INTERNATIONAL MONETARY FUND

IMF Country Report No. 17/181

NORWAY

SELECTED ISSUES

July 2017

This Selected Issues paper on Norway 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 June 14, 2017.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
PO Box 92780 • Washington, D.C. 20090
Telephone: (202) 623-7430 • Fax: (202) 623-7201
E-mail: publications@imf.org Web: http://www.imf.org
Price: $18.00 per printed copy

International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

NORWAY

SELECTED ISSUES

June 14, 2017

Approved By
The European Department

Prepared By Nan Geng, Christian Henn, and Yuanyan Sophia Zhang

CONTENTS

FIGURES

TABLES

BOX

FIGURES

TABLES

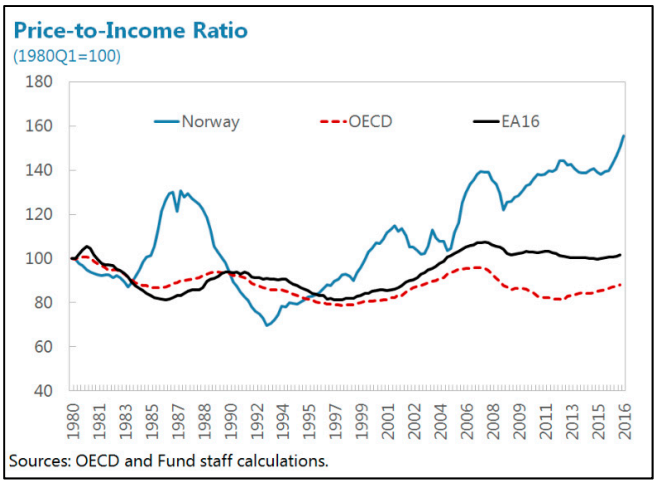
ARE HOUSE PRICES OVERVALUED IN NORWAY?—A CROSS-COUNTRY ANALYSIS [1]

House prices in Norway have increased substantially over the past two decades, including by comparison to other countries. Given the importance of the housing market to both financial and macroeconomic stability, it is essential for policymakers to monitor the extent to which house prices deviate from economic fundamentals. This paper examines various factors driving the uptrend in house prices, with a particular focus on institutional and structural factors. The extent of a possible valuation gap is gauged empirically in the context of a cross-country panel analysis of long-run fundamental determinants of house prices using data from 20 OECD countries.

A. Introduction

1. House prices in Norway have risen strongly over the past two decades (Figure 1). Norway has seen a long housing boom since the mid-1990s apart from a brief and mild downturn during the global financial crisis, with house price inflation exceeding income growth by a wide margin. While real house prices have also been up strongly during the same period in the majority of advanced economies, Norway experienced one of the highest increase in the OECD. Real house prices have more than tripled since 1995 and more than doubled since 2000, with average annual nominal house price growth of 9.3 percent during 2000–07 and 5.1 percent since 2008. Following a short pause in 2013, house price inflation reaccelerated in recent years and reached double digits in the second half of 2016, particularly in the Oslo area (21.7 percent y/y in 2016 Q4).

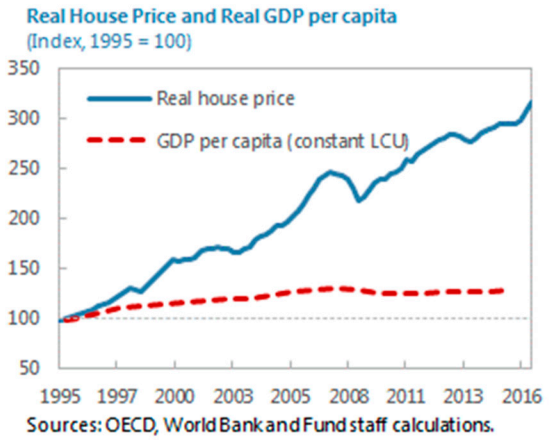
2. House prices-to-income ratios are high by international standards (Figure 1). With house prices rising ahead of income, the average cost of a home relative to the median household income nationwide has almost doubled since the mid-1990s, rising much faster than OECD average. In absolute terms, the house price-to-income (PTI) ratio is also high relative to a range of countries. In Oslo, the ratio has soared to nearly twice the national average and is among top in major cities worldwide. Household debt as a share of disposable income has also increased along with house prices from around 145 percent of disposable income in 2002 to 227 percent as of end-2016, higher than in most comparator countries.



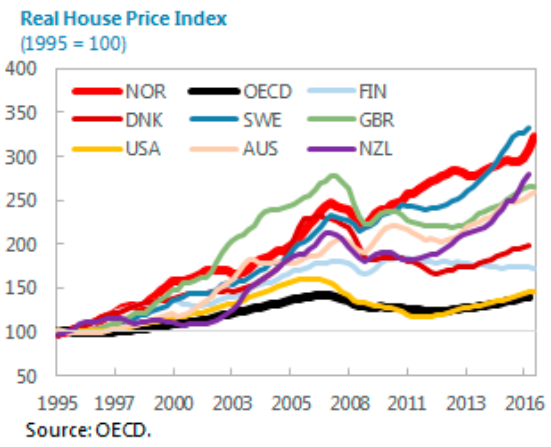
[1] Prepared by Nan Geng.

Figure 1. The Housing Boom

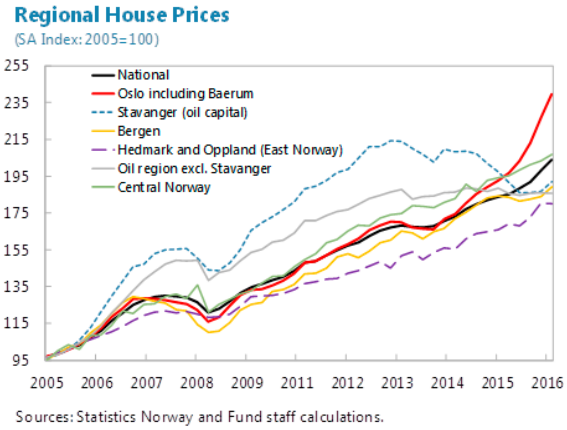
House price inflation has been high since the mid-1990s, greatly exceeding income growth…



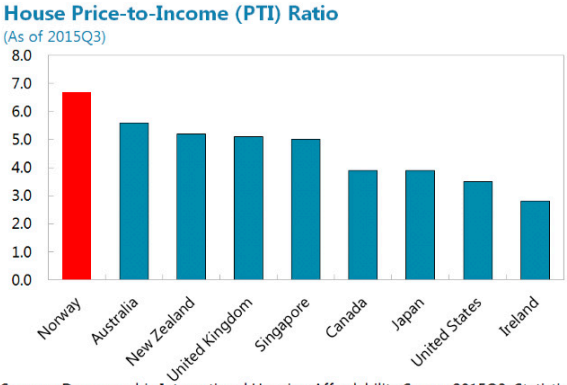
…and the OECD average.



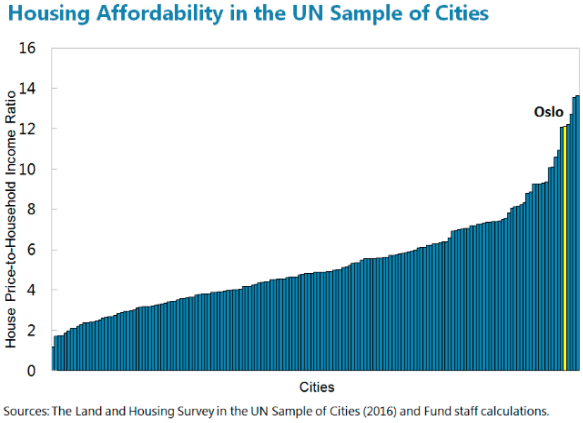
House prices have risen strongly in most parts of the country, particularly in the Oslo area over recent years.



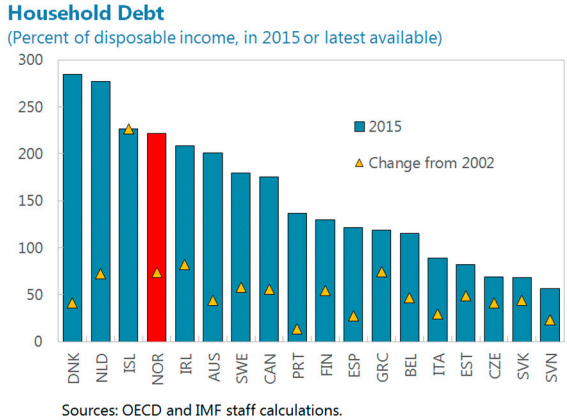
As a result, the PTI ratio has almost doubled since the mid-1990s, and is high relative to a range of countries.



Especially in Oslo, the ratio has soared to nearly twice the national average and is among the top in world cities.



Along with rising house prices, household debt has also risen to historic highs, among the highest in the OECD.



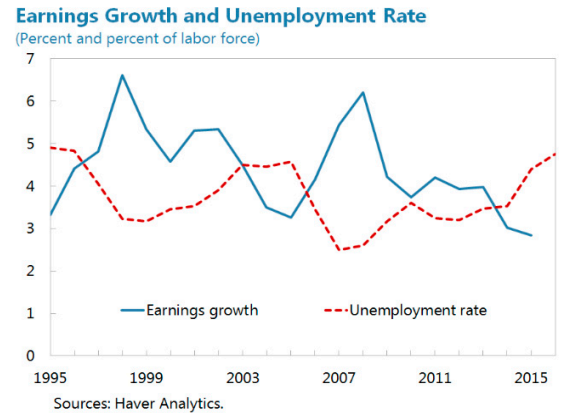
3. For policymakers, it is important to monitor the extent to which house prices deviate from economic fundamentals. If house prices significantly exceed fundamentals, this raises the risk of a house price correction, which could significantly reduce household consumption through wealth effects (Mian et al., 2013). Even though bank losses related to residential mortgages may not increase much,[2] both financial and macroeconomic stability could be undermined if lower consumption impairs business activity, which would negatively impact output and pushes up unemployment and bank losses associated with enterprise loans. While it is difficult to detect housing `bubbles' in real time, it is helpful to gauge the degree of overvaluation or undervaluation in the housing market by comparing actual price levels to those that would be justified by demand, supply, institutional factors.

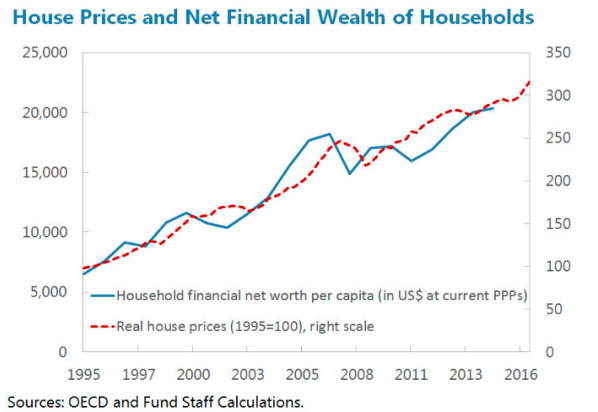
4. The paper is organized as follows. Section B discusses the driving forces behind the uptrend in house prices, including demand, supply, and institutional factors. Section C presents the cross-country analysis of long-run equilibrium house prices using data from 20 OECD countries. Section D concludes with policy implications.

B. Factors Driving the Uptrend in House Prices

Demand Factors

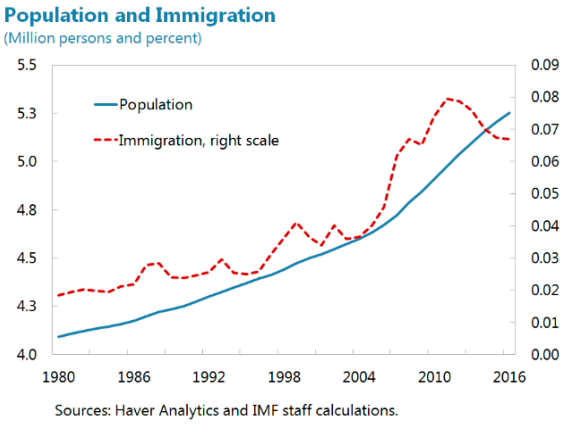
5. Robust income growth, low unemployment, and rapid accumulation of household financial net wealth, have contributed to strong demand for housing. Real personal disposable income (RPDI) grew by 5.5 percent per year on average over the past two decades—the highest in the sample—and high oil prices helped keep unemployment down. Even following the GFC and the oil price slump in 2014, annual RPDI growth averaged 4.2 percent and unemployment remained relatively low in Norway. The favorable economic and labor market trends, combined with the solid financial position of households, increased housing demand pressure.

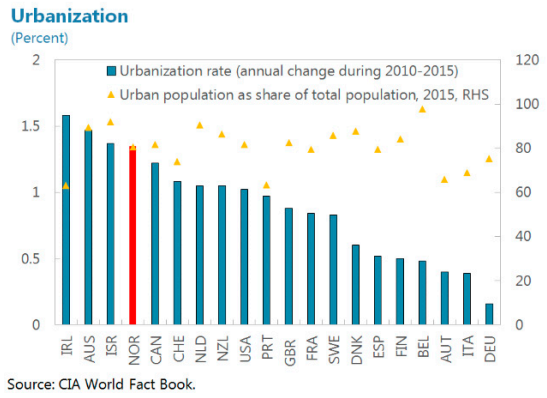




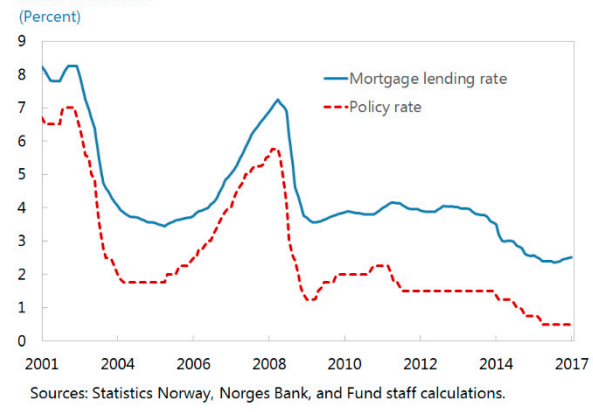
[2] The direct effect on default rates would likely be limited given that: (i) households have sound repayment buffers in view of their high and strengthened financial asset holdings and the social safety net; and (ii) the full recourse nature of mortgages has typically meant that households prioritize mortgage payments over other payments.

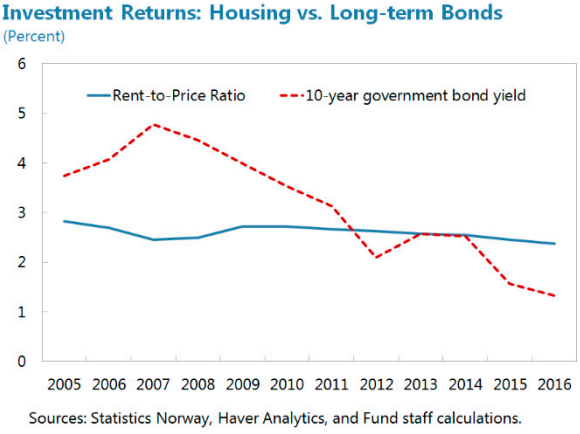
6. Population trends reinforced the high demand for owner-occupied housing. Population growth averaged about 0.6 percent from 1995–2005, and increased to about 1.1 percent on average for the past decade—higher than most advanced economies—due to a steady inflow of immigrants. Despite the recent decline due to the economic downturn, annual immigration and net migration remained at around 1.3 and 0.5 percent of total population, respectively. Meanwhile, urbanization—with an average annual rate of 1.4 percent over 2010–15—is exerting additional pressure on demand for housing in the main urban areas.





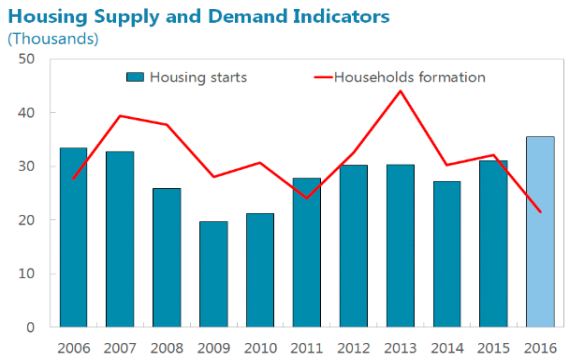
7. Housing demand has also been fueled by declining interest rates. Mortgage rates have gone down substantially since 2000 and stayed low in recent years, with real mortgage rates falling close to zero by end-2015. In addition, housing investment returns have held up as long term bond yields declined along with the slide of policy rates, which stimulated purchases for investment purposes by the wealthier.

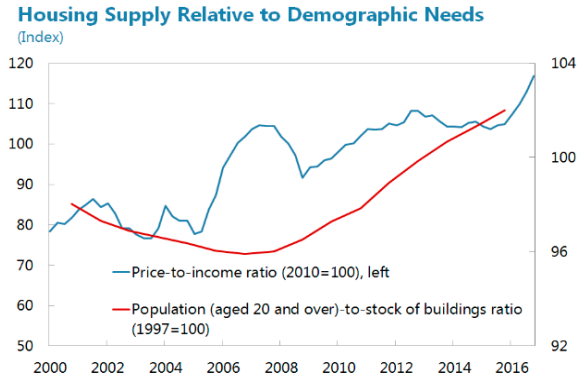




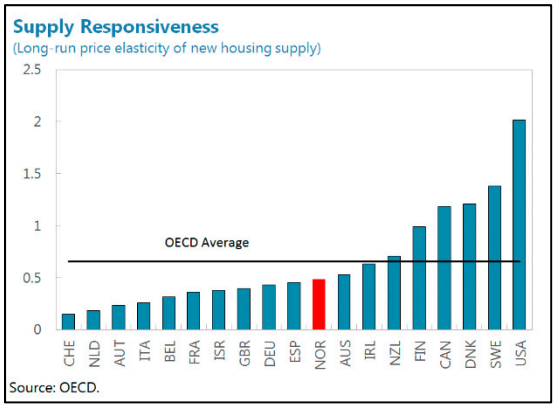
Supply Factors

8. Housing supply plays an important role in house price dynamics in Norway as it has not kept up with demand. Residential investment has risen in response to higher prices, but housing starts remained below estimated household formation until recently. This results in a continued increase in the ratio of population aged 20 and over to the stock of dwellings over the past decade, contributing to prices rising faster than incomes.





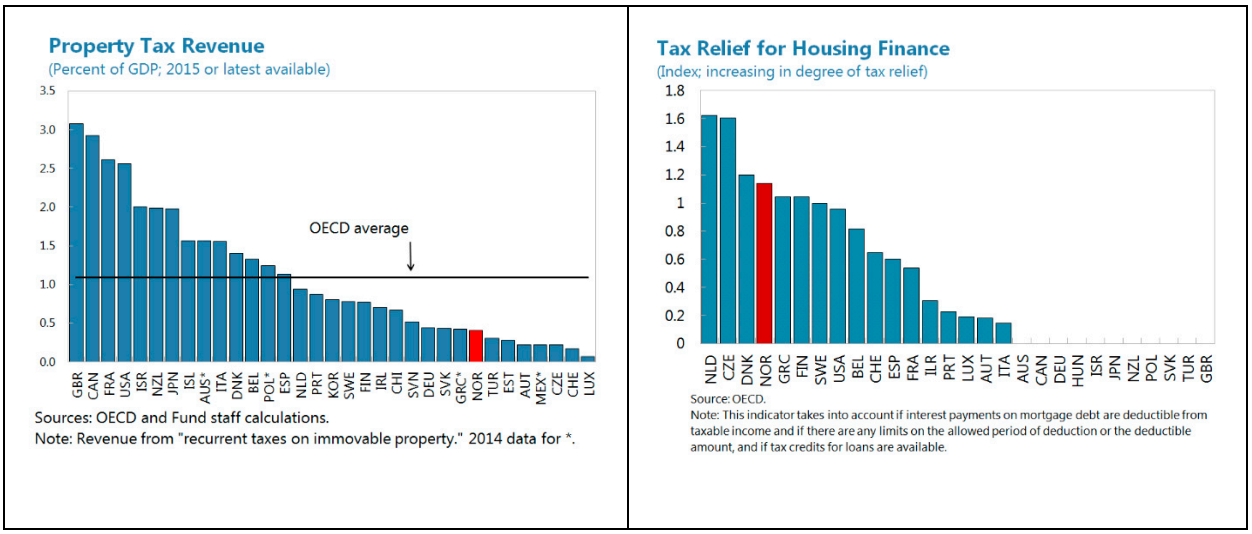
9. The slow supply response to rising demand can amplify price increases. The supply of housing has been falling behind the growing number of households due to both natural (i.e. topographical) and man-made constraints (e.g. local regulations on land use and minimum unit size, including zoning codes and building permits). According to an OECD estimate, Norway has a relatively low price responsiveness of housing supply, with the long-run price elasticity of new housing supply estimated at about 0.5 compared to the OECD average of 0.7. Subject to a given increase in demand, markets with inelastic supply cannot build new dwellings quickly enough to meet the higher demand, resulting in a larger price increase relative to markets with more elastic supply (Anundsen et al., 2016).



Institutional or Structural Factors

10. Generous tax incentives for home ownership and mortgage financing have substantially reduced the user cost of housing, contributing to high and rising house prices.

Housing investment receives favorable tax treatment relative to other investment (IMF, 2013).[3] Compared with other assets, owner-occupied housing enjoys a large discount in tax base calculation for wealth taxation (25 percent of market value for primary dwellings and 90 percent for secondary dwellings).[4] In addition, interest on mortgages is fully tax deductible, which effectively reduces the debt service costs, thereby incentivizing households to borrow more and purchase more expensive houses. As a result, Norway is among OECD countries with one of the lowest recurrent tax revenue from immovable properties and one of the highest degrees of tax relief on debt financing of housing purchases. The favorable tax treatment on housing investment may crowd out capital from more productive use than housing, resulting in efficiency losses and housing demand distortions by reducing the user cost of housing and encouraging excessive leverage (OECD, 2009; Geng et al., 2016).[5] Other things equal, housing demand in markets with more favorable tax treatment on housing would be higher for a given level of income or lending rate, pushing up house prices relative to markets with lower tax preferences, which could lead to more pronounced housing boom-bust cycles. In addition, tax relief such as mortgage interest deductibility also tends to be regressive as it is a deduction against earned income instead of a credit, and therefore matters more when income and/or interest rates are higher.

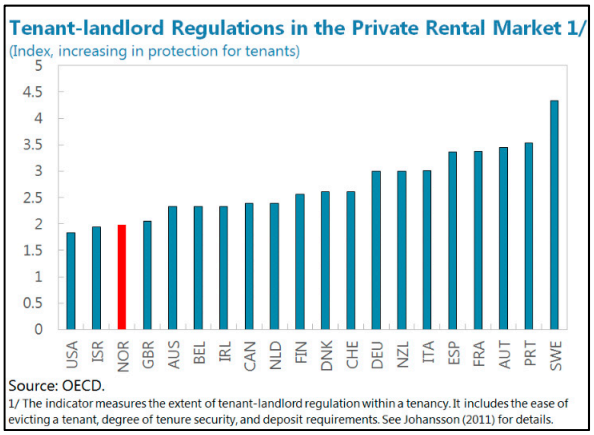


[3] Like in many other countries, the imputed rent from home ownership is tax exempt in Norway. Also there is no capital gains tax if a house has been owned for more than one year and the owner has used it as their own home for at least 12 out of the past 24 months.

[4] The valuation discount in tax base calculation of second homes for wealth taxation purpose has recently been reduced from 30 to 10 percent stepwise.

[5] Capozza et al. (1996) and Harris (2010) showed that tax-favoring of housing tends to encourage excessive leverage and be capitalized into house prices, without necessarily expanding housing opportunities for households.

11. The underdeveloped rental market put further pressure on the owner-occupied housing market. The rental market in Norway is small, with private and public rental combined accounting for about 23 percent of the total dwelling stock, compared to an average of 38 percent for the Nordic neighbors (IMF, 2015). In addition, protection for tenants in Norway is among the lowest in OECD countries. These factors led to people entering the owner-occupied housing market and taking mortgages at a relatively younger age.



C. A Cross-Country Housing Valuation Model

12. To gauge the extent of a possible housing valuation gap, the long-run relationship between real house prices and their potential determinants discussed above is estimated in a cross-country panel model. Following the literature, the observed real house prices, P_{it}, are modeled in the form of an inverted demand function of the long-run equilibrium real house prices, P_{it}^{*}, which are determined by the housing stock, demand shifters, and time-invariant unobserved housing market characteristics:

$$\begin{aligned} P_{it} = P_{it}^{*} + \varepsilon_{it} = {} & \beta_1 \, Real\ per\ capita\ disposable\ income\ (RPDI)_{it} \\ & + \beta_2 \, Real\ mortgage\ rate\ (RMORR)_{it} \\ & + \beta_3 Real\ Household\ Net\ Financial\ Wealth(RHNFW)_{it} \\ & + \ \beta_4 \ Housing\ stock/population\ aged\ 20\ and\ over_{it} + \beta_5 \, Tax\ relief_i \\ & * RPDI_{it} + \beta_6 \, Tax\ relief_i * RMORR_{it} + \alpha_i + \varepsilon_{it} \end{aligned}$$

Where i denotes country and t year. Besides the commonly used demand shifters, i.e., real disposable income, real mortgage rates, population and its composition, the model also includes household real financial net wealth as an explanatory variable to capture the wealth effects. In addition, the differential impact of tax relief on housing financing cost on house prices are captured by two interaction terms of the tax relief index from the OECD with income and mortgage rate in the augmented model presented in column (3). All variables are in log terms except for mortgage rates and the tax relief index. Country fixed effects are used in the panel estimation to control for direct influences of housing market characteristics or policies that cannot be identified separately—such as cultural attitudes toward housing and the size and efficiency of the rental market. In addition, robust standard errors are clustered at the country level. The estimation sample covers 20 advanced countries in the OECD over the period of 1990Q1–2016Q4.[6]

[6] The 20 countries included in the sample are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Italy, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and United States.

13. Estimation results confirm that these factors play important roles in shaping long-run house price developments (Table 1). The explanatory variables all have the expected sign and are statistically significant. On the demand side, higher incomes, lower lending rates, or more household net financial wealth have a positive impact on house prices. Tax relief on housing also contributes to spurring housing demand and driving up house prices. For example, a one percent increase in real per capita disposable income will raise the long-run equilibrium house price by about 1.4– 2.0 percent, with a greater impact in countries having more generous tax relief. In other words, a positive income shock in Norway translates into an increase in house prices that is around 25 percent larger than in a OECD country with median level of tax relief. On the supply side, a reduction in housing stock relative to the population aged 20 and over is associated with higher prices. In total, the model explains about 86 percent of the cross-country and overtime variation in house prices.

Table 1. A Cross-Country Panel Model: Long-Run Determinants of Real House Prices

Variables	(1)	(2)	(3)
RPDI, log	1.698	1.649	1.449
	[0.032]***	[0.034]***	[0.043]***
RMORR, percent	-1.978	-1.865	-2.632
	[0.208]***	[0.215]***	[0.299]***
RHFNW, log		0.022	0.010
		[0.008]***	[0.008]
HS2, log	-1.093	-1.140	-1.142
	[0.072]***	[0.073]***	[0.075]***
Tax relief * RPDI (log)			0.431
			[0.055]***
Tax relief * RMORR			1.490
			[0.377]***
Obervations	2056	2056	2056
Adj. R-squared	0.847	0.848	0.851
Number of countries	20	20	20
Country fixed-effect	Y	Y	Y
Corrected for heteroskedasticity	Y	Y	Y

Note: Dependent variables are the logarithm of real house prices. Significance at 1, 5, and 10 percent levels indicated by ***, **, and *, respectively. Robust standard errors clustered at the country level.

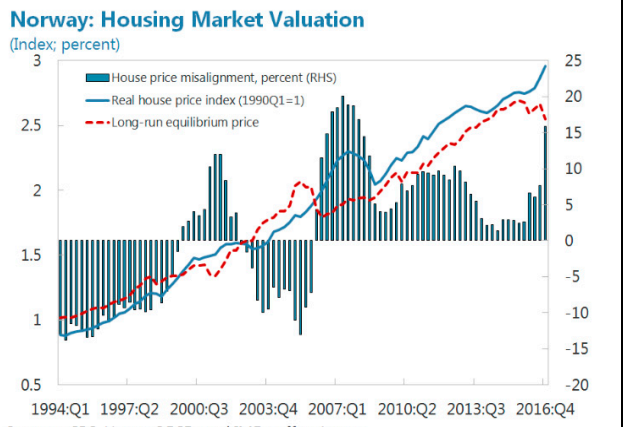
14. Estimation results suggest that current house prices in Norway are moderately overvalued. The model is used to gauge the extent of a possible housing valuation gap. The advantage of our housing valuation model over standard metrics such as the PTI ratio is that it considers a comprehensive list of determinants of long-run equilibrium prices—instead of only one 'fundamental' variable, e.g., income—in assessing the degree of over- or undervaluation. Based on the model estimates in column (3), the degree of price deviation from long-run values implied by fundamentals is measured by:

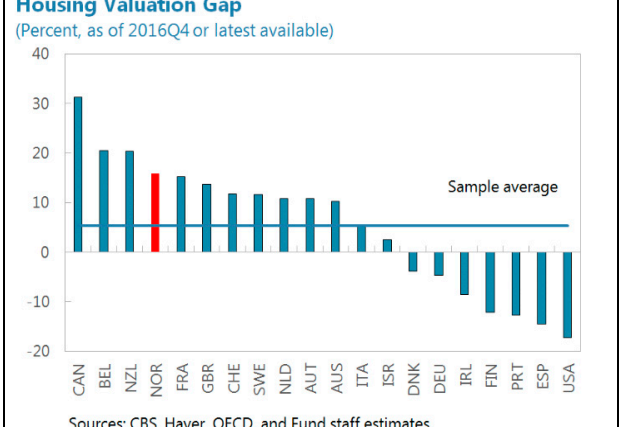
$$\varepsilon_{it} = P_{it} - P_{it}^{*}$$

Based on the metric, the average house prices in Norway in 2016 Q4 are found to be about 16 percent above the estimated equilibrium value as implied by fundamentals. This is comparable

to—albeit still slightly below—the estimated deviation during the 2007 peak, and is among the highest in the 20 OECD countries covered in the analysis (also see Annex I).

15. The implied valuations from this exercise should be interpreted with caution. The results can only be indicative of potential valuation gap in the sense that the estimated equilibrium price levels are subject to uncertainties. For example, developments in the housing market are complicated by purchases for investment purposes by high-income households—as rental returns exceed long-term bond yields. Meanwhile, while low interest rates have driven up equilibrium house prices which mitigates overvaluation concerns, they do not rule out that demand is excessive, nor that it could fall sharply as interest rates normalize. This could complicate the housing valuation analysis and potentially bias up the estimates of long-run equilibrium prices.





D. Conclusion and Policy Implications

16. High and overvalued house prices are a source of vulnerability in Norway, in view of the importance of the housing market to both financial and macroeconomic stability. A large correction of house prices, driven by slower real income growth, a reverse in sentiment, or interest rate hikes could weaken household balance sheets and depress private demand, and in turn adversely affect corporate and bank earnings. The authorities have been vigilant about the risks and have implemented a list of measures to strengthen the resilience of banks and households, including additional bank capital buffer requirements in line with Basel III/CRD IV, higher risk weights on residential mortgages using IRB models, tighter mortgage regulations, and the introduction of the debt-to-income limit of five times the borrower's gross annual income to complement the loan-to-value (LTV) limits and affordability tests. Nevertheless, further targeted macroprudential measures should be considered to help contain systemic risks if vulnerabilities in the housing sector intensify, including: tighter LTV limits, a reduction in banks' scope for deviating from mortgage regulations, and/or higher mortgage risk weights.

17. In the longer term, the macro-financial resilience of the economy to housing market shocks should be enhanced through tax reform and structural measures. A stable housing

market (without pronounced boom-bust cycles) would contribute to smoother economic development. While macroprudential measures play an important role in containing the buildup of financial imbalances, a holistic approach is needed to fundamentally address the issue: (i) reducing the generous tax preferences for housing investment would help prevent demand distortions and excessive leverage, thereby dampening housing cycles; (ii) while the recent streamlining of building codes—which shortened the time needed to obtain a building permit and finish construction—is welcome, relaxing land-use and remaining constraints on new property construction, including at the municipal level, should facilitate a more efficient use of land and a flexible adjustment of housing supply, which will mitigate house price growth; and (iii) a more developed rental market would help relieve demand pressures—especially in view of the recent large influx of asylum seekers—as well as support labor mobility across regions as the economy goes through structural change.

References

Anundsen, A.K. and C, Heebøll, 2016, "Supply Restrictions, Subprime Lending and Regional US House Prices," *Journal of Housing Economics*, 31: pp. 54–72.

Caldera Sanchez and Johansson, 2011, "The Price Responsiveness of Housing Supply in OECD Countries," OECD Economics Department Working Papers No. 837.

Capozza, D., R. Green and P. Hendershott, 1996, "Taxes, Mortgage Borrowing, and Residential Land Prices," *Economic Effects of Federal Tax Reform*, ed. H.J. Aaron and W.G. Gale, Brookings Institution Press, Washington, pp. 171–198.

Dermani, E., Linde, J. and Walentin, K., 2016, "Is There an Evident Housing Bubble in Sweden?" *Sveriges Riksbank Economic Review* 2016:2.

Geng, N. and N. Arnold, 2015, "The Housing Boom and Macroprudential Policy," Norway Selected Issues, IMF Country Report No. 16/215.

Green, R. K., S. Malpezzi and S.K. Mayo, 2005, "Metropolitan-Specific Estimates of the Price Elasticity of Supply of Housing, and Their Sources," *American Economic Review* 95 (2): pp.334–339.

Harris, B., 2010, "The effect of Proposed Tax Reforms on Metropolitan Housing Prices," Tax Policy Center Working Paper, April.

International Monetary Fund, 2013, Norway 2013 Selected Issues, IMF Country Report No. 13/273, 2013.

———, 2015, Norway 2015 Selected Issues, IMF Country Report No. 15/250, 2015.

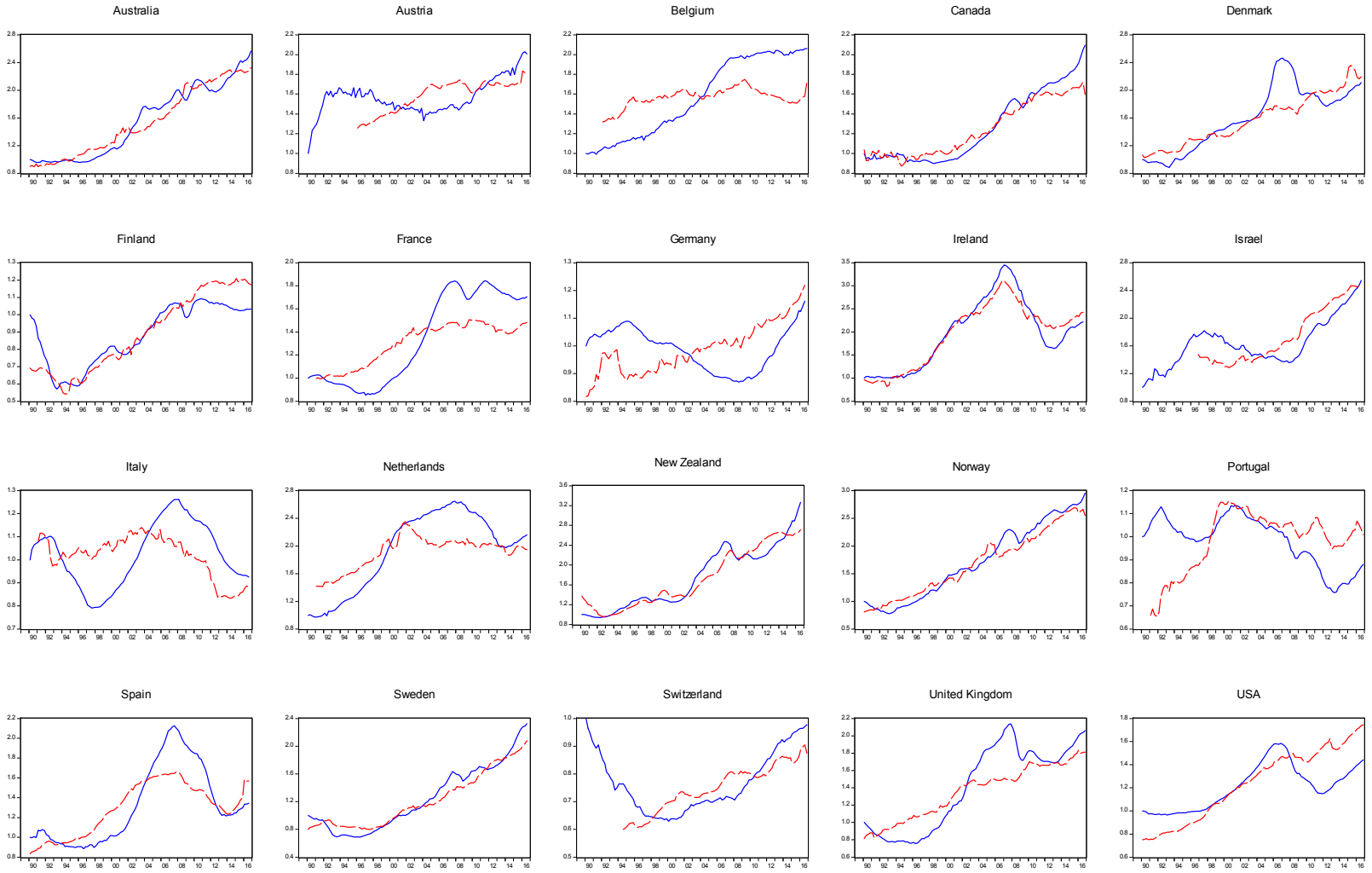
———, 2016, Norway 2013 Selected Issues, IMF Country Report No. 13/273, 2013.

Mian, A., K. Rao, and A. Sufi, 2013, "Household Balance Sheets, Consumption, and the Economic Slump," *The Quarterly Journal of Economics* 128 (4), 1687–1726.

OECD, 2009, "Taxation and Growth," Chapter 5, OECD *Going for Growth* 2009.

Annex I. Actual and Estimated Long-run Equilibrium House Prices in Selected OECD Countries

Figure 1: Actual and fitted house prices in panel regression.



Note: Red lines represent estimated long-run equilibrium prices, while blue lines refer to actual house prices.

CLOSER TO BEST PRACTICE—TAX REFORM IN NORWAY[1]

A tax reform, underpinned by work of the Tax Commission in late 2014, has begun being implemented from 2016. It entails scaling back the overall tax burden and adjusting the tax structure away from income taxes, which are high by OECD standards. The reform is timely as the Norwegian economy is looking to rebalance from many years of an oil and gas-related growth model to achieve sustained long term growth. The key reform measures, including lowering corporate income and ordinary personal income taxes, raising reduced VAT rates and introducing financial activity taxes, and better aligning taxable housing wealth with market values, are welcome steps to help stimulate innovation, boost productivity, improve labor supply, and promote business investments in line with the objectives in the government's Long-Term Perspectives white paper (2016–2017). This Selected Issues Paper evaluates the key reform measures and identifies remaining gaps in the current tax system relative to the best practice.

A. Introduction

1. Norway's mainland economy has taken a hit from the oil shock. Oil and oil-related investment and exports have dropped significantly. Despite the recent pick-up, global oil prices are likely to stay low due to oversupply and slowing demand. Oil-related investments are projected to recover over the medium term, but not to the level seen in the past as oil-related investment was expected to fall irrespective of oil prices. Hence, the oil-driven growth has come to an end. The journey ahead calls for reforms in support of economic transition.

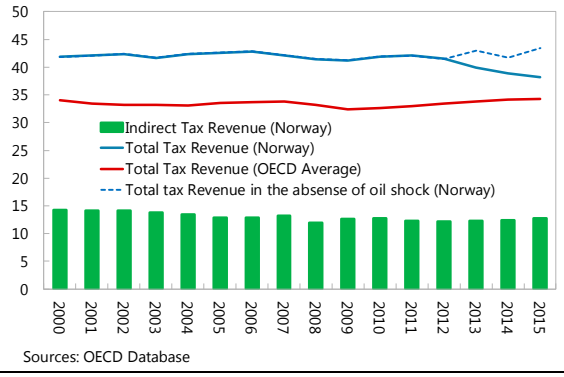
2. Tax revenue in recent years reflected the oil sector downturn, but the level is still high compared with that of peers. Like other Nordic countries, tax revenue-to-GDP ratio in Norway was around 10 percent higher than the OECD-average prior to the oil shock. The margin narrowed by half in the recent years as tax collection from corporate income and profits fell sharply, driven largely by oil sector companies. Excluding taxes from the oil activities, Norway's tax revenue has been growing in pace with economic growth.

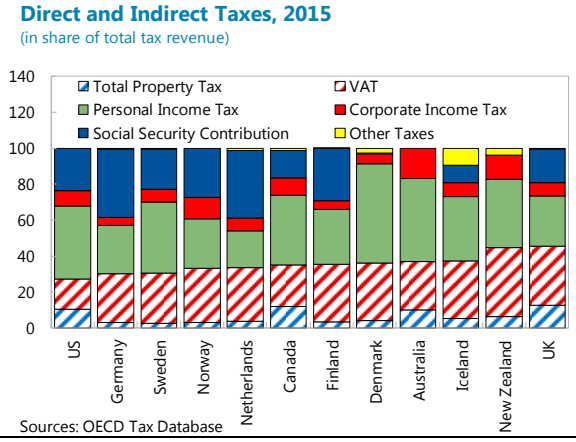
3. The tax burden lies mostly on income taxes. Close to 70 percent of overall tax revenues are from income taxes, of which 58 percent is in the form of individual taxes and social security contributions. Taxes on corporate income, profits and gains account for the rest including from the oil industry, which accounts for about half[2] of total corporate income tax. Compared with other OECD countries, Norway's tax structure is characterized by higher taxes on personal and corporate income, profits and gains and lower taxes on property. This suggests some room to shift the tax burden from direct to indirect taxes.

[1] Prepared by Yuanyan Sophia Zhang

[2] Subject to large fluctuation due to volatile oil prices.

Figure 1: Recent Trend of Tax Revenue and Tax Structure





4. The tax reform could help mitigate the erosion of the tax base and facilitate the economic transition away from oil dependence. Following many years of strong growth driven by the oil-related industries, the Norwegian economy is looking to rebalance and diversify in support of sustained longer term growth. The non-oil-related mainland economy will need to make larger contributions to growth and public finances considering growing financing needs for old age pensions and health care services. In this context, the Tax Commission proposed a tax reform in [late 2014], which laid the basis for the tax reforms that started implementation in 2016. The reform aims at securing the tax base, and strengthening incentives to save, invest, and work.

B. An Overview of the Tax Reform

5. The reform proposals entail scaling back the overall tax burden and adjusting the tax mix more towards indirect taxes. Since the reform, the corporate income tax rate has been reduced from 27 to 25 percent in 2016, and is planned to decline further to 23 percent by 2018. This brings Norway's effective tax rates closer to the levels in the comparator countries. To avoid tax planning, the reform will lower the ordinary personal income tax rate in parallel with the corporate tax rates to 23 percent by 2018. To compensate for the revenue loss, a new progressive tax on gross personal income has been introduced to replace the current surtax on higher incomes. The new progressive gross tax incorporates four brackets (the bracket tax), where the upper two brackets correspond to the previous surtax. This will reduce the top marginal tax rate for most personal tax payers. And to prevent income shifting from labor income to dividends because of the reduction of CIT rate, an adjustment on dividends, which increased the effective tax rate was introduced in 2016. In addition, one of the reduced VAT rates increased from 8 to 10 percent in 2016; a new tax on the financial activities was introduced in 2017; rules on depreciation, interest deduction limitation and other measures to counter profits shifting and base erosion will be phased in over the coming years. The Tax Commission also proposed a revenue neutral reform of the net wealth tax to bring the allow more equal tax treatment across different types of assets and debts; so far some minor changes have been made. For example, the 2017 budget introduced a 10 percent valuation discount for shares and operating assets and associated debt. Secondary dwellings and associated debt will be valued at 90 percent, narrowing the preferential tax treatment for real estate. The reform has also

introduced a scheme for the deferred payment of net wealth tax for business owners. There has also been a clear shift towards environmentally-related taxes, in line with the Long-Term Perspectives White Paper.

6. Some revenue loss resulting from the reform in the short term is acceptable given ample fiscal space. Overall, the reform was estimated to cost around 11 billion krone in net, equivalent to about 0.4 percent of mainland GDP in 2016. A bulk of the costs resulting from the reduction of CIT and PIT rate (2 percent of mainland GDP in 2016) will be partially offset by other tax changes. The newly introduced bracket tax in replacement of the surtax offset over 65 percent of the revenue loss from the reduction of PIT tax rate. Other indirect taxes such as financial activity tax, increase in reduced VAT rate, and changes of depreciation rules, interest deduction limitations and other measures to counter profits shifting are also expected to mitigate the remaining of the revenue loss. Norway has ample fiscal space given the fiscal surplus, small gross debt, and very large GPFG and other financial assets. Hence some revenue loss in the short term is justifiable.

7. Over the longer term, the reform can help improve productivity, stimulate labor supply and support longer term growth, which would at least partially offset any short-term revenue loss. The tax structure would be improved by shifting the tax burden away from income taxes to more growth-friendly indirect taxes. Lowering PIT rates along with better design of labor taxes and social benefits can strengthen work incentives and induce a positive labor supply response. Lowering the CIT rate supported by well-targeted tax incentives can help stimulate private investment, encourage entrepreneurship, and improve productivity growth. Reducing tax preferences for housing investment frees up capital for other business and industrial investment, generating more sustained long term growth.

8. Further tax reforms would be warranted to bring Norway's tax system closer to the best practice. The following sections will discuss the remaining gaps in the current system and how further tax reforms could help the economy achieve the objectives highlighted in the Long-Term Perspectives White Paper.

C. Boosting Productivity and Promoting Investments

9. Norway's effective corporate tax rate is moving closer to the average among advanced European economies owing to the ongoing tax reform. Effective tax rates account for both statutory rates as well as depreciation rules and tax exemptions; hence they are considered more relevant for investment decisions. Norway's statutory and effective tax rates are both higher than an average advanced European country. The tax reform, which lowered the statutory tax rate and adjusted the depreciation rule has brought Norway's effective tax rate closer to its peers, and will lower the rates further next year (Figure 2).

Table 1: Revenue Effects of Tax Reform 2/
(in million NOK)

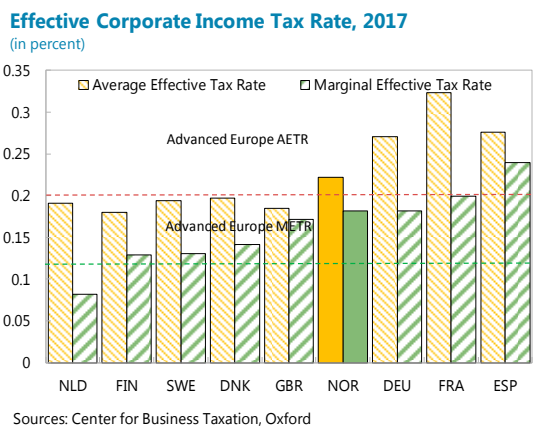
	Proposal White Paper 2016-2018	Parliament's agreement 2016-2018	Budget 2016-Tax Reform Measures	Budget 2017-Tax Reform Measures 1/
	I	II	III	IV
Reducing the corporate tax rate from 27 to 23 percent	-14215	-11515	-6115	-2708
Additional changes in the corporate taxation (depreciation, interest deduction limitation and other measures) to counter profit shifting	3500	3460	240	500
Reducing tax on ordinary income for persos from 27 to 23 percent and raising tax on dividends	-53200	-42610	-21360	-11065
New tax on personal income (the bracket tax), which replaces the surtax	45400	36340	17640	8550
Increasing the low rate in the value-added from 8 to 10 percent	650	650	650	0
New tax on financial services increasing the rate of return allowance for shresholders, etc	3500	3500	0	2250
Increasing the low rate in the value added tax from 8 to 10 percent	0	-140	0	-140
Reducing and modifying the net wealth tax	0	-1120	-390	-280
Taxing loans from companies to personal sharesholders as dividends	600	600	600	0
SUM	-13765	-10835	-8735	-2893

Source: Ministry of Finance, Tax Commission, and staff calculations

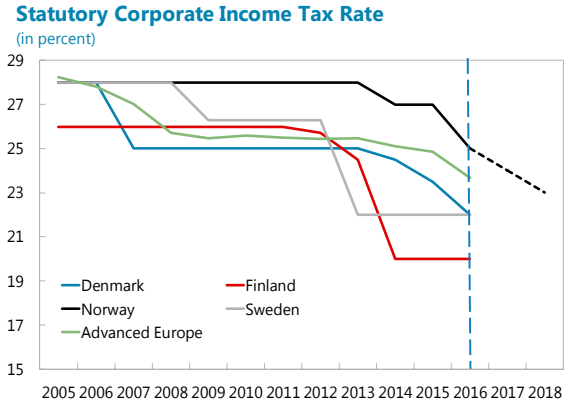
Notes: 1/ Revenue effect of Budget 2017 is measured in 2017 NOK, while other revenue effects are in 2016 NOK

2/ Only includes revenue effects of agreed upon tax reform, which is not equivalent to aggregate revenue effects of implemented tax programmes.

Figure 2: Statutory and Effective Corporate Income Taxes



Sources: Center for Business Taxation, Oxford



Sources: OECD Tax Database

10. The lower CIT rate should help improve firms' cost competitiveness, though the productivity impulse can sometimes be modest. In theory, reducing the effective tax rates lowers firms' investment costs, and hence should encourage higher investments. Empirical analyses for the advanced economies (De Mooij and Edervenn (2008), IMF Fiscal Monitor (April 2016)) show that

lower CIT rates attract inbound FDI. Innovation is a key driver of long term productivity growth. To boost innovation, research and development (R&D), technology spillovers, and entrepreneurial innovation play key roles. The IMF Fiscal Monitor (April 2016) finds that lowering the average effective tax rates on business income by 1 percentage point, would increase new business entry rate by between 0.1 and 0.3 percentage points; the impact is relatively modest.

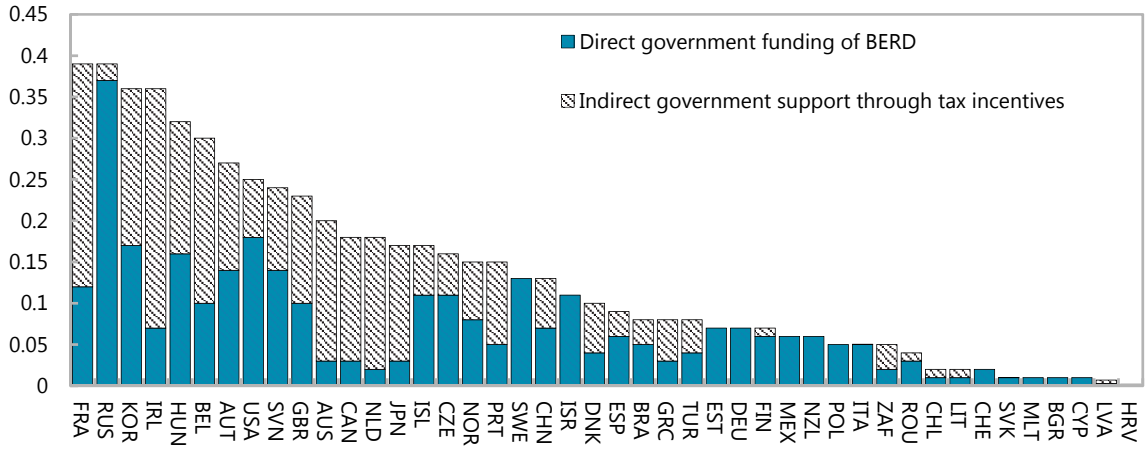
11. Tax incentives could enhance productivity by stimulating R&D and entrepreneurial innovation. The positive externalities imply that private companies would underinvest in R&D compared with the socially-optimal level. The underinvestment can be addressed by corrective fiscal instruments that lower the costs of private R&D and encourage firms to invest. The fiscal support can take the form of direct provision of grants, contracts and loans (direct subsidies), or preferential tax treatments such as tax credits, enhanced allowances, accelerated depreciation, and special deductions for labor taxes or social security contributions (tax incentives). Tax incentives provide broader incentives to all firms investing in R&D, which complement direct subsidies that are more targeted and especially useful to support research in the early phase of innovation (Fiscal Monitor April 2016). The analysis in the Fiscal Monitor (April 2016) found that both direct subsidies and indirect tax incentives increase firms' productivity, but tax incentives have a large effect in high R&D industries and for small firms. Tax allowances to venture capitalists or start-ups also help promote entrepreneurial activities. Increasing private R&D could generate a significant growth dividend. Donselaar and Koopmans (2016) found that by boosting the productivity, an increase of 10 percent in private R&D for a representative advanced economy could boost the level of GDP by 1.3 percent over the long term.

12. The tax incentives should be properly designed and effectively administered to yield the most value. 29 out of 35 OECD members and 22 out of 28 EU member states gave preferential tax treatment to R&D expenditures in 2016. The wider use of tax incentives in recent years has highlighted the importance of design to maximize the overall effectiveness. The Fiscal Monitor (April 2016) summarized a few key lessons. F*irst,* targeting new firms is more effective in promoting entrepreneurship than size-based incentives. S*econd,* loss-making start-ups would benefit from refundable tax credits, and relief from labor taxes rather than tax credit before making profits. *Third,* measures targeting incremental R&D can be cheaper than broad-based tax incentives, but they are more complex and have higher compliance costs. *Fourth,* intellectual property (IP) box regimes have been proven less cost-effective to promote innovation. F*ifth,* a gradual phase-in of tax incentives in pace with educational advancement is preferable to prevent wage inflation led by excess demand for high-specialty labor. L*astly,* a well-designed tax incentive system should be supported by effective administration to ensure compliance rates.

13. The Norwegian government expanded the R&D tax incentives in recent years. Norway's tax incentives compared favorably to other Nordic countries, but much less so as a percentage of GDP than major advanced OECD countries, such as US, Canada, Netherlands, and the UK (Figure 3). The Skattefunn research and development (R&D) tax incentive scheme, a government policy tool to offer tax deductions to all Norwegian companies or branches with R&D projects, has expanded the tax incentives in recent years.

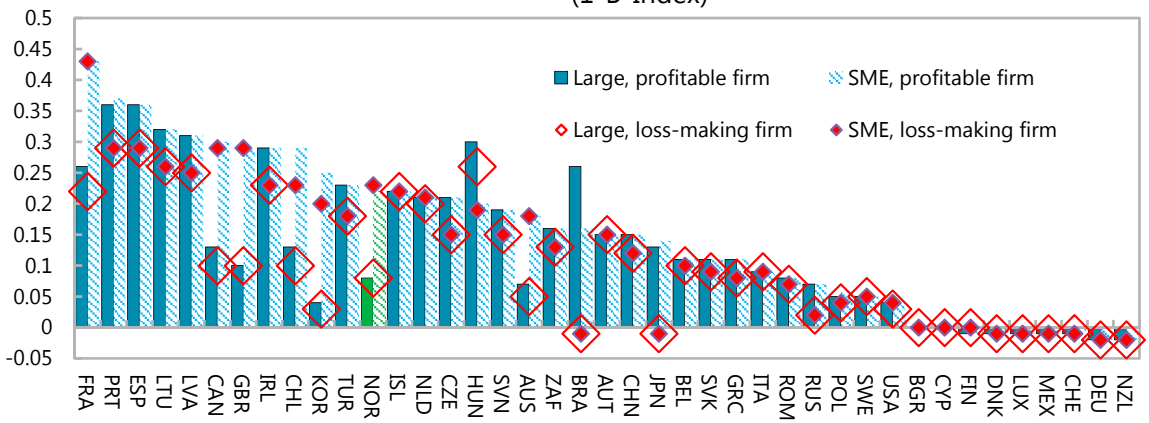
Figure 3: Government Support for R&D

Direct Subsidy and Indirect Tax Incentives for R&D, 2014
(in percent of GDP)



Sources: OECD Database

Tax Subsidy Rates by Firm size and Profitability, 2016
(1-B-Index)



Sources: OECD Database

Note: B-Index = before-tax income needed to break even on one dollar of R&D outlay; BERD = business expenditures on research and development

14. While Norway's tax incentives are generally well-designed, further adjustment may help improve their effectiveness. Empirical studies find that tax incentives targeting new firms and start-ups are more effective in raising R&D investment, whereas size-differentiated tax incentives could restrain firms from growing. Norway's overall fiscal support on R&D is not high by international standard, but the preferential tax treatment to SMEs is more generous than the peers. Like Norway, France, Canada, the UK, Chile, Netherlands, Australia, and Japan also give a more generous rate of tax credit to smaller firms; while in other countries (Belgium, France, Italy, the Netherlands and Portugal), preferential tax treatments are given to the young and start-ups. Tax allowances to venture capitalists or start-ups may be considered to help encourage entrepreneurial activities.

15. Lowering the net wealth tax and reducing tax preferences on housing assets could help stimulate savings and reallocate investments to the business sector. The net wealth tax implies a very high effective tax rate for savings. Based on the latest calculation by the Ministry of Finance, a 0.85 percent tax on the household net wealth suggests the effective tax rate on real income from interest-bearing assets and shares of 87%. The net wealth tax also distorts investments away from business activity to residential property due to the discounted valuation on primary residences (25%). The government has been gradually lowering the net wealth taxes in recent years. The rate has been reduced from 1.1 per cent in 2013 to 0.85 percent, and the tax-free allowance has been increased from NOK 870,000 in 2013 to NOK 1.48 million. The taxable values of second dwellings have been increased from 50 to 90 percent[3] of estimated market value, and the taxable values of recreational properties have been increased by 10 percent to ensure more equal treatment across investment types. A valuation discount of 10 percent on shares and operating assets and associated debt was introduced in 2017. This is to be increased to 20 percent in 2018, in line with the Parliamentary agreement on tax reforms. Continued reduction of the net wealth tax and more equal valuation discounts applied for different investment assets, for example lowering valuation discounts for primary dwellings, would further improve savings and channel more investments to the productive investment.

16. Protecting the tax base against profit shifting practices is vital. Norway has adopted key anti-avoidance measures, but there is room for improvement. In 2014, Norway adopted an anti-avoidance rule to address earning stripping by means of intra-company loans by denying interest deductibility if the ratio of interest payments to EBITDA exceeds 25 percent. The design of this rule, however, is not ideal and its application is complex as it applies only to intra-company loans. The rule could be improved by applying it to *all* net interest payments in line with the OECD BEPS project and the recent EU directive on anti-tax avoidance.[4] Further, Norway does not impose withholding taxes on interest payment, royalties, and lease payments in its domestic law. It could consider introducing withholding taxes on cross-border royalties and interest[5].

D. Improving Labor Supply

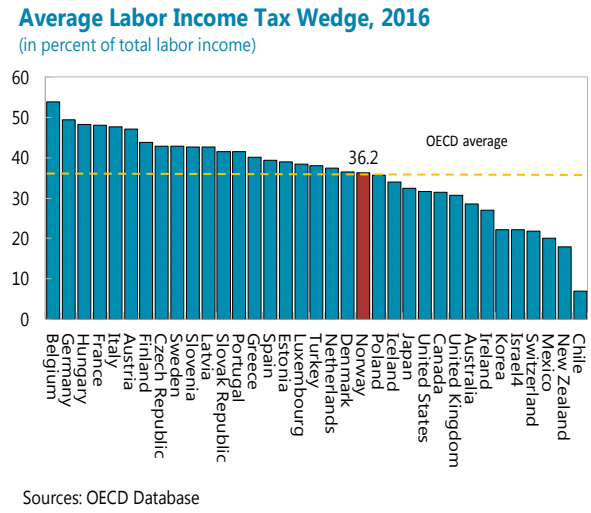
17. The tax reform has narrowed the labor tax wedge further, which should stimulate labor supply. Norway's average labor tax wedge was comparable to other OECD countries prior to the reform (Figure 4). The government decided to lower ordinary personal income taxes in line with corporate income taxes to prevent the shifting of tax base from labor to capital income, which also contributed to further narrowing the labor tax wedge.

[3] The parliament modified the Government's 2017 tax proposal in the revised budget by increasing the valuation of secondary dwellings and associated debt for net wealth tax to 90 percent (from 80 percent).

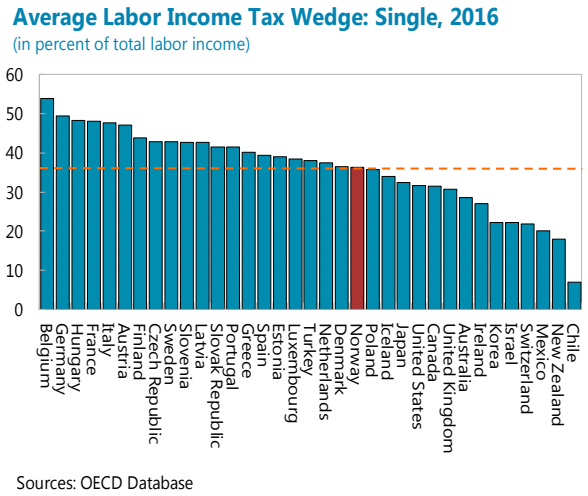
[4] The Ministry of Finance issued a discussion paper with an amendment to the 2014 interest deduction limitation rule in May 2017. The proposed new rules include limitation also on third party interest and a debt-to-equity ratio escape clause. The new rules are proposed to be implemented in 2018.

[5] Such withholding taxes has been proposed by the government as part of the 2016-2018 tax reform, but implementation of such taxes has not yet been proposed in the annual budgets.

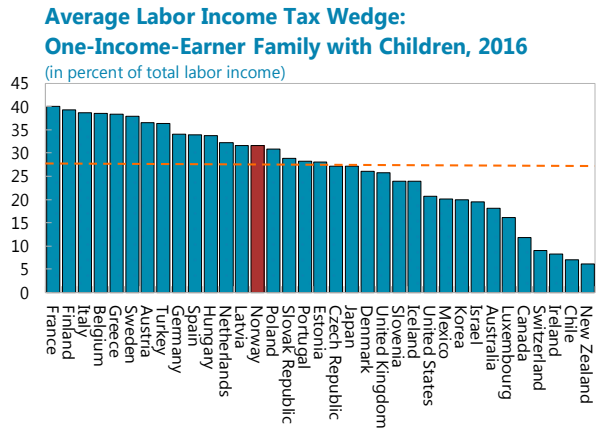
Figure 4: Labor Tax Wedge: By Family Type and Over Time



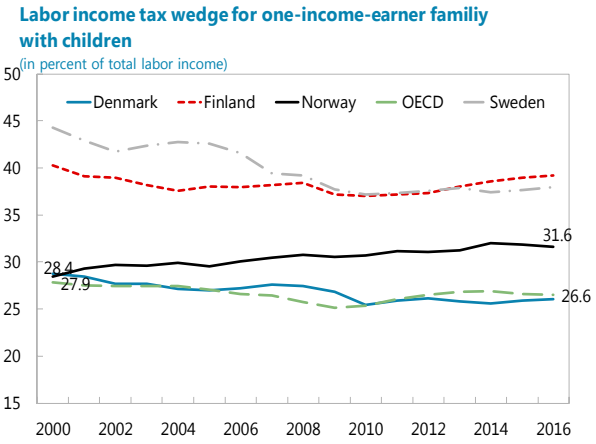
Sources: OECD Database



Sources: OECD Database



Sources: OECD Database



Sources: OECD tax database

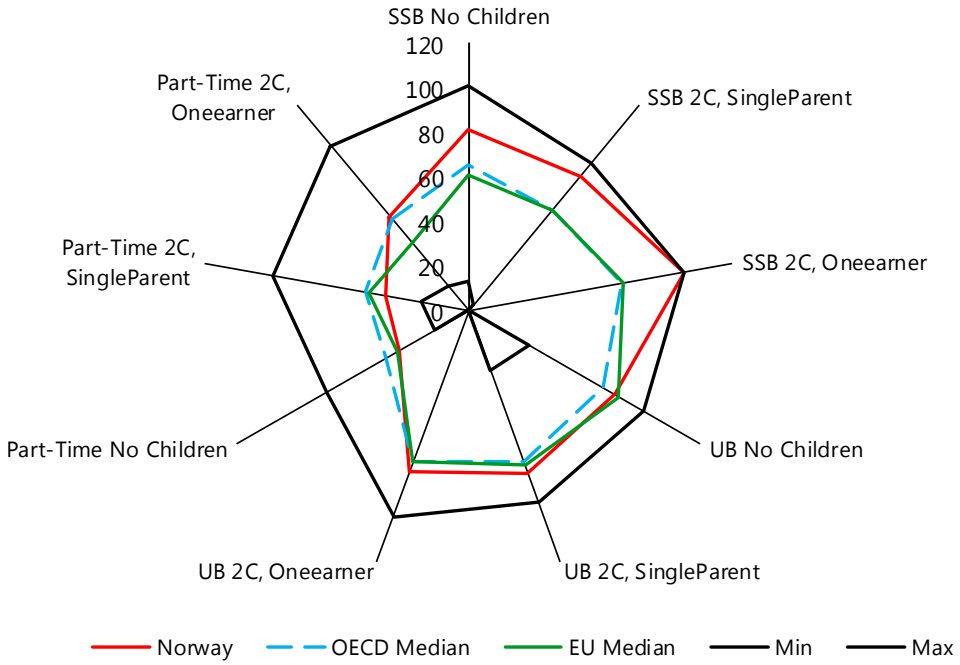
18. However, the average tax wedge for certain groups remains high, undermining work incentives. While single workers' tax wedges are close to OECD averages, regardless of the income levels, one-income-earner-families with children are subject to higher tax wedges[6] than similar families in an average OECD country. While the tax wedge on one-income-families with children is falling in other Nordic countries and many OECD countries, it has risen in Norway. Higher wedges can be attributed to both higher income tax rates and more generous benefit systems[7]. Indeed, Norway's social security and unemployment benefits are found to be more generous than an average OECD or EU country. This is true for all family types, but more so for family with children. For example, the marginal effective tax rate to transition from being unemployed while receiving

[6] Average wage tax wedge.

[7] Introduced higher tax allowance for married taxpayers that provide for a spouse that has no or little income.

social security benefits to full employment was as high as 98 percent of gross labor income for one-income family with children, much higher than the OECD and EU averages around 70 percent (Figure 5).

Figure 5: Marginal Effective Tax Rates to Transition to Full Time Employment
(Percent, 2014)



Source: OECD Database

19. Income tax policies need to be complemented by well-targeted reform of the benefit system to reactivate the work incentive for certain groups. Norway's disability rate is one of the highest among the Nordics thanks to the generous disability system. Some changes have been made on the calculation of disability benefit, but further reforms to increased employment rate among disabled are pending. The tax system does not explicitly penalize two-earner households, but its progressiveness can nonetheless create disincentive for women to work given wage gaps relative to male workers[8]. Providing alternative child care options for children under age two could increase caregivers' availability to work.[9]

[8] There is a higher tax allowance for married couples where second earner has no or little income.

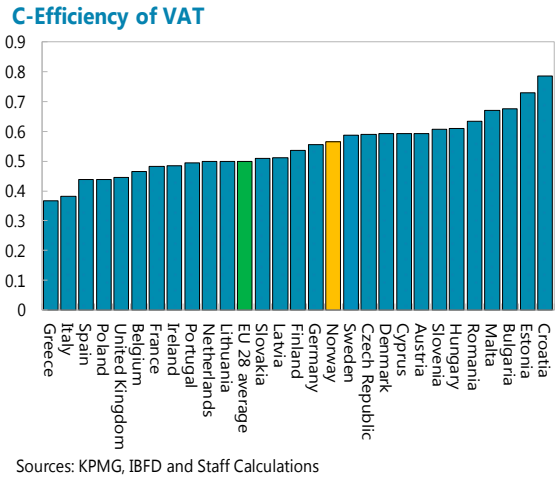
[9] It could also underpin women's participation in professional activities, where longer absences can carry implicit penalties with regards to career progression.

E. Broadening the VAT Tax Base

20. Norway has one of the highest standard VAT rates in the EU, but collection performance is somewhat lower. At 25 percent, Norway's standard VAT rate is the second highest in the EU, the same as Sweden and Denmark. But the C-efficiency[10], an indicator of the departure of the VAT from a perfectly enforced tax levied at a uniform rate on all consumption, is somewhat lower than some other Nordic countries (Figure 6). This can be due to a relatively more complex VAT system with multiple reduced rates[11] and exemptions, and efficiency of the tax administration system.

Figure 6: VAT Rates and Collection Efficiency

Sources: National Authorities, Staff Calculation



Sources: KPMG, IBFD and Staff Calculations

21. The government has taken steps to broaden the tax base. A new tax on financial activities—which are currently exempt from value added tax—was introduced on January 1, 2017. The value added consists of the sum of wages and profits. The tax on wages will be set at 5 per cent of gross salaries paid; and the corporate tax rate for financial undertakings will be kept at the 2016 level. Accordingly, financial undertakings will not be included in the general reduction in tax on ordinary income. Profits from financial undertakings will then be taxed 1 percent higher than others. The 2016 budget also incorporates an increase of the low rate from 8 percent to 10 percent.

22. To broaden the tax base further, the government could consider reducing the exemptions and unifying the reduced rates. The government may reconsider the previous proposal by the Tax Commission for a dual-rate value added tax system, in which the standard rate of 25 per cent can be retained but the current zero rate on domestic sales and the lowest rate of 10 percent increased to 15 per cent, corresponding to the current rate on food.

[10] C-Efficiency is calculated as the VAT rate times the ratio of VAT revenue to Final Consumption minus VAT Revenue
[11] 15 percent on food stuffs, 10 percent on transport and zero percent on magazines, cultural activities.

F. Lowering Household Debt Bias and Housing Market Vulnerability

23. Various tax instruments have important implications for household leverage and housing market stability. While the tax deductibility of mortgage interest provides incentives for higher household leverage (IMF Policy Paper, 2016), taxes on imputed rent or capital gains, transaction taxes, or recurrent property taxes are designed to reduce bias towards home-ownership and risks of excessive house price appreciation. While the effectiveness of using transactions taxes to reduce the risk of erratic house-price developments shows mixed success, new evidence finds that recurrent property taxes curb house-price volatility, adding to their attractiveness as a fair and efficient revenue source. A fully neutral taxation of owner-occupied housing would require full taxation of imputed rents and capital gains on housing, combined with mortgage interest deductibility. In practice, however, imputed rents and capital gains on primary residences are rarely taxed, creating a general bias toward housing, which is reinforced by the mortgage interest relief where it exists.

Table 2: Current Mortgage Interest Deductibility from Personal Income Taxes

	Denmark	Finland	Ireland	Netherlands	Norway	Spain	Sweden	United Kingdc
General rule	32.7 percent	45 percent capital income deduction in 2017; 35 percent in 2018; 25 percent in 2019	Until 2017: Up to 30 percent for first-time homebuyers, and up to 15 percent for others. 2018 and onward: 0 percent	100 percent for pre-2013 loans; 100 percent for post-2013 fully amortizing loans (within 30 years)	100 percent (full deduction)	0 percent for properties purchased after Jan 1, 2013	30 percent	0 percent
Caps/notes	Reduced to 27 percent in 2017 for annual mortgage interest expense over DKK 50,000; 26 percent in 2018; 25 percent in 2019 and thereafter	30 percent deduction of the excess interest expense over capital income against income tax, up to EUR 1,400 per year (32 percent for first-time homebuyers)	Deductibility varies by origination date (only 2004-12), and borrower's marital status	The maximum tax rate that mortgage interest can be deducted decreases by 0.5 points annualy from 52 percent in 2013, to 38 percent in 2042 (50 percent in 2017)		15 percent deduction up to EUR 9,040 per year, for properties purchased before Dec 31, 2012	Reduced to 21 percent for annual mortgage interest expense over SEK 100,000	Mortgage interest relief at source abolished in 2000

Sources: National tax and other authorities; Bourassa et al. (2013); Smidova (2016).

24. Mortgage interest deductibility in Norway favors household leverage. Tax deductibility of mortgage interest is widespread among AEs and EMs. But the design and coverage differs across countries. The design in Norway is more generous than the peers. While Sweden applies deduction of 30 % of interest up until 100 000 SEK (€10,438), and 21 % over that amount, Norway considers any interest paid, for a home mortgage as a deductible expense (Table 2). In recent years, several countries have taken steps to put restrictions on this deductibility: Ireland and Spain have eliminated mortgage interest deductibility on new loans, while Denmark and the Netherlands are gradually reducing them (IMF Cross-Country Report, 2015).

25. Low property taxes provide an additional incentive for house ownership. Compared to peer countries, recurring tax on housing ownership is relatively low in Norway. There are two types of recurrent taxes on residential property: net wealth tax and property tax. A wealth tax is imposed on real estate property at the national and municipal levels. A flat rate of 0.85 percent is levied on the assessed value of the property, which is much lower than the market value, especially for the primary residence (75 percent discount)[12]. With the tax being levied only on net wealth exceeding a certain threshold NOK 1.48 million (€158,000), only 11 percent of the tax payers are paying the net wealth tax. Property tax rates range from 0.2 percent to 0.7 percent, depending on the municipalities. The rate is not necessarily low by international comparison (Table 3), but the collection rate is low, which can be attributed to discounted assessed value, basic allowances, and partial participation from municipalities[13].

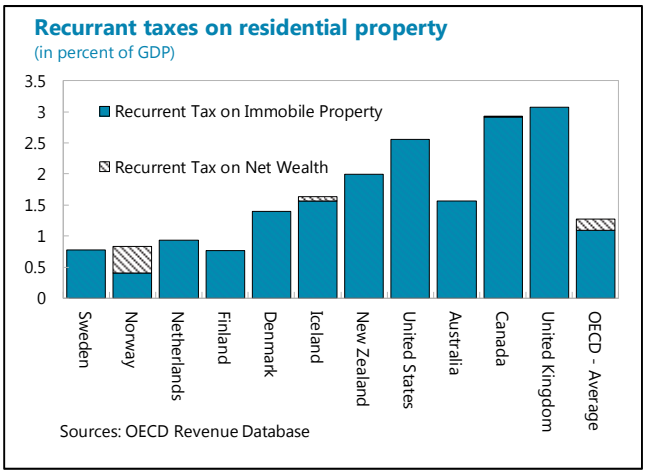


Table 3: Residential Recurrent Property Taxes

	Denmark	Finland	Ireland	Netherlands	Norway	Spain	Sweden	UK
General Rules	**Local:** levied on land value, 1.6-3.4 percent and vary by region; **National:** 1 percent of assessed value for up to 3,040,000 (€406,961); 3 percent for the exceeding amount	0.93% – 1.80% for general real estate tax; 0.41% – 0.90% for permanent residences; 0.93% – 1.180% for other residences; 2.00% – 6.00% for unbuilt sites	0.18 percent of a property's value up to €1 million, and 0.25 percent on the balance.	0.1 to 0.3 percent of property value, and vary by region	**Local:** 0.2 to 0.7 percent of assessed property value; **National:** 0.85 percent of net wealth exceeding threhold of NOK 1.4 million	Levied on market value; [0.4] percent for urban properties, and [0.3] percent for rural properties	Dwellings: the minimum of 0.75 percent or SEK 7,687; Duplex Dwellings: minimum of 0.3 percent or SEK 1,315	vary by value of house from £989 to £2968 for the lower value band of (0-£40000) and higher value band (more than £320000) respectively. There are 8 bands in total, corresponding to the value bands
Notes	If the property was purchased before July 1, 1988 the applicable national property tax rates are reduced to 0.5% and 2.8% respectively		Local authorities can vary rate -/+ 15% of national central rate; taxable value is based on market value assessed very 6 years (last 2013, next 2019)	Paid by both owner and user	Assessed value for primary residential property is 25 percent of market value and 80 percent for secondary residential and commercial property.	Can be charged to the tenant if agreed in the contract; market value adjusted every eight years	No property tax or fee is levied on certain types of real property	Discount on furnished holiday and secondary housing; discount on disabled, vacant, or single occupant residence.
Government level	local, national	local	local	local	local, national	local	local	local

Sources: National Authorities, Deloitte

26. The recent change to the net wealth tax is welcome, but further reform is needed to reduce tax preferences on housing. Norway may consider reassessing policy tools such as

[12] No primary dwelling has a taxable value higher than the market value. Secondary dwellings and commercial properties have valuation discounts of 10 percent and 20 percent respectively.

[13] Discounts on assessed value (either follow estimated value from the wealth tax system or own assessment) and basic allowances (0-4 million NOK) vary by municipalities. As of 2016, 270 of 428 the municipalities had introduced recurrent tax on residential properties.

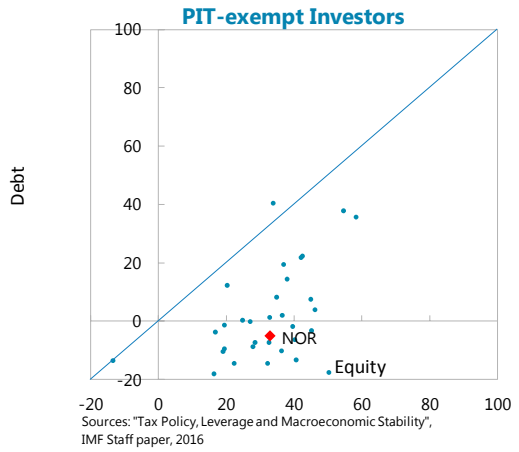
mortgage interest deductibility, imputed rents on owner-occupied housing, and property taxes, for example by lowering the cap on mortgage interest deduction, applying deductibility only to first mortgages on primary residences, increasing property tax rates, better aligning tax charges with market values of properties, updating assessed value more frequently, etc. Reforming mortgage interest deductibility requires a cautious and gradual approach as house prices can respond rapidly with consequent risks to macroeconomic stability. The current low interest rate environment is a great opportunity for Norway to act ahead of curve before higher interest rates pose additional debt burden on mortgage holders.

G. Other Considerations

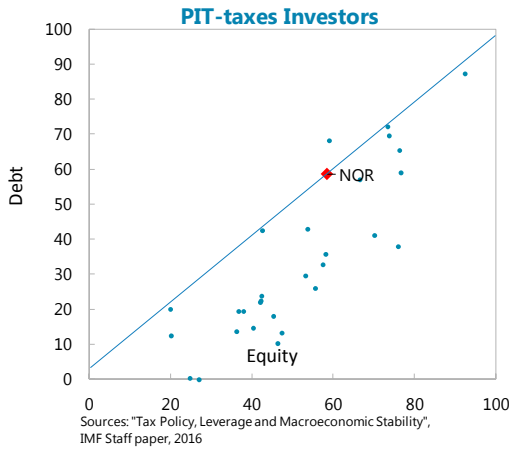
Corporate Debt Bias

27. Corporate debt bias remains a financial stability concern for many countries. A common corporate income tax system allows deduction on interest expense from debt financing while the same allowance for equity financing is not granted, which leads to preference for debt financing, called "debt bias". This debt bias raised concerns for financial stability as financial and non-financial firms with higher corporate leverage are vulnerable to credit crunch or business cycle downturns (IMF Policy Paper, 2016). This effect can be partially offset by the personal income taxes. However, a significant share of investment is sheltered from PIT, such as those by institutional investors who mainly pay CITs, and foreign investors who are usually not subject to PITs in the host country.

Figure 7: Effective Marginal Tax Rates for Debt vs. Equity



Sources: "Tax Policy, Leverage and Macroeconomic Stability", IMF Staff paper, 2016



Sources: "Tax Policy, Leverage and Macroeconomic Stability", IMF Staff paper, 2016

28. An allowance for corporate equity (ACE) is one option to address the corporate debt bias. Under a well-designed ACE system, debt bias is eliminated as a notional return on equity is deducted from taxable income. This implies that the "normal" return to investment is not taxed; only abnormal returns ("economic rent") are taxed. Several advanced economies, including Belgium and Italy, have used variants of this scheme without major implementation problems. The evidence suggests that the ACE has considerably lowered corporate debt (Hebous and Ruf, 2017; De Mooij and Keen, 2016). Some studies found a positive impact on private investment in Belgium (e.g., Aus

dem Moore, 2014). The budgetary cost of the ACE can be mitigated by granting the allowance for only incremental equity (i.e., only to new equity compared to a reference year).

Environmental Taxes

29. The government has carried out a shift more towards environmentally-friendly taxes. Energy and environmentally-related taxes have increased in real terms by 5.5 NOK billion since 2013. The 2017 budget included a green tax shift as a part of the follow-up on the Green Tax Commission with higher taxes on greenhouse gas emissions and fuel use, and tax relief to low/zero emission motorists and transport providers (e.g. reduced motor vehicle taxes, reduced road tolls, and increased travel allowances). Norway's environmental tax collection is currently higher than the OECD average, but the shift towards more ambitious target is welcome as it helps lower the social costs and broaden the tax base to compensate the revenue loss from the income tax reductions.

References

"Better Taxation – A Tax Reform for Transformation and Growth Report," (2015–2016), *The Report to Storting No. 4*

Donselaar, P., and C. Koopmans. 2016, "The Fruits of R&D: Meta-analyses of the Effects of Research and Development on Productivity," *Research Memorandum 2016-1, Free University of Amsterdam, Amsterdam.*

Hebous, S., and Ruf, M. 2017, "Evaluating the Effects of ACE Systems on Multinational Debt Financing and Investment," *Journal of Public Economics, forthcoming.*

IMF Fiscal Monitor, 2016, "Acting Now, Acting Together," *International Monetary Fund*

IMF Multi-Country Report, 2015. "Housing Recoveries: Cluster Report on Denmark, Ireland, Kingdom of the Netherlands—The Netherlands, and Spain," *International Monetary Fund*

IMF Policy Paper, 2016, "Tax Policy, Leverage, and Macroeconomic Stability," *International Monetary Policy*

Keen, Michael, and Ruud de Mooij, 2012, "Debt, Taxes, and Banks," *IMF Working Paper 12/48, International Monetary Fund.*

Nils aus dem Moore, 2014, "Corporate Taxation and Investment – Evidence from the Belgian ACE Reform," *Ruhr Economic Papers*

"Long-term Perspectives on the Norwegian Economy 2017," (2016–2017), *Meld. St. 29, Report to Storting, The Ministry of Finance, Norway*

Sørensen, Peter Birch, 2014, "Taxation and the Optimal Constraint on Corporate Debt Finance," *No 5101, CESifo Working Paper Series, CESifo Group Munich.*

"Taxes 2016," (2015–2016), *Chapter 1 of Prop 1 LS*, *The Norwegian Tax Commission*

———, 2017" (2016–2017) *Chapter 1 of Prop 1 LS, The Norwegian Tax Commission*

———, 2017: Main Feature of Norwegian Tax System," (2016–2017) *Chapter 2 of Prop 1 LS, The Norwegian Tax Commission*

"The National Budget 2016," (2015–2016), *The Ministry of Finance, Norway*

"The Revised National Budget 2016," (2016), *The Ministry of Finance, Norway*

"The National Budget 2017," (2016–2017), *The Ministry of Finance, Norway*

GENDER AT THE FRONTIER: POLICIES TO UNDERPIN HIGH-QUALITY LABOR SUPPLY IN NORWAY[1]

This chapter focuses on how to underpin long-term growth in Norway through high-quality labor supply. Norway ranks first globally in female economic participation and opportunity; but women and men face very different labor market challenges, making a gender perspective useful to explore which policies can be effective at the frontier of gender equality.[2] While female employment rates are high, considerable potential remains to increase full-time work incidence and foster women's upward mobility to reduce persistent wage gaps. There is also considerable potential to reintegrate men, whose employment rates have declined after the global crisis and not recovered, and increasing numbers of youth who have been unable to gain a solid foothold in the labor market.

A. Introduction: Macro-Criticality of Gender and Gender-Divergent Labor Market Trends in Norway

In the long term, there are two factors that determine how quickly an economy can grow: the supply of labor and labor productivity.
Øystein Olsen, Norges Bank Governor, February 2017

This chapter focuses on labor supply. It approaches the topic from a gender perspective for two reasons.

1. **First, higher gender equality in labor markets can have several favorable macroeconomic implications.** While Norway's labor market is among one of the most gender equal worldwide, complete equality is still a way away. Potential benefits from fostering equality further are:

- **Higher output.** Elborgh-Woytek et al. (2013) document the positive link between gender equality and GDP per capita. They find that raising the female labor force participation rate to country-specific male levels would, for instance, raise GDP in the United States by 5 percent, in Japan by 9 percent. While in Norway, female participation rates already stand close to those of males, the analysis here shows that increasing female full-time work could considerably increase earnings (Section B).

- **Higher productivity.** Christiansen et al. (2016b) show on a large dataset covering two million firms in 34 European countries that firms with a larger share of women in senior positions have higher profitability, which may support corporate investment and productivity. They find that an

[1] Prepared by Christian Henn.

[2] World Economic Forum (2015).

additional woman in senior management or on the corporate board is associated with an 8– 13 basis points higher return on assets. However, more mixed results from previous literature suggests that effects can vary by country and studies specifically for Norway have been less sanguine (Section B). At lower levels of organizations, greater gender diversity can improve productivity by increasing the heterogeneity in values, beliefs, and attitudes, resulting in more creativity and critical thinking (Lee and Farh 2004).

- **Lower volatility.** Many studies have suggested that female executives lead to improved corporate governance through less risky financing and investment decisions, less aggressiveness in pursuing tax avoidance, more conservative accounting, and less equity-based compensation (Adler, 2001; Khan and Vieito, 2013; Huang and Kisgen, 2013; Francis et al., 2014)

- **Lower inequality.** Female labor force participation can compensate for the negative impact of higher inequality on growth. Grigoli and Robles (2017) find that inequality reduces growth for countries with Gini coefficients higher than 28. Higher-than-average female labor force participation can increase this threshold and thus help avoid that inequality retards growth. For very equal countries such as Norway with Gini levels in the mid-twenties, this suggests that higher female participation could help safeguard growth, even if inequality were to increase.[3]

2. Second, labor market performance of females and males in Norway has varied considerably during the last decade. Participation rates are high in Norway, but have been declining during the last decade. Looking at gender here is important: The decline has been almost exclusively driven by men, was caused by the global crisis, and a rebound has remained elusive. For females, their earnings remain at only two-thirds those of males for two main reasons. First, women still face notable wage gaps, despite Norway's considerable efforts to promote equality. Second, while women remain as highly integrated into the labor market as before the crisis, incidence of part time work is high. This may be driven by preferences for leisure at an income level as high as Norway's, but there could be potential to increase hours worked to the extent that part-time preference is driven by policies and incentive structures. Finally, youth are having more trouble integrating into the labor market, and although the outlook is brightening, boys are struggling more than girls.

3. The chapter proceeds as follows. Sections B through D evaluate the developments in Norway's labor market in comparison with peer countries, focusing in turn on women, men, and youth. Section E focuses on labor market policies and how they could be adapted to further enhance equality and labor market performance. Section F concludes.

[3] In addition, it has been found for developing countries that gender equality increases export and output diversification (Kazandjian et al, 2016).

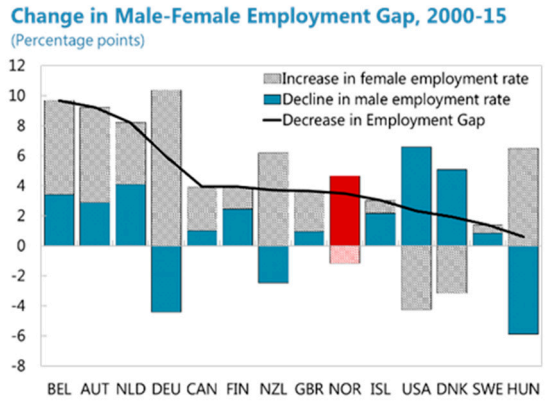
B. Females: High Part-time Work and Persistent Wage Gaps

Employment Rates and Hours Worked

4. The gap in employment rates between females and males has declined, but due to falling male employment. The decline in male employment rates—at 5 percentage points since 2000—outstripped the 1 percentage point decline in the female rate over the same period. Among peer countries, only Denmark and the United States experienced similar developments. The decline in employment gaps has been broad based across ages; gaps increased only among the oldest cohorts as Norway has been more successful in extending the working lives of males more than females among the baby-boomer generation. However, in the youngest age groups, female employment is now as high or higher than that of males. On average across all ages, the female employment rate is 5 percentage points lower than that of males.

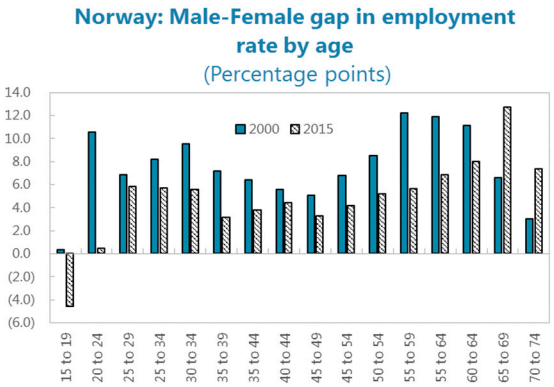
Figure 1. Norway: Developments in Female Employment

Equality in employment increased, but driven by large declines in male employment. As a result, …



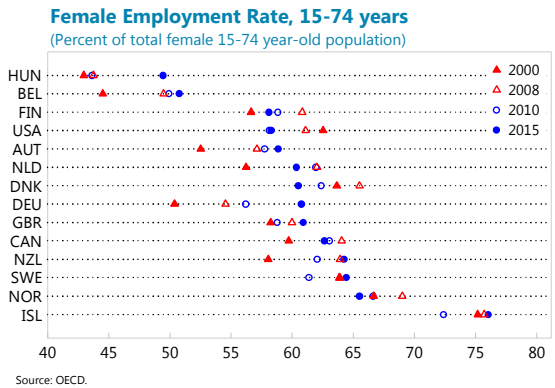
Sources: OECD and IMF Staff calculations.

… the gap in employment rates is now only 5 percentage points and has decreased in all cohorts except the oldest.



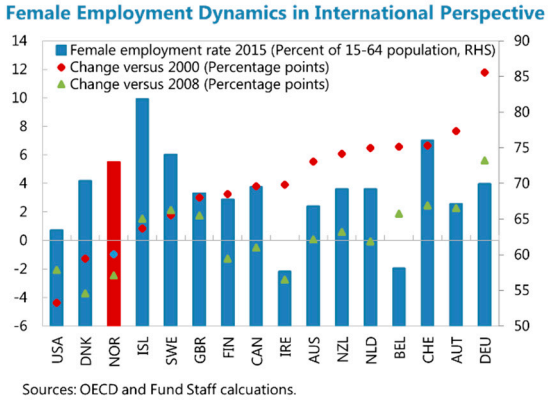
Source: OECD.

Norway remains one of the countries with the highest female employment rates, but gains in the early 2000s …



Source: OECD.

… have been reversed by the global crisis. Some other countries with high female employment performed better.



Sources: OECD and Fund Staff calcuations.

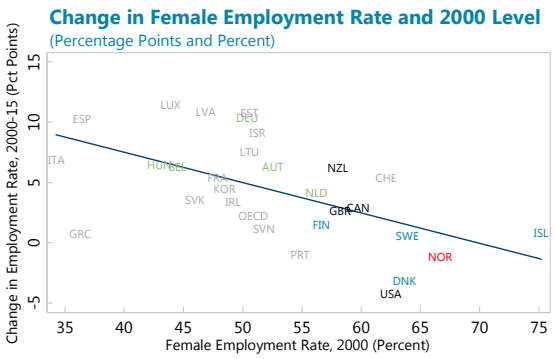
5. Female employment rates have stagnated in Norway (Figure 1). On the broadest available and preferred measure covering the 15–74 year-old population, the female employment rate stands at 65½ percent, second only to Iceland among advanced country peers. Female employment rates increased by some 3 percentage points during the 2000-08 period, but these gains were wiped out by the global crisis. While such a pattern has not been uncommon among peer countries, Norway also was among a smaller group of countries where female employment continued to gradually decrease further after the crisis.

6. A simple regression analysis is useful in benchmarking Norway's performance in female employment rates to that of peers. The regression relates the 2000–15 change in the employment rate to the initial employment rate in 2000. The analysis shows that advanced countries with low initial employment rates managed to boost those, while the opposite is true for countries with high initial employment rates, such as Norway.

7. Female employment performed slightly worse than may have been expected based on peer experiences and accounting for the initial high employment levels. Norway places slightly below the regression line, suggesting that it performed worse than expected based on peer experiences (Figure 2). If Norway had performed like its peers during 2000–15 on this metric, its female employment rate should have increased by 0.8 percentage points. However, Norway's female employment rate declined by 1.2 percentage points, resulting in a 2 percentage point underperformance. However, developments in countries with high employment rates were quite heterogeneous. Among countries with high female employment in 2000, Norway did perform better than Denmark and the United States, but lagged Switzerland (considerably) and its Nordic peers Sweden and Iceland (slightly).

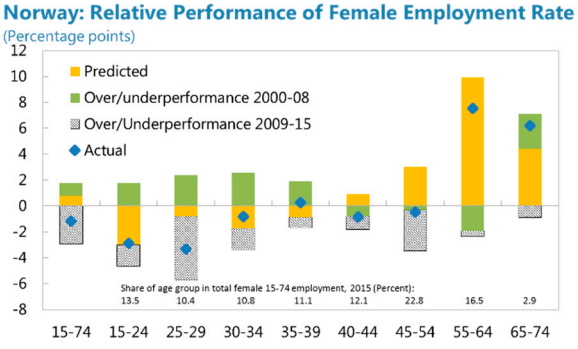
Figure 2. Norway: Benchmarking Progress in Female Employment Relative to Peers

Norway performed slightly worse than a simple regression accounting for high initial female employment suggests.



Source: OECD and IMF Staff calculations.
Note: The employment rate is for all persons and computed based on the 15-74 year cohort.

Analog analysis by age group shows that the crisis affected employment rates among the young most negatively.



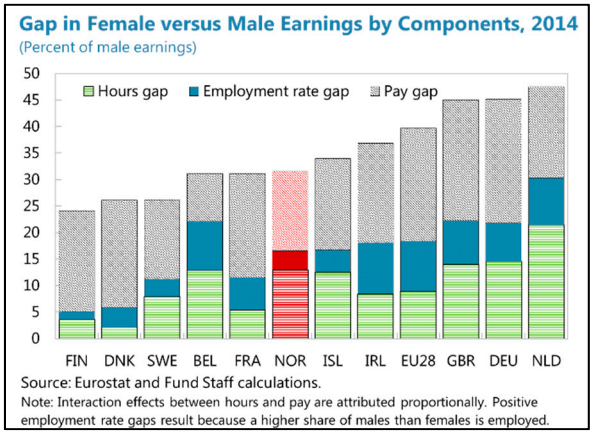
Sources: OECD and IMF Staff calculations.
Note: Performance relative to peers given initial level of employment rate based on regression of change in employment rate to initial level for 2000-15 and 2009-15.

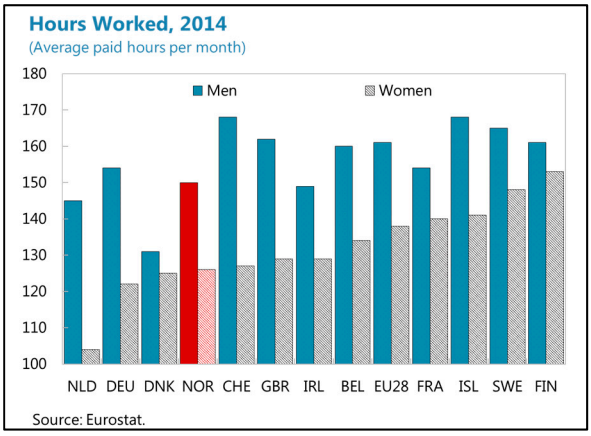
8. Norway's underperformance came during the post-crisis period, while it did better than expected in the pre-crisis period. Repeating this regression analysis separately for the pre- and post-crisis periods shows for the broad 15–74 year age group, that Norway outperformed peers

by about 1 percentage point during 2000–08. However, it did some 3 percentage points worse than peers during and after the crisis. This post-crisis underperformance extends across all age cohorts.

9. Employment of young and some prime working age women was most negatively affected by the crisis. While the youngest females (15–24) were very negatively affected across countries, the impact in Norway also extends strongly to the next older 25–29 cohort. Among women aged 45–54, the employment rate held steady, but Norway did not manage to boost their participation as peers did. Meanwhile, among older working women (as well as men), Norway matched the advances of peers closely, partly thanks to the 2011 private sector pension reform which increased incentives for continuing to work.

10. Despite similar employment rates, women's earnings in Norway are 30 percent lower than those of men. The overall earnings gap is about 5 percentage points higher in Norway than among most Nordic peers. This gap is driven in broadly equal shares from lower wages, to be considered later, and lower work input. The latter is mainly driven by less hours worked per female worker, while the difference in male and female employment rates is a minor factor.





11. Lower hours worked among women are largely driven by a higher incidence of part-time work (Figure 3). The incidence of part-time work overall in Norway, at 27 percent, is slightly higher than the OECD average and higher than all other Nordic countries, although it has been gradually falling in favor of full-time work over the last decade as child care has become more universal and easily accessible. Two-thirds of part-time workers are women, and although this fraction has been declining, it is still higher than in most other Nordic countries, where it stands around 60 percent. The declining trend is likely to continue as older women, among whom part-time work is more common, retire. Apart from part-time work, the number of hours worked is reduced by a relatively short work week, including for full-time workers of both genders, and high absenteeism (Section E).

12. Incentivizing female part-time workers to work more hours holds potential to increase earnings and output. An important caveat is that more strongly than in other countries, part-time work in Norway seems to be a choice of the worker. Only about 6 percent of Norwegian part-timers state that they are involuntarily working part time, much less than in peers and other Nordics.

However, there is also the possibility that some part-time workers are not working more hours, because there are disincentives to going full-time, which could be lessened by policy changes.

13. For part- to full-time converts, the increase in earnings could be even larger because full-time compensation per hour is higher. In Norway, this wage gap between part- and full-time work is above 10 percent for females and close to 20 percent for males. It also rises across age cohorts. Some studies suggest that such a wage penalty is often associated with part-time jobs in exchange for providing more flexible hours, opportunity for telework, or limited travel (e.g., Bertrand et al., 2010). However, also part-time work is not a possibility in many high-paid professional and managerial jobs, in which a larger number of working hours is necessary given the indivisibility and complexity of the task.

14. Two simple calculations are illustrative in quantifying possible macroeconomic effects of increasing female full-time work.[4] Both of the calculations are inspired by Figure 3. The first supposes that incidence of female part-time work were reduced from two-thirds to 60 percent—the level observed in Finland, Sweden, and Denmark—by converting female part-time workers to full-time workers.[5] The second calculation supposes that incidence of part-time work would be reduced by one third, from 27 to 18 percent in Figure 3, to reach the levels of Sweden. Again, this would be achieved by shifting female part-timers into full-time employment. Coincidentally a shift of this magnitude would also result in full equality in part-time work of males and females; i.e., the proportion of workers of both genders that are in part-time work would be equal.

15. The two calculations show that resulting economic impacts would be sizable—and suggest even incremental changes would have a notable impact (Table 1). Scenario 1 would expand earnings by 3.8 percent. Most of this effect is driven by the longer hours worked (2.9 percent), but also the increase of hourly compensation linked to moving to full-time employment has an impact (0.5 percent), with the interaction of the two effects accounting for the remainder. In the more ambitious Scenario 2, the overall effect would come close to 10 percent of GDP. Based on the 57 percent labor share observed in mainland GDP in 2015, Scenario 1 suggests that GDP could increase by over 2 percent. In Scenario 2, the GDP increase could exceed 5 percent.

Table 1. Scenarios Illustrating Macroeconomic Impacts of Expansions in Female Full-time Work

	Gain in Earnings (percent)				Gain in mainland GDP (percent) 1/	Females' earning (percent of total earnings) 2/
	Total	due to hours worked	due to higher full-time wages	Interaction		
Sc. 1: Reduce female part-time incidence to 60 percent	3.8	2.9	0.5	0.4	2.2	42.6
Sc. 2: Reduce incidence of part-time work by 1/3	9.6	7.1	1	1.4	5.5	45.6

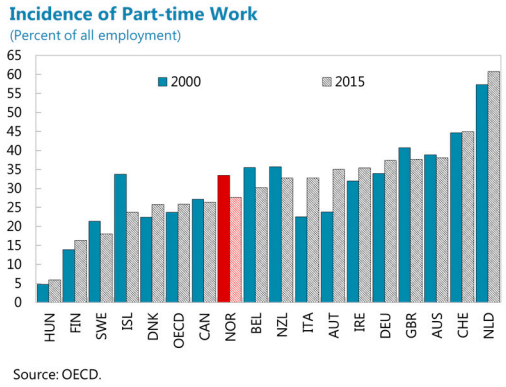
Source: Fund staff calcualtions based on data from OECD and Statistics Norway.
1/ Assumes a constant labor share in mainland GDP at the 2015 level of 57 percent.
2/ The comparable actual 2015 figure is 40.4 percent.

[4] These calculations are based on 2015 economy-wide employment and earnings data from Statistics Norway. While they are useful to obtain an order of magnitude, they could be refined by using more disaggregate data (e.g. by sector of employment) as the calculation basis. Also, given different definitions of part- and full-time employment between Statistics Norway and the OECD, some proportionality assumptions had to be made.

[5] This would also lower overall part-time incidence by some 3½ percentage points.

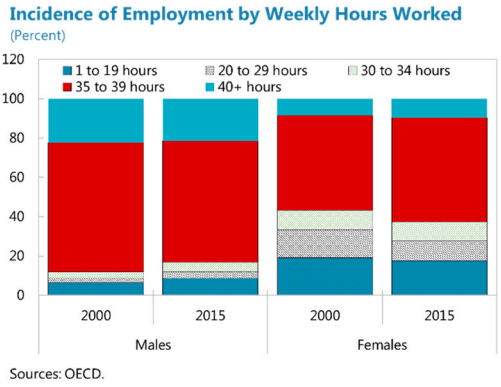
Figure 3. Norway: Part-time Work

Part-time work constitutes 27 percent of employment in Norway, more than in Nordic peers.



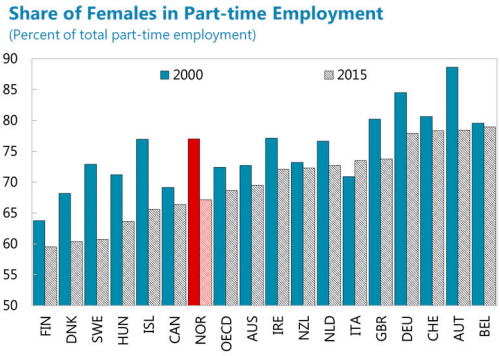
Source: OECD.

Although gender equality in the distribution of part and full-time work has been increasing …



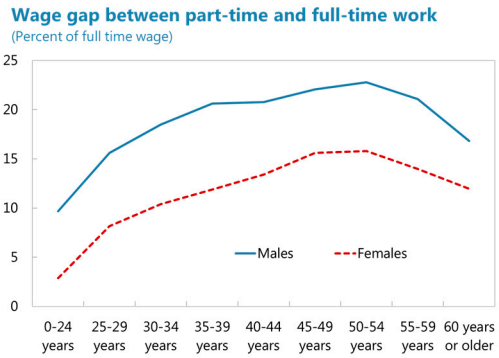
Sources: OECD.

… Norwegian females still make up two-thirds of part-time workers, which reduces their hours worked.



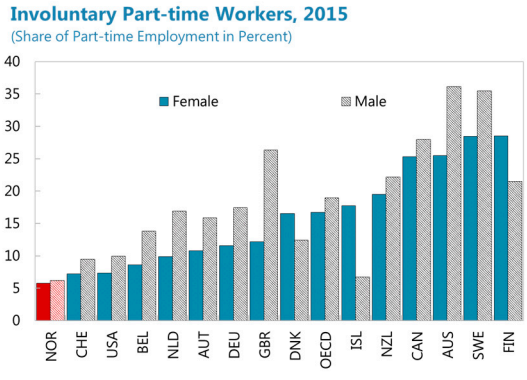
Source: OECD.

In addition, earnings of part-time workers are lower due to a wage differential, although it is lower for females.



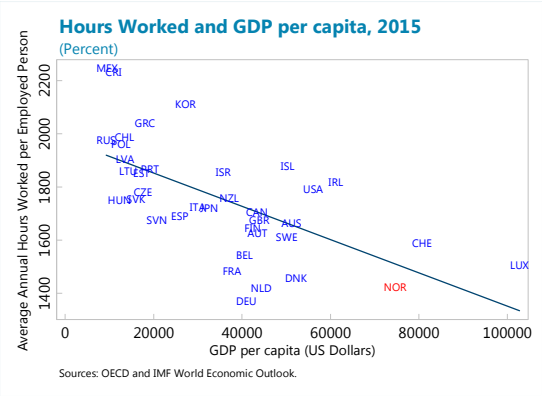
Sources: Statistics Norway and Fund Staff calculations.

Despite this wage penalty, part-time work seems to be largely driven by choice …



Sources: OECD.

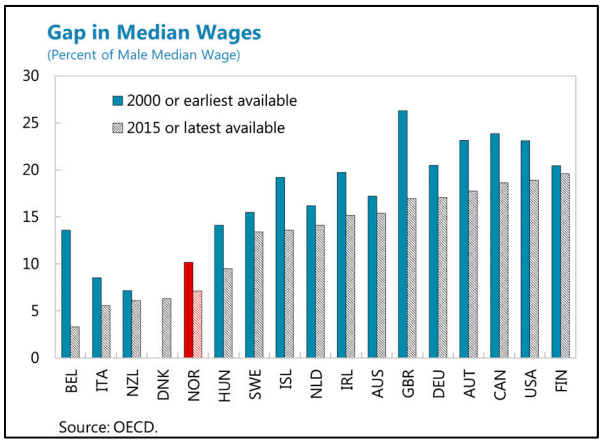
… likely due to a higher relative value of leisure time at high income levels.



Gender Wage Gaps

Stylized Facts

16. While wage gaps in Norway are modest, there may be potential to learn from certain peer countries regarding how to accelerate further narrowing. Gender wage gaps in Norway narrowed rapidly before 2000; since then further progress has been very gradual. Measured at the median wage, the gender wage gap in Norway was 7 percent in 2015, down from 10 percent in 2000. This reduction was broadly in line with peers, which during the same period experienced a 4 percentage point reduction—but many from higher initial levels. Certain peers achieved especially large reductions in wage gaps. They include Belgium during the past 15 years, where legislative action and continued focus in the political debate bore fruit in a 10 percentage point reduction of the gap (Box 1). New Zealand achieved a similar-sized reduction during the 1990s.[6]



17. Wage gaps are higher for full-time workers (Figure 4). Full-time workers recorded a wage gap of 12 percent in 2015, while that of part-time workers was small at 0.8 percent on average. As a result, the analysis here focusses more strongly on full-time employment.

Box 1. Measures to Reduce the Gender Pay Gap in Belgium

The Belgian case is of interest to Norway, because some structures of the labor market are similar. For instance, the incidence of part-time work is on par with that of Norway at slightly below 30 percent. The success in Belgium has come despite very high female representation among part-time workers (Figure 3). The latter is important, as part-time work often carries a wage penalty compared to full-time employment, which can work in the disfavor of women.

Attention to gender wage gaps was significantly stepped up in Belgium around 2000. The efforts included an evaluation committee, on which social partners were represented. It devised a manual of gender-neutral job classifications which became the obligatory basis for collective labor negotiations in 2008. Annual Gender Pay Gap Reports were released by the federal government from 2006 and in receiving considerable media attention, kept the issue on the political agenda.

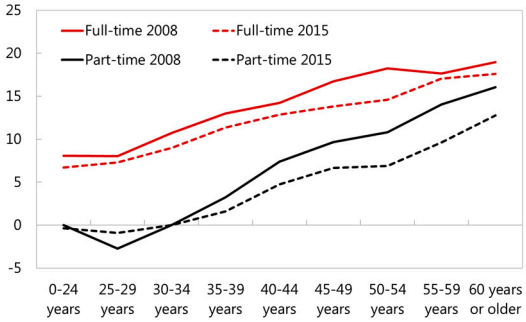
The process culminated in a 2012 law aimed, which states that gender pay gaps need to be discussed at all levels of collective labor negotiations (national, sector, subsector, company). It furthermore makes it mandatory for all firms over 50 employees to release a gender pay gap report every two years. Finally, mediators can be appointed in companies to resolve claims of unequal pay. Van Hove (2015) provides additional information on the Belgian case.

[6] Hungary also achieved a 10 percentage point reduction during 2000-14 to a 4 percent wage gap, but, according to OECD data, the gap based on median wages amplified again during 2015 to 9½ percent.

Figure 4. Norway: Female-Male Wage Gaps

Wage gaps have narrowed, but are larger in full-time jobs and for older workers.

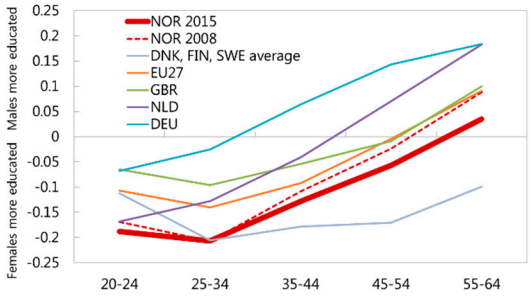
Gap in Mean Wage by Working Time
(Percent of mean male wages)



Sources: Statistics Norway and Fund Staff calculations.

Gaps persist despite females being better educated than males in Norway, except among the oldest workers.

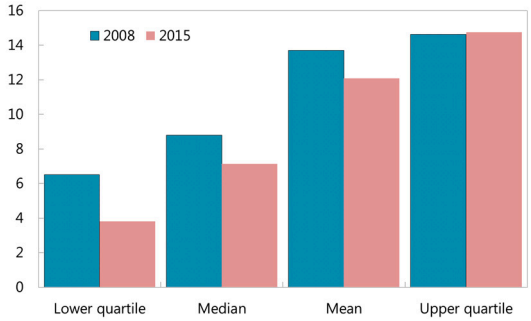
Gender Gap in Educational Attainment by Age, 2015
(Index)



Sources: Eurostat and Fund Staff calculations.
Note: Difference between male and female indices, each of which can range from 1-3 and is a weighted average of attainment, with weight 1 for primary, 2 for secondary, 3 for tertiary.

Wage gaps are also larger at the upper end of the wage distribution, …

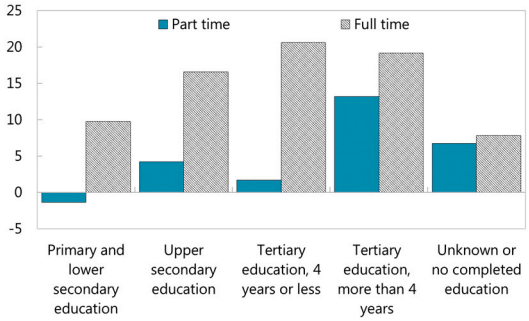
Wage Gap of Full-time Employees by Quartile
(Percent of male wage)



Sources: Statistics Norway and Fund Staff calculations.

…and for well-educated females.

Wage Gap for Full-time Employees by Education, 2015
(Percent of mean male wage)



Source: Statistics Norway and Fund Staff calculations.

This reflects larger wage gaps in managerial and professional jobs; these tend to be also high in the health sector, where the share of female employment is highest. In government, wage gaps are lower and more uniform across occupations.

Female-Male Wage Gaps by Occupation, 2015
(Percent)

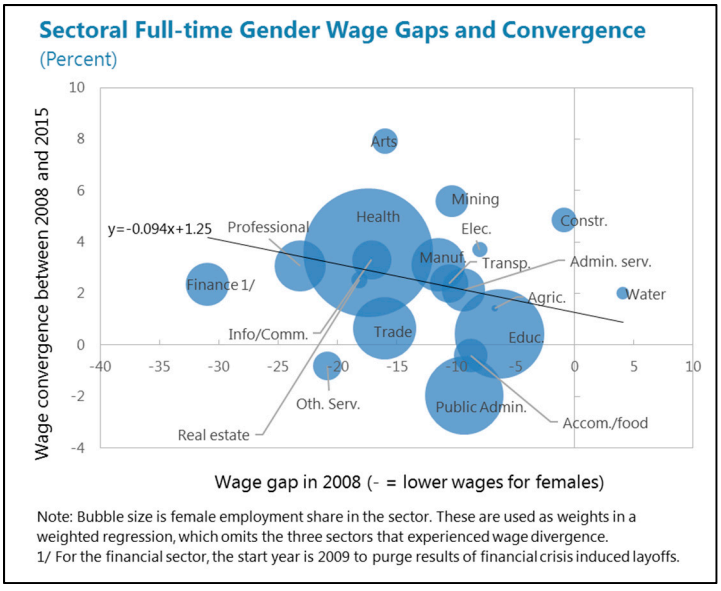
Sources: Statistics Norway and Fund Staff calculations.
Note: Data on Government are simple averages of central government (2013 data) and municipalities (2015 data).

18. Wage gaps increase with age. Within the full-time employed, the mean wage gap rises constantly with the age of cohorts, from 6.7 percent for those younger than age 24 to 17.6 percent for those above 60. It also increases with age among part-time workers, but wage gaps in favor of women among the young offset this effect in the average figures. The rise of wage gaps across cohorts could be a result of education differentials, which in Norway sway more strongly in the favor of females in younger cohorts. However, this can hardly explain the level of gaps in disfavor of females, given that they are more highly educated than men, except in the oldest cohorts.

19. Wage gaps are higher at higher wage levels. In 2015, the gender wage gap with low-wage earners (25th percentile) was slightly below 4 percent, while there was a wage gap of almost 15 percent for high-wage earners (75th percentile). While this pattern is common across countries, it is conceivable that high wage compression in Norway and other Nordic countries and its resulting high entry-level wages also help compress gender wage gaps for low-wage earners. Notably, also wage gaps for lower wage earners have narrowed in recent years, while they stayed stable for high-wage earners. With the distribution of earnings skewed to the upside, the mean wage gap for full-time employees—at 12 percent—is higher than the median wage gap.

20. This reflects that wage gaps are higher for highly educated women and in managerial and professional occupations. Women with university education recorded the highest wage gaps, of 20 percent in 2015, which have not shown any tendency to decrease since data became available in the late 1990s. Across occupations, female managers, professionals and technicians suffered from the largest wage gaps. Mean wage gaps in those skilled occupations are higher in the private and health sector standing well above 10 percent. In government employment, meanwhile, mean wage gaps are relatively constant between 6–10 percent across occupations. The persistence of large gaps in the health sector is important, because it is employs one third of all women in Norway, making it the largest sector for female employment.

21. Female-dominated sectors feature moderate, but relatively persistent wage gaps. The two largest sectors for female employment after health are education and public administration. In education, the mean wage gap was 6 percent in 2015, but there has been only a very slight reduction since 2008. In public administration, the wage gap even opened further during this period, resulting in a 11 percent gap by 2015. On average across sectors, there has been convergence, with high-gap sectors converging more strongly and the large health sector making an important positive contribution. However, overall convergence has been



Note: Bubble size is female employment share in the sector. These are used as weights in a weighted regression, which omits the three sectors that experienced wage divergence.
1/ For the financial sector, the start year is 2009 to purge results of financial crisis induced layoffs.

quite gradual. The sectors with the largest gender wage gaps in 2015 represented 10 percent of female employment. These sectors were finance and insurance (28.6 percent wage gap); professional, scientific, and technical activities (21.6 percent); and other services (21.6 percent).

22. Continued work toward closing gender wage gaps could have notable macroeconomic impacts. Reducing the gender wage gap in full-time employment to levels of Belgium would increase earnings by 2.4 percent and the share of female in total earnings by 1½ percentage points. Complete elimination of the gender wage gap would roughly double these impacts. Given that wage gaps in part-time work are already small on average, their elimination would only have a small impact.

Table 2. Scenarios Illustrating Macroeconomic Impacts of Elimination of Gender Wage Gaps

	Gain in Earnings (percent)	Females' earnings (percent of total earnings)2/
Sc. 3: Reduce full-time gender wage gap to Belgian level 1/	2.4	41.8
Sc. 4: Eliminate full-time gender wage gap completely	4.5	42.9
Sc. 5: Eliminate part-time gender wage gap completely	0.2	40.5

Source: Fund Staff calculations based on data from OECD and Statistics Norway.
1/ Corresponds to a 54 percent decrease in the gender wage gap.
2/ The comparable actual 2015 figure is 40.4 percent.

Possible Reasons for the Persistence of Gender Wage Gaps

23. There are several possible reasons for the persistence of gender wage gaps in Norway. This subsection discusses limitations to upward mobility, sectoral gender segregation, skill advantages in favor of males in highly-paid areas, impact of family policies and career-progression penalties for extended absence from work, and regional factors.

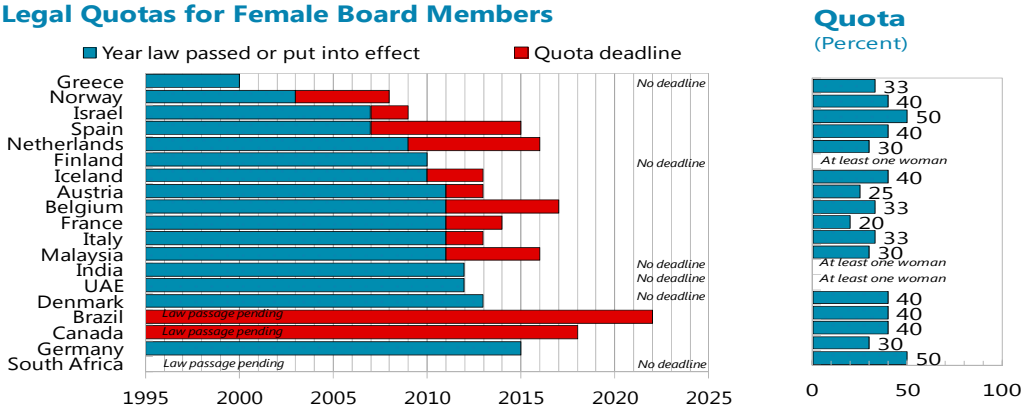
24. Norway has been one of the trailblazers in promoting women's career progression. In particular, it was among the first countries to introduce minimum female representation (of 40 percent) on boards of directors of publicly-listed companies (Figure 5). Also, Norway is among the countries with the highest female representation in parliament and the cabinet.

25. However, the trickle down into management positions has been slow, although there are promising signs in recent years. During 2011–15 Norway managed to increase female representation in management positions from one third to 39 percent. However, it still lags Sweden, Iceland, and the United States and the increase was driven mostly by advances of women into lower and mid-level management.

26. Integration of women into top management remains an ongoing challenge. Johnsen and Loken (2015) document that Norway is not atypical among Nordics in achieving high female employment rates, but relatively low numbers of female top managers. Recent advances have been more limited in private business, even in large listed companies subject to the quota on female

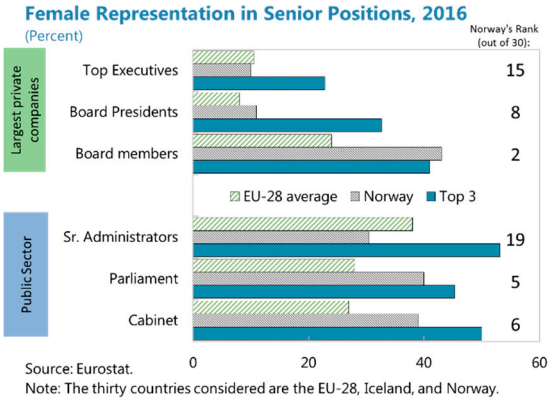
Figure 5. Norway: Upward Mobility of Females

Norway was an early mover in putting in place quotas for female representation on company boards of directors.



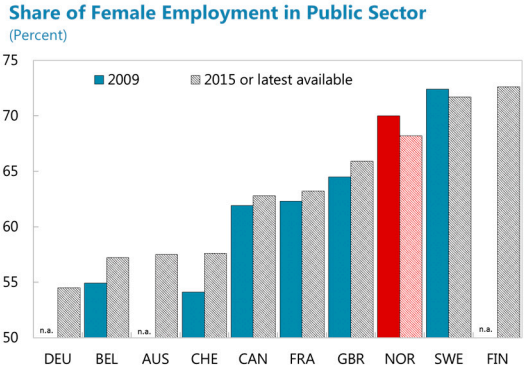
Sources: Deloitte's Women in the Boardroom 2013 survey; Bertrand et al., 2014 (Norway); National (UAE); Spiegel Online (Germany).

The trickle down into top management has been slow, and more so in the public sector, …



Source: Eurostat.
Note: The thirty countries considered are the EU-28, Iceland, and Norway.

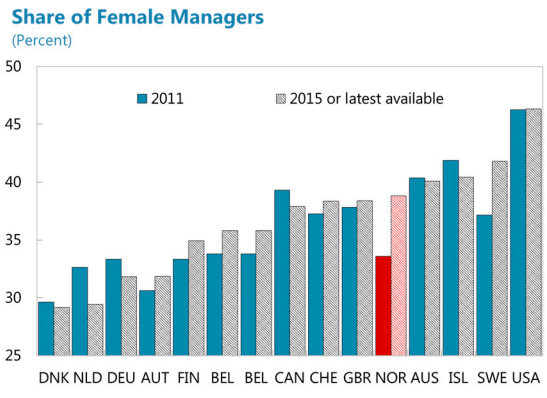
… which is an obstacle, given Norway's high female concentration in that sector, mirroring Nordic peers.



Sources: OECD.

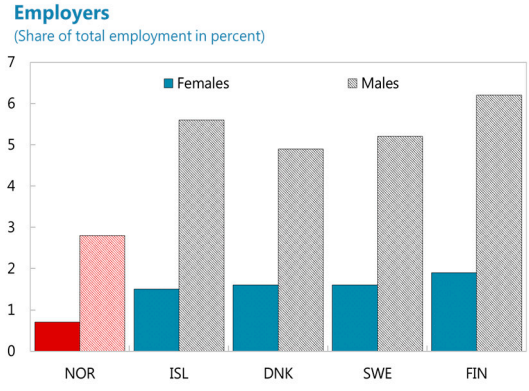
Overall, however, equality in management has been advancing driven by lower-level management positions

.



Source: OECD.

Female entrepreneurship remains low in absolute terms, but, relative to male rates, it is in line with other Nordics.

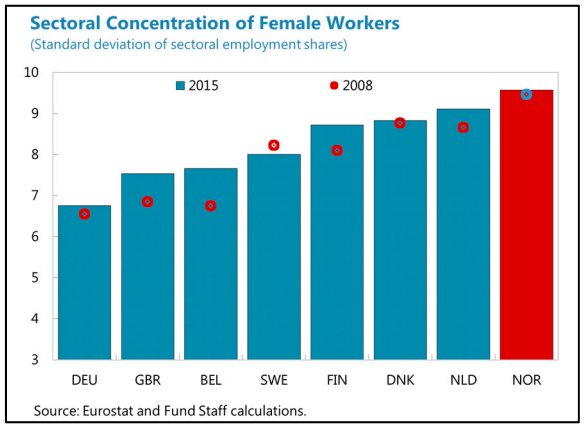


Sources: Nordic Council.

board representation. Among female top executives in the largest private sector companies, Norway only matches the EU-28 average. It is a possibility that women in Norway, more strongly than men, avoid the most demanding jobs to satisfy a preference for work-life balance. However, limitations on female upward mobility could also be driven by a reluctance of private companies to delegate more decision-making powers to females as results from research specifically on Norway could be taken to suggest. For instance, Matsa and Miller (2009) find that gender board quotas are associated with reduced short-term profitability for firms that had no female board membership beforehand, owing to increased labor costs from fewer layoffs and higher relative employment.[7] Finally, female entrepreneurship is also low in Norway, though this is in line with lower entrepreneurship rates overall in Norway relative to other Nordics.

27. The public sector has not widely championed females in senior civil servant positions. Norway ranks below the EU average in terms of the share of females in senior public administrator positions. Given that more than 70 percent of civil servants are women and public administration is the third largest sector in female employment, limitations on upward mobility in the public sector also hold back female progression overall, even if not much importance were attributed to a positive signaling effect. In general, promoting females to managerial positions could hold additional rewards in any sector with high female employment as Giuliano et al (2006) point out. The authors document large negative effects of gender and other demographic differences between managers and subordinates in terms of subordinates' rate of quits, dismissals, and promotions.

28. Gender segregation may explain almost half of the wage gap and may worsen females' chances at moving up to higher level positions. Norway is among the countries with the highest sectoral concentration of female workers (Figure 6). Over 90 percent work in the services sector. The health, education, and public administration subsectors alone account for more than half of female employment and derives partly from historical reasons as these sectors were strongly expanding in the 1970s, at the same time as female participation.[8] This sectoral segregation can explain about 45 percent of the aggregate wage gap as women cluster in sectors and occupations with lower pay levels (Barth et al, 2013). It also implies that in female-dominated sectors, very high share of female (top) managers would need to be observed to achieve equality in



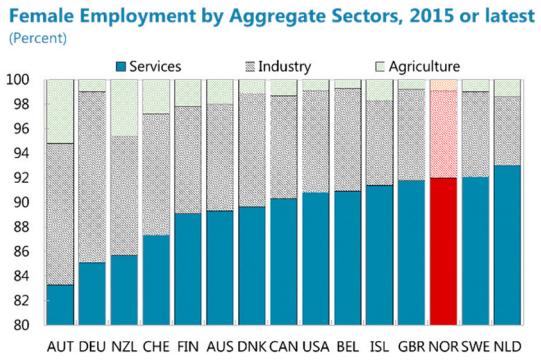
[7] Similarly, Ahern and Dittmar (2012) similarly cast doubt on the positive effects of gender diversity on corporate boards in response to the legislative changes in Norway, finding that listed firms experienced a decline in their stock price at announcement, and their market value also declined in subsequent years. However, Campbell and Vera (2010) opposite results for Spain. For the U.S., Adams and Ferreira (2009) find that gender diversity in top management has an impact only on those firms lagging in quality of corporate governance.

[8] High female dominance in the health sector plays a role also in high female part-time incidence, because lower total hours implied by shift work result in some 70 percent of jobs in the sector to be considered part time.

aggregate across sectors. Within companies, a study from Denmark finds that female managers also tend to cluster in functional areas such as HR, R&D and IT, which have lower chances of promotion to CEO (Smith, Smith and Verner, 2013). Therefore, addressing sectoral gender segregation can complement efforts for equality.

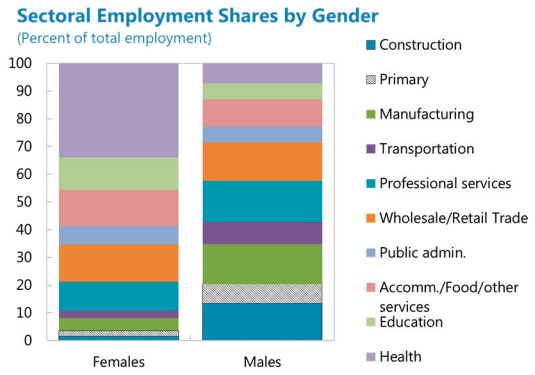
Figure 6. Norway: Sectoral Gender Segregation

Norwegian females are more concentrated in services sectors than in peer countries, …



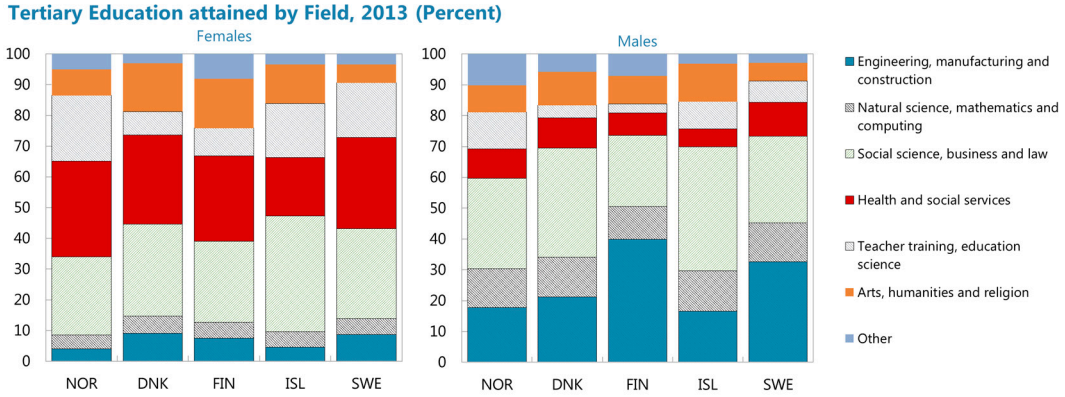
Source: OECD.
Note: Axis rescaled as >80 percent of females work in services in all countries considered.

… and within services they are also highly concentrated in health, education, and public administration.



Sources: Eurostat and Fund Staff calculations.

Gender segregation starts in education. Study preferences of both females and males in Norway are more strongly oriented towards female-dominated disciplines. This may lead to higher labor supply in these professions and drive down female wages, while STEM majors seem relatively undersupplied.



Source: Nordic Council.

29. Gender segregation starts in education, and competition in female-dominated fields seems particularly high in Norway. Compared to other Nordic countries, both female and male university students seem to lean more towards female-dominated majors such as teaching, health and social work, and arts and humanities. Higher labor supply in these areas would suggest a downward pressure on wages, which affects females disproportionately. Meanwhile, graduates in STEM fields are relatively undersupplied compared to other Nordics, which may underpin higher wages in those fields. This mostly favors men and could partly explain the persistence of wage gaps.

30. Men may have skill advantages in certain highly-rewarded areas. Such advantages could compensate for their lower average level of education. OECD data show that Norwegian men score somewhat better than Norwegian women in "proficiency in problem solving in technology rich environments." Moreover, men may also be more frequent among top performers. The Nordic Council (2016) points out that men are more frequent among the top performers in math. These high-performing students study and learn mathematics differently, and differ in their perception of control, attribution of success and other motivational beliefs. They report higher perseverance and more positive attitudes to mathematics. This could result in considerably higher earnings, especially as information technology allows superstar performers nowadays to tap into larger revenue pools more easily.

31. Implicit penalties in career progression as a result of extended breaks disproportionately affect women. Johnsen and Loken (2015) document that countries with more generous family policies have higher maternal employment but fewer female managers and senior officials, which matches the Norwegian experience. Longer job leaves have also been found to be more harmful to the careers of highly educated women and women in the private sector (Datta Gupta et al, 2008). Bertrand et al. (2010) find for a sample of U.S. MBAs that controlling for career breaks and hours worked completely eliminates the gender wage gap, i.e. career breaks have very negative effects for males also, but only few men take them. Thus, having a child can have a large and long-lasting negative effect on female labor supply,[9] and the within-couple wage gap between husband and wife often expands substantially after becoming parents.[10] Thereby, relatively high fertility rates in Norway may be associated with the persistence in gender wage gaps, despite their positive effects e.g. on pension sustainability.

32. Gendered regional migration patterns could also have some effect. Compared to other Nordics, there is an especially strong tendency in Norway for female university graduates to cluster in cities, reportedly in part to escape certain social norms in smaller communities and lesser appeal of rural recreation options (Nordic Council, 2016). In Oslo, for instance, 60 percent of the population with university degrees are females. In contrast, men are more open to returning to outlying areas. Thereby they avail themselves to a wider range of job opportunities, which could increase the gender wage gap, but there would be an offsetting effect of urban areas featuring higher income levels.

C. Males: Strong Declines in Employment Rates

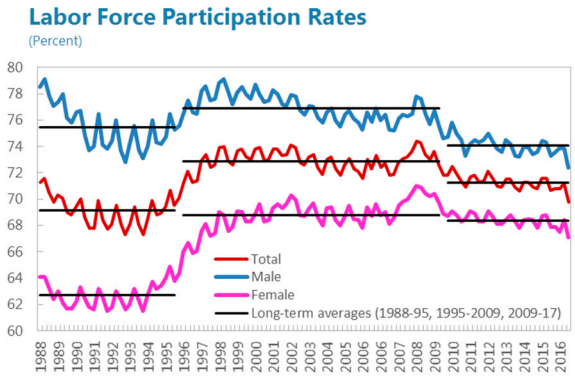
33. The employment rate for males in Norway declined by 5 percent during the financial crisis and did not recover thereafter. The male employment rate among the 15–74 year-old population stood at 70½ percent in 2015 after having declined from levels exceeding 75 percent before the crisis (Figure 7). Compared to the female employment rate, it was both hit harder by the

[9] See Lundborg et al (2014) based on Danish data.

[10] For Sweden, Angelov et al (2013) find that the wage gap more than doubles.

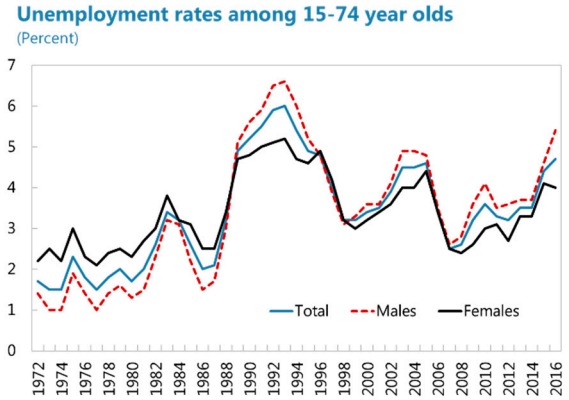
Figure 7. Norway: Developments in Male Employment

Male participation dropped after the global crisis and did not recover since. This suggests that many exits may be …



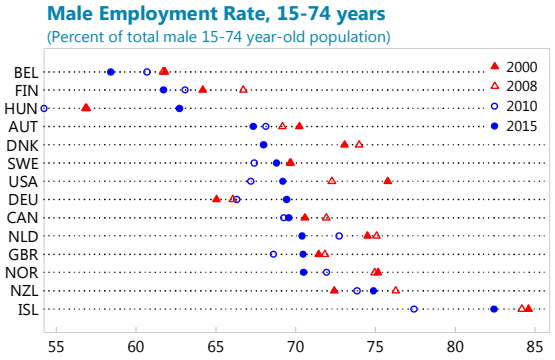
Source: Statistics Norway and IMF Staff calculations.

… involuntary, given that male unemployment has also separated again to the upside from female unemployment.



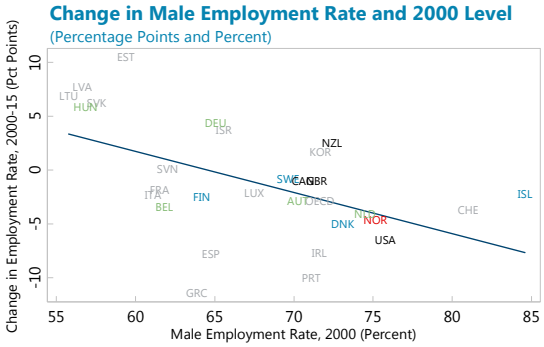
Sources: Statistics Norway.

Male employment rates have fallen 5 percentage points since 2008 and continued to deteriorate after the crisis …



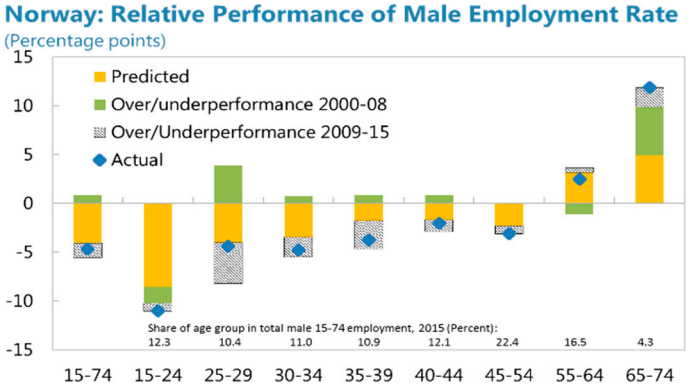
Source: OECD.

… giving cause for concern, although other countries with high initial employment rates have suffered similar fates.



Source: OECD and IMF Staff calculations.
Note: The employment rate is for all persons and computed based on the 15-74 year cohort.

Simple regression analysis confirms that the fall in male employment rates is largely an unresolved crisis legacy, with young cohorts more strongly affected. Meanwhile Norway outperformed in extending working lives of older males.



Sources: OECD and IMF Staff calculations.
Note: Performance relative to peers given initial level of employment rate based on regression of change in employment rate to initial level for 2000-15 and 2009-15.

crisis and continued to decline at a faster pace thereafter. Given that much of the fall in employment was induced by the crisis that suggests that much of it is involuntary, although some of it can be explained by population aging. Larger increases in male than female unemployment during and since the crisis point in the same direction, although, over the long term, a gradually declining trend in male participation rates has been observed, which is likely driven by preferences.

34. The Norwegian experience mirrors that of peer countries, in what some have termed a "mancession" (Nordic Council, 2016). In most countries crisis-induced losses in male employment dwarfed those in female employment. Therefore, when the earlier simple regression analysis of changes in employment rates on initial employment rates is repeated for males, we find that Norway's underperformance relative to peers was only 0.6 percentage points. This results because countries with high initial male employment rates generally suffered steep declines. After the crisis a rebound in male employment remained elusive in Norway, making it one of only a few European countries where male employment rates did not rebound after the crisis (the others are Austria, Belgium, Netherlands), with the oil sector downturn and exerting a Norway-specific effects during 2014–16.

35. Analysis by age cohort shows that young males were most affected. Male employment rates dropped by 11 percent among 15–24 year-olds, relative to a predicted 8½ percent drop based on peer experiences. The remaining relative underperformance accumulated throughout the pre- and post-crisis period, pointing toward a longer-standing structural problem in integrating young males into the labor market. The impact on the youngest cohorts largely mirrors the results for females, but the shock reverberated further into prime working age cohorts for males. For male cohorts through 39 years of age, drops were on the order of 4 percent. However, among males aged 55 and above, Norway performed very well in extending their working careers with the 2011 private sector pension reform showing the expected results.

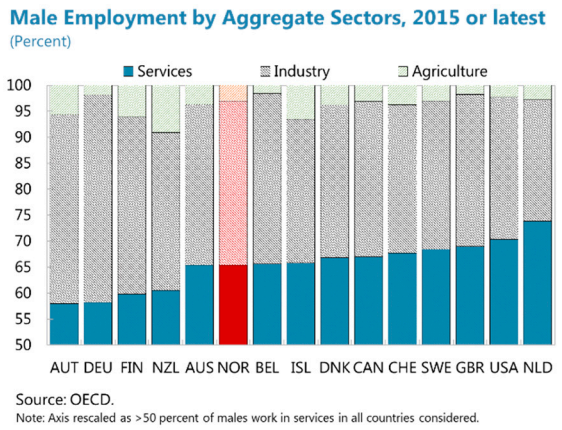
36. The sectoral distribution of employment is important in explaining large male employment declines. Males are concentrated in more cyclically-sensitive industries such as construction and manufacturing industries while females more often work in services sectors less affected by the crisis, as Elborgh-Woytek et al (2013) highlight. Although this concentration is less pronounced in Norway than in most peers, it is nonetheless strong enough for crises to have a more marked impact on male workers. Our analysis shows that employment only grew by 3½ percent in male-dominated sectors in total during 2008–15, while it grew almost 13 percent in female-dominated sectors (Figure 8). Meanwhile, layoffs in the Norwegian oil sector since start of the oil price slump in 2014 are not very large in comparison to longer-standing declines in male employment rates.[11] Hvinden and Nordbø (2016) analyze the Norwegian labor market from an oil

[11] Job losses broadly attributable to oil activity are hard to pinpoint from official data and therefore often total employment in western Norwegian (oil) counties is analyzed instead (including by Hvinden and Nordbø, 2016). Falls in employment in western Norwegian (oil) counties represented a ¼ percentage point drag on national employment growth in each 2015 and 2016.

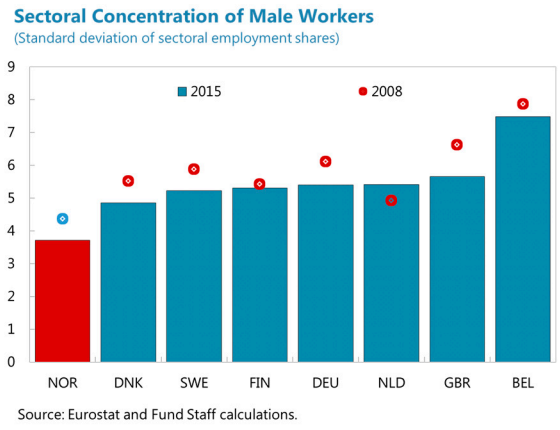
sector viewpoint; they encouragingly conclude that the slump did not cause labor market mismatches larger than in typical downturns and that labor mobility is high.

Figure 8. Norway: Sectoral Composition of Male Employment

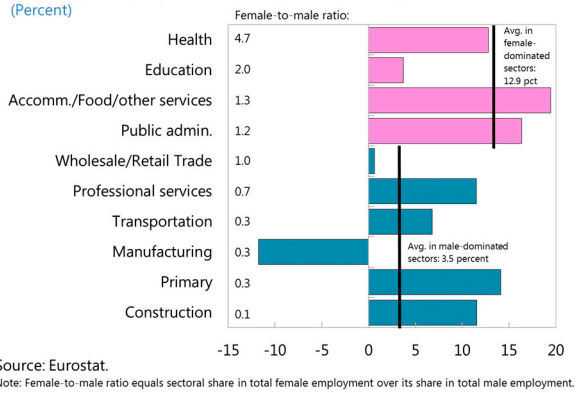
Male employment is less concentrated than elsewhere …



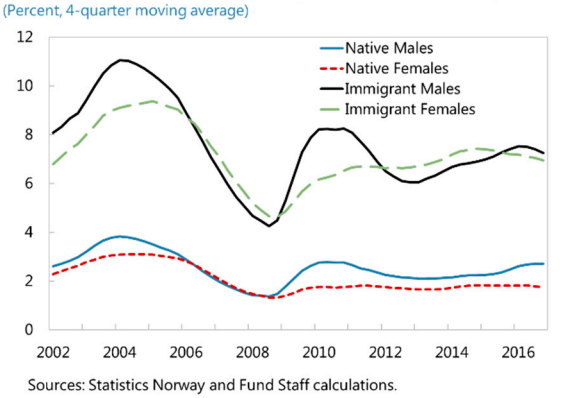
… and concentration has been declining.



But it is still sufficiently concentrated for the crisis to have exerted a much higher impact on male employment.



Crises tend to have permanent effects, including on immigrants and those with low skills.



37. Crises tend to hit immigrants particularly hard and often have permanent effects. Immigrants from Eastern Europe and outside Europe tend to cluster in cyclically sensitive industries. When laid off during a crisis, a considerable share of lower-skill immigrants find it hard to reintegrate into the labor market and often become long-term unemployed or claim disability benefits (Bratsberg and Roed, 2015). With immigrant employment much higher for males than females, such patterns can partly explain that absence of a rebound in male employment rates after the crisis.

38. Reinvigorating male employment could have notable macroeconomic impacts, but will be challenging. The calculations in Table 3 suggest that returning male unemployment to female levels by integrating these males into employment could increase earnings by 1¼ percent. Increasing male employment rates by some 5 percentage points to return them to their pre-crisis

levels would triple this effect. However, it will necessitate higher growth—The Ministry of Labor estimates suggest that mainland GDP needs to expand by more than 2¼ percent for employment gains to be realized. Achieving increases in employment rates will be challenging, because crises in Norway result in disproportionate labor market withdrawals, including through sickness and disability (Section E), and some immigrant groups are hard to reemploy across sectors, partly as a result of insufficient language skills.

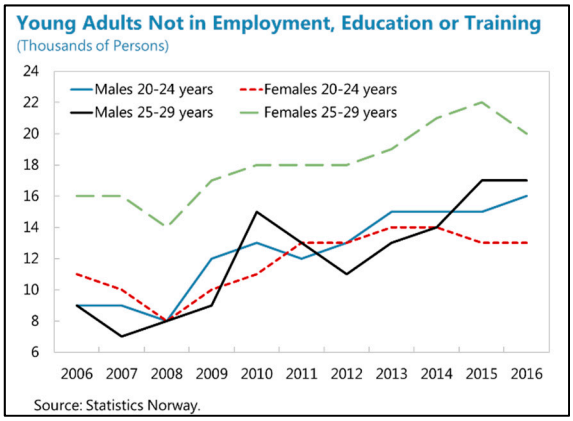
Table 3. Scenarios Illustrating Macroeconomic Impacts of Increasing Male Employment

	Gain in Earnings (percent)	Gain in mainland GDP (percent) 1/
Sc. 6: Reduce male unemployment rate to that of females 2/	1.2	0.7
Sc. 7: Increase male employment rate to its 2000-08 average	3.7	2.1

Source: Fund Staff calculations based on data from OECD and Statistics Norway.
1/ Assumes a constant labor share in mainland GDP at the 2015 level of 57 percent.
2/ Assumes that the male unemployment rate would be lowered by 1.4 percentage points.

D. The Young: Some are at Risk of Exclusion

39. The young have been faring worse in the labor market across the board (Figure 4). Youth unemployment rates are considerably higher than those in the 15–74 year-old population. Among 15–24 year-old males, the unemployment rate in 2016 was 12½ percent (versus 5.4 percent in the overall population). For females, it was 9.3 percent (versus 4 percent overall).[12] Moreover, among both sexes another 5–6 percent of young people have dropped out of the labor force although they would be willing and able to take a job.



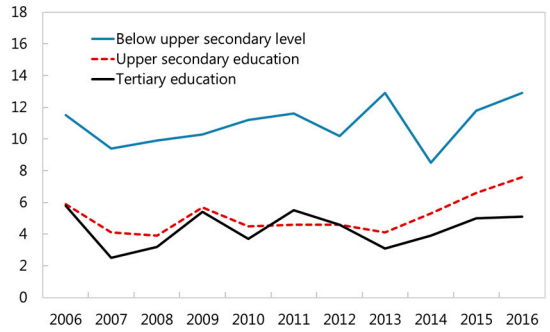
40. This could have permanently damaging effects. Nilsen and Reiso (2014) find for Norway that early-career unemployment leaves permanent scars in working careers, leading to higher probability later in life of being unemployed or dropping out of the labor force. Rosholm and Svarer (2015) document that long-term unemployment at early age leads to loss of cognitive human capital skills as well as non-cognitive skills such as work motivation, discipline, and self-control. Therefore, there is a risk that worse labor market outcomes propagate forward as cohorts age.

[12] However, Labor Force Survey figures such as these may overstate youth unemployment somewhat, because some students may declare that they are unemployed. Therefore it is also useful to consider the figures on those young people not in employment, education, or training (NEET).

Figure 9. Norway: Labor Market Integration of Youth

Youth unemployment is high relative to overall unemployment …

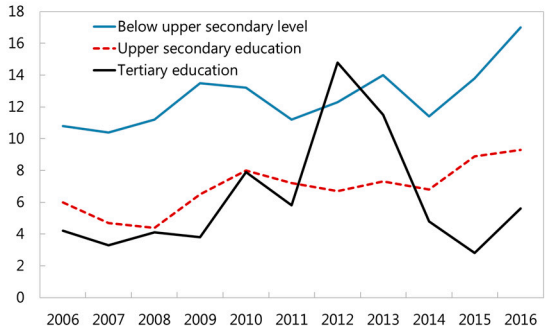
Unemployment Rates of Females (15-24 years) by Education
(Percent)



Source: Statistics Norway.

… and integrating low and mid-skill persons into the labor market is a challenge.

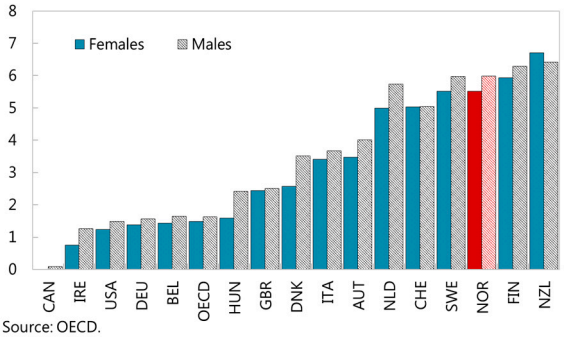
Unemployment Rates of Males (15-24 years) by Education
(Percent)



Source: Statistics Norway.

A further fraction of youth is at risk of joining the ranks of the unemployed …

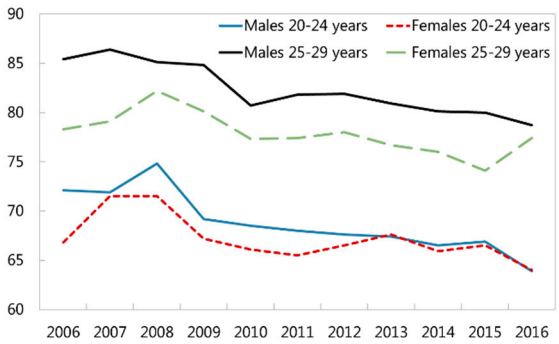
Marginally attached 15-24 year-old workers, 2015
(Percent of 15-24 year-old population)



Source: OECD.
Note: Persons that are neither employed nor looking for working (but have looked for work in the previous 12 months) and are willing and available to take a job.

… and youth employment rates have been in continuous decline.

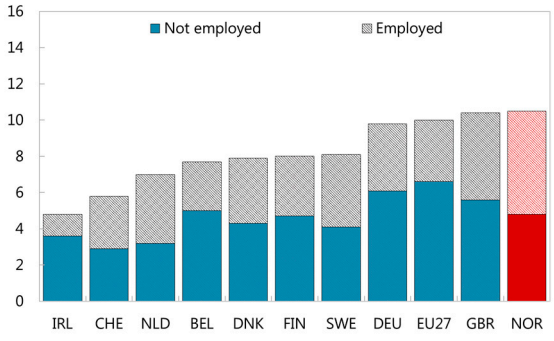
Employment Rates among Youth
(Percent of cohort population)



Source: Statistics Norway.

Challenges are aggravated by high shares of youth dropping out of formal education, …

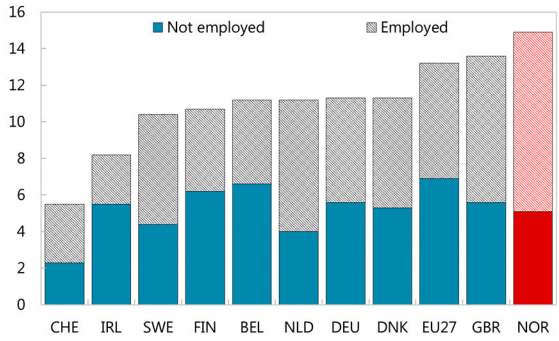
Female Early Leavers from Formal Education, 2016
(Percent of all females aged 18-24)



Source: Eurostat.

… especially boys. But drop-out rates have already been improving over the past few years.

Male Early Leavers from Formal Education, 2016
(Percent of all males aged 18-24)



Source: Eurostat.

41. Integrating low-skill youth represents a special challenge. Youth unemployment is particularly high among those not having completed upper secondary education, especially boys. The problem is aggravated by high dropout rates from formal education. Although they have been declining in recent years, given the focus on education reform (Section E), they remain high in international comparison. Finally, some scholars (e.g., Rosholm and Svarer, 2015) are concerned that a subgroup of youth could become permanently socially excluded. In that at-risk group, lack of education and work experience often interacts with physical and psychological health problems, drug abuse, and debt issues, so that achieving employability requires progress in several dimensions. The authors study two Danish schemes which achieved some success through intense in-person mentoring. Although their cost is high, the authors argue that such interventions can be cost effective from a fiscal point of view, given that over youths' long remaining working lives high amounts of social transfers can be saved.

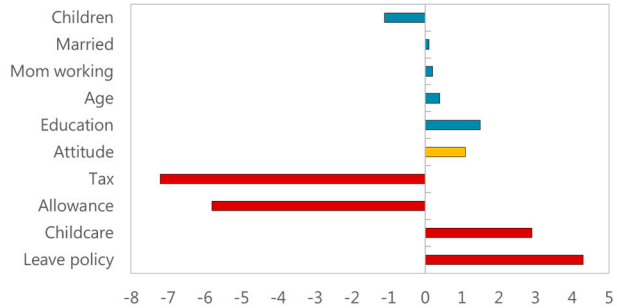
E. Policies for Promoting Gender Equality and Participation

42. This section explores policies, which could leverage labor force participation and advance gender equality. Previous research focusing on female labor force participation has found it is affected much more by policies than women's individual characteristics (Christiansen et al, 2016a). This research focused on evaluating tax policies, family and parental leave benefits, as well as access to child care. This chapter in addition touches upon education and lifelong learning, labor market flexibility, and disability and sickness benefits. These are also important in the case of Norway, including for participation of males and youth. While Norway's labor market policies are already quite favorable overall, this section identifies a series of reform possibilities. On some of these reforms are already ongoing.

Tax Policies for Second-Earners in Families

43. Norway's tax policies for second earners in the family encourage female participation, but may also incentivize part-time work. Previous research has found that tax policy for the second earner in the family, oftentimes the wife, strongly shapes work incentives (Christiansen et al, 2016b; IMF 2012). Tax policy should therefore be carefully designed. As in other Scandinavian countries, partners in married couples are taxed separately in Norway. This reduces the relative tax rate faced by the second earner and encourages participation (Figure 10). However, this relative tax rate rises relatively quickly with earnings driven by the progressiveness of the tax system, and this creates incentives for part-time work for the second earner. Incentives for part-time work in Norway are lower than in continental European countries, some of which rely on joint taxation of married couples, but they are higher than in most Anglo-Saxon countries.

Marginal Effects of Individual Characteristics and Policies on Female Employment
(Percentage points)

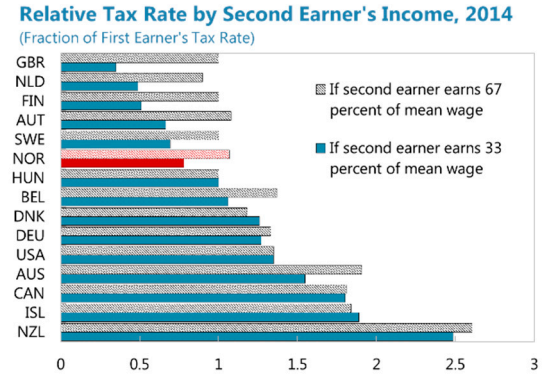


Source: Christiansen and others (2016a).
Note: Impact per one-standard-deviation increase (during 2002-12 across countries) in the given variables. Coefficient on 'Married' is insignificant.

44. Efforts to reduce the reliance of the tax system on direct taxes could help increase incentives to work full time. The tax system in Norway relies relatively heavily on direct taxes. Direct taxes have the advantage that their progressiveness can underpin equality, but the tradeoff is that there are lower work incentives. There have been efforts in recent years to reduce the flat-rate component of the personal income tax (alongside the corporate income tax) from 28 percent to 25 percent in 2016 and further cuts to 23 percent by 2018 are envisaged. (The previous chapter on Tax Reform in Norway provides further analysis.) While this reduces personal income taxes, it does not explicitly lower its progressiveness, which could help expand hours worked by women. Space to further reduce labor taxation could be created by improving cost-efficiency in public spending, for which there is substantial scope (OECD, 2016). While the main VAT rate is high at 25 percent, there are lower preferred rates for certain items. There is scope to increase those, a process that was already started in 2016 by increasing the VAT from 8 to 10 percent on passenger transport, and accommodation and entertainment services.

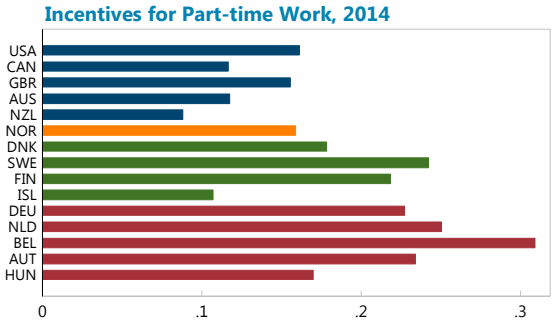
Figure 10. Norway: Taxation for Second-Earners in the Family

The relative tax rate for second earners compared to first earners is moderate, encouraging female participation.



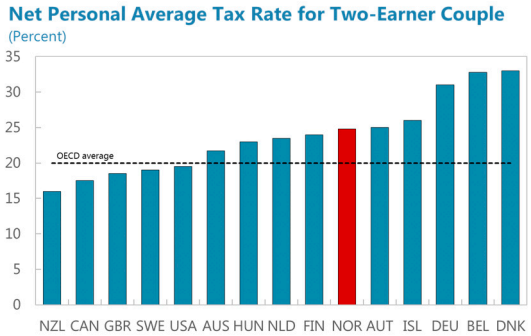
Source: Christiansen et al (2016a), based on OECD data.
Note: Tax rate of second earner divided by tax rate of first earner in a childless household.

But it rises relatively quickly with the second earner's income, incentivizing part-time work.



Source: Christiansen et al (2016a).
Note: Net income of 2 earner couple, one at 100%, the other at 67%, minus net income of a single person at 167% of average wage as a share of the latter.

This is a result of the progressiveness of the tax system and its relatively strong reliance on direct taxes.



Source: OECD.
Note: Based on a two-earner married couple, one at 100 percent of average earnings, the other at 67 percent with 2 children.

Parental Leave, Family Benefits, and Child Care

45. Parental leave policies need to strike an appropriate balance between supporting families and maintaining labor market ties. Long periods outside the labor market risk reducing skills and earnings (Elborgh-Woytek et al, 2013). Overly generous leave policies can also affect the employment opportunities of not just mothers but also all women of child-bearing age. This could decrease women's chances of landing a first job or being promoted, especially in certain occupations or managerial positions where it is more difficult to replace a person temporarily (Johnsen and Loken, 2015). On the other hand, the absence of appropriate parental leave can dent overall well-being as well as fertility rates, with negative effects on pension systems.

46. Norway's leave policies for mothers are generous, but maintain some incentives for a relatively swift return to work. Norway's public spending on parental leave is among the highest in the world, trailing only Luxembourg (Figure 11). Mothers can choose to take up to 39 weeks of parental leave with a 100 percent replacement rate or 49 weeks at 80 percent replacement rate. Of this, 13 weeks can exclusively be taken by the mother, while parents can agree to split the remainder as desired. The high replacement rates serve as encouragement to take the full duration of the leave.

47. Parental leave does not seem to hurt maternal employment rates, but extended home care leave has an impact, especially among the low skilled. When considering the entire female labor force, the economic literature has not been able to find a causal effect of parental leave duration on maternal labor supply. Carneiro et al (2015) and Dahl et al. (2015) confirm this result for Norway.[13] This could be because the take-up rates of parental leave are close to 100 percent for Nordic mothers, a sign that there is little stigma against women taking long parental leaves. The home care allowance for 1-year-olds of NOK 7,500/month kicks in after parental leaves expire if parents choose to care for the child at home, instead of using child care. This cash-for-care allowance does seem to decrease labor supply in the short and long run, among mothers with low education, whose employment rates dip during child-bearing age. The negative earnings effect persists after the allowance has run out driven partly by affected mothers working part time instead of full time (Drange and Rege, 2013) and is much larger among non-Western immigrant mothers (Naz, 2010).

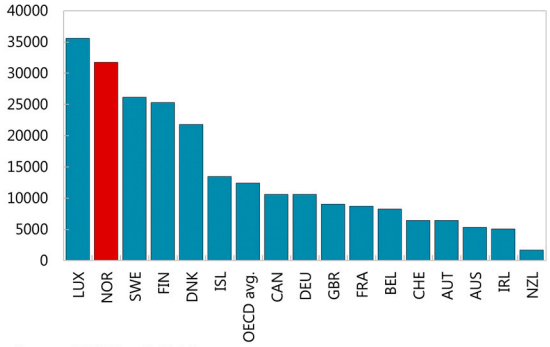
48. But lengthy leave allowances can have an adverse effect on female career progression. It has been found that countries with more generous family policies have larger gender wage gaps at the higher end of the income distribution (Arulampalam et al, 2007), which mirrors the situation in Norway. Evidence from the U.S. and Sweden suggests that career progression does become more difficult for those women taking extended parental leaves (Bertrand et al, 2010; Albrecht et al, 2015), particularly if they are highly educated and working in the private sector (Datta Gupta et al, 2008).

[13] For Sweden, Liu and Skans (2010) find no effect on mothers' earnings after an increase in parental leave and results for Austria and Germany are similar (Lalive et al, 2014; Schönberg and Ludsteck, 2014).

Figure 11. Norway: Parental Leave Policies

Norway's public spending on parental leave is among the highest worldwide.

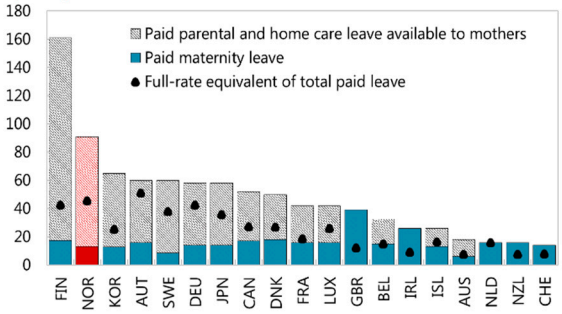
Public Spending on Parental Leave, 2011
(Per child born, in PPP-adjusted USD)



Source: OECD Family Database.

Replacement rates are high during maternity leave, at 100 percent, but then drop down during home care leave.

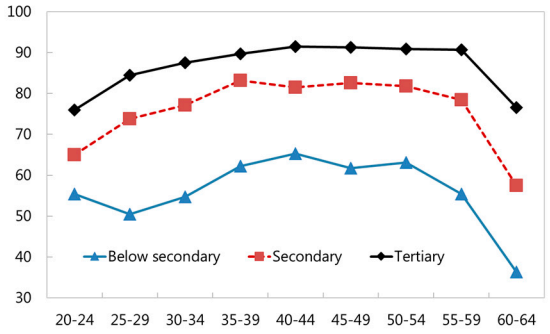
Paid Leave Entitlements Available to Mothers, 2015
(Weeks)



Source: OECD Family Database.
Note: For Norway, paid maternity and parental leave available to the mother total 39 weeks at 100 percent replacement rate or 49 weeks at 80 percent replacement rate. Thereafter, a cash-for-care allowance of NOK 7,500/month is for 1 year-olds not in formal child care.

Long duration of leave benefits available to mothers is mostly felt in lower employment rates among low skilled.

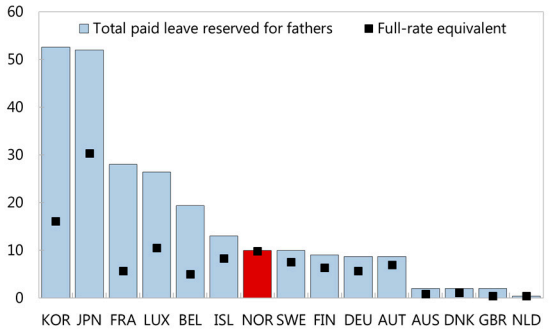
Female Employment Rates by Age and Education Level
(Percent of cohort population)



Source: OECD Family Database.

Norway is among one of few countries reserving some leave (10 weeks) exclusively for fathers and …

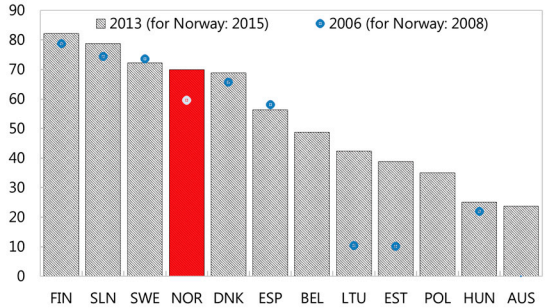
Paid Leave Reserved for Fathers, 2015
(Weeks)



Source: OECD Family Database.

… the attractiveness of the 100 percent replacement rate has helped increase uptake over time.

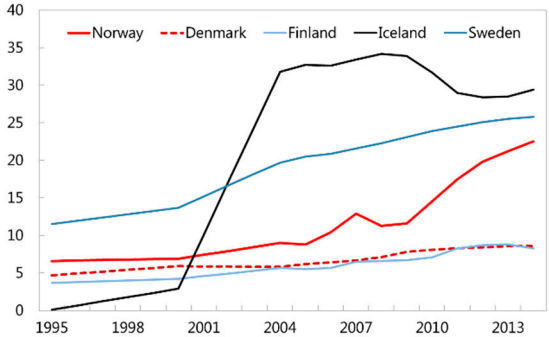
Use of Paid Paternity Leave
(Percent of eligibile males using paternity leave)



Source: OECD Family Database and Statistics Norway.
Note: Figures for Norway refer to males taking the full quota reserved for fathers or more.

But despite positive trends, not many fathers take more than the 10 weeks of leave exclusively reserved for them.

Evolution of the Male Share of Paid Parental Leave Days
(Percent of total parental leave entitlement used by males)



Source: Nordic Social Statistical Committee (NOSOSCO).

49. But lengthy leave allowances can have an adverse effect on female career progression. It has been found that countries with more generous family policies have larger gender wage gaps at the higher end of the income distribution (Arulampalam et al, 2007), which mirrors the situation in Norway. Evidence from the U.S. and Sweden suggests that career progression does become more difficult for those women taking extended parental leaves (Bertrand et al, 2010; Albrecht et al, 2015), particularly if they are highly educated and working in the private sector (Datta Gupta et al, 2008).

50. Setting aside a share of parental leave for exclusive use of fathers—as Norway does—can promote equality by lessening disincentives for hiring women.[14] Exclusively reserving a share of parental leave for the father has been found to induce take-up by fathers, while just replacing maternity leave with paternity leave available to either parent does not change the gendered take-up (Datta Gupta et al, 2008). Norway has a 10-week long quota for fathers, among the highest in the Nordic countries, but shorter than in some other European and East Asian countries. Also, the quota has been recently shortened (OECD, 2016), just as take-up has been rising with 70 percent of Norwegian fathers now taking the full 10 weeks or more.[15] Few men, however, take more than those 10 weeks, and as a result Norway continues to lag Sweden and Iceland in the total share of parental leave taken by males, despite some recent catchup.

51. Child care provision is among the best in the world and further increasing, but somewhat less readily available for the youngest children. Norway devotes slightly more than 3 percent of its GDP to family benefits; these are relatively focused toward services provision (1.8 percent of GDP), chiefly child care (Figure 12). Johnsen and Loken (2015) argue that child care provision is a key determinant behind the high employment rates in the Nordics. Indeed, increases in child care provision and decreases in its costs in Norway over the past decade have been associated with higher female full-time work incidence. In Norway, pre-school enrollment for children aged 3–5 is high at above 90 percent and has been rising considerably in recent years. Likewise formal child care for younger children has been rising strongly., Its coverage still remains lower, and although Norway places second among peers, further catchup to Denmark (77 percent coverage) may yield labor market benefits. Informal child care is hardly available any more, which may be a concern in remote rural areas where formal child care with easy accessibility is harder to provide.

52. There are strong economic arguments to further deepen child care provision. Andresen and Havnes (2014) have found that the 2000s expansion of subsidized child care for 1 to 2 year-olds in Norway increased employment among affected mothers. It may also help lower the pay gap,

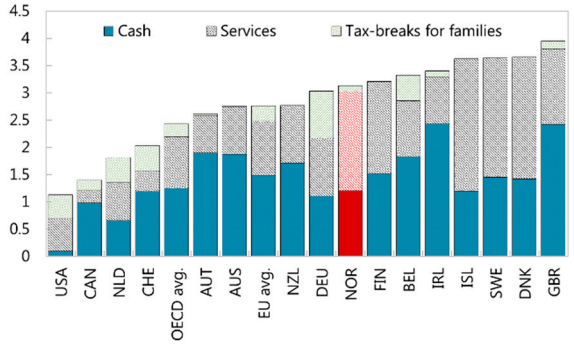
[14] Evidence of whether such quotas also help women by changing intra-household specialization has been mixed with two studies for Norway finding opposite results (Cools et al., 2015; Rege and Solli, 2013).

[15] Dahl et al (2014) find that the full effect such policy takes time to materialize as it is reinforced by peer effects.

Figure 12. Norway: Child Care and Family Benefits

A relatively high fraction of family benefits is put toward services provision, chiefly child care.

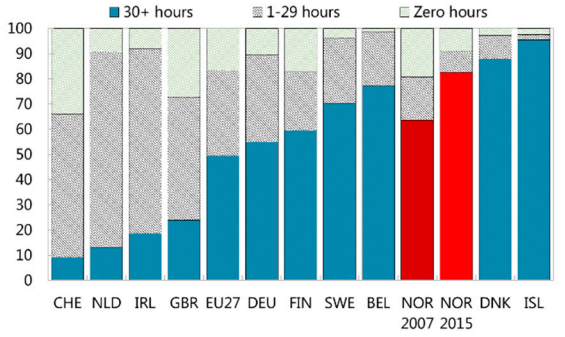
Public Spending on Family Benefits, 2013 or latest
(Percent of GDP)



Source: OECD Family Database.

Pre-school enrollment rates are high, but more flexibility would help parents with demanding work schedules.

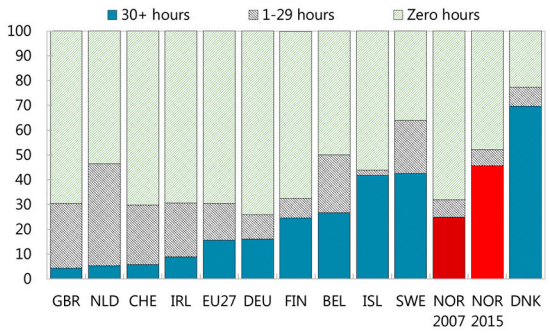
Formal Child Care Enrollment, 3 years to school age, 2015
(Percent)



Sources: Eurostat and Fund Staff calculations.

Formal care for younger children—though plentiful in international comparison—is harder to come by, …

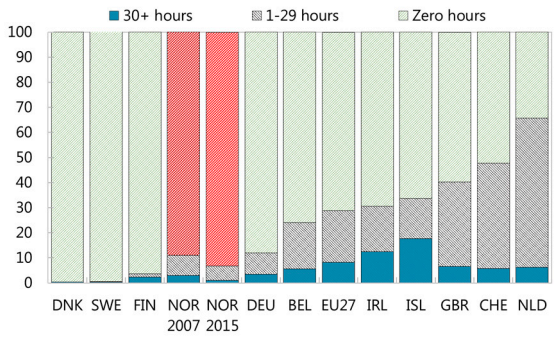
Formal Child Care Enrollment, 2 years and younger, 2015
(Percent)



Sources: Eurostat and Fund Staff calculations.

… as is informal childcare. This disproportionately hurts mothers in high-powered career streams.

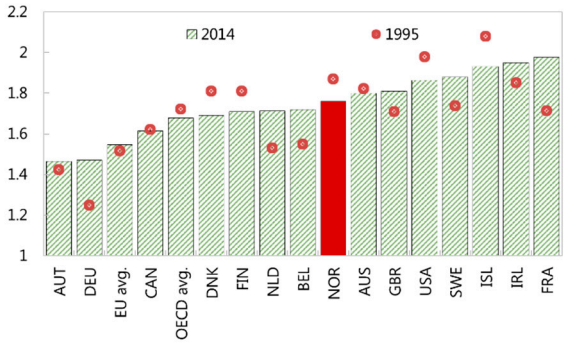
Informal Child Care Coverage, 2 years and younger, 2015
(Percent)



Source: Eurostat.

Apart from underpinning employment, child care has been supporting Norway's moderately high fertility rate …

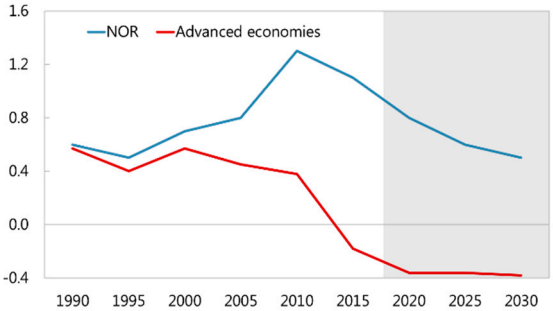
Fertility rates
(Average number of children born per woman)



Source: OECD Family Database.

… giving it higher working age population growth than most advanced economies, thereby supporting pensions.

Working Age Population (15-64 years)
(Average annual growth, percent)



Sources: Norges Bank, Economic Perspectives (2017).
Note: Projections based on Statistics Norway's benchmark scenario and the UN medium fertility scenario for Europe, North America, Australia, New Zealand and Japan.

which has been found to be higher among parents than non-parents, suggesting that the former that some specialization of the parents between home and outside production remains common (Østbakken, 2014; Cools and Strøm, 2016). Disincentives for employers to hire women would also decrease, because increased use of child care instead of home care will shorten leave periods after childbirth. Johnsen and Loken (2015) further argue that, over the long run, child care and family policies can pay for themselves through higher fertility rates. Indeed, Norway is already reaping the benefits at present in form of a more benign aging profile than most advanced countries. Finally, early childhood interventions in nurseries, kindergartens and schools may improve long-term labor market outcomes by preventing social exclusion (Rosholm and Svarer, 2015). Further reorienting family spending away from cash allowances toward child care financing could also increase labor supply of the lower skilled, as highlighted in the Norwegian Government's (2017) report on support for families with children.

53. There may be scope to increase both child care provision for children younger than 2 years and the flexibility in child care provision across all ages. Currently, a child care spot is guaranteed at the beginning of the school year after children turn 1 year old. This still leaves a gap for mothers of 1 year-olds after parental leave is used up, which can be relatively long for those with children born late in the calendar year. A first step in expanding the system could be to accept new children twice per year instead of only once, which would already shorten the gap for many women.

54. Increasing flexibility in child care could lift women's upward mobility. This would be important given that the analysis above showed remaining gender gaps in the labor market to be concentrated at the top of the career ladder. At present, formal child care functions only during standard weekly work hours, but many higher-level jobs require regular overtime or work at irregular hours. Johnsen (2015) finds that grandparents' retirement increases adult daughters' labor supply in Norway, likely due to grandparents' provision of child care during irregular hours.

55. To boost upward mobility of career-oriented women, increasing the availability of child care is likely more important than lowering its cost. Although the evidence on the effect of the cost of child care on labor supply is mixed, most studies for Nordic countries find it to be small (Black et al, 2014; Lundin et al, 2008). Even if more flexible care could only be provided at higher prices, it would probably nonetheless succeed in increasing the labor supply of those women most likely to reach leadership positions during their careers, as their opportunity cost of absence from work is highest. Costs to parents would, however, start to matter in boosting labor supply of less skilled women, as evidence from Denmark suggests (Simonsen, 2010). Another option could be to subsidize informal child care at irregular hours (nannies at home, pick-up-services at day care), or other domestic services. Evidence from Sweden, which instituted a 50 percent tax deduction on domestic services, suggests that labor supply of married women increased subsequently (Halldén and Stenberg, 2013).

Education and Lifelong Learning

56. Education is vital in Norway to enhance non-cost competitiveness, adapt to technological change, and integrate vulnerable groups. Education and skill enhancement are important to address labor market challenges brought on by technological advances in automation and use of artificial intelligence. Importance of education is well recognized by the Norwegian authorities. Norway has been the first OECD country to undertake a national skills strategy project in 2013–14, informing the ongoing education reforms (Norwegian Ministry of Finance, 2017). Their success is essential also to ensure that less advantaged individuals are integrated into society (Rosholm and Svarer, 2015).

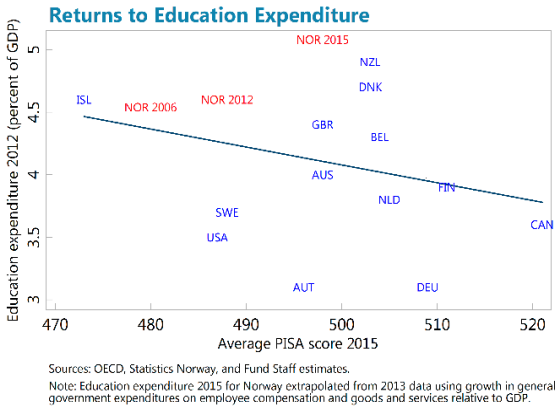
57. Norway's spending on education is high and, thanks to ongoing reform efforts, results have been improving. Norway is one of the countries worldwide that has been spending most on education, upwards of 4½ percent of its GDP (Figure 13). For many years, results have been lackluster, but a steady rise in PISA scores across its three disciplines (math, reading, science) for both males and females confirms that they are now improving in primary and secondary education. Broad reforms since the early 2000s, including a redesign of national curricula, are paying off. Ongoing efforts comprise increasing teacher quality through their continued education and a master's degree requirement for new teachers. To ensure that people remain employable throughout their lives, lifelong learning initiatives can play an important role in updating skills of those older than 25. Their participation in education and training has been moderately high in Norway, but lower than in other Nordic countries. Finally, boys continue to lag girls in PISA scores driven by underperformance in reading and across all subjects in national 10th grade exams; the authorities' current focus lies on research to assess which interventions would be the most fruitful.

58. Dropout rates have declined in the past few years in Norway, but remain high, especially for males. Given the healthy labor market, they are partly result of job opportunities, including in the oil and construction industries, and some dropouts return to finish their education after some years. But high dropout rates also reflect issues including in vocational secondary education (OECD 2014, 2016), where reforms are also underway. Literature suggests that when boys leave for vocational education around age 16 they can be challenged by long commuting distances and having to stay in school boarding houses, placing a premium on regional provision as well as long-distance education options, where Norway has been proactive (Nordic Council, 2016).[16] Effective January 2017, the government introduced a mandatory activity requirement for all social assistance recipients younger than 30 years. It is hoped that it will also reduce dropout rates, given that such effects have been observed in municipalities featuring such requirements previously (Hernæs et al, 2015).

[16] The "Local education in cooperation with the labour market" (LOSA) program in Norway offers decentralized Internet-based education for young people in rural communities, but also includes occasional meetings in a classroom with a larger group (Nordic Council, 2016).

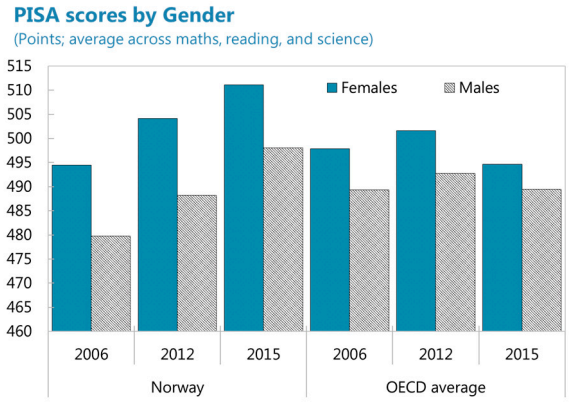
Figure 13. Norway: Education and Lifelong Learning

Norway has been struggling with education results, despite high spending, but things are improving …



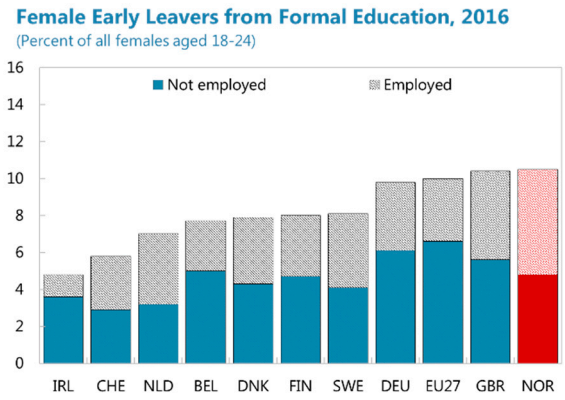
Sources: OECD, Statistics Norway, and Fund Staff estimates.
Note: Education expenditure 2015 for Norway extrapolated from 2013 data using growth in general government expenditures on employee compensation and goods and services relative to GDP.

… with PISA scores increasing for both girls and boys.



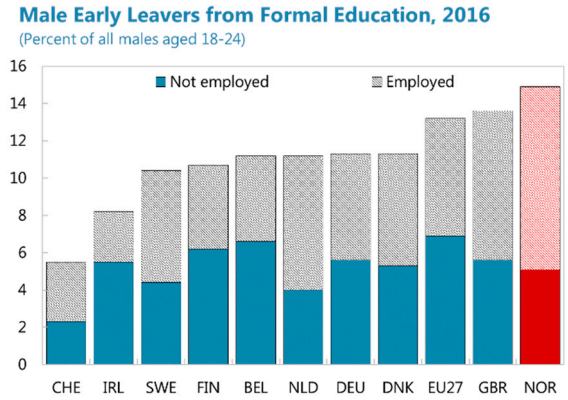
Source: OECD.

Early leaver rates from formal education have been declining, but remain high …



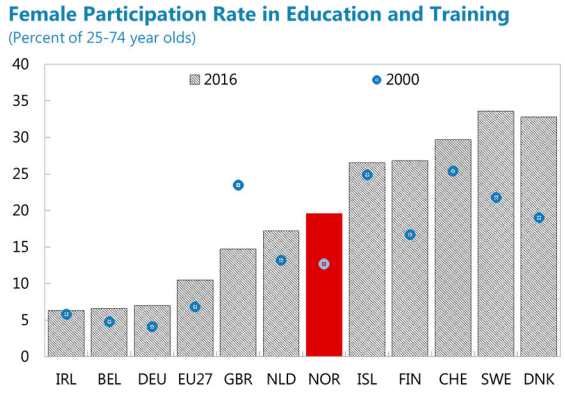
Source: Eurostat.

… especially among males, partly driven by job opportunities.



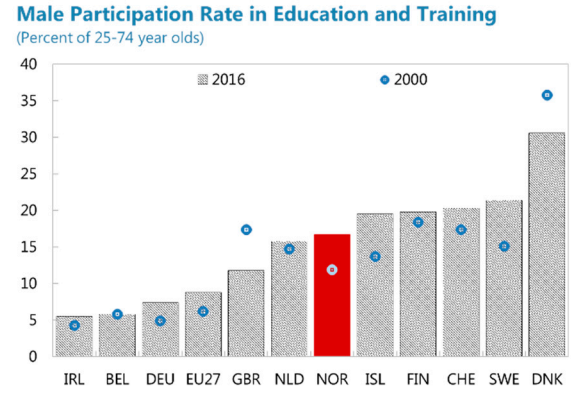
Source: Eurostat.

Given rapid technological change, lifelong learning is becoming more important to facilitate worker mobility.



Source: Eurostat.

Both among females and males, Norway lags Nordic neighbors, although lifelong learning has been expanded.



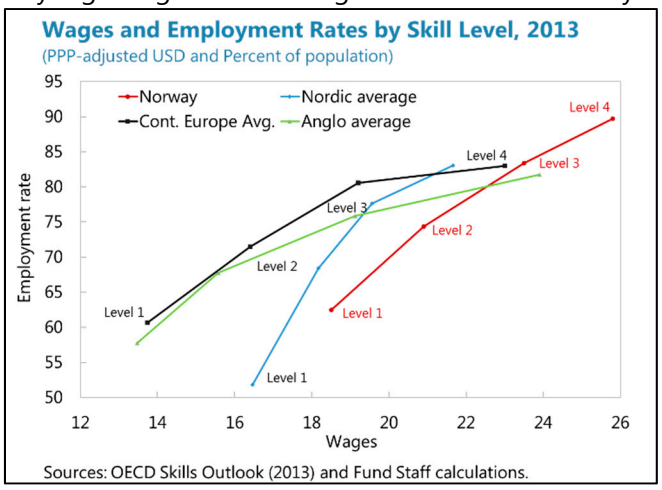
Source: Eurostat.

59. Tertiary education has also been facing challenges and undergoing reforms. The OECD Survey of Adult Skills has shown that 10 percent of tertiary graduates only attain low literacy levels and a national student survey has revealed low levels of satisfaction in some critical areas of learning outcomes, such as experience with research and development work and innovative thinking. A major reorganization has been ongoing to address through institutional mergers the overly small size of institutions, which has also been holding back research activity. Follow-up policy initiatives are expected to be discussed this year. OECD (2016) recommends close monitoring given mixed cross-country experiences with institutional mergers. It also suggests further strengthening incentives for students to complete their courses on time and to move into shortage occupations. These include STEM fields important for driving innovation, where more progress is needed building on recent success to expand the number of graduates in these fields.[17]

60. To better integrate struggling youth into the labor market, Norway is prioritizing them in active labor market policies and refocusing education toward skills in demand by employers. The 2016 reforms included strengthening of apprenticeships and are being broadened to guarantee anyone under the age of 30 that has been unemployed for eight weeks a place in a labor market program to enhance employment chances. Regions hit hardest by the oil downturn have been prioritized in the rollout, but this 'Youth Guarantee' program should be operational in the entire country by end 2017. A government strategy, currently under preparation, to increase focus on math, science, and technology throughout the education system may prove helpful. Finally, a national skills strategy has recently been agreed between social partners and the government. It aims to foster development of skills in demand by employers throughout the education system and could have a positive impact, if translated into concrete actions.

Labor Market Flexibility

61. High implicit minimum wages can make entry of lower skilled persons into the labor market difficult. Wage compression, with relatively high wages for low wage earners and relatively low wages for high wage earners, is a typical feature of Nordic labor markets resulting from collective bargaining (Figure 14). This reduces labor demand for low skill workers, hurting disproportionately immigrants, youth, and those unemployed in the process of switching occupations and looking to rebuild their skills. High wage levels represent an obstacle and wage compression in Norway is higher than in continental European or Anglo-Saxon countries, although less pronounced than in other Nordics.

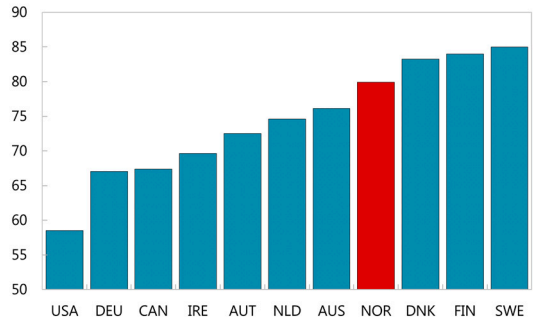


[17] The number of graduates in STEM fields has increased by 35 percent between 2006 and 2016.

Figure 14. Norway: Labor Market Flexibility

Wage compression is high with wages of the low skilled being high relative to high-skilled workers.

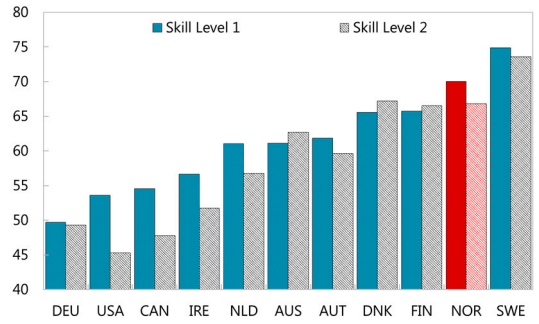
Wage Compression between the Low and High-Skilled, 2013
(Median wage at skill levels 1/2 in percent of median wages at skill levels 3/4)



Sources: OECD Skills Outlook (2013) and IMF Staff calculations.

Also within low skilled workers, there is not much differentiation between those with higher and lower wages.

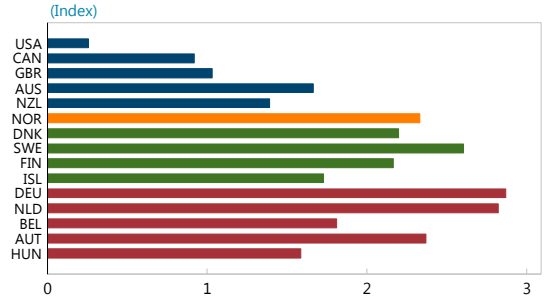
Wage Compression within Lower-Skill Employment, 2013
(Lower quartile wage in percent of upper quartile wage within skill level)



Sources: OECD Skills Outlook (2013) and Fund Staff calculations.

Employment protection for individual dismissals is moderately high for those on regular contracts.

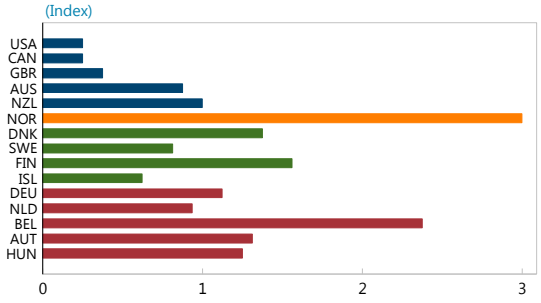
Employment protection for regular contracts, 2013
(Index)



Source: Christiansen et al (2016a).
Note: Higher value implies higher strictness.

It is extremely high for those on temporary contracts.

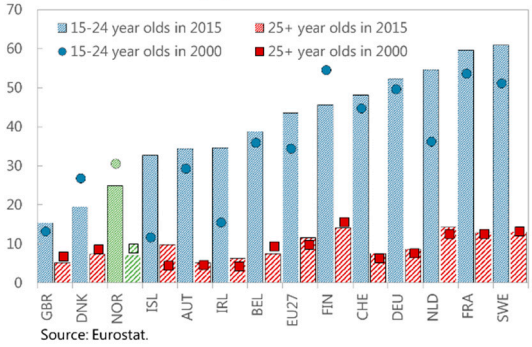
Employment protection, temporary contracts, 2013
(Index)



Source: Christiansen et al (2016a).
Note: Higher value implies higher strictness.

This partly explains why temporary employment is relatively uncommon in Norway and has been declining.

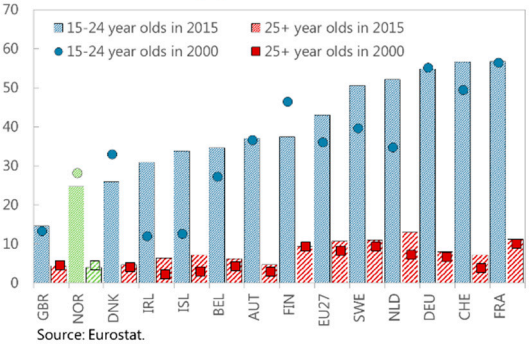
Female Temporary Employment
(Percent of total male employment)



Source: Eurostat.

Making temporary employment more flexible could help integrate those on the margins of the labor market.

Male Temporary Employment
(Percent of total male employment)



Source: Eurostat.

62. Making effective wages more downwardly flexible could help these lower-skilled groups, but caution needs to be taken to how this flexibility is achieved. Ideally, it would be achieved within collective bargaining processes by allowing for lower wages, at least temporarily, for new hires within well-defined vulnerable groups. Well-targeted, temporary wage subsidies could be another option, but close monitoring would be important because they may incentivize employers to convert regular into subsidized jobs or lay off workers when the subsidy expires and rehire them later. Reducing payroll taxes for specific groups could be another avenue, but again design and monitoring are important. Sweden implemented a payroll tax reform targeted at young workers, but job-creation impacts were so small that each new job created was associated with a cost exceeding USD 150,000 (Egebark and Kaunitz, 2013; Skedinger, 2014). Finally, high implicit minimum wages may indirectly protect the welfare state by disincentivizing large low-skill migration.[18] While these options should be carefully studied, the conclusion may be that further action on the labor supply side (e.g., enhancing ALMPs and job counseling, tightening eligibility to unemployment and disability benefits) may be more cost effective.

63. Employment protection legislation can make firms more reluctant to hire and diminish openings for the more vulnerable to find footholds in the labor market. This will disadvantage particularly mothers, the low-skilled, and immigrants, who spend longer times outside employment for various reasons (e.g. family time; more frequent layoffs, e.g. due to automization; difficulties in finding a job matching skills).

64. Norway's regulations on temporary employment are especially stringent. With the intention of safeguarding protection of permanent employees, restrictions cover the number of temporary work assignments, the use of fixed term contracts and temporary work agency employment (OECD, 2016). The government has taken some steps, to liberalize temporary work and lightening of working-time regulation.[19] Nonetheless, the remaining restrictions disproportionately limit chances youth and the less educated, for whom informal recruitment channels are the most significantly associated with finding employment (Hensvik and Nordström Skans, 2014; Rosholm and Svarer, 2015). Incidence of temporary employment in Norway is among the lowest in Europe as a result. Among, the young, where it is most common, 25 percent hold temporary jobs and this fraction has declined slightly since 2000.

Sickness and Disability

65. A considerable share of persons in Norway are outside the labor force due to sickness or disability and public expenditure on related benefits remains high. Individuals are able to transition from paid sick leave (which replaces 100 percent of income for up to one year), to a

[18] In Norway, there is a mandatory extension of minimum wage provisions of collective agreements in sectors with heavy immigrant concentrations (e.g. construction, cleaning services). Otherwise, the private sector could attract immigrants for very low wage positions with an implicit understanding that the true payoff to the worker comes at a later stage when he becomes eligible for social benefits.

[19] A 2015 reform allowed temporary work up to one year, but retains a quota on the share of such contracts permitted within any firm.

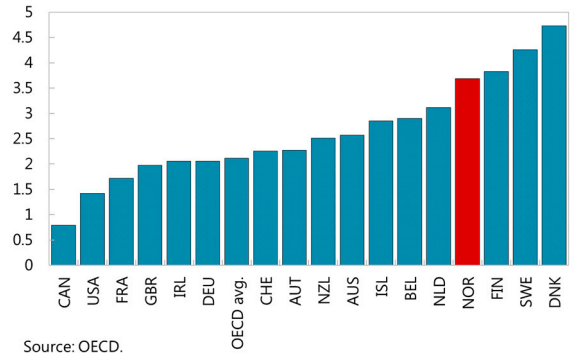
rehabilitation-type benefit (replacing two thirds of income and whose duration is envisaged to be reduced from four to three years) and then to the disability benefit, which often serves among older recipients as a pathway to retirement. Norway continues to spend around 4 percent of its GDP on benefits related to incapacity. This remains one of the highest worldwide, but it has been slightly falling in recent years and is now somewhat lower than in other Nordics, as efforts for tightening eligibility and activity requirements—though incremental—seem to be bearing some fruit.

66. Sickness absence is high, but has been falling gradually. In 2016, 4 percent of working days were lost to sickness for males and 7 percent for females. These figures have been gradually declining in recent years and prolonged sickness absences have been falling more strongly (Figure 15). The more recent decline in sickness absence may partly be result of renewed efforts to implement a more rigorous enforcement of activity requirements for sick-listed workers (NAV, 2017).

Figure 15. Norway: Sickness and Disability

Public spending on incapacity benefits is high, though below that in other Nordics.

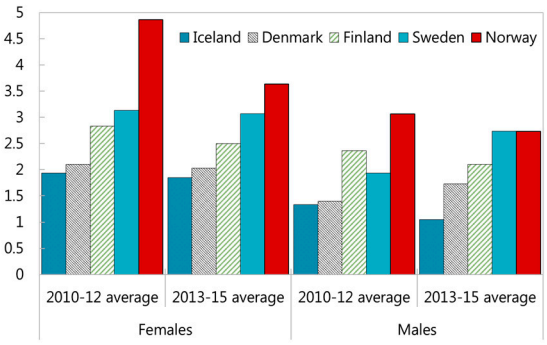
Public Spending on Incapacity, 2013
(Percent of GDP)



Source: OECD.
Note: Includes spending due to sickness, disability, and occupational injury.

Although sickness absence rates have been gradually declining, they remain high.

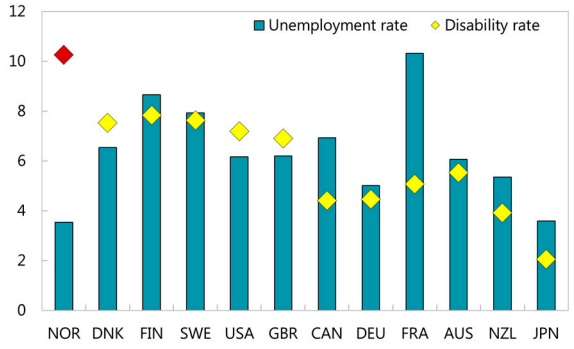
Prolonged Sickness Absences
(Percent of all employed with more than one week of sickness absence per year)



Source: Nordic Council.

Disability incidence is high and often serves as a pathway to early retirement …

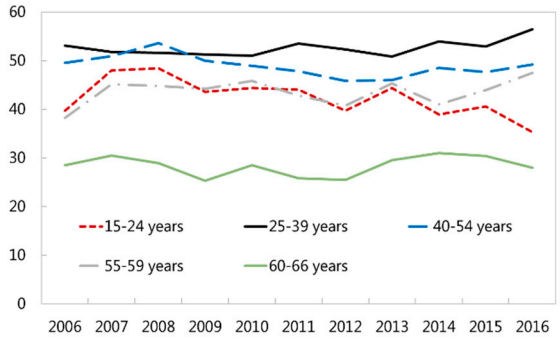
Unemployment and Disability, 2015
(Percent)



Sources: IMF World Economic Outlook, OECD, and Fund staff calculations.

… but in recent years also more of the young rely on disability benefits and drop out of the labor market.

Employment Rate of Disability Group by Age
(Percent of total labor force)



Sources: Statistics Norway

Other recent reforms in this area include the introduction of a decision support tool aimed at doctors issuing sickness certificates, although this system awaits full implementation and evaluation.[20] However, further reforms could yield further gains and should include tightening eligibility further by relying more on third-party assessments, rather than the beneficiary's general practitioner. Extending the initial employer-financed phase of sick leave benefits and reducing the generosity of benefits could also help.

67. Disability incidence remains among the highest worldwide. About 10 percent of working age persons receive disability benefits, far outstripping the number on unemployment benefits. Research has found that many disability claims are triggered by job loss, suggesting that disability serves as a substitute to unemployment benefits (e.g. Bratsberg et al, 2010). However, in recent years, also more young individuals have come to rely on disability benefits and withdrawn from the labor market. Some reforms have been implemented in 2015 to strengthen work incentives for the disabled. However, eligibility checks should be tightened considerably further to reduce new flows into disability and more could be done to reintegrate those beneficiaries with considerable remaining work capacity. In this sense, the awarding of permanent and full benefits to most applicants and the limited incentives for partial benefit recipients to increase their working hours should be addressed (OECD, 2010).

Improving Attitudes

68. Attitudes toward women working are favorable in Norway, but some room for improvement remains. The gap between women's and men's attitudes seems to be higher in Norway than in other Nordics, suggesting that further improvement in male attitudes could be helpful. This could eventually also lead to more equal sharing of domestic work, freeing up women to expand work outside the home (Figure 16). Anecdotal evidence suggests that the rural-urban divide is relatively stark in Norway, with women perceiving attitudes to be considerably more patriarchic in the country and that they have less of a voice in the community there (Nordic Council, 2016). As a result, highly-educated women cluster in cities, which may have detrimental effects on job creation in rural areas.

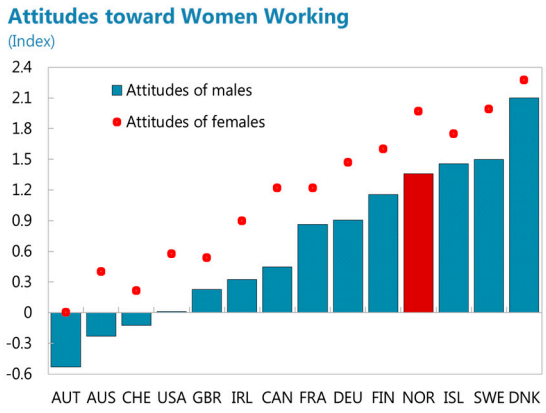
69. Changes in attitudes could also help reduce sectoral and occupational gender segregation. Softening perceptions of "female jobs" and "male jobs" is important, including for women as female employment is the most sectorally segregated. This can be advanced by displaying positive role models in non-traditional professions. For boys, McDowell (2003) highlights that they can absorb an outdated idea of "melancholic masculinity", especially when growing up in rural areas, leading them to pursue career choices that do not lead to job security. Male teachers can make a significant impact; therefore the authorities' objective to raise the number of male childhood educators to 20 percent is well taken (Nordic Council 2015). Another noteworthy project is "Men in Health" which retrains men from traditional male jobs for jobs in health care. The project has been

[20] A trial to require a renewed medical assessment after six months of sick leave has also been conducted, but the results are not yet available.

considered effective in changing perceptions of health sector jobs with its participants being successful in finding employment in the sector (Nordic Council, 2016).

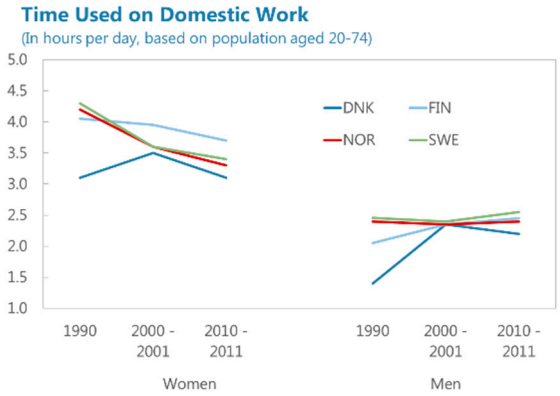
Figure 16. Norway: Attitudes and Domestic Work

Attitudes in Norway toward women working are positive, but men are less supportive than in some other Nordics.



Source: Christiansen et al (2016a).

Women have found ways to spend less time on domestic work, but not because men have been helping more.



Source: Nordic Council (2015).

F. Conclusion

70. Norway's employment rates are high, but challenges to maintaining high-quality labor supply have risen in recent years. This chapter has documented four challenges. For females, part-time employment remains high and wage gaps are persistent given limited upward mobility. Taken together, they reduce female earnings to only two thirds those of males. Norway's proactive policies to advance gender equality, including through quotas on female participation on boards of private companies, have not yet trickled down strongly into female representation at the top of career ladders and stronger female dispersion into more traditionally male sectors. Among males, employment rates have decreased after the global crisis and not recovered. With men are more concentrated in sectors affected by the crisis, this suggests a third challenge in facilitating their mobility. The fourth challenge relates to integrating youth into the labor market, among which especially a low-skilled subgroup has become more marginalized amid high dropout rates from education and limited downward wage flexibility.

71. Norway's policies have been successful in generating high employment rates, but reforms in several areas—some already ongoing—will be necessary to maintain these. To foster upward mobility and full-time work among women, child care provision can have a large impact. It should be made more flexible and be expanded to the youngest children. Shortening extended home care leave in return could provide financing; this may also indirectly aid lower-skilled mothers by nudging them to a faster return to the labor market. Fiscal space could also be created by enhancing efficiency in public sector service provision, and could in addition be used to continue ongoing reforms to lighten labor taxation. To boost male and youth employment, education is important as the low skilled are most affected. Education reform is ongoing and has

already been yielding benefits; reinforcing retraining and lifelong learning initiatives is becoming ever more important to foster labor mobility and decrease high sectoral gender segregation. But, in addition, effective downward wage flexibility could be enhanced, restrictiveness on temporary work further loosened, and work incentives increased, including by tightening the disability and sickness benefit system. Such reforms would also underpin labor market integration of immigrants, on which previous work has centered (IMF, 2015). Fiscal costs of policies need to be weighed against benefits through future taxes, which can be substantial for individuals with long working lives ahead.

References

Adams, R., and D. Ferreira, 2009, "Women in the Boardroom and Their Impact on Governance and Performance," *Journal of Financial Economics*, Vol. 94, pp. 291–309.

Adler, R. 2001, "Women and Profits," *Harvard Business Review*, Vol. 79, No. 10, p. 30, November.

Ahern, K. and A. Dittman, 2012, "The Changing of the Boards: The Impact on Firm Valuation of Mandated Board Representation," *Quarterly Journal of Economics*, Vol. 129 No. 1, pp. 137–197.

Albrecht, J., P. Skogman Thoursie, and S. Vroman, 2015. "Parental leave and the glass ceiling in Sweden," IFAU Institute for Evaluation of Labour Market and Education Policy, Working Paper 2015:4.

Andresen, M.E., and T. Havnes, 2014. "Women and children first? Labor market effects of universal child care for toddlers," Working Paper.

Angelov, N., P. Johansson, and E. Lindahl, 2013. "Is the persistent gender gap in income and wages due to unequal family responsibilities?" IZA Discussion Paper 7181.

Arulampalam, W., A.L. Booth, and M.L. Bryan, 2007. Is there a glass ceiling over Europe? Exploring the gender pay gap across the wage distribution. *Industrial and Labor Relations Review*, 60, pp. 163– 86.

Barth, E., I. Hardoy, P, Schøne, and Østbakken, K. M., 2013. *Lønnsforskjeller mellom kvinner og menn. Hva har skjedd på 2000-tallet?* ISF-rapport 2013:07, Institutt for Samfunnsforskning, Oslo.

Bertrand, M., C. Goldin, and L.F. Katz, 2010. "Dynamics of the gender gap for young professionals in the financial and corporate sectors," *American Economic Journal: Applied Economics*, 2, pp. 228–255.

Black, S.E., P.J. Devereux, K.V. Løken, and K.G. Salvanes, 2014. "Care or cash? The effect of child care subsidies on student performance", *Review of Economics and Statistics*, 96, pp. 824–837.

Bratsberg, B., E. Fevang, and K. Roed, 2010. "Disability in the Welfare State: An Unemployment Problem in Disguise," IZA Discussion Paper Series No. 4897.

Bratsberg, B., and K. Roed, 2015. "The Nordic welfare model in an open European labor market," *Nordic Economic Policy Review*, 1, 2015, pp. 19–42.

Campbell, K. and A.V. Vera, 2010, "Female Board Appointments and Firm Valuation: Short and Long-term Effects," *Journal of Management & Governance,* 14(1), pp 37–59.

Carneiro, P., K. V. Løken, and K. Salvanes (2015). "A flying start? Maternity leave and long run outcomes of children," *Journal of Political Economy*, 123, pp. 365–412.

Christiansen, L., H. Lin, J. Pereira, P. Topalova, and R. Turk, 2016a. "Individual Choice or Policies? Drivers of Female Employment in Europe," IMF Working Paper 16/49, International Monetary Fund, Washington, D.C.

———, 2016b. "Gender Diversity in Senior Positions and Firm Performance: Evidence from Europe," IMF Working Paper 16/50, International Monetary Fund, Washington, D.C.

Cools, S., J.H. Fiva, and L.J. Kirkebøen, 2015. "Causal effects of paternity leave on children and parents", *Scandinavian Journal of Economics*, 117, pp. 801–828.

Cools, S. and M. Strøm, 2016. "Parenthood wage penalties in a double income society," *Review of Economics of the Household,* 14, pp. 391–416.

Dahl, G., K.V. Løken, M. Mogstad, and K. Salvanes, 2015. "What is the case for paid maternity leave?" *Review of Economics and Statistics*, 98 (4), pp. 655–670.

Datta Gupta, N., N. Smith, and M. Verner, 2008. "The impact of Nordic countries' family friendly policies on employment, wages, and children", *Review of Economics of the Household*, 6, pp. 65–89.

Drange, N., and M. Rege, 2013. "Trapped at home: The effects of mothers' temporary labor market exits on their subsequent work career," *Labour Economics*, 24, pp. 125–136.

Elborgh-Woytek, K., M. Newiak, K. Kochhar, S. Fabrizio, K. Kpodar, P. Wingender, B. Clements, and G. Schwartz, 2013. "Women, Work, and the Economy: Macroeconomic Gains from Gender Equity," IMF Staff Discussion Note SDN/13/10, September, International Monetary Fund, Washington, D.C.

Francis, B., I. Hasan, Q. Wu, and M. Yan, 2014. "Are female CFOs less tax aggressive? Evidence from tax aggressiveness," Research Discussion Paper 16/2014, Bank of Finland, Helsinki.

Giuliano, L., D.I. Levine, and J. Leonard, 2006. "Do Race, Age, and Gender Differences Affect Manager-Employee Relations? An Analysis of Quits, Dismissals, and Promotions at a Large Retail Firm," Working Paper, University of Miami.

Grigoli, F. and A. Robles, 2017. "Inequality Overhang," IMF Working Paper 17/76, International Monetary Fund, Washington, D.C.

Halldén, K., and A. Stenberg, 2013. "The relationship between hours of domestic services and female earnings: Panel register data evidence from a reform," IZA Discussion Paper 7649.

Hensvik, L. and O. Nordström Skans, 2014. "Networks and Youth Labor Market Entry," *Nordic Economic Policy Review*, 1, 2014, pp. 81–118.

Hernæs, Ø., S. Markussen, and K. Røed, 2015. "Can Welfare Conditionality Combat High School Dropout?", 7

Huang, J., and D. Kisgen, 2013. "Gender and Corporate Finance: Are Male Executives Overconfident Relative to Female executives?" *Journal of Financial Economics,* Vol. 108 No. 3, pp. 822–839.

Hvinden, E.C., and E.W. Nordbø ,2016. "The fall in Oil Prices and the Labour Market," Economic Commentaries, No. 7/2016, Norges Bank, Oslo.

IMF, 2012. "Fiscal Policy and Employment in Advanced and Emerging Economies," Board Paper, Washington, D.C.

———,2015. "Norway: Selected Issues," IMF Country Report No. 15/250, International Monetary Fund, Washington, D.C.

Johnsen, J.V., 2015. *Work and Families: Four Essays in Applied Microeconomics*. University of Bergen, Bergen.

Johnsen, J.V. and K.V. Løken, 2015. "Nordic Family Policy and Maternal Employment," *Nordic Economic Policy Review*, 2, 2015, pp. 115–132.

Kazandjian, R., L. Kolovich, K. Kochhar, and M. Newiak, 2016. "Gender Equality and Economic Diversification," IMF Working Paper 16/140, International Monetary Fund, Washington, D.C.

Khan, W.A., and J.P. Vieito, 2013. "CEO Gender and Firm Performance," *Journal of Economics and Business,* Vol. 67, pp. 55–66.

Lalive, R., A. Schlosser, A. Steinhauer, and J. Zweimüller, 2014. "Parental leave and mothers' careers: The relative importance of job protection and cash benefits," *Review of Economic Studies*, 81, 219– 265.

Lee, C. and Farh, J.-L., 2004. "Joint Effects of Group Efficacy and Gender Diversity on Group Cohesion and Performance," *Applied Psychology*, 53(1), January, pp. 136–154.

Liu, Q., and O.N. Skans, 2010. The Duration of Paid Parental Leave and Children's Scholastic Performance, *BE Journal of Economic Analysis & Policy*, 10.

Lundborg, P., E. Plug, and A.W. Rasmussen, 2014. "Fertility Effects on Female Labor Supply: IV Evidence from IVF Treatments," IZA Discussion Paper No. 8609.

Matsa and Miller, 2012. "A Female Style in Corporate Leadership? Evidence from Quotas," *American Economic Journal: Applied Econometrics*, 5(3), pp. 136–169.

NAV, 2017. *Evaluering av forsøk med Hedmarksmodellen i Aust-Agder, Buskerud og Rogaland*, NAV-rapport 2017:3, Norwegian Labour and Welfare Administration, Oslo.

Naz, G., 2010. "Effect of a Family Policy Reform on Immigrants' Labor Supply and Earnings," *Labour*, 24, pp. 74–92.

Nilsen, Ø. A., and K.H. Reiso, 2014. "Scarring Effects of Early-Career Unemployment," *Nordic Economic Policy Review*, 1, 2014, pp. 13–46.

Nordic Council, 2015. *Gender Mainstreaming in the Work Performed by Governmental Authorities – Results and recommendations from the trans-Nordic study*, Nordic Council of Ministers, Copenhagen.

Nordic Council, 2016. *Place, (In)Equality and Gender*, Nordic Council of Ministers, Copenhagen.

Norwegian Government, 2017. "Offentlig støtte til barnefamilien," NOU 2017:6.

Norwegian Ministry of Finance, 2017. *Long-term Perspectives on the Norwegian Economy 2017—A Summary of Main Points*, Meld. St. 29 (2016–17), Report to the Storting (White Paper).

OECD, 2010. *Sickness, Disability and Work: Breaking the Barriers – Norway*, OECD Publishing, Paris.

———, 2013. *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing, Paris.

———, 2014. *OECD Economic Surveys: Norway 2014*, OECD Publishing, Paris.

———, 2016. *OECD Economic Surveys: Norway 2016*, OECD Publishing, Paris.

Østbakken, K. M., 2014. "Kjønn, lønn og barn – hva betyr barn for timelønnsnivået til kvinner og menn?", *Søkelys på arbeidslivet (Norwegian Journal of Work Life Studies),* 31, pp. 229–248.

Rege, M., and L.F. Solli, 2013. "The Impact of Paternity Leave on Fathers' Future Earnings," *Demography*, 50, pp. 2255–2277.

Rosholm, M. and M. Svarer, 2015. "Future Pathways for Labour Market Policy: Including the Excluded," *Nordic Economic Policy Review*, 2, 2015, pp. 43–64.

Schönberg, U., and J. Ludsteck, 2014. "Expansions in Maternity Leave Coverage and Mothers' Labor Market Outcomes After Childbirth," *Journal of Labor Economics*, 32, pp. 469–505.

Simonsen, M., 2010. "Price of High-Quality Daycare and Female Employment," *Scandinavian Journal of Economics*, 112, pp. 570–594.

Smith, N., V. Smith, and M. Verner, 2013. "Why are so Few Females Promoted into CEO and Vice President Positions? Danish Empirical Evidence, 1997–2007," *ILR Review*, 66(2), pp. 380–408.

World Economic Forum, 2015. *The Global Gender Gap Report 2015*, World Economic Forum, Geneva.

Van Hove, H., 2015. "Some Facts About the Gender Pay Gap in Belgium," Country Fact Sheet prepared for the project *Gender Pay Gap: New Solutions for an Old Problem. Developing Transnational Strategies Together with Trade Unions and Gender Equality Units to Tackle the Gender Pay Gap*, July, Brussels.