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IRELAND

SELECTED ISSUES

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INCOME INEQUALITY AND THE WELFARE SYSTEM IN IRELAND: AN OVERVIEW¹

1. This paper provides a brief overview of income distribution and the welfare system in Ireland, with a focus on the crisis and post-crisis period. Ireland's flexible economy and strong social safety net helped mitigate the adverse effects of the property-driven crisis. While economic conditions are improving rapidly, lifting employment, ongoing efforts are needed to address the lingering impact on those hardest hit, including the long-term unemployed and unemployed youth. More broadly, the tax-benefit system has been effective in redistributing income and mitigating poverty, but the long-recognized challenges of market-income inequality, i.e. before taxes and transfers, and regional disparities continue to be relevant. In this context, consistent efforts will be needed to support sustainable and inclusive growth and meet ambitious social targets, including the reduction of consistent poverty to 2 percent by 2020.²

2. Important caveats apply to this analysis. Given data limitations, the quantitative analysis in this paper focuses on basic aspects of income distribution. However, economic inequality is a holistic concept that goes beyond narrow measures of income distribution and comprises the capacity and ability of people to attain goods and services to satisfy their diverse needs and to thrive as individuals. In addition, household living standards are also affected by the provision of public services, such as health and education, with an impact on inequality that is hard to quantify (Lawless and Reilley, 2016). Ireland performs relatively well in studies of broader well-being, where these factors are relevant (Box 1). In addition, the latest available data on social conditions and income distribution does not reflect more recent improvements in the Irish economy.

3. The paper is structured as follows. Section A provides an overview of economic and social developments from crisis to recovery. Section B discusses the main causes of the relatively high market-income inequality that characterizes Ireland. Section C summarizes Ireland's tax-benefit system, focusing on issues regarding personal income taxation, labor market policies, and the impact of social benefits in mitigating income disparities and poverty. Section D concludes.

4. The main findings can be summarized as follows:

- Ireland is characterized by one of highest dispersions of market income among EU (and OECD) countries. Specific features of the Irish economy, as well as specific structural gaps, contribute to explaining this situation.

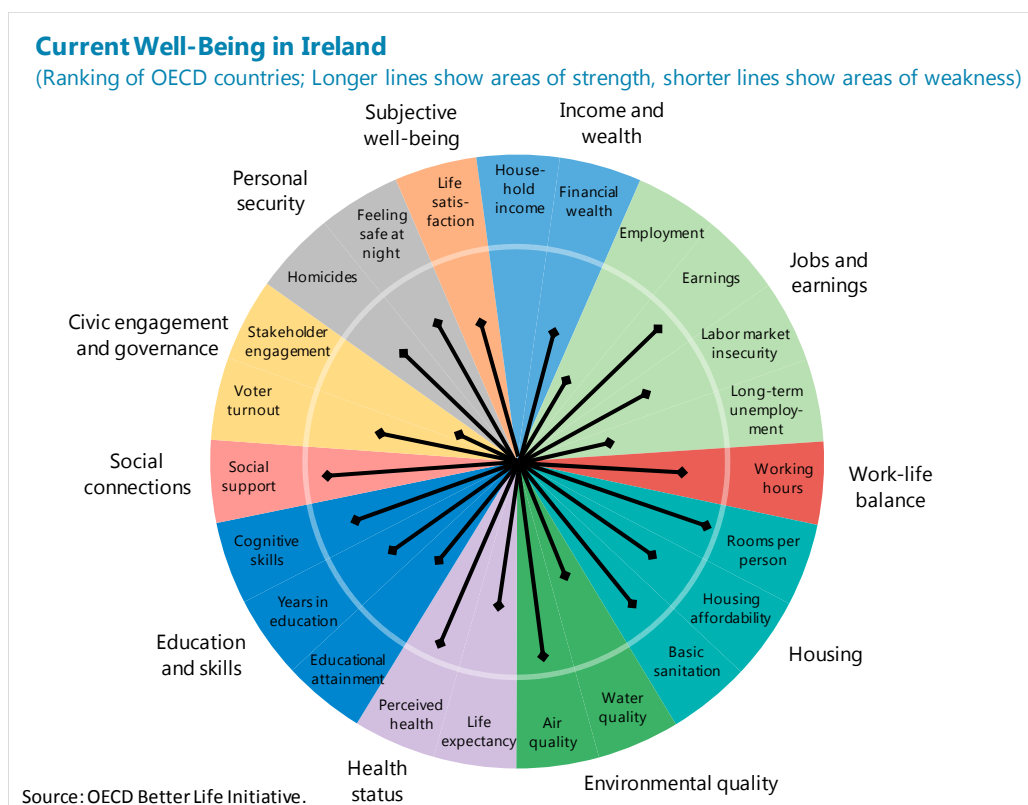
¹ Prepared by Alessandro Giustiniani. The author wishes to thank the participants to the seminar organized by the Central Bank of Ireland and, in particular, Reamonn Lydon for his useful comments to the presentation.

² The term consistent poverty describes individuals whose income is below the relative/at risk of poverty threshold and who cannot afford at least two of eleven deprivation indicators (such as two pairs of strong shoes, a warm waterproof overcoat, or an adequately warm home).

- Ireland's tax-benefit system is one of the most effective in the EU in redistributing income, thereby mitigating income disparities across a range of factors (including regions). A relatively progressive tax system funds a robust system of social benefits, a significant share of which is means-tested.

Box 1. Ireland: Broader Measures of Well-Being

A better understanding of people's well-being is central to developing better policies for better lives. To this end, the OECD has developed a well-being index (Better Life Index), a multidimensional metric covering aspects of life ranging from civic engagement to housing, from household income to work-life balance, and from skills to health status.^{1/}



Ireland performs well in many measures of well-being relative to most other countries, particularly regarding housing (despite the current supply shortfall), personal security, health status, education and skills, social connections, subjective well-being, work-life balance, and environmental quality. However, Ireland ranks below average in income and wealth, and civic engagement.

^{1/} See, <http://www.oecdbetterlifeindex.org/>

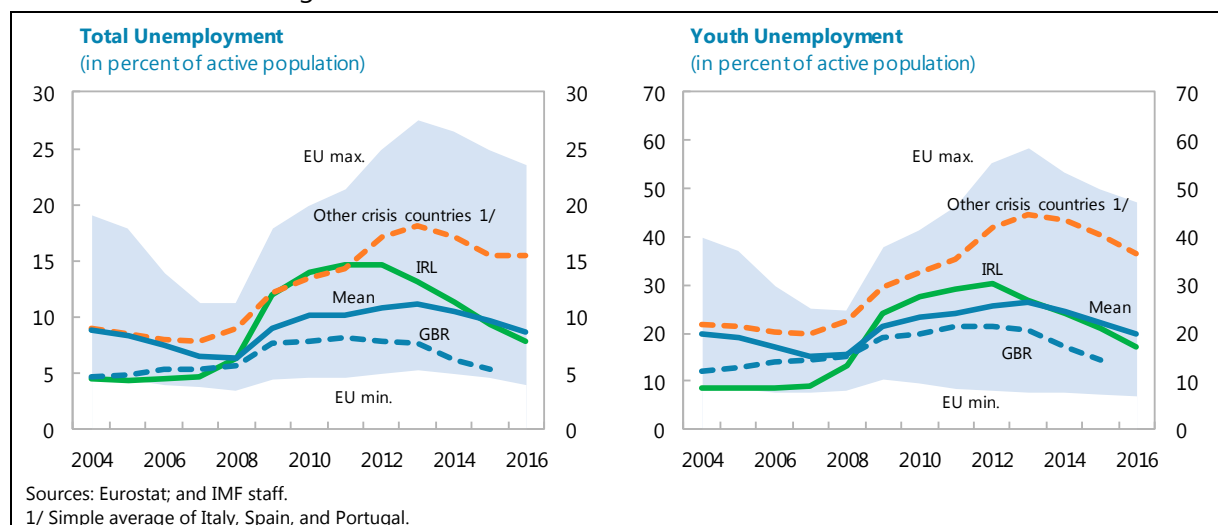
- Despite the severe financial crisis and substantial budget cuts, the government succeeded in preserving most welfare expenditure, which provided an important cushion against the worst effects of the crisis. This helped safeguard social solidarity and cohesion.
- During the crisis, the elderly were shielded more than younger generations, who also face more uncertain job opportunities than before the crisis. With the economic recovery and the

associated decline in unemployment, including youth joblessness, the intergenerational distribution has shown some improvement. Nonetheless, it would be useful to consider potential steps to reinforce the current welfare system to address future challenges.

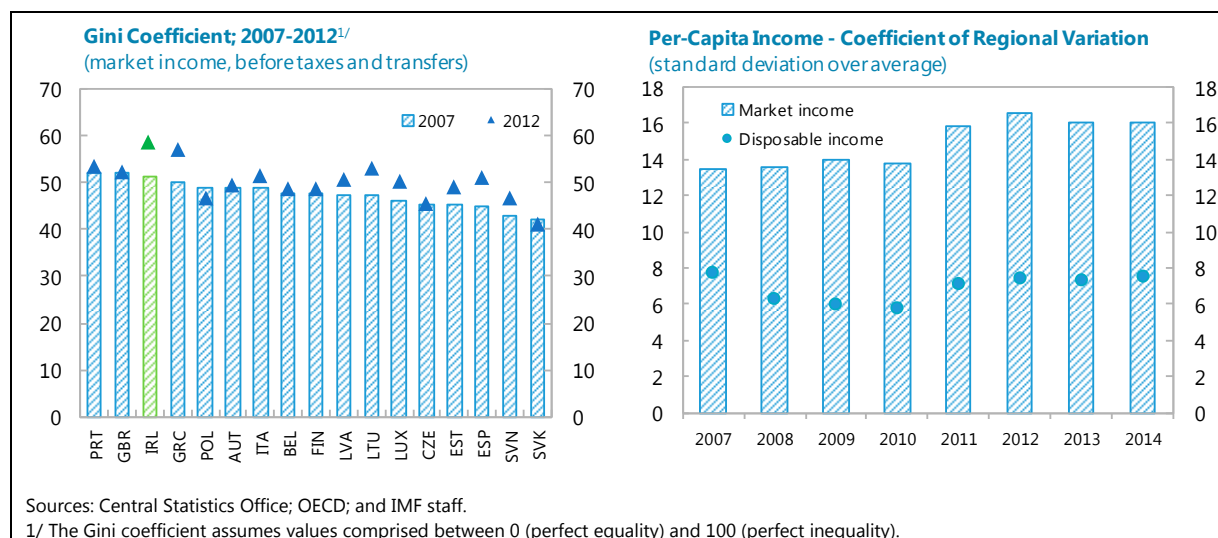
- Although efficient, the welfare system is complex, covers a relatively high number of individuals and families, and represents a sizable portion of public expenditures. Efforts should continue to get more people into jobs, and specifically more secure and better paying jobs, thus mitigating market-income, as well as regional, inequality. To this end, the authorities recognize that upskilling and reskilling the labor force requires enhancing the effectiveness of active labor-market policies and, more broadly, better aligning educational path with enterprise needs. They are also working to address gaps in childcare provision, a crucial drag on female labor market participation.

A. From Crisis to Recovery

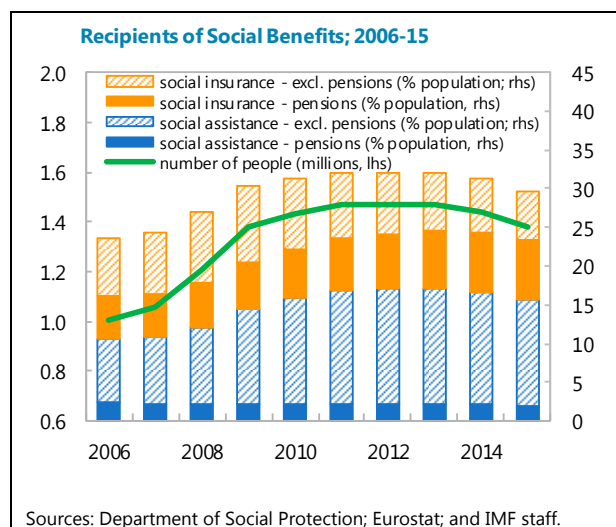
5. The bust of the real estate bubble, together with the Great Recession, had a striking impact on Ireland's economy. The consequences for the labor market were rapid and deep, particularly for younger generations. Total unemployment soared to almost 15 percent in 2011–12 from less than 5 percent in 2007, while youth joblessness peaked at 30 percent from less than 10 percent over the same period.³ Per-capita market income declined by about 17 percent on average, with the burden disproportionately borne by those in lower-income deciles, reflecting in part the heavy toll of the construction bust (OECD, 2015). Moreover, the wage entry of new hires collapsed by 20–25 percent compared to existing workers or job changers (Lydon, 2017). Consequently, the worsening of market-income distribution, as measured by the Gini coefficient, was among the steepest in EU countries. This was also associated with an increase in the dispersion of per-capita market income across regions, with the Border, Midland, and the South-East regions falling further from the national average.



³ Ireland also experienced a reversal in net migration, with outflows exceeding inflows. Without this, the increase in unemployment would have been worse. In addition, youth may have reacted to the employment collapse by delaying their labor market entry.



6. The crisis period also saw significant reforms of the tax-benefit system. Mainly reflecting the increase in unemployment, the number of recipients of welfare social payments peaked in 2012 at 1.47 million, or 32 percent of the total population, compared to 24 percent in 2007. This put the welfare system under pressure, while fiscal consolidation also became necessary to bring public finances and debt on a sustainable path.⁴ Consequently, with a view to protect the



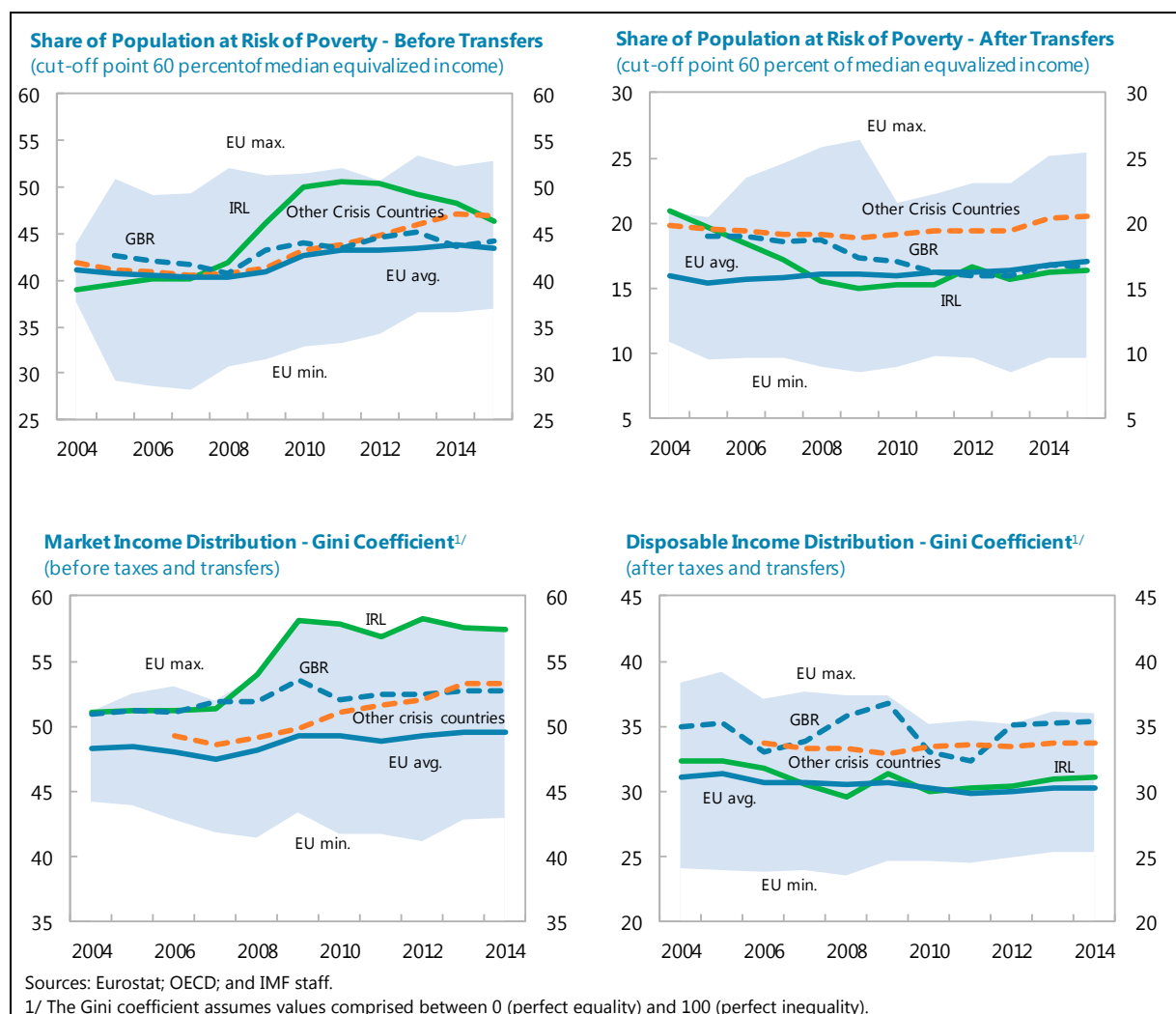
most disadvantaged while keeping adequate incentives to work, the system of social benefits was significantly recalibrated: eligibility criteria were tightened, means-testing was strengthened, the duration of some benefits was shortened, and allowances were reduced in some cases.⁵ At the same time, incentives for education and training were strengthened to facilitate the return to work of the unemployed, especially young people with low skills who, before the crisis, were able to find jobs in the booming construction sector. On the revenue sides, the introduction of the Universal Social Charge (USC), which replaced two flat

contribution-rate levies (the health and income levies), increased the progressivity of the income tax system (Kennedy and others, 2015).

⁴ Dukelow and Considine (2014) emphasize that in the early stages of the crisis, debate on social welfare reforms focused on the generosity of the social system that had developed during the boom period and hence on the need to reduce work disincentives and keep the unemployed as "close to the labor market as possible."

⁵ In particular, the universally paid Child Benefits, as well as unemployment payments and welfare payments to one-parent families, were reduced. Callan and others (2015) estimates that "policy-induced losses" over 2009–16 were just over 14 percent for the top income group and almost 13 percent for the lowest income group. Proportionate losses for single unemployed people without children were highest at close to 20 percent.

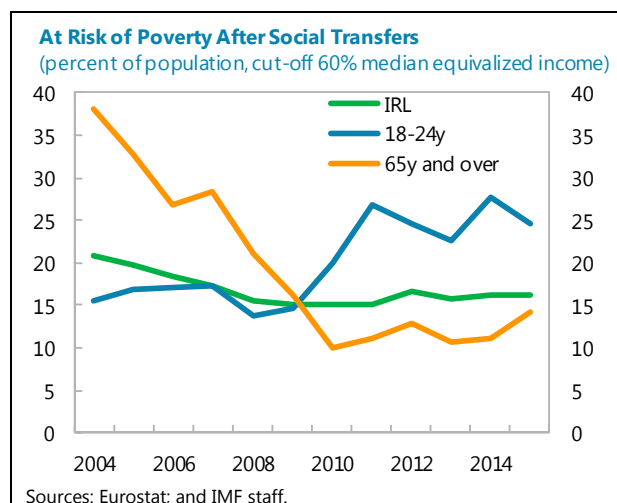
7. Overall, social transfers performed strongly throughout the crisis in reducing the at-risk-of-poverty rate. At the apex of the crisis (2010–12), social transfers (including pensions) reduced the share of total population at risk of poverty to around 15 percent, broadly in line with the EU (simple) average, from over 50 percent. In 2010–11, the improvement due to social transfers was about 25 percentage points in absolute terms, the largest in EU countries, which corresponded to poverty reduction of about 50 percent. This is a particularly striking result compared to the experience of other EU countries that experienced sharp debt and/or property-driven corrections (e.g. Italy, Spain, and Portugal).⁶ A similar picture emerges when income-distribution indicators, such as the Gini coefficient, are considered. The Irish tax-benefit system has performed strongly, reducing relatively high market-income inequality (i.e. before taxes and transfers) to the EU average in terms



⁶ Spain experienced a similar real estate boom-bust cycle; Portugal entered into a EU-IMF supported program a few months after Ireland; Italy has a high debt burden, like Ireland during the crisis. The UK was also included as comparator, given the close ties between the two countries and the UK influence on the Irish welfare system.

of disposable income (i.e. after taxes and transfers). Bargain and others (2015) note that disposable-income inequality remained relatively unchanged during the first part of the crisis (2008–10), increasing in the subsequent period, (2010–13). Notwithstanding this increase, Ireland also compares favorably to other crisis-hit countries in this dimension. In addition, the welfare system mitigated the impact of the crisis on regional disposable-income dispersion.

8. As in other EU countries, intergenerational differences worsened during the crisis period.⁷ The welfare system in Ireland protected the elderly more than the young from the consequences of the crisis. Pensioners were mainly affected by reductions in supplementary entitlements, as pension benefits were increased in the 2009 and 2016 budgets. Nonetheless, the scale of rate reductions (including child benefits) and reductions in supplementary payments (where entitled) experienced by working-age individuals were larger.



9. Traditional metrics based on income may not fully capture the severity of the crisis, which was amplified by household over-indebtedness. Many households were caught between the rock of servicing their mortgages in face of declining incomes and the hard place of negative wealth, reflecting the collapse of real-estate prices, which resulted in a sharp surge in wealth inequality (Lydon, 2017). Whelan and others (2015, 2016), focusing on measures of economic stress, find that the gap between the elderly and remaining age groups widened significantly during the crisis.⁸ Material deprivation and financial stress for young and working-age groups, although starting below the EU average, deteriorated substantially until 2012–13.^{9 10} The trend for the elderly, albeit still adverse, was smoother. This also reflects the fact that debt distribution by group ages is skewed towards the young.¹¹

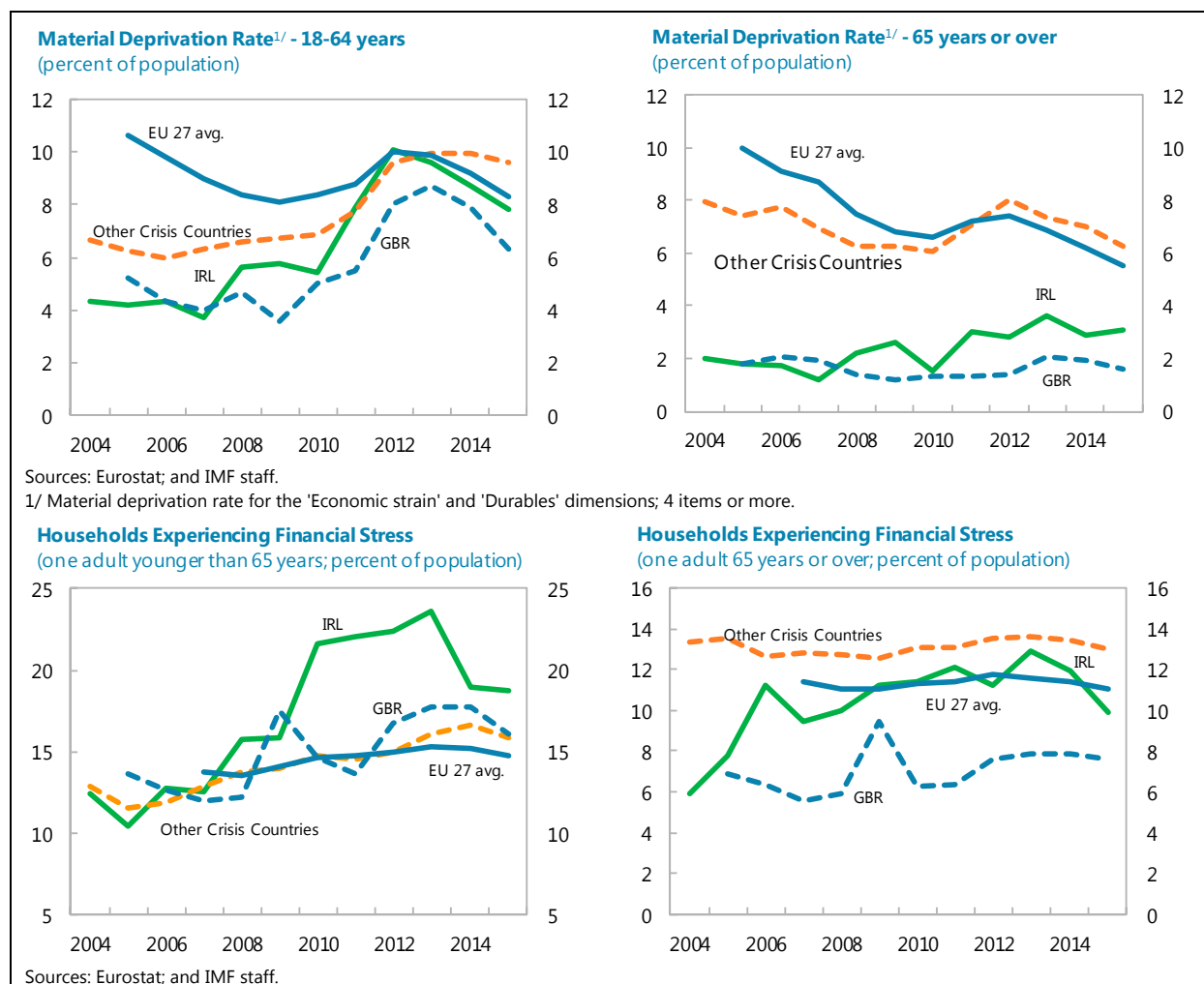
⁷ Chen and others (2017).

⁸ The measure of economic stress is based on a set of indicators that are intended to capture debt problems but also capacity to cope with financial demands, such as structural arrears, burden of housing costs, inability to meet unexpected expenses, and difficulty in making ends meet.

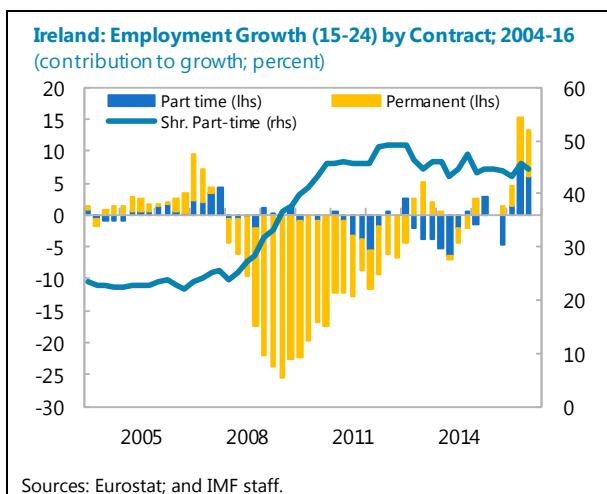
⁹ The simple average of the share of households that were unable to cope with unexpected expenses; to avoid arrears on mortgage or rent payments, utility bills, instalment loans or other loan payments (in the past 12 months); and could not make ends meet.

¹⁰ The material deprivation rate measures the share of population unable to afford some items considered desirable or even necessary to have an adequate life.

¹¹ See also, N. Klein (2017).



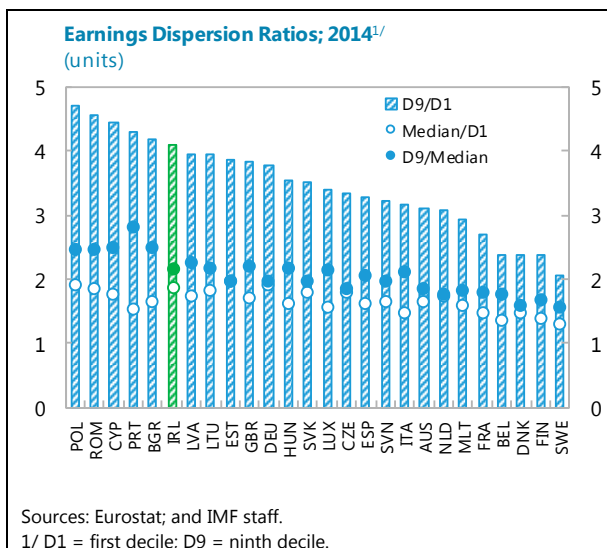
10. With the economic recovery firmly underway, social conditions have improved, but the young and long-term unemployed are still facing a challenging environment. Reflecting the steady implementation of sound macroeconomic policies and reforms, the Irish economy has returned rapidly to a sustained growth path. Unemployment and youth joblessness have declined steadily since 2012, to about 6½ percent and 14½ percent in early 2017, respectively, both well below EU averages and projected to continue to decline. Nonetheless, labor market participation has not recovered to pre-crisis levels and part-time employment has increased, particularly for workers aged 15–24 years. Long-term unemployment has also declined from 9 percent in 2012 to 4.2 percent in 2016, broadly in line with the EU average. In terms of material deprivation and financial stress, the relative position of younger groups, while showing signs of improvement, remained, as of 2015, disadvantaged compared to the EU average.



B. Why is Ireland's Market-Income Inequality High?

11. High market-income inequality in Ireland is mainly driven by the lower end of income distribution. Earnings dispersion in Ireland has widened over time and is among the largest in the EU.

- The share of market income accruing to the top decile is high (about 37 percent), partly driven by the growing role of multinational enterprises (MNEs) in Ireland, which offer high-paid jobs to those with high skills. However, the high-end share is not excessive by international comparison.
- On the other hand, the income share of the bottom 20 percent of households is the lowest in the OECD (OECD, 2015), with the share of low-wage earners in Ireland (about 22 percent of total employees) higher than the EU average (about 17 percent).¹²

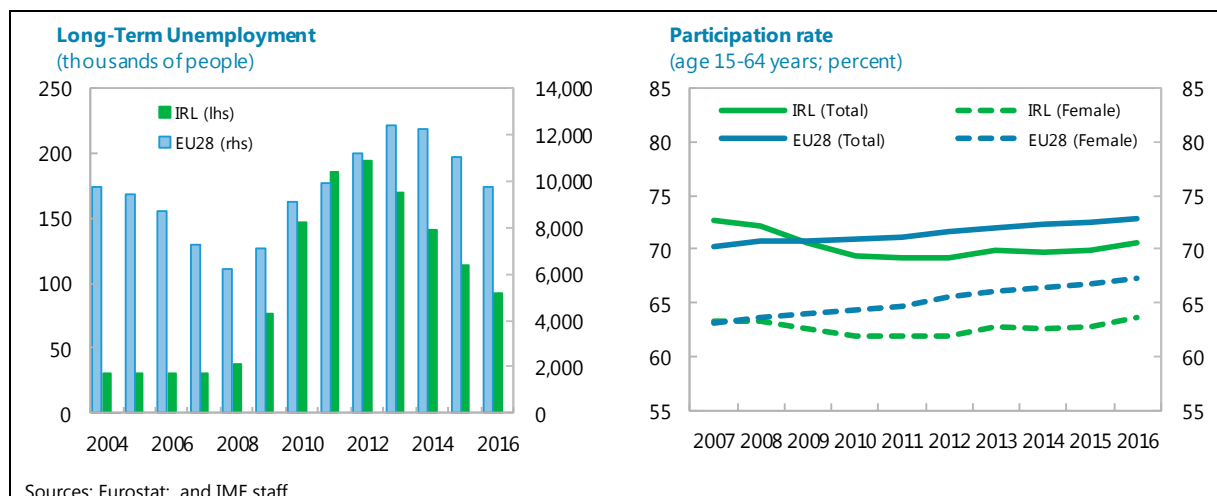


12. High, albeit improving, long-term unemployment and low labor market participation add to inequality. Unemployment is rapidly declining but long-term unemployment remains relatively high. As of end-2016, the long-term unemployed stood at just over 83 thousand (3.8 percent of the labor force); almost three times higher than in 2007 (for the EU, the increase was 1½ times over the same period). Long spells of unemployment deplete labor skills, thus making return to work harder. In addition, the labor market participation rate is low compared to EU peers, especially for women. In this regard, the availability and cost of childcare remain a crucial barrier, forcing parents into labor market inactivity or part-time work.¹³ The combination of these factors translate into a relatively high portion of Irish people living in households with low work intensity: 18.8 percent in 2015—the highest in Europe.¹⁴ Moreover, the share of children living in jobless households is second only to that of Bulgaria. The Irish authorities have taken steps to address the

¹² In Ireland, the low-wage threshold is just above 55 percent of average gross earnings and 66 percent of median gross earnings, which are broadly in line with the simple average for EU countries (54.8 percent and 67 percent, respectively). Nonetheless, Ireland's low pay threshold (10.99 in purchasing power terms) is about 25 percent higher than the EU average (8.80 in purchasing power terms).

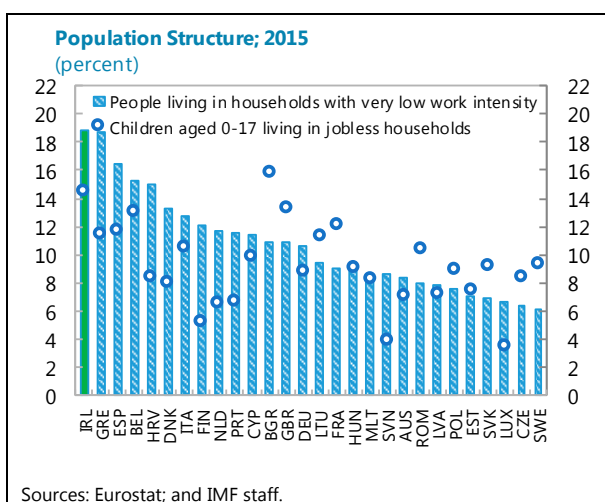
¹³ Around 27.4 percent of inactive women aged 20–64 do not work because they must look after children or incapacitated adults (4.5 percent of men) and 26 percent of women who work part-time cite the same reason (3.6 percent of men). Single parents, mostly women, suffer from the lack and high cost of childcare support (European Commission, 2017).

¹⁴ The work intensity of a household is the ratio of the total number of months that all working-age household members (i.e. all members aged 18–59 years) have worked during the income reference year and the total number of months the same household members theoretically could have worked in the same period. A ratio between 0.20 and 0.45 indicated low work intensity.

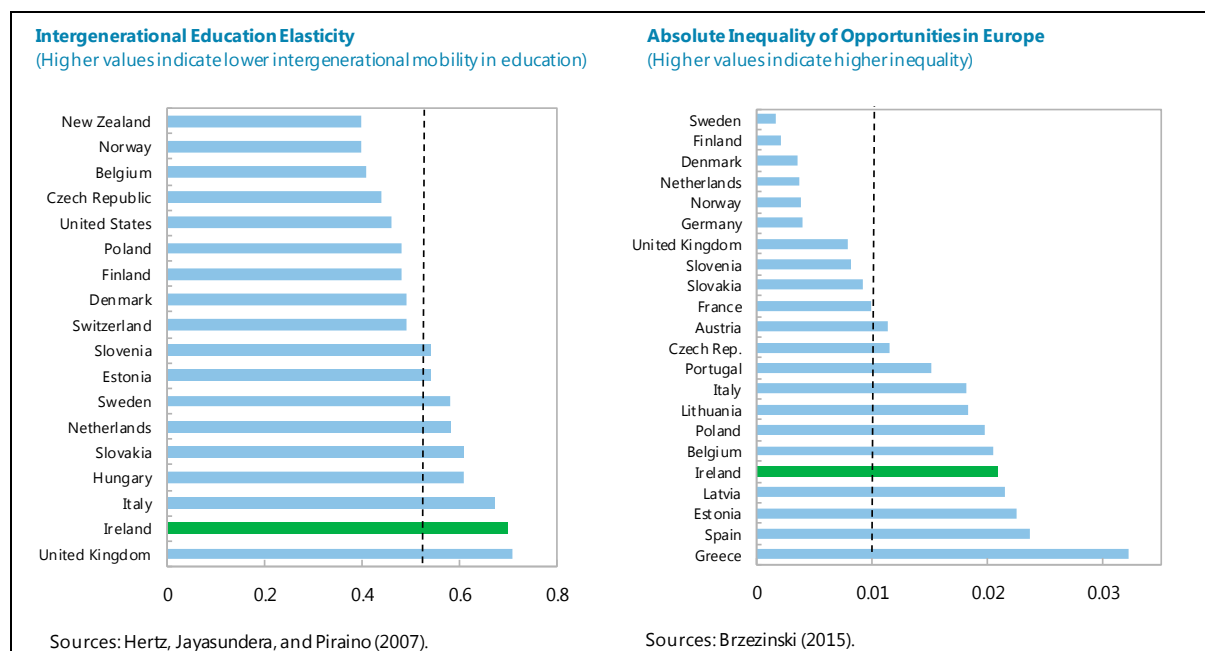


issue of access and affordability of childcare. In this context, the 2017 budget introduced a new Single Affordable Childcare Scheme, replacing all existing schemes with mostly means-tested subsidies focused on low-income, disadvantaged families. Steps are also underway to improve the quality of childcare provision.

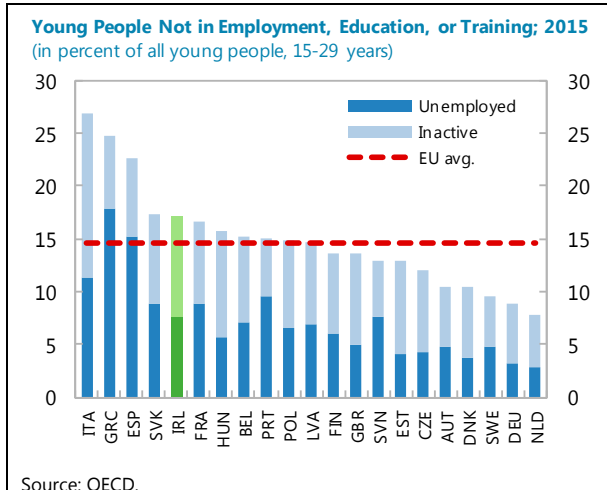
13. High market-income inequality is associated with low intergenerational mobility in Ireland. The two phenomena are closely intertwined. Higher income inequality skews opportunity and lowers intergenerational mobility, thus perpetuating disparities. Low mobility in turn perpetuates inequality. Empirical evidence indicates that income mobility in Ireland has indeed been low at both ends of income distribution. However, the distribution moved towards the low end once the crisis began, reflecting the sharp deterioration of the labor market (Kennedy and others, 2015). Ireland does not compare favorably with peers in cross-country analyses of intergenerational earnings and education mobility as well as broad measures of inequality of opportunity (Hertz and others, 2007, Checchi and others, 2016, Brzezinski, 2015).¹⁵



¹⁵ Inequality of opportunities emphasizes the impact of circumstances for which individuals cannot be held responsible, such as socio-economic background, on individual outcomes in terms of income earnings. Parents' educational attainment and occupation are usually used as proxies.



14. Educational attainment also has a bearing. Ireland performs generally well in terms of educational attainment, and the share of students leaving school early is relatively low. However, Ireland continues to lag EU peers in terms of young adults who are not in education, employment, or training (NEET). Unemployment among those with low educational achievement remains elevated (13½ percent as of 2016Q3). Although the provision of basic skills has improved, skill shortages in sectors such as information and communication technology (ICT)—which has an impact on ICT occupations across all sectors—have emerged, and there is a need to further upskill and reskill the adult population through increased participation in further education and training (European Commission, 2017). To guide investment in education over the 2016–2019 period, the government launched a comprehensive Action Plan for Education (2016), which focuses on disadvantaged students and continuous improvement within the education sector.¹⁶ In addition, the National Skills Strategy aims to provide skill development opportunities and foster lifelong learning. Prioritization of skills needs will be overseen by the new National Skills Council. New Regional Skills Fora will facilitate ongoing employer-educator dialogue to match identified needs with sustainable provision in each region, with a view to optimize the return on investment in education and training (see also next Section).

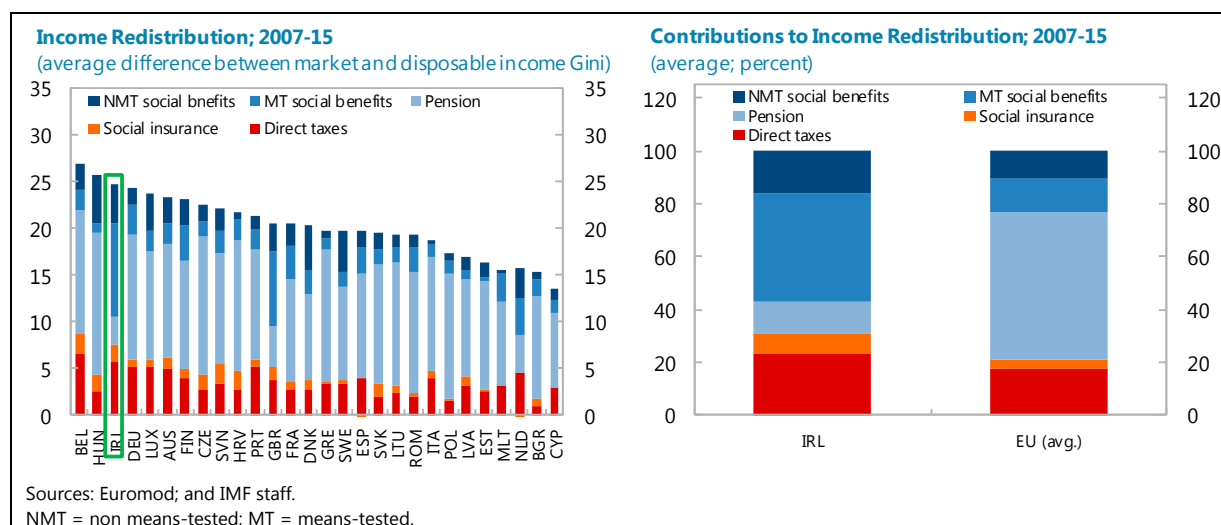


¹⁶ The 2017 budget envisages higher spending on education and the recruitment of more teachers in the future, reflecting also demographic-driven needs.

15. Despite these reforms, some aspects of the tax-benefit system may create disincentives to transition from welfare to work. Although Ireland provides relatively generous social family-income support by international standards, the tax and welfare system maintains a strong incentive to shift from welfare to work. However, some groups, particularly those with a non-working partner and children, had high replacement rates or face steep increases in marginal tax rates that might reduce the incentives to enter the job market (Savage and others, 2015, Callan and others 2016). To address work disincentives, the 2015 budget introduced the “Back to Work Family Dividend” (BTWFD), which allows families who move from welfare into work to retain 100 percent of the Qualified Child Increase for one year, and 50 percent of the payment for an additional year. The rollout of the “Housing Assistance Payment,” designed to enable people to take up full-time employment and keep their housing support, is also continuing. However, concerns regarding loss of eligibility for the medical card, which entitles the bearer to a range of free health services and to important additional benefits for the family, is reportedly a powerful disincentive.¹⁷

C. Can Ireland’s Social Protection System Be More Effective?

16. Compared to EU peers, Ireland’s tax-benefit system is one of the most effective in redistributing income, with variations in the contribution of the system’s components. About 60 percent of the average 25-percentage point difference in Ireland’s market- and disposable-income Gini coefficient during the 2007–15 period was driven by social benefits, one of the highest among EU countries and largely means-tested. Another one-fourth of the improvement was due to direct taxes (broadly in line with the EU average), and 12 percent through pensions, the lowest in the EU (Box 2).



¹⁷ People receiving means-tested Social Welfare Allowances or with their income (and their spouse/partner’s income) below specified thresholds qualify for a Medical Card. Any income, savings, investments and property (except for own home) are considered in the means test (<http://www.hse.ie/eng/services/list/1/schemes/mc/about/Amieligible/>). Additional benefits provided to medical-card holders comprise exemption from payment of the health portion of social insurance (PRSI); free transportation to school for children who live 3 miles or more from the nearest school; exemption from state examination fees in public second-level schools; and financial help with buying school books.

Box 2. Ireland: Pensions and Social Insurance

Pensions

The Irish pension system consists of:^{1/} a pay-as-you-go public pension pillar supplemented by a voluntary second pillar scheme and private pension plans. The public pension pillar comprises both contributory and non-contributory elements. The latter is means-tested and paid to individuals without adequate means at the age of 66. The old-age contributory pension system is financed on a pay-as-you-go basis and provides flat-rate benefits depending on the contribution period without reference to pre-retirement earnings. The Irish system, like in the UK, puts more emphasis on occupational pension schemes, managed by (private) pension funds, and therefore do not affect income redistribution.^{2/}

Social Insurance

The structure of social insurance charges is not progressive. Contributions to the Pay Related Social Insurance (PRSI) fund pensions and a variety of other benefit payments, including disability, maternity, and illness. The PRSI is levied at a single rate of 4 percent on gross wage income.

Important revenue-enhancing and expenditure-reducing measures have been introduced in recent years to safeguard the financial viability of the social security system (Tax Strategy Group, 2016b). The main revenue measures comprise increases in rates of contribution, the broadening of the base,^{3/} the abolition of the employee ceiling for charging PRSI, the abolition of the PRSI relief for employee pension contributions, and the abolition of the employee PRSI-free allowance. Expenditure savings were achieved mainly through stricter conditions for entitlement and reductions in the level and duration of entitlement, most notably for jobseeker and illness benefits, as well as by increasing the pension age to 66 years.^{4/}

^{1/} For more details, see OECD (2014).

^{2/} In the Euromod model, the payment of pensions from private plans is included in market income.

^{3/} Since 2014, the PRSI is payable also on unearned income, such as income from investments (including bank deposits) and rents.

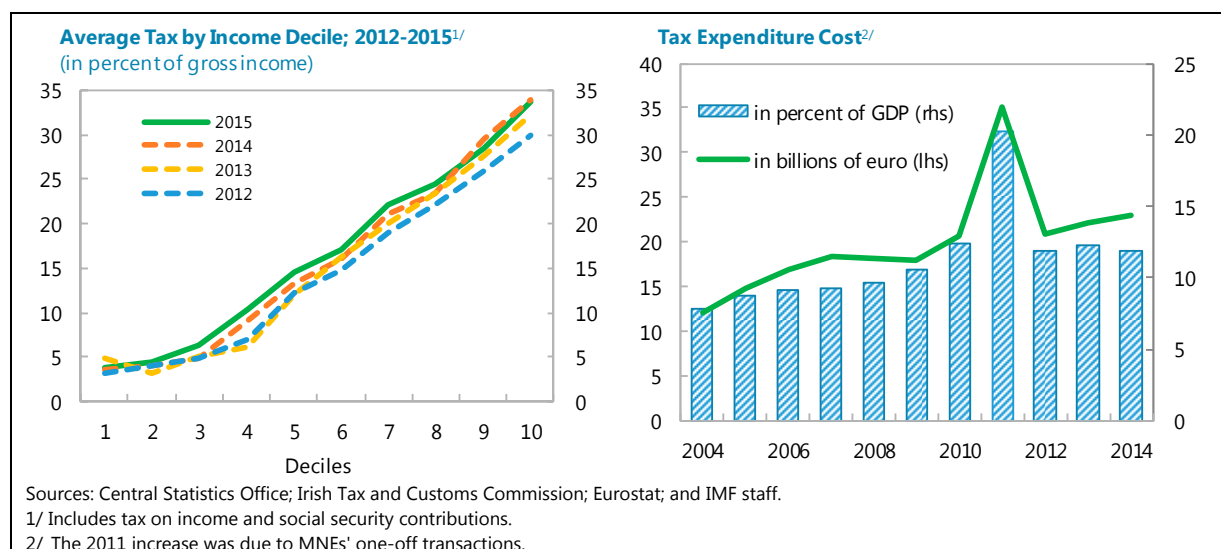
^{4/} The state pension age will further increase to 67 years in 2021 and 68 years from 2028.

17. To better understand the social protection system in Ireland, three policy areas are analyzed: direct taxation, active labor market policies, and social transfers.

Income Taxation

18. Personal income taxation is progressive. Those at the top decile of income earners pay about 59 percent of total income tax, although their share of market income is about 37 percent (Kennedy and others, 2015). The personal income tax (PIT) operates using a two-rate structure with different thresholds depending on family type.¹⁸ While the system of tax credits supports disposable income for low-earning households, a large share of tax allowances is enjoyed by top income groups, notwithstanding cuts in recent years (Kennedy and others, 2015). The USC, which was introduced in 2011, applied on a broad base, with limited relief and no credits.

¹⁸ The income tax rates are 20 percent on income within the standard band, which depends on the family type (single, single parent, married with one earner, married with two earners) and 40 percent on income above the standard band.



19. However, the current structure of direct taxation suffers some shortcomings. Despite measures to broaden it, the PIT base remains narrower and more complex than the USC base, which the government plans to gradually phase out, as conditions allow.¹⁹ Given different but, in both cases, relatively high entry points, some 36 percent of income earners are currently exempted from income tax and about 29 percent from the USC. In addition, the entry to the second bracket of the PIT occurs at a relatively low level (Tax Strategy Group, 2016a).²⁰ This places a large tax burden on middle-income households, undermines female labor force participation, and creates inactivity traps for low-skilled workers.

20. A broadening of the tax base would protect public finances against adverse risks and support priority expenditures in a sustainable manner. To this end, consideration could be given to merging the USC into a more comprehensive PIT, with a review of the income brackets, including the possible introduction of a third bracket to spread the burden among income earners (OECD, 2015). Potential revenue losses could be compensated by decreasing the number of products with reduced and zero VAT rates and by aligning self-assessed property values, from which the local property tax is calculated, to market values. Regressivity from these changes could be addressed by means-tested transfers to low-income households.²¹ A thorough review of the system of tax expenditure would also support revenue enhancement.

Labor Market Policies

21. With long-term unemployment still higher than pre-crisis levels and the need to bring more people to better paying jobs, labor market policies (LMPs) are key. To reduce joblessness and get the long-term unemployed back to work, Ireland has introduced several labor market

¹⁹ With the 2017 budget, the government reduced the three lowest USC rates by 0.5 percent (from 1 percent to 0.5 percent; from 3 percent to 2.5 percent; from 5.5 percent to 5 percent).

²⁰ The standard rate band threshold for a single individual, €33,800, is now below the national average wage, €36,815.

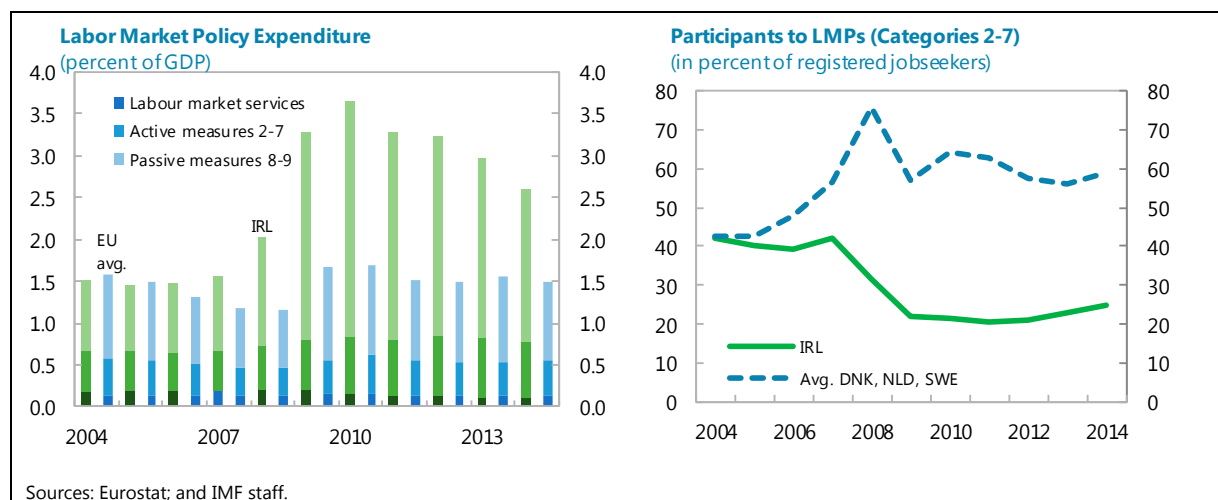
²¹ Lydon (2017) notes high low-income home-ownership in Ireland means local property tax tends to be regressive.

training and activation measures. Pathways to Work is the overarching strategy to increase the engagement of mainly long-term and young jobseekers. There have been changes in the organization of programs, particularly regarding the interaction among income support for the unemployed, education and training options, and employment support programs (OECD, 2016):

- Intreo, a Department of Social Protection “one-stop-shop” service, provides an integrated system of social welfare income benefits, community welfare services, and employment supports through its local offices.
- Sixteen Education and Training Boards resulted from consolidation of 33 Vocational Education Committees, with responsibility for education and training, youth work, and other functions.
- A Local Development Committee has been established in each of the 31 local authority areas, with a view to improving the efficiency and integration in the delivery of local services.

22. Although Ireland devotes significant resources to LMPs, the results have been mixed.

Reflecting the crisis-driven surge in unemployment, Ireland’s spending for LMPs rapidly increased to over 3 percent of GDP. With the start of the recovery, LMP expenditure scaled back but remains above the EU average. Nonetheless, the share of jobseekers (registered with Public Employment Services) participating in activation programs is low compared to the best performers in terms of LMPs (Denmark, Sweden, the Netherlands). Also in terms of spending per LMP participant, Ireland does not compare favorably. The number of jobseekers for each caseworker in the Public Employment Services, although declining from 800 in 2013 to 500 in 2015, remains relatively high and above what is considered best practices (OECD, 2015).

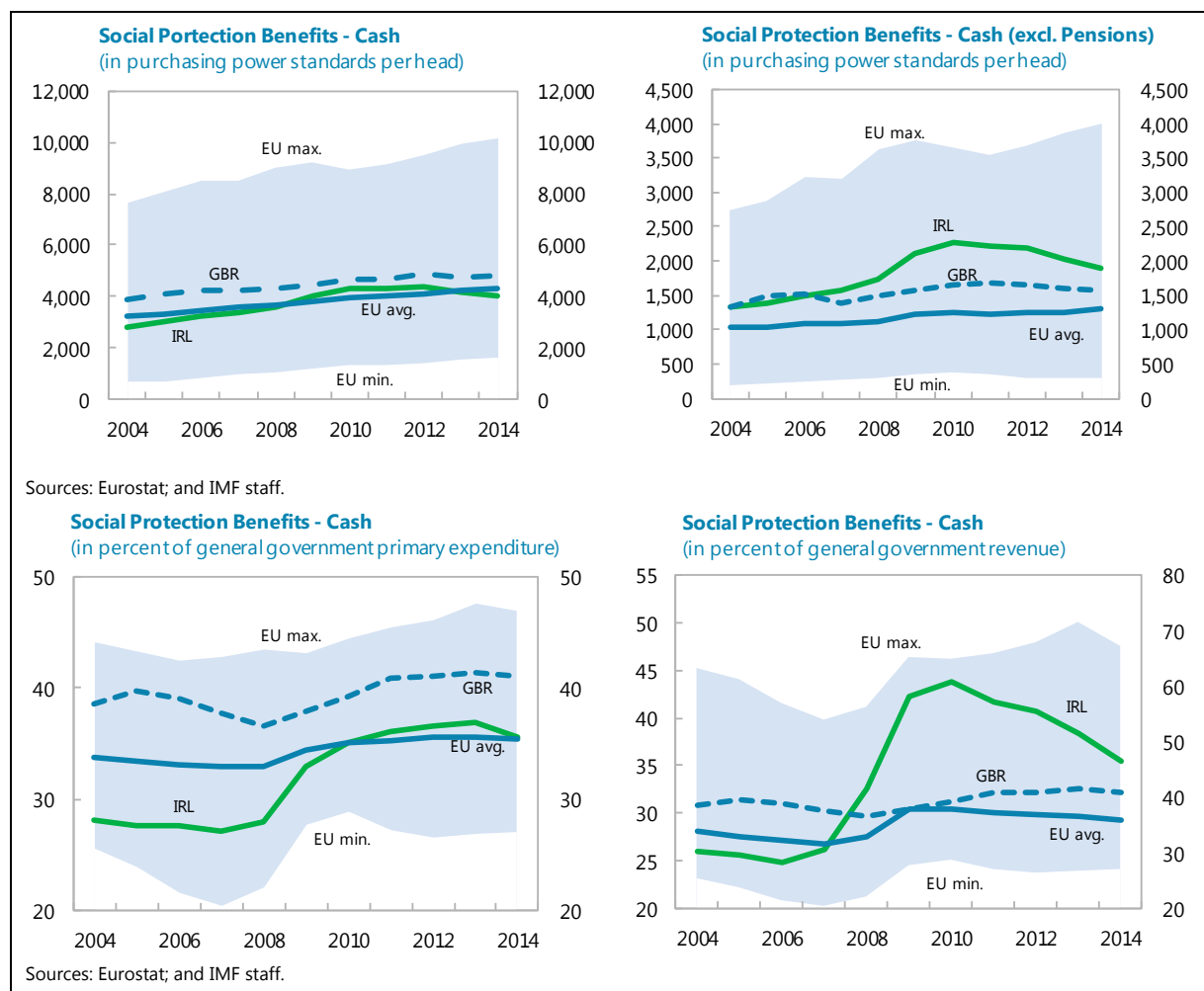


23. Existing schemes continue to be evaluated to ensure that scarce resources are channeled to the most effective programs. As part of the Pathways to Work program, the Department of Social Protection is reviewing the current range of labor market programs. A first review of the Back to Education Allowance raised concerns about its effectiveness in assisting jobseekers to return to work (Lawless and Reilly, 2016). An evaluation of the Intreo “one-stop-shop” services for jobseekers is currently underway. A comprehensive assessment would also be useful to

streamline the numerous initiatives with a view to using scarce resources more effectively. Reducing the number of jobseekers per caseworker may also help improve service effectiveness.

Social transfers

24. Ireland's total spending on social protection benefits is in line with the EU average but still sizeable for public finances. Measured in purchasing powers standards, Ireland's cash social benefit spending in per-capita terms is broadly in line with the simple average of EU countries.²² However, it absorbs a larger share of general government's total revenue.²³ If spending for pensions is excluded, Ireland's per-capita spending results somewhat higher than the EU average.



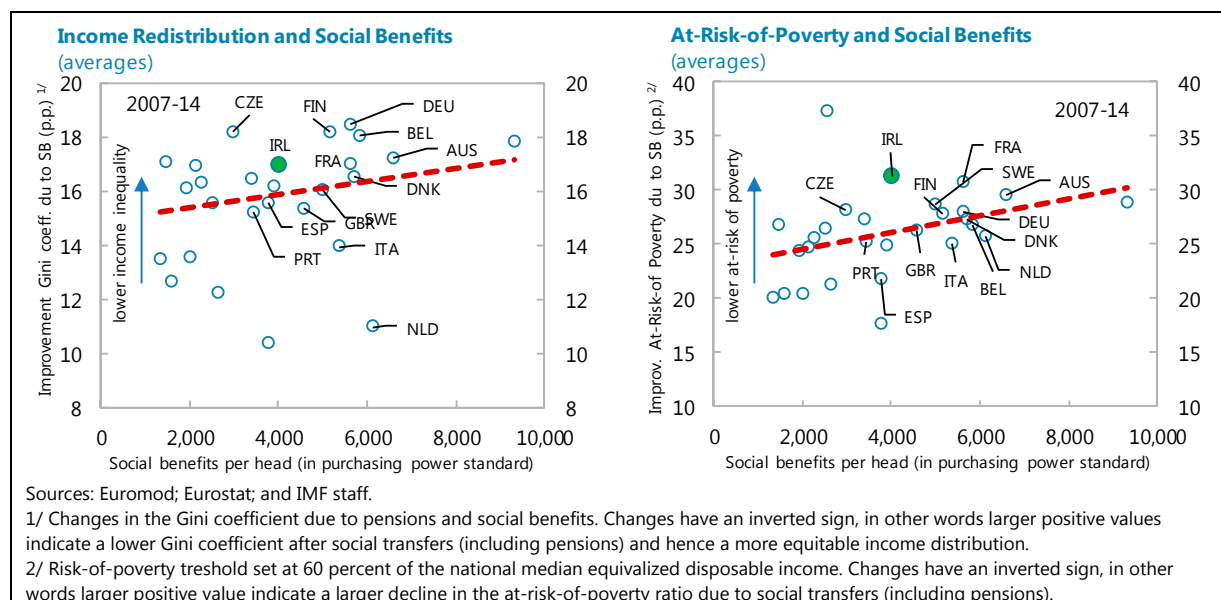
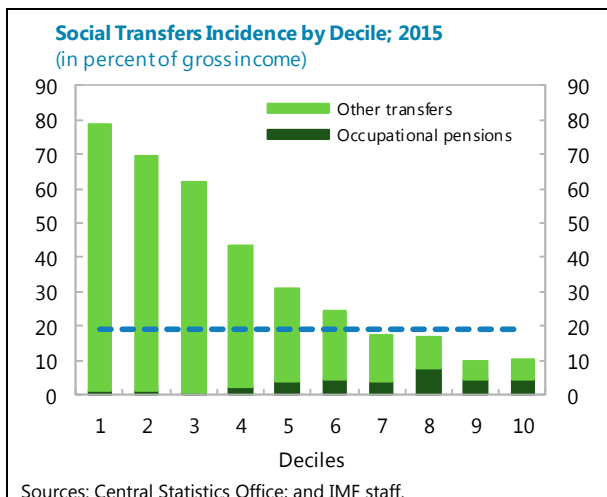
²² Social benefits in cash account for about 60 percent of total social protection spending; lower than the EU average.

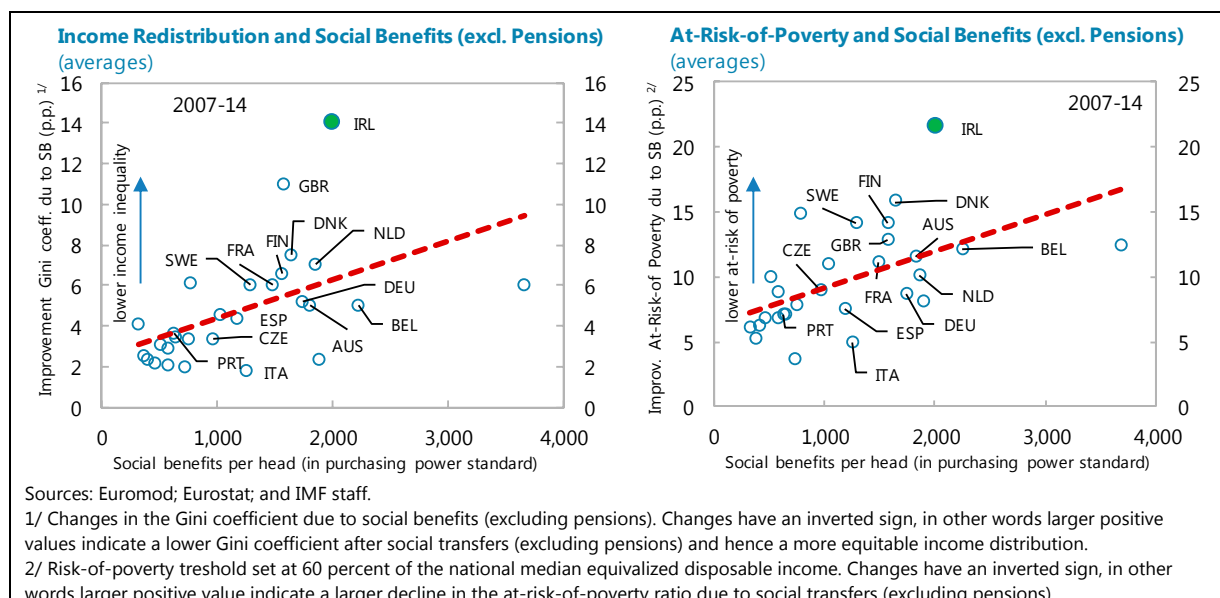
²³ A similar picture emerges if also in-kind social benefits are considered. In this case, Ireland's social spending accounts for a slightly larger share of general government primary expenditure than the EU simple average.

25. Ireland stands out relative to comparators in targeting social spending on poor households.

Almost a third of the social transfers in Ireland is means-tested, the second largest share in the EU. For the bottom two deciles, social transfers make up about three-quarters of total income, with more than half of these transfers related to unemployment benefits and family-children allowances. If all social benefits are considered, including pensions, Ireland's welfare system is more focused on poverty reduction (as measured by the difference between the share of population

at risk of poverty before and after transfers) than on income redistribution (as measured by the difference between market and disposable income). However, if pensions are excluded, Ireland's efficiency in redistributing income and fighting poverty is well-above EU peers. This result suggests that the degree of income redistribution that other EU countries achieve through pension spending, Ireland realizes through social benefits.





D. Conclusions

26. Ireland's tax-benefit system is effective in redistributing income and alleviating poverty. Despite the severe financial crisis and substantial budget cuts, the government succeeded in preserving most of welfare expenditure, which provided an important cushion for people against the worst effects of the crisis. A relatively progressive tax system funds a robust system of social transfers, a significant share of which is means-tested. The system of social transfers is particularly efficient in redistributing income and reducing the share of population at risk of poverty. During the crisis, the elderly were shielded more than younger generations, which are also facing more precarious job opportunities than before the crisis, although it remains unclear whether this represents a structural change. Despite the ongoing economic recovery, important structural challenges persist, particularly regarding intergenerational (and regional) disparities.

27. A multi-pronged approach is called for to reinforce more inclusive growth. To get more people into better paying jobs, unemployed workers need support to upskill and reskill through continued and more effective active labor market policies. More broadly, education paths need to be better aligned with market needs, while providing equal opportunities for disadvantaged children. Revising personal income taxation, supporting transition to work through additional (temporary) in-work benefits, and improving childcare availability and affordability will also support incentives for transition to work. These measures might contribute to mitigating market-income inequality thus reducing the pressure on the welfare system.

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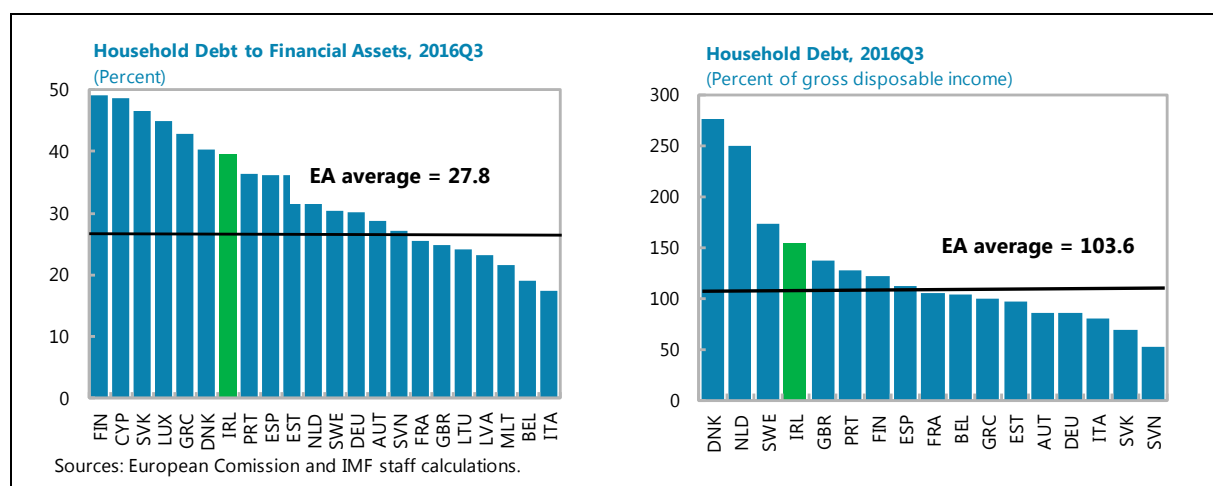
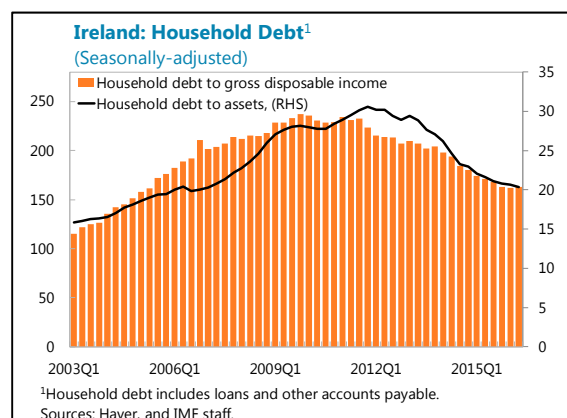
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HOUSEHOLD DELEVERAGING IN IRELAND¹

A. Introduction

1. Irish households have deleveraged steadily in recent years. After peaking during the financial crisis, household debt moderated to about 150 percent of disposable income and about 19 percent of total assets at end-2016—its lowest level in a decade.² The deleveraging process was initially driven by a significant decline in nominal debt, as households increased their saving rate and reduced new borrowing, and more recently by the strong rebound of economic activity and the rapid increase in incomes and asset values. Still, despite the sharp deleveraging, Ireland's household debt remained well above the euro area average and levels seen in Ireland, prior to the property-market boom.



2. Against this background, this paper takes stock of the recent deleveraging while seeking to identify some of its drivers. In particular, it looks at the recent dynamics of household debt, changes in its composition, and the pace of deleveraging compared to other European countries. It also provides an overview on the distribution of household debt and households in negative equity by age and income cohort, building on the recent findings of the ECB's Household Finance and Consumption Survey. Finally, the paper aims to identify some of the determinants of household debt, drawing also on the experience of euro area peers, and explore their role in the deleveraging process in Ireland. This exercise—although subject to large uncertainties—may help

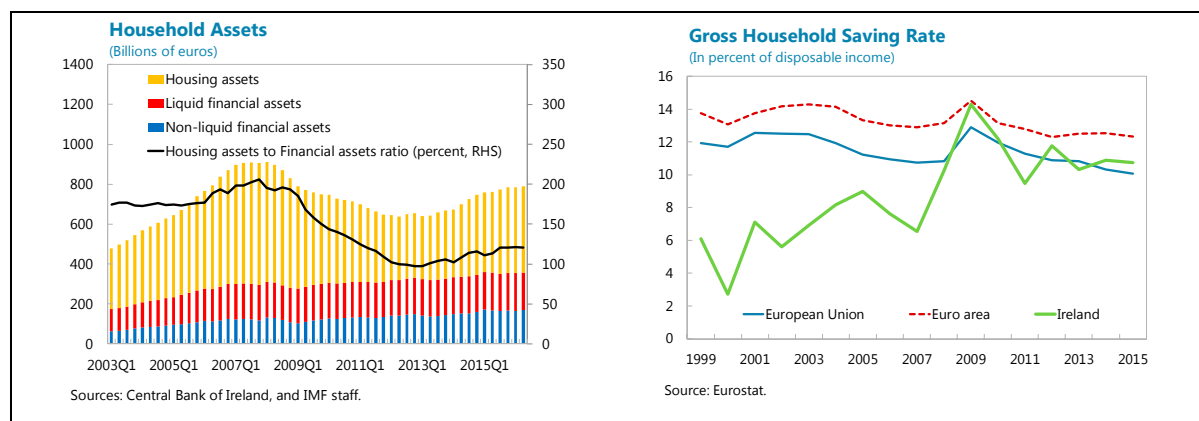
¹ Prepared by Nir Klein. I would like to thank Tara McIndoe-Calder and the participants of the workshop at the Central Bank of Ireland for their useful comments and suggestions.

² Household debt includes loans and other accounts payables, and is seasonally-adjusted.

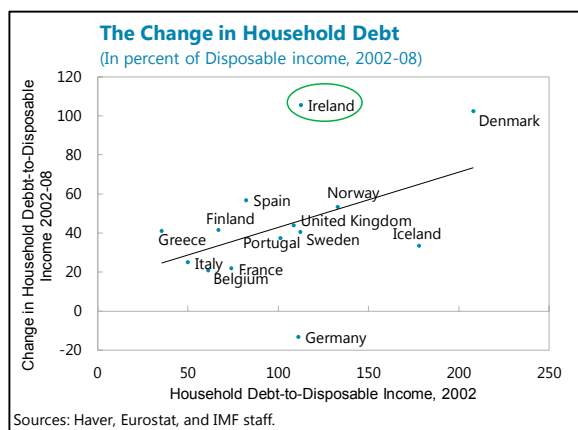
gauge whether the end of household deleveraging in Ireland's is near. The latter may have implications for economic activity, including bank operations and private consumption dynamics.

B. The Dynamics and Composition of Household Debt

3. Ireland's household debt reached unprecedented levels during the financial crisis. In the run-up to the crisis, household financial liabilities climbed rapidly to a peak of nearly 240 percent of disposable income in late 2009 from 115 percent in early 2003. Similarly, the household leverage ratio, defined as debt to financial and housing assets, increased to a record high of nearly 30 percent from 15 percent in 2003. The surge in household debt took place in the face of strong economic activity, low unemployment, and easy credit conditions, and was largely driven by a sharp increase in mortgage borrowing. In turn, the sustained appreciation of house prices boosted household assets and confidence, fueling further borrowing for consumption. As households consumed a larger share of their disposable income, their saving rate in 2003–07 stood at an average 7½ percent, nearly half the rates seen in European peers.



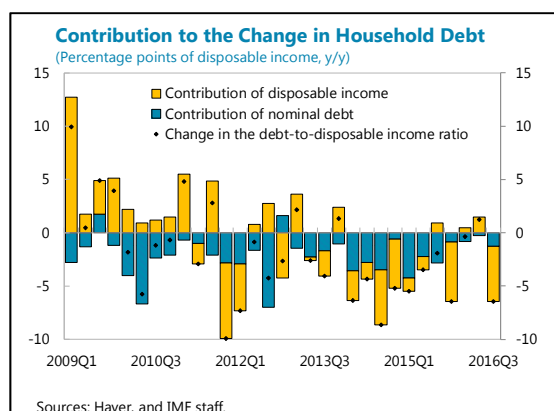
4. The extent of household debt accumulation in Ireland in the pre-crisis period was more pronounced than in peers. While many European countries experienced an increase in household debt in 2002–08, the rapid increase in Ireland was exceptional and similar in magnitude only to Denmark, which also experienced a period of rapid house price appreciation that peaked in 2007. Consequently, Irish household debt-to-disposable income was among the highest in Europe when the global financial crisis unfolded and, combined with an overvaluation in house prices, it amplified household vulnerabilities, likely contributing to the prolonged adjustment process.³



³ Empirical evidence suggests that economic downturns tend to be more severe and prolonged when they are preceded by excessive increases in household debt (see for example IMF, 2012).

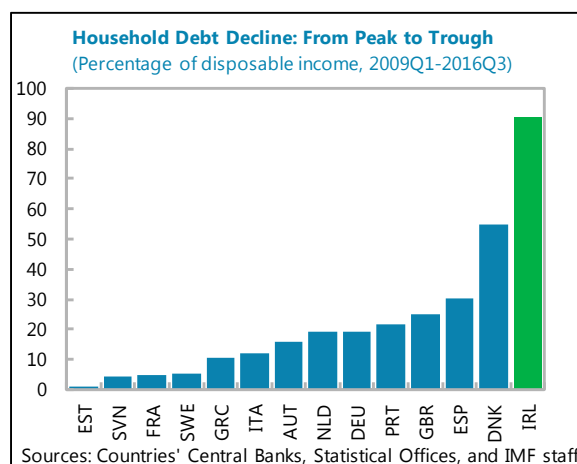
5. The recent deleveraging was supported by both net debt repayments and a strong rebound of disposable income.

The adverse shift in economic conditions in 2009, which was accompanied by rising unemployment and tightening lending standards, prompted households to begin reducing their nominal debt almost immediately. Nevertheless, household debt as a ratio of disposable income continued to increase in 2009 as disposable income contracted significantly. In 2010–11, the household debt ratio started to moderate, initially due to significant net debt repayments, and later—particularly from 2011 onwards—also due to the recovery of disposable income. In recent years, the moderation in household debt was mainly driven by the strong increase in disposable income as new borrowing picked up and net repayments slowed.



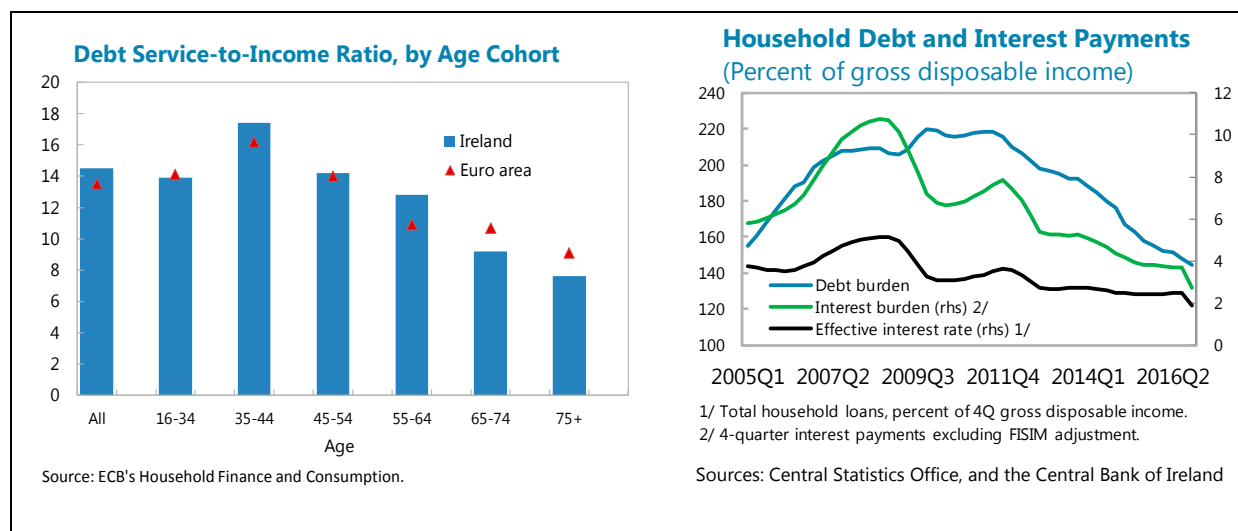
6. The magnitude of household deleveraging has been high compared to international comparators.

Irish household debt registered a decline of about 90 percentage points of disposable income from its peak in late 2009, beyond the levels seen in other euro area countries, including those that experienced a financial crisis. The sharp deleveraging, which can be seen as a correction to the rapid debt accumulation prior to the crisis and was accompanied by a significant level of defaults, was partly driven by the strong growth of disposable income in recent years, low level of new lending, and intensified supervisory efforts, which promoted “sustainable solutions” for distressed borrowers.



7. The debt service burden declined significantly in recent years. The interest burden, which stood at more than 10 percent of household disposable income in 2007, fell significantly in recent years on the back of strong recovery of disposable income and lower interest rates. Despite high debt levels in Ireland, the debt service burden is similar to that in the euro area across most of age cohorts. Fasianos and others (2017) argues that this is mainly due to (i) high income levels among those that hold mortgage; (ii) long debt maturity;⁴ and (iii) significantly lower interest rates, which can be largely attributed to the prevalence of “tracker” rate mortgage, which are linked to the ECB rate with a full pass-through to mortgage interest rates.

⁴ Connor and others (2012) show that the proportion of long maturity loans (over 30 years) increased from 10 percent to 35 percent between 2004 and 2007.



8. Despite the prolonged deleveraging, a high share of households, particularly in the younger cohorts, remained heavily indebted. The recent ECB's Household Finance and Consumption Survey (2016) indicates that about 57 percent of Irish household held debt in 2013/14—well above the euro area average of 42 percent. At about 12 percent, the share of negative equity households was also among the highest in the euro area, largely reflecting younger cohorts who bought homes near the peak of the property market. Additionally, household debt among young Irish households is well above that in their euro area peers, reflecting in part high home ownership in Ireland. Indeed, Fasianos and others (2017) indicate that, in this group of borrowers, debt is more concentrated in property than in comparator countries, such as the UK, the US and the euro area. Lydon and McIndoe-Calder (2017) show that deleveraging proceeded at a faster pace among older households. In contrast, young households who saw large increases in their debt-to-income ratio from 2006 to 2010 deleveraged only modestly in recent years due to weak disposable income growth and slow amortization rates. They concluded that deleveraging for these young households still has some way to go.⁵

9. The composition of household debt holders changed significantly over time.

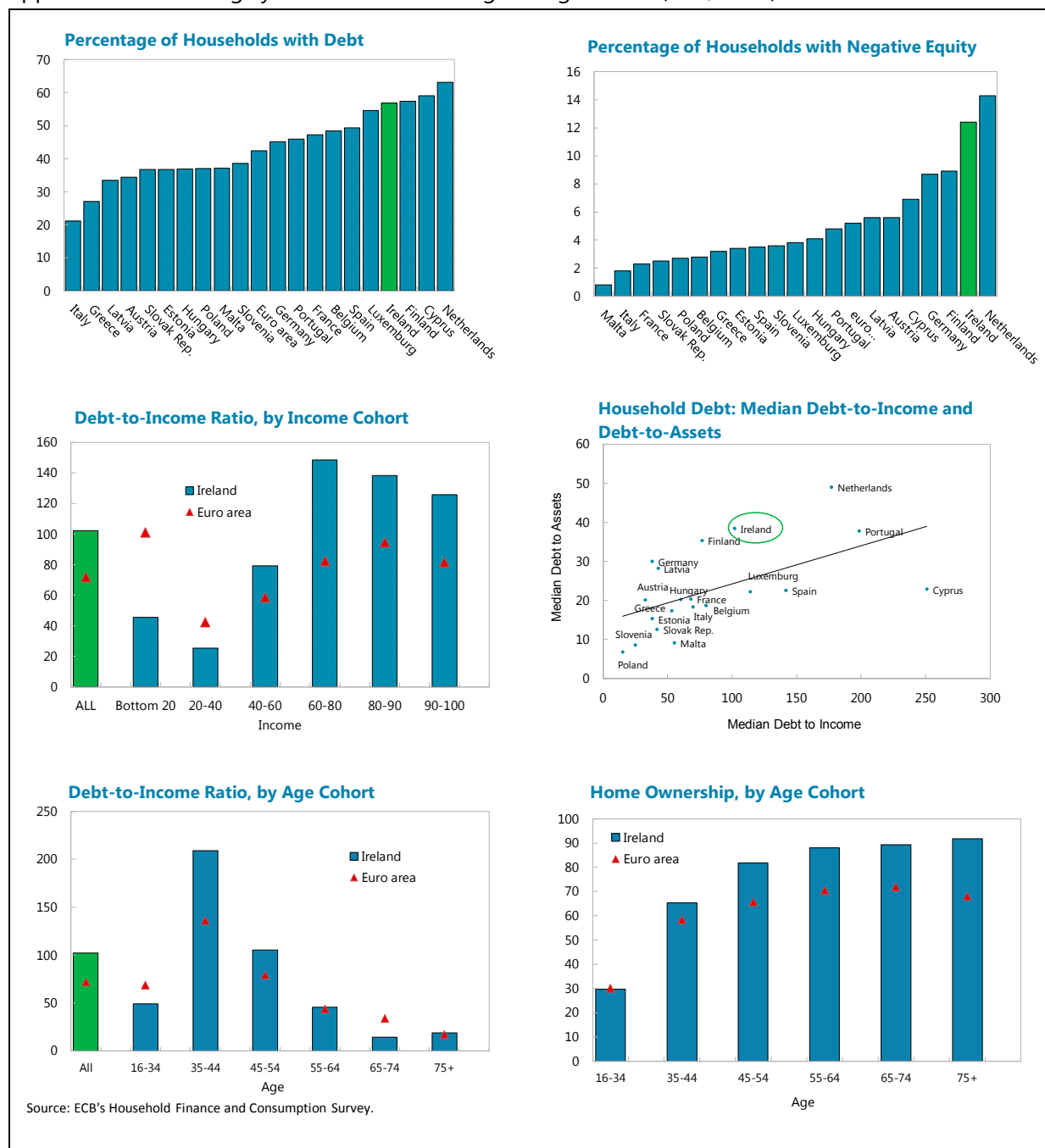
Household debt mainly consists of loans from Monetary Financial Institutions (MFIs), and Other Financial Institutions (OFIs).⁶ A small portion of loans, about 2½ percent of total household loans, is provided by the general government, and the non-financial corporate (NFC) sector.⁷ The share of MFIs loans, which averaged about 80 percent of household total liabilities in the pre-crisis period,

⁵ Banerji and others (forthcoming) use the ECB's Household Finance and Consumption Survey to identify the debt level at which households are likely to become credit constrained. Their preliminary results, which are based on cross-country analysis, indicate that a significant proportion of Irish households (40-50 percent) in the bottom three quintiles have debt above the thresholds, and are likely to remain credit constrained.

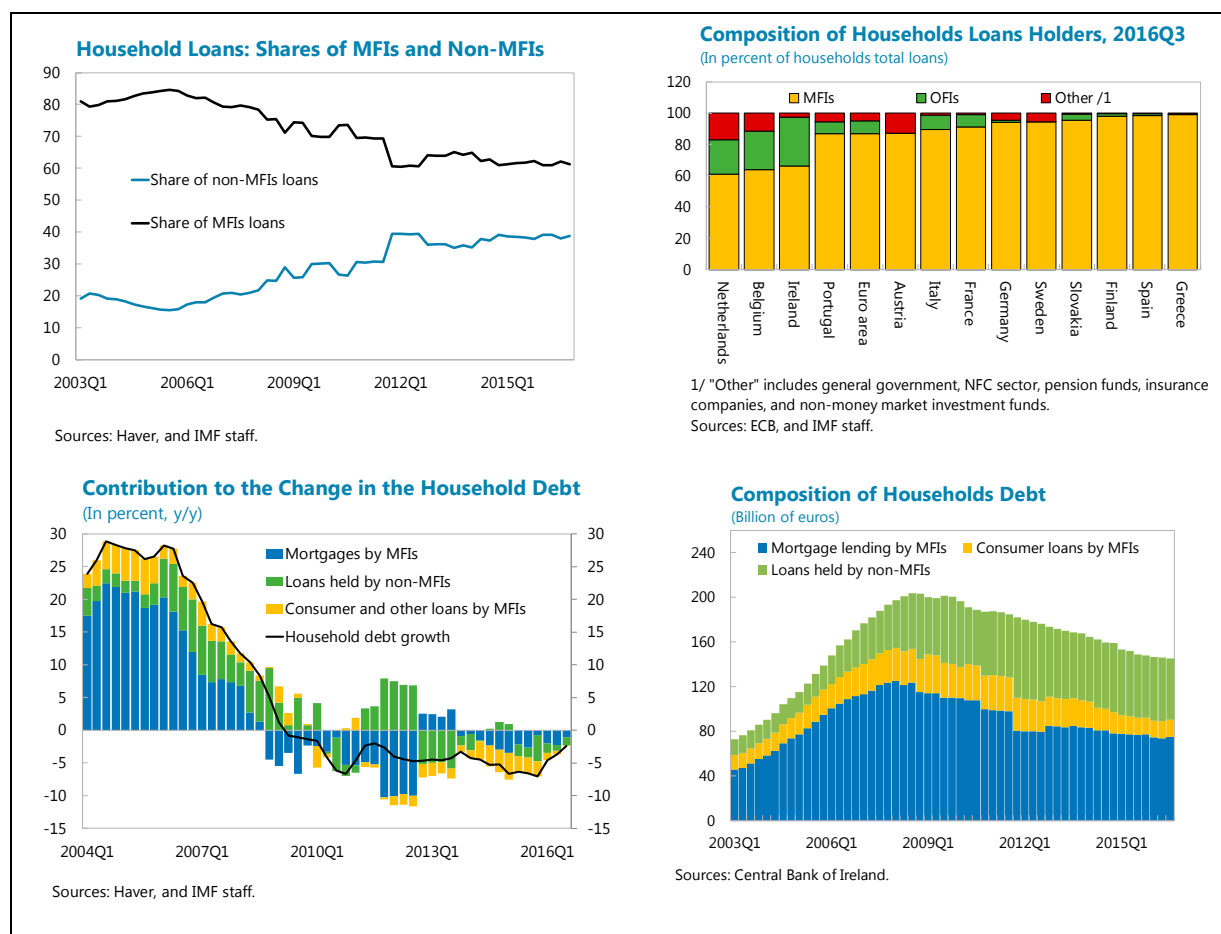
⁶ OFIs include financial auxiliaries, captive financial institutions, money lenders, and financial vehicle corporations.

⁷ Household borrowing from the NFC sector and the government is less than 10 percent of non-MFIs lending.

receded to 62 percent in 2016q3, reflecting securitization of loans, retained securitization, and sales of distressed loans by MFIs to non-MFIs, as well as new lending by non-MFIs.⁸ New lending by non-MFIs, also seen in some other European countries, may be driven by the tight credit conditions applied in the banking system and more stringent regulations (ECB, 2016).



⁸ Retained securitizations are securitizations, which are brought back onto the balance sheet of the bank and used as collateral with the ECB as part of monetary operations. Preliminary Central Bank of Ireland analysis of Q3 2016 data indicates retained securitizations represent a significant percentage of overall non-MFI lending to Irish households.



C. Determinants of Household Debt

10. Cross-country data is employed to study the determinants of household debt and the role of institutions. We follow recent papers (e.g. Jappelli and others, 2008, Barnes and Young, 2003, and Albuquerque and others 2014), which link household debt to several factors, both structural and cyclical.⁹ More specifically, we regress household debt to disposable income on the following variables:

- **Demography.** As implied in the life-cycle model (Modigliani and Brumberg, 1954) and existing empirical studies, households incur debt when they are young. This hypothesis is broadly consistent with the findings of the recent ECB's Household Financial and Consumption survey and other empirical studies (e.g. Albuquerque and others, 2014).
- **House prices-to-disposable income ratio.** Higher house prices require higher borrowing and allow greater access to finance due to higher value of collateral. Additionally, house

⁹ As some of the factors are purely cyclical, the analysis aims to explore which factors have contributed to household debt dynamics in recent years, rather than to identify the "equilibrium" or sustainable debt level across countries.

price appreciation can work through the traditional wealth effect and lead to higher borrowing to boost consumption (Dynan and Kohn, 2007).

- **Unemployment rate.** Unemployment has an ambiguous effect on household debt. On the one hand, higher unemployment may be associated with the lower future income and uncertainty, therefore discouraging household from borrowing (Mainal and others, 2016, Meng and others, 2013). On the other hand, higher unemployment could represent an income shock and reduction of household wealth, thus leading to an increase in the debt burden. Furthermore, unemployment is normally highly correlated with high level of household distress and limited debt repayment capacity. Indeed, using a micro-level data of euro area member states, Du Caju and others (2016) found that unemployment triggers over-indebtedness.
- **Home-ownership rate.** Homeowners tend to have more debt than non-homeowners as many household do not have sufficient equity to purchase a home (Dynan and Kohn, 2007). Moreover, higher housing assets held by households would reduce borrowing constraints and raise available collateral for consumer loans.¹⁰
- **Interest rate on mortgages.** Higher real interest rates on mortgages reduce the affordability of household debt and increase the opportunity cost of buying a home.
- **Institutional structure.** Better information sharing among credit institutions and greater legal rights for both borrowers and creditors were found to be positively correlated with higher credit to households (Jappelli and others, 2008, Djankov and others, 2007). We use the World Bank's Doing Business indicator of "getting credit," which measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and the effectiveness of information sharing about borrower characteristics.
- **Public debt.** Following the Ricardian equivalence argument, public debt might influence taxation and therefore household saving and debt. In the context of Ireland, Andritzky (2012) finds a strong and significant impact of the Ricardian effect, i.e., households tend to relax savings when the government cuts the fiscal deficit (and vice versa). In addition, a higher public debt-to-GDP ratio may induce banks to be regular holders of government securities, crowding out loans to households (Coletta and others, 2014).

¹⁰ This indicator may also capture household wealth, which is largely affected by housing assets. Cross-country data on housing assets are not available.

Box 1. Methodologies Applied to Study Household Debt

Recent studies applied different specifications and estimation methods to examine the determinants and sustainability of household debt. For example, Barnes and Young (2003) developed a calibrated partial equilibrium overlapping generations model to explain the increase in aggregate indebtedness in the United States. Tudula and Young (2005) applied a similar approach to the United Kingdom. Dynan and Kohn (2007) used micro-level data to assess the determinants of household debt in the US, using variables such as age, education, and homeownership. Colletta et al. 2014 applied a panel data of 32-countries to study the determinants of household debt, taking into account both demand and supply-side factors.

Other studies identified the “equilibrium” level of household debt and the short-run deviations. Philbrick and Gustafsson (2010) and Meng and others (2011), for instance, studied the determinants of household debt in Australia through a Vector Error Correction Model, while Mokhtar and others (2013) employed a similar methodology to study household debt in Malaysia. Similarly, Albuquerque and others (2014) used a panel dataset to estimate a time-varying equilibrium household debt-to-income ratio across US states by employing a Pooled Mean Group developed by Pesaran et al. (1999).

A somewhat different strand of the literature focused on deleveraging needs based on a sustainability analysis. Cuerpo et al. (2013), for instance, proposed a time-varying measure that relies on the notion of stationarity of household debt-to-asset ratio. While this modelling approach considers valuation effects on the asset side, it ignores the possibility that the sustainable debt ratio could also depend on factors other than assets, such as income expectations, uncertainty, or the cost and access to credit. Andritzky (2012) used “out-of-sample” prediction of household savings rates to assess the future trajectory of household debt.

11. Data and methodology: The sample covers the period 2003Q1–2016Q3 and includes eleven euro area countries where data for both household debt and the considered explanatory variables are available.¹¹ For some countries, the sample is shorter due to lack of data availability. Data is taken from Haver (household debt-to-disposable income, public debt-to-GDP, and interest rates on mortgages), Eurostat (home ownership, and the share of population age 25–44), OECD (house price-to-income ratios), and the World Bank (“Getting Credit” indicator).¹² The dependent variable is household debt as a share of gross disposable income. The regressions are estimated using an instrumental variable method to address a possible endogeneity bias (two stage least square), with country fixed effects.¹³ The specifications also include a time dummy to control for common euro area macroeconomic effects.

¹¹ The countries are Austria, Belgium, Finland, France, Germany, Greece, Italy, Ireland, the Netherlands, Spain, and Portugal.

¹² Getting Credit is measured as the distance from the frontier. Higher value indicates that the distance from the frontier (100) is closer.

¹³ The variable lags as well as financial assets and employment are used as instruments.

12. Table 1 presents summary statistics for Ireland and the rest of the countries in the sample. It shows that average household debt-to-disposable income was nearly double in Ireland compared to the rest of the countries in the sample. Moreover, the home ownership rate and the share of young population (ages 25–44) are on average higher in Ireland than in the rest of the sample, though in recent years it has shown a significant decline (see Annex). Real interest rates on mortgages were somewhat lower on average, reflecting in part the prevalence of tracker mortgages. The data also show that house price-to-income was, on average, higher in Ireland than in peers, despite the housing-market bust in the crisis, and that Ireland's unemployment rate was much more volatile around its mean. The “getting credit” indicator suggests that access to credit in Ireland is, on average, better than that in other euro area members in the sample.¹⁴

Table 1. Ireland: Summary Statistics, 2003Q1–2016Q3								
	Debt-to-disposable income/1	Public debt as a share of GDP /1	Real interest rate on mortgages	Home ownership	Population at age 25–44	House price to income ratio	World Bank's “Getting Credit”	Unemployment (diff. from long-term average)
Full sample, excluding Ireland								
mean	99.8	100.1	3.5	71.7	28.8	110.3	61.8	0.000
min	22.4	37.3	0.56	51.9	24.7	75.5	43.8	-2.446
max	267.2	193.7	6.52	90.5	33.5	166.4	87.5	2.853
Ireland								
mean	186.9	61.9	3.1	74.4	30.8	119.2	84.9	0.000
min	112.7	24.7	2.1	68.6	28.9	81.8	70.0	-5.292
max	237.2	117.9	5.0	81.8	32.1	165.4	87.5	7.137
1/ Data are seasonally adjusted.								

13. The estimation results are shown in Table 2. We present only the fixed effects specifications as Hausman tests indicate that the coefficients under the random effects estimations are not consistent. While the specifications have in general a relatively low explanatory power (0.18–0.35), they suggest that household indebtedness is higher in countries with a high share of young and high home ownership. As expected, a higher house price-to-income ratio has a positive effect on household debt while higher interest rates on mortgages and lower public debt contribute to lower household indebtedness. The results also show that high unemployment (relative to its long-run average) positively affects household debt ratios, possibly representing an income shock and/or a high level of distress, which is associated with limited debt repayment capacity. In addition, better information regarding borrower characteristics and stronger legal rights, which reduce the risk of default, are correlated with higher household debt. Finally, the *pre-crisis* dummy, which obtains a value of one in the pre-crisis period 2003Q1–2007Q4 and zero otherwise, shows that, on average, household debt was higher in the post-crisis period.

¹⁴ Get credit is measured as distance from frontier. Higher value suggests that the distance from frontier is smaller.

Table 2. Ireland: Determinants of Household Debt-to-Disposable Income

Instrumental variable estimation, two-stage least square (GLS2LS), Fixed Effects 2003q1-2016q3

	(1)	(2)	(3)	(4)	(5)	(6)
<i>House price to income</i>	0.491***		0.478***	0.456***	0.550***	0.494***
<i>Real interest rate on mortgages</i>	-0.791	-2.677***	- 0.427		-4.379**	-4.106**
<i>Share of population at age 25-44</i>					7.293***	8.187***
<i>Public debt</i>	- 0.076	-0.272***	-0.127**	-0.128***	-0.028	
<i>Home ownership</i>	0.014	1.337***	0.143	-0.055		0.696*
<i>Getting Credit</i>	0.837***	0.719***		0.682**	0.597***	0.483***
<i>Unemployment 1/</i>	2.940***	2.326***	3.360***	2.6269***	2.605***	2.451***
<i>Pre-crisis</i>	-5.448**	-12.621***	-4.614***	-3.538***	-14.419**	-14.500***
<i>Time dummy</i>	yes	no	yes	no	yes	yes
<i>R² (within)</i>	0.649	0.527	0. 623	0.619	0.612	0.639
<i>R² (overall)</i>	0.311	0.347	0.214	0.327	0.204	0.177
<i># obs.</i>	395	395	401	407	402	395
<i>Hausman test p-value H₀: RE H₁: FE</i>	0.000	0.000	0.000	0.000	0.000	0.000
<i># countries</i>	11	11	11	11	11	11

1/ difference from the country' long-term average.

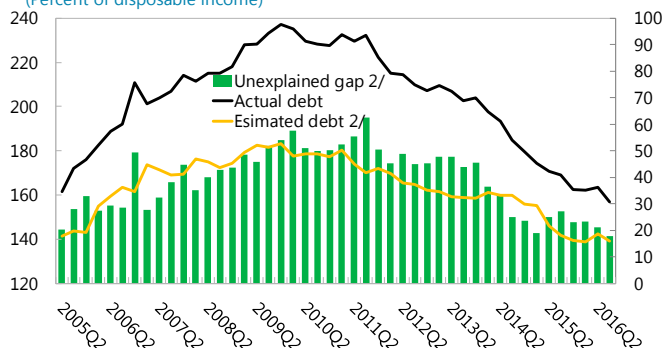
*** Indicate significance level of 1 percent; ** indicates significant level of 5 percent, and * indicates significance level of 10 percent.

14. While the model provides useful information regarding some of the determinants of household debt, some important caveats should be recognized. First, the estimations' relatively low explanatory power suggests that there may be time-varying factors that affect the level of household debt that are not directly captured in the specifications above (e.g., sentiment about future economic activity). Second, the sample covers a highly volatile period that includes a boom-bust cycles in several countries, including Ireland, elevated public debt levels, and an unusually accommodative monetary policy stance. Furthermore, widespread uncertainty regarding future economic conditions in the post-crisis period, which may not have been fully captured in the analysis, may have also affected household saving-borrowing behavior. Third, the analysis, which is based on a macro-level data, ignores the distribution of debt across households, and possible asymmetries between borrowers and creditors. Lastly, while we use a two-stage instrumental variable methodology, the possibility of endogeneity cannot be ruled out, particularly given that some of the variable lags are used as instruments.

15. With these caveats in mind, we turn to assess the impact of the identified determinants on Ireland's deleveraging in recent years. We use the model's coefficients and the actual values of the identified determinants to estimate household debt in Ireland. This exercise replicates the hump shape pattern of the Irish debt ratio in the past decade, though it shows a relatively large unexplained gap between actual and estimated debt levels. More specifically, the estimated debt ratio increases from about 140 percent of disposable income in early 2005 to nearly 185 percent at end-2009, largely on the back of higher house prices, the rising share of young prior to the crisis, and favorable consumer sentiment and economic conditions in the euro area, as

captured by the time dummies. From 2010 onwards, the estimated model explains more than half of the actual deleveraging. The moderation of the estimated debt ratio is largely driven by the decline in unemployment, which points to improved economic conditions and a lower level of distress (especially after 2013), as well as a decline in the share of homeownership and young, lower access to credit, and moderation of house prices (mainly up to 2014). At 2016Q3, estimated debt was just below 140 percent of disposable income, but since the actual debt ratio declined more rapidly, the unexplained gap narrowed to about 15 percentage points of disposable income from nearly 55 percentage points in late 2009. All else equal, continued reduction in the unexplained gap would be consistent with further deleveraging in the near term.

Ireland's Household Debt: Actual and Estimated 1/
(Percent of disposable income)



Source: IMF staff calculations.

1/ Household debt includes loans and other account payable, seasonally adjusted.

2/ Based on specification 6 in Table 2.

D. Key Takeaways

16. Ireland has experienced a significant reduction in household debt in recent years.

Following a significant accumulation of debt in the pre-crisis period, Irish households have endured a prolonged period of adjustment. This paper provides a short overview of the deleveraging dynamics and household indebtedness using both aggregated and more granular data, and explores some of the factors that may have supported the adjustment process. The analysis suggests that:

- Household debt declined sharply in recent years, but remained above the euro area average and levels seen in Ireland prior to the property boom. Moreover, a significant share of households, particularly young and high income households, remain heavily indebted with negative equity.
- The composition of household debt holders changed significantly over time. While the banking system still holds the lion's share of household loans, the share of household loans held by nonbanks registered a twofold increase compared to the early 2000s and stabilized at just below 40 percent of total household loans in recent years. This increase largely reflects securitization of loans by MFIs, sale of distressed assets by MFIs to non-MFIs, and also new lending by non-MFIs.
- Household debt-to-disposable income was found to be higher in countries with a high proportion of young, high home ownership rates, better access to credit, high unemployment (relative to the long-term average), and a high house price-to-income ratio. A lower public debt-to-GDP ratio and real interest rate on mortgages also contribute to higher household debt.

- The estimated model—although subject to several caveats—suggests that the identified determinants contributed to more than half of the decline in household debt since 2010, while the unexplained gap narrowed sharply from 55 percentage points of disposable income in late-2009 to about 15 percentage points at 2016Q3. All else equal, continued reduction in the unexplained gap would be consistent with further deleveraging in the near term.

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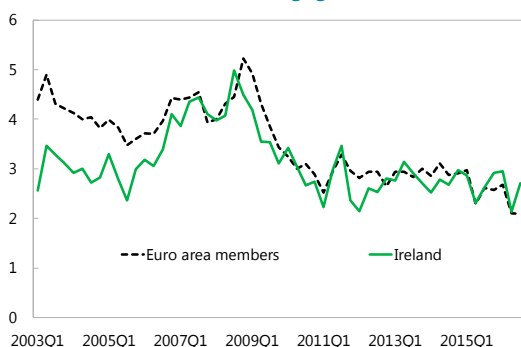
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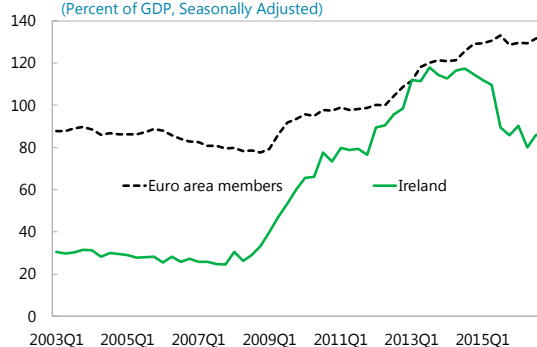
Annex I. Determinants of Household Debt¹

Real Interest Rate on Mortgages

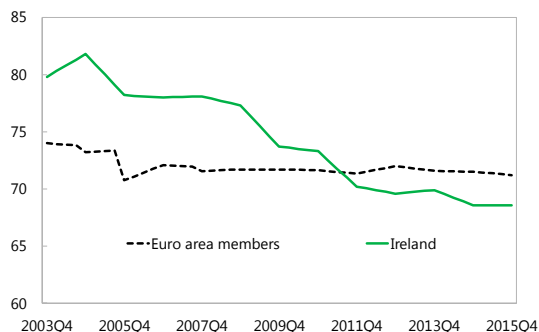


Public Debt

(Percent of GDP, Seasonally Adjusted)

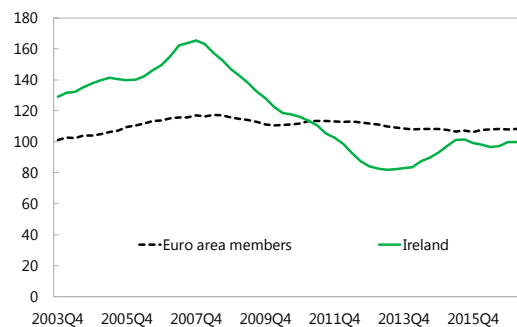


Home Ownership Share in Total Population¹

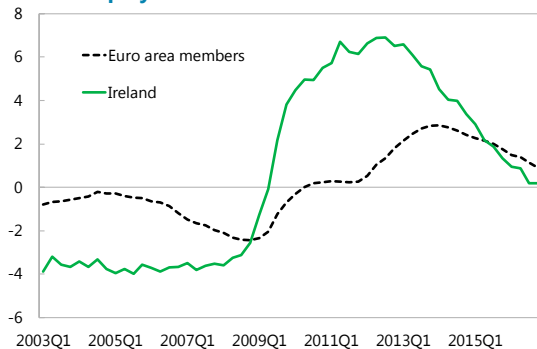


¹Quarterly data is based on interpolation.

House Price-to-Income Ratio

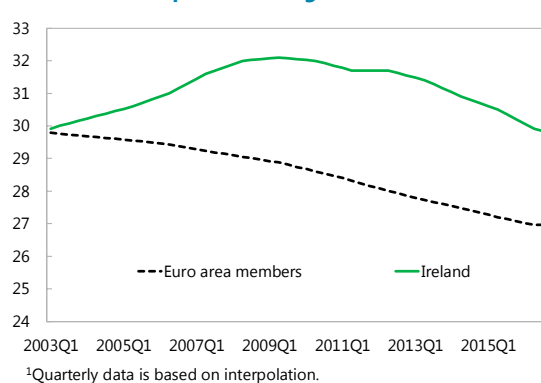


Unemployment¹



¹Difference from long-term average.

Share of Population at Age 25-44¹



¹Quarterly data is based on interpolation.

¹Euro area members refer to the countries in the sample, excluding Ireland.

Sources: Eurostat, Haver, World Bank, OECD, and IMF staff.

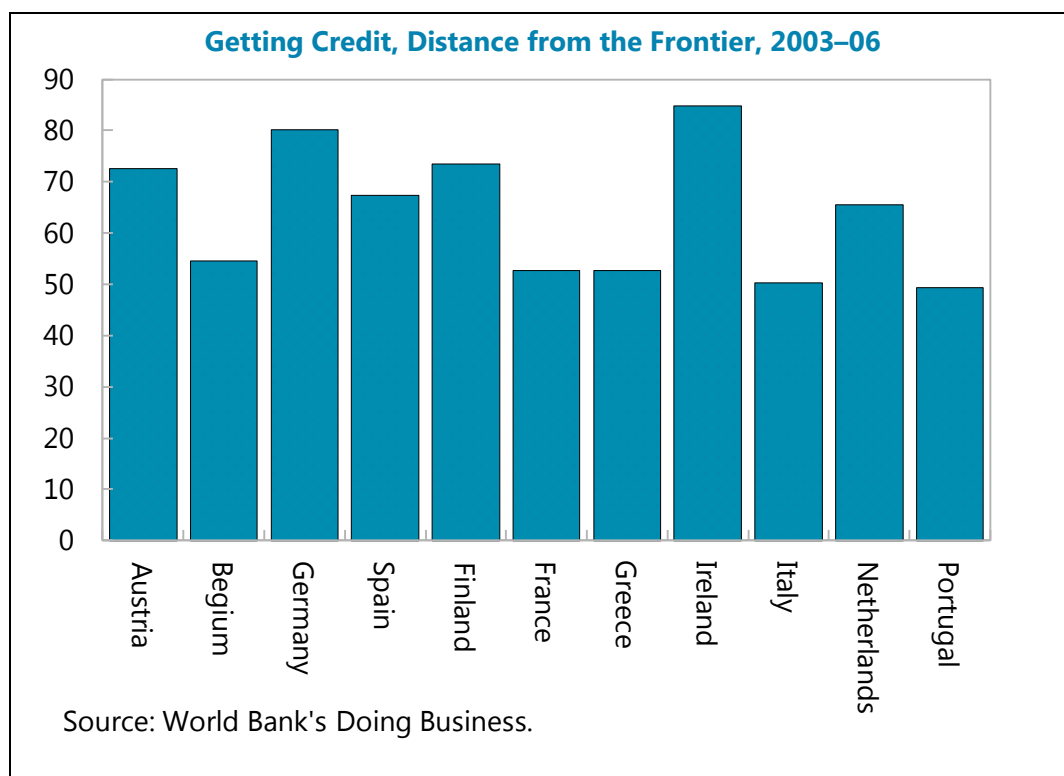
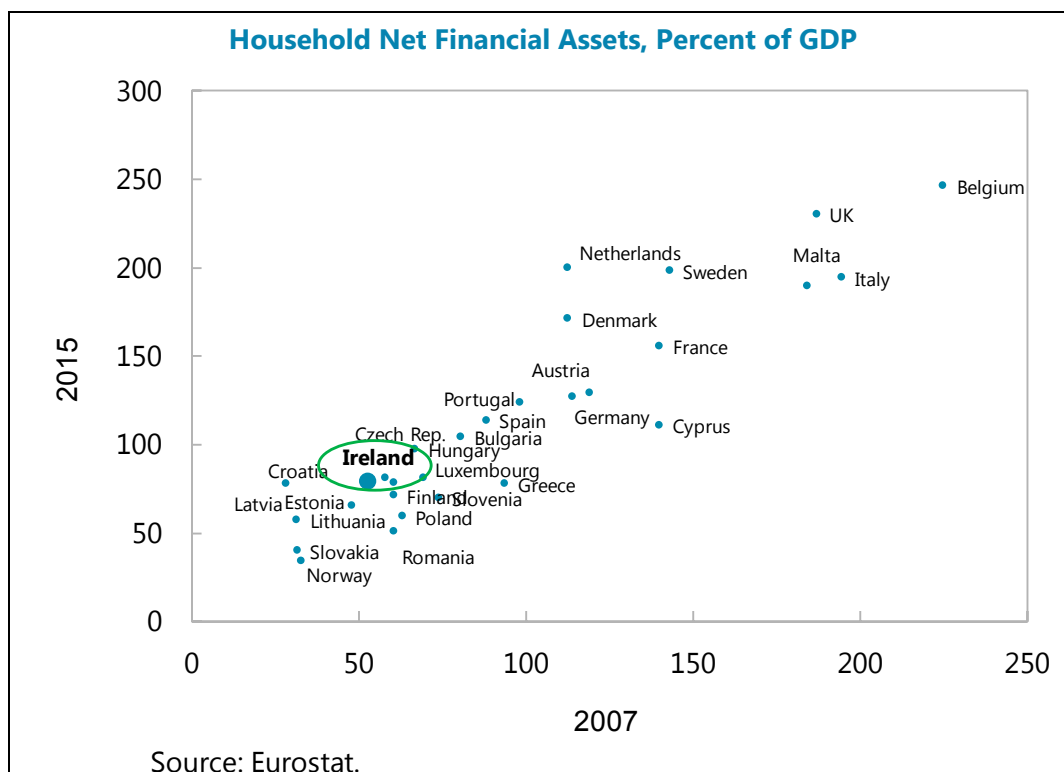


Table A1. Correlation Matrix

	Household debt to disposable income	Home ownership rate	Real interest rate on mortgages	House price to income ratio	Share of population at age 25-44	Getting Credit	Public Debt to GDP ratio	Unemployment (diff. from long-term average)
Household debt to disposable income	1							
Home ownership rate	0.182	1						
Real interest rate on mortgages	-0.005	-0.223	1					
House price to income ratio	0.127	0.368	0.173	1				
Share of population at age 25-44	0.201	0.459	0.119	0.181	1			
Getting Credit	0.389	-0.311	-0.001	-0.170	0.104	1		
Public Debt to GDP ratio	-0.412	-0.155	-0.139	-0.323	-0.117	-0.431	1	
Unemployment (diff. from long-term average)	0.308	0.142	--0.417	-0.197	0.146	0.090	0.257	1

IRELAND: THE ROLE OF FOREIGN-OWNED MULTINATIONAL ENTERPRISES¹

Foreign-owned multinational enterprises (hereafter “multinationals”) have played a central role in supporting Irish growth over the past two-and-a-half decades.² They have concentrated in higher productivity activities, providing high-skilled employment opportunities and contributing fiscal revenue that has supported growth-enhancing investment and social spending. Notwithstanding their manifold benefits, their complex operations and large scale relative to the overall economy require special consideration, particularly in terms of concentration risks to public finances, employment, and output, and the impact on the external balance. They also have sizable effects on Irish statistics, as most prominently highlighted by 26.3 percent growth rate in 2015.

A. Overview

1. Multinationals have played a key role in the economic success of Ireland. Ireland has actively promoted inward foreign investments, including through support by the Industrial Development Authority (IDA) Ireland.³ During the 1990s, companies, mainly from the US and to a lesser extent the EU, invested in high-productivity industries, such as chemicals (mainly pharmaceuticals), as well as information and technology. By providing high-skilled jobs and investing into R&D, they contributed significantly to growth of the economy, including through productivity spillovers, although economic multipliers are smaller than in the rest of the economy.

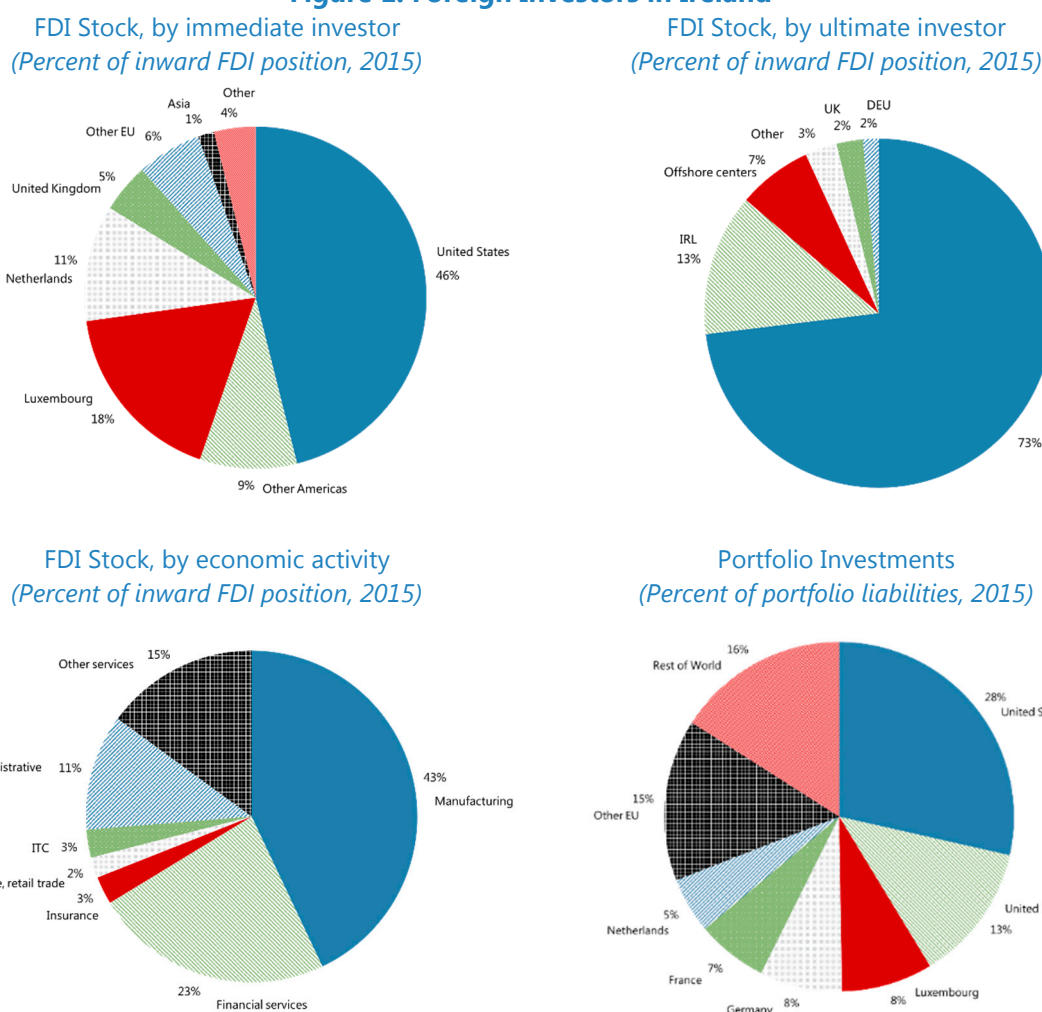
2. Who are they? Multinationals operating in Ireland may be subsidiaries or Ireland-headquartered (domiciled) foreign-owned companies. Close to a half (measured by FDI stock, by immediate investor) are from the United States, followed by Luxembourg, Netherlands, the UK and other EU countries (Figure 1). Measured by ultimate investor, U.S. investors dominate with 73 percent of FDI stock. Indeed, as of 2012 (latest available data), three quarters of multinationals-related gross value added (GVA) is produced by multinationals from outside of the EU.⁴ At the same time, more than half of portfolio investment originates in the EU, with an additional one third from the US.

¹ Prepared by Jiří Podpiera. The paper benefited from discussions with the authorities during Article IV seminar, in particular, Thomas Conefrey, and substantial input by members of the IMF Ireland team.

² This paper focuses on the role of non-financial enterprises. Financial service operations by multinationals (IFSC) also have a sizable impact on Ireland.

³ IDA Ireland has provided support to one third of multinationals in Ireland.

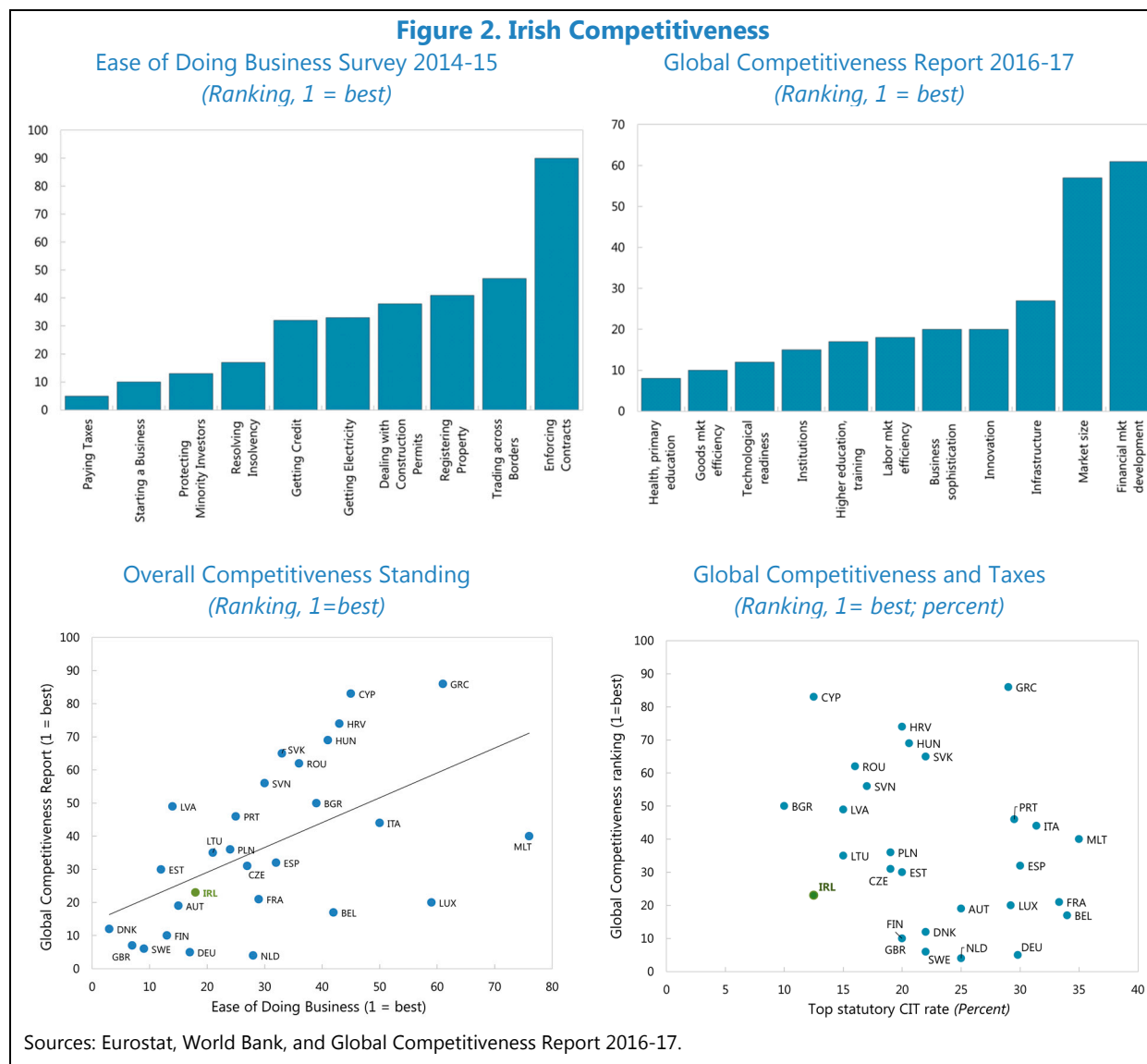
⁴ Table 8.2 Structural business statistics by sector and nationality of ownership, 2012
<http://www.cso.ie/en/releasesandpublications/ep/p-bii/businessinirelandabridged2012/multinationals/>

Figure 1. Foreign Investors in Ireland

Sources: Eurostat, Coordinated Portfolio Investment Survey (CPIS), and CSO.

3. What brought multinationals to Ireland? There are several elements that make Ireland an attractive destination for foreign investments. Key factors include Ireland's strong, flexible, English-speaking workforce, proximity to Europe and membership in the European Union, a competitive business environment (as reflected in a variety of international comparisons highlighted in Figure 2), and low statutory and effective corporate tax (CIT) rates relative to comparators. Indeed, these elements align with characteristics found to be significant in recent cross-country studies explaining FDI location decisions.⁵

⁵ See, for example, Davies and Killeen (2015) and Davies and others, (2016). These studies find that factors such as location, common language, market size, and EU market access play a key role for EU and non-EU investors, a low tax environment matters mainly for FDI in services for non-EU investors. Beusch and others (2013) also finds a correlation between a low tax environment and location of contract manufacturing.

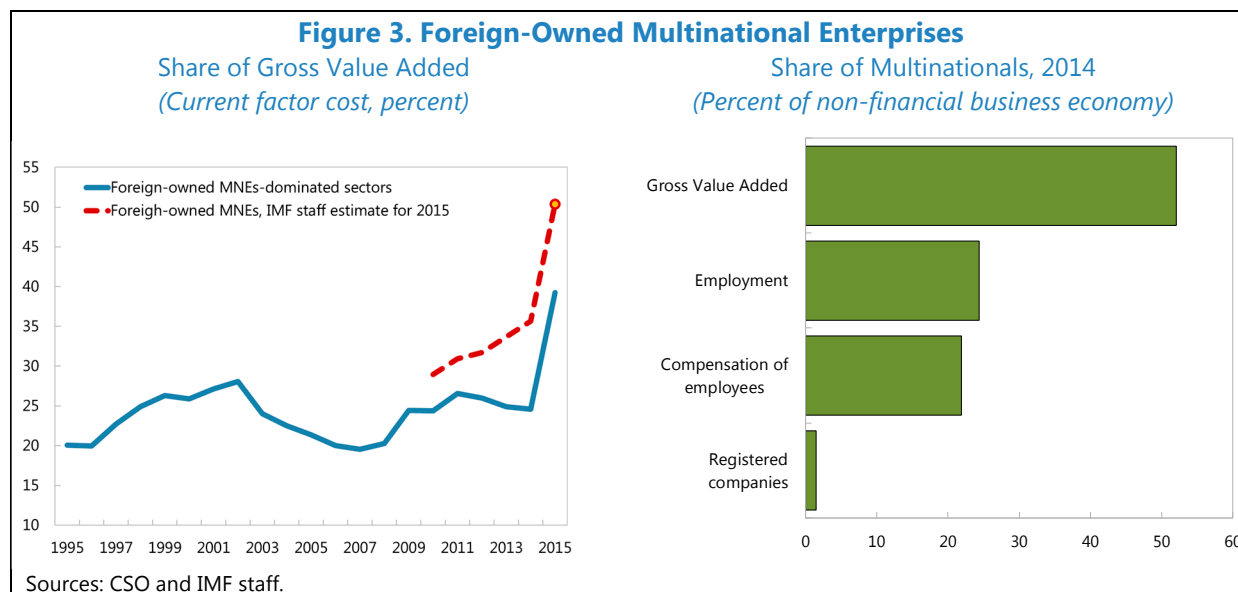


Output and Employment

4. Multinationals are an important part of the Irish economy (Figure 3). In total, they produced more than a third of GVA in 2014, rising to an estimated 50 percent in 2015, equivalent to approximately 60 percent of the non-financial business economy, much higher than the EU average of about 25 percent.⁶ Certain aspects of multinational operations (e.g., IP-related investment, contract manufacturing, and aircraft leasing) inflate these headline figures (Appendix). Still,

⁶ Actual data for 2015 is not available. GVA shares for 2015 are therefore estimated using the share of multinational-dominated sectors in overall GVA in 2015 and adding (1) the 2014 difference between multinational-dominated sectors and all foreign-owned multinationals to estimate the share in GVA of all foreign-owned multinationals in 2015 and (2) the 2014 difference between the share of multinational-dominated sectors in GVA and the share in the business economy to obtain the multinationals share in business economy in 2015.

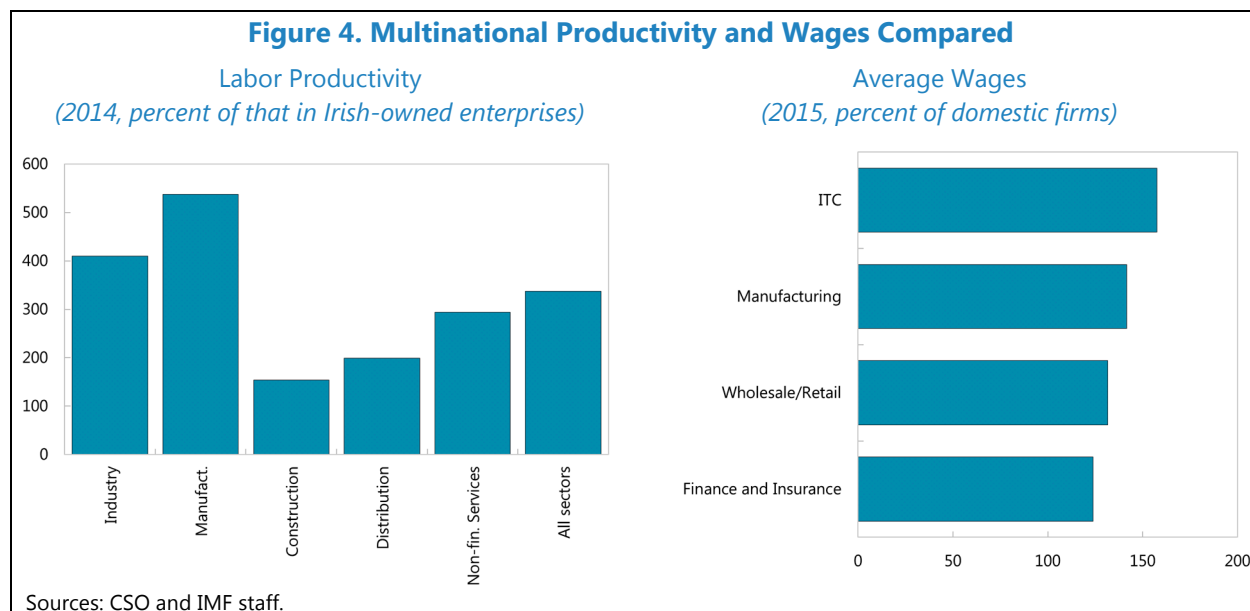
multinationals have a sizable impact on underlying Irish economy. Multinationals tend to cluster in, and dominate, chemicals and chemical products, software and communications, and a mixed group of related sub-sectors.⁷ These multinational-dominated sectors jointly represented 40 percent of GVA in 2015. Activities of multinationals account for a significant share of employment and payroll in the non-financial business economy, while making up just 1.5 percent of total companies.



5. Multinational-dominated sectors exhibit higher labor productivity and wages than indigenous firms (Figure 4). The high presence of IP-related activities in Ireland and related contract manufacturing pushes up labor productivity in manufacturing.⁸ Although still significant, differences in productivity between multinational and indigenous firms in construction and distribution appear to be many times smaller than in manufacturing. Correspondingly, the differences in wages paid by multinationals compared to domestic firms are the highest in manufacturing and ITC. Nevertheless, when compared to the overall economy, pay in the multinational-dominated sectors is close to the average (Figure 3).

⁷ Reproduction of recorded media; basic pharmaceutical products and pharmaceutical preparations; computer, electronic and optical products; electrical equipment; medical and dental instruments and supplies.

⁸ Pharmaceutical products are recorded under Manufacturing and IT in Non-Financial Services.



6. Production by multinationals tends to be part of global value chains (GVC). Especially for chemicals and electronics, the stages of GVC production in Ireland involve manufacturing, assembling, logistics, and design, that are characterized by low value added consistent with the middle of GVC production stages (Figure 5). Indeed, chemicals and electronics have a short production span in Ireland relative to the overall length of the GVC (Figure 6). These stages are longer for medical equipment, where there are also more spillovers to the broader economy.

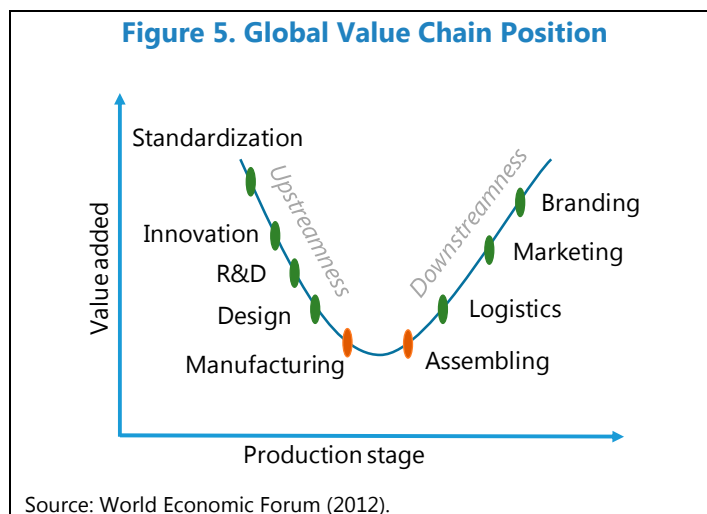
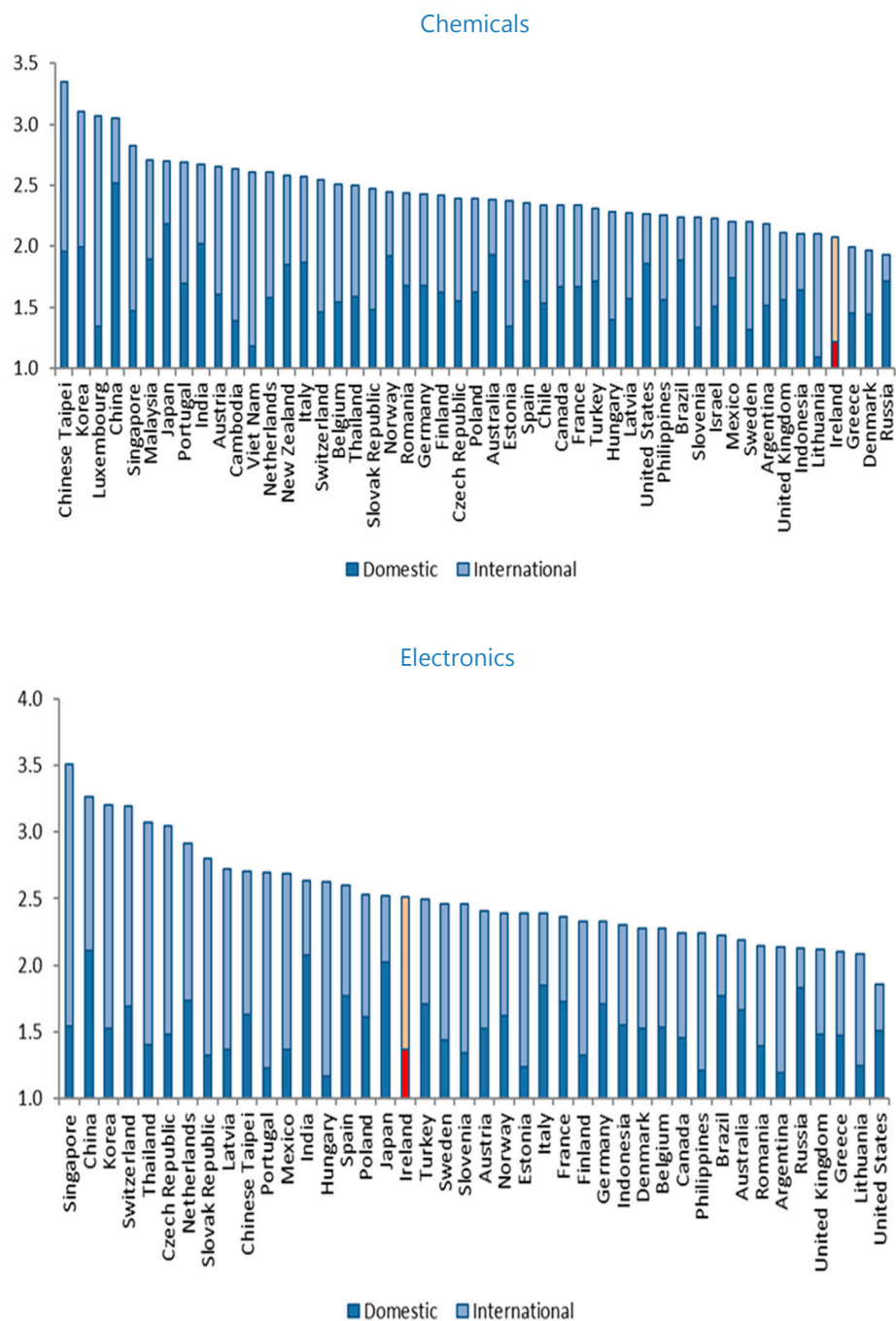


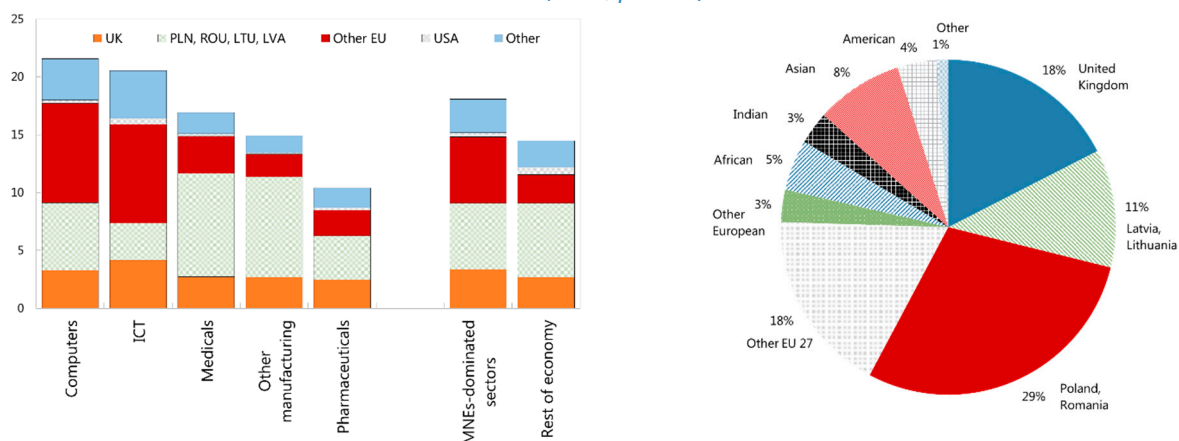
Figure 6. Length of Global Value Chains
(Index of production stages, 2008)



Source: OECD ICIO model, December 2012 release.

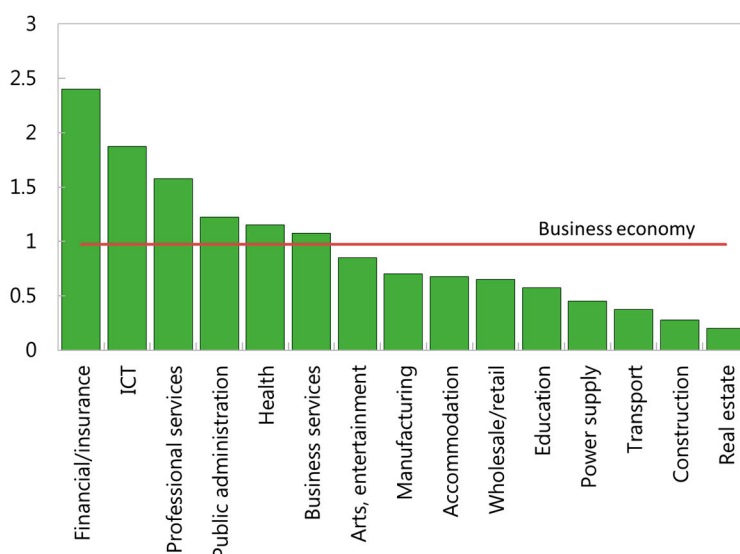
7. Employing non-Irish workers is common in Ireland, and their share in employment in multinational-dominated sectors is somewhat higher than in the broader economy (Figure 7). This testifies for the truly open character of the Irish economy, including the labor market. However, it also likely signals skills mismatches at the domestic labor market—shortages of local high-skilled professionals for high-value added jobs of multinationals (IMF, 2016). A high rate of vacancies (job vacancies per 100 jobs taken up) in multinational-dominated sectors, such as the financial sector and ICT, may also suggest untapped employment potential (Figure 8). Between 2012 and 2015, over 115 thousand jobs were created in the indigenous sector versus 8 thousand by MNEs, although MNE job creation jumped substantially in 2015 to 82 thousand, just above half of total new jobs created that year.

Figure 7. Share of Non-Irish Employment
(2011, percent)



Source: CSO and IMF staff.

Figure 8. Job Vacancies Rate, by activity



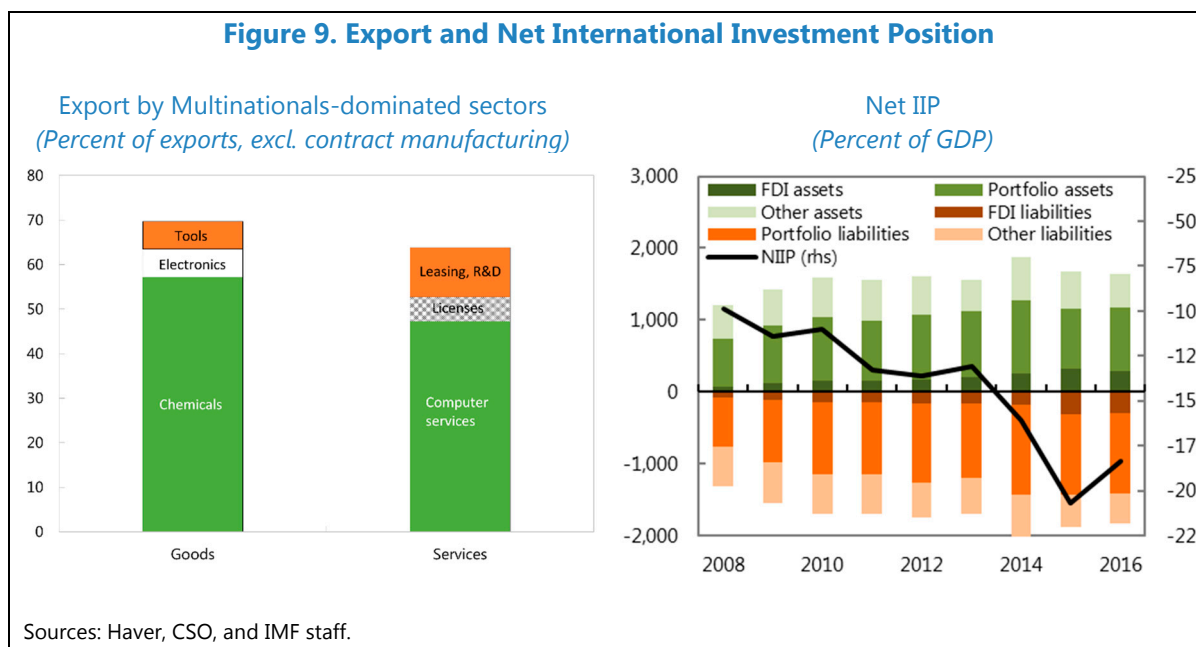
Source: Eurostat.

Note: Business economy includes sectors B to J, L to N, and S95 of NACE Rev. 2.

8. Despite relatively low multipliers, multinational-dominated sectors provide a buffer during downturns in the domestic business cycle. Foreign-dominated sectors have lower output multipliers and much lower employment effects (DOF, 2014). The output multiplier, measuring the marginal full-economy direct and indirect effects on output from an increase in final demand for output in a given sector, is 1.2 for the multinational-dominated sector and 1.4 for the indigenous sector. The impact on employment in the economy resulting from a €1m increase in final demand for output in a given sector (the employment effect) is 3 additional jobs for the multinational-dominated sector, compared to 10 jobs for the indigenous sector. This finding is consistent with the specialized, export-oriented activities of multinationals. However, this paired with strong access to external finance has a positive macroeconomic stabilization impact during downturns, that is periods of domestic demand adjustments and impaired financial intermediation.

External sector

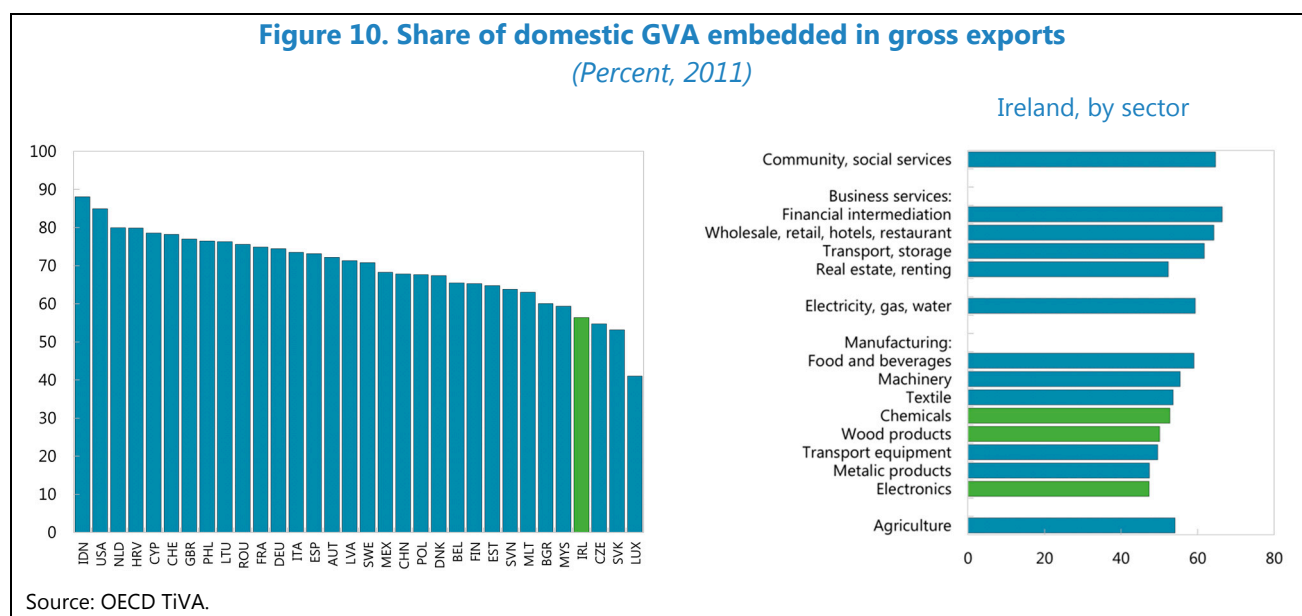
9. Multinationals had a sizable impact on the Net International Investment Position (NIIP), especially in 2015. Foreign investment in Ireland has grown significantly and become the key driver of NIIP. The large size of assets and liabilities reflects the scale of multinational operations (Figure 9, FDI and portfolio investments). The recent deterioration of NIIP has been mostly driven by multinational's intangible operations related to balance-sheet restructuring and thus has not affected the external sustainability of core domestic sectors (see Appendix III, IMF, 2017a).



10. Multinationals dominate Irish exports, albeit concentrating in few export categories. According to IDA (2011), exports of multinationals accounted for 75 percent of total in 2011. Using trade data (excluding contract manufacturing), multinational-dominated activities in exports of goods and services accounted for close to 70 percent of total in 2015 and concentrate in handful of product categories, namely chemicals, selected manufacturing products, and computer and financial services. Nevertheless, contract manufacturing plays an increasingly important role in overall

exports. Approximately 25 percent of GDP in 2016 (up from 5 percent of GDP in 2013) relates to contract manufacturing (Box 1), with important implications for the trade balance. While the trade balance for goods and services is 23.2 percent of GDP, without contract manufacturing, it would be close to zero.⁹

11. The large scale and low value added per unit of multinational exports has reduced the ratio of domestic GVA in gross exports. While the overall domestic export-oriented GVA rose substantially between 1995 and 2011, the share of domestic GVA in gross exports fell from 62 percent to 56 percent during this period, currently among the lowest for OECD countries. The share of domestic GVA in indigenous sector exports is relatively high, but the short production cycle of multinationals in Ireland and their increased importance in exports weights down the overall share (Figure 10).



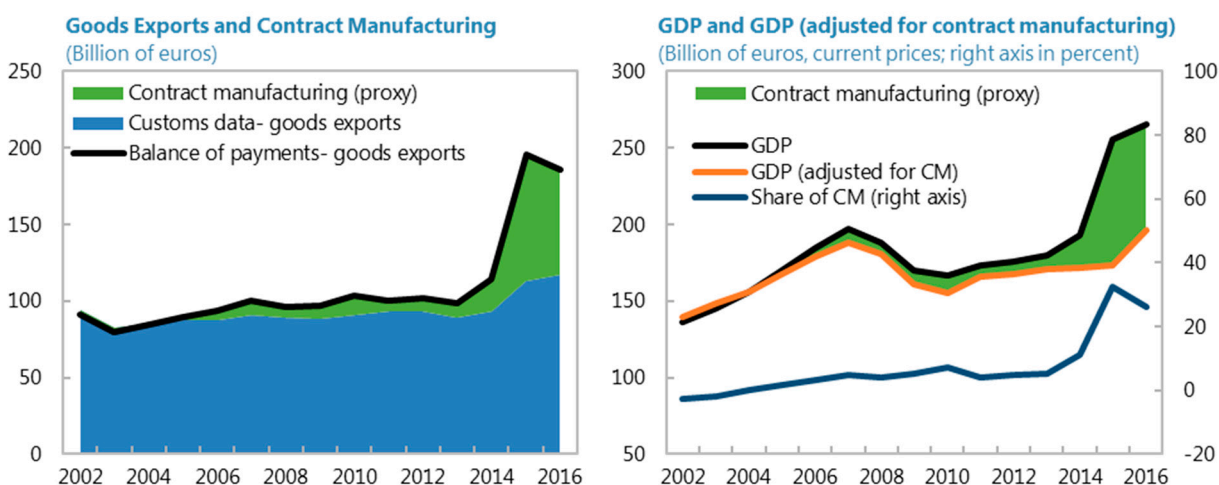
⁹ A large part of the import of services (royalties and IP investment) may be linked to contract manufacturing and would be ideally subtracted from imports. Data on this breakdown, however, are not currently available.

Box 1. Overseas Activities of Multinationals

The most important part of offshore production is contract manufacturing. That is manufacturing of goods abroad, based on a contract with an Irish-domiciled firm (see Appendix, footnote 1). While information on the approximate scale of such operations in manufacturing is available, a quantification of offshoring in other sectors is not. In the financial sector for instance, it is difficult to break down the export-related value-added into traditional export of services and offshoring.

Contract manufacturing accounted for an estimated quarter of GDP in 2016. Products under contract manufacturing in Ireland are not registered by customs but are booked in the national accounts as net export (revenues less costs). Therefore, the difference between goods export in balance-of-payments accounts and customs accounts serves as a proxy for the size of contract manufacturing.^{1/} Contract manufacturing goods exports accounted for a third of 2015 GDP and for about a quarter of 2016 GDP. For 2015, the figure is similar to the preliminary estimate of the difference between GDP and GNI* (see Appendix), suggesting that the biggest difference between GDP and a proxy measure of the size of the domestic economy is contract manufacturing (CBI, 2017).

Sources: Central Statistics Office; and IMF Staff.



^{1/} The proxy is not exact as the difference also reflects a variety of adjustments to the trade data, including valuations.

B. Policy Implications

12. Multinationals present important opportunities and challenges. Given their networks, they can channel products efficiently to various markets—an important opportunity for Irish-owned businesses in related sectors to partner with multinationals. In addition, multinationals invest in R&D, increasing labor productivity. At the same time, the high concentration of multinational operations implies risks. In this context, potential tax changes in key partners, including the US, and broader discussions on international tax cooperation may affect multinational operations in Ireland (Box 2).

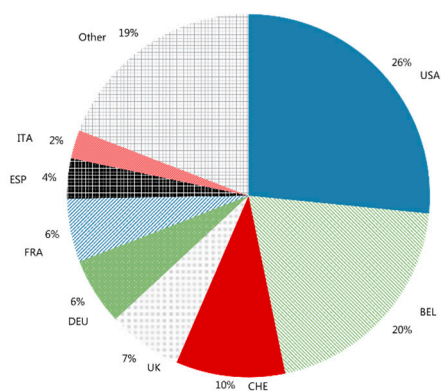
Box 2. Impact of Potential US Tax Changes on Multinationals in Ireland

The complex nature of the international tax system makes it difficult to assess the impact of potential changes in international taxation. There are several factors – beyond Ireland’s low tax rate – that make it an attractive destination for foreign investment. Ireland ranks well in various indicators of global competitiveness, based on a sound legal and regulatory system, a strong workforce, and a flexible labor market. EU membership and the native English environment are also relevant to the mainly US-based multinationals in Ireland. Nonetheless, in a globalized world with mobile capital, it is important to consider possible implications of ongoing discussions of international tax reforms for Ireland, including the ongoing discussions of possible tax reform in the US. Tax-related issues are likely to be particularly relevant for multinationals with substantial profits deriving from IP and those with limited physical operations in Ireland. In such cases, the impact may be less severe on domestic underlying activity and employment, notwithstanding potential effects on corporate taxes.

Destination-based tax systems and those with less favorable treatment of imports, such as the recently floated border tax in the US, would likely have the largest impact on exporters in general, including those in Ireland. Such reforms in the US, which imply fundamental changes from the existing system, appear less likely at present. At the same time, direct exports to the US are concentrated in the chemical/pharmaceutical sector, with many multinationals in Ireland serving mainly as a hub for European operations. Possible US measures to support repatriation of profits or to reduce tax rates (as has been occurring for some time in other jurisdictions) are less likely to have a major effect in the short-term.

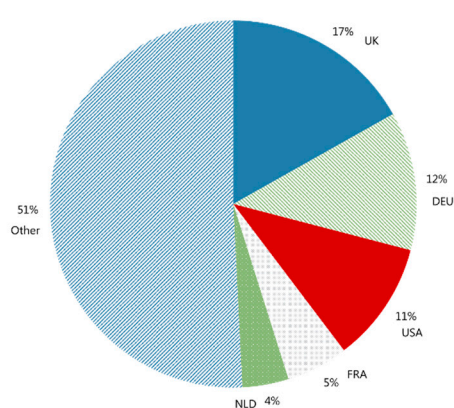
Export of Chemicals, 2014

(Percent)



Export of Machines and Electronics, 2014

(Percent)



Source: World Integrated Trade Solution.

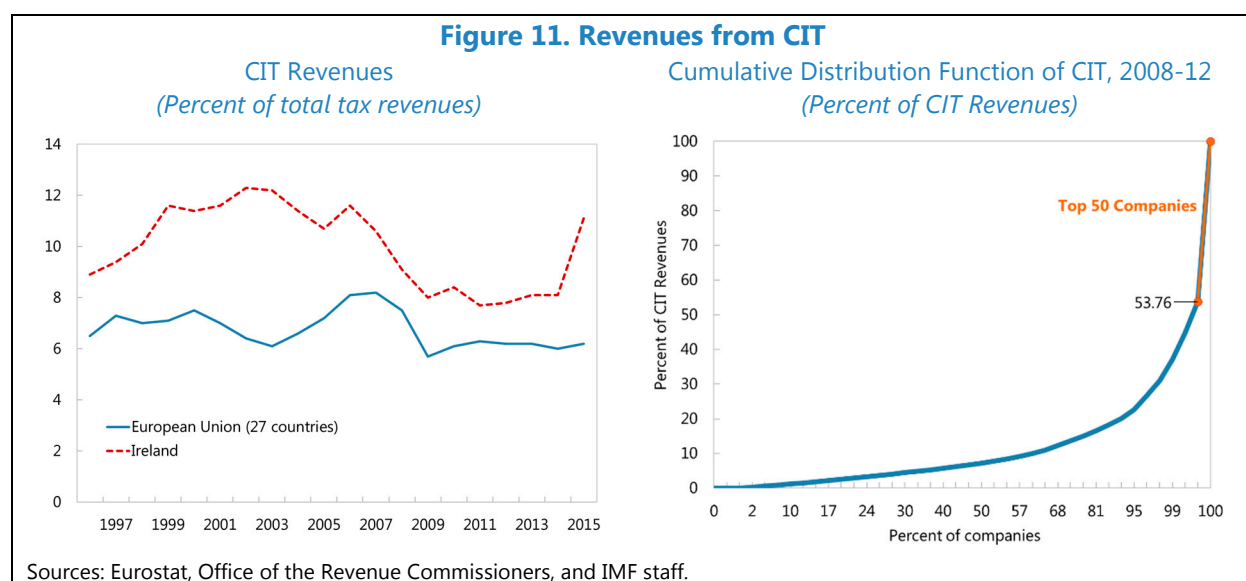
13. What are the policy options to further increase the benefits from multinationals while mitigating associated risks? Among key priorities are to continue building fiscal buffers and to broaden the tax base, while fortifying the business environment to maintain competitiveness. The latter includes improving infrastructure, strengthening human capital (including through higher female labor force participation and investment in tertiary and technical education), and promoting innovation and diversification in the SME sector, including through higher local sourcing in Ireland by multinationals.

Importance for Public Finances

14. The activities of multinationals have important implications for government revenues.

The impact on revenues is both direct (through CIT) and indirect (through taxes paid on compensation of employees and consumption):

- *CIT receipts are a relatively large and concentrated source of government revenues, suggesting elevated risks to revenue collection* (Figure 11). The CIT share of total tax revenues is about double the EU average, pointing to a higher reliance on CIT as a form of state financing that is also concentrated among few companies (see IMF 2017a).
- *Estimates suggest large indirect effects on tax revenues.* Multinationals pay about 15 percent of total compensation of employees, hence social contributions and income taxes. In addition, through wage-linked consumption, they affect VAT receipts. Here also, there is a significant concentration of the indirect impact. IMF staff estimates that the top 50 companies account for about 10 percent of non-CIT tax receipts.¹⁰



15. Changes in the offshore activities of multinationals may significantly and quickly affect public debt sustainability. Offshore activities of multinationals are large and portable, with potential implications for both tax revenues and measured GDP, hence the public debt-to-GDP ratio. Staff estimates suggest offshore activities accounted for about 25 percent of GDP in 2016 (see Box 1). For an assessment of the risks to debt dynamics in the event of a sudden decline in multinational

¹⁰ The estimate assumes that non-CIT tax receipts are proportional to the compensation of employees. Therefore, the derived share of compensation by top 50 companies yields the estimate. The share of compensation by the top 50 companies have been derived using reported CIT tax payments, divided by the CIT rate (12.5 percent) and by the share of profits in GVA observed in the multinationals-dominated sector (77 percent). The result is multiplied by 0.9, since non-CIT tax revenues represent 90 percent of total tax revenues, yielding the estimate of the share of top 50 companies in non-CIT tax receipts.

activities, see the public-sector debt sustainability analysis (DSA) in IMF (2017a). Fiscal policies should focus on:

- **Building fiscal buffers.** The concentration risk associated with multinational-driven CIT further reinforces the importance of strong fiscal buffers. At the same time, some portion of these revenues may prove temporary, highlighting the importance of saving revenue windfalls and not using them to fund permanent increases in expenditures.
- **Utilizing alternative metrics to assess the appropriate fiscal stance:** As detailed in the appendix, headline, or measured, GDP overstates underlying economic activity, complicating policymaking. The planned publication of additional metrics beginning in July, which seek to strip out the effect of global activities by multinationals, will provide a stronger basis to assess public spending and debt levels than GDP-based metrics.

Structural Reforms

16. An effective strategy to reinforce sustainable and inclusive growth in Ireland will need to reflect Ireland's growth model—taking advantage of the strong presence of multilaterals while insulating against associated risks, preparing the workforce to compete effectively for the more skilled, high-paid jobs multinationals offer, and supporting the dynamism of the domestic economy:

- *Enhancing labor skills.* Continued efforts to align education path with business needs can help address the skills shortages in fast-growing sectors, including those dominated by multinationals that were identified in the 2016 [National Skill Bulletin](#).
- *Further improving the business environment.* International survey data suggest some gaps in the generally strong business environment, including improving contract enforcement, strengthening procedures for registering property, further developing the financial market, and dealing with construction permits (see Figure 2).¹¹
- *Addressing infrastructure needs.* Inadequate infrastructure has been identified in these surveys as an important obstacle in doing business in Ireland.
- *Promoting innovation among SMEs* in the indigenous sector. While Ireland is considered a top innovator, a large part of R&D activities are carried out by large enterprises, mostly foreign-owned. The share of R&D expenditures by small firms in business R&D expenditures remains just above 13 percent, and spillovers from multinationals are relatively limited. Furthermore, public-sector support for business innovation is mainly in the form of tax credits, which may be less effective in helping start-up firms. Promoting innovation through expansion of government support for SME-driven R&D, including direct funding measures, will help increase dynamism in the domestic economy. Consistent with the government's [Action Plan for Jobs 2017](#), innovation support, especially through monitoring IP activity at a

¹¹ Executive survey by the WEF, Global Competitiveness Report as well as ranking by the WB's Doing Business.

firm level, increasing collaboration with research centers and multinationals through [Knowledge Transfer Ireland](#), and assuring broader non-bank financing options, is important. These efforts would improve the share of domestic value added in exports, increase employment of skilled labor force, and thereby increase economic multiplier of multinational operations in Ireland.

Appendix I. Statistical Challenges

This appendix reviews the challenges of measuring domestic economic activity in Ireland and discusses ongoing efforts by the authorities to address this issue with additional statistics.

A. Measurement Challenge

1. The large scale of multinational activities in Ireland relative to the domestic economy, as well as their complex, varied and changing nature, contribute to statistical challenges.

Multinationals invest in substantial physical production, provide significant employment, and are an important part of the tax base in Ireland, with a direct bearing on the underlying economy. However, significant investment in (or relocation of) intangible and internationally mobile capital assets (including aircraft leasing), as well as often related “offshore” contract manufacturing, have a large statistical impact not in line with their relevance to underlying domestic activity (See Box A1 and Figure A1).^{1 2} They also substantially complicate understanding of the external accounts (Box A3). While such operations are in no way unique to Ireland, their large scale relative to the overall Irish economy presents special challenges. The often-complex nature of these operations adds to the challenge. This impact was particularly striking in 2015, with multinational intangible operations related to balance sheet restructuring (and related contract manufacturing) accounting for a large portion of the 26.3 percent headline GDP growth.³

2. Why are alternative metrics important? While Ireland’s national accounts statistics are fully consistent with international norms, the headline aggregates no longer provide an accurate picture of underlying performance within Ireland. Multinational activities can mask trends in underlying growth rates, as well as trade and investment developments, making it more difficult to gauge the cyclical position of the economy and the appropriate setting for economic policies. Volatility and lumpiness in multinational investment or income flows further complicate assessment. Standard metrics, often based on GDP or headline balance of payments figures, can distort analysis of, for example, labor productivity and economic well-being, fiscal sustainability, and external competitiveness, masking important risks or misrepresenting performance. Headline data also limits meaningful cross-country comparisons, as standard metrics can lead to misrepresentation of Ireland’s relative position.

¹ “Contract manufacturing” refers to a special form of outsourcing, where a domestic company engages a company abroad to manufacture products on its behalf but retains the economic ownership of the inputs used in this production process. This process includes the import of intermediate inputs and manufacturing services by the domestic company. Subsequently, when the product is sold to a customer abroad, a change in economic ownership takes place and the export of this good is then recorded in the domestic national accounts and balance of payments, even though it was never physically present in the country.

² See Lane (2016).

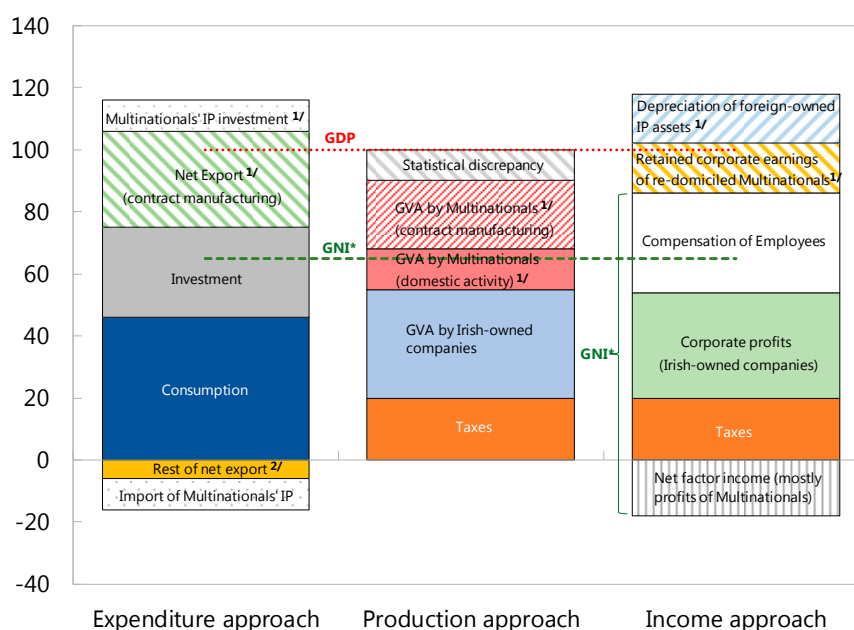
³ The revision was driven by a Euro 300 billion increase in the capital stock and associated activities, see Annex 1, Post Program Monitoring 6 for a fuller discussion of the July 2016 revision to 2015 GDP from 7.8 to 26.3 percent.

Box A1. Impact of Multinationals on GDP

Multinationals strongly affect national account measures under ESA2010 and BPM6, complicating an analysis of underlying conditions:

- *Expenditure approach.* Offshore production and other proceeds for invested capital (such as license fees) by Irish multinationals are part of net exports of goods and services. Investment in intellectual property (IP) affects capital formation, capital stock, and imports. Because current national accounts statistics do not provide a breakdown for contract manufacturing and partial information for investment into IP by multinationals, underlying components of domestic demand and exports cannot be distinguished from the often volatile effects of multinational activities, especially on investment and exports. This also complicates the assessment of external sustainability.
- *Production approach.* Gross Value Added (GVA) includes both domestic and offshore value added created by multinationals in Ireland. Current national accounts statistics do not provide a breakdown for domestic and offshore production of multinationals. Thus, the offshore component is difficult to separate to derive certain domestic measures, such as labor productivity. Given the volatile nature of offshore activities, they often mask underlying domestic economic trends.
- *Income approach.* Investment profits by Irish-domiciled companies, including from offshore activities, are part of GNP/GNI. Although income data for redomiciled companies are available, current statistics do not report separately profits of multinationals from offshore activities with weak links to employment, which would be ideally excluded when analyzing underlying economic conditions. Consequently, the labor share for domestic production cannot be derived, limiting analysis of potential output and the cyclical position. A GNI* metric and related data will be produced starting this summer to begin addressing some of these issues (discussed in Section B).

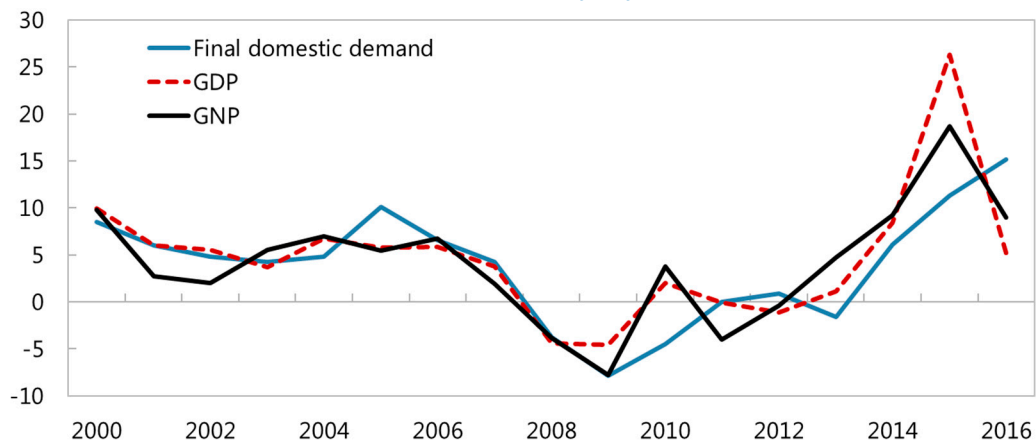
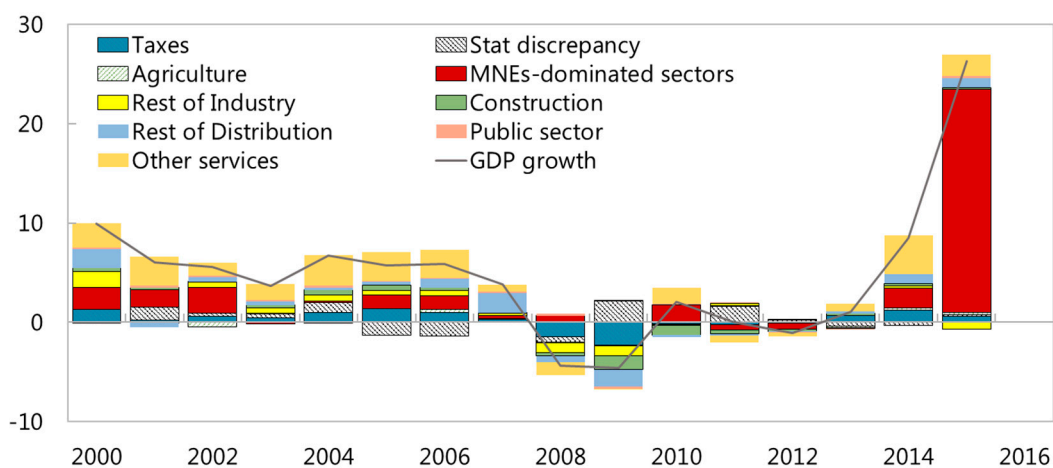
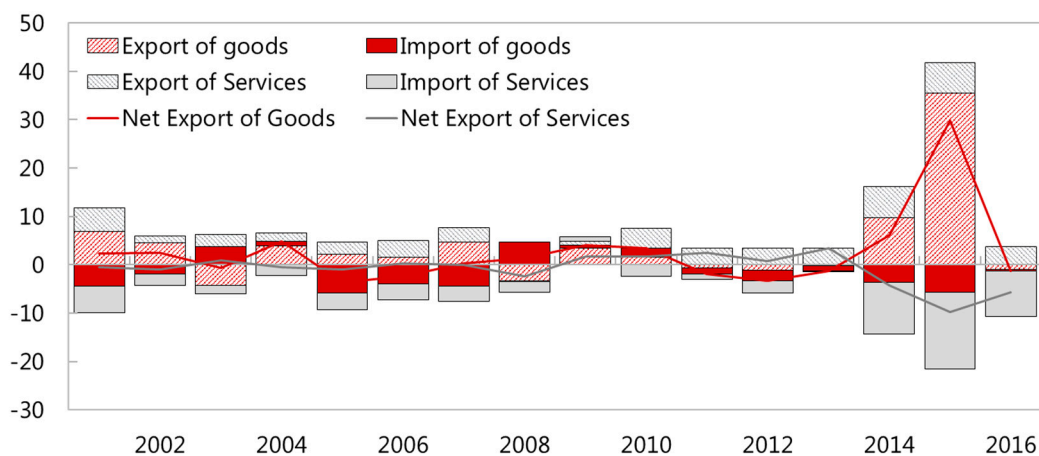
Schematic National Accounts Statistics with Multinationals (Percent of GDP)



Source: IMF staff.

1/ Items are currently not reported separately.

2/ Includes net export of royalties, not reported separately.

Figure A1. Growth and Trade*GDP Growth (Constant prices, y-o-y, percent)**Gross Value Added (Contributions to growth, percent)**Trade in Goods and Services (Contribution to GDP growth, percent)*

Sources: Haver Analytics and IMF staff.

Note: Contract manufacturing is recorded on a net basis as net export and added to the series of exports of goods.

Box A2. Impact of Multinationals on External Accounts

Operations of multinationals affect NIIP and nearly all flows on the Balance of Payments.

Multinationals perform contract manufacturing, provide financial services, invest in IP, and trade in goods and services. In terms of financing, multinationals borrow abroad, pay out dividends, and reinvest. These flows affect virtually all parts of the BOP accounts (see table) and NIIP since multinationals are often financed from external sources (including related-party lending). Recent relocation of large balance sheets by multinationals also has had a major impact on asset and liability stocks and flows of profits and royalties. A better understanding of the underlying BOP and IIP would require stripping out multinational activities related to their global operations (e.g., those driven by IP and contract manufacturing).

Balance of Payments with Multinationals

Balance of payments item	Affected by multinationals	Type of multinational flow
Current account	Yes	
Trade balance	Yes	
Export of goods	Yes	Contract manufacturing ^{1/} , other multinational export
Export of services	Yes	Financial services of IFSC, royalties of re-domiciled multinationals
Import of goods	Yes	Non-contract manufacturing import of multinationals
Import of services	Yes	Import of IP-related investment, royalties paid
Income balance	Yes	
Credit	Yes	Profits of Irish re-domiciled multinationals
Debit	Yes	Profits, remittances
Capital account	No	
Financial account	Yes	
Direct investment	Yes	FDI by multinationals, including reinvested profits
Portfolio investment	Yes	Foreign investments in multinationals (not classified as FDI)
Other investment	Yes	External borrowing by multinationals, including related party
Change in reserves	No	
Errors and omissions	Possibly	

^{1/} Contract manufacturing is recorded as export on a net basis and thus does not affect imports.

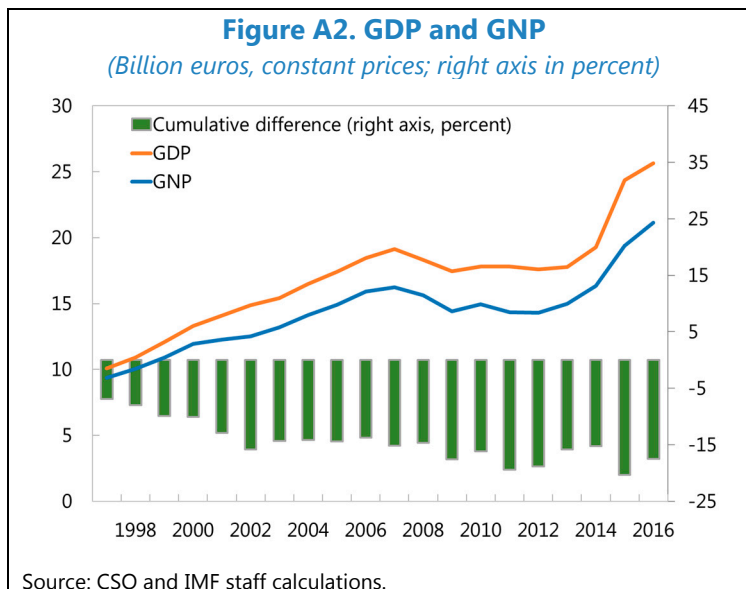
Box A3. Statistical Impact of IP-Related Operations by Multinationals

The complex impact of multinational operations on Irish national accounts can be demonstrated by the differential impact of IP-related operations carrying different structures:

- *Investment into the IP.* A multinational company purchases IP (acquires it) and imports it to Ireland. This will be registered as an increase in investment and imports by the same amount with no immediate impact on GDP but with a negative immediate effect on the current account. The acquisition of the asset may affect import and export flows in the future – through the payments of royalties and the direct effect on the trade of goods or services (see Box 1, 2016 Article IV).
- *Transferring IP assets.* When a multinational relocates an entire balance sheets to an Irish subsidiary there is no asset acquisition and the transaction affects neither capital formation nor imports (and thus has no immediate effect on the BOP. However, IP relocation increases the capital stock and affects the IIP since it implies relocation of liabilities related to non-resident owners/creditors. Over time, it increases net exports through the inflow of royalties and the direct effect on the trade of goods and services (see Annex I, PPM6).

3. Historically, GNP was used as an alternative to GDP to address the effect of multinationals in Ireland.

GNP measures activity attributable to Irish residents and is defined as GDP less net factor income to non-residents from Ireland.⁴ The gap between Ireland's GDP and GNP is among the highest in the world and has grown, driven by multinational operations. GNP grew on average about a percentage point a year slower than GDP over nearly two decades (Figure A2). Nonetheless, GNP has never been a perfect substitute and over time has become increasingly problematic given the increased relevance of issues related ownership of intellectual property, including under new international statistical norms adopted in 2010 and with significant re-domiciling of activities to Ireland. In addition, the scale of contract manufacturing and aircraft leasing has also ballooned, especially in 2015, having a large effect on all standard measures of economic activity – GDP, GNP, and domestic demand (Figure A1).



4. The Irish authorities have long recognized the need for better measures of underlying activity. Additional metrics for output beyond GNP have been utilized in key analytical and policy documents for some time. For example, the Ministry of Finance has included interest-to-revenue and debt-to-revenue benchmarks in budget documents in addition to traditional debt-to-GDP measures. Central Bank analysis utilizes measures of underlying activity (e.g., domestic demand, investment), which exclude volatile components of investment in intangibles and aircraft leasing.⁵ Alternatives to GDP in analytical work by public and private researchers, such as GNP and employment, has also been common. The CSO periodically publishes useful information on multinational-dominated sectors, albeit not with sufficient detail to fully separate out overseas operations.⁶ Notwithstanding these earlier efforts, the 2015 national accounts revision was rightly seen as a game changer.

⁴ GNI (Gross National Income) is a similar concept to GNP, subtracting net property income to non-residents from Ireland.

⁵ Underlying domestic demand is close to the concept of "core domestic demand" utilized in recent Fund staff reports.

⁶ <http://www.cso.ie/en/releasesandpublications/er/gvafm/grossvalueaddedforforeign-ownedmultinationalenterprisesandothersectorsannualresultsfor2015/>

Box A4. How Statistical Issues Affect the IMF's Work

Applying standardized IMF approaches to economic and sustainability analyses requires caution and adjustments in the Irish case:

- Producing a measure of underlying domestic economic conditions – *core domestic demand*. This measure adjusts domestic demand for intangible and aircrafts investments.
- Relying more on complementary statistics in DSA analysis, such as *public debt to revenues and per capita debt*, rather than the ratio of debt to headline GDP that is distorted by the large size of offshore activities by multinationals (Annex VI, IMF 2017a).
- Recognizing *external analysis* under EBA methodology is complicated by contract manufacturing and IP-related operations on the current account and its determinants. (Annex III, IMF 2017a).

More generally, special attention is required when applying economic models, and there is also need to caveat cross-country work to recognize the special circumstances of the Irish case.

B. Addressing the Issue

5. Following the revision to 2015 data last year, the CSO convened an Economic Statistics Review Group (ESRG), led by the governor of the Central Bank of Ireland, Philip Lane, and including members from the CSO, government, academia, business, and unions, with observers from the IMF (STA) and Eurostat and contributions from the OECD, UN, Central Bank of Ireland, and KPMG. This group was tasked with identification of indicators that would support better understanding of Ireland's highly globalized economy.

6. A staged approach was chosen (Box A3). The CSO, based on the ESRG recommendations, will publish a range of additional information over time beginning this summer, and further consider the possibility of additional steps. The ESRG and CSO took into consideration factors including implementation costs, stability, and repeatability of proposed changes in the context of a changing globalization landscape, and potential confidentiality issues – which might arise when one or a small number of firms have a macro-significant impact.

7. Key follow-up steps include:

- CSO publication, beginning in mid-2017, of a GNI* series, that reduces GNI for undistributed profits of foreign-owned Irish firms (on portfolio investments) and depreciation pertaining to the gross earnings of foreign-owned domestic capital.⁷ A complementary presentation of the balance of payments, adjusted for these components, will also be provided. A preliminary estimate by the Central Bank of Ireland suggest GNI* was equivalent to approximately two-thirds of GDP in 2015 (CBI, 2017).

⁷See Lane (2017) for a clear presentation of the underlying conceptual framework for this approach.

Box A5. ESRG Recommendations and Planned CSO Follow-up^{1/}

ESRG Recommendation	CSO Response
<p>Level Indicator: Publication of GNI* and adjusted presentations of BOP/IIP data.</p>	<p>Annual time series for GNI* and corresponding BOP measures to be published beginning July 2017. Develop quarterly GNI* series during 2017; further work to highlight impact of IP relocations on IIP in 2018. Continue annual update on impact of re-domiciled firms on existing measures.</p>
<p>Structural Indicators: Large Cases/Remainder presentation; further explore data clarifications proposed by FitzGerald and Honohan; publication of Table 1 of the QNA in current as well as constant prices.</p>	<p>Include breakdown of foreign and domestic subsectors of non-financial corporate sector in annual sector accounts publication (beginning October 2017 with large cases only), with consideration of quarterly publication and a fuller breakdown and broader steps in 2018.</p>
<p>Cyclical Indicators: Publication: quarterly of underlying investment and domestic demand measures that take account of IP relocation, contract manufacturing, aircraft leasing, and re-domiciled firms; of similarly adjusted trade data at current and constant prices; quarterly of GVA data for multinational-dominated sectors (and other); quarterly of NNP data; of monthly production and turnover data adjusted for multinational activity, along with alternatively weighted indices, using sectoral wages rather than GVA.</p>	<p>Information consistent with first recommendation to be published in mid-2017; publish “walk-through” analysis of existing “cross-the-border” based external account data to calc. exports/imports on a “ownership” based national accounts basis; quarterly GVA data planned to begin in 2018; annual and quarterly NNP data by end-2018. Indices to be provided by early 2018.</p>
<p>Cooperation: Focused on inter-institutional collaboration, in particular with the central bank, while continuing substantial engagement on globalization-related issues by the international statistics community.</p>	<p>Continued collaboration with various domestic partners and participation in numerous international statistical forums.</p>
<p>Communication: Improve strategy in relation to release of national accounts data, reflecting the importance of transparency to a wide range of domestic and international counterparties.</p>	<p>Appointed a head of communications, in the process of establishing a press office function and restructuring existing information unit in line with the CSO’s new communications policy.</p>

1/ See ESRG, 2016 and CSO, 2017

- Publication of additional statistics on multinationals over-time, albeit without a split between on- and offshore operations, namely:
 - A set of structural macroeconomic indicators that describe economic activity by multinational-dominated and domestic sectors, through the publication of a breakdown of the NFC sector in the institutional sector accounts into broadly defined foreign and domestic subsectors.

- Additional details on the cross-border economic activity in terms of gross fixed capital formation, domestic demand, and exports and imports.

8. The announced publication of supplementary data is an important step.

- The planned GNI* series should provide a reliable measure of changes in overall domestic activities, filling a critical gap. It will represent a lower bound for the size of the domestic economy, since it will remove depreciation and undistributed profits for all multinationals and not just those pertaining to offshore and IP-related activities.⁸ At the same time, applying concepts, such as potential output and output gap, that need consistent series for components of overall activity (e.g., labor share, capital stock, or wage-productivity developments), will continue to be complicated.
- While an additional breakdown of multinational-driven external flows will become available with the new statistics the CSO will publish, some elements will not be available. IP-related imports and FDI profits (including from re-domiciled firms) will become available. However, disaggregation of exports of financial services and additional details on royalty flows, dividends, and related party borrowing, which are more difficult to capture, will not, implying important continuing gaps for the external assessment and calculation of a proxy for underlying net exports of goods and services.
- The CSO is also working to develop analytical tools to support calculation of productivity for the domestic economy, which may require capital stock adjustments for IP assets. More broadly, the CSO will continue to consider data classifications proposed by FitzGerald (2016) and Honohan (2016) that would allow for “trimmed” accounts that would separate out multinational-related distortions. This assessment will consider the costs (including in terms of collection) and additional analytical benefits these and other possible steps to taking the process further following initial experience.

⁸ Undistributed profits have been standardly excluded from GNI in accounting standards.

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