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A macroeconomic assessment

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What would happen to Italy's GDP if half a million public employees obtained a tertiary degree? If the costs of starting a business were reduced by 10% to 20%? If the duration of civil trials was halved? If the school dropout rates were the same as those of the best European countries? In other words, how much would the country's GDP gain if Italy became a more efficient country?

This policy brief presents the results of a study that used a model-based approach to assess the potential effects of the structural reforms in the Italian Recovery and Resilience Plan.[2] The study utilized detailed administrative data from 482 milestones and 665 policy targets. The analysis was based on official documents, and a dynamic general equilibrium model was employed to evaluate the reforms' effects. In a nutshell, reforms substantially impact potential output in the medium- and long-term. The reform package's effectiveness becomes evident in the long run, with a projected 10% increase in GDP in 2050 compared to the alternative scenario without reform. However, significant effects are also anticipated to emerge by 2026, with a projected 3.4% increase in potential output. The labor market and education measures are the primary drivers of the reforms' impact.

Structural reform. The Italian Recovery and Resilience Plan (RRP) has been allocated 191.5 billion euros, making Italy the first beneficiary of the European Recovery and Resilience Facility (RRF). The plan aims to address the country's fundamental weaknesses by investing in public projects and implementing reforms. It includes horizontal reforms to improve the justice system, public administration, and business environment as well as sectoral reforms focused on education, active labor market policies, and healthcare. The plan also includes the transformation of vulnerable areas into sustainable territories by investing in social housing, local social services, and infrastructure.

[1] The views expressed in this paper are strictly those of the authors.

[2] "Structural Reforms in the Italian National Recovery and Resilience Plan. A macroeconomic assessment of their potential effects" by Sara D'Andrea, Silvia D'Andrea, Giovanni Di Bartolomeo, Paolo D'Imperio, Giancarlo Infantino, Mara Meacci, Treasury Working Paper No. 2 March 2023, Ministry of Economy and Finance, Roma, Italy.

The RRP comprises 6 missions with 16 components emphasizing public investments and reforms across 63 interventions. The reforms are categorized as horizontal, enabling, and sectoral. Horizontal reforms focus on cross-cutting areas such as improving bureaucratic efficiency and rationalization in the public sector and making the justice system more effective. Enabling reforms simplify legislation, promote competition, and improve the business environment, while sectoral reforms focus on education, R&D, and labor market policies. For instance, the education and research reform aims to improve primary and secondary education, enhance digital and STEM skills, and support research activities and technology transfers.

The assessment groups structural measures into five reform areas: Justice, Competition, Education and Research, Labor Market Policies and Training, and Public Sector.

The Justice reform aims to enhance the efficiency of the judicial system by decreasing the length of civil proceedings and criminal trials by 40% and 25%, respectively, compared to 2019. Disposition time, measured by the ratio of pending cases to resolved cases annually, is used to gauge the duration of proceedings. The reduction in disposition time is converted into a Total Factor Productivity (TFP) growth rate using an elasticity estimate obtained from micro-econometric research. Achieving the reform targets would result in a TFP increase of 1.45%. This brief summarizes the mapping for this reform area, assuming a 20% reduction in the length of civil proceedings and a 12.5% reduction in criminal trials, with simulations conducted through a bottom-up approach.

The Product Market Regulation (PMR) index formalizes the structural measures associated with competition and procurement systems, measuring pro-competition regulation in the goods and services markets. Enhancements in the PMR index are anticipated to decrease price markups. The anticipated effects of each national recovery plan on country-specific PMRs are simulated to assess the impact of pro-competition interventions. The public procurement system's quality is evaluated using the public procurement performance indicator of the Single Market Scoreboard, which comprises 12 individual indicators. Analyzing the normative measures within the RRP is expected to enhance the procurement system's decision-making speed. The economy is anticipated to be affected by exogenous shocks concerning simplification and competition in the second quarter of 2022 and the first quarter of 2023. The reforms' schedule is based on M&T (the horizon is 2022-2026.)

The education reform focuses on enhancing the education system in Italy, spanning from nursery schools to universities and research. The reform targets three key objectives: i) decreasing school dropouts, ii) improving the composition of human capital, and iii) enhancing the quality of education. The aim is to decrease the dropout rate from 13.5% to 10.2% between 2019 and 2024, resulting in 27,000 fewer early leavers annually up to 2027. The reform comprises measures to improve human capital composition by investing in tertiary vocational education and offering college scholarships and PhD grants. The goal is to decrease the number of low-skilled individuals and increase the number of medium and high-skilled individuals. The reform also seeks to improve education quality by enhancing school facilities, providing training, and continuing education programs for teachers and school deans. The reform's potential impact on aggregate productivity is estimated by using elasticities derived from PISA test scores, with a predicted 5.3% increase in total factor productivity. The timing of the reform measures is based on official starting periods and the years required to obtain degrees.

The proposed labor market structural policies and training measures aim to increase labor market participation, with the RRP targeting three key areas. The first area introduces the Employability Guarantee of Workers (GOL) program, which is designed to skill, upskill, and reskill at least 2.6 million inactive and unemployed individuals, focusing on underrepresented groups such as women, long-term unemployed, disabled, and older or younger workers. Over the 2022-2026 period, an estimated 3 million individuals will participate in the GOL program, resulting in a 3.3% increase in the labor force. The second area targets female participation, with measures to support female entrepreneurship, early childhood education, and care services and create 264,500 new work positions in this sector to boost female labor force participation. Thanks to these measures, an estimated 25,750 additional women could join the labor force. Finally, the third area aims to improve labor market matching through training programs for inactive and unemployed individuals, resulting in an estimated 10% increase in the marginal cost of job searching. The measures' timing is expected to impact the economy and labor force levels starting in the third quarter of 2022 for the GOL program, the beginning of 2024 for new places in kindergartens, and in ten years for reducing the gap in female labor participation and improving labor market search and matching.

The structural measures associated with the Public Sector reform are classified into three areas: i) enhancing efficiency, ii) reducing bureaucratic costs, and iii) improving human capital. The mapping is derived from micro-econometric research, with a conservative target for narrowing the gap in public sector efficiency and reducing bureaucratic costs. The assumptions for increasing efficiency and reducing bureaucratic costs include digitization measures. The improvement in human capital is simulated by shifting employees toward tertiary graduates.

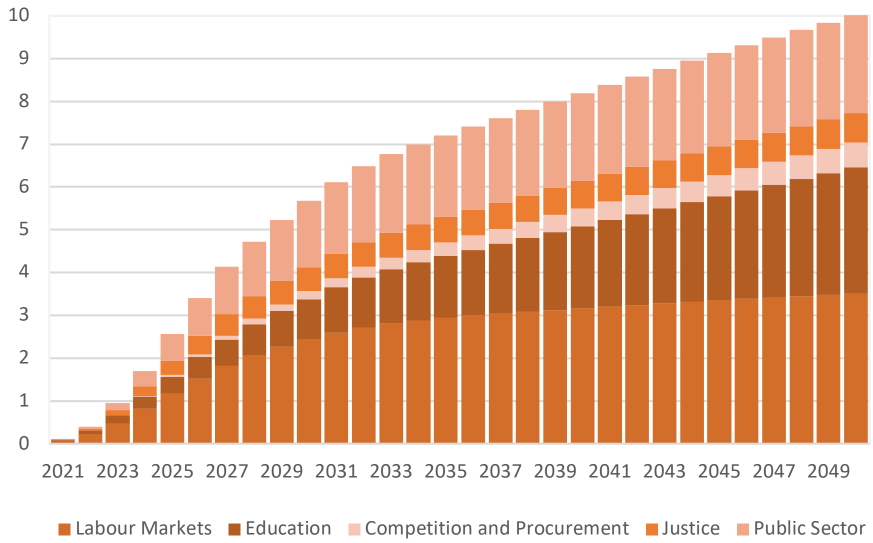
A short overview of the evaluation methodology. The assessment methodology involves a model-based approach to evaluate the reforms' macroeconomic consequences. It involves converting structural policy measures into an aggregate model, which analyzes the reforms' transmission mechanisms and transition dynamics from the initial state to the final state, in which all measures will be implemented. The approach considers both static and dynamic impacts, as well as direct and indirect effects. Three strategies map the reforms into model parameters: a bottom-up approach utilizing explicit targets from official documents, a top-down approach using comparable economies as a reference, and a judgmental approach as a last resort. The assessments utilize the QUEST macroeconomic model developed by the European Commission Directorate General for Economic and Financial Affairs (DG ECFIN).[3] Mapping the reforms is subject to uncertainty which

[3] The Italian QUEST R&D model is a large-scale DSGE model used to study the Italian economy. It has a three-region structure and includes technological change, two production sectors, three skill categories, and two types of households. The model incorporates fiscal and monetary policies. The European Central Bank follows a standard Taylor rule for monetary policy, and the government adopts a fiscal rule for debt-to-GDP ratio stability. The model is calibrated using a mix of estimation and matching approaches to match observed economic ratios and data from various sources.

is accounted for by constructing an "uncertainty interval" around the baseline setup. Scenarios differ in the number of objectives achieved by the reforms.

The macroeconomic impact of the reforms. The primary outcomes of the assessments are displayed in Figure 1. It reveals that the reform program has a significantly positive impact on potential output in the medium and long term, with a projected increase of 3.4% by 2026 and approximately 10% by 2050. Labor market and education measures are the primary drivers of the impact, resulting in substantial increases in labor and capital income.

Fig. 1. The cumulate effect of reforms on potential output (deviation from no reform scenario)



Source: "Structural Reforms in the Italian National Recovery and Resilience Plan. A macroeconomic assessment of their potential effects," Sara D'Andrea, Silvia D'Andrea, G. Di Bartolomeo, P. D'Imperio, G. Infantino, M. Meacci, Treasury Working Paper No. 2 March 2023, Ministry of Economy and Finance, Roma, Italy.

The lack of surprise in these findings can be attributed to the fact that policies concerning labor markets primarily address one of the main flaws of the Italian economy, which is the low participation rates that restrict its potential output. Furthermore, the limited effect of competition measures can be attributed to the country's previous positive performance, in which previous reforms already addressed significant issues in this area. Finally, it is also important to mention that other measures have been evaluated using rather conservative assumptions.

The structural reform package's impact on aggregate investment and consumption is proportional to its impact on GDP. Initially, private investment may be crowded out as firms anticipate increasing total factor productivity. The reforms' positive impact on total factor productivity negatively impacts prices, as increased production reduces prices. Productivity-enhancing reforms positively impact both imports and exports. The impact of the reforms on the functional income distribution is expected to result in increased wages, capital, and profits, except for the impact of competition and public procurement structural measures. There is also an anticipated change in income shares, with an increase in wage and capital/profit shares, while financial wealth, government benefits, and transfers are expected to decrease.

As mentioned, there is significant uncertainty surrounding the impact of structural reforms due to various factors, including timing, efficiency, modeling choices, and econometric studies. A range of alternative scenarios have thus been considered to address this uncertainty. Scenarios differ in the number of milestones and objectives achieved by the structural measures among those declared in the official documents. The low-impact scenario represents the incomplete implementation of reforms. In such a case, partly achieving the reforms' goals implies much more limited impacts on potential output. In a pessimistic scenario, the projected cumulative output increase is 1.6% in 2026 and 4.5% in 2050. It is worth noting that uncertainty refers to the fact that reforms may be less effective than expected in achieving milestones and objectives.

Simulations based on a high-impact scenario assume full implementation of the reforms, representing the best possible outcome. However, there are risks associated with inadequate management during the implementation process, and inflationary trends could also undermine the macroeconomic effects of these reforms. It is also essential to highlight that the financial plan is formulated in nominal terms, and unforeseen inflation could lead to reduced investments in real terms. Recognizing the significance of inflation in shaping short-term dynamics, the Italian Government has allocated additional resources to address this issue.