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Europe's Openness Leans Against its Productivity Headwinds

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- As the world's most open major economy, the European Union provides a compelling case of how its openness affects productivity and its broader economic backdrop. Our sequential approach to the question establishes relationships among trade, competition, openness, and productivity.
- Based on these relationships, our research quantifies the effect that the EU's competitive backdrop and openness has on productivity.
- Although our findings show that Europe's recent, moderate growth would have been far worse without these improvements, the region stands to reap long-term benefits that will extend beyond the global cyclical recovery.

WIDE OPEN

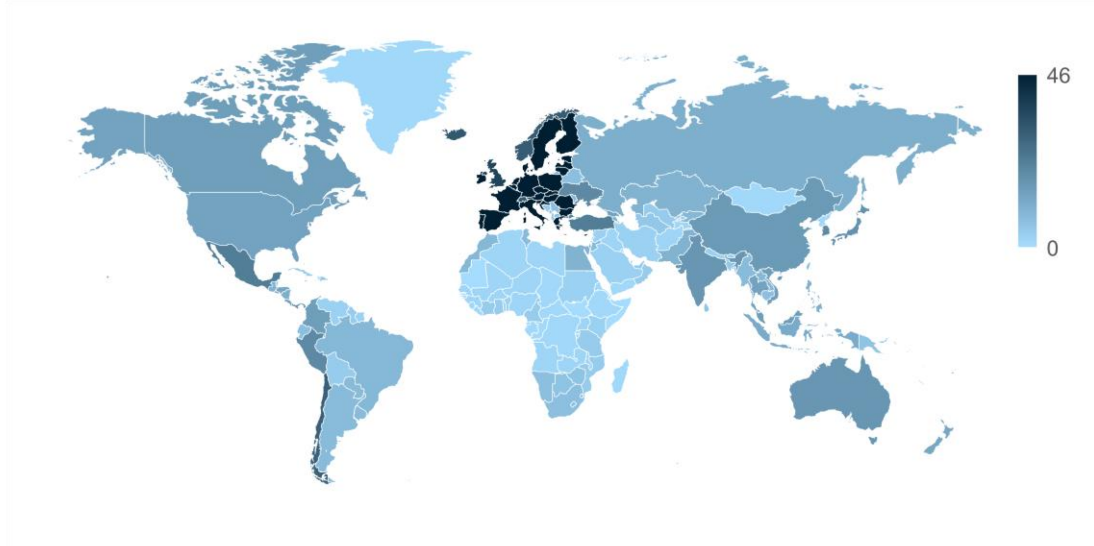
It is a well-known fact that Europe is the world's most open economic region. The European Union's Single Market facilitates nearly unimpeded trade as well as the free movement of people and capital between more than 30 countries. Yet, there is less recognition of the bloc's initiatives to continue integrating and to open with new trade deals amid lingering questions about the benefits of globalization. As the trade war between the U.S. and China generated nearly constant headlines, the EU reached free-trade deals with Japan, Canada, and Vietnam.

Figure 1 shows the EU's exceptionally large number of trade agreements with other countries or regions, placing it ahead of China and the U.S. in terms of total trade as a percent of GDP, even when excluding intra-EU trade (Figure 2).[1] The effects of the EU's openness to trade extend globally given that the region is one of the most open importers from the emerging markets.[2] While Europe's position will allow it to benefit from the global cyclical recovery being led by China and the U.S.—two of its key trading partners—the region's openness leans against its existing productivity headwinds and will likely support its economic growth beyond the cyclical recovery.

[1] Based on extra-EU trade, which is defined as trade with counterparties outside the Union.
[2] Excluding fuels, see https://ec.europa.eu/trade/policy/eu-position-in-world-trade/index_en.htm

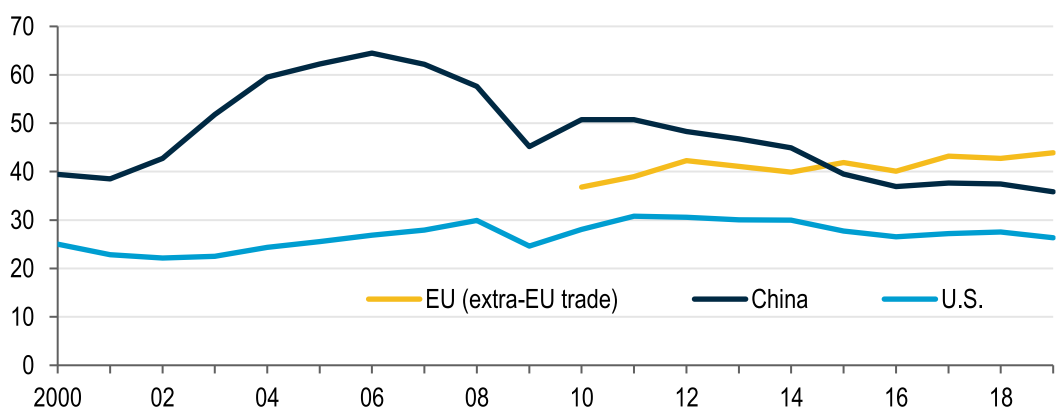
Figures 1 and 2: Trade Agreements Beget Total Trade

Active Regional Trade Agreements



Source: World Trade Organization as of May 2021.

Total Trade % of GDP



Source: Eurostat, World Bank

One widely held assumption is that productivity is improved by competition, which is subsequently enhanced by innovation and openness.

PRODUCTIVITY: DIFFICULT TO MEASURE, HARDER TO PROVE

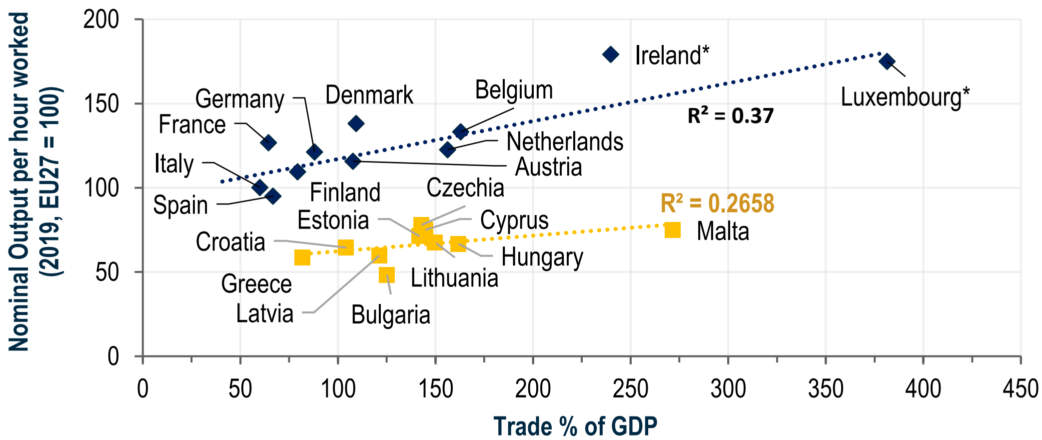
Productivity is notoriously difficult to measure. Estimates of total factor productivity (TFP) are typically backed out from GDP as a residual after accounting for inputs, such as labour and capital. Identifying the causal drivers of productivity is even more challenging. For example, one widely held assumption is that productivity is improved by competition, which is subsequently enhanced by innovation and openness, i.e. economies that are more open to trade benefit from knowledge and technology transfers from internationally competing firms.[3] While this dynamic may be sound in concept, the EU's open framework provides a compelling study on whether its relationship between openness and productivity is quantifiable, and, if so, what are the economic implications?

As a starting point, our research finds that trade and productivity are positively linked within the EU, which confirms existing cross-country studies.[4] Figure 3 shows that those countries

[3] Isaksson, Anders (2007), 'Determinants of Total Factor Productivity: a literature review', UNIDO, Research and Statistics Branch Staff working paper 02/2007.
[4] See https://www.ecb.europa.eu/pub/pdf/other/ebbox201707_01.en.pdf

with larger trade flows as a percent of GDP, such as Belgium and the Netherlands, tend to be more productive. Consistent with those results, EU economies that experienced significant improvements in productivity since the global financial and European sovereign debt crises also saw large increases in gross trade flows.

Figure 3: Productivity and Trade



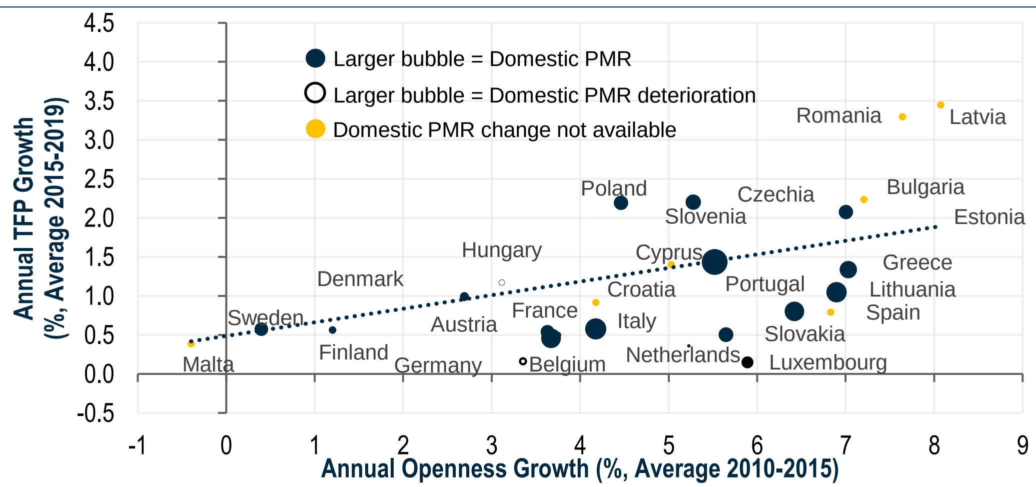
Source: Eurostat; World Bank. *Measures of output are known to misrepresent economic activity in Ireland and Luxembourg. Consequently, the R^2 is reported excluding these two countries. The slope of the line is robust to their inclusion.

Higher levels of openness magnify the positive effect that reduced product market regulation has on productivity.

As part of that improvement, peripheral countries that faced significant pressure during the sovereign debt crisis, such as Portugal and Spain, demonstrated remarkable turnarounds. The improvements reflect structural changes, particularly in terms of product market regulations (PMRs), that appear to be sustainable.[5] Whilst not providing causal evidence, the data depicted in Figure 4 indicate that the EU's more open economies tend to be more productive and that productivity improvements coincide with increased openness.

Furthermore, the easing in product market regulation has accompanied increased openness for a number of EU countries. Those countries to the right in Figure 4 that experienced higher than average opening growth also show greater product market reforms (as indicated by the larger circles). Hence, higher levels of openness magnify the positive effect that reduced product market regulation has on productivity.[6]

Figure 4: Improvements in TFP, Openness, and PMR



Source: The World Bank and the the Organization for Economic Co-operation and Development

[5] See for example IMF Country Report No. 18/330 for Spain.
[6] Égert, Balász (2016), 'Regulations, Institutions, and Productivity: new macro evidence from OECD countries', American Economic Review: Papers & Proceedings.

GLOBAL PERSPECTIVE ON COMPETITIVE IMPROVEMENTS

Much of the competitive improvement across Member States is concentrated in the regulation of network sectors at the EU level, such as energy, telecoms, and transport.[7] Based on an internationally comparable measure constructed by the Organization for Economic Co-operation and Development—which includes regulatory measures, such as the administrative burden associated with start-ups, licensing procedures, and retail price controls—several EU countries, including peripheral members Greece, Portugal, and Spain, recently appeared more competitive than the U.S.[8]

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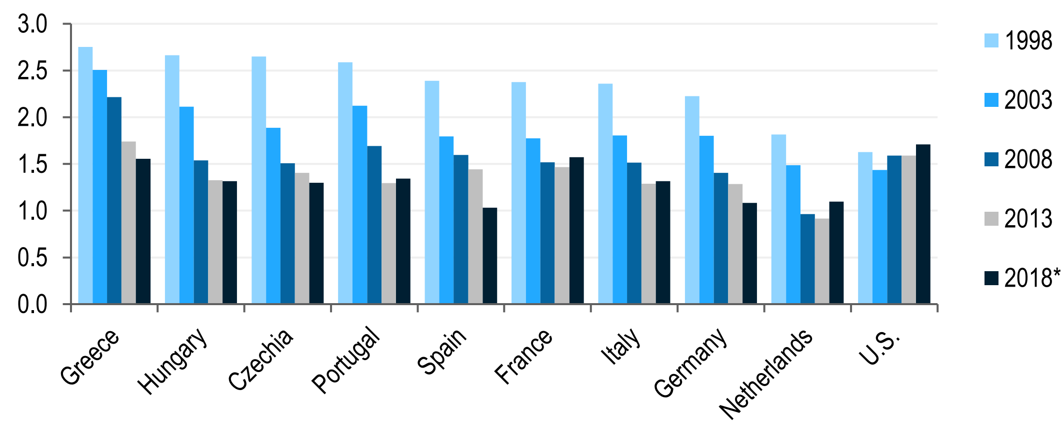
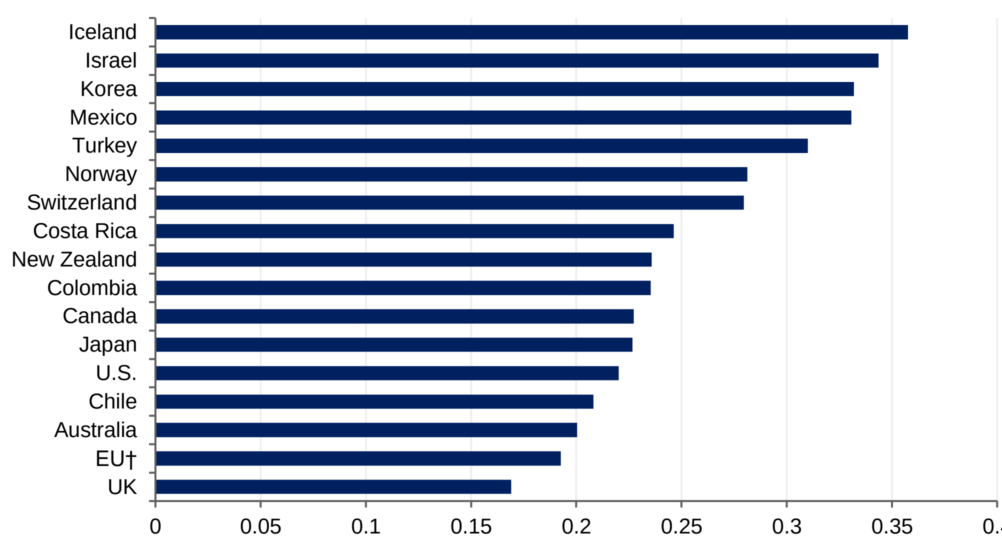
Figure 5: Measure of Regulatory Barriers in Product Markets



Source: Organization for Economic Co-operation and Development. *Methodology change.

A similar picture emerges with another OECD measure of services trade restrictions in the telecoms, banking and transport sectors, and the EU again compares favourably against its OECD peers (Figure 6).[9]

Figure 6: Services Trade Restrictions in Telecoms, Banking, and Transport* 2020, Index* (0-1)



Source: OECD. *Equally weighted. † GDP weighted.

[7] The reduction in product market regulation has been driven in part by reduced barriers to foreign trade and investment, but the bulk of the change reflects reduced domestic regulatory barriers to competition.

[8] Next Generation EU aims to provide grants and loans to EU Member States hard hit by the pandemic in exchange for reforms. To date, details on reforms remain limited, but do not appear to be related to sectors that are captured within the product market regulation index. As such, we anticipate the 2023 measure to remain broadly unchanged relative to the previous 2018 estimate.

[9] See OECD Service Trade Restrictiveness Index: policy trends up to 2020, January 2020.

QUANTIFYING THE IMPACT ON LONG-RUN TFP

In this section, we replicate the work of Égert and Gal using dynamic ordinary least squares, including one lead and one lag, to estimate the long-run impact of PMR and Openness on productivity (Figure 7).[10] We update the sample period with annual data from 1995 to 2018 and restrict the set of countries to the 20 EU Member States for which the PMR indicator is available. As expected, a reduction in product market regulation boosts productivity as does increased openness. Moreover, both variables have a statistically significant impact on productivity for the EU OECD sample, with an adjusted R-squared of 0.65.

Product market reforms impact EU countries similarly to the OECD average, and, as expected, openness is more impactful by a measure of 76 bps when it comes to TFP for EU countries.

Figure 7: Total Factor Productivity Regression Results

PMR (Index, 0-6)	-4.32*
	(-13.2)
Openness (% of GDP)	0.79*
	(-4.93)
Observations	369
Adjusted R-squared	0.65

Source: PGIM Fixed Income. Note: The regression includes expenditure on R&D and the output gap as control variables. T-stats are reported in parentheses. * indicates significance at the 5% level.

Based on the methodology developed by Égert and Gal, these results can also be used to quantify the long-run impact on total factor productivity from typically observed reforms in product markets and openness (Figure 8).[11] Our results indicate that product market reforms impact EU countries similarly to the OECD average, and, as expected, openness is more impactful by a measure of 76 bps when it comes to TFP for EU countries given their broader role in international trade.

Figure 8: Long-run Impact of Average Reforms on TFP

	Sample		Long-run impact on TFP of average reforms	
	Period	Countries	Openness	PMR
Egert and Gal (2016)	1985-2013	OECD	2.40%	1.44%
PGIM (2021)	1995-2018	EU OECD	3.16%	1.34%

Source: PGIM Fixed Income

The combined long-run effect from product market improvements and openness over the 2010-2018 period is estimated to increase the long-run level of total factor productivity by slightly more than 10% (Figure 9). In terms of dynamics, Égert and Gal find that around half of the level of improvement to TFP is expected in the first 10 years following openness reforms, and about 75% of the improvement from product market reforms feeds through to TFP in 25 years. Therefore, the EU's openness and product market reforms over the last decade should continue boosting the region's TFP for years to come.

[10] Égert, Balász and P Gal (2017), 'The quantification of structural reforms in OECD countries: a new framework', OECD working paper no. 1354

[11] We adopt the Égert and Gal (2017) definition of "typically observed reforms", measured by the average of all beneficial two-year policy changes that were observed over two consecutive years in their sample.

The combined long-run effect from product market improvements and openness over the 2010-2018 period is estimated to increase the long-run level of total factor productivity by slightly more than 10%.

This result may be surprising given the EU's weak productivity growth since the financial crisis. In particular, TFP is estimated to have grown 13.5% in the first half of our sample, but only 4.3% since 2008. It is beyond the scope of this paper to draw conclusions regarding drivers of overall TFP growth as our analysis excludes other factors, such as deteriorating demographics, that are assumed to weigh on productivity.[12] However, these results indicate that TFP growth would have likely been notably weaker in the absence of these product market and openness reforms.

Figure 9: Effect on Long-Run TFP Due to Changes Observed Between 2010 and 2018

	Change (2010 - 2018)	Long-run impact on TFP
PMR	-0.175	0.76%
Openness	12.73	10.03%

Source: PGIM Fixed Income

CONCLUSION: WITH OPENNESS COMES SOFT POWER

In the years since the global financial and European sovereign debt crises, the EU has markedly improved its openness and product market competition. These improvements have enabled the EU to benefit from the current global cyclical upswing as economies begin to recover from the pandemic. As we stated, these trends can also improve the medium-term outlook for EU productivity and growth. The 10% boost that openness and competition may bring to the EU over the long run will provide an important offset to other productivity headwinds in the region, such as aging demographics.

The European Commission's recently adopted trade strategy emphasises its ambitions to further expand trade linkages, especially with developing economies in Africa, Latin America, and Asia Pacific.[13] Indeed, after 20 years of negotiation, the agreement with Mercosur (a major South American trading bloc), which has yet to be ratified amid sticking points on agriculture and the environment, would establish the EU's largest free-trade agreement to date.

The EC recognises that, as one of the world's largest economies and trading blocs, the EU is well positioned to shape the future of the global trading system. Commonly adopted EU rules would likely serve to hardwire and embed trade linkages for years to come. The adoption of "open strategic autonomy" will likely see the EU exert greater influence and soft power as it tries to extend its own regulatory practises to the rest of the world, and it may find success given how its openness continues to effectively lean against the productivity headwinds common in many developed economies.

[12] *https://www.pgimindiamf.com/docs/default-source/documents/theeconomicsofglobalaging.pdf?sfvrsn=2*
[13] *See https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_645*

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Source(s) of data (unless otherwise noted): PGIM Fixed Income as of August 2021.

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