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Norway's economy: Maintaining a successful business sector in a changing world

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NORWAY'S ECONOMY: MAINTAINING A SUCCESSFUL BUSINESS SECTOR IN A CHANGING WORLD

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By Philip Hemmings

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ABSTRACT/RESUMÉ

Norway's economy: Maintaining a successful business sector in a changing world

Norway's success in maintaining high living standards, low inequality and good progress in gender balance owes much to its business sector. High-productivity business-sector jobs support high wages and profits, providing capacity to fund comprehensive public services and inclusive employment practices. Ensuring that the business sector thrives as globalisation and technologies evolve further and as the oil and gas sector enters long-term decline requires maintaining business-friendly conditions. This paper examines framework conditions, notably competition legislation and policy affecting firm entry and exit ("firm dynamics"). It evaluates how best to encourage new business models, as well the growing issue of labour supply among older cohorts. Education policy's role in providing skills conducive to good lifetime earnings is also discussed.

This Working Paper relates to the *2017 OECD Economic Survey of Norway* (www.oecd.org/eco/surveys/economic-survey-norway.htm).
JEL classification I23, I28, L53, 031, O38
Keywords: Productivity, competition, firm dynamics, innovation, disruption, labour supply, education

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Économie de la Norvège : Conserver un secteur des entreprises dynamique dans un monde en mutation

La capacité de la Norvège à maintenir des niveaux de vie élevés, de faibles inégalités et des progrès notables dans l'équilibre hommes-femmes doit beaucoup à son secteur des entreprises. Les emplois à forte productivité de ce secteur favorisent des salaires et des bénéfices élevés, qui procurent les ressources nécessaires pour financer une offre étendue de services publics et une politique d'emploi inclusif. Pour que le secteur des entreprises continue de prospérer à l'heure où la mondialisation et les technologies ne cessent de progresser et où le secteur du pétrole et du gaz amorce un déclin durable, la Norvège devra maintenir des conditions favorables aux entreprises. Ce document examine les conditions cadres, notamment la législation et la politique de la concurrence qui influent sur l'entrée et la sortie des entreprises (« dynamique des entreprises »). Il détermine les meilleurs moyens d'encourager l'émergence de nouveaux modèles d'activité et étudie le problème croissant de l'offre de main d'œuvre parmi les cohortes plus âgées. Il analyse également le rôle de la politique d'éducation dans l'acquisition de compétences de nature à assurer des revenus d'activité élevés tout au long de la vie professionnelle.

Ce Document de travail se rapporte à *l'Étude économique de l'OCDE de la Norvège, 2017*
Classification I23, I28, L53, 031, O38
Mots clefs : productivité, concurrence, la dynamique de l'entreprise, innovation, interruption, la main d'œuvre, éducation

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NORWAY'S ECONOMY: MAINTAINING A SUCCESSFUL BUSINESS SECTOR IN A CHANGING WORLD

By Philip Hemmings[1]

Norway's success in maintaining high living standards, low inequality and good progress in gender balance owes much to its business sector. High-productivity business-sector jobs support high wages and profits, providing capacity to fund comprehensive public services and inclusive employment practices. Ensuring that the business sector thrives as globalisation and technologies evolve further and as the oil and gas sector enters long-term decline requires maintaining business-friendly conditions. This paper examines framework conditions, notably competition legislation and policy affecting firm entry and exit ("firm dynamics"). It evaluates how best to encourage new business models, as well the growing issue of labour supply among older cohorts. Education policy's role in providing skills conducive to good lifetime earnings is also discussed.

Maintaining Norway's well-performing socio-economic model requires a strong business sector with capacity for exploiting opportunities in globalised markets, and for delivering goods and services domestically, in a an environment of comparatively high wages and high taxes. Furthermore, capacity to shift the focus of economic activity is important to help Norway diversify away from oil- and gas-related activity over the longer term. This paper first examines the composition of Norway's business sector and the challenges ahead. The subsequent sections consider key areas of policy.

Key features of Norway's business sector

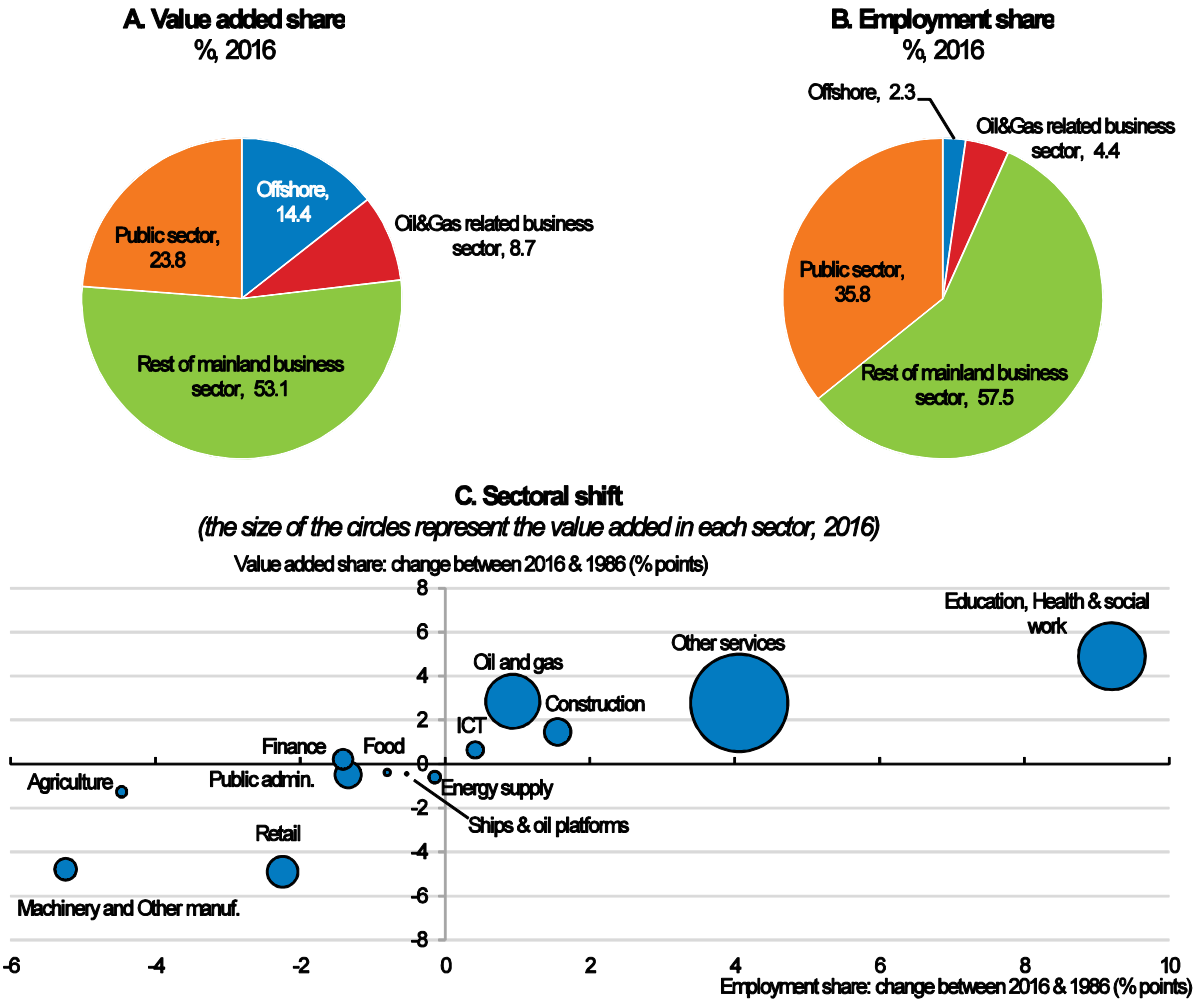
Petroleum-related activity extends beyond offshore production; state stakes remain substantial

- **Activities related to oil and gas (together, "petroleum") sector remain an important segment of the mainland business sector.** Mainland businesses provide exploration and production services and investment goods not only in Norwegian offshore fields but also elsewhere in the North Sea, and beyond. Mainland petroleum activities are estimated to account for nearly 9% of total economic activity. Adding offshore activity to this, means total petroleum-related activity accounts for a little under one quarter of value added (Figure 1, Panels A and B). In employment terms the share is substantially smaller, reflecting high capital intensity in the petroleum sector.

- **State ownership in businesses remains substantial.** According to recent estimates, about 15% of business-sector employment is in companies with partial or complete state ownership. Stakes are held in a wide range of sectors, the most significant economically being a 67% in the oil and gas producer, Statoil.

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Figure 1 The composition of Norway's economic activity



Notes: Panel A and B, Public sector comprises categories: Education, Health & Social Work, Public Administration and defence. The mainland Oil&Gas related business sector are estimates:

- "Value added" share is a Ministry of Finance estimate of the value of demand from the petroleum sector. As such it includes imports, which do not contribute to value added in the Norwegian economy.

- Oil-related employment reported by Statistics Norway (Økonomiske analyser 1/2017) as of 2016 around 185 000 jobs, or 6.7% of employment were directly or indirectly linked to the oil and gas sector.

Source: Statistics Norway; Statistics Norway; Ministry of Finance.

Familiar sectoral shifts are underway in the mainland economy

- **Manufacturing's share of output has shrunk further**. The "machinery" and "other manufacturing" categories combined currently generate about 5.5% of mainland value added compared with 10.5% in the mid-1980s (Figure 1, Panel C). According to one input-output analysis (Prestmo et al, 2015), about 14% of manufacturing is linked to the petroleum sector.

- **Service activities occupy an increasing share of economic activity**. Businesses classified as "other services" today accounts for about 25% of value added (Figure 1, Panel C). In addition, Education, Health and social work have expanded significantly, which in Norway implies mainly an expansion of public-sector activity as private enterprise plays a comparatively small role in these sectors.

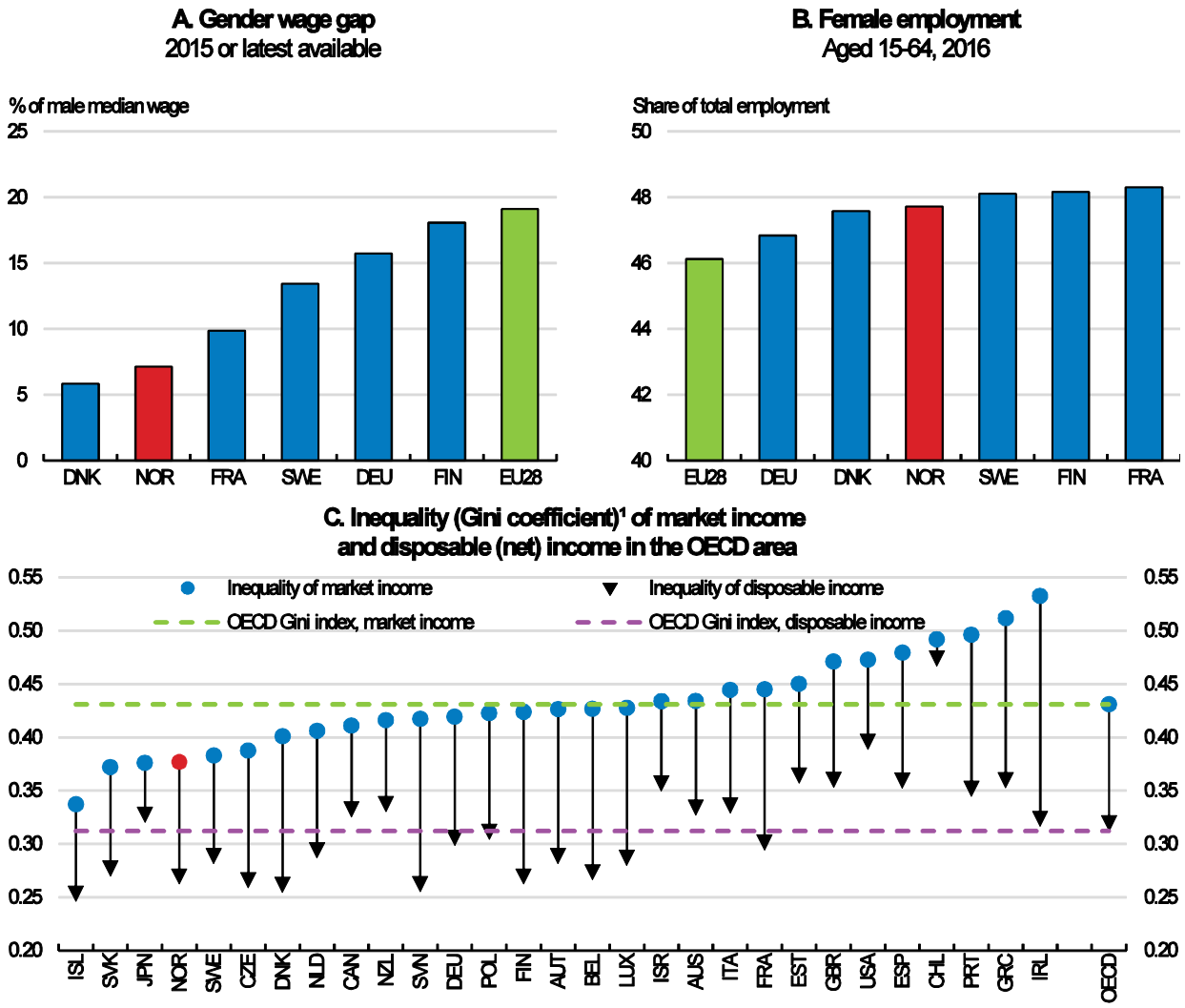
- Norway's "traditional" sectors, **farming and capture fishing, today account for only around 2% of output and employment**. For farming in particular, economic protection remains substantial reflecting longstanding priority in Norwegian policy to preserving rural and remote communities. Meanwhile, **capital-intensive aquaculture (mainly salmon) has expanded rapidly.** Exports now account for about 2% of GDP and the sector is second-largest export category after petroleum.

Business sector and employment practices are more inclusive than most

- **Business-sector employment practices have contributed significantly to the narrow gender wage gap and high rate of female employment**. Norway's gender wage gap is now 7% and women account for nearly 48% of employment (Figure 2, Panels A and B). Norway was an early mover in bringing in statutory quota's for women on the boards of public limited companies. Nearly 45% of board members are now women among large listed companies. Furthermore, gender balance is a key factor in Norway's narrow distribution of market income (Figure 2, Panel C) along with high educational attainment and a strongly centralised collective bargaining system.

- **Businesses score reasonably on environment-social-governance (ESG) indicators but lag behind leading countries**. Indicators based on Thomson Reuters data (Figure 3) score Norway above the United States on environment and social dimensions but not quite as well as its Nordic peers or the Euro Area. A comparison of oil-and-gas sector scores produces a similar story. Norway performs comparatively poorly on the governance component, possibly reflecting weak scores in state stakes in business.

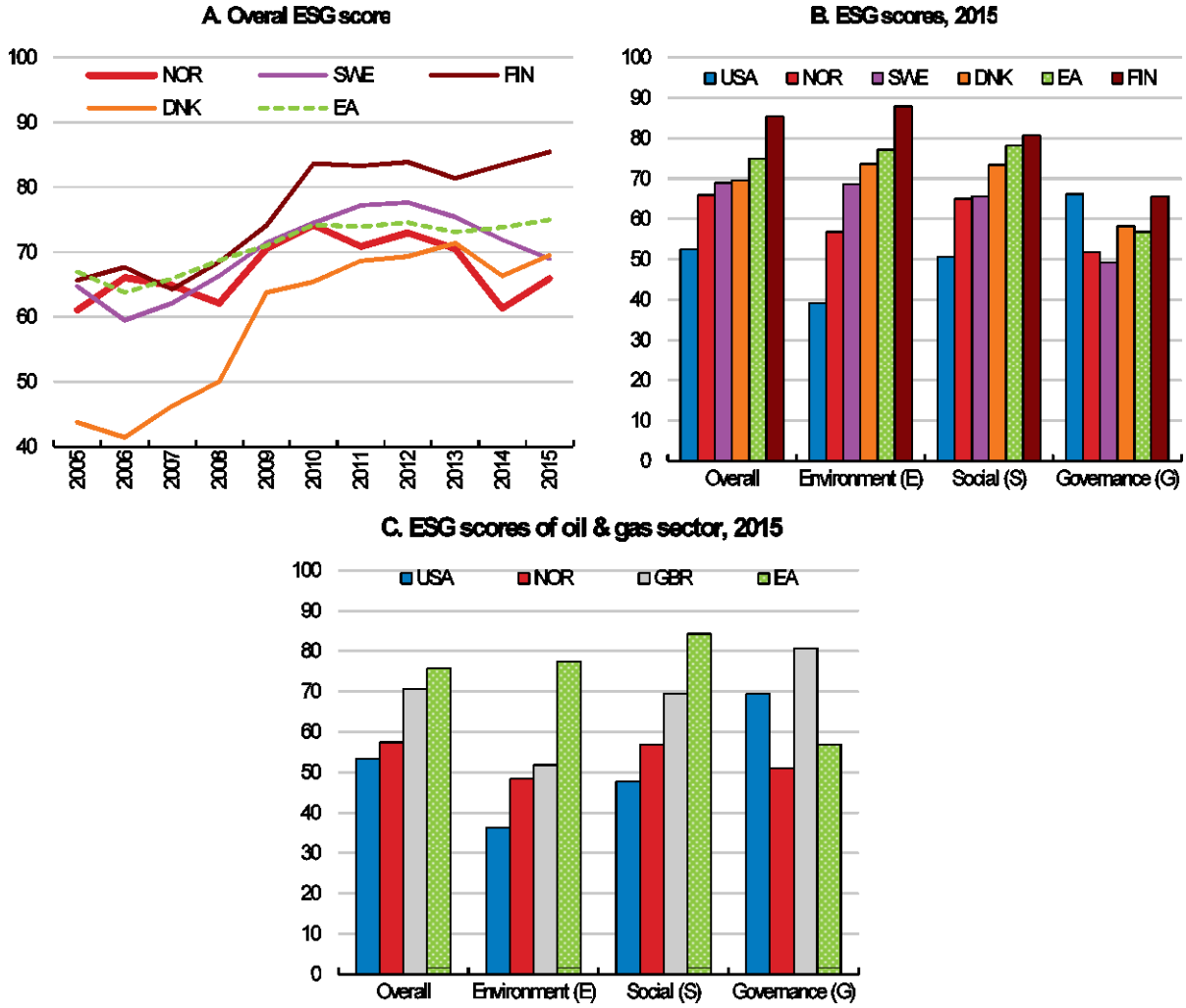
Figure 2 Much of Norway's inclusiveness derives from high employment rates and small gaps in earnings



1. The Gini coefficient ranges from zero to 1, zero indicating all individuals have the same income; 1 indicating one individual receives all income.

Source: OECD Employment and Labour Market Statistics; and OECD Income Distribution Database (IDD).

Figure 3 Norway scores reasonably in environment-social-governance (ESG) indicators



Note: The number of firms reporting Environmental, social and governance (ESG) scores varies each year.

Source: Adapted from ASSET4 Thomson Reuters data.

Challenges and opportunities for Norway's business sector

Globalisation and technological change

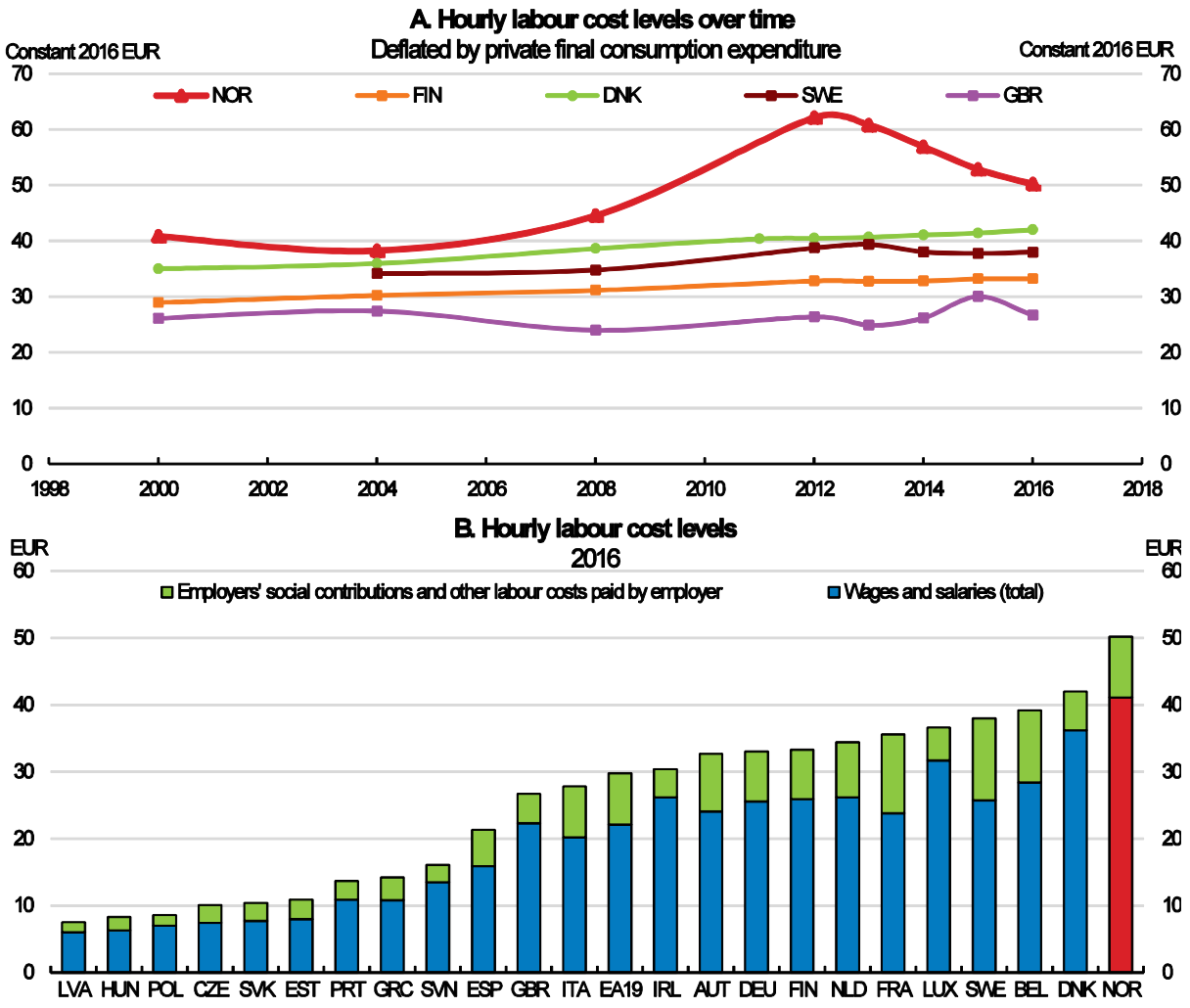
Globalisation and technological change are re-shaping Norway in similar ways to many other advanced economies. New production and export capacity in emerging market economies, the internationalisation of supply chains ("global value chains") and the continuing digital revolution (and other new technologies) are generating compositional shift in economic activity and bringing dramatic change in the range and price of goods and services available to consumers (for a recent general discussion, see, for instance OECD, 2017a). Welfare gains have been significant. Emerging production bases, particularly in Asia, have reduced the price, and widened the range, of clothes, textiles and electronic goods in particular. In addition, globalisation and technological change have been an integral part of processes that have brought substantial improvement to the capacity and quality of existing products and the generation of new products and services.

Adjustment in Norway's economic activity arising from globalisation and technological change has been comparatively smooth. Employment and output have been shifting away from primary activities (such as agriculture) and manufacturing and towards service sectors. However, in Norway this process has left few people behind. This is partly because negatively affected sectors, such as manufacturing, do not account for a large share of employment. Furthermore, the generally healthy state of the economy, thanks notably to activity related to the petroleum sector has facilitated the reallocation of labour resources. Furthermore, comprehensive welfare support reduces the risk of local economies spiralling downwards when hit by plant closures.

High labour costs remain a core challenge. Businesses in all advanced countries are to some extent having to climb further up the value chain to remain viable. Norway's high production costs, even compared with other advanced economies, mean this pressure is more keenly felt. The euro-equivalent average wage calculated by Eurostat has come down in recent years (Figure 4, Panel A), largely due to exchange-rate depreciation and compositional effects from job-losses in the high-paying petroleum sector. Nevertheless, at around EUR 50 per hour, the average wage remains comparatively high. In Denmark and Sweden the hourly rate is around EUR 40 and there are many countries in Europe with rates below EUR 30 per hour (Figure 4, Panel B).

Norway's labour-cost challenge has been amplified by wage growth outpacing productivity growth in most years---i.e. unit labour costs have risen. This has happened in several OECD countries, but to a greater extent in Norway (Figure 5). This partly reflects employment linked to a wave of heavy petroleum-sector investment, which ramped up the wage bill in the "mining and utilities" category and inflated unit labour costs. However, unit labour costs have also risen quite strongly in manufacturing and in business-sector services. More recently, unit labour costs have fallen across the board due to currency depreciation. In the petroleum sector a fall-off in petroleum sector investment and cost-savings in response to the 2014 oil-price drop have also driven unit labour costs down.

Figure 4 Norway's labour costs remain high in international comparison

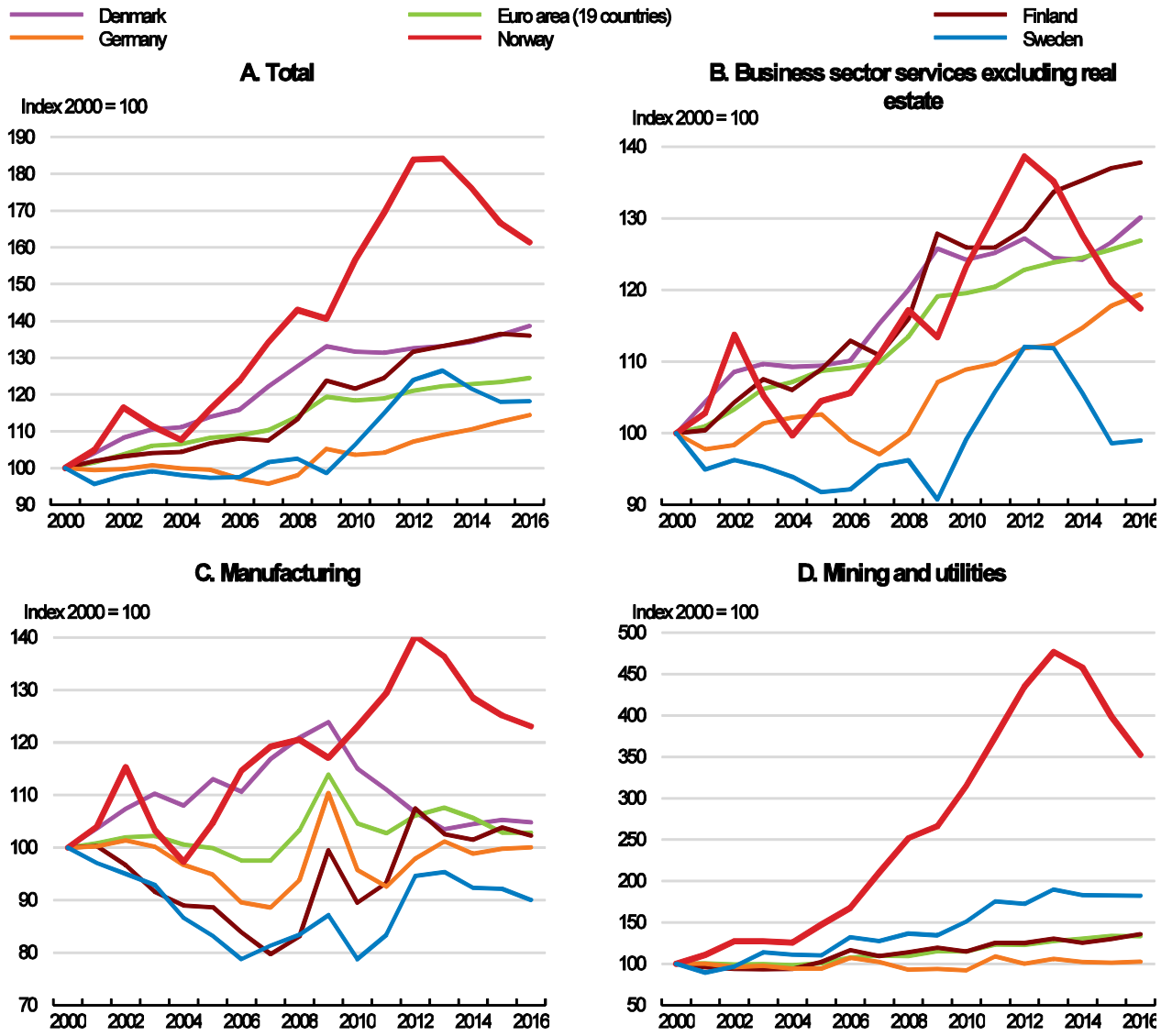


Note: Industry, construction and services (except public administration, defence, compulsory social security). Where applicable, currency conversion is via exchange rates.

Source: Eurostat; and OECD Analytical Database.

Figure 5 Norway's unit labour cost (ULC) indices remain high despite recent falls

In Euros



Notes: Unit labour costs (ULCs) measure the average cost of labour per unit of output. They are calculated as the ratio of total labour costs to real output. Annual ULCs can be expressed as the ratio of total labour compensation per hour worked to output per hour worked (labour productivity). Panel D, Denmark is omitted due to for sector comparability issues.

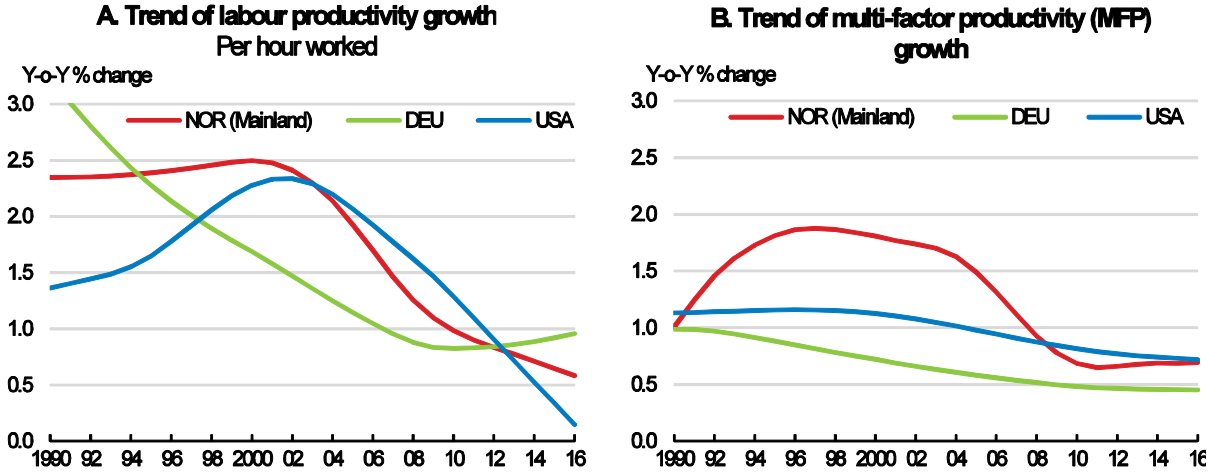
Source: OECD Productivity Statistics (database); and OECD Analytical Database.

Productivity slowdown

As in many countries, productivity growth has weakened (Figure 6). Weakening has occurred in trend labour productivity (which reflects the deepening of physical and human capital as well as innovation processes) and multi-factor productivity (MFP, which more closely reflects innovation). The step-down in the pace of productivity growth started around 2005. A leading explanation is that Norway is experiencing the low-growth trap phenomena seen elsewhere; a cycle of weak consumption demand, low output growth expectations, feeding to low business confidence and tempered investment. As elsewhere, breaking any

such cycle is a core reason for the continuation of supportive macroeconomic policy, particularly monetary policy. Technological developments are almost certainly playing a role, as has been the case in past productivity trends (Box 1).

Figure 6 Productivity growth has slowed



Note: series are smoothed by a Hodrick-Prescott filter with a lambda of 100.

Source: OECD Economic Outlook database.

Box 1 Norway's productivity growth over the longer term

Changes in trend productivity growth over the long term correspond to different phases of economic development. Norway's long-term pattern is in many respects a familiar one. A Norges Bank paper (Hagelund, 2009) identifies several phases of productivity growth, which can be summarised as:

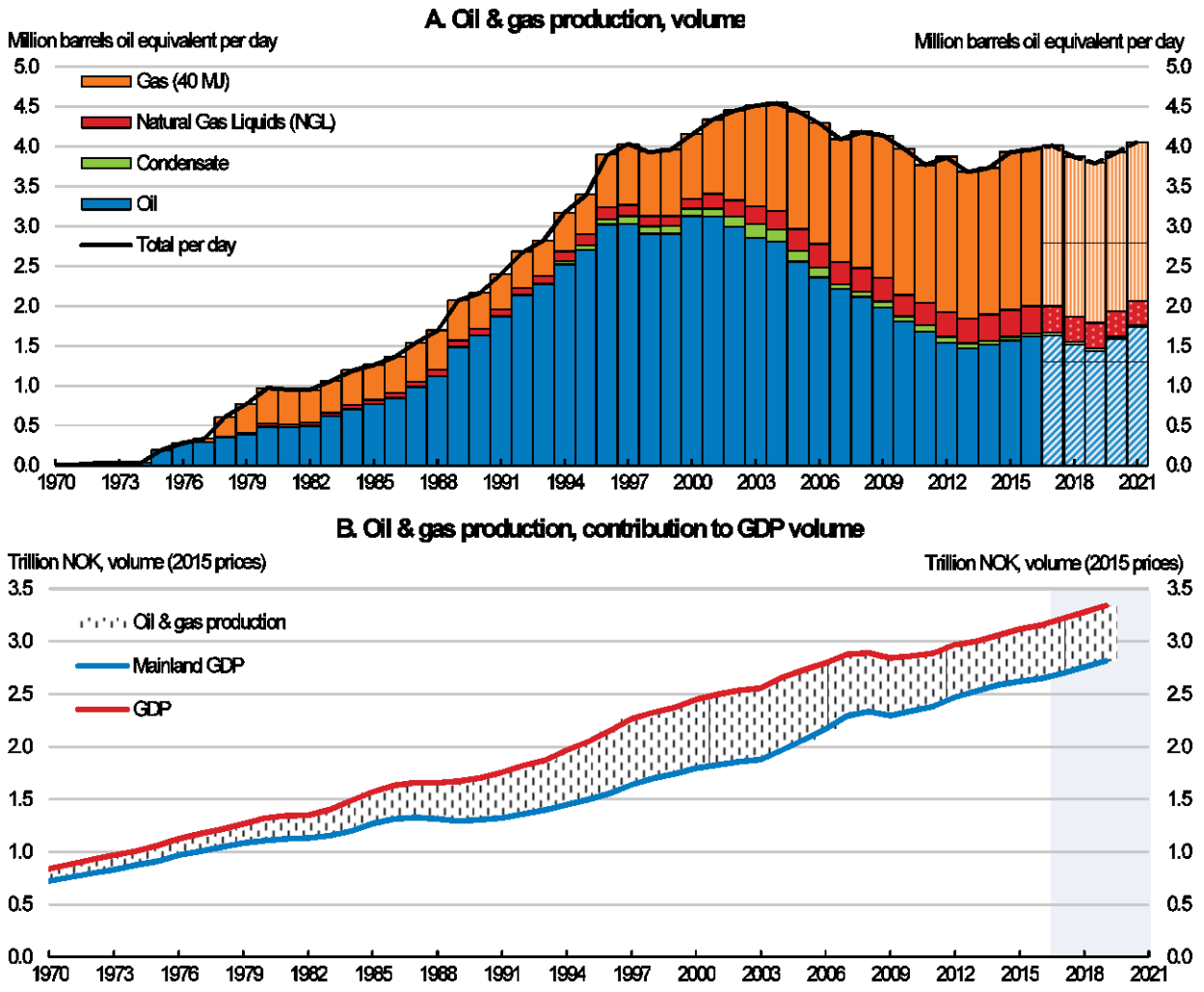
- Strong productivity growth from post-World War II to early 1970s: "catch-up" with leading economies in investment and technology, particularly in manufacturing where machine-based automation generated large gains in labour productivity growth
- Weak productivity growth from mid-1970s to late 1980s: macroeconomic instability (including inflation), global oil crisis and tailing off from in gains from post-war catch-up
- Resurgence from late 1980s to mid-2000s: competitive pressure from trade and product-market liberalisation, structural reforms in the 1990s, productivity gains from information-technology
- Step-down from mid-2000s onwards: prolonged weak investment growth linked to weak confidence and demand, possible weakening of productivity gains from information technology

Diversification away from petroleum activities

Norway's oil-and-gas related activities are driven by external demand as well as domestic production. In Norway's fields, oil production is already in decline, though this has been somewhat offset by increasing gas production (Figure 7, Panel A). However, at some point the latter will also peak. Norway's oil and gas production is echoed in the gap between total and mainland GDP; mostly in the form of exports (Figure 7, Panel B). Based on currently known reserves and estimates of new discoveries, along with likely production levels, experts generally expect Norway's oil and gas production will end in around 50 years.

However, oil and gas production in offshore fields is only one segment of Norway's engagement with the petroleum sector. In addition, the future path of Norway's oil and gas activities depends on global developments. Echoing estimates described above, demand from petroleum activities in the mainland economy is currently estimated to be around 10% of mainland GDP, which is already below peak values and further decline is expected (Figure 8).

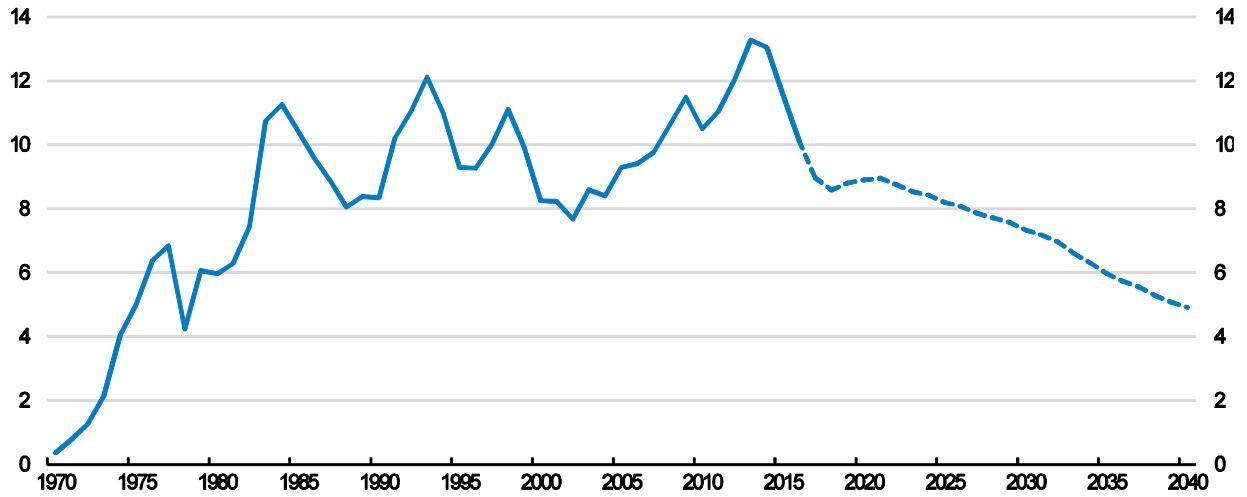
Figure 7 Combined oil and gas production has already declined



Source: Norwegian Petroleum Directorate and OECD Economic Outlook 102 database.

Figure 8 Mainland oil and gas are projected to decline steadily over the long term

Estimated demand for oil and gas services, % of mainland GDP



Source: Ministry of finance: Meld. St. 29 (2016–2017) - Long-term Perspectives on the Norwegian Economy 2017.

Norway's future oil-sector development is highly uncertain. This is illustrated in Table 1 which describes a "central" scenario plus possible upside and downside outcomes. The global oil price is a key influence. Changes in the current price of oil can shift expectations of future prices, which in turn shift the calculus of production and exploration activity. Higher expected prices can bring marginal fields into production and make new exploration and development activity worthwhile. Furthermore, the current price of oil influences activity because the major oil producers typically finance exploration and development out of profits, which are themselves strongly driven by the price of oil. The large downward shift in the price of oil since 2014, may or may not herald the "beginning of the end" for Norway's oil sector, much depends on the complex matter of production costs (Box 2). Whatever, the 2014 price drop has certainly illustrated the consequences of substantial price movements.

Box 2 Production cost issues in oil and gas

Norway's oil production has not fallen following the 2014 oil-price fall (Figure 7), suggesting that the marginal production cost for its offshore fields generally lies below the current global oil price. This is confirmed by some cost estimates; a consultancy company, Rystad Energy UCube, estimated Norway's average cash production cost at about USD 20 per barrel in 2016. However, this figure requires judicious interpretation. For a start, production costs vary widely from one field to another, so the range around the average value will be wide (for commercial reasons producers do no generally make public the details of field costs). Furthermore, production costs are not only influenced by the engineering aspects of production. In particular, the intensity of attention to costs by the producers varies with the oil price; for instance producers have reportedly found room for substantial cost savings since 2014. Furthermore, a full lifespan cost assessment needs to incorporate exploration and development costs and (increasingly in recent times), scrapping costs.

Diversification away from petroleum-related activities in Norway will probably be gradual, as described by the central scenario in Table 1. From a policy perspective, this suggests that policies should focus primarily on facilitating a business-led, market-driven resource reallocation through good "framework conditions" for business. In this context, framework conditions refer to the various structural policy areas that influence the general conditions that businesses operate in, notably areas such as taxation,

competition legislation, regulatory requirements on starting-up, running and winding up business. These policy levers largely overlap with those that can also help Norwegian business engage with the challenges and opportunities of globalisation and technological change.

However, the "gradual transition" narrative may not play out. As Table 1 describes, a large and permanent negative shock to the oil sector is possible, for instance through a substantial acceleration globally in the switch to electric vehicles with consequent fall off in oil demand. Conversely, a string of surprise new petroleum-sector exploration possibilities and large new resource finds could put diversification into reverse, bringing to the fore the gains and challenges of a booming oil and gas sector. Particularly in the case of a negative shock, more interventionist policy may be warranted; for instance, additional regional support and more support for retraining to prevent the emergence of economically deprived areas.

Table 1 Possible scenarios for Norway's petroleum sector

	Conditions that could give rise to the scenario	Likely consequences for the mainland economy
Central scenario: **gradual decline in petroleum-related activity** (domestic Norwegian production ends around 2060)	Oil-price remains at a level that supports a gradual decline in domestic production No large new discoveries in Norwegian fields	Mainland petroleum-sector activity steadily declines as demands from offshore Norwegian fields (and the global petroleum sector) gradually ease off Transition is smooth. The slow adjustment away from oil sector means businesses, households and policies have time to prepare and adjust
Downside scenario: accelerated decline in petroleum-related activity	Massive negative demand or supply shock to the global oil business (e.g. acceleration in the switch to electric vehicles or discovery of new large low-cost reserves globally) Oil price shifts permanently below production costs for much of Norwegian offshore production	Norwegian offshore production is wound back rapidly, global demand for Norwegian oil-and-gas services weakens substantially Severe economic downturn, particularly in certain regions. Transition to new activities is not fast enough to prevent entrenched socio-economic problems from long-term unemployment and skill redundancy
Upside scenario: a substantial resurgence in petroleum-related activity	A surprise large new domestic discovery and/or sustained high oil prices	Transition goes into reverse, oil-sector activity surges (marginal known reserves brought into production, new exploration activity), non-oil sectors diminish. Benefits and challenges of resource wealth once again take centre stage

Specific policy areas for Norway

Enabling Norway's business sector to thrive requires attention to a wide range of policy areas. The remainder of this paper focuses on the following:

- **Scaling back and rebalancing taxation**, Norway's socio-economic model requires substantial revenues, so a large tax burden cannot be avoided. Yet, there are opportunities for some scaling back in the size of tax revenue relative to GDP and for re-balancing taxation to help business.

- **Promoting flexible markets and competition.** Ensuring competitive and flexible product markets is core to efficient resource allocation, and can be more challenging in small economies

because markets may be more easily dominated by a single enterprise or groups of enterprises engaged in tacit forms of collusion.

- **Improving resource reallocation through firm dynamics.** Bringing more firms close to best practice and frontiers in innovation and productivity through the entry, exit, expansion and contraction of firms is as significant for Norway as elsewhere.

- **Targeted support for innovation**. Much of Norway's productivity growth arises from global advance in technology and knowledge but encouraging domestic innovation is important and strengthens Norway's absorptive capacity for global knowledge.

- **Facilitating new forms of business**. As elsewhere, Norway is experiencing a wave of innovative business models based on internet platforms that challenge existing service delivery in a number of areas.

- **Maintaining strong and flexible labour supply**. As Norway's population ages the longstanding policy challenges linked to early withdrawal from the labour force (typically via the sickness and disability system) are gaining increased significance for the economy. Mobility within Norway and internationally is also important, as is supporting further advance in ensuring both female and male talent pools are utilised to the greatest effect.

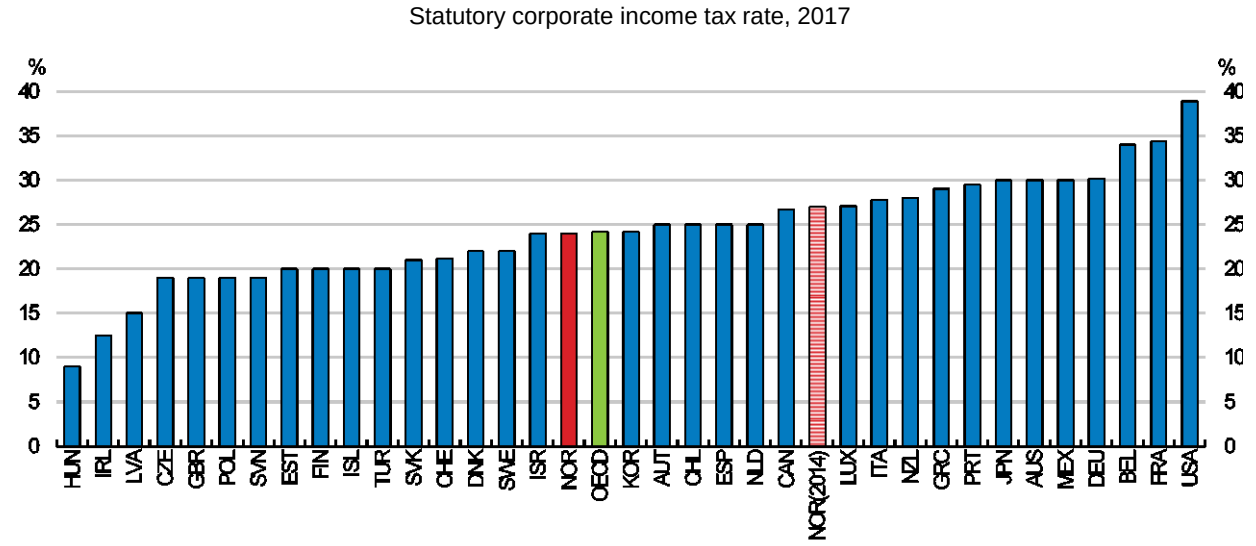
- **Education and skills**. Ensuring workers have high skill levels is a core channel for making high labour costs viable for businesses and for ensuring economic inclusiveness for households.

Scaling back and rebalancing taxation

Norway's comprehensive public services, welfare support and investment require substantial fiscal revenue. Indeed, revenues (excluding petroleum-related) are equivalent to 45% of mainland GDP, which is among the highest in the OECD area. Past OECD assessment has underscored the room for efficiency gains in many areas of public spending in Norway. Achieving these gains can then be used to pare back the revenue-share of GDP.

Welcome shifts in the tax mix are underway. A commendable drive to move the tax burden away from income taxes and towards indirect taxes, including environmentally related taxes, continues. Income-tax reductions began in 2015 and are centred on rate reductions in the single-rate "ordinary tax", which applies to most forms of income (including corporate income in the case of enterprises, and capital income and wages in the case of individuals). The rate is 24% for 2017, down from 28% in 2014 (Figure 9) and there is parliamentary agreement for a reduction to 23% in 2018. The main goal has been to lower the burden of corporate-income tax. For individuals the reduction in the "ordinary tax" has been partially offset through increases in the progressive tax ("bracket tax") that applies to wage earnings. The tax changes maintain a narrow gap between the top marginal rate of tax on wage income and dividend income, which ensure personal business owners have little incentive to avoid taxation by reporting wage income as capital income. In addition, the changes retain neutrality with regard to portfolio choices (such as the choice between shares and bonds) via the dividend tax allowance.

Figure 9 Norway's corporate tax rate has been lowered



Source: OECD Revenues Statistics.

Indirect-tax reform has included progress on narrowing gaps across VAT rates. In 2016 the concessionary rate of VAT on certain services (including passenger transport and accommodation) was increased from 8% to 10% bringing it closer to the concessionary rate applied to food stuffs (15%) and the standard rate (25%). The Government has proposed to further increase the 10 % concessionary rate to 12% in the 2018 budget. Further progress in reducing the differences in VAT rates would be welcome through further increase in the concessionary rates, along with reduction in the standard rate. Cost-of-living concerns from concessionary-rate increases could be packaged with greater targeted support to low-income households via the welfare and income-tax system. In the sphere of environmental taxation there has been partial implementation of recommendations by a green-taxation committee (see Assessment and Recommendations of the latest *Economic Survey* of Norway, OECD 2018).

Financial-services taxation has also received some attention. As for most countries, VAT is not imposed on financial services, largely because of challenges in measuring value added. Norway introduced a "financial activity" tax in 2017 as a substitute for this. The tax comprises a 5% additional employer levy on wages and a one-percentage-point higher rate of ordinary tax on corporate income in the financial sector (i.e. for 2017 the financial sector faces a corporate tax rate of 25%, compared with 24% for other sectors).

Taxes targeting wealth have been adjusted further. Wealth and inheritance taxes, in principle, shore up the redistribution provided through income-tax progressivity, helping address inequality issues. In practice, there are challenges. Indeed, Norway's inheritance tax was scrapped in 2014, partly because rules to counter avoidance (notably, rules on gifts) were complex and not very effective. Most notably, intergenerational transfers among the most affluent families in Norway are typically made by transfer of business interests, which was not captured by the inheritance tax (it only covers personal assets). As regards the wealth tax, the impact on incentives to invest is a key issue. The wealth tax, an annual tax levied on net wealth, has been lightened with reduction in the maximum marginal rate from 1.1% to 0.85% and with reduced weightings on business capital in the calculation of net wealth. Further reductions in the wealth tax rate would make sense as despite the recent reduction; the tax still implies a high marginal rate of tax on saving, especially in the current low-inflation, low-interest rate environment.

Norway's housing taxation continues to include generous concessions. Most notably, mortgage interest is deductible without corresponding inclusion of imputed rent in taxable income. The tax concessions fuel demand for home ownership and skew saving and investment more generally. Tackling this problem is politically difficult but should nevertheless remain an aspirational goal for policymakers. The optimal approach, in principle, would be to introduce imputed rent in income-tax calculation. A gradual phase-in process could make this more tractable. Or, property tax could be increased as a proxy for imputed rent. Alternatively, the interest-rate deduction could be phased out; though this would reduce the consistency of capital-asset treatment in the tax system (the system would less "symmetric"). Other avenues for housing taxation reform should be exploited, in particular through further increases in the weights applied to housing assets in the calculation of capital gains tax (and in net wealth calculation).

Promoting flexible markets and competition

Ensuring competitive markets should be a central theme in efforts to improve framework conditions for Norwegian business. Competition motivates cost-efficiency within firms and helps direct businesses towards providing the goods and services that intermediary producers and households want. In addition, as emphasised in recent research (e.g. Aghion et al, 2014), competition motivates innovation, especially among firms at the technological frontier because of its potential to bring commercial advantage (the "escape-competition effect"). This suggests policy that both encourages strong competition and increases the number of firms operating at technological frontiers is particularly powerful.

Norway's scale and geography, to an extent shape, the scope for competitive markets:

- The country's comparatively small economy and market size can mean that in some markets only small numbers of players are feasible due to economies of scale. This raises the risk of arrangements between firms (tacit or otherwise) which limit competition. This risk is amplified by Norway's geography, the largest population centres are quite distant from each other and there are extensive rural areas with low population density in which competition for some services is very limited (a recent OECD report examines the economies of Norway's northern areas, OECD, 2017b).

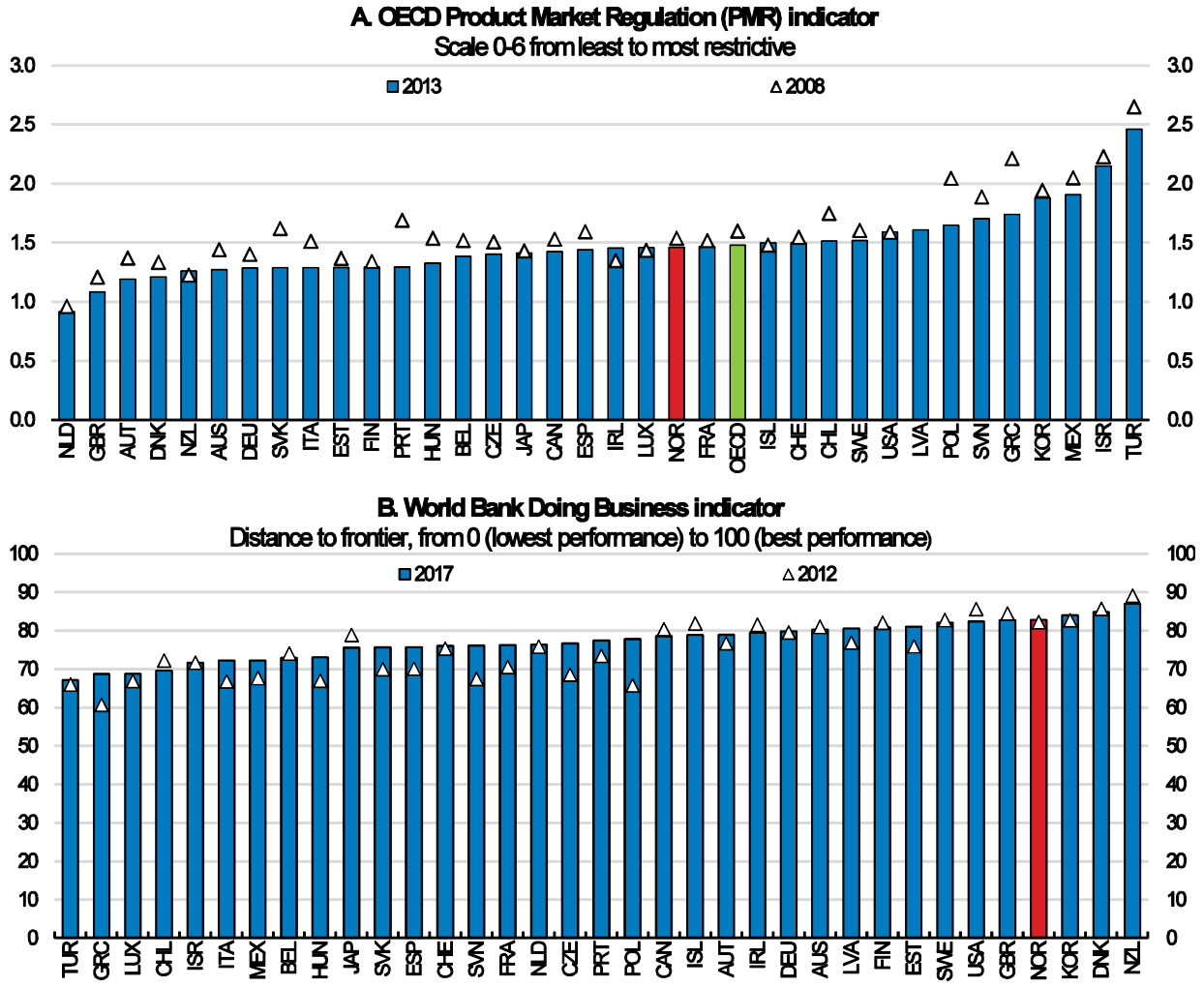
- Upscaling challenges in trade arise. Businesses founded in a small country can face challenges in expansion because there is less opportunity for growth domestically before entering international markets, which often involves substantial fixed costs and hurdles in regulation. This underscores the importance of membership of the EEA and Norway's extensive alignment with EU regulation in providing access to markets.

Norway scores reasonably in broad indicators of the environment for business (Figure 10). It has a middle-ranking position in the OECD's product-market regulation (PMR) indicator and performs very well in the World Bank's Doing Business indicator. Examination of the PMR indicator's sub-components shows Norway's score is negatively affected by the still extensive state stakes in business; scores in "public ownership" and "regulatory protection of incumbents" are comparatively poor (Figure 11). In other dimensions of the PMR indicator Norway generally ranks well.

However, regulatory indicators on services trade point to above-average restrictiveness in many sectors. Norway has longstanding and substantial trade in maritime transport and petroleum-related services. And, as elsewhere, information and communication technology means many services can now be provided at distance, bringing opportunity for lower cost and better quality domestic services, and new markets for exporting services. The OECD's Services Trade Restrictiveness Index shows Norway to have above-average restrictiveness in these sectors (Figure 12). This is partly due to state stakes, which as in the PMR, raise the restrictiveness score. However Norway is comparatively restrictive on some other fronts.

Most notably, the Country Profile in the OECD's Services Trade Restrictiveness Index flags that Norway requires that at least half of the board members and the manager (CEO) in corporations must be residents of Norway or the European Economic Area (EEA). Similar restrictions apply in other Nordic countries but are rare elsewhere. Norway's other restrictions are typically more common, such as rules requiring wage parity rules for temporary foreign workers, capital deposit requirements for registering corporations and the incorporation of public procurement into regional trade agreements. Access to public procurement contracts by foreign businesses is expected to become more restrictive following the requirements that contractors must hire apprentices (the apprenticeship system is discussed further below). While positive for the supply of apprenticeships, apprenticeship programmes require companies to have qualified staff for training and links with upper-secondary schools, which foreign bidders for procurement contracts are unlikely to possess.

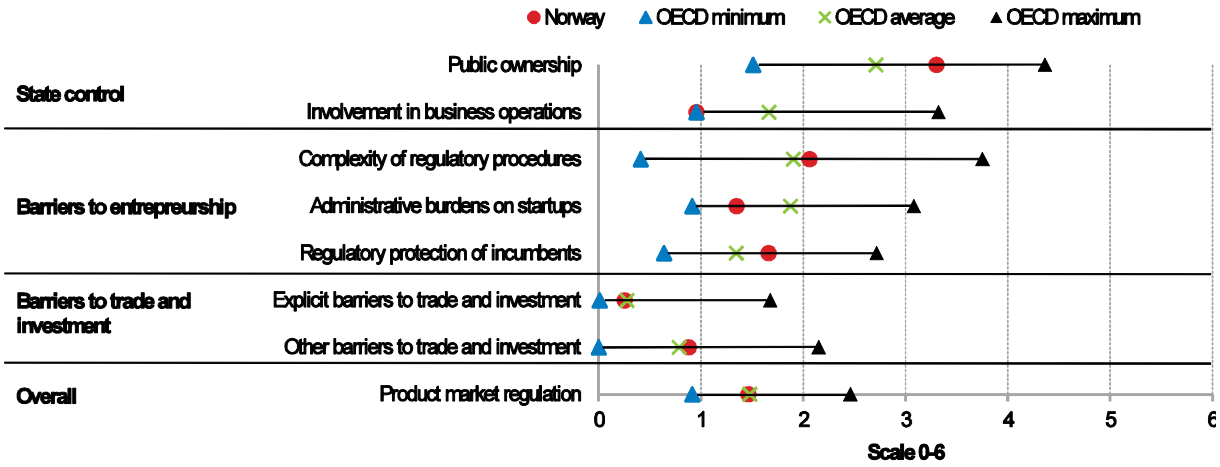
Figure 10 Norway performs reasonably in top-level indicators of the business environment



Source: OECD Product Market Regulation Database ; and World Bank Doing Business 2017.

Figure 11 Sub-components of the OECD PMR indicator flag Norway's state stakes in business

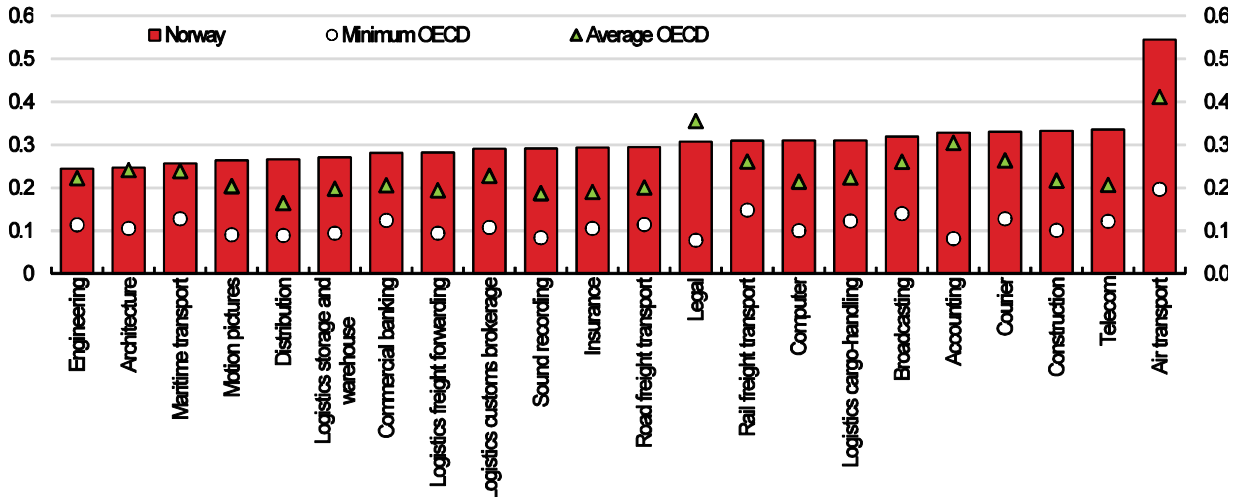
Scale 0-6 from least to most restrictive



Source: OECD Product Market Regulation Database.

Figure 12 The OECD's Services Trade Restrictiveness Index also flags issues in Norway

The indices take values between zero and one (the most restrictive)



Note: The index includes regulatory transparency, barriers to competition, other discriminatory measures, restrictions on movement of people and restrictions on foreign entry. The STRI methodology takes into account different market and trade cost structures across sectors to ensure that they reflect the relative restrictiveness of each sector. Nevertheless, the indices may not be perfectly comparable across sectors. The indicators are for 2016 or the most recent year available.

Source: OECD Services Trade Restrictiveness Index (STRI).

Avenues for improving competition law

Norway's competition law and process is core to combating anti-competitive practices. The legislation is based on the Competition Act of 2004 and partially incorporates EU competition legislation. Amendments in recent years (Box 3) have focussed on the treatment of mergers. For instance, Norway has moved away from a "total welfare" approach towards a consumer approach. A total welfare approach is

sound in principle as it aims to maximise overall economic surplus by considering all gains and losses. However the authorities have decided that in the Norwegian context the approach was allowing too many deals that risk limiting market competition from a consumer perspective (Productivity Commission, 2015; OECD, 2014a).

Past OECD *Surveys* have been critical of the sectoral exemptions from the Competition Act, which include agriculture, fishing and book retailing. The exemption for agriculture facilitates the operation of Norway's agricultural co-operatives and is one element of the wide-ranging support to preserve domestic agricultural production (much of which is uneconomic), along with extensive import tariffs and income-support payments to farmers.

Supermarket retail chains have attracted the attention of policymakers. As in a number of countries, the chains are criticised for being overly powerful in the grocery supply chain, exploiting monopsony powers over food producers and squeezing out small, independent retail outlets. Legislative measures have been suggested but none, so far, have garnered widespread support among competition experts. A report by the Ministry of Trade, Industry and Fisheries criticises a suggestion to allow the application of "abuse of unilateral behaviour" (under certain circumstances) even if the business in question has not been legally classified as being in a "dominant position". In addition, opinion is divided on the merits of a proposed "code of conduct" law for negotiations between the retail chains and suppliers.

Box 3 Recent amendments to Norway's competition legislation

In recent years amendments to the 2004 Competition Act have focussed on two issues.

Measures to increase the efficiency of competition law (2014):

- Merger notification thresholds were increased, enabling the authorities to concentrate investigation; the investigative caseload has dropped from around 800 to 100 mergers
- Leniency rules have been simplified and harmonised with EU legislation

Measures to increase independence and harmonisation with regard to mergers (2016/17), including*:*

- Establishment of a competition complaints board
- Removal of the Ministry of Trade, Industry and Fisheries as the appellate body for some types of National Competition Authority (NCA) decisions, including mergers
- Removal of government powers to overturn NCA decisions based on public interest considerations
- Adoption of the EU model for settlements in cartel cases
- Shift in merger-test approach from the SLC ("substantial lessening of competition") model to the SIEC ("significant impediment to effective competition") model
- Shift from a "total welfare" standard to a "consumer welfare" standard

Reducing government's direct role in business through public ownership

State ownership of business enterprise in Norway has diminished, but nevertheless remains extensive. Around 280 000 people, or 11% of employees (equivalent to around 15% of business-sector employees) are employed in companies that are partially or completely state owned according to the latest annual State Ownership Report (Ministry of Trade, Industry and Fisheries, 2016). Economically, the most significant

holding is the 67% state stake in the oil and gas conglomerate, Statoil ASA. Other sectors with substantial state stakes include, notably telecoms (Telenor), energy and aluminium production (Norsk Hydro), chemicals (Yara International, ASA), a manufacturing conglomerate (Kongsberg Gruppen) and banking (DNB Bank). The frameworks for administering state-ownership are in many respects exemplary, aligning with good practice in governance. For example the annual *State Ownership Report* brings substantial transparency on the details of state holdings. However, good governance does not necessarily justify the retention of stakes. This is especially the case for stakes that are held in companies that operate in markets for goods or services that are competitive and well-functioning in other respects. It is therefore encouraging that a process of partial or complete sell-offs continues.

Improving resource reallocation through firm dynamics

Firm dynamics — the entry, exit, expansion and contraction of businesses — are core to resource reallocation, innovation and progress towards higher productivity. This is illustrated in a recent OECD publication that includes a study of firm dynamics among incorporated firms in Norway (OECD 2017c). The study confirms that, similar to other countries, firm dynamics can have a sizeable impact on overall productivity growth alongside within-firm productivity growth. Framework conditions that promote flexible and competitive product and labour markets provide an important backdrop for effective firm dynamics. There are more proximate policy influences. The following sections examine administrative procedures and regulatory requirements on business ("red tape"), and insolvency legislation and procedures.

Red tape associated with establishing and operating a business

Norway's red-tape burdens on business are lighter than most. Red tape often involves time and other costs for business, absorbing managerial resources. It also often reflects restrictions and regulations on business operation. Red-tape tends to affect start-ups more than incumbents (OECD, 2016a). This is partly because there are red-tape hurdles in establishing businesses but, in addition, small and young businesses often do not have strong capacity or experience in dealing with red tape. There are ways of ensuring processing and administration requirements are kept to a minimum and Norway appears to be doing reasonably on this front. The Entrepreneurship component of the OECD's product market indicator indicates low barriers to firm entry (see Figure 11). Furthermore, Norway ranks 21st highest out of 189 economies in the Starting a Business component of the World Bank's Doing Business indicator.

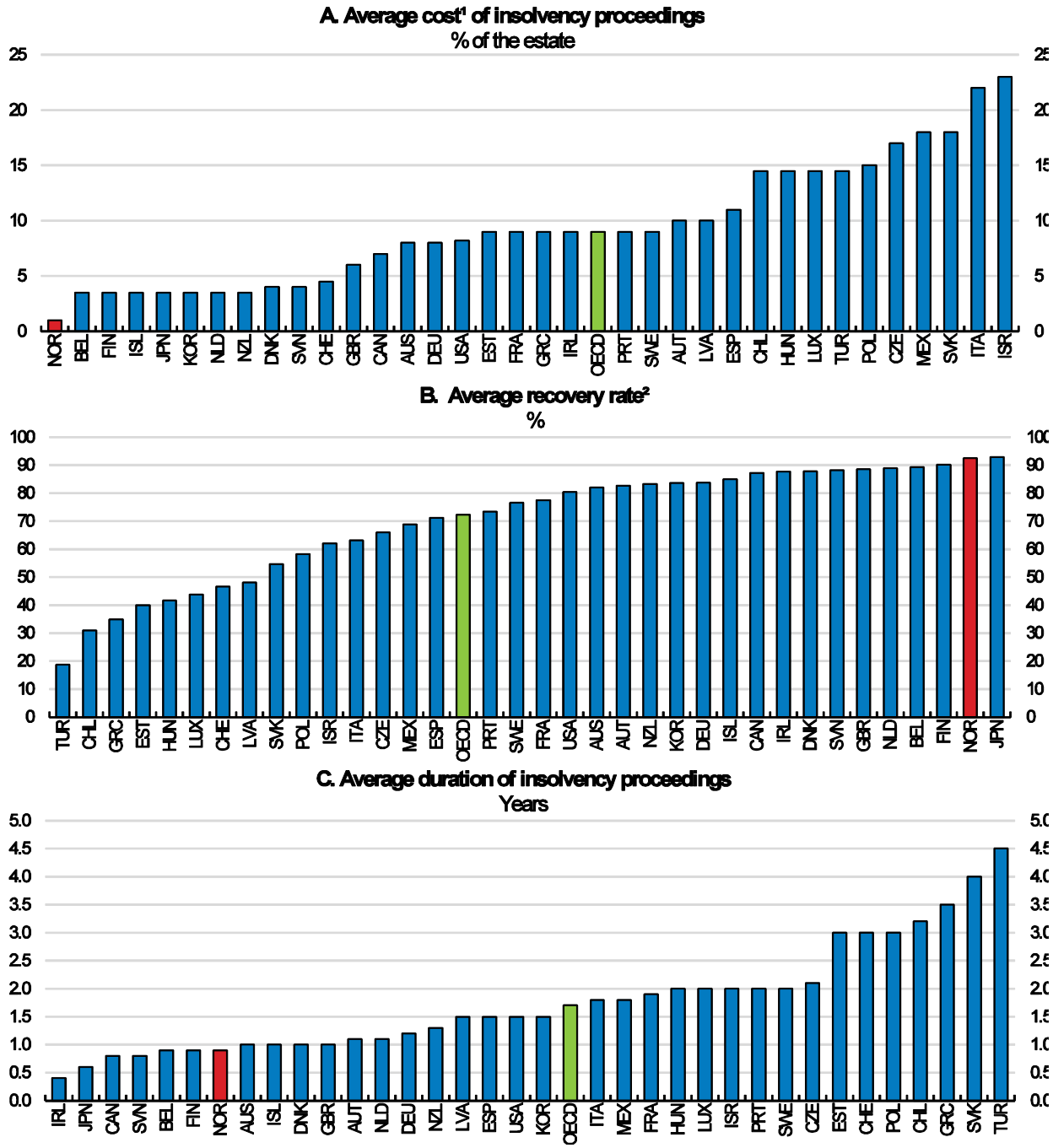
Welcome policy effort to reduce red-tape burdens further continues. A "better regulations council" similar to that in Sweden has been established (Government of Norway, 2013). Progress in specific areas has included lighter social-security reporting requirements for employers, simplification in building and planning legislation and simplified tax rules for business partnerships. In addition, efforts to simplify administration using digital solutions are underway. A new government portal for enterprise (Altinn) has been set up and a project revamping the ICT of the labour and welfare administration (NAV) is underway. Continued progress along these lines can only be encouraged.

Tuning insolvency legislation to better support innovation and risk taking

Insolvency legislation and procedure influence the efficiency of firm dynamics because they determine what happens to firms in difficulty. Insolvency systems need to offer opportunity to restructure and, where necessary, facilitate exit predictably and expediently (Box 4)—as well as providing appropriate balance between the interests of the businesses (the "debtors") and those financing them (the "creditors"). A strong slant in favour of debtors can dissuade credit growth and prompt excessive risk taking. Conversely, strong creditor protection and heavy penalties on debtors can overly dissuade business enterprise and risk taking.

International indicators point to a mixed picture for Norway's insolvency system. Sub-components of the World Bank's Doing Business insolvency indicator show low financial and time costs (Figure 13). In addition, Norway's "recovery rate" is high, i.e. creditors are typically returned a substantial proportion of their investment through reorganization, liquidation or debt enforcement (foreclosure or receivership) proceedings. Meanwhile, Norway appears mediocre in a recently developed OECD indicator of insolvency that focuses on restructuring and efficiency (Figure 14, Panel A). Exploration of the individual components points to various weaknesses. Time to discharge (i.e. the number of years a bankrupt person must wait until they are discharged from pre-bankruptcy indebtedness) is relatively long (Figure 14, Panel B). Furthermore, there are shortfalls in prevention and streamlining, and in restructuring tools. There has already been some investigation of insolvency system, which is welcome. The Ministry of Justice and Public Security commissioned a report with a remit to propose changes to debt negotiation provisions ("reconstruction" provisions) in bankruptcy law. The government has yet to follow up on the commission's findings.

Figure 13 Norway's insolvency system is low cost and has a high recovery rate



1. The cost of the proceedings is recorded as percentage of the value of the debtor's estate. The cost is calculated on the basis of questionnaire responses and includes court fees and government levies; fees of insolvency administrators, auctioneers, assessors and lawyers; and all other fees and costs.

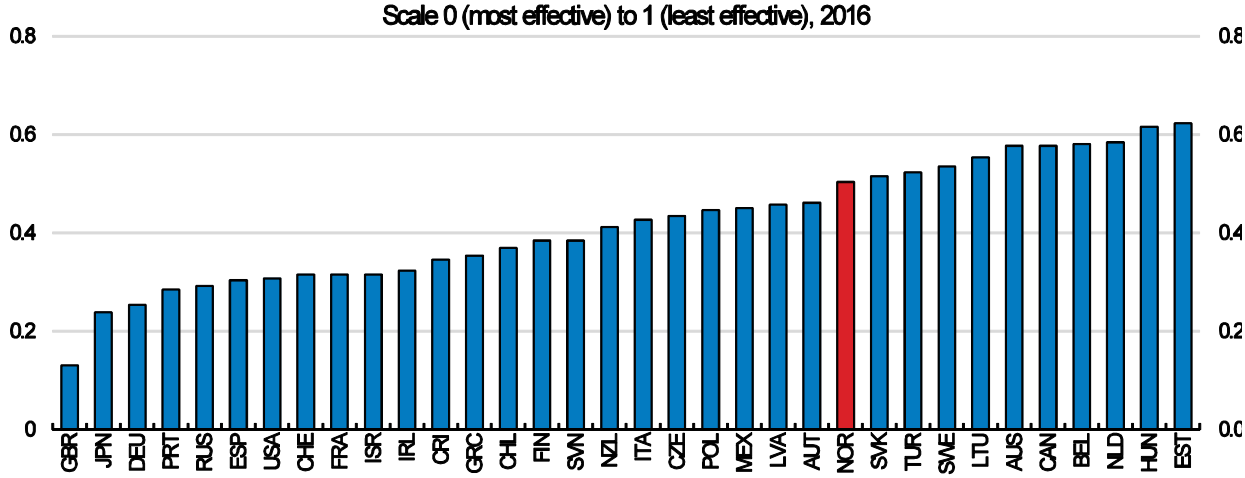
2. The recovery rate is calculated based on the time, cost and outcome of insolvency proceedings involving domestic legal entities and is recorded as percentage of the amount recovered by secured creditors. The calculation takes into account the outcome: whether the business emerges from the proceedings as a going concern or the assets are sold piecemeal. Then the costs of the proceedings are deducted. Finally, the value lost as a result of the time the money remains tied up in insolvency proceedings is taken into account. The recovery rate is the present value of the remaining proceeds, based on end-2015 lending rates.

Source: World Bank, Doing Business 2017 Database.

Figure 14 A new OECD indicator suggests weaknesses in insolvency restructuring and efficiency

A. Insolvency composite indicator based on 13 components

Scale 0 (most effective) to 1 (least effective), 2016



B. Cross-country variation in the design features of insolvency regimes, 2016

		NOR	SWE	FIN	DNK	NLD	DEU	USA	ESP	FRA	GBR
Treatment of failed entrepreneurs	*Time to discharge*	■	■	▒	▒	▒	■	□	▒	□	□
	Exemptions	□	▒	▒	▒	■	▒	□	▒	■	▒
Prevention and streamlining	*Early warning systems*	■	□	□	□	■	□	■	■	□	□
	Pre-insolvency regimes	□	■	■	□	□	□	■	□	□	□
	Special procedures for SMEs	■	■	□	■	■	■	□	□	□	□
Restructuring tools	*Creditor ability to initiate restructuring*	■	□	□	□	■	□	□	□	□	□
	Availability and length of stay on assets	□	■	■	□	■	□	■	□	□	□
	Possibility and priority of new financing	■	□	□	□	□	□	□	▒	▒	□
	Possibility to "cram-down" on dissenting creditors	▒	▒	□	▒	■	□	□	▒	▒	□
	Treatment of management during restructuring	□	□	□	□	□	□	□	□	□	□
Other factors	*Degree of court involvement*	▓	▦	⁘	▦	▨	▓	⁘	▦	▨	▦
	Rights of employees	▒	▒	⁘	N/A	⁘	□	⁘	▒	⁘	⁘
	Distinction between honest and fraudulent bankrupts	□	■	■	□	□	□	□	□	■	□

Notes: Darker shades denote the specific design features that are likely to delay the initiation of and increase the length of insolvency proceedings. Specifically, a white cell refers to the best practice and cells are ordered such that a black cell refers to features that are most likely to delay the initiation of and increase the length of insolvencyproceedings.

Source: McGowan et al (2017).

Box 4 Key elements of insolvency

There is no single best-practice model of insolvency due to variation in institutional and legislative contexts across countries. Nevertheless, an OECD review of insolvency (McGowan and Andrews, 2016) indicates there are several key elements:

- A clear trigger for initiating insolvency proceedings that encourages early remedial action towards restructuring
- Efficient liquidation options and fair opportunity for rehabilitation
- Checks against undesirable strategic behaviour
- Options for out-of-court settlement
- Provisions for cross-border insolvency and equal treatment for foreign and domestic creditors
- Attention to personal insolvency arrangements so that these align with the objectives of corporate insolvency

Targeted support for innovation

Innovation, whether based on R&D activity or other investments in knowledge-based capital, drives much of productivity growth. This is especially the case in advanced countries such as Norway where productivity gains through capital deepening in well-established technologies are typically well-advanced. Key points for policy are:

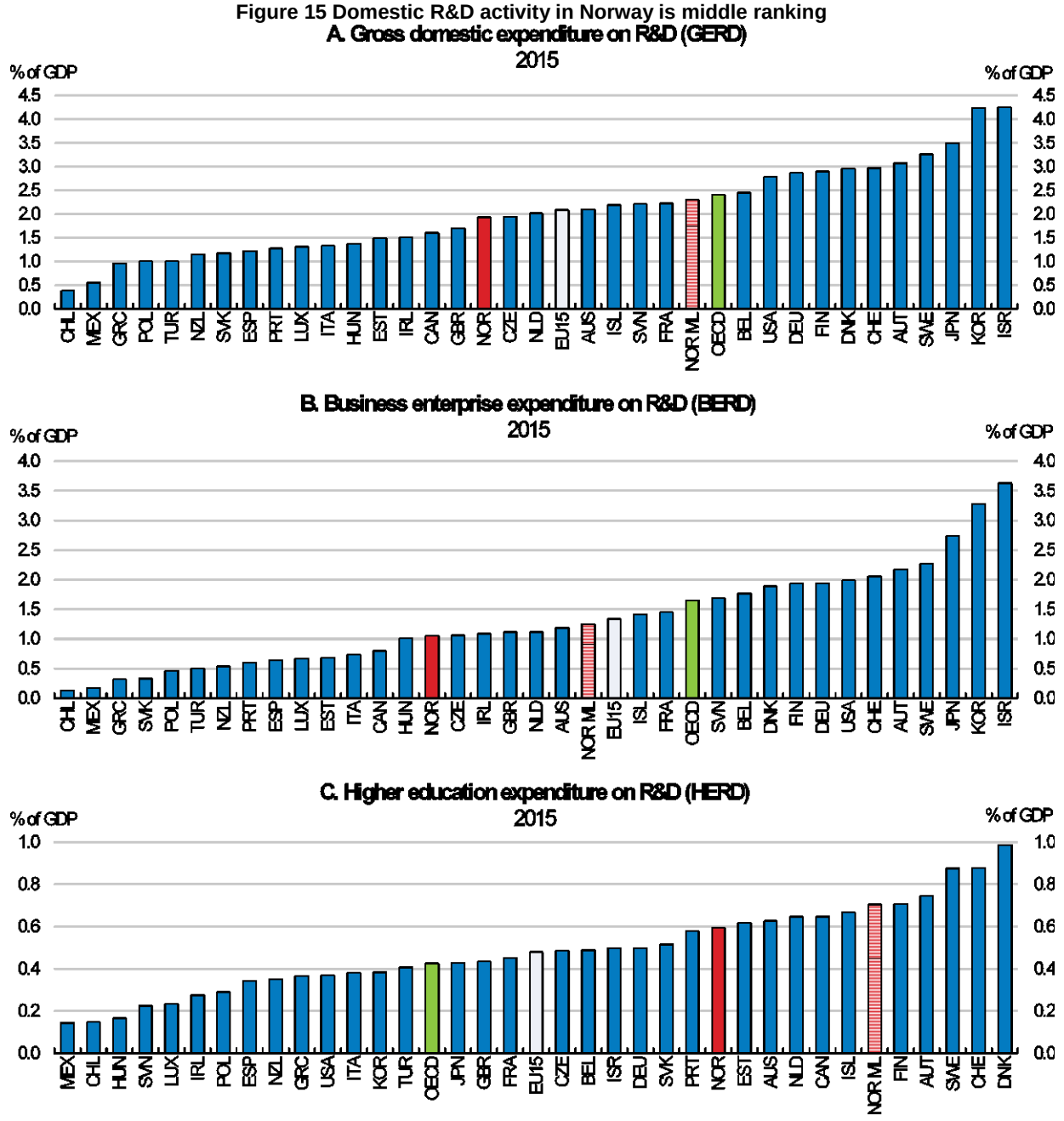
- As a small open economy, much of Norway's productivity-enhancing innovation is "imported", in the form of tangible new products, machinery and equipment, or intangibles, such as software. The increasing internationalisation of production ("global value chains") has raised the role of innovation diffusion via supply chains. Imported innovation underlines the importance of cross-border trade, investment and business linkages, and consequently the importance of ensuring good framework conditions for business. Similar applies for exported innovation, where Norway has strengths in petroleum-sector technology and aquaculture.

- Nevertheless, domestic research and innovation has an important role to play. Furthermore, it can be strongly influenced by policy. Levers include, business R&D tax breaks, research grants and influence via public funding of research in universities and research institutes (the 'research sector'). The research sector's linkage to business-sector productivity growth is complex. Substantial segments are not primarily focussed on bringing gains for the business sector, for instance, this applies to areas of health research. The research sector most directly feeds into domestic productivity when this involves working with the business sector (for example through commissioned research or collaborative research). In addition, domestic research feeds through to global knowhow and then back through to domestic productivity gains. Also, "basic research" plays a key role, for instance through positive effects on the effectiveness of applied research (OECD, 2015a; Saia et al., 2015).

Norway's domestic research and innovation activity, as measured by R&D expenditure, is middle ranking. Overall R&D expenditure is just under 2% of total GDP and 2.4% of mainland GDP (Figure 15).

In all three of its Nordic peers, Denmark, Finland and Sweden, R&D expenditure is closer to 3% of GDP. Norway's business-sector R&D expenditure is a couple of notches further down the international ranking while it ranks better in higher education expenditure. Cross-country differences in industry composition play a role in these comparisons; in Norway's case much business-sector R&D is in petroleum-related sectors. Furthermore, R&D spending does not capture all forms of innovation. Nevertheless, it seems that, broadly, Norway is below par in business-sector innovation, notably in relation to its Nordic peers.

Figure 15 Domestic R&D activity in Norway is middle ranking

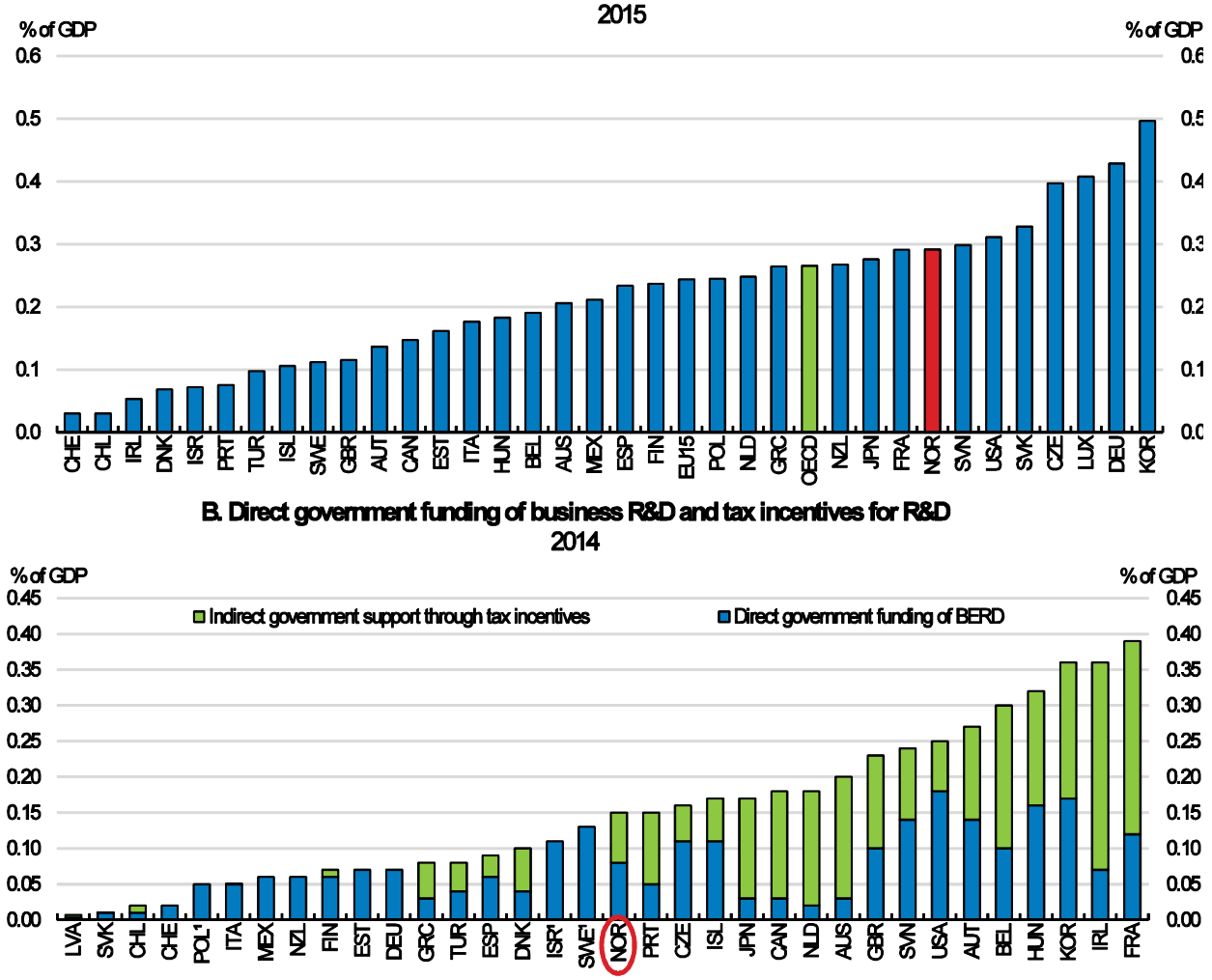


Note: For NOR ML the denominator is Mainland GDP.

Source: OECD Main Science and Technology Indicators Database.

Meanwhile, government expenditure on R&D is comparatively high (Figure 16). Given the middle-ranking overall R&D expenditure this may suggest that government R&D spending is not leveraging a lot of additional R&D activity in the business sector. To an extent this is not a concern, reflecting the non-business orientation of much government-backed research. Notably much government support for R&D is channelled towards improving the public health care system (OECD, 2017d).

Figure 16 Government expenditure on R&D is comparatively high



1. Data on tax incentive support not available.

Source: OECD Main Science and Technology Indicators Database.

Norway's primary policy levers on domestic research echo those used elsewhere. These essentially comprise: i) programmes that provide direct financial support, primarily, R&D tax breaks and research grants; ii) non-direct support for business, such as support for research incubators; and, iii) powers to influence university and research-institute behaviour most notably because block grants form a large part of most of these institutions' funding (Table 2). A recent OECD *Innovation Review* of Norway (OECD, 2017d) contains extensive coverage on the innovation activities of public-research institutes and the higher education sector. In addition it assesses the menu of support programmes. A selective summary of the Review's recommendations is shown in Box 5.

Table 2 Key elements in Norway's innovation support

Policy area	Key aspects
Tax break for innovation-related expenditure (SkatteFUNN)	SkattteFUNN is a tax credit; 20% of R&D-related costs for SMEs and 18% for larger enterprises (with ceilings on the size of the credit). A tax refund is possible if the credit is greater than the firm's total tax liability
Grant programmes run by the Research Council of Norway (an agency operating under the Ministry of Education and Research)	A large-scale grant programme Competitive thematic research grant programmes
Support via Innovation Norway (a state-owned enterprise under the Ministry of Trade and Industry)	Advisory and promotional activities Public procurement for innovation programmes
Support via the Industrial Development Corporate of Norway (SIVA, *Selskapet for industrivekst*, a state-owned enterprise under the Ministry of Trade and Industry)	Cluster programmes Science parks, research parts, incubators, business gardens Venture capital programmes
Block funding for universities and public research institutes (administered by the Ministry of Education and Research)	Block funding comprises a mix of "basic" allocations, which are based on historical values and criteria-based allocations

Box 5 A selective summary of recommendations from the OECD *Innovation Review* (2017)

Innovation support programmes

- More strongly target innovation support towards identified priorities. For instance, cluster policies could be made more selective
- Develop a holistic system of enterprise support that focuses both on R&D of established firms and renewal through start-up development
- Reinforce collaboration across agencies and ministries around key priorities and opportunity-driven innovation policies

Higher education sector

- Focus on excellence and critical mass: prioritise top-class recruiting and career models; further increase the capacity of higher-education leadership to reallocate resources towards excellence; continue funding centres of excellence
- Promote further mergers between providers, mainly among university colleges. However, resist pressure to increase the number of universities; the functional stratification between regional or applied institutions and internationally competitive research-intensive universities should be maintained

Public research institutes

- Use block funding to encourage good performance and incentivize (further) mergers between institutes and with universities
- Ensure that the funds distributed directly by ministries to the research institutes are related to strategic projects
- Encourage collaboration across institutes, include collaboration across institutes as a criterion for funding programmes

Knowledge transfer

- Provide more diversified support to the "third mission" in universities, in addition to increasing the budget of the R&D commercialization programme, FORNY
- Increase incentives for external engagement of academics with industry and other sectors, such as hospitals and the public and voluntary sector. Improve data collection on third-mission activities
- Encourage knowledge-transfer activities of research institutes. Consider additional funding streams, including dedicated commercialisation funds, and/or the inclusion of knowledge-transfer indicators in existing funding

Policy governance

- Use the long-term plan process to gradually enhance the level of multiannual financial commitment and priority setting
- Build upon the long-term plan process and institutional infrastructure to improve strategic and operational inter-ministerial co-ordination
- Provide the Research Council of Norway with a more independent budget to run inter-ministerial strategic programmes
- Incentivise the Council to further reduce the number of funding programmes

Support programmes for business R&D: overall coverage and mix of instruments

The recent OECD review recommends more strategic support (Box 5). It finds that the current menu of policies is comprehensive but geared to supporting existing strengths rather than emerging sectors for innovation. Some steps have been taken to address this. For instance the Research Council of Norway has introduced more strategic-type programmes that encourage the transfer of knowledge across sectors. The review underscores that more shift in this direction would be welcome.

Furthermore, the number of programmes raises concern. Funding growth in recent years has increased an already large number of programmes, which are managed by the Research Council of Norway and Innovation Norway. Reportedly, there is substantial overlap between some of these programmes, and the large number of different schemes makes it a complex system. The OECD's *Innovation Review* suggests incentivising the Council to reduce the number of programmes.

Support programmes for business R&D: the SkatteFUNN tax-break

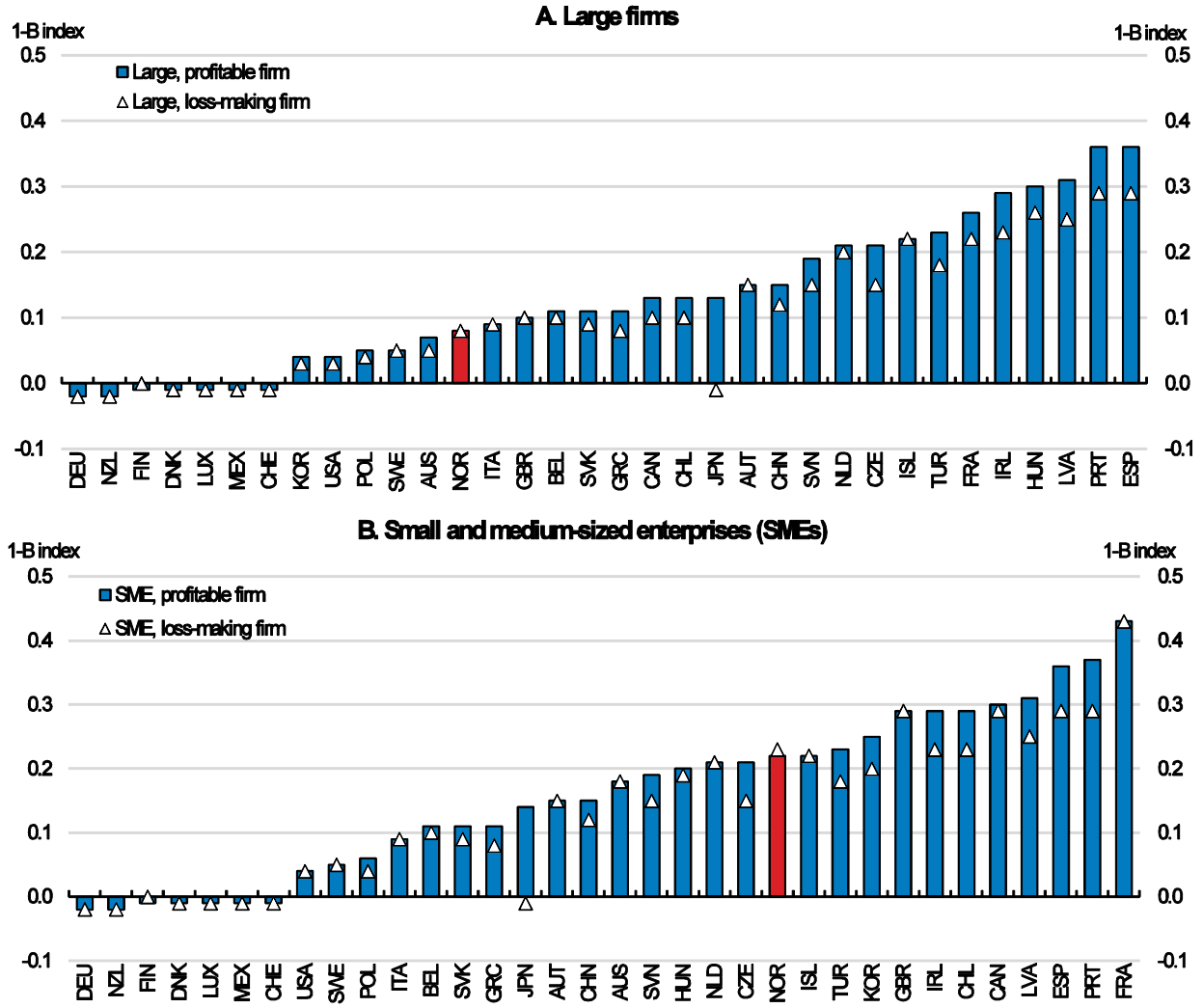
The SkatteFUNN tax break is Norway's largest R&D support programme and its only innovation-related tax break. It is a tax credit calculated as a percentage of eligible R&D expenditures and provides more support to small-and-medium enterprise. When introduced the credit only applied to SMEs. Support has widened since then and there is now only a small gap between the credit rate applied to SMEs and large firms (the rate is 20%, compared with 18% for large firms). Ceilings on claimable R&D costs have been increased significantly from 2013 to 2017, which substantially increased support for larger-scale innovation (and increased the fiscal cost of the scheme). OECD calculations of the "B-index" show SkatteFUNN is middle ranking regarding the marginal incentive to investment in R&D, and, as expected given the structure of the credit, the index is lower for large firms compared with SMEs (Figure 17).

SkatteFUNN has positive features including refundability and a pre-approval system. Refundability in particular implies support for innovative enterprises at an early stage of development when, typically, revenue and profit streams have yet to fully develop. Under the pre-approval system firms apply (and, if successful, receive approval) for the SkatteFUNN credit in advance, which provides more certainty over systems where the tax-break is calculated *ex post*.

As for R&D tax breaks elsewhere, the impact on R&D activity and whether, overall, the tax expenditure is worthwhile are difficult to determine. While the tax break almost certainly has a positive impact on overall innovative activity, estimates of the value of this benefit range widely (in part because of hard-to-measure spill-over effects), so whether the benefits justify the fiscal cost is unclear. Creditably, the Norwegian authorities have initiated several impact studies. For instance Haegland and Moen (2007) estimated that the scheme had input additionality effects ranging from 1.3 to 2.9 per unit of support. A new government-initiated evaluation, due to be published in 2018, should shed new light on SkatteFUNN's effectiveness.

Figure 17 Norway's R&D tax break is slanted to supporting SMEs

2016



Note: The tax advantage is calculated as 1 minus the B index, which is a measure of the before-tax income needed to break even on an additional unit of R&D outlay. The index is calculated for a representative firm according to whether it can claim tax benefits against their tax liability in the reporting period. This is an experimental indicator and international comparability may be limited. See also OECD (2017, Science, Technology and Industry Scoreboard)

Source: OECD Science, Technology and Industry Scoreboard 2017.

Support programmes for business R&D: access to finance is currently high on the policy agenda

As discussed in the context of firm dynamics (see above), administrative processes to set up businesses are quite smooth in Norway. However, access to finance is commonly a constraint on the establishment and growth of firms. Policy intervention can be used to address externalities, the "classic" reasoning for intervention being that there are public returns to research that are not factored into commercial financing decisions. Access to finance for innovative firms can be compromised, unintentionally, by the extensive regulation that governs financial markets.

Policy steps have already been taken. These include proposal in the 2017 Interim Budget for a tax-deduction for private individuals investing in young start-up companies, which essentially implies a 24% subsidy on the investment. The scheme is quite tightly targeted. The deduction is capped at NOK 500 000 (i.e. around EUR 55 000 at an exchange rate of 9 NOK per EUR) and eligibility requirements include that

the company is less than six years old, has less than NOK 40 million in revenue and less than 25 employees. In addition, there are plans to make share-option compensation of employees more attractive. Currently, when the option is exercised, the employees and employers are required to pay, almost immediately, tax and social-security charges. This can be problematic when shares cannot be sold easily as it means finding alternative means paying these costs. The proposed measures reduce the immediacy of these payment demands. A committee (due to report in 2018) has been appointed to further examine access to capital, including those arising from prudential regulation. For instance, Norway's insurance-sector regulation forces asset portfolios to be highly conservative which means the sector invests little in shares or start-ups.

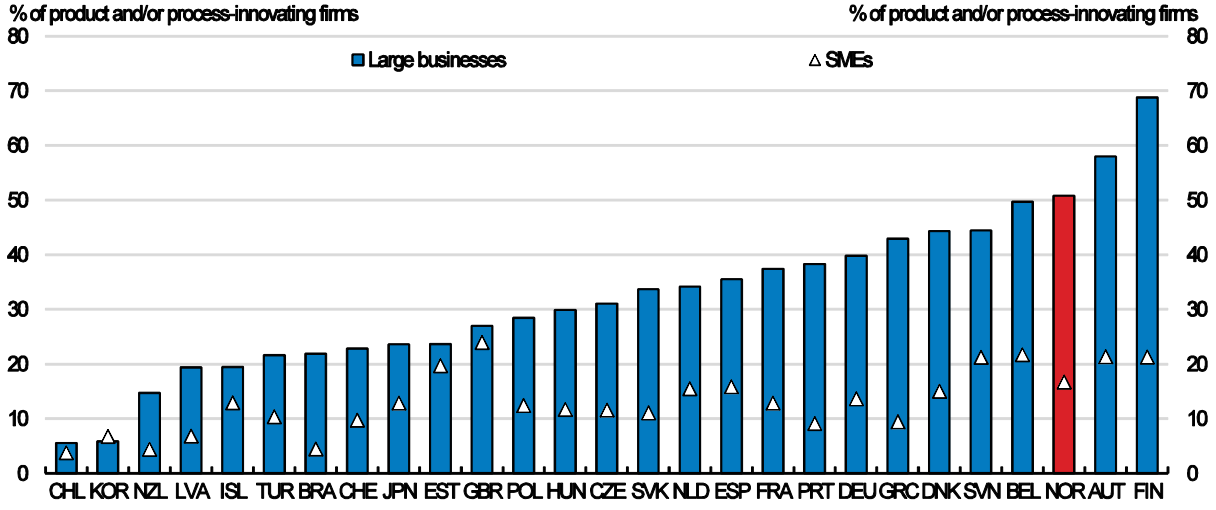
Policy steerage on the higher education sector

Research capacities of universities and research institutes are core to domestic research. Good research capacity is an important draw for business investment and scale effects from collaborative research networks can generate high-productivity growth clusters. According to an OECD indicator, Norway scores quite well in collaborative research (Figure 18). Collaboration between public-sector research institutes and health trusts is, reportedly, particularly strong (OECD, 2017d). Yet industry funding of higher-education expenditure is moderate in international comparison, suggesting perhaps weaker collaboration in this sphere.

Scale of operation is a key issue for research in Norway's higher education sector (which comprises universities and more vocationally oriented "university colleges"), particularly that required for internationally recognised centres of excellence. Mergers underway mark a positive step. Indeed, the response to the government's inducements to merge (see 2016 *Economic Survey* of Norway) was broadly successfully. As of autumn 2017 the number of higher education institutions had been reduced from 33 prior to the merger programme to 21. The final impact of these mergers will depend importantly on the degree to which there is follow-through in mergers between faculties and departments.

Figure 18 Norway scores reasonably in collaborative research

Firms collaborating on innovation with higher education or research institutions, by size, 2012-14



Source: OECD Science, Technology and Industry Scoreboard 2017.

Recent reforms to block-grant funding aim to improve research incentives. The reforms partly aim to re-shape research incentives with new components added to the block allocation linked to research activity (Table 3). In addition, a roll-out of performance agreements is underway that will see further alteration of research incentives via the funding system.

Table 3 Block-grant funding for higher education following the reforms of 2017

Component of funding	Share of aggregate higher-education revenues (approximate and will vary across institutions
Block-grant funding continues to account for around 80% high-education provider revenues (in aggregate), 20% from various other sources	80%
Of which: **A) roughly 70% remains based on an institutions historical budget level ("Basic Component")**	56%
B) the remaining 30% of block-grant funding comprises:	24%
1. **"Open-ended component" (**85% of the 30%). This budget allocation is "open ended" and the allocation formula now comprises: - Credit points (64%) - Graduation rates (15%) (new) - PhD graduates (5%) (new) - Exchange students (1.2%)	20%
2. **"Fixed-limit budget components"** a fixed limit budget equivalent to roughly 15% of the 30% remainder). The allocation formula now comprises: - Publication Credits - Research Council of Norway funding - EU funding and similar - A contract research indicator	4%

Policy steerage on research institutes

Norway's research-institute sector is comparatively large. There are over one hundred institutes, of which 44 are recipients of state block grants (OECD, 2017d). Areas of specialisation include aquaculture and health care. There are some large players among the over one hundred institutes. For example, SINTEF (*stiftelsen for industriell og teknisk forskning*, "foundation for industrial and technical research"), a research institute headquartered Trondheim has around 2000 employees. Nevertheless, many institutes are small, arguably too small in many cases. There have been voluntary mergers in recent years and there is a case for inducing more though a similar government program to that implemented in higher education. In addition, stronger encouragement for exploiting synergies between institutions should be considered.

Similar to higher education, funding reform is being used to induce change in the research-institute sector. Funding of research institutes is complicated because several ministries are involved. A common performance-based mechanism for one segment of budget allocation aiming, *inter alia*, to strengthen scientific quality and collaboration was introduced in 2009. However this still does not apply across all research institutions and room remains to harmonise the performance indicators used (OECD, 2017d).

Policy strategy and governance

The OECD *Review of Innovation Policy* considers strategic steerage in innovation policy. Since 2014, strategic guidance has begun to operate through four-year rolling "long term plans" that look one decade ahead. At present the emphasis is on guidance, as the plans do not lay down binding commitments. The review recommends these plans include more defined financial commitment and provide a stronger inter-ministerial and operational co-ordination. In addition, the review underscores the challenges faced by the Research Council of Norway as the central conduit for the programmes of several ministries. It runs more than 30 major programmes and many smaller ones. The review suggests the Council is provided with a more independent budget for running inter-ministerial programmes and incentives to reduce the number of programmes (Box 5).

Facilitating new forms of business

As elsewhere, internet-platform businesses (so-called "disruptors") are growing in scale and scope in Norway (for general discussion see OECD 2015b). Disruption in personal transport and short-term

accommodation has so far attracted most attention. Disruption on other fronts is emerging, for instance in financial and legal services. In a welcome move, the Norwegian Government established a committee to look into the 'sharing economy', which accounts for much of the new wave of business models. The committee delivered its report in February 2017 (NOU 4, 2017).

Policy needs to embrace disruption, though not unconditionally. As OECD *Surveys* have pointed out (for instance OECD, 2017e), disruption can bring widespread benefits to households (and businesses) through lower-cost and better quality goods and services. Smoothing the way for disruption may require countering incumbents' attempts to stifle new entrants. Furthermore, there can be unintended obstacles to disruption in legislation and regulation that could be removed without negative consequence. However, support for disruptors should not be universal, as some business models bring downsides for consumers and service providers or may be based on undesirable exploitation of regulation or taxation.

Labour dimensions of disruption are particularly challenging in the Norwegian context

Sharing economy business models are typically founded on using internet platforms to create a point of exchange for supply and demand. In some cases the service providers (e.g. drivers of taxi-like services) operate under some form of non-standard work category; such as self-employment and temporary employment contracts (for a general discussion see OECD, 2016b). For service providers this can bring welcome independence and flexibility but involves greater risk and less protection than regular employment, prompting debate as to the relative merits of some sharing economy businesses (OECD, 2016b).

Norway's legal framework regarding non-standard work arrangements is provided by the Working Environment Act of 2005 (*Arbeidsmiljøloven*). Key elements in definition of "employee" are whether the individual has *a*) a personal and ongoing duty to work and b) a duty to submit to another person's management, instructions and control. The nature of the relationship between the service providers and the management and owners of digital platforms in areas such as taxi-like services indeed suggests the situation is by no means clear cut. For instance, the digital platforms, to an extent, set rules about the service provided, which can be interpreted as being under managerial control. In terms of policy action, the key question is whether the existing system of legislation and procedure can handle these new questions regarding status as an employee. The majority of the members of the committee on the sharing economy concluded this was the case.

Recommendations have been made to strengthen sub-contractor rights. Network effects in the sharing economy can result in markets dominated by a handful of operators (or even just one), leaving the (sometimes numerous) subcontractors with little bargaining power. Norway's sharing-economy committee discussed giving subcontractors the right to negotiate collective agreements in situations where the internet platform sets the services prices. Making service-provider ratings portable could also help.

Taxation of service providers in the new business models

Differences between service providers in incumbent and disruptor business models often mean differences in the way they are taxed. The small scale (and low revenue amounts) of service providers often contrasts with incumbent providers and this drives differences in tax treatment. For instance, based on data provided by internet-platform providers, the annual income from taxi-like services or short-term rentals in Norway is typically around NOK 20 000 (i.e. around EUR 2 200 at an exchange rate of 9 NOK per EUR). Small-scale income based on one-time services per client is typically treated as freelancer labour income and not as business income. Such small-scale income service providers are entitled to a tax free income of NOK 1 000 (NOK 6 000 in the case of work in client's home or holiday home) per client. This entails a tax advantage compared to the self-employed, whose surplus is taxable from the first krone. The Sharing Economy Committee suggested simplifying tax treatment of small incomes from services, including service provision that would otherwise not be taxed.

In Norway some of the most thorny tax questions relating to disruption are in the accommodation market:

- Similar to some other countries, rentals of private accommodation are not subject to VAT, representing a tax advantage over "traditional" accommodation providers. This relates to a wider issue of VAT thresholds (see below).

- Various exemptions on non-commercial accommodation rental income further add to differences in tax treatment with traditional providers. The income from renting out up to half of a person's own home is free from tax. If more than half of the home is let out rental income is also free from tax up to NOK 20 000 per annum. A majority of the Sharing Economy Committee suggested that income from short-term tenancy agreements should be taxable also for residential landlords. In the 2018 Budget the government has proposed that rental income from tenancy agreements lasting less than 30 days will be taxable capital income.

- Classification as a commercial activity (which brings heavier tax and reporting duties) is unclear. For instance, rental activity combined with significant input in the form of private work (such as cleaning) can justify re-classification.

Increasing numbers of small-scale providers have brought VAT thresholds under the spotlight. Thresholds for VAT collection, if set low, can impose heavy administrative burdens on small-scale operators in return for little fiscal revenue. Meanwhile, high thresholds can put substantial sub-groups of providers at an advantage. The Norwegian threshold, equivalent to only around EUR 5 500 per year (Table 4), implies a lot of small-scale activities are obligated to report VAT.

Also as regards small-scale provision, the committee on the sharing economy suggests introducing "third party disclosure rules" to sharing-economy platforms akin those that apply to traditional businesses. For instance, the platforms could be obliged to report details on the independent operators using their system, including details of revenues. The latter could the then be automatically fed into tax administration data on individuals' incomes. Small-scale providers can be further helped by information campaigns on their tax situation. This has already been addressed in Norway; the tax authorities have published information regarding the taxation of short-term rentals and other sharing economy activities.

Table 4 Selected tax details relevant for the sharing economy

Area of taxation	Selected detail (EUR values approximate, based on an exchange rate of 9 Norwegian Krone per Euro)
Value-added tax (VAT)	• VAT threshold: operations with sales of more than NOK 50 000 (EUR 5 500) during a 12-month period are subject to VAT • Real-estate rental is exempt from VAT legislation (the Value Added Tax Act)
Income-tax treatment of small jobs/services	• General rule: labour income up to NOK 1 000 (EUR 110) per client is generally exempt from taxation. If remuneration is higher than NOK 1 000, then the whole remuneration is taxable • Labour income from work performed in a client's home or holiday home (e.g. cleaning services) is exempt up to NOK 6 000 (EUR 650) per client
Income-tax treatment of revenue from non-commercial rental (e.g. of houses, vehicles)	• General tax-free threshold of NOK 10 000 (EUR 1 100) per taxpayer per year. Renting out up to half of own home is free from tax. If more than half of own home is let out, up to NOK 20 000 (EUR 2 200) is free from tax
Other	• Taxis are subject to lower motor-vehicle registration tax and lower annual vehicle tax (though all electric vehicles, taxis or otherwise are entirely exempt)

Transportation-sector disruption has not got that far in Norway

Personal transport services such as Uber are in most cases illegal in Norway due to compulsory taxi licencing. The situation is akin to that in some other countries. In Norway, the legality of the drivers rests on whether they can be considered to operate as a transport service under the Professional Transport Act. In principle, applicability of the term "operate" is determined according to various factors such as frequency of operation and whether the vehicle is systematically used for commercial purposes. The Norwegian taxi regulation contributed to the termination of Uber's unlicensed service (UberPop) in October 2017.

Meanwhile, Norway's taxi licencing system remains largely unreformed. Similar to taxi regulation in many countries, the licencing system includes regulations endeavouring to ensure service availability, passenger safety and protection from abusive charging practices. However these regulations often also serve to protect incumbent operators. The numbers of licences are set by county governments according to an assessment of need but the challenges in doing this invariably means there is mismatch between supply and demand. Among the various criteria, licence holders (who may be taxi drivers, or employers of drivers) must be a member of an approved taxi dispatch centre, and the provision of taxi services must be their principle occupation. The taxi drivers themselves are subject to a range of additional criteria, including (in some localities) tests of geographical knowledge. Though the taxi sector has modernised to an extent (for instance options for booking online have been developed), there is little justification for retaining the system in its current form. As recommended by the committee on the sharing economy, wholesale replacement of the current taxi-licencing system with less restrictive regulation to address availability and consumer-protection would be welcome. Pressure for change has already come from the EFTA Surveillance Authority, which in February 2017 delivered a "reasoned opinion" questioning the legality of limiting the number of taxi licences in the context of EEA laws on freedom of establishment.

Disruption in the accommodation market has been less contentious

Short-stay rentals via companies such as Airbnb, occupy a small but growing market share. For instance, as of 2015 Airbnb accounted for nearly 2% of the total number of overnight stays (NOU, 2017). As elsewhere, short-term rentals are probably expanding the accommodation market because the services are somewhat different from traditional accommodation providers (hotels, guest houses). Nevertheless, these services will have taken some business away from traditional providers, though exactly how much is not known.

Short-term rentals do not face major controversies in Norway but there are issues. In particular:

- Building regulation. Short-term rentals are typically private homes, and therefore subject to different (usually lighter) building regulation compared with traditional accommodation in areas such as fire safety and electrical systems. In Norway, much building regulation lies in the hands of municipalities and so any policy response to this issue will be heterogeneous and may be a vehicle for protecting vested interests.

- Legal provisions to protect neighbours. Under Norway's legislation, home owners can be required to apply for a change in use if is deemed that accommodation is used for activities resembling a hotel or commercial operation and that this results in increased traffic noise or other inconvenience. Such provisions provide useful protection for local residents but, as with building regulation, can end up as an instrument for those opposed to short-term lets.

- Threat to the ordinary rental market. In some cities in Europe and the United States restrictions on short-term rents have been introduced that reflect concerns for the negative impact on the ordinary rental market (higher prices, reduced availability). So far this problem has not become prominent in Norwegian cities. This is partly because the long-term rental market is comparatively small (rates of home ownership are very high).

Policy can help ensure a balanced development in short-term rents. Ensuring good information on the rules and regulations that apply to private rents helps reduce uncertainty for renters and clients. In addition, there is value in monitoring and encouraging an exchange of experiences across local government on building regulation and the application of laws. This can help improve practice (and prevent regulatory changes from being used unreasonably to protect commercial or local interests).

Maintaining strong and flexible labour supply

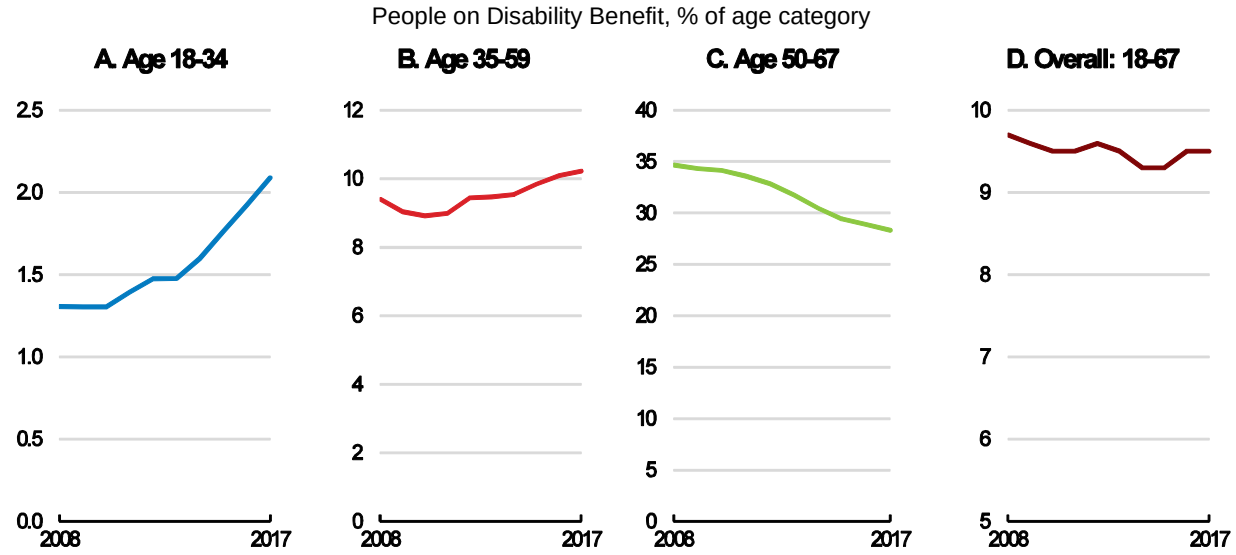
Norway scores well in many aspects of labour supply. High levels of labour-force participation, especially among women, high educational attainment, and low rates of long-term unemployment mean there are few groups with weak skills or little work experience. Furthermore, Norway's membership of Europe's core agreement on the free movement, the European Economic Area, facilitates international labour migration (notably from eastern-European countries, such as Poland), providing an important source of supplementary labour supply. Retaining these channels for labour migration will be important for helping Norway's economy cope with business-cycle fluctuations in the future. This said, Norway's high rates of home ownership, fuelled by unusually favourable tax treatment, may to an extent be limiting household and labour mobility; providing another reason for reform. In addition, labour-market withdrawal among older cohorts remains a challenge for policy.

Sickness and disability benefit reform

Norway's sickness and disability system has become a channel for *de facto* early retirement. The authorities face the difficult challenge of ensuring the system provides individuals with appropriate support for disability, while encouraging those with capacities for employment to remain in the labour force. The route to early retirement typically entails individuals transitioning from paid sick leave (which lasts up to one year), to a rehabilitation-type benefit, the Work Assessment Allowance, AAP, which can be provided for up to four years (from January 2018 the main rule will be three years) and then to the national-insurance funded Disability Benefit. The latter may be supplemented by income from occupational disability pension schemes.

Progress has been made in reducing recipiency, but concerns remain. For instance the proportion of 50-67 year-olds receiving the Disability Benefit has been declining (Figure 19). Nevertheless, the recipiency rate in this cohort is nearly 30% and the decline is recipiency is partly due to increased numbers receiving the rehabilitation benefit. Around 5% of the working-age population receive the latter benefit and about 3.5% receive the sick-pay allowance. Furthermore, there has been increase in the share of Disability Benefits among young and middle-aged cohorts. Though the recipiency rates remain low, the development is of some concern.

Figure 19 Recipiency of Disability Benefit is declining among older cohorts but rising in young age groups



Source: Norwegian Labour and Welfare Administration (NAV).

Past and ongoing reforms have significantly improved the sickness and disability system. There are provisions for gradual return to work, a fine grid of partial disability benefits along with comprehensive rehabilitation, training and work placement services. Recent reforms to sick leave (Table 5) include efforts to strengthen medical assessment. In addition, changes in the Work Assessment Allowance will be implemented from January 2018. The long-standing series of agreements between the government, employers and unions, the Inclusive Working Life Agreements, which aim to reduce sick leave continue. Prima facie, these agreements help prosecute reform. Yet despite operating since 2001, the impact of the agreements on sick leave has been underwhelming. One reason may be that, to date, the Agreements have contained a clause that prevents government-initiated changes to the sickness system while the Agreement is in operation. Disability-Benefit changes introduced in 2015 included steps making that make it easier to take on paid work and there is evidence that these moves have increased labour supply (Alne, 2016).

The ongoing efforts to improve the sickness and disability system can only be applauded. As urged in OECD *Economic Surveys*, reform should consider:

- Prolonging the employer-financed phase of sick leave so as to strengthen incentives for businesses and public-sector employers to take preventative measures.

- Reducing the generosity of payment. Tackling generosity may require reining in pay outs provided by the supplementary disability schemes, as well as the publically funded components to be effective.

- Tightening medical assessment procedures, especially through more third party medical assessment. Medical assessment has been the subject of reform in the past. Most recently a new medical assessment after six months of sickness benefit has been trialled. However, the medical-assessment process still relies heavily on input from the individual's GP which can raise the risk of leniency to help individuals remain on benefit.

- Re-thinking the Inclusive Working Life Agreements, especially regarding the clauses that restrict alteration to the sickness leave system.

- Increasing the minimum age at which the Disability Benefit can be accessed to 30 years or higher, accompanied by the strengthening of efforts to bring and keep these young adults in the labour market through multidisciplinary, integrated services. Denmark has experimented with this approach in recent years with considerable success.

Table 5 Norway's sickness and disability system: key features and recent initiatives

Sick leave	
Key features	• Employer pays sickness benefit for the first 16 calendar days, the benefit can be paid for a total of one year • Follow up requirements include: formulation of a return-to-work plan by employer and employee within four weeks, an expanded medical certificate and requirements regarding activity after eight weeks • As a main rule, a compulsory dialogue meeting after 26 weeks between NAV, the employer and the person receiving sickness benefits
Recent measures	• A trial new requirement for a medical assessment after six months of sick leave has been completed • Introduction of guidance for doctors on the appropriate length of sick leave • Ramped up implementation of rules requiring that those on sick leave beyond eight weeks are subject to activation requirements
Work Assessment Allowance (AAP)	
Key features	• Principally aims to get individuals into employment, targets those who have been assessed as having at least 50% impairment in work capacity • Receipt of the benefit is conditional on following an agreed activation plan • Those reaching the end of one-year of sickness leave may apply to the scheme
Recent initiatives	• New rules will be implemented from January 2018, including the rules governing the duration of the scheme
Disability Benefit	
Key features	• Provides long-term disability support for those of working age (i.e. 18 to 67 years) and can be supplemented by a disability pension from a public occupational scheme • Income from employment is permitted though benefit is partially withdrawn for income levels above certain limits
Recent initiatives (2015 reform)	• The disability pension system is no longer part of the old-age pension system. This, inter alia, has resulted in disability benefit being taxed as wage income • Combining disability and work income has been made easier

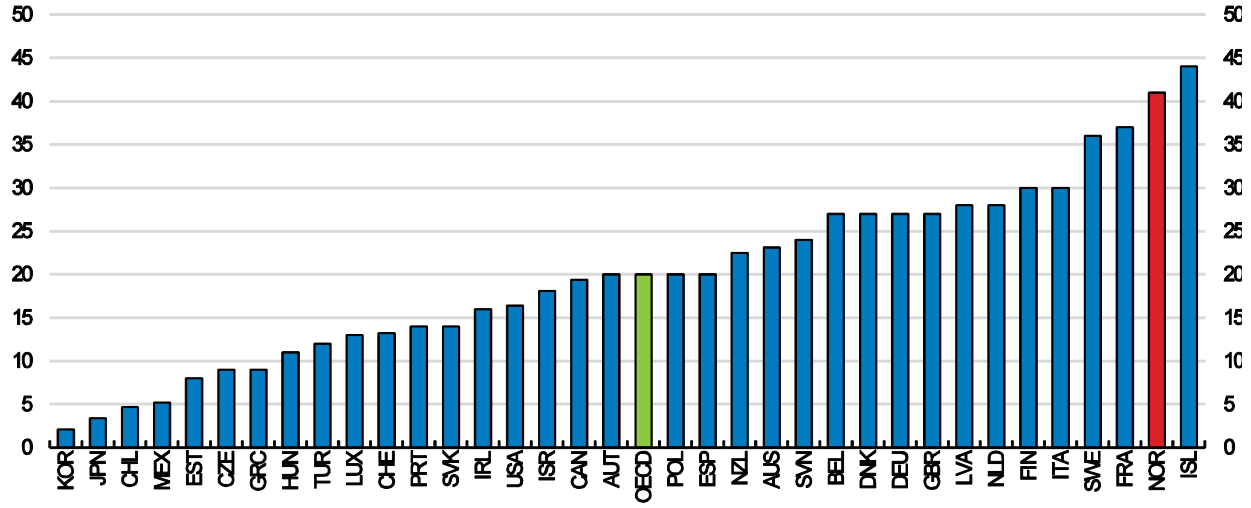
Supporting further advance in workplace gender balance and improving child care

While Norway scores well in terms of gender balance and businesses are tapping more effectively into the female talent pool than many countries, this does not preclude the need for further policy action nor the presence of weak points in existing systems.

Norway's progress on strengthening women's role at the top-end of businesses has been impressive but there is still room for further advance and progress has proven slow. It has taken considerable time to achieve the nearly 45% share of women on the boards of the largest companies (Figure 20). A legislated gender quota of 40% applied to listed companies in 2003 but was only met with a substantial response following the introduction of sanctions. Furthermore, the response was, in part, negative; about a third of the approximately 560 companies concerned delisted in response to the sanctions. Therefore progress has been less substantial than appears in Figure 20. In addition, the impact on enhancing women's careers more generally appears to have been limited (Bertrand et al., 2014), although further positive effects may emerge in the coming years. There remains ground to cover, given it would appear small and private companies are not yet tapping fully into female talent. Extension of quotas may not be the right tool in this context, or indeed feasible, due to the legal rights of private companies. Instead, continued policy efforts to identify, nurture and promote female talent are probably a more fruitful way forward.

Figure 20 Norway has been a leader in getting women on company boards

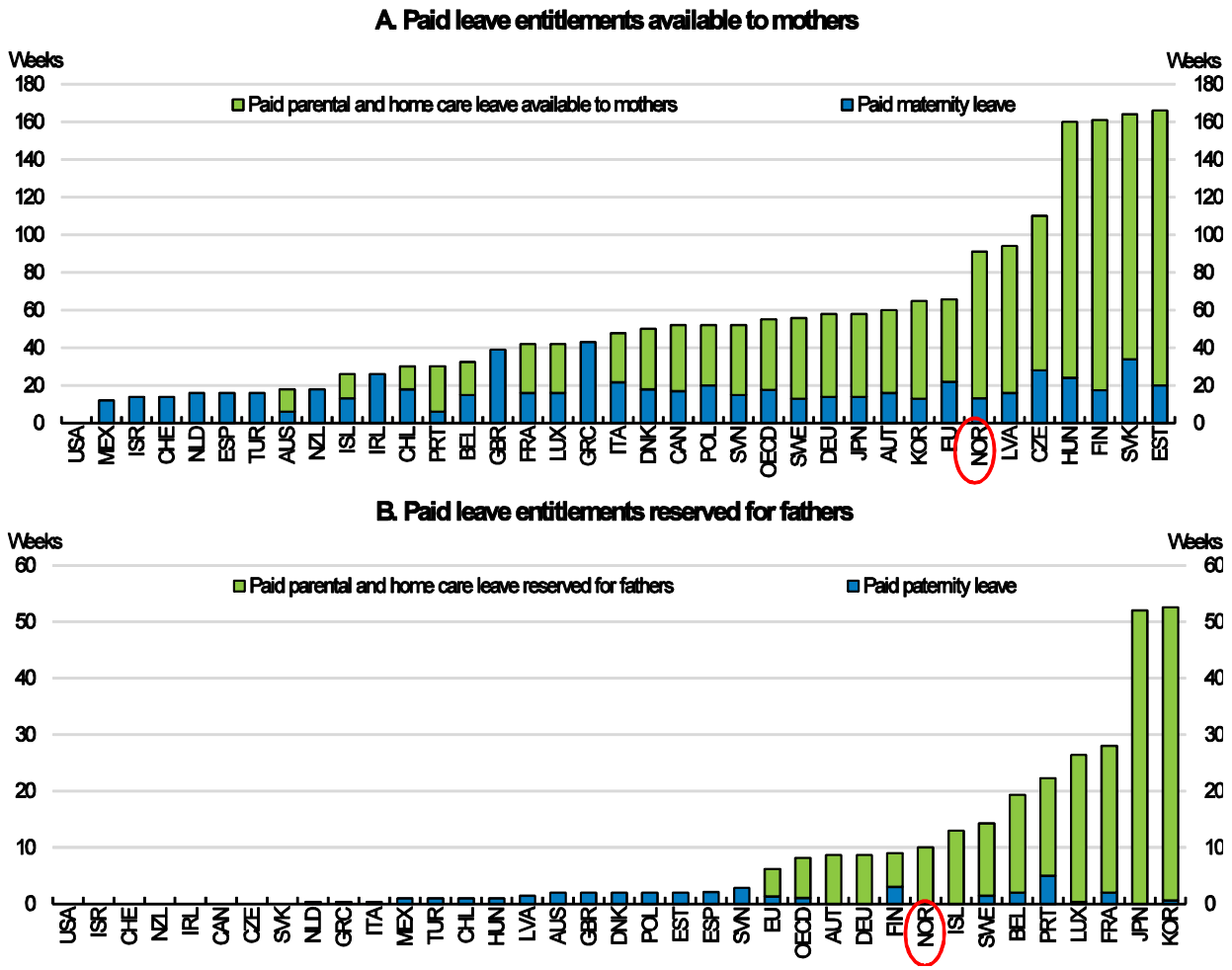
Female share of seats on boards of directors in publicly listed companies, 2016 or latest available year



Source: For EU countries, Iceland, Norway and Turkey, EC Database on Women and Men in Decision Making, (http://ec.europa.eu/justice/gender-equality/gender-decision-making/database/index_en.htm); for all other countries, Lee et al. (2015).

Norway's system of parental leave and child care is generally comprehensive, but not without room for improvement. Parental leave provisions are generous in Norway, facilitating the initial months of child care and providing stability of employment and income (Figure 21). As discussed in the 2016 OECD *Economic Survey*, parental-leave provisions took a potentially backward step with regard to gender balance with reduction in the leave that is reserved for the mother and father individually (with corresponding increase in the "shared period"). This is likely to have reduced use of parental leave by men as less leave is reserved exclusively for them, thereby diminishing women's labour-market opportunities. As regards child care, a recent general OECD assessment (OECD, 2016c) underscores that it is often low-income groups that make the least use of childcare, largely linked to mothers not working, but children from these groups often have the greatest potential benefit from childcare in terms of cognitive development. IMF assessment (IMF, 2017) makes a specific suggestion to improve coverage. A child-care place is guaranteed for children who turn one no later than the end of November in the year they apply for a place. Those turning one after end November are entitled to a place in August the following year. Thus, parents with children turning one-year old just after the end of November in effect are not guaranteed a child-care place until the child is nearly two years old.

Figure 21 Paid parental leave is comparatively long
2016



Notes: Panel A: Information refers to parental leave and subsequent periods of paid home care leave to care for young children (sometimes under a different name, for example, "childcare leave" or "child raising leave". Panel B: Information refers to entitlements to paternity leave, "father quotas" or periods of parental leave that can be used only by the father and cannot be transferred to the mother, and any weeks of sharable leave that must be taken by the father in order for the family to qualify for "bonus" weeks of parental leave.

Source: OECD (2017), OECD Family Database.

Education to help business and households thrive under globalisation

Education and training (human capital development) fundamentally drive Norway's capacity to thrive on the changes brought by globalisation and to cope with challenges of long-term shrinkage in petroleum-related activities and population aging.

Reform efforts in compulsory education and degree-level education head in the right direction

Ensuring primary and secondary education provides, *inter alia*, sound basic skills. As underscored in the Assessment and Recommendations of the latest OECD *Econonmic Survey* of Norway, Norway scores reasonably in the OECD's PISA tests, but there is room for improvement. Primary and secondary education reforms currently include a major curriculum overhaul (the previous major review was in 2006) and efforts to improve the management of schools.

In higher education the labour-market relevance of courses and length of study are frequently the subject of debate. Enrolment in tertiary education in Norway has long been high, helped by generous support for students (generally, there are no tuition fees and students receive support for living expenses). However, as discussed in OECD *Economic Surveys* of Norway, this support may be unhelpfully weakening the influence of vocational and career considerations in the choice of subjects and intensity of study (students in Norway tend to be older on graduation than those in other countries). There is little appetite in Norway for a substantial downgrade in student support. Nevertheless, there is room for policy action. OECD *Surveys* suggest, for instance, altering living-expenses support for students and block-grant funding formulae with criteria that encourage course completion. This approach could also be used to influence subject choices by students and course offerings by providers.

In addition to improving choices on the demand side in higher education, there is opportunity for supply-side improvement. Welcome progress is being made to improve the quality of teaching and courses in higher education, a topic raised in OECD *Surveys*. A white paper was published in early 2017 (Ministry of Education and Research, 2017) that identifies a range of weaknesses, including uneven academic standards, cases of poor course design, insufficient use of active teaching methods (e.g. tutoring). The paper proposes several routes for improvement, including more use of peer review and monitoring in teaching and developing a competitive arena for teaching (in a similar way to research).

More broadly, a welcome campaign focusing on skills is underway. Over the past two years the government has engaged in a major effort to develop a policy for improving skills, partly prompted by the OECD's Skills Strategy project with Norway, which led to diagnostic and action reports (OECD 2014b and 2014c). In February 2017 the Norwegian Strategy for Skills Policy 2017-2021 was launched with wide support from ministries and stakeholders. In addition, a committee examining future skills needs has been established. Such efforts to address skills can only be applauded, given the pay-off for businesses as well as households.

Challenges in Norway's upper-secondary vocational education

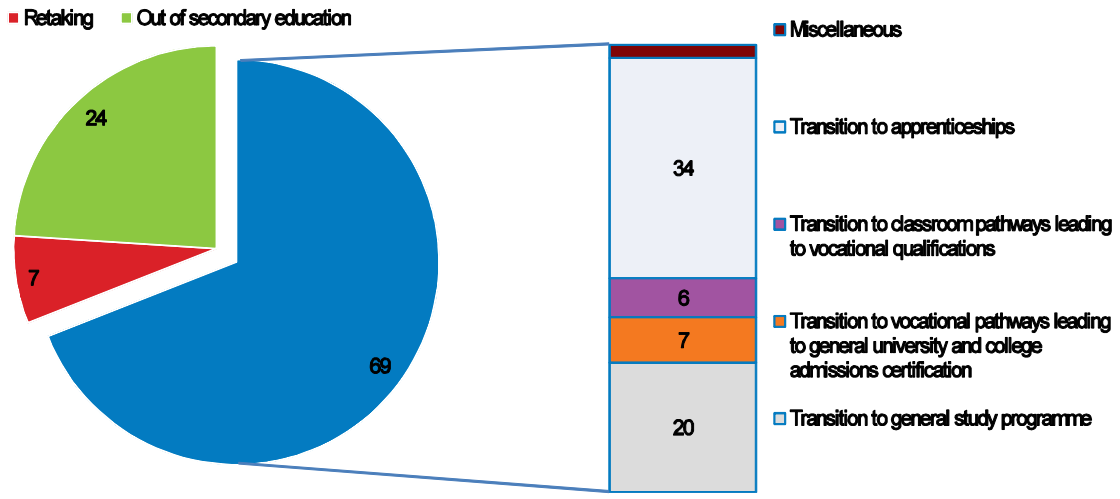
Globalisation reinforces the importance of skill-based education. The markets for jobs requiring little or no post-compulsory education are shrinking and are increasingly concentrated in areas with a strong supply of workers that have comparatively low reservation wages (in Norway's case often via labour migration). Vocational education is the chief channel for raising the employment and earnings capacities for those that would otherwise be on low-skill, low-wage trajectories, and for providing employers with ready-to-go skills for many types of work. Assessment of Norway's vocational education is part of an upcoming OECD *Investing In Youth* study (OECD, 2017f) and the following paragraphs draw on this analysis.

Most vocational training in Norway is provided by upper-secondary schools. The schools are the responsibility of county-level government and are inclusive in that students have the right to attend for three years, irrespective of previous schooling performance (the students are generally aged 16 to 19). Practically all students completing compulsory education enrol in upper-secondary courses and it is a national policy that all students attain an upper-secondary diploma. Upper-secondary education is also "integrated" in that students of all backgrounds and abilities are taught within each school. Within each school there are two tracks, an academic ("general") stream (*studiespesialisering*) that principally channels students into degree-level tertiary education and a vocational stream (*yrkesfag*, meaning "professional"). Apprenticeship courses are a central pillar of this latter stream. These are generally structured on a 2+2 basis; i.e. two years of full-time study is followed by two years of training and work experience with an employer.

The inclusiveness of Norway's upper-secondary education is positive, but brings challenges. Particularly in the vocational stream, there is a diverse intake in terms of student abilities, motivation and background. This is reflected in the wide range of paths followed by the vocational-stream students. According to a data published by the Norwegian Directorate for Education and Training (Figure 22), 20% of second-year students transition into the general stream in the third year of study (transition is possible through one-year conversion courses). Meanwhile, nearly 25% of students are no longer in the system by the end of the third year, apparently "dropping out".

Figure 22 Many vocational-stream students do not complete courses

Transitions from the second year of upper secondary vocational strudy programmes to the third year of education. 2014, %



Source: The Norwegian Directorate for Education and Training 2016: The education mirror 2016.

Non-completion of vocational-education courses has long been a policy concern. It is partly explained by Norway's tight labour market; job opportunities prompt some to leave upper-secondary school before graduating. While this has positive dimensions, there is a risk that early leavers are putting themselves onto a trajectory of low-paid, unstable and unfulfilling jobs for the longer term. Non-completion is particularly high in restaurant and food processing programmes, and the reasons are telling. Students entering these programmes typically have poor grades from lower-secondary school and many have special needs (Norwegian Directorate for Education and Training, 2017), which indicates that many early leavers are indeed vulnerable to poor socio-economic outcomes for the longer term.

Shortages in the two-year apprentice placements with employers are a key problem. Around one third of students do not find a placement (Norwegian Directorate for Education and Training, 2014). Furthermore, though schools provide one-year courses for students that cannot find placements, few students take them up. Of around 6 000 students who failed to find apprenticeships in 2013, only about 350 took up the school based alternative. According to one study (Mogstad Aspoy and Nyen, 2015), the one-year courses are unpopular because of the lack of work-based training; the absence of apprenticeship earnings is likely to be an additional factor. The vast majority of those that do not get an apprenticeship place either drop out or pursue routes to higher education. The most recent major policy initiative to encourage employers to offer apprenticeships, the "social contact for VET", aimed to increase the number of places by 20% between 2011 and 2015. The scheme comprised a ranged of measures including a cash

bonus equivalent to around EUR 6 200 for businesses taking on apprentices for the first time. The scheme was partially successful, increasing apprenticeships by an estimated 10% (OECD, 2017f). In addition, as mentioned above in the assessment of business regulation, there are now requirements for public procurement contractors to run apprenticeship programmes—a plus for apprenticeship places but potentially limiting access to public procurement contracts for foreign companies.

Apprenticeship wages are one factor dissuading the supply of apprenticeship places. The wages are set as part of collective agreements. According to calculations in the upcoming OECD *Investing in Youth* study, first-year apprentices cost around 16% of a skilled workers salary (with government subsidy included in the calculation) but this rises to 60% in the second year due to the increase in the regulated wage. The OECD study further points out that apprentice wages in Germany and Switzerland start at roughly the same relative cost but only increase to around 30% of the skilled worker wage. This would suggest that Norwegian reform should either seek to flatten the apprentice wage award and/or increase subsidies to employers. As regards the latter, the OECD study suggests reintroduction of a bonus to employers on the graduation of apprentices benefits along the line of a scheme that operated in the late 1990s.

Apprenticeship wages are unlikely to be the sole explanation for the shortage of apprenticeship places. The apparent shortage may reflect that employers have tapped optimally into the talent pool and that students who cannot find apprenticeship places are not considered suitable. This would suggest a need for further work on improving student abilities and their relevance for the workplace. Furthermore, an OECD analysis of apprenticeships in the sparsely populated Nordland region (OECD, 2017g), emphasises that greater flexibility on how apprenticeships are scheduled (i.e. alternative arrangements to the current 2+2 approach) could allow course structures that suit both students and employers better. The report also underscored the role of training offices in deepening linkages between schools, students and employers and the importance of supporting transport (and accommodation) for apprentices in remote regions.

Box 6 Recommendations on maintaining a successful business sector in a changing world

Further cultivate business framework conditions that promote flexible markets and competition:

- Continue addressing weak points in competition legislation, in particular re-consider sectoral exemptions, such as those in agriculture
- Slim down the wide-ranging portfolio of state stakes in business through privatisation, especially where these are held in companies operating in competitive and well-functioning markets

Scale back and rebalance taxation:

- Complete the programme of income-tax rate cuts, and consider further reductions
- Reduce the tax distortions in housing. Either carefully phase out mortgage-interest relief or increase property taxes on housing as a proxy for implicit rental income while paying attention to symmetries in the tax system
- Consider further wealth tax reduction given its substantial impact on the returns to saving in the current low-return environment, while paying attention to inequalities

Ensure policy settings encourage good firm dynamics:

- Strengthen routes to recovery in the insolvency regime for businesses in difficulty, through lighter penalties for failed entrepreneurs, better prevention and streaming mechanisms and more restructuring tools

Ensure Norwegian business makes the most of innovation:

- Maintain a free-trade policy and facilitate cross-border investment and business linkages
- Work further on ensuring impact from the R&D tax credit given its central role in supporting innovation
- Reduce the number of targeted innovation support programmes and review their focus as per the OECD *Innovation Review*
- Tackle regulatory barriers to the supply of credit to high-risk, small-scale enterprise
- In higher education and in research institutes, and as per the OECD's *Innovation Review*, focus on excellence and critical mass, including through use of block-funding to re-shape research incentives and through supporting institutional mergers

Encourage market entry by innovative business ("disruptors") while also checking for downsides:

- Use competition-policy tools to combat resistance by incumbents and reduce disparities between incumbents and disruptors in the tax system, and in business support mechanisms
- Adjust sectoral regulation quickly as new business models and services emerge
- Replace the taxi-licensing system with less restrictive regulation to address availability and consumer-protection

In labour supply:

- Press on with reform to sick leave and disability benefit including through an employer-financed phase of sick leave and tighter medical assessment.
- Continue policy efforts to identify, nurture and promote female talent for positions at the top-end of business
- Address shortfalls in the availability of child-care provision particularly in care facilities for infants

In education policy, ensure reform of upper-secondary vocational education is core pillar of policy:

- Strengthen incentives for employers' to offer apprenticeship places by lowering costs, either through lowering apprentice wages or through providing additional subsidies
- Make courses more attractive and relevant to students

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