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Firm Dynamics and Firm-Level Total Factor Productivity in Belgium

Karen Coulibaly

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Firm Dynamics and Firm-Level Total Factor Productivity in Belgium

Prepared by Karen Coulibaly

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March 2025

ABSTRACT: Belgium's total factor productivity (TFP) growth slowdown since the late 1990s has been worse than peers' despite significant spending on innovation. This is largely explained by subdued business dynamics, insufficient firm access to financing, labor and capital misallocation, and the predominance of small firms. Further product-market reforms to reduce barriers to entry and lower exit costs are needed to raise TFP. Reforming the wage-setting mechanism to better align wage and productivity developments would improve labor allocation. Deepening the European single market and advancing the capital market union would contribute to higher Belgian firm productivity and facilitate firm scale up.

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Belgium

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BELGIUM

SELECTED ISSUES

March 3, 2025

Approved By
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FIRM DYNAMICS AND FIRM-LEVEL TOTAL FACTOR PRODUCTIVITY IN BELGIUM[1]

Belgium's total factor productivity (TFP) growth slowdown since the late 1990s has been worse than peers' despite significant spending on innovation. This productivity gap is largely explained by subdued business dynamics, insufficient firm access to financing, labor and capital misallocation, and the predominance of small firms. Further product-market reforms to reduce barriers to entry and improve the insolvency regime to lower exit costs are needed to raise TFP. Reforming the wage-setting mechanism to better align wage and productivity developments would improve the efficiency of labor allocation. Deepening the European single market and advancing the capital market union would also contribute to fostering higher productivity of Belgium firms and facilitate firm scale up.

A. Context: Declining Productivity Growth, and Subdued Firm Dynamics

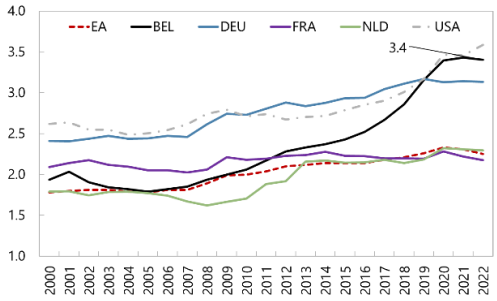
1. Despite significant spending on innovation, Belgium's long-term productivity slowdown is worse than peers'.[2] Belgium ranks among the most innovative countries in Europe. Innovation-income deductions introduced in 2017, which allow firms to deduct up to 85 percent of their net income from innovation from the taxable base—reducing effective corporate taxation to as low as 3.75 percent, appear to have boosted R&D spending (in percent of GDP) to 3.4 percent of GDP in 2022, well above neighbors. However, TFP growth lags peers, suggesting stalling technical diffusion and room to improve the transmission of innovation to productivity gains. This, despite the lower shares of accommodation and food service activities (sectors typically with lower productivity) in both employment and value added in Belgium than on average in the European Union (EU) (4.9 percent and 7 percent for Belgium and the EU, respectively, for employment, and 1.7 percent and 2.7 percent, respectively, for value added). Belgium's TFP growth fell from 1 percent on average over 1990-94 to -0.1 percent in 2015-19. It was lower on average over 1999–2022 than the euro area's (EA) (Figure 1). For example, Germany's productivity slowdown was less pronounced, due in part to its a strong manufacturing base with a focus on high-value, export-oriented products, which allows for greater economies of scale and efficiency.

[1] Prepared by Karen Coulibaly (EUR).

[2] Peers are France, Germany, the Netherlands—Belgium's three main trading partners—, and other EU and EA countries.

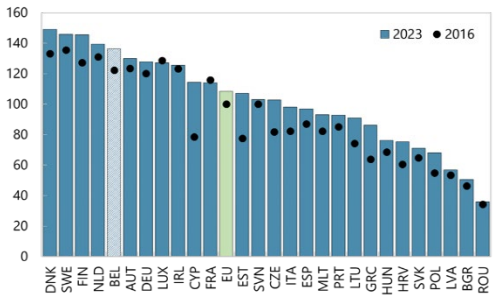
Figure 1. R&D Spending, Innovation and TFP

R&D Spending
(Percent of GDP)



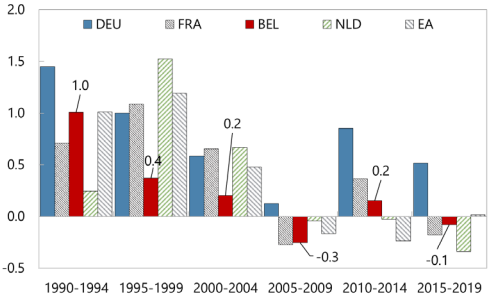
Source: Eurostat.

Innovation Index
(Index, EU in 2016 = 100)



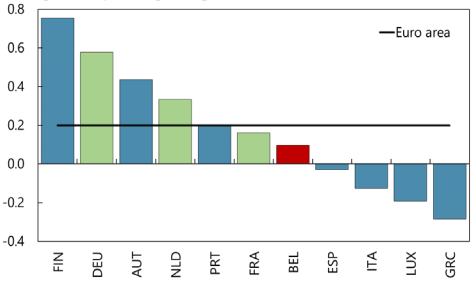
Source: European Commission.

Total Factor Productivity
(Average 5-year period annual percentage change)



Sources: OECD and IMF staff calculations.

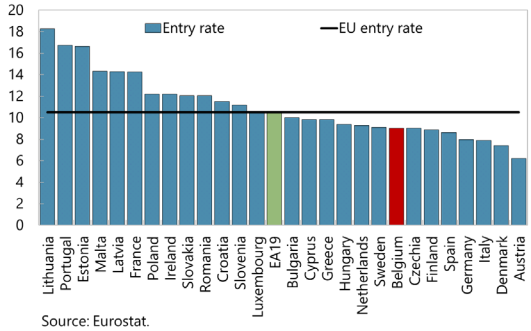
Total Factor Productivity Growth, 1999-2022
(Average annual percentage change)



Sources: OECD and IMF staff calculations.
Note: Euro area indicates the average annual growth of the unweighted average of the total factor productivities of the countries shown on the x-axis.

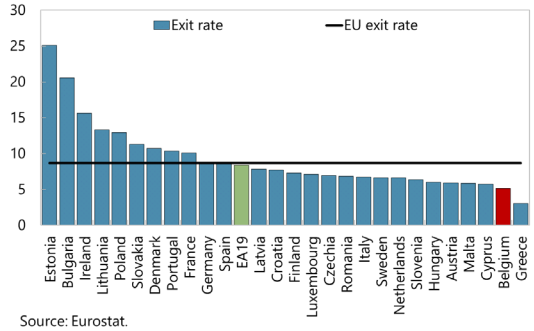
Figure 2. Firm Dynamics

Entry Rate, 2022
(Percent of active firms)



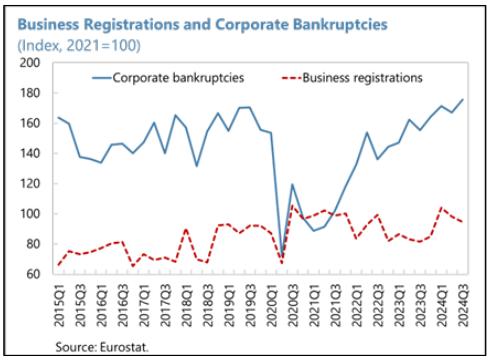
Source: Eurostat.
Note: Excludes firm entry following restructuring, merger or break-up.

Exit Rate, 2022
(Percent of active firms)



Source: Eurostat.
Note: Excludes firms exits following restructuring, merger, or break-up.

2. Lagging TFP partly reflects unfavorable firm dynamics, with low and, on the whole, stagnant entry and exit rates.[3] Belgium has some of the EU's lowest firm entry and exit rates. The country's firm entry rate of 9 percent is lower than the EU and euro area average (both at 10.5 percent), and stagnant. The exit rate is particularly low at 5.2 percent compared to an 8.7 percent EU average (Figure 2), despite the recent increase in bankruptcies that brought them back to pre-pandemic level (Text Chart).



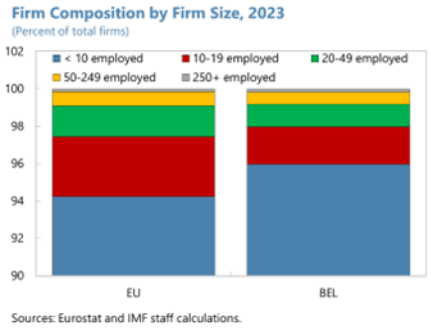
B. Firm Characteristics

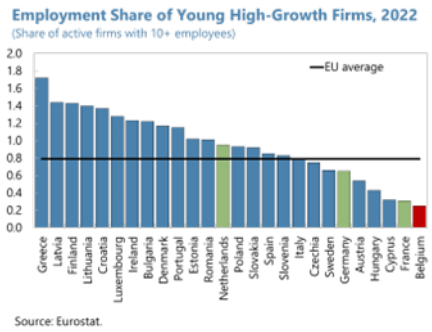
3. Belgian firms are as small as European firms on average. In Belgium, 96 percent of firms employ fewer than ten employees compared to 94 percent in the EU. Belgian micro firms (with ten employees or fewer) make up 32 percent of total employment, compared to 30 percent on average in Europe, nearly thrice as much as in the United States. Firms with fewer than 50 employees employ 45 percent of Belgian employees, compared to 49 percent in the EU.

4. Belgian young, high-growth firms have a smaller footprint in the economy than their European counterparts.[4] They employ 0.25 percent of those employed in firms with 10+ employees against a euro average of 0.8 percent. Young Belgian high-growth firms also have an average of 48 employees, 10 employees fewer than the EU average (Figure 3).

5. Too few young firms scale up. In Belgium as in Europe, an average mature firm (above 25 years old) typically has about 12 employees. This is just thrice as many workers as the typical firm below the age of three, versus over ten times in the United States. Furthermore, while the employment growth rate of Belgian startups is on par with the EU average, it is much lower for above-average TFP startups in Belgium.

Figure 3. Firm Characteristics

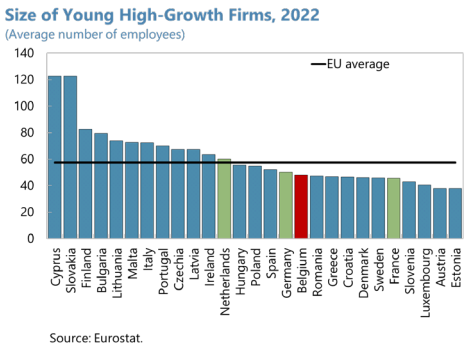


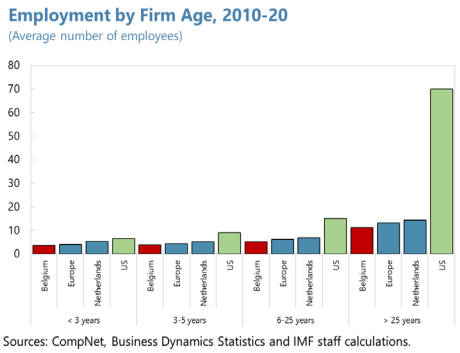


[3] See (Barseghyan and DiCecio, 2011) for a discussion of the causal links between high entry costs, business dynamics, and TFP.

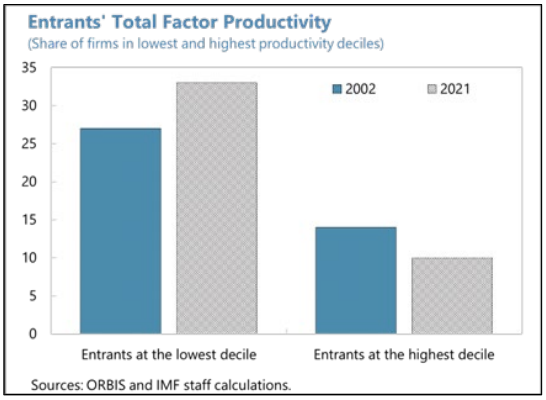
[4] Young high-growth firms are three- to four-year old firms with an average annualized turnover growth of more than 20 percent per year for three years.

Figure 3. Firm Characteristics (concluded)





6. Start-up quality is falling. The share of one- to four-year-old firms in the highest productivity decile declined from 14 percent in 2002 to 10 percent in 2021 while the share of startups in the lowest TFP decile increased over time from 27 percent in 2002 to 33 percent in 2021 (Text Chart). This may in part reflect the increase in federal and regional government-funded loan guarantees and additional angel investor and seed funding to startups during the pandemic.[5]



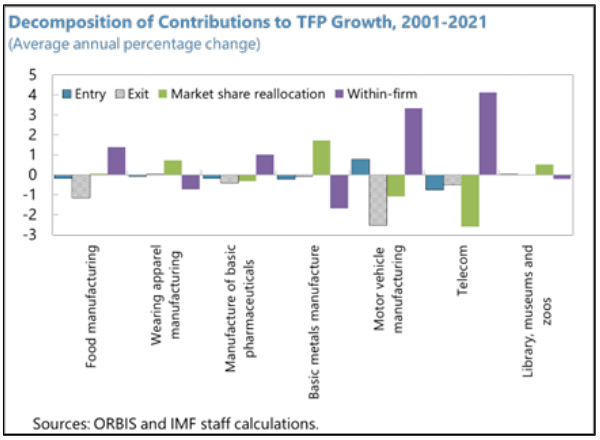
7. Firms benefit from relationships with high-growth exporting firms and multinationals. Forming relationships with multinationals or "superstar firms" that are very large, high-growth, and export heavily can boost a firm's TFP by 8 percent in three years (NBB, 2023).

8. However, below-average TFP startups increased their share in output and employment faster than others, possibly gaining from their relationships with state-owned enterprises and political connections. Firms with lower profitability and productivity that purchase inputs from state-owned suppliers have higher leverage and employment, more so if politicians are on their boards (NBB, 2024). This may discourage efficiency and innovation.

[5] (Alperovych and others, 2015) showed that firms with access to government-funded venture capital are less productive that those that rely on private capital.

C. Firm Dynamics' Contributions to Sectoral Productivity Growth[6]

9. Overall, within-firm TFP growth contributes the most to aggregate sectoral productivity growth; the impact of entries and exits is unclear. The contribution of within firm productivity growth is highest in sectors with higher investment intensity, such as pharmaceuticals. The impact of within-industry market-share reallocation varies depending on the impact of competition and gains from economies of scale on sectoral productivity. Its contribution to productivity growth is strongly negative for the telecom sector. Entry contributes positively to productivity in some sectors (e.g., motor vehicle manufacturing). However, the negative contributions from exits suggest they are not from the lowest productivity (or below average productivity) firms (Text Chart).



D. Firm Access to Finance

10. Belgium firms consider that they are under-financed. Firms consistently report in European Commission surveys financing needs that exceed available funding, particularly from bank loans and credit lines. Early-stage startups have access to a more diverse range of funding options than other European firms, including private venture and angel investor capital, but funding remains scarce at later stages of growth.

Debt Financing

11. Belgian startups are particularly under-leveraged.[7] In the United States and many other European countries, startups are significantly more leveraged than larger firms (Adilbish and others, 2024). This supports their investment in new technologies and helps them scale-up quickly. However, Belgian young firms are not benefiting from higher leverage. Indeed, they cite the challenges they face in accessing capital to scale as a major constraint to their growth in surveys on access to finance.

12. Startups typically face higher interest rates than more mature firms, reflecting their higher failure rate. The cost of financing remains a major obstacle to access to funding for

[6] The analysis of firm dynamics' contributions to sectoral productivity growth follows Melitz and Polanec, 2015, to estimate contributions from entry, exit, within-industry reallocation among incumbents, and within-firm productivity growth during 2002–21.

[7] Leverage is defined as the sum of loans and long-term debt as percent of total assets. Outliers including the largest 5 percent observations and those with negative values are excluded.

corporates in Belgium (as in Europe), more so for startups, particularly those with higher intangible investments, who face higher borrowing costs.[8]

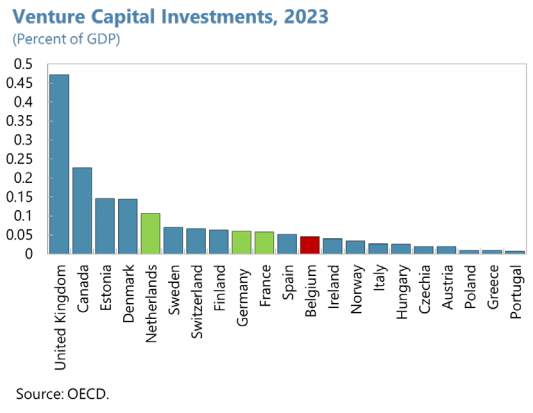
13. Belgium's (and Europe's) bank-based financial system is ill-fitted for startup funding. Banks' risk models and debt-service and loan-maturity requirements do not allow funding of fast growing but initially unprofitable firms. Regulatory and supervisory guidelines also do not favor risky exposures. Loan approval processes are typically lengthy. Bank funding is more abundant for established than emerging industries, and bank financial product offers remain standardized and limited.

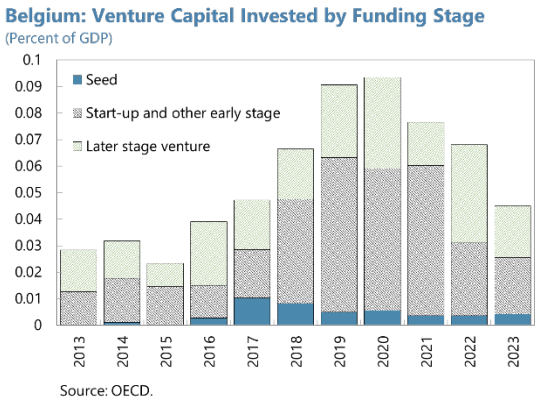
Private Equity Financing

14. Venture capital (VC) (and equity financing) remains limited in Belgium, keeping firm growth and productivity lower. At 0.04 percent of GDP, VC investment in Belgium was twice as low as in Netherlands and ten times lower than in the United Kingdom (as a share of GDP) in 2023 (Figure 5). Firms with significant funding from VC grow faster, create more jobs, and contribute more to aggregate TFP and growth. Access to VC can also improve resource allocation, through better entry-exit dynamics, supporting innovation and productivity (Arnold and others, 2024). In Belgium as in the rest of the EU, home bias in asset allocations as well as regulatory, legal, and tax issues limit cross-border activity and consolidation, reduce private risk sharing, and impede the formation of the deeper pools of capital and more liquid markets at EU level needed to support VC (Arnold and others, 2024).

15. Most of the deals are in early stage, which partly explains the relatively small size of Belgian startups. The share of funding for later-stage VC has also increased in recent years. In 2023, 57 percent of funding went to seed or early-stage deals, up from 45 percent in 2013 but down from a peak of 71 percent in 2018 (Figure 4). On average over 2007–23, 40 percent of VC investment in Belgium were at late stage compared to 45 percent in Germany and 60 percent in France.

Figure 4. VC Funding



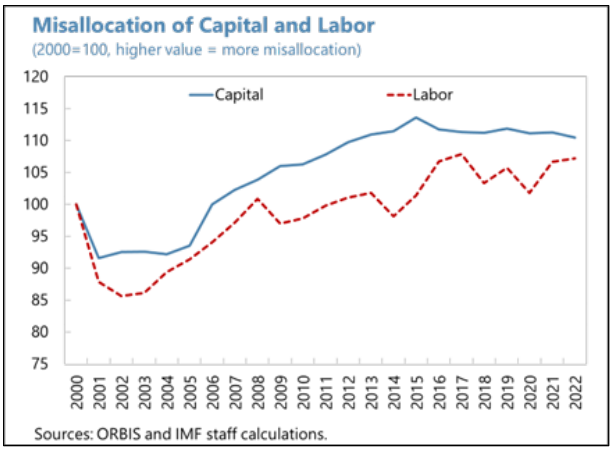


[8] See (Adilbish and others, 2024) for further discussion of firm funding at the European level.

16. The notional interest deduction (NID) that was introduced in 2006 helped reduce the corporate debt finance bias, leveling the debt-equity playing field, but was abolished in 2023. The NID allowed firms to reduce their taxable income based on their amount of equity capital. It helped increase equity ratios of Belgian firms by approximately three percentage points above the pre-NID mean equity-to-asset ratio of 39 percent (Meki, 2023). The NID was nonetheless considered too fiscally costly and too beneficial to multinationals that shifted profits and displaced capital across countries. It was abolished in 2023, as part of a broader effort to simplify and increase the transparency of corporate taxation. Similar allowances for corporate equity introduced in Austria, Croatia and Italy were also subsequently eliminated, mostly due to their large fiscal cost. Denmark, Germany, and Sweden's allowances remain in force. New Zealand also exempts capital gains for certain equity holdings.

E. Labor and Capital Misallocation[9]

17. Labor and capital allocation are deteriorating. They have suffered in recent years from the growing share of lower quality startups with abundant government support, including loan guarantees targeted to higher-risk borrowers, that crowded more productive firms out of labor and capital markets. The misallocation of capital, as measured by the standard deviations of the marginal revenue product of capital, has increased in Belgium over the past two decades. It has remained more pronounced among younger firms in recent years. The misallocation of labor also increased over the past two decades, and was typically more pronounced in larger firms, suggesting labor hoarding (Figure 5).

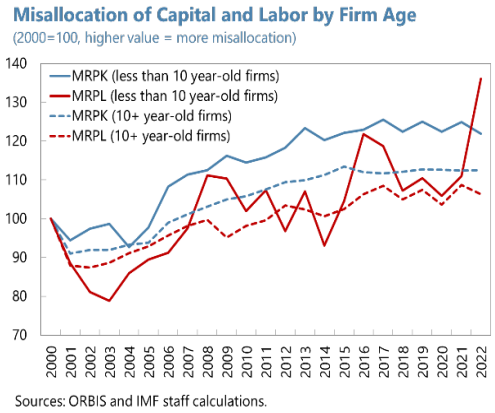


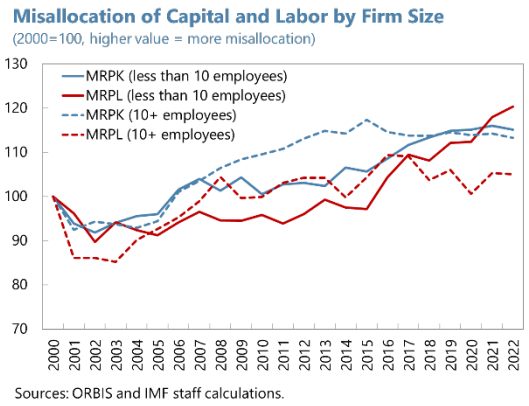
18. Reforming the wage-setting mechanism would help increase labor market efficiency. Belgium's wage-setting process is governed by automatic indexation, which establishes the lower limit of wage increases based on projected inflation in Belgium, and a 1996 wage law that restricts salary increases for the coming two years within an upper limit based on hourly wage growth in France, Germany, and the Netherlands with no reference to productivity differentials.[10] Wages are indexed to actual inflation excluding alcohol, tobacco, and petrol prices, and indexation applies nearly universally, ensuring a quick pass-through of inflation (including its most volatile components). This "wage corridor" prevents productivity-based real wage differentiation across industries and firms or adjustment of wages to local labor market conditions, thus likely contributing to labor misallocation.

[9] The analysis of labor and capital misallocation follows Hsieh and Klenow, 2009.

[10] 2023 SIP: "Wage Indexation and International Competitiveness in Belgium: An Uneasy Coexistence".

Figure 5. Labor and Capital Misallocation by Firm Age and Size





F. Product Markets and Insolvency Frameworks

19. Belgium's product market regulation is more restrictive than those of other European advanced economies, constraining TFP growth.[11] Belgium's economy-wide product-market regulations are only marginally less restrictive than the three most-constraining regulations in European advanced economies, except on administrative burdens on firms. More competition-friendly product-market regulation could spur firm entry, particularly in professional services and retail, in which restrictions are the highest, except for civil engineers (Figure 6). Closing half the gap with the top three European advanced economies could potentially boost TFP by about 3½ percent in the long run, offsetting losses since the global financial crisis.[12]

20. In particular, progress reducing state-imposed retail price controls and regulatory capture is needed. Price controls are more widespread in Belgium than in the average European advanced economy. Nearly half of services prices are either regulated by the government or indexed to inflation. Interactions between public officials and interest groups are not sufficiently regulated. The registration of lobbyists in the dedicated public registry remains voluntary. Public officials are also not required to disclose interest groups consulted during regulatory processes, nor do they not have to observe a cooling-off period after leaving their positions.

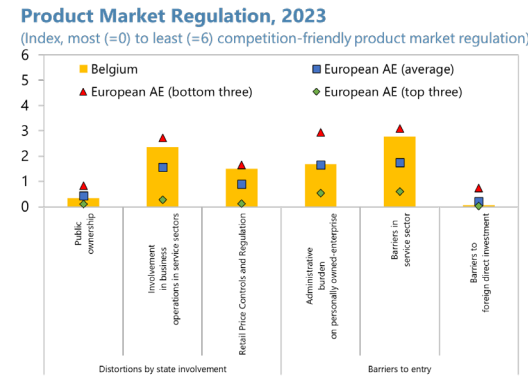
21. Belgium's insolvency regime has improved since 2010 but barriers to a more efficient system remain. Personal costs to owners of failed companies are lower. Prevention and streamlining of insolvency have improved (notably with revamped early warning, pre-insolvency, and small and medium enterprise-specific procedures). However, barriers to restructuring remain

[11] See (Barseghyan and DiCecio, 2011) for a discussion of the causal links between high entry costs, business dynamics and TFP.

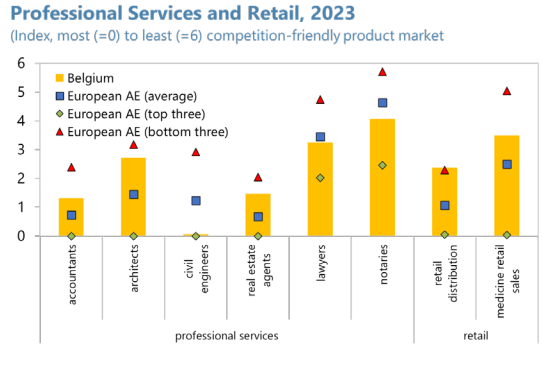
[12] 2023 Article IV report, Annex VII.

strong. Creditors still cannot initiate restructuring (only liquidation), delays remain lengthy, and courts are still too often involved.

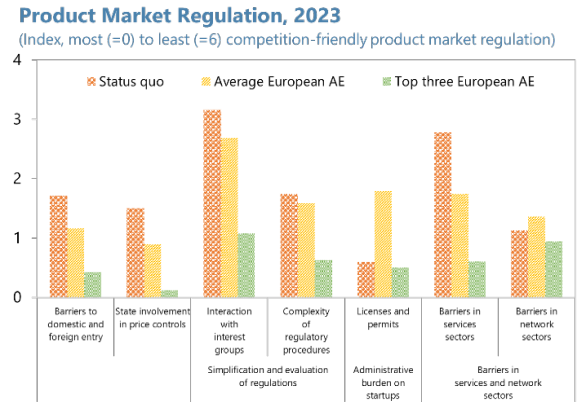
Figure 6. Product Market and Insolvency Framework Reform



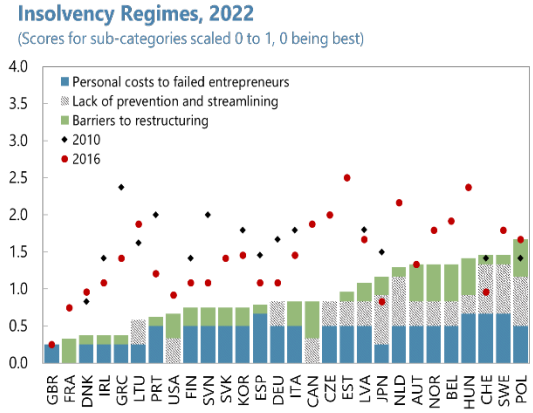
Sources: OECD and IMF staff calculations.



Sources: OECD and IMF staff calculations.



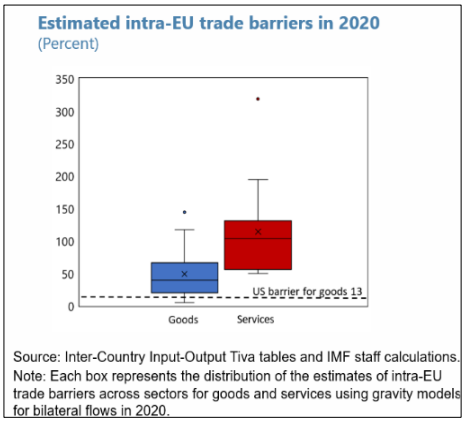
Sources: OECD and and IMF staff calculations.



Source: OECD.

G. Intra-EU Trade Barriers and Firm Productivity

22. Despite great strides towards the single market, significant barriers to intra-EU trade remain. Non-tariff barriers such as different treatment of foreign suppliers, and licensing, registration, classification, labeling, and packaging import requirements are still substantial. Barriers to foreign direct investment are also still significant. Overall, remaining barriers are as high as a tariff equivalent of about 44 percent on average for goods trade—three times higher than trade barriers between US states. For services, barriers are even steeper, equivalent to a 110 percent tariff (Adilbish and others, 2024).



Source: Inter-Country Input-Output Tiva tables and IMF staff calculations.
Note: Each box represents the distribution of the estimates of intra-EU trade barriers across sectors for goods and services using gravity models for bilateral flows in 2020.

23. Belgum's trade integration within the single market is among the highest in the EU, positioning the country well to benefit from further intergration, particularly of service trade. Belgium's strategic location (with the port of Antwerp as key entry point of goods in the EU), high-quality infrastructure and well-developed logistics network, and strong ties with neighboring countries like the Netherlands and Germany have made it a major player in intra-EU trade. The professional services sector where national competition is limited, entry requirements are rigid, and conduct rules strict stands to benefit more from EU level harmonization and expanded firm reach than the trade of goods.

24. In collaboration with its EU partners, Belgium can work toward reducing barriers to intra-EU trade. This requires investing in cross-border infrastructure, liberalizing protected sectors, pursuing meaningful intra-EU trade liberalization, and harmonizing regulations across member states. Investing in cross-border infrastructure can improve connectivity. Opening up protected sectors would foster increased competition and innovation. Harmonizing regulations across member states would allow firms to exploit economies of scale and network effects to improve efficiency and productivity (Adilbish, and others., 2024).

H. Conclusions and Options for Reform

25. Further product market reforms to reduce regulatory and administrative barriers to entry and improve the insolvency regime to lower exit costs are needed to raise TFP. State-imposed price controls, the complexity of regulatory procedures and regulatory capture, and strict occupational restrictions offer opportunities for improvement.

26. Deepening the European single market and advancing the capital market union would also contribute to fostering higher productivity of Belgium firms. More integrated markets can allow firms to scale up and attract financing at a larger scale. Removing remaining barriers to trade within the EU and harmonizing regulations and bankruptcy frameworks, would give Belgian firms access to a much larger customer base, improve competition, and vitalize firm dynamics. Increasing the availability of long-term risk capital and developing venture capital within an EU-wide push toward capital market union could help it play a more prominent role in firm financing.

27. New policies to reduce the tax debt-bias should also be explored. The authorities could consider reinstating the NID or introducing a similar measure to foster more equity financing, while limiting interest deductions on debt.

28. Wage-setting mechanism reforms should aim to foster a better alignment of wage growth with productivity and improve labor allocation. As a first step, they could include excluding items with volatile prices from the basis for indexation, widening the group of country comparators, using unit-labor costs instead of wage growth as basis for comparison, and leaving room for firms at risk to index wages only partially.

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