



Digital Density in Europe

More evidence of small business
ecommerce success promoting
inclusive growth

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ebay

EXECUTIVE SUMMARY

Regional economic disparities continue to plague Europe. While policymakers have had some meaningful successes at the country-level, inside many European markets regional imbalances are rife and getting worse. National capital regions, increasingly home to younger, more highly educated, and more productive citizens, are accelerating as growth hubs. Their “magnetic” ability to concentrate entrepreneurs, workers and financial capital threatens to reduce market opportunities in other regions, depress national economic potential, and undermine political, economic, and social cohesion.

This paper, using two indexes to rank regions at the NUTS 2 level in EU Member States and their equivalent in the UK, provides a hopeful counterweight to evidence that national capital regions and other European urban centers are the only winners from the digital revolution. One, called **eBay Digital Density**, is based on the per capita eBay selling activity carried out by registered eBay-enabled small businesses. The second, called **Relative Economic Advantage**, is based on a region’s GDP per capita.

The analysis confirms that the national capital regions are nearly always home to the wealthiest and most advantaged regional economy. In 20 of the 23 markets with more than one NUTS 2 region, the capital region enjoys the highest GDP per capita, often by a significant margin. Twenty-one of 23 are also their country’s most urbanized. eBay Digital Density presents a far more balanced picture. Robust eBay selling communities operate in a wide mix of regions whether viewed through the lens of geography, GDP per capita, population or population density. Nine of the capital regions that top their GDP per capita index also lead their eBay small business index, but nine regions with GDP per capita below their national average are top in eBay Digital Density, demonstrating that regional economic performance and wealth does not determine the capacity for digitization. Likewise, robust eBay small business communities emerge from vibrant secondary cities and more rural regions with small cities and towns, including seven Digital Density leaders with fewer than 100 people per square kilometer.

Ecommerce marketplace platforms that provide a level playing field have transformed the ability of independent small businesses to reach buyers locally, nationally, across Europe, and around the world. The success of small entrepreneurial enterprises to engage in trade offers one set of striking and measurable contrasts between traditional and digital business models. Across the 28 European markets studied, 97 percent

of all eBay-enabled small businesses export, while just over 6 percent of traditional European businesses sell across borders. The eBay-enabled small business exporters in the 27 EU markets average 20 different international destination markets, and those in the UK average 23, far outstripping the single digit results of traditional traders. Collectively, the eBay small business communities in each market have the global export reach of corporate giants.

This report offers a different perspective on the suggestion that Europe’s national capital regions and tech startup hotspots dominate every measure of entrepreneurship, the mastery of digital tools, and the ability to exploit global trade. Rather, digitally-enabled small businesses in Europe are succeeding in a manner that is far more balanced. Therefore, policies and public investments that facilitate ecommerce by independent small businesses can disproportionately pay dividends in regions that are otherwise slipping behind the growth hotspots, spurring more inclusive progress that promotes social cohesion.

Key Learnings

Minor cities and rural areas are emerging thanks to digitization. Independent small businesses are able to reach national and global markets through ecommerce, offering more choices to consumers and creating new sources of employment:

- **In 23 EU Member States** (with more than one NUTS 2 level region) **eBay Digital Density leaders average just 562 people per square kilometer**, compared to 1926 for the 23 national capital regions.
- While national capital regions top their country’s GDP per capita ranking 20 of 23 times, **they only top the eBay Digital Density ranking 9 times.**
- **97 percent of all eBay-enabled small businesses in Europe are exporting**; this rate reaches 100 percent in 22 EU Member States. This remarkable export success is far removed from traditional business operations where the comparable export rates are 6,5 percent in the EU and 6,6 percent in the UK.

Stimulating the growth of such areas should be a priority for European and national policymakers, for example by implementing public policies and investments that facilitate ecommerce access to SMEs.

INTRODUCTION



A long-standing challenge to inclusive economic opportunity in European markets has been the dominance of their vibrant capital cities. Their role as hubs of productivity, entrepreneurship, and growth is generally an attractive development when seen from within these centers of activity and culture. However, as the capital regions continue to “pull away” from the rest of their respective countries, it threatens to undermine long-term economic and social viability.

The eBay marketplace supports small businesses in countries across the globe. This is true across all regions of Europe, where entrepreneurs are often taking advantage of multiple ecommerce platforms to capitalize on sales opportunities, locally, nationally, and across borders. The eBay marketplace is a proven tool that empowers even very small businesses to reach consumers where they are, which is particularly valuable to small and medium-sized enterprises (SMEs) in remote and less prosperous communities.

This paper presents eBay “Digital Density” data, which is a country-level ranked measurement of the per capita eBay-enabled small business activity in European markets across 283 NUTS 2 level regions¹, indicating that the level playing field offered by eBay’s ecommerce marketplace is helping to counter the trend of capital city dominance in many countries. In most European markets, the region that dominates the traditional economy does not lead in small business Digital Density, illustrating that an ecommerce marketplace can allow independent small business owners to tap their entrepreneurial spirit and provide an inclusive counterbalance to the prevailing economic growth trends.

The ecommerce analysis in this report is based on data covering transactions on the eBay marketplace in 2020 unless otherwise indicated. When analyzing the activities of small businesses on eBay, the data was limited to transactions by sellers who were registered business enterprises in the 27 Member States of the European Union and the United Kingdom with sales of approximately EUR 8770 and GBR 7790 (equivalent to USD 10 000)² or more annually on the eBay marketplace. In this report, these sellers are called “eBay-enabled small businesses”.

Europe's "magnetic" national capitals: An urban paradox

Economic and social imbalances have plagued European markets for decades. Policymakers have responded, investing consistently increased funds in regional development since special regional development funds were introduced in 1975.³ In the latest iteration of the European Commission's Regional Development funding plan, priorities include spurring growth in Europe's southern and eastern regions, development of SMEs, especially through digitalization, growing the green economy and enhancing mobility.⁴ Meanwhile, in the UK, successive governments have sought to reduce regional inequalities with 'leveling up' between regions⁵, a key priority for the current Conservative government. It is important to note that there has been some progress within Europe as a whole, with inequality between countries declining over the last two decades, especially in the central and eastern regions, although less so in southern Europe.⁶ But, even as national GDP per capita in European markets has converged, the regions within each country have tended to grow apart in economic performance.⁷

National capital regions have played a central role in driving this trend of overall economic growth combined with greater regional economic inequalities inside countries. The capital cities in European markets are typically centers of education, science, social, cultural, and ethnic diversity. Workers in nearly all European national capital regions are more productive⁸, younger⁹, and more highly educated¹⁰ than elsewhere in their respective countries, and they draw in similar people, leading to "a slow process of geographic sorting, with more highly educated people clustering together."¹¹

This "magnetism" of many national capitals in European markets is a manifestation of an "urban paradox" as the concentration of investment and resources in a dominant urban region increasingly exacerbates social, economic, and environmental inequalities.¹² In economic terms, secondary cities and regions outside the national capital area have the potential to contribute more to output and growth in national markets and the European economy overall if they are given national and European support.¹³

Countries in focus: United Kingdom



The NUTS 2 level region of Greater Manchester is not just number one in Digital Density in the United Kingdom, but the top eBay-enabled small business selling region across all European markets. And, it sits at the center of a true "superhub" of eBay-enabled small business success, with the neighboring NUTS 2 regions of Lancashire and West Yorkshire holding 3rd and 4th in Digital Density in the United Kingdom. Only Outer London West and North West cracks their hold on the top four spots. When pulling out to look at the NUTS 1 level, it is clear that eBay is helping regionally balance the economy, with the top four regions in Digital Density being North West, West Midlands, East Midlands and Yorkshire, and the Humber. They sit 5th, 7th, 8th, and 9th in GDP per capita, while London, dominant in GDP per capita, sits at a decidedly mid-table 6th in eBay Digital Density.

eBay sellers countering regional imbalances

In this section, we calculate and use two indexes to rank regions at the NUTS 2 level¹⁴ in EU Member States and their equivalent in the UK. One, called **eBay Digital Density**¹⁵, is an index based on the per capita eBay selling activity carried out by registered eBay-enabled small businesses. The second, which we call **Relative Economic Advantage**¹⁶, is an index based on a region's GDP per capita.¹⁷ In both cases, the figures represent per capita values, allowing for more helpful comparisons between regions with larger and smaller populations. Both indexes normalize their values by presenting an individual region's performance as a percentage of their national average. A value that is 25 percent above the national average has an index value of 125. For example, if the national GDP per capita is EUR 10 000, a regional GDP per capita of EUR 12 500 would result in a Relative Economic Advantage value of 125. If the national GDP per capita is EUR 20 000, a region with the GDP per capita of EUR 25 000 would have the same index value of 125. However, a region with a GDP per capita of EUR 15 000 in a country with a national GDP per capita of EUR 10 000 would have a Relative Economic Advantage value of 150. Despite this final region's GDP per capita being lower than that in the region with the GDP per capita of EUR 25 000, it is farther ahead of its fellow regions, representing greater economic disparity.

Data backs up the view that the capital city regions of Europe are nearly always home to the wealthiest, most advantaged, and resilient regional economy in each Member State. In 20 of the 23 European markets with more than one NUTS 2 level region, the capital region enjoys the highest GDP per capita, often by a significant margin, over other regions.¹⁸ Along with nearly always leading in the key GDP per capita statistic, European capital

regions are even more likely to be the most urbanized region in their respective country as measured by population density¹⁹, with 21 of the 23 taking the top spot.

Unlike the nearly uniform economic supremacy of the national capital regions, the top eBay Digital Density regions represent a wide mix of geographic, population, population density, and economic conditions. (See map on pages 8-9 for examples).

While capital regions top their country's GDP per capita ranking 20 of 23 times, they top the eBay Digital Density ranking **only 9 times**.

No capital region has a GDP per capita below their national average, meaning a Relative Economic Advantage value below 100. On the other hand, nine of the leading eBay Digital Density regions are home to a below average GDP per capita, demonstrating that a region's economic performance and wealth is not always correlated to its capacity for digitization.²⁰

The level of urbanization, often best reflected by population density, offers a similarly stark difference. The national capitals are all major urban centers, while the most robust eBay-enabled small business communities emerge from a wider range of regions including those with vibrant secondary cities as well as more rural regions with small cities. Among them, 7 have a population density less than 100 per square kilometer.²¹

The 23 National Capital regions from countries with more than one NUTS 2 level region average 1,926 people per square kilometer while the eBay Digital Density leaders average just 562.

Countries in focus: France



The eBay Digital Density figures at the NUTS 1 level²² for France reveal a regional balancing effect in a country with an otherwise economically dominant national capital region. Île-de-France is the wealthiest, most populous and most heavily urbanized in France, and Paris appears on many lists of Europe's tech startup hotspots. But it sits in sixth place in Digital Density among the country's 14 NUTS 1 level regions. Provence-Alpes-Côte d'Azur, with a GDP per capita that is right on the national average and therefore just over half of the level in Ile-de-France, is tops in eBay Digital Density, while Grand Est is 2nd, Centre-Val de Loire is 3rd, and Occitanie is 5th, all sitting below the national average in GDP per capita.

Comparing national capital regions to eBay digital density leaders


We first compare the Relative Economic Advantage of the national capital regions from each country to their respective top eBay Digital Density regions. We limit the analysis to markets with at least five NUTS 2 regions in order to offer enough inter-regional differentiation for both eBay-enabled small business communities as well as GDP per capita.²³ The 18 capital regions that remain have an average Relative Economic Advantage Index value of 178, meaning they enjoy, on average, 78 percent higher GDP per capita than their country as a whole. We then did the same Relative Economic Advantage calculation using the region in each of those countries with the highest eBay Digital Density. Those Digital Density leaders were just 14 percent wealthier than their country, meaning an average Relative Economic Advantage index value of 114, just barely above the national GDP per capita.

In this analysis, five national capital regions, those home to Prague, Copenhagen, Madrid, Athens and Bucharest, each of which tops the Index of Relative Economic Advantage in their country, are also their country's top eBay Digital Density region. But, if you carry out the same analysis without these five regions, the results are even more striking. The remaining 13 capital regions have an even higher value of 182 for Relative Economic Advantage, or 82 percent above the average. The 13 regions that lead in eBay Digital Density in those countries average just 93 in Relative Economic Advantage, meaning their residents live in regions with per capita income below their national average and less than half of their country's capital region.

eCommerce brings opportunity to less prosperous regions:

In 9 European countries, the leading eBay Digital Density region has a Relative Economic Advantage **below their national average.**



 **Andreas Müller**
Deltatecc
Saarbrücken, Germany

Andreas Müller was still a student back in 2003 when he first started selling on ebay.de. Together with his brother, he sold all excess inventory from the family business on eBay - and thus earned additional real money besides studying. "In the evening we sat down over pizza and beer and thought about what to do the next day - we wanted to sell more stuff," says Andreas Müller. It worked so well that the brothers soon needed extra goods to sell online. They founded their own company, rented a space and started selling cell phones and navigation devices. After just two years, the company had a monthly turnover of over EUR 150 000. Via his eBay shops, deltatecc and deltatecc-home, Andreas is now selling a wide range of electronic household products. Major brand manufacturers reach out to Andreas and his company in order to get support for the sale of their products on online marketplaces.

"The fact that we started trading online with the help of eBay was partly due to the intuitive and easy handling of the platform. In addition, we were able to significantly expand our clientele. We sell products across Europe thanks to the wide reach of eBay."



Comparing tech startup hot spots to eBay digital density leaders

Finally, we compared the Relative Economic Advantage of 15 regions in the European Union and UK which are recognized as Tech Startup Hot Spots.²⁴ Similar to our analysis of the national capital regions, we compared them to the regions in their respective countries that are top in eBay Digital Density. Once again, there is meaningful divergence in Relative Economic Advantage. The Tech Startup Hotspots collectively had an average Relative Economic Advantage Index value of 128, meaning 28 percent above their national average.

When pulling out Copenhagen, Madrid and Dublin (regions that are both Tech Start-Up Hotspots and national eBay Digital Density leaders) eBay Digital Density leaders have an index value of just 86.

This means the most active eBay-enabled small business communities are in regions with below average GDP per capita in their country, while the more acclaimed “tech hotspots” are well above average.

Countries in focus: Italy



Italy represents the clearest example globally of eBay-enabled small businesses thriving as an engine of growth in a country's most economically challenged regions. Italy suffers persistent and stark regional disparities along a wide range of poverty indicators including income and unemployment.²⁵ Against that backdrop, the highest levels of eBay Digital Density consistently spring from many of its most distressed regions. Digital Density leader Campania, home of Naples, is 18th of 21²⁶ in GDP per capita, a level that is just 65 percent of the national average, and half that in Milan's Lombardia, and is plagued by nearly 18 percent unemployment²⁷, second worst in the country. But, Campania is not an outlier where eBay small businesses are pushing back against Italy's regional imbalance. The top eight regions in Digital Density all have GDP per capita levels below the national average, including the bottom three by income - Calabria, Sicilia and Puglia.

eBay Digital Density



Higher Lower
— National border ★ Highest population ★ Highest GDP per capita
— Regional border



Oliver Margaron

Electrolve, Ltd.
Grimsby, UK

“Flexibility is the best part of owning your own business. You come to work every day and have the freedom to do whatever you like and make it a success. That’s my favorite part of owning my own business.”

Netherlands - Limburg

Limburg, 7th of 12 in population and 5th in GDP per capita, is first in Digital Density, more than five times greater than the capital region of Noord Holland, which sits at 6th.



Arnaud Disastri

Groupe LGA
Allez Et Cazeneuve, France

“eBay levels the playing field for small businesses. I can live where I want and reach customers across all of France and around the globe.”

Portugal - Algarve

Algarve is tops in Digital Density in Portugal, with remote Norte, with the lowest GDP per capita, and national capital region Lisbon, with the highest GDP per capita, rounding out the top three.



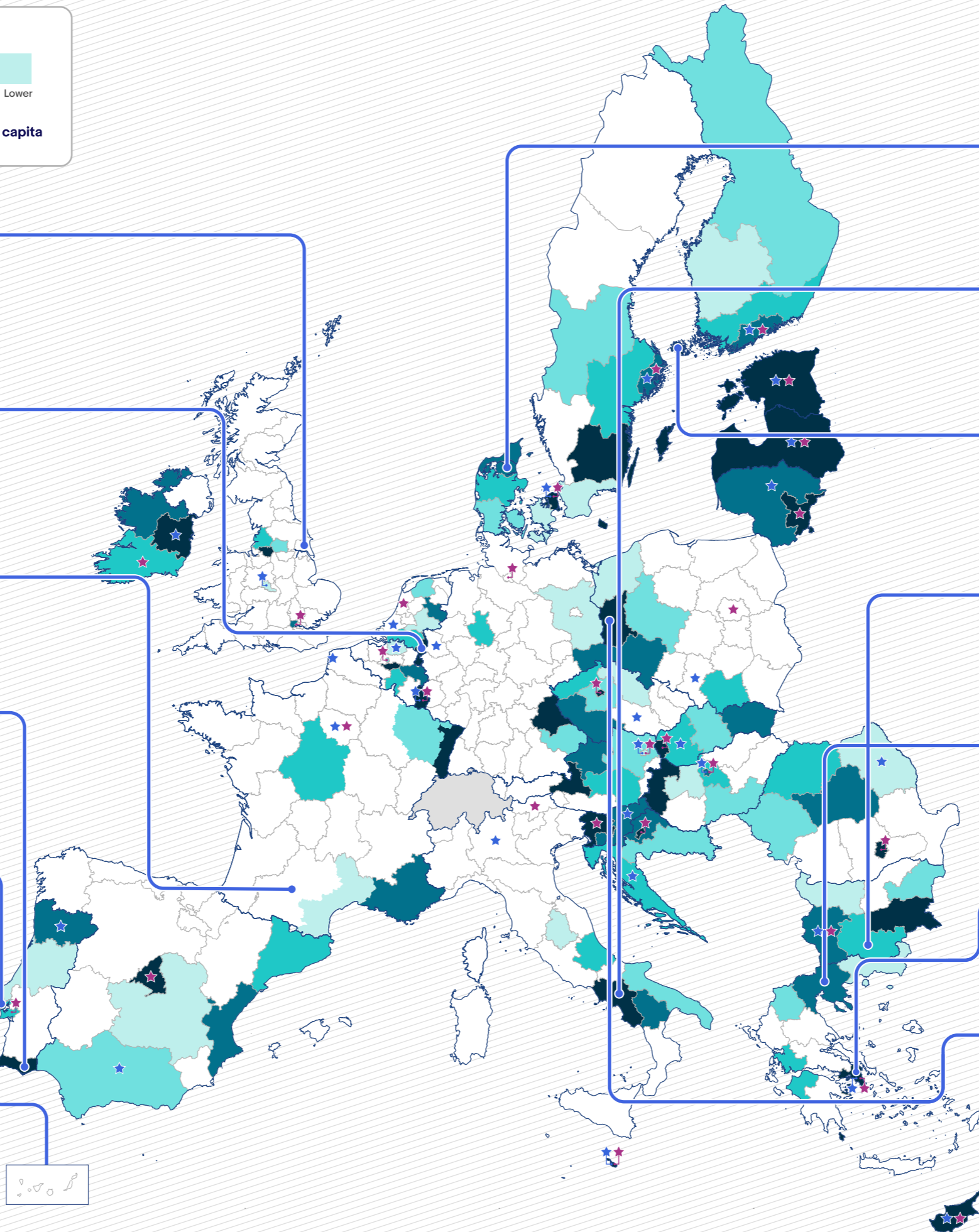
Mario Silvestre

Unipessoal IDA
Odivelas, Portugal

“The international marketplace allows my products to reach consumers all over the world. If it weren’t for online sales, my business simply wouldn’t exist, and I would not be able to create a business out of my passion.”

Outermost Regions - The Canary Islands & Madeira

Two of the EU’s “Outermost Regions” have eBay selling communities commensurate with those on the continent. The Canary Islands rank 9th of 19 in Digital Density in Spain and Madeira (not pictured) ranks 4th of 7 in Portugal.



Denmark - Nordjylland

Denmark capital region Hovenstaden is first in Digital Density, population density and GDP per capita, but #2 Nordjylland has the smallest population and second lowest GDP per capita.



Maria Gabriella Russo

You Dream Italy
Naples, Italy

“eBay turned my dream into a thriving business. I love connecting with customers worldwide in search of authentic Italian goods.”

Finland - Åland

The Helsinki-Uusimaa region is tops in Finland in GDP per capita and population, but it is 2nd in eBay Digital Density to the remote island region of Åland, which is last in population.



Stefan Tashev

Doctor Auto Ltd.
Plovdiv, Bulgaria

“eBay empowered me to build a successful small business, create jobs for my community, and stay close to my family.”

Greece - Κεντρική Μακεδονία (Kentriki Makedonia)

Greek region Κεντρική Μακεδονία (Kentriki Makedonia) is the fifth lowest in GDP per capita but still the second highest Digital Density ranking in the country.



Stelios Anapolitakis

Stelios Motorradladen
Athens, Greece

“eBay opened my horizons and gave me a chance to become a global dealer of motor accessories.”

Poland - Lubuskie

Warsaw dominates the Polish economy, but the Lubuskie region, with a third of the population, is tops on eBay. Three of the top five in Digital Density are below the national average in GDP per capita.

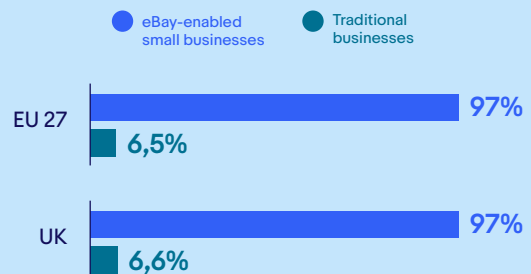
SME marketplace exports helping power inclusive growth

It has been well understood, both intuitively and through economic study that distance reduces opportunities to engage in commerce.²⁸ It is easier to do business with a customer that is nearby rather than one who is 100 kilometers away, or 1,000 kilometers, or on the other side of the world. This has traditionally meant that small enterprises, largely limited to serving local customers, were often dependent on local economic circumstances. Distance matters less for commerce online, which is facilitating trade, especially by small firms.²⁹ European regional development policies continue to include expanding SME opportunities, who represent 99 percent of all European firms, including through digitization and expanding international opportunities.³⁰ The cross-border commerce occurring over eBay's level playing field marketplace, carried out by SMEs across Europe, rather than just in the leading urban hotspots, validates these policy initiatives.

Share of eBay-enabled small businesses exporting

Nearly all European-based small businesses selling on eBay are exporting. This remarkable export success is far removed from traditional business operations. Across the 28 European markets studied, 97 percent of all eBay-enabled small businesses, most of them small firms, export.³¹ The comparable export rates of traditional firms are 6,5 percent in the EU and 6,6 percent in the UK.³² Above all, in 22 Member States, all eBay-enabled small businesses are exporters.

Share of enterprises that export



Frank Burguera

California Motorcycles
Oliva, Spain

In 2007, Frank Burguera used his extensive experience in the motorcycle accessory and repair industry to open his own retail store, California Motorcycles, where he repairs and sells motorcycle and automotive parts and accessories. The following year, he started selling on eBay to move extra inventory and soon realized its potential to expand his physical business. eBay afforded Frank the ability to hire an additional employee and now 25 percent of his sales are international.

“Selling on eBay has helped expand our physical business. It’s like having a virtual shop in every country around the world.”

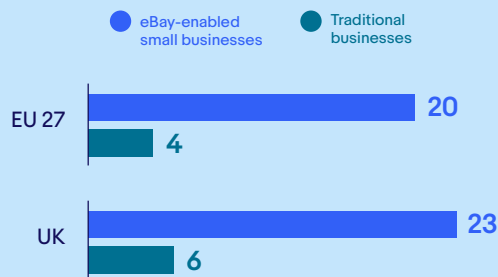
Average number of international destination markets

Exporting to a new international market traditionally imposes new costs of entry, leading to smaller firms with smaller budgets exporting to fewer markets than larger firms with more financial resources.³³ eBay largely ends that relationship between size and reach and dramatically opens more export markets. eBay-enabled small business exporters in the 27 EU markets average 20 different export markets³⁴ reached in a year, with those in the UK averaging 23.³⁵ The respective traditional exporting rates lag far behind at four and six markets, respectively.³⁶

eBay small business communities: virtual export giants

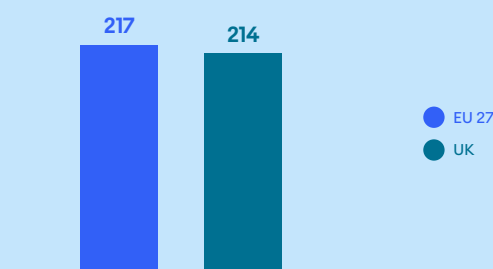
If one looks to the collective exporting of eBay-enabled small businesses, whether across Europe or within each individual market, the total number of international markets (includes countries and territories) reached is staggering. These numbers stand up favorably to the country-level export reach of some of the world's largest consumer brands.³⁷ Among eBay-enabled small businesses, those in Italy led the way, collectively making sales to consumers in 215 international markets in 2020, just two behind the 217 total markets collectively reached by European eBay-enabled small businesses as a whole.³⁸ Country-by-country, the eBay small business communities exhibit the export reach of corporate global giants.

Average number of international destination markets



Note: Only exporters are considered.

Total number of international destination markets



Note: Only exporters are considered.



Richard Parnell

Parnells
Dublin, Ireland

Started by Richard Parnell's grandfather in 1949, Parnells is the largest castor, wheel & specialist tire distributor in Ireland. Richard started selling on eBay in 2008 when he began the task of listing his bestselling products. With sales going well in Ireland, Richard wanted to target the eBay UK marketplace and discovered that the UK could easily be serviced from his main warehouse in Dublin. After the UK left the EU in 2016, Richard and his team looked to expand further and now have successful shops running on all the eBay European marketplaces.

"Thanks to eBay, I have been able to reach new customers and new markets overseas which we wouldn't have been able to reach on our own. This has helped me grow my business and make it more resilient."

CONCLUSION



Regional economic disparities continue to plague Europe, and while policymakers have had some meaningful successes at the country-level, inside many European markets regional imbalances are rife and getting worse. National capital regions, increasingly home to younger, more highly educated, and more productive citizens, are accelerating as growth hubs. Their “magnetic” ability to concentrate entrepreneurs, workers, and financial capital threatens to reduce market opportunities in other regions, depress national economic potential, and undermine political, economic, and social cohesion as more people feel disconnected from their leaders.

eBay Digital Density data, a measurement of the per capita eBay selling activity carried out by registered small businesses, provides a hopeful counterweight to evidence that national capital regions and other European urban centers are the only winners from the digital revolution. While country-by-country, Europe’s national capital regions are nearly always first in key measures including GDP per capita and urban density, and often by a significant margin, Digital Density presents a different and far more balanced picture. The most robust eBay selling communities come from a wide mix of regions whether viewed through the lens of geography, GDP per capita, population, population density or other economic measures,

with regions home to vital secondary cities, rural communities, and even some of Europe’s most economically challenged areas, rising near, and even to the top.

This report offers a different perspective on the suggestion that the national capital regions and tech startup hotspots dominate every measure of entrepreneurship, the mastery of digital tools, and the ability to exploit global trade opportunities.

Rather, digitally-enabled small businesses in every region of Europe are succeeding, proving that technology and level playing field marketplaces are opening new opportunities for entrepreneurs - locally, regionally, nationally across Europe, and around the world.

Policies and public investments that facilitate ecommerce by independent small businesses therefore offer more than just additional economic growth. Instead, they can disproportionately pay dividends in regions that are otherwise falling behind the growth hotspots, spurring inclusive growth that also promotes social cohesion.



Bogdan Pascu

Kit Xenon Tuning
Bucharest, Romania

“eBay has been a big part of our journey so far and we hope to continue and grow further with eBay. The ability to access diverse markets and reach customers in different countries has added value to our business.”

RESOURCES

- ¹ The current NUTS 2021 classification is valid from 1 January 2021 and has 92 regions at NUTS 1, 242 regions at NUTS 2 and 1166 regions at NUTS 3 level. In addition, there are 12 regions at NUTS 1 level, and 41 NUTS 2 regions in the UK. Available at: <https://ec.europa.eu/eurostat/web/nuts/background> (background information on NUTS 2021); <https://ec.europa.eu/eurostat/web/nuts/history> (list of current and all historical NUTS classifications); and <https://ec.europa.eu/eurostat/documents/345175/629341/NUTS2021.xlsx> (2021 NUTS classification in Excel format).
- ² 2020 exchange rate.
- ³ European Commission (03/18/2015) "European Regional Development Fund turns 40." Available at: https://ec.europa.eu/regional_policy/en/newsroom/news/2015/03/european-regional-development-fund-turns-40.
- ⁴ European Commission (2022) "European Regional Development Fund." Available at: https://ec.europa.eu/regional_policy/en/funding/erdf/#1.
- ⁵ Holton, K. and P. Sandals (02/22/2022) "Embattled UK PM Johnson launches plan to tackle regional inequality." Reuters. Available at: <https://www.reuters.com/world/uk/uk-johnson-tries-reset-premiership-with-levelling-up-policies-2022-02-02/>.
- ⁶ Demertzis, M., A. Sapir, and G. Wolf. (2019) "Promoting sustainable and inclusive growth and convergence in the European Union." Bruegel. Policy Contribution for the Informal ECOFIN Meeting, Bucharest, 5 April 2019. Available at: https://www.bruegel.org/sites/default/files/wp_attachments/PC-07_2019.pdf.
- ⁷ Kilroy, A., and R. Ganau (01/28/2021) "How do small regions in Europe achieve growth?" Brookings Institute. Available at: <https://www.brookings.edu/blog/future-development/2021/01/28/how-do-small-regions-in-europe-achieve-growth/>.
- ⁸ Berlin is the only European capital city that is less productive than the average of the country as a whole. See: Odenhal, C., and J. Springford (05/13/2019) "Why Europe's Capital Cities are Pulling Away From Their Countries – And What We Can Do About It." Center for European Reform. Available at: <https://www.cer.eu/in-the-press/why-europes-capital-cities-are-pulling-away-their-countries-%E2%80%93-and-what-we-can-do-about>.
- ⁹ O'Sullivan, Feargus (10/11/2018) "Capital cities stay young, as Germany ages (following two points from Europe's Capital Cities Keep Getting Richer and Younger - Other areas, not so much)." Bloomberg. Available at: <https://www.bloomberg.com/news/articles/2018-10-11/the-onward-march-of-europe-s-capitals>.
- ¹⁰ Eurostat (10/31/2017) "City dwellers: highly educated but weighed down by housing costs." Press release. Available at: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20171031-1>.
- ¹¹ Odenhal, C., and J. Springford (05/13/2019) "Why Europe's Capital Cities are Pulling Away From Their Countries – And What We Can Do About It." Center for European Reform. Available at: <https://www.cer.eu/in-the-press/why-europes-capital-cities-are-pulling-away-their-countries-%E2%80%93-and-what-we-can-do-about>.
- ¹² Eurostat (07/08/2016) "Urban Europe – statistics on cities, towns and suburbs – the dominance of capital cities." Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Urban_Europe_%E2%80%94_statistics_on_cities,_towns_and_suburbs_%E2%80%94_the_dominance_of_capital_cities&oldid=296362. For more on "urban paradoxes", see: Rueda-Sabater, Enrique (09/07/2021) "Urbanization and Its Paradoxes." Do Better. Esade Foundation. Available at: <https://dobetter.esade.edu/en/urbanization-trends>.
- ¹³ Parkinson, P., R. Meegan, et al. (November 2013) "Second Tier Cities and Territorial Development in Europe: Performance, Policies and Prospects." By Michael Parkinson, Richard Meegan, et al. A report from the European Spatial Planning Observation Network. Available at: https://www.espon.eu/sites/default/files/attachments/SGPTD_Executive_Summary_-_Final_Version_27.09.12.pdf.
- ¹⁴ In some cases, we also examine the data at the NUTS 1 and NUTS 3 levels.
- ¹⁵ **Calculating eBay Digital Density:** Digital Density is a measurement of the per capita eBay selling activity carried out by registered eBay-enabled small businesses in a country. Unless otherwise designated, Digital Density is calculated at the NUTS 2 regional level in EU Member States and its equivalent in the UK. The level of Digital Density is based on two factors – (1) the number of eBay-enabled small businesses per 100,000 inhabitants and (2) the total sales by eBay-enabled small businesses per 100,000 inhabitants. These two factors are combined in a weighted average, normalized in an index, and then the NUTS 2 regions in each EU Member State and the UK are ranked based on how their region's eBay seller community performs in relation to their national average.
- ¹⁶ **Calculating Relative Economic Advantage:** Similar to our calculation of Digital Density, the Index of Relative Economic Advantage provides a per capita ranking at the NUTS 2 regional level in EU member states and their equivalent in the UK, in this case GDP per capita. If the GDP per capita in a region is the same as their national GDP per capita, meaning income was perfectly average, the Relative Economic Advantage index value would be 100. If a region's GDP per capita is twice the national average, the index value is 200. This is the case whether the national GDP is 20,000 euro or 40,000 euro per person. This allows for comparable rankings of the regions within a country based on how much above or below the national average the regional economy is, which is helpful when comparing between Member States at different levels of economic development. It also allows for regional comparisons of relative economic advantage across the EU and the UK based on how much the regional GDP per capita is above or below its national GDP per capita.
- ¹⁷ Gross Domestic Product (GDP) at current market prices per capita, nominal (NUTS 1, NUTS 2 and Country). Source for the EU27 – Eurostat Gross domestic product (GDP) at current market prices by NUTS1 and NUTS 2 regions. Available at: https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_10r_2gdp. Note: Data is for 2020 and converted from EUR to USD using exchange rate (of 0.877) available at: <https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates>. Source for the UK (NUTS 1, NUTS 2 and Country) – Office for National Statistics (Table 7). Available at: <https://www.ons.gov.uk/economy/grossdomesticproductgdp/datasets/regionalgrossdomesticproductallnutslevelregions>. Data is for 2020 and converted from GBP to USD using exchange rate (of 0.779) available at: <https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates>.
- ¹⁸ The three European markets with more than one NUTS 2 level region in which the capital region did not have the highest GDP per capita are Germany, Italy and Ireland.
- ¹⁹ Source for Population – Eurostat Population on 1 January by age group, sex and NUTS 2 region. Available at: https://ec.europa.eu/eurostat/databrowser/view/demo_r_pjangroup/default/table?lang=en. (DEMO_R_PJANGROUP); Source for Total Land Area (Square Kilometer) – Eurostat. Available at: https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=reg_area3&lang=en. Note: Data used is "total land area" which excludes lakes, rivers, transitional and coastal waters. Population Density (Person per Square Kilometer) = Population / Total Land Area.

- ²⁰ See the leading Digital Density regions for Bulgaria, Finland, France, Hungary, Italy, Netherlands, Poland, Sweden and the United Kingdom in the accompanying Report Appendix. Available at: ebaymainstreet.com/EuropeDigitalDensity.
- ²¹ See the leading Digital Density regions for Austria, Bulgaria, Finland, Hungary, Poland, Portugal and Sweden in the accompanying Report Appendix. Available at: ebaymainstreet.com/EuropeDigitalDensity.
- ²² We exceptionally use NUTS 1 for our analysis on France as this level most accurately reflects the political and administrative organization of France.
- ²³ As both eBay Digital Density and Relative Economic Advantage are normalized figures comparing NUTS 2 regions within a country, the calculation is not applicable to single-NUTS 2 region countries as their values always equal 100 and the one region always ranks first. Therefore, eBay Digital Density and Relative Economic Advantage are not calculated for Cyprus, Estonia, Latvia, Luxembourg, and Malta. Similarly, intra-country regional comparisons at the NUTS 2 level in small states suffer from similar shortcomings due to limited regional distinctions, so countries with fewer than five NUTS 2 regions are not included in cross-European comparisons in this report unless specifically noted.
- ²⁴ The Tech Start-Up Hot Spots used in this calculation are London, Berlin, Paris, Amsterdam, Barcelona, Munich, Madrid, Stockholm, Dublin, Milan, Copenhagen, Helsinki, Hamburg, Lisbon and Cambridge. See Ohr, Thomas (November 24, 2020) "Europe's biggest startup hubs in 2020." EU Start-Ups. Available at: <https://www.eu-startups.com/2020/11/top-30-europes-biggest-startup-hubs-in-2020/>; The previous list included two cities in countries with just one NUTS 2 region, so we added Lisbon and Cambridge from: Bugarovic, Sofia (07/05/2021) "10 best cities for entrepreneurs: EU edition." TravelPerk. Available at <https://www.travelperk.com/blog/10-best-cities-for-entrepreneurs-eu-edition/>; Finally, as London is an urban center that includes multiple NUTS 2-level regions, we used the Outer London West and North West for this calculation.
- ²⁵ eBay (2019) "Italy Small Online Business Inclusive Growth Report." Available at: <https://www.ebaymainstreet.com/policy-papers/italy-small-online-business-inclusive-growth-report>.
- ²⁶ It is worth noting that the number of 21 regions refers to the division of Italy into NUTS 2 territorial units (consistently with the methodology applied for all countries in this report), according to which the Trentino Alto Adige region is divided into two areas (that of Trentino Alto Adige, precisely, and that of Süd Tirol), thus resulting in a quantitative mismatch with the number of regions into which the Italian territory is divided according to its own system.
- ²⁷ Eurostat (09/27/2022) "Unemployment rate by NUTS 2 regions (2020)." Available at: [https://ec.europa.eu/eurostat/databrowser/view/TGS00010/default/table \[TGS00010\]](https://ec.europa.eu/eurostat/databrowser/view/TGS00010/default/table?TGS00010).
- ²⁸ For examples from economic literature, see: Disdier, A., and K. Head (2008) "The Puzzling Persistence of the Distance Effect on Bilateral Trade." Review of Economics and Statistics 90(1), 37-48; Chaney, Thomas (2018) "The Gravity Equation in International Trade: an Explanation." The Journal of Political Economy, Volume 126, Number 1. The University of Chicago Press; and Allen, Treb (2011) "Information Frictions in Trade." Yale University.
- ²⁹ Gomez, E., B. Martens, and G. Turlea (January 2013) "The drivers and impediments for cross-border e-commerce in the EU." European Commission, Joint Research Center, Digital Economy Working Paper 2013/2. Available at: <http://docplayer.net/10084572-The-drivers-and-impediments-for-cross-border-e-commerce-in-the-eu.html>.
- ³⁰ European Commission (2022) "An Economy that works for people: Cohesion Policy support for small and medium-sized enterprises." Available at: <https://cohesiondata.ec.europa.eu/stories/s/An-Economy-that-works-for-people-Cohesion-Policy-s/n4ee-2h83>.
- ³¹ The eBay data reflects the share of 2020 eBay-enabled small businesses (those with \$10,000 USD or more in annual sales on eBay) in each location, who exported in that year.
- ³² Source for total number of enterprises that export - OECD Trade by enterprise characteristics (TEC) data: IV. Trade by the number of partner countries and economic sector. Available at: https://stats.oecd.org/Index.aspx?DataSetCode=TEC4_REV4; Source for total number of enterprises - OECD SDBS Structural Business Statistics (SIC Rev. 4): Total number of enterprises, by sector. Available at: https://stats.oecd.org/Index.aspx?DataSetCode=SSIS_BSC_ISIC4. Share = (total number of enterprises that export) / (total number of enterprises).
- ³³ For example, see Roberts, Mark J. and James R. Tybout. Directions in Development: What Makes Exports Boom? (Washington, D.C.: The World Bank, 1997a); Bernard, Andrew and Joachim Wagner. Export entry and exit by German firms. Review of World Economics (Weltwirtschaftliches Archiv), 137 (2001), 105-123.; Bernard, Andrew and J. Bradford Jensen. Entry, Expansion, and Intensity in the U.S. Export Boom, 1987-1992. Review of International Economics, 12 (2004b), 662-675.
- ³⁴ Includes countries and territories. For a full global list, see: UNECE (09/01/2022) "UN/LOCODE Code List by Country and Territory." Available at: <https://unece.org/trade/cefact/unlocode-code-list-country-and-territory>.
- ³⁵ The eBay data reflects the average number of different international markets reached by 2020 eBay-enabled small businesses (those with \$10,000 USD or more in annual sales on eBay) in each location, who exported in that year.
- ³⁶ Source for (i) Number of enterprises that trade with 1 country; (ii) Number of enterprises that trade with 2 countries; (iii) Number of enterprises that trade with 3 to 5 countries; (iv) Number of enterprises that trade with 6 to 9 countries; (v) Number of enterprises that trade with 10 to 14 countries; (vi) Number of enterprises that trade with 15 to 19 countries; (vii) Number of enterprises that trade with 20 or more countries (2017): Eurostat: Trade by number of partner countries and NACE Rev. 2 activity. Available at: https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ext_tec04&lang=en; Average number = ((number of enterprises that trade with 1 country)*1 + (number of enterprises that trade with 2 countries)*2 + (number of enterprises that trade with 3 to 5 countries)*4 + (number of enterprises that trade with 6 to 9 countries)*7.5 + (number of enterprises that trade with 10 to 14 countries)*12 + (number of enterprises that trade with 15 to 19 countries)*17 + (number of enterprises that trade with 20 or more countries)*25) / ((number of enterprises that trade with 1 country) + (number of enterprises that trade with 2 countries) + (number of enterprises that trade with 3 to 5 countries) + (number of enterprises that trade with 6 to 9 countries) + (number of enterprises that trade with 10 to 14 countries) + (number of enterprises that trade with 15 to 19 countries) + (number of enterprises that trade with 20 or more countries)).


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³⁷ See: Heineken (08/25/2022) "Our Global Presence." Available at: <https://www.theheinekencompany.com/our-global-presence>; Cascade Team (09/21/2021) "How Diageo Became One Of The World's Largest Alcohol Producers." Strategy Factory. Available at: <https://www.cascade.app/strategy-factory/studies/diageo-strategy-study>; Nike, Inc. (08/25/2022) "We are Global." Available at: https://media.corporate-ir.net/media_files/IROL/10/100529/nike-gs09/global.html; Volkswagen (08/25/2022) "Portraits and Locations." Available at: <https://www.volkswagenag.com/en/group/portrait-and-production-plants.html>; and Interbrand (08/25/2022) "L'Oreal." Available at: <https://interbrand.com/best-global-brands/loreal/>.

³⁸ The eBay data reflects the total number of different international markets reached by 2020 eBay-enabled small businesses (those with \$10,000 USD or more in annual sales on eBay) collectively in each location, who exported in that year.

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