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EXECUTIVE BOARD MEETING

SM/17/155
Correction 1

June 23, 2017

To: Members of the Executive Board

From: The Secretary

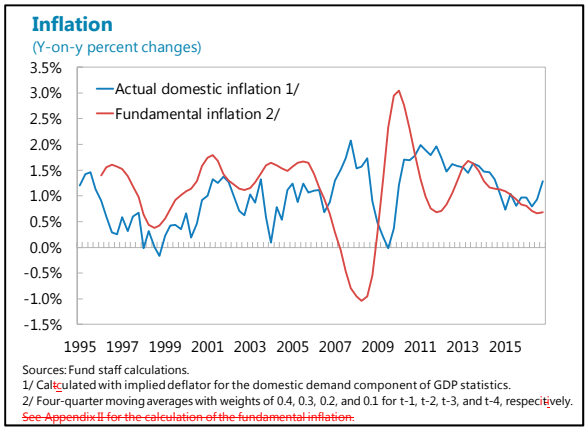
Subject: **Germany—Selected Issues**

Board Action:	The attached corrections to SM/17/155 (6/14/17) have been provided by the staff:
Evident Ambiguity	**Pages 26 and 33**
Factual Errors Not Affecting the Presentation of Staff's Analysis or Views	**Page 17 (text figure, bottom line)**
Typographical Errors	**Pages 17 (text figure, footnote 1; footnote 2, "respectively"), 25, 27**
Questions:	Ms. Detragiache, EUR (ext. 36376) Ms. Mineshima, EUR (ext. 36156) Mr. Natal, EUR (ext. 35983) Ms. Pereira, EUR (ext. 39452) Mr. Vandenbussche, MCM (ext. 36676)

Let *A* denote the companion matrix of the VAR(1) representation of a four-lag (q=4) VAR model for inflation and real marginal cost gaps, we can write $E_t\{\widehat{MC}_{t+k} \mid W_t\} = e_1' A^k W_t$, where e_1 is a vector with a 1 in its first position and zeros elsewhere. If the model is correct, the fundamental equation can be expressed as follows:

$$\pi_t^* = \gamma e_1'(I - \beta A)^{-1} W_t$$

9. Based on NKPC estimation results, nominal wages would have to grow by over 3 percent per year for inflation to be consistent with staff's baseline forecast. Using coefficient estimates for the NKPC equation fitted to German data, real wages would have to grow by 1.3 percent per year on average (implying that nominal wage growth would increase to 3.3 percent) if fundamental inflation—a measure of underlying inflation driven by labor costs—is to reach 2.3 percent by 2022, as projected by staff.[8]



C. Sluggish Wage and Price Inflation Expectations: G20MOD Simulations

10. This section analyses the effects on the German economy and the rest of the euro area of a failure of wage and price inflation expectations to increase as fast as in the baseline. We run two experiments using G20MOD. In the first experiment, we assume that—due to sluggish expectations—wages and prices inflation developments are temporarily more subdued than justified by the degree of labor and good markets tightness *in Germany*. This may occur if, for example, following years of wage moderation and low inflation, social partners are reluctant to let nominal wages accelerate, even in the presence of tight labor markets.[9] In the second experiment, inflation expectations remain sluggish *in all euro area countries,* where years of recession and low inflation may delay the normal pick-up in wages and prices as goods and labor markets gradually tighten.

11. Sluggish expectations are simulated through negative shocks to wage and price inflation expectations in a macroeconometric model. To simulate the effect of more sluggish wage and price inflation expectations than in the baseline, we introduce a series of fully anticipated negative shocks to the wage and price inflation expectation formation processes, that are otherwise rational and model consistent in G20MOD, a multi-region, forward-looking semi-structural global model consisting of 24 regions/countries. The shocks are calibrated to stabilize price and wage inflation at current levels for the next three years—or about 1 percentage point lower than in the baseline by 2019. Beyond 2019, the expectation formation process returns to normal. G20MOD has been developed in the Modeling Division of the IMF's Research Department, and is one of the modules of the flexible system of global models (FSGM). The model is based on micro-founded

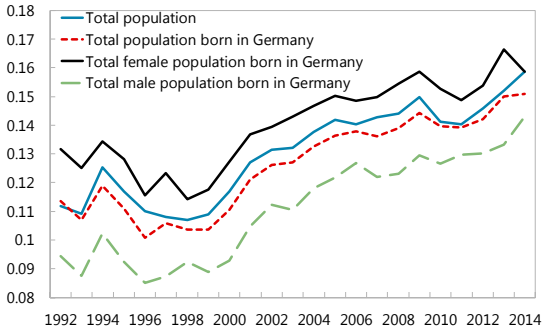
[8] Real marginal cost-based NKPC are known to produce volatile inflation projections around crisis time as labor hoarding could give rise to sharp drops in labor productivity, as appears to be the case in 2009 and 2010.

[9] In Germany, increased demand for alternative benefits that are not captured by compensation of employees (e.g., increased flexibility) could also have slowed down wage increases. This could continue to play a role in the near future.

Alternative measures of the relative poverty rate based on thresholds lower than 60 percent also show an upward trend.

9. This increase in poverty rate appears to have been relatively broad-based across various demographic groups. The upward trend in the relative poverty rate between 1999 and 2014 has been relatively more pronounced for children and young adults, those with a low education level, and single-parent households. Immigration has had a negligible effect on the trend so far: while the immigrant population has a higher poverty rate than the population born in Germany, composition effects from a rising share of immigrants in the population have not played a role (Figure 6).[7] BMAS (2017) describes policy measures taken during the current legislative term that may have had a poverty-reducing effect which is not yet captured by the data (see Appendix for a summary).

Figure 6. Germany: At-Risk-of-Poverty Rate
(Share of demographic group with disposable income below 60 percent of median)

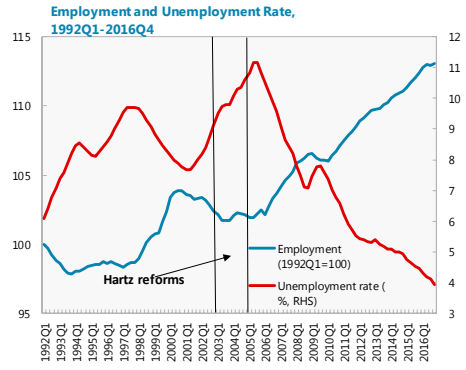


Sources: SOEP, and IMF staff calculations

C. Labor Market Developments During 1992–2016

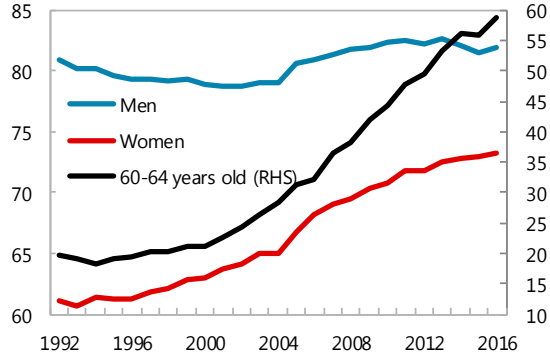
10. The German labor market performance has turned around since 2005. The unemployment rate (as measured in the national accounts), which had risen from 6 percent at the time of reunification to 11 percent in 2005, plunged spectacularly thereafter and is today below 4 percent. In parallel, employment growth, which had been tepid until the mid-2000s, started rising at a sustained pace (Figure 7), as participation rates of women and older workers started rising at a faster rate and the participation rate of men reversed its declining trend (Figure 8).

Figure 7. Employment and Unemployment Rate, 1992:Q1–2016:Q4



Sources: Haver, and IMF staff calculations

Figure 8. Labor Force Participation Rate
(Percent)

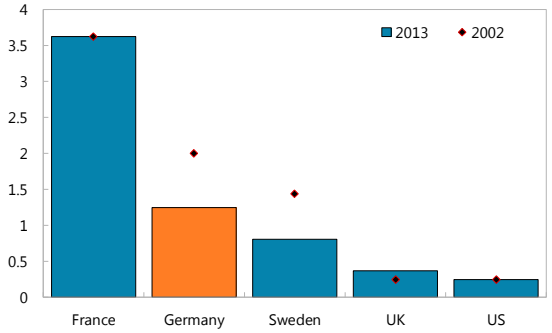


Sources: Eurostat, and IMF staff calculations.
Note: methodological change in the survey in 2005

[7] Using a different data source (the German Microcensus), Seils and Hoehne (2017) find that the increase in the child poverty rate since 2009 is due to immigration only.

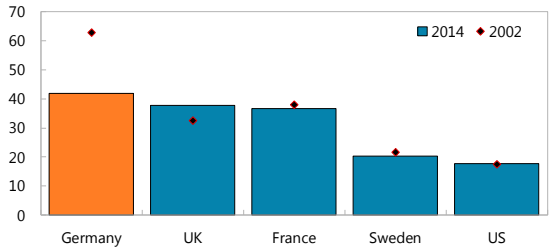
11. This turnaround coincided with the implementation of a comprehensive set of labor market reforms during 2003–2005 which increased labor market flexibility (see Weber, 2015; Scheffel and Krebs, 2017 and references therein). The reforms increased the effectiveness of labor market support services, including through a reorganization of the Federal Labor Agency and a redesign of active labor market policies. They also sought to stimulate labor demand by a liberalizing temporary agency work and short-term contracts (Figure 9), and to boost labor supply and induce more intense search efforts by cutting unemployment benefits for the long-term unemployed (Figure 10; Krebs and Scheffel, 2013) and reforming social assistance. As a result of the reforms, matching efficiency in the labor market improved, and the Beveridge curve shifted to the left (Figure 11; Jung and Kuhn, 2014).

Figure 9. Strictness of Employment Protection—Temporary Contracts (Index)



Sources: OECD

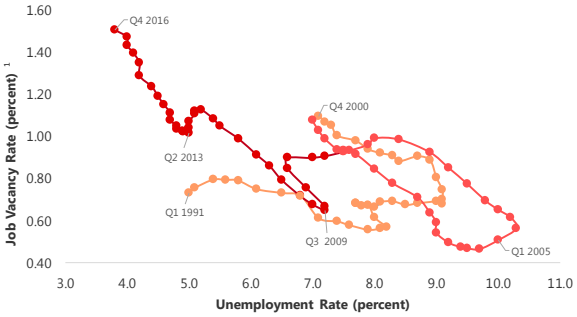
Figure 10. Net Replacement Rate for Long-Term Unemployed (~~Family does not qualify for social assistance,~~ percent)



Sources: OECD

Note: the net replacement rate indicates the proportion of net income that is maintained after job loss for a given family type. The numbers shown in the figure are the average for 6 family types across 2 earnings levels (67 percent and 100 percent of Average Worker earnings), assuming these families do not qualify for cash housing assistance or social ass istance top ups, as computed by the OECD.

Figure 11. Germany: Beveridge Curve, 1991:Q1–2016:Q4

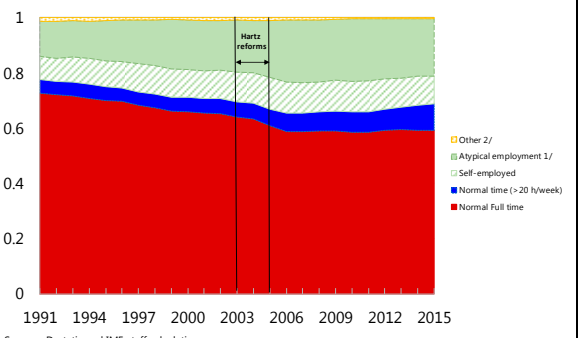


Source: Haver Analytics, Destatis, OECD and IMF Staff calculations

1 Number of registered unsubsidized vacancies in relation to the labor force

12. The share of atypical forms of employment stopped increasing soon after the reforms. Regular full-time and part-time jobs, while remaining the norm, declined as a share of total employment during the 1990s and early 2000s. At the same time, so-called marginal employment, temporary employment, and part-time jobs with low weekly hours grew in importance (Figure 12). These trends continued during the period of implementation of the reforms and shortly afterwards. However, beginning in 2006, the respective shares of these broad categories of employment stabilized, and a small trend reversal has been observed in recent years, when regular forms of employment

Figure 12. Composition of Employment, 1991–2015 (employed persons aged 15-64, share of total)



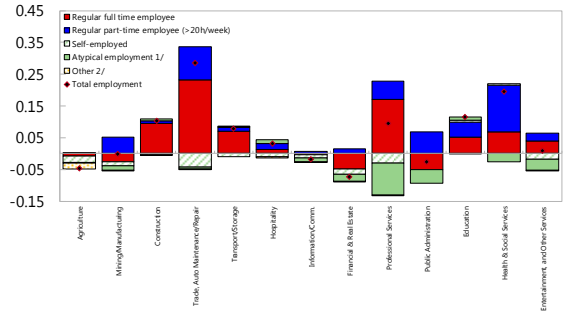
Sources: Destatis and IMF staff calculations

1/ Temporarily employed, part-time employed (<20 h/week), marginally employed, employed in *Kurzarbeit*, employed living in collective households

2/ Assisting family members

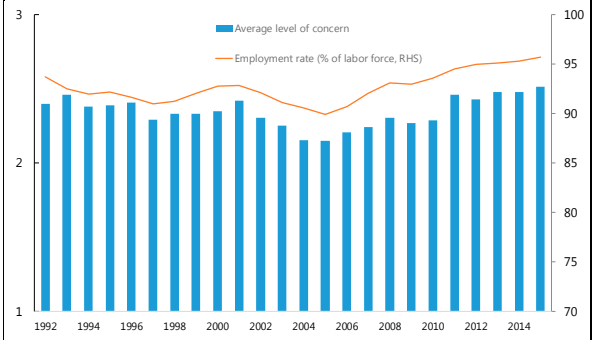
accounted for most of employment growth across most economic sectors, and atypical employment receded somewhat (Figure 13). With historically low unemployment rate and improved overall job quality, concerns about job security are at a historic low (Figure 14).

Figure 13. Contributions to Annual Growth of Total Employment (2011–2015 average, percentage points)



Sources: Destatis and IMF staff calculations
1/ Temporary employed, part-time employed (<20 h/week), marginally employed, employed in short-term work, employed living in collective households
2/ Assisting family members

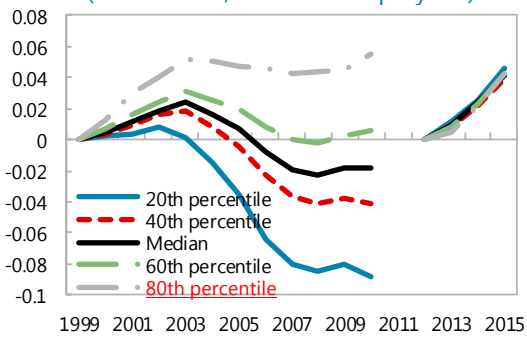
Figure 14. Concerns with Job Security, 1992–2015 (inverted scale: 1=very concerned; 2=somewhat concerned; 3=not concerned at all)



Sources: SOEP, and IMF Staff calculations

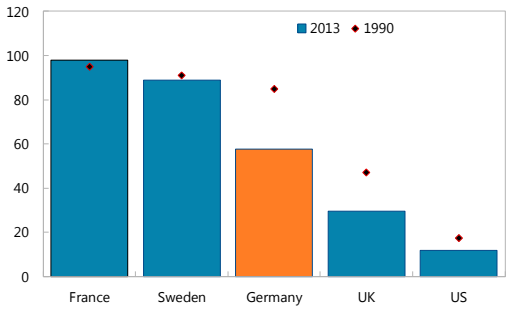
13. Wage inequality gradually rose from the 1990s, but this trend has stopped over the past few years. The wage distributions for full-time and part-time employees widened from the mid-1990s (Figure 15). Technological change, greater trade openness and offshoring opportunities, as well as diminished coverage by collective bargaining agreements likely played a role, as in other advanced countries (Figure 16; Dustmann et al., 2014; Felbermayr and Baumgarten, 2015). Following the Hartz labor market reforms, the surge in labor supply triggered by the reforms initially reinforced pre-existing downward pressures on low wages (Burda and Seele 2016), but did not result in an increase in labor income inequality because of its powerful positive effect on employment (Figure 17).

Figure 15. Cumulative Changes in Real Wage, 1999–2010 and 2012–2015* (2010 euros, full time employees)



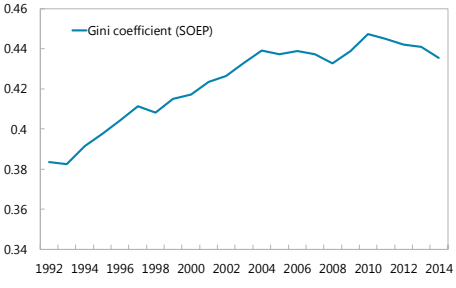
Source: Federal Employment Agency.
*new survey procedure starts in 2011

Figure 16. Collective Bargaining Coverage, 1990 and 2013 (Percent of employees)



Sources: Visser (2016)

Figure 17. Germany: Gini Coefficient of Individual Income from Dependent Employment (Index between 0 and 1)



Sources: SOEP, and IMF staff calculations

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