Economic Research Digest
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The **Economic Research Digest** monitors recently published research across a number of economic areas relevant to the work of the Department for the Economy such as competitiveness, innovation, enterprise, trade, FDI, tourism and infrastructure. The Skills Research Digest deals separately with recently published skills and labour market research.

In each case, we provide a short summary of the key points and web links to the full article or report*. A full list of sources can be found at the end of the publication.

Highlights this quarter include:

- Rankings on country competitiveness, global financial centres, cities liveability, women's entrepreneurship and top cities to live and do business in.
- Plenty of analysis on potential impact of Brexit - on trade, investment and costs of goods and services.
- Several reports about women entrepreneurs and SME growth.
- Numerous reports published on renewable energy looking at costs, supply and environmental factors.
- Reports and a survey on growth and living standards within the UK and Northern Ireland.

** Links are correct at the time of publication, however it is likely that some will break over time. The list of sources has more general links, which should help the reader to track down the original report.*

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Economic Outcomes

COMPETITIVENESS

Should the fiscal powers of the Northern Ireland Assembly be enhanced? **published by Queens University Belfast, examines the question whether fiscal powers of the Northern Ireland Assembly should be enhanced.** ***This article requires a subscription to access.***

- Northern Ireland has been characterised by an inability to narrow the persistent economic gap relative to Britain with some commentators suggesting that regional corporation tax variation may be the 'game changer' in closing this gap. It also gives into consideration as to which taxes might be the most suitable candidates for devolution.
- A tax will be the most suitable candidate for devolution if it scores well across a number of principles such as:
  - Minimal impact on the tax base of the rest of the UK; promoting accountability because the tax is paid by a high percentage of Northern Ireland residents and is well understood by the general population; compatible with legal constraints; does not harm administrative efficiency because it avoids the relatively high admin costs; is relevant to policy in terms of providing a useful policy lever and helping to achieve policy goals of the executive and the assembly.
- Based on a simplified approach reducing the evaluation to two dimensions, firstly if a tax was devolved would this have a high or low impact in assisting policies? Secondly, how feasible is devolution?
  - Results found that only income tax and air passenger duty are the most suitable for devolution as they have high impact and high feasibility.
  - In contrast, the low impact and low feasibility tax to devolve are betting and gaming duties, insurance premium, climate change levy, vehicle excise duty, inheritance tax, aggregates levy and capital gains tax.

The World Economic Forum (WEF) has published ***The Global Competitiveness Report 2017–2018*** **ranking 137 countries across 12 pillars of competitiveness.**

- Switzerland has maintained its first position, with six of the top 10 countries listed from Europe.
  - Top 10 competitive countries are Switzerland (1), United States (2), Singapore (3), Netherlands (4), Germany (5), Hong Kong SAR (6), Sweden (7), United Kingdom (8), Japan (9) and Finland (10).
- The United Kingdom (8th) falls one spot. This drop does not yet reflect the outcome of the Brexit negotiations.
  - Currently the country performs very well on technological readiness and the sophistication of its business sector. Its macroeconomic environment remains challenging and could become an important constraint in the future as the timeline for a reduction of the fiscal deficit is repeatedly pushed back.
- Ireland also fell one spot to 24th in this year's edition.

The National Competitiveness Council published a bulletin assessing Ireland's position in the latest ***WEF Competitiveness Rankings 2017/2018*****.**

- Ireland is the 8th most competitive economy within the euro area, and 11th amongst the EU28.
- Ireland performs well in relation to goods market efficiency (ranked 8th); higher education and training (10th); health and primary education (16th); technological readiness (18th); institutions (19th) and labour market efficiency (21st).
- Ireland is ranked in the top 10 in relation to FDI and technology transfer, FDI rules, quality of the education system, number of procedures to start a business and judicial independence. However, its performance is still being negatively affected by perceptions regarding the quality of infrastructure and access and affordability of credit.

Z/Yen published ***The global financial centres index 22*****. This report examines the attractiveness and competitiveness of 108 financial centres across the globe, drawing on analysis of a range of indicators and online assessments.**

- The headline results included London and New York remaining in the first two places respectively.
  - Followed by Hong Kong (3), Singapore (4), Tokyo (5), Shanghai (6), Toronto (7), Sydney (8), Zurich (9), Beijing (10).
- It noted that there was a drop in confidence amongst the leading centres with 23 of the top 25 ranking centres noting falls. Despite ongoing Brexit negotiations, the fall for London was the smallest decline of the top ten centres.
- European 'island' centres did well. The British Crown Dependencies of Jersey, Guernsey, and the Isle of Man all performed strongly and there were also strong rises for Malta, Reykjavik, and Gibraltar.

PRODUCTIVITY AND GROWTH

The financial foundations of the productivity puzzle **published by The National Institute of Economic and Social Research (NIESR) explores the role of overall and sectoral productivity in explaining the fall in labour productivity, but also questions the extent to which productivity in the service sector may be measured with error.** ***This article requires a subscription to access.***

- The productivity gap has been widening over the years since the financial crisis and output per hour is some 18% lower today that it would otherwise have been had productivity stayed on its pre-crisis path.
- Manufacturing sector is relatively easily measurable both in value and real terms, government services and services in general are much more difficult to measure.
  - Take for example education, it doesn't have a market price which makes them difficult to value. To overcome this problem, direct measures of the volume of services provided are made, such as the number of pupils who attend school.
  - The financial sector is one of the most challenging sectors to measure and can be divided into three categories: the banking sectors, non-banking financial intermediaries and insurance and pension funds.

NIESR published ***Medium-run implications of changing demographic structures for the macro-economy*** **examining the relatively poor economic performance of the last decade, looking specifically at the impact of demographic structure and innovation.**

- A change in the age profile affects the macroeconomy through three distinct channels.
  - Firstly, changes in fertility and availability of resources of workers affect investment in human capital and the labour supply.
  - Secondly, aging affects the saving decision of workers. The model suggests that the population ageing predicted for the next decades will tend to reduce output growth and real interest rates across OECD countries. It may contribute to reduced innovation, reduced output growth and reduced real interest rates across OECD economies.
  - Finally, the share of young workers impacts the innovation process positively and, as a result, a change in the demographic profile that skews the distribution of the population to the right, leads to a decline in innovation activity.
- Changes in age profile not only have significant implications for savings, investment, real interest rates and growth but also for innovation. For instance, if in 2015 the UK had the 1970 age structure, it would have added 0.68 percentage points to the long-run annual growth rate.
- On the demand side older people tend to dissave (i.e. spend a greater amount of money than they have in income), putting upward pressure on the interest rate, while young workers expecting to live longer save more, putting downward pressure on interest rates.
  - While the on the supply side, innovation by the young workers raises the marginal product of capital and the real interest rate, while the old inhibiting the adoption of new ideas depress the marginal product of capital and the real interest rate.

Get A Move On? The decline in regional job-to-job moves and its impact on productivity and pay**, published by Resolution Foundation (RF), looks at how economically-driven internal migration has changed in the UK over the past two decades.**

- It's been nine years since the country fell into recession off the back of the financial crisis and real pay is still over 3% below its pre-crisis peak. Average weekly earnings are still £15 less than they were in early 2008 and pay for many groups, such as younger workers, remains even further below peak.

- 10% of those moving regions for jobs were previously out of work – a proportion that has remained constant - and so more attention needs to be paid to the role of mobility in matching people to jobs and raising productivity.
- The decline in regional job-to-job moves has occurred at a time when differences in employment rates between regions of the UK have significantly narrowed. In this sense the fall in internal migration may just reflect the fact that it is easier for people to find jobs nearer to home.
- Younger workers may earn higher rises for moving region than older employees because monetary considerations may play a bigger part in their decisions. While an older worker may relocate to take advantage of cheaper housing or for family reasons, a younger worker is more likely to want to maximise their earnings earlier on in their career.
- At a time when differences in productivity, between UK regions, have increased suggesting that the decline in mobility may be contributing to poor productivity growth as workers fail to find jobs that best suit their talents.
- For policy makers deciding how much to worry about this trend it is important to distinguish between cyclical effects associated with the financial crisis that may fade and more structural shifts with a lasting effect.

The Institute for Public Policy Research (IPPR) published *Time for change: a new vision for the British economy* looking at some of the challenges facing the British economy and makes recommendations for a new approach to economic policy.

- Economic growth no longer leads to higher pay: the period from 2008 to 2021 will be the longest period of earnings stagnation for around 150 years.
- The UK is the most geographically unbalanced economy in Europe. Almost 40% of UK output is produced in London and the South East, and only those regions have recovered to pre-2008 levels.
  - Median incomes in the North West, South West and West Midlands are now more than 30% lower than in London and the South East; in Wales, 35%; in Scotland 22%. For people in deindustrialised areas and declining communities, there has been little sign of economic recovery.
- We have both world-leading businesses and world-lagging productivity.
  - UK productivity is 13% below the average for the richest G7 countries, and has stalled since 2008. Our leading firms are as productive as elsewhere, but we have a longer 'tail' of low-productivity businesses, in which weak management and poor use of skills leads to 'bad jobs' and low wages. A third of adult employees are overqualified for their jobs, the highest proportion in the European Union.
- Different income groups have shared in economic growth over the past three decades. Before taxes and government transfers are taken into account, only 10% of overall income growth between 1979 and 2012 went to the bottom half of the household income distribution.
  - Those in the bottom third barely shared in the growth at all. Meanwhile, the richest 10% took almost 40% of the total. This is, by any account, a remarkably unequal distribution of rewards.

LIVING STANDARDS, WELLBEING AND PROSPERITY

***The Global Liveability Report 2017* published by The Economist Intelligence Unit scores lifestyle challenges in 140 cities worldwide.**

- For the seventh consecutive year, Melbourne is Australia is the most liveable urban centre of the 140 cities surveyed, closely followed by the Austrian capital Vienna. Only 0.1% separate the top two cities and just 0.2% and 0.3% separate Canada's Vancouver and Toronto respectively, from Melbourne.
- The top five most liveable cities remain unchanged (Melbourne, Vienna, Vancouver, Toronto, Calgary), the past few years have seen increasing instability across the world, causing volatility in the scores of many countries.
  - Top five least liveable cities: Kiev, Douala, Harare, Karachi, Algiers.
- Cities such as Reykjavik and Amsterdam have benefitted from an increasing cultural availability and falling crime rates, enabling them to register improvements in living conditions.
- The survey shows a higher incidence of positive index movements. Of the 17 cities with an index movement last year, 12 have seen and improvement in their score, reflecting positive developments in other categories, despite heightened threats of terrorism or unrest with which cities around the world continue to grapple.

- Concerns over geopolitical stability are growing in Asia owing to potential flashpoints involving a number of countries including China and North Korea. It is therefore not surprising that declining stability scores have been felt around the world.
- Overall, the global average liveability score has fallen by 0.8% to 74.8% over the past five years. Weakening stability has been a key factor in driving the decrease. The average global stability score has fallen 2% over the past five years from 73.4% in 2012 to 71.4% now.

RF published *A rising tide lifts all boats? Advanced industries and their impact upon living standards* exploring some of the core assumptions of an industrial strategy built on advanced industries and its ability to spread growth both geographically and across households.

- Investment provides employment for those who work in the growing sector or incoming firm.
  - For example, when Nissan chose to invest in Sunderland in 1986, it brought with it thousands of jobs in its plant. But as well as those roles within the plant, it created jobs in the supply chain.
  - Indirectly, it is also likely to have generated jobs in Sunderland as Nissan employees spent their earnings on local goods and services. Thus, potentially creating jobs in unconnected parts of the local economy.
- Regional inequality is relatively high in the UK, but not an outlier.
  - The OECD complied data which allows for some comparison of regional inequality. It has found that UK is somewhat more unequal than its peers but is far from the most regionally unequal country.
  - Top 10 of the most unequal countries are Italy (1), Australia (2), United States (3), Spain (4), Canada (5), United Kingdom (6), Greece (7), Netherlands (8), Portugal (9) and Germany (10).
- From a perspective of growth being truly inclusive, even if the gains of investment are felt by lower-qualified or relatively low-paid workers, other higher-skilled workers may benefit more, thereby increasing inequality.
- Other research has found that although inward investment and the growth in advanced industries may raise pay and reduce poverty, those at the bottom of the earnings distribution fail to benefit.

***Living standards, poverty and inequality in the UK: 2017*, published by the Institute for Fiscal Studies (IFS), examines changes in the distribution of household incomes in the UK, and the determinants and consequences of recent trends. (Northern Ireland's data is excluded as it was only available from 2002/03 onwards).**

- London and the South East: As one might expect, both of these regions have median before housing costs (BHC) income more than 10% higher than the GB median.
  - If incomes are measured after housing costs (AHC), the position of the South East relative to GB as a whole is (surprisingly perhaps) unaffected while the relative position of London changes dramatically – after housing costs, median income in London is actually 1% lower than the GB median.
  - This is not just the result of housing being more expensive in London – it also reflects differences in the mix of renting versus owner-occupation (including outright homeownership, where there are no mortgage payments). For example, while half of those in London live in rented accommodation, the figure is only 30% for the South East.
- The last five decades have witnessed dramatic changes both in the overall rate of poverty and in the types of individuals who are likely to be in poverty. Sharp increases in relative poverty across all demographic groups during the 1980s have not been fully unwound in the decades since, with the result that relative poverty in 2015–16 stood at 22% in comparison with 13% in 1961.
- IFS research suggests that we should expect the overall absolute poverty rate to remain broadly unchanged between 2016–17 and 2021–22. Absolute child poverty is projected to rise over this period, with all of the projected rise explained by the impact of benefit reforms currently in the pipeline.
  - The reforms with the biggest projected impact include the cash-terms freeze of many working-age benefits (which is expected to result in those benefits being 6% lower in real terms by 2019–20 than if they had been uprated in line with inflation), cuts to child tax credit (including the limit to two children for new births and some new claims) and the introduction of the less generous universal credit.

- Relative poverty among children and working-age adults has increased and, over the past 20 years or so, has increasingly become an in-work phenomenon due to declines in worklessness, low earnings growth and widening earnings inequality.
- Some groups with low income – such as lone-parent households and families with more than three children – are more likely to experience poverty on a persistent basis than others; and while the majority of individuals in snapshot poverty belong to working households, households with strong and weak labour market attachment account for roughly equal shares of the population in persistent poverty.

RF has published *The living standards audit 2017* giving an insight on living standards of UK households in the year leading up to the 2017 general election, as well as a detailed look at the trends in living standards over the previous two decades.

- Home ownership has risen among the pensioner group, while the working-age group has recorded an increase in private renting – which is typically more expensive than having a mortgage.
- Strong income growth for pensioners and weaker income growth for the rest of the population is such that in 2011-12 typical pensioner AHC income surpassed that of the typical non-pensioner for the first time.
    - This situation has persisted since then, despite relatively strong growth over the past few years for those of working-age. The difference in typical income is small: data for 2016-17 suggests that typical pensioner AHC incomes stand at £22,300, compared to £22,000 for those of working-age.
- Single parent families have the lowest typical AHC income (£13,600 in our 2016-17) and couples without children have the highest typical income (£30,100). Between these two extremes the annual incomes of other family types are all clustered around £20,000-£25,000.
- These post-crisis trends are likely to be associated with the fact that younger workers experienced the biggest pay squeeze of any age group in recent years. Between 2009 and 2014 the typical pay of someone aged 22 to 29 fell by almost 14%, significantly more than the fall experienced by older age groups.
- Three of five lowest income regions – the West Midlands, Yorkshire and Humberside and Northern Ireland – have experienced sluggish employment growth over the phase of income recovery, this far from encouraging.
- Regional disparities have remained largely unchanged over the longer-term – lower income parts of the country appear to have fared better in general during the post-crisis recovery than higher income areas have.
    - Wales, Scotland, the North West and the East of England recording comparable or stronger growth in 2016-17 than in the previous three years. But these parts of the UK are characterised by having recorded lower than average growth over the early part of the recovery, implying more room for catch-up in the latest data.

RF has published *Diverse outcomes: living standards by ethnicity* looking at how typical household incomes have differed by ethnicity, given that around one fifth of the population self-report their ethnicity as something other than White British.

- There are large differences in typical household incomes by ethnic group, with typical Bangladeshi household incomes being £8,900 a year (35%) lower than the White British median; Pakistani households £8,700 less (34%) and typical Black African households £5,600 less (22%).
- After taking housing costs into account, the disposable income gap between typical White British households and Bangladeshi households increases to £9,800 (44%).
- Employment differences provide part of the reason for household income differences. Employment rates for Pakistani and Bangladeshi women are 37% and 31% respectively, far below the White female rate (72%).
- Male employment rates have also risen dramatically for ethnic minorities. Black male employment rates fell substantially post-crisis and were slow to recover, but since then have rebounded to record highs.
    - Sustained employment growth for Bangladeshi and Pakistani men – with increases of 17 and 10 percentage points respectively since 2001-03 – has also supported household incomes, as has real growth in typical weekly earnings of 28% compared to 1% for other male employees.

- Age and family size can explain some differences in both living standards and faster income growth for some groups. Some ethnic populations are far younger than others, contributing to differences in employment, incomes, and home ownership.

[The millennial bug: public attitudes on the living standards of different generations](#) **published by the RF seeks to understand people's perceptions around the principle that generation-on-generation progress shows signs of being disrupted (in areas such as earnings, housing and building up resources), drawing on a survey of over 2,000 adults and a workshop involving members of different generations.**

- Britons no longer think young people will have a better life than previous generations, with only around one quarter (23%) of adults taking this view. Instead, roughly half (48%) believe that millennials will have a worse life than their parents.
- The factors that are significantly related to a person's outlook for the young includes:
  - Education level (with graduates more pessimistic than the lowest-educated);
  - Employment status (with the unemployed more pessimistic than full-time workers and retired people);
  - marital status (with single or separated people more pessimistic than married or co-habiting couples);
  - Voting intention (with Labour voters more pessimistic than Conservatives).
- Graduates and those with higher incomes are markedly more pessimistic than their less-educated and lower-income counterparts. For example, 57% of those with degrees think today's young people will have a worse life than their parents will have had, compared to 44% of non-graduates.
- Millennials are more pessimistic about their own prospects than members of older generations are, with over half (53%) thinking their generation will have a worse life than their parents compared to 44% of baby boomers who think millennials will be worse off.
- Pessimism pervades in the majority of areas. It is by far strongest in relation to young adults' ability to own a home (where 71% of respondents think millennials will be worse off than their parents' generation), followed by their prospects of living comfortably when they retire from work (61%) and having a secure job (54%).
- Three-in-five adults (59%) think that every generation should have a higher standard of living than the one before it, far outweighing the 8% who disagree. This implies a shared desire for something to be done to improve younger people's prospects.

The Economic and Social Research Institute (ESRI) has published a briefing ***[Reducing income inequality](#)*** **examining trends and changes in the distribution of household incomes in the UK. The analysis included average living standards, inequality in household incomes and measures of income poverty and deprivation.**

- Absolute poverty has changed little over the last decade, reflecting the general lack of real income growth.
- Overall, the top 1%'s income share more than doubled over 30 years, from 3.4% in 1980 to 8.7% in 2009-10, before falling back during the recession.
- Income inequality is lower than it was 20 years ago, the top 1% have continued to pull away from the rest, and UK income inequality remains high by international standards.
- The difference between high and low earners is largest in London, but since the late 2000s there has been a large fall in income inequality – due to falls in real earnings and strong employment growth.

[Living on the edge: Britain's coastal communities](#), **published by Social Market Foundation, explores the economic and social deprivation in coastal towns in Great Britain (GB).**

- The economic gap between coastal and non-coastal communities has widened over time. In GB economic output (GVA) per capita was 23% lower in coastal communities compared to non-coastal communities.
- Low employee pay is pervasive across coastal communities. Among the 98 coastal local authorities in GB 85% has mean pay levels below the average across Britain in 2016.
- Some also point to the fact that many coastal communities are poorly connected to major employment centres in the UK, which compounds the difficulties faced by residents in these areas.

Not only do they lack local job opportunities, but travelling elsewhere for work is also relatively difficult.

Consuming forces: generational living standards measured through household consumption **has been published by RF, examining living standards across generations by considering levels and patterns of expenditure for working-age households in detail**.

- Overall consumption differences are often greater by income than by age, and wider price-related, social and technological shifts generally pervade across age groups.
  - In terms of patterns of spending on eating in and eating out, younger adults spent less on the former and more on the latter than did older working-age adults in 2014. Eating out expenditure was 25% higher among 25-34 year olds than among 55-64 year olds, mainly accounted for by the fact the younger group spent less eating in.
  - Turning to transport, young adults spent relatively less on private transport (mainly cars) than other age groups did in 2014 and more on public transport and flights. Again, however, differences are much greater by income than by age, and the overall pattern appears to be driven by the spending of those with higher incomes in each age group.
  - Young adults today spend more on modern communications technologies than older ones: 25-34 year olds spent 32% more on mobile phones and internet services than 55-64 year olds in 2014. Strikingly, young adults now spend more on mobile phones than they do on alcohol and tobacco combined (£7 per week compared to £6).
  - Consumption of personal goods and services has increased for 25-34 year olds over the 21st Century despite the apparent (likely under-recording influenced) faltering performance of overall non-housing spending. However, some of the most striking changes appear to be related to particular changes – like car seat regulation, and higher maternal employment driving up consumption related to having children – rather than independently-shifting preferences among young adults.
- There is also little evidence to support the characterisation of millennials as frivolous spenders compared to other age groups or to their predecessors at the same age.

The Sainsbury's Living Well Index **produced by Oxford Economics, analyses the results of an adult survey of Great Britain with 60 questions covering a wide range of topics across people's everyday habits and experiences.**

- The Living Well score of people living very well (the top 20% of our survey group) was 32.8 points higher than people struggling (the bottom 20%), based on a zero-to-100 scale.
- Being unemployed, suffering from problems with physical and mental health and lacking a strong support network are all problems that commonly affect those at the bottom of the Living Well Index distribution.
- Older people consistently report higher wellbeing. Some of this is down to things like being more financially secure than young people.

Family Friendly Working Scotland has published *Timewise Flexible Jobs Index Scotland: maximising talent and driving inclusive growth*. This article analyses the flexible jobs market in Scotland and discusses employers' approaches to flexible working.

- The availability of quality flexible jobs varies significantly depending on the field of work. Salary also has an effect: as salary rises, availability declines.
- Amongst jobs paid £20,000 full-time equivalent or more, only 11.9% are advertised with flexible working options.
- Demand for flexible jobs in Scotland outstrips supply and suggests that a lack of flexible jobs negatively affects individuals, employers and the economy.

***Rethinking Growth: Toward the Well-being Economy*, published by Sustainable Places Research Institute, explores alternative approaches to measuring economic growth and the potential policy impact of well-being legislation in Wales.**

- The paper argues that currently applied models of growth are both inefficient and unsustainable, as they are extractive of finite natural and human resources, and lead to inequalities that produce unaffordable costs.
- Public expenditure in London continues to be significantly higher than other areas of the UK. Over the three years between 2013-2016 total public expenditure in Wales, for example, was around £11.5bn, whereas London received nearly £32.5bn, with the gap widening to London's advantage each year. In

the last financial year, London received around three times more public expenditure than the whole of Wales (ONS, 2016).

- The Welsh economy has clear post-industrial structural weaknesses that have proved resistant, thus far, to development attempts despite considerable regional investment over an extended period. Such structural weaknesses are not exclusive to Wales and many other regions of the UK, Europe and beyond experience similar issues.

Innovation and Enterprise

INNOVATION

This paper, *Innovation and willingness to export: is there an effect of conscious self-selection?*, published by Economics eJournal, presents an analysis of the relationship between innovation, productivity, and export in Small and Medium Enterprises (SMEs).

- Two points regarding the relationship between innovation, productivity and export:
    - The productive advantage of exporting firms is largely explained by their innovation activities. The relation between productivity and export is indirect and derived from innovation. These results are consistent with the hypothesis of conscious self-selection (Constantini and Melitz, 2008) stating that the most productive firms are selected for export, their productive advantage being rooted in innovation activities.
    - Self-selection of more productive firms in foreign markets is revealed. The results make it possible to test the effect of conscious self-selection in endogenising productivity and innovation. The researchers have established that the capacity of an enterprise to enter foreign markets depends positively on the level of productivity which, in turn, depends on innovation activities.

RESEARCH AND DEVELOPMENT

Enterprise Research Centre (ERC) published a paper on *Assessing the business performance effects of publicly-funded science, research and innovation grants September 2017*. This paper provides a comprehensive assessment of the impact of participating in Research Council funded projects on the performance of UK firms.

- Firms participating in projects funded by UK Research Councils grew their turnover and employment 5.8-6.0% faster in the three years after the project, and 22.5-28.0% faster in the six years after the project, than other similar firms.
- Support relevant to businesses is provided largely by Engineering & Physical Science Research Centre and Innovate UK. Support from both organisation increases both employment and turnover growth in the short and medium terms with only marginal differences in their impact.
- The impact of participation is larger for firms in high-tech manufacturing and knowledge intensive services.
- Effects of participation varies depending on the size of the project. Participating in small and very large projects has smaller growth effects than medium-sized projects.

SECTORS AND TECHNOLOGIES

WEF has published *Beyond Fintech: A Pragmatic Assessment Of Disruptive Potential In Financial Services* representing the culmination of three phases of research into the transformative role of fintech's on the financial services ecosystem.

- Fintechs have changed how financial services are structured, provisioned and consumed, but have not successfully established themselves as dominant players. Many fintechs came into existence with the goal of overtaking incumbents as the new dominant players in the financial services- but have shifted to building partnerships as they struggle with scale and customer adoption.
- Where fintechs have succeeded:
    - Fintechs have seized the initiative- defining the direction, shape and pace of innovation across almost every subsector of financial services- and have succeeded as both stand-alone businesses and crucial parts of financial value chains.
    - Fintech have reshaped customer expectations, setting new and higher bars for user experience. Through innovations like rapid loan adjudication fintechs have shown that the customer

experience bar set by large technology firms, such as Apple and Google, can be met in financial services.

- Where fintechs have fallen short:
  - Customer willingness to switch away from incumbents has been overestimated. Customer switching costs are high, and new innovations are often not sufficiently material to warrant the shift to a new provider, especially as incumbents adapt.
  - Fintechs have struggled to create new infrastructure and establish new financial service ecosystems, such as alternative payment rails or alternate capital markets. They have been much more successful in making improvements with traditional ecosystems and infrastructure.
- Fintechs have failed to disrupt the competitive landscape, they have laid the foundation for future disruption, some financial institutions have turned the threat of fintechs into an opportunity, but the accelerating rate of changes represents a serious threat.
- The project has identified eight forces that have the potential to shift the competitive landscape of the financial ecosystem:
  - Cost commoditisation; Profit redistribution; Platforms rising; Systemically important techs; **E**xperience Ownership; Data monetisation; Financial regionalisation and Bionic workforce.

Takeaway Economy Report **published by Just Eat with support from the Centre for Economics and Business Research examines the economic, social and cultural contribution that the takeaway industry makes to the UK.**

- Takeaways contributed £4.5 billion to the UK economy in 2016.
- The takeaway market is expected to continue growing at a strong rate, averaging annual growth of 2.6% over the next five years.
- Takeaways represent a small but growing portion of household food expenditure – 12.1% of total spending on food in 2016, or an average of £30 a month. This spending has increased significantly in recent years – up 25% since 2009 – growing steadily even during the last recession.
- The increase in consumer spending has supported strong growth in employment. Across the UK, the takeaway sector has created 41,000 new jobs since 2009, and now employs a record 231,350 people – more than telecoms, advertising and Premier League football.
- Since 2014, the areas with the highest growth were Northern Ireland (21.3%) and the North West (13.2%).
  - Northern Ireland's takeaway spending is £0.51bn, the industry employs 7,837 people and spend per household per week is estimated at £12.93.

Digital Spillover**, by Oxford Economics, measures the impact of the Digital Economy.**

- The analysis suggests that on average over the past three decades, for every US $1 investment in digital technologies there has been a US $20 rise in GDP. This return on investment dwarfs the US $3:US $1 return for non-technology investments in the same period. This result shows that for every US $1 investment the average return to GDP is 6.7 times higher for digital investments than for non-digital investments
- The digital economy is worth US $11.5 trillion globally, equivalent to 15.5% of global GDP and that has grown two and a half times faster than global GDP over the past 15 years, almost doubling in size since the year 2000.
  - China's share of the global total has more than trebled from 4% to 13%, and India's share has doubled to 2%.
- Achieving a high-digitalisation scenario, where spillovers are maximised, could result in a US $1.7 trillion boost to global GDP in 2025, equivalent to putting an extra US $500 per year in the pocket of every person of working-age around the globe.
- Maximizing the spillover benefits for the digital economy needs buy-in from multiple stakeholders, including governments. The economic potential of digital technologies is enormous, but there are challenges to maximizing their productivity benefits.
  - Governments must combine strategic oversight with direct intervention. Direct actions include regulating against market failures, investing in infrastructure and incentivising private sector activity.

- Soft infrastructure, like skills, data availability and a supportive business environment are equally important to the productivity gains that digital investment can bring.

***The local shop report 2017*, published by Association of Convenience Stores, examines the local convenience store sector in the UK, its importance, impact and characteristics, drawing on the results of surveys of independent and multiple retailers.**

- The convenience sector is worth £38billion – making it comparable in size to industries like oil and gas, defence and recruitment.
- There are 49,918 convenient stores in the UK with 74% of these run by independent retailers.
- Over the last year, convenience stores have invested £858m into their businesses, with 73% of independents funding investments from their own reserves.

ENTREPRENEURSHIP

***GEM 2016/2017 Women's Entrepreneurship Report* published by Global Entrepreneurship Monitor (GEM), reports specifically on women's entrepreneurial activity across 74 economies. (Note this publication is listed under Special Topic Reports online).**

- Among 63 economies (out of 74) featured in this report and the previous one issued two years ago, overall female total entrepreneurial activity rates have increased by 10% and the gender gap (ratio of women to men participating in entrepreneurship) has narrowed by 5%.
- The highest level of innovation occurs in North America, where 38% of women report having innovative products and services.
- Across the entire sample, 10% of women entrepreneurs operated businesses alone with no intention to add employees in the next five years.
- There are three economic development levels (factor driven, efficiency drive and innovation driven economics). The UK and Ireland fall under innovation driven economies.
  - Ireland's early stage entrepreneurial activity is higher than the UK.

The OECD has published *Entrepreneurship at a Glance* presenting a collection of entrepreneurship indicators.

- Productivity differences between larger and smaller firms vary considerably across countries and across sectors. In general however, productivity gaps are much smaller in the services sector than they are in manufacturing.
- A more entrepreneurial services sector may help to continue to reduce gender inequalities, as women disproportionately engage in service sector start-ups. Over the last ten years the gap between male and female self-employment rates has closed in nearly all countries.
  - But significant gender gaps remain: in OECD countries, one in ten employed women is self-employed, almost half the rate of self-employed men (17%).
- Part-time self-employment has increased considerably in the past decade, in part reflecting new opportunities presented by the emergence of the "gig economy", i.e. the rising phenomenon of flexible employment arrangements that complement or substitute for full-time jobs.
- Large firms generally have a more positive evaluation of the state of their business than smaller firms. This reflects important challenges faced by micro-enterprises in running and growing their business, such as compliance with regulations, securing financing, recruiting and retaining skilled employees, and finding business partners.

BUSINESS GROWTH

ERC has published *Exporting, ambition, finance and SME performance: Exploratory analysis of the Longitudinal Small Business Survey 2015 and 2016*. The report examines the relationships between firms' financial status and their business performance in the subsequent 12 months and is based on the Longitudinal Small Business Survey in UK.

- The analysis suggests a close relationship between financial status and the performance of SMEs in the following year.
  - More specifically, succeeding in obtaining external finance significantly increases the probability that firms will be profitable, expand sales, and improve their operation efficiency.

- Firms which failed to obtain external finance, or were discouraged in borrowing external finance, were less likely to be profitable and improve productivity.

- Firms which were exporting in 2015 had slower sales and productivity growth between 2015 and 2016 than firms selling only in the domestic market.
- SME intention to invest in capital assets positively influences their profitability and employment growth, while a corresponding negative influence is observed on their productivity growth.

Social enterprise: market trends 2017 **published by Department for Digital, Culture, Media and Sport (DCMS) provides estimates of the number of social enterprises in the UK, describes the key characteristics of social enterprises and compares these to those of SMEs.**

- There are an estimated 471,000 UK social enterprises overall. This is made up of 99,000 social enterprises with employees and 371,000 social enterprise with no employees.
- A total of 22% of the UK small business population (or 1.21 million enterprises) are identified as socially-oriented SMEs, i.e. SMEs that have social/environmental goals but do not use surplus/profit chiefly to further these goals.
- Growth patterns of social enterprise employers and SME employers appear similar for both past and expected future growth in terms of both turnover and employees. However, social enterprise employers are more likely to report a positive longer-term outlook, expecting growth over the next three years.
- Social enterprise employers are less likely to engage in exporting (17% vs. 27% of SME employers).
- Social enterprise employers cite regulation/red tape and the national living wage more frequently as an obstacle to success than SME employers, and late payment less frequently.
- Top reported obstacles for social enterprise employers are:
  - Competition in the market (6%); regulations/red tape (58%); taxation (4%); recruitment/skills (39%); workplace pensions (28%); UK exit from the EU (28%).

Oxera published *The continuing development of airport competition in Europe*. This article talks about how competition in airports is an important feature of the European aviation market.

- The aviation market has continued to expand, with growth particularly driven by low cost carriers.
  - Overall capacity of airlines on flights to, from and within Europe (measured by the number of seats) was 25% higher in 2016 than in 2010, with most of this growth occurring after 2013.
- Large European airports are facing greater competition for connecting passengers on many dimensions.
  - Of all possible flights with a connection in Europe, 19% can now be taken with a connection in the Middle East or Turkey, an increase from 10% of connecting routes in 2010.
- Market outcomes show a mixed picture in terms of airports' ability to raise charges, with an approximately equal divide between those raising charges in real terms and those lowering them.

FINANCE

Scottish Enterprise has published *Going global: attracting international investment* setting out trends in the investment market in Scotland.

- In 2016, Scotland's companies secured £336 million, the second highest investment total recorded since 2001. This total included £153 million of Venture Capital "VC" investment.
- Scotland's risk capital market also experienced the highest number of investment deals on record – 285 deals, a 33% increase on the year before.
- Scottish companies secured investment from geographically diverse investors including from Asia, North America and Europe

BUSINESS REGULATION

The Centre for Economic Policy Studies has published *Introducing EU Reduction Targets on Regulatory Costs: A Feasibility Study*. This report looks at the feasibility of a European Commission's initiative aimed at adopting net reduction targets for regulatory costs.

- Rather than proposing cost reductions as the only focus for better regulation in Europe, the study focuses on a specific dimension of better regulation, i.e. regulatory costs, seeking to explore those options that would maximise impacts, in particular for European businesses, in the shortest time possible, and in the most cost effective way possible.
- The setting of net reduction targets can contribute to an enhanced attention towards avoiding the imposition of unnecessary costs on businesses and later, on citizens, which in itself fosters societal welfare.
- Net reduction programmes in many countries are exclusively focused on businesses, and often even more directly focused on SMEs, which are typically disproportionately hit by certain types of regulatory costs. Needless to say, the more a reduction programme is comprehensive and covers also citizens, the greater its impact on the economy.
  - There is more evidence backing the assumption that regulatory costs hamper competitiveness in the case of businesses than in the case of citizens. And there is generally much more information and data available to map regulatory costs for businesses than for citizens. Accordingly, it seems reasonable to assume that the initial reduction programme could only start in 2017 if it focused on businesses.

Succeeding Globally

TRADE

Legatum Institute published a paper on *Mutual Interest: How the UK and EU can resolve the Irish border issue after Brexit* setting out the steps to minimise potential disruptions at the Irish border to ensure a future for the UK and Ireland that is open and inclusive, that creates growth and jobs, and encourages innovation and enterprise.

- The UK government's stated policy of leaving the EU Customs Union and the Single Market does not prevent the UK and the EU achieving a resolution to the Irish border issue.
- The UK and Ireland's government should utilise existing bodies to create a joint committee responsible for ensuring proper implementation of the border agreements.
- The most effective way to reduce border disruption for trade in goods between NI and Ireland is by the UK and EU agreeing a smooth customs arrangement, and using the best practice legal and technology tools. This is an opportunity to deploy the latest technology available in a limited area which could become a prototype for other regions – turning a challenge into an opportunity.

Nevin Economic Research Institute (NERI) published a paper *Northern Ireland, the Republic of Ireland and the EU Customs Union* looking at the impacts of the UK leaving the Custom Union for trade on the island of Ireland and looks at what post-Brexit policy options are available to avoid such disruption.

- There are four scenarios for the ROI and the UK post-Brexit:
  - The UK including NI leave the customs union. Borderless solutions are only possible in this scenario if the UK agrees a zero-tariff Comprehensive Free Trade Agreement with the European Union. It would be possible under these circumstances for the UK not to enter a formal customs arrangement with the EU but maintain existing external trade regulations in order to preserve frictionless trade. This would involve the UK unilaterally adopting the EU common external tariff, maintaining and updating the Union Customs Code in UK law but importantly would not include the common commercial policy.
  - The UK including NI remains in the customs union. This option can result in a Turkey and EU Customs Union kind of scenario. Turkey amended its laws to reflect the EU's Common Commercial Policy, in essence deferring to the EU's trade policy, with minor exceptions for limited regional trade deals which Turkey has signed. If EU membership is not in prospect then a EU-Turkey Free Trade Agreement would appear to be more welfare enhancing,
  - NI alone remains within the customs union. If this option was chosen there would be two significant challenges. Firstly, whilst administering rules of origin checks at ports may be easier, the total volume of goods that would face disruption is so much larger, any perceived benefit to trade with the ROI may be offset by the level of disruption to trade with UK. Secondly, is unlikely that political parties that favour the union between NI and the rest of the UK would countenance any kind of border between both territories, particularly in order to attain closer access to the ROI.

- The RoI leaves the customs union, the likelihood of this occurring is highly unlikely. However, this option would maintain frictionless trade with both NI and UK for the RoI but at a cost to trade with the rest of the EU. No territory that was once part of the EU Customs Union has left without first leaving the EU and so this scenario would almost inevitably involve the RoI leaving the EU.

- All four options identified are seen as sub-optimal to the current situation regarding trade on the island of Ireland with it noting that in reality, the Brexit process is likely to culminate in identifying the least worst option which is politically acceptable to all involved.

HMRC and DExEU published *Future customs arrangements - a future partnership paper*. This paper discusses options for the UK's future customs arrangements with the EU.

- This paper includes proposals that are first steps to meet the UK government's objective of trade across the land border being as seamless and frictionless as possible, but notes that further steps will be necessary.

- The UK government believes there are two broad approaches it could adopt to meet its objectives:
  - A highly streamlined customs arrangement between the UK and the EU, streamlining and simplifying requirements, leaving as few additional requirements on EU trade as possible.
  - A new customs partnership with the EU, aligning its approach to the customs border in a way that removes the need for a UK-EU customs border.

DExEU published *Continuity in the availability of goods for the EU and the UK - position paper*. This paper outlines the government's position on continuity in the availability of goods in UK and EU markets at the point of EU exit.

- The EU is the UK's largest market for goods, and in 2016 other EU Member States, taken as a whole, exported more goods to the UK than any third country.
  - Citizens across the EU also benefit from this close relationship and the integrated regulatory systems, which enable the supply of safe products across the EU and the UK, as well as reduced costs, increased variety, flexibility for supply chains, benefits for patients, and higher quality and innovative products.

- Both consumers and producers would benefit from maintaining close trading ties after the UK's exit to ensure the reliable supply of products and reduced costs. In 2016, the EU exported €127.9 billion of consumer goods to the UK and imported €62.3 billion of UK consumer goods. Producers in the rest of the EU rely on UK firms in their supply chains, and vice versa.
  - In addition, the UK is an important contributor to many European value chains, and in 2011 the UK content accounted for 1.9% of the total value of other EU member state exports, and 6.4% of all foreign value added in other EU member state exports.

- The UK's ambition is to work towards a comprehensive future agreement with the EU, which includes securing the freest and most frictionless trade possible in goods and services, to the benefit of all.

- The UK's proposals on customs and tariffs in the future relationship are set out in 'Future customs arrangements: a future partnership paper' cited above.

The Institute for Government published *Frictionless Trade: What Brexit means for cross-border trade in goods* exploring potential future options finding that they each mitigate the introduction of new trade barriers in different ways for future trade outside of the EU.

- A deep and comprehensive free trade deal could, in theory, remove many obstacles if it went well beyond any agreement the EU has already concluded with another third country. Generally, the deeper the agreement, the greater the loss of control over laws and regulations. Without a softening of 'red lines' from either the UK or EU side, it is hard to see how a deal could prevent the introduction of any regulatory barriers.

- A customs union agreement, like the arrangement between the EU and Turkey, could help to avoid origin checks. But Turkey is obliged to levy the EU's common external tariff, which impedes its ability to run an independent trade policy. And as its Customs Union only applies to industrial goods, it still faces border checks on agricultural goods and its trucks cannot circulate freely within the EU.

- Staying in the Single Market, like Norway, would allow the UK to have an independent trade policy, but at the price of origin checks and accepting EU rules, with no formal say over them. This option goes the furthest in maintaining frictionless trade in terms of services, but exporters would still need to prove origin for goods and agricultural and fisheries products (which are not covered by the Single Market and face border checks).

- Membership of both the Single Market and a customs union arrangement comes the closest to minimising disruption. This may be needed as a transitional arrangement but as a permanent arrangement it is really just EU membership without the institutions or commitments and, crucially, without the political influence.
- Leaving with no deal is a recipe for maximum disruption. That no major trading partner trades with the EU on World Trade Organization (WTO) terms alone indicates the unattractiveness of this option. It would mean document checks, testing and inspection at the border. Tariffs would damage the competitiveness of many sectors.
  - The impositions of tariffs will affect some industries more i.e. the agriculture sector could see the highest impact by EU tariffs, being a high as 87% for frozen beef to 3.8% for fresh sweet potatoes.

CBI UK published a Brexit briefing on *The Trade Costs of A "No Deal" Scenario*. This briefing sets out evidence on the scale of barriers to trade in different sectors, to highlight the potential costs of leaving the EU with no deal in place, but also of securing a more limited trade deal over the long-run.

- The potential costs if EU-UK trade were carried out under the World Trade Organisation Most Favoured Nation terms (MFN), suggests that the average MFN tariff on the UK exports to the EU would be 4.3%.
  - Total increase in tariff costs would be between £4.5bn and £6.0bn, depending on how much of the value of the good in question was produced in the UK, the EU or outside the EU.
- Some of the UK's exports would experience tariff rates significantly higher than the average rate. The agriculture sector would face an average tariff of 16.4%, while textiles faces the next highest at 10.5%.
  - Due to its size and relatively high tariffs (10% on vehicles and 4.5% on components), the automotive sector would have to pay the highest export cost of between £800 million and £1.5 billion.
- Furthermore, firms in all sector will face an increase in administrative costs as a result of a requirement to provide a more detailed paper trail tracking EU as well as non EU intermediate inputs to ensure the right amount of tax is paid. These extra costs are likely to impact the competitiveness of UK exporters.
- The cost of tariffs on imported goods could be more than double the cost on exports, reflecting the fact that the UK runs trade deficits across many categories of goods.
  - The average MFN tariff rate on the UK's imports from the EU would be around 5.7%. When applied to UK imports of £237bn in 2016, this would amount to an additional cost of £11bn-£13bn (approx. 0.6% to 0.7% of GDP) for UK consumers and businesses.
  - Within the food sector, for example, dairy goods attract an average 32%, with Italian mozzarella attracting levies as high as 45.5%.
- Industries and in domestically focussed service industries such as energy, utilities and environmental services, also highlight the importance of tariff free UK-EU trade. These industries want to avoid vehicles machinery and other supply chain costs increasing.
- The UK's strongest comparative advantages by far are to be found within the services sector; UK insurers enjoy a strong position in both global and EU markets, though they are particularly dominant in extra-EU trade.

***What sort of Brexit do the British people want?*, published by King's College London, explores the attitudes towards different aspects of a possible agreement to exit the EU, drawing on a stated preferences surveyed on almost 1,000 members of the British public.**

- Respondents showed a strong preference for maintaining free trade in goods with the EU markets, as well as for the reciprocal provision of services such as banking. People highly value having access to EU markets for trade in goods and services, but also would like the UK to be able to make its own trade deals. The survey has found that people value the UK being able to make its own laws, but not as much as a single market access or the ability to make trade deals.
- The analysis indicated that on average, respondents would prefer a future relationship in which the UK is able to prefer a future relationship in which the UK is able to make and interpret all laws itself, but this was considered less important than maintaining free trade or being able to negotiate new trade deals independently.

- Respondents with a degree level education showed a preference for the UK being subject to EU laws, favouring the status quo and placing a negative value on the option in which the UK makes its own laws.
    - In contrast, those without a degree favoured the UK making all of its own laws and placed a negative value on the UK being subject to EU law areas like trade, employment, and the environment and consumer protection.
- While all people, on average, placed a negative value on the UK making any contribution to the EU budget, people with a degree have a lower sensitivity to the level of this contribution than those without a degree.
    - Those with degrees had stronger preferences for the non-monetary characteristics compare to those without. They were much more strongly opposed to needing a visa to travel on holiday: they would pay over £40 per household per week to avoid the need for a visa and health insurance to travel between the UK and EU.
- The British public valued a Norway-like deal of this kind at about £14 per household per week more than the status quo, largely a result of the ability to make trade deals with countries outside the EU.
    - This is despite the perceived disadvantage that it would entail allowing free movement for holidays and working and living.
- In comparison to no deal at all the public value a Norway-like relationship at £38 per household per week. That the public prefer this kind of deal to the status quo, but prefer the status quo to leaving the negotiations with no deal at all, may present the government with a potentially challenging position from which to negotiate.

IMD World Competitiveness Center has published an article, *Brexit: A Year After*, using findings from its Executive Opinions Survey to identify whether people's perceptions towards issues that may affect the economy changed after the EU referendum.

- 57% of the respondents, before the result of the referendum, agreed to a positive attitude towards globalisation for the UK; a year after this, the number dropped to just 36%.
- In 2016, 80% of the managers who participated in the survey believed that the image of the country abroad encouraged business development. In 2017, only 54% of the respondents felt that the image abroad was fostering business development.

The Centre for European Policy Studies has published an article, *For a 'Scrap-it' Brexit – 33 reasons why … and counting*, listing what it sees as the main costs of holding the referendum.

- The UK's leading place in Europe in the IT sector is highly dependent on high-skilled personnel from the continent, and this thriving sector is now at risk if immigration is restricted.
- The dropping of UK research institutions out of EU-funded networks and projects threatens the UK's leading position in European scientific research.
- Quitting the single market means bringing back roaming charges.
- The car industry, entirely foreign-owned, has stopped investing. Airbus is considering relocating its UK operation. Some 40% of UK enterprises say Brexit is negatively affecting their investment plans and only 2% report a positive effect
- UK universities are seriously concerned about losing academic staff from the continent as well as falling enrolment. Oxford University, ranked number one in the world, depends on continentals for 17% of its academic staff and 15% of its student body. Brexit is a "major concern" for the Vice-Chancellor. The UK's 24 leading universities depend even more (24%) on academic staff from the continent, and a 30% rise in departures back home is already reported

The OECD has published a policy paper on *Digital Trade*. It discusses how the digital transformation is fundamentally changing the international trade landscape.

- Trade is still subject to comparative advantage and informational asymmetries and barriers to trade both at-the-border and behind-the-border. However, new business models are changing how we trade.
    - The growth of online platforms has led to a rising number of small packages crossing international borders.
    - New technologies are also changing how services are produced and supplied, blurring already grey distinctions between modes of delivery and posing new challenges for the way international trade and investment policy is made.

- Emerging technologies, such as distributed ledgers (Blockchain) or additive manufacturing (3D printing) have the potential top further change how we trade in the future.

- Digitalisation is also changing what we trade.
  - New 'information industries' supplying, for example, 'big data' analytics, cybersecurity solutions or at-a-distance quantum computing services across borders are emerging.
  - At the same time, digitalisation is also changing the tradability of already established service industries and enabling a greater bundling of goods and services.
- It also underpins trade less directly: by enabling control and coordination along international production networks or by enabling the implementation of trade facilitation measures.
  - It is at the core of new and rapidly growing service supply models such as cloud computing and additive manufacturing.
  - It also underpins trade less directly: by enabling control and coordination along international production networks or by enabling the implementation of trade facilitation measures.
- There are also a number of trade related issues that may require further thought i.e. Growing interconnectedness and a greater demand for just-in-time delivery also means that trade needs, more than ever, to be faster and more reliable underscoring the need for more efficient trade facilitation.

TOURISM

Understanding the impact of a tourism VAT reduction for Northern Ireland **has been published by Cut Tourism VAT. The report assesses the scenario if there was a tourism VAT cut in Northern Ireland.**

- Cutting VAT on visitor accommodation and attractions in Northern Ireland from 20% to 5% would result in a loss of Treasury income in the first year of £4.2 million.
  - However, there would be gains from the following year and over 5 years the Treasury would gain by £32 million at current prices and by £109 million over 10 years.
- Recent reports have confirmed the benefits of the reduction to 9% similar to the Irish economy.
  - The effect of the lower VAT rate was notably progressive, impacting positively on lower-income households.
- Since then, Ireland's foreign-exchange earnings from tourism have grown considerably. Having been raised in 1994 to 12.5% and in 2004 to 13.5%, in July 2011, the rate of VAT was cut from 13.5% to 9% as a "temporary measure" to stimulate tourism growth and jobs in the aftermath of the financial crisis.

INWARD INVESTMENT

Ipsos Mori has published *Top Cities 2017* ranking 60 cities in terms of people's perceptions of where is the best to live in, visit and do business in?

- New York is the most popular city worldwide, retaining the title it claimed when the survey was first run in 2013.
  - New York is followed by Abu Dhabi (2), London (3), Paris (4), Sydney (5), Zurich (6), Tokyo (7), Rome (8), Los Angeles (9) and Amsterdam (10).
- New York is the most popular city to do business in, with 23% of the global sample selecting it from the list. Abu Dhabi is second with 21%, followed by London and Hong Kong (both on 16%) and Tokyo (15%).
- Paris tops the global list of tourism destinations, 21% say it is one of the best destinations for tourism. However, it rates comparatively poorly as a business hub, failing to reach the top 10 on this measure.
- Focusing only on the 18 EU and European Free Trade Association cities in the list, it appears that any concerns about the negative impact of Brexit on London's image are yet to materialise. London retains its crown as the leading city in this region, with a strong lead over Paris and Zurich.

ENERGY

BEIS has launched a consultation on *Controlling the costs of biomass conversion and co-firing under the Renewables Obligation.*

- The two options proposed are:
  - A generator cap - This option would introduce an annual cap on the total number of Renewables Obligation Certificates (ROCs) that can be issued to each biomass conversion or co-firing station in respect of generation at its non-grandfathered units. This proposes an annual cap of 105,000 ROCs for each station to cover generation from all its non-grandfathered units. This would limit additional spend under the Levy Control Framework in a way that takes into account maximum annual historic performance of any affected generator;
  - A re-banding of support levels - This option would adjust the support levels for non-grandfathered units operating under the biomass conversion and co-firing bands. This proposes that non-grandfathered biomass conversion and co-firing projects receive the same support under all these bands as they all present a risk to managing the Levy Control Framework budget in the interests of consumers.

BEIS also published *Renewable electricity in Scotland, Wales, Northern Ireland and the regions of England in 2016*. This article provides information and analysis on the amount of electricity from renewable sources, disaggregated below UK level.

- England had the most renewable capacity and generation, largely due to the three biomass units at Drax in Yorkshire and the Humber.
- The highest technology growth in capacity was solar PV, notably in the South-West, driven by large-scale schemes supported by the Renewables Obligation.
- Between 2003 and 2016, there was a 685% increase in overall generation from renewables in the UK, but faster rates of growth were recorded in Yorkshire and the Humber (2,866%), Northern Ireland (2,129%), the East Midlands (1,005%), the South East (840%) and the South West (772%).
- Between 2003 and 2016, there was a 932% increase in overall capacity from renewables in the UK. Faster rates of growth were recorded in individual regions. Northern Ireland (2,193%) from mainly onshore wind, the South East (2,104%) and the East of England (1,349%) both mainly from PV and offshore wind.
- In the case of Northern Ireland, there has been a growth in capacity and load factors as new sites have been exploited but this has now settled down to similar values to the rest of the UK.

The Economic and Social Research Council (ESRC) has published an evidence briefing *Low-carbon trade opportunities* setting out opportunities for future trade of low carbon goods and services.

- Demand for low-carbon goods and services is increasing rapidly, with a turnover of £43.3 billion in 2015 for low-carbon and renewable energy companies in the UK.
- Growth opportunities in a low-carbon economy extend beyond low-carbon technologies – encompassing a wide range of sectors including transport, finance, industry, agriculture, law, retail and services.
- UK industries that currently enjoy high export value – including aircraft and spacecraft, motor vehicles, and steam generators – are at risk of losing global market share to cleaner competitors in Germany, Japan and elsewhere.
- The UK is already an effective low-carbon innovator in areas such as electric motors, electricity distribution and domestic appliances, and has the potential to export other technologies including low-emissions vehicles and batteries
- Recommendations include that low-carbon research, innovation and skills should be made a priority issue throughout the Government's Industrial Strategy and that BEIS should develop an effective Clean Growth Plan, consistent with the fifth carbon budget, which allows UK firms to develop expertise for the low-carbon economy, exploit the domestic market and become globally competitive.

Household investments into solar PV and battery storage: an analysis of profitability and impact **has been published by The Economic and Social Research Institute (ESRI) comparing the profitability and impact of photovoltaic (PV) and storage systems from a household perspective in Germany and Ireland.**

- Findings show that PV subsidies or changing economic conditions (e.g. PV and storage cost reductions) can lead to an increase in PV on the Irish system in the coming years. While there is nothing wrong with that, such high levels of PV can create significant challenges as outlined above.
- For current levels of costs, prices and feed-in-tariff (FIT), household investments into solar PV are profitable in Germany. Even without FIT, battery storage costs decreasing to a level of around 500 €/kWh would render combined PV-storage systems profitable in Germany.
- For Ireland, it finds that investments into solar PV or storage are not profitable under current market conditions and regulation. At today's costs of PV systems, a feed-in tariff of approx. 200% of the current REFIT level for wind would be required to achieve an internal rate of return of 5% for rooftop PV.

Why the UK needs an ambitious clean growth plan now **has been published by the Green Alliance. This report sets out the consequences of delaying low carbon policy for the power, transport and heat sectors, and showcases the opportunities that an ambitious clean growth plan would bring to the UK.**

- Investment in new renewables is projected to peak at £6.2 billion in 2017-18. Without clear government policy from the end of this decade, it is estimated that investment will drop by 95% to below £0.3 billion by 2020-21.
- The UK's commitment to phase out new petrol and diesel cars, including hybrids, by 2040 is a strong start, but ultra-low emission vehicles only made up 1.4% of new cars and vans sold in 2016. New infrastructure rollout and interim targets are needed to ensure we keep up with other countries.
- Zero carbon homes cost around 1.4% more to build than a standard new home, but they have energy bills 80% lower than the UK average (calculation based on data from: HM Land Registry and OFGEM).

Negotiating Brexit: positive outcomes for the UK on energy and climate **published by the Green Alliance, identifies what positive outcomes would look like for the UK on energy and climate policy, highlighting the major challenges to achieving these outcomes and suggesting how to address them.**

- A continued participation in the Internal Energy Market (IEM) will help to keep electricity prices down for UK consumers.
- Interconnection already contributes to meeting 7% of the UK's electricity demand. A potential reversion to WTO rules, could result in the UK imposing import tariffs on electricity, making it uneconomic for our EU neighbours to export their electricity to the UK, cutting imports by a third and increasing the cost of electricity by a further £140 million.
- Leaving the IEM for gas would take the UK from being hardly dependent on foreign supplies to 42% dependent. Any imposition of costly regulation on these pipelines post-Brexit could drive up energy prices in the UK, making the EU industry more cost competitive.
- Northern Ireland and the Republic of Ireland currently benefit from a fully linked energy network with shared infrastructure and joint regulatory bodies. An estimated £6 billion worth of energy products were imported by Ireland through the UK in 2014.

Fraser of Allander Institute has published *Impacts of Residential Energy Efficiency and Electrification of Heating on Energy Market Prices*. This paper presents an assessment of the impact on electricity prices produced by the decarbonisation of heating and energy efficiency in the residential sector.

- The electrification of services such as heating increases electricity prices, directly affecting the affordability of such services for consumers. In this study, a cost increment of up to 32.7% was found. In addition, the effect on the energy price change due to the heating profile was also analysed.
- In peak hours, it tends to increase the peak price (approximately 35% in this analysis) and the difference between off-peak and peak prices (with off-peak price is approximately 65% lower than peak prices).

TELECOMS

DCMS published a study on *Broadband Connection Voucher Scheme Impact and Benefits*.

- The scheme made a big difference to thousands of small businesses, it revealed demand previously not met by the market by allowing groups of organisations to pool their vouchers and it encouraged competition and consumer choice by supporting several hundred suppliers including many smaller suppliers. Key headlines figures are:
  - 42,500 small firms were able to substantially improve their internet connection: on average new services were 18 times faster.
  - The UK benefitted by at least £8 for every £1 spent.
  - One in four firms employed an extra full time member of staff and each made an average of £1,300 more profit per annum, through being more efficient and effective, and providing more reliable and faster delivery of goods and services.
- The scheme encouraged competition and consumer choice with 87% of funding going to smaller suppliers providing specialised services, with only 13% of the funding went to the top 3 of BT, Virgin and TalkTalk.
- SMEs report that faster broadband makes a huge difference to their business. The survey revealed:
  - 86% of firms who responded reported that their broadband upgrade had increased their employees' effectiveness.
  - 83% reported improved efficiency.
  - Almost 70% reported increased speed and reliability of delivering goods or services.

Government

NORTHERN IRELAND

DExEU published *Northern Ireland and Ireland - position paper*. This outlines the UK's position on addressing the unique circumstances of Northern Ireland and Ireland in light of the UK's EU withdrawal.

- Upholding the Belfast ('Good Friday') Agreement in all its parts;
  - Political stability in Northern Ireland is dependent on the continued operation of The Belfast ('Good Friday') Agreement's institutions and constitutional framework, effective management of the security environment, and economic prosperity.
- Maintaining the Common Travel Area (CTA) and associated rights;
  - The CTA's internal borders are subject to some immigration restrictions but not, or only to a minimal extent, border controls. The CTA arrangement established cooperation between the immigration authorities of its members to provide a pragmatic response to the movement of people within it, including other nationalities who remain subject to immigration control.
- Avoiding a hard border for the movement of goods;
  - In 2015, external sales of goods from Northern Ireland to Great Britain stood at £10.7 billion (22% of all NI's sales in goods by value). Trade between Northern Ireland and Ireland is also very important. Over the same period, Ireland was Northern Ireland's biggest external trading partner, exporting £2.7 billion of goods to Ireland (6% of all NI's sales in goods by value and 36% of NI's total goods exports).
- Aiming to preserve North-South and East-West cooperation, including for Energy;
  - The UK proposes that the UK and the EU should focus in the initial phases of the dialogue on reaching a common understanding of the principles of North-South and East-West cooperation.

***Collaboration on science and innovation - a future partnership paper* published by the Department for Exiting the European Union (DexEU) outlining the UK's objectives for an ambitious science and innovation agreement with the EU.**

- It is the UK's ambition to build on its uniquely close relationship with the EU, so that collaboration on science and innovation is not only maintained, but strengthened.

- The UK and the EU share common fundamental challenges such as dealing with climate change, tackling infectious diseases in people, animals and plants, maintaining growth and security in the face of threats and natural hazards, and supporting developing countries to build societal and economic resilience.
  - These challenges can be best met by continued collaboration amongst the top scientists across Europe and the UK seeks to continue to play its full part in helping European partners meet these fundamental challenges
- The UK would welcome dialogue with the EU on the shape of a future science and innovation agreement, reflecting a joint interest in promoting continued close cooperation, for the benefit of UK and European prosperity.

HM Treasury published a consultation on *Financing growth in innovative firms* seeking views on how to increase the supply of capital to growing innovative firms, as part of the Treasury's Patient Capital Review.

- Potential solutions:
  - A new national investment fund could channel new investment into patient capital. The most effective way to crowd in new private investment would be to create a public-private partnership. This could provide scale to new private investment; however, private investors may not have the appetite to participate in a new fund without an established track record of successful investment.
  - An alternative approach would be to incubate a fund on the government's balance sheet (as a new subsidiary of the British Business Bank), with the intention of selling part or all of the fund to private investors once it has established a suitable track record.
  - The third way would simply be to increase government investment through existing channels, although this may in the longer term reduce vibrancy within the market and not be fiscally sustainable. In each case, government investment would be made through the British Business Bank.

ENGLAND

BEIS has also launched a consultation on *The Non-Domestic Renewable Heat Incentive: Further Proposed Amendments* following the UK government's commitment to undertake further detailed work on eligible heat uses and consult on subsidy limits for very large plant.

- This consultation sets out the Government's proposals on both these issues, as well as on the eligibility rules where multiple installations are accredited at a single site to ensure continued value for money and robust budget management of the scheme.
- The reform package announced in December 2016 will improve the scheme to ensure it:
  - Focusses on long-term decarbonisation. The reforms promote deployment of the right technologies for the right uses, while ensuring the RHI contributes to both decarbonisation targets and to the UK's renewable energy target;
  - Offers better value for money and protects consumers. The reforms will improve how costs are controlled, give consumers more confidence in the performance of particular technologies, address potential loopholes in the scheme, and significantly improve the scheme's value for money; and
  - Supports supply chain growth and challenges the market to deliver. The reforms will drive cost reductions and innovation to help build growing markets that provide quality to consumers and are sustainable without Government support in future.

SCOTLAND

The Scottish Government published *A Nation With Ambition: The Government's Programme for Scotland 2017-18*. This programme sets out the actions the Government will take in the forthcoming year.

- To support businesses to grow and expand, particularly in key sectors, the Scottish government will appoint a new Strategic Board to focus their enterprise and skills agencies even more firmly on supporting the growth of key sectors and ensuring that our universities, colleges and wider training programmes are producing the skills that businesses and our people need.
- Become a more entrepreneurial government by launching the Unlocking Ambition Challenge to invest in a group of up to 40 talented individuals and early-stage entrepreneurs who have big ideas and ambitions and who will be chosen, mentored and led by some of Scotland's leading entrepreneurs.

- To support the position of Scotland in the world and reinforce their international outlook, it will continue to expand its presence in key markets to boost trade and exports, including the establishment of a new hub in Paris.

The Scottish Government published *Scottish Framework and Action Plan for Women in Enterprise*. The document has been refreshed to reflect the emerging post Enterprise and Skills Review support landscape.

- It will seek to ensure greater participation of women's businesses in the innovation process, including access to innovation support and participation within innovation hubs.
- It will also support Business Women Scotland to deliver more networking opportunities for women across Scotland, and seek to extend this collaboration to include other women's business networks.
- This refreshed framework also says that the government will support Investing Women's annual ambition and growth events promoting the success stories emerging therefrom.

The Scottish Government published *Scottish 4G Infill Programme Consultation*. This public consultation seeks to define the proposed intervention locations in the first phase of this programme.

- The Scottish Government and Scottish Futures Trust recognise there will be gaps in 4G mobile coverage and the need to fill these coverage gaps. As part of the Programme for Government 2016/17, the Scottish Government stated its intention to develop a 4G infill programme to work with industry and eliminate these coverage gaps.
- The 4G infill programme is looking to provide additional mast (and associated) infrastructure and services to underserved locations. It is recognised that provision of infrastructure through the programme is a requirement to enable mobile operators to deliver a commercial service in the target areas.
- 4G Long Term Evolution is classified as a next generation access (NGA) broadband service. The objective of this intervention is to provide access to mobile NGA infrastructure which is capable of delivering 4G LTE services.
- One of the main reasons preventing the procurement such a more comprehensive programme from the outset is the uncertainty of the extent of commercial 4G rollout.
- Engagement activity will be accountable and cost effective, using the necessary resources and time to make a difference, and properly evaluate findings.

The Scottish Government published *Independent Advisor on Poverty and Inequality, The Life Chances of Young People in Scotland, A Report to the First Minister*. This report makes 18 recommendations across the key themes of employment, housing and mental health, seeking to improve the life chances of young people from less advantaged backgrounds.

- The report recommends for skills development and transition that all adults who are in regular contact with young people, i.e. teachers, would need to receive training in providing advice with a combination of web-based and face to face support.
- For job quality and pay it recommends that concerns needs to be raised with the Department for Work and Pensions that includes the quality of support offered to young people in Jobcentre Plus.
- It also further recommends for mental health that the Scottish Government should fund applied research on school and classroom practices that encourage wellbeing.

The Scottish Government published *The life chances of young people in Scotland: an evidence review for the First Minister's Independent Advisor on Poverty and Inequality.* The review focuses primarily on young people aged 16 to 24 and their transition from school to adulthood, although relevant outcomes for age 11 to 15 are also considered.

- An increasing proportion of young adults are living in the private rental sector or with their parents, and fewer are able to save for a deposit to buy their own home.
  - The level of deposit as a percentage of income required for first time buyers in Scotland is relatively high. This has contributed to a large decrease in the proportion of younger households owning with a mortgage over the last decade. Low income and insecure work are additional barriers to the housing market for young adults.
- Young adults are particularly likely to be in low quality employment compared to older age groups and to past generations.

- Labour market changes – such as globalisation and technological change – have been identified as an underlying driver of inequality. While the Scottish employment rate has recovered since the recession, there has also been a growth in part time jobs, and increases in self-employment, insecure working, and underemployment.

- Young people, particularly those not going directly to university, are having to negotiate increasingly complicated transitions from school into employment.
  - Young people today are much more likely to continue in education, rather than move directly from school into employment as in the past.
- There is some evidence of growing mental health issues for young people, particularly young women.
  - The proportion of young adults who self-reported to have ever self-harmed was much higher than for older age groups. The analysis suggests there may have been increases in the proportions of young adults self-reporting symptoms of depression and anxiety, and self-harm.
- The persistence of health inequalities and slower declines in rates of certain risky health behaviours in the most deprived areas compared to the least deprived areas.
  - Rates of smoking, drinking, teenage pregnancy and offending have all declined amongst young people in Scotland over the last decade. However, alongside this overall decline, some risks have declined more slowly in the most deprived areas compared to the least deprived areas.
  - In particular, young people living in the most deprived areas are at a higher risk of regular smoking, teenage pregnancy and spending time in custody compared to those in the least deprived areas.

The Scottish Government published *Scotland a low carbon leader*, making £60 million available to accelerate innovation in new technologies, including low carbon and digital projects by 2020.

- The Innovation Fund will support the development of low carbon energy infrastructure, such as electricity battery storage, sustainable heating systems and electric vehicle charging.
- The Scottish Government intends to end the need for new petrol or diesel vehicles in Scotland by 2032 by taking a range of actions, including expanding the charging network and making the A9 Scotland's first electric-enabled highway.

WALES

The Welsh Government published *Evaluation of the Export Assist Programme*. The evaluation aimed to analyse the effectiveness of processes, measure the net impacts and assess the value for money of the Export Assist Programme.

- Respondents expressed the opinion that Export Assist was largely fit for purpose in terms of interventions as it addressed market failures.
  - Asymmetric information/Networking Coordination Issues: The Programme addressed this by providing sectoral/market intelligence and also in-market support by sectoral experts who identify potential clients for Welsh firms;
  - Financial Barriers: The Programme addressed this through the provision of financial support to companies, thereby enabling them to visit target markets and develop linkages.
- The Export Assist Programme does not assist companies in entering supply chains, which are a key entry point for many intermediary products.
- At the UK level there are four main ambitions:
  - To encourage significantly (a doubling) more SMEs to export, in particular targeting innovative and high growth SMEs;
  - To help bring high value opportunities home, not only through a programme of intensive support for larger companies, but also promoting supply chain opportunities for SMEs;
  - To encourage investment in innovation through the demonstration effect of exporting; and
  - To expand the number of export markets for UK companies, in particular the emerging BRIC and CIVET economies and the cash rich countries of the Middle East.

The Welsh Government published a *new national strategy for a more prosperous Wales* designed to drive integration and collaboration across the Welsh public sector, and put people

at the heart of improved service delivery. It also outlines what the Welsh government will do to achieve these objectives.

- The Welsh government aims to:
  - Support people and business to drive prosperity by committing to a new 'Economic Contract' between business and government to stimulate growth, increase productivity, and make Wales fairer and more competitive. Simplify and rationalise the range of financial support offered to companies, ensuring it is clear, easily understood and responsive and develop a new employability plan for Wales, focusing on the diverse needs of individuals, and responsive to the particular skills needs of each part of the country.
  - Deliver quality health and care services fit for the future. It will continue the drive to improve further the standard, quality and timeliness of treatment across the NHS, ensuring access to the services people need, delivering good health outcomes for all. Further integrate health and social care, building on the work of the Parliamentary Review into Health and Social Care, and publish a long term plan for the NHS and social care in Wales.
  - Deliver modern and connected infrastructure. It will introduce the new National Infrastructure Commission for Wales to strengthen the governance and strategic planning of major infrastructure investments; require co-ordinated planning of new homes, facilities and infrastructure by local authorities, health bodies, housing associations and other key partners.
  - Drive sustainable growth and combat climate change. It will introduce a new National Development Framework, setting out a 20-year land use plan for Wales, guiding strategic development and supported by the National Infrastructure Commission for Wales; accelerate the decarbonisation of public services, creating new opportunities for businesses in Wales in the transition to a low carbon economy.

The National Assembly for Wales has published a research brief *Low Carbon Electricity* focusing on low carbon electricity, discussing its role in decarbonising the energy system and giving details of the main technology types and their impact in the Welsh context.

- It reports that the energy supply was responsible for 28.5% of emissions in Wales in 2014 but the sector has seen the greatest technological progress in identifying and deploying low carbon alternatives.
- The centralised nature of electricity generation provides the potential to achieve large-scale emissions reductions more easily than in other more distributed sectors, such as transport. For this reason, increased electrification of the residential sector through electric heating, and the transport sector through electric vehicles, could have a role to play in decarbonising the economy.
- Increased electrification could place significant demands on the electricity system. If electricity were to be used for all passenger transport, as well as domestic heating and cooking, the current demands on the electricity system would more than triple.
- Onshore wind tends to cost less than offshore wind power. A review by ClimateXChange found a range of cost estimates in the region of £50/MWh to £90/MWh for onshore wind power in the UK. The review highlighted that the costs of wind power are highly sensitive to installation-specific considerations such as capacity, lifetime and financing arrangements.
- According to the Energy Saving Trust, an average domestic solar PV system costs in the range of £5,000 to £8,000 and can generate 3,400 kWh per year, approximately equivalent to the annual electricity needs of a typical household.

REPUBLIC OF IRELAND (ROI)

[No relevant material sourced for this quarter's release.]

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