120	35
Myanmar	121	36	82	53	131	27	127	24	129	28
Mozambique	122	36	113	44	129	29	128	23	113	41
Madagascar	123	36	117	41	125	31	129	23	107	43
Cameroon	124	36	120	41	122	34	92	35	128	29
Guinea	125	35	109	45	99	40	124	25	131	24
Liberia	126	35	130	36	86	43	N/A	N/A	127	30
Zimbabwe	127	35	125	38	124	32	115	27	117	38
Ethiopia	128	34	121	41	128	29	119	26	118	37

Country	Cyclical Rank	Cyclical Score (0 to 100)	2.1 Absorptive Capability Rank	2.1 Absorptive Capability Score	2.2 Adaptive Capability Rank	2.2 Adaptive Capability Score	2.3 Transformative Capability Rank	2.3 Transformative Capability Score	2.4 Institutional Capability Rank	2.4 Institutional Capability Score
Burundi	129	33	129	37	119	36	130	23	123	35
Venezuela	130	32	80	54	134	25	132	19	133	19
Mauritania	131	32	128	37	132	26	111	28	125	33
Mali	132	32	132	34	127	29	109	29	126	33
Angola	133	31	123	40	133	25	131	22	124	33
Haiti	134	26	127	38	136	22	N/A	N/A	135	18
Chad	135	25	135	29	135	22	N/A	N/A	134	18
Yemen	136	23	131	35	130	29	N/A	N/A	136	2

DATA SOURCES

- [1] EUROSTAT. 2022. Job vacancy rate. online data code: JVS_Q_NACE2 (2022). Retrieved October 12, 2022 from https://ec.europa.eu/eurostat/databrowser/product/view/JVS_Q_NACE2.
- [2] Harvard Kennedy School, Growth Lab, The Atlas of Economic Complexity. 2022. *Export Basket in 2020* (2022). Retrieved October 18, 2022 from <https://atlas.cid.harvard.edu/countries/41/export-basket>.
- [3] International Labour Organization, ILOSTAT, ILOEST. 2022. *Employment by sex and occupation -- ILO modelled estimates, Nov. 2022 (thousands) -- Annual* (2022). Retrieved January 12, 2023 from <https://ilostat.ilo.org/data/>.
- [4] Edouard Mathieu, Hannah Ritchie, Esteban Ortiz-Ospina, Max Roser, Joe Hasell, Cameron Appel, Charlie Giattino, and Lucas Rodés-Guirao. 2021. A global database of COVID-19 vaccinations. *Nature human behaviour* 5, 7, 947–953. DOI: <https://doi.org/10.1038/s41562-021-01122-8>.
- [5] Norges Bank Investment Management. <https://www.nbim.no/>. Retrieved November 17, 2022 from.
- [6] OECD. 2022. *International Migration Outlook 2022*.
- [7] Statistics Netherlands. 2021. *Dutch Trade in Facts and Figures 2022. Exports, imports & investment*. Statistics Netherlands, The Hague.
- [8] The World Bank, Data Help Desk, Knowledge Base, Country Classification. 2022. *World Bank Country and Lending Groups* (2022). Retrieved January 12, 2023 from <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.
- [9] The World Bank, World Development Indicators. 2022. *Central government debt, total (% of GDP)* (2022). Retrieved November 9, 2022 from <https://data.worldbank.org/indicator/GC.DOD.TOTL.GD.ZS>.
- [10] The World Bank, World Development Indicators. 2022. *Exports of goods and services (% of GDP)* (2022). Retrieved November 9, 2022 from <https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS>.
- [11] The World Bank, World Development Indicators. 2022. *GDP growth (annual %)* (2022). Retrieved November 9, 2022 from <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>.
- [12] The World Bank, World Development Indicators. 2022. *GDP per*

capita, PPP (constant 2017 international \$) (2022). Retrieved November 9, 2022 from <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD>.

[13] The World Bank, World Development Indicators. 2022. *Population ages 65 and above (% of total population) (2022)*. Retrieved October 26, 2022 from <https://data.worldbank.org/indicator/SP.POP.65UP.TO.ZS>.

[14] The World Bank, World Development Indicators. 2022. *Services, value added (% of GDP) (2022)*. Retrieved November 9, 2022 from <https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS>.

[15] The World Bank, World Development Indicators. 2022. *Unemployment, total (% of total labor force) (2022)*. Retrieved October 21, 2022 from <https://data.worldbank.org/indicator/SL.UEM.TOTL.NE.ZS>.

[16] United Nations, Department Of Economic and Social Affairs, Statistics Division, Trade Statistics, UN Comtrade database. 2022. *Trade Data (2022)*. Retrieved October 28, 2022 from <https://comtradeplus.un.org/TradeFlow>.

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