



AUSTRIA

SELECTED ISSUES

February 2016

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AUSTRIA'S LONG-RUN FISCAL SUSTAINABILITY IN LIGHT OF CURRENT TAX AND EXPENDITURE TRENDS¹

This chapter discusses the sustainability of Austria's public finances over a horizon stretching to 2060, reviewing its tax and expenditure trends in an international comparison. It concludes that to maintain fiscal sustainability over the longer run, Austria needs to implement a strategy based on structural expenditure consolidation. This should focus on making the pension and healthcare systems more efficient and sustainable, given upcoming cost pressures.

A. Introduction

1. **In March 2015, the government announced a significant tax reform.** The key element is the reform of the progressive income tax scale which shall lead to overall tax relief of approximately €5 billion (1½ percent of GDP). More than 6 million taxpayers shall benefit from this reform. Under the new tax schedule, the main change is that lowest income tax rate applicable for annual taxable income of €11,000-18,000 shall decrease from 36.5 to 25 percent.
2. **To maintain fiscal sustainability, such tax relief requires significant counter-financing measures.** As a result, plans to reform the progressive income tax scale have reignited the debate about the level and structure of tax rates, as well as the level of expenditure. This debate is, above all, connected to the fundamental question whether the inevitable consolidation of public finances should be achieved at least in part on the expenditure side, and if so, which types of expenditure can be cut without dampening growth over the medium to long term. There is also a long-standing discussion on whether high tax rates (as observed in Austria and other European countries) reduce growth over the medium run, with adverse effects on the general sustainability of fiscal accounts.
3. **Attention to the structure of Austrian taxes and expenditure is germane because this displays important differences vis-à-vis European peers.** Specifically, while in the majority of EA countries the tax wedge on labor declined in the recent past, it continued to increase in Austria. At the same time, Austria's social transfer payments are high in an international comparison. Even controlling for demographic factors, health and educational spending (in per capita and per student terms, respectively) are among or the highest in OECD countries, but do not result in better outcomes. To this end, the next section examines general government public finances in more detail, highlighting these issues. Section III examines risks to fiscal sustainability from secular trends like ageing and falling productivity. Finally, Section IV discusses alternative fiscal consolidation scenarios. Section V draws policy implications.

¹ Prepared by Nicoletta Batini (nbatini@imf.org) with research assistance from Terri Chen.

B. Austria's Tax and Expenditure Structure in an International Comparison

Taxes

4. **Over the past decades, overall tax ratios have increased considerably in EU and OECD countries.** Measured by the share in total tax revenues, above all social contributions and taxes on consumption have increased, whereas taxes on property and wealth have tended to become less important. Accordingly, tax revenues of general governments have gone up, including since the onset of the global financial crisis, despite the generalized and often severe drop in economic activity over those years.
5. **Taxes influence or distort the decisions of economic agents in various ways, and they have different effects on growth and income distribution.** For the purpose of international comparisons of developed economies, the tax structure (i.e. the composition of the total tax ratio) is thus more relevant than the absolute level of the overall tax ratio.
6. **Austria has a 28 percent higher overall tax ratio than the OECD Advanced Countries' average (ACA).**² This is primarily attributable to the fact that taxes on labor income of payroll employees and of the non-employed (above all pensioners) are substantially above the average. Accordingly, Austria's general government revenues both in GDP and in per capita terms rank among the highest in the OECD. Since 2007, the ratio has trended upwards at a stable rate of around 1 ½ percentage points per year, like in a small sub-group of OECD countries including Italy and the Netherlands, Norway and Switzerland. The increase in this group was primarily driven by an increase in social security contributions that offset the trend decline in corporate income taxes; as well as by a slight upward trend from personal income taxes; while the trend in revenues from taxes on goods and services follows the overall OECD ACA trend and remains relatively stable (Figure 1).
7. **From an international point of view, labor taxes are very high in Austria (the second highest in the EU-28).** This is reflected not only in the large share of labor taxes in total tax revenues, but also in the comparatively high implicit tax rate (ITR) on labor (this was 41 ½ percent of GDP on latest data³ against 36.1 in the EU-28 and 38.5 in the EA).⁴ The above-average revenues

² The overall tax-to-GDP ratio measures the tax burden as the total amount of taxes and compulsory actual social contributions as a percentage of GDP. Based on 2013 data, as per the latest (2014) OECD Revenue Statistics Database, Austria's tax ratio stood at 42.5 percent of GDP vis-à-vis a ratio of for the OECD ACA equal to 33 percent of GDP.

³ See Taxation Trends in the European Union, 2014.

⁴ The implicit tax rate (ITR) on labor should be seen as a summary measure that approximates an average effective tax burden on labor income in the economy. It is defined as the sum of all direct and indirect taxes and employees' and employers' social contributions levied on employed labor income divided by the total compensation of employees working in the economic territory increased by taxes on wage bill and payroll. It is calculated for employed labour only (so excluding the tax burden falling on social transfers, including pensions).

mainly result from high social security contributions and from payroll taxes⁵ (above all contributions to the Family Burdens Equalization Fund and municipal taxes), which implies that—at 49.4 percent—Austria’s tax wedge is the second highest in the OECD, and over 40 percent higher than its ACA.⁶ Besides Austria, in the OECD only Sweden reports a higher share of these payroll-based taxes in percent of GDP.

8. **While the effective tax rate on labor has remained broadly unchanged since 2000 in the OECD ACA, it has increased in Austria.** The share of wage-related taxes in GDP has remained roughly unchanged despite a decline in the labor share of GDP, which can be attributed mainly to a significant rise in revenues from withholding tax on employees (wage tax).

9. **The tax reform adopted in July 2015⁷ will lower the share of labor tax revenue** by around 2 percentage points, taking it closer to the average of comparators, but has no implications for employers’ and employees’ social security contributions (SSC), the sum of which—as a share of GDP—currently outstrips the corresponding share in tax revenues of the OECD ACA by around 5 percentage points.⁸ Recently, cuts to the payroll tax and employers’ social security contributions have been envisaged by the government for 2017-18, but these cuts are modest, denting only a small fraction of the share differential between Austria’s and its peers. Thus this remains clearly an area where a fiscal devaluation—i.e. a revenue-neutral shift from social contributions to consumption taxes—and/or an outright tax reduction offer natural ways to rebalance tax burdens across types of economic transaction, and to support employment and growth.

10. **Austria ranks in the medium range of the OECD Advanced Countries regarding taxation of consumption** (Figure 1). Both the GDP share of consumption-related taxes and the statutory VAT rate, at 20 percent, correspond roughly to the OECD ACA average. In Austria, a relatively large number of products and services are subject to the reduced VAT rates of 10–12 percent (basic foodstuffs, books and newspapers, public transport, renting of residential immovable property,

⁵ There are two payroll taxes which are levied on employers for all private sector employees with a monthly gross wage total of more than €1,095: the contribution to the Family Burden Equalization Tax (4.5 percent) and the Community Tax (3 percent).

⁶ The tax wedge is defined as the ratio between the amount of taxes paid by an average single worker (a single person at 100% of average earnings) without children and the corresponding total labor cost for the employer. The average tax wedge measures the extent to which tax on labor income discourages employment. This indicator is measured in percentage of labor cost.

⁷ Under the new tariff, the lowest income tax rate applicable for annual taxable income of €11,000-18,000 decreases from 36.5 to 25 percent. The current ceiling rate of 50 percent applies to annual taxable income of more than €90,000 (current threshold is €60,000). Finally, there will be a new ceiling rate of 55 percent for annual taxable income of more than €1 million (applicable in 2016-20).

⁸ In Austria health and pension expenditure are paid out of social security contributions without additional compulsory contribution to second pillar pension systems (like in the Netherlands or in Denmark). Moreover, in some OECD countries, notably Switzerland, it is possible to opt out from public health insurance schemes, which may reduce this gap. The gap however remains very large (and considerably larger than this average differential) relative to many individual OECD advanced countries.

and, since 2009, pharmaceuticals).⁹ Regarding specific excise duties, however, Austria ranks somewhat below the OECD ACA both in terms of tax rates and tax revenues.¹⁰

11. **Taxes on capital and wealth are below average.** Revenues from these taxes (that include taxes on business income, taxes on capital and investment income and taxes on property and wealth) are rather low in Austria compared to the OECD ACA and European comparators (Figure 1).¹¹

12. **Within these, revenues from taxes on property and wealth are especially low, in part due to numerous tax exemptions.** Austria lacks an inheritance tax, and wealth brackets are not scaled. Property and rent taxes are practically non-existent.¹² In 2014, these taxes accounted for around 6 percent of revenues in the OECD ACA, but for a mere 2.2 percent in Austria (Figure 1). The main reason for this is that Austria's real property tax is very low by EU standards—in particular recurrent property taxation; among all taxes imposed in Austria, this tax shows the largest difference to the EA average. The introduction of a number of exemptions from wealth taxation (savings accounts, debt instruments, holdings in limited companies below 1 percent of nominal capital) has limited collections further over time.

13. **Taxes on asset transactions, too, are very low,** for example compared with other OECD countries. Since the abolition of the *Wertpapiersteuer* (tax on securities) and the *Börsenumsatzsteuer* (tax on stock transactions), the *Gesellschaftssteuer* (equity duty for corporations) remained the only capital transaction tax imposed in Austria before also being abolished as of January 1st, 2016. At the same time, the tax rate on real property transfer is rather moderate in Austria compared to the other OECD countries.

14. **While the recent reform of the Personal Income Tax goes a long way in reducing Austria's abnormally high tax wedge on labor, the analysis above highlights several additional areas for reform.** Specifically: (i) the tax burden on labor could be lowered further, primarily through cuts in social contributions which remain around 5 percentage points higher than the average of comparators; (ii) the lost revenue should be offset by a combination of expenditure cuts and hikes in consumption (unifying the VAT rate at 20 percent) and capital taxes (including property) that are very low by international standards; (iii) fiscal federalism should be reformed by strengthening the link between revenue and expenditure at the province level, including through meaningful tax autonomy. This will also create powerful incentives to reduce inefficiencies.

⁹ Some of these goods will be taxed at 13 percent starting in 2016. See Austrian Stability Programme 2014–19, April 21, 2015.

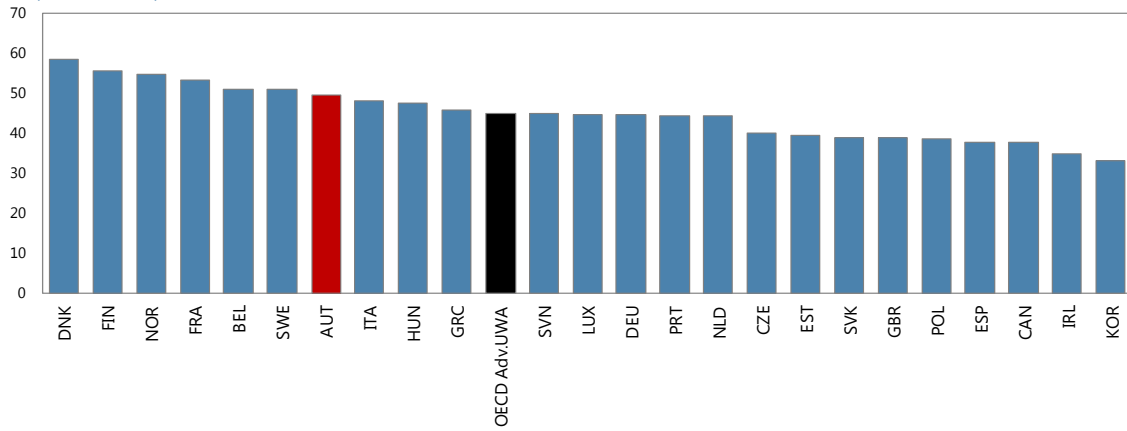
¹⁰ The quantitatively most important excise duties are on mineral oil and tobacco, which have been increased considerably since 2011.

¹¹ Recent changes introduced by the 2016 budget plan and to take effect from January 2016 in the context of the budget's "solidarity package", such as changes in land transfer tax, an increase in the tax rate for the transfer of real estate from 25 to 30 per cent, and an increase of the capital yields tax to 27.5 per cent, are expected to make very small differences in tax structure and revenues.

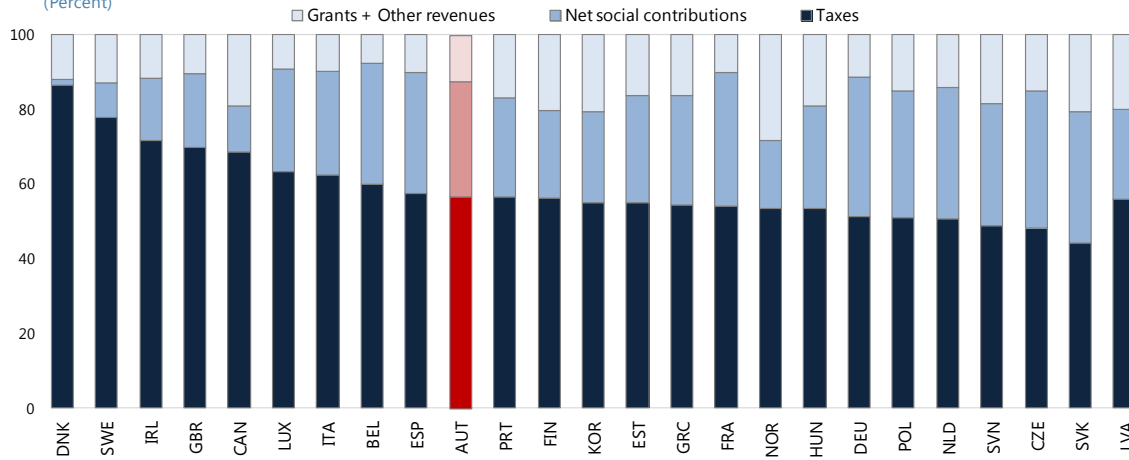
¹² While taxes on property and wealth used to play an important role in Austria they have been replaced by income and consumption taxes over time.

Figure 1. General Government Revenues

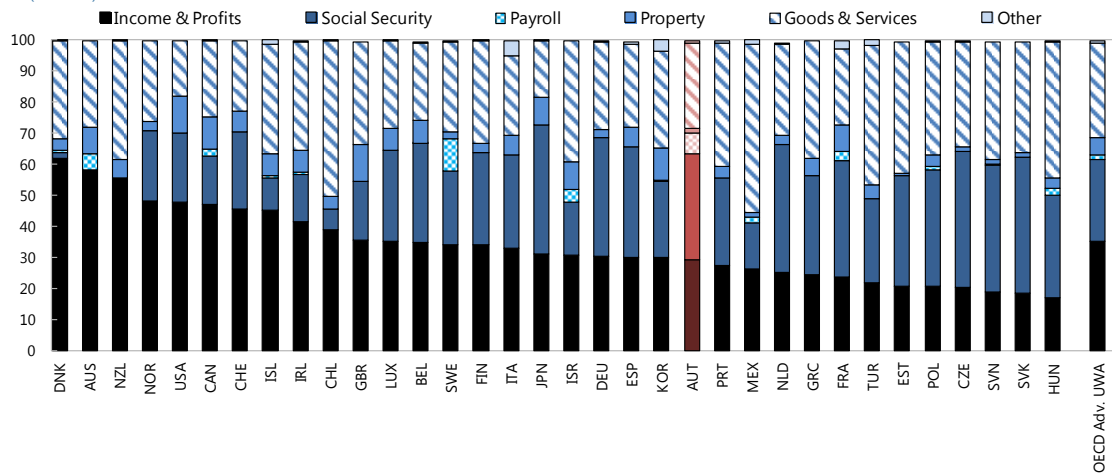
General Government Revenues, 2014
(Percent of GDP)



Structure of General Government Revenues, 2014
(Percent)



Breakdown of Tax Revenues as Percentage of Total Taxation, 2012
(Percent)



Source: Government at a glance 2015, OECD.

Expenditure

15. **Austria sits at the top of OECD countries in terms of the amount of public expenditure as a share of GDP.**¹³ In 2014, public expenditure in Austria represented 52.7 percent of GDP compared to the OECD weighted average of 41.9 percent. In terms of the size of public social spending (measured on a gross basis in percent of 2012 GDP), Austria is the fifth largest spender in the OECD.

16. **The largest share of expenditure falls on social protection** (41.9 percent), which exceeds the OECD's Advanced Countries' average (OECD ACA) by about 15 percent. The share of spending on health is 5 percent higher than the OECD's Advanced Countries' average (OECD ACA), while the share of spending on general public services, economic affairs and recreation, culture and religion is around 10 percent above average. The share spent on education is lower than the OECD ACA but spending on education is considerably higher in per student terms (30 percent higher). These relative differences carry over to a comparison of spending in percent of GDP—given Austria's above-average-sized public expenditure in those terms.

17. **Austria is far from alone in having total public expenditure at this level.** Several countries exceed the OECD ACA, while the totality of euro area countries exceeds the OECD ACA on public spending. Thus, in addition to comparing the composition of Austrian expenditure to the OECD ACA, which also contains some moderate spenders, it is useful to compare Austria's spending pattern with this group of high expenditure countries.¹⁴ To facilitate this comparison, data for these countries in the charts contained in this chapter are highlighted in green, and—in Figure 2—moderate spenders relative to the OECD ACA are highlighted in blue.¹⁵

18. **The composition of Austria's expenditures is broadly in line with the high expenditure countries identified above, and with the OECD ACA in most areas.** The exception is social protection, which falls significantly above the high spenders' average. Other differences are also apparent, notably in housing, defense, recreation, public order, and education (all lower), and health, general public services adjusted for interest expenditure and economic affairs (all higher).

19. **Most social protection spending goes toward old-age pensions** owing to Austria's generous welfare system.

20. **The high share of spending on old-age pensions is not fully explainable in terms of demographics.** Comparing old-age pension spending to dependency ratios across the OECD,

¹³ Based on the OECD's most recent Government at a Glance (2015) that, in turn, uses latest available data, which are largely 2014 data. Care must be taken in comparing public expenditure across countries. In Austria, income transfers are usually taxable, while income transfers in some OECD countries are not taxable. This difference does not affect the conclusions of this paper.

¹⁴ We define "high expenditure" countries as countries with public spending in percent of GDP above the OECD32 average (including, notably, countries like France, Germany, Iceland, Italy and Sweden). By contrast we define "moderate expenditure" countries with public spending-to-GDP below the OECD32 average (including, notably, Australia, Canada, New Zealand, and the United States).

¹⁵ All other countries are indicated in dark blue. The OECD ACA is labeled in black. Markers for Austria are red.

Austria sits below the trend line, implying that the pension system is more generous than in countries which much more rapid ageing dynamics (for example, Italy).

21. **The difference with spending in peer countries is ascribable to two key factors.** First the effective retirement age remains considerably below the statutory retirement age, while the statutory retirement age of women is well below that of men.

22. **The low effective retirement age is largely due to the use of early retirement and invalidity pensions, which negatively affects long-term sustainability of the pension system.**

Women's low statutory retirement age, besides putting pressure on fiscal sustainability in the medium-term, also results in low pension entitlements, partially contributing to a large gender pension gap which is widening on latest data from 35 percent in 2008 to 42 percent.¹⁶

23. **Second, Austria's replacement rates are much higher than the OECD ACA average.**¹⁷

Gross pension replacement rates of Austrians (for the median earner) are 31 percent higher than the OECD average.

24. **Measures to contain spending on old-age pensions involve primarily increasing the effective retirement age.** This can be achieved by restricting early retirement by bringing forward the harmonization of the statutory retirement age for men and women (planned for 2024-2033, see Annex I); and by indexing the retirement age to longevity while ensuring that benefits are actuarially fair, as done now in many advanced countries. Increasing the statutory retirement age would likely translate into higher effective retirement age as well, in that a higher statutory age for retirement would automatically boost the disincentives to retire by increasing the wedge between current effective retirement age and the time in which pension benefits can first be drawn. These recommendations are in line with recommendations by the Council of the EU for the 2014–15 period.

25. **Saving obtained through these measures is potentially large.** Based on authorities' simulations and the EC's Ageing Report 2015, simply indexing the statutory retirement age to longevity would lower total public pension expenditures by 1 percentage point by 2060. Rapid implementation of the steps taken in 2013 and 2014 to restrict early retirement would buy 0.2 percentage points of GDP in pension saving by 2020. Additional measures to further penalize early retirement and bring forward the steps to align men and women statutory retirement age can bear additional benefits after 2020 (as the envisaged grandfathering of women 55 and older would not allow saving before 2020).

26. **Public health expenditure as a share of GDP is about 1/2 percentage point higher in GDP terms than the OECD ACA.** This trend tracks the discrepancy in total health expenditure, but hides a higher per capita expenditure on pharmaceuticals (approximately 15 percent higher than the

¹⁶ OECD, "Pensions at a Glance 2014", based on 2012 data.

¹⁷ The gross replacement rate is defined as gross pension entitlement divided by gross pre-retirement earnings. Based on the OECD's "Pension at a Glance 2013". To be updated with "Pension at a Glance 2015" (forthcoming).

OECD ACA) and a number of system inefficiencies. In addition, Austria's elderly population—above average in numbers in the OECD relative to total population—provides a demographic burden, implying higher-than-average health expenditure. Adjusting expenditure as a share of GDP for the age-spending-profile-weighted-demographic factors, following Hagist and Kotlikoff (2005)¹⁸, decreases Austria's health spending per capita. The total amount of health expenditure also needs to account for private funding, which is relatively low, but still non-zero. On this demographically-adjusted measure of health expenditure, Austria moves from amongst the top 8 spenders closer, yet still above, to the OECD ACA average when expressed in percent of GDP (Figure 3).¹⁹

27. Even if Austria's total spending on health is broadly similar to the rest of the OECD once demographic factors are accounted for, concerns remain over the quality and level of public services.²⁰

28. One way to assess this is to compare welfare outcomes to the rest of the OECD, and compare that to the amount of spending to gain a sense of effectiveness. To account for variances in GDP per capita levels across the OECD, the level of spending is stated in US\$ per capita on a PPP basis, rather than as a share of GDP as described above. Where relevant—such as in health and education—these spending measures are adjusted for demographic factors and for levels of private expenditure. Points to the north-west in the scatter plot charts (Figure 3) indicate a country with more effective spending. Of course, how effective and efficient public spending is depends on many factors (like population characteristics, past expenditure, income and education levels and immigration rates) which this graphic presentation does not control for. Furthermore, the direction of causality is not always clear—high levels of spending could be a response to poor initial outcomes. Finally, social outcomes of public spending are the result of several, if not many years of public spending. Therefore, ideally, they should be evaluated in the context of longer relative spending dynamics, not just of spending differences at one point in time.

29. Austria's health outcomes are good but slightly inferior to those of high spenders. While Austria's infant mortality rate and life expectancy at birth and at 65 are broadly in line with the OECD ACA (Figure 3), it underperforms other high and moderate expenditure countries both in terms of infant mortality and life expectancy.

30. Importantly, Austria's health expenditures appear not to be highly effective, lying away from the efficient frontier of the OECD. Part of this is likely due to Austria's non-medical

¹⁸ Laurence Kotlikoff and Christian Hagist, "Who's Going Broke?" National Bureau of Economic Research, Working Paper No. 11833, December 2005, p. 29.

¹⁹ Note that data on public health spending is not always comparable due to the different classification in some countries of spending on specific items (e.g. spending on hospitals can on occasion be excluded by public spending). This is why Figure 3 compares the *sum* of private and public healthcare spending, as opposed to public spending alone.

²⁰ Based on data contained in the OECD's "Health at a Glance 2015".

determinants of health,²¹ but it also reflects the structure of health provision which is based, on one side, on public basic insurance coverage with little private insurance beyond the basic coverage, and on the other side on an extensive private provision of care, with wide patient choice among providers and fairly large incentives to produce high volumes of services. It also reflects the fact that overall care is heavily skewed to hospital-based care, signaling potential cost efficiency gains from shifting care more towards outpatient services. Limited information on quality and prices to stimulate competition add to the causes of spending inefficiencies.

31. **This conclusion is supported by data on Austria’s health outputs, which are more directly related to spending inputs than the outcomes.** Austria also has an above average doctor-to-population ratio (with a remuneration that is one of the highest in relation to the average wage), indicating a highly human-capital-intensive labor input, although the nurse-to-population ratio is below average. Capital-intensive inputs, measured by outputs such as CT and MRI scanners are also relatively high. On the other hand, reflecting the skew to hospital-based care, the number of hospital beds in proportion of the population is extremely high in relative terms, even if the beds’ utilization rates (measured restrictively by the average length of stay in hospitals for acute care) is close to the OECD average, indicating—in that case—a relatively efficient use of capital inputs.²² Avoidable hospital admissions (for asthma, COPD and diabetes) are among the highest in the OECD. Finally, the quality of care is lightly below average, as indicated by the above average hospital mortality rate of myocardial infarction (AMI).²³

32. **Aligning spending to the OECD ACA could save 25 percent out of public health spending without affecting outcomes.** And if Austria’s health system were operating at the frontier level of efficiency, health spending could be reduced by an additional 40 percent.²⁴ Based on the above analysis, a number of avenues are available to achieve more efficiency and, thus, make spending on health more cost effective. These include: (i) shifting more care than what currently targeted from hospitals to outpatient services;²⁵ (ii) aligning doctor numbers and their remunerations with the OECD average, and (iii) cutting down the number of hospital beds (on latest

²¹ While Austrian 11- and 15-year old children top the OECD ranking in terms of daily moderate to vigorous physical activity, Austria displays the highest rate of smoking among 15-years old of the OECD (1 in 3 15-year old children smoke). Adult smoking is above the OECD average as well, and adult consumption of alcohol is one of the highest in the OECD.

²² The average length of stay in hospitals for acute care is often considered a measure of efficiency. All other things being equal, a shorter stay will reduce the cost per discharge and shift care from inpatient to less expensive post-acute settings. However, shorter stays tend to be more service-intensive and costly per day. Too short a stay could even signal a potential for more adverse health outcomes.

²³ AMI case-fatality rate is a good measure of acute care quality because it reflects the processes of care for AMI, such as effective medical interventions including thrombolysis, early treatment with aspirin and beta-blockers, and coordinated and timely transport of patients. AMI case fatality rates have been used for hospital benchmarking in several countries including Canada, Denmark, the United Kingdom and the United States.

²⁴ This analysis follows the methodology in OECD’s 2011 Austria report. It is an upper bound of potential savings because it abstracts from differences in non-medical factors between countries, which can have non-negligible impact on the effectiveness of health systems for given spending levels.

²⁵ The 1 percent targeted percentage of patients for whom outpatient multidisciplinary primary care settings should be available by end of 2016 is not ambitious enough and could be increased considerably.

data 60 percent above the OECD average per 1,000 residents) by ensuring that care is provided in the most clinically appropriate and cost-effective way; and (iv) using more primary care than hospital-based care. Important additional efficiency gains can be pursued by keeping up efforts adopted in the recent health reform to focus on health rehabilitation, preventive care and independent living (see Annex II).

33. **Accordingly, long-term care for the elderly and the chronically ill can be improved.** The system relies on cash benefits and publicly-organized care services. However, cash benefits provision is not means-tested, while the amount of the benefits is assigned in a relatively arbitrary fashion that could be made more homogenous on the basis of a series of parameters. This could lead to savings and to a more equitable system based on a more comparable assessment of the care requirements of the person in need of assistance.

34. **As for health spending, savings in long-term care are possible.** These can be attained by mean-testing cash benefits and streamlining their administration, extending Long-Term Care Fund up to 2018, homogenizing the quality and the availability of public formal care services differ across the *Länder*.

35. **The level of efficiency of spending in both health and long-term care would be greatly improved also by adjusting current cost-sharing among administrations** to encourage better use of more effective and cost-effective services.

36. **Important additional efficiency gains can be pursued by keeping up efforts adopted in the recent health reform to focus** on health rehabilitation, preventive care and independent living (see Annex II).

37. **Spending on education is slightly below the OECD's ACA in terms of GDP, but it is higher in per student terms.** Austrian annual expenditure per student in US\$ terms Primary to tertiary education (including R&S) is over 30 percent above the OECD ACA, and it is significantly higher than in countries that achieve much higher results. At the same time, Austrian children spend considerably less cumulative time in school during compulsory education (across ages 7–14) than the OECD average. On the other hand, class sizes in Austria are smaller than the OECD average. These results call into question the effectiveness of education spending in Austria.

38. **Crucially, Austria's education outcomes are disappointing.** While average PISA scores are not below the OECD ACA, Austria's attendance in early childhood education remains well below the OECD looking at enrollment rates for 3-year olds. At the same time, tertiary education attainments, although rising, are below the OECD's ACA. Importantly, upward intergenerational mobility in education is one of the lowest in the OECD (on latest figures, only 1/5 of young adults in Austria manages to attain a higher level of education than their parents).

39. **Aligning spending per student to the OECD ACA would save 1–2 percentage points of GDP,** although part of these savings should be used to improve outcomes in areas of relative underperformance like in early childhood and tertiary education, and to improve equity in education.

40. **Another two areas stand out as potential targets for near-term fiscal saving:** general public services (that deviates from the OECD WA by 0.4 percentage points of GDP)²⁶ and economic affairs (that deviates from the OECD WA by 1.6 percentage points of GDP).²⁷ While some of this extra spending is related to costs of the recent bank support packages, a review of other expenditure sub-items could identify areas for viable savings.

41. **Spending on general public services is larger than the OECD's ACA.** In part this is ascribable to efficiency losses in crucial sectors of public administration, reflecting the complexity of the current organizational relations between different levels of government. Austria remains one of the countries with the lowest share of subnational own taxes in percentage of GDP, in particular regarding the tax-raising powers of subnational governments. Despite this low level of tax autonomy, subnational levels of government have several spending and administrative responsibilities, which in many cases are shared between levels of government and are financed mainly by intragovernmental transfers. The high level of complexity and the misalignment between revenue and spending responsibilities are not conducive to comprehensive policy reforms. It leads to efficiency losses in crucial public administration functions, including healthcare, education systems and spending on social transfers. Furthermore, as a result of complex interactions between national and sub-national policy strategies key policy areas (e.g. innovation and research policy) suffer from coordination costs and efficiency losses. This may prevent the exploitation of cross-regional synergies.

42. **Despite measures to reduce them, subsidies in specific economic areas remain elevated.** These include subsidies and tax breaks in the transport sector and fossil-fuel energy-intensive industries. In addition, there is often a duplication of subsidies at the federal and state level.

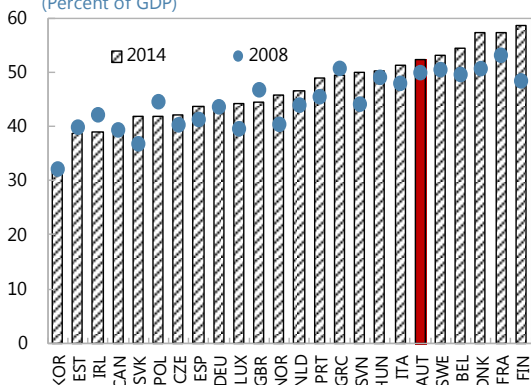
43. **The upper, indicative envelope of saving of combined reforms in all these areas of spending is promising.** Assuming that it embraced promptly a series of structural reforms to improve the cost effectiveness of its public service provision, aligning it with best practices in the OECD's Advanced Countries, Austria could enjoy savings of up to 4 percentage points of GDP in total public expenditure over the medium run.

²⁶ This includes spending on: executive and legislative organs, financial and fiscal affairs, external affairs, foreign economic aid, general services, basic research, R&D general public services, general public services, public debt transactions, and transfers of a general character between different levels of government. It is to be noted that in 2013, GFS spending on "economic affairs" included revenue from a spectrum auction of 0.6 percent of GDP (negative expenditure) and capital transfers to Hypo Alpe Adria of about 0.5 percent of GDP.

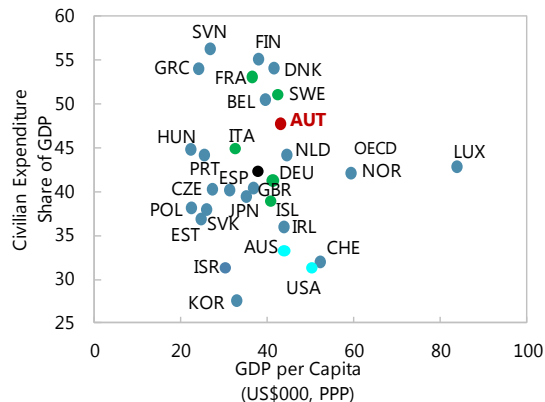
²⁷ This includes spending on: general economic, commercial and labor affairs, agriculture, forestry, fishing and hunting, fuel and energy, mining, manufacturing and construction, transport, communication, other industries, R&D.

Figure 2. Size and Composition of Public Expenditure

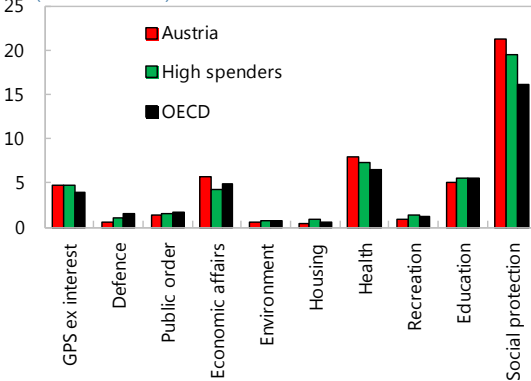
Public Expenditure
(Percent of GDP)



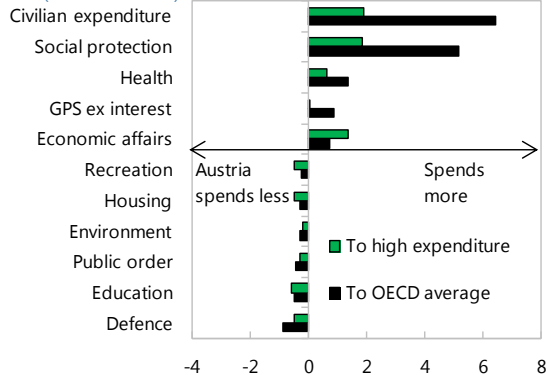
Public Expenditure vs. GDP per Capita, 2013



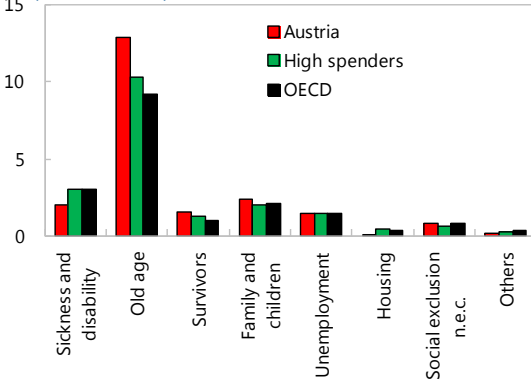
Public Expenditure by Function, 2013
(Percent of GDP)



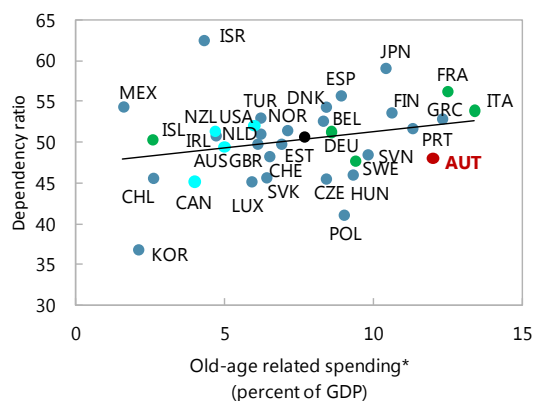
Variation of Total Expenditure by Function, 2013 1/
(Percent of GDP)



Decomposition of Social Protection Expenditure, 2013
(Percent of GDP)



Age Dependency and Age Related Spending, 2012 2/



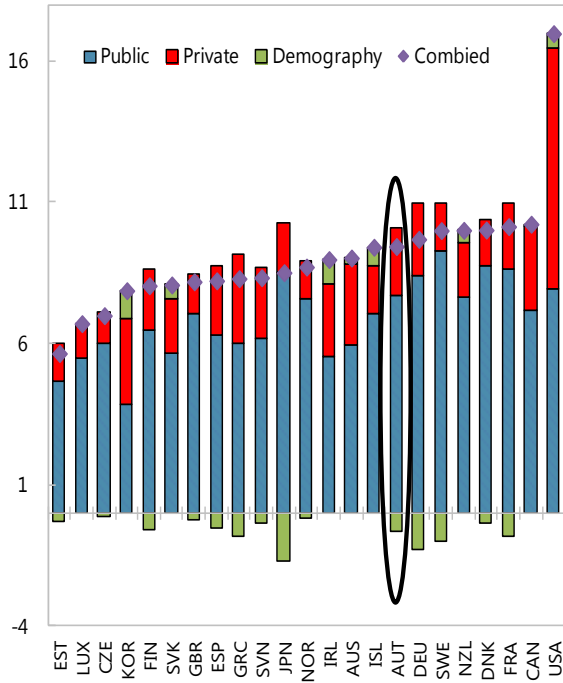
Sources: Eurostat, OECD and Fund staff calculations.

1/ Excludes defense spending.

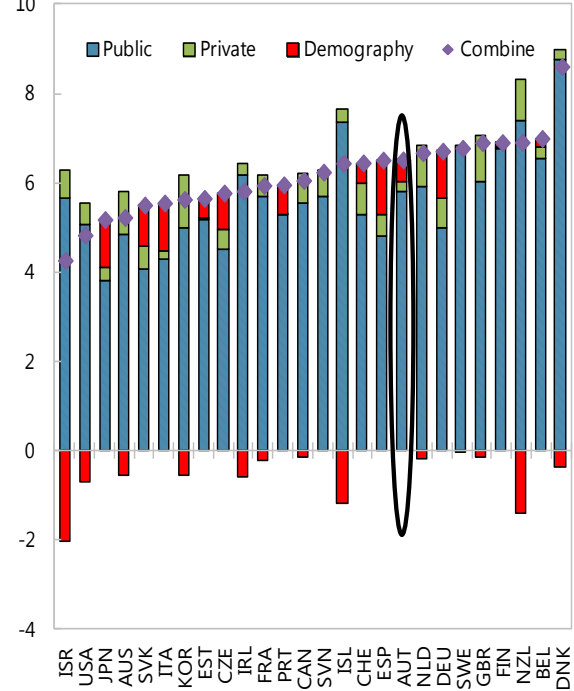
2/ 2011 values for old-age related spending.

Figure 3. Public and Private Spending in Key Functional Areas

OECD - Total Health Spending Adjusted for Demographics, 2013
(Percent of GDP)

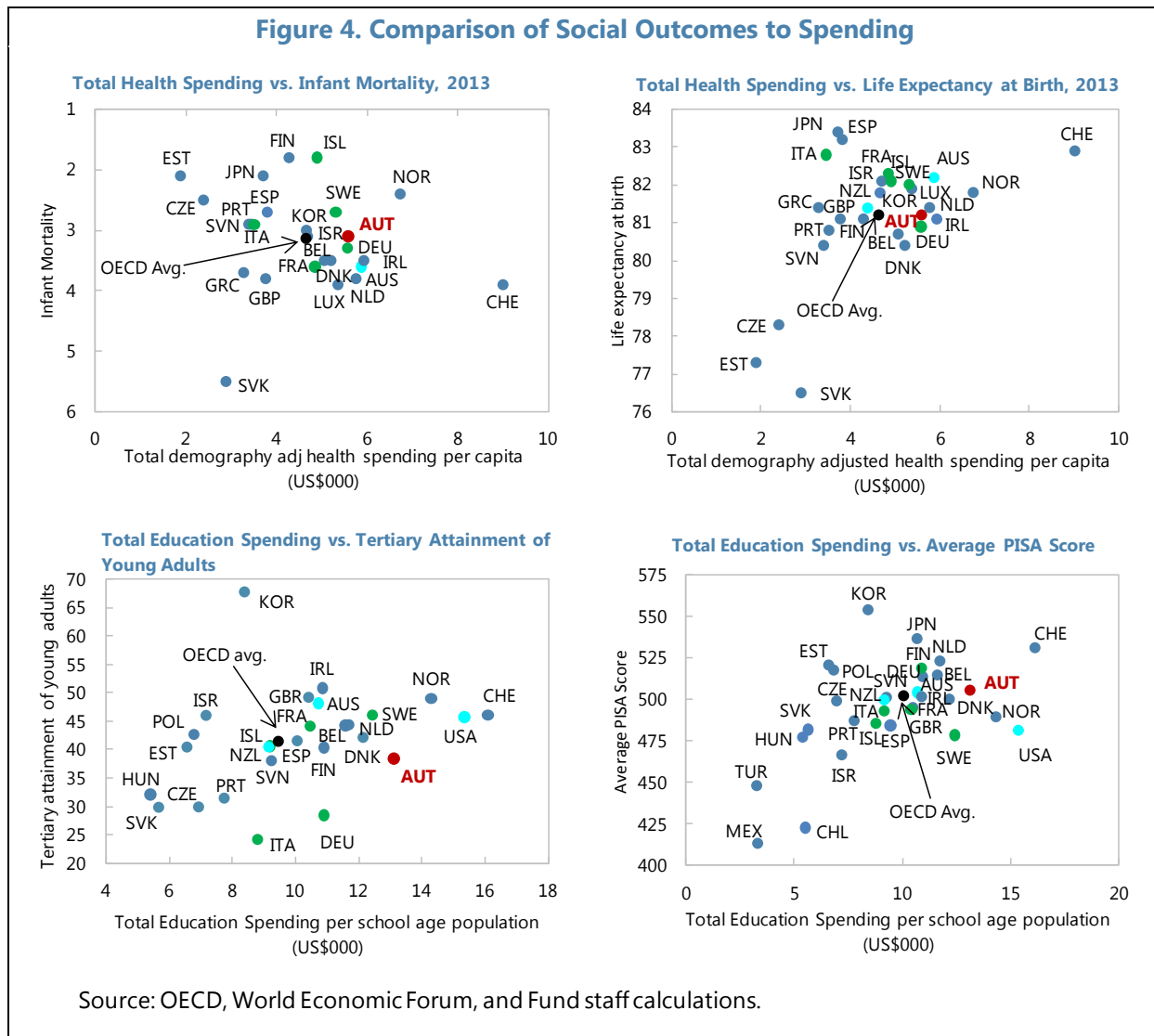


OECD - Total Education Spending Adjusted for Demographics, 2011
(Percent of GDP)



Sources: OECD and Fund staff calculations.

Figure 4. Comparison of Social Outcomes to Spending



C. Risks to Fiscal Sustainability

44. **Austria’s public finances are not at a particular risk in the short term.** With gross general government public debt below both the EU and EA averages, and a structural deficit below ½ percent of GDP in 2014-15, Austria does not face a risk of fiscal stress in the short run—absent large unanticipated shocks.

45. **However, ageing poses a serious medium-term fiscal risk.** Despite the low-risk short-term environment, the country is fiscally vulnerable in the medium and long run due to the costs implied by its ageing population, which are compounded by Austria’s generous pension replacement ratios, and relatively low effective retirement ages of both men and women.

46. **Longer lives will cause a doubling old-age dependency ratio by 2060.** Eurostat's projects that by 2060 the Austrian total population will increase by 1 million to 9.5 million.²⁸ The demographic transition will provide Austrians with longer life expectancy (with gains of 5–6 years, depending on gender, by 2060) almost doubling the old-age dependency ratio that is hence expected to go from 27 to 51 percent in 2060.

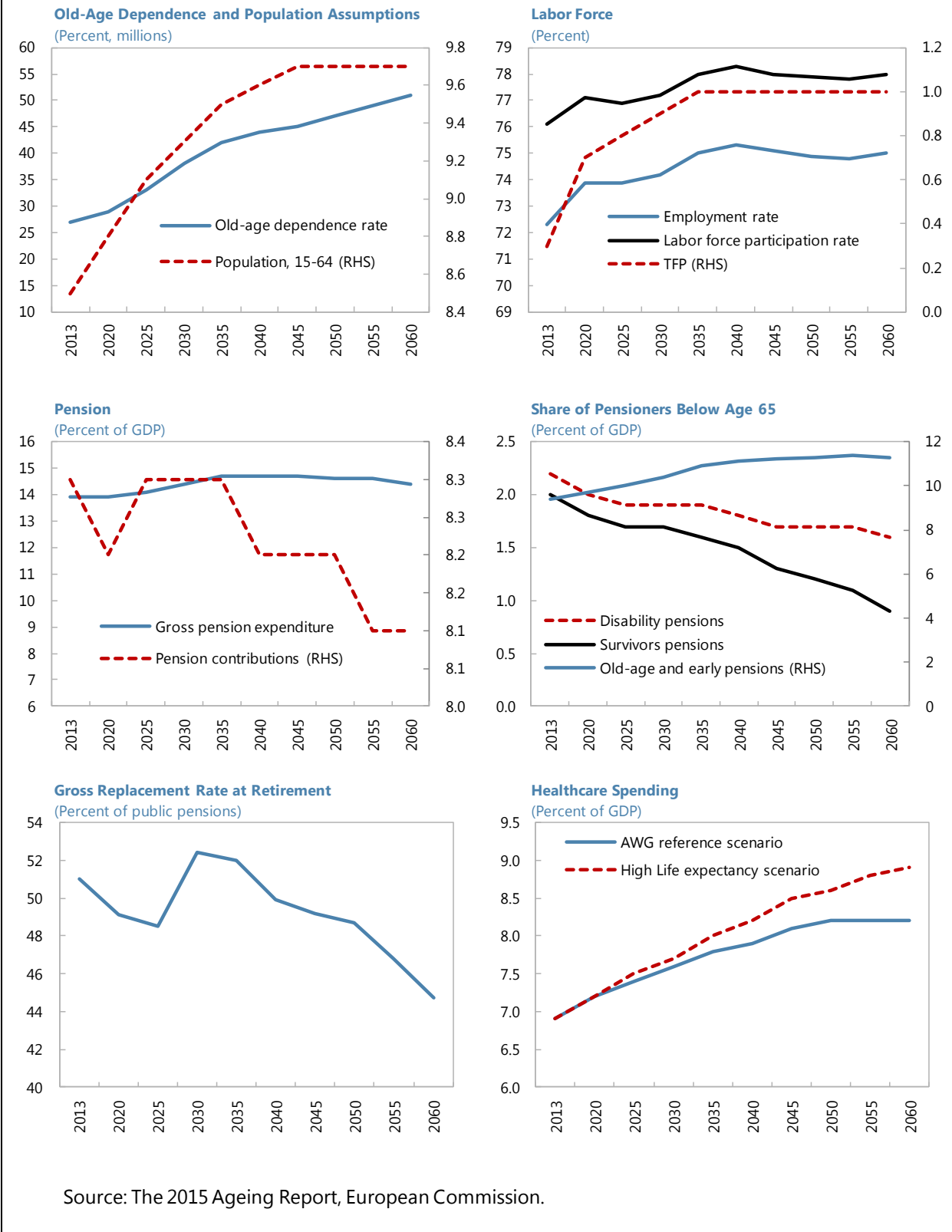
47. **The ageing of the population will move an increasing share of Austrians out of the prime working-age and into their retirement years** resulting in slower growth of the labor force. The peak in working age population (20–64) is expected to occur in 2021 (5.4 million) and to decline thereafter to around 5 million by 2060.

48. **The implications of demographic change for public expenditures and growth under current policy are potentially stark.** Based on the authorities' projections, the EC's 2015 Ageing Report projects gross public pension expenditures to rise by around 0.8 percentage points between 2014 to 2037 (with the impact from the baby-boom generation peaking in 2032), falling again by 1/3 of a percentage point by 2060. These projections are considerably lower (-1.3 percentage points of GDP) than those included in the past Ageing Report (2012) due to a better demographic and macroeconomic outlook, and the adoption of a pension reform passed in 2014, which is estimated to have lowered future pressures on public pension expenditures by 0.6 percentage points of GDP.

49. **Spending on healthcare and long-term care is also expected to have a significant impact on total spending going forward,** due to inflation in health services and the compounded effect of ageing and the escalation of health costs in the last years of life. Under the EC's 2015 Ageing Report's AWG scenario, total (age and non-age-related) spending on health and long-term care in the public sector will increase by 2.6 percentage points in GDP terms by 2060 (1.3 in health- and 1.3 in long-term care), but could rise by more, with health expenditure increasing by up to 3 percentage points in GDP terms over the same horizon under alternative scenarios.

²⁸ Eurostat's population projection (EUROPOP2013) was published on March 28, 2014. The projections are updated every three years.

Figure 5. Ageing Trends and Age-Related Spending



Source: The 2015 Ageing Report, European Commission.

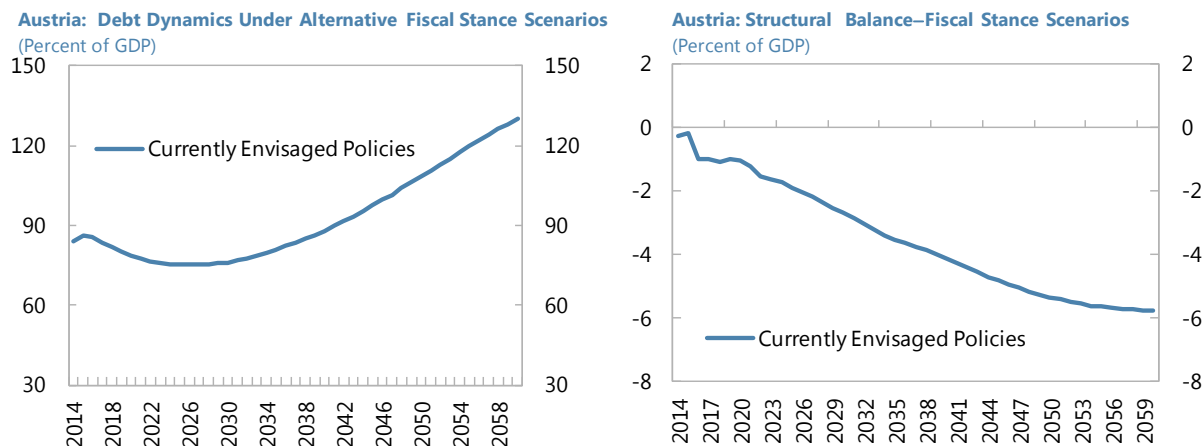
50. **Debt simulations assuming no policy change show ever rising debt.** Assuming a profile for the structural deficit as in the staff fiscal outlook for 2016–2020 indicate that the debt-to-GDP ratio will not converge to 60 percent at any point over the longer term, but will rather start to rise exponentially when age-related and other health spending (including long-term care spending) peak in the mid-2030s. Under this scenario the debt ratio would reach approximately 130 percent by the end of the horizon.

51. **Debt dynamics are subject to a number of risks.** For example, based on the EC’s 2012 Fiscal Sustainability Report, assuming that life expectancy is two years longer would almost double spending on pensions in gross terms by 2060—a result reaffirmed by staff simulations using a multigenerational model that relates pension expenditure to GDP to benefit generosity (average pension to GDP per worker), coverage (number of pensioners to the population 65 and older), the inverse of the labor force participation rate (workers to population ages 15–64), and aging, represented by the old-age dependency ratio (population 65 and older to population 15–64). Likewise, a 25-basis-point lower productivity growth would increase the pensions’ burden in GDP terms by 120 percent; while a 1 percentage point bleaker path for interest rates owed on rolled-over short- and long-term debt from 2016 could add 5–6 percentage points to the debt-to-GDP ratio by 2060.

52. **Austria needs a bold fiscal strategy to manage the risks** posed by the demographic transition to public finances and to undo the erosion of fiscal buffers associated with weak growth and the cost of bank support packages.

53. **The strategy should aim at bringing debt close but below pre-crisis levels.** While investors have not yet shun away from purchasing Austrian government paper, and the interest rate on long term government securities has remained favorable, returning debt to safer levels by not later than 2030 would buttress credibility that public finances are sustainable and avoid further downgrades, which could drive up the cost of debt servicing.

54. **To this end, targets for the structural fiscal balance need to be set in the near to medium-term so that the debt-to-GDP ratio is put firmly on a downward path** and returns to 60 percent in ten years, well before 2030.



Sources: Austrian authorities and IMF staff calculations and projections.

1/ The trajectory "Current Envisaged Policies" shows debt dynamics in 2014-2060 under the staff's baseline projections and unchanged policies after 2020. From the mid-2020s, debt rises faster than nominal GDP, driven by ageing and healthcare and LTC costs, and snowballing interest expenditure.

D. Concluding Remarks and Policy Recommendations

55. **Overall, Austria's fiscal framework has been conducive to enhancing budgetary discipline and avoiding pro-cyclical policies.** However, it has not enabled it to achieve a balanced budget over the business cycle and risks to medium and long-term fiscal sustainability remain.
56. **In addition, the global financial crisis has left tangible legacies**—following extensive support packages of the public sector to the banks—on the level of general government debt.
57. **A fiscal strategy to return debt to pre-crisis levels would buttress Austria's macroeconomic and financial stability,** and pave the way to entrenching fiscal sustainability ahead of the demographic transition which will accelerate beginning from the mid-2020s.
58. **To this end, this chapter has examined tax and expenditure trends in an international comparison, and conducted debt simulations to assess fiscal sustainability over the longer term under these trends.** The simulations point to sizeable long-term risks. A faster consolidation than what is planned by the government would restore resilience sooner, promising several benefits. The bulk of the adjustment should be on expenditure.
59. **Analysis in this chapter reveals that Austria's public expenditure is particularly high in the area of pensions, health (in per capita terms) and education (in per student terms).** This imposes the need of a high level of taxation, which is skewed disproportionately onto labor income.

60. **While Austria's public expenditure by function of government is above peers in these areas, its social outcomes are at, or below the average of comparators.** This calls for better targeted health and education expenditure considering that there are a number of more moderate expenditure countries which succeed in delivering higher quality social outcomes as well as similar expenditure countries which achieve higher targets with similar amounts of spending. Failure to tackle these problems would lead fiscal sustainability problems given fiscal cost pressures from Austria's demographic transition as well as projected increases in non-age related spending.

61. **Policy actions taken are moving in the direction of containing public spending,** with the introduction in 2013 and 2014 of steps to restrict early retirement, the Austrian Health System Reform Plan (2013-2016) imposing mandatory healthcare spending ceilings for all levels of government, plus steps to improve the consistency of responsibilities between central and sub-national governments, initiatives to raise labor supply via reductions in the income tax wedge, and, in the education sector, improvements in the evaluation framework for both students and staff. (See Annexes I and II).

62. **However, with its elderly population adding a sizeable and increasing demographic cost, containing public spending while ensuring that it reaches the efficiency frontier requires bolder action.** The chapter suggests a number of areas for potential saving, identifying an upper envelope for cuts. This is large enough to be worth exploring, in that—if achieved—savings this large could help not only to make significant dents to the level of outstanding public debt, but also to shave labor taxes further from their current relatively high level. This would support labor force participation, employment and potential growth.

63. **Exploring additional, specific ways to contain spending while raising outcomes is beyond the scope of this chapter.** However, one building block for such exploration could be a comprehensive spending review to identify areas of where public resources could be used more effectively and efficiently. Likewise, raising labor supply, especially of older workers and increasing productivity levels of the employed could reduce spending considerably without affecting its efficiency. To increase the effectiveness of spending, Austria should also look to lessons from those moderate expenditure countries, particularly in the design of policies to increase the degree of targeting and conditionality to provide more bang for the social transfer euro especially on labor market-related benefits, including disability.

Annex I. Pension System and Impact of Recent Reforms

1. **The most important source for the provision of retirement income in Austria is the so-called "statutory pension system"** (*Gesetzliche Pensionsversicherung*). It provides: old-age pensions, surviving dependants' pensions, as well as disability pensions.
2. **The Austrian statutory pension system is a defined-benefit public scheme with an income-tested top-up for low-income pensioners.** There is a coverage condition for participation: 180 months (15 years) in the last 30 years or 300 months (25 years) during the full lifetime. Alternatively, 180 months of contributions actually paid (as opposed to coverage alone) are sufficient. Insured months are either contributory months (from employment or voluntary contributions) or supplementary (i.e. credited months, known as *Ersatzzeiten*), for which only limited contributions are paid. With the pension reform of 2005, the number of contribution years in gainful employment required for old-age-pension has been reduced from 15 to 7 years. The remaining minimum insurance period can be reached, e.g., by child raising periods.
3. **Normal pension age is 65 for men. For women, retirement age is currently 60 years, but will be increased by 0.5 year-steps per year to 65 between 2024 and 2033**, thanks to recent pension reforms taken by the government in 2013 and 2014 to restrict conditions for early retirement (early retirement is possible on the grounds of: (i) disability; (ii) long-term insurance contributions; (iii) physically hard work combined with long-term insurance periods; and (iv) the so called corridor-pension at the age of 62 for both sexes, when having 37.5 or more insurance years). Following these reforms and previous reforms since 2010, the average retirement age for old-age pensions has increased by about ½ years for men and women over 2010-15. The increase in the average retirement age for invalidity pensions was much stronger over this period (+2.2 years for men and +2.8 years for women) but to a large extent driven by special factors. As a result, the average retirement age for men has now reached 60.8 years while that for women 58.6 years.
4. **The Austrian statutory pension system does not provide for an unconditional minimum pension for people beyond a certain age.** However, the so-called "means-tested equalization supplement" (*Ausgleichszulage*) may—on a partly means-tested basis—apply to low-income pensioners.
5. **The second pillar system was modified somewhat by the introduction of the new severance pay scheme in 2003**, according to which employers must deposit 1½ percent of the gross salary to a staff provision fund set up for this purpose. Employees can withdraw their savings in case of termination of a work contract (if specific preconditions are fulfilled) or keep them until retirement age.
6. **Amendments to the Pension Fund Act that significantly change the second-pillar pension system** took effect since January, 2013. They offered an option for employees to decide in favor of a minimum guaranteed pension and give added individual choice, in

shaping future pension provisions. More specifically, the amendments allow defined contribution (DC) plan members to choose a new model that secures a minimum guaranteed pension; and to switch between the two funding vehicles for DC plans in Austria — the *Pensionskasse* and the *Betriebliche Kollektivversicherung* (which has a guaranteed discount rate) and increasing disclosure requirements to enhance transparency.

7. **Summary of very recent reforms.** Table 2, drawing on Austria’s 2015 National Reform Program, highlights the most important pension reforms undertaken in recent years.

New pension account	A single pension account system for all persons born after 1 January 1955 (in effect since 1 January 2014)
New disability pension	Disability pensions will only be granted in cases of permanent disability; this provision has been in effect since 1 January 2014 and applies to all persons under 50 years of age.
Special retirement scheme for long-time insured manual labourers (“Hacklerregelung”)	Since 1 January 2014, stricter access conditions for early retirement have been in effect for long-time insured manual workers. The minimum age and number of contribution months has been raised (men: 62 years, 540 contribution months/women: 57 years, with a gradual increase to 62 years; 504 contribution months with a gradual increase to 540 contribution months) and the prerequisites for claiming these pensions are now more rigid (no purchase of insurance periods, school and university years no longer credited).
Corridor pensions	Since 1 January 2013, the required number of insurance years has been increased gradually, from 37.5 in 2012 towards the target of 40 years in 2017.
Labor market package for older workers	Adopted by the Austrian National Council on 27 March 2014; entered into force on 1 July 2014. Employment promotion in order to integrate older workers into the labor market.
Fit2work	The objectives of this prevention program are to provide information on healthy working environments and to provide support in the case of health problems at the workplace. Gradual introduction of advising for individuals and businesses from 2011 onward; nationwide implementation now completed.

Annex II. Healthcare System and Impact of Recent Reforms

1. **Austria has a two-tier health care system in which virtually all individuals receive publicly funded care**, but they also have the option to purchase supplementary private health insurance. Some individuals – very limited in number – choose to completely pay for their care privately. Membership of a health insurance scheme is determined by place of residence and/or occupation, so there is no competition between funds. Social insurance contributions are determined at federal level by parliament. In recent years, they have been fixed at 7.65 percent of income for most of the population, but individuals earning more than a certain threshold do not have to pay contributions for income exceeding this threshold. The annual threshold is the same for everybody: in 2016 this has been set at €68,040. The ensuing monthly threshold is 1/6 higher for self-employed as employees typically get 14 salaries. Hence, in 2016, the threshold for employees (earning 14 salaries per year) is €4,860, and for self-employed (earning 12 salaries per year) it is €5,670.

2. **The system is characterized by free choice of providers and unrestricted access to all care levels** (general practitioners, specialist physicians and hospitals), implying a level of population satisfaction that is considerably above EU average. Income-related inequality in health has increased since 2005, although it is still relatively low compared to other countries.

3. **The health-care system is run by self-governing stakeholders, but is meant to ensure equal provision of services at the federal level.** The system of delegation from national to sub-national governments allows adjusting planning and governance to local norms and preferences. However, it also implies fragmented responsibilities that have often led to cost inefficiencies. For this reason, from 2013, the government has strived to better integrate the planning, governance and financing of the health-care system at the federal and regional level.

4. **Several challenges remain.** An OECD study (OECD, 2010b) comparing Austria to peers indicates asymmetric decentralization, relatively weak regulation and little budget control with limited “gate-keeping” as the primary system deficiencies.

5. **Spending on preventive medicine, at 2 percent of total health spending, is significantly lower than the OECD ACA** (3 percent), and also shows a below-average rate of growth. While the recently introduced “framework health goals” put more emphasis on health promotion and prevention, the reforms still lack concrete measures, the assignment of clear responsibilities for implementation and the mobilization of sufficient funds.

6. **Between 2005 and 2012 the government has strived to lessen the main weaknesses of the healthcare systems by introducing reforms in the following key areas:**

- *Coordination and governance.* A Federal Health Agency was established in 2005 to include all stakeholders in the health-care system in the development of the Austrian Structural Plan for Health (ÖSG)—the system’s main planning instrument. As a result, national planning and governance now extend to the whole provision structure (inpatient, ambulatory and rehabilitation). Following the reform, national plans focus uniquely on the framework for the provision of care, while detailed planning is decentralized and implemented by regional health funds. “Reform pool” funding has been introduced at the regional level to reward shifting care provision away from the inpatient and towards the ambulatory sector.

- *Finance for the health insurance funds and for long-term care.* A Structural Health Fund for Health Insurers was launched in 2010 with a total of €260 million of general tax revenue in order to reduce the level of indebtedness of the health insurance institutions. This fund insured leverage of the federal government over health insurers, as the former could finally link transfers to the attainment of preset goals, especially those associated with financial consolidation. For long-term care, a long-term care fund was created in 2011, which is intended to cover the increases in costs experienced by *Länder* and local authorities from 2011 onwards.

- *Expansion of health insurance protection and limitation of financial burden.* Since 2010 the recipients of the need-based minimum income are covered by the general statutory health system. Caps on prescription fees have helped contain patients' financial burden and government functions on medications and medical devices have been unified. In 2006, PharmMed was founded as the national licensing authority for medications and then integrated into the Federal Office for Safety in Health care (BASG), becoming the Medicines and Medical Devices Agency. Since then licensing of pharmacies has become less restrictive to encourage more competition. Moreover, via moral suasion the current government has induced self-regulation in pharmaceutical pricing practices, reducing costs.

7. **Additional efforts have been made over the past years to promote care at home, as well as to introduce a new scheme of group practices (*Ärzte-GmbHs*).** Similarly, prevention has received more attention through the introduction of specific screening measures, a National Nutrition Action Plan, a Children's Health Strategy and the development of framework health goals for Austria. Moreover, starting in 2015, a pilot project fostering multi-profession group practices has been introduced. By the end of 2016, a coverage level of 1 percent of the population is planned in each federal province. These measures are meant to provide relief for Austria's more costly hospital clinics and serve to expand acute care in private practices in the medium term.

8. **In 2013 the government launched a new set of reforms (the Austrian health system reform plan (2013-2016)) based on stabilizing healthcare spending as a share of GDP as of 2016.** This cost containment strategy is supported by the introduction of a tailored monitoring mechanism, setting concrete operational targets, to improve the organization of the system.¹ A further key component of the current reform plan is the full roll-out of the Electronic Health Record system, a process meriting close follow-up at national level. However, as for targets on planning and governance, these targets could be strengthened too, for example by adopting more ambitious goals regarding the planned shift of care from hospital-based to outpatient services.

¹ According to the most recent monitoring report, the cumulative cost reduction effect for provincial governments and statutory health insurance providers amounts to approximately €2.9 billion for the years 2012, 2013 and 2014. As a result, expenditure remained below the agreed cap during that period.

AUSTRIA'S MIGRATION RECORD: MACROECONOMIC CHALLENGES AND OPPORTUNITIES¹

A. Introduction and Stylized Facts

1. **The surge in refugee inflows into EU countries in 2015 is unprecedented, surpassing the levels seen during the Balkan wars in the early 1990s.** About one million asylum applications have been already filed in EU countries in the first ten months of 2015, representing about 100 percent increase relative to the same period of the last year. It is expected that the number of asylum applicants has reached about 1.3 million by the end of 2015, more than three times the yearly average over 2008–2012.² In 2015, Austria has recorded about 90,000 asylum applicants, making it one of the top three host countries relative to its population.³

2. **The geographic distribution of asylum seekers has changed relative to the refugee inflows of last decades.** The recent influx of refugees to Austria is mainly from Afghanistan, Syria, and Iraq, while asylum seekers from the former republic of Yugoslavia dominated the flows in the 1990s (Figure 1). In addition, Austria is among the countries with relatively high share of immigrants from other EU countries in their labor force.

3. **The immigrants that Austria attracts improve the characteristics of its labor force.** Historically Austria is an attractive migrant destination. The share of immigrants in population rose from about 8.5 percent in 2000 to 12.5 percent in 2014. The inflow of immigrants has been particularly strong since 2011 reflecting the labor market liberalization for workers from EU's New Member States and unrest in the Middle East. Relative to native-born population, immigrants are much younger, filling the gap of workforce among young cohorts created by ageing population (Figure 2). This would increase the likelihood of immigrants to have higher net fiscal contribution, which is driven by savings on education expenditure in the host country and by the larger number of working years ahead. However, immigrants are also somewhat less educated compared with the native-born population, except in tertiary education. This could reduce immigrants' net fiscal contribution and slower their labor market integration. Although available data suggest that recent refugees from Syria are more skilled than other groups and those who came during the Balkan wars in the 1990s.⁴ While Austria is able to attract high-skilled immigrants more than EU average, it is still behind top recipients of high-skilled labor.

¹ This paper draws heavily on Aiyar et al., "The Refugee Surge In Europe: Economic Challenges", SDN/16/02, adapting the analysis to Austria.

² This paper discusses the economic implications of the current inflow of people seeking permanent residence in Austria, who are referred to as "asylum seekers/applicants". Foreign-born residents of Austria with established legal status, both from the current and previous inflows, are referred to as "immigrants" or "migrants".

³ Federal Office of Aliens and Asylum "BFA annual accounts 2015".

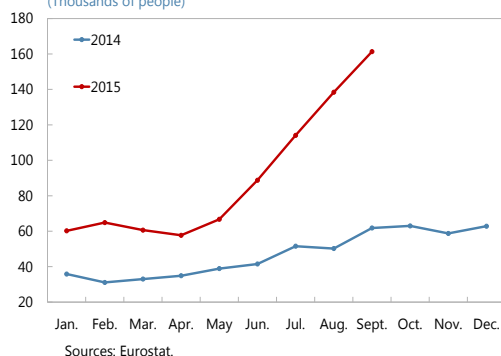
⁴ OECD Migration Policy Debates, September 2015.

4. **Going forward, net migration is expected to be an important source of population growth in Austria.** According to Eurostat data, Austria’s native-born population is projected to decline by about 20 percent by 2060 compared with 2015, higher than the projected 13 percent decline for the EU on average. This will more than double Austria’s old age dependency ratio to about 70 percent. However, net migration is expected to contribute about 31 percent to the population growth by 2060 relative to 2015 more than offsetting the decline in the native-born population. This will bring down the old age dependency ratio by about 20 percentage points, to the still-high 51 percent.

Figure 1. Recent Surge in Refugee Inflows

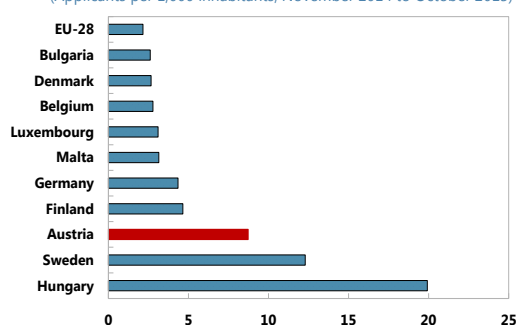
Number of asylum applicants in EU surged in 2015.

First-Time Asylum Applicants
(Thousands of people)



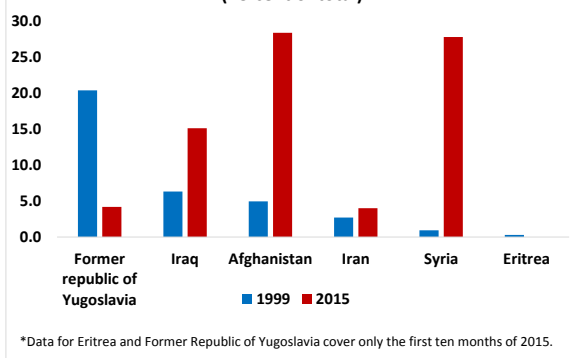
Austria is among the top three host countries relative to its population.

Top Ten Asylum Seekers Host Countries in the EU-28
(Applicants per 1,000 inhabitants, November 2014 to October 2015)



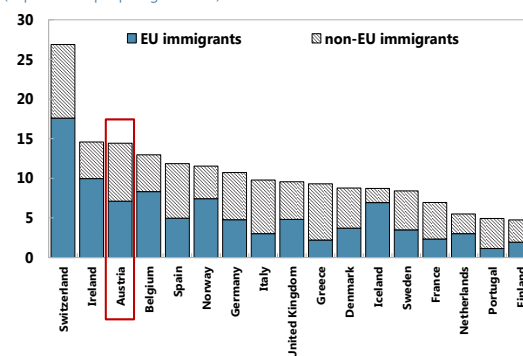
Migrants’ geographic distribution has shifted recently towards Syria and Afghanistan.

Austria: First Time Asylum Applicants
(Percent of total)



Austria still attracts considerable number of migrants from other EU countries.

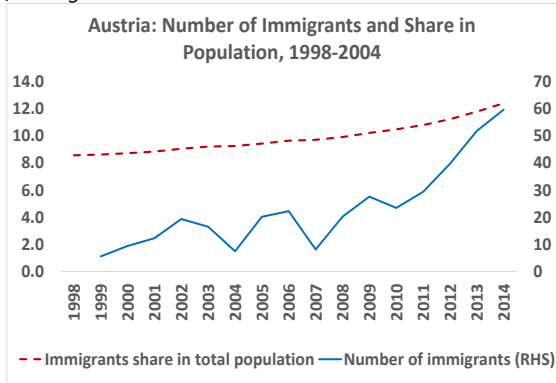
Share of immigrants (15-64) in the labor force in 2014
(in percent of people aged 15-64)



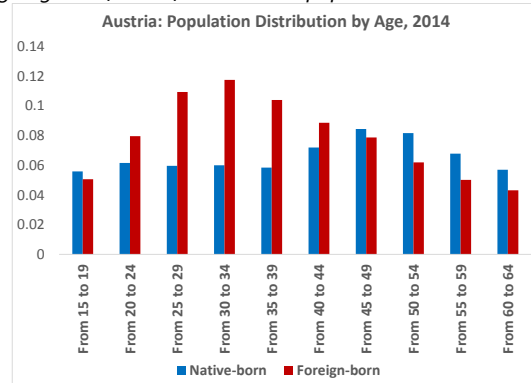
Sources: Aiyar et al., “The Refugee Surge In Europe: Economic Challenges”, SDN/16/02, Eurostat, Statistics Austria, and IMF staff calculations.

Figure 2. Historical Overview and Outlook of Migrant Flows

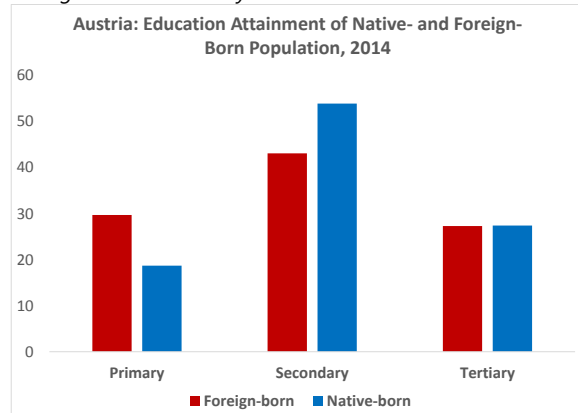
Historically, Austria was a home for considerable number of immigrants....



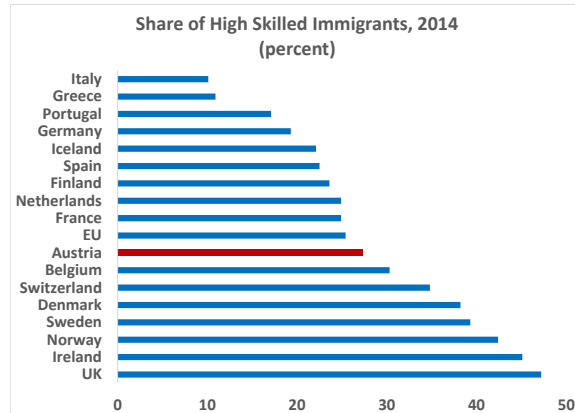
.... Most of them are relatively young, complementing ageing workforce of native-born population.



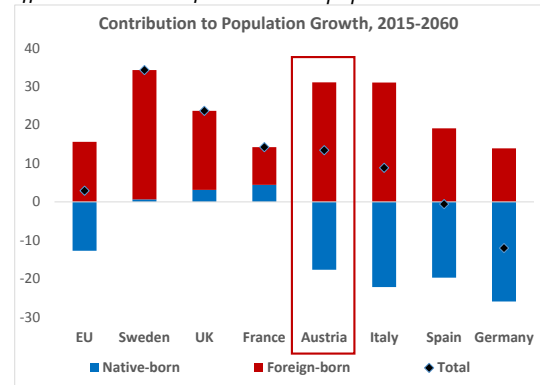
While skill distribution of immigrants is skewed towards low skill relative to native-born population, the share of immigrants with tertiary education is considerable....



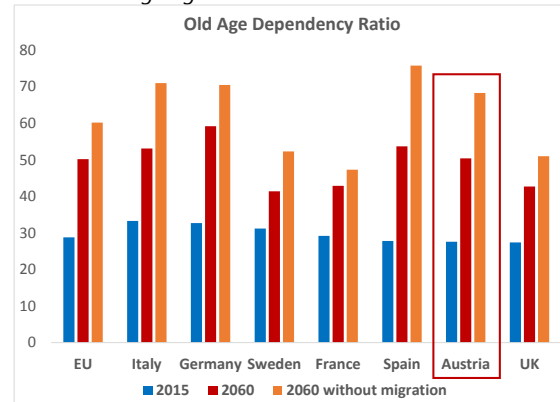
....although, in terms of attracting high-skilled migrants, Austria is only slightly above the EU average.



Going forward, net migration is expected to more than offset the decline of native-born population...



... and mitigate the expected surge in old age dependency ratio due to ageing.



Sources: Eurostat, Statistics Austria, and IMF staff estimates.

B. Migration Policies: International Comparison and Recent Reforms

5. **Austria's integration policies for migrants has improved significantly since 2007, rising 8 points on the MIPEX scale.**⁵ Labor market mobility has been the major priority for new integration policies, while anti-discrimination laws were created and improved in line with EU law. However with a score of 50 out of 100, Austria's overall integration policies still leave a lot of room for improvement so that non-EU immigrants fully participate in the economy and society. This applies particularly to opportunities for immigrants to reunite with their family, become citizens, and fight discrimination (Figure 3).

6. **The adaptation of the migration model in favor of inflows of skilled labor was part of the government program during 2008–2013.** Main changes in migration policies include:

- In mid-2011 a point system for immigration has been introduced, referred to as red-white-red (r-w-r) card, which replaces the key-skills quota and widens the scope for third country workers to access the Austrian labor market.
- Since July 2012 asylum seekers under the age of 18 may take up apprenticeship education and thus part-time work with an employer. In March 2013 the age limit was extended to 25 years of age. In addition, asylum seekers may become self-employed in special occupations not covered by trade law, e.g. as journalists, artists, sports and language trainers. They may earn 110 euro per month in addition to their benefits; in case they earn more, their welfare receipts are reduced by the surplus.
- In April 2013 an amendment to the Foreign Worker Law was adopted allowing the employer to organize the paperwork in Austria, thereby minimizing the administrative work for prospective third country employees. In order to promote the employment of migrants commensurate with their acquired skills, the National Assembly eased skills recognition of university graduates from third countries.

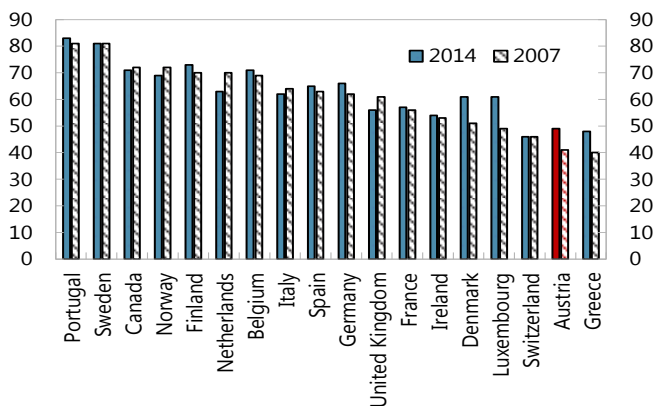
The amendment to the citizenship law in April 2013 introduced a reduced waiting period for citizenship (from 10 to 6 years) if a high degree of integration (economic, social or cultural) can be demonstrated. The law identifies good German language competence together with a self-sufficient economic situation (no take-up of social assistance payments) as an indicator of integration.

⁵ The Migrant Integration Policy Index (MIPEX) benchmarks countries' current laws and policies against the highest standards in place through consultations with top scholars and institutions using and conducting comparative research in their area of expertise. It covers legal frameworks to promote integration in the following policy areas: labor market mobility, family reunion, education, political participation, long-term residence, access to citizenship, anti-discrimination and access to health care.

Figure 3. Migrants Integration Policies

Migrant Integration Policy index has improved significantly

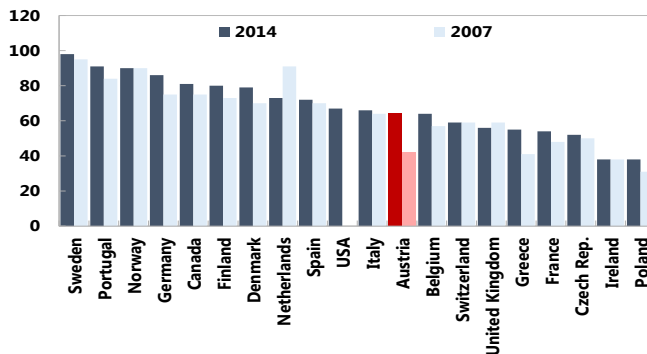
MIPEX Index 1/



Particularly in the area of labor market opportunities for immigrants.

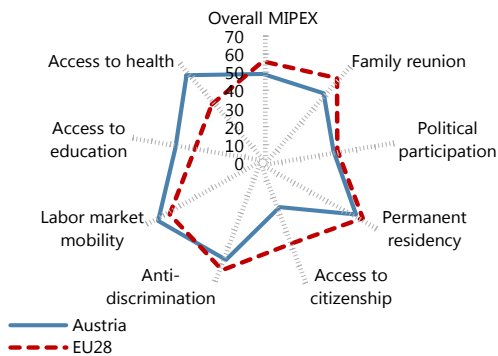
Opportunities for Migrants: Ease of Access to Jobs and Training

(policy scores; Higher values imply more integrating policies)



However, there is room to improve in some areas relative to the EU average

MIPEX index 1/



Sources: Aiyar et al., "The Refugee Surge In Europe: Economic Challenges", SDN/16/02, MIPEX database, UN, and IMF staff calculations.

1/ Migrant Integration Policy Index (MIPEX) benchmarks current laws and policies of individual countries against the highest relevant standards through consultations with top scholars and institutions.

C. Fiscal Impact of Migrants

7. **Under the right policies, the net fiscal impact of immigrant could be positive in the medium-term.** The design of the tax and benefit system and the success of immigrants' integration in the labor market determine immigrants' net fiscal impact.⁶ While benefits should be sufficient to allow successful integration, the tax-benefit interaction might affect incentives to take up work for low-skill workers, a category often including migrants. Moreover, migrants' performance in the labor market is linked to individual characteristics such as skills and age as well as the state of the business cycle.

8. **In the short-run, taking basic care of the refugees will generate notable, but manageable cost for public finance.** The total budgeted cost for asylum seekers in Austria for 2016 is 0.3 percent of GDP compared with 0.1 percent in 2015. Most of this spending will go toward basic necessities such as housing, food and health insurance, as well as work and integration programs. These estimates are highly uncertain, reflecting, in particular, the wide range of predicted asylum seekers arriving this year and the next. The built-in flexibility in the Stability and Growth Pact should allow countries to absorb the costs of the refugee crisis within the established framework (see Aiyar et al., "The Refugee Surge In Europe: Economic Challenges", SDN/16/02).

9. **Staff calculations suggest that the net fiscal contribution of the recently increased inflow of migrants will likely be negative in the short-run and turn positive after 8-10 years (Figure 4).** These calculations show the fiscal effects of the higher expected immigration in 2015–20 relative to the pre-2014 immigration trends and also include tax revenue contributed by employed immigrants. They are based on the budgeted refugee-related gross costs of 0.1 percent of GDP for 2015 and 0.3–0.5 percent of GDP in 2016–20, gradually declining as accepted refugees find employment. The net fiscal cost in 2016–20 is projected to fall in the range of 0.2–0.3 percent of GDP. By 2024, the net fiscal contribution will amount to about 0.1 percent of GDP.

10. **The impact of migration on pension and health spending is likely to be positive but small in the medium term.** The methodology developed in recent IMF work on the fiscal effects of population aging was used to assess the effects of migration on government spending in pension and health care.⁷ In addition, we netted out this impact with the respective social security contributions generated by employed immigrants. Staff's baseline macroeconomic projections already reflect increased immigrant inflows of about 1 percent of the working-age population a year. Relative to a scenario based on the pre-2014 migration trends, by 2020 net pension spending would be lower by 0.3 percent of GDP and net health-care spending—by 0.1 percent of GDP, with the gains steadily increasing over the long run as more immigrants get employed (Figure 4). A 75 percent higher immigrant inflow can deliver even larger benefits, provided immigrants are successfully integrated. Under this scenario, net pension spending would fall by about 0.7 percent of GDP in 2020, while net health care spending would be lower by 0.2 percent of GDP relative to

⁶ See Aiyar et al., "The Refugee Surge In Europe: Economic Challenges", SDN/16/02.

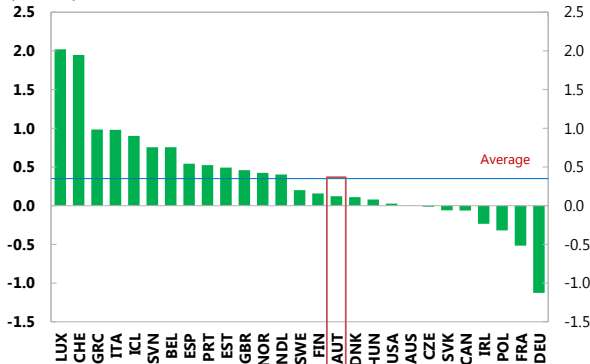
⁷ See "Fiscal Consequences of Shrinking Populations," IMF Discussion Note October, 2015, SDN/15/21.

pre-2014 trend (Figure 4). These results are sensitive to the assumptions about immigrants' labor productivity, the speed of labor market integration, and their age profile.

Figure 4. Fiscal Impact of Immigrants

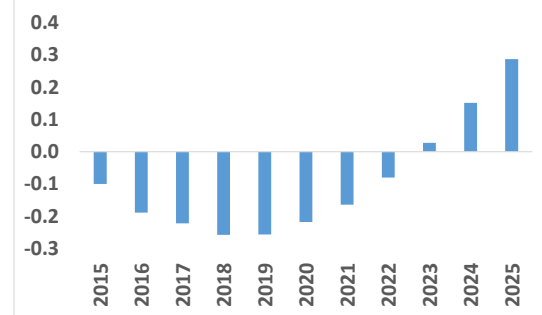
Immigrants in Austria have had positive net fiscal contribution, although it is below the EU on average.

Estimated Net Fiscal Impact of Immigrants, 2007-09 average
(% GDP)



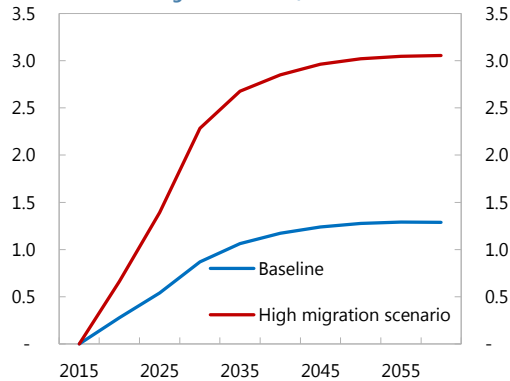
Immigrants have negative net fiscal contribution in the short-term, which turns positive in the long-run.

Austria: Net Fiscal Contribution of Immigrants
(Percent of GDP, relative to pre-2014 trend)



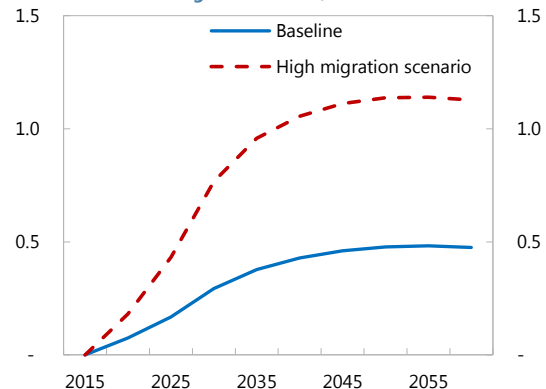
Successful integration of immigrants in the economy could reduce notably net pension cost relative to GDP...

Reduction in Net Pension Spending Relative to Pre 2014 Migration Trends, 2015-60 1/ 2/



... and to a lesser extent net health care cost.

Reduction in Net Health Care Spending Relative to Pre 2014 Migration Trends, 2015-60 1/ 2/



Sources: Aiyar et al., "The Refugee Surge In Europe: Economic Challenges", SDN/16/02, OECD and IMF staff calculations.
1/ The baseline scenario reflects migrant inflows of 1 percent of the working-age population (WAP) a year, the higher inflow scenario assumes 1.7 percent of the WAP, while the pre 2014 migration trends imply 0.6 percent of WAP a year.
2/ Net pension and health care spending are net of the respective social security contributions generated by employed immigrants.

D. Impact of Migration on Labor Market and Potential Output

Impact on labor market

11. **Immigrants' impact on the labor market outcomes of the native-born population depends on the relative magnitude of immigrants influence on labor supply, aggregate demand, and total factor productivity (TFP).** Immigrants' impact on labor market outcomes of native-borns is negative when the substitution (displacement) effect from increased labor supply overweighs the increased labor demand due to higher aggregate demand and increased TFP. The substitution effect depends on the size of migrant flow of a particular skill (high or low) and the degree of substitutability between immigrants and native-borns as well as the substitutability of workers with different skills. If elasticity of substitution between immigrants and native-borns is high then the substitution effect will be higher. Increased migrant flows affect labor demand of native-borns through several channels. First, increased labor supply increases aggregate demand and thus increases demand for labor. Second, increased labor supply, other things equal, reduces wages boosting labor demand. Third, inflows of high skilled migrants increase TFP, which in turn lead to higher demand for labor. The magnitude of each channel depends on parameters describing the behavior of economic agents in the economy and the size of high skilled immigrants relative to low skilled ones. For example, if the elasticity of TFP from high skill labor tends to zero, the demand effect of high skilled immigrants on native-born workers is smaller. However, in the case of positive TFP elasticity from high skilled labor, labor demand gets additional boost from productivity gains due to increased inflow of high skilled migrants.
12. **The confluence of social benefits and labor taxation may have created disincentives for immigrants to take up low paid jobs.** As shown in Aiyar et al., the self-employment rates of non-EU immigrants are higher in countries with better access to opportunities for immigrants and lower barriers to entrepreneurship (Figure 5). While Austria ranks well both in terms of access to opportunities for immigrants and barriers to entrepreneurship, self-employment rate among non-EU immigrants is very low. This begs the question what prevents non-EU immigrants to engage in self-employment activities. One reason may be that the effective marginal tax rate for immigrants when they move from social assistance to work is very high in Austria. Therefore, the after-tax income from employment may not be much higher than the social benefits that migrants (particularly low skilled ones) receive while under social assistance. This suggests that the confluence of social benefits and labor taxation creates strong incentives for immigrants to remain within social assistance programs (Figure 5). As a result unemployment rate for immigrants is more than double the unemployment rate for native-born population—one of the highest among EU countries.
13. **We used the theoretical framework developed by Docquier et al. (2013) to simulate the immigrants' impact on employment and wages of native-borns in Austria.** In this framework there are two types of labor—high and low skilled—and they are differentiated by their place of birth—native-born and foreign-born (See Annex I for more details). Physical capital is perfectly mobile and immigration affects TFP through a human capital externality. In addition, there is imperfect substitution between native and foreign-born workers and between high and low skilled workers. In this framework, the impact of immigrants on wage and employment outcome of

native-born population depends on the following factors: (i) the change in the share of each skill group immigrants in the working age population; (ii) the change in the share of high skilled workers in the working age population due to immigration; and (iii) the shares of each skill group of native-born and foreign-born population in the wage bill.

14. **Our simulations suggest that migrant flows during 2010–14 had a positive though small impact on labor market outcomes of native-borns.** Under the most plausible parametrization (intermediate scenario), wages of low-skilled native-born workers rose by 0.4 percent due to the migration during 2010–14 (Figure 6).⁸ Immigrants' impact on low skilled native-borns wage and employment is turning marginally negative only under the low impact scenario, which assumes infinite elasticity of substitution between native-born and foreign-born labor and no productivity gains from the inflow of high skilled immigrants (See Annex I for parameter values and all other assumptions). In the high impact scenario, when we assume relatively low elasticity of substitution between native and foreign-born labor and high productivity gains from the inflow of high-skilled immigrants, the impact of immigrants on low skilled native-born workers' wages reaches 0.9 percent. The impact of immigrants on high skilled native-borns is higher relative to low skilled native-borns in all scenarios. The reason is that the share of high skilled immigrants is relatively low and therefore native-born high skilled population experienced smaller displacement effect, while benefiting from the higher demand generated by all immigrants. We have extended our simulations until 2020 using our baseline projections for immigrants' flows. The results are similar—under most parameter combinations immigrants have positive but small, impact on native-borns' wage and employment outcomes (Figure 6). These results are consistent with other empirical studies on episodes of sizable immigration waves in European economies. These studies find that the average wages of native workers' respond little and that the effect on unemployment is also limited (see Aiyar et al.).

Impact on potential output

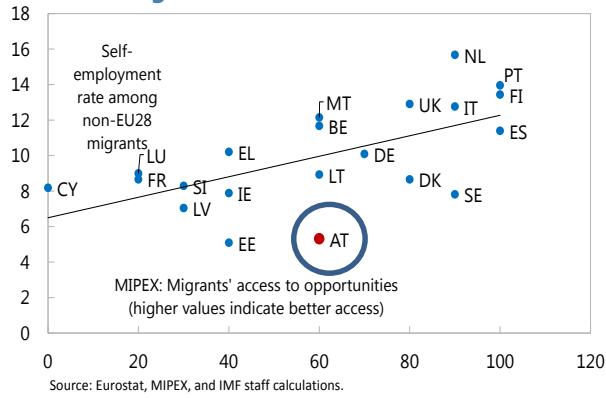
15. **A simple growth accounting calculation revealed that immigrants have contributed notably to the Austria's potential output.** Immigrants' impact on potential output depends on the level of their skills and the pace of integration in the labor market (Annex II). The potential output generated by immigrants has been steadily increasing since 2004 reaching about 4 percent of potential GDP in 2015 (Figure 7). Immigrants' contribution to the GDP is not as high as their share in employment, because relative to native-born population they have lower skills and, moreover, their skills face a significant discount during the first years of arrival. Going forward immigrants are expected to play an important role in ensuring sustainable potential growth given Austria's ageing population. Under the baseline scenario, potential output is expected to grow by around 1 percent in 2020. This is 0.2 percentage points higher relative to a scenario based on the pre-2014 migration trends. In the scenario with high migrant flows, potential output growth would reach 1.3 percent in 2020—up by 0.3 percentage points compared with the baseline. These calculations are based on the assumption that the current skill structure of the labor force and the response of investment to the higher labor supply would remain unchanged relative to the baseline scenario.

⁸ Detailed parametrization is presented in the Annex I.

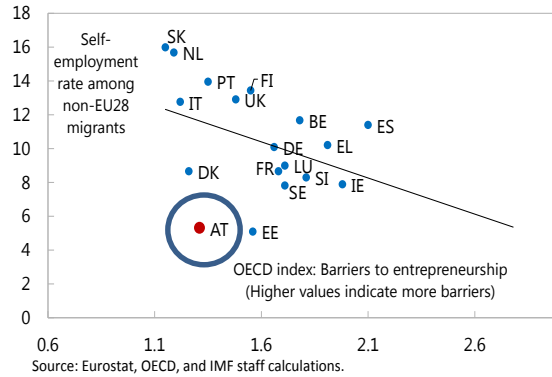
Figure 5. The Role of Policies on Labor Market Integration of Immigrants

Austria's improved opportunities for immigrants and low barriers to entrepreneurship have not yet translated to high self-employment for immigrants.

Integration Policies and Self-Employment for non-EU migrants, 2013

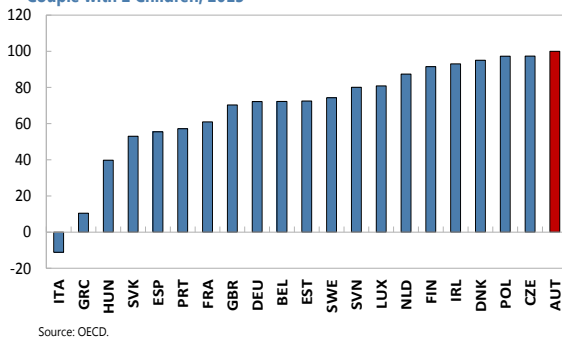


Barriers to Entrepreneurship and Self-Employment for non-EU migrants, 2013

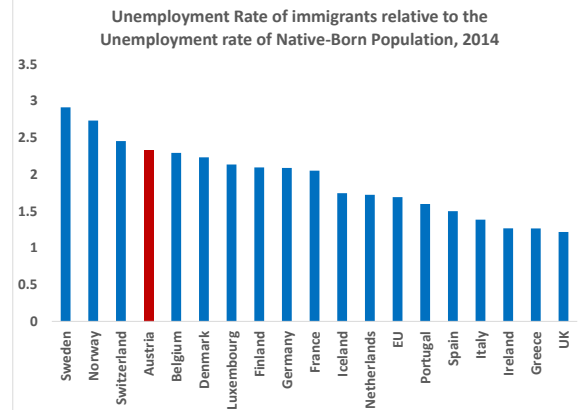


Probably reflecting Austria's high effective marginal rate when moving out from social assistance ...

Selected EU Countries: Average Effective Tax Rate of Returning to Work From Social Assistance at 50% of Average Wage for One Earner Couple with 2 Children, 2013

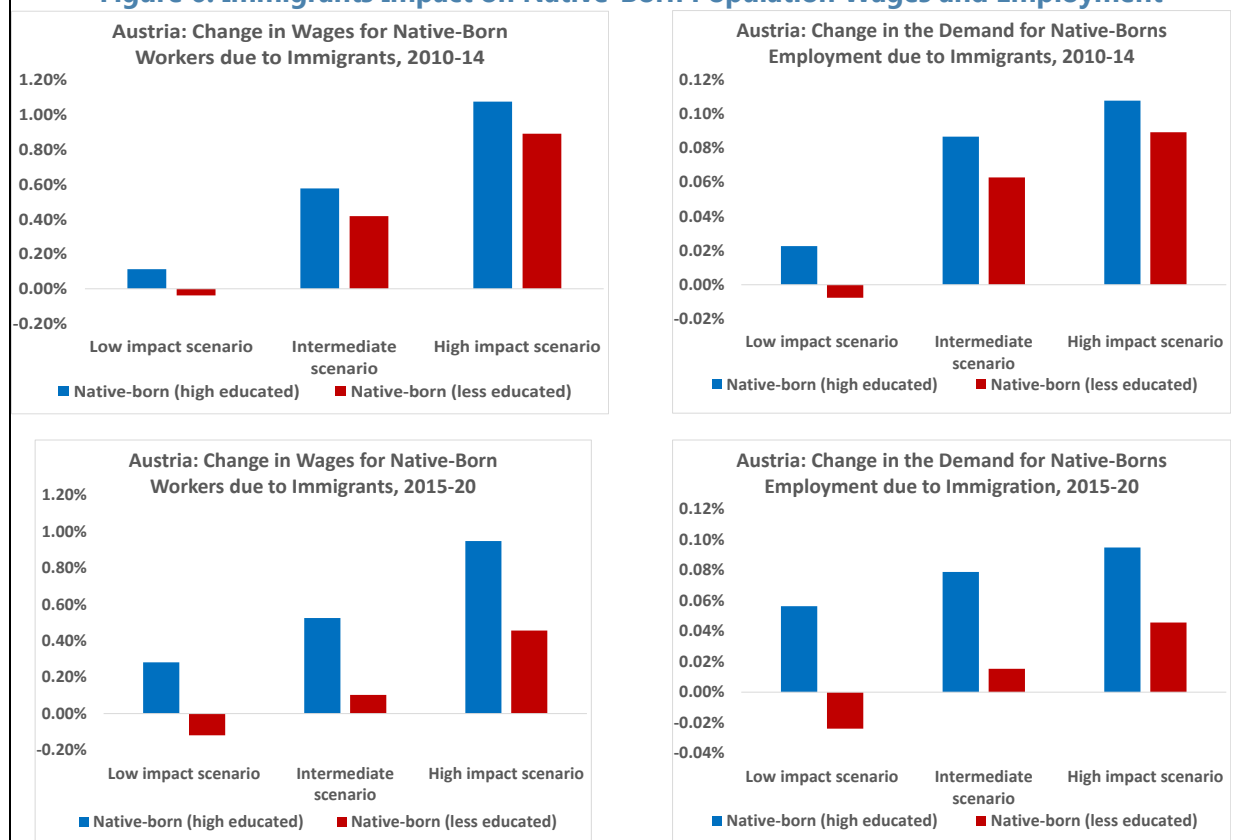


..., which has also resulted in very high unemployment rate for immigrants relative to native-born population.



Sources: Aiyar et al., "The Refugee Surge In Europe: Economic Challenges", SDN/16/02, Eurostat, and IMF staff calculations.

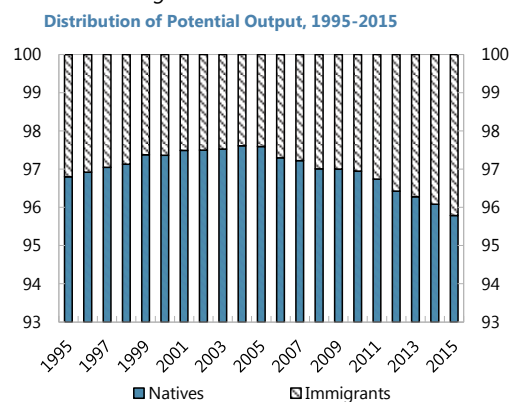
Figure 6. Immigrants Impact on Native-Born Population Wages and Employment



Sources: Docquier et al. (2013), Eurostat, Statistics Austria, and IMF staff estimates.

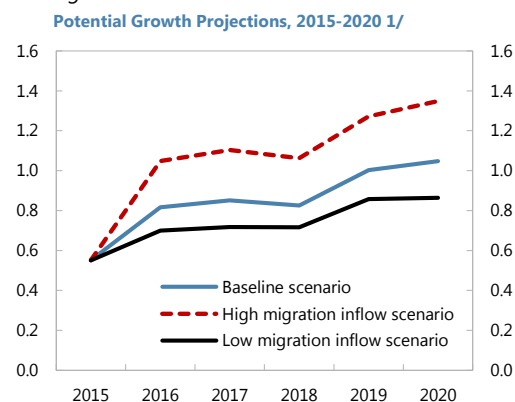
Figure 7. Austria: Migrants' Contribution to Potential Output

The share of potential output generated by immigrants has been increasing.



Sources: UN, Eurostat, and IMF staff calculations.

Successful integration of migrants can rise Austria's potential growth.



1/ The baseline scenario reflects migrant inflows of 1 percent of the working-age population (WAP) a year, the higher inflow scenario assumes 1.7 percent of the WAP, while the low inflow scenario corresponds to pre 2014 migration trends.

E. Conclusions and Policy Recommendations

16. **The unrest in the Middle East gave rise to an influx of refugee flows to Europe at magnitudes that have not been experienced since World War II.** Austria, being historically an attractive host country for immigrants, is receiving one of the largest asylum applications relative to its population compared with other EU countries.
17. **Young, well-educated immigrants, combined with host countries' supportive policies to facilitate their labor market integration, could bring notable economic benefits.** High share of young adults among immigrants increases immigrants' net fiscal contribution through savings on education in host countries and higher tax revenues associated with a larger number of working years. The impact of highly skilled immigrants is positive in many dimensions, including higher net fiscal contribution due to higher wages, positive impact on employment of low skilled native-born population through creation of complementary jobs, and higher boost to potential output through higher productivity.
18. **The integration of immigrants in the labor market strongly depends on the host country policies.** Labor market flexibility is an important factor facilitating integration of immigrants. Particular areas where Austria lags behind other Western European countries include: (i) equal access to public sector jobs and trade licenses for non-EU immigrants and (ii) work placements and bridging courses for both high- and low-educated immigrants. On the other hand, the confluence of social benefits and labor taxation creates disincentives for immigrants to take low paid jobs. In case of high marginal tax rates for immigrants when they move from social assistance to work, immigrants would not have incentives to take up low paid jobs, because their after-tax income from employment may only be marginally higher than the social benefits that they receive while being under social assistance.
19. **Simulation analysis suggests that the higher inflow of migrants could have positive impact on Austria's potential output and could reduce spending on pensions and health care.** Immigrants have already been generating considerable portion of Austria's potential GDP, and going forward under the baseline scenario by 2020 migrants would increase potential GDP growth by 0.2 percentage points as well as reduce net pension and health care spending.
20. **In the short-run, Austria's policy priority should be processing and supporting such large number of asylum seekers.** This would entail 0.3 percent of GDP fiscal costs, part of which is one-off and should be excluded from calculating the structural fiscal balance in line with the built-in flexibility of the Stability and Growth Pact.
21. **In the long-run, successful integration of refugees will require early, intensive, and sustained efforts to provide language training, assess and certify individual skills, provide school access, address health and social problems, and work with employers to help boost refugees' chances of employment.**

22. **Relaxing some labor market regulations and tailoring active labor market policies towards migrants can help immigrants find work.** Legal obstacles preventing immigrants from finding jobs fast, such as restrictions on asylum seekers to take up work during the first three months while their case is processed, could be eased. Active labor market policies and job-entry instruments such as training contracts could be strengthened and tailored toward migrants to help leverage and build their skills. Providing language trainings early on would be crucial since past experience suggest that it considerably facilitates integration of immigrants.

23. **There is room to reduce incentives for immigrants to fall into an “inactivity trap”.** In order to reap the benefit of Austria’s low barriers to entrepreneurship and improved access to opportunities for immigrants, the interaction of social benefits and labor taxation at the lower spectrum of wage distribution could be modified to prevent immigrants from falling into an “inactivity trap”. Perhaps a gradual, rather than abrupt, withdrawal of the social assistance benefits would help reduce disincentives of immigrants to take up low paid jobs. In addition, the maximum amount that asylum seekers can earn before facing a reduction in their welfare benefits could be increased to encourage more refugees to take up low paid jobs.

24. **Housing is an essential component of the integration process for refugees.** Increasing the supply of affordable housing for refugees in the areas where labor demand is highest is critical to refugees’ successful integration.

Annex I. Impact of Immigrants on Wages and Employment of Native-Born Population: A Theoretical Framework and Parametrization

We have borrowed the theoretical framework developed by Docquier et al. (2013) to simulate the impact of immigrants on the wage and employment outcomes of native-born population. In the model workers are differentiated by their place of birth (native versus foreign born) as well as their education (high and low skilled) levels. Physical capital is perfectly mobile across nations in the model and immigration affects TFP through a human capital externality. The human capital externality assumes that TFP is an increasing function of the share of high skilled in labor force. There is imperfect substitution between native and foreign born workers and between high and low skilled workers. The effect of migration on native-born workers' wage and employment is the difference in wages and employment of native-borns between the scenario with actual migration flows and a counterfactual scenario with zero migration flows. The equilibrium effect of immigration on wages and employment of native-borns is presented by the following relationship:¹

$$q_{h,n} = \frac{\left(\frac{1}{\gamma} + d_l\right) \left(m p_{h,n} + \frac{1}{\gamma} Q_{h,n}\right) + \frac{sh_{l,n}}{\sigma_q} \left(m p_{l,n} + \frac{1}{\gamma} Q_{l,n}\right)}{\left(\frac{1}{\gamma} + d_l\right) \left(\frac{1}{\gamma} + d_h\right) - \frac{sh_{l,n} sh_{h,n}}{\sigma_q^2}}, \quad h=\text{high skill, } l=\text{low skill, } n=\text{native born}$$

$$q_{l,n} = \frac{\left(\frac{1}{\gamma} + d_h\right) \left(m p_{l,n} + \frac{1}{\gamma} Q_{l,n}\right) + \frac{sh_{h,n}}{\sigma_q} \left(m p_{h,n} + \frac{1}{\gamma} Q_{h,n}\right)}{\left(\frac{1}{\gamma} + d_l\right) \left(\frac{1}{\gamma} + d_h\right) - \frac{sh_{l,n} sh_{h,n}}{\sigma_q^2}}$$

$$w_{i,n} = \frac{1}{\gamma} (q_{i,n} - Q_{i,n}) \quad \text{for } i=(h, l)$$

$$m p_{i,n} \equiv \frac{1}{\sigma_q} (sh_{h,f} Q_{h,f} + sh_{l,f} Q_{l,f}) + \left(\frac{1}{\sigma_m} - \frac{1}{\sigma_q}\right) \frac{sh_{i,f}}{sh_i} Q_{i,f} + \mu \Delta f_h, \quad f=\text{foreign born}$$

$$d_i \equiv \frac{1}{\sigma_m} - \left(\frac{1}{\sigma_m} - \frac{1}{\sigma_q}\right) \left(\frac{sh_{i,n}}{sh_i}\right) - \left(\frac{sh_{i,n}}{\sigma_q}\right)$$

Where $q_{i,n}$ is percentage change in the employment of native-born population with type i skill, $sh_{i,j}$ for $j=(n,f)$ is the share of the wage bill for the skill group i and country of origin j , $Q_{i,j}$ is the percentage change in the population of the skill group i and country of origin j , Δf is the change in the share of high skilled workers in the working age due to immigration, and σ_q, σ_m, μ , and γ are

¹ For more details on the equations and derivations see Docquier et al. (2013).

elasticities describing the behavior of economic agents. The parameter values for these elasticities and their descriptions are presented in Table I.1. We have used the similar parameter values as Docquier et al. (2013).² The values are chosen to span the range found in the literature.

Table I.1. Parameter Values

	Low impact Scenario	Intermediate Scenario	High impact Scenario
σ_q : Elasticity of substitution between more and less educated	2	1.75	1.3
σ_m : Elasticity of substitution between immigrants and native-borns	Infinity	20	6
μ : Intensity of college externalities	0	0.45	0.75
γ : Elasticity of labor supply	0.2	0.15	0.1

Source: Docquier et al. (2013).

Main assumptions:³

- Three scenario for asylum applicants: (i) baseline—80000 applicants in 2015, 85000 in 2016, and 50000 in 2017; (ii) low inflow scenario—consistent with pre 2014 trends; and (iii) high inflow scenario—assumes 75 percent more inflow than the baseline.
- Migration projections beyond 2017 are from Eurostat.
- Acceptance rate of asylum seekers is 47 percent.
- Migrants from other EU countries are 33 percent of total inflow of migrants. Before 2014, on average immigrants from other EU countries were about half of total immigrants. Given the more than doubling inflow of immigrants from non-EU countries and assuming a continuation of the pre-2014 trend for immigrants from other EU countries, the share of immigrants from other EU countries will decline to about 1/3rd of the total.
- Immigrants from other EU countries have a similar labor force participation rate as native-born Austrians, while their employment rate is lower by about 5 percentage points.
- Working age population among asylum seekers is 77 percent.

² Only the labor supply elasticity is slightly different from Docquier et al. (2013). In the “high impact scenario” they have zero for labor supply elasticity, while we have assumed 0.1 to reflect Austria’s increasing participation rate and dynamic response of average hours worked to economic conditions.

³ Most of our assumptions are borrowed from the OeNB’s November 2015, memo on “Economic impact of the current wave of refugees on Austria”.

- Asylum seekers' labor force participation is 45 percent, which gradually increasing over time.
- Asylum seekers' employment rate is 10 percent in the first year reaching 55 percent after 10 years. The employment rate of non-EU immigrants converges to the employment rate of native-borns after about 15 years.
- Immigrants wage gap relative to native-born workers with the same characteristics is 20 percent in the first year, which declines gradually over 15 years.
- Immigrants' skill discount in host countries is 20 percent, which declines gradually over 15 years.
- Pension contribution from the wage fund is 22.8 percent.
- Health insurance rate from the wage fund is 7.65 percent.
- Self-financing ratio is 40 percent.

Annex II. A Growth Accounting Calculation of the Output Impact of Refugee Inflows¹

To illustrate the impact of refugee inflows on real output in Austria, the calculation is conducted based on the Cobb-Douglass production function:

$$Y_t = A_t(K_tCU)^{(1-\alpha)}(L_tHW_thc_t)^\alpha$$

where

- K denotes the capital stock, which is derived using the standard perpetual inventory model (Epstein and Macchiarelli, 2010, and Teixeira de Silva, 2001) as $K_t = (1-\rho)K_{t-1} + I_t$, where ρ is the depreciation rate. The source for capital stock data is Penn World Tables.
- CU stands for capacity utilization.
- L is the number of employed persons.
- HW is the average hours worked corresponding to national accounts.
- A represents the TFP.
- hc is human capital, which defines as $hc_t = e^{rS_t}$, where r is the return on education and S is the average years of schooling.
- α stands for the labor share in the production function.

In order to separate the impact of immigrants on GDP we used the skill distribution of foreign-born and native-born population, their relative shares in employment, and estimates from the empirical literature on the skill discounts that immigrants face in host countries. Consistent with the empirical evidence, the discount is assumed to decrease over time. For the projected impact of immigrants under the different scenarios, we used the following information: (i) population growth projections under different scenarios (low, baseline, and high migrant flow), (ii) WEO projections for investment, and (iii) historical trend in TFP. We also assumed unchanged skill structure for employment going forward.

¹ A similar approach is also used in Aiyar et al., "The Refugee Surge In Europe: Economic Challenges", SDN/16/02. The main difference is that we take into account human capital and the skill distribution of immigrants as well.

References

- Aleksynska and Tritah, 2013, "Occupation-Education Mismatch of Immigrant Workers in Europe: Context and Policies", CEPII.
- Aslund, O., and D. Rooth, 2007, "Do when and where matter? Initial labour market conditions and immigrant earnings", *The Economic Journal*, Volume 117, pp 422–448, March 2007.
- Aiyar, S., B. Barkbu, N. Batini, H. Berger, E. Detragiache, C. Ebeke, H. Lin, L. Kaltani, S. Sosa, A. Spilimbergo, and P. Topalova, 2016, "The Refugee Surge In Europe: Economic Challenges", Staff Discussion Note 16/02 (Washington: International Monetary Fund).
- Borjas, G. J., 1995, "The Economic Benefits from Immigration", *The Journal of Economic Perspectives*, Vol. 9, No. 2. (Spring, 1995), pp. 3–22.
- Borjas, G. J., 1999, Immigration and Welfare Magnets, *Journal of Labor Economics* 17, pp. 607–637.
- Butschek, S., and T. Walter, 2014, "What active labour market programmes work for immigrants in Europe? A meta-analysis of the evaluation literature" *IZA Journal of Migration* 2014, 3:48.
- Cattaneo, C., C. V. Fiorio, and G. Peri, 2015 "What Happens to the Careers of European Workers when Immigrants "Take their Jobs." *Journal of Human Resources*, 50(3), pp. 655–93.
- Clements, B., K. Dybczak, V. Gaspar, S. Gupta, and M. Soto, 2015, "Fiscal Consequences of Shrinking Populations," Staff Discussion Note 15/21 (Washington: International Monetary Fund).
- D'Amuri, F. and G. Peri, 2014, Immigration, Jobs, and Employment Protection: Evidence from Europe Before and During the Great Recession. *Journal of the European Economic Association*, 12 (2), pp. 432–64.
- Docquier, F., C. Ozden, and G. Peri, 2013, "The Labor Market Effects of Immigration and Emigration in OECD countries, *The Economic Journal*, 124 (September), pp. 1106–1145.
- Dustmann, C., and T. Frattini, (2014), "The Fiscal Effects of Immigration to the UK", *The Economic Journal*. Volume 124, pp. F593–F643, November 2014.
- Foged, M., and G. Peri, 2015, "Immigrants' Effect on Native Workers: New Analysis on Longitudinal Data", IZA Discussion Paper No. 8961.
- Gudran Biffle, 2014, "Migration and Labour Integration in Austria", SOPEMI Report on Labour Migration Austria 2013–2014.
- Ho, Giang and K. Shirono, 2015 "The Nordic Labor Market and Migration," IMF Working Paper, forthcoming.

Kerr, Sari Pekkala and William Kerr, 2011, "Economic Impacts of Immigration: A Survey?" *Finish Economic Papers*, 24(1), p. 1–32.

OECD, (2013), "The fiscal impact of immigration in OECD countries".

_____, (2015), "Migration Policy Debates", September 2015.

OeNB memo, November 2015, "Economic impact of the current wave of refugees on Austria".

Peri, G., 2010, "The Impact of Immigrants in Recession and Economic Expansion," Migration Policy Institute.

_____, 2010, "The Effect of Immigrants on U.S. Employment and Productivity," FRBSF Economic Letter, August 30, 2010 <http://www.frbsf.org/economic-research/publications/economic-letter/2010/august/effect-immigrants-us-employment-productivity/>