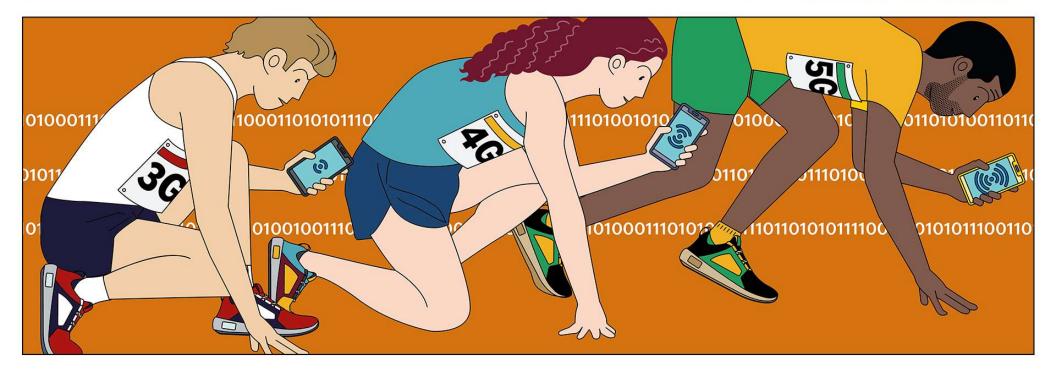
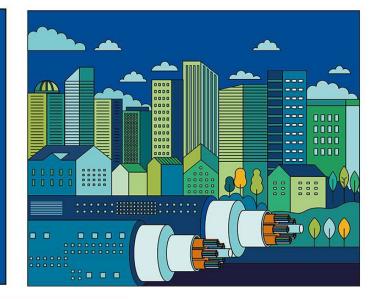
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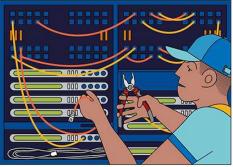
2021.tr-ebrd.com



DIGITAL DIVIDES

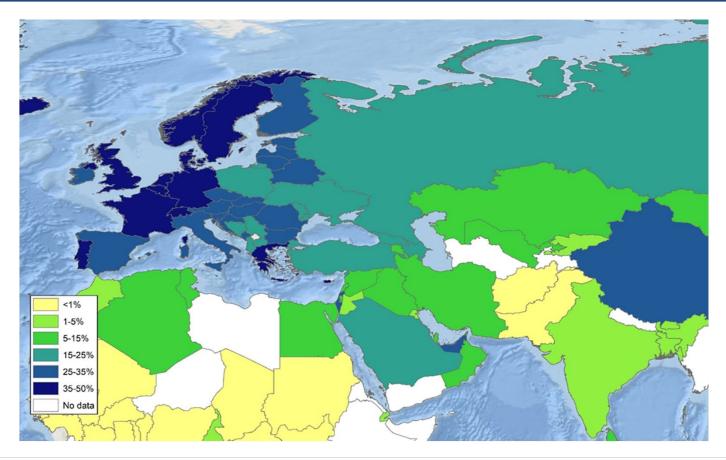






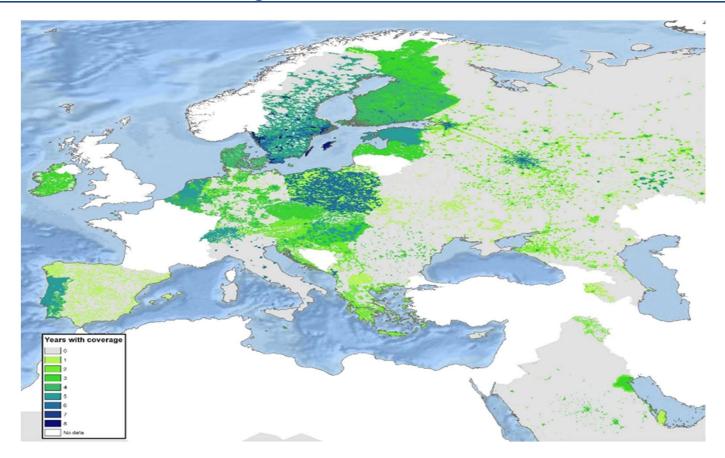


Adoption of fixed broadband, providing faster internet speeds, remains relatively limited in the EBRD regions



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Many economies in the EBRD regions lag western European economies, especially in faster 4G technologies

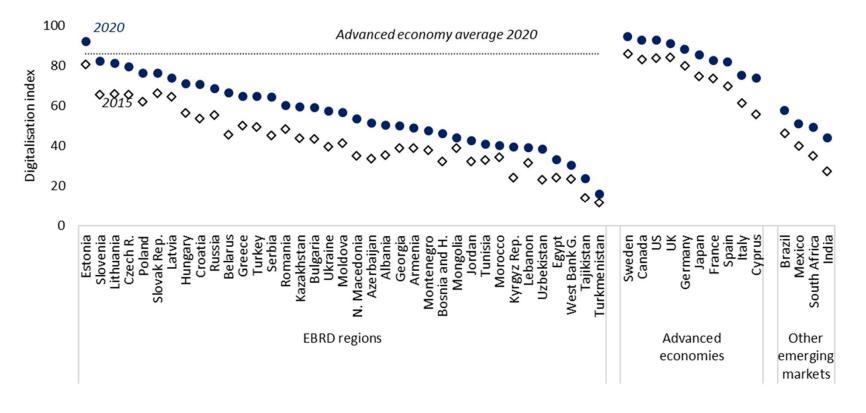


TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING THE DIGITAL DIVIDEND

Sources: Collins Bartholomew's Mobile Coverage Explorer, ESRI's World Ocean Base and authors' calculations. Darker colours indicate locations that received 4G coverage earlier between 2011-15. Missing data = white.

Large digital divides across countries

Large gap between the EBRD regions and advanced economies, especially for more advanced digital technologies

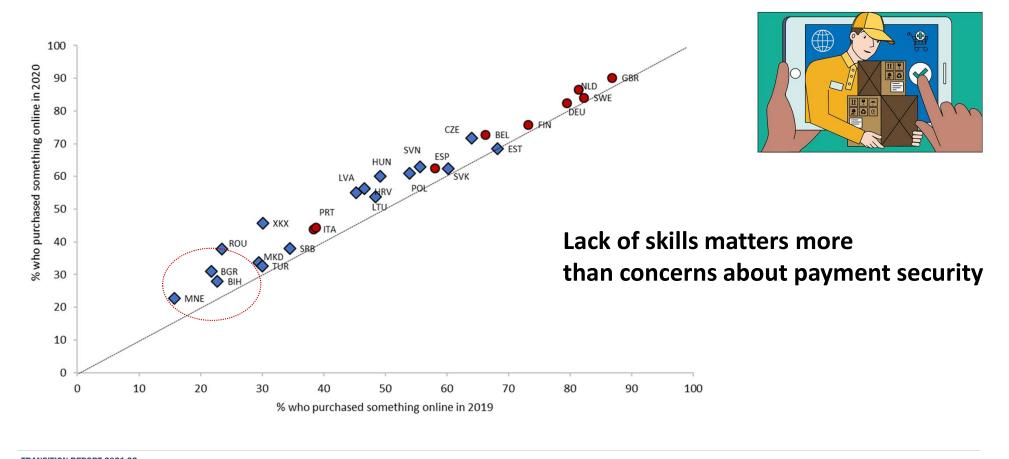


TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING

THE DIGITAL DIVIDEND

Source: Authors' calculations based on data from Enterprise Surveys, Findex, GSMA Mobile Connectivity Index, ITU-D ICT Statistics and Global Cybersecurity Reports, Ookla Speedtest Open Data, World Bank, World Economic Forum, UN, UNCTAD.

Online shopping has become more common, though still less prevalent than in Western Europe

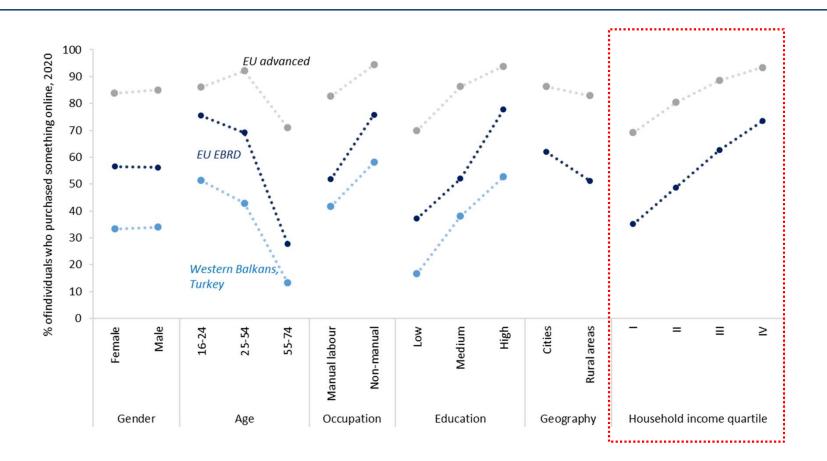


 TRANSITION REPORT 2021-22
 Sources: Eurostat and authors' calculations.

 SYSTEM UPGRADE: DELIVERING
 Notes: Based on a survey of individuals in the EU, Western Balkans and Turkey

6





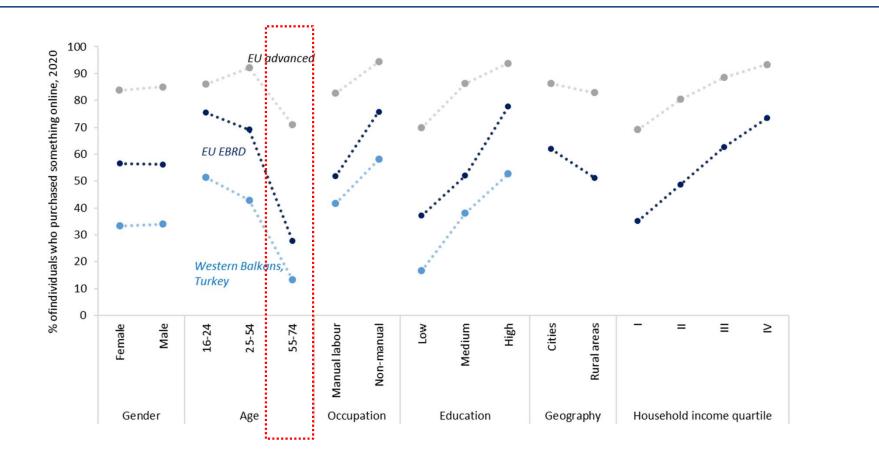
TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING

Sources: Eurostat and authors' calculations.

THE DIGITAL DIVIDEND

Notes: Based on a survey of individuals in the EU, Western Balkans and Turkey. EU comparators includes Germany, the Netherlands and Sweden.

Digital divide particularly pronounced among those over 55 years of age



TRANSITION REPORT 2021-22 Sources: Euro

Sources: Eurostat and authors' calculations.

THE DIGITAL DIVIDEND

Notes: Based on a survey of individuals in the EU, Western Balkans and Turkey. EU comparators includes Germany, the Netherlands and Sweden.

TELEWORKING, AI AND THE LABOUR FORCE



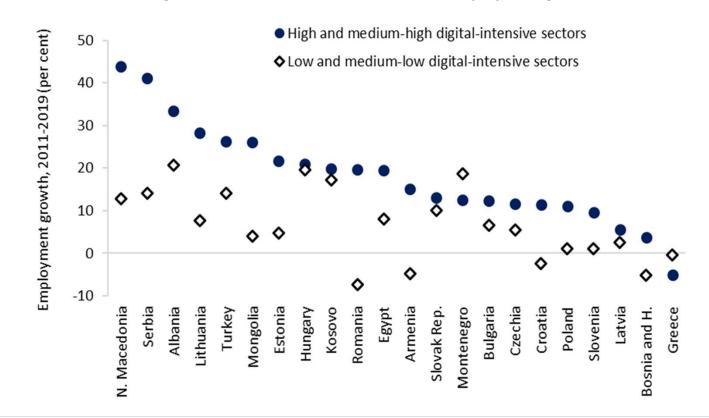








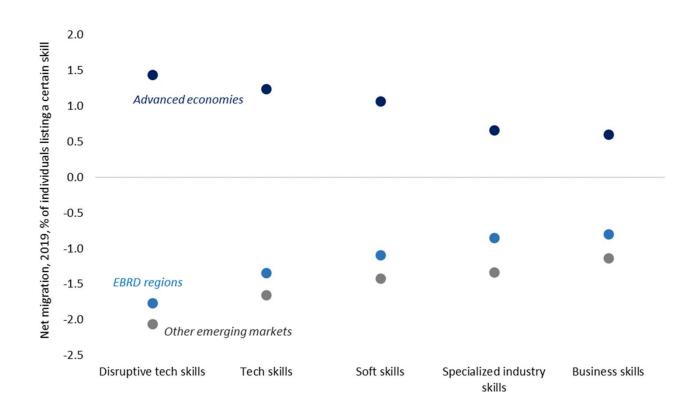
Economies have been shifting towards more digital-intensive sectors



More digital-intensive sectors have seen faster employment growth

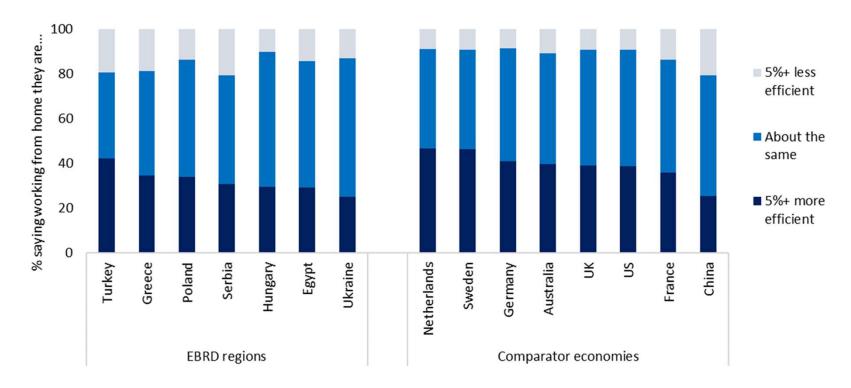
TRANSITION REPORT 2021-22 Source: ILO, OECD and authors' calculations. Digital intensity defined according to ISIC Rev.4 following the taxonomy in Calvino and others (2018). SYSTEM UPGRADE: DELIVERING

Digital brain drain from the EBRD regions



TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING THE DIGITAL DIVIDEND Source: World Bank-LinkedIn database and authors' calculations. Simple average across 30 economies in EBRD regions, 41 advanced economies and 48 other emerging markets. See Zhu et al. (2018) for descriptions of skill groups

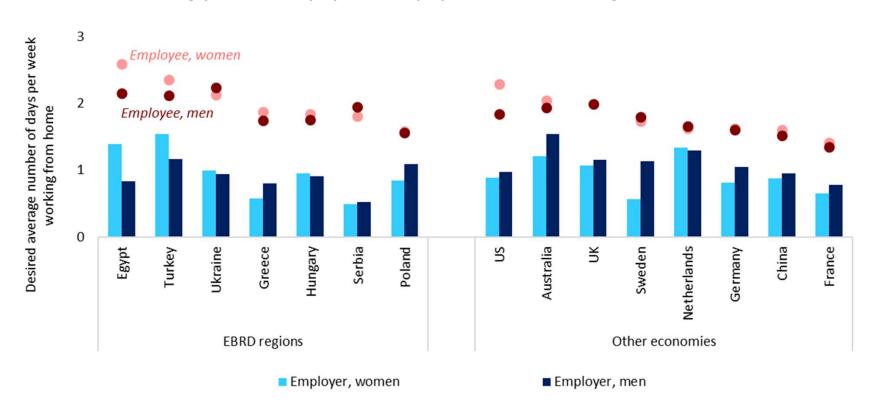
Latest developments: Working from home



Employees, on balance, feel more productive when working from home

TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING THE DIGITAL DIVIDEND Source: EBRD-ifo Survey 2021, and authors' calculations. How does your efficiency working from home during the COVID-19 pandemic compare to your efficiency working on business premises before the pandemic?

Employers, however, are less keen on work from home

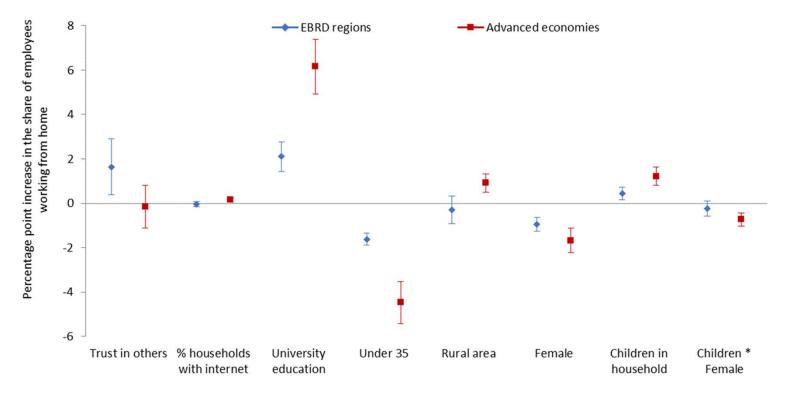


A gap between employee and employer views about working from home

 TRANSITION REPORT 2021-22
 Source: EBRD-ifo Survey 2021, authors' calculations. Questions: After Covid-19, in 2022 and later, how often (i) would you like to work from home?; (ii) is your employer planning for you to work full days at home?

 THE DIGITAL DIVIDEND
 Source: EBRD-ifo Survey 2021, authors' calculations. Questions: After Covid-19, in 2022 and later, how often (i) would you like to work from home?; (ii) is your employer

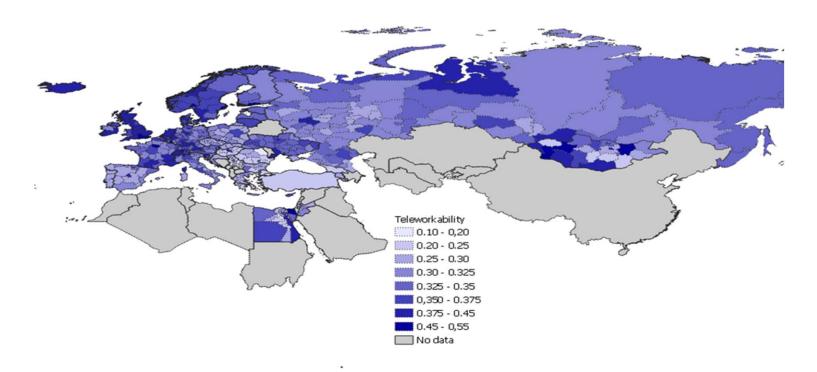
Work from home is more common where interpersonal trust is greater – taking occupation structure into account



Interpersonal trust is strongly associated with working from home in EBRD countries

TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING THE DIGITAL DIVIDEND Source: EU LFS (2014-2016), Serbian LFS (2019), European Social Survey (2008 - 2016), and authors' calculations. Based on the regression analysis, 95% conf intervals with robust se.

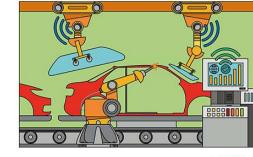
Future trends: EBRD regions have similar exposure to potential AI automation as advanced economies

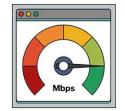


Around 40% of jobs are estimated to be exposed to automation in the medium term

TRANSITION REPORT 2021-22 Source: Various Labour Force Surveys (2014-2019), Felten et al. (2018) and authors' calculations. THE DIGITAL DIVIDEND

DIGITAL INFRASTRUCTURE AND FIRMS' PERFORMANCE





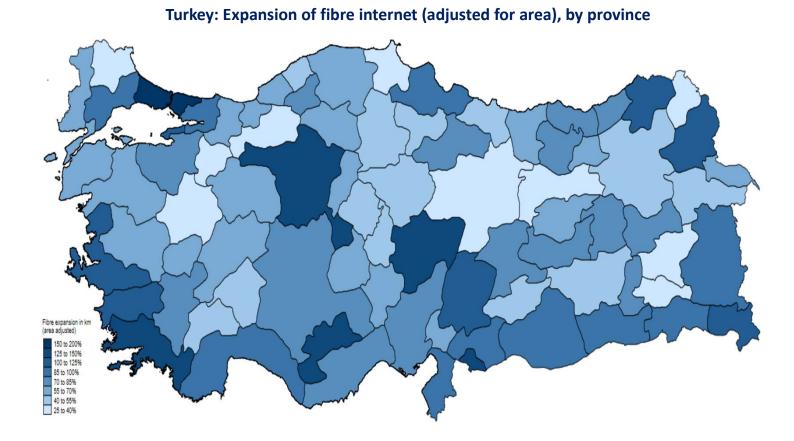








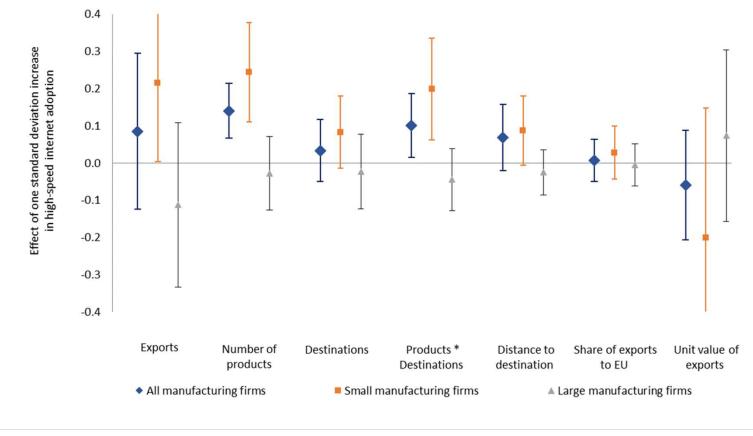
Case study: Turkey has invested heavily in expansion of fibre internet



TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING THE DIGITAL DIVIDEND

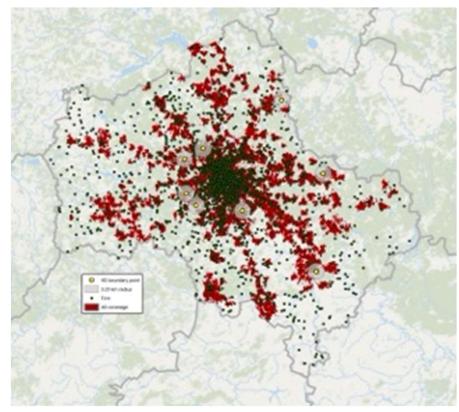
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Small manufacturers in ICT-intensive sectors benefitted by increasing the volume of exports and the range of exported products

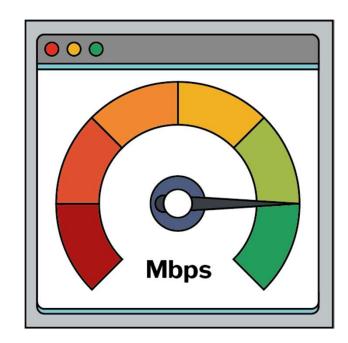


TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING THE DIGITAL DIVIDEND

4G rollout: Regression discontinuity analysis using firm geolocations



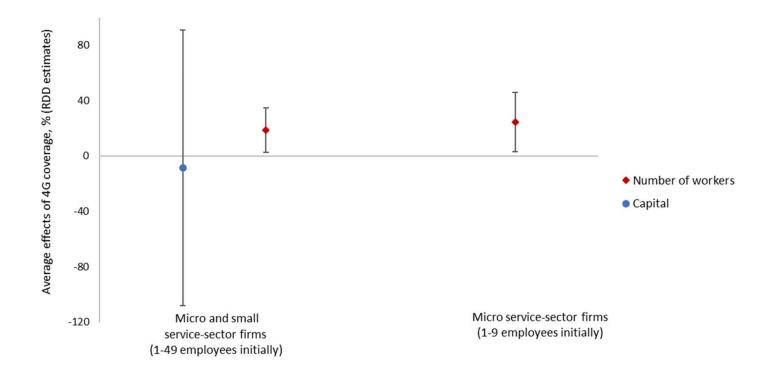
4G coverage frontiers and firms' locations around Moscow in 2013



TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING THE DIGITAL DIVIDEND

Sources: Collins Bartholomew's Mobile Coverage Explorer, Orbis ESRI's World Ocean Base and authors' calculations. 4G coverage in 2013 = red. Dark green = active firms in 2013. Yellow dots = boundary points along the frontier with a 3 km radius in shaded grey. A zoomed in view of two boundary points in the upper right corner.

In Russia, smaller firms increased employment by 18% on the back of 4G rollout

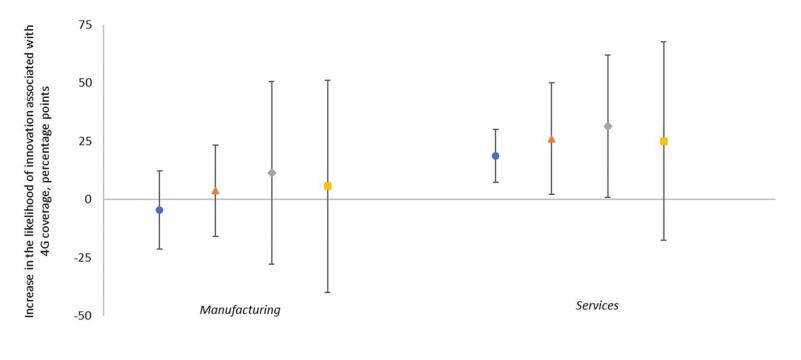


In Russia, smaller firms increased employment by 18% on the back of 4G rollout



Small firms in the service sector also introduced new products and services on the back of 4G rollout





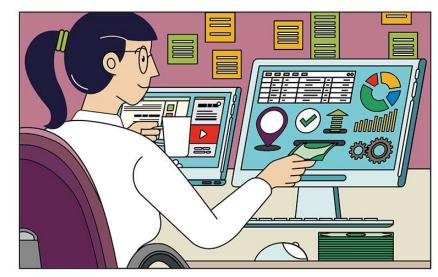
• Micro firms (1-9 employees) Small firms (10-49 employees) Medium firms (50-249 employees) Large firms (250+ employees)

TRANSITION REPORT 2021-22
SYSTEM UPGRADE: DELIVERING
THE DIGITAL DIVIDENDSources: Collins Bartholomew's Mobile Coverage Explorer, Enterprise Surveys, CIESEN Gridded Population of the World Version 4 and authors' calculations. Innovation
= product or a service that is new to a firm or a significantly improved product or service. 95% confidence intervals are based on robust standard errors.

FINTECH AND BANKS IN TRANSITION

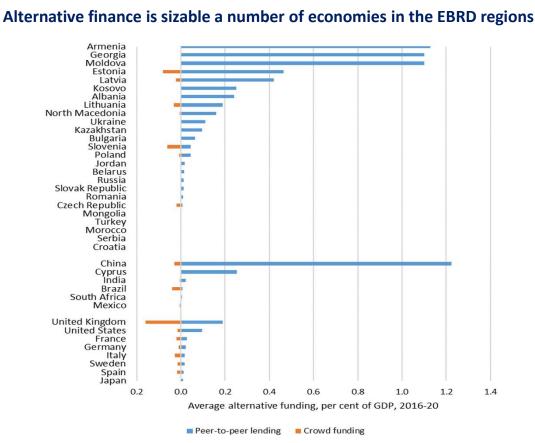


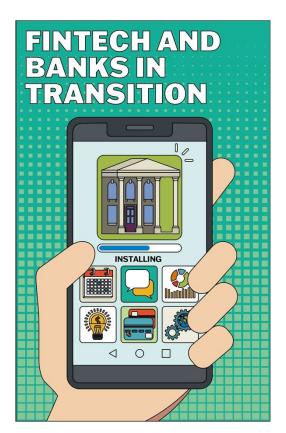






Technological disruption is transforming financial services across the EBRD regions



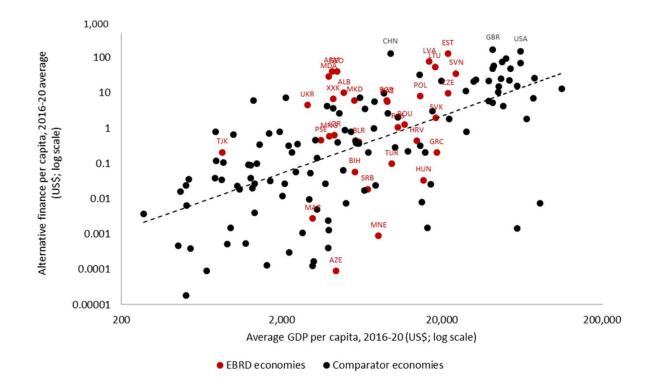


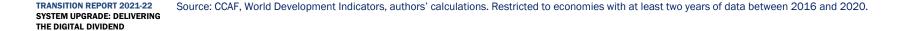
TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING THE DIGITAL DIVIDEND

Source: Cambridge Centre for Alternative Finance, the World Bank Development Indicators and authors' calculations. Average alternative funding comprises P2P lending and capital raised through investment- and non-investment based crowdfunding.

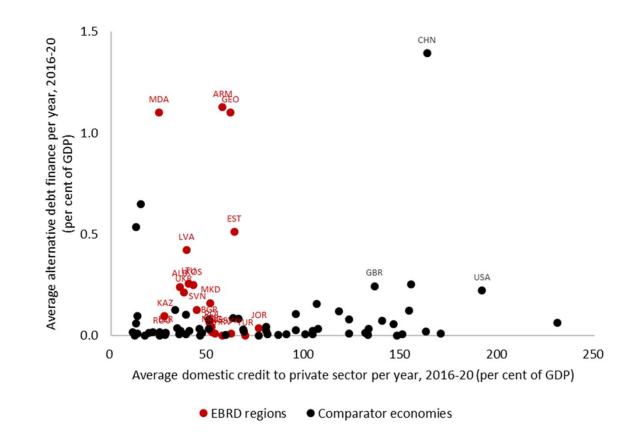
In some economies in EBRD regions, alternative finance is well above levels that could be expected based on per capita income

Alternative finance markets in the Baltics are large relative to per capita income



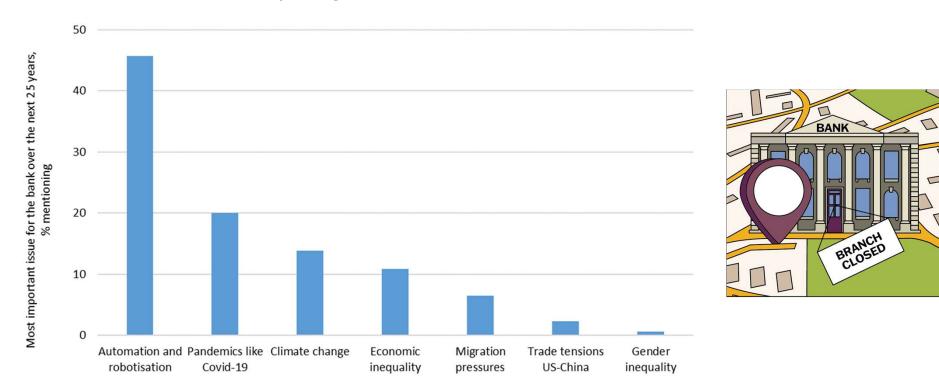


Large fintech sectors both where banking is highly developed and underdeveloped





Bank CEOs view digitalisation as the biggest challenge they face in coming years

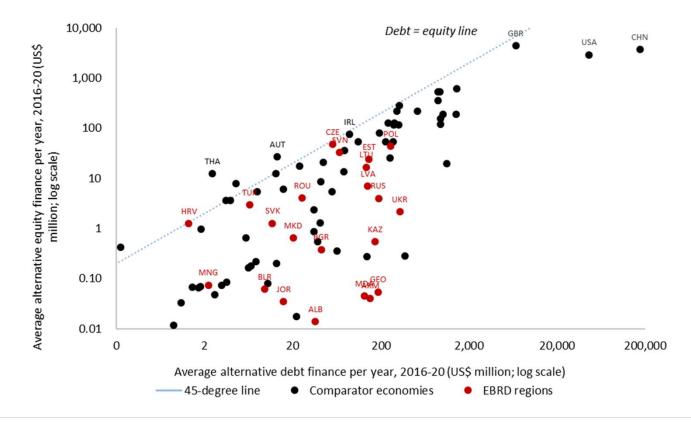


Automation is a key strategic concern for banks

TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING THE DIGITAL DIVIDEND

Fintech lending is far more developed than equity, exacerbating debt bias in the EBRD regions

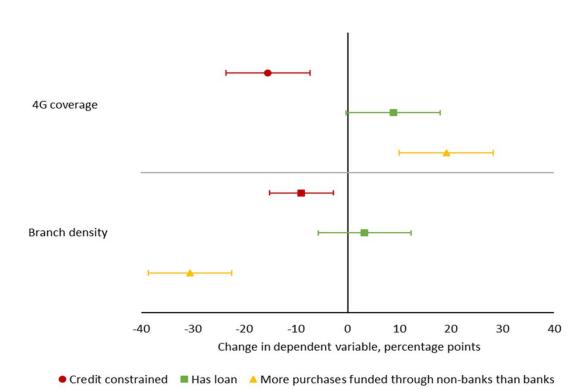
Alternative funding models are also slanted heavily towards debt funding



 TRANSITION REPORT 2021-22
 Source: Cambridge Centre for Alternative Finance and authors' calculations. Note: The sample is restricted to economies with at least two years of data between 2016-20.

 System UPGRADE: DELIVERING THE DIGITAL DIVIDEND
 20.

Faster mobile network coverage has helped relieve credit constraints for businesses



Access to 4G mobile networks enables access to finance for businesses

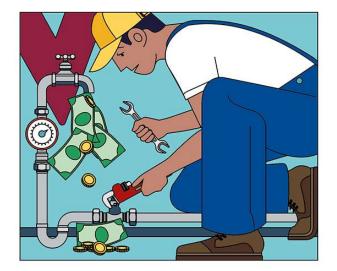
TRANSITION REPORT 2021-22
SYSTEM UPGRADE: DELIVERING
THE DIGITAL DIVIDENDSource: Enterprise Surveys and authors' calculations. OLS estimates of the impact of 4G mobile network availability at the sub-national region level on financial inclusion
at the firm level. 90% confidence intervals, se clustered by region. Region, country-year, sector-year FE and other controls. Localities with < 5 firms are excluded.</th>

Conclusions

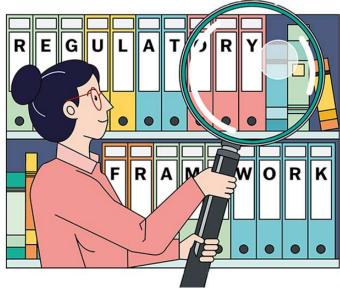
- Large differences across and within countries in both digital infrastructure and digital skills
- Significant digital brain drain from the EBRD regions
- Digitalisation has already brought about some structural changes in the EBRD regions and lowered costs of obtaining information for SMEs
- More changes to come, including significant exposure to potential Al automation
- Fintech sector has grown in economies with highly developed as well as underdeveloped financial markets . . . but it is biased towards debt (at the expense of equity)

THE FINANCIAL MARKET DEVELOPMENT INDEX

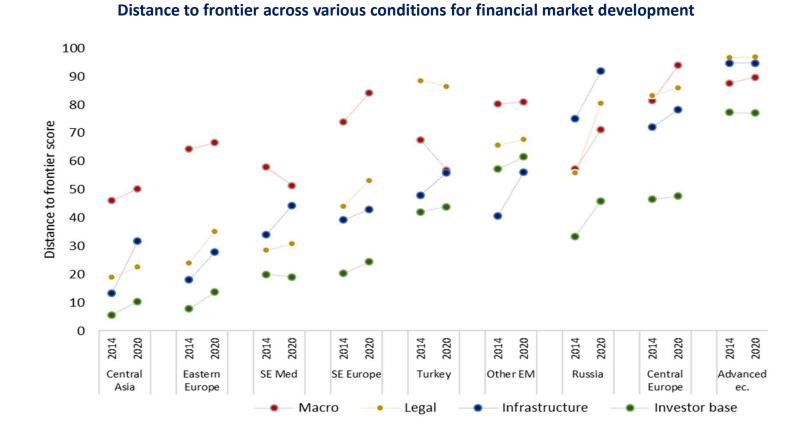








Improved conditions for capital market development in EBRD regions compared with 2014, but major challenges remain



TRANSITION REPORT 2021-22 SYSTEM UPGRADE: DELIVERING THE DIGITAL DIVIDEND

Source: National authorities, IMF, CEIC, Bloomberg and authors' calculations. Simple average across economies. Other emerging markets = Columbia, Peru, South Africa, Thailand. Advanced economies = Canada, Cyprus, France, Germany, Japan, Sweden, UK, US.

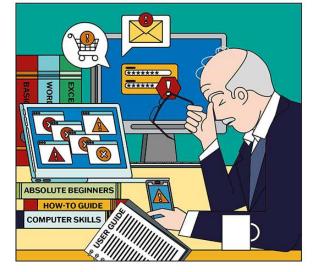
STRUCTURAL REFORM



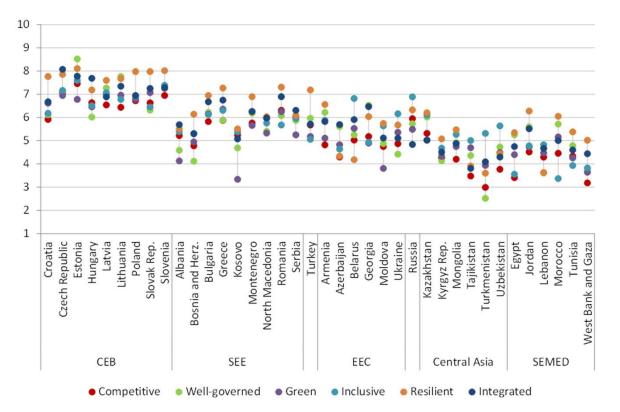








Continued reform efforts notwithstanding the Covid-19 crisis



ATQ scores for six qualities of a sustainable market economy, 2021

TRANSITION REPORT 2021-22 Source: EBRD. 1-10 scale where 10 represents a synthetic frontier corresponding to the standards of a sustainable market economy. SYSTEM UPGRADE: DELIVERING THE DIGITAL DIVIDEND

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