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ITALY

SELECTED ISSUES

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SELECTED ISSUES

July 5, 2017

Approved By
The European Department

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COMPETITIVENESS AND WAGE BARGAINING REFORM IN ITALY[1]

The growth of Italian exports has lagged that of euro area peers. Against the backdrop of unit labor costs that have risen faster than those in euro area peers, this paper examines whether there is a competitiveness challenge in Italy and evaluates the framework of wage bargaining. Wages are set at the sectoral level and extended nationally. However, they do not respond well to firm-specific productivity, regional disparities, or skill mismatches. Nominally rigid wages have also implied adjustment through lower profits and employment. In a search-and-match DSGE model of the Italian labor market, this paper finds substantial gains from moving from sectoral- to firm-level wage setting of at least 3.5 percentage points lower unemployment (or higher employment) rate and a notable improvement in Italy's competitiveness over the medium term.

A.   Introduction: Defining the Competitiveness Challenge

1.   Italy's growth and export performance has lagged in international comparison. Over the past two decades, real GDP per capita, total factor productivity (TFP), and real export performance have lagged euro area peers. Real incomes per capita and TFP in Italy are below levels from more than two decades ago, whereas in Germany these have increased by about 20 and 12 percent over the same period, respectively. An issue in this context is whether Italy has lost some competitiveness and, if so, how might it be improved as part of a pro-growth strategy.
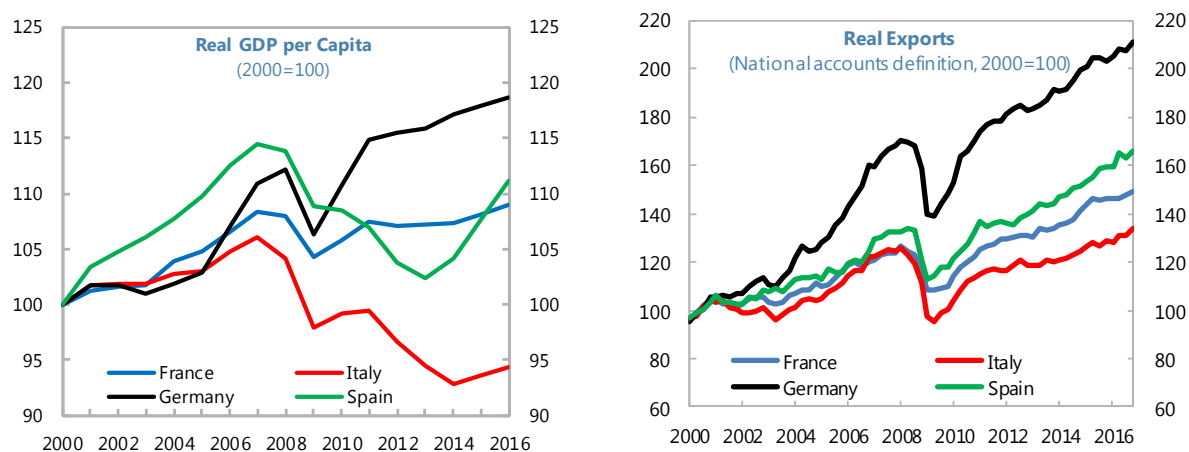
2.   Standard price-based competitiveness indicators paint a mixed picture. CPI- or PPI-based real effective exchange rates (REERs) do not show Italy losing competitiveness, as they have returned close to the levels that they were when the euro was introduced (Figure 1). This is largely due to the depreciation of the euro: since the beginning of 2010, the euro has depreciated by about 15 percent against a basket of currencies of its main trading partners and by 25 percent against the

Chinese yuan. At the same time, however, Italy has maintained a price-based REER gap in the range of about 5–15 percent against the euro area and Germany, depending on whether the comparison is based on the CPI, PPI, or GDP deflator.

3.   Measured at factor costs, however, Italy's competitiveness losses are more evident.
When measured at unit labor costs (ULCs) in the total economy, Italy maintains an REER gap of close to 10 percent vis-à-vis the euro area (EA) average and almost 20 percent vis-à-vis Germany. The

dynamics of ULCs themselves are more illustrative, especially for tradables as proxied by the manufacturing sector, where competitiveness matters the most. Following Blanchard and others (2013) in measuring ULCs on a national accounts definition— compensation of employees per real output[2]— it is evident that ULCs in Germany as well as in the rest of the euro area have followed each other rather closely around parity. Manufacturing in Italy, by contrast, has seen a secularly increasing average wage compared to productivity that has stabilized, but not reduced, in recent years (Figure 1).

Relative ULCs in Manufacturing
(1999Q1=100, Germany normalized to 100 throughout)
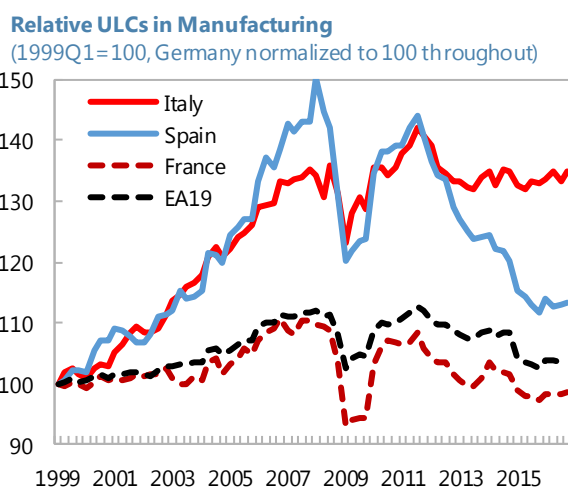
4.   Competitiveness is a multi-dimensional concept where consideration should be given to a broad set of price- and non-price indicators. This note analyzes competitiveness in a broader context and examines potential reforms of wage bargaining in light of the persistent rise in unit labor costs:

- *External adjustment.* Two key issues relate to (i) the elasticity of exports to REERs, including intra- and extra-EA, and (ii) the relevant REER metric. A sustained competitiveness gap alongside higher elasticities of exports to REERs would suggest a lower contribution of exports to growth. Italy's external adjustment in this regard is briefly discussed in Section B (External Adjustment).

- *Internal adjustment.* Differences in elasticities and in the relevant REER metric in explaining export performance are important because, within a monetary union, enhancing competitiveness requires adjusting relative prices and thus tackling nominal rigidities. A decomposition of the ULC-based competitiveness indicator shows that, over the past two decades, the contribution of hourly wages to Italy's competitiveness gap vis-à-vis Germany has been around 45 percent. As illustrated in the chart above, the wage-productivity differential has been sustained but not reversed. Thus, adjustment has occurred through lower pre-crisis profits and reduced quantities since the outbreak of the crisis, such as employment and investment, as

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[2] This national accounts definition, based on agreed conventions to allocate incomes, facilitates cross-country comparisons across different macroeconomic aggregates (e.g., the labor share). For an Italy-specific view, see Torrini (2016).

companies sought to retain some measure of labor productivity and not increase price differentials against foreign competitors. This is elaborated in Section B (Internal Adjustment).

- *Export and product structure.* Not all goods are equal substitutes but differ in value added content, type, and complexity. Italian exports have traditionally been associated with high quality and diverse products. Keeping up in the technology ladder requires innovation and economies of scale, whereas Italy has seen its product complexity gradually erode and productivity in frontier companies decline. Section B (Italian Exports) presents the story.

- *Wage setting.* Ensuring wage growth in line with productivity growth depends crucially on labor market institutions that can have substantial effects on competitiveness and labor market outcomes. Section C takes a closer look at wage bargaining in Italy and quantifies employment gains from reforms toward more flexible firm-level bargaining.

- *Productivity.* While wage adjustment can improve competitiveness, the effect on output is constrained by potential negative demand effects that is larger if other countries undertake wage adjustment simultaneously or if monetary policy is constrained from being accommodative (Decressin and others, 2015). Experience suggests that internal devaluations are more likely to be maintained when accompanied by productivity-enhancing reforms (Blanchard and others, 2013). Thus, supportive administrative, labor market and product market reforms, fiscal reforms, and cleaning bank balance sheets are vital for Italy to raise productivity and growth (SIP Parts 2 and 3).

B. External and Internal Adjustment

External Adjustment

5.   The estimated impact of REERs on export developments has been the subject of recent research, and points to the importance of ULC-based indicators.

- Bayoumi and others (2011) find that ULC- and export unit value-based REERs are better indicators of competitiveness, while PPI-based REERs are insignificant and CPI-based REERs are insignificant and incorrectly signed. Christodoulopoulou and Tkačevs (2014) find that Italy's exports of goods are driven more prominently by PPI- and total ULC-based REERs, and exports of services by price-based REERs. They note that overall the absolute impact of ULC-based REERs might be higher, and conclude that Italy has been steadily losing competitiveness since euro adoption due to weak productivity and rapid wage and price growth. Giordano and Zollino (2016) find that all REER indicators are significant at the 1 percent level in explaining Italy's goods exports, with generally higher elasticities than in other major EA countries, while based on encompassing test their preferred indicator is the PPI-based REER.[3] More recently, Bobeica and others (2016) based on similar encompassing test find that for Italy, as well as for most other

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[3] At the same time, Giordano and Zollino (2016) show that the PPI for Italy forms a cointegrating relationship with the manufacturing ULC, suggesting it is difficult to disentangle the two.

euro area countries where significant, ULC-based indicators are empirically better in explaining export performance. All in all, these results suggest that indicators of cost competitiveness can often be more informative in explaining export flows.

- The evidence is scarcer on the differential impact of competitiveness indicators on intra- and extra-EA export flows. Bayoumi and others (2011) provide evidence that the elasticity of exports within the EA to ULC-based REERs is more than three times compared to that of exports outside the EA (WPI-based REERs show the highest sensitivity within the EA). Bobeica and others (2016) find that the effect of competitiveness indicators on exports is generally more evident outside the monetary union, although, where significant, the magnitude of REER elasticities is generally larger for intra-EA exports. The latter is also the case for Italy where the ULC-based indicator has a roughly two times higher (in absolute terms) long-term elasticity in explaining the intra- compared to extra-EA exports in full sample regressions. These differences in intra- and extra-EA elasticities imply that even relatively small REER gaps can have notable implications for exports. The evidence for Italy also points to persistently higher competitiveness gaps within the EA as opposed to trading partners outside the EA.

- Many studies look also at the direct relationship between competitiveness indicators and the external balance, traditionally finding a significant negative relationship (Leigh and others, 2015). Ahn and others (2017) in a panel of 35 major developed and emerging countries show that only ULC-based real exchange rates exert a significant impact on the external balance through the expenditure switching effect. Giordano and Zollino (2016) find that, contrary to three other major European countries covered, all REERs have a partial impact on non-energy imports of goods to Italy, emphasizing the high sensitivity of Italy's external balances to price or cost competitiveness. Bobeica and others (2016) largely confirm these results for non-energy imports, although they do not find a significant impact of REERs on total imports. Bluedorn and Lin (2017) show that, in a sample of 35 advanced economies, rising relative ULC is associated with a declining trade balance; the relationship is stronger for the EA countries. Further ULC decomposition assigns important roles to changes in own wages and employment in external adjustment.

6.   Prior to the crisis, the current account saw a steady deterioration. Between 1995 Q1 and 2011 Q1, real imports grew by 75 percent compared to about 40 percent growth in real exports. As the ratio of exports to GDP (in real terms) increased by 4.7 percent of GDP over the same period, the ratio of imports to GDP increased by two times that of exports, 9.5 percent of GDP (or 10.9 percent of final consumption). The increase in imports is only partly

Exports, Imports, and Current Account
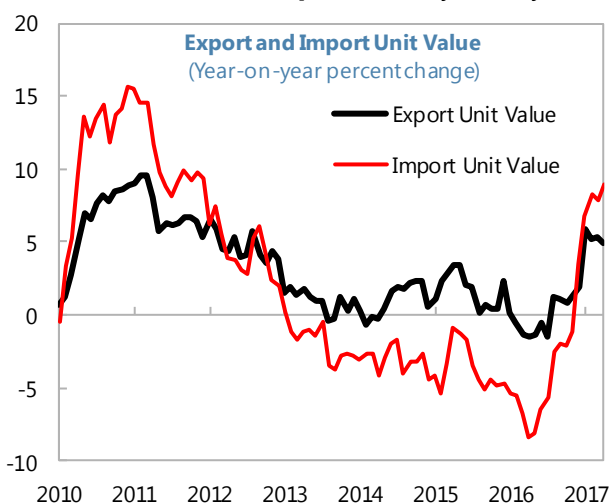(in percent of GDP or final consumption)
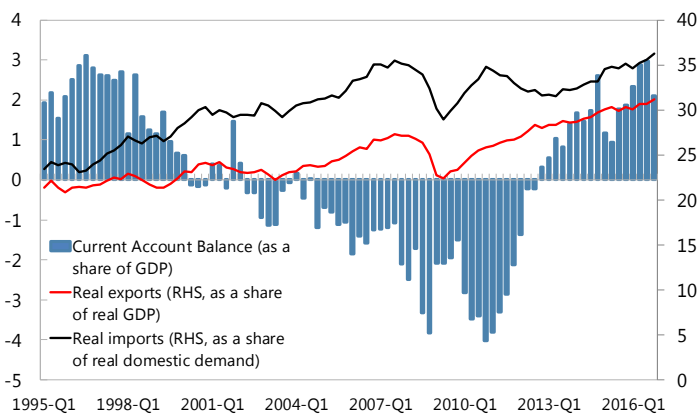
Sources: Haver Analytics; and staff calculations.

reflective of domestic demand—in particular, investments in the 2000s—that, over the same period, grew by 19 percent, or 4 percentage points faster than real GDP. Italy's imports, unlike in peer countries, have been found to be strongly sensitive to relative price developments (Giordano and Zollino, 2016). Thus, the deterioration in the current account also reflected a shift toward foreign goods as domestic ULCs increased rapidly vis-à-vis trading partners, not least because export sensitivity to traditional competitiveness indicators increased within the monetary union (Bayoumi and others, 2011).

7. **The double-dip recession swung the current account into a surplus,** initially mostly through import compression caused by a decline in investment, and followed by large commodity terms of trade gains. All else equal, the surplus is therefore expected to diminish as the output gap closes and the commodity terms of trade gains reverse. At the same time, desirable policy settings, including to reduce high public debt, as well as medium-term fundamentals, related for example to Italy's rapidly aging society, point to higher savings and a higher equilibrium current account balance (IMF, 2017). Thus, real depreciation on the order of 10 percent is estimated to be needed to realign Italy's current account with fundamentals.

Export and Import Unit Value
(Year-on-year percent change)

— Export Unit Value
— Import Unit Value

Internal Adjustment: Prices versus Quantities

8. **A wide gap persists between nominal wages and productivity in manufacturing.** Figure 2 plots the two components of the ULC—average wages and productivity—in manufacturing in Italy against Germany. Nominal manufacturing wage growth in Italy exceeded own productivity, which was largely stagnant, as well as the productivity gains in Germany. This has led to a build-up of a wage-productivity differential—or an increase in ULCs—of over 30 percent since the inception of the EMU. The opposite pattern is observed in Germany.

9. **An even wider wage-productivity gap is evident in the services sector.** In a standard Balassa-Samuelson setting, the non-tradable sector is a source of real appreciation as wages follow those in the tradable sector where productivity growth is generally higher. While this fits broadly the picture in Figure 2 (with some deacceleration in wage growth in Italy starting 2011), there has been a secular decline in productivity of services in Italy. Declining productivity may reflect, among other factors, regulatory and non-regulatory barriers to competition. At the same time, resources have been gradually reallocated from higher productivity manufacturing to lower productivity services (Figure 2) that may not bode well for the long-term growth potential.

10. **About 45 percent of the ULC gap in manufacturing relative to Germany is due to the rising hourly wage rate.** Following Manasse (2013), the change in Italy's relative competitiveness against Germany over the past two decades is decomposed into four factors: the hourly wage rate, labor productivity, consumption taxes, and employers' social contributions. The first two refer to ULCs whereas the last two capture the effect of a fiscal devaluation. The results point to a loss of competitiveness against Germany of about 40 percent over 15 years (1995–2010). The productivity gap with Germany accounted for roughly 60 percent of the overall competitiveness gap over the past two decades, whereas hourly wages alone added about 45 percent. During the last five years, Italy regained about 4.4 percent of the competitiveness gap supported mostly by higher productivity (by shedding labor—see below) and some fiscal devaluation.

Decomposition of Competitiveness vis-a-vis Germany
(5-year growth rates, in percent)
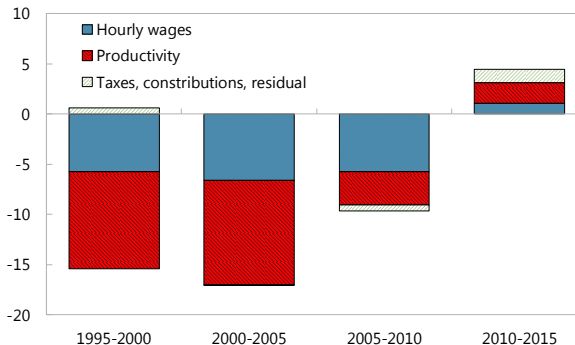
Sources: Haver Analytics, OECD, and staff calculations

11. **The prices of Italian exports do not appear to respond strongly to domestic ULCs, albeit with varying patterns pre- and post-crisis.**

- Mazier and others (1999) argued that Italy has historically had very low domestic cost elasticity of the export price, in contrast to German and U.S. exporters. Similarly, Bussière and Peltonen (2008) provide evidence of a low pass through of domestic cost factors to export prices of Italy; by contrast, domestic cost factors matter notably (or even exclusively) for export prices of Germany. Rather, export prices in Italy appear to have followed import prices in the euro area more closely than domestic ULCs. This relationship is also illustrated in the negative correlation between Italian export prices and ULCs in manufacturing.

Export Prices, ULC, and Import Prices in the EA
(2010Q1=100)
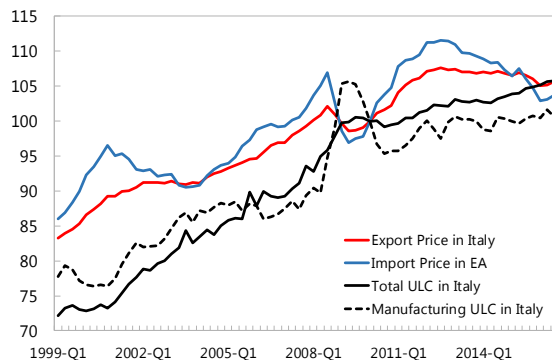
Sources: Haver Analytics

- Table 1 presents empirical results on domestic cost and foreign price elasticities of export prices, estimated on quarterly data for the past 20 years.[4] In line with earlier studies, the table shows

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[4] All regressions relate export prices to measures of domestic costs and foreign competitors' prices; see Marazzi and others (2005) for a short overview of micro-foundations. The dependent variable is the total export deflator. Foreign prices are measures with HICP-based REER (an increase denotes appreciation), divided by domestic HICP. Domestic costs are measured by the domestic PPI excluding construction and energy. PPI oil and non-oil energy prices are added as additional regressors, together with the Brent oil prices in U.S. dollar terms to avoid multicollinearity. All data are quarterly and seasonally and/or working-day adjusted. As in most of the literature, in most cases, a

(continued)

that Germany has passed domestic costs through to the export price, whereas smaller countries such as Belgium or Portugal have been pricing their exports to market. Italy has a very low pass-through of domestic costs to the export prices, with the latter being relatively sensitive to oil and energy prices.

- Indicative evidence suggests that the pattern of pass-through of domestic costs to export prices varies from pre- to post-crisis period. Table 2 presents the results of the export price regressions split indicatively into pre- and post-crisis periods from the beginning of 2008. Across most peer countries, a notable increase is observed in the domestic cost elasticity during the post-crisis period. Germany and Portugal pass the costs through at a one-to-one or higher ratio, but these countries have also gained export market share, including from lower or declining ULCs relative to trading partners. The cost elasticity has also increased for Italy, but remains closer to France and two times lower compared to Portugal or Spain. This suggests a limited ability to enhance the profitability of exports.

Table 1. Italy and Euro Area: Export Price Regressions for the Full Period

	EA19 (1)	Belgium (2)	France (3)	Germany (4)	Italy (5)	Netherlands (6)	Portugal (7)	Spain (8)	Slovenia (9)
Export prices (-1)	0.048	0.118	0.231***	0.075	0.267***	-0.322***	0.096	-0.141	-0.057
	(0.06)	(0.09)	(0.08)	(0.08)	(0.08)	(0.11)	(0.10)	(0.10)	(0.11)
Foreign prices	-0.085***	-0.322**	-0.107***	-0.188***	-0.138***	-0.402***	-0.559***	-0.078	-0.278**
	(0.02)	(0.13)	(0.04)	(0.02)	(0.04)	(0.15)	(0.09)	(0.13)	(0.13)
Domestic PPI	0.611***	0.377***	0.322***	0.668***	0.225*	0.619***	0.467	0.657***	0.532***
	(0.10)	(0.14)	(0.11)	(0.11)	(0.12)	(0.16)	(0.32)	(0.19)	(0.17)
PPI energy	0.019	0.044	0.002	-0.013	0.035*	0.026	0.038	-0.003	-0.068
	(0.02)	(0.04)	(0.02)	(0.02)	(0.02)	(0.04)	(0.03)	(0.05)	(0.04)
PPI oil	0.040***	0.021	0.035***	0.018*	0.037**	0.053	-0.009	0.125***	0.136***
	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.04)	(0.02)	(0.02)	(0.04)
Brent oil price	-0.000	0.017	0.002	-0.003	0.001	0.001	0.031***	-0.057***	0.005
	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Constant	-0.001***	-0.002	-0.001*	-0.002***	0.000	-0.002*	-0.002*	0.001	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
R-squared	0.87	0.60	0.75	0.75	0.69	0.62	0.51	0.56	0.54
Adj. R-squared	0.86	0.57	0.73	0.74	0.67	0.59	0.47	0.52	0.50
Observations	82	85	86	86	81	81	85	82	74

Standard errors in parentheses. ***, **, and * denote significance at 1, 5, and 10 percent significance level, respectively.

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cointegrating relationship cannot be found among the key variables of the model. Accordingly, the regressions are estimated in log-differences without an error correction term. All regressions include a lagged dependent variable as in Bussière and Peltonen (2008) that, in most cases, is found to deliver similar results to a distributed lag representation. Equivalent estimation results for the distributed lag representation can be found in the appendix, Tables A1 and A2. Similarly, instrumenting for the lagged dependent variable to address the potential endogeneity bias delivers qualitatively similar results for most countries, although often with reduced significance. Whereas this paper focuses on country-specific results, various panel data estimators point to a similar aggregate relationship.

	EA19		France		Germany		Italy		Portugal		Spain	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Export prices (-1)	0.112	-0.006	0.263**	0.173	0.176*	-0.033	0.217*	0.176	0.173	-0.148	-0.049	-0.287
	(0.09)	(0.12)	(0.10)	(0.13)	(0.10)	(0.12)	(0.11)	(0.12)	(0.14)	(0.12)	(0.13)	(0.18)
Foreign prices	-0.073***	-0.109***	-0.083	-0.172***	-0.177***	-0.215***	-0.203***	-0.089	-0.586***	-0.207	-0.051	-0.142
	(0.02)	(0.02)	(0.06)	(0.05)	(0.03)	(0.05)	(0.04)	(0.07)	(0.17)	(0.17)	(0.17)	(0.23)
Domestic PPI	0.599***	0.516**	0.377**	0.323*	0.477***	1.036***	0.154	0.430*	-0.051	1.146***	0.653**	0.751**
	(0.14)	(0.21)	(0.18)	(0.18)	(0.10)	(0.20)	(0.16)	(0.25)	(0.39)	(0.22)	(0.32)	(0.30)
PPI energy	0.021	0.038	-0.018	0.011	0.006	-0.059**	0.051	0.038*	0.051	0.067	0.065	0.003
	(0.03)	(0.03)	(0.28)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	(0.07)	(0.05)	(0.14)	(0.05)
PPI oil	0.033**	0.057**	0.037***	0.030*	0.011	0.011	0.009	0.037	-0.027	0.063*	0.146***	0.093*
	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.05)
Brent oil price	0.002	-0.002	-0.001	0.007	-0.000	-0.005	-0.000	0.001	0.045***	-0.003	-0.068***	-0.047*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.03)
Constant	-0.002***	0.000	-0.001	-0.000	-0.002***	-0.001**	0.001	0.000	-0.001	-0.002	0.001	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
R-squared	0.81	0.94	0.63	0.89	0.73	0.84	0.55	0.83	0.40	0.76	0.60	0.54
Adj. R-squared	0.78	0.92	0.57	0.87	0.70	0.81	0.48	0.80	0.31	0.71	0.54	0.44
Observations	47	35	51	35	51	35	46	35	50	35	47	35

Standard errors in parentheses. ***, **, and * denote significance at 1, 5, and 10 percent significance level, respectively.

12.   Before the crisis, manufacturing companies gradually absorbed part of the wage increases in lower profit margins. When a country is unable to pass increases in domestic costs to export prices, other margins must adjust. A decline in capital share and thus profit margins in manufacturing is evident from ULCs increasing over and above the output deflator, in contrast to the developments in Germany (Figure 2) and consistent with "pricing to market" behavior. A gradually eroding profit share over a prolonged time horizon reallocates income toward households and can constrain business investment in areas such as innovation and R&D. Prior to the crisis, easy access to financing implied limited constraints to reducing employment, although there was a trend decline in output in several subsectors (Figure 2 of the 2016 Article IV consultation staff report).[5]

13.   However, since the crisis, nominal wage rigidities have resulted in an adjustment through quantities such as employment and investment. While some labor shedding was inevitable during the crisis as companies attempted to maintain productivity, the scale has been notable in Italian manufacturing—declining employment for eight consecutive years, which remains 16 percent below its pre-crisis level (Figure 2). Real investment has been cut dramatically and is now 2 percent below the euro introduction level. Export volumes have remained subdued against the backdrop of compressed profit margins and some pass-through of domestic costs to export prices. Business services have taken an even larger hit with 10 percent reduction in real investment compared to 1999, whereas in Germany both sectors have expanded real investment by 10 percent or more. The adjustment in real quantities and persistence of low productivity contrasts sharply with

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[5] Lissovolik (2008) estimates that, for the period preceding the crisis, the long-term elasticity of Italy's real exports to global demand, estimated in the order of 0.4, was about 2–3 times lower than for Germany or Spain.

the preservation of nominal wages, and with the textbook adjustment associated with a successful internal devaluation.[6]

Italian Exports: Lagging Productivity and Competitiveness

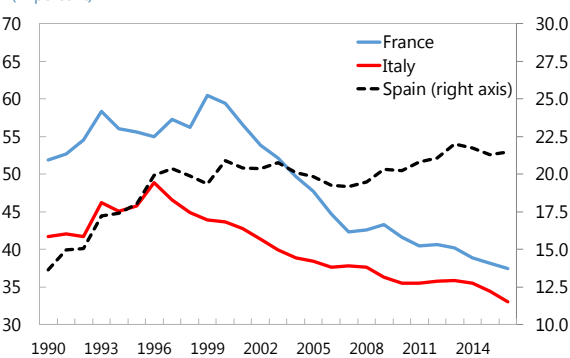**14.   Italian exports are among the most diversified in the world, with high-quality products that have served as a comparative advantage.[7]** One measure often referenced in this context is the export unit values that historically have grown faster than the export deflator. This can suggest increasing quality, but also an internal shift in the product mix (toward higher value added goods without an improvement in quality of these goods), changes in production costs and thus overall loss of competitiveness, or pricing strategies. Henn and others (2013) adjust export unit values for changes in production costs and prices, and derive a quality index that confirms Italy's high position by placing Italy at or just below the 90th percentile of 178 countries covered, although they also point to a steady deterioration in the quality since late 1990s. Bugamelli and others (2017) compute "export quality" as a CES demand shifter that has grown more rapidly than in most peer countries, although it cannot be fully differentiated from other demand shifters and cross-country variations in prices or production costs, and do not capture firms' quality choices.

15.   However, Italy has been gradually losing export market share. Along with other advanced countries, Italy has been losing its market share at the time that marks the rise of China (Figure 3). However, when most other euro area countries have reversed the trend alongside a

Export Prices and Unit Values
(2008Q1=100)

Legend:
- Italy: Export Deflator
- Italy: Export Unit Values
- Germany: Export Unit Values
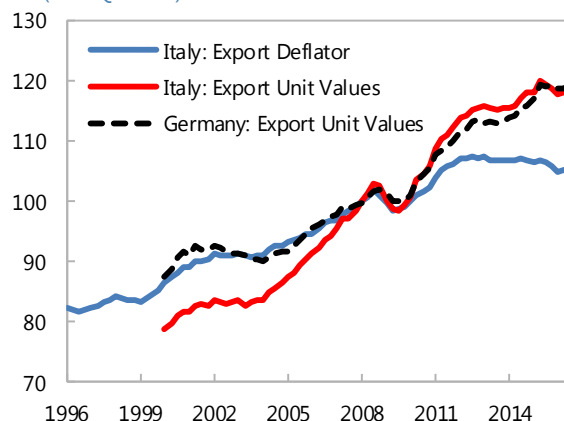
World Export Shares Relative to Germany
(In percent)

Legend:
- France
- Italy
- Spain (right axis)

Sources: Haver Analytics, and staff calculations

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[6] The contrast to Spain is particularly informative, where the 2012 structural labor market reforms, including a prioritization of more efficient firm-level wage bargaining, have contributed to bringing down the ULCs (see previous text chart) and avoided job losses in response to labor demand shocks (Dao, 2015).

[7] The authorities have recently taken a series of measures in the context of the "Industry 4.0" plan to stimulate investment and build export capacity. These include (i) temporary extension of super-amortization; (ii) temporary introduction of a hyper-amortization for "Industry 4.0" goods; (iii) more attractive R&D tax credit; (iv) tax incentives for start-ups and innovative SMEs; (v) reduction in the corporate tax rate (IRES) from 27.5 to 24 percent; (vi) reduced 10 percent tax rate on productivity-related wage bonuses at the firm level; (vii) refinanced guarantee fund to facilitate credit to SMEs; (viii) newly created Digital Innovation Hub and the "Industry 4.0" Competence Center; (ix) measures to reinforce technological clusters and the Ultra Broadband Plan; and (x) public investment toward "Industry 4.0" related education and research.

weaker euro in recent years, Italy has not managed to do so. Against the backdrop of increasing export unit values, a declining relative market share means that exports in Italy have not led the recovery, unlike in the 1992 recession and devaluation (Figure 3; OECD, 2017).

16.   Productivity growth in Italian manufacturing has been substantially lagging the euro area:

- OECD (2017) finds that the negative contribution to growth arising from a shift in economic activity *across* Italian industries—and toward low productivity growth industries—has been of the same magnitude observed in other euro area countries (the annual average contribution of a shift across industries to productivity growth is estimated at −0.48 percent in both Italy and the euro area).

- However, what has been holding Italian industries back relative to peers is slow productivity growth *within* industries; the contribution of within manufacturing growth has been three times higher in the euro area than in Italy, at 0.42 compared to 0.17 percent. Manufacturing in Italy is also the sector with largest within-industry productivity-growth differential in the euro area.

- Furthermore, and in sharp contrast to the rest of the OECD, declining productivity in Italian manufacturing is concentrated in firms at the technological frontier. OECD (2017) estimates that between 2001 and 2012 the productivity in the top 10 percent of Italian manufacturing firms *declined* by almost 15 percent, whereas over the same period the productivity of OECD top five frontier firms *increased* by more than 30 percent. Their estimates also show that increasing the productivity and size of Italian frontier firms to global frontier would expand the manufacturing sector by about one-fifth.

17.   Italy's integration into global value chains has been generally low, while Italy's product mix has been moving away from the technological frontier (Figure 3).

- Trade and related integration into global value chains (GVCs)[8] has been shown to enhance the gains from trade liberalization, including through increased specialization and scale of production by exploiting comparative advantages, improved resource allocation, transfer of knowledge and innovation, favoring more productive firms, and fostering exit of the least productive firms (see Haugh and others, 2016). Not being able to share fully these gains has constituted a missed opportunity for Italy's export performance. Its low participation in GVCs is also an example of negative complementarities: lack of decentralized firm-level wage bargaining weighs on exports as, in the GVCs, production is optimized on a plant-by-plant basis that in turn requires simultaneous negotiation of all aspects of production (Boeri, 2015).

- Italy has the highest export similarity with China. Export similarity between countries, which denotes the similarity of relative shares of each good in countries' total exports, is a metric of

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[8] Global value chains capture vertical integration in production processes through trade in intermediate products, where each fragmented production stage is carried out in the most cost-efficient location.

potential competitive pressures. By this metric, Italy's exports are very similar—and increasingly so—to the export structure of China (Figure 3), even more so than countries like Korea, Japan, and Germany. This points to potentially notable adjustment challenges for Italian exports, even more so as the share of high-technology exports in China increases rapidly (IMF, 2011). Similarly, Bugamelli and others (2017) find that, compared to European peers, Italy's export structure is the most exposed to competition from China. They classify 67 percent of Italy's exports in 1999 as facing high or medium competition from China, falling to about 59 percent in 2015, still far above 44 percent in Germany or 36 percent in France. While a falling share of exports exposed to high competition from China necessarily implies some rebalancing in the export structure, by itself this does not make Italy's exports more competitive; as seen in ¶16, frontier manufacturing firms have not been able to support growth.

- While export similarity may not adequately capture differences in quality within product categories, a metric closer in nature to quality differences is Hidalgo and Hausmann's (2009) "Economic Complexity Index" (ECI) that was shown by Hausmann and others (2007) to have predictive power for economic growth.[9] As illustrated in Figure 3, the product structure in Italy has over time become less and less "complex". Compared to 1991 when Italy was at par with Germany and France and was not far from the technological frontier, it has lost 40 percent in terms of the economic complexity index, gradually falling in the rankings. Similar trends are evident in Spain and Portugal, whereas China has gained considerable ground. Similar country rankings are observed in other studies of export complexity (e.g., Felipe and Kumar, 2011).

18. Other factors add to Italy's productivity and competitiveness challenges.

- A gradual decline in the ECI is indicative of insufficient innovation and R&D investment to keep apace with the productivity frontier. The overall scale of innovative activity in Italy is low by EU or OECD standards (OECD, 2017)—as measured, for instance, by the number of researchers and patents, public and private spending on R&D as a share of GDP, and private investment in fixed and knowledge-based capital—even though research productivity (patent applications per researcher or R&D expenditure) is relatively high.

- The small size of Italian firms has often been highlighted as an impediment to economies of scale and technology spillovers. This is especially evident in manufacturing where the correlation between market size and productivity is very low compared to other advanced countries in Europe. Andrews and Cingano (2014) attribute about three-fourths of the productivity gap with the global frontier to the small size of the Italian frontier firms.

- Adalet McGowan and others (2017) find evidence of increasing prevalence of zombie firms in OECD economies that not only lock in sizeable resources, but crowd out resources from heathy firms and create barriers to entry. These effects are especially prevalent in Italy where zombie

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[9] The ECI is a measure that captures both countries' production sophistication and export diversity. Countries at the productivity frontier export goods that tend to be unique and produced only by highly diversified countries. Countries further away from the frontier lack capabilities to produce such specialized or exclusive products.

firms are found to hold almost one-fifth of capital and account for almost one-quarter of the decline in business investment. Schivardi and others (2017) argue, however, that there is no crowding out effect of the presence of zombie firms, although bank weaknesses contribute to misallocation of resources and production efficiencies, including by allowing zombies to grow faster or contract less. In this regard, the cleanup of bank balance sheets would boost bank profitability and stability and allow the banking system to fully support the economic recovery.

- Moreover, impediments to competition are still prevalent, whereas decisive reforms in public administration are crucial for both direct effect on firm productivity (Giordano and others, 2015) as well as to unlock potential gains from product market reforms (Lanau and Topalova, 2016).

C. Wage Bargaining in Italy

Institutional and Economic Context

19.   **Wage setting in Italy is conducted through centralized wage bargaining at the sectoral level, where sectoral wage agreements are extended to the whole country.** The underlying framework as defined by the 1993 social pact is that of a two-tier wage bargaining that was growing in popularity around that time in many countries. The second- or firm-level bargaining was subordinated to the national sectoral contract and applicable in "non-repeatable" areas with an aim to provide productivity-related wage increases. This was the consensus in many countries: the social partners to the wage setting, rather than moving toward the extremes of fully centralized or fully firm-level wage setting, opted for operating in the middle (Boeri, 2015). This was despite the finding of Calmfors and Driffill (1988) that such intermediate bargaining schemes have the lowest power to restrain wages and are considered to deliver labor market outcomes such as higher unemployment that are inferior to both firm-level and national bargaining.

20.   **Since 2009, there have been several, albeit limited, attempts in Italy to facilitate firm- or second-level bargaining.** Most dominantly, the 2011 decree law (138) set conditions for firm-level and local wage agreements to prevail over the industry-wide national collective agreement.[10] However, the legal standing of such conditions remains weak and restrictive (e.g., requiring a majority representation of trade unions for contract discussions at the firm level with restrictive or unclear criteria such as the aim to foster employment, increase in salary and competitiveness etc.), and the rules on wage bargaining and the structure of contracts are set by social partners in framework agreements (rather than by law). The favorability principle thus remains deeply rooted in wage setting; Jin and Lenain (2015) report that the role of firm-level negotiations remains subject to fields specified within collective agreements and usually allowed for productivity-related incremental adjustments to collective terms. The empirical evidence cited by D'Amuri and Giorgiantonio (2015) shows a very small—12 percent of companies—and declining interest by companies to resort to the derogative principles of the 2011 law, owing to the prevailing legal uncertainty.

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[10] See Schindler (2009) and D'Amuri and Giorgiantonio (2015) for descriptions of other reform initiatives.

21.   Wage-setting institutions in Italy thus impose strong wage rigidities. According to WEF (2016) indicators, both the flexibility of wage determination as well as the degree of cooperation between social partners are among the lowest in the euro area (see text chart). So is a supplementary indicator of bargaining governability—the ability of employer associations and trade unions to control their constituencies (OECD, 2004).[11] Coordination in particular has been found in many studies to be a key factor for macro flexibility and the ability to adjust to macroeconomic shocks (see OECD 2017 for a recent review). Sectoral-level bargaining with low flexibility and low coordination performs the poorest in internalizing negative wage externalities—the main argument in favor of centralization—which is effective only with a high degree of cooperation and at the national or possibly regional level. For this reason, it is advisable to avoid the third quadrant on the left text chart, in which Italy is placed.

Wage Bargaining Structures in the Euro Area
(indices, rescaled between 0 and 1)

Institutions versus Productivity-Pay Correspondence
(Indices)

Sources: WEF (2016); and staff calculations. Both axes rescaled between 0 and 1.

Sources: WEF (2016); and staff calculations. Horizontal axis rescaled between 0 and 1.
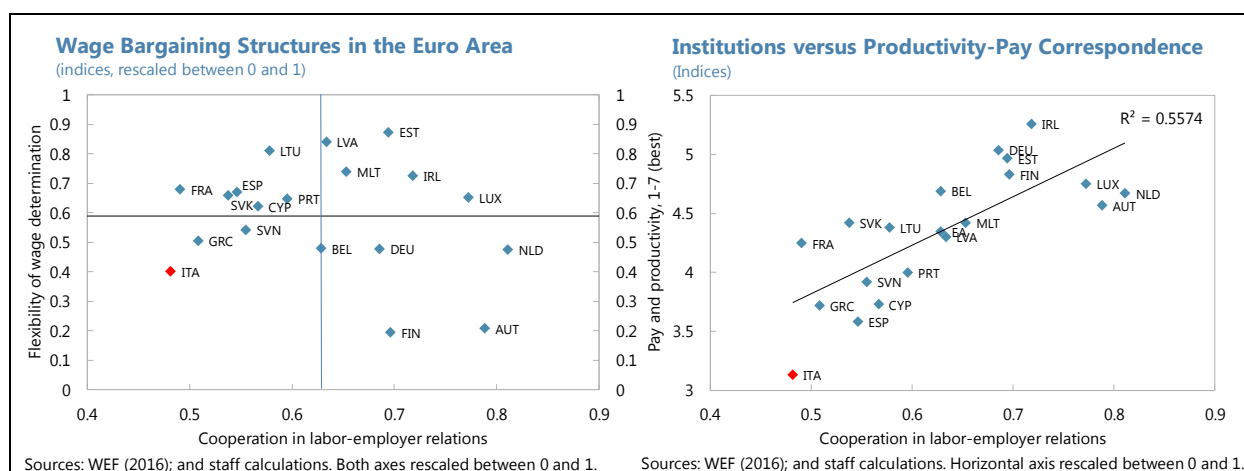
22.   The outcome has been persistent wage growth above labor productivity growth. The coverage of the national wage contracts in practice is very high, exceeding 90 percent, owing to constitutionally-provided administrative extension to the entire workforce, whether covered by unions or not. The negotiated wage limits are effectively binding. The survey evidence in D'Amuri and Giorgiantonio (2015) reveals that the portion of wages exceeding the minimums in the national collective agreements is only around 10.5 percent. Thus, the wage distribution is highly compressed, even though regional firm-level productivity differentials are pervasive and the mismatch of the supply and demand of skills is one of the largest in Europe (see OECD, 2017). Such low productivity and pay correspondence is strongly associated with the low degree of coordination in labor-employer relations (see text chart), which is in line with empirical studies finding a strong effect of the degree of "corporatism" on unemployment (Bassanini and Duval, 2009). Industry agreements that are in place for three years link the contractual wages to CPI forecasts excluding energy, where adjustments can be made only at the next round of negotiations, contributing to high persistence and sluggish adjustment (Jin and Lenain, 2015). All these factors point to potentially large employment gains from decompressing the wage distribution to reflect productivity differentials.

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[11] In OECD (2004), bargaining governability as an indication of vertical control is measured by legal enforceability of collective contracts and whether a peace obligation prohibits industrial action.

23.   Discontent with the current wage setting among firms appears to be high. D'Amuri and Giorgiantonio (2015) find that companies that had some form of second-level bargaining tended to provide wage increases related to productivity and were more likely to adopt innovative practices. Roughly one-third of surveyed businesses and 44 percent of those with supplementary firm-level agreements declared their dissatisfaction with national agreements. More importantly, almost two-thirds of firms expressed interest in more flexible working hours in exchange for employment guarantees or even wage increments. The need to keep wages down in exchange for concessions was especially strong for companies with an international orientation (exports accounting for more than one-third of turnover).

24.   Two-tier bargaining schemes have not lived up to the expectations also elsewhere in Europe. More broadly, the evidence summarized in Boeri (2014, 2015) suggests that, contrary to expectations, two-tier bargaining structures have not delivered enhanced wage flexibility. Three empirical findings stand out. First, firms under two-tier bargaining structures adjust mainly employment in response to adverse shocks, whereas firms with decentralized firm or plant level bargaining adjust mainly wages. Second, firms' wage share linked to an individual's performance is about the same as in firms applying only higher-level agreements. It is higher in firms applying firm-level agreements. Third, compression of nominal wages does not necessarily imply a reduction in real wage inequality, especially in countries with large productivity dispersions across firms and regions such as Italy. Such findings are not supportive of the hoped for micro-economic wage flexibility, pointing to the need to adjust the institutional setting.

Employment Effect of Firm-Level Bargaining

25.   To quantify the potential benefits of a more competitive wage setting, the steady-state unemployment outcomes under sectoral-level and firm-level wage bargaining are compared in a search-and-match framework. The model economy of Jimeno and Thomas (2013) is used who, in a standard Mortensen-Pissarides economy, depart from the otherwise common assumption of symmetric firms, differentiated only by the sector that they belong to. In their extended framework, relative wages respond to both firm- and sector-specific factors (productivity shocks) that allows for a more meaningful comparison of the two bargaining regimes. In this model economy, wages react to firm-specific productivity shocks in the case of firm-level bargaining and to sector-wide average productivity shocks under sector-level bargaining.

26.   The model is parameterized to the Italian labor market, with the currently prevailing sector-level bargaining regime as a baseline (Figure 4 and Table A3). The steady-state quarterly real interest rate is set to 0.01 and the long-term unemployment rate to 10 percent (Italy's average unemployment rate over the long term is about 9½ percent, which is above the average rate in many OECD economies). The quarterly job finding rate is set to 0.075, following Hobijn and Şahin (2007), who estimate the monthly job finding rate for Italy at 0.026, the lowest among the OECD countries.[12] For comparison, the standard parameterization of the quarterly job finding rate in the

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[12] The standard expression $X_m + (1 − X_m)X_m + (1 − X_m)^2 X_m$, is used, where X_m is the monthly job finding rate.

literature is 0.7 for the U.S. and 0.25 for the "more rigid" continental European labor market (see Blanchard and Gali, 2010). Combined with the probability of filling a vacancy of 0.7 that is at the lower end of commonly found empirical values (see Raissi, 2015), labor market tightness is set at 0.11; both parameters also reflect the average values observed in the available data. The job finding rate and the unemployment rate yield 0.8 percent for the separation rate that is lower compared to the usual values of around 2 percent. The share of exogenous separations is set at 0.7, following Jimeno and Thomas (2013) and Den Haan and others (2000) that implies an exogenous separation rate of 0.6 percent. The matching function is assumed to be a standard Cobb-Douglas specification with constant returns to scale, where the elasticity of unemployment is 0.4 that is toward the lower end of the usually found empirical range.[13] Idiosyncratic productivity shocks follow a log-normal distribution with mean log-productivity μ normalized to $\sigma^2/2$ such that the expectation of idiosyncratic productivity $E(z)$ is unity. While evidence on the standard deviation of intra-sectoral productivity is lacking, the standard deviation of productivity σ is set to 0.2 that is at the higher end of values tested by Jimeno and Thomas (2013).[14]

27.   The baseline simulation indicates that moving from sector- to firm-level bargaining results in potentially significant employment gains that are larger than similar gains expected for continental Europe. The text chart shows the steady-state unemployment rate, together with other key labor market statistics under different wage setting regimes, against the payoff of being unemployed. Results are shown for sector level, firm level, and an alternative "right-to-manage" wage bargaining; in the latter case, instead of taking the number of jobs as given, the bargaining parties internalize their wage agreement on employment at the firm level, once the sector-level wage agreement is reached. Unemployment is lower under firm-level bargaining compared to sector-level bargaining, which is also the main theoretical result of Jimeno and Thomas (2013). This reflects the key argument for decentralization: letting wages of individual and heterogeneous firms / plants to respond to their specific conditions would save jobs—through a lower separation rate— that would otherwise be destroyed, and would create new ones—through a higher job finding rate—that would otherwise not have been economical owing to higher wages. Calibrated to the labor market conditions of Italy, the model predicts a fall in the equilibrium unemployment rate from 10 percent to 6.5 percent, with a corresponding 3.5 percentage point (or 4 percent) increase in the steady-state employment.[15] This points to potentially significant real gains that exceed the 3 percentage points decline in the unemployment rate for an average continental labor market found by Jimeno and Thomas (2013).

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[13] Peracchi and Viviano (2004) estimate the aggregate unemployment elasticity for Italy as low as 0.23, increasing to 0.488 in the North-Eastern Italy. Petrongolo and Pissarides (2001) in an extensive survey find support to CRS that in general estimate the coefficient on unemployment in the range of 0.5–0.7, although some estimates that use total hires instead of hires from unemployment as a dependent variable find lower coefficients on the unemployment in the range of 0.3–0.4.

[14] The authors also show that changes in the dispersion of firm-specific productivity shocks have little impact.

[15] The size of the labor force is normalized to 1, so that a reduction in the unemployment (rate) translates into an equivalent increase in employment.

Labor Market Outcomes Under the Baseline Parameterization
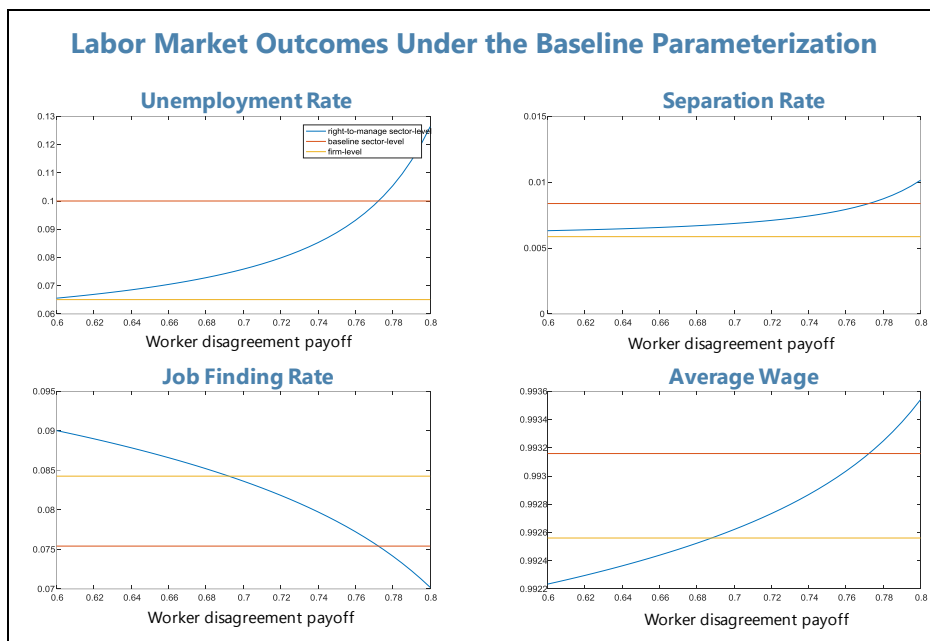
28.   Robustness tests point to potentially even larger employment gains:

- There are at least three possible limitations to the baseline calibration: (i) the available data for Italy presented on Figure 4 only concerns companies with 10 or more employees, covering industry and services; (ii) a large share of vacancies in Italy is likely not advertised but rather filled through short-term work arrangements (e.g., the voucher program); and (iii) the data available are dominated by the crisis followed by a prolonged adjustment period of high unemployment that might not reflect well the equilibrium conditions. To address these limitations, two robustness tests are performed. First, a labor market tightness of 0.2 is targeted that is at the higher end of Italy's pre-crisis period (Figure 4). As it is closer to values observed in the continental Europe, this could be considered a "medium tightness" scenario. With unchanged probability of finding work (0.7) and long-run unemployment rate (0.1), a job finding rate of 14 percent and a separation rate of 1.6 percent are implied. Second, a more extreme "high tightness" scenario is tested for, targeting labor market tightness of 0.445 and reducing the unemployment elasticity of the matching function to 0.23—both reflecting point estimates obtained by Peracchi and Viviano (2004)—while increasing the vacancy filling rate to 0.8. With this parameterization, the job finding rate increases to 0.36 that is in between Blanchard and Gali's (2010) treatment of the U.S. and continental European labor markets.

- Employment gains are larger as the parameterization reflects a more fluid labor market. In the first alternative scenario, the equilibrium unemployment rate under firm-level bargaining falls to about 6¼ percent because of an almost two times higher job finding rate compared to the baseline calibration. The second "high tightness" scenario is designed to test the limits of the expected efficiency gains through an even higher probability of finding a job, a higher probability for the firm of filling the vacancy, and a matching technology that gives a higher positive externality by firms on searching workers (with consequently lower positive externality

from workers to firms). With this parameterization, the unemployment under the firm-level wage setting falls further to just below 5 percent. Thus, while the baseline scenario is firmly rooted in the available data, it is likely to be a conservative lower bound parameterization.[16]

Labor Market Outcomes Under a "Medium Tightness" Scenario

Labor Market Outcomes Under a "High Tightness" Scenario

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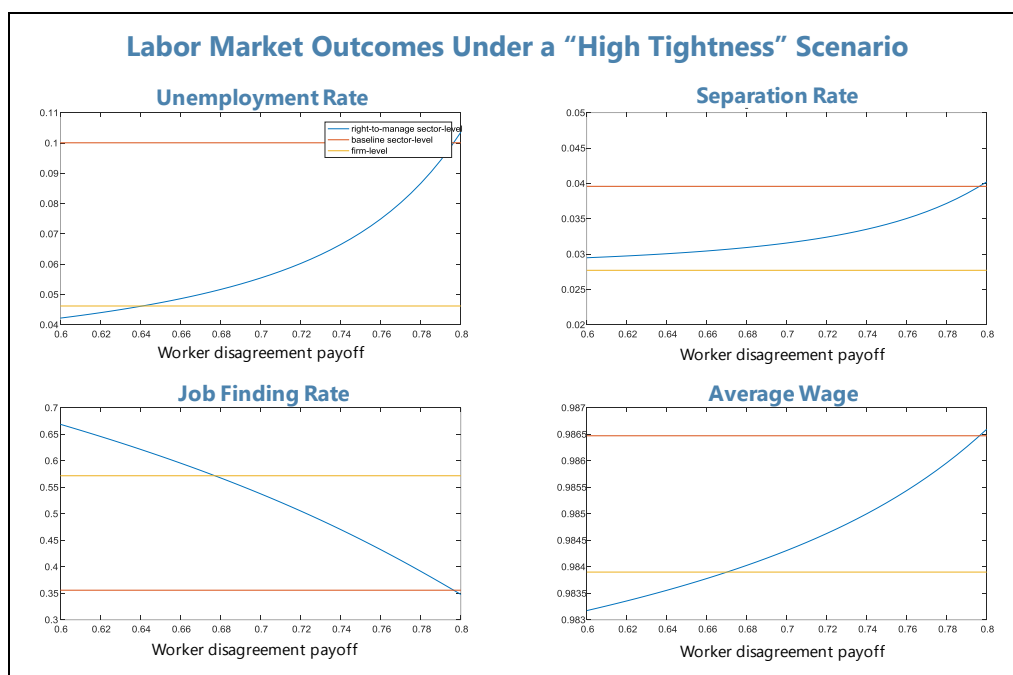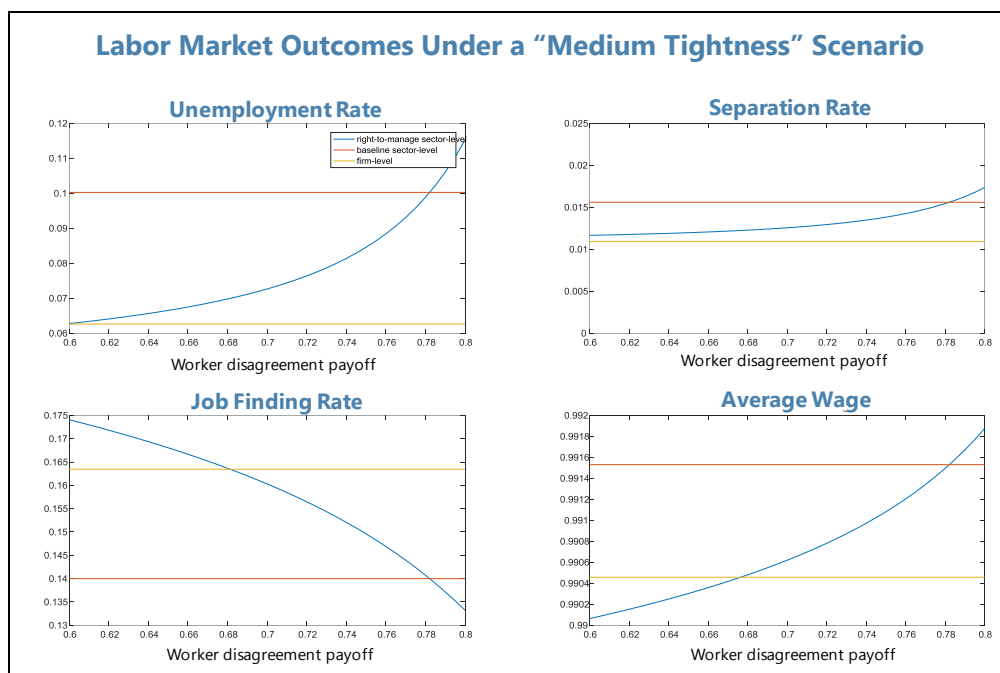
[16] Another reason why a more conservative baseline scenario is followed in the quantification presented here is the nature of the DSGE model, which does not account for other rigidities that can affect equilibrium (un)employment. A comprehensive complementary reform package to tackle structural rigidities is thus necessary to allow the yields from wage bargaining reform to materialize fully.

Policy Considerations

29.   The prevailing institutional structures suggest moving toward firm-level rather than regional or national wage bargaining. Although fully centralized and coordinated bargaining schemes are often found to deliver superior outcomes (Bassanini and Duval, 2009), these outcomes mostly hinge on a high degree of coordination or corporativism, where Italy scores the lowest in the euro area. Thus, the internalization of negative externalities arising from excessive wage claims is limited. Regional bargaining could be an alternative, but it suffers from similar drawbacks—as the main argument for regional bargaining also lies in the internalization of negative wage externalities that, in the main part, occur at the regional level (Calmfors, 1993). As such, firm-level bargaining would be a more feasible option, especially given the large heterogeneity of firms in Italy.

30.   Starting from a "clean slate" could address issues of legal uncertainty. Although efficient opt-outs for firms from sectoral wage bargaining, with clear rules set to overcome the favorability principle, can—in theory—deliver similar outcomes as firm-level bargaining, difficulties could arise with enforcement in practice. Social partners in Italy have considerable leverage over the rules of collective bargaining that are set by framework agreements rather than by law. These have made largely ineffective the various attempts at promoting second-level bargaining within the current two-tier framework. Restrictions on administrative extensions of collective agreements as implemented in other countries are harder to impose in practice as they stem from constitutional principles. Therefore, a cleaner way to decentralize wage setting would be to allow firm-level contracts to take prevalence over higher bargaining levels; firms can be allowed to resort to higher sector- or national-level bargaining only when they do not engage in (or agree to opt out of) firm-level bargaining. A derogation from sectoral contracts should be available for a wide range of issues (i.e., not limited to wages but also hours worked and other non-wage benefits) and the representativeness criteria firmly established in the law.

31.   A floor on wages could be set by a legal minimum wage. This option is foreseen in the Jobs Act, although it has not been implemented as wage floors are de facto provided by national contracts. Since at the firm level (and without strong coordination) a higher elasticity of demand in the product markets would make employment more elastic and shift the bargaining power to employers, consideration should be given to instituting a statutory minimum wage. The level of minimum wage should be set appropriately not to dis-incentivize participation, and ideally would be differentiated by regions given the differences in productivity and living standards.

32.   Implementing other labor reforms could allow the gains from firm-level bargaining to materialize in full. Other rigidities can contribute to structural unemployment and dampen the efficiency gains from firm-level wage setting. Therefore, wage bargaining reform can be supported by other labor market measures to reduce supply constraints, including active labor market policies to facilitate search-and-match and reduce skill mismatches, and scaling up child-care and lowering the labor tax wedge for second earners to incentivize employment (Topalova, 2016).

Output and Competitiveness Gains

33.   **The IMF's Global Integrated Monetary and Fiscal Model (GIMF) can be used to simulate the effect of firm-level wage bargaining on growth and competitiveness.** This is important, not least to assess whether the near-term demand effects are contractionary as wages adjust down toward productivity at the firm level while employment and investment gains take some time to materialize. The incorporation of monopolistic competition and a rich set of rigidities allows the GIMF to help assess the impact of structural reforms on macroeconomic outcomes.[17] The key assumption relates to the mapping of specific reforms into meaningful changes in GIMF structural parameters. To derive the mapping, the simulation results are used from the search-and-match DSGE model from the previous section that, in the baseline scenario, pointed to an increase in employment of about 4 percent. To replicate this steady-state employment (as opposed to unemployment) outcome in GIMF (whose labor market representation only contains the intensive margin or hours worked), wage markups are reduced by about 15 percentage points, phased in linearly over five years, is anticipated by households and firms, and fully credible after the fifth year.

34.   **The GIMF simulations predict a notable improvement in output and competitiveness over the medium term.** Figure 5 shows the GIMF simulation results. First and importantly, the reform is associated with little or no upfront output losses. In other words, the concern that the reform is recessionary in the near term need not materialize (especially when consideration is given to a comprehensive reform package; see Part 3). Real consumption and investment decline somewhat initially as wages and inflation decline that push up real interest rates, but are offset by expenditure switching toward imports as the real exchange rate depreciates. Second, the medium-run gains can be substantial: over a 5–10 year horizon, real output is about 4–5 percentage points higher than in the baseline, while the REER depreciates by about 2–3 percent. Third, there is some initial overshooting; as inflation recovers and real interest rate declines, the improvement in output and the REER reduces slightly in the long-run steady state.

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[17] See Anderson and others (2013) for an overview of GIMF simulation properties and Lusinyan and Muir (2013) for an earlier GIMF application to assess structural reforms in Italy.

Figure 1. Italy: Competitiveness Indicators

CPI-Based REER
(1999Q1=100, ECB EER-38)

Germany
France
Italy
EA-19
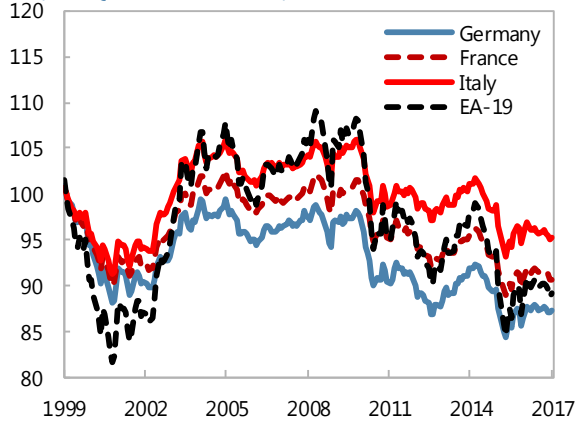
PPI-Based REER
(1999=100, BoI, 61 trading partners)

Germany
France
Italy
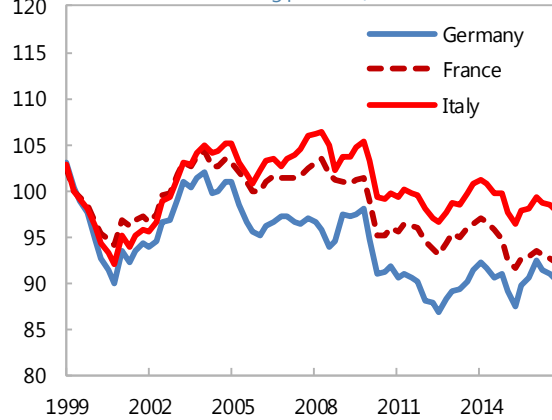
Deflator-Based REER
(1999Q1=100, ECB EER-19, 38 trading partners)

Germany   France
Italy   EA-19

ULC-Based REER
(1999Q1=100, ECB EER-19, 38 trading partners)

Germany   France
Italy   EA-19
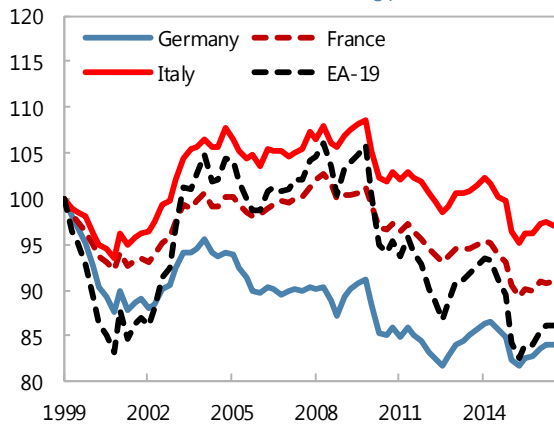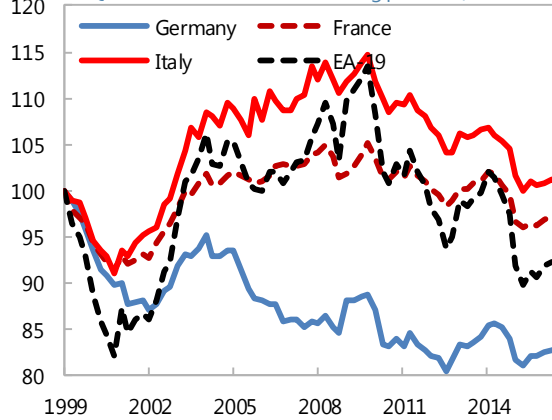
ULC: Total Economy
(1999Q1=100)

Italy
Germany
France
EA19

ULC: Manufacturing
(1999Q1=100)
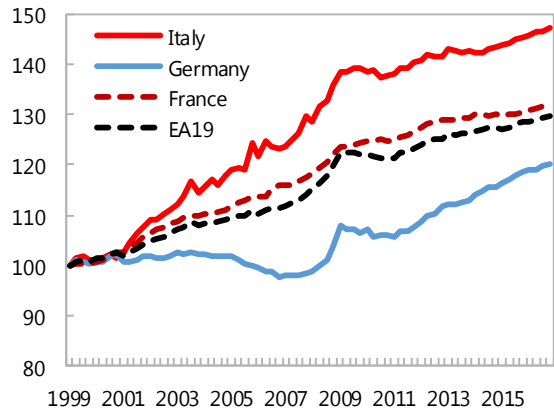
Italy
Germany
France
EA19
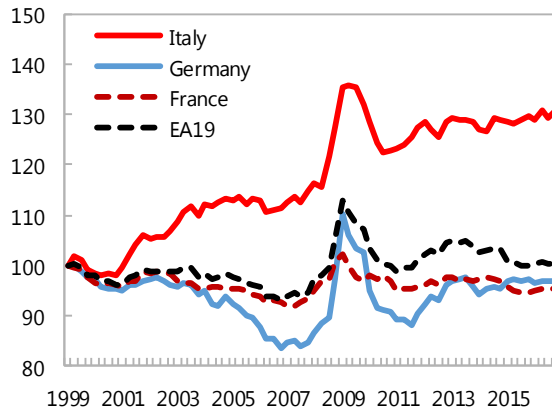
Sources: ECB, BoI, and Haver.
Note: Unit labor cost (ULC) is defined as ratio of compensation of employees to real GDP.

Figure 2. Italy: Competitiveness and Internal Adjustment

Wages and Productivity in Manufacturing
(1999Q1=100)

- - - GER: Productivity
- - - ITA: Productivity
——— ITA: Average Nominal Wage
——— GER: Average Nominal Wage

Wages and Productivity in Business Services
(1999Q1=100)

——— ITA: Average Nominal Wage
——— GER: Average Nominal Wage
- - - ITA: Productivity
- - - GER: Productivity

Real Gross Value Added in Italy
(1999Q1=100)

——— Business Services
——— Manufacturing

Labor Share in Manufacturing
(Percent of GDP)

——— Italy
——— Germany

Employment in Manufacturing
(1999Q1=100)

——— Italy
——— Germany

Investment in Manufacturing
(1999Q1=100)

——— Italy
——— Germany

Sources: Eurostat; ISTAT; and IMF staff estimates.
Note: nominal wage is defined as a ratio of compensation of employees to employment.

Figure 3. Italy: The Dynamics and Structure of Exports

Share of World Exports
(Percent)

Legend: Italy, Germany, China

Real Exports During Recessions
(Trough = 100)

Legend: 1993Q3, 2012Q2

Trade in Value Added (TIVA) Indicator
(Index)

Legend: France, Germany, Italy, China

Structural Global Value Chain (GVC) Indicator
(Index; 1995=100 for "unstructural" GVC indicator)

Legend: France, Germany, Italy, China

Export Product Similarity with China
(HS 4 digit level; index from 0 to 1)

Legend: Italy, France, Germany, Spain, Portugal

Economic Complexity Index (ECI)
(Index)

Legend: China, France, Germany, Italy

Sources: OECD; Eurostat; ISTAT; IMF, IFS Database; and IMF staff estimates. TIVA and GVC indicators come from Haugh and others (2016). TIVA indicator refers to foreign value added embodied in final domestic demand. Structural GVC measure relates import value of intermediate goods to final domestic demand, is deflated and purged from cyclical effects.

Figure 4. Italy: Labor Market Indicators

Unemployment Rate
(Percent)

Average

Employment
(Percent)

— Employment rate
— Share of industry (right scale)

Vacancy Rate
(Percent)

Average

Beveridge Curve
(Percent)

2007Q2

2004Q1

2016Q4

Vacancy Rate

Unemployment Rate

Job Finding Rate
(Percent)

Average

Labor Market Tightness
(Percent)

Average
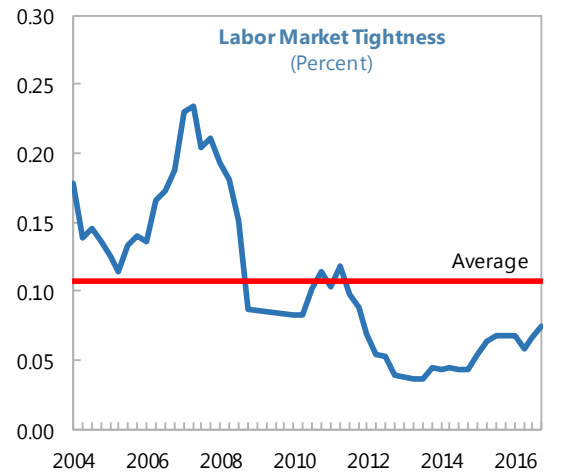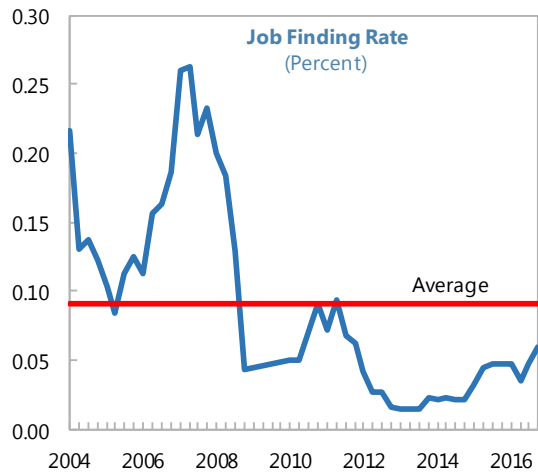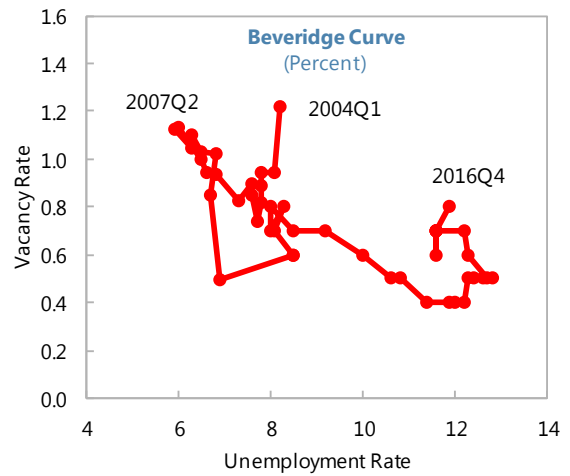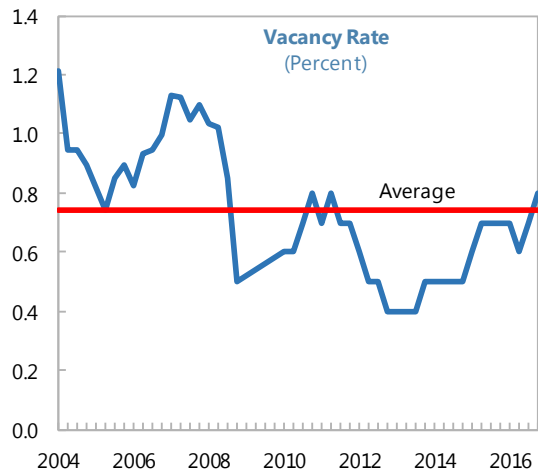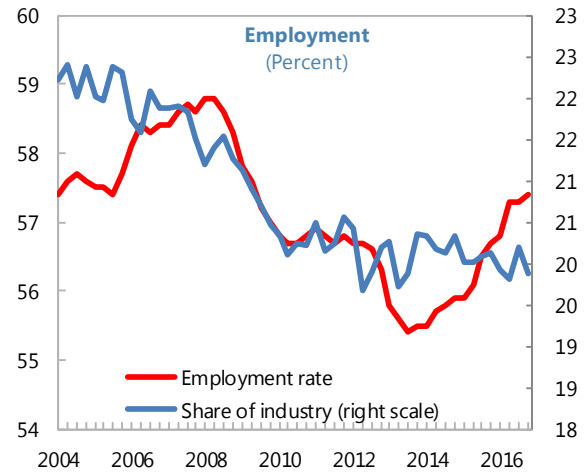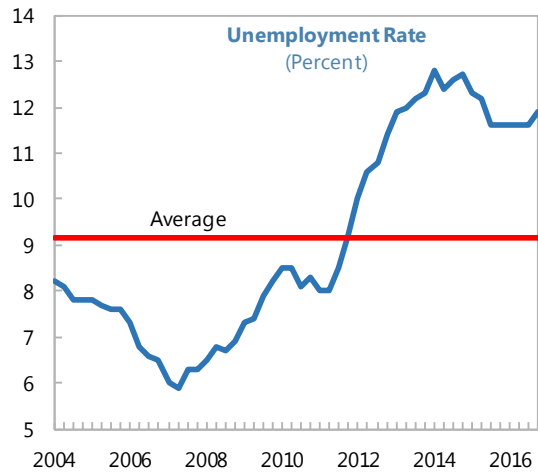
Source: Istat, and staff calculations.

Figure 5. Italy: GIMF Simulations of a 15pp Reduction in Wage Markups

Real GDP
(Percent deviation from baseline)

Consumption
(Percent deviation from baseline)

Investment
(Percent deviation from baseline)

Current Account/GDP
(Difference from baseline)

Real Effective Exchange Rate
(Percent deviation from baseline; "+"=appreciation)

Primary Surplus/GDP
(Difference from baseline)

Debt/GDP
(Difference from baseline)

Interest Expenditure/GDP
(Difference from baseline)
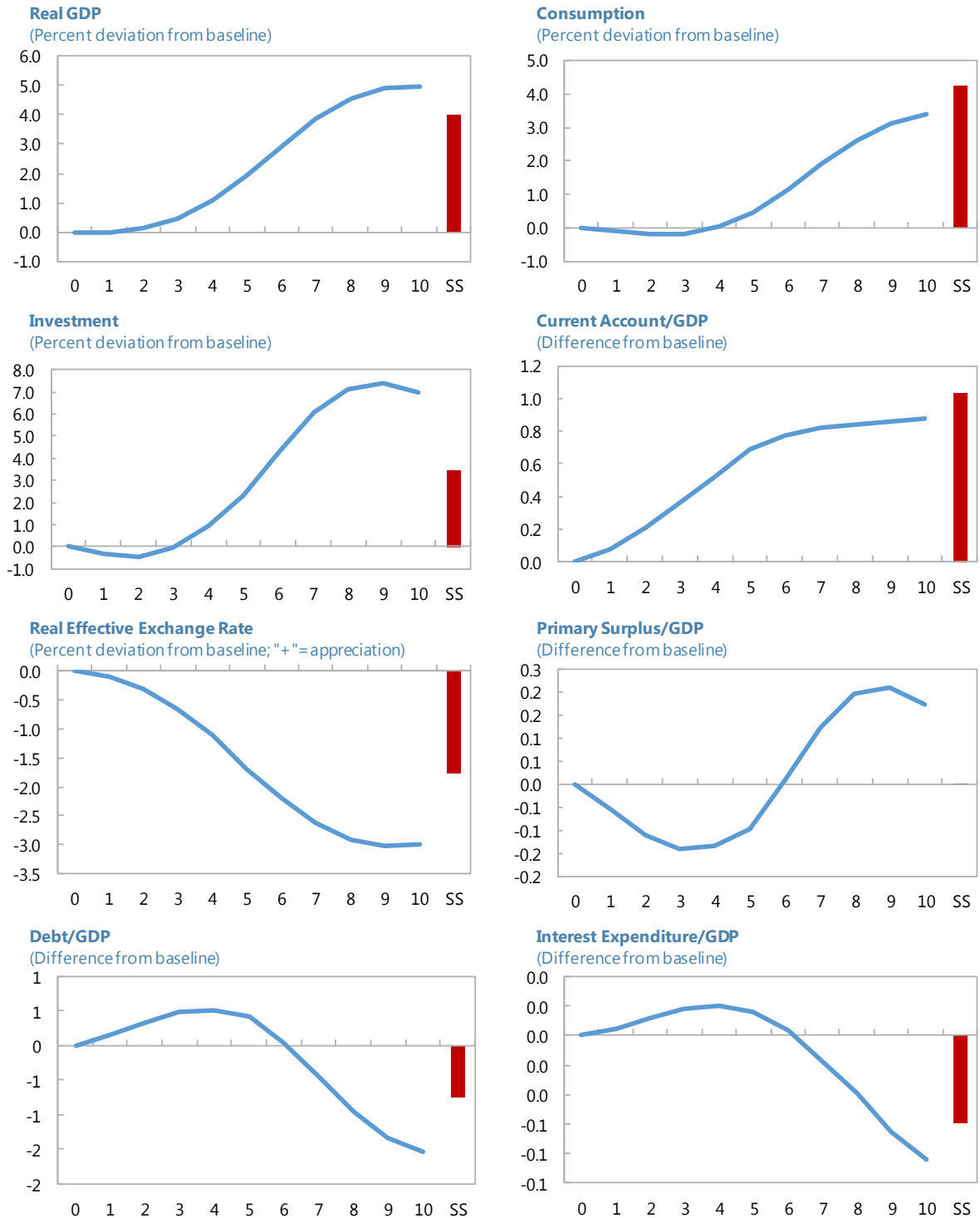
Source: IMF staff estimates.
Notes: Horizontal axis=years, and SS=steady state. Blue line: total impact.

Appendix

Table A1. Italy and Euro Area: Export Price Regressions for the Full Period

	EA19 (1)	Belgium (2)	France (3)	Germany (4)	Italy (5)	Netherlands (6)	Portugal (7)	Spain (8)	Slovenia (9)
Foreign prices	-0.082***	-0.341**	-0.109***	-0.173***	-0.167***	-0.372**	-0.544***	-0.103	-0.250*
	(0.02)	(0.14)	(0.04)	(0.02)	(0.04)	(0.16)	(0.10)	(0.14)	(0.13)
Foreign prices (-1)	-0.024*	0.022	-0.099***	-0.081***	-0.036	-0.214*	-0.102	0.060	-0.177
	(0.01)	(0.10)	(0.04)	(0.02)	(0.03)	(0.12)	(0.14)	(0.10)	(0.16)
Domestic PPI	0.585***	0.362**	0.485***	0.720***	0.146	0.442**	0.409	0.385*	0.409*
	(0.12)	(0.17)	(0.09)	(0.14)	(0.11)	(0.19)	(0.33)	(0.20)	(0.21)
Domestic PPI (-1)	0.073	0.117	0.050	-0.057	0.293***	0.060	0.252	0.149	0.004
	(0.10)	(0.12)	(0.08)	(0.12)	(0.09)	(0.13)	(0.20)	(0.18)	(0.22)
PPI energy	0.014	0.058	0.008	-0.009	0.048**	0.018	0.027	-0.002	-0.052
	(0.02)	(0.04)	(0.03)	(0.02)	(0.02)	(0.04)	(0.04)	(0.05)	(0.04)
PPI oil	0.041***	0.024	0.031***	0.014	0.036**	-0.010	-0.009	0.126***	0.094**
	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.04)	(0.02)	(0.02)	(0.04)
Brent oil price	0.000	0.015	0.002	-0.002	0.002	0.028*	0.032***	-0.052***	0.007
	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Constant	-0.001***	-0.002*	-0.001***	-0.002***	0.000	-0.003**	-0.003**	0.001	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
R-squared	0.88	0.60	0.75	0.78	0.73	0.57	0.52	0.55	0.54
Adj. R-squared	0.86	0.56	0.72	0.76	0.70	0.53	0.48	0.51	0.49
Observations	81	86	85	85	82	82	86	81	73

Standard errors in parentheses. ***, **, and * denote significance at 1, 5, and 10 percent significance level, respectively.

Table A2. Italy and Euro Area: Export Price Regressions for Sub-periods

	EA19		France		Germany		Italy		Portugal		Spain	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Foreign prices	-0.073***	-0.100***	-0.104*	-0.159***	-0.176***	-0.172***	-0.242***	-0.108*	-0.572***	-0.255	-0.060	-0.345
	(0.02)	(0.02)	(0.06)	(0.05)	(0.03)	(0.05)	(0.04)	(0.06)	(0.16)	(0.16)	(0.18)	(0.28)
Foreign prices (-1)	-0.022	-0.044*	-0.122**	-0.069	-0.073***	-0.115**	-0.038	-0.047	-0.244	0.323*	0.054	0.060
	(0.02)	(0.02)	(0.05)	(0.04)	(0.02)	(0.05)	(0.04)	(0.04)	(0.16)	(0.17)	(0.11)	(0.20)
Domestic PPI	0.368*	0.420**	0.472	0.393***	0.309***	0.893***	0.055	0.163	0.008	1.234***	0.608*	0.023
	(0.21)	(0.18)	(0.31)	(0.12)	(0.10)	(0.23)	(0.15)	(0.18)	(0.37)	(0.24)	(0.33)	(0.42)
Domestic PPI (-1)	0.380**	0.027	0.133	0.128	0.347***	-0.190	0.280**	0.428***	0.240	-0.063	-0.023	0.431*
	(0.18)	(0.13)	(0.31)	(0.09)	(0.10)	(0.24)	(0.12)	(0.09)	(0.29)	(0.19)	(0.31)	(0.25)
PPI energy	0.012	0.038	-0.025	0.004	0.005	-0.026	0.064**	0.035**	0.036	0.094**	0.073	-0.012
	(0.02)	(0.03)	(0.27)	(0.03)	(0.02)	(0.04)	(0.03)	(0.02)	(0.06)	(0.04)	(0.15)	(0.06)
PPI oil	0.040***	0.062***	0.031**	0.031**	0.011	0.023	0.006	0.039***	-0.032	0.049*	0.148***	0.072
	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.03)	(0.03)	(0.06)
Brent oil price	0.001	-0.001	0.001	0.006	0.001	-0.005	-0.002	0.008*	0.046***	-0.002	-0.067***	-0.019
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.03)
Constant	-0.002***	0.000	-0.002*	-0.000	-0.003***	-0.001*	0.001	0.000	-0.002	-0.001	0.001	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
R-squared	0.82	0.95	0.62	0.90	0.79	0.87	0.64	0.90	0.41	0.77	0.60	0.53
Adj. R-squared	0.79	0.93	0.55	0.87	0.76	0.83	0.58	0.88	0.32	0.71	0.53	0.41
Observations	46	35	50	35	50	35	47	35	51	35	46	35

Standard errors in parentheses. ***, **, and * denote significance at 1, 5, and 10 percent significance level, respectively.

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Table A3. Model Specification and Parameterization

Calibration to Steady-State Labor Market Conditions

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Parameter	Notation	Continental Europe	Italy baseline	Italy: medium tightness	Italy: high tightness	Source
Discount rate, real interest rate	r	0.01	0.010	0.010	0.010	Data.
Vacancy filling rate	q	n/a	0.700	0.700	0.800	Raissi (2015), data.
Job finding rate	p=[1-F](1-ρ)θq(θ)	0.20	0.075	0.140	0.356	Hobijn and Şahin (2007), data.
Total separation rate	ρ+(1-ρ)F(Rs)	0.02	0.008	0.016	0.040	Steady-state condition.
Share of exogenous separations		0.70	0.700	0.700	0.700	Den Haan et al. (2000).
Exogenous separation rate	ρ	0.014	0.006	0.011	0.028	Steady-state condition.
Idiosyncratic productivity shock	F(z)	$\Phi((\log(z)-\mu)/\sigma)$	$\Phi((\log(z)-\mu)/\sigma)$	$\Phi((\log(z)-\mu)/\sigma)$	$\Phi((\log(z)-\mu)/\sigma)$	Jimeno and Thomas (2013).
SD idiosyncratic (log)productivity	σ	0.15	0.20	0.20	0.20	Jimeno and Thomas (2013), assumption.
Mean idiosyncratic productivity	μ	-σ2/2	-σ2/2	-σ2/2	-σ2/2	Assumption.
Matching function elasticity	ϵ	0.50	0.40	0.40	0.23	Peracchi and Viviano (2004), Petrongolo & Pissarides (2001).
Vacancies-to-unemployment rate	θ	0.25	0.11	0.20	0.45	Steady-state condition.
Steady-state unemployment rate	u	0.09	0.10	0.10	0.10	Data.

Note: all parameter values are quarterly, baseline is sector level wage bargaining. The column for Europe shows Jimeno and Thomas (2013) calibration for an average continental European labor market.

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ITALY: TOWARD A GROWTH-FRIENDLY FISCAL REFORM[1]

The Italian authorities' medium-term objective is to achieve structural balance. However, they are yet to specify concrete measures. This paper seeks to contribute to the discussion by (i) assessing spending patterns to identify areas for savings; (ii) evaluating the pension system; (iii) analyzing the scope for revenue rebalancing; and (iv) putting forward a package of spending cuts and tax rebalancing that is growth friendly and inclusive, could have limited near-term output costs, and would achieve a notable reduction in public debt over the medium term. Such a package could help the authorities balance the need to bring down public debt and, thus, reduce vulnerabilities while supporting the recovery.

1.   **In the 2017 Economic and Financial Document (DEF), the authorities committed to achieving a structurally balanced budget by 2019.** This corresponds with Italy's medium-term objective of a balanced budget under the European fiscal framework. The DEF, which lays out their policy intentions for the next three years, projects the headline deficit to decline from 2.3 percent of GDP in 2017 (before implementation of new measures of 0.2 percent of GDP) to 1.2 percent of GDP in 2018, 0.2 percent of GDP in 2019, and zero in 2020. The related structural deficit, i.e., the deficit adjusting for the economic cycle, is expected to decline from about -1.5 percent of GDP in 2017 to -0.7 percent in 2018 and 0.1 percent in 2019. Thus, after having pursued an expansionary fiscal stance for the past few years, Italy has committed to undertaking consolidation measures over the next three years amounting to a further 1½ percent of GDP. However, the authorities have not specified concretely how they plan to achieve these targets beyond identifying broad areas, such as cuts to follow spending reviews, the fight against tax evasion, and rationalizing tax expenditures.

2.   **This paper identifies growth-friendly options for achieving the necessary fiscal consolidation and putting debt on a firm downward path.** It is divided into four parts:

- *Public spending trend and composition.* An analysis of spending over the past two decades reveals (i) in the decade following euro accession, spending grew faster than potential output, owing in large part to the rapid growth of pensions; (ii) since the global financial crisis, the authorities have broadly controlled spending, mainly through a freeze on hiring and wages and cuts in capital spending. Pension spending though has continued to rise; (iii) despite the recent spending control, the pre-crisis spending excesses have not been reversed; and (iv) achieving sizable and durable expenditure savings may require lowering the large pension spending. Improving the efficiency of health spending, especially at the local level and in some geographical areas, is also warranted.

- *Pension system.* Over half of current primary spending is social benefit spending, which is dominated by pension spending. At around 16 percent of GDP, pension spending in Italy is the

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second highest in the euro area after Greece. The authorities have legislated several reforms. However, before the full effect of these reforms is evident over the very long run, fiscal pressures are likely to persist and weigh on Italy's goal of achieving and maintaining a balanced budget. The second part of this paper finds (i) despite past reforms, there remain generous parts of the system where Italy is a clear outlier, pointing to areas of potential savings; and (ii) pension projections rest on optimistic assumptions of (a) immigration and employment, specifically that Italy will benefit from more immigration than any other country in Europe for decades to come and will go from having among the highest to very low unemployment rates; and (b) Italy will maintain much higher real GDP growth rates for decades to come than has been its experience and policy settings. Relaxing these assumptions implies a notable rise in projected spending over the coming decades until the full benefits of past reforms become evident.

- *Revenue rebalancing.* The tax system is characterized by a high tax wedge, a relatively narrow tax base, and significant tax arrears. A fiscal devaluation strategy—a shift from taxing productive factors to taxing consumption and property—reveals the scope to (i) decrease the tax wedge significantly; (ii) reduce value-added tax gaps (both compliance and policy), by harmonizing the reduced VAT rates and improving the tax collection performance; (iii) rationalize tax expenditures; and (iv) raise revenues by re-introducing the property tax on primary residences.

- *Toward a growth-friendly policy mix.* The last part of this note simulates, using the IMF's GIMF model, the impact of a growth-friendly mix of spending and revenue measures along a gradual fiscal consolidation path that puts Italy's debt-to-GDP ratio on a firm downward trajectory. The model simulations show that a revenue-neutral and less distortionary tax reform, alongside current spending cuts and capital spending increases, can generate sizable output gains and a sustainably lower public debt ratio over the medium to long term. Short-term output costs of this fiscal package, if implemented credibly, are limited.

A.   Public Spending Trends and Composition

3.   Over the past two decades, primary spending in Italy has grown faster than potential output. This was particularly the case in the years after euro accession. From 1999 to 2007, Italy's nominal current primary expenditure grew faster than the euro area average, and well above the country's average nominal potential growth—driven mainly by social benefit spending (primarily pensions), intermediate consumption (goods and services), and wages (in general services, defense and health). Capital spending rose in line with that of the euro area average. From 2008 to 2016, however, Italy's nominal current primary expenditure grew at 1.8 percent per year on average, below the euro area average of 2.6 percent.[2] The deceleration after the global financial crisis was driven mainly by the decline in the public sector wage bill—reflecting the freezing of nominal wages from 2010 to 2015 and a reduction in the number of public sector employees from 3.6 million

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[2] The high cost of servicing public debt implies total public expenditure in Italy about 2 percent of GDP above the euro area average (at 50.4 percent of GDP versus 48.5 percent). Interest on debt (4.2 percent of GDP in 2015) absorbs more resources than spending on education (4 percent of GDP), and is over 3½ times as much as on defense (1.2 percent of GDP).

in 2007 to around 3.3 million people in 2015; and a severe cut in capital expenditure, which declined by about 28 percent in nominal terms between 2009 and 2016. Nevertheless, even with these exceptional measures, total primary spending grew above the country's average nominal potential GDP growth over this period. Italy has been unable to reverse its past overspending (especially those related to the pre-crisis period).

Source: Eurostat.

Source: Eurostat.
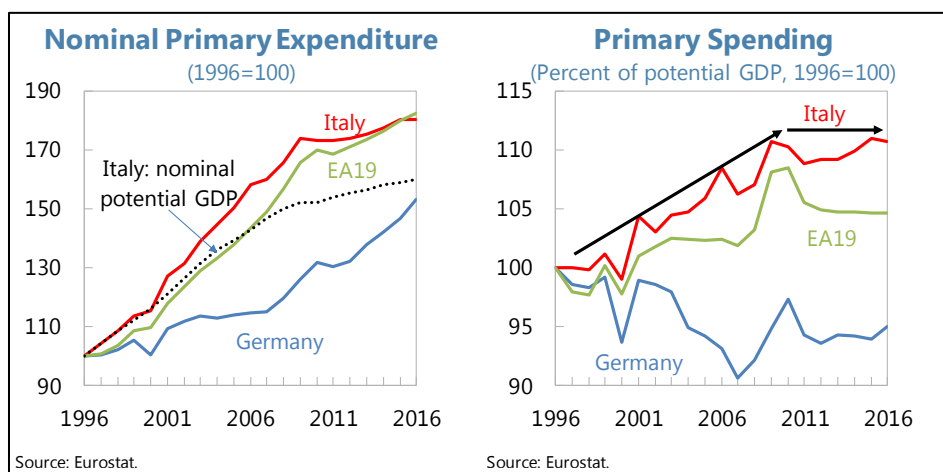
4. **Rising social benefits have dominated public spending.** Social benefits have dominated all other categories of spending, rising by about 43 percent cumulatively from 1999 to 2007 and by a further 33 percent since then. It constitutes half of total primary spending, up from 40 percent at the time of euro accession. The bulk of social benefits spending is in pensions (see next section), reflecting both a high share of elderly population and generous pension benefits with high replacement rates. However, non-pension social benefit spending in Italy is low, fragmented, and poorly targeted in comparison to other EU countries. The latter is evidenced in the disproportionately low share of social transfers accruing to the low-income working age population (Box 1). There is also a higher reliance on intra-family transfers for social assistance, even as there is underspending related to social inclusion, family/child benefits, and housing relative to the euro area average. Reducing the fragmentation of anti-poverty programs and improving their targeting are therefore warranted.

Box 1. Poverty Reduction Measures

Designing and implementing poverty-reduction policies has largely been delegated to local governments, with nationwide programs tailored mostly toward the elderly and people with disabilities. This has left a large share of the population, especially the young and children, weakly protected. As an emergency measure to provide limited support to low-income families affected by the financial crisis, the government introduced a social card in 2008, which was subsequently re-designed and broadened in scope in 2011 to provide a mix of cash transfers and social services.

The government launched the SAI (Support for Active Inclusion) program in 2013, targeting low-income families with children and in cities with more than 250,000 people. With the 2016 Stability Law, Italy set up a Fund for Combating Poverty and Social Exclusion within its triennial budget blueprint (with an initial endowment of €600 million in 2016, rising to €1 billion in 2017, and €1.5 billion in 2018). These resources were complementary to those already earmarked (€1.4 billion) for extending the SIA nationwide in 2016.

Box 1. Poverty Reduction Measures (concluded)

The SIA program was subsequently replaced by a new program called *Inclusion Income* (Reddito di inserimento, REI)—introduced within an enabling law in 2017, which is expected to increase the number of households receiving help (from 160,000 households in SIA to 660,000 households in REI). Benefits are given to households with children under 18 years old, experiencing economic hardship (an equivalent financial situation index of €3,000 or less, per a top-up formula), and based on a comprehensive evaluation of need that considers the number of dependents, the earnings situation, accumulated wealth, and employment prospects. Benefits are conditional on a personal plan of work, and social inclusion prepared by local administrations: the applicant must participate in a personalized work/social program that could encompass any civic service—from the municipalities to employment centers, from schools to healthcare services—with the involvement of the services sector. The REI program will be funded with resources of around €2 billion in 2017, including EU funds, and could rise to nearly €2.2 billion in 2018. Apart from tackling poverty, the enabling law aims to re-organize welfare services and improve coordination among social services.

Figure 1. Italy: Social Benefits
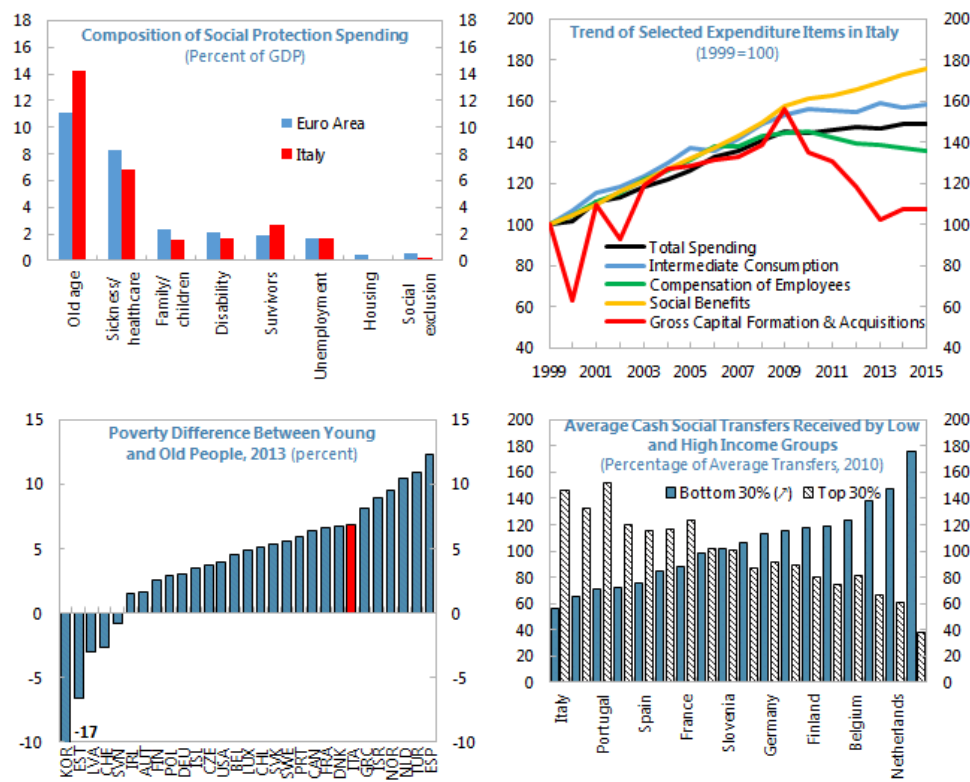
Source: Eurostat, Haver, OECD, and IMF staff.

5. **Beyond social benefit spending, there are other areas of overspending relative to the euro area average.** Although much has already been written about the subject in Italy (Box 2), a decomposition of spending—using standard economic and functional classifications at the general and local government levels (Tables 1–4)—reveals some essential points:

- As noted above, social benefits spending (see the social protection column in Table 1) is the area of largest overspending relative to the euro area average. Interest payments exceed the euro area average by 1.6 percent of GDP, given Italy's high stock of public debt.

- Other areas of overspending include intermediate consumption spending (primarily on goods and services) in the health sector; compensation of employees in defense, public order and safety, and health; subsidies in the economic affairs sector; and capital transfers in general services and economic affairs.

- It is notable that although overall public health spending in Italy is in line with the euro area average, the bulk of it is for compensation of employees and intermediate consumption, in contrast with the euro area average. This points to room for potential efficiency savings, at the local-government level.[3] Medeiros and Schwierz (2015) highlight regional differences and show that the output of public spending is lower in southern regions based on health-related variables, such as life expectancy at the age of 65.

- The main areas where Italy underspends is in education (i.e., in the provision of goods and services and in total compensation). The public education expenditure gap is especially concentrated at the tertiary level, as highlighted in OECD (2015). As for economic classification, underspending is in gross capital formation.

6. **There is room to improve the spending mix to make it more growth friendly and inclusive.** The above simple presentation indicates that rising social spending (primarily pensions) has crowded out spending in areas such as education and capital spending. Achieving a more growth-friendly and inclusive spending policy mix, while making space for spending cuts to achieve the medium-term objective, will likely require cuts to total social benefit spending; improved targeting of non-pension social benefit spending to those who need the resources most; better efficiency in health spending at the local level; and reallocation of spending toward capital spending and education, while also improving the efficiency of outcomes in both areas. Protection of the vulnerable could be further improved through complementary measures such as more intense use of active labor market policies and a modern social safety net.

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[3] An outline for the rules of fiscal federalism was approved by parliament in 2009, but much of the detail related to standard costs has yet to be agreed. The only part operating in practice is the system for calculating central finance for health expenditure and for municipalities, per an increasing share of total grants. From 2017, the use of expenditure needs and standard tax capacity is also used as a criterion to set consolidation targets for ordinary statutory regions and autonomous provinces. Health expenditure accounts for around half of sub-national government spending. For regional administrations, it accounts for about 85 percent of spending.

Box 2. Spending Reviews

Recent governments conducted comprehensive Spending Reviews with the aim of finding cost-efficient ways to cut spending.

The first plan was presented in April 2012—the so-called "Giarda spending review report"—with a focus on (i) large territorial differences in the production costs of public services across all sectors and government levels; and (ii) very diverse territorial scope of the entities to which the same administrative functions are assigned, thereby leading to inefficiencies and high variability of unit costs because of scale economies. The report proposed different pathways for expenditure rationalization, from more radical reforms such as privatizing public services on efficiency grounds to more targeted actions aimed at enhancing public spending efficiency.

A second major spending review was conducted by Carlo Cottarelli with a plan to achieve savings worth up to 0.4 percent of GDP in 2014, 1 percent of GDP in 2015, and 2 percent of GDP in 2016 compared to a trend scenario based on unchanged legislation. The so-called "Cottarelli spending review report," made public in March 2015, analyzed a broad range of spending items and proposed priority actions to rationalize spending, including (i) more centralized public procurement, including in healthcare; (ii) streamlining and digitizing of all public administrations; (iii) cuts in the number of state-owned enterprises, particularly at the local level; (iv) reduction in specific forms of public support to firms; (v) rationalization in the provision of certain public services; and (vi) interventions on pension entitlements, including de-indexation.

In 2016, the reform of the accounting law envisaged the integration of the spending review into the economic-financial planning cycle.

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7.   **Following sharp cuts in capital spending and with the wage bill/GDP at its lowest in two decades, rationalizing social benefits spending appears unavoidable.** In recent years, the authorities have pursued a strategy of notably cutting capital spending and curtailing the wage bill, which at 9.8 percent of GDP is at its lowest level in several years. This strategy may be close to its limit, however, and may be neither sustainable nor desirable. There is a need for public investment to support stronger, sustained growth.[4] Moreover, as a share of total employment, public sector employment is below the euro area average; the age structure of public employees is titled toward older workers, implying the need to refresh the skill mix without reducing the headcount further (there have been recent announcements for hiring sizable numbers of new staff, in education and local offices); and, after years of wage freezes, wage increases are planned.[5] This suggests

Public Administration Employment
(Percent of total)
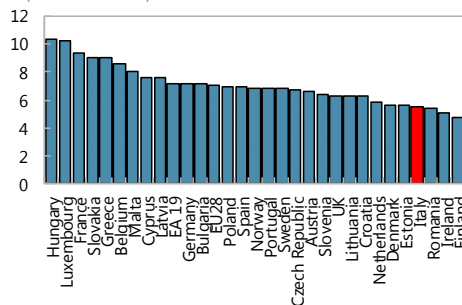
Sources: Eurostat.

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[4] OECD (2015) argues that public investment in Italy is inefficient owing to overlapping responsibilities between levels of government, insufficient attention to cost effectiveness in the selection of projects and in implementation, and the lack of technical capacity in evaluation and implementation. The Bank of Italy (2012) also highlights higher unit costs and slower delivery on road and rail projects, adjusting for objective differences, than in other European countries.

[5] The wage freeze was put in place when the economy went into a deep recession and has remained through a period of weak nominal growth. To keep it broadly in place when stronger nominal growth is expected could be difficult, not least as the constitutional court has also noted that wage increases need to be given.

limited room, if any, for further cuts in the overall wage bill or in capital spending, going forward, and thus for little alternative but to tackle the sizable social benefits spending.

Figure 2. Italy: Dimension of the Civil Service Workforce
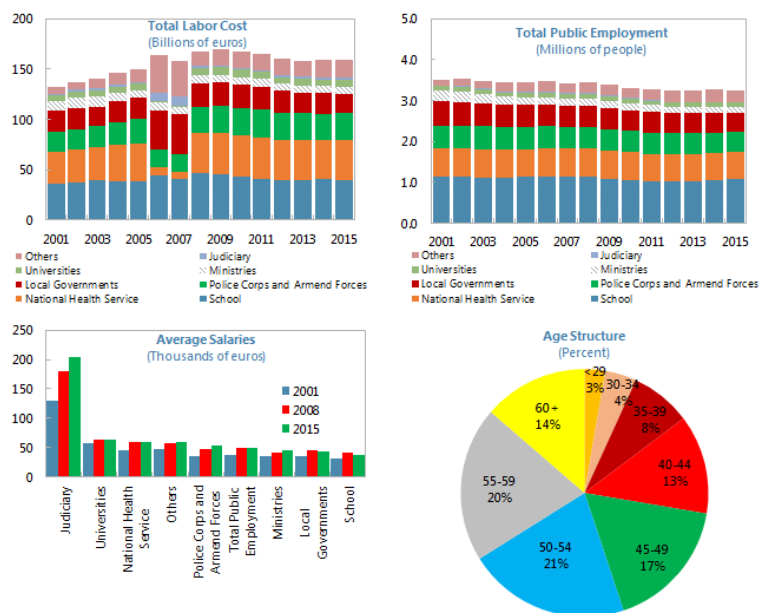
Sources: Italian Department for Public Administration and IMF staff estimates.

Table 1. Italy and Euro Area: *General* Government Spending, 2005–2014, and 2015

(Percent of GDP)

| | | | Functional Classification | | | | | | | | | | | | | | | | | | | | |
			Total Expenditure		General Services		Defense		Public Order and Safety		Economic Affairs		Environmental Protection		Housing		Health		Rec/Culture		Education		Social Protection	
Total Expenditure	Italy		49.3	50.4	8.8	8.4	1.3	1.2	1.9	1.9	4.3	4.1	0.9	1.0	0.7	0.6	7.1	7.1	0.8	0.7	4.3	4.0	19.3	21.5
	EA		48.4	48.5	7.0	6.6	1.3	1.2	1.7	1.7	4.6	4.5	0.8	0.8	0.8	0.6	7.1	7.2	1.1	1.1	4.8	4.7	19.2	20.1
Intermediate Consumption	Italy		5.9	6.1	1.1	1.0	0.2	0.1	0.4	0.4	0.4	0.3	0.5	0.7	0.2	0.2	1.9	2.1	0.2	0.3	0.7	0.6	0.4	0.3
	EA		5.4	5.4	0.9	0.9	0.3	0.3	0.3	0.4	0.8	0.8	0.4	0.4	0.2	0.2	1.0	1.0	0.3	0.3	0.7	0.7	0.5	0.5
Compensation of Employees	Italy		10.4	9.8	1.5	1.4	0.8	0.8	1.4	1.4	0.4	0.4	0.1	0.1	0.2	0.1	2.3	2.2	0.2	0.1	3.2	3.0	0.3	0.3
	EA		10.4	10.3	1.5	1.5	0.7	0.7	1.2	1.3	0.7	0.7	0.2	0.2	0.2	0.2	1.6	1.6	0.3	0.3	3.2	3.1	0.8	0.8
Property Income	Italy		4.7	4.2	4.6	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EA		2.9	2.6	2.8	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	Italy		1.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
	EA		1.3	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Other current transfers	Italy		1.6	1.5	1.0	1.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
	EA		2.2	2.3	1.1	1.2	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.2	0.2	0.4	0.4
Other social benefits	Italy		20.9	23.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.4	0.0	0.0	0.0	0.0	18.4	20.5
	EA		21.8	23.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	4.1	4.3	0.0	0.0	0.2	0.2	17.4	18.4
Capital Transfers	Italy		1.5	1.9	0.2	0.7	0.0	0.0	0.0	0.0	1.1	0.9	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	EA		1.4	1.2	0.2	0.2	0.0	0.0	0.0	0.0	0.8	0.7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Gross Capital Formation	Italy		2.8	2.3	0.3	0.3	0.2	0.2	0.1	0.1	0.9	0.8	0.2	0.1	0.2	0.2	0.3	0.3	0.1	0.1	0.2	0.2	0.0	0.0
	EA		3.1	2.7	0.4	0.4	0.2	0.2	0.1	0.1	1.1	0.9	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.1

Color code: | at least 5% less | upto 10% more | > 10% | Long-term average

Table 2. Italy and Euro Area: *Local* Government Spending, 2005–2014, and 2015

(Percent of GDP)

Functional Classification

Economic Classification			Total Expenditure		General Services		Defense		Public Order and Safety		Economic Affairs		Environmental Protection		Housing		Health		Rec/Culture		Education		Social Protection	
Total Expenditure	Italy		15.2	14.5	2.2	2.1	0.0	0.0	0.3	0.2	2.2	1.9	0.7	0.9	0.6	0.5	7.0	7.0	0.4	0.3	1.1	0.9	0.7	0.7
	EA		10.1	9.9	1.8	1.7	0.0	0.0	0.3	0.3	1.6	1.5	0.6	0.6	0.5	0.4	1.5	1.4	0.7	0.6	1.4	1.4	1.7	1.9
Intermediate Consumption	Italy		4.2	4.3	0.6	0.5	0.0	0.0	0.1	0.1	0.3	0.2	0.5	0.7	0.2	0.2	1.8	2.1	0.1	0.1	0.4	0.3	0.2	0.2
	EA		2.5	2.5	0.5	0.5	0.0	0.0	0.1	0.1	0.3	0.3	0.3	0.4	0.2	0.1	0.4	0.4	0.2	0.2	0.4	0.4	0.2	0.2
Compensation of Employees	Italy		4.4	4.0	0.9	0.8	0.0	0.0	0.2	0.1	0.3	0.2	0.1	0.1	0.2	0.1	2.3	2.2	0.1	0.1	0.4	0.3	0.1	0.1
	EA		3.2	3.2	0.7	0.7	0.0	0.0	0.2	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.5	0.5	0.2	0.2	0.6	0.7	0.4	0.4
Property Income	Italy		0.3	0.2	0.2	0.2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EA		0.2	0.1	0.2	0.1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	Italy		0.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EA		0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other current transfers	Italy		0.4	0.6	0.1	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0
	EA		0.7	0.7	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
Other social benefits	Italy		2.8	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.4	0.0	0.0	0.0	0.0	0.4	0.4
	EA		1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.1	0.1	1.0	1.1
Capital Transfers	Italy		0.9	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EA		0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross Capital Formation	Italy		1.6	1.3	0.3	0.2	0.0	0.0	0.0	0.0	0.5	0.4	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.0
	EA		1.4	1.2	0.2	0.1	0.0	0.0	0.0	0.0	0.5	0.4	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.0	0.0

Color code: at least 5% less   upto 10% more   > 10%   Long-term average

Table 3. Italy and Euro Area: *General* Government Spending, 2005–2014, and 2015

(Percent of Potential GDP)

Functional Classification

Economic Classification			Total Expenditure		General Services		Defense		Public Order and Safety		Economic Affairs		Environmental Protection		Housing		Health		Rec/Culture		Education		Social Protection	
Total Expenditure	Italy		48.6	48.9	8.6	8.1	1.2	1.2	1.9	1.8	4.2	3.9	0.8	0.9	0.7	0.6	7.0	6.9	0.8	0.7	4.2	3.9	19.0	20.8
	EA		48.0	47.7	7.0	6.5	1.3	1.2	1.7	1.7	4.6	4.4	0.8	0.8	0.8	0.6	7.0	7.1	1.1	1.1	4.7	4.6	19.0	19.8
Intermediate Consumption	Italy		5.9	5.9	1.1	0.9	0.2	0.1	0.4	0.4	0.4	0.3	0.5	0.7	0.2	0.2	1.8	2.1	0.2	0.3	0.7	0.6	0.4	0.3
	EA		5.3	5.3	0.9	0.9	0.3	0.3	0.3	0.3	0.8	0.8	0.4	0.4	0.2	0.2	1.0	1.0	0.3	0.3	0.7	0.7	0.5	0.5
Compensation of Employees	Italy		10.3	9.5	1.5	1.3	0.8	0.8	1.4	1.4	0.4	0.4	0.1	0.1	0.2	0.1	2.3	2.1	0.1	0.1	3.2	2.9	0.3	0.3
	EA		10.3	10.1	1.5	1.5	0.7	0.6	1.2	1.2	0.7	0.7	0.1	0.1	0.2	0.2	1.6	1.6	0.3	0.3	3.1	3.0	0.8	0.8
Property Income	Italy		4.6	4.0	4.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EA		2.8	2.6	2.8	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	Italy		1.4	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
	EA		1.3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Other current transfers	Italy		1.6	1.5	1.0	0.9	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	EA		2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.4
Other social benefits	Italy		20.6	22.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.3	0.0	0.0	0.0	0.0	18.1	19.9
	EA		21.6	22.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	4.0	4.2	0.0	0.0	0.2	0.2	17.2	17.9
Capital Transfers	Italy		1.5	1.8	0.2	0.6	0.0	0.0	0.0	0.0	1.1	0.9	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	EA		1.4	1.2	0.2	0.2	0.0	0.0	0.0	0.0	0.8	0.7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Gross Capital Formation	Italy		2.8	2.2	0.3	0.3	0.2	0.2	0.1	0.1	0.9	0.8	0.2	0.1	0.2	0.2	0.3	0.3	0.1	0.1	0.2	0.2	0.0	0.0
	EA		3.1	2.7	0.4	0.4	0.2	0.2	0.1	0.1	1.1	0.9	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.1

Color code: at least 5% less   upto 10% more   > 10%   Long-term average

Table 4. Italy and Euro Area: *Local* Government Spending, 2005–2014, and 2015

(Percent of Potential GDP)

Functional Classification

		Total Expenditure		General Services		Defense		Public Order and Safety		Economic Affairs		Environmental Protection		Housing		Health		Rec/Culture		Education		Social Protection	
Total Expenditure	Italy	15.0	14.1	2.1	2.0	0.0	0.0	0.3	0.2	2.2	1.8	0.7	0.9	0.6	0.5	6.9	6.7	0.4	0.3	1.1	0.9	0.7	0.7
	EA	10.0	9.7	1.7	1.7	0.0	0.0	0.3	0.3	1.6	1.4	0.6	0.6	0.5	0.4	1.4	1.4	0.7	0.6	1.4	1.4	1.7	1.9
Intermediate Consumption	Italy	4.1	4.2	0.6	0.5	0.0	0.0	0.1	0.1	0.3	0.2	0.5	0.7	0.2	0.2	1.8	2.0	0.1	0.1	0.4	0.3	0.2	0.2
	EA	2.5	2.5	0.5	0.5	0.0	0.0	0.1	0.1	0.3	0.3	0.3	0.4	0.2	0.1	0.4	0.4	0.2	0.2	0.4	0.3	0.2	0.2
Compensation of Employees	Italy	4.3	3.9	0.8	0.7	0.0	0.0	0.2	0.1	0.3	0.2	0.1	0.1	0.1	0.1	2.3	2.1	0.1	0.1	0.4	0.3	0.1	0.1
	EA	3.1	3.1	0.7	0.7	0.0	0.0	0.2	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.5	0.5	0.2	0.2	0.6	0.6	0.4	0.4
Property Income	Italy	0.3	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EA	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	Italy	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EA	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other current transfers	Italy	0.4	0.6	0.1	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0
	EA	0.7	0.7	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
Other social benefits	Italy	2.8	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.3	0.0	0.0	0.0	0.0	0.4	0.4
	EA	1.4	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.1	1.0	1.0
Capital Transfers	Italy	0.8	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EA	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross Capital Formation	Italy	1.6	1.3	0.3	0.2	0.0	0.0	0.0	0.0	0.5	0.4	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.0
	EA	1.4	1.2	0.2	0.1	0.0	0.0	0.0	0.0	0.5	0.4	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.0	0.0

Color code: at least 5% less (green) | upto 10% more (yellow) | > 10% (red) | Long-term average (grey)

B. The Italian Pension System: A Deeper Look

Past Reforms and the Current System

8.   Since 1992, the pension system in Italy has undergone multiple reforms. These include pro-rata replacement of the old Defined Benefit (DB) scheme with a Notional Defined Contribution (NDC) scheme (1995), periodic updates based on mortality rates (2007), tightening of eligibility requirements (1992, 1995, 1997, 2004, 2007, 2011), alignment of the statutory retirement age of women with that for men (2010, 2011), and indexation of the retirement age to life expectancy. (The fundamental differences between a DB scheme and an NDC scheme are outlined in Box 3.)

9.   The transition from the old DB system to an NDC scheme divides pension beneficiaries into two categories, based on years of insurance accumulated by end-1995:

- Insured with at least 18 years of contributions accumulated by end-1995 will largely maintain the DB formula. For these insured, the old pension rules are grandfathered for contributions accumulated until 2011. For contributions accrued after 2011, the NDC scheme applies.

- Insured with less than 18 years of contributions accumulated by end-1995 are subject to a pro-rated scheme. For these insured, contributions accumulated up to 1995 will be subject to the DB formula, whereas contributions accumulated after 1995 will be subject to the NDC scheme.

The average contribution period in Italy for *new pensions* is about 33 years (expected to increase to 35 years) and life expectancy at 65 is about 20 years. Thus, by about 2030, all *new retirees* entering the pension system will be fully subject to the NDC formula, whereas by about 2050, the old DB should be fully phased out also from the stock of existing retirees.

10.   Eligibility requirements have been tightened considerably in a series of reforms, notwithstanding repeated attempts to weaken them. Both statutory and early retirement ages are set to increase further over time as part of the 'Fornero' reform (L. 214/2011).[6]

- *Statutory Retirement Age* (SRA) is gradually increasing to at least 67 years by 2021. In 2017, the SRA is 66 years and 7 months for men and for female employees in the public sector. It is 65 years and 7 months for female employees in the private sector and 66 years and 1 month for female self-employed, but they are set to catch up with the SRA of other workers by January 1, 2018.

- *Early Retirement* is allowed regardless of age based on minimum years of service of 42 years and 10 months for men and 41 years and 10 months for women. Under NDC, workers may retire up to 3 years earlier than the SRA with minimum 20 years of contributions and a pension of at least €1,200 per month.

Eligibility requirements and average retirement age

- *Indexation*. From 2013 onwards, the eligibility requirements are linked to changes in life expectancy at 65 (every three years up to 2019 and two years starting from 2021).

- *"Pathways to early retirement."* While eligibility requirements have been significantly tightened over time, occasionally pathways to early retirements were eased or implementation of stricter rules were postponed (see ¶15 for measures in the 2017 budget). Special treatments and incentives for early withdrawal from the labor market should be avoided in both DB and NDC schemes (see also IMF, 2010).
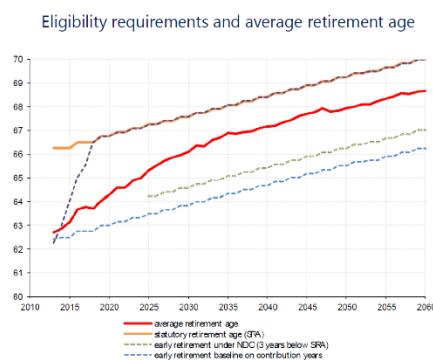
11.   Minimum and targeted pensions are not excessively high. The minimum contributory pension level in 2016 stood at €6,524.57 annually; any contributory pension would be topped up to reach this level. This forms about 70 percent of the relative 60 percent poverty level that in 2015 reached €9,508 for a single person. Although most OECD countries do not define minimum contributory pensions, the minimum pension in Italy is not excessively high. For example, the minimum income guarantee for working age people in the EU generally falls into a range of 50–80 percent of the poverty level. A social pension of €5,824.91 annually (in 2016) is provided at an age of 65 years and 7 months that increases with life expectancy. Retirees above 70 years of age will

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[6] Following the 'Fornero' reform, the pension system (i) adopts an actuarial computation of pension benefits using an implicit rate based on the accrued contributions, and automatically adjusted to mortality developments; and (ii) introduces periodic increases in all eligibility requirements for retirement in line with longevity developments.

receive an additional monthly pension (or social purchase card), which increases the annual social pension to €8,298.29.

Box 3. A Quantitative Primer on the Mechanics of DB and NDC Pension Schemes

Defining the benefit. The DB system requires the policy makers to define at least four key parameters: (i) the accrual rate (a), that is the pension entitlement for a full year's coverage as a share of earnings; (ii) a measure of earnings (w) that usually is lifetime average earnings; (iii) valorization factor (u), that is, the way how the earnings of earlier years are adjusted to reflect changes in standards of living between the year of retirement and these earlier years; and (iv) the retirement age (T). The benefit is then defined as:

$$DB = \sum_{t=0}^{T} w_t (1+u)^{T-t} a. \quad (1)$$

Defining the notional contributions. In the NDC system, each individual paying contributions at rate (c) accumulates notional capital (in individualized accounts) that by end of any period (T) is:

$$K_{t,T} = \sum_{t=0}^{T} c\, w_t (1+\rho)^{T-t}, \quad (2)$$

where ρ is the notional interest rate or the internal rate of return (IRR). In computing the annuity at retirement, the accumulated capital stock is divided by the annuity factor (G) that in turn is a function of life expectancy (LE) at retirement and the IRR:

$$NA = \frac{K}{G[LE, \rho(LE)]} = \sum_{t=0}^{T} \frac{c\, w_t}{G[\ldots]} (1+\rho)^{T-t}, \quad (3)$$

The internal rate of return. The core of the NDC system is the IRR that in the pure NDC scheme is derived such that:

$$PV(L_t) = PV(A_t). \quad (4)$$

This says that, in the pure NDC system, the internal rate of return is chosen to equalize the *overall system's* financial balance where the present value of *overall system* assets (A) equals the present value of *total system* liabilities (L). Total liabilities are the sum of workers accumulated capital (K) and pensioners' annuity (NA). The present value of assets is the present value of the stream of future contributions (plus technical reserves). In practice, this true IRR is only known ex post. However, it has to be parameterized ex ante (to calculate the annuity) that is perhaps the single most important choice to make. Since NDC is still financed as PAYG, the natural choice for the notional IRR is the implicit return of the PAYG scheme, that is, the growth rate of the wage bill:

$$\rho = n + g, \quad (5)$$

where n is the growth rate of labor force (population) and g is the productivity growth.

Steady-state equivalence. It should be immediately obvious from equations (1) and (3) that the structure of the two systems is very similar. When the rate of valorization in the DB and the internal rate of return in the NDC system are equal (i.e., $u=n$) and the accrual rate (a) is set to equal the ratio of contribution rate to the annuity factor (c/G), the systems can, in fact, be identical. Therefore, although the two systems appear rather different, they are nothing else but closely related variants of formulae-based earnings-related pension plans. The main differences relate to the manner the schemes react to shocks and in available policy instruments to counter these shocks.

Rules versus discretion. In the NDC, pension benefits adjust *automatically* to shocks like a sudden decline in fertility (lower contributions) or an increase in life expectancy (that determines the annuity factor G). This is not to say that the DB system cannot cope with such shocks; there is nothing in the DB system that would prevent linking the formulae or retirement ages to life expectancy. Reversing the accounting system also reverses the parameters that policy makers can more easily control: examples of these in the NDC are IRR computation rules, minimum retirement age, life expectancy tables, and methods to calculate annuity. In the DB scheme, many such parameters are absent or non-discretionary.

Issues

12.   In the short to medium run, the pension system continues to provide very high benefits compared to actuarially fair values. The existing DB scheme is overly generous on many accounts:

- *Accrual rates.* The DB scheme uses a weighted average accrual rate of 2 percent (MEF, 2014) that is multiplied by the years of contributions and the reference wage (pensionable earnings) to obtain the monthly pension benefit. An accrual rate of 2 percent is high by international comparison, compared to about 1.5–1.7 percent in the EU/euro area.

- *Reference wage or pensionable earnings.* For insurance years before 1992, the reference wage is defined as the last monthly wage for civil servants or an average wage of the last 5 to 10 years in the private sector, based on different sources and occupations. For contribution years after 1992, the number of annual wages involved in the calculation increases gradually until it covers the last 10 years for employees and the last 15 years for the self-employed. But the periods over which pensionable earnings are calculated are still too short and tend to inflate the pension benefits of the DB scheme. On the other hand, the NDC (by definition) covers total lifetime contributions.

- *Early retirement penalties (actuarial corrections).* Under the DB scheme, the early retirement penalty is 1 percent at the age of 61, 2 percent at the age of 60, and a further 2 p.p. for each year below 60. These penalties are rather lenient—Queisser and Whitehouse (2006) calculate that, for Italy, the actuarially neutral reduction in benefits for each year of early retirement is in the order of 7.5 percent.

13.   The DB or the mixed system provide high replacement rates that do not seem actuarially fair and place the adjustment burden disproportionately on future retirees. The replacement rates under the current DB/mixed scheme in Italy are high compared to other countries (chart). The difference from the euro area average, according to EC (2015), is around 10 percentage points. The simplest solution would be to reduce spending in DB/mixed schemes equivalent to the thirteenth pension payment (i.e., the Christmas bonus) that would constitute a 7.7 percent cut in average pensions of the DB component. In the case of the wholly NDC scheme, it should be noted, however, that the thirteenth payment by itself does not constitute a departure from actuarial fairness since the calculation of the annuity considers 13 payments. Another option that would also improve intergenerational fairness is to recalibrate existing pensions based on the steady-state NDC formula or equivalent accrual rates.

Gross Replacement Rates and Economic Benefit Rates, 2013
(Percent)
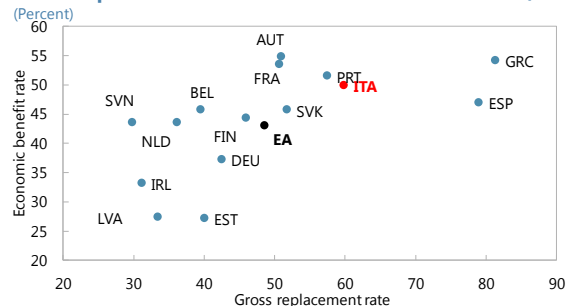
Sources: Eurostat, 2015 Aging Report, and IMF staff calculations.
Note: Gross replacement rate is a ratio of the average first pension to the average wage at retirement. Economic benefit rate is defined as a ratio of pension spending per individual aged 65 and older to GDP per working aged population.

14.   Although the long-run design is rooted in the NDC accounting scheme that screens out many past excesses, the annuity factor is based on a too high internal rate of return and the adjustment on current pensions limited.

- The NDC (Box 3) (i) is based on the total lifetime earnings history instead of the average of the last few years; (ii) cuts benefits (and thus implicit accrual rates) automatically in case of lower contribution rates/payments or demographic shocks; (iii) and thus also ensures neutral adjustment factors (implicit early retirement penalties). However, this is not to say the NDC is automatically sustainable or not open to interference that can operate via different sets of parameters (e.g., fourteenth pension, annuity factor). As in any PAYG-financed system, sustainability also depends on demographic trends and whether growth and employment outcomes materialize as currently parameterized (see the next subsection).

- Under current policies, however, the annuity factor is based on a too high internal rate of return. In a "pure" NDC, the internal rate of return (IRR) should be chosen to ensure actuarial balance between the system-wide assets and liabilities (Box 3). In steady state, the IRR converges to the rate of economic growth.[7] While in the Italian NDC the IRR that credits the notional capital each period is the moving average of nominal GDP growth over the past five years, the discount rate used to derive the annuity factor, defined as the ratio of the IRR to a rate of inflation indexing, is set at a rate of 1.5 percent, based on an expected long-run real growth rate.[8] Absent comprehensive and decisive structural reforms, such a real rate of return is considerably above Italy's current growth potential.

- In the Italian pension system, the adjustment to macro-demographic conditions (such as the periodic revisions in the transformation coefficient) affect future generations of retirees only, leaving current retirees unaffected. The IRR that credits the notional capital is linked to past performance. It would therefore be important to introduce an automatic adjustment (or sustainability) factor that links current pension payments to a measure of a long-term actuarial balance to shield against unforeseen shocks and improve intergenerational equity (see Barr and Diamond, 2011, for a discussion on such a "break" mechanism in Sweden).

15.   The 2017 budget dilutes expected gains from past pension reforms. The 2017 budget provides for an annual fourteenth pension payment to low-income persons as well as for temporary cash benefits to elderly workers until their retirement, raises the tax-free threshold for pensioners, facilitates portability for public mandatory pensions, temporarily extends the voluntary early retirement loan program, facilitates early retirement of certain categories of workers (arduous and hazardous workers, and young workers with contribution histories before 19 years of age), and abolishes a limited set of early retirement penalties introduced with the 2011 reform. While some measures such as enhanced pension portability are structurally welcome (although similar measures should also be applied to occupational pensions), the fourteenth pension payment and the higher

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[7] Here we abstract from the adjustment factor derived by Settergren and Mikula (2006) that can arise in non-steady state and in practice captures payment timing and system noise.

[8] A higher discount factor leads to a lower annuity factor, increasing the calculated annuity at retirement.

tax-free thresholds together are costly and depart from actuarial fairness. Frequent deviations from general rules can also undermine past reforms.

16.   The pension system would benefit from separating the insurance and social protection/welfare functions. Additional welfare benefits to retirees, as well as the fourteenth pension, are badly targeted as retirees have a lower incidence of poverty than the working age youth or the unemployed. Providing welfare benefits through, for instance, a national and universal anti-poverty scheme would better target those in need. Similarly, the NDC scheme in Italy effectively credits the notional capital of women with children with additional insurance time by granting them a higher transformation coefficient corresponding to 3 months higher retirement age for each child up to one year. While providing such benefits is a socio-political choice, from the perspective of the design of the pension system, such benefits are not transparent nor in the nature of insurance, especially since the years of maternity leave or spent for childcare also count as pensionable time of insurance. Similar support would be better targeted and more efficient by means of direct family benefits or childcare support.

17.   At around 2¾ percent of GDP, spending on survivor pensions is the highest in the Europe. According to Eurostat, the average monthly survivors benefit per inhabitant (at constant prices) in Italy is €608 compared to about €500 in the euro area—the second highest in the euro area after Luxembourg and the third highest in Europe after Luxembourg and Denmark. Similarly, survivor pensions in Italy have very wide coverage: the number of survivor pensions forms about 28 percent of total pensions in Italy and is much higher compared to about 18 percent in the EU on average. The eligibility for a surviving spouse in Italy does not appear to be constrained by an age limit, the absence of which can also dis-incentivize return to the labor market, especially for women. Survivor pension

Survivor Pensions, 2014
(percent of GDP)

Sources: Eurostat

payments to family members other than surviving spouse or orphans should be strictly limited.[9]
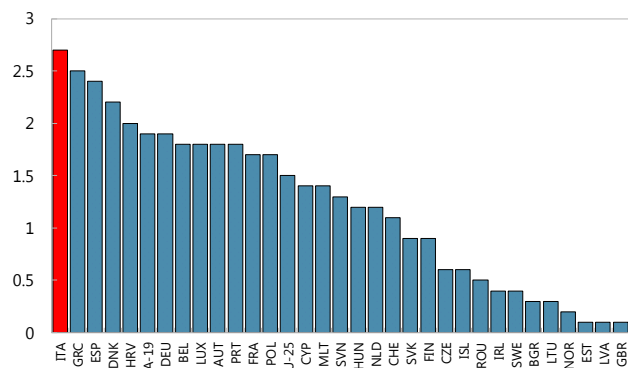
18.   Revenues collected from the self-employed could be increased. At 33 percent, the pension contribution rates on wage earners are high. Of the contribution rates on wage earners, about one-third is borne by the employee and two-thirds by the employer. For the self-employed and farmers, the contribution rate in 2014 was 22.2 percent, set to increase to 24 percent by 2018. One explanation for the difference in the contribution rates for employees and self-employed relates

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[9] SSA (2016) documents that 15 percent of the old-age or disability pension is paid to each parent, brother, or sister if there is no surviving spouse or orphans.

to differences in the gross base: for the self-employed, the gross contribution base includes all contributions whereas for workers only one-third (the employees' share). However, even then, the "neutral" contribution rate for the self-employed should be at least 27 percent.[10] The self-employed in Italy exhibit below average revenue productivity compared to their peers in the euro area. This is indicative of the need to further harmonize the contribution rates as well as strengthen collection and payment compliance.

Revenue Productivity of Self-Employed, 2015
(Percent)
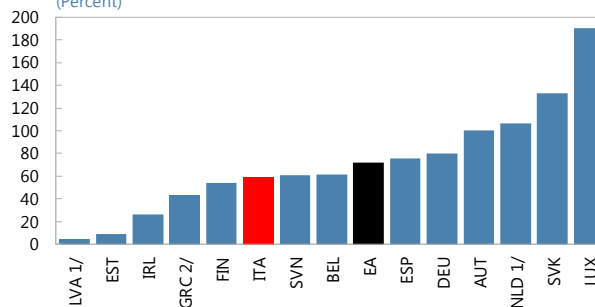
Sources: OECD; and IMF staff calculations.
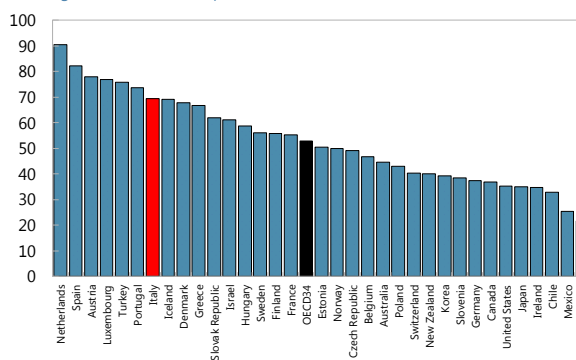1/ 2/ Data as of 2013 or 2014 due to availability, respectively.
Note: revenue productivity is calculated as a ratio between the share contributions paid by self-employed from total contributions and the share of self-employment in total civilian employment.

19.   The tax burden on pensions is favorable to retirees. According to the OECD (2015), both the gross and net replacement rates in Italy are on average about 17 percentage points higher than for the OECD average retiree, although the extension of the non-taxable area for retirees in the 2017 budget will widen the gap between Italy and the OECD. Compared to wage earners, retirees in Italy are subject to preferential tax treatment in terms of a higher tax-free allowance and full exemption on health contributions on pensions. Compared to retirees in other OECD countries, Italy offers tax relief on pension income from private schemes.

20.   Although the NDC in the very long run is expected to reduce pension spending, by itself it is not sufficient to deal with Italy's fiscal problems. According to OECD (2015), future gross replacement rates in Italy would still remain one of the highest in the OECD (text chart) with both gross and the net replacement rates about 15–20 percentage points above the OECD average, depending on the average pensionable wage. Similarly, EC (2015) projects Italy's pension spending to remain more than 3 percent of GDP above the average of other European countries. This is partly due to many features described above, including high discount factor, survivor pensions, and transformation coefficient for women with children, but also due to the very high pension

Future Gross Replacement Rates
(average income earner, in percent)

Sources: OECD (2015) Pensions at a Glance

contribution rate of 33 percent. Rapid aging will also put strong pressure on spending on health and long-term care that, according to EC (2015), is expected to increase by about 1½ percent of GDP by 2060 (net of lower spending on education).

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[10] For contributions rates of 11 percent for employees and 22 percent for employers, the "neutral" rate for self-employed is approximately $(0.11+0.22)/(1+0.22) \approx 0.27$.

Long-Run Simulations

21.   The authorities project long-term pension spending to remain relatively subdued, supported by the implementation of the above-mentioned past pension reforms and strong recovery in employment.

- According to the latest projections of the Ministry of Economy and Finance (MEF), pension spending is expected to remain relatively flat at just above 15 percent of GDP until 2045 and decline afterwards, reaching 13.7 percent of GDP by 2060. Based on these findings, the pension system and overall public debt are understood to be sustainable over the long term, and it is argued that Italy is in much better stead than many other euro area members that have still to come to terms with age-related spending.

- There are several offsetting factors that contribute to pension spending projections remaining broadly flat until 2045 and declining thereafter:

  o   The MEF notes that adverse demographic trends as captured by rising old-age dependency are the main drivers of future pension increases, adding more than 9 percent of GDP to pension spending by 2050.

  o   Over the next decade, until 2025, the benefit rate—the ratio of average pensions to GDP per worker—is expected to continue to increase pension spending, owing to the generosity of the old though declining DB component compared to low productivity growth.

  o   Thereafter, the share of retirees under the NDC scheme is projected to become sufficiently large to dominate the more generous older DB scheme, settling the benefit rate on a modest downward trend.

  o   But the strongest savings in the MEF's projections stem from a sizeable pick-up in the employment rate, with notable immigration ensuring steady labor force and population over the long term, as well as from reforms to restrict early retirement and extend retirement ages (eligibility rate), each reducing pension spending by about 4½ percent of GDP. With the unemployment rate reaching as low as 5.5 percent of GDP by 2060, Italy is expected to move from one of the worst to among the best performers in the labor market.

22.   Relaxing some of the optimistic demographic and macroeconomic projections suggest spending would be notably higher (Figure 4). The simulation results indicate that for the authorities' projections to materialize, the NDC system must cut average pensions of future retirees further by more than 4 percent of GDP (or by more than by 30 percent).

- *Employment rate.* The increase in the employment rate by the authorities seems excessive based on current policy settings, where the steady state unemployment rate is around 10 percent (indeed, Italy's average unemployment rate over the long term has been around 9½ percent). Nonetheless, assuming Italy's unemployment rate settles at 9 percent, implying an increase in

the employment rate that is only a half of the MEF's,[11] the total pension spending increases by more than 2¼ percent of GDP by 2060.

- *Old-age dependency rate.* The authorities (and the 2015 EC Aging Report) assume strong immigration into Italy, larger than into other euro area countries such as Germany. This is at odds with long-run dynamics observed to date and the argument that immigrants tend not to stay in Italy.[12] It is also at odds with recent demographic projections released by ISTAT. Demographic population projections by the United Nations Population Division—the most widely used source providing consistent world-wide demographic projections—point to more rapid population aging in Italy, increasing the long-run pension spending further by more than ¾ percent of GDP by 2060.

- *Total factor productivity.* With strong employment recovery, the authorities are also expecting per capita real GDP growth and real labor productivity growth around 1¾ percent, far above what has been observed for the last few decades. Such projections appear very optimistic. Lower TFP growth would lower GDP growth immediately, but would impact pension benefits slowly—through wages that pass through to lower contributions and thus lower notional stock of pension capital:

GDP and TFP Growth (1995-2014) (Percent)
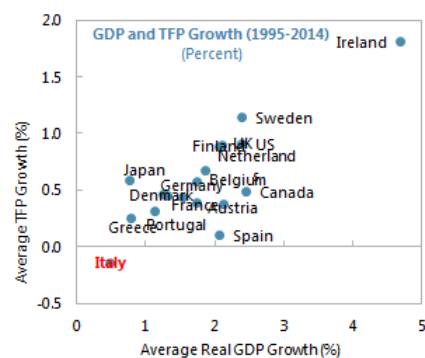
  o According to the MEF (2015, 2016), 0.25 percentage points in lower labor productivity growth would lead to about 0.5 percent of GDP higher pension spending in both 2040 and 2060, whereas 0.2 percentage points lower TFP alone would increase the pension spending to GDP ratio by 0.6–0.7 percent of GDP, respectively.

  o In response to a permanent negative labor productivity shock (of about ½ percentage points per year), staff simulations suggest that pension spending would be about 1 percent of GDP higher in both 2040 and 2060.[13]

23.   Correspondingly, the pressures on public debt are notable. All else equal, lower steady state employment, higher old-age dependency rate, or under a permanent negative labor productivity shock, the debt-to-GDP ratio would rise by 20–60 percentage points above the baseline, indicating the high sensitivity of public debt to pension expenditures.

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[11] The employment rates in Figure 4 are defined as a ratio of employed aged 15–74 to the working age population aged 20–64. The scales of these employment rates are thus not directly comparable with published statistics across countries.

[12] The Minister of Economy and Finance in his open letter to the EC of October 27 2016 wrote, "I would also like to recall that Italy is mostly viewed by migrants as a transit country, which reduces the medium to long-term economic benefit resulting from the enlargement of the labor force."

[13] A temporary negative labor productivity shock of the same size (over the period 2016–2025) though would result in a 0.4 percent of GDP higher pension spending between 2025–2040 before the impact of the shock fades away.

Figure 3. Italy: Demographic Projections
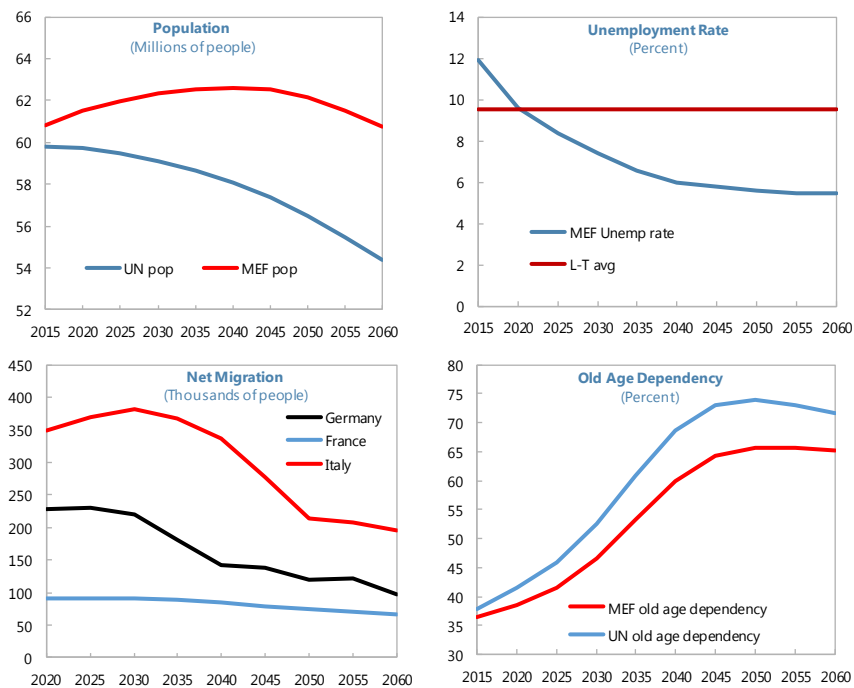
Sources: European Commission, Ageing Report; UN, Italian MEF; and ISTAT.

Reform Options

24.   Consideration should be given to enacting measures that would yield savings in the near term and secure savings over the medium term, consistent with current policy settings. Near-term savings come from addressing the excessive generosity and lack of actuarial fairness in the DB and mixed schemes, and several options to this end are outlined below. These could go toward creating the room for achieving higher primary surpluses that Italy needs to put public debt on a firm downward trajectory as well as to improve intra-generational equity by shifting the adjustment on retirees who thus far have been relatively better off. Longer-term savings come from using more realistic (or conservative parameters) that guide long-term pension benefit calculations as well as ensuring actuarial balance.

- *Eliminate the newly introduced fourteenth pension payment fully and the thirteenth payment for all retirees in the DB and mixed schemes.* Support for the most vulnerable—a justification provided for the introduction of the fourteenth pension payment to low income retirees in the 2017 budget—could be achieved through a modern well-targeted social safety net, in particular a national and universal anti-poverty scheme.

- *Introduce an age limit for a surviving spouse and limit any payments to relatives other than surviving spouse or orphan.* This would restrict eligibility for a survivor pension, reduce spending, and incentivize labor force participation.

- *Recalibrate existing pensions based on the steady-state NDC formula or equivalent parameters for accrual rates and/or pensionable earnings.* This would serve to reduce short- to medium-run pension spending by reducing benefits to those who have benefited from the generous DB scheme. It will not affect the long-run steady-state spending (given by the NDC).

- *Harmonize (effective) contribution rates of self-employed with those of wage earners.* Lower contribution rates for the self-employed constitutes preferential treatment. Although from a system-wide point of view lower contribution rates in the NDC eventually translate into lower pension benefits, it reduces the financing available to the pension system in the PAYG system and is a source of unfairness.

- As *a second-best option, part of the reduction in the high labor tax wedge—as part of a fiscal devaluation strategy—can rest on lowering employers' contributions.* This not only reduces the tax wedge on labor for current workers, but also translates into lower future pension spending via the NDC scheme. However, this is not the first-best policy choice when there is a tight (and actuarially fair) link between contributions and benefits that can be imposed by the NDC, since in that case pension contributions are effectively deferred savings that are less distortionary than other contributions (e.g., health) that are more redistributive in nature. This option could be considered only if future pension spending cannot be reduced by other means.

- *Subject pension benefits to health contributions and realign the tax-free threshold with wage earners.* Retirees should not be burdened with pension or unemployment contributions, although they are relatively more frequent consumers of health services and therefore should pay health contributions. Consideration should also be given to reversing the higher tax-free threshold for retirees introduced in the 2017 budget.

- *Adjust the NDC discount factor to reflect realistic growth potential and introduce an automatic adjustment mechanism that links pension spending to the long-term actuarial balance* (as, for example, done in Sweden, Canada, and Germany). The main purpose of such a mechanism is to allow for automatic adjustments in current pension payments as a response to permanent shocks, thus helping to keep the pension system solvent without a possible need to increase payroll taxes (that in turn would lead to increases in future benefits). The discount factor currently fixed at 1.5 percent annually is well above the Italy's long-term growth potential based on current policy settings.

25.   A key implication of the above simulations is that Italy needs to pursue comprehensive growth-enhancing reforms as a matter of urgency to reduce nominal wage rigidities and increase productivity and long-run employment rates. In the absence of such reforms that will take time to yield gains and reduce existing imbalances, even the self-adjusting NDC cannot ensure the sustainability of the pension system and public debt. It would, therefore, be prudent to set the safeguards as well as the system-wide parameters to be in line with the economy's potential under current policies rather than the stronger growth rates assumed in the MEF projections. Such an approach would reduce the risk of needing to take painful, large adjustments over a short time and thus reduce policy uncertainty.

Figure 4. Italy: Pension Simulations Under the MEF and UN Population Projections

Pension Spending
(Percent of GDP)

- MEF baseline
- Alternative
- Alternative (low productivity)

Average Pension
(In euros)

- MEF Baseline
- Alternative
- Alternative (low productivity)

Old-Age Dependency Rate
(Percent)

- MEF Baseline
- Alternative

Employment (15-74) / Population (20-64)
(Percent)

- MEF Baseline
- Alternative

Benefit Rate
(Percent)

- MEF Baseline
- Alternative

Eligibility Rate
(Percent)

- MEF Baseline
- Alternative

Sources: 2015 Aging Report, UN 2015 Population Projections; and IMF staff calculations.
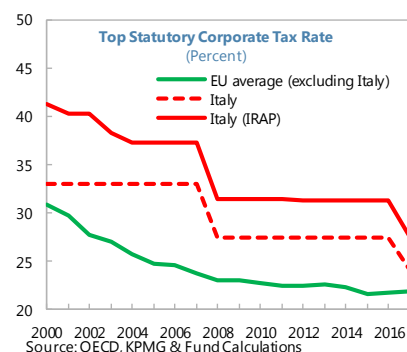
Notes: The alternative scenario uses UN population projections, as well as IMF staff's employment projections. Red dashed lines show the impact of a permanent negative labor productivity shock (of about ½ percentage points per year).

C.   Revenue Rebalancing: Some Considerations

26.   The Italian tax system has many aspects of a Dual Income Tax (DIT) regime.[14] It applies a flat tax rate of 26 percent on capital income (dividends, interest income, and capital gains on securities),[15] and 21 percent on rental income. Labor income is subject to a progressive scale with a starting rate on the first earned euro of 23 percent and a top tax rate of 43 percent for income exceeding €75,000 (the personal income tax is known as "IRPEF"). The corporate income tax (CIT) rate, the so-called "IRES," stands at 24 percent, but a surcharge of 3.5 percent is imposed on financial and insurance companies. In addition to the IRES, there is a "regional production tax"—an origin-based value-added tax known as the IRAP—imposed as a fixed rate of 3.9 percent on the net value of production.[16]

27.   However, tax rates remain high and are applied on a relatively narrow base. Total government revenues—at 43.5 percent of GDP—compare favorably with the EU average of 37 percent (Table 5). Out of this, total tax revenues of 29.7 percent of GDP in 2015 also compare favorably with revenues in the region. This is based on:

- *High tax rates:*

  - o The labor tax wedge is high. The average tax wedge in Italy for a single person earning an average income is 47.9 percent, well above the OECD average of 35.9 percent.[17] This pattern is observed across levels of income and types of households.[18] The ratio of the social security contributions (SSC) to GDP is 13.4 percent, which is 2 percentage points higher than the EU average. The share of personal income tax (PIT) in total taxes is among the highest in the EU at 41 percent.

  - o The CIT to GDP ratio is about 2 percent, well below the EU average of 2.7 percent, even though the CIT rate is significantly higher than the current EU simple CIT

Top Statutory Corporate Tax Rate
(Percent)
- EU average (excluding Italy)
- Italy
- Italy (IRAP)

Source: OECD, KPMG & Fund Calculations

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[14] The essence of a DIT regime is to tax capital at a low single rate and labor income under a progressive schedule.

[15] The 26 percent flat rate applies in the case of non-qualified shareholding. If certain thresholds' requirements are met, then 49.72 percent of the (qualified shareholding) capital gains or dividends are subject to the progressive personal income tax scale. A reduced rate of 12.5 percent is applied to the share of capital income deriving from State securities; and a Tobin tax exists on financial transactions and stamp duties, consisting of taxes on stock of financial assets rather than incomes.

[16] Ten percent of the IRAP paid during a year can be deducted from the IRES. The labor cost for open-ended employees can be deducted from the IRAP tax base; there is a possibility for regions to reduce up to zero the tax rate of 3.9 percent or increase it by up to 0.9 pp.

[17] The tax wedge is sum of taxes and SSCs paid by employees and SSCs paid by employers, minus family received benefits. The average tax wedge is the tax wedge divided by the total cost of labor for the employer. This measure can be computed at various levels of income and types of households (singles, couples, with or without children).

[18] To reduce the labor tax wedge, Italy has adopted several measures, including SSC exemptions, the €80 PIT reduction, and deduction from the IRAP tax base of the labor cost of hires with permanent contracts.

average (excluding Italy) of 21.3 percent. With the IRAP, Italian companies are taxed at an even higher rate.

- o The standard VAT rate is 22 percent compared to an EU average standard VAT rate of about 21.5 percent.

- *Relatively narrow base:*

- o Tax expenditures are quite large, estimated by Tyson (2014) at 6.5 percent of GDP, and by the "*Commissione Marè*" report on tax expenditures at 5.5 percent of GDP. A recent report from the Ministry of Economy and Finance (MEF) identifies 600 measures of this kind on a legal basis.

- o Italy has one of the weakest performing VAT systems in the EU, reflecting the presence of reduced rates and compliance gaps. The VAT C-efficiency—an indicator of the departure of the VAT from a perfectly enforced tax levied at a uniform rate on all consumption—at about 40 percent is well below the EU average.[19] Combining this with a compliance gap of about 30 percent, as estimated by MEF, implies a policy gap of about 40 percent.[20]

- o Moreover, the CIT revenue productivity is only 7.4 percent compared to the EU average of 13.4 percent. Alternatively, the Implicit Tax Rate on Corporate Income in Italy was 25.9 percent in 2012 (the latest year available), as compared to 17.8 percent for Spain and 20.8 percent for the U.K.

- o Tax evasion is very high. On average and over the period 2012-2014, the amount of revenues forgone per year is estimated by the Ministry of Economy and Finance at around €110 billion. The stock of unpaid tax and SSC debt in 2016 was €614 billion.

Sources: IMF staff calculation using EU Tax Statistics.
Notes: C-efficiency is defined as the ratio of VAT revenue to the product of the standard VAT rate and consumption. CIT productivity is the ration of CIT revenues to the product of the CIT rate and GDP.

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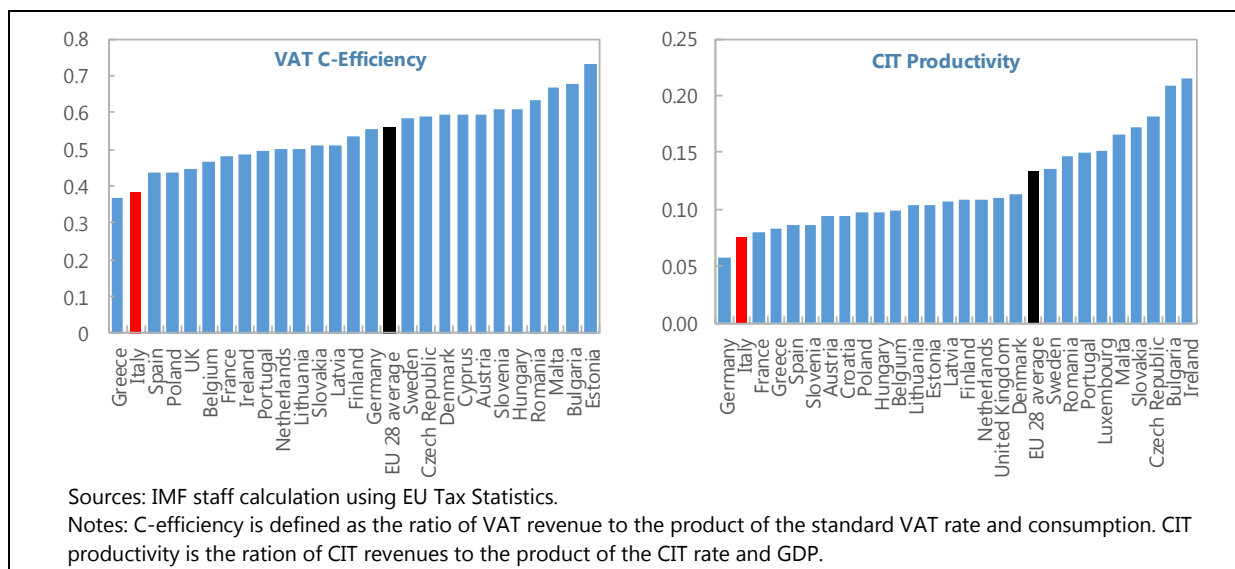
[19] See Keen (2013) for a detailed discussion of the C-efficiency measure.

[20] The policy gap can be further decomposed into those arising from exceptions and rate dispersion.

28.   A shift in the tax burden from productive factors to property and consumption, with support for investment, would make for a growth-friendly mix:

- "Fiscal Devaluation" (see De Mooij and Keen, 2012)—shifting the tax burden from labor income to less distortive tax bases by:

  a. Lowering employers' SSC rate to closer to the EU average.
  b. Using well-designed targeted instruments to increase labor supply, such as replacing the family ("dependent spouse") tax credit with an in-work tax credit.
  c. Introducing a modern property tax on primary residences and updating cadastral values; and lowering the VAT policy and compliance gaps, e.g., by harmonizing the reduced VAT rates, reducing the range of items subjected to reduced rates or exemptions, and considering a moderate increase in the standard VAT rate.
  d. Eliminating inefficient tax expenditures (e.g., abolishing the mortgage interest tax credit).
  e. Making the newly introduced self-employment regime compulsory.
  f. Strengthening capital gains taxation by ensuring Italy's right in the domestic law to tax capital gains from offshore indirect transfers of assets.

- Encouraging investment through more effective, efficient, and credible tax provisions, building on measures such as adoption of an Allowance for Corporate Equity (ACE) regime since 2012[21] and several internationally-required anti-tax-avoidance provisions:[22]

  a. Streamlining targeted tax incentives to encourage innovation and R&D investment.
  b. Improving the design of ACE, e.g., by providing a higher ACE rate for start-ups.
  c. Abolishing the intellectual property (IP) box regime.
  d. Improving the overall investment climate by addressing uncertainty in tax matters that dampen taxpayers' confidence and investment, e.g., by making the R&D tax credit permanent and credibly announcing the non-extension of enhanced depreciation.

- Reforming tax administration, including by restoring autonomy to fiscal agencies, strengthening enforcement, relaxing legal constraints to tackle tax debt, and bringing instalment arrangements in line with international best practice.

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[21] The ACE rate was reduced from 4.5 percent to 2.3 percent in 2017 and 2.7 percent in 2018.

[22] Examples include rules to limit interest deduction for the CIT (*an earning-stripping rule*) and rules to limit profit shifting through Italian-controlled companies located in low tax ("black-listed") jurisdictions (*controlled foreign company rules*).
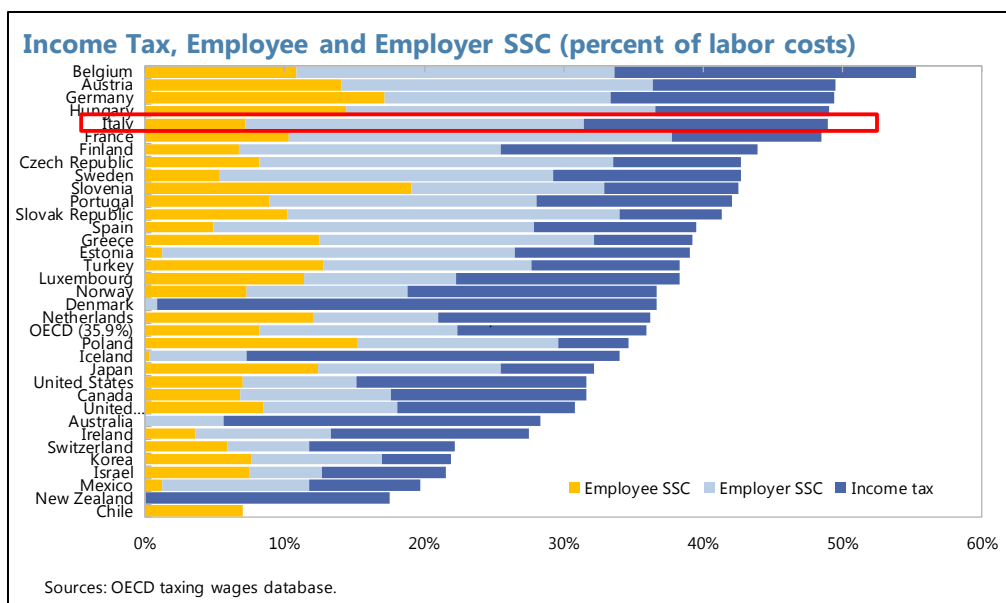
Table 5. Tax Structure in Selected Countries, 2015

Country	Total	General Government Revenue Structure (percent of GDP)									
		Tax Revenue								Capital	Social Contributions
		Total	Taxes on Income and Profits				Taxes on Goods and Services					
			Total	PIT	CIT	Other	Total	VAT	Import	Other		
Austria	44.6	28.2	13.6	11.0	2.4	0.3	14.6	7.8	0.1	6.7	0.0	15.5
Belgium	46.9	29.9	16.1	12.5	3.4	0.2	12.9	6.7	0.6	5.5	0.9	16.6
Bulgaria	29.6	21.4	5.4	2.9	2.1	0.4	15.8	9.2	0.1	6.5	0.3	8.1
Croatia	37.5	25.2	5.6	3.6	1.9	0.1	19.6	13.0	0.0	6.6	0.0	11.9
Cyprus	33.3	23.8	8.9	2.5	6.0	0.4	14.9	8.7	0.2	6.0	0.0	8.5
Czech Republic	34.2	19.4	7.1	3.6	3.4	0.0	12.3	7.3	0.1	5.0	0.0	14.6
Denmark	48.4	46.6	29.7	27.0	2.7	0.0	16.6	9.6	0.0	7.0	0.3	1.0
Estonia	33.6	22.2	7.9	5.8	2.1	0.0	14.3	9.2	4.4	0.7	0.0	11.4
Finland	44.1	30.0	15.5	12.9	2.2	0.5	14.2	9.1	0.1	5.1	0.3	12.9
France	47.8	28.0	11.5	8.8	2.7	0.0	15.9	6.9	0.1	8.9	0.6	18.9
Germany	39.8	22.8	11.8	9.9	1.7	0.2	10.8	7.0	0.8	3.0	0.2	16.5
Greece	39.4	24.3	8.2	5.4	2.2	0.6	16.1	7.3	0.2	8.5	0.1	13.9
Hungary	39.4	25.8	6.9	5.0	1.9	0.0	18.9	9.8	0.0	9.1	0.0	13.3
Ireland	24.3	19.3	10.4	7.5	2.7	0.3	8.8	4.7	1.5	2.6	0.2	4.5
Italy	43.5	29.7	14.4	12.1	2.1	0.3	15.3	6.2	0.1	8.9	0.1	13.4
Latvia	29.4	20.4	7.6	6.0	1.6	0.0	12.8	7.7	0.2	4.9	0.0	8.7
Lithuania	29.3	17.3	5.4	3.9	1.6	0.0	11.8	7.8	0.3	3.8	0.0	12.0
Luxembourg	38.4	25.6	13.5	9.1	4.4	0.0	12.0	6.7	2.5	2.8	0.1	12.0
Malta	34.6	27.2	13.5	5.9	5.8	1.8	13.5	7.8	0.2	5.6	0.2	6.8
Netherlands	37.8	22.0	10.5	7.7	2.7	0.0	11.3	6.6	1.6	3.0	0.2	14.7
Poland	33.3	19.5	6.5	4.7	1.9	0.0	12.9	7.0	0.2	5.7	0.0	13.6
Portugal	37.0	25.0	10.5	7.3	3.1	0.0	14.6	8.6	0.6	5.4	0.0	11.6
Romania	28.0	19.5	6.2	3.7	2.4	0.2	13.3	8.1	0.1	5.1	0.0	8.1
Slovakia	32.5	18.0	7.1	3.2	3.8	0.2	10.9	6.9	0.2	3.8	0.0	14.1
Slovenia	37.0	21.5	6.6	5.1	1.5	0.0	14.9	8.3	0.1	6.4	0.0	14.8
Spain	34.3	22.1	9.7	7.2	2.4	0.1	11.8	6.5	0.2	5.2	0.6	12.2
Sweden	44.3	40.3	18.2	15.0	3.0	0.2	22.1	9.1	0.0	12.9	0.0	3.7
United Kingdom	34.8	24.7	11.7	8.9	2.3	0.5	12.8	6.9	0.2	5.7	0.2	7.8
EU 28 average including	37.0	25.0	10.7	7.8	2.7	0.2	14.1	7.9	0.5	5.7	0.2	11.5
EU 28 average excluding	**36.8**	**24.8**	**10.6**	**7.6**	**2.7**	**0.2**	**14.1**	**7.9**	**0.5**	**5.6**	**0.2**	**11.4**

Sources: IMF staff, Eurostat, and OECD. Components of Income Tax for Germany, Hungary, Estonia, and Spain are taken from OECD Revenue Statistics.

Fiscal Rebalancing/Devaluation

A "fiscal devaluation" is a revenue-neutral shift in the tax structure (e.g., from employers' social security contributions toward value-added and property taxes) with positive effects on employment and output. Nonetheless, it could present risks for pension financing.

29.   Reducing employers' SSCs can stimulate labor demand in the short term. Given wage rigidities and being in a monetary union with major trading partners, cutting employers' SSCs can reduce labor costs (and producer prices, including those of exports) as well as increase labor demand in the short term. The resulting favorable effect on the trade balance could be temporary though, if nominal wages eventually adjust to fully offset the cut. However, the impact on employment and output may be longer lasting with a shift in the tax burden toward non-labor income (VAT and property taxes) that is also less distortionary.

Income Tax, Employee and Employer SSC (percent of labor costs)

Countries (top to bottom): Belgium, Austria, Germany, Hungary, Italy, France, Finland, Czech Republic, Sweden, Slovenia, Portugal, Slovak Republic, Spain, Greece, Estonia, Turkey, Luxembourg, Norway, Denmark, Netherlands, OECD (35.9%), Poland, Iceland, Japan, United States, Canada, United…, Australia, Ireland, Switzerland, Korea, Israel, Mexico, New Zealand, Chile

Legend: Employee SSC, Employer SSC, Income tax

X-axis: 0%, 10%, 20%, 30%, 40%, 50%, 60%

Sources: OECD taxing wages database.

30.   Moderately increasing the share of employees' SSCs in total could, under certain conditions, partially finance the cut in the employers' SSC and ensure a stable stream of funding. Changing the composition of the SSCs by adjusting the employees' SSC share would address the risk of using general revenues to finance pension and social security obligations. However, there could be a negative effect on wages and labor supply, and thus the measure could best be introduced should the government decide to reduce personal income taxes and be complemented with other targeted measures.

31.   Better use of targeted measures toward increasing labor supply, especially of low income earners, is recommended. Italy has the lowest labor supply of married women among EU countries. This is in part driven by a tax credit for non-working spouses that discourages their labor supply. A better-targeted design is replacing this tax credit with a tax credit for households if both spouses are employed (called working family tax credit or in-work tax credit), which can be increasing with the number of children (as, e.g., in the U.K. and the U.S.). Available evidence suggests that adopting in-work tax credits for low income earners, within a revenue-neutral reform, can have sizable impacts on the female labor-force participation and aggregate employment (Saez, 2002; De Mooij, 2008). For Italy, Colonna and Marcassa (2015) find that replacing the dependent-spouse tax credit with an in-work tax credit increases married women participation rate by 3 percentage points. However, although in-work tax credit alleviates the tax burden at the extensive margin, there is a risk of increasing distortion at the intensive margin of labor supply, which can be mitigated through an appropriate design of the in-work credit.

32.   Re-introduction of a property tax on primary residences is a vital element of a modern tax system in Italy. The municipality property tax (known as "IMU") and the municipality tax on

local services ("TASI") for primary residences were abolished in 2015, owing to their unpopularity.[23] The property tax is an efficient instrument and can raise significant revenues. In 2015, recurrent taxes on immovable property raised 1.6 percent of GDP in Italy. Even if taxes on primary residence were reintroduced, to fully exploit the potential of the property tax, it is essential to reform the cadastral system and update the cadastral declared value of the property on the *Rogito* (deed of sale). Using municipal property taxes to finance local governments enables the central government to reduce transfers to local governments and free up resources to fund the lowering of employers' SSCs.

33.   Lowering the VAT policy gap by harmonizing the reduced VAT rates can raise significant revenues. The VAT compliance gap is €36.9 billion, about 27.5 percent of total VAT liability (2.28 percent of GDP), significantly higher than the EU-27 average (14 percent). Halving this gap, while maintaining all tax rates unchanged, would increase revenues by 1.14 percent of GDP. Moreover, based on EU (2016), fully closing the policy gap, i.e., if no VAT reduced rates and exemptions were applied, would enable Italy to increase its VAT revenue by an additional 15 percent. This estimate, however, is based on a full compliance scenario. Adopting a lower number of reduced rates could be an intermediate step toward lowering this policy gap. Decreasing the range of items subjected to reduced rates or exemptions is also important for lowering the policy gap. For instance, instead of exempting taxi services from the VAT, they can be subject to the reduced rate; however, if taxis pay VAT on their inputs, a careful analysis is needed to assess the revenue impact.[24]

34.   Concrete actions are required to tackle the causes of high tax arrears. Tax arrears are at an alarmingly high level reaching €614 billion (as of 2016). Toro and others (2015) suggest that a significant amount of arrears is not collectable (e.g., because 31 percent of debtors are out of business or bankrupt and 36 percent relate to cases where enforcement actions were taken but did not result in actual collection) calling for effective write-off arrangements. Recurrent tax concessions undermine voluntary compliance culture and the effectiveness of tax administration. About €31 billion of tax arrears is deemed recoverable. Enforcement actions are critical that could be supported with timely filing, modern payment arrangements, and relaxing legal constraints.

35.   Italy embraces a large set of tax credits in part reflecting income redistribution mechanisms. For example, within the personal income tax, there are tax credits for dependent spouses, children, retirees, education and medical expenses. Other allowances/deductions within the tax structure include substitute tax on capital income, ACE allowances and participation exemption, reduced VAT rates and compulsory payroll tax deductions. The largest item of tax expenditures is the employment income tax credit for wage and self-employed income. This reflects the fact that the first bracket of income (from zero to 15,000 euro) is subject to a tax rate of 23 percent (i.e., there is no zero-tax bracket for low income). Thus, the tax credit is warranted for

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[23] The IMU on luxury houses remains enacted, but the tax was reduced. The basic rate for the IMU for the primary residence was equal to 0.76 percent, but it varies depending on the location of the house by a maximum of +0.3 percent.

[24] Several measures were introduced in recent years to reduce the VAT gap. Examples include optional electronic invoicing, more frequent VAT invoice transmissions, and split-payment and reverse-charge mechanisms.

redistribution. However, some other tax expenditures within the direct income tax should be revisited and could be gradually eliminated, including:

- *Mortgage interest tax credit.* The tax credit is equal to 19 percent of the mortgage interest payments. The upper limit of this tax credit is €4,000. Since capital gains on primary residence in Italy are exempt from the capital gains tax, and high household debt could be associated with stability risks (IMF, 2016a), the mortgage interest tax credit should be phased out or at the very least its generosity should be lowered.

- *Tax credit for medical expenses.* This tax credit is equal to 19 percent of medical expenses exceeding €129.11.[25] Yet, redistribution motives in this area can be better-targeted using government expenditures, and furthermore, currently, health services are either subject to a reduced VAT rate or exempted from the VAT in Italy. Hence, this tax credit can be revisited.

Supporting Investment

> *A simple and certain business taxation strategy is recommended that relies on two key elements: (i) innovation and allowance for corporate equity, and (ii) removal of inefficient incentives.*

36.   Improving the design of the ACE can support investment. In the main, these comprise technical adjustments to the ACE regime, rather than cuts to CIT rates.

- In the presence of ACE, changes to statutory CIT rates are less likely to impact investment decisions. The extent to which the revenue cost of the recent CIT rate cut from 27.5 to 24 percent can be compensated by increased investment and growth depends on:

  o *Profit shifting.* The lower CIT rate can reduce incentives for profit shifting. However, this aspect is unlikely to be significant because, as discussed above, Italy has agreed to comply with the ATAD and the G20/BEPS minimum standards. These anti-avoidance measures help safeguard against profit shifting.

  o *Location choice.* The neutrality of the CIT with regard to ACE means that any impact on investment will come in effect from changed location by multinational companies, but the location decision depends on several other tax and non-tax factors (including labor regulations and labor supply). Firms that would have invested anyway would also benefit from the rate cut, adding to the fiscal cost but without benefit.

- ACE contributes to very low, perhaps even negative, marginal effective tax rates, thereby positively impacting investment. Effective tax rates summarize the impact of major elements of

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[25] A 2015 analysis of the tax credit for medical expenses based on tax returns statistics show that the beneficiaries, mostly with incomes below €55,000, are 17.3 million for a total amount of €16.2 billion of expenses.

the tax base, such as depreciation allowances and the ACE, along with the rate of tax itself. In theory, the marginal effective tax rate (METR)—a measure of the tax burden on an investment that just yields the required rate of viable return—is zero in Italy because the ACE does not tax normal return.[26] In the text Figure, taken from the Oxford Center for Business Taxation, the METR is negative, suggesting that the marginal investment receives a subsidy in Italy (although these calculations must be interpreted with caution as the negative rate is driven by strong assumptions underlying the calculations). Another measure is the effective average tax rate (EATR), which is important for multinational companies' location choice for new

Statutory and Effective Tax Rates
(Percent)

affiliates (it measures the proportion of the present value of pre-tax profit that would be taken in tax). The EATR in Italy compares favorably to several EU member states including Spain, France, Germany, and Portugal.
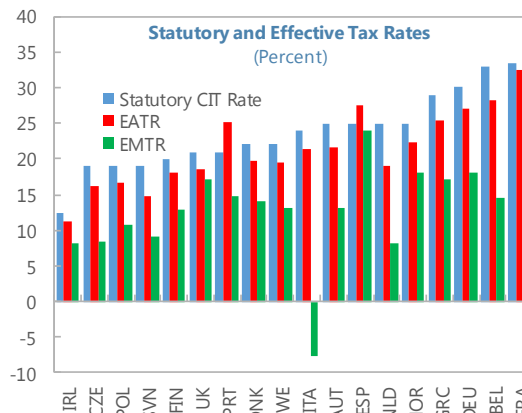
- The impact of the ACE on investment could be enhanced, for instance, by providing a higher ACE rate for small businesses (perhaps contingent on an age requirement), re-linking the rate to government bond yields, and a premium to reflect risks, and introducing a minimum rate of 2 to 3 percent in line with the EU Common Consolidated Corporate Tax Base (CCCTB) proposal to enhance tax certainty.[27]

37.   Well-designed R&D tax incentives can have a sizable impact on productivity. Taxation can incentivize private R&D activities through the input side—in the form of an R&D tax credit or deduction—or the output side in the form of a reduced tax rate on IP income ("IP box"). While Italy has measures on both sides, the former measures are more efficient.[28] Empirical evidence suggests that one euro spent by the government on R&D tax incentives, on average, increases domestic private R&D by one euro, whereas one euro spent on an IP box can, at best, increase R&D by less than one euro (IMF, 2016b; Dumont, 2015).

Effective Tax Rates in IP Box Regimes
(Percent)

IP Box Effective Rate
CIT Rate

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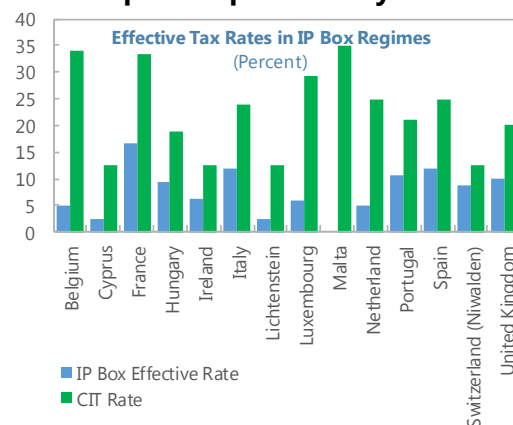
[26] The METR considers the size of allowances and deductions in determining taxable profit and measures the proportionate increase in the required rate of return on an investment project.

[27] Within the 2017 supplementary budget, the base of the ACE tax deduction was changed from "the increase in equity since 2011" to "the increase in equity in the last five years before the tax year considered".

[28] The strategy followed by Italy to scale-up investment and enhance productivity includes: i) tax credits for R&D investments; ii) accelerated depreciations, such as super and hyper-amortizations; ii) subsides to SMEs to repay loans and agreements with banks to promote access to credit, as envisaged by the so-called Nuova Sabatini Law;

(continued)

Bloom and others (2002) estimate that a 10 percent reduction in the cost of R&D increases the level of R&D by about 1 percent in the short run and 10 percent in the long run. Griffith and others (2014) estimate that IP regimes have resulted in lower revenues from IP in the Benelux countries and the U.K. Not all EU countries adopt an IP box, while the tax rates for those that apply an IP regime are shown in the text figure. Italy exempts 50 percent of qualified IP income from taxation, and taxes the remaining 50 percent of that income at the statutory CIT rate of 24 percent implying an effective tax rate of about 12 percent.

**38.   In general, there are fundamental conceptual concerns with IP boxes. The IP tax relief:**

- *Rewards only success.* Successful R&D outputs are a function of many non-R&D related inputs (including management) that are not characterized with market failure. IP regimes may discriminate against potentially important R&D activities that may not be successful quickly.

- *Is proportional to the amount of qualifying IP income, and not connected to the level of R&D expenditure.* That is, two patents may generate the same income, thereby receiving the same benefits from the IP regime, even if they have different levels of R&D input.

- *Cannot perfectly target the location of R&D.* There is a distinction between the legal ownership of patents (and know-how assets) and the location of R&D activities that led to the patents. IP boxes can influence the location of the legal ownership of the know-how assets (within the multinational group) with little effect on domestic R&D investments. Essentially, large enterprises particularly in the manufacturing sector benefit the most from this scheme.

39.   Options to streamline the existing R&D and investment incentives in Italy include:

- Abolish the IP box regime. The October 2016 European CCCTB proposal envisages a super deduction for R&D expenditures. If implemented, the CCCTB would phase out IP regimes. The 2017 supplementary budget attempts to harmonize the Patent box regime to OECD standards.

- Make the tax credit for R&D expenses permanent.

- Credibly announce that temporary super depreciation rules will not be renewed (starting from a given date).

- Periodically assess the effectiveness of the allowances for investment in innovative startups. Potentially, this measure should not be size-based and apply only to startups.

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iii) specific credits and crowdfunding for start-up and SMEs; iv) tax allowances, such as ACE; v) State guarantees on loans of SMEs; vi) a reduced tax rate on incomes from the direct use or license for IP incomes (the so-called Patent Box); and vii) targeted incentives to innovative start-ups.

40. **Frequent changes to tax policy and administration, and excessive use of temporary provisions can be an important source of uncertainty (IMF/OECD, 2017).** The frequency of tax changes in Italy is high compared to other G20 countries, and introducing or renewing temporary measures with varying conditions is prevalent. Temporary measures generate uncertainty when their expiry date is either unclear or not credible. Such uncertainty risks creating a hold-up problem, as firms defer investment until the uncertainty is resolved.[29]

Frequency of CIT Changes, 1983-2014
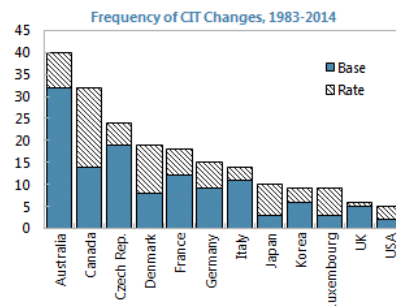
Source: IMF staff calculations. On average, there are 17 significant policy changes per country over the sample period: a little more than one every eighteen months. There is, however, significant variation in this frequency. It is greatest in France and Italy (with 40 and 32 changes respectively) and least in Denmark and Korea (9 and 10 changes). In most countries, significant base changes have been noticeably more common than rate changes.

D. A Growth-Friendly Fiscal Policy Mix

41. **The IMF's Global Integrated Monetary and Fiscal Model (GIMF) is used to illustrate the effects of the above-mentioned fiscal package (Figure 4).** The scenario modeled assumes a permanent fiscal consolidation of about 2 percent of GDP (in the structural primary balance) over four years to achieve a small structural surplus, supported by a pro-growth mix of revenue and expenditure reforms, and is compared to a trend or no-policy-change baseline. Two types of growth-friendly revenue and spending measures are considered along the envisaged fiscal consolidation path: shifting taxation from direct to indirect taxes, and lowering expenditure and shifting its composition from transfers to investment.

- On the revenue side, a lower labor tax wedge (1.5 percent of GDP) is offset by higher VAT collections (1 percent of GDP) and introducing a modern property tax (0.5 percent of GDP).[30]

- On the expenditure side, spending on public consumption is lowered by 1.25 percent of GDP, while productive public investment spending is increased by 0.5 percent of GDP. The remaining portion of the fiscal consolidation, 1.25 percent of GDP, is implemented via reduced social transfers. In the model-based analysis, it is assumed that higher public investment spending and an associated higher level of government capital exert positive spillovers on private sector productivity.

42. **The policy package would result in an output increase of around 2 percent and a lower debt-to-GDP ratio of around 13 percentage points in a decade.** The increase in output is even larger in the long run (around 2½ percent higher than the baseline) while the debt-to-GDP ratio is more than 35 percentage points lower than the baseline. The positive response of the economy is a result of a less distortionary new tax structure, with lower labor tax wedges, and of the more productive spending, namely on public investment, and lower debt-service costs. Lower taxes on capital induce firms to increase investment and raise their desired level for the private capital stock. Lower labor income taxes encourage households to provide more labor. The net effect of lower

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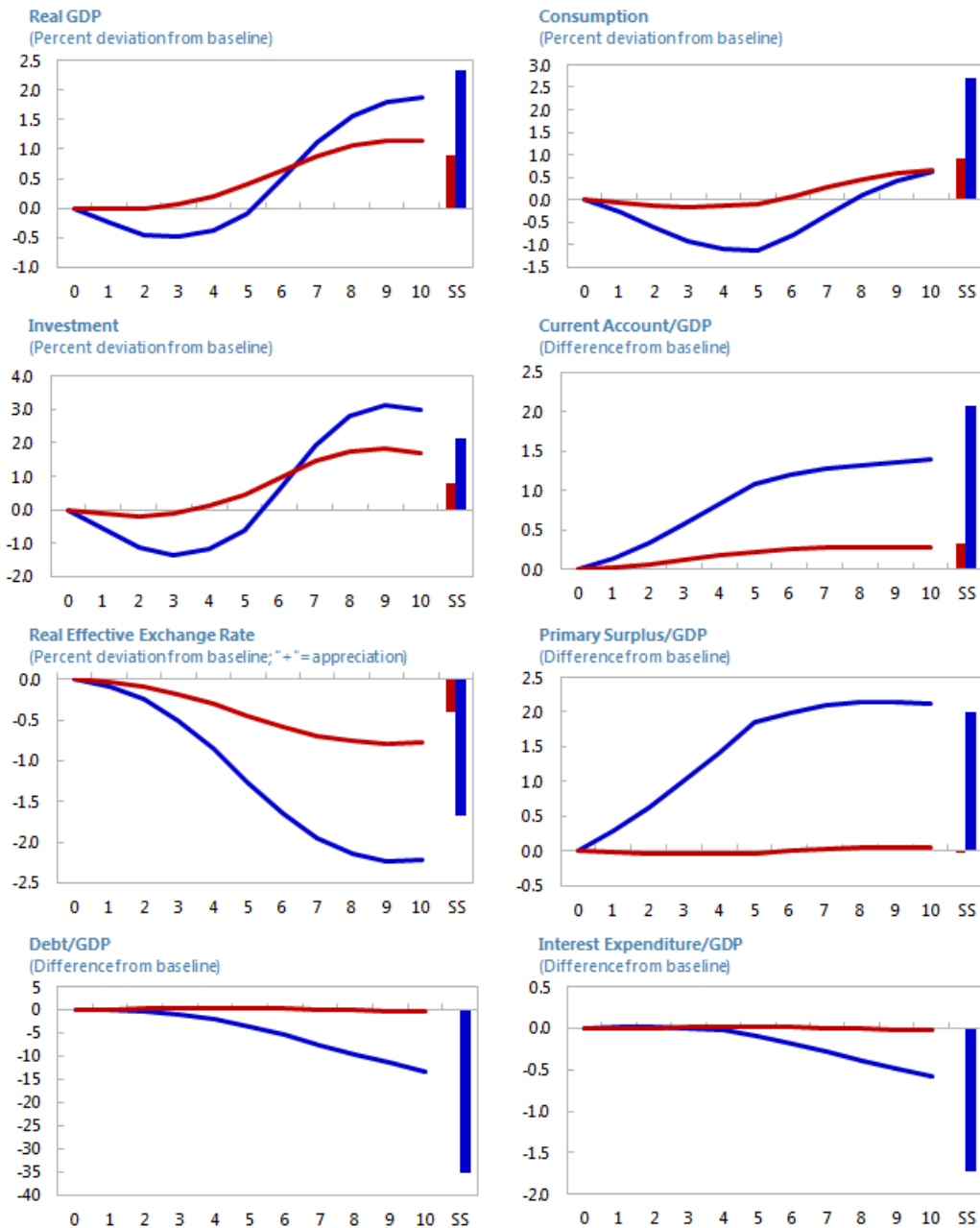[29] Gulen and Ion (2016) find evidence that policy uncertainty is persistently and negatively correlated with corporate investment, with an important part of the negative effect of tax-related uncertainty measured as the presence of temporary measures where the expiration date or the possibility for renewal are unclear.

[30] The property tax is approximated by lump-sum taxes in the model-based analysis.

income taxes and higher lump-sum as well as value-added taxes is positive on private consumption in the long term. The revenue-neutral tax reform on its own—with no change in the debt-to-GDP ratio—would result in higher private consumption and output owing to the economy moving towards less distortionary sources of taxation.

43.   The increase in productive public investment and lower expenditure on public consumption and lower social transfers result in further output gains in the long run. The productive public spending stimulates private capital accumulation and the lower deficit and debt ratios result in significant savings on debt-service costs. In the short run, before the benefits of more productive investment and of lower debt fully materialize, the reduced social transfers and public consumption dampen somewhat private consumption and output. Short-term costs though are quite modest and are traded for significant longer-term benefits of permanently higher private consumption and output. The fiscal consolidation/composition shift scenario assumes that the measures are gradually phased in over the period of four years. If the announcement of the reform is fully understood by firms and households and fully believed, the short-term costs are even smaller than in the case when the general public considers permanent only the measures implemented in the given year and in the past, but do not believe that future reforms will be implemented. When households and firms believe the whole path of fiscal reforms they invest more from the outset and reap the long-term benefits of the fiscal consolidation sooner.

Figure 5. Italy: Simulated Fiscal Reform

Real GDP
(Percent deviation from baseline)

Consumption
(Percent deviation from baseline)

Investment
(Percent deviation from baseline)

Current Account/GDP
(Difference from baseline)

Real Effective Exchange Rate
(Percent deviation from baseline; "+"=appreciation)

Primary Surplus/GDP
(Difference from baseline)

Debt/GDP
(Difference from baseline)

Interest Expenditure/GDP
(Difference from baseline)

Source: IMF staff estimates.
Notes: Horizontal axis=years, and SS=steady state. Red: revenue rebalancing. Blue: total impact.

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QUANTIFYING THE BENEFITS OF A COMPREHENSIVE REFORM PACKAGE[1]

This note seeks to quantify the net benefits of a comprehensive reform package aimed at addressing Italy's inter-related challenges. Specifically, it simulates the growth and competitiveness effects of a package of fiscal, financial, wage bargaining, and other structural reforms. Credible implementation of such a package yields substantial medium-term dividends at negligible near-term growth costs. Real GDP growth is estimated to be substantially higher over the medium term, while the real effective exchange rate depreciates notably.

A.   Background

1.   Italy is struggling with modest growth, high public debt, and a banking system burdened with high nonperforming loans and weak profitability. The economic recovery is being weighed down by long-standing structural problems, imbalances, and strained balance sheets. At the same time, restoration of balance sheet health is being hindered in important part by the slow economic recovery. On current projections, growth remains too modest to decisively reverse imbalances and lower debt, leaving the economy vulnerable to adverse developments.

2.   Relatedly, Italy's competitiveness is assessed to be moderately weaker than suggested by medium-term fundamentals and desirable policy settings. The current account surplus that emerged since 2013 has mostly been the result of import compression caused by a decline in investment and large commodity terms of trade gains. The recovery of exports has lagged, while desirable policy settings to reduce high public debt and medium-term fundamentals, including Italy's rapidly aging society, imply a higher equilibrium current account balance. Unit labor costs that rose notably in the years following euro accession remain elevated, as wage gains have outstripped productivity. The real exchange rate is estimated to be overvalued on the order of 10 percent.[2]

3.   Fostering growth and competitiveness and addressing imbalances requires a comprehensive and timely policy response. Such a response would not only address underlying rigidities and imbalances and, thus, unlock growth, but also ensure that public debt and bank nonperforming loans (NPLs) are placed on a firm downward trajectory over the medium term. It could include (i) fiscal consolidation, underpinned by growth-friendly and inclusive measures (see SIP Part 2); (ii) wage bargaining reforms to ensure wages are aligned with productivity at the firm level (see SIP Part 1); (iii) other structural reforms (e.g., product market, other supportive labor market reforms, and public administration reforms); and (iv) financial sector measures to hasten the cleanup of bank balance sheets and corporate restructuring.

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[2] IMF, "2017 External Sector Report," IMF Policy Paper (Washington, 2017).

B. Reform Program

4.   This note uses the IMF's Global Integrated Monetary and Fiscal Model (GIMF) to simulate the impact of key fiscal and structural reforms on output and competitiveness (Box 1). As the GIMF incorporates monopolistic competition and a rich set of structural rigidities, it can be used to assess the effectiveness of structural reforms. In doing so, this note relies on the distance-to-frontier approach whereby the gap between Italy and the euro area frontier is assumed to be narrowed over the medium term.[3] GIMF also has a well-developed fiscal block allowing for the analysis of fiscal instruments. All other structural policies are phased in over a 5–10-year horizon in a step-wise manner, becoming fully implemented and credible at the fifth year.

5.   Several research papers over the past few years provide guidance on mapping reforms to GIMF. While the fiscal block in GIMF allows a direct relation to fiscal policies, simulating structural and financial reforms requires mapping reform intentions to changes in GIMF structural parameters (such as wage and price markups, labor supply, total factor productivity or TFP, etc.). A growing body of literature on macro-structural and macro-financial interlinkages provides quantitative guidance for such mappings. Table 1 summarizes all shocks, instruments and sources for mapping.

6.   The proposed policy package is as follows:

- *Fiscal adjustment and rebalancing.* To achieve a small structural surplus, which for simplicity is modeled as a fiscal consolidation of 2 percent of GDP over four years, a growth-friendly and inclusive policy mix is envisaged. This is assumed to comprise a revenue-neutral and less distortionary tax reform to reduce the labor tax wedge by 1½ percent of GDP, financed by lower VAT gaps, both compliance and policy, (1 percent of GDP); a property tax on primary residences (½ percent of GDP); current primary spending cuts, achieved by reducing large social benefits and spending on goods and services, both by 1¼ percent of GDP; and increasing spending on public capital by ½ percent of GDP (see SIP Part 2).

- *Wage bargaining.* To facilitate the alignment of wages with productivity at the firm level, a move from the current sectoral-level to firm-level wage setting is assumed (see SIP Part 1). By aligning the wage distribution closer with the productivity distribution of firms, decentralized bargaining could save (create) jobs that otherwise would be destroyed (or not created). As shown in SIP Part 1, simulations of such a reform calibrated to the Italian labor market point to an increase in steady-state employment of about 4 percent from such a reform. This result is replicated in GIMF via a reduction in the wage markup by about 15 p.p.

- *Other structural reforms.*

  - *Labor market reforms.* Measures to incentivize labor force participation and improve targeting of social spending in a fiscally-neutral manner include (i) scaling up active labor

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[3] Lusinyan and Muir (2013) conduct a similar exercise while quantifying the impact of the authorities' structural reform program at the time.

market policies (ALMPs, 0.4 percent of GDP); (ii) increasing spending on childcare (0.2 percent of GDP); and (iii) broadening the social safety net to cover all those below the poverty line (0.5 percent of GDP). These reforms are modelled as a neutral spending reallocation from general (untargeted) to targeted transfers phased in over five years. The effect of these reforms on labor supply is derived from estimates developed by the OECD, including for the IMF's contribution to the G-20 Mutual Assessment process (see IMF, 2011; Barnes, 2014).

o   *Product market reforms.* The reform envisages further easing of regulatory barriers to competition in sectors such as retail trade, professionals, and select network sectors (e.g., road and local transport services) that remain more highly regulated than the euro area frontier, defined as an average of the five best OECD Energy, Transport, and Communications Regulation (ETCR) scores. It is assumed that the distance-to-frontier is closed by one-half, resulting in an equivalent improvement in a non-tradable product market regulation (PMR) score by about 17 percent, and phased in over 5–10 years. The phasing as well as mapping into a non-tradable TFP shock[4] follows OECD estimates of the reform impact (see Barnes, 2014).

o   *Public administration reforms.* Public sector efficiency and firm productivity vary widely across Italian provinces (OECD, 2017). Giordano and others (2015) calculate public sector efficiency as a distance to the efficiency frontier in five key public service sectors—health, education, civil justice, child care, and waste collection—across 103 Italian provinces, using non-parametric Data Envelopment Analysis. They find that an increase in public sector efficiency in all provinces to the frontier would expand output for an average firm by 3 percent. Given that public-sector efficiency—as institutions—are slow to change, it is assumed that about one-half of the distance to frontier will be closed, by means of an economy-wide TFP shock.

- *Banking sector clean-up.* High NPLs are a drag on bank profitability and economic activity by requiring greater loan-loss provisions, which reduce the resources available for lending, and diverting resources and attention away from extending new credit to internal consolidation and asset quality (see Peek and Rosengren, 2005; and Caballero and others, 2008).

o   Using a newly constructed dataset on NPL reduction episodes, Balgova and others (2016) illustrate that a reduction in NPL ratios leads to faster GDP growth, higher credit growth and investment, and better labor market outcomes. Following Mohaddes and others (2017), the impact of a change in the NPL ratio on long-term real GDP growth is estimated—mean reverting the NPL ratio to normal levels (around 5–6 percent) would lead to a 3 percent higher real GDP in the long run (see Table 1). All the estimates are negative (about –0.08) and statistically significant at the 1 percent level, suggesting that a 5 percent persistent

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[4] TFP shock has quantitatively similar properties compared to a price-markup shock.

increase in the NPL ratio per year (observed in Italy since 2000 on average) is associated with 0.4 percentage points lower annual GDP growth in the long run, on average.

o Correspondingly, reducing the NPL ratio to normal levels in five years and sustaining them at that level should imply higher real GDP by about 2 percent in five years and around 3 percent in steady state. This finding is mapped into GIMF—to allow for cumulating the effects of the reform package in a single framework—via a TFP shock that is distributed about ¾ into the non-tradable and ¼ into the tradable sector. In practice, this modeling assumption within the GIMF framework (which does not have banks) can be thought of as recovering value from existing stock of NPLs, e.g., through accelerated insolvency and workout procedures, rather than through higher upfront provisioning or capital costs.

Estimates of (Mean) Long-run Effects of Changes in the NPL Ratio on Real GDP Growth (1997–2014)

Estimation method:	Auto-Regressive Distributed Lag (ARDL)			Distributed Lag (DL)			
Lag order:	1	2	3	0	1	2	3
	-0.087	-0.079	-0.080	-0.092	-0.087	-0.083	-0.082
	(0.0111)	(0.0136)	(0.0137)	(0.0087)	(0.0081)	(0.0108)	(0.0132)

Notes: Standard errors are provided in parentheses. All estimates are statistically significant at the 1% level.

C. Results and Policy Discussion

7.   The reform package potentially increases output by 6–13 percent above the baseline and delivers a notable REER depreciation.
Figures 1–4 show individual simulation results for the above-mentioned reform blocks. The cumulative results are shown in Figure 5. About one-half of the competitiveness gains over the medium term stem from structural reforms and, in particular, wage bargaining. This is consistent with the finding that increases in the hourly wage rate accounts for a large part of the ULC-gap against euro area peers (see SIP Part 1). The other half comes from growth-enhancing fiscal devaluation, spending rebalancing, and the cleanup of bank balance sheets.
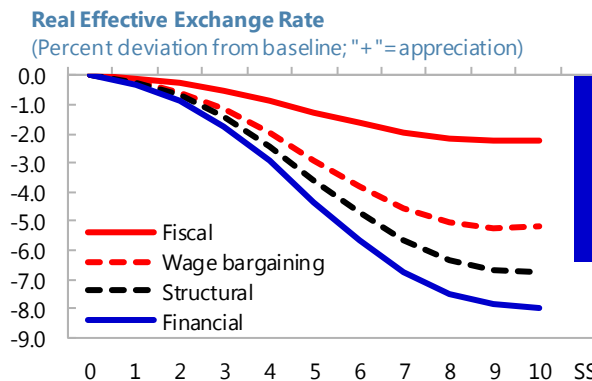
Real Effective Exchange Rate
(Percent deviation from baseline; "+"=appreciation)

Source: IMF staff estimates.
Notes: Horizontal axis=years, and SS=steady state. Lines are stacked so that blue shows also total impact.

8.   The medium-term output gains are substantial, while the short-term output losses are very limited. Upfront implementation of structural reforms is supportive of growth in the near and medium terms and helps offset the relatively small initial output losses associated with the fiscal consolidation. By itself, fiscal consolidation results in lower real GDP that, at its peak, is about

½ percent below baseline after three years. However, taken together with upfront implementation of structural reforms and bank balance sheet cleanup, these costs are offset.

9.   **In practice, the yields from the comprehensive reform package outlined above may be smaller.** Model uncertainty, measurement error, interim economic shocks, implementation challenges, and the like may reduce the yields of the above comprehensive policy package. Thus, it may be more prudent to conclude that growth over the medium term would increase at best by the amounts estimated above.
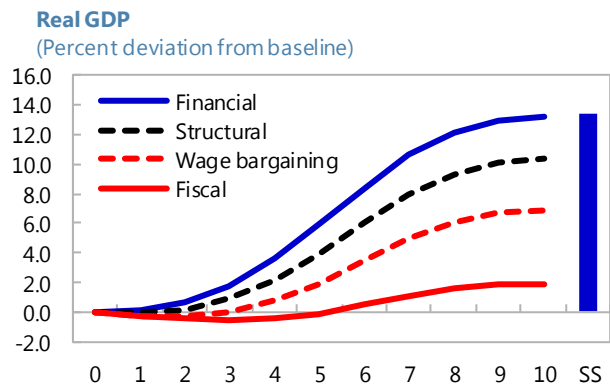
Real GDP
(Percent deviation from baseline)

Source: IMF staff estimates.
Notes: Horizontal axis=years, and SS=steady state. Lines are stacked so that blue shows also total impact.

Box 1. The Global Integrated Monetary and Fiscal Model (GIMF)

The IMF's Global Integrated Monetary and Fiscal (GIMF) model is used to quantify the effects of reforms—see Kumhof and others (2010) and Anderson and others (2013) for more details.
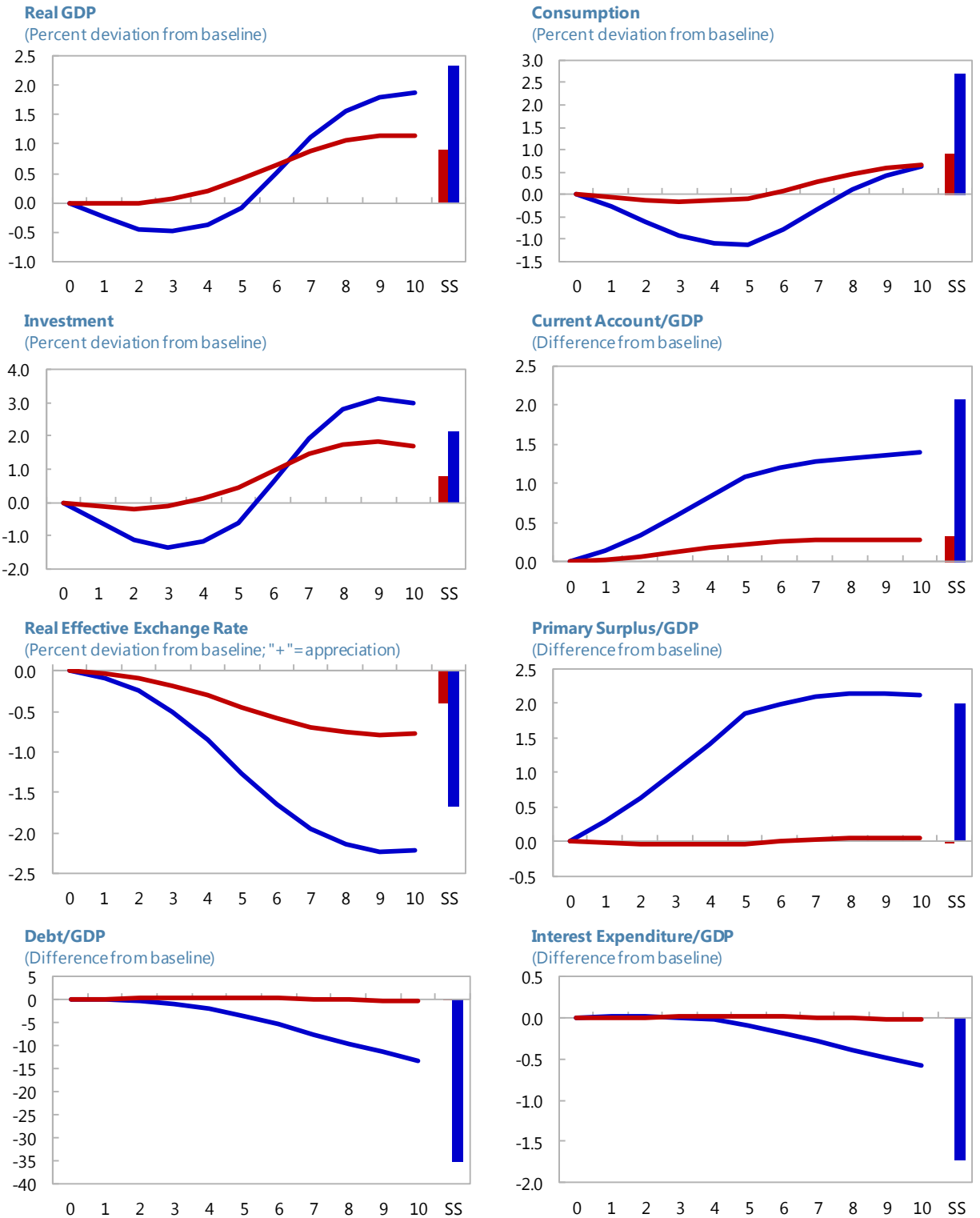
GIMF is a multi-country structural dynamic general equilibrium model featuring Italy, the rest of the euro area, and the rest of the world. It links the behavior of households, firms, and government sector within and among countries. The model has a consistent system of national accounting and stock-flow budget constraints for all sectors, including the government. The model belongs to exogenous-growth types of models, meaning that the long-term growth of output is exogenous. Hence, all fiscal or structural measures may change only the structure of the economy, possibly increasing permanently the level of real output per capita; never long-term growth.

The household sector consists of forward-looking optimizing households, as well as liquidity-constrained households who spend all their available income every period. The forward-looking households are modeled as overlapping generations (OLG) with finite lives, following the Blanchard-Weil-Yaari framework. The presence of OLG households breaks the Ricardian equivalence and is important for realistic results of fiscal policy in both the short and long run. Households gain utility from consumption and disutility from labor effort, they consume traded and non-traded services and goods, receive labor income, transfers from the government, dividends from corporations, and pay taxes—income, consumption, and lump-sum taxes.

Firms produce intermediate and final goods using labor and capital inputs, accumulate capital, and import or export their production. Firms pay taxes from corporate income. Monetary policy in the euro area and rest of the world regions follows an inflation-forecast targeting rule to set policy interest rates. Italy is a member of the euro area.

Government collects tax revenues (consumption, labor income, capital income, and lump-sum taxes) and spends them on government consumption, investment, and transfers to households. Governments target specific debt-to-GDP (and thus deficit-to-GDP) ratios and use a mix of instruments to achieve it. The government's commitment to sustainable public finance is credible for firms and households, who hold the stock of government bonds.

Figure 1. Italy: Fiscal Reform

Real GDP
(Percent deviation from baseline)

Consumption
(Percent deviation from baseline)

Investment
(Percent deviation from baseline)

Current Account/GDP
(Difference from baseline)

Real Effective Exchange Rate
(Percent deviation from baseline; "+"=appreciation)

Primary Surplus/GDP
(Difference from baseline)

Debt/GDP
(Difference from baseline)

Interest Expenditure/GDP
(Difference from baseline)

Source: IMF staff estimates.
Notes: Horizontal axis=years, and SS=steady state. Red: revenue rebalancing. Blue: total impact.

Figure 2. Italy: Wage Bargaining
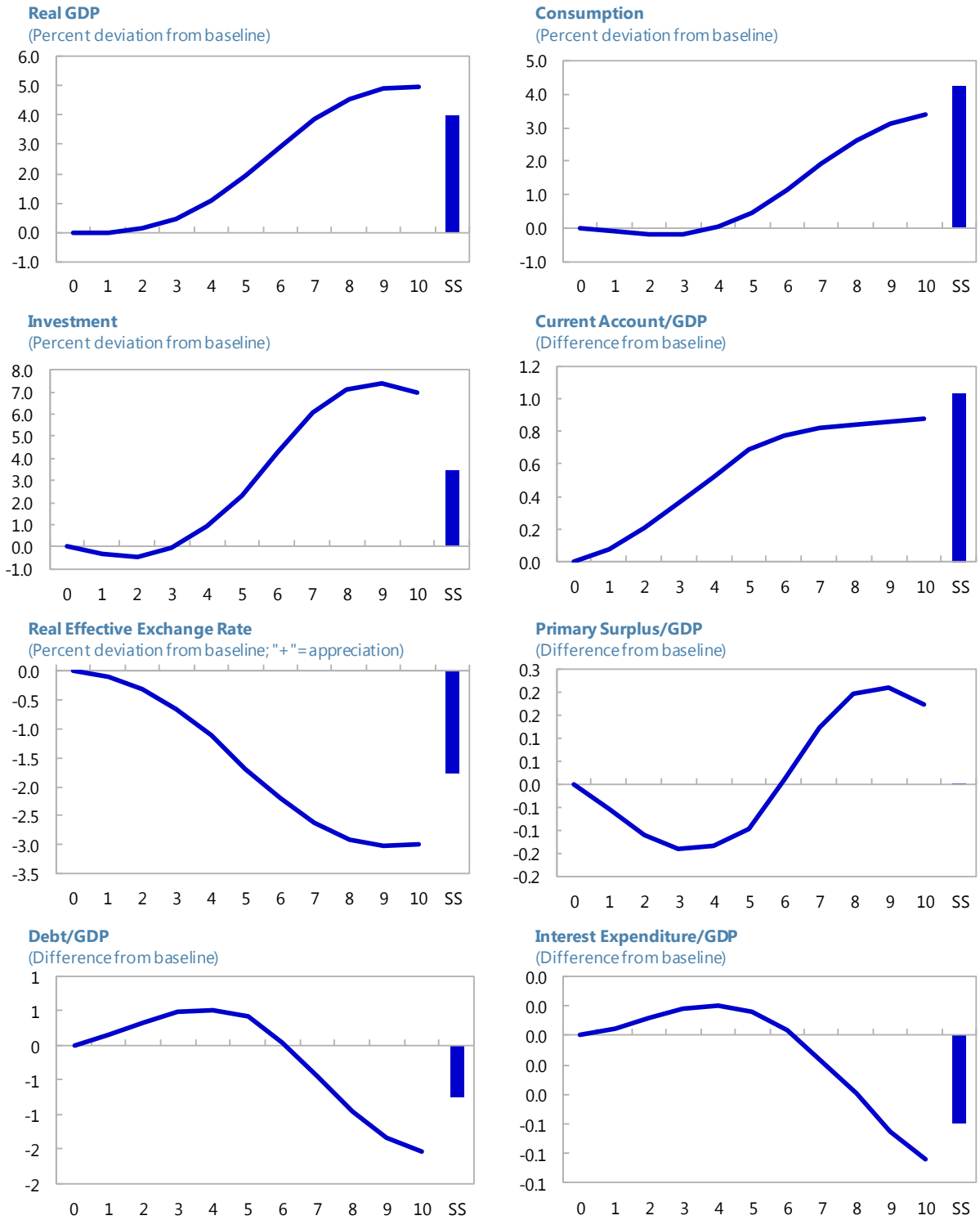
Real GDP
(Percent deviation from baseline)

Consumption
(Percent deviation from baseline)

Investment
(Percent deviation from baseline)

Current Account/GDP
(Difference from baseline)

Real Effective Exchange Rate
(Percent deviation from baseline; "+"=appreciation)

Primary Surplus/GDP
(Difference from baseline)

Debt/GDP
(Difference from baseline)

Interest Expenditure/GDP
(Difference from baseline)

Source: IMF staff estimates.
Notes: Horizontal axis=years, and SS=steady state. Blue: total impact.

Figure 3. Italy: Other Structural Reforms: Product Markets, Public Sector Efficiency, Guaranteed Minimum Income, ALMPs, and Child Care

Real GDP
(Percent deviation from baseline)

Consumption
(Percent deviation from baseline)

Investment
(Percent deviation from baseline)

Current Account/GDP
(Difference from baseline)

Real Effective Exchange Rate
(Percent deviation from baseline; "+"=appreciation)

Primary Surplus/GDP
(Difference from baseline)

Debt/GDP
(Difference from baseline)

Interest Expenditure/GDP
(Difference from baseline)
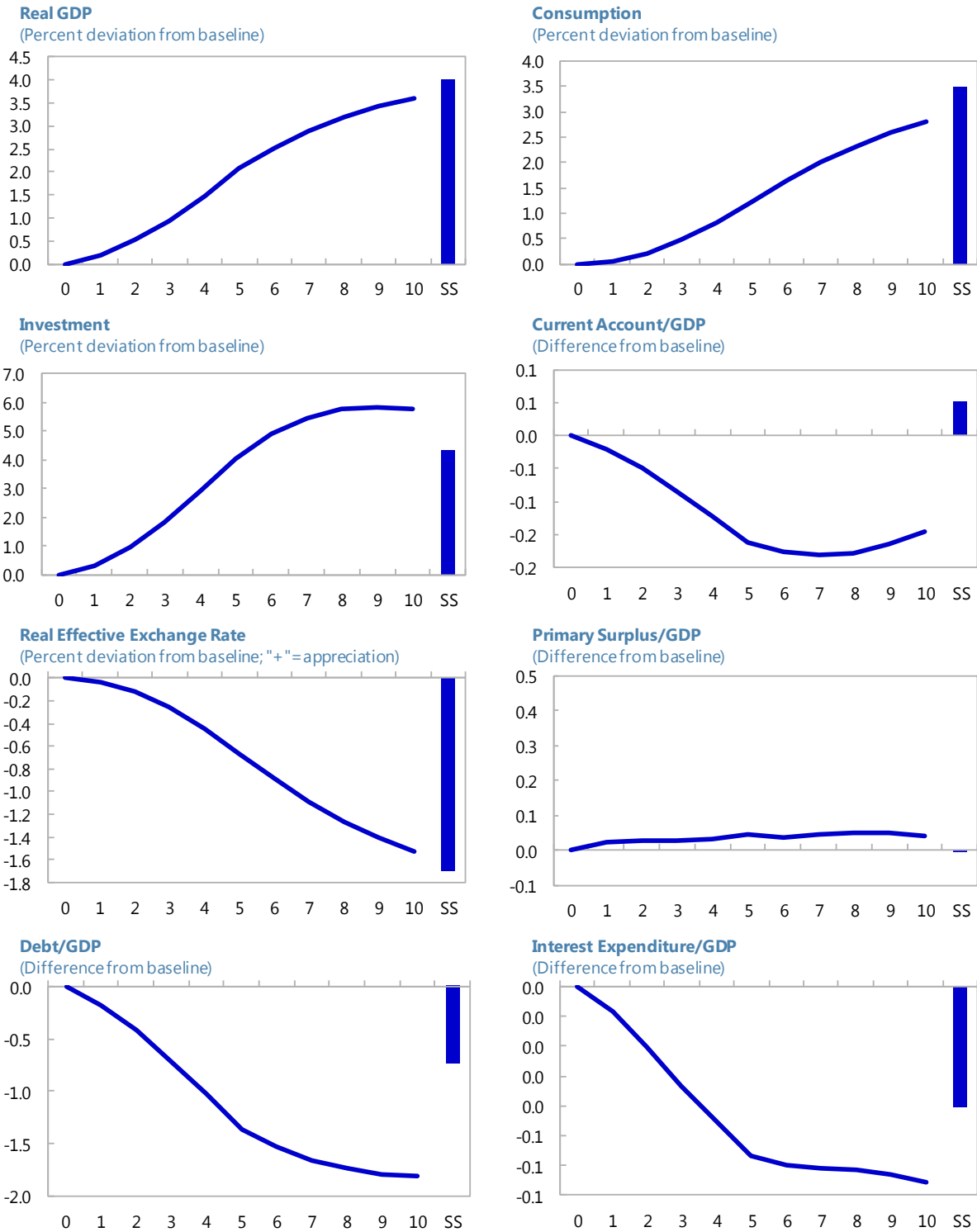
Source: IMF staff estimates.

Notes: Horizontal axis=years, and SS=steady state. Blue: total impact.

Figure 4. Italy: NPL Reduction
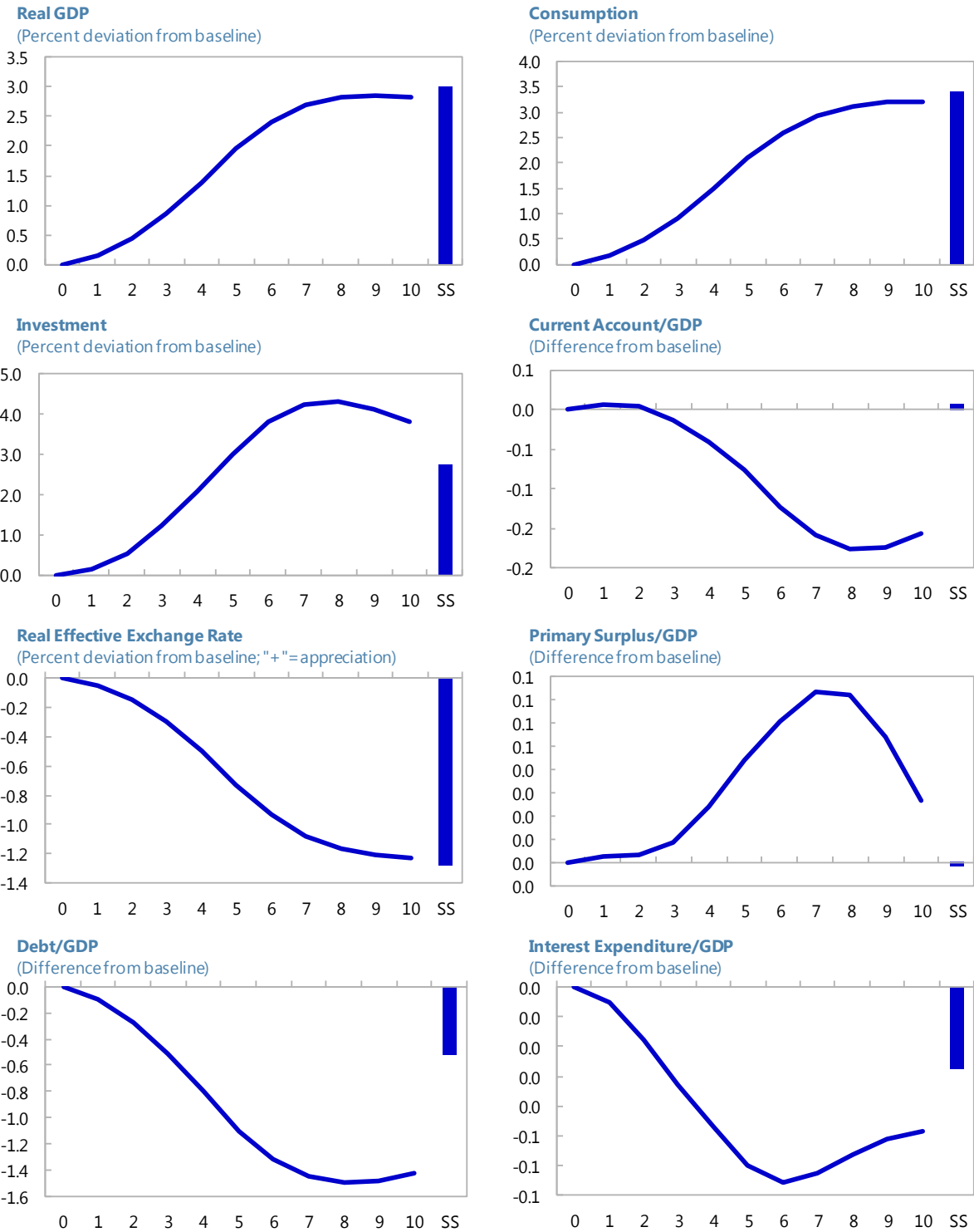
Real GDP
(Percent deviation from baseline)

Consumption
(Percent deviation from baseline)

Investment
(Percent deviation from baseline)

Current Account/GDP
(Difference from baseline)

Real Effective Exchange Rate
(Percent deviation from baseline; "+"=appreciation)

Primary Surplus/GDP
(Difference from baseline)

Debt/GDP
(Difference from baseline)

Interest Expenditure/GDP
(Difference from baseline)

Source: IMF staff estimates.
Notes: Horizontal axis=years, and SS=steady state. Blue: total impact.

Figure 5. Italy: Total Reform Package
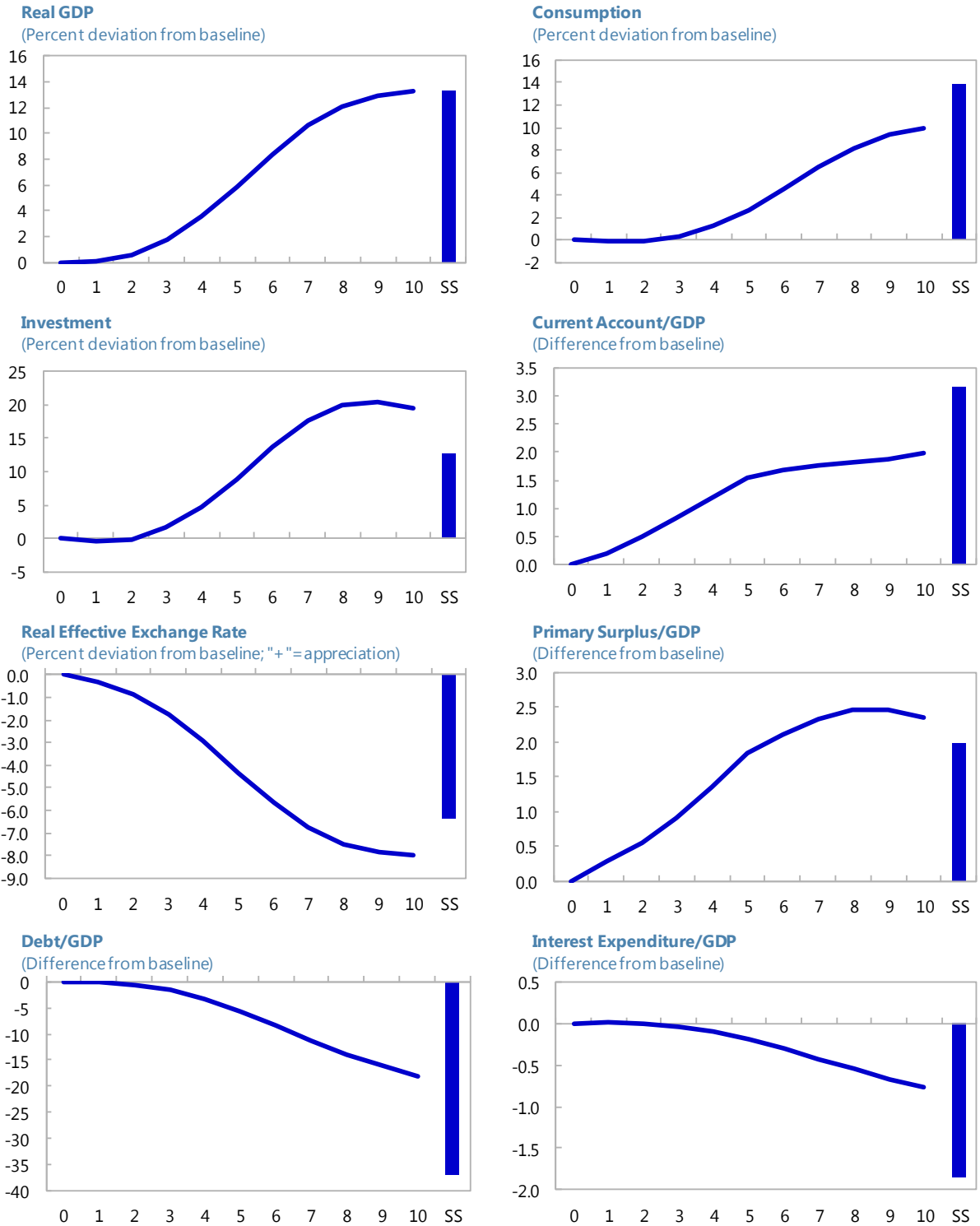
Real GDP
(Percent deviation from baseline)

Consumption
(Percent deviation from baseline)

Investment
(Percent deviation from baseline)

Current Account/GDP
(Difference from baseline)

Real Effective Exchange Rate
(Percent deviation from baseline; "+"=appreciation)

Primary Surplus/GDP
(Difference from baseline)

Debt/GDP
(Difference from baseline)

Interest Expenditure/GDP
(Difference from baseline)

Source: IMF staff estimates.
Notes: Horizontal axis=years, and SS=steady state. Blue: total impact.

Table 1. Italy: GIMF Simulation Strategy

Measure	GIMF instrument / shock	Scale	Mapping
Fiscal Adjustment and Rebalancing			
Lower untargeted social transfers	General untargeted transfers	1¼ percent of GDP	Anderson and
Lower spending on goods and services	Government consumption	1¼ percent of GDP	others (2013),
Higher spending on public investment	Government investment	½ percent of GDP	Kumhof and
Lower tax wedge on labor	Taxes on labor	1½ percent of GDP	others (2010)
Higher VAT revenue	Taxes on consumption	1 percent of GDP	
Higher revenue from property tax	Lump-sum tax	½ percent of GDP	
Wage Bargaining			
Move to firm-level wage bargaining	Wage mark-ups	15 pp reduction	Kangur (2017)
Other Structural Reforms			
Higher spending on ALMPs (fiscally neutral)	Higher targeted and lower untargeted social transfers	0.36 percent of GDP	Barnes (2014)
Higher spending on child care (fiscally neutral)	Higher targeted and lower untargeted social transfers	0.2 percent of GDP	Barnes (2014)
Universal anti-poverty program (fiscally neutral)	Higher targeted and lower untargeted social transfers	½ percent of GDP	Anderson and others (2013)
Product market reforms	Non-tradables TFP (equivalently price mark-ups)	17 percent decline in ETCR / PMR	Barnes (2014)
Public administration reforms	Aggregate TFP	1½ percent increase in steady-state real GDP	Giordano and others (2015)
Banking Sector Clean-up			
Reduction in NPLs	TFP shock: ¾ non-tradables and ¼ to tradables	2 percent increase in real GDP over 5 years	Mohaddes and others (2017)

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