



# MALTA

## 2020 SELECTED ISSUES

April 2020

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# MALTA

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March 25, 2020

Approved By  
European Department

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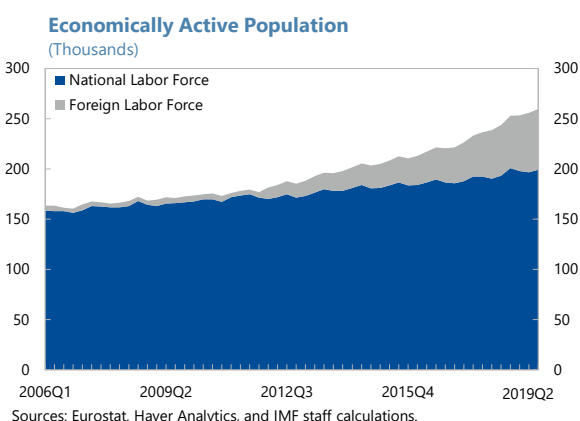
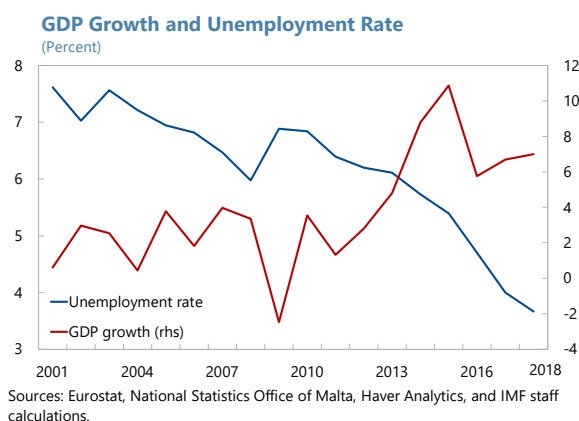
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# IMMIGRATION AND THE LABOR MARKET IN MALTA<sup>1</sup>

## A. Introduction

### 1. Foreign labor has helped support several years of strong economic growth in Malta.

Over 2013–19, average real GDP growth has been around 7 percent, one of the highest rates among EU countries and nearly four times higher than the EU average. A structural rebalancing towards high value-added and labor-intensive services (e.g., professional and scientific activities, remote gaming, tourism) has underpinned Malta’s strong growth. Large inflows of foreign workers have helped the economy meet fast-growing labor demand. Foreign workers added an extra 18 percent to the size of the labor force over the period 2013–18 on top of the nearly 10 percent added from Maltese nationals. Meanwhile, the unemployment rate declined to record lows and total employment grew by 29 percent, compared to just around 9 percent in the period preceding the global financial crisis (2002–07).



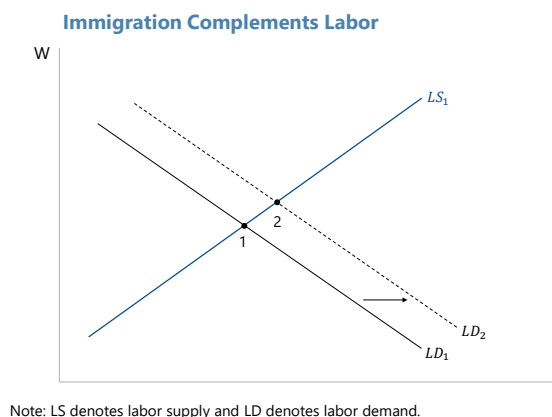
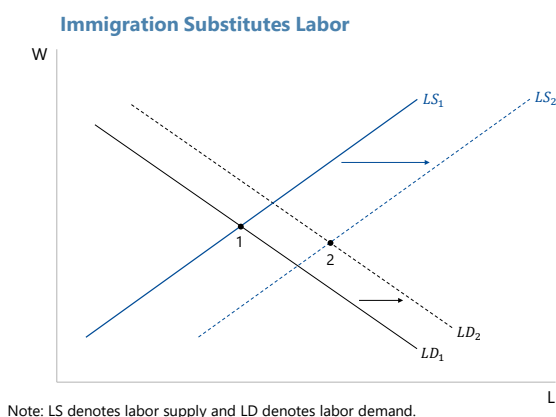
**2. On balance, this paper finds that immigration has been positive for Malta,** as it has helped boost growth, employment, productivity and incomes. The increased availability of foreign labor has also helped contain wage inflation (and hence probably also price inflation) in recent years, contributing to maintain competitiveness in the face of a booming economy. After a brief theoretical discussion of the many ways foreign labor inflows are expected to impact productivity, income and wages, the paper documents recent immigration patterns and estimates some of their likely short- and long-term effects on the labor market in Malta. Due to data limitations, the paper does not assess the specific impact of immigration on labor market outcomes of native workers. A series of policy recommendations around reaping the benefits of migration are provided in the concluding section.

<sup>1</sup> Prepared by Karim Foda and Jorge Salas (both EUR). Jai-Ryung (Jenny) Lee provided excellent research assistance. The authors are grateful to the Maltese authorities and Jean-Marc Natal for their helpful comments.

## B. Immigration and Labor Markets: Some Theoretical Insights

**3. Immigration has long- and short-term effects on labor markets.** In the longer-term, the increase in labor supply from immigration leads to an increase in the return on capital, helping to drive an increase in investment which in turn raises demand for labor (Peri 2010). The long-term effect of immigration on overall wages then largely depends on its effect on overall labor productivity (see paragraph 5). In the short-term, the effect of immigration on wages is in principle ambiguous and depends, among other factors, on the degree of *substitutability* or *complementarity* between the skills of immigrants and natives (see text figure):

- In terms of labor demand, the boost to population growth from immigration could lead to greater demand for goods, services and labor, which in turn leads to an upward shift of the labor demand curve and an increase in employment.
- If the skills of immigrants are similar (or substitutable) to the ones of natives, then the two groups would be in direct competition for the same set of jobs. In this case, immigration could be seen as an exogenous increase in labor supply, leading to a downward shift in the labor supply curve which would result in lower wages.
- If the skills of immigrants are complementary to the skills of natives, then there is no competition from immigration, which can be modeled as an upward movement along the labor supply curve and result in an increase in wages.
- In sum, the resulting labor market equilibrium mainly depends on the degree of substitutability or complementarity between immigrant and native workers. With full substitutability, the equilibrium is higher employment and lower wages. With full complementarity, the equilibrium is higher employment and higher wages. Ultimately, the outcome tends to be a combination of the two.



**4. The magnitude of the short-term effect of immigration on the labor market depends on several factors.** The size, speed and profile of incoming migrant waves all contribute to determining the strength of the impact on the labor market. Large and rapid inflows of migrants can temporarily dampen aggregate wage growth through a rapid expansion of the labor supply, particularly if migrants' skills are broadly similar to those of native workers—making them substitute for natives—and migration is broad-based across all sectors.

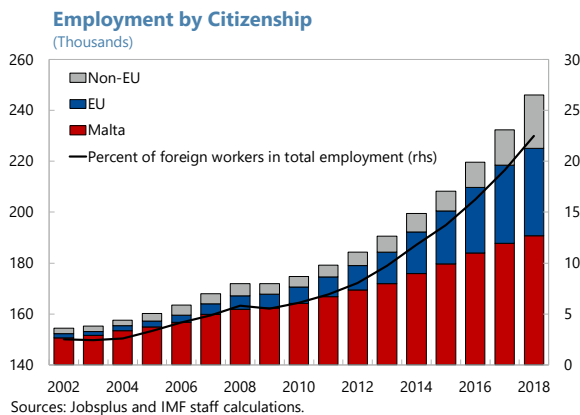
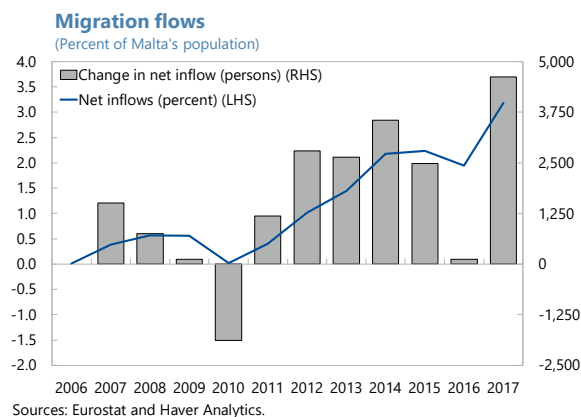
**5. Immigration can affect productivity in different ways.** The contribution to productivity from highly educated immigrants is clear, but low- and medium-skill migrants could also contribute to aggregate productivity to the extent that their skills are complementary to those of natives. Complementarity supports higher productivity through greater specialization in tasks and occupations where each worker has a comparative advantage. Over the long term, native workers and firms can adjust to the skills of migrants in order to increase complementarity (Catteneo, Fiori and Peri 2015, Peri 2016). Adjustment channels include changing occupations, skills or investing in technology and capital. With flexible and well-functioning labor markets, economic theory suggests a positive link between real wages and labor productivity. With high degrees of complementarity between migrants and native workers, productivity gains should support sustainable gains in wages and incomes in the long term. Immigration can also create productivity-enhancing externalities such as improvements in learning by doing, promoting innovation, agglomeration externalities, and a wider variety of ideas, goods and services (Peri 2014 and 2016).

**6. Changes in the composition of the labor force can shape aggregate wages.** Composition effects can sometimes explain changes in aggregate wage growth that may not be captured by changes in aggregate labor supply and demand or be fully in line with the business cycle (see Nickel et al., 2019 for estimates of composition effects in the euro area, or Klinger et al., 2019 for Germany). Immigrants can be concentrated in either high- or low-wage sectors and statistically increase the weight of those sectors in the economy, independently of their impact on labor supply and demand. For example, growing shares of young, low-wage immigrants may be large enough as a share of total employment to weigh down on aggregate level wage growth and could mask potentially positive impacts on individual wages if their skills and occupations increase complementarity with the rest of the labor force.

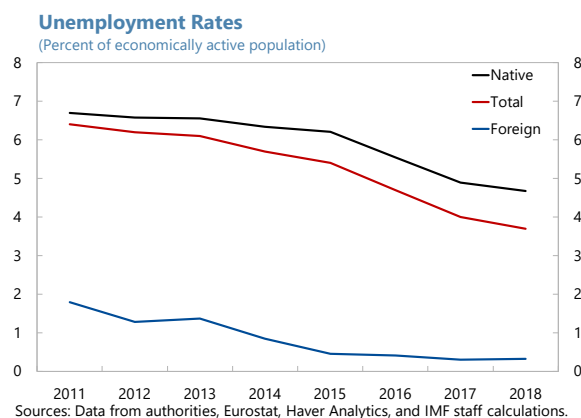
### C. Immigration and Malta's Labor Market: Some Stylized Facts

**7. Net migration to Malta has proceeded at an increasing pace and migrants are quickly integrating into the labor market.** The pace of net migration to Malta has been increasing in recent years, from 0.4 percent of the total population in 2011 to 3.2 percent in 2017. Since joining the EU in 2004, Malta has experienced one of the largest increases in the migrant's share of the population in the EU, behind only Austria, Luxembourg and Sweden.<sup>2</sup> Migrants from both EU and non-EU countries are being quickly integrated into the Maltese labor market and contributing to output. The share of foreign workers in total employment surged from just over 3 percent in 2005 to over 22 percent in 2018.

<sup>2</sup> Many of migrants to Sweden over this period were asylum seekers in addition to economic migrants.



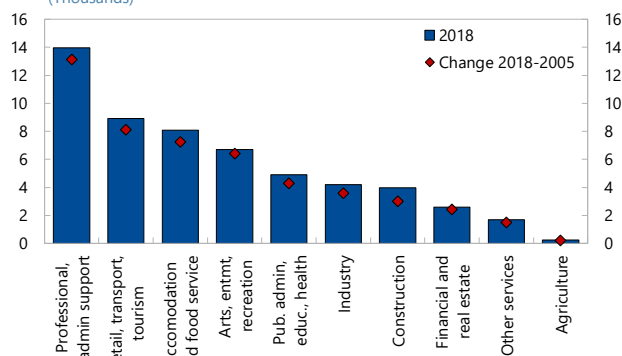
**8. Migrants are helping to meet growing and broad-based labor demand, yet labor shortages remain a challenge.** In other European and advanced economies, immigrants tend to have lower labor force participation and employment rates than natives (Kerr and Kerr 2011). In Malta, however, the very low and declining unemployment rate among foreign workers, from 1.8 percent in 2011 to 0.3 percent in 2018, along with a declining unemployment rate among Maltese workers, points to the demand-pull nature of migration to Malta. Excess demand for labor is pulling foreign workers into the Maltese economy and integrating them into a growing labor market, potentially fueling even more demand for labor via aggregate demand effects. Indeed, the number of job vacancies nearly doubled between 2013 and 2018 even as the labor force was expanding, employment was rising, and unemployment was declining. Administrative data indicate that increases in job vacancies are widespread across sectors and occupations.<sup>3</sup>



<sup>3</sup> Based on Jobsplus data, sectors where the number of vacancies at least doubled over 2013–18 and was at least 2,000 in 2018 included manufacturing, construction, accommodation and food services, and professional, scientific and technical activities. Using the same criteria for occupation groups, the greatest unmet needs were for services and sales workers, clerks and support workers, craft and related trade workers, plant and machine operator and assemblers and elementary occupations. Vacancies for technicians and associate professionals rose by 40 percent.

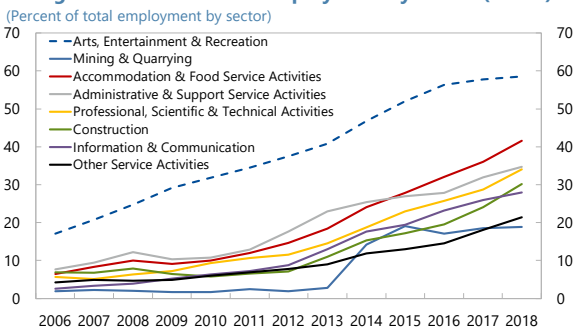
**9. Immigration has been broad-based with rising shares of foreign workers across all sectors.** The sectors that experienced the largest increases in the volume of foreign employment over the same period were mainly labor-intensive services across the skill spectrum, from professional services to retail to accommodation and food services. The broad-based nature of foreign employment highlights the range of labor shortages across sectors with varying skill requirements. In percentage terms, the largest increase occurred in arts, entertainment and recreation (which includes the remote gaming sector), where the share of foreign workers in the sectors total employment rose by over 47 percentage points in 2005–18, followed by tourism and other services sectors. Manufacturing and construction also experienced notable increases of 15 and 24 percentage points, respectively.

**Number of Foreign Workers by Sector, 2018**  
(Thousands)



Sources: Jobsplus and IMF staff calculations.

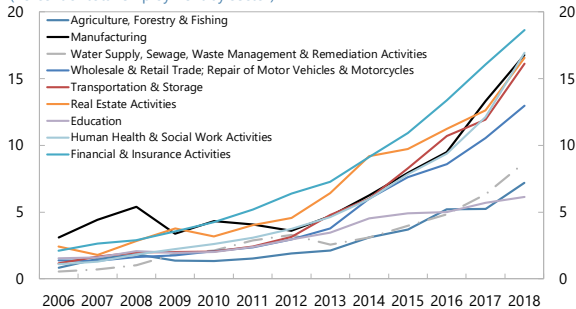
**Foreign Workers Shares of Employment by Sector (>20%)**  
(Percent of total employment by sector)



Source: Jobsplus.

Note: Only sectors with foreign workers making up at least 20 percent of total employment in 2018 are displayed.

**Foreign Workers Shares of Employment by Sector (<20%)**  
(Percent of total employment by sector)

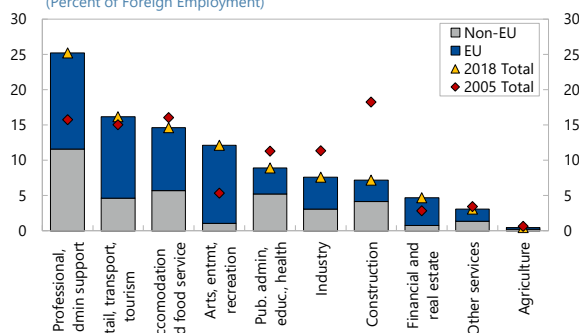


Sources: Jobsplus.

Note: Only sectors with foreign workers making up less than 20 percent of total employment in 2018 are displayed.

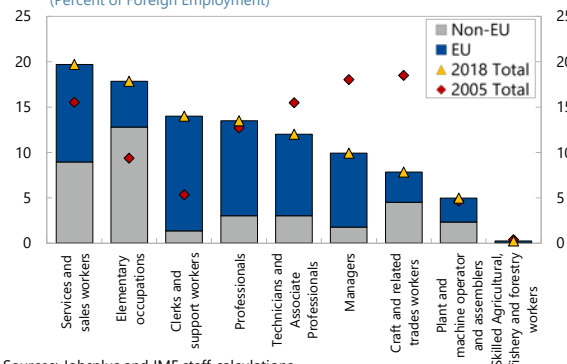
**10. Foreign employment in Malta has grown across a range of sectors, occupations and skill-levels.** While higher-skill occupations such as managers, technicians and professionals tend to have a larger share of EU nationals and elementary occupations tend to have a larger share of non-EU nationals, both sets of migrants are found across high, medium and low skill occupations and sectors. Overall, workers from the EU account for around 60 percent of foreign employment. EU migrants accounted for the majority of net migrant inflows in the years following the global financial crisis, a trend that has been reversed in recent years. Interestingly, the share of foreign workers employed in arts, entertainment, recreation and professional services has increased significantly in recent years, in line with the rising importance of the gaming sector.

**Foreign Employment by Sector, 2018**  
(Percent of Foreign Employment)



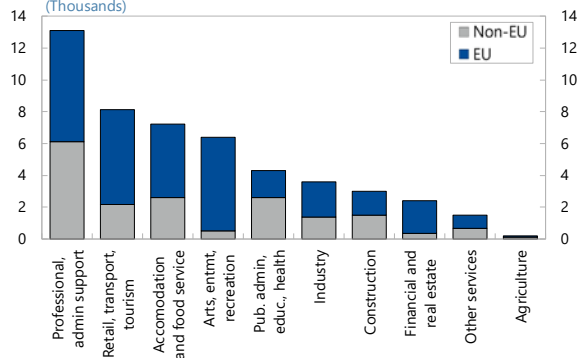
Sources: Jobsplus and IMF staff calculations.

**Foreign Employment by Occupation, 2018**  
(Percent of Foreign Employment)



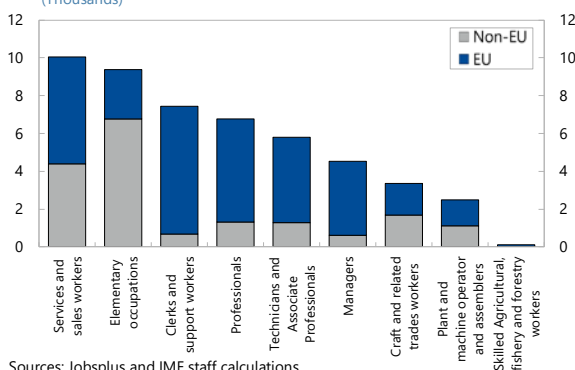
Sources: Jobsplus and IMF staff calculations.

**Change in Foreign Workers by Sector, 2005-2018**  
(Thousands)



Sources: Jobsplus and IMF staff calculations.

**Change in Foreign Workers by Occupation, 2005-2018**  
(Thousands)



Sources: Jobsplus and IMF staff calculations.

## 11. There is some evidence that Maltese workers are upgrading into higher skill occupations.

As foreign workers have helped expand the labor force to fill labor shortages, there are signs that Maltese workers have been upgrading into higher skill occupations. Over 2012–17, the number of Maltese workers employed in elementary occupations or as clerical support workers declined by nearly 18 percent and 9 percent, respectively. These declines were more than offset by increases in high and medium skill occupations, mainly in services sectors. Maltese workers employed as managers increased by 25 percent, professionals by 23 percent, and services and sales workers by nearly 20 percent over the same period.<sup>4</sup> While it is unclear if these trends are a direct response to inflows of migrants, there does appear to be an adjustment process underway for Maltese workers that could increase complementarity with lower- and middle-skill migrants and support stronger productivity growth and wages over time.

## 12. Educational attainment levels are broadly similar between migrants and non-migrants,

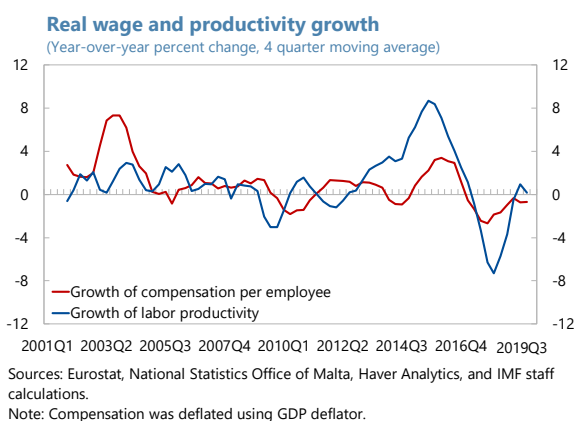
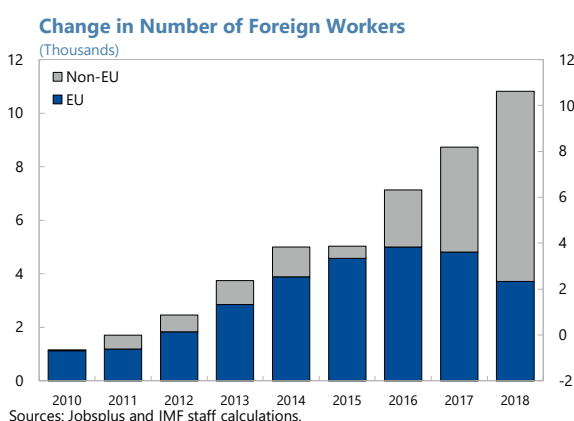
when distinguishing people with secondary education or less and those with more than secondary education. Based on 2014 Labor Force Survey evidence, the share of migrants with more than a secondary education degree was just over 62 percent (of which around 39 percent had tertiary

<sup>4</sup> Recent analysis by the Central Bank of Malta (2019) documents that these shifts by Maltese workers into higher skill occupations have been underway prior to 2012 as well.



education) compared to 54 percent for non-migrants (of which around 23 percent had tertiary education). Since 2014, these shares likely became more even as immigration from non-EU countries picked up. This rough similarity further points to the broad-based nature of immigration to Malta, even if foreign workers still tend to have higher rates of tertiary education.

**13. Composition effects may have weighed on aggregate wages in recent years.** Foreign workers from the EU accounted for over three-quarters of incoming foreign workers over 2010–2016. Most recently, however, net inflows of foreign workers from non-EU countries have accelerated and accounted for over 65 percent of the growth in foreign employment in 2018. This sudden acceleration could suggest that some composition effects may be at play, related to the fact that non-EU foreign workers seem to disproportionately occupy low-skilled jobs (e.g., elementary occupations, services and sales). Coincidentally, in recent years productivity growth in Malta tended to decline and some measures of wage growth (e.g., compensation per employee) moderated too, though it remains unclear if these patterns are directly due to composition effects.



## D. Long-Term Income Effects of Immigration in Malta

**14. Immigration has been found to boost GDP per capita in the long term.** Recent cross-country IMF staff's analysis estimated the long-term impact of a rise in the migration share of host advanced countries' population on real GDP per capita (Jaumotte, Koloskova, and Saxena 2016). The study modeled two main channels through which immigration can impact GDP per capita: an increase in the share of working age population and an increase in productivity per worker based on potential complementarity between the skills of migrants and natives. It used a restricted sample of advanced economies and an empirical approach that stresses robustness to address the risk of endogeneity biases.<sup>5</sup> With real GDP per capita as the dependent variable, the key independent variable is the migration share of the host country's population. Other independent and control variables include population size, the shares of high and medium skilled workers, trade openness,

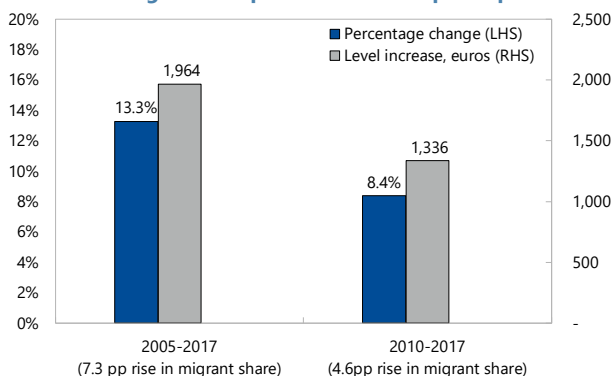
<sup>5</sup> Biases could arise, for example, from reverse causality problems—namely that high income levels in host countries attract migrants, rather than migrants contributing positively to GDP per capita.

age shares, and the share of information and communication technologies in the capital stock. The main finding is that a 1 percentage point increase in the migration share can raise GDP per capita by up to 2 percent in the long run. This effect is found to come mainly from labor productivity and to a lesser extent from an increase in the ratio of working-age to total population. Gains in labor productivity are most evident where there is complementarity among workers.<sup>6</sup>

**15. A simple extrapolation exercise applied to Maltese data suggests that GDP per capita gains from immigration could have been sizeable.**

Applying Jaumotte, Koloskova, and Saxena's (2016) estimated elasticity of real GDP per capita to the migration share to Maltese data points to large income gains over two selected periods: 2005–17 and 2010–17. In particular, nearly one-third of the actual increase of GDP per capita over 2005–17 and around one-fifth of the increase over 2010–17 could have been due to foreign labor inflows. That means that immigration would have boosted real GDP per capita by 13 percent (or around 2,000 constant euros) over 2005–17, and by an 8.4 percent (or around 1,300 constant euros) over 2010–17.<sup>7</sup>

**Potential Long Term Impact on Real GDP per Capita: Malta**



Sources: IMF (2016), UN, and IMF staff calculations.

## E. Short-Term Effects: a Simple Empirical Analysis of Wage Dynamics

**16. Simple wage-Phillips curves are estimated to attempt quantifying the potential impact of migration on short-term aggregate wage growth.** The econometric specification broadly follows Nickel et al. (2019), who estimate wage Phillips curves for euro area countries. The estimates are based on Maltese quarterly data from around mid-2000s until 2019Q2. In general, the models use the year-on-year change in compensation per employee as the relevant wage growth indicator, regressing it against its own lags and measures of labor market slack, backward-looking inflation expectations, and labor productivity growth; the share of foreign workers in total employment, to capture the role of immigration; and a constant.

**17. The analysis gives some insights into the empirical drivers of short-term fluctuations in aggregate wages but is silent on the underlying mechanisms.** Some limitations are important to consider. First, the available data, and the fact that the immigration surge is a relatively recent

<sup>6</sup> The study presents evidence of one possible channel of complementarity: an increase in the share of low-skilled migrants tends to increase the labor force participation rate of native women, likely through greater availability of household and childcare services.

<sup>7</sup> Peri (2010) finds similar long-term impacts in the United States where immigration between 1990 and 2007 was associated with a 20 percent to 25 percent of the total real increase in average yearly income per worker.

phenomenon, do not allow for a more granular analysis of the channels through which immigration can impact aggregate wages, or of the possible impact of immigration on native workers' wages specifically.<sup>8</sup> Second, recent changes in wage dynamics may reflect composition effects in the Maltese labor market that the estimated model can only partially capture. Third, the results might be fragile due to the short sample period that coincides with rapid structural changes in the economy, including in the labor market.

**18. The results suggest that foreign workers have helped contain aggregate wage inflation.** The baseline regression includes as regressors the headline unemployment rate, lagged core inflation, labor productivity growth, the share of foreign workers in total employment, and the first and fourth lags of the dependent variable (Table 1, column 1). The coefficients for the usual wage Phillips curve variables—unemployment, core inflation and labor productivity—are statistically significant, their signs are in line with theory, and their magnitudes are reasonable. Most important, the coefficient attached to the share of foreign workers is also significant and has a negative sign, indicating a dampening effect on aggregate wage growth *in the short term*. This particular result is in line with other studies (see e.g. Furlanetto and Robstad 2019, and the papers cited therein).<sup>9</sup>

**19. The results are qualitatively robust to different specifications and definitions of key variables.** In particular, other specifications with different measures of labor market slack—including the broad unemployment rate gap, the job vacancies-to-unemployment ratio, and the headline unemployment gap—do not materially change the signs or statistical significance of the key variables, particularly those of the immigration variable (Table 1, columns 2-4).<sup>10</sup> The NAIRU (or non-accelerating inflation rate of unemployment) used when computing the unemployment gap measures was assumed to be nonzero and time-varying, dissipating possible concerns that the share of foreign workers could be partly capturing the role of a declining NAIRU in Malta. While some quantitative estimates are specification-sensitive, the main results are also robust to using the change in the share of foreign workers (lagged one period) rather than the level (Table 1, column 4). Further, the key results are robust to dropping either the first or fourth lag of the dependent variable, lagging the unemployment rate, lagging the share of foreign workers, and using growth in real compensation per employee as dependent variable (Appendix I). In other unreported results, robustness was also checked to using as dependent variable the growth of wages taken from the Labor Force Survey, and separately incorporating additional control variables such as the share of part-time workers in total employment, shares in total employment and in gross value added accounted for by manufacturing or services, the labor force participation rate, and the female employment share.

<sup>8</sup> The latter analysis usually requires long-run labor market data on both native and foreign workers in different skill and age groups (Borjas 2003, Ottaviano and Peri 2012).

<sup>9</sup> However, the general evidence about the medium and long-term impact of immigration on native workers' wages is more mixed. For instance, Longhi, Nijkamp and Poot 2005 conduct a meta-analysis of 18 studies (that include 348 estimates) and report that the overall effect, while negative, is very small. For additional evidence, see Peri (2014).

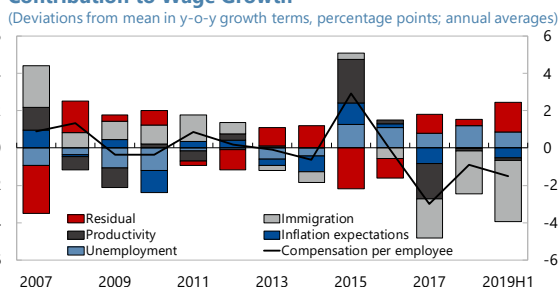
<sup>10</sup> The quarterly vacancies-to-unemployment ratio was obtained by interpolating an annual series provided by Jobsplus. As reported in Table 1, column 3, the coefficient attached to that variable is positive as a higher ratio (i.e., a higher number of jobs that employers would like to fill relative to the number of unemployed people available to fill them) implies a tighter labor market.

**Table 1. Selected Summary Results: Short-Term Wage Dynamics**

	Dependent variable: Compensation per Employee, 4-quarter log change			
	(1)	(2)	(3)	(4)
Dependent variable (t-1)	0.446***	0.518***	0.454***	0.475***
Dependent variable (t-4)	-0.364***	-0.392***	-0.361***	-0.26***
Unemployment rate	-0.596**			
Broad Unemployment gap		-0.434*		
Job vacancies-to-unemployment ratio			0.009**	
Unemployment gap				-0.793*
Inflation Expectations: 4-quarter log change of Core CPI, 4-quarter backward-looking moving average	0.38**	0.496***	0.378**	0.5***
Labor productivity per employee, 4-quarter log change	0.131***	0.112***	0.145***	0.124***
Share of foreign workers in total employment	-0.174***	-0.064***	-0.19***	
Share of foreign workers in total employment, 4-quarter change (t-1)				-0.256***
Constant	0.066***	0.019***	0.019***	0.015***
Observations	57	46	57	53
Adj. R-squared	0.726	0.8	0.727	0.717

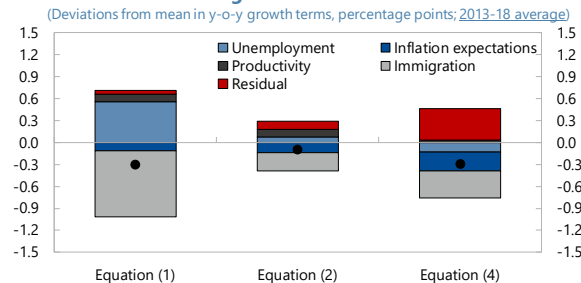
*Notes:* Statistical significance denoted by \*\*\* for 1%, \*\* for 5%, and \* for 10%. Full results, including robust standard errors, are shown in Appendix 1. Estimation sample is 2005Q2-2019Q2; except for columns (2) and (4), where due to data availability the sample starts in 2008Q1 and 2006Q2, respectively. The table omits a dummy variable that takes the value of 1 in 2015Q4 which controls for an outlier.

**20. The results across some selected models suggest that foreign labor has helped contain wage inflation in recent years.** To identify the drivers of nominal wage growth, a decomposition analysis is conducted which allows calculating the contributions of each of the independent variables included in the regressions. To do this, as in Nickel et al. (2019) who in turn follow Yellen (2015), a sequence of counterfactual simulations of the model is run and, one by one, each explanatory variable is set to zero and the model is simulated in a dynamic way. The resulting difference between actual wage growth and its simulated value equals the historical contribution of that particular variable. The results show that labor market slack (unemployment) exerted some downward pressure on wages until 2014, yet more recently helped increase wage growth. In recent years, inflation expectations have also dampened wage growth. Also, immigration appears to

**Contribution to Wage Growth**

Source: IMF staff calculations

*Notes:* Contributions are based on baseline regression (Table 1, column 1). Following Nickel et al. (2019), contributions (including residual) are shown as deviations from their model-implied mean. Compensation per employee growth is thus also shown as deviation from its model-implied mean. Contributions are calculated as in Yellen (2015).

**Contribution to Wage Growth in Alternative Models**

Source: IMF staff calculations.

*Notes:* Contributions are based on regressions reported in Table 1 (columns 1, 2 and 4). Following Nickel et al. (2019), contributions (including residual) are shown as deviations from their model-implied mean. Compensation per employee growth is thus also shown as deviation from its model-implied mean. Contributions are calculated as in Yellen (2015).

provide the largest negative contribution, especially since 2017. Decompositions based on other model specifications—when using the broad unemployment gap or changes in the migration share—show smaller contributions from immigration to wage growth in recent years, but in the same direction.

## F. Conclusions and Policy Recommendations

**21. Immigration has had overall positive effects on growth, employment and income in Malta.** Foreign workers have helped sustain fast economic growth by boosting employment gains and safeguarding Malta’s competitiveness. While important productivity and real wage gains may have been facilitated by the large inflows of foreign workers, and these favorable effects will likely accentuate over the medium to long run, there is some evidence that the immigration flows in recent years have helped contain wage inflation and hence probably also price inflation.

**22. Policies should facilitate healthy long-term adjustment through structural reforms, including investment in human capital and innovation.** Investing in skills, education and innovation may help increase the potential productivity and wage gains from immigration by maximizing the scope for complementarity. Policies should foster innovation through stronger public investment in human capital and research and development (R&D). Ongoing measures aimed at closing skills gaps, notably through training programs, should continue to be supported and refined as needed.

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## Appendix I. Full Set of Regression Results: Short-Term Wage Dynamics

Dependent variable:	Compensation per Employee, 4-quarter log change							Real Compensation per Employee, 4-quarter log change		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable (t-1)	0.446*** (0.071)		0.376*** (0.067)	0.518*** (0.077)	0.454*** (0.066)	0.438*** (0.072)	0.475*** (0.062)	0.513*** (0.102)	0.513*** (0.105)	0.52*** (0.1)
Dependent variable (t-4)	-0.364*** (0.076)	-0.279** (0.111)		-0.392*** (0.07)	-0.361*** (0.073)	-0.368*** (0.075)	-0.26*** (0.096)	-0.36*** (0.078)	-0.372*** (0.076)	-0.358*** (0.078)
Unemployment rate	-0.596** (0.3)	-0.846** (0.39)					-0.634** (0.319)		-0.57** (0.271)	
Unemployment rate (t-2)			-0.788* (0.443)							
Broad Unemployment gap				-0.434* (0.235)						
Job vacancies-to-unemployment ratio					0.009** (0.004)					0.008** (0.003)
Unemployment gap							-0.793* (0.403)		-0.874** (0.393)	
Inflation Expectations: 4-quarter log change of Core CPI, 4-quarter backward-looking moving average	0.38** (0.152)	0.701*** (0.205)	0.261 (0.182)	0.496*** (0.14)	0.378** (0.148)	0.388*** (0.152)	0.5*** (0.16)			
Labor productivity per employee, 4-quarter log change	0.131*** (0.026)	0.191*** (0.05)	0.148*** (0.052)	0.112*** (0.029)	0.145*** (0.032)	0.135*** (0.026)	0.124*** (0.025)	0.129*** (0.023)	0.122*** (0.024)	0.141*** (0.025)
Share of foreign workers in total employment	-0.174*** (0.055)	-0.236*** (0.069)	-0.18*** (0.067)	-0.064*** (0.016)	-0.19*** (0.056)			-0.144*** (0.042)	-0.053** (0.021)	-0.156*** (0.038)
Share of foreign workers in total employment (t-1)							-0.189*** (0.06)			
Share of foreign workers in total employment, 4-quarter change (t-1)								-0.256*** (0.094)		
Constant	0.066*** (0.023)	0.09*** (0.029)	0.073** (0.034)	0.019*** (0.003)	0.019*** (0.004)	0.069*** (0.024)	0.015*** (0.003)	0.046** (0.018)	0.005** (0.002)	0.001 (0.004)
Observations	57	57	57	46	57	57	53	57	57	57
Adj. R-squared	0.726	0.554	0.591	0.8	0.727	0.728	0.717	0.634	0.644	0.634

**Notes:** Statistical significance denoted by \*\*\* for 1%, \*\* for 5%, and \* for 10%. Robust standard errors are shown in parentheses. Estimation sample is 2005Q2-2019Q2; except for columns (4) and (7), where due to data availability the sample starts in 2008Q1 and 2006Q2, respectively. The table omits a dummy variable that takes the value of 1 in 2015Q4 which controls for an outlier.