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Competitiveness and Wage Bargaining Reform in Italy

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Competitiveness and Wage Bargaining Reform in Italy[1]

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Abstract

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. Wage developments explain about 45 percent of the manufacturing unit labor cost gap with Germany. 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.

JEL Classification Numbers: C53, C54, E24, E31, F14, F16, F41, J31, J51, J52, J64

Keywords: Italy, competitiveness, exchange rate, labor costs, exports, labor market reforms, wage bargaining, search and matching, DSGE models.

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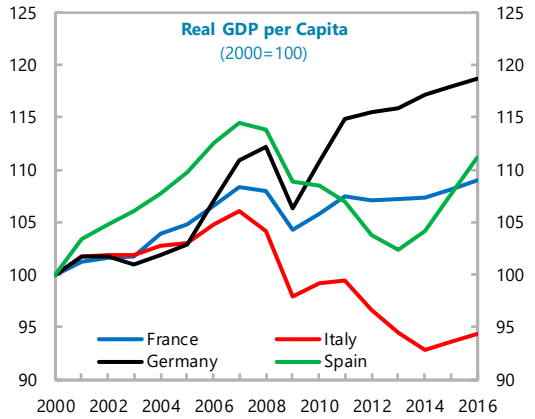
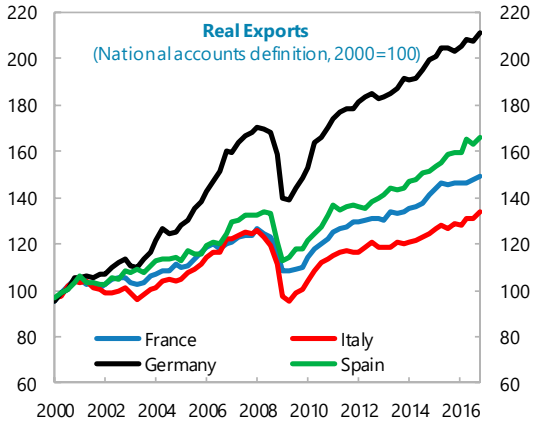
I. INTRODUCTION

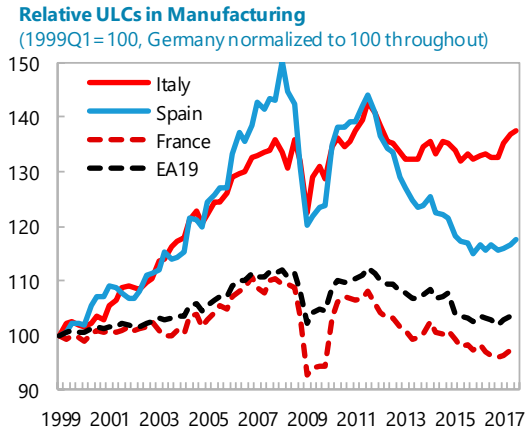
Italy's growth and export performance has lagged in international comparison. Over the past two decades, real GDP per capita, total factor productivity (TFP), and real export performance have lagged euro area peers. Although the economy has recently started to recover, real incomes per capita and TFP 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.





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 until end-2017, the euro depreciated by about 10 percent against a basket of currencies of its main trading partners and by 20 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.

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).

Competitiveness is a multi-dimensional concept where consideration should be given to a broad set of price- and non-price indicators. This paper analyzes competitiveness in a broader context and examines potential reforms of wage bargaining in light of the persistent rise in ULCs:

- *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 II (External Adjustment).

- *Internal adjustment.* Differences in elasticities and in the relevant REER metric in explaining export performance are also important because, within a monetary union, enhancing competitiveness requires adjusting relative prices and thus tackling nominal rigidities. A decomposition of the manufacturing 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 text chart above, the wage-productivity differential has been sustained but not reversed. Thus, adjustment has occurred through lower profits in the pre-crisis period and reduced quantities since the outbreak of the crisis, such as employment and investment, as companies sought to retain some measure of labor productivity and not increase price differentials against foreign competitors. This is elaborated in Section II (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 but also labor intensive and lower technology 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 II (Italian Exports) presents the story.

- *Productivity.* Experience suggests that internal devaluations are more likely to be maintained when accompanied by productivity-enhancing reforms (Blanchard and others, 2013). This is important, not least because the contribution of lagging labor productivity to the gap in Italian manufacturing unit labor costs compared to Germany is around 60 percent. Bluedorn and Lin (2017) show that both own wage and labor productivity are important in determining the external balance. Section II (Italian Exports) similarly reviews consequences for export potential. While wage adjustment can

[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).

improve competitiveness, the effect on output could be 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). Thus, supportive administrative, labor market and product market reforms, fiscal reforms, and cleaning bank balance sheets can play a vital role in raising productivity and growth (see Andrle and others, 2018a,b).

- *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 III takes a closer look at wage bargaining in Italy and quantifies employment gains from reforms toward more flexible firm-level bargaining.

II. External and Internal Adjustment

External Adjustment

International cost and price competitiveness is usually understood as the ability to sell products in foreign markets. A proper indicator of competitiveness should represent sectors that are subject to international competition. For this reason, the emphasis of most of the literature—as well as of the current analysis—is usually on manufacturing sector. At the same time, the ability to sell internationally can also be affected by costs and prices of non-traded inputs. Therefore, the appropriate relative price concept is an important one. While the measurement differences in the most oft-used competitiveness indicators such as CPI-, PPI-, GDP deflator, and ULC-based REER is well understood (see ECB, 2003 for a good exposition), their relevance to external balances depends on a multitude of economic factors and is often left as an empirical question.

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 in a sample of 11 euro area countries, including Italy, 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 owing 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 euro area countries where significant, ULC-based indicators are empirically better in explaining export

[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.

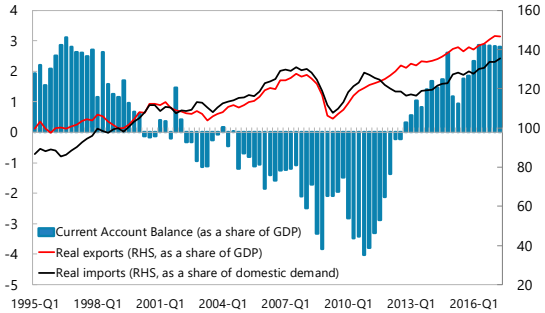
performance. Amici and others (2017) also show that in a sample of 10 major euro area countries' manufacturing sectors, relative ULCs explain export shares whereas PPIs are insignificant. They further find, however, that a broader indicator of relative profit margins conveys statistically more information on export shares than ULCs, implying that other factors besides labor costs can be relevant as well. 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 higher 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 (holding real output constant) in external adjustment.

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

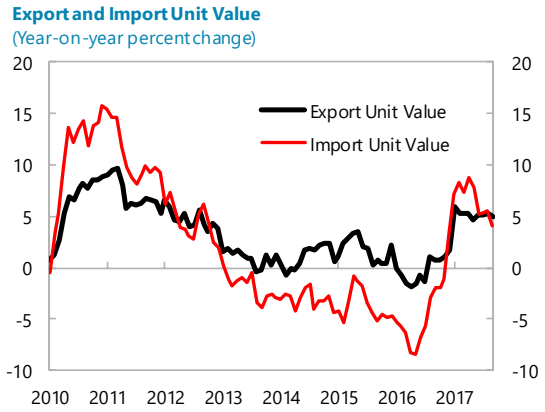
Exports, Imports, and Current Account
(in percent of GDP or final consumption)



Sources: Haver Analytics; and staff calculations.

partly 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).

Following the double-dip recession, the current account swung 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 could therefore 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.



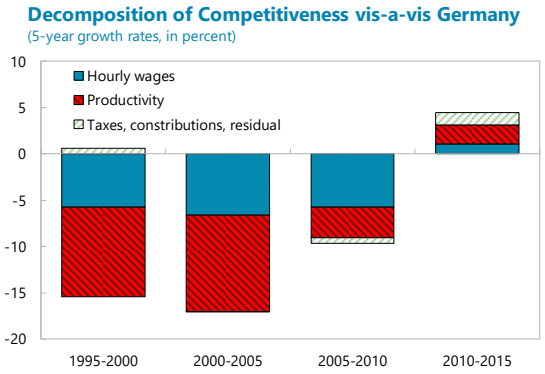
Internal Adjustment: Prices versus Quantities

While ULCs appear to be more informative of export and external balance developments, the diverging patterns of price-based competitiveness indicators need to be interpreted appropriately. According to Walras' Law, the *values* of excess demand or supplies across markets must sum to zero. Any such imbalance is best understood in a general equilibrium context: while a disequilibrium such as excess ULC growth in Italy is not reflected in the price-based REERs, it must show up somewhere in the economy. For example, traded and non-traded prices can diverge owing to international and sectoral differences in productivity, implying that broad price-based indicators could be misleading indicators for tradables. Also, the ability to sell tradables internationally should not be affected by pricing strategies such as "pricing to market," whereby firms offset losses owing to cost or exchange rate movements by lowering profit margins. Similarly, changes in taxes and subsidies can distort many price-based indicators. Movements in ULCs in turn may reflect or cause changes in other cost components (R&D expenditure, capital costs etc.) or factor substitution. In this section, we explore these patterns of internal adjustment.

A wide gap persists between nominal wages and labor productivity in manufacturing. Figure 2 plots the two components of the ULC—average wages and labor productivity—in manufacturing in Italy against Germany. Nominal manufacturing wage growth in Italy has exceeded own productivity, which has been 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 about 30 percent since the inception of the EMU. The opposite pattern is observed in Germany where labor productivity growth has exceeded the growth in average wages. Overall, this has opened a ULC gap of close to 35 percent in Italy relative to Germany.

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 growth in labor productivity is generally higher. While this fits broadly the picture in Figure 2 (with some deceleration in wage growth in Italy starting 2011), there has been a secular decline in the labor productivity of services in Italy. Declining productivity may reflect, among other factors, regulatory and non-regulatory barriers to competition. Depending on the measurement of labor inputs, a gap in the order of 40–60 percent between wages and productivity has opened up in Italy compared to around 28–35 percent in Germany. At the same time, resources in Italy have been gradually reallocated from higher productivity manufacturing to lower productivity services (Figure 3) that may weigh on the long-term growth potential.

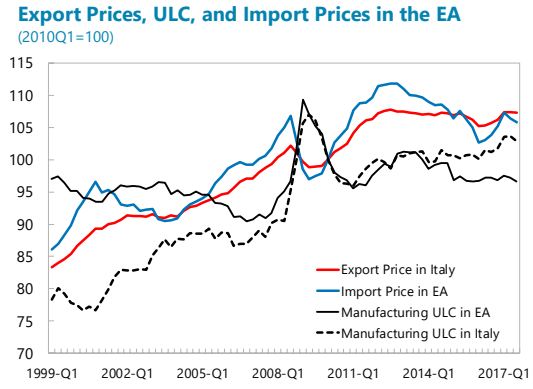
About 45 percent of the ULC gap in manufacturing relative to Germany is due to the rising hourly wage rate. Following Manasse (2013), the change in Italy's relative competitiveness against Germany over the past two decades is decomposed into four factors: the hourly wage rate, labor productivity, consumption taxes, and employers' social contributions. The first two refer to ULCs (in terms of wages per real value added, excluding social contributions) whereas the last two capture the effect of a fiscal devaluation. The results point to a loss of competitiveness against Germany in excess of 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.



Sources: Haver Analytics, OECD, and staff calculations

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) argue 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 changes in Italian export prices and ULCs in manufacturing.



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 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. Such "pricing-to-market" behavior is consistent with the observed reduction in profit margins and weakens the interpretability of price-based competitiveness indicators, favoring cost-based measures (ECB, 2003).

- Indicative evidence suggests that the pattern of pass-through of domestic costs to export prices varies between the pre- and post-crisis periods. 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 their trading partners. The cost elasticity has also increased for Italy, but remains closer to France and two times lower compared to Portugal or Spain. Although indicative of somewhat improved pricing behavior, it remains notably weaker than peer countries and suggests a limited ability to enhance the profitability of exports.

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 3) 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 IMF's 2016 Article IV consultation staff report for Italy).[5]

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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 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.

[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.

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.

Table 2. 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
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.

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—employment declined for eight consecutive years and has started to turn around recently, but remains 16 percent below its pre-crisis level (Figure 3). Real investment has been cut dramatically and by 2015 reached just above the euro introduction level. Business services have taken an even larger hit with 8 percent reduction in real investment compared to 1999, whereas in Germany both manufacturing and service sectors have expanded real investment between 1999 and 2015 by 15 and 10 percent, respectively. Export volumes have remained subdued against the backdrop of compressed profit margins and some pass-through of domestic costs to export prices. The adjustment in real quantities and persistence of low productivity contrasts sharply with the preservation of nominal wages, and with the textbook adjustment associated with a successful internal devaluation.[6]

Italian Exports: Lagging Productivity and Competitiveness

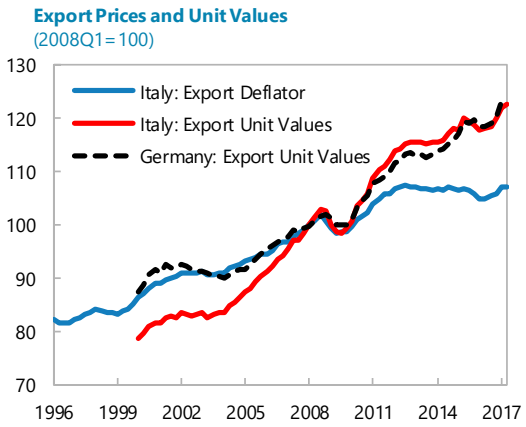
Product quality and related advances in labor productivity and TFP have gradually lost their ability to shield Italy against cost competitiveness. Earlier we established that about 60 percent of the Manufacturing ULC gap between Italy and Germany is due to labor productivity. Bluedorn and Lin (2017) show that both own wages and own labor productivity are statistically associated with trade balance and external adjustment. The TFP growth in Italy has been negative for a prolonged period that is not conducive to export quality upgrades. Understanding these factors helps to explain the severity of observed internal adjustment as well as the multi-dimensionality of the Italian competitiveness puzzle.

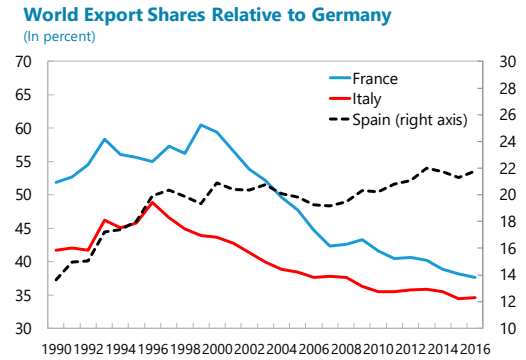
Italian exports are among the most diversified in the world, with high-quality products that have served as a comparative advantage.[7] One measure often referenced in this context is the export unit values that historically have grown faster than the export deflator. This can suggest increasing quality, 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

[6] The contrast with Spain is 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 text chart on page 3) and avoided job losses in response to labor demand shocks (Dao, 2015).

[7] In 2017, the authorities took 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. Several measures were extended or adapted in the 2018 budget, including the incentives for private investment ('super-amortization') differentiated across innovative industries, R&D tax credit, and SME financing.

ninetieth percentile of 178 countries covered, although they also point to a steady deterioration in the quality since the 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.





Sources: Haver Analytics, and staff calculations

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 4 and text chart). However, when most other euro area countries have reversed the trend alongside a 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 4; OECD, 2017).

Italian exports are specialized in lower-technology and labor-intensive products. Wolff (1999) showed that already historically among the advanced countries Italy had the highest relative production shares in textiles, wearing apparel, footwear, and motorcycles and bicycles—sectors that are mostly classified as low-tech. More recently, Tressel (2017) shows that while Germany's exports have Balassa Revealed Comparative Advantage (RCA) in high-and medium-tech sectors, exports of Italy (and even more so of France) have persistently concentrated in low-technology or less knowledge intensive sectors. For Italy, despite some balancing in the export mix over time, the calculated RCA is the highest in textiles, real estate, hotels and restaurants, and postal services while it is lowest in mining, other machinery and equipment, energy and construction. The RCA for high-technology sectors such as computers and related activities, or electrical and optical equipment is around 0.8, showing revealed disadvantage (an RCA value above/below unity indicates a revealed comparative advantage/disadvantage in the product or sector).

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

- OECD (2017) finds that, during 2000–13, 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. Similar results are found by Pellegrino and Zingales (2014). While specialization in sectors affected labor productivity negatively in earlier decades, the productivity slowdown within industries in more recent decades suggest contributing factors are probably common to most industries. Several of these are discussed in the next paragraphs of this section.

Italy's integration into global value chains has been generally low (Figure 4).

- 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).

- While the domestic value added content of exports (forward linkage) in Italy is generally high, it is lagging its peers in terms of foreign value added or import value of intermediate goods in final demand (backward linkage). However, it is the backward linkage that is particularly relevant for the manufacturing sector as services have lower import content and do not use much foreign value added. Ignatenko and others (2018) provide evidence on the productivity-enhancing effects of GVC participation. They also show that higher quality of institutions and infrastructure as well as lower labor costs could enhance possibilities to participate in GVCs. Not being able to share fully these gains has constituted a missed opportunity for Italy's manufacturing 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).

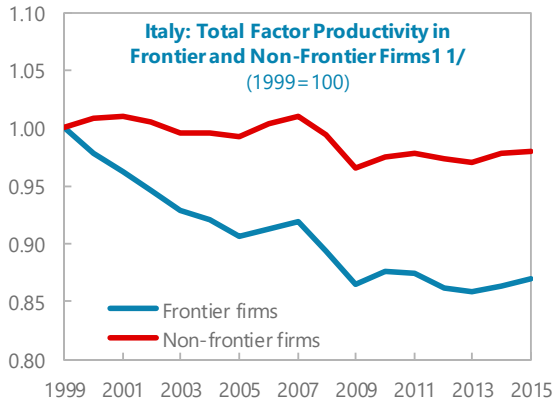
Italy has the highest export similarity with China (Figure 4). Export similarity between countries, which denotes the similarity of relative shares of each good in countries' total exports, is a metric of potential competitive pressures. By this metric, Italy's exports are very similar—and increasingly so—to the export structure of China (Figure 4), 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; also, as noted above, the frontier manufacturing firms have not been able to support growth.

[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.

Italy's product mix has been moving away from technological frontier (Figure 4).

- 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 4, 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).

- Furthermore, and in sharp contrast to the rest of the OECD, declining productivity in Italian manufacturing appears to be 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. Anderson and Raissi (2018) similarly find that the average TFP level in the top five percent of Italian firms, as measured by the TFP level in 1999, declined between 1999 and 2015 by 13 percent whereas the TFP in non-frontier firms declined by 2 percent (see text chart).



1/ Frontier firms are defined as those in top five percent of TFP distribution in 1999. Andersson and Raissi (2018).

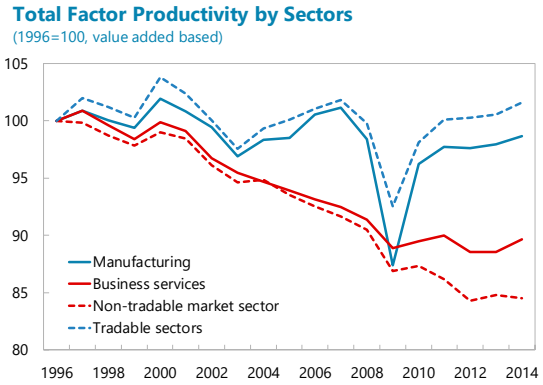
Slow adoption of new technologies combined with familyism, cronyism, and lack of meritocracy in selecting managers have also been identified as important problems.

- A gradual decline in the ECI and general as well as frontier firm TFP levels is indicative of insufficient innovation and R&D investment to keep pace 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.

[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.

- Pellegrino and Zingales (2017) document the failure of Italian firms with prevalently loyalty-based management to take advantage of the ICT revolution, relating Italy's productivity problem to utilization of ICT capital. These authors show that TFP growth and ICT usage is higher in firms with more meritocratic (as opposed to loyalty-based) managers, especially in sectors where the contribution of ICT capital to value added growth is higher. Importantly, these authors also show that while among European firms in general more meritocratic firms face fewer external constraints (such as financial, labor regulation or public administration), the loyalty-based firms in Italy face only labor market constraints. Thus, loyalty-based management systems have been able to overcome distortions due to financial or bureaucratic distortions, but not constraints from labor regulations and have failed to translate ICT investments into productivity growth. The latter is estimated to cost Italy about 13–17 percentage points in TFP growth.

Without investments in upgrading skills and knowledge-based capital, a continued shift from manufacturing towards services would likely bear more heavily on long-term growth. Rodrik (2013a) shows elegantly that the "lost" unconditional convergence can be found in manufacturing with a baseline convergence rate of 2.9 percent a year estimated in a sample of 118 countries. Among his stylized facts, Rodrik (2013b) points out that historically manufactured exports have been the source of sustained growth as was experienced also in Italy during 1945-75. While deindustrialization is a normal process in advanced countries and Italy's manufacturing share is still relatively high (reflecting relatively more labor-intensive production), over the past two decades TFP in services has been on a secular downward trend (see text chart), pointing to unfavorable compositional effects of deindustrialization. As the process continues, care should be taken in that policies would allow for the manufacturing sector to mature technologically to sustain innovation-led growth as well as create conditions to facilitate skill-intensive services-led (such as IT) growth.



Sources: EU KLEMS (September 2017), staff calculations

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

- 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 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).

III. Wage Bargaining in Italy

Institutional and Economic Context

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.

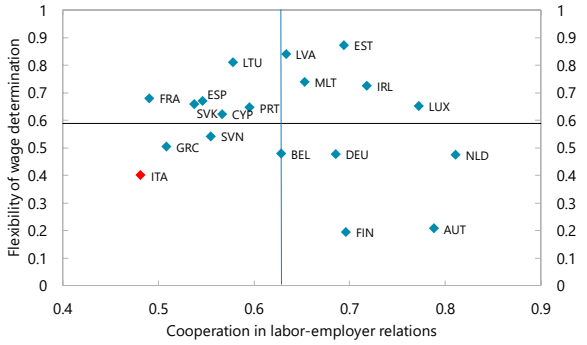
Since 2009, there have been several, albeit limited, attempts in Italy to facilitate firm- or second-level bargaining. Most dominantly, the 2011 decree law (138) set conditions for firm-level and local wage agreements to prevail over the industry-wide national collective agreement.[10] However, the legal 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.

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).

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

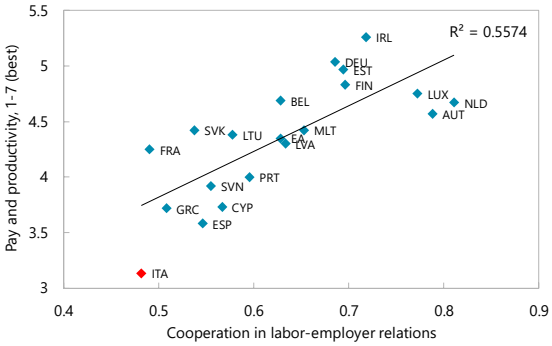
So is a supplementary indicator of bargaining governability—the ability of employer associations and trade unions to control their constituencies (OECD, 2004).[11] Coordination in particular has been found in many studies to be a key factor for macro flexibility and the ability to adjust to macroeconomic 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)



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

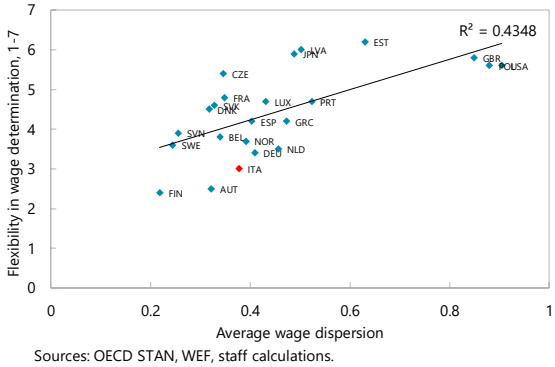
Institutions versus Productivity-Pay Correspondence
(Indices)



Sources: WEF (2016); and staff calculations. Horizontal axis rescaled between 0 and 1.

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 (see text chart), 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.

Wage Dispersion and Flexibility, 2014
(Wage dispersion is measured by coefficient of variation over 65 industries)



Sources: OECD STAN, WEF, staff calculations.

[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.

Large regional disparities and a low-inflationary environment can hinder real wage and ULC adjustments in the context of rigid wage setting. As downward rigidity concerns more often wages, especially in countries with rigid wage settings, low inflation observed in recent years is not conducive to downward adjustments in real wages and ULCs. In Italy, adjustment difficulties are even more pronounced at the regional level where Northern regions exhibit higher productivity but also higher housing prices. However, as nominal wages equalize due to national contracts real wages are higher in the Southern regions (Boeri and others, 2014). As real wage adjustment in the South is much more difficult, adjustment occurs through quantities as evidenced by high unemployment rates in the Southern regions. The current wage bargaining system thus creates large mis-allocations of human resources.

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).

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.

Several countries have sought solutions to overcome difficulties associated with centralized bargaining. Germany's success in keeping wages more aligned with productivity has been at least partly attributed to a system of shared responsibility, whereby employees' representatives participate in the management of companies. This has fostered coordination that is so critical to internalizing negative wage externalities. In Belgium a creation of competitiveness councils serves a similar purpose. Other countries have directly sought to enhance firm-level bargaining. The Spanish extensive 2012 Labor Market reforms, among other things, sought to increase bargaining flexibility by easing opt-outs.

Employment Effect of Firm-Level Bargaining

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.

The model is parameterized to the Italian labor market, with the currently prevailing sector-level bargaining regime as a baseline (Figure 5 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 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]

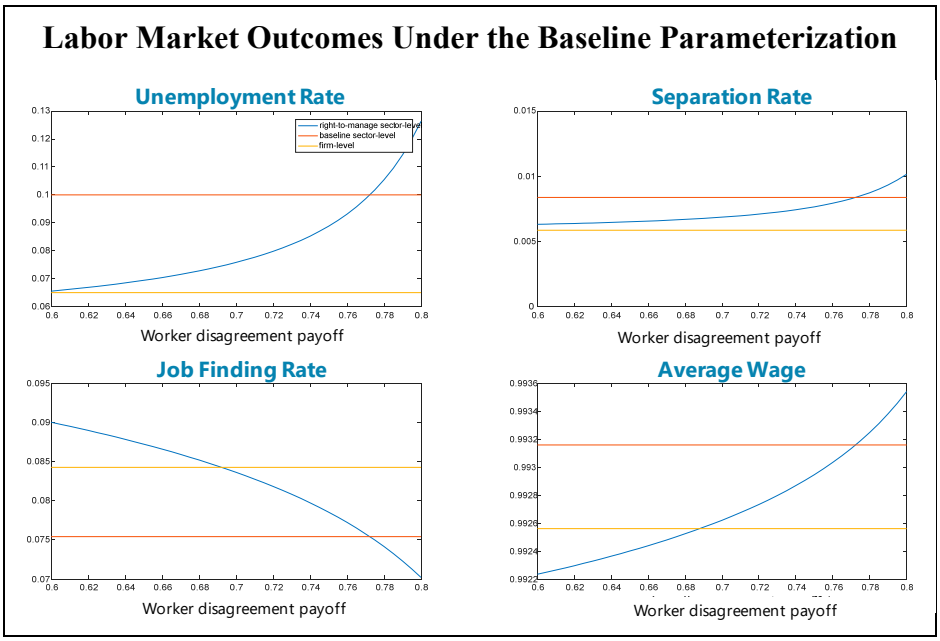
The baseline simulation indicates that moving from sector- to firm-level bargaining results in potentially significant employment gains that are larger than similar gains expected for continental Europe. The text chart shows the steady-state unemployment rate, together with other key labor market statistics 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

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

[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.

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).

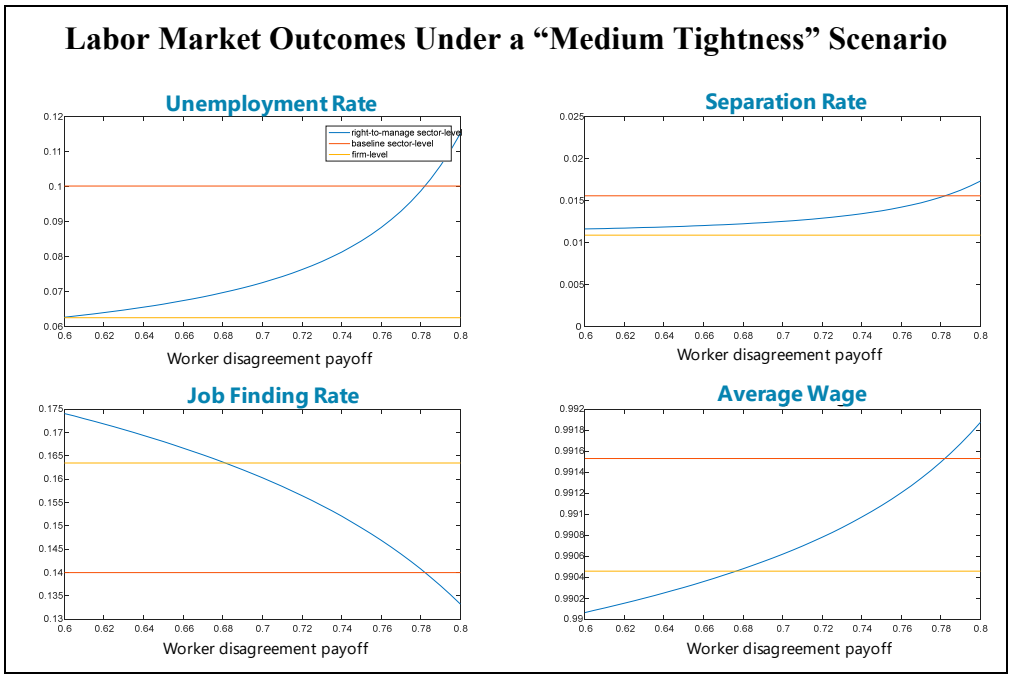


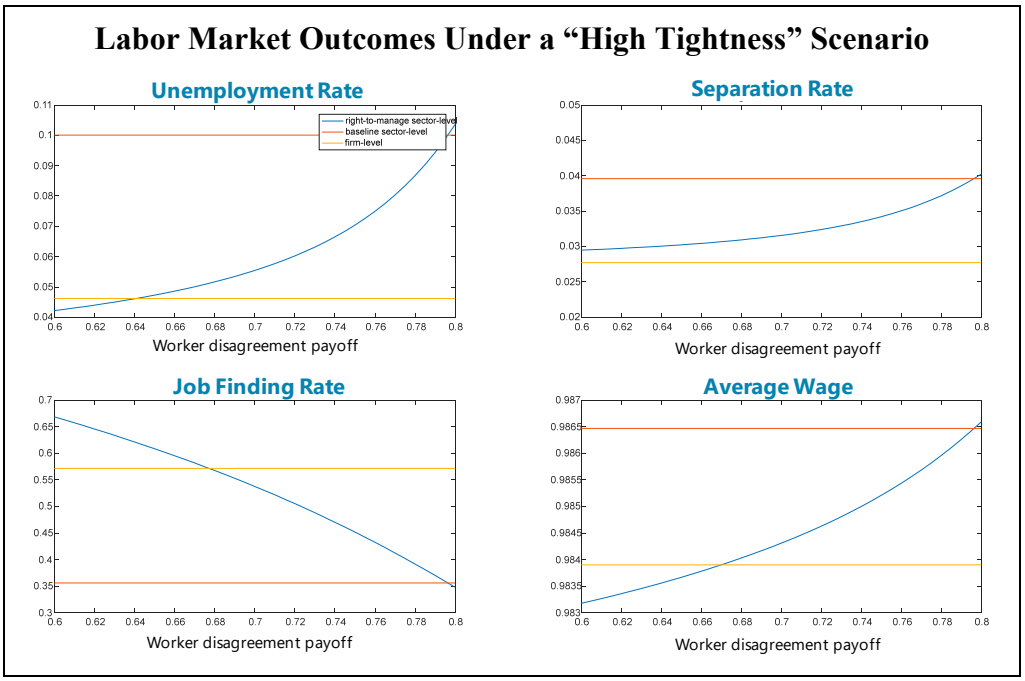
Robustness tests point to potentially even larger employment gains:

- There are at least three possible limitations to the baseline calibration (see text charts): (i) the available data for Italy presented on Figure 5 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; 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. 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

[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.

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]

Policy Considerations

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, where Italy scores the lowest in the euro area. In contrast, centralized wage setting systems in countries like Germany or Belgium exhibit institutional features fostering shared responsibility and coordination. Thus, the internalization of negative externalities arising from excessive wage claims is likely to be limited in Italy. 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.

Enhancing firm-level flexibility within the current sector-level bargaining system is a tall order. 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 the interpretation of constitutional principle of fair wage. The prevalence of small firms complicates opt-outs as for them firm-level negotiations are costly or sometimes even effectively prohibited by national contracts. Also, the representativeness criteria that are guided by general constitutional provisions are not detailed in the ordinary legislation, are in practice again subject to negotiations between the social partners and often missing (EC, 2016). If employee representativeness cannot be ensured, negotiation is escalated to the local level, making it harder to tailor wages to firm-specific conditions (Terzi, 2016).

[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.

Starting from a "clean slate" could be more effective in addressing legal uncertainty and fostering institutional change. The numerous legislative uncertainties and deep-rooted institutional structures and practices—as also evidenced by history—make the use of effective opt-outs a tall order. Therefore, a cleaner way to decentralize wage setting and to overcome multiple legal and institutional constraints 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. Firm-level bargaining (or 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.

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.

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

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.

[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.

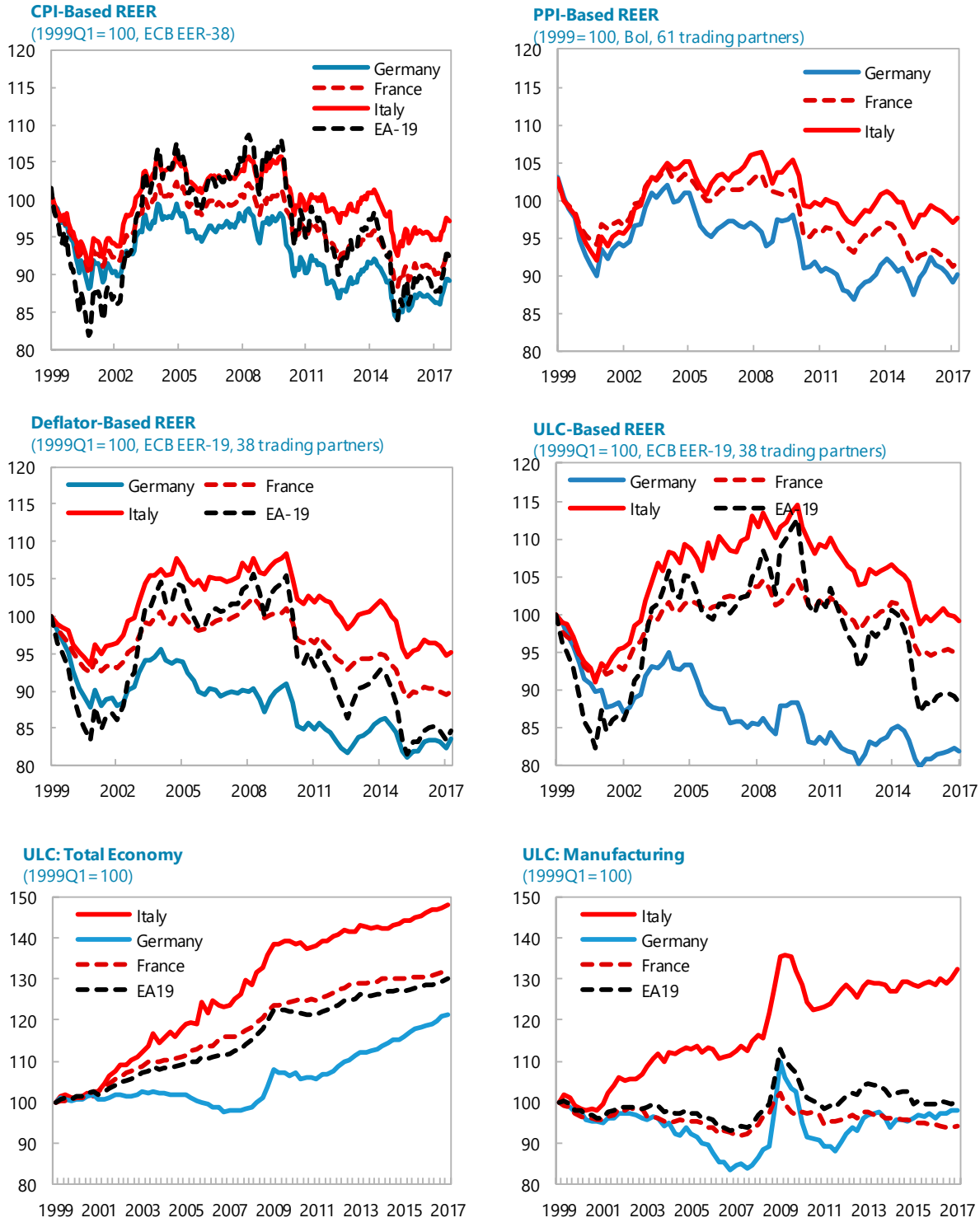
The GIMF simulations predict a notable improvement in output and competitiveness over the medium term. Figure 6 shows the GIMF simulation results. First and importantly, the reform is associated with little or no upfront output losses. In other words, the concern that the reform is recessionary in the near term need not materialize (especially when consideration is given to a comprehensive reform package; see Andrle and others, 2018b). 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.

IV. CONCLUSION

Over the past two decades, about 35 percent gap in unit labor costs has opened between Italy and Germany and about 30 percent gap between Italy and the euro area. About 45 percent of Italy's manufacturing ULC-gaps relative to Germany can be attributed to wage developments, 60 percent to lagging labor productivity, and the remaining -5 percent to 'fiscal devaluation'. This paper argues that such an increase in ULCs adversely impacts competitiveness. Increases in wages and ULCs have not translated into commensurately higher prices of goods and services, in part owing to pricing-to-market behavior of Italian exporters. Rather, adjustment has been on profit margins, or employment and investment; correspondingly, Italian exports have lagged those of euro area peers. Relatedly, declining TFP and subdued labor productivity growth, for which the literature has advanced several possible explanations, have not been favorable to upgrades in product quality and shielding against eroding cost competitiveness. The explanations include specialization into lower-technology and labor-intensive products, low integration into global value chains, high export similarity with China, distancing from technological frontier, and lack of meritocracy combined with slow adoption of new technologies. This paper thus is in line with much of the literature that finds greater evidence for the role cost-based indicators, rather than goods price-based indicators, in explaining Italy's lagging exports.

High labor costs in excess of productivity requires an institutional reform of the labor market. Current sector-level bargaining with low flexibility and low coordination among social partners produces suboptimal economic outcomes relative to other labor market institutional settings, as it performs the poorest in internalizing negative wage externalities. Consideration should therefore be given to modernizing wage bargaining so as to align wages with productivity at the firm level. Simulations on search and matching DSGE and GIMF models point to sizable employment and competitiveness gains. As part of a comprehensive reform package (e.g., of product markets, the judicial system, the public administration, and the financial sector), such institutional labor market reforms could go a long way in fostering strong and sustained growth and job creation and improving productivity growth in Italy.

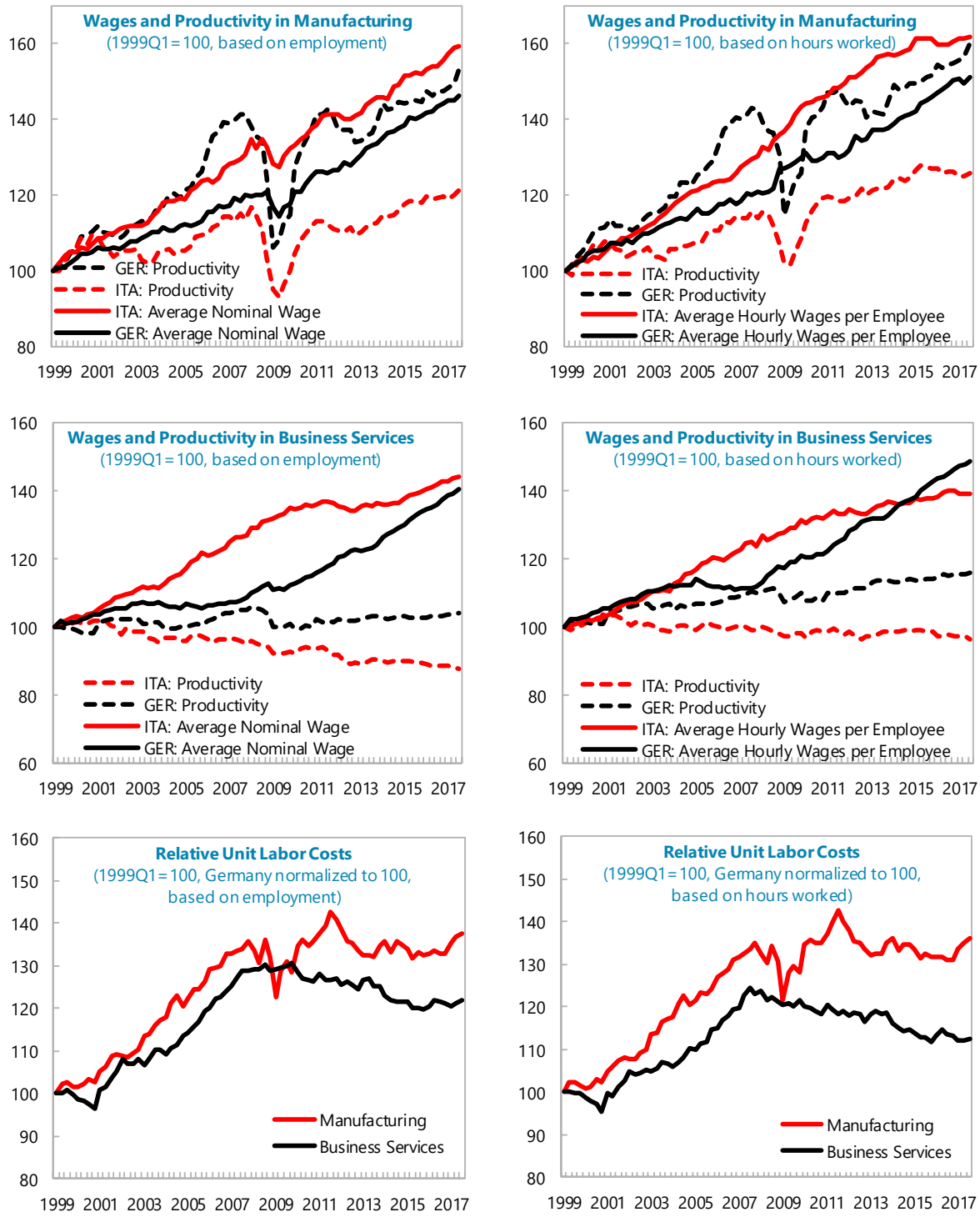
Figure 1. Italy: Competitiveness Indicators



Sources: ECB, Bank of Italy, and Haver.

Note: Unit labor cost (ULC) is defined as ratio of compensation of employees to real GDP.

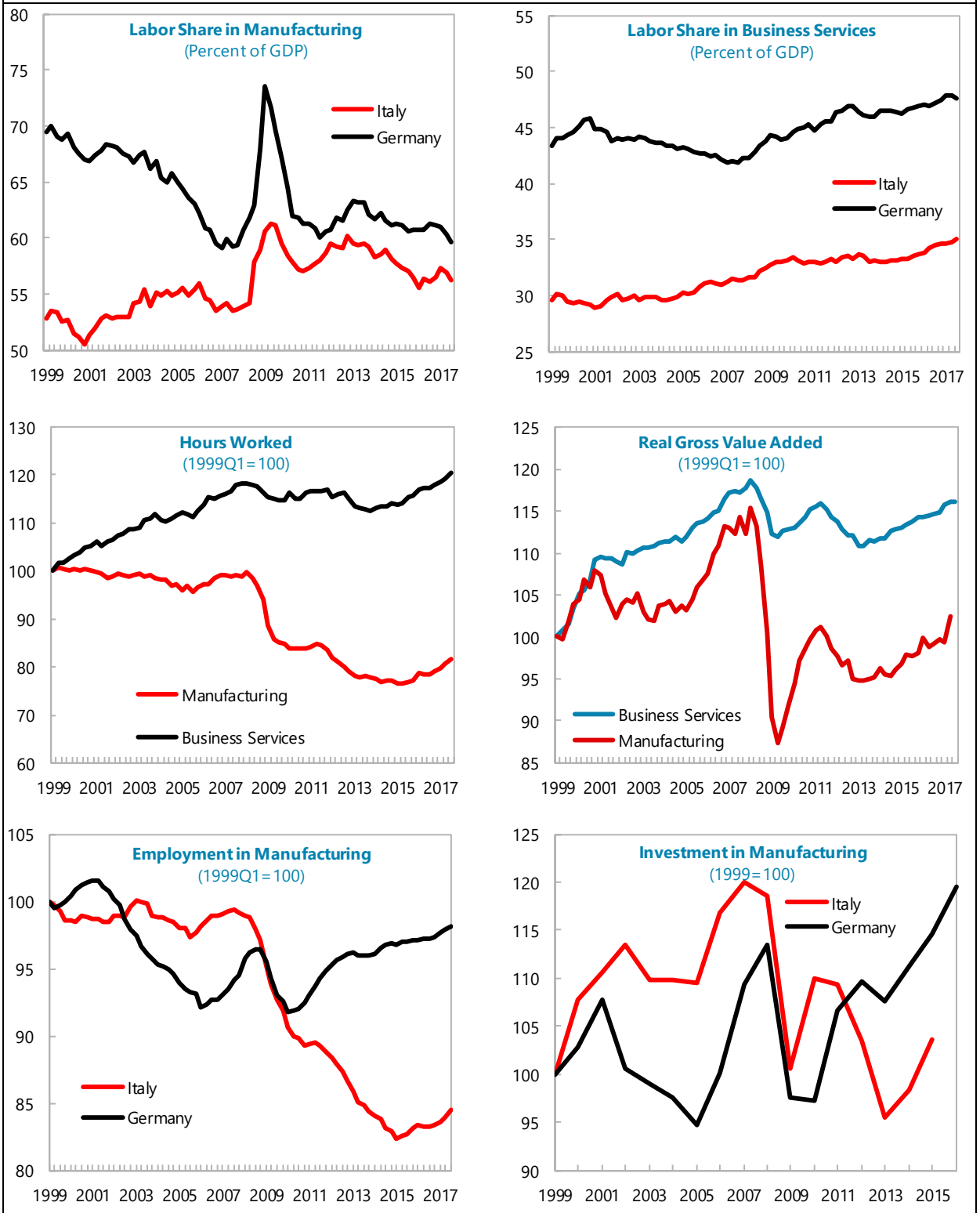
Figure 2. Italy: Productivity, Wages, and Relative Unit Labor Costs



Sources: Eurostat; ISTAT; and IMF staff estimates.

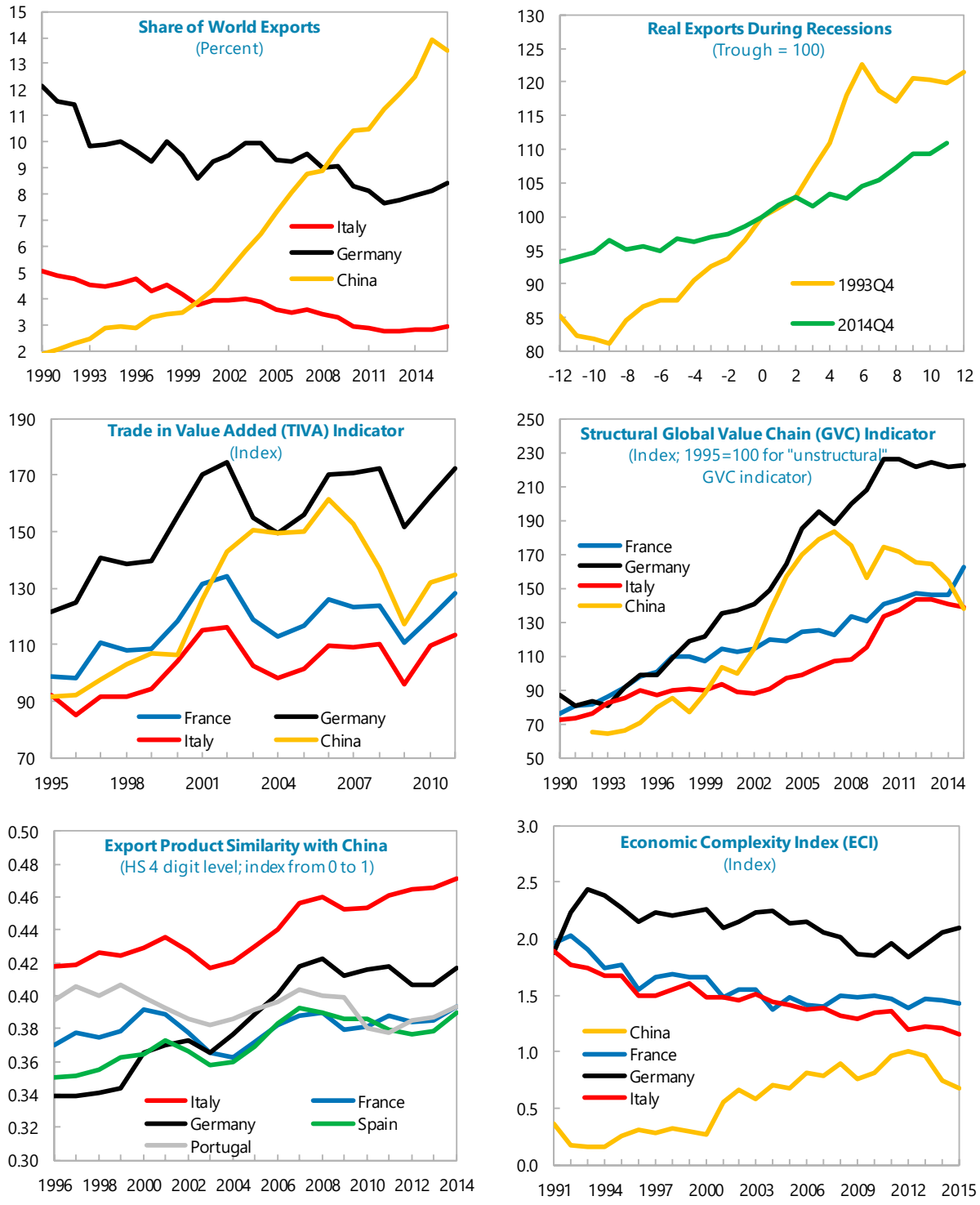
Notes: In the first column productivity is defined as real value added per employment and average wage is defined as a ratio of compensation of employees to employment. In the second column productivity is calculated as real value added per hours of employment and average wage is calculated as compensation of employees per hours worked by employees.

Figure 3. Italy: Internal Adjustment in Labor Shares and Quantities



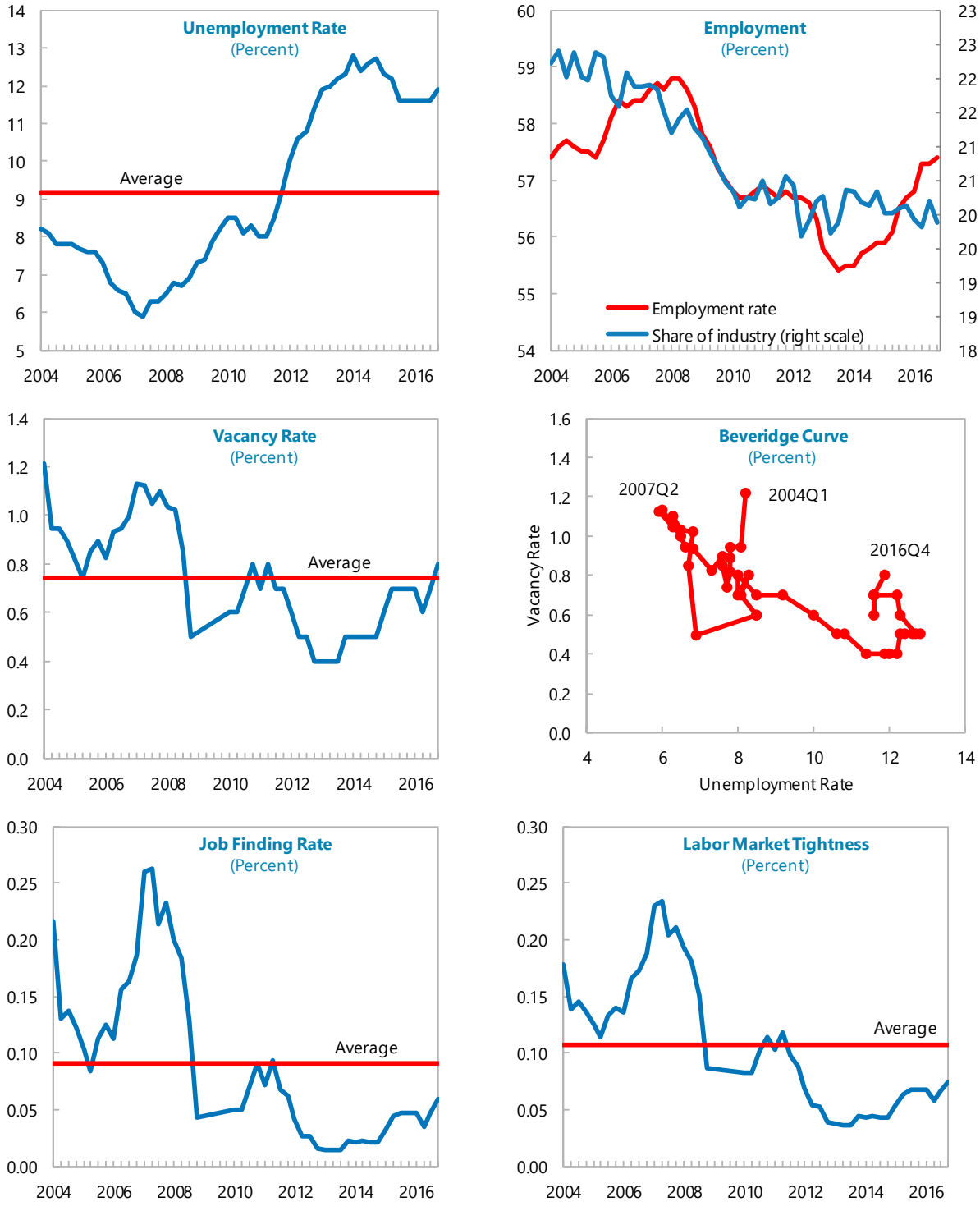
Sources: Eurostat; ISTAT; and IMF staff estimates.

Figure 4. Italy: The Dynamics and Structure of Exports



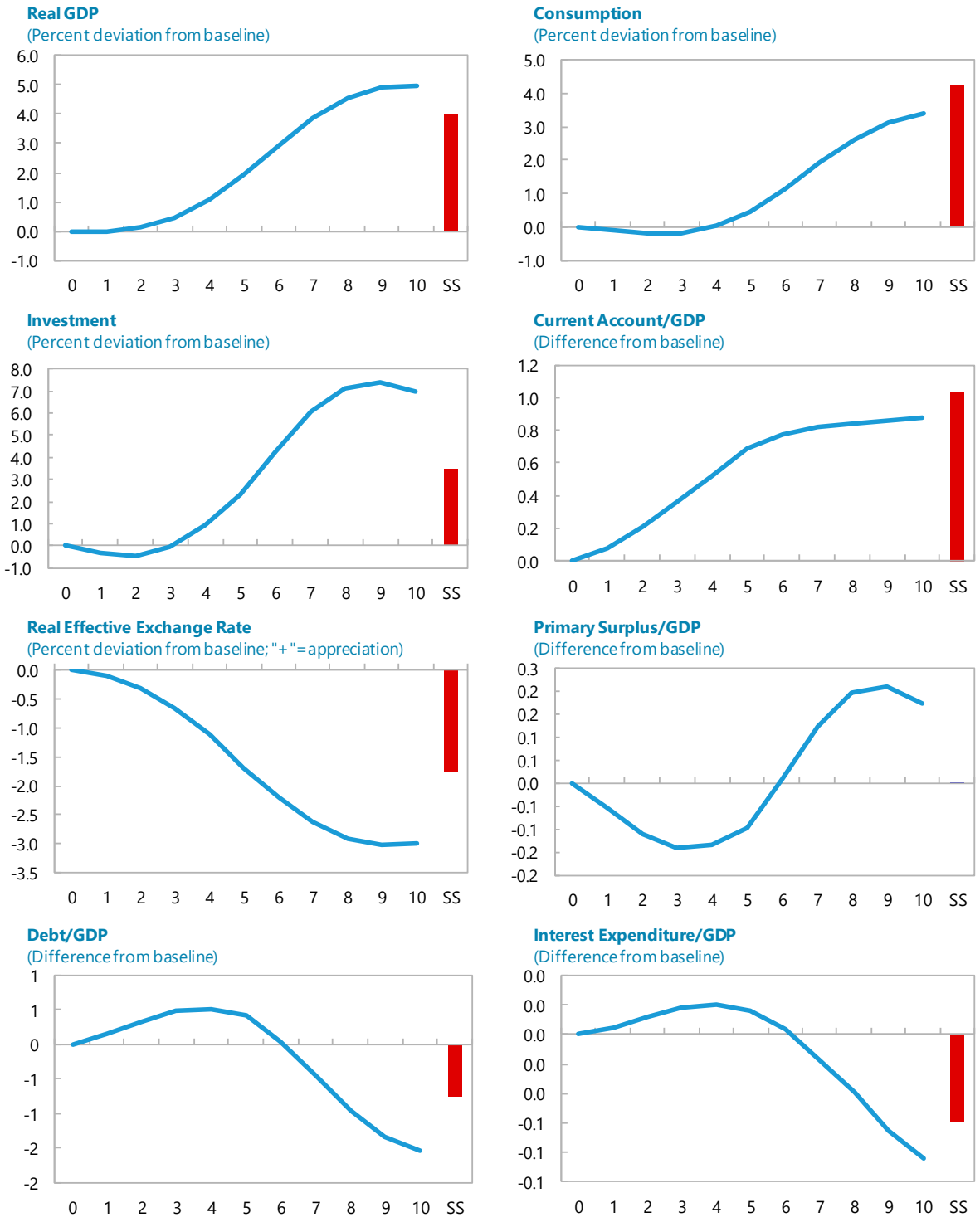
Sources: OECD; Eurostat; ISTAT; IMF, IFS Database; and IMF staff estimates.TIVA and GVC indicators come from Haugh and others (2016). TIVA indicator refers to foreign value added embodied in final domestic demand. Structural GVC measure relates import value of intermediate goods to final domestic demand,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

Figure 5. Italy: Labor Market Indicators



Source: Istat, and staff calculations.

Figure 6. Italy: GIMF Simulations of a 15pp Reduction in Wage Markups



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.

Table A3. Model Specification and Parameterization

Calibration to Steady-State Labor Market Conditions

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)	Φ((log(z)-μ)/σ)	Φ((log(z)-μ)/σ)	Φ((log(z)-μ)/σ)	Φ((log(z)-μ)/σ)	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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