SWEDEN

SELECTED ISSUES

This Selected Issues paper on Sweden was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on November 17, 2015.

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International Monetary Fund
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INTERNATIONAL MONETARY FUND

SWEDEN

SELECTED ISSUES

Approved by the European Department

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CONTENTS

SWEDEN'S LABOR MARKET AND MIGRATION[1]

A. Introduction

1.   Sweden enjoys a broadly well-functioning labor market. The labor force has been expanding at a healthy pace, in part reflecting rising participation including by females. Moreover, employment growth has been solid, placing Sweden among the OECD countries with the highest employment rate, and helping bring the rate of unemployment down to about 7¼ percent recently from an average of 8 percent over the past three years.

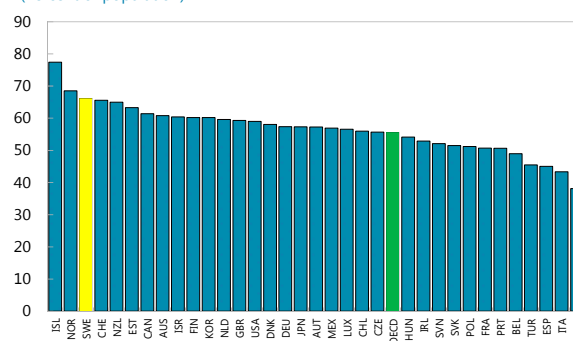**Labor Force Participation Rate, 2014**
(Percent of working age population, 15-74)
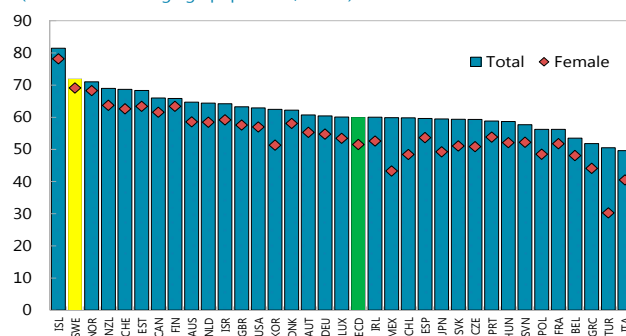
Sources: OECD and Fund staff calculations.

Employment Rate, 2014
(Percent of population)

Sources: OECD and Fund staff calculations.

2.   However, there are large asymmetries across labor market groups. Participation and employment rates are lower among certain groups, including the low skilled and foreign-born, and unemployment falls disproportionately on these groups (Figure 1). The low skilled have an unemployment rate of 19 percent in 2014, with unemployment of the foreign-born almost as high at 16 percent. These rates are high, especially relative to total unemployment in Sweden.

Low-skilled Unemployment, 2014
(Ratio of low-skilled unemployment rate to overall same-country unemployment rate)
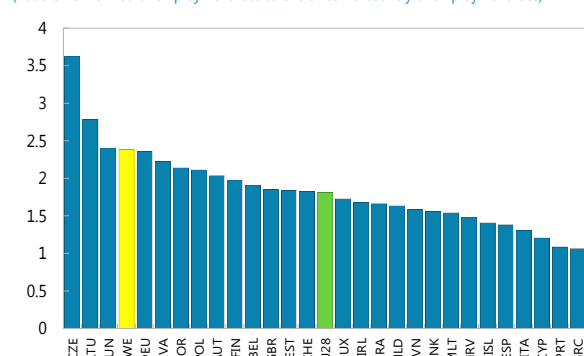
1/Low skilled refers to persons with education level below upper secondary education
Sources: Eurostat and Fund staff calculations.

Foreign Born Unemployment, 2014
(Ratio of foreign born unemployment rate to overall same-country unemployment rate)

Sources: Eurostat and Fund staff calculations.

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[1] Prepared by Asmaa El-Ganainy.

3.   The evolving composition of the labor force, in part a result of migration, is a challenge to maintaining Sweden's high employment rate. Past reforms (i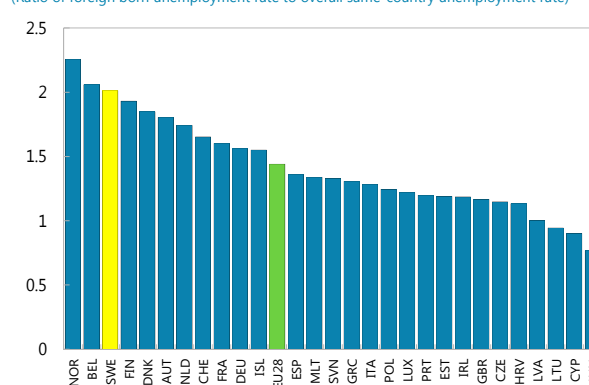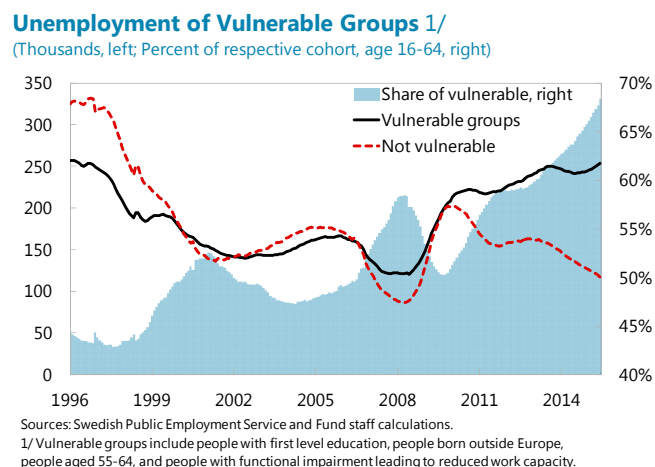ncluding a tightening of eligibility for unemployment and sickness benefits, and lower taxes on low wage earners) have led in recent years to rising participation among the young, old, and foreign-born.[2] [3] Large migration inflows of late have also been adding to labor supply, and high inflows appear likely to continue in coming years. Asylum seekers, who historically have taken longer to integrate into the Swedish labor market, form a large portion of these inflows. The [Swedish public employment service (PES) (2015)](#) reports that the share of vulnerable groups among the unemployed reached close to 70 percent in April 2015, and projects that this share will reach 75 percent by the second half of 2016 owing largely to increasing numbers of people born outside Europe.

Unemployment of Vulnerable Groups 1/
(Thousands, left; Percent of respective cohort, age 16-64, right)

Sources: Swedish Public Employment Service and Fund staff calculations.
1/ Vulnerable groups include people with first level education, people born outside Europe, people aged 55-64, and people with functional impairment leading to reduced work capacity.

4.   Accordingly, this paper considers how Sweden can adapt to maintain high employment, which is key to sustaining its strong social model. The paper first discusses the compositional changes in the labor force, employment and unemployment over the past decade. Second, it provides a brief overview of migration flows and their composition, their demographic benefits, and assesses the potential implications of the projected increase in migration for unemployment. It outlines features of Sweden's labor market that contribute to the higher unemployment rates of the lower skilled and foreign-born. Finally, it discusses policies to enhance employment prospects for a more diverse labor force and facilitate the integration of asylum seekers, while preserving the strengths of Sweden's labor market model.

B.   Compositional Trends in the Swedish Labor Market

5.   A skill divide has emerged in the Swedish labor market. The following paragraphs provide a decomposition of changes in key labor market indicators in the past decade. Workers with medium and high skills have enjoyed solid growth in labor supply and employment, and a decline in their unemployment rate. However, workers with low skills have experienced a decline in employment and a sharp rise in unemployment, despite aggregate employment growth averaging 1.4 percent since 2010. Foreign nationals have also faced a rise in unemployment, as their positive contribution to employment was outweighed by the large contribution they have made to the increase in the labor supply.

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[2] Youth unemployment reached 23 percent in 2014. But half of youth unemployment reflects the inclusion of young unemployed people in full time studies. Hence, the analysis in this paper does not focus on this group.
[3] See Box 2 in chapter III of IMF (2014) for a summary of labor market reforms in Sweden over the past two decades.

6.   Natives and the medium-high skilled contributed significantly to labor supply gains.
Labor supply increased by more than 560,000 persons over the past 10 years, of which the medium-high skilled accounted for about 90 percent, whereas foreign nationals accounted for close to 25 percent. These gains correspond to a 2 percentage point increase in the participation rate, reaching 72 percent in 2014. The medium-high skilled accounted for the entire increase in the participation rate and the foreign nationals for some 75 percent of the increase.

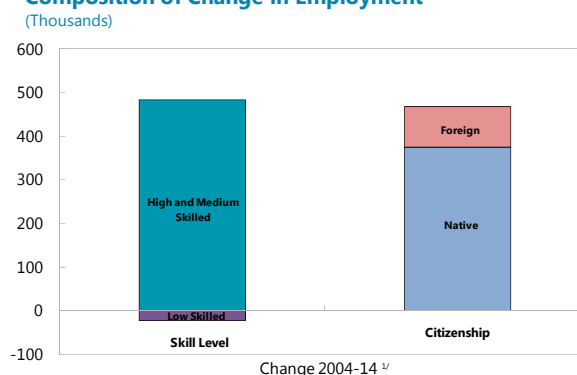**Composition of Change in Labor Force**
(Thousands)
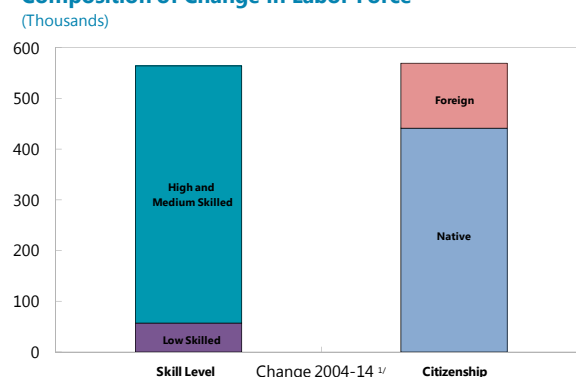
Sources: Eurostat and Fund staff calculations.
1/ A statistical reclassification in 2005 impacts some of the results.

7.   Employment gains were concentrated among the natives and medium-high skilled workers. Total employment gains of more than 460,000 people during 2004–14 amounted to
about 82 percent of the increase in labor supply, of which over 100 percent were taken up by medium-high skilled, partly offset by a 5 percent decline in the employment of low skilled. Foreign nationals accounted for about 20 percent of the gains in employment. These changes correspond to a decline in the employment rate during the past decade by about 1.3 percentage points reaching 92 percent in 2014, as gains in labor supply were faster than those of employment. The decline in the employment rate was accounted for by the low skilled, whereas the employment rate of the foreign rose by about 1½ percentage points.

Composition of Change in Employment
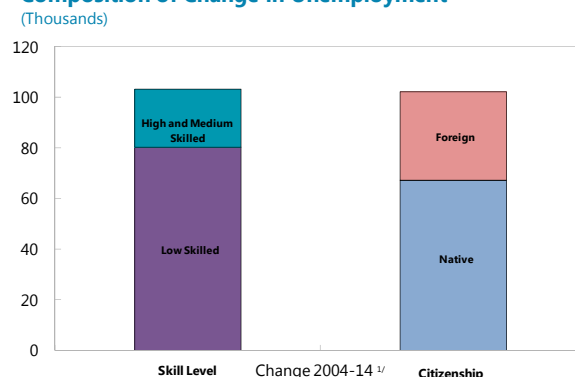(Thousands)

Sources: Eurostat and Fund staff calculations.
1/ A statistical reclassification in 2005 impacts some of the results.

8.   The rise in unemployment was mostly concentrated among the low skilled.
Unemployment increased by more than 100,000 over the past decade, of which the low skilled accounted for about 80 percent; whereas the foreign accounted for more than one-third of the rise in unemployment. Low skilled also comprised a rising share among the unemployed over the period, with their share reaching close to 40 percent in 2014 (up from 25 percent in 2004); whereas the share of foreign nationals in total unemployed reached

Composition of Change in Unemployment
(Thousands)
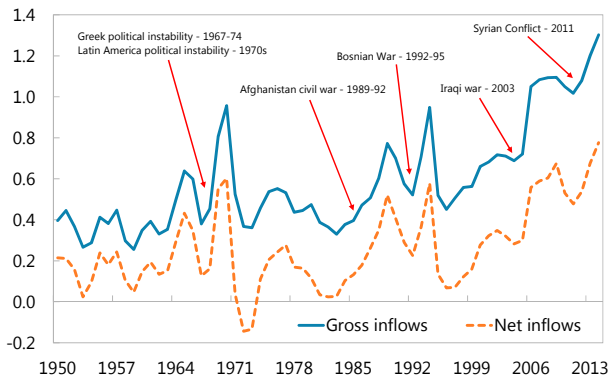
Sources: Eurostat and Fund staff calculations.
1/A statistical reclassification in 2005 impacts some of the results.

17 percent in 2014 (up from 11 percent in 2004). These changes correspond to an increase in the unemployment rate by close to 1½ percent over the period, which was largely due to the low skilled, whereas the contributions of the natives and foreign were equally split.

## C.   Migration and the Swedish Labor Market

9.   Sweden's long history of immigration has led to an increasingly diverse population. Sweden has received net migration inflows since the 1930s. Gross migration inflows have been rising over the years, reaching 1.3 percent of the population in 2014, up from ½ percent in the mid-1990s. Over that period, the share of foreign-born persons has risen from 10½ to 16½ percent of the population. Swedish migration policy has a strong humanitarian dimension, therefore, peaks in migration inflows coincide with wars and unrest in other parts of the world. Indeed, Sweden receives more asylum seekers relative to its population than any other EU country, and it has a well-developed framework for integrating migrants especially refugees (Box 1).

Migration Flows
(Percent of population)

Sources: Statistics Sweden and Fund staff calculations.

Asylum Seekers, 2014
(Percent of population)
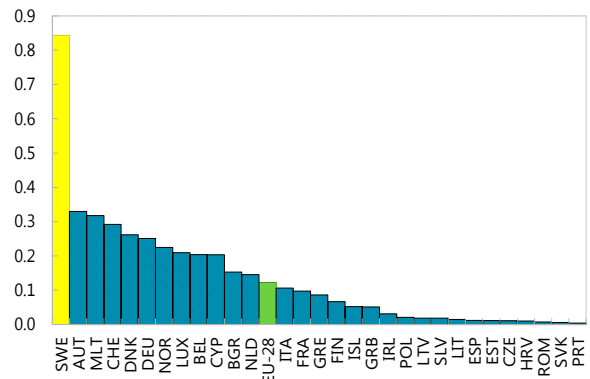
Sources: Eurostat and Fund staff calculations.

10.   The shift in migrants' composition towards asylum seekers contributes to altering the skill distribution of migrants. The share of migrants seeking asylum (and family reunification) has been rising, with asylum seekers comprising about two-thirds of total migrants' inflows in 2014, up from about one-third in 2010. A higher share of asylum seekers is expected in 2015 and the share could remain high for some years. Further, the share of migrants from non-OECD countries has been increasing consistent with the rising numbers of refugees who, in recent years, have largely come from Eritrea, Somalia, Afghanistan, Iraq, Iran, Kosovo, Albania, and Serbia, with Syria the largest source since 2012. In 2015, unaccompanied minors—primarily from Afghanistan—are almost 20 percent of total refugees, up from about 8 percent in recent years.

Migrants by Reason for Migration
(Percent of total)
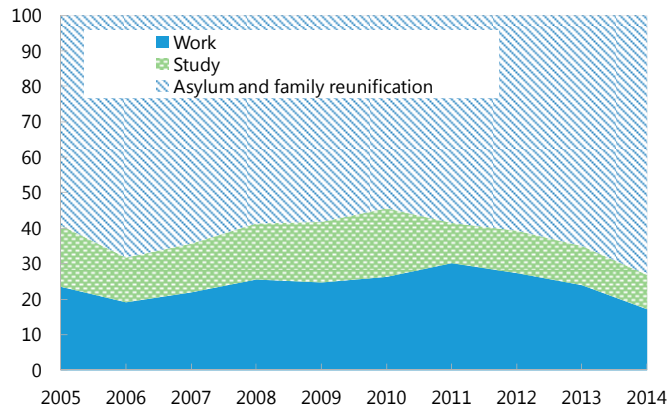
Sources: Swedish Migration Board and Fund staff calculations.

Among the stock of migrants, the share of low-educated increased to about 28 percent in 2014, from 17 percent in 2005, broadly offset by a declining share of highly-educated migrants, which fell by 10 percentage points over the same period.[4]

Migrants by Country of Origin
(Percent of total)

Sources: Statistics Sweden and Fund staff calculations.

Migrants by Educational Attainment
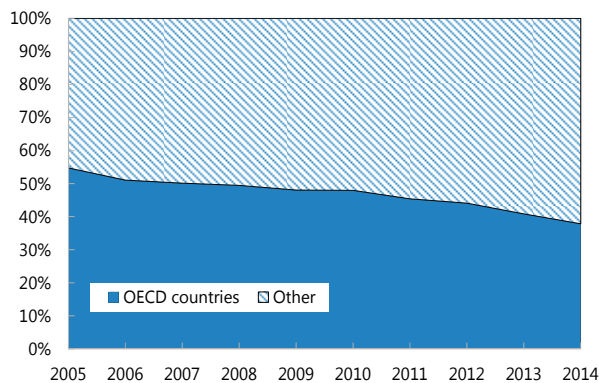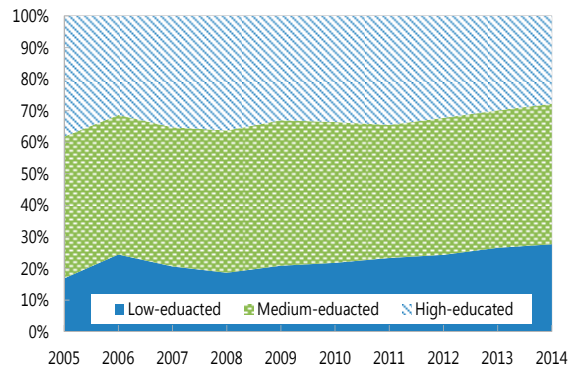(Percent of total) 1/

Sources: Statistics Sweden and Fund staff calculations.
1/ High refers to educational attainment of post secondary education of 3 years or more (ISCED97 5A) or higher; low-and-medium-refers to educational attainment below high.

11.   At the same time, migration has important demographic benefits. Migration helps maintain population and labor force growth in the face of an aging of the native population, as it tends to be concentrated among the younger and economically active age groups. Indeed, three-quarters of the overall population increase in Sweden since the mid-2000s came from net migration; and the foreign nationals contributed close to 40 percent of the increase in the labor force during 2008-14 (Figure 2). Going forward, migration is critical for maintaining growth in the working age population—which, without migration, would shrink by a cumulative 3 percent by 2030 and 12 percent by 2060, according to Eurostat forecasts. Overall, these favorable effects will substantially curb the expected rise in the old age dependency ratio.[5]

Old Dependency Ratio
(Number of 65+ years old per 100 working age (15-64 years old))
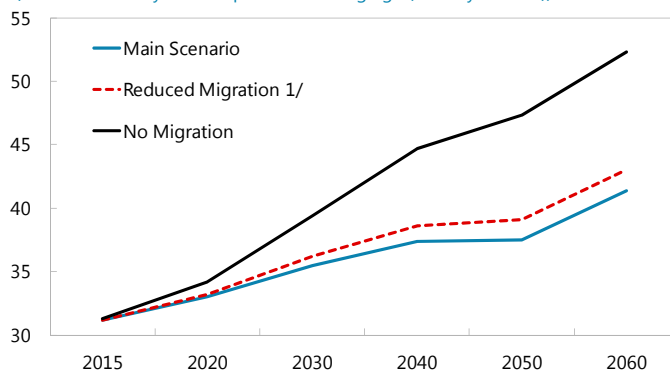
Sources: Eurostat and Fund staff calculations.
1/ Reduced migration scenario assumes that net migration is reduced by 20 percent relative to the main scenario.

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[4] Highly-educated are defined as those with tertiary education or higher according to the International Standard Classification of Education (ISCED97 levels 5A-6); medium-educated are those with educational attainment of upper secondary up to post secondary of less than 3 years (ISCED97 levels 3C-5B); and low-educated are those with educational attainment of less than lower-secondary education (ISCED97 levels 0-2).

[5] About 80 percent of the migrants' inflows to Sweden over the next 40 years are projected to be in working age group (15-74 years old).

Box 1. The Swedish Framework for Integrating Asylum Seekers

The policy goals of integrating migrants into the labor market are achieved mainly through general measures for the unemployed among the whole population, regardless of country of birth or ethnic background. These general measures are supplemented by targeted support for the introduction of newly arrived refugees in Sweden—namely, the introduction program (see below).

Accommodation: As asylum seekers pursue their application with the Swedish Migration Agency, they are offered temporary accommodation for as long as needed. These accommodations can be either in an apartment in a normal housing area or at a reception center. Applicants who do not arrange accommodation on their own cannot choose where they live, and must be prepared to move to a town where housing is available, including during the waiting period for an asylum decision, due to limited availability of housing. If the applicant has the financial resources (as assessed by the Migration Agency), they must pay for the accommodation themselves. Applicants who choose to find accommodation on their own are responsible for their living costs, but have the option to go to an accommodation center where space is available if needed later. If a residency permit is granted, the PES or the Migration Agency can help find housing. Refugees move to municipalities once a residency permit has been issued so as to start the introduction program. Until recently, municipalities could chose not to accept refugees (even though the approach is that every municipality would be 'expected' to be ready to accommodate refugees). However, this is now being changed, and all municipalities will be designated to receive refugees largely based on employment prospects.

Work arrangements: Asylum seekers are allowed to work, even without a work permit if certain conditions are met. This right lasts until a final decision on their asylum application is taken, including during appeals procedures, and can extend beyond that if the applicant cooperates in preparations to leave the country voluntarily. Asylum seekers who can get jobs can possibly switch from being an asylum seeker to a labor market migrant if they manage to work 4 months before receiving a final negative decision at the second instance or after their appeal to the Migration Court of Appeal is refused. A successful applicant will receive a temporary work permit of at least 1 year and at most 2 years. After 4 years on temporary permits, a person who still has a job can apply for a permanent residence permit. Asylum seekers may also engage in a 'work practice at a company' to help them learn about the Swedish culture, language, and working life, while building their skills.

The Introduction Program: Eligibility is restricted to asylum seekers who have received a residence permit as refugees, quota refugees, or other persons in need of protection, aged 20-64 years (or 18-19 years without parents living in Sweden) and their relatives. An introduction interview by the PES assesses their experience, education and ambitions to develop an "introduction plan" which can last up to 24 months. The plan has three main activities that should occupy participants full-time: (i) Swedish language training; (ii) employment preparation, such as the validation of education and professional experience; and (iii) social studies to provide a basic knowledge of Swedish society. Participation in the program is voluntary, but the introduction benefit is conditional on participation. Participants who find work are able to continue to claim the introduction benefit alongside their wages for six months, after which the benefit is reduced in proportion to the time spent working. The PES can assist refugees with an introduction plan in finding an accommodation at a location where it considers the chances of finding work or education are good.

12.   The benefits of migration for growth and long-term fiscal sustainability hinge critically on the extent of migrants' integration into the labor market. An extensive literature has studied how migrants fare compared with natives in terms of employment and wages, as well as how their arrival affects the employment and wages of native workers.[6] One of the key findings is that immigrants integrate slowly: they have lower average participation and employment rates, higher unemployment rates, and these gaps are more pronounced in the years upon arrival. Key factors affecting migrants' labor market outcomes are found to be: educational attainment, age, and host country qualifications and language skills (Aiyar *et al*, 2015; and Beyer, 2015). However, these gaps are not fully accounted for, indicating other obstacles, such as difficulties with gaining recognition of qualifications.

**13.   Similar trends are seen in Sweden, where migrants have achieved high employment rates but their integration process is lengthy.** Based on historical experience, after 5 years migrant employment rates reach about 50 percent, and 60 percent after 10 years—compared with 77¾ percent among natives percent in 2014. Migrants' employment rates keep rising, reaching a quite high 73 percent after 20 years. However, the lengthy integration process means that average employment gaps are higher in Sweden compared with other Nordic peers, being most pronounced among the low-skilled. The unemployment rate gap with natives is also high and rising—standing at 10 percentage points in 2014, up from an average of 7 percent points during 2005–08.

Immigrant Labor Market Integration Rate, Ages 16-64, 2013

Length of Stay	Labor Force Participation	Employment rate
0-4 years	66.9	48.2
5-9 years	71.4	53.8
10-19 years	77.6	64.7
20-29 years	82.1	73
30 or more years	78.2	73.2

Source: NIER, June 2016 Special Analysis 'Population growth will affect the labor market', available at: http://www.konj.se/download/18.1734e80814bc5f7dc5b529b/Population-growth-will-affect-the-labour-market.pdf

Native-Foreign Employment Rate Gap, by Education Level, 2014
(Percentage points) [1/]
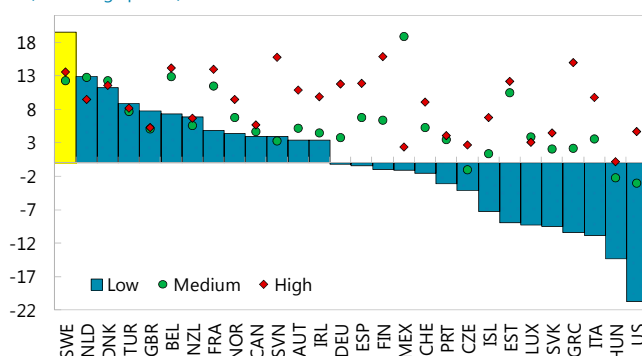
Sources: OECD and Fund staff calculations.
1/ Positive values imply that the native-born employment rate is higher than that of the foreign-born, and *vice versa.*

Foreign-Native Unemployment Rate Gap, 2014
(Percentage points)
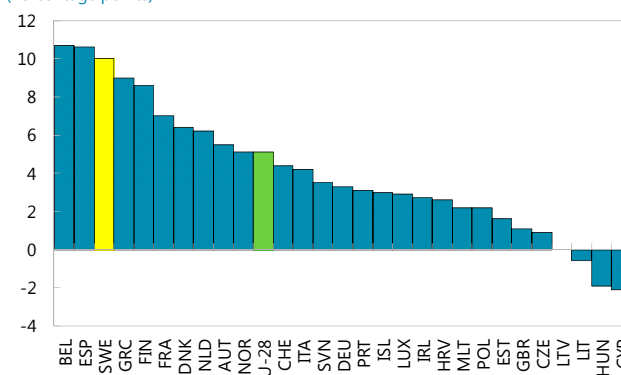
Sources: Eurostat and Fund staff calculations.

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[6] See Kerr and Kerr (2011) for a review of the literature on the labor market effects of migrants, and Beyer (2015) for evidence from Germany.

14.   Rising migration inflows pose upside risks to unemployment for some years. Labor supply growth is projected to be supported by continuing migrant inflows averaging about 1¼ percent of the population annually, although there is sizable uncertainty around these prospects. A majority of inflows are expected to be asylum seekers (about two-thirds of inflows in recent years), who historically have taken longer, on average, to integrate.[7] A simple dynamic accounting framework that factors in migrants' age and skill profile is utilized to project unemployment (see table 1 for details). At historical rates of integration—taking 5 (10) years to reach employment rate of 48 (60) percent—the unemployment rate could rise to about 8½ percent by 2020, and remain elevated for some years before declining. In contrast, under an accelerated integration scenario—taking 5 (10) years to reach employment rate of 60 (70) percent—the unemployment rate would remain broadly stable for a number of years at around 7½ percent before falling gradually to around 6¼ percent by 2025.

Unemployment Rate under Various Integration Speeds [1/]
(Percent)
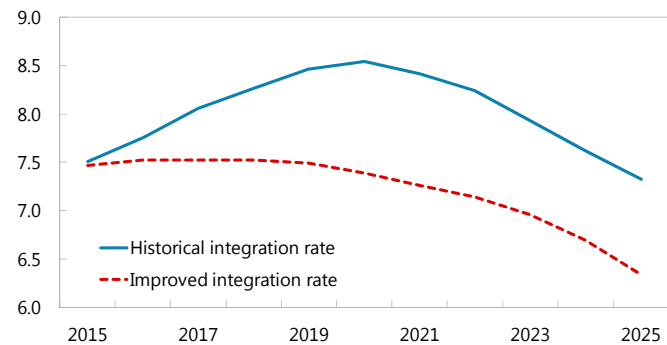
Sources: NIER, Statistics Sweden, and Fund staff calculations.
1/Historical integration rates refer to employment rate at 48 percent in first five years, and 60 percent after 10 years; whereas improved integration rates refer to employment rate of 60 percent in first five years and 70 percent after 10 years.

D. The Swedish Labor Market Plays a Role

15.   The labor market outcomes for the low skilled and migrants reflect in part the net effects of Swedish labor institutions and related policies. As discussed below, collective bargaining and employment protection may tend to raise unemployment among the low skilled and migrants, but government policies including active labor market policies, tax policy, and wage subsidies work in the other direction.

16.   High entry-level wages arise from the collective bargaining process between unions and employers. The bargaining process takes place at the sector level, but is highly coordinated across industries with the national agreement for the industrial sector setting the example for the rest of the labor market. Sector agreements include floors on wage increases at the firm/local level, limiting the scope for adjusting wages at the firm level to local conditions (IMF, 2014). Although there is no national minimum wage in Sweden, the roughly 600 collective agreements include multiple minimum wages that are differentiated by sector, occupation, age and experience (Skedinger, 2008; OECD, 2011; and IMF, 2014). In 2011, these collectively negotiated wage floors were, on average, 80 percent of average wages. This is high in comparison for instance to Germany

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[7] Analysis by Statistics Sweden suggests that asylum seekers have the lowest employment rate, but with increasing time in Sweden the differences with other immigrant groups narrow.
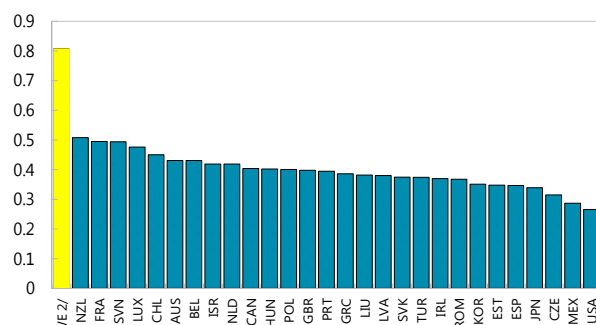
where collectively agreed wage floors in most sectors were closer to about ½ of average hourly earnings in 2014 (IMF, 2014), and is also high relative to national minimum wages in other countries.

Collectively Agreed Wage Floors, 2011
(Percent of average wage)
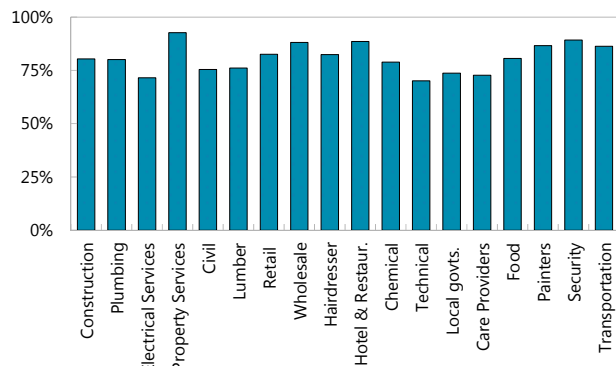
Sources: Swedish Trade Union Confederation (LO) and Fund staff calculations.

Minimum Wage Relative to Average Wage, 2014 1/
(Ratio)

Sources: OECD, Swedish Trade Union Confederation, and Fund staff calculations.
1/ Data for Sweden are for 2011, and for Japan and Korea are for 2012.
2/ For Sweden, data refers to average collectively-agreed wage floor in 2011.

17.   The resulting highly compressed wage distribution seems to have particularly adverse effects on the employment (and unemployment) of migrants. Consistent with the population's strong support for social equity, rather than allow lower wages, the tradition in Sweden is to lift the skills of workers so as many as possible attain a productivity that justifies the relatively high wages at the lower end of the distribution. As a result, sectors that would absorb workers with the lowest skills in many countries, such as domestic help, are very small in Sweden (OECD, 2015). This tradition has supported equity while achieving high employment, yet some, especially those with low skills, do not gain work.[8] Migrants appear to be particularly affected, suggesting factors beyond their education and skills could be at play, including language barriers and lack of social/career networks.[9]

Wage Dispersion, 2012 1/
(Ratio of gross earnings, decile 5/decile 1)
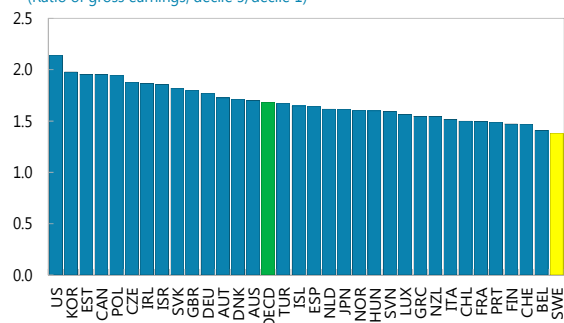
Sources: OECD and Fund staff calculations.
1/ Data for Chile, Iceland, and Israel are for 2011. Data for Estonia, France, Luxembourg, Netherlands, Slovenia Switzerland, and Turkey are for 2010.

Wage Structure and Foreign-Native Unemployment, 2012
(Ratio of 5th to 1st wage deciles, X-axis; Ratio, Y-axis)
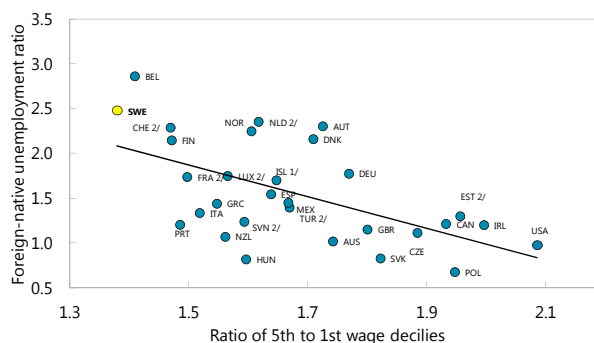
Sources: OECD and Fund staff calculations.
1/ 2011 wage ratio data used. 2/ 2010 wage ratio data used.

[8] Eliasson and Skans (2014) show that in industries where the minimum wage is binding, workers with low skills are squeezed out when minimum wages rise further.

[9] A number of studies confirm the potential negative employment effects of high wage floor for workers with weak attachment to the labor market, including the low skilled and foreign-born as it leaves a gap between wages and productivity (Skedinger, 2008; Eliasson and Skans, 2014; NIER, 2014; Ho and Shirono, 2015; and OECD, 2015).

18.   Employment protection is asymmetric between regular and temporary contracts, and the share of temporary contracts has risen though not far above EU levels. Employment protection of regular contracts is negotiated in collective agreements against a legislative fallback of a last-in, first-out rule for dismissals. Over time, protections for temporary contracts have been reduced, leaving a wide gap between regular and temporary contract protection—among OECD countries, Sweden is second to the Netherlands in terms of asymmetry of employment protection. The share of temporary employment in Sweden, has risen from an average of 12 percent of employees in the mid-1990s to 17½ percent in 2014, somewhat above the EU average of 14 percent

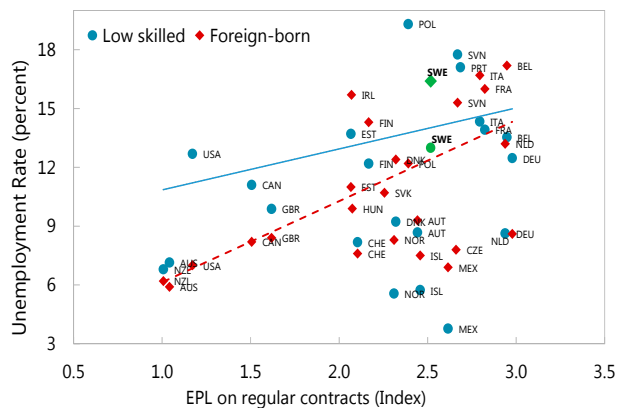**Strictness of Employment Protection, 2013**
(Index: 2013)
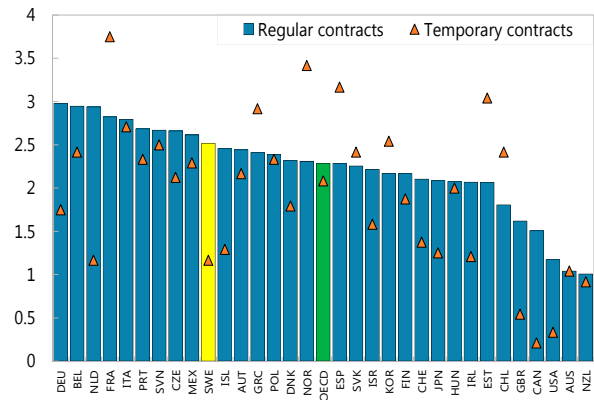
Sources: OECD and Fund staff calculations.

19.   Such an asymmetry in employment protection is found to raise unemployment rates for migrants and the low skilled. In principle, the availability of temporary contracts with lower protection should help less established workers gain jobs initially, which would aid the lower skilled and migrants. A concern would arise if employees were unable to graduate to more stable work, but, in Sweden, transition rates from temporary to permanent employment are relatively high, at over 40 percent compared with an EU average of 23 percent, suggesting that temporary contracts are likely playing a role as a stepping stone to more stable jobs for many.[10] However, transitions from temporary employment to inactivity (and to a lesser extent to unemployment) are also common (Figure 3).

Employment Protection and Labor Market Outcomes, 2013
(Index: 0-6 where 6 is most restrictive, X-axis; Percent, Y-axis)

Sources: OECD and Fund staff calculations.

Indeed, based on a sample of OECD countries, Ho and Shirono (2015) find that a greater asymmetry in employment protection is associated with a larger gap between unemployment rates of the foreign-born and natives. This may reflect the lower skilled and migrants taking temporary jobs with relatively high labor turnover, making unemployment more likely. Such an asymmetry may also contribute to widening the skill gap if it deters firms from investing in training and human capital.[11]

[10] Indeed, Hartman *et al* (2010) find that receiving a fixed term contract reduces the risk of future unemployment. They also find that the longer the temporary contract, the higher the probability of having a permanent contract at the same site 2–2.5 years after the start of the contract.

[11] Evidence from Sweden shows that employers provide less training to temporary workers (Wallette, 2005).

20.   At the same time, Swedish policies promote employment through a combination of measures which benefit the low skilled and foreign-born:

- *Active labor market policies (ALMPs) receive substantial resources*. They encompass a large number of programs aimed at addressing both supply and demand side barriers to employment. They include training, wage subsidy schemes (see below), and job matching services targeted at various groups.[12] In 2013, public spending on labor market policies stood at 2 percent of GDP, of which two-thirds were active measures. These efforts are one of the highest in the OECD countries–only Denmark spends more on ALMPs.

Active Labor Market Programs, 2013
(Percent of GDP)

Sources: OECD and Fund staff calculations.
1/ 2011 data used
2/ 2012 data used
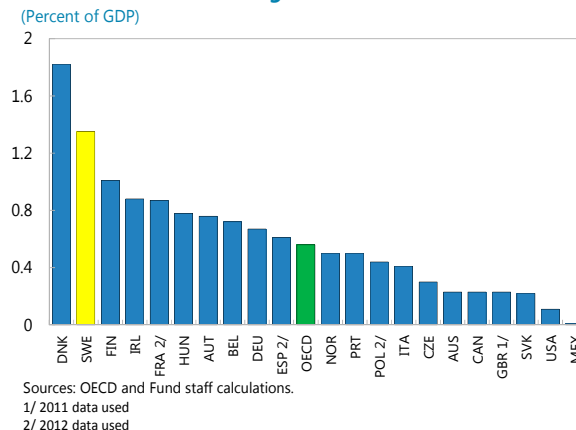
- **However, ALMP spending is skewed towards wage subsidies with mixed effectiveness**. Wage subsidies accounted for almost half of ALMP spending in 2013, while spending on training and job-matching services comprised only 30 percent of this total. Some studies find that wage subsidies reach the right people and have a positive but small effect on the employment of people with weaker attachment to the labor market (NIER, 2014), and that among ALMPs, wage subsidies are the most effective tool to employ migrants (Butschek and Walter, 2014; and Aiyar *et al*, 2015). In other studies, the effectiveness of wage subsidies has been questioned.[13] An assessment by the National Audit Office (2013) of the Step-in-Jobs scheme found that participants did not have a higher probability of gaining unsubsidized employment within three years, rather they moved to another subsidized employment scheme. Similarly, OECD (2014) finds that New Start Jobs have little or no lasting employment impact on

Labor Market Programs By Category, 2013
(Percent of total expenditures on LMPs)

Sources: OECD and IMF staff estimates.

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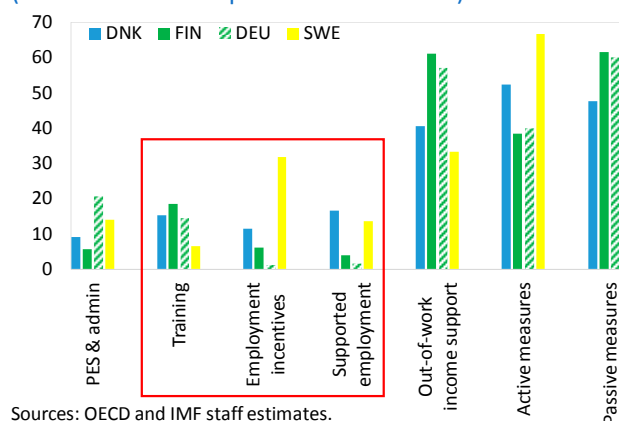
[12] See Calmfors *et al* (2004) for a comprehensive review of the effectiveness of various ALMPs in Sweden.

[13] There are doubts about subsidies creating additional jobs due to evidence of displacement effects as employers switch into subsidized hiring rather than creating new positions. There are also questions around their effectiveness in transitioning participants to unsubsidized employment due to the limited focus of these programs on boosting participants' skills (Calmfors *et al*, 2004; IMF, 2014; European Commission, 2015; OECD, 2015; and NIER, 2015).

the vulnerable groups they are intended for, and that there is a displacement effect between different programs, such as Step-in-Jobs and New-Start-Jobs.

- **Tax policy also seeks to support employment within the context of high overall tax burdens.** Measures to boost labor demand include reduced employer social security contribution for the young and the old, and a lower VAT rate in hotels and restaurants. Other tax measures focus on enhancing incentives to work, including the introduction of an earned income tax credit in 2007, which was strengthened over time. However, the effectiveness of some of these measures has been questioned, as they can lead to displacement effects with limited aggregate employment gains and generate high deadweight costs—as many beneficiaries would be employed even without the tax break ([Fiscal Policy Council, 2014](#)). Indeed, this was the reason behind the phasing out of the lower social security contribution for the young in the 2016 Budget Bill.

E. Policy Priorities

21.   **Containing risks to unemployment from rising migration requires addressing high unemployment of the low skilled and accelerating the pace of migrant integration.** The analysis presented in section C raises concerns around unemployment prospects given the historical experience with migrant integration. Sections B and D indicate parallels between the performance of low skilled and that of migrants in the Swedish labor market, which is consistent with migrants on average being less educated compared with natives.[14] Further, among the more highly educated migrants, their foreign qualifications are less likely to be accepted by Swedish employers; language barriers and lack of knowledge of the Swedish culture further exacerbate these challenges.

22.   **Adapting the Swedish labor market to broaden employment does not mean conceding its core principles, which seek a careful balance between equity and efficiency.** The Swedish labor market delivers high overall participation and employment rates, aggregate wages move with productivity in a manner that protects competitiveness over time, and it continues to do well in terms of achieving social equity objectives. Andersen (2015) notes that the Nordic model is defined not in terms of specific policies but rather in terms of overall objectives, and that the model is not static, but has seen ongoing reforms and has been adapted to changes in the economic environment and in society more widely. Recent and prospective trends in the composition of the Swedish labor force call for further adaptation, with a focus on elements that deter employment of the low skilled and migrants. Achieving high employment of these groups is important to sustain the broader social model and is also consistent with promoting active participation and inclusion of these groups in society.

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[14] Migrants from Afghanistan, Iraq, Syria, Somalia, and Eritrea—the main countries of origin of the current wave of asylum seekers, are on average less educated than the native population or other migrants (Aiyar *et al*, 2015).

23.   Increasing wage flexibility within the existing system would expand work opportunities for the low skilled and migrants. While maintaining collective agreements, the social partners could allow greater scope for firms and workers to find wages that reflect the individual workers' productivity, firm specific factors, and local demand conditions (NIER, 2014). Social supports and tax credits could ensure adequate income. Wage flexibility could also be enhanced in a selective manner by introducing special wage scales for those needing on the job training (likely low-skilled and newly arrived immigrants), as seen in the Netherlands (Box 2).

Box 2. Special Salary Scales in the Netherlands

Collective agreements in the Netherlands can include special scales targeted at certain groups. The wage level under these special arrangements typically starts at 100 percent of the statutory minimum wage, while the regular wage scales typically start at 5-10 percent higher.

For instance, 'preliminary scales' were introduced in 2004 in an effort by the social partners to combat the high youth unemployment. These are included for workers who still receive training, such as the young. The social partners' recommendations included making use of these preliminary scales that are determined under collective agreements, together with creating work place training opportunities for young people enrolled in education.

The 'special scales' were introduced in 2014 for disadvantaged young workers (i.e., young workers who entered into a youth disability scheme). The social partners recommended combining these lower pay scales with subsidies to lower the cost to employers while ensuring that workers receive the minimum 100 percent of the statutory minimum wage. In 2012, out of 53 concluded collective agreements, 31 have included preliminary scales, and 8 included special targeted scales.

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24.   Reducing employment protection for regular contracts would lower hurdles to stable jobs. Employment protection is negotiated in the shadow of a strong legislative backstop, which has led to relatively high exit costs.[15] Anecdotal evidence suggests that one effect of such protection is for employers to raise minimum educational qualifications to ensure they will be able to reallocate employees to other roles in case business needs change, which would likely disadvantage foreign-born workers. There is a need to review this legislation to ensure a better balance, such that exit costs do not deter firms from hiring new entrants with sufficient skills. Easing the protection on regular contracts would also help alleviate the extent of labor market duality and its adverse consequences on labor market outcomes of the low skilled and migrants.

25.   ALMPs support the unemployed, particularly the low skilled and migrants, but effectiveness should be enhanced. Improving results in terms of creating new jobs and increasing prospects for gaining unsubsidized employment would benefit from a refocus of ALMPs on training that meets employers' needs and strengthened job matching services. In particular, the PES needs

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[15] See OECD (2011) for a detailed discussion of some aspects of the Swedish employment protection.

stronger contacts with employers and better information provision to employers.[16] In cases where wage subsidies are used, they are more likely to be effective if a better employee-employer match is made at the outset. Closer contacts with employers, along with expanding work-place based training programs, would also help align training and vocational programs with employers' needs. More generally, while ALMPs are used intensely in cases of long-term unemployment, it would be useful to intervene earlier in cases where risks of long-term unemployment are high. Addressing housing supply constraints (Chapter II), especially building affordable rental housing in or near the main centers where job prospects are best, would facilitate labor mobility and employment.

26.   Focusing on migrants—in particular, accelerating their integration into the labor market is a key priority. As noted, Sweden has a well-developed framework for integrating migrants (Box 1), ranking top among 38 economies.[17] However, in practice, the integration

process is lengthy as in other countries (section C), with only 30 percent of participants in the introduction program are in employment or full-time education after two years. Beyond the specific features of the Swedish labor market model discussed above, there are non-wage barriers, such as the lengthy residency permit process—a pre-requisite for the introduction program—difficulties gaining recognition of foreign skills and qualifications, and potential "statistical" discrimination (OECD, 2014; and European Commission, 2015).[18]

Migration Integration Policy Index, 2014
(Index: 100=Most favorable)
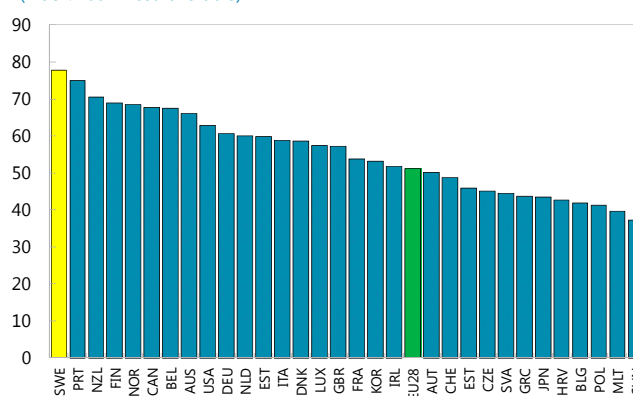
Sources: MIPEX and Fund staff calculations.

27.   The Swedish authorities are taking a range of steps in this area. The 'fast tracks' initiative aims to create faster entry to the labor market for highly skilled migrants in occupations where there are shortages. The reception system is being adjusted to designate municipalities to receive refugees based mostly on job opportunities. Recognizing the potential adverse role of discrimination, a new government body, The Equality Ombudsman, was created

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[16] Such information would, for instance include information about existing employment subsidy schemes and migrants' skills and qualifications.

[17] The ranking is based on the migrants' integration policy index ([MIPX](#)), developed by Barcelona Centre for International Affairs, and the Migration Policy Group. The index is based on a review of integration outcomes, policies, and beneficiaries in all EU Member States, Australia, Canada, Iceland, Japan, South Korea, New Zealand, Norway, Switzerland, Turkey and the USA. The MIPX covers 8 policy areas: labor market mobility, education, political participation, access to nationality, family reunion, health, permanent residence, and anti-discrimination.

[18] Statistical discrimination occurs when risk-averse employers avoid hiring based on a candidates' country of origin or surname if it signals greater uncertainty about a candidate's experience or qualifications (OECD, 2014).

in 2009 to combat discrimination and promote equal rights and opportunities for all. Migrants also benefit from comprehensive ALMPs, including from wage subsidies which can help overcome employers' risk aversion (OECD, 2014), although relatively large and prolonged subsidies may be needed if exit costs are high.[19]

28. **Continued efforts to accelerate integration are needed.** This is particularly important in light of the rising numbers of asylum seekers recently, estimated to reach about 160,000 (1.6 percent of population) in 2015—roughly double earlier projections—and expected to be almost as high in 2016. The average processing time for residency permits has doubled from an average of 108 days in 2012 to 220 days during Q1-Q3 2015, suggesting a need to channel more resources to the Migration Agency. Potential areas where improvements are most important include: [20] [21]

- *Expediting the educational assessment and skill validation process*, so as to help develop an appropriate introduction plan at early stages, and identify courses needed to upgrade skills and help refugees succeed.

- *Easing the advanced Swedish language requirements* to start the qualification validation process and/or begin supplementary education for regulated professions (doctors, nurses, teachers, and lawyers); expanding the availability of supplementary education beyond the regulated professions; and ensuring that employers are an integral part of the certification procedure in order to build trust.[22]

- *Improving the quality of the Swedish for Immigrants* language training and increasing its flexibility by combining it with vocational training.

- *Continuing support for highly qualified migrants* who accept a low-skilled job (who lose access to PES services once employed), to help them continue to search for a better job.

- *Expanding certain employment programs* for youth that combine work and training, such as the [vocational introduction employment program](#) to also cover newly arrived refugees could help them gain their first job quickly and build needed skills.

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[19] See Aiyar *et al*, 2015 for a review of the literature on the effectiveness of ALMPs in integrating migrants, many of which include studies on the Nordic countries, including Sweden. The findings suggest that many of the Swedish programs, such as 'the special introduction' program introduced in 2003, and the 'intensive coaching' program introduced in 2006, have a positive effect on the employment rate of migrants.

[20] Recently, the [Swedish National Audit Office (2015)](#) made more comprehensive recommendations along these lines to promote rapid and effective establishment of newly arrived immigrants.

[21] See OECD (2014) for more detailed recommendations on specific measures to accelerate the integration of migrants into the Swedish labor market.

[22] Swedish language requirements could be eased for instance by using English (or maybe Arabic for now in light of large numbers of Syrian refugees) to start the validation process while migrants learn Swedish along the way.

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Table 1. Unemployment Simulations: Assumptions and Data Sources

|	Historical Integration Rate	Improved Integration Rate
Period	2015-2025	2015-2025
Data Sources	Statistics Sweden, OECD, Eurostat, and NIER	Statistics Sweden, OECD, Eurostat, and NIER
Assumption		
Net Migration flows	As projected from Statistics Sweden: Average annual inflow of 1.25 percent of the population during 2015-2025	As projected from Statistics Sweden: Average annual inflow of 1.25 percent of the population during 2015-2025
Share of working age migrants	As projected from Statistics Sweden: On average about 76.5 percent of net inflows	As projected from Statistics Sweden: On average about 76.5 percent of net inflows
Share of highly-educated working age migrants	Based on historical averages from Statistics Sweden: About 31 percent of the immigrants stock. The share was applied to the working age net inflows	Based on historical averages from Statistics Sweden: About 31 percent of the immigrants stock. The share was applied to the working age net inflows
Integration pace:	*Guided by NIER, special analysis report: 'Population growth will affect the labor market', June 2015. 1/*	
	Gradual increase in participation rate from 65.7 percent in year 1 to 73.4 percent in year 10. Gradual increase in employment rate from 42 percent in year 1 to 60.2 percent in year 10.	Gradual increase in participation rate from 66.2 percent in year 1 to 73.6 percent in year 10. Gradual increase in employment rate from 53 percent in year 1 to 70.2 percent in year 10.

1/ The integration pace assumes a faster integration pace of highly-educated immigrants, but the overall weighted impact is consistent with NIER's analysis.

Figure 1. Labor Market Outcomes of Various Groups

Participation Rate 1/
(Percent of corresponding sub-group population, 15-74 years old)
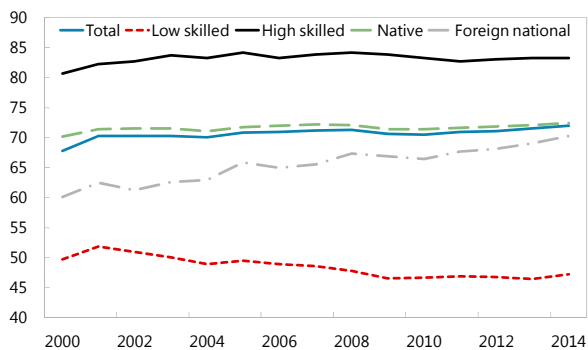
Sources: Eurostat and Fund staff calculations.
1/ A statistical reclassification took place in 2005.

Employment Rate 1/
(Percent of corresponding sub-group active population, 15-74 years old)

Sources: Eurostat and Fund staff calculations.
1/ A statistical reclassification took place in 2005.
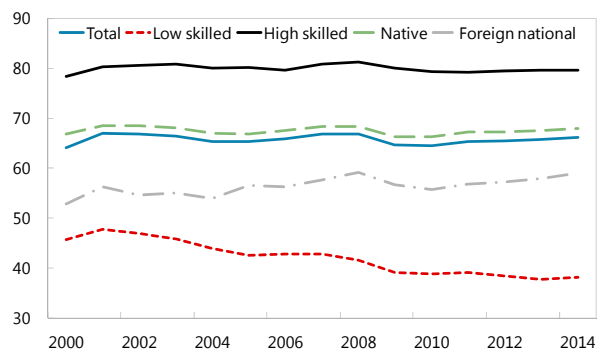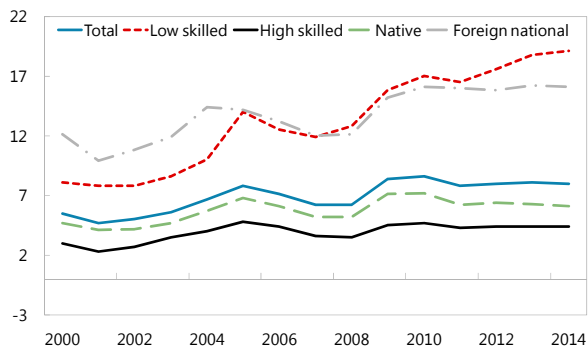
Unemployment Rate 1/
(Percent of corresponding sub-group active population, 15-74 years old)

Sources: Eurostat and Fund staff calculations.
1/ A statistical reclassification took place in 2005.

Long-Term Unemployment 1/
(Share of unemployed, three months moving average)
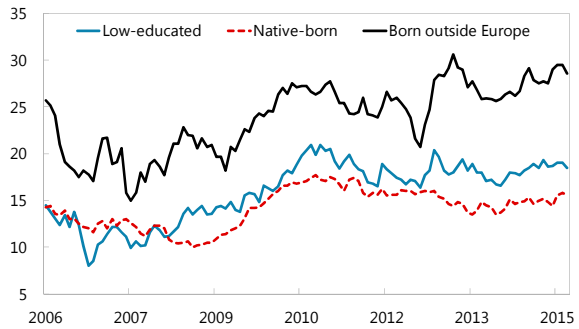
Sources: Statistics Sweden and Fund staff calculations.
1/ Unemployment duration of 12 months or more.

Figure 2. Migration and Demographic Trends

Population Growth
(Change in Thousands)
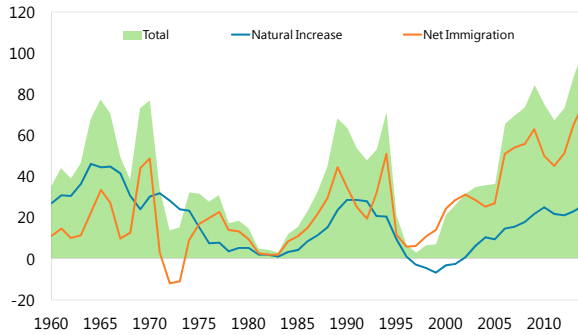
Sources: Statistics Sweden and Fund staff calculations.

Projected Increase in Population
(Thousands)
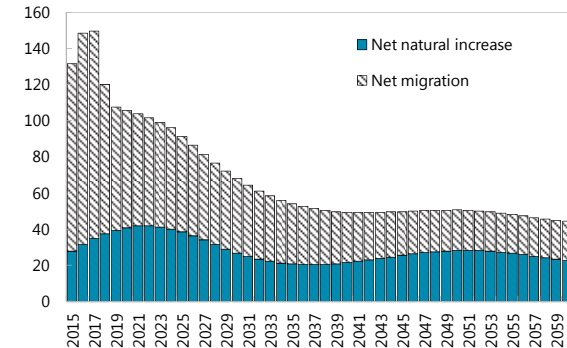
Sources: Statistics Sweden and Fund staff calculations.

Change in Working Age Population
(In thousands)
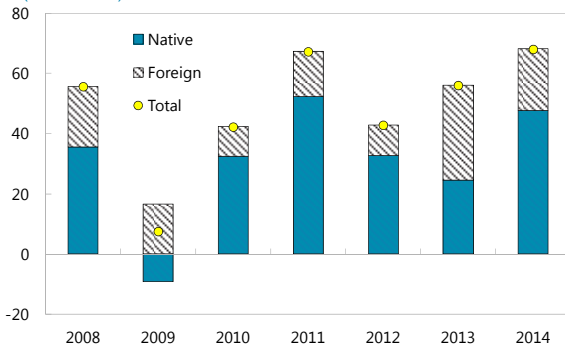
Sources: Eurostat and Fund staff calculations.

Projected Change in Working Age Population
(Thousands, cumulative change relative to 2015)
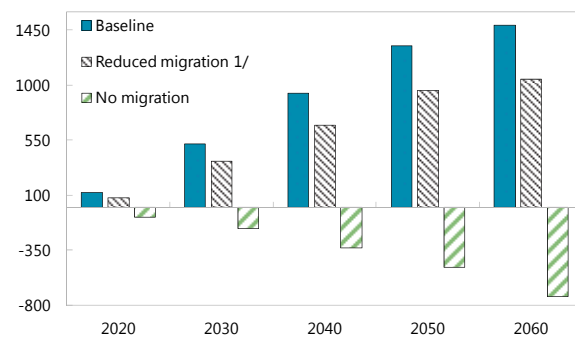
Sources: Eurostat and Fund staff calculations.
1/ Net international migration is reduced by 20 percent relative to baseline.

Figure 3. Temporary Employment

Temporary Employment
(Percent of total number of employees)
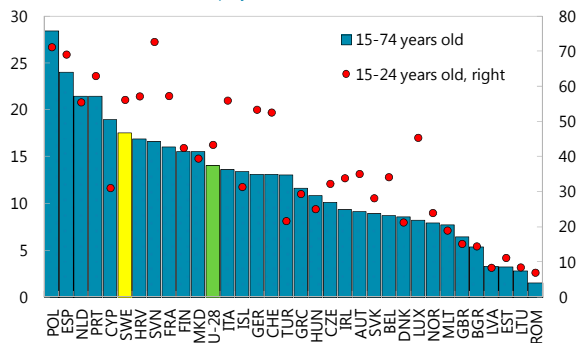
Sources: Eurostat and Fund staff calculations.

Temporary Employment of Low-Skilled
(Percent of total temporary employment)
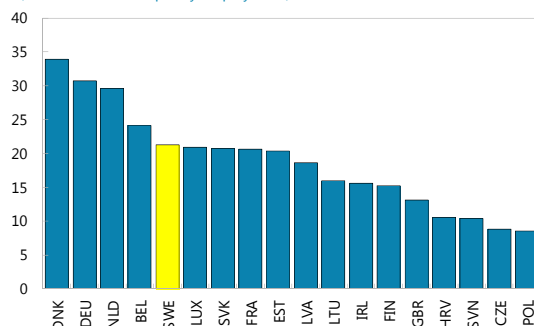
Sources: Eurostat and Fund staff calculations.

Labor Turnover by Educational Attainment, 2011
(Individuals less than 1 year in current job, percent of employment)
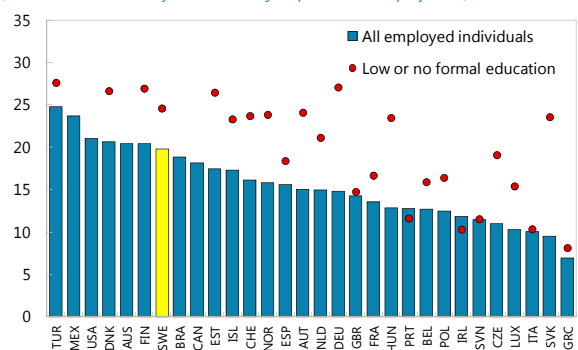
Sources: OECD and Fund staff calculations.

Transition From Temporary Employment
(Percent of total temporary employment, average 2011-13)
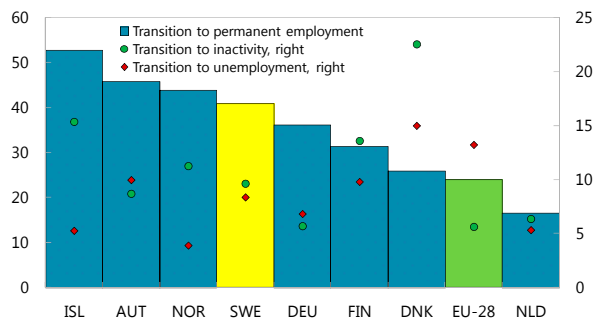
Sources: Eurostat and Fund staff calculations.

HOUSING SUPPLY CONSTRAINTS IN SWEDEN[1]

Sweden has experienced rapid house price increases since the mid-1990s, interrupted only briefly by the global financial crisis. The recent surge in house prices and the associated increases in household debt pose growing macro-financial risks. Dealing with these challenges requires a holistic approach, including solving the supply bottlenecks that have long plagued the Swedish housing market. This chapter highlights the role of supply constraints in driving prices of Swedish owner-occupied housing based on an empirical analysis using municipal-level data.

A. Introduction

1.   House price booms in Sweden, as in many other countries, are a big-city phenomenon. There is large divergence between house prices in major urban areas such as Stockholm and Gothenburg and other parts of the country, suggesting that local factors play a large role in housing markets. For example, between 1996 and 2014, real house prices increased by over 280 percent in Stockholm municipality compared with a cumulative 115 percent rise in real terms in the median city.[2]

Real House Prices in Selected Swedish Cities
(Index, 1996 = 100)
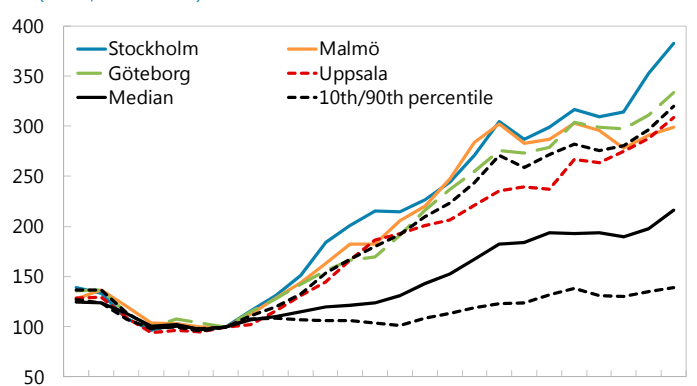
Sources: Statistics Sweden and Fund staff calculations.
Note: Nominal price of 1- and 2-dwelling buildings deflated by CPI.

2.   Differences in housing supply conditions across cities contribute to such price divergences. Immigration inflows, rapid urbanization, and income growth have put pressures on the demand for housing in large cities. But the housing stock has also not expanded at a pace commensurate with that demand (Figure 1), leaving the burden of adjustment to fall on prices. The problem tends to be more severe in major urban areas, as more densely-populated conditions limit the land available for further development, and such density may also be associated with stricter zoning/planning regulations.

3.   This chapter focuses on the role of supply constraints in driving house prices in Sweden. The next section briefly outlines the main issues on the supply side of the housing market. Section C seeks to quantify the impact of supply constraints on house prices using data from Swedish municipalities. Section D discusses the implications for Sweden's housing policy.

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[1] Prepared by Giang Ho.

[2] Prices refer to the average purchase prices for one- and two-dwelling buildings, deflated by the CPI.

Figure 1. Housing Stock and Population in Major Swedish Cities

Stockholm: Housing Stock and Population
(Index, 1990 = 100)
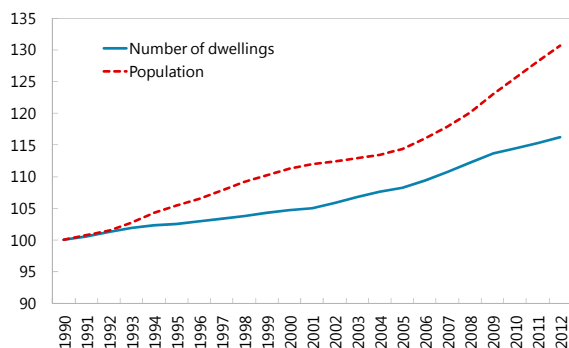
Sources: Statistics Sweden and Fund staff calculations.

Malmo: Housing Stock and Population
(Index, 1990 = 100)
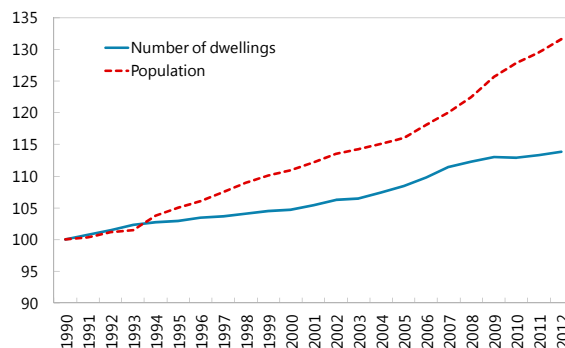
Sources: Statistics Sweden and Fund staff calculations.

Goteborg: Housing Stock and Population
(Index, 1990 = 100)
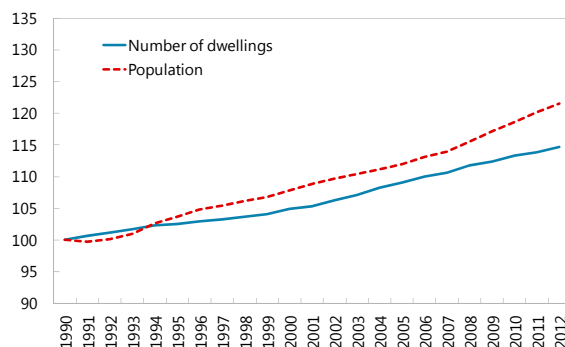
Sources: Statistics Sweden and Fund staff calculations.

Uppsala: Housing Stock and Population
(Index, 1990 = 100)
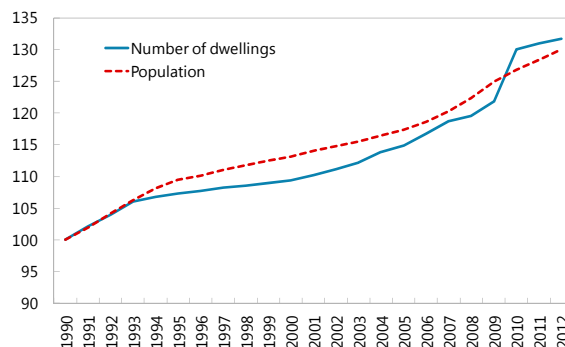
Sources: Statistics Sweden and Fund staff calculations.

B. Sweden's Housing Supply Problem

4.   Sweden is experiencing a growing housing shortage, especially in big cities. New construction has not kept pace with population growth, particularly in big cities; in all three major metropolitan areas, the increase in the number of finished residential properties was only one-fifth of the population increase (Housing Crisis Committee, 2014). Meanwhile, demand for housing has increased substantially as a result of favorable economic conditions. The shortage of housing has therefore grown, and the Swedish National Board of Housing, Building and Planning calculated that in 2012 the housing deficit[3] totaled 156,000 residential properties, over half of which were in the three metropolitan areas: Stockholm, Gothenburg, and Malmo. By the municipalities' own calculations, 126 out of 290 municipalities reported having a housing shortage in 2013, with as much as two-thirds of Sweden's population living in municipalities with a shortage.

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[3] Defined as the difference between current housing stock and what would be required to eliminate "excessive" housing prices, i.e. price increase exceeding that caused by population growth.

5.   Complex planning and zoning processes and inefficiencies in the construction sector explain the inadequate supply response.[4] Municipalities have monopoly power over the planning process, which may lead to a failure to internalize all the benefits of development in these decisions. Different municipalities apply different building permit requirements across the country, which creates uncertainty for the construction companies operating projects at different locations (OECD, 2012). Although the 2011 Planning and Building Act shortened the decision time on building permits to ten weeks and made the production of development plans—required before building permits can be issued—simpler and shorter, the appeal process in case a building plan is rejected remains lengthy. Moreover, construction costs in Sweden are among the highest in the OECD, driven by rapidly rising land prices but also by weak productivity growth and limited competition in the construction sector owing to barriers of entry against small and foreign firms (OECD, 2012; Sorensen, 2013). These rigidities contribute to preventing a sufficient and timely response of new residential construction to increasing demand and prices.

6.   The shortage of rental properties puts further pressure on the owner-occupied market. Over the past two decades, a large number of rental flats in Sweden—particularly in big cities such as Stockholm—have been converted to tenant-owned flats, and new construction of rental flats has fallen behind. These are natural responses to the rigid rent control system, which creates a large difference between market and regulated rents in the main cities. The outcome has been an increasingly acute shortage of rental properties (e.g., about 85 percent of all municipalities reported a shortage of rental flats in 2013), lengthening housing waiting lists (e.g., in 2013, the average waiting time at the Stockholm Housing Service was over eight years), reported use of the black markets (e.g., unauthorized subletting, trade in leases and fraud)—although the extent is hard to quantify, and limited labor market mobility (Housing Crisis Committee, 2014). And as the majority of renters are younger households (e.g., over 50 percent of people aged 25 to 34 rent), the dysfunctional rental market is pushing these households into earlier home ownership and contributing to driving up prices in the owner-occupied market.

C.   Empirical Analysis

7.   How do these supply constraints impact house prices? This section presents a simple empirical framework to quantify the impact of supply constraints on house price developments by exploiting the substantial variation in house prices and supply conditions across 290 Swedish municipalities. The estimated model is then used to answer policy-relevant questions regarding the interaction between demand shocks and structural rigidities in the Swedish local housing markets.

***Measuring housing supply constraints***

8.   In principle, supply constraints can be measured by the elasticity of housing supply. This elasticity governs how much the stock of housing adjusts to a change in prices. While the

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[4] See e.g. Emanuelsson (2015) for a detailed discussion of factors restricting supply of housing.

literature has traditionally focused on shocks to housing demand (e.g., income/population growth) in explaining house price developments, the role of housing supply elasticity has recently gained attention (see e.g. Glaeser and others, 2005; Caldera Sanchez and Johansson, 2011; Paciorek, 2013). When there is an increase in demand, markets with inelastic supply cannot generate enough new construction, resulting in a larger price increase relative to markets with more elastic supply. Thus, housing supply elasticity can affect short-run price changes through its interaction with demand shocks. The supply elasticity is determined by both natural (i.e. topographical) and man-made constraints (e.g., local land use regulations, including zoning codes and building permits).

9.   Measuring local supply constraints is challenging due to lack of data. For the purpose of empirical analysis, one would like to ideally have an indicator of each city's available and developable land supply (to assess the natural land constraints), as well as of regulatory restrictions related to local land use. These indicators have been developed for US metropolitan areas (see e.g. Saiz, 2010; Gyrouko and others, 2008), but are not available for Swedish cities.

Sweden: House Prices and Population Density
(percent)

Sources: Statistics Sweden and Fund staff calculations.

10.   Our empirical strategy addresses this issue in two ways. First, we directly estimate the price elasticity of housing supply using data on house prices and housing stock in Swedish municipalities (see Box 1). Second, we use the local population density and local land development[5] as indicators of housing supply conditions; more densely populated cities or cities whose land has been more intensively developed tend to experience a larger degree of housing supply shortage. These measures are imperfect in that they cannot distinguish the effects of natural land constraints versus regulations; however, the two factors are often highly correlated. Encouragingly, municipalities where these indicators suggest more severe supply constraints (e.g., Stockholm, Malmo, and Goteborg) also experienced larger run-ups in house prices over the past two decades.

Sweden: House Prices and Land Development
(percent)

Sources: Statistics Sweden and Fund staff calculations.

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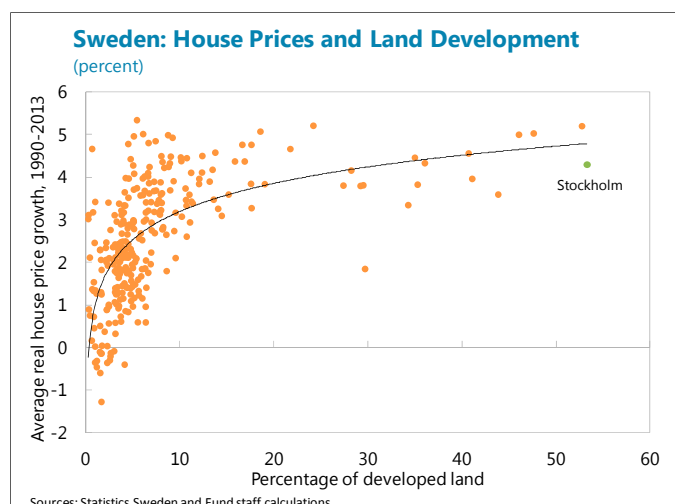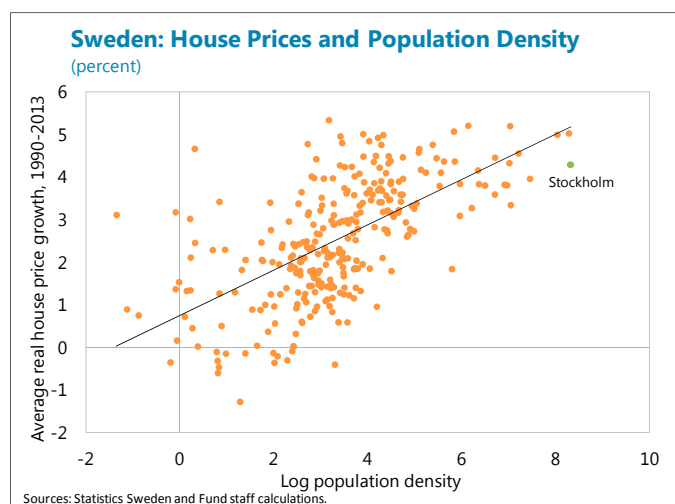
[5] This indicator is calculated as the percentage of built-up land in total land area, where built-up land consists of land used for residential purposes as well as for transport, infrastructure, and other industrial purposes.


Box 1. Estimating Local Housing Supply Elasticity

This analysis uses data on annual housing stock and house prices for 290 Swedish municipalities over 1980–2014. The housing stock is measured using the number of dwellings in one- and two-dwelling buildings (data prior to 1990 is estimated using the number of completed new dwellings for each year), and prices refer to the purchase prices for the same housing category deflated by the national consumer price index. Statistical tests indicate that the two series in log levels are non-stationary and co-integrated in a number of municipalities (with one co-integrating relationship). Thus, following Wheaton and others (2014), we use the Vector Error Correction Model (VECM) to estimate the elasticity of supply. This flexible framework can address both non-stationarity and simultaneity issues (i.e. stock and prices are jointly determined in equilibrium) while allowing for short-run dynamics that may be distinct from long-run equilibrium impacts. The model is represented by the system of equations:

$$\Delta S_t = \alpha_0[S_{t-1} - (\beta_1 + \beta_2 P_{t-1})] + \sum_{k=0}^{n} \gamma_k \Delta P_{t-k} + \sum_{k=1}^{n} \alpha_k \Delta S_{t-k}$$
$$\Delta P_t = \alpha_0'[S_{t-1} - (\beta_1 + \beta_2 P_{t-1})] + \sum_{k=0}^{n} \alpha_k' \Delta S_{t-k} + \sum_{k=1}^{n} \gamma_k' \Delta P_{t-k}$$

where S_t and P_t denote (the logarithm of) the stock of housing and real house prices, respectively. The parameter of primary interest—our measure of the long-run elasticity of supply—is β_2 in the cointegrating equation, which governs the long-run relationship between the housing stock and prices. The set of adjustment coefficients, α, γ and α', γ' control how quickly the stock and prices adjust back to the long-run relationship given a temporary deviation from the equilibrium. The system is estimated repeatedly for each municipality using the single-step Johansen Maximum Likelihood Estimator, which makes the assumption that the errors are normally distributed.

The estimated elasticity values are reasonable. Focusing on the statistically significant estimates, we obtain elasticity measures for about 150 municipalities ranging from close to zero up to 3.8, with a median of 0.1 (e.g., a 10 percent rise in real house prices would lead to a 1 percent increase in the housing stock). The magnitude of these estimates is close to estimates in the housing supply literature (e.g., Mayer and Somerville (2000) obtained a value of 0.08 for the US). The estimated elasticities are also correlated with population density (with a simple correlation of -0.45), which is an alternative measure of housing supply constraints. Stockholm municipality—the most densely populated urban area—also has one of the lowest estimated housing supply elasticities in the country at 0.036.

Distribution of Long-Run Supply Elasticity

Source: Fund staff estimates.
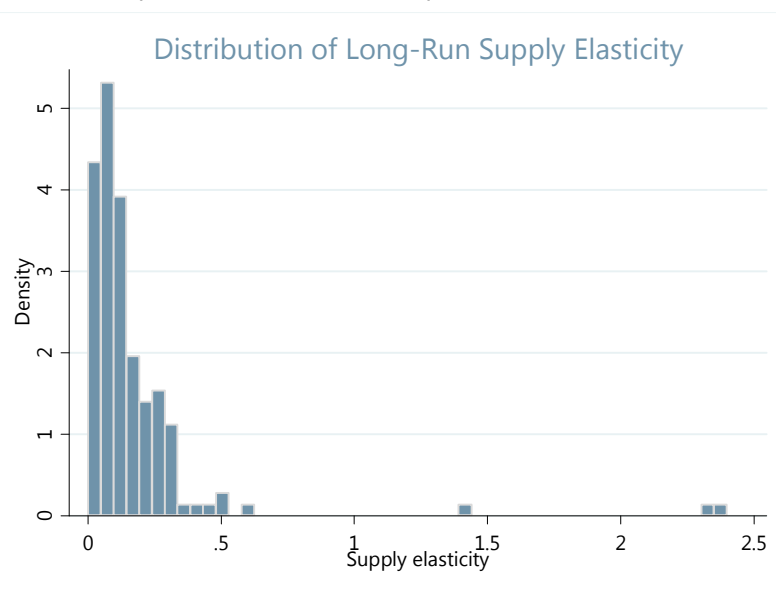
Impact of supply constraints on prices

11. The impact of supply constraints on local house price growth is estimated using a dynamic panel regression approach. The empirical model relates the annual change in local house prices[6] ($\Delta P_{i,t}$) to its lag, a vector of national or local demand shocks ($\Delta X_{i,t}$), a measure of local supply constraints (Z_i)—which is time invariant, and an interaction term between the demand shocks and the supply variable. We're most interested in the elasticity (θ) on the latter variable, which captures the extent to which local supply conditions magnify or mitigate the effect of a shock to housing demand on prices. (Formally, the effect of a demand shock is $\Delta X_{i,t}(\gamma + \theta Z_i)$ and thus varies with Z_i.)

$$\Delta P_{i,t} = \alpha + \beta \Delta P_{i,t-1} + \gamma \Delta X_{i,t} + \delta Z_i + \theta \Delta X_{i,t} Z_i + \mu_t + \omega_i + \varepsilon_{i,t}$$

As discussed, our three alternative measures of Z_i are local population density, local land development, and the local elasticity of housing supply estimated in Box 1. Demand factors included in the model are changes in the national real lending rate—which governs (part of) the user cost of housing, local real household disposable income growth[7], and growth of local population in the 25-44 age group, who are more likely to demand owner-occupied housing. In addition, several variables on the supply side are included, such as the national residential construction cost in real terms and changes in the local dwelling stock to reflect the existing supply of housing. Finally, a full set of year and municipality fixed effects are included. The dynamic model is estimated using annual data for 290 Swedish municipalities over 1996–2011 (Table 1 provides summary statistics). As is well known, the correlation between the municipality fixed effects and the lagged dependent variable gives rise to dynamic bias especially in "small T, large N" type of panels; thus, the Generalized Method of Moments estimator is used to mitigate this bias (see e.g. Arellano and Bond, 1991; Arellano and Bover, 1995).

Table 1. Summary Statistic					
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Real house prices (annual chg, %)	4,620	4.8	8.9	-30.4	54.7
Real lending rate (annual chg, %)	4,620	-0.4	0.9	-2.2	0.9
Real household disposable income (annual chg, %)	4,620	2.2	1.8	-3.9	7.3
Aged 25-44 population (annual chg, %)	4,620	-1.0	1.6	-8.3	6.9
Real construction costs (annual chg, %)	4,620	2.3	1.0	0.06	3.8
Dwelling stock (annual chg, %)	4,620	-0.003	2.4	-42.2	38.3
Population density (log)	290	3.3	1.6	-1.3	8.3
Percentage of developed land (%)	290	7.5	8.6	0.3	53.3
Estimated supply elasticity	150	0.5	1.8	0.0	3.8
Source: Statistics Sweden and Fund staff calculations.					

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[6] Only the prices for one- and two-dwelling buildings are available at the municipal level.

[7] Disposable income data are at the county level (there are 25 counties in total).

12. **The estimation results indicate a significant role for local housing supply conditions in shaping house price developments** (Table 2). Subject to a reduction in the lending rate or an increase in disposable income, housing prices increase more strongly in cities with more severe supply constraints, as measured by higher population density, more intense land development, or lower supply elasticity (Columns 3 to 5). In other words, inelastic supply of housing contributes to magnifying the impact of shocks to housing demand. Responses to other variables mostly behave as expected. On the demand side, stronger house prices are associated with lower cost of borrowing, higher disposable income, or a surge in population. On the supply side, higher nation-wide costs of construction feed into local increases in house prices, as does a fall in the local dwelling stock.
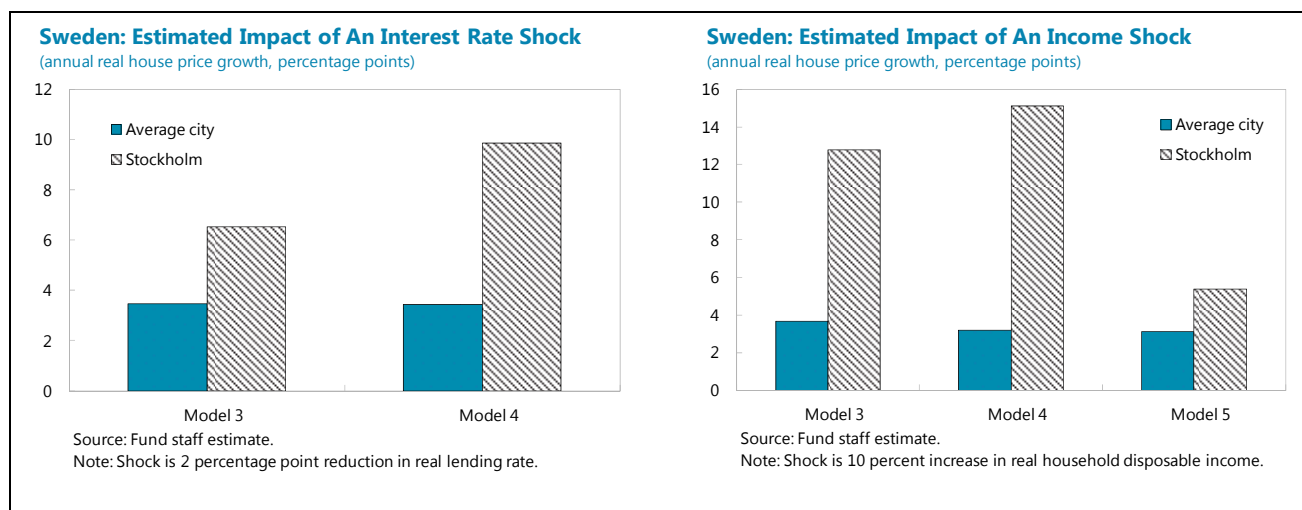
Table 2. Impact of Supply Constraints on House Prices

VARIABLES	(1) Baseline OLS	(2) Baseline GMM	(3) Pop. density	(4) Used land	(5) Supply elast.
Real lending rate (change)	-1.140	-1.637	-1.727	-1.713	-2.514
	[0.312]***	[0.612]***	[0.634]***	[0.649]***	[0.811]***
Real net disposable income p/c (change)	0.410	0.398	0.366	0.318	0.312
	[0.141]***	[0.151]***	[0.154]**	[0.168]*	[0.185]*
Population growth (aged 25-44)	0.585	0.856	0.520	0.645	0.838
	[0.123]***	[0.180]***	[0.154]***	[0.164]***	[0.176]***
Real construction cost (change)	3.451	2.787	2.942	2.855	2.872
	[0.199]***	[0.288]***	[0.342]***	[0.329]***	[0.364]***
Dwelling stock (change)	-0.233	-0.133	-0.168	-0.149	0.052
	[0.054]***	[0.063]**	[0.063]***	[0.064]**	[0.086]
Population density (log)			0.232		
			[0.139]*		
Income growth*Density			0.183		
			[0.085]**		
Lending rate*Density			-0.308		
			[0.153]**		
Fraction of developed land				0.014	
				[0.017]	
Income growth*Developed land				0.026	
				[0.013]**	
Lending rate*Developed land				-0.070	
				[0.016]***	
Supply elasticity					-0.170
					[0.374]
Income growth*Elasticity					-0.430
					[0.190]**
Lending rate*Elasticity					-0.633
					[0.555]
Real house price growth (lag 1)	-0.466	-0.004	0.009	0.034	0.038
	[0.023]***	[0.172]	[0.192]	[0.180]	[0.226]
Real house price growth (lag 2)	-0.151	-0.229	-0.214	-0.211	-0.248
	[0.023]***	[0.076]***	[0.075]***	[0.076]***	[0.114]**
Observations	4,620	4,620	4,620	4,620	2,380
R-squared	0.273	--	--	--	--
Number of municipalities	290	290	290	290	150
Hansen test (p-value)	--	0.0809	0.0753	0.0867	0.115
AR(2) test (p-value)	--	5.75e-06	8.79e-05	1.01e-05	0.000763
Number of instruments	--	25	28	28	28

Notes: Dependent variable is annual growth rate of real house prices (for 1- and 2-dwelling buildings). The estimation sample consists of 290 Swedish municipalities over 1996-2011. Estimation method (specifications 2 to 5) is system GMM. A full set of year FE is included in all specifications, and municipal FE included in specification 1. Two lags of the dependent variable are treated as endogenous, and instrumented using lags 3 to 5. Robust standard errors in brackets. Statistical significance at *** 1%, ** 5%, and * 10%.

Policy experiments

13.   The estimated models can be used in policy experiments and to test the economic significance of housing supply constraints. We experiment with two types of permanent shocks: (i) a 2 percentage point reduction in the real lending rate; and (ii) a 10 percent increase in real household disposable income.[8] We then compare the estimated response of house prices to these shocks in markets with different degrees of supply constraints, measured by either population density (Model 3), the extent of land development (Model 4), or our estimated supply elasticity (Model 5).[9] Based on average impacts across these models, in response to the interest rate shock house prices would increase by about 4.7 percentage points more annually in Stockholm compared to a city with average supply constraints, and by 7.8 percentage points more if subject to the income shock. This stylized example highlights the importance of being able to adjust the housing stock to different demand conditions, if large run-ups or reversals in prices are to be avoided.

Sweden: Estimated Impact of An Interest Rate Shock
(annual real house price growth, percentage points)

Source: Fund staff estimate.
Note: Shock is 2 percentage point reduction in real lending rate.

Sweden: Estimated Impact of An Income Shock
(annual real house price growth, percentage points)

Source: Fund staff estimate.
Note: Shock is 10 percent increase in real household disposable income.

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[8] The interest rate reduction is approximately equivalent to the observed change in the real lending rate between 2007 and 2010 in Sweden, and the income shock is roughly comparable to the increase in disposable income in Stockholm city between 2007 and 2011.

[9] We exclude Model 5's response to an interest shock as the coefficient on the interaction term is not statistically significant.

D. Conclusion

14.   The analysis in this chapter illustrates the important role of housing supply flexibility in cushioning the impact of demand pressures.[10] This is particularly relevant in the current favorable economic growth and low interest rate environment in Sweden, in order to contain risks of misaligned housing prices and a further build-up of the already elevated level of household debt. The recent surge in immigration could also put additional pressure on the housing market, likely through increased demand for rental housing. Easing housing supply bottlenecks could be achieved not only through stimulating new construction but also by improving the efficiency of the utilization of the existing housing stock. Thus, policies to facilitate new residential construction need to go hand-in-hand with reform of the rental market; the problems are intertwined and so should be the solutions.

15.   Coherent and comprehensive reforms of Swedish housing policy need to be implemented. A Housing Crisis Committee was formed in 2013 with a view to proposing concrete steps to reform the Swedish housing market to improve its functioning. The Committee issued its report in June 2014, which contained several useful recommendations. For example, simplifying the local planning and zoning procedures further, reducing the ability to appeal construction and zoning cases, and limiting the municipal zoning monopoly would help increase housing construction. Increasing the rights to freely negotiate rent (particularly for newly built rental properties) and also increasing the flexibility of rent setting would move rents closer to market-based levels and stimulate investment in rental properties. Implementing measures along these lines would help Sweden move toward a better functioning housing market.

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[10] We do not claim that Sweden's housing supply is inflexible by international standards (see e.g. Sorensen (2013) and Caldera Sanchez and Johansson (2011) who presented evidence that, although Sweden's *level* of residential investment as a share of GDP remains low by international standards, it has been quite responsive to changes in house prices compared to other advanced OECD countries.) Our analysis emphasizes the divergence in supply constraints across Swedish cities, and that focusing on relieving the constraints in a few high-stress areas can go a long way to dampening the impact on house prices.

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