



OXFORD ECONOMICS



NICCE Post Primary Review Briefing Conference: The Economic, Skills and Demographic context



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Oxford Economics

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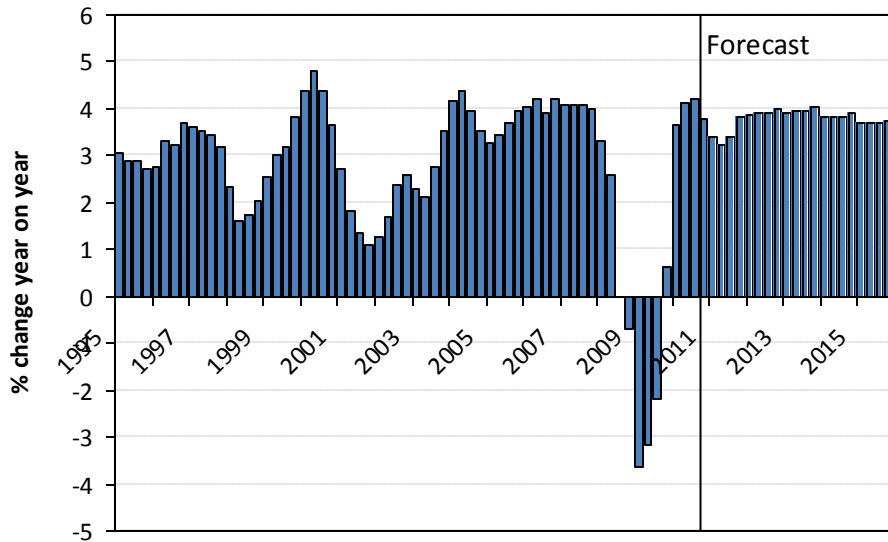
The recession has come to an end

- Challenging economic backdrop for our young people
- Skills and education in Northern Ireland – are we as good as we think?
- Understanding the demographic outlook
- Concluding remarks – does our education system need to change and how?

Challenging economic backdrop for our young people

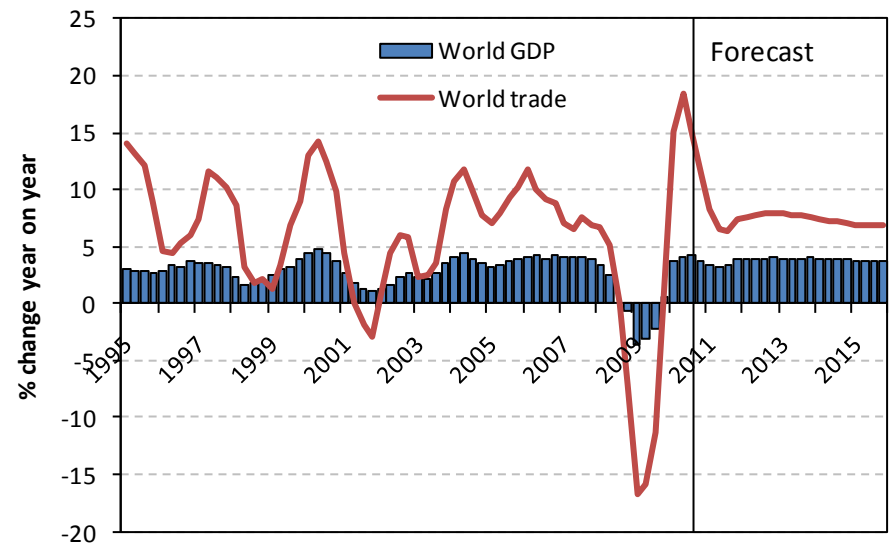
The recession has come to an end...

World GDP 1995 - 2015



Source: Oxford Economics

World GDP and world trade 1995 - 2015



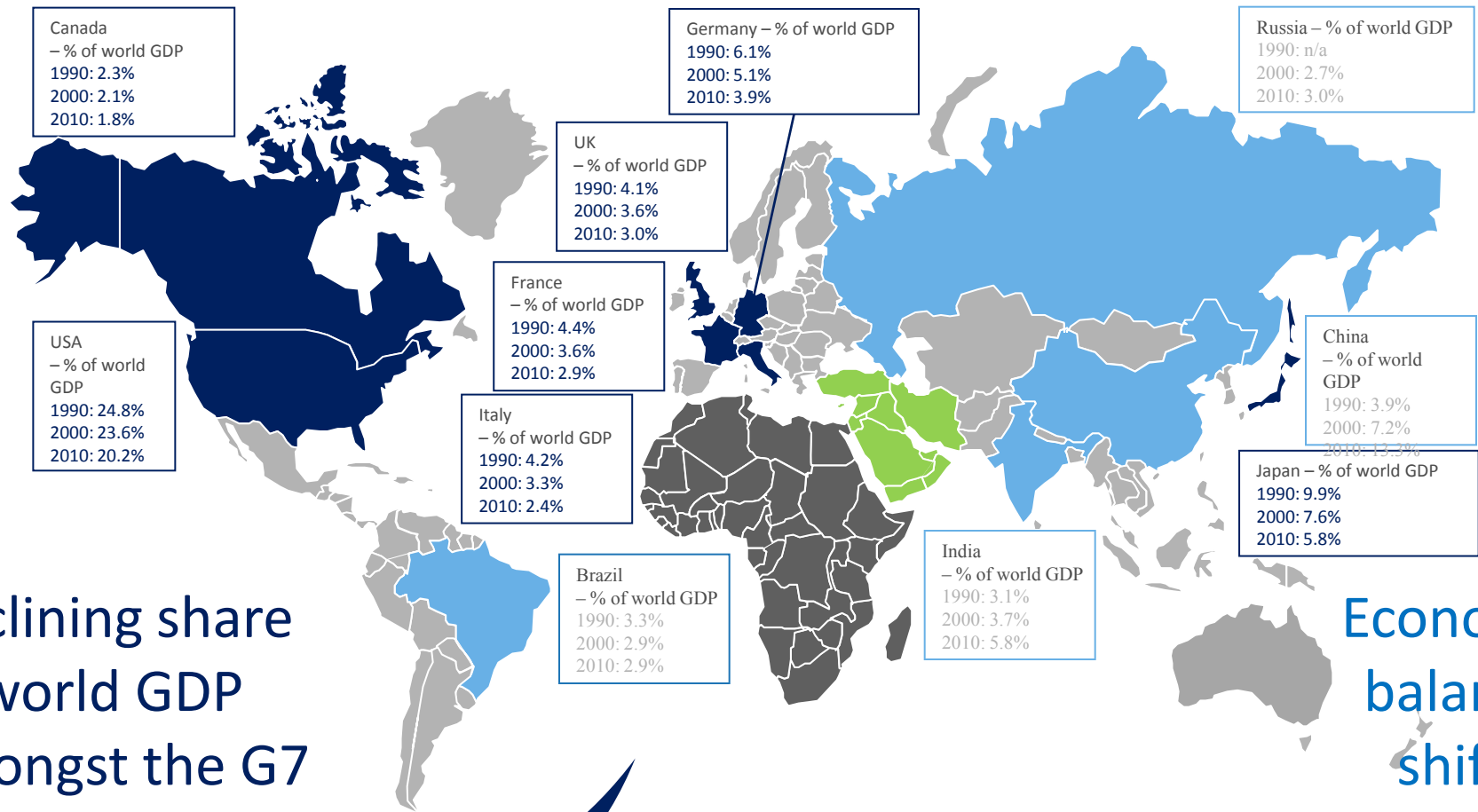
Universal GDP contraction in major European countries in 2009

GDP growth, selected countries, 2008 - 2020

	Annual GDP % change				
	2008	2009	2010	2011 - 2014	2015 - 2020
US	0.0	-2.6	2.9	3.4	2.8
Japan	-1.2	-6.3	4.2	1.8	1.1
China	9.6	9.1	10.1	8.9	8.3
Eurozone	0.3	-4.0	1.7	1.8	1.8
Germany	0.7	-4.7	3.5	2.0	1.8
France	0.1	-2.5	1.5	2.0	1.8
Italy	-1.3	-5.1	1.0	1.2	1.4
Ireland	-3.6	-7.6	-0.8	0.9	3.2
Greece	1.3	-2.3	-4.1	0.0	1.6
Spain	0.9	-3.7	-0.2	1.4	1.7
UK	-0.1	-4.9	1.6	2.6	2.4
Brazil	5.2	-0.7	7.6	4.6	3.9
OPEC	5.9	3.1	4.0	4.9	4.2

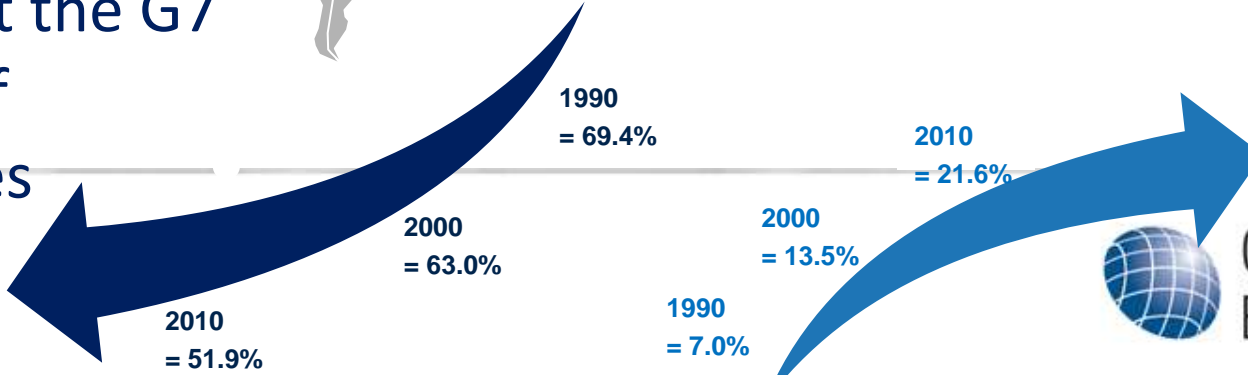
Source: Oxford Economics

The 'new normal'...



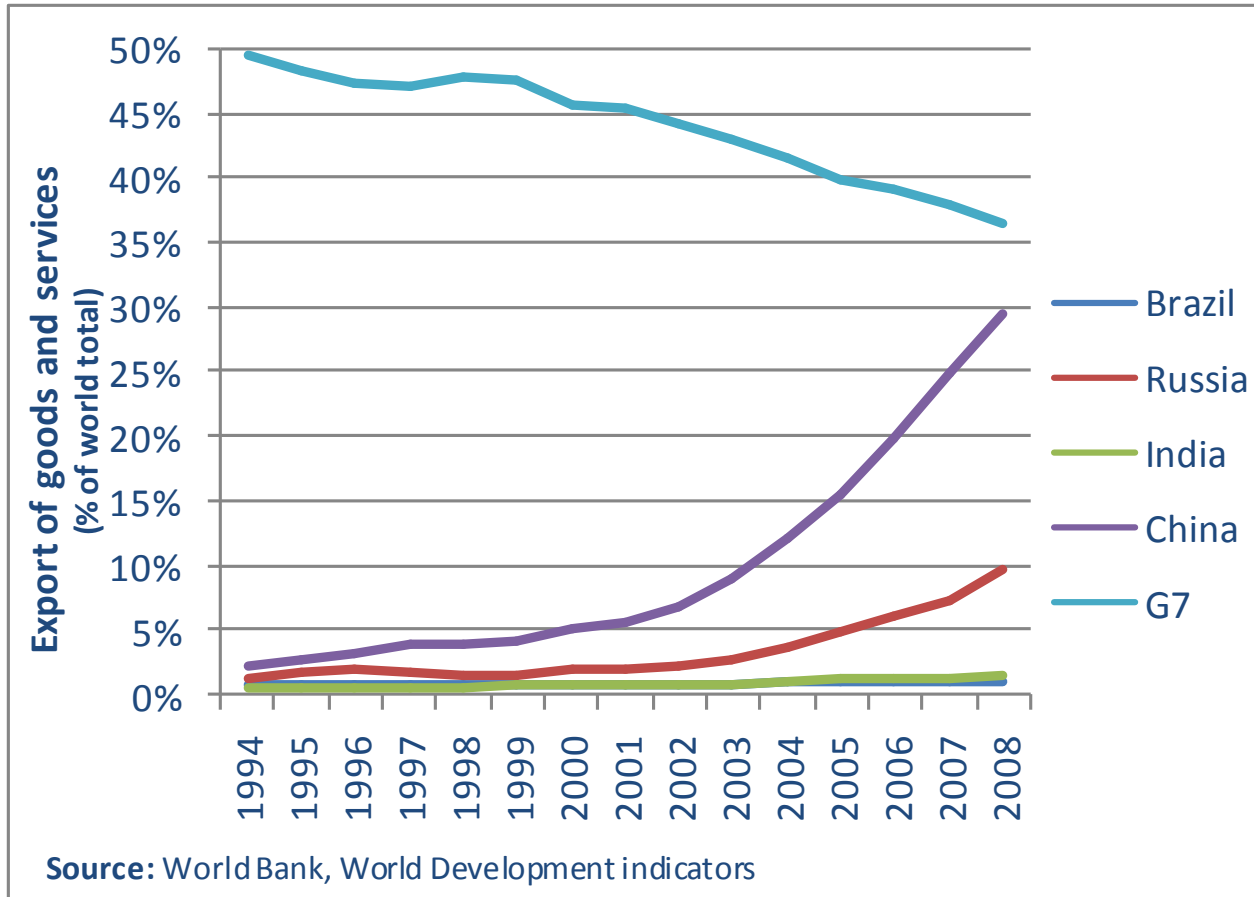
Declining share of world GDP amongst the G7 group of countries

Economic balances shifting towards BRIC economies



Developing countries are increasingly driving global trade...

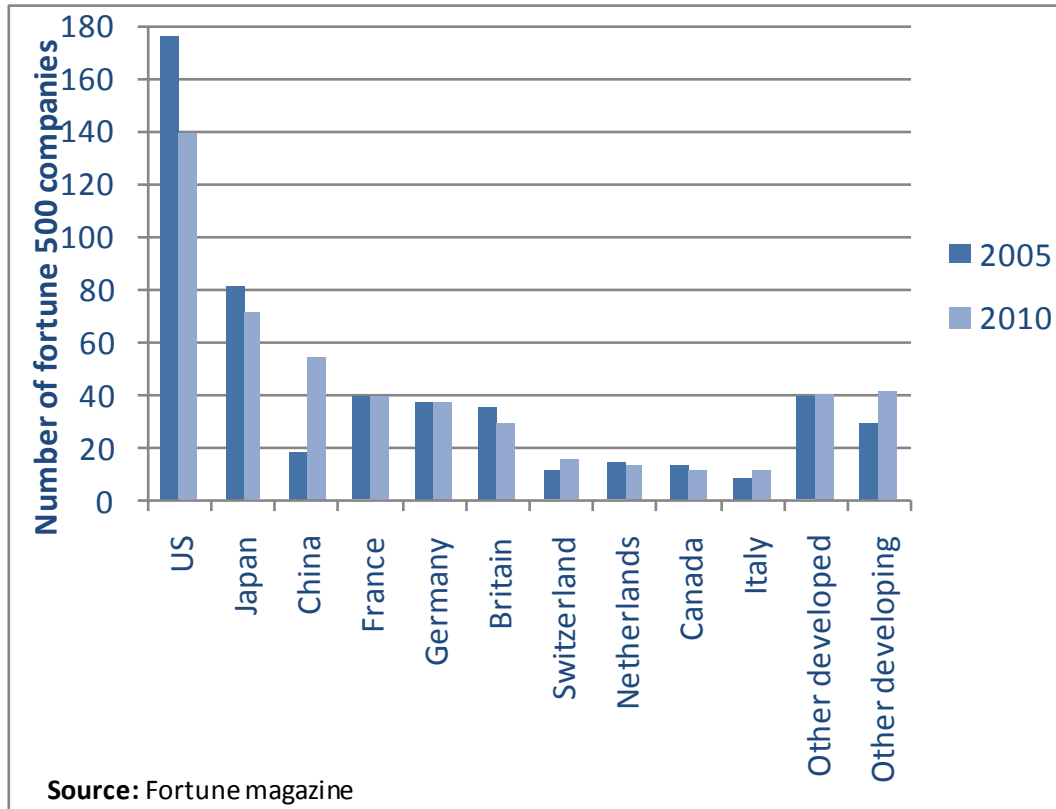
Exports of goods and services (share of world total)



China's share of world trade has increase from less than 5% to almost one third of global exports in under a decade

Developing nations becoming 'big business'...

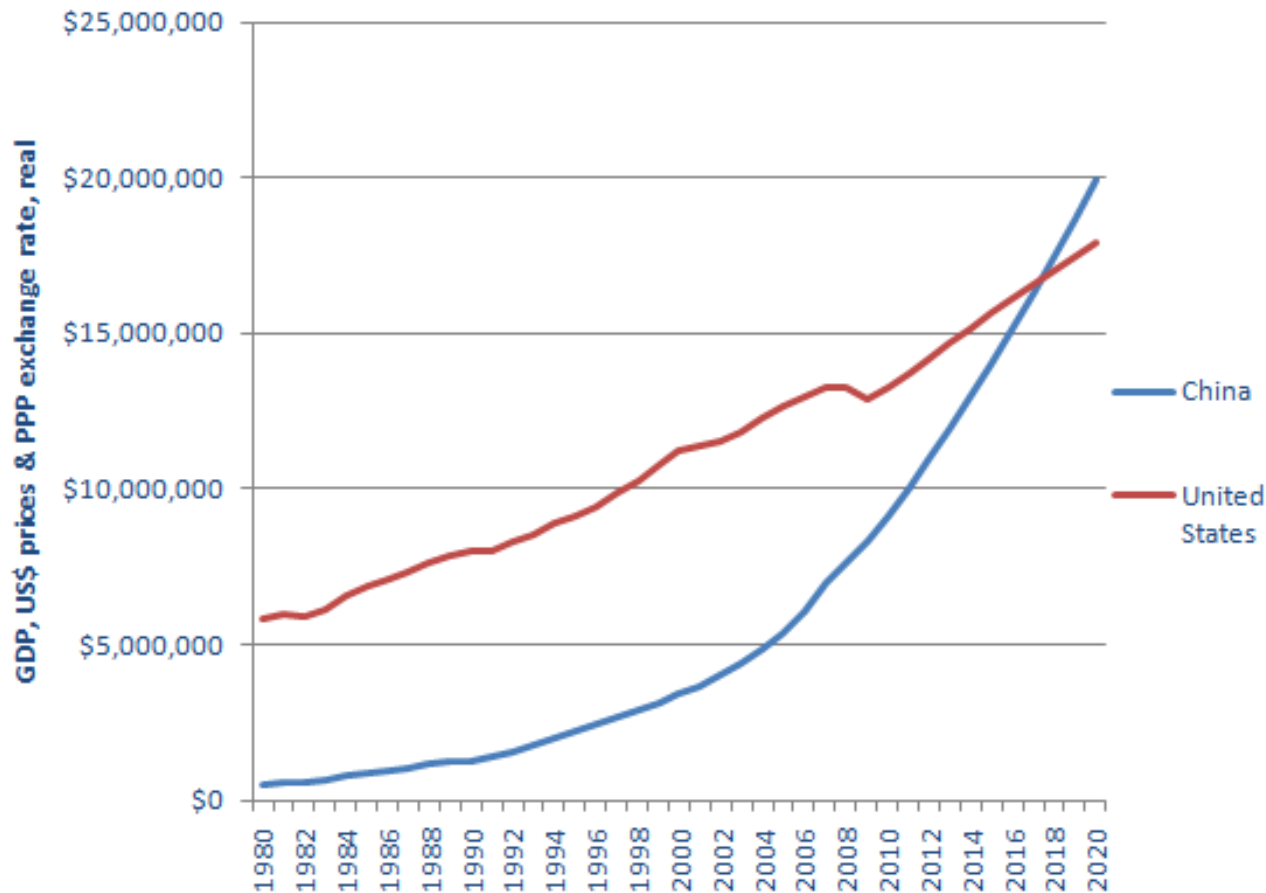
Number of Fortune 500 companies per country in 2005 & 2010



Competition
for labour
will become
increasingly
global

The rise of these sleeping giants will transform the balance of economic power over the next decade and beyond. ...

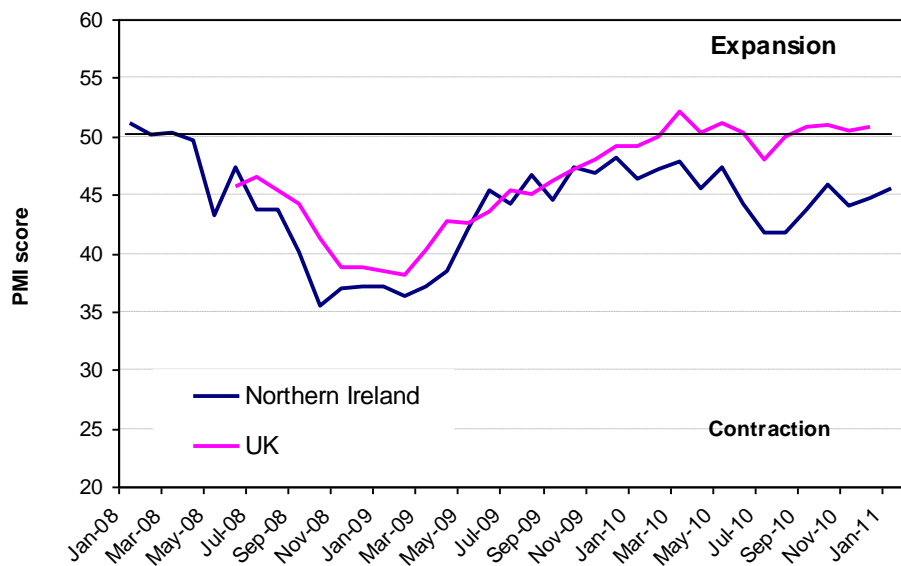
GDP – Purchasing Power parity, US\$ (1980-2020)



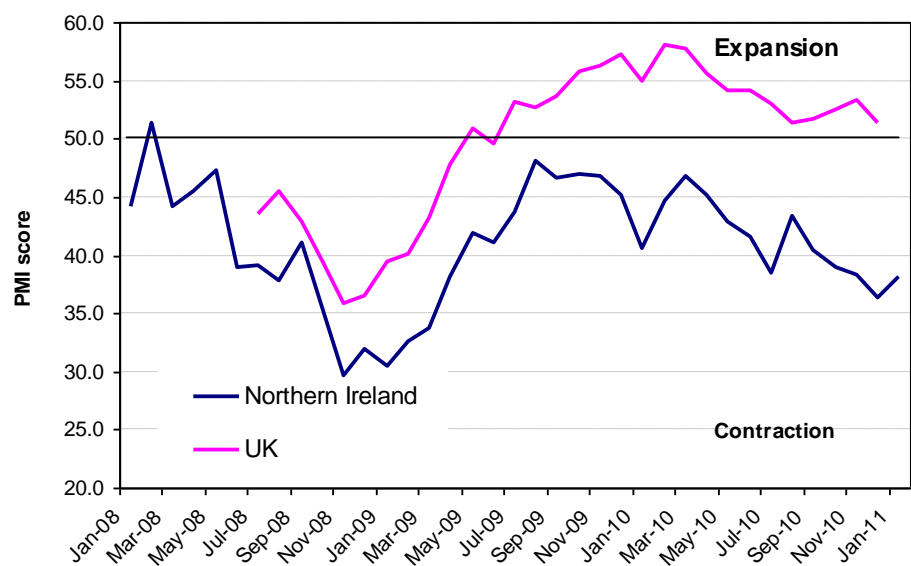
Oxford Economics estimates that China will overtake the US in 2018 to become the world's largest economy (measured in US\$ prices & PPP exchange rate).

Indicators suggest that the recession is still underway in NI and ROI. ...

PMI Output, NI and UK, Jan 08 – Jan 11



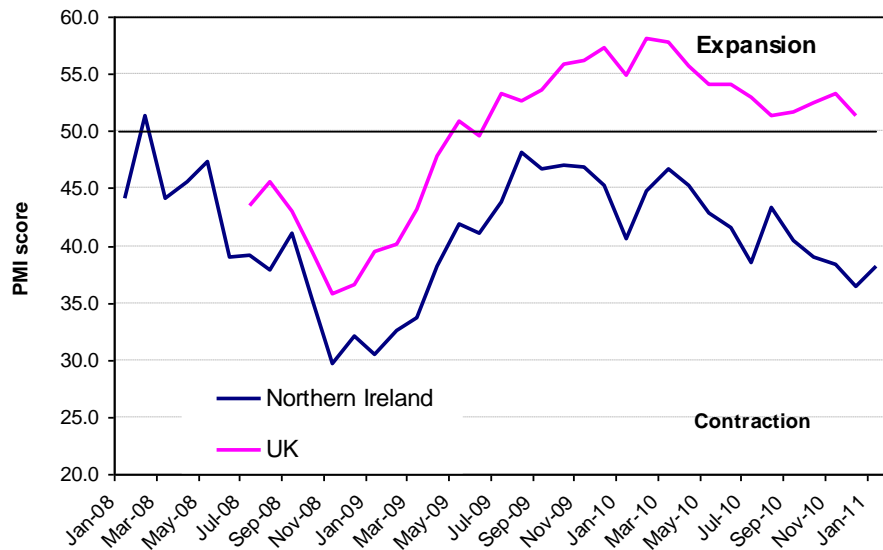
PMI Employment, NI and UK, Jan 08 – Jan 11



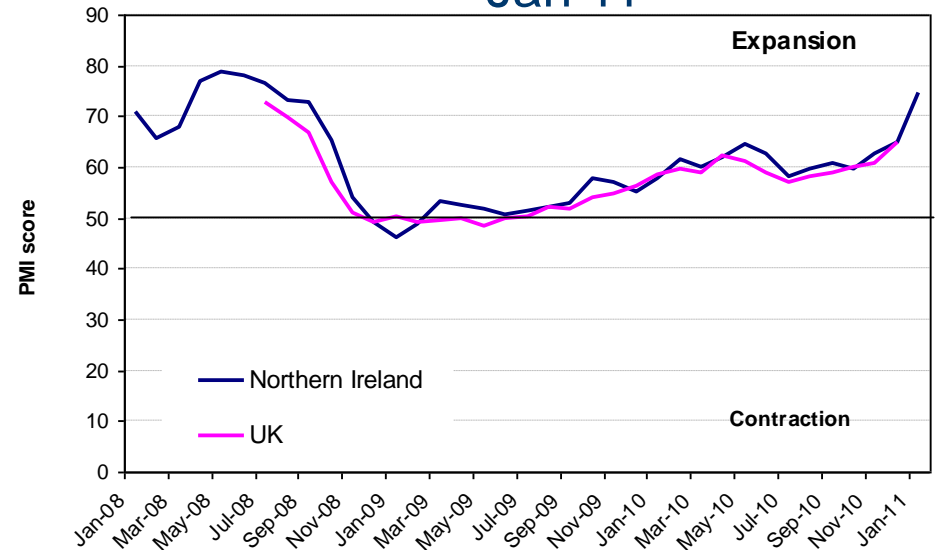
Source: Markit Economics, Ulster Bank

Input prices eroding competitiveness....

PMI New Business, NI and UK, Jan 08 – Jan 11



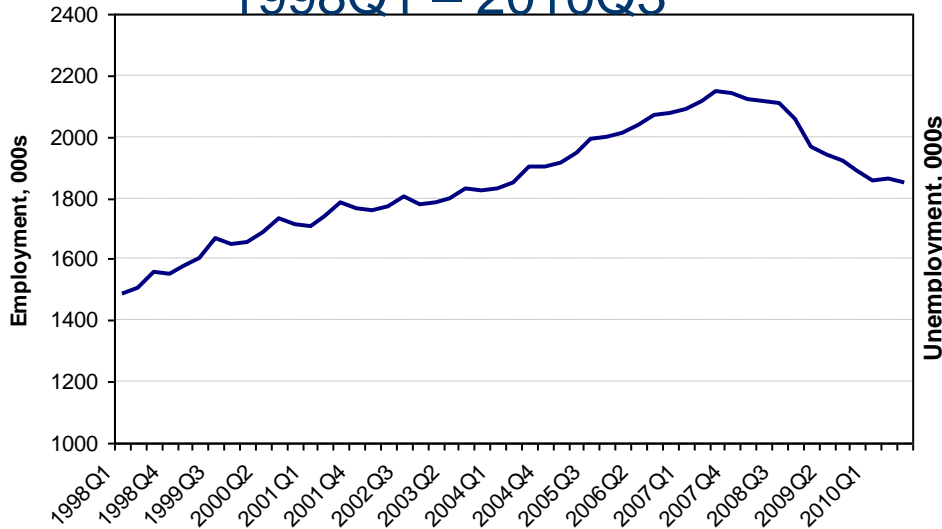
PMI Input prices, NI and UK, Jan 08 – Jan 11



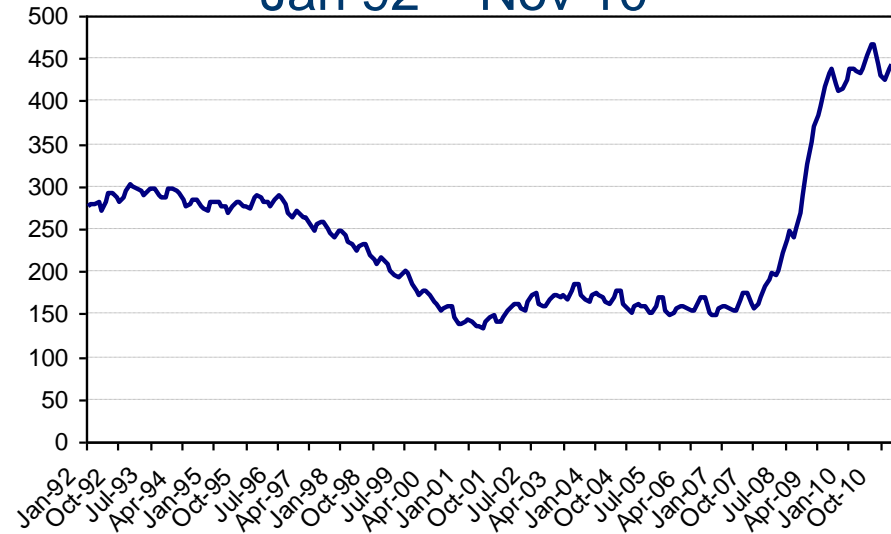
Source: Markit Economics, Ulster Bank

Unemployment at record highs in ROI....

Employment (unadjusted), ROI, 1998Q1 – 2010Q3

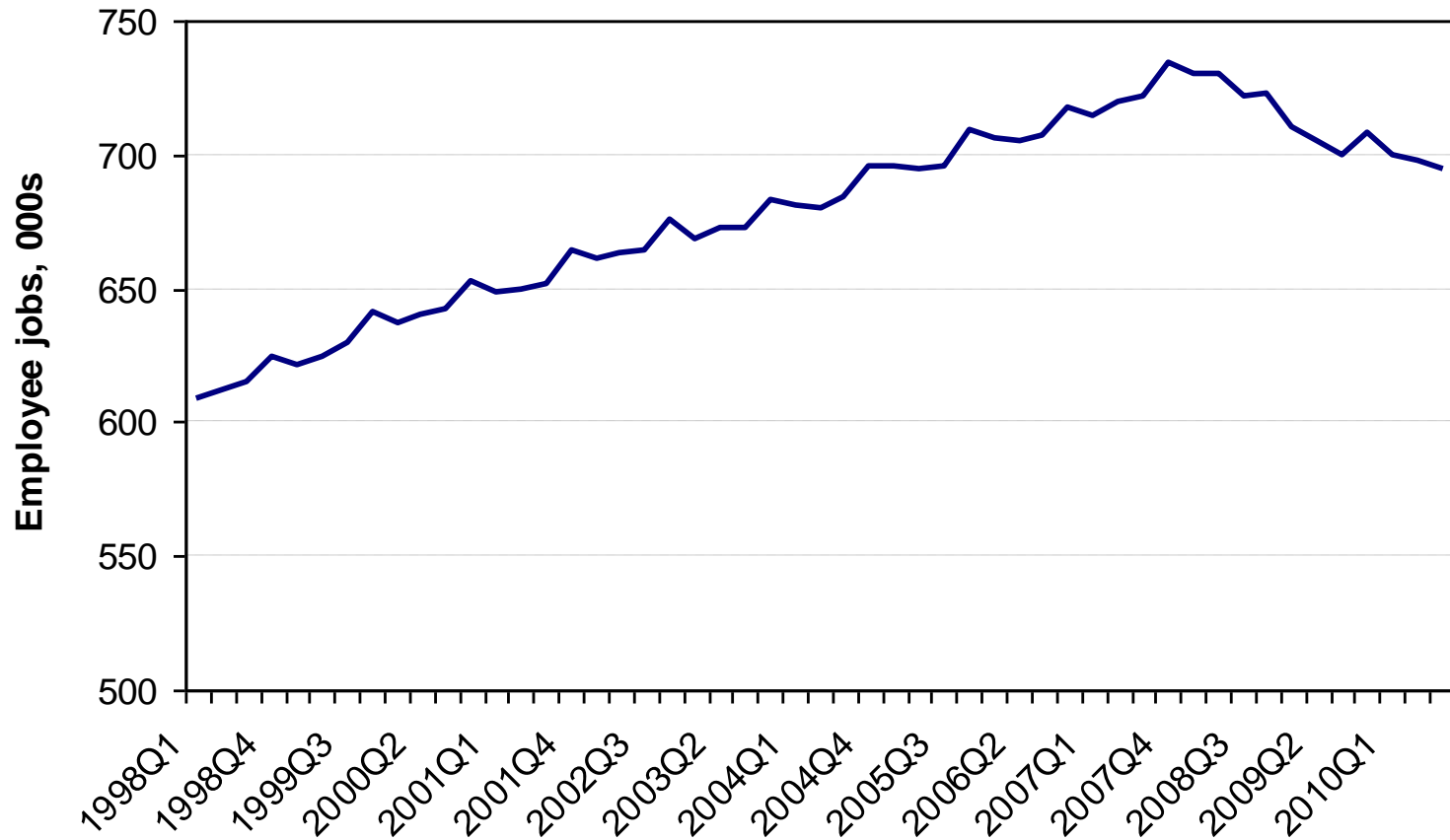


Unemployment (unadjusted), ROI, Jan 92 – Nov 10



Source: CSO

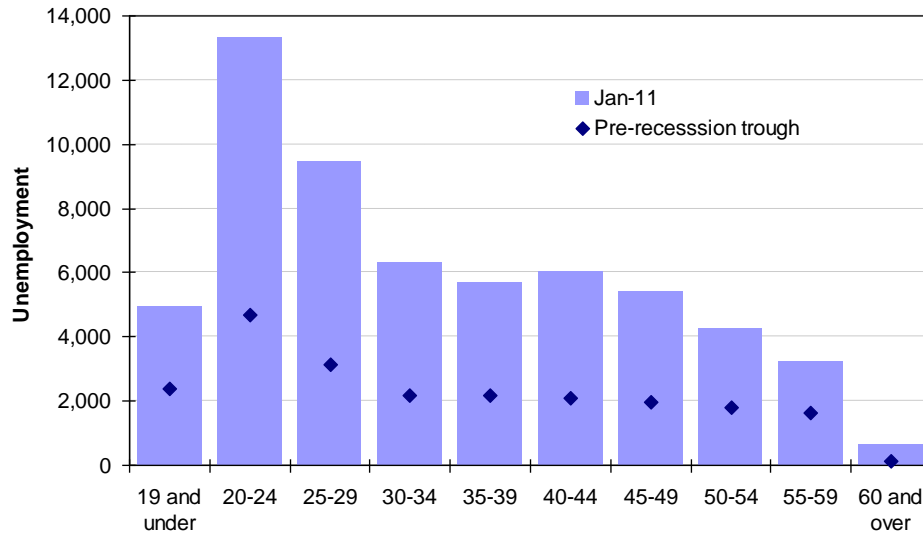
Employment has fallen back to 2005 levels in NI....



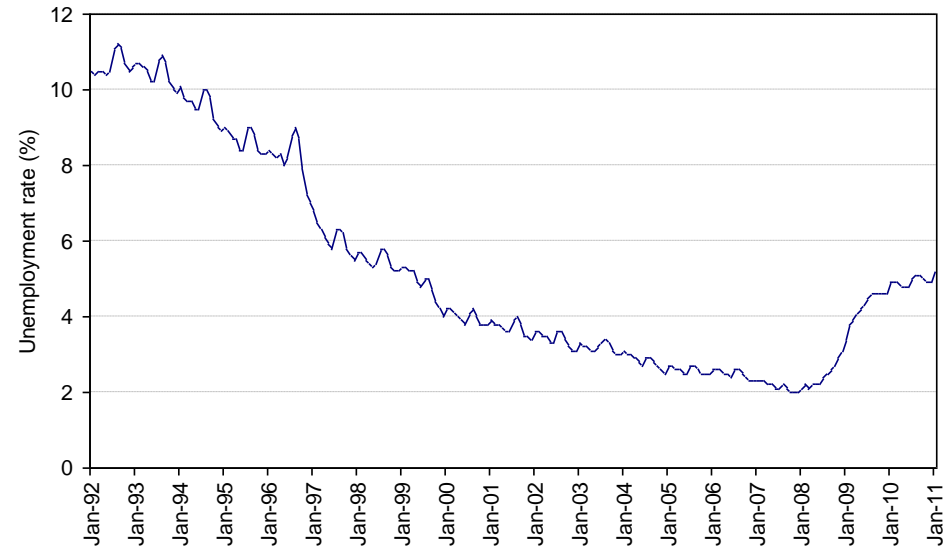
Source: QES NI

Unemployment has risen rapidly, largely accounted for in the under 24's....

Unemployment by age band, NI, Jan 2011 and trough

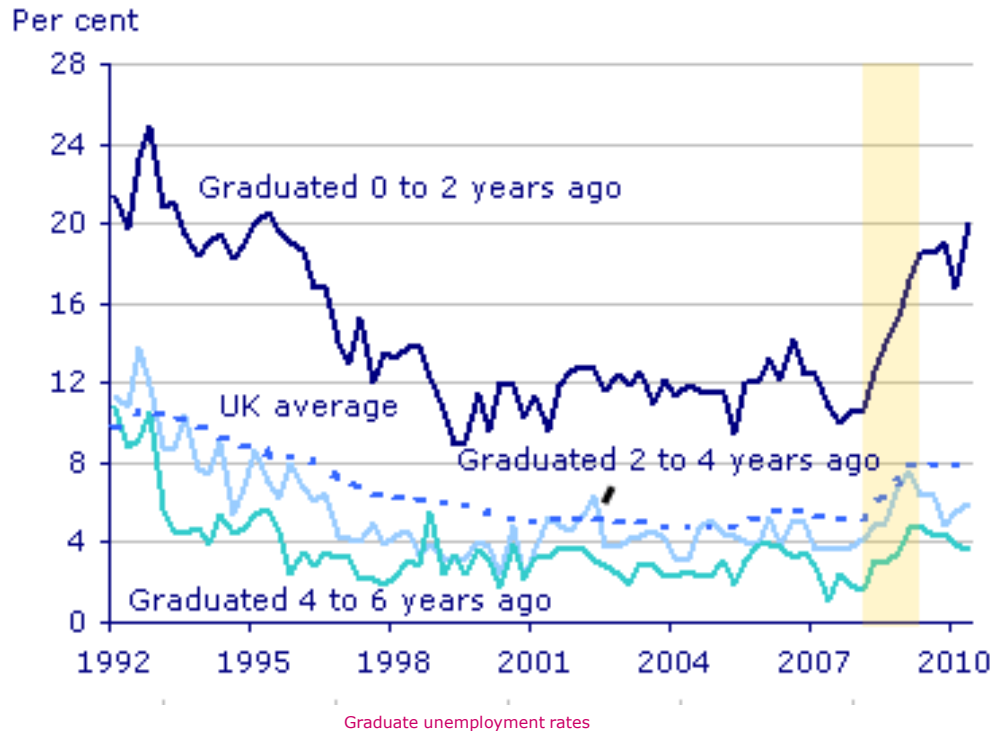


Unemployment (unadjusted), NI, Jan 1992 – Jan 2011



Source: Claimant Count

Graduate unemployment has risen to a 17 year high....

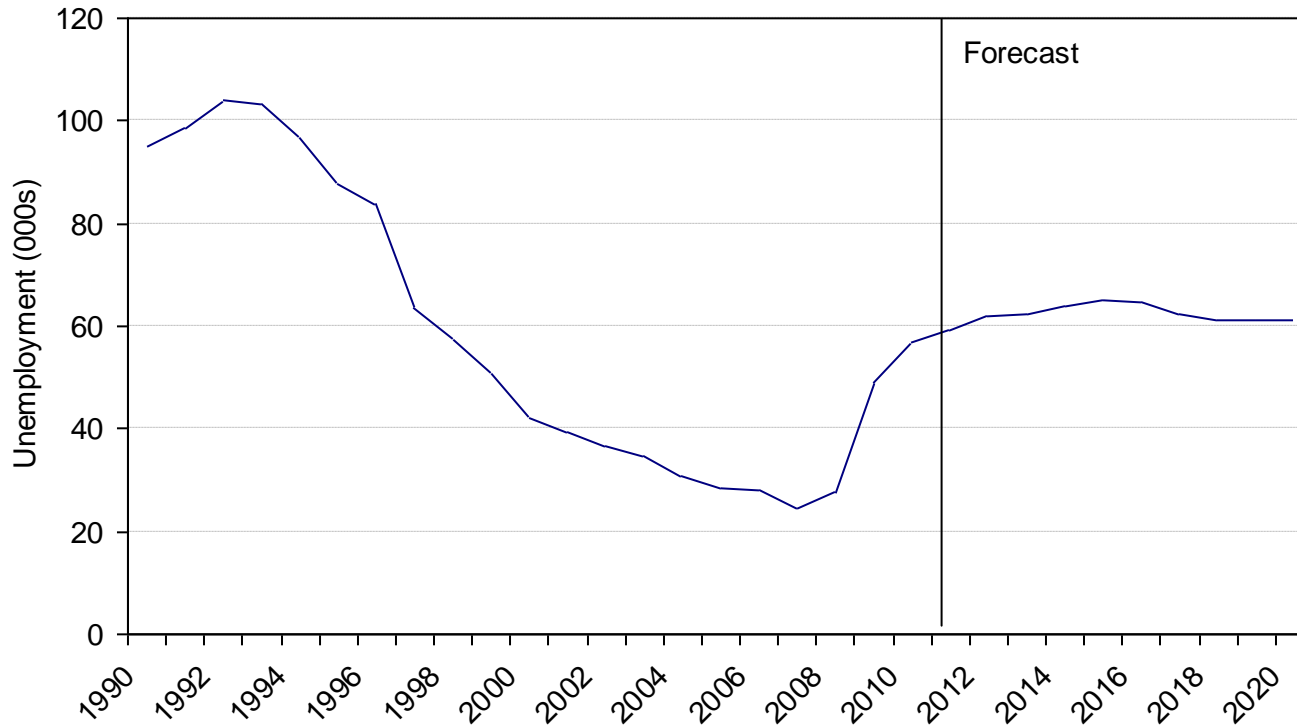


Unemployment increased faster for new graduates compared to the UK as a whole.

By the end of the recession the rate for new graduates was 2.3 times higher (18.5% compared to 7.9%).

The unemployment level will remain high over the coming decade....

Unemployment, NI, 1990 - 2020



Source: Oxford Economics

Unemployment is not forecast to return to previous lows due to austerity measures creating less public sector employment

Time for the private sector to deliver

Belfast will continue to be the key driver of employment

Employment change by DC, NI, 2010 - 20

	2010 - 20	
	000s	%
Antrim	1.2	3.9
Ards	-0.2	-0.6
Armagh	0.1	0.2
Ballymena	0.0	-0.1
Ballymoney	0.3	3.1
Banbridge	0.9	6.0
Belfast	16.8	8.1
Carrickfergus	-0.3	-2.6
Castlereagh	1.5	5.0
Coleraine	-1.0	-4.0
Cookstown	0.2	1.4
Craigavon	2.0	4.7
Derry	3.4	7.2
Down	-0.8	-3.0
Dungannon	1.3	5.0
Fermanagh	-0.4	-1.4
Larne	0.4	3.8
Limavady	-0.1	-1.1
Lisburn	2.6	5.3
Magherafelt	0.8	4.1
Moyle	0.0	-0.3
Newry and Mourne	2.9	7.0
Newtownabbey	0.6	1.8
North Down	1.1	3.7
Omagh	-0.5	-2.0
Strabane	0.2	1.6
Northern Ireland	33.2	4.0

Two third of jobs created between 2010-2020 will be in the Belfast Metropolitan Area

The 'new normal' economy will see much fewer employment opportunities over the next decade....

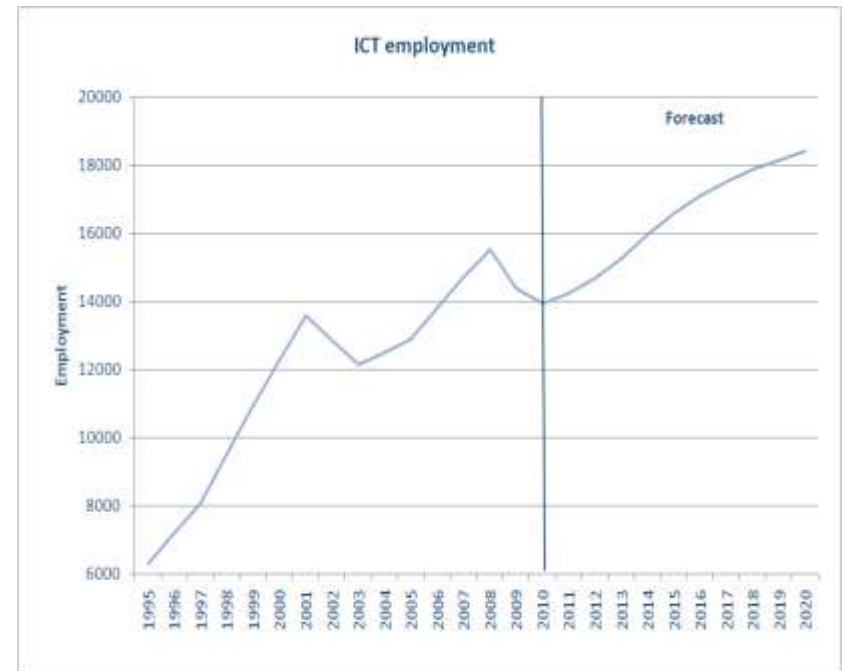
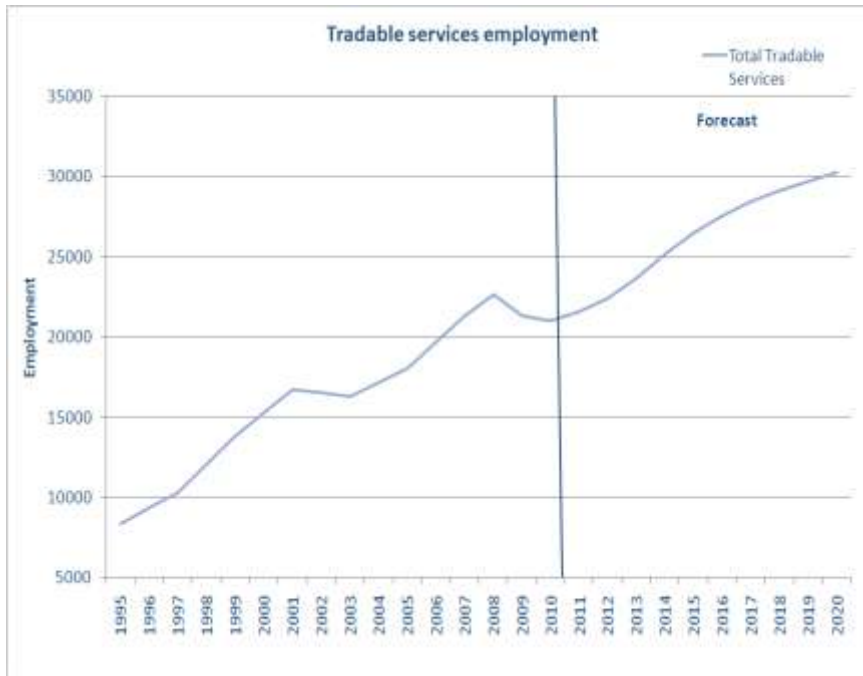
Employment change by sector, NI,
1998 – 08 and 2010 - 20

	Employment change (000s)	
	1998 - 08	2010 - 20
Agriculture	-11.0	-3.4
Extraction	0.3	-0.5
Manufacturing	-24.2	-9.2
Utilities	-1.3	-0.2
Construction	27.5	0.9
Distribution & retail	34.3	10.9
Hotels & restaurants	7.1	6.9
Transport & communications	6.8	4.4
Financial services	6.6	0.1
Business services	47.9	24.7
Public admin.	0.8	-8.3
Education	7.3	-2.9
Health	24.5	3.1
Other personal services	10.6	7.1
Total	125.2	33.2

The economy will create
90,000 less jobs over the
next decade compared to
the decade preceding the
recession

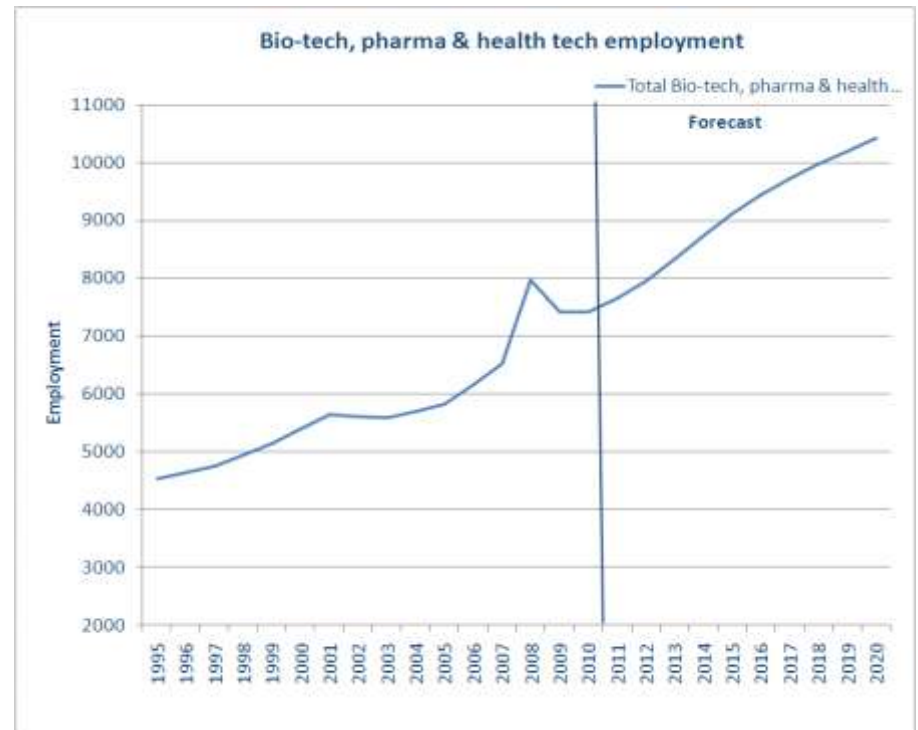
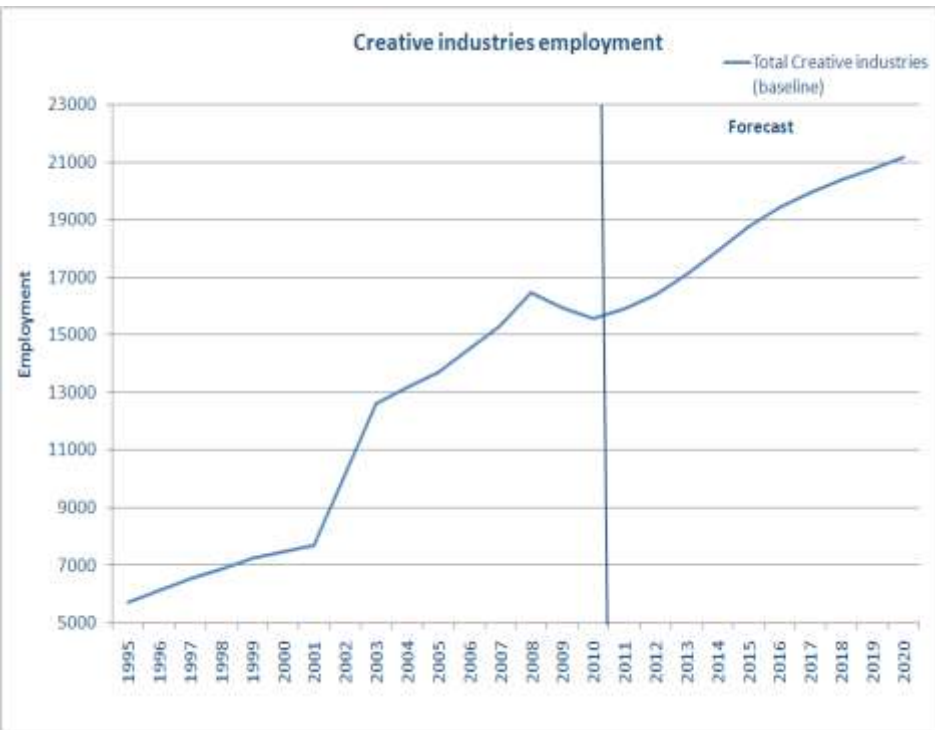
Source: Oxford Economics

Areas where NI has had success will continue to be important...



Source: Oxford Economics

Previous 'niche' sectors becoming more staples of the local economy....

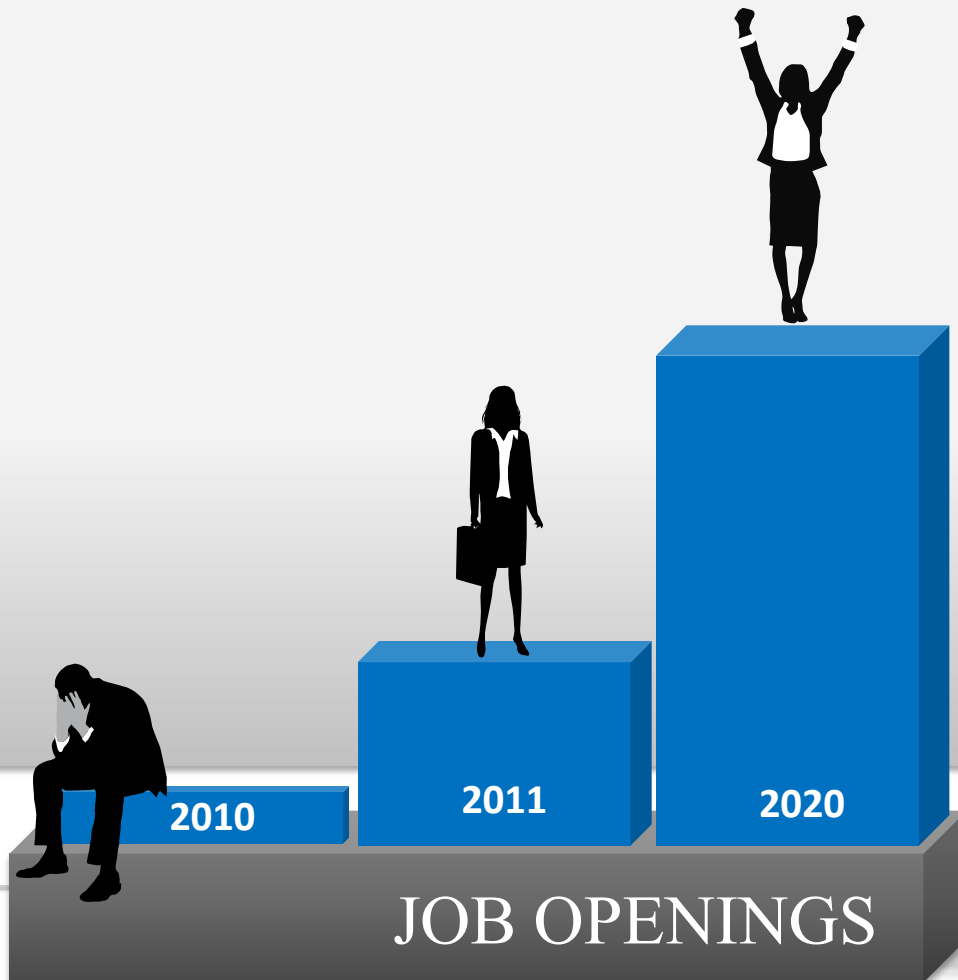


Source: Oxford Economics

What does the 'New Normal' look like for new entrants into the Northern Ireland Labour market?....

- More competition – fewer jobs
- Wages bid down – it may take longer save for deposits for homes
- More have to leave for GB or further afield (already seeing this in some sectors)
- Limited opportunities traditional sectors – public sector
- Frustration if students feel they have not been given good career advice or have been failed by education system
- Still high demand for areas NI good at – ICT, medical research, finance – and good wage returns in these sectors

Challenging conditions remain in the short term, but opportunities remain...



The NI economy is forecast to create 33,000 new jobs over the next 10 years

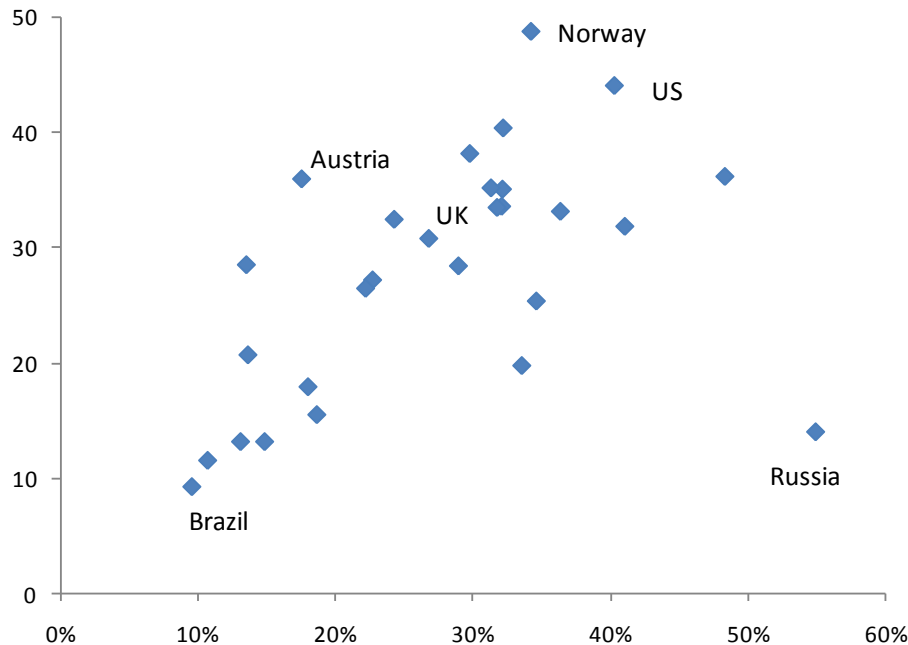
- 9000 new jobs in tradable services
- 6,000 new jobs in creative industries
- 3,000 new jobs in pharma / biotech
- 8,000 new jobs in tourism
- 4,500 new jobs in ICT

Skills and education in Northern Ireland – are we as good as we think?

Reminder of why education and skills matter...

International: Tertiary skills and GDP per head (2007)

US\$000 PPP GDP
per capita (2005
prices)



Source: OECD, Oxford Economics

Tertiary attainment % 25-64 population

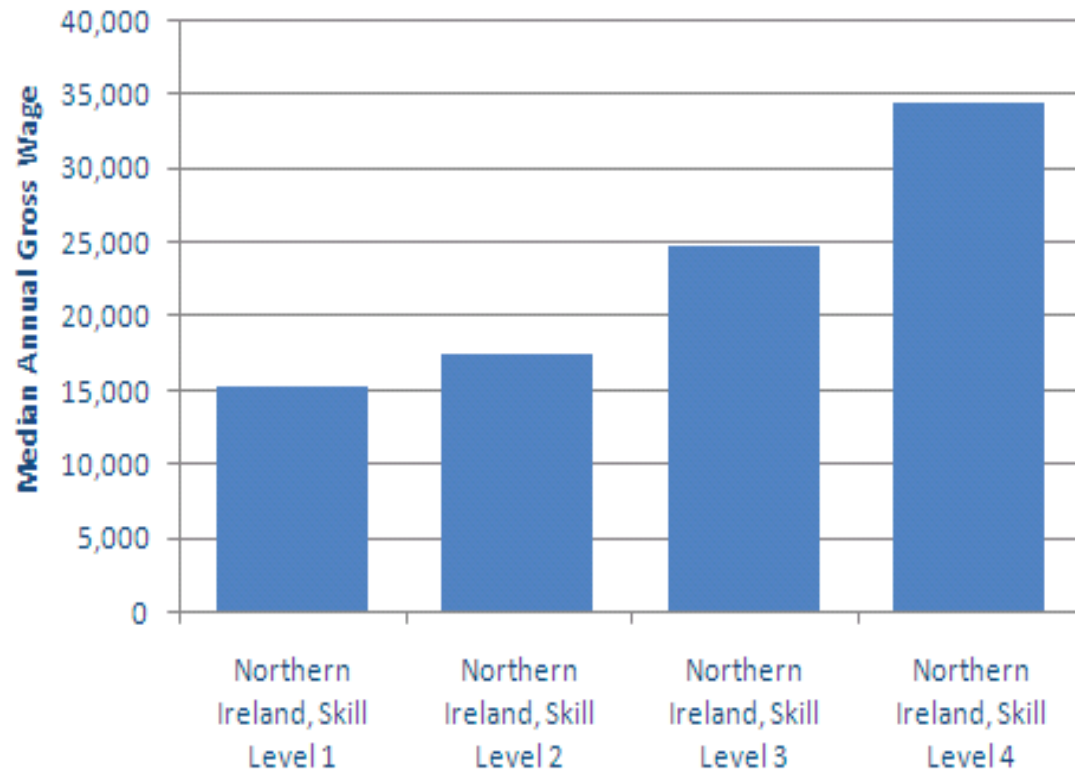
	2009
Degree or equivalent	90%
GCE A level or equivalent	77%
GCSE grade A-C or equivalent	73%
Other qualification	70%
No qualification	47%
Total	72%

Source: LFS, Oxford Economics

Note: Annual figures are 4-quarter averages.

Working age denominator excludes inactive students

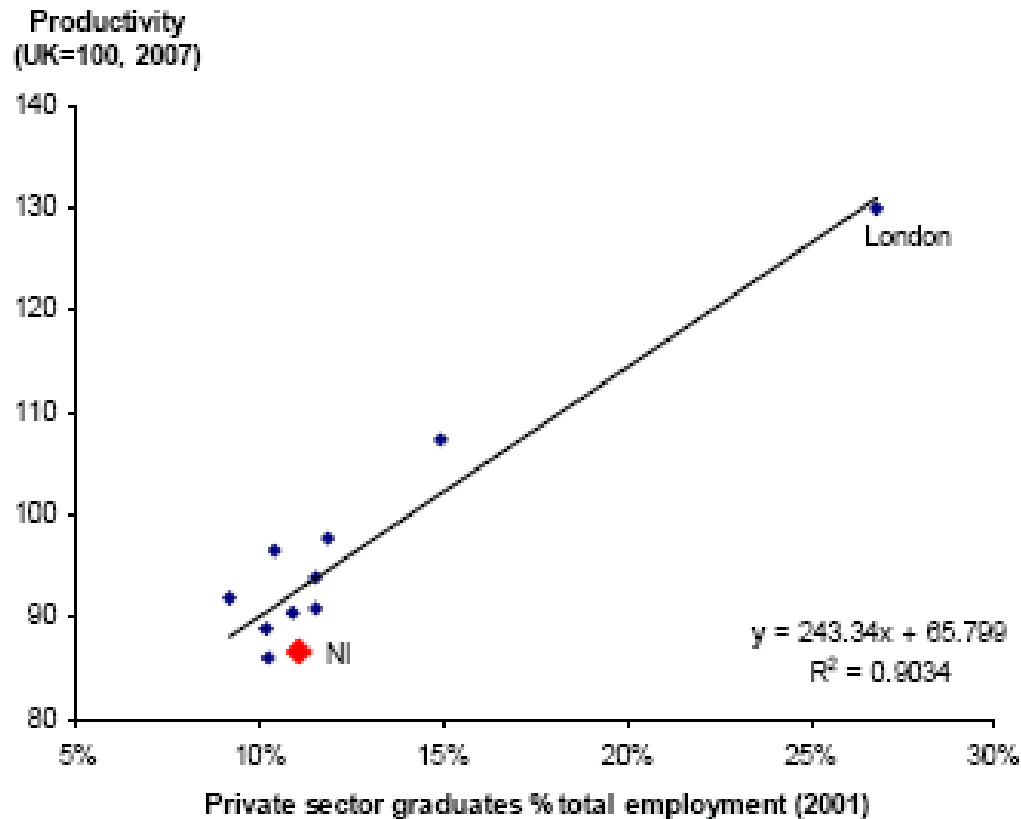
High wage jobs need highly skilled labour...



	Employed	Unemployed	Inactive excluding students and early retirees
NVQ 5	93%	1%	5%
NVQ 4	91%	1%	8%
NVQ 3	84%	3%	14%
NVQ 2	81%	4%	15%
NVQ 1	68%	7%	25%
NVQ 0	54%	5%	41%

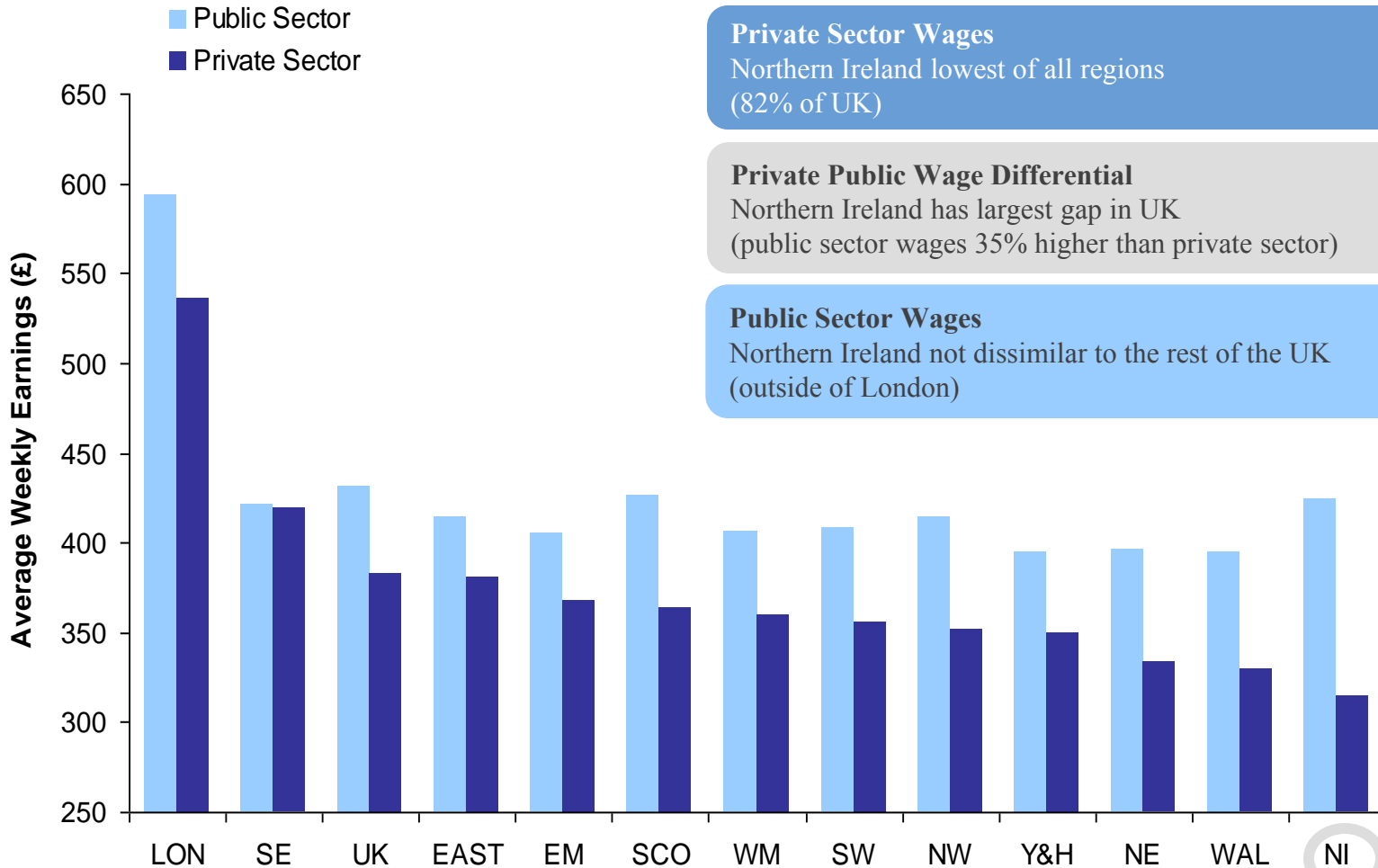
Graduates in the private sector create wealth...

UK regions: Private sector graduates and productivity



Source: Census, Regional Accounts, DETI, ONS, Oxford Economics

Public sector has previously crowded out skilled labour...



Private Sector Wages

Northern Ireland lowest of all regions
(82% of UK)

Private Public Wage Differential

Northern Ireland has largest gap in UK
(public sector wages 35% higher than private sector)

Public Sector Wages

Northern Ireland not dissimilar to the rest of the UK
(outside of London)

Need the right skills –

STEM graduates are crucial for future growth...

STEM

	% total first destination	
	Managers & professionals	Sales, customer service, process and elementary
(H2) Civil engineering	82%	5%
(H3) Mechanical engineering	66%	13%
(G6) Software engineering	61%	12%
(H4) Aerospace engineering	60%	13%
(F1) Chemistry	53%	12%
(G3) Statistics	51%	10%
(H6) Electronic & electrical engineering	51%	16%
(F3) Physics	50%	14%
(G1) Mathematics	47%	12%
(G4) Computer science	46%	16%

Source: HESA

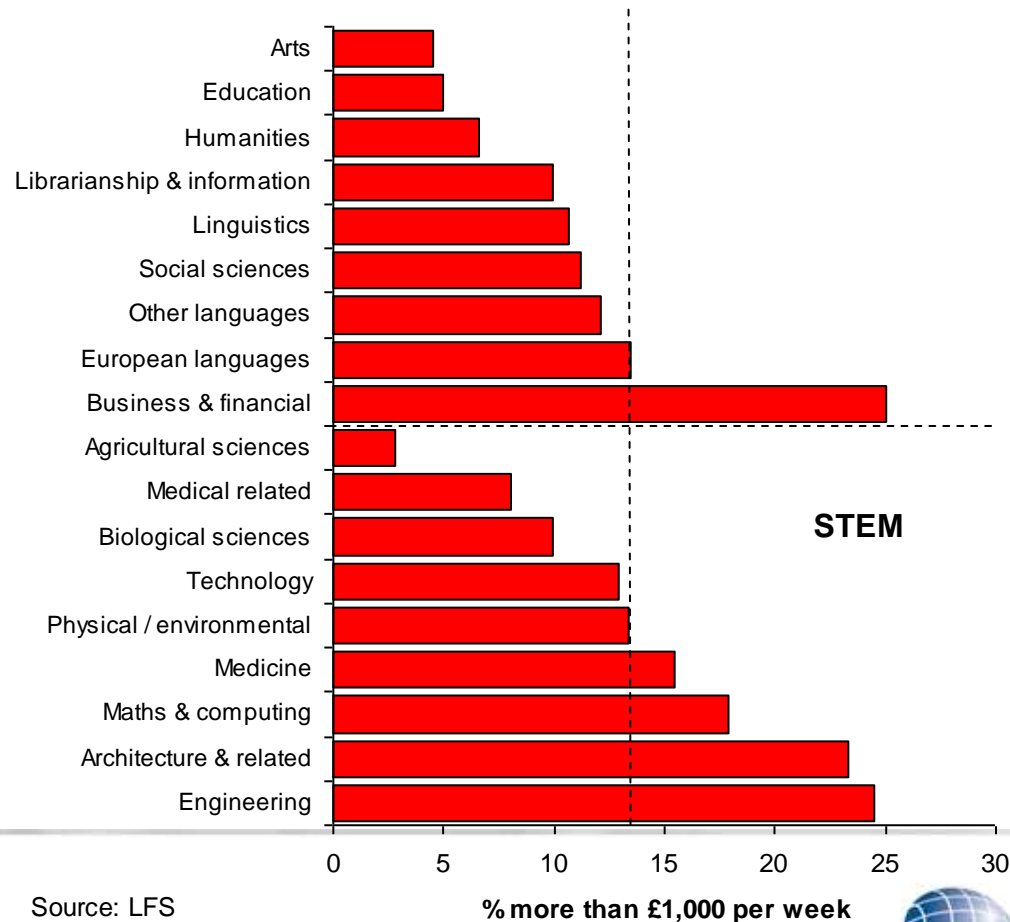
Non-STEM

	% total first destination	
	Managers & professionals	Sales, customer service, process and elementary
(N1) Business studies	30%	16%
(R1) French studies	30%	13%
(L2) Politics	29%	16%
(L4) Social policy	28%	16%
(C8) Psychology	28%	16%
(V5) Philosophy	25%	22%
(C6) Sports science	24%	18%
(N5) Marketing	22%	17%
(W4) Drama	17%	25%
(P5) Journalism	11%	13%

Source: HESA

A high rate of return from STEM subjects...

UK: Weekly earnings by degree subject (2008)



Source: LFS

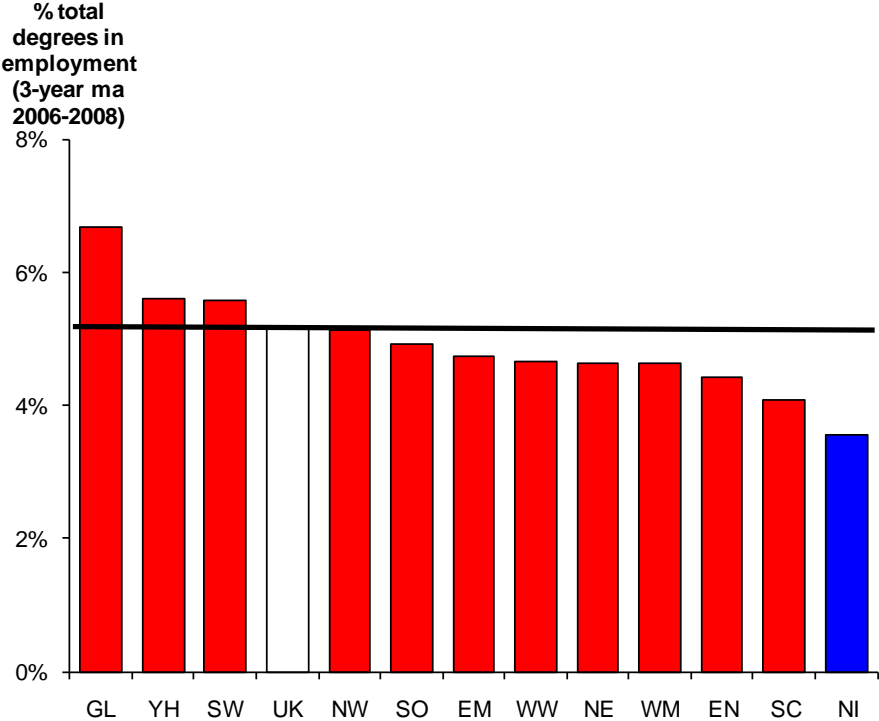
% more than £1,000 per week



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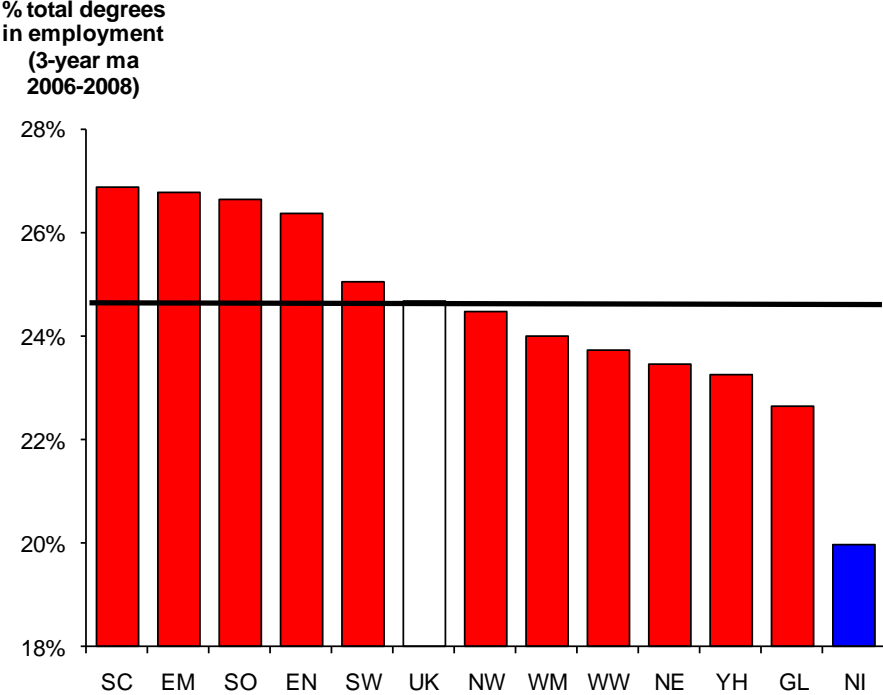
Low relative supply in some key sectors...

UK regions: Creative Arts & Design degrees in employment



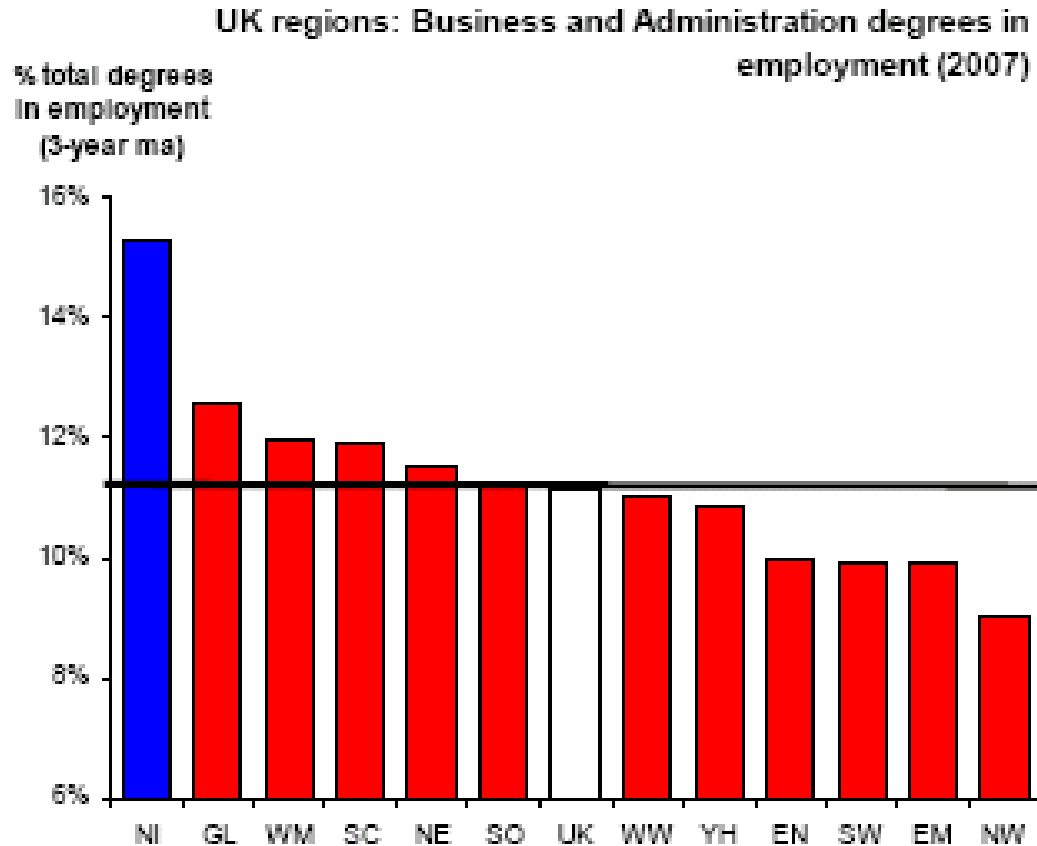
Source: LFS, Oxford Economics

UK regions: STEM degrees (narrow definition) in employment



Source: LFS, Oxford Economics

Oversupply in some subjects?...



Source: LFS, Oxford Economics

Narrow 'unspecialised' subject focus – Too many Generalists?...

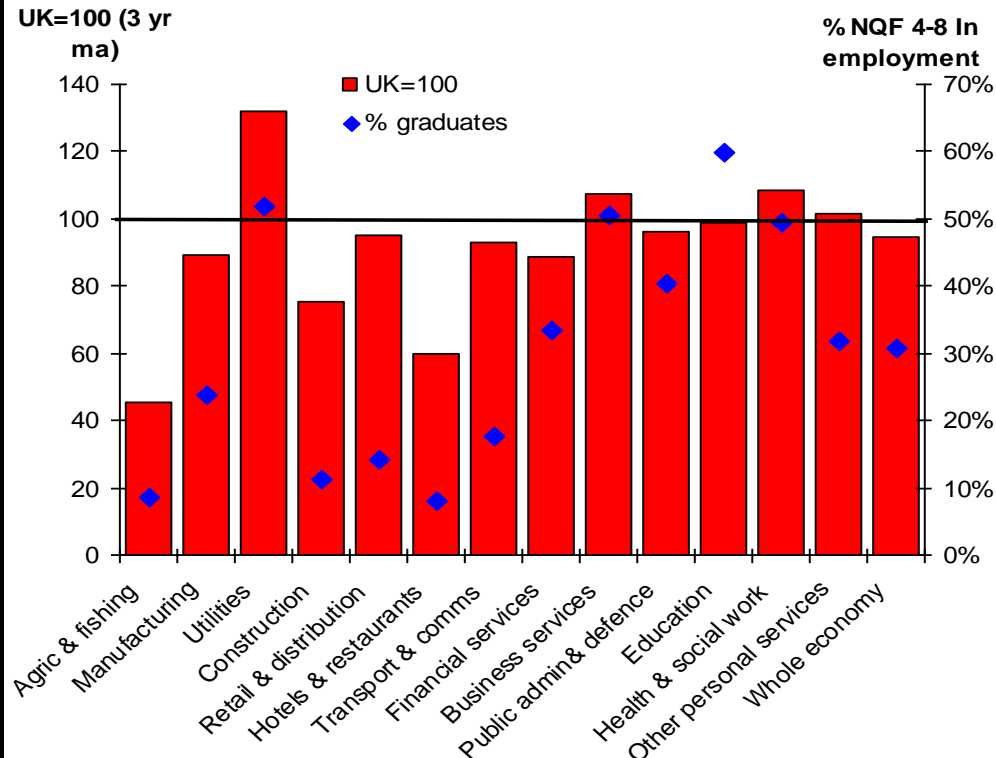
	NI % degree employed persons (2008, 3-year moving average)	UK % degree employed persons (2008, 3-year moving average)	NI rank (1=highest share)	NI subject degree employed persons per 10,000 working age population (UK=100)
Medicine and Dentistry	4%	2%	1	160
Subjects Allied to Medicine	13%	11%	5	104
Biological Sciences	4%	5%	12	68
Physical Sciences	4%	5%	11	70
Mathematical and Computer Sciences	4%	6%	12	71
Engineering	5%	6%	12	70
Architecture, Building and Planning	2%	2%	5	95
Social Studies	6%	7%	5	87
Law	2%	4%	12	63
Business and Administration	16%	11%	1	123
Linguistics, Classics and Related	1%	3%	12	33
History and Philosophical Studies	3%	4%	10	79
Creative Arts and Design	4%	5%	12	61
Education	7%	7%	9	90
Combined degree	20%	18%	1	104

Source: LFS, Oxford Economics

Slightly lower skill intensity than the UK...

	Sub-degree, degree and postgrad % employed persons (2008, 3-year moving average)	UK=100
Canada (adult graduate pop 2005) *	46%	141
London	45%	138
US (adult grad pop 2005) *	39%	120
Scotland	37%	113
Finland (adult graduate pop 2005) *	35%	106
ROI (graduate 2007) *	34%	103
South East	33%	103
UK	33%	100
South West	31%	96
NI	31%	94
North West	31%	94
UK excluding Greater South East	30%	93
Wales	30%	90
Eastern	29%	89
West Midlands	29%	89
East Midlands	28%	87
North East	28%	86
Yorkshire & Humber	28%	85
France (adult graduate pop 2005) *	25%	76
Germany (adult graduate pop 2005) *	25%	75

NI: Workforce NQF 4-8 relativities

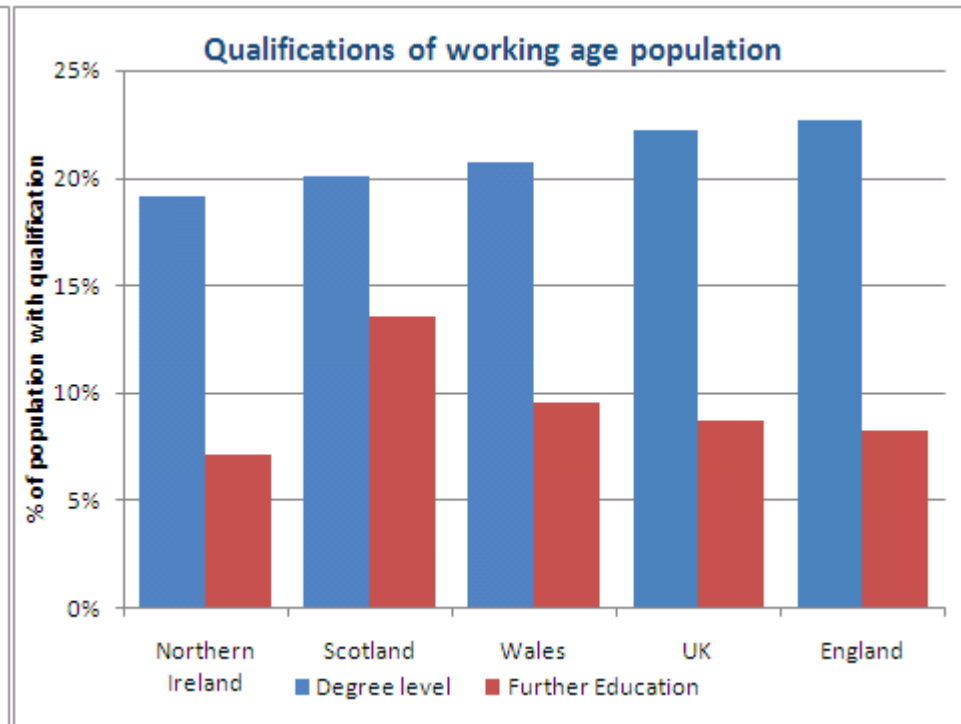
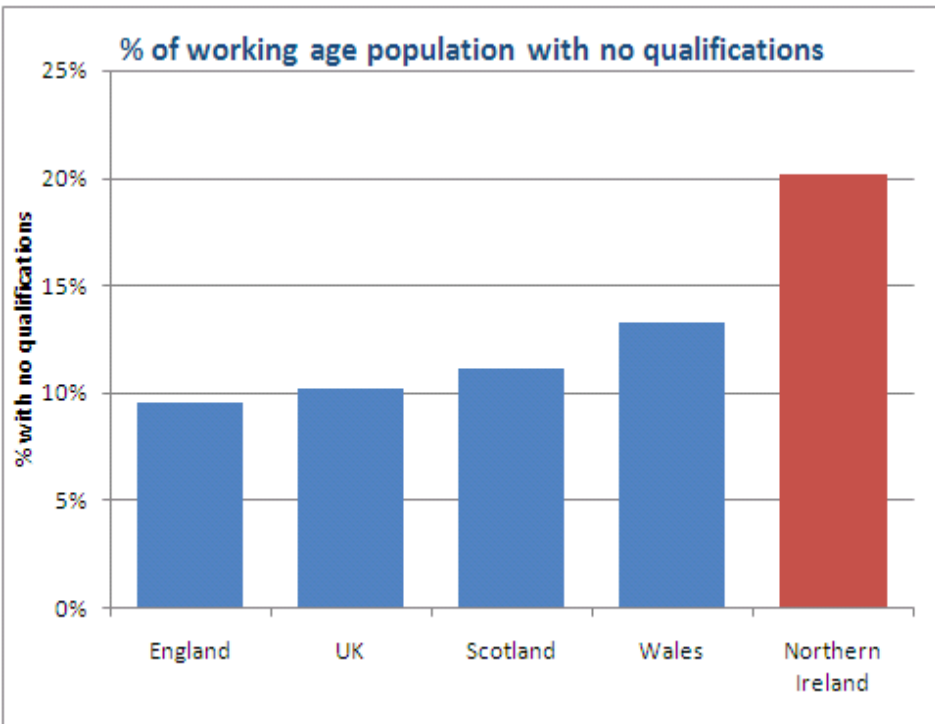


Source: LFS, Oxford Economics

Mining & quarrying not included due to the small LFS sample

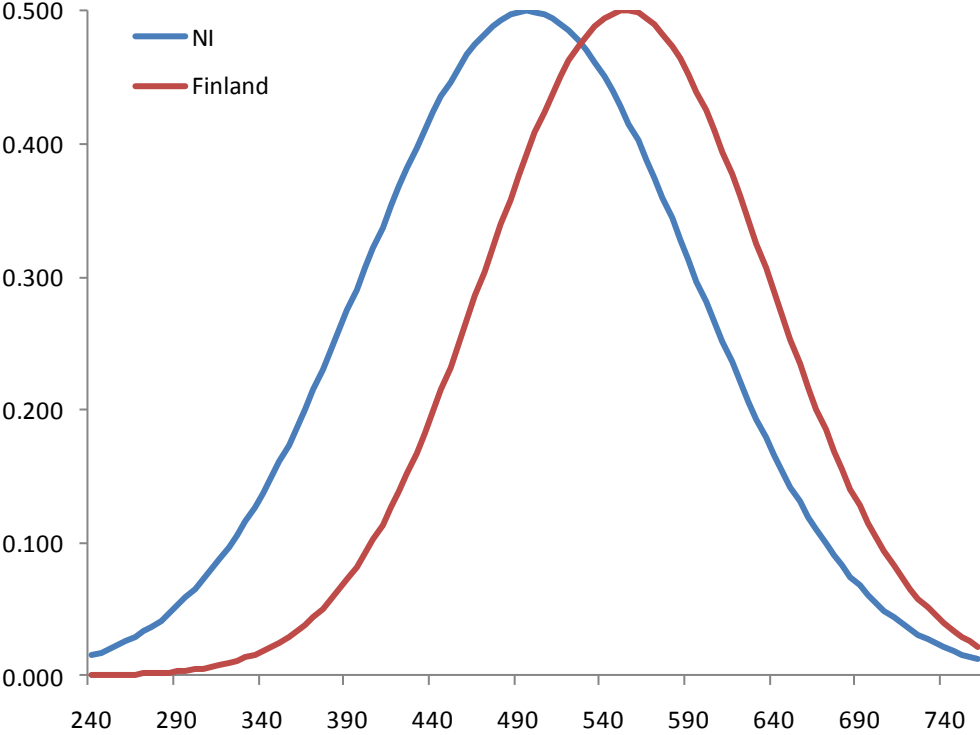


A story with two sides....



A 'tail' of underachievement at the low end of the skills spectrum...

NI and Finland: PISA subject average distribution (2006)



Source: OECD, NFER

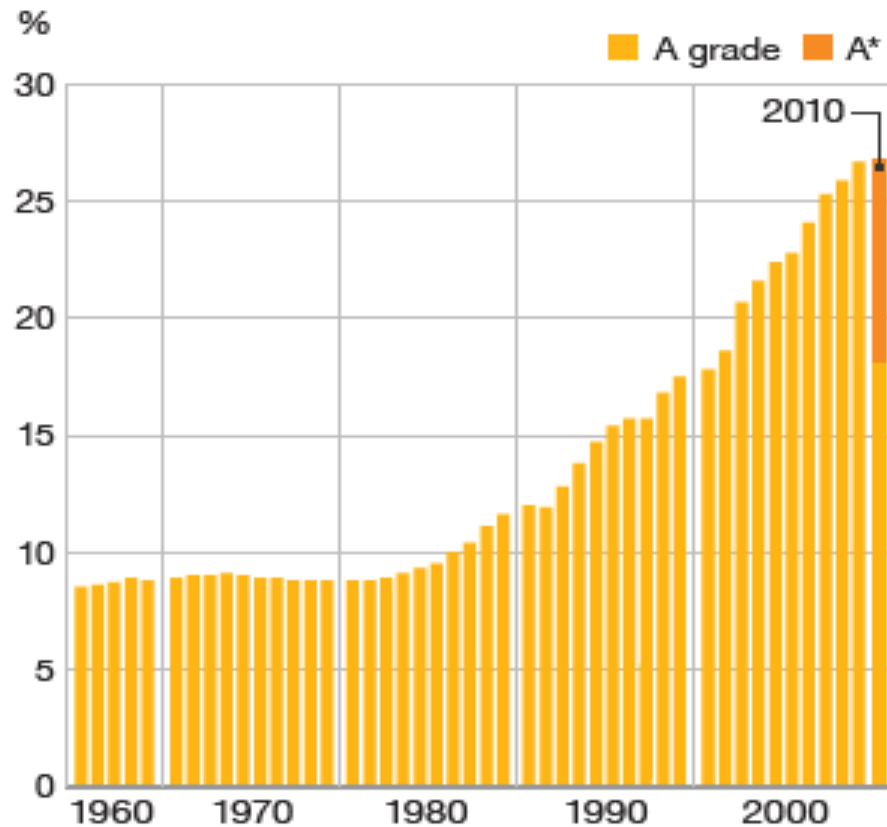
School leaver GCSE highest qualifications (2008/09)

	At least 5 GCSEs A*-C incl English and Maths	Not achieving at least 5 GCSEs A*-C incl English and Maths
Year 12	7%	31%
Year 13	4%	5%
Year 14	48%	5%
Total	58%	42%

Source: DE

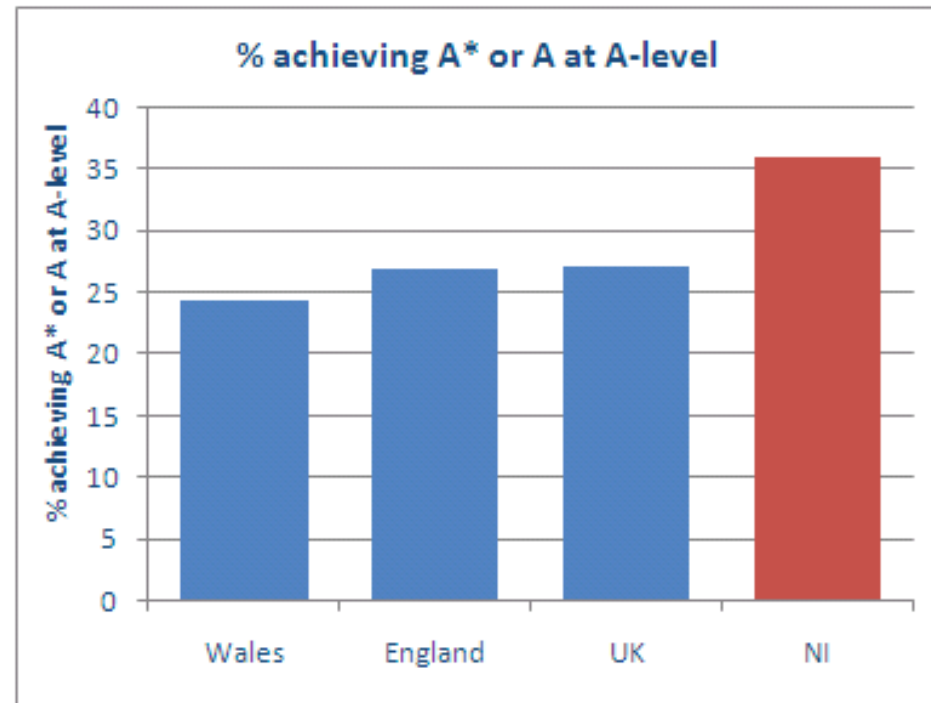
Are we really getting smarter?...

% of A-level entries awarded A grade



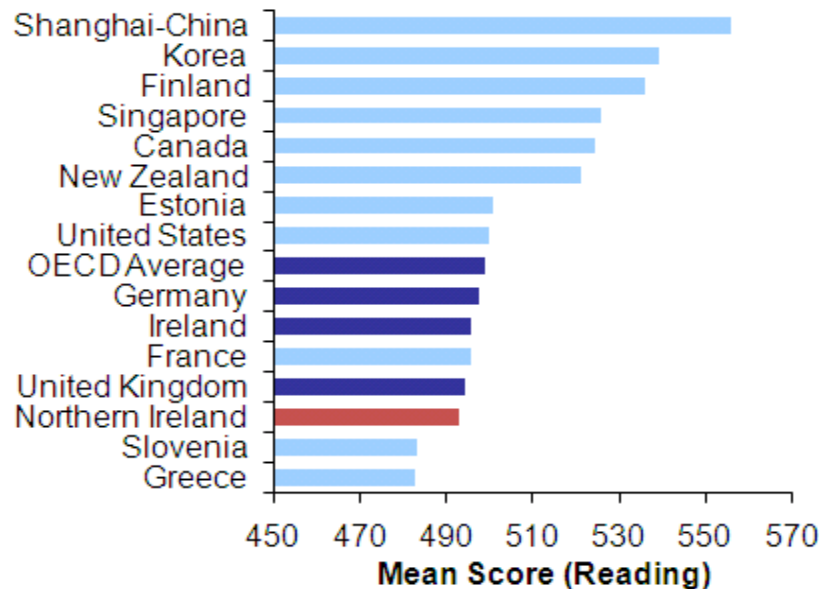
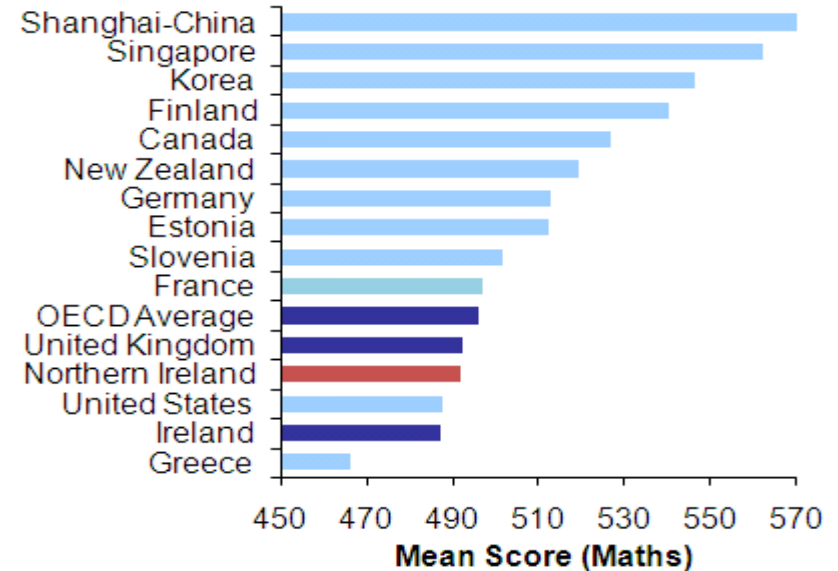
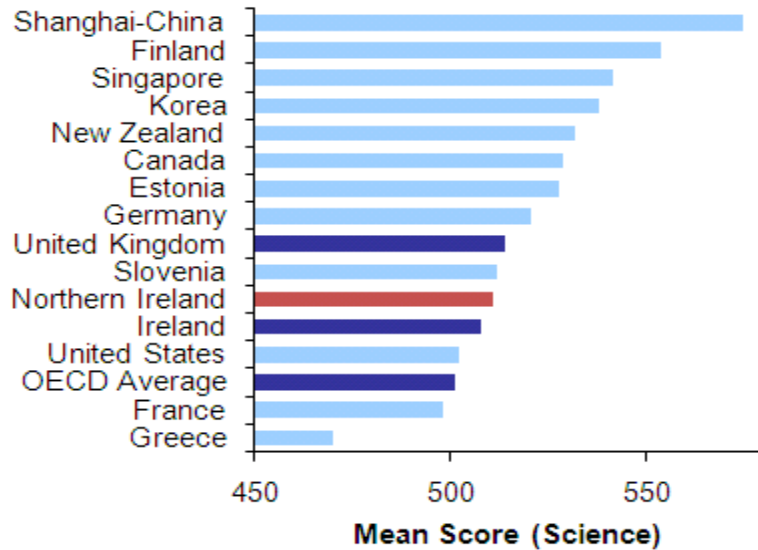
Source: Centre for Education and Employment Research, University of Buckingham/JCQ

% achieving A* or A at A-level



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Competition for labour is increasingly global – and NI is falling behind emerging markets



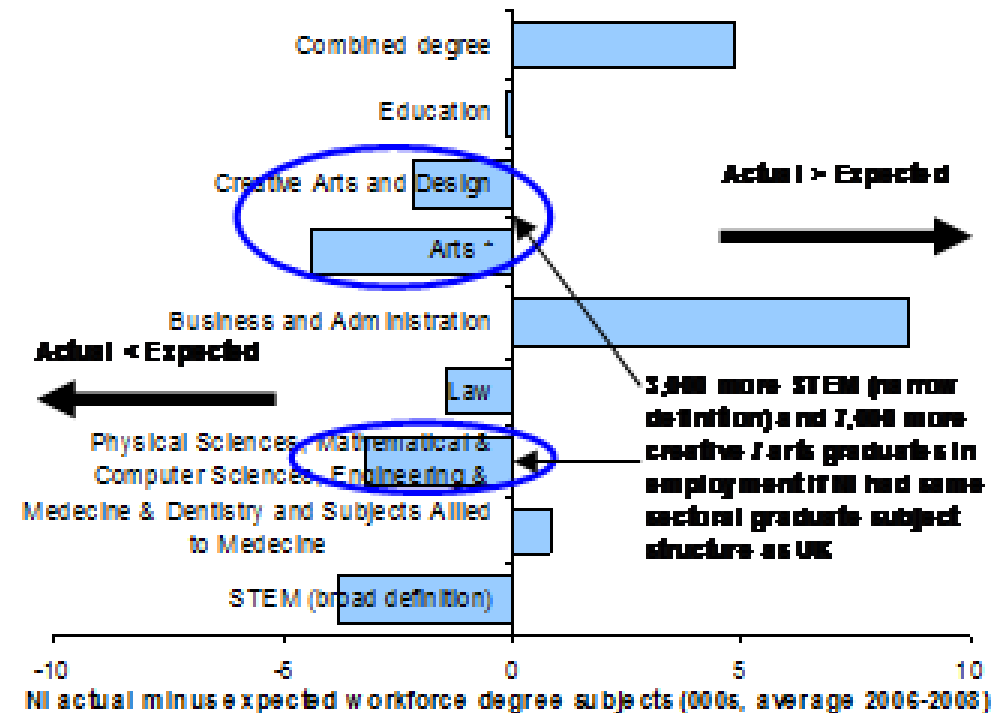
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Business forecasts the need for a higher skilled workforce...

- Business expects make up of workforce to change rapidly over next 5 years; 55% needing higher skilled individuals
- Major growth in management and leadership posts -69% employers
- 51% not confident of being able to meet their need for high skilled staff
- Less than half (46%) rate current competences in low skilled jobs as good; literacy, numeracy, IT
- Employability Skills – 57% see weaknesses in school leavers self management abilities; 68% inadequate business and customer awareness
- 24% dissatisfied with graduate problem solving and 26% concerned with graduate self management skills
- STEM – 45% experiencing difficulties in recruiting STEM staff; 60% expect difficulties in next 3 years

Where could NI be?...

NI: Actual minus expected workforce degree subjects



Source: LFS, Oxford Economics

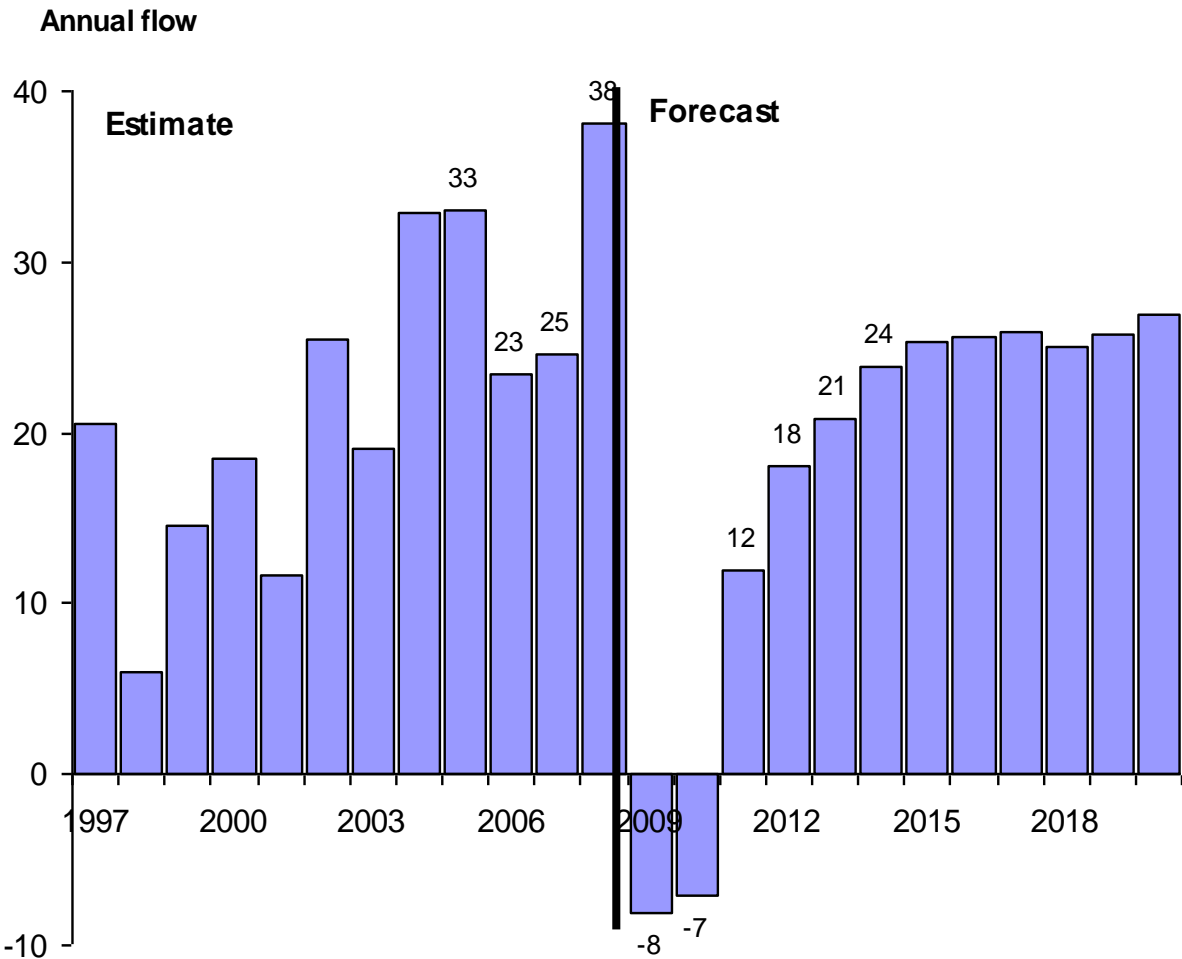
* Humanities, Languages, Literature, History & Philosophy



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Despite short term demand issues, net requirement from education will return to a positive trajectory ?...

NI: Net requirement from education system and in-migration



Source: Oxford Economics

But not all required from higher education – Further Education Colleges and Apprenticeships are also good options, and one in 5 jobs will be for people with low skills



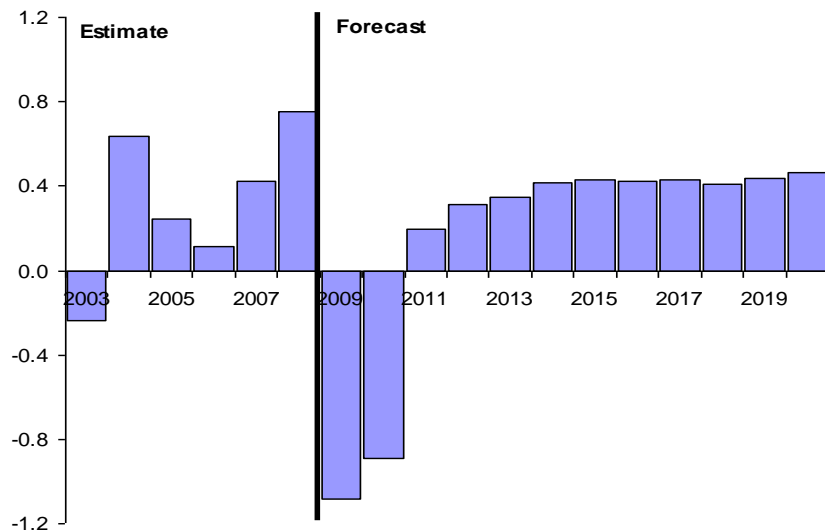
The next 10 years will still be a graduate hungry economy, but needs to be better tailored to sectors where demand exists...

	2008-2010 (annual)	2010-2020 (annual)	Difference	2010-2020 (annual % total)
Postgraduate (NQF 7-8)	-0.2	1.9	2.0	8%
First degree and sub-degree (NQF 4-6)	-2.2	7.1	9.3	31%
Intermediate a (NQF 3)	-3.0	5.6	8.5	24%
Intermediate b (NQF 2)	-1.2	3.1	4.3	13%
Low (NQF 1 and below)	-1.0	5.3	6.3	23%
Total	-7.6	22.9	30.5	100%

Source: Oxford Economics

NI: Architecture, building and planning

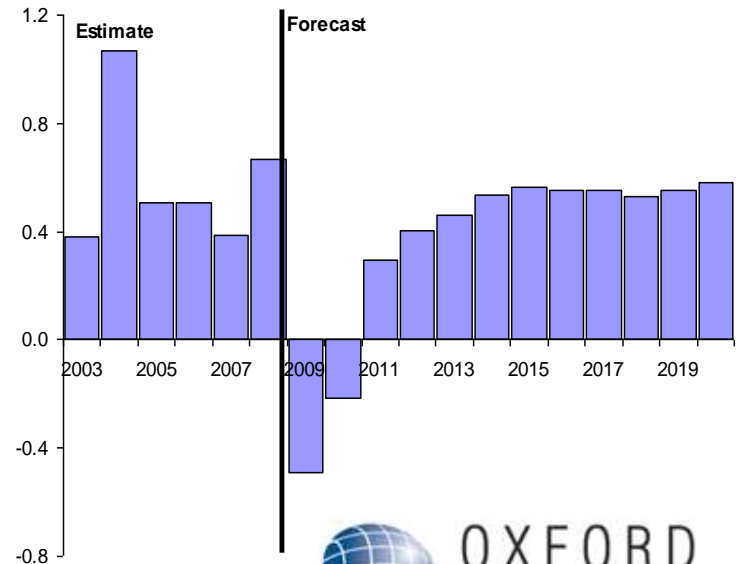
Annual flow



Source: Oxford Economics

NI: Computer science

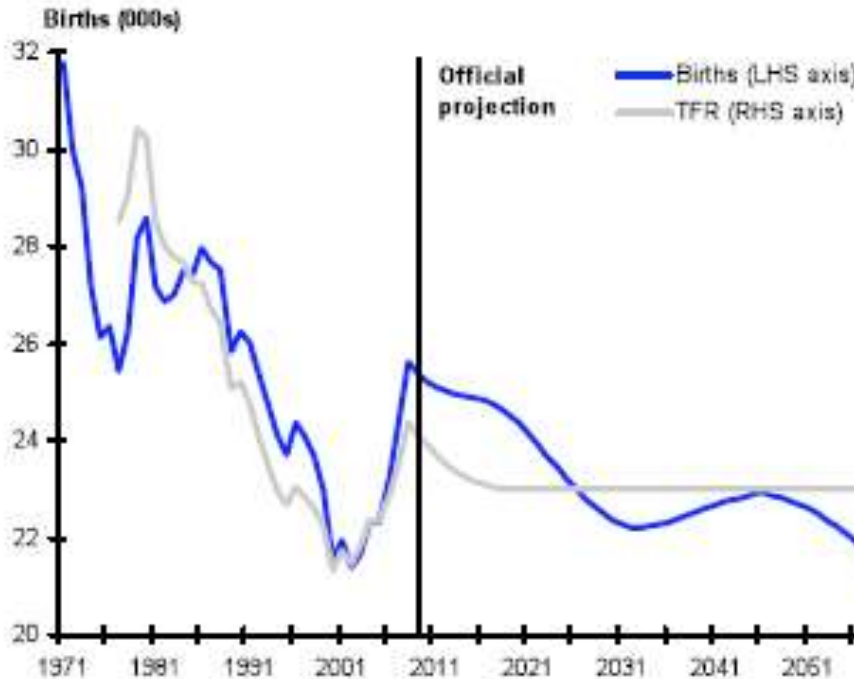
Annual flow



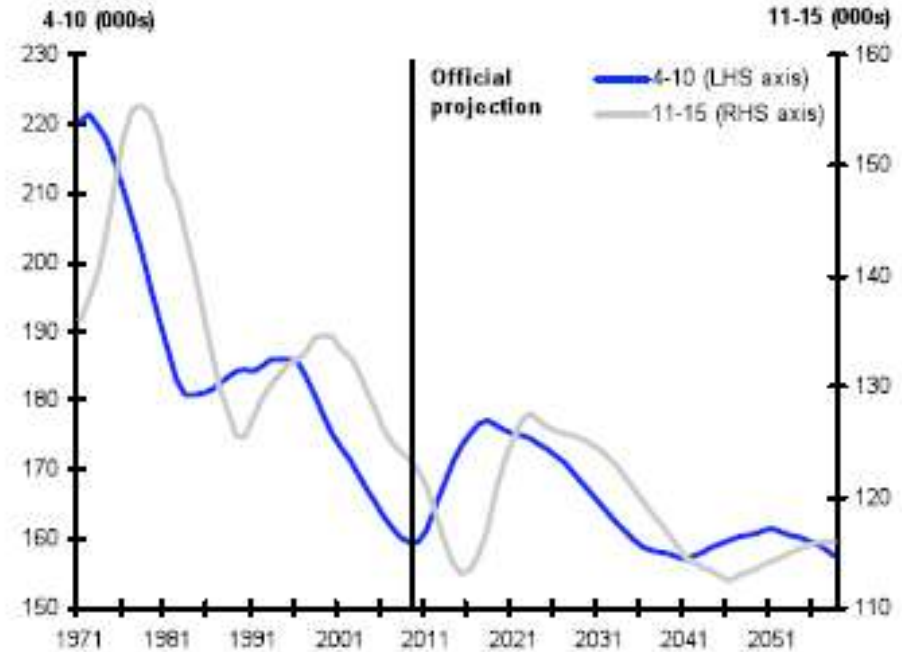
Source: Oxford Economics

Understanding the demographic outlook

Short-term boost in demand is forecast, putting pressure on resources...



Source: NISRA



Source: NISRA

Given demand and funding pressures, innovative and more efficient ways of education delivery will need to be considered in the next 10-20 years to manage this projected 'temporary' growth.

**Concluding remarks – does our
education system need to
change and how?**

Short-term boost in demand is forecast, putting pressure on resources...

- Very different from the 'baby boomer generation of the past
 - Baby boomers collectively own close to £500bn of the UK's assets, which is four-fifths of the entire nation's wealth.
 - On average, young people owe £9,016 in personal debts and that's excluding mortgages or their share of the national debt, which is currently £2.2 trillion.
 - As young adults, baby boomers had a fantastic start in life, with free education, paid apprenticeships and work contracts that lasted an average of 10.4 years.
 - Today's youngsters become adults with an average of £20,000 in student debt and struggle to find jobs that last an average of 15 months.

A changing world – important to consider career choices early to gain a competitive advantage...

- Increased global competition from developing countries such as China, India, Brazil, Russia etc
 - In both world export markets, and the increasingly global competition for talented labour
- World has changed immeasurably but long-term trends and fall out from recession
- Incomes will be squeezed in the future due to inflationary pressures stemming from the developing world (i.e. price of our imported goods increases)
- Look at situation today for young people –much harder but they need to know and think carefully about their decisions. An effective careers strategy is important
- But no need to be overly pessimistic – growth opportunities are there, just very different from last decade

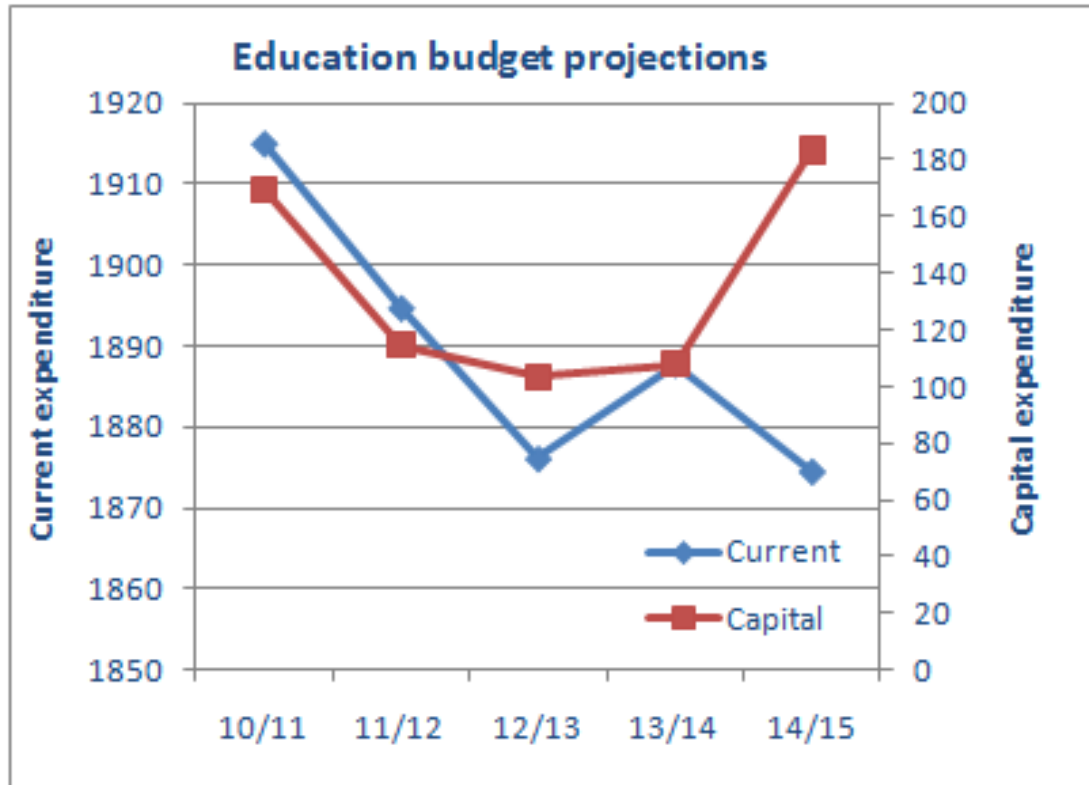
Cannot be complacent about education...

- Are we as good as we think? Is it enough to achieve the level of economic growth required in the future
- Other countries are overtaking – and in these countries skills are not the only area they are better than us at (lower costs, better infrastructure, stronger demand).
- Can we learn from education systems elsewhere?
- Why has education not changed over the past 30 years at the same pace as the economy?
- Not only school way of doing things needs to change – why are universities not offering learning opportunities in Far East?
- What is our approach to work placements? The give students a competitive edge

What could a better education system in the future look like...

- Evolving curriculum in line with the changing needs of the economy
 - Mandarin as an additional language? Are German and French still the most appropriate languages? The Assembly advising on politics modules? ICT to included an i-phone application design module?
- Experts becoming more involved in the design of the curriculum
- E.g. GlaxoSmithKline advising on the design of science subjects; Treasury advising on economics etc
 - Over two thirds of businesses surveyed by the CBI indicated that they would be willing to work alongside schools to help shape STEM subjects
- Regular presentations from industry help inform students
- Shaping entrepreneurs - including developing your own business as part of business studies subjects (potentially making up marks for the final grade)
- Introducing a preparing for work subject (providing advanced excel skills, drafting briefings etc)

But where could the money come from...



- Is shared education an option?
 - Collaboration on curriculum and equipment (sports, science labs etc)?
 - Potential for amalgamation in some instances?
 - Area based delivery?
 - More independence?
- If a plan for change is of benefit to the economy the Executive may find it hard to turn down – the economy is their number one priority

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