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**EXECUTIVE
BOARD
MEETING**

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SM/18/104
Correction 1

May 22, 2018

To: Members of the Executive Board

From: The Secretary

Subject: **Kingdom of the Netherlands—Netherlands—Selected Issues**

Board Action: The attached corrections to SM/18/104 (5/9/18) have been provided
                       by the staff:

Evident Ambiguity   **Page 8**

Typographical Errors   **Page 5**

Questions: Mr. Dorsey, EUR (ext. 34047)
                        Mr. Gerard, EUR (ext. 39576)
                        Ms. Chen, EUR (ext. 37917)

5. **The following sections examine the fundamental factors driving the Netherlands' "wage puzzle" as highlighted above.** Section B summarizes the Netherlands' wage bargaining system and the existing literature on the wage developments both in the Netherlands as well as in the international context. Section C highlights the key stylized facts that motivates the empirical analysis. Section D and E describe the model specifications and underlying data. Section F illustrates the regression results; and section G concludes.

B. Background of Wage Formation in the Netherlands and Literature Review

6. **Wage outcomes in the Netherlands in part reflect the nature of the Netherlands' wage bargaining system** (Box 1). The collective bargaining process takes place predominantly at the sectoral level, while leaving certain scope of flexibility at the firm/local level. While the wage bargaining process is relatively independent across sectors; wages agreed in other sectors do not deviate much from the ones set in the export-oriented industry sector, which can be influenced by foreign wages, especially among the trading competitors. The bargaining process covers not only the pay, but also types of contracts (e.g. temporary or permanent), retirement and leave benefits, etc. Increasingly, there has been a trend towards more firm-level and individualized wage arrangements. The recent coalition agreement pointed out the importance of having such arrangements to allow the pay to better reflect workers' improving performance and productivity.

7. **It is well documented in the literature that wage growth has slowed down significantly both in nominal and real term since the global financial crisis** (e.g. Eggelte et al. 2014). The slow wage growth has been largely driven by remaining slack in the labor market (DNB 2017) and rising labor market flexibility (DNB 2018). Peeters and den Reijer (2001) documented a shift in the bargaining power from employees to the employers since 1990s that may have also contributed to the recent low wage growth. Going forward, the tightening labor market is expected to increase negotiated wages from 1.5 percent in 2017 to 2.2 percent in 2018, the number of permanent contracts and tariffs of self-employed; though the wage development is projected to remain relatively moderate (CPB 2017/18).
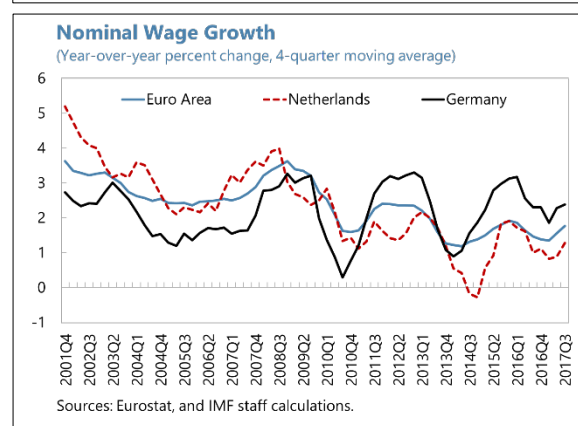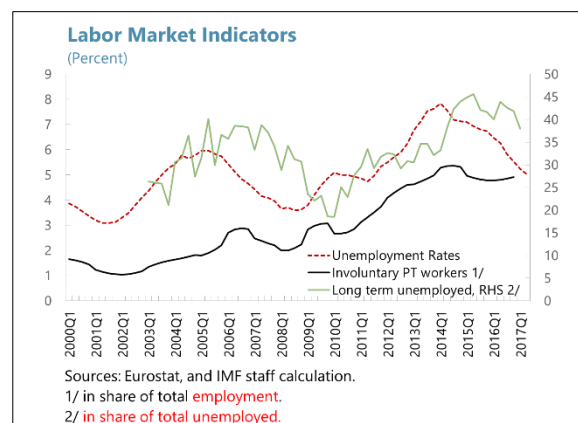
8. **Analysis on other advanced economies finds that subdued wage growth can also be attributed to changes to employment structure, technological advancement, etc. among other factors**. IMF (2017) finds that while the bulk of the recent wage slowdown in the advanced economies (AEs) can be explained by lower trend productivity, labor market slack that is not captured by the traditional unemployment measures, in many AEs, given increases in part-time employment and temporary contracts. These developments may also point to persistent changes in relationships between firms and workers in response to technological change and remaining labor market rigidities in some countries that deter employers from hiring on standard full-time contracts. Beyond these factors, it is found that automation and diminished medium-term growth expectations may have also contributed to slower wage growth.

11.   In addition, despite falling unemployment, some non-traditional indicators point to remaining slack in the labor market. Although unemployment has fallen from above 8 percent to less than 5 percent, close to the pre-crisis range; other indicators such as involuntary part-time employment and long-term unemployment remain elevated. This suggest that labor market slack has not yet entirely diminished.

Labor Market Indicators
(Percent)

Sources: Eurostat, and IMF staff calculation.
1/ in share of total employment.
2/ in share of total unemployed.

12.   The Netherlands' wage growth has been moving closely with or even more slowly than that in Germany and other Euro Area countries. Like other EA countries, wage growth in the Netherlands followed its trading competitors quite closely, including during the period of wage moderation in Germany (2003–05). Post-crisis wages have been growing even more slowly than most euro area countries (due to a higher unemployment gap during the recession), and much more slowly than Germany, despite similar trend productivity growth, labor market slack, and expected inflation.

Nominal Wage Growth
(Year-over-year percent change, 4-quarter moving average)

Sources: Eurostat, and IMF staff calculations.

D.   Model Specification

13.   We use a wage curve model, based on Blanchard (1997), to analyze the drivers of Netherlands' moderate wage growth in recent years. A wage curve relationship can be derived from a range of underlying models, including wage bargaining and efficiency wages. In equilibrium, the wage curve implies that the level of real wages is negatively related to aggregate unemployment (U). Extending this model to apply over time, it is necessary to augment this relationship with labor productivity (TLP). But there are significant costs to adjusting wages, especially to reducing wages, so in practice wages are more likely to follow a measure of the trend in labor productivity rather than actual labor productivity which is subject to cyclical swings and various other shocks.

$$\log RW = \alpha \log TLP - \beta U$$

14.   An error-correction specification (ECM) is used to estimate the wage curve.[2] This specification appears similar to the more widely used Phillips curve in wages, except for the inclusion of an error correction term that depends on the lagged levels of real wages and trend labor productivity. When real wages deviate from their long run equilibrium level in relation to trend labor

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[2] Sargan (1964) originated the estimation of an error correction model for wages. Zhang (2017) elaborate the model to include more labor slack indicators and external spillovers.