Good growth

A summary report on economic wellbeing from PwC and Demos

pwc

Contents

Summary

Britain's bumpy road out of recession is understandably causing policymakers and commentators to focus their attention on quarterly gross domestic product (GDP) figures as the key indicator of our economic health.

However this report, based on research by PwC and Demos[1], shows that the public takes a wider view of the components of economic success. In the public's eyes, 'good growth' depends on creating jobs that enable their bills to be paid, but also on issues such as work-life balance, health and housing, amongst others, which are seen as critical components of good economic performance.

Indeed, when forced to make trade-offs in the factors contributing to economic success, work-life balance assumes an even greater importance; working people are willing to sacrifice income to spend more time with family and friends. Overall, income and jobs only account for roughly a third of what the public thinks is important when considering what a successful economy might look like.

If we then assess the performance of the UK economy against these stated priorities of the public, Britain falls down towards the bottom of international rankings compared with similar mid-high income OECD countries. British people are, in effect, saying that they'd prefer the economic performance of practically any other OECD country (bar Spain) to our own.

1   Copies of the full report can be downloaded from
www.demos.co.uk

And within the UK, the South East, South West and Eastern regions have the most attractive economies in which to live, with London, the North East and Wales scoring worst.

Based on our findings, we recommend that the government tracks not only GDP as a measure of economic success but also a wider measure of what we are calling our 'good growth index'. This will help make sure that economic policy decisions are aligned with what citizens say is important.

Policy issues arising and possible implications

The importance the public places on the two traditional measures of economic success – jobs and income – means that growth in GDP without job creation would not be seen as consistent with good growth. The priority for economic policy is therefore to drive the creation of jobs, particularly in the light of current economic conditions.

But the public's interest in other issues beyond GDP when considering economic policy strongly suggests that the government should take a wider view of the success of UK plc. With health, work-life balance and infrastructure (housing and transport) accounting for between 31% and 50% of the public's definition of good growth, this has important consequences for the choices made by government in the allocation of its constrained resources as well as for the actions that businesses can take in support. In **Table 1** we set out examples of the short and longer term implications for government and business in these three areas.

Table 1: Examples of the implications for business and government

Good Growth	Government	Business
Health: Keep people well to work, and work for longer	• Reform of statutory sick pay to focus on early rehabilitation • Incentivise occupational healthcare schemes • Longer term, shift resources to prevention and early intervention	• Promote healthy lifestyles at work • Arrange local facilities to support work-life balance e.g. crèches, gyms • Provide access to preventative health checks • Increase support for early return to work of the long term sick
Work-life balance: Increase employee engagement and performance	• Increase the flexibility of public services to support workers e.g. evening and weekend appointments for working age people	• Increase opportunities for flexible working e.g. re-design of job roles, shift to 'total hours' contracts
Infrastructure: Shift resources to improve housing and transport	• Give more weight to reduced cost of travel and travel times when appraising transport investments • Accelerate affordable house-building in areas of high demand through a sustainable planning regime	• Increased innovation in the development of lower cost affordable housing by the housing and construction sector

Against the backdrop of fiscal constraint, we highlight in the rest of this report the implications for policies on health, work-life balance, infrastructure, skills, spatial and sectoral policy, affordability and sustainability. We also discuss the potential for our methodology, including conjoint analysis, to be applied to other complex policy areas.

Good Growth

This research was conducted by PwC and Demos during the course of 2011, as a contribution to the national and international debate on measures of social wellbeing that look beyond GDP. It builds on the insights from the Stiglitz Commission and related initiatives by bodies such as the ONS, OECD, European Commission, World Bank and United Nations.

The 'good growth index', which is the key output of our research, is distinctive from these other attempts in two key respects.

First, and most important, it gives the UK public a key role in the design of the index, through a range of qualitative and quantitative research aimed at identifying what factors they thought should be included in a 'good growth' measure and what weight should be given to each of these factors. In contrast, previous such studies have tended to rely on expert judgement to drive the choice of factors and their weights in such indices.

Second, it has a narrower focus – on the economic (or 'work and money') side of people's lives rather than trying to capture all aspects of wellbeing in a single index, as is being undertaken by the ONS.
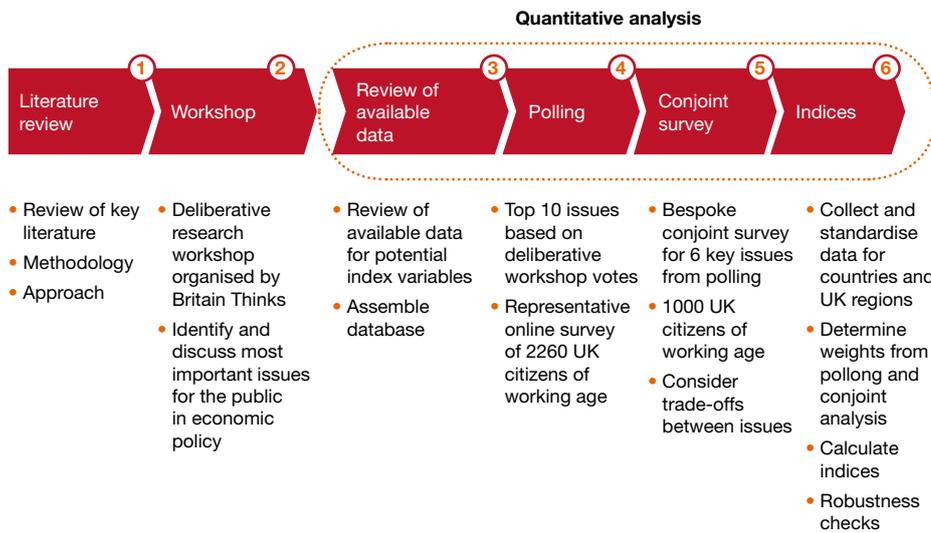
Methodology

The methodology we used is summarised in **Figure 1**. We started with a qualitative session with the public, followed by two separate surveys, as described below. We then compared the results with the views of business leaders, policymakers and other opinion formers, obtained both via the 2011 PwC Annual Global CEO Survey and a number of specially convened roundtable discussion groups. We also used these sessions to help draw out our policy conclusions.

The public research began with an intensive one day deliberative workshop session in April 2011 with a representative group of working age[2] people drawn from across the UK population. In-depth discussion with this group helped to identify the economic factors that people found most important both for their personal economic wellbeing and for that of the country as a whole.

---

2   We focused on working age people as we wanted to explore trade-offs between competing pressures within the work and money sides of people's lives: the choices available to pensioners and those who were unable to work due to health are limited to a far greater extent than other groups.

Figure 1: Research Approach

Quantitative analysis

1 Literature review	2 Workshop	3 Review of available data	4 Polling	5 Conjoint survey	6 Indices

- Review of key literature
- Methodology
- Approach

- Deliberative research workshop organised by Britain Thinks
- Identify and discuss most important issues for the public in economic policy

- Review of available data for potential index variables
- Assemble database

- Top 10 issues based on deliberative workshop votes
- Representative online survey of 2260 UK citizens of working age

- Bespoke conjoint survey for 6 key issues from polling
- 1000 UK citizens of working age
- Consider trade-offs between issues

- Collect and standardise data for countries and UK regions
- Determine weights from pollong and conjoint analysis
- Calculate indices
- Robustness checks

The headline results from the discussion were that:

- The most important 'work and money' issue in people's lives relates to affordability i.e. their ability to pay their bills. Aspirational issues such as career progression and owning one's own home were seen as less important in the current difficult economic environment.

- Simply having a job and/or high levels of employment in the economy were seen as critical to economic success: by implication, increases in GDP without creating jobs was not deemed 'good growth'.

- Health is an economic policy issue in the eyes of the public: poor health means reduced chances of employment or staying in employment, which means less financial security and/or insufficient savings for retirement.

- Other issues that were highlighted by the Stiglitz Commission as important, such as education and training and the environment, were seen as relevant to the group but were not their top priorities. In the case of education this may perhaps have been because it was seen as a means to an end (a job) or because of a disconnect in the public's mind between post-compulsory formal education and workplace learning.

Our qualitative research allowed us to identify ten top issues for further quantitative investigation which would enable us to pin down their relative weights in the index. In the first stage of this research, we carried out a poll of a representative sample of 2,260 UK residents, matched to the working age population as a whole, to assess the relative importance of these ten factors in an absolute sense. The issues ranked most important to economic success were jobs, health and income, with all the others –

providing for future generations, time with family, housing, the environment, economy wide balance (regional and/or sectoral), transport and the distribution of wealth – also receiving reasonably strong scores. We also explored the underlying reasons for each issue that was considered important. In health, for example, 76 per cent of respondents considered the driving factor to be 'being healthy enough to work'.

We then recruited a new sample of 1,000 people specifically to explore the trade-offs between the various issues that had previously been identified. To do this we used conjoint analysis (Appendix A), which is under-used in public policy but often used in the private sector to determine, for example, the value attached to different characteristics of a new product or service being brought to market.

Conjoint analysis is a robust technique for deriving revealed preferences which works by requiring participants repeatedly to choose between two different bundles of things – in this case countries with different characteristics – to enable their underlying preferences to be revealed. Standard regression techniques are then used to derive weightings for each of the various characteristics or indicators that make up the bundle. We were able to do this simultaneously for six of the public's top ten desirable features of a successful economy, and used two separate techniques, which we called variant 1 and variant 2, to extrapolate the weightings for the remaining four indicators.

Finally, we tested our results and their implications in a semi-structured setting with groups of business people, other stakeholders and policymakers at a number of specially convened seminars in London, Manchester, Liverpool and Birmingham. Specifically, we held a series of scoping seminars in London in November 2010, then presented the early results at a London seminar in July 2011 and a discussion of the policy implications, followed by similar events at all three main party conferences in the autumn of that year. We also compared and contrasted the views of the UK public with the views garnered by the 2011 PwC Annual Global CEO Survey.

Findings

Table 2 shows the results of our qualitative and quantitative research. The second column gives the weights attached by the public to the various factors of a successful economic policy from the first quantitative poll. The next two columns give the results of the subsequent conjoint survey when participants were forced to make trade-offs between those factors, and the final column gives the average of the first three columns.

Overall, two of the most conventional economic indicators – jobs and income – had a combined weight of between around 26% and 37% depending on the method used. This leaves between around 63% to 74% of the public's definition of what makes up 'good growth' coming from factors other than jobs and income. The public is saying loudly that as well as having a job to help pay the bills, it values factors such as affordable housing, a balanced economy, a sustainable environment, provision for future generations and a more equal income distribution.

Table 2: Alternative weights for components of a good growth index

Category	Polling weights	Conjoint variant 1 weights	Conjoint variant 2 weights	Index weights (average of methods)
Jobs	15%	22%	18%	18%
Income	11%	15%	13%	14%
Health	13%	15%	13%	13%
Work-life balance	9%	18%	16%	13%
Housing	9%	4%	4%	9%
Income distribution	8%	4%	4%	7%
Future	10%	7%	10%	7%
Environment	9%	5%	7%	7%
Sectoral balance	8%	5%	8%	6%
Transport	8%	5%	7%	6%
Total	100%	100%	100%	100%

Source: PwC analysis of polling and conjoint survey results commissioned from Opinium

In particular, regardless of the methodology used, people consistently rated health as one of their top three economic policy priorities alongside jobs and income. Having better work-life balance also rose in importance when people were forced to make choices between factors. Indeed further analysis of the conjoint results suggested that people were prepared to reduce their weekly pay by around £20 (over three times the minimum wage) to work one less hour per week. They also ascribed a monetary value of around £23 per week to the benefit of reducing the national unemployment rate by around 1 per cent, and gave a similar valuation to reducing the rate at which people were out of work due to ill-health. But the importance attached to housing and income distribution fell when a trade-off had to be made.

Whilst in some cases these findings might be seen to be inconsistent with the views of business, for instance, on work-life balance, it is interesting to note that PwC's Annual Global CEO Survey last year found that business believes it should take a lead role on maintaining the health of its workforce. Business also sees it as a priority that government prioritises infrastructure development, including transport – a key concern for the public if costs and travel to work times are to be reduced.
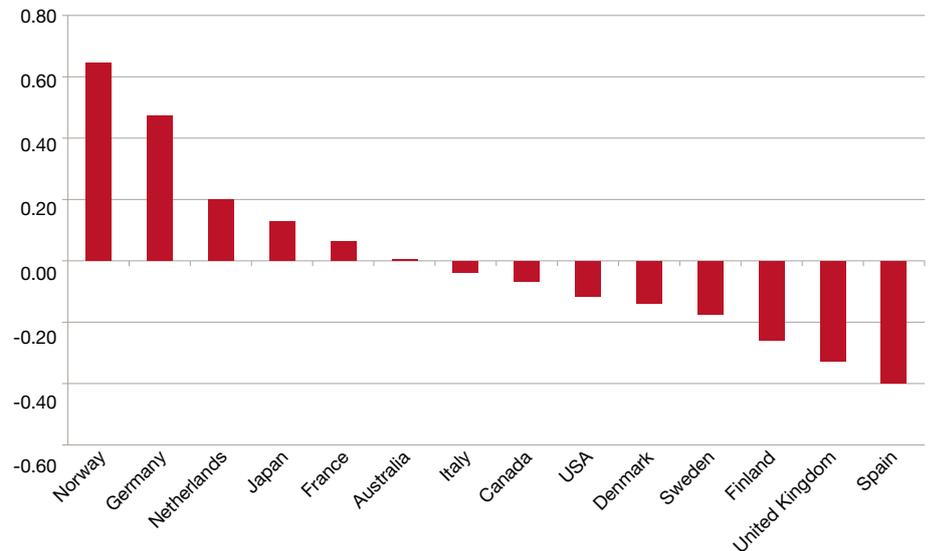
The index

We used the average of the three sets of weights in Table 2 to derive a Demos-PwC good growth index with two spatial dimensions, one for comparing countries (**Figure 2**) and one for comparing UK regions (**Figure 4**). The countries and regions that have the highest scores are those whose economies, according to existing public datasets, that more closely display the characteristics that the UK population say are important. Note that the rankings do not represent the views of the countries and regions in question, but simply how these countries and regions are rated when their actual economic performance is viewed through the prism of what the UK public in aggregate has told us it considers as economic success. (The composition of the indices is described in more detail in Appendix B).

From the country index we can see that the UK ranks second from bottom, with only Spain (with its very high unemployment rate) being lower. The top scores were for Norway, Germany and the Netherlands and this was robust to alternative weightings of the variables. Norway scores highest in all variants based on its low unemployment rate, relatively low average hours worked, low carbon emissions and very high national savings rate (due to its oil revenue fund in particular), which also put it ahead of other Scandinavian countries.

The reason the UK scores relatively poorly, in contrast to Gross National Income (GNI[3]) per capita for which the UK is close to the average for this group as shown in **Figure 3**, is a combination of relatively poor scores on measures such as hours worked, income inequality, transport costs and national savings rates. The US, despite having the second highest GNI per capita (on a PPP basis as shown in Figure 3) also scores

Figure 2: Demos-PwC International good growth index (using average weights)

Notes to figures 2 and 3: The y axis represents the number of standard deviations from the average of the group. We also looked at indices resulting from each of the individual three sets of weights from Table 1 as a robustness test, rather than the average. In general, the position of the UK in the country rankings did not change significantly regardless of the alternative variant ways of estimating the weights.

Figure 3: Good growth index vs GNI per capita at PPPs ($k)
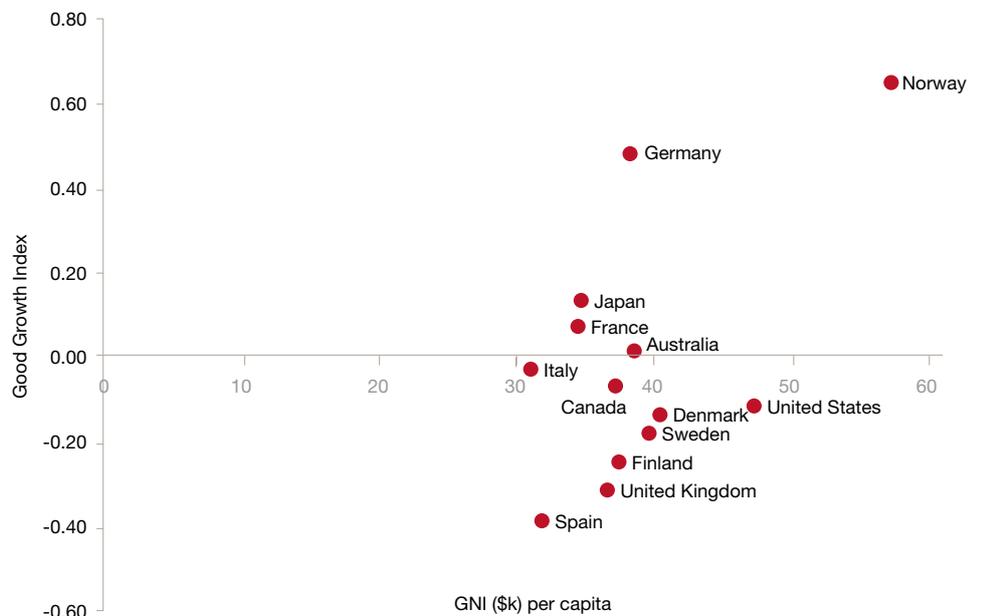
Source: PwC/Demos, ONS

---

3   GNI is a version of GDP preferred by the World Bank for national income comparisons due to including net property income from abroad. The measure in Figure 3 also corrects for price level differences between countries by using purchasing power parities (PPPs) to translate into a common currency, rather than market exchange rates, which can be volatile.

significantly below average for similar reasons such as relatively high income inequality, high carbon emissions per unit of GDP, high hours worked and low national savings rates.

From **Figure 3**, we can see that there is a positive relationship between GNI per capita and our index: indeed, the top and bottom scores, Norway and Spain respectively, are the same on both measures. However, there are also some notable outliers from this relationship, including Germany with a much higher score on our index and, as noted above, the US and UK with lower scores on the index than might have been predicted based on GDP per capita levels.

We also looked at whether there was any relationship between our good growth index and tax/GDP ratios but there is no statistical evidence of such a link. Norway and Germany, for example, have above average tax levels but high good growth scores, while the opposite is true for the US, Spain and the UK.

Within the UK, **Figure 4** shows that the regions that scored best were the East, South East and South West; the lowest scores were reported in the North East, Wales and, particularly, London. The latter region has by far the highest Gross Value Added (GVA) per capita[4] as shown in **Figure 5**, but scores relatively poorly in relation to measures such as income inequality, unemployment, travel to work times, housing affordability and working hours. At the same time, some of the other relatively rich regions in Southern England score well above average, while relatively poorer regions such as the North East and Wales are low down the rankings.

So there is some relationship with traditional GDP-type measures at regional level but London is a major outlier as **Figure 5** illustrates.

Our research is necessarily preliminary given that it is the first time a good growth index of this particular kind has been produced, so it is only a 'snapshot'

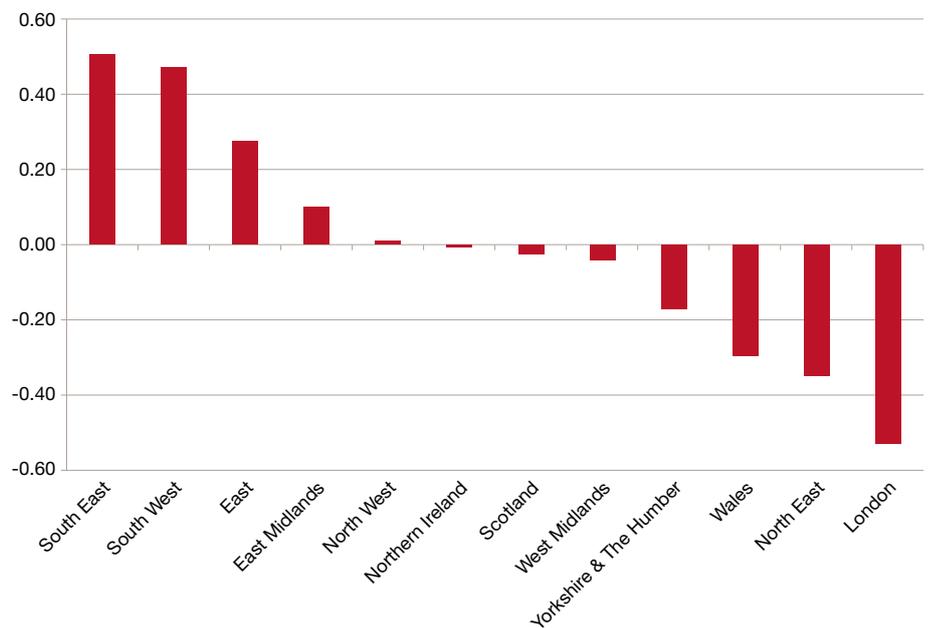**Figure 4:** Demos-PwC regional good growth index (with average weights)
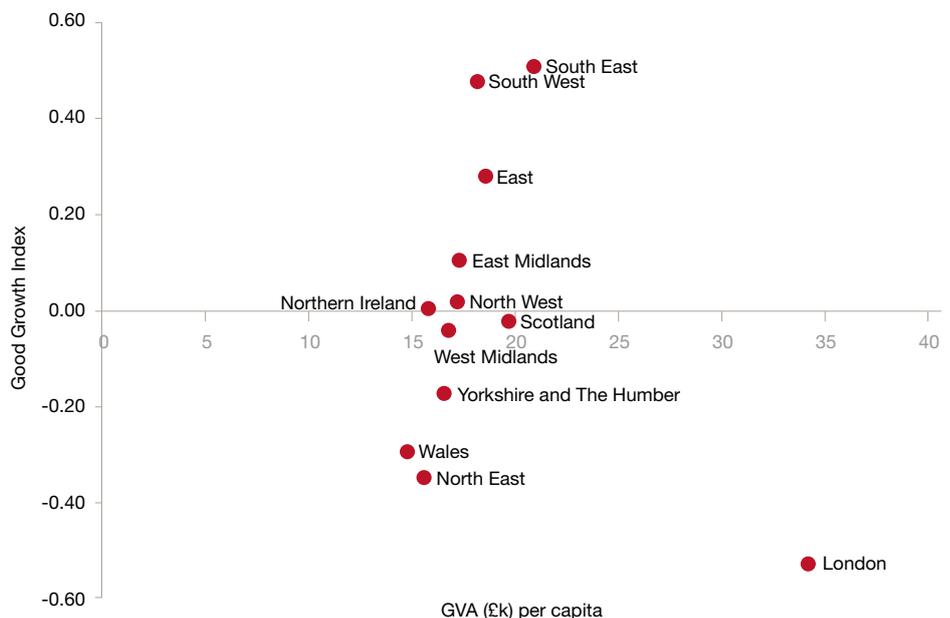

Figure 5: Regional good growth index vs GVA per capita

Source: PwC/Demos, World Bank

4   Nearest equivalent to GNI/GDP measured regionally.

of country and regional rankings at a point in time and has not been tested for sensitivity to changing economic circumstances over a longer period of time. Drawing strong policy recommendations may therefore be premature. Nonetheless, the index and the wider research programme we have undertaken highlights a number of important policy issues and suggests a broad direction for policy in these areas, as discussed further below.

Implications

The main insight to be drawn is that the basic premise behind the original work of the Stiglitz Commission is correct; the public are interested in other issues beyond GDP when considering economic policy. This validates the government's decision to explore the wellbeing agenda.

The public also sees two traditional measures of economic success – jobs and income – as critical to good growth. Where growth in GDP occurs without creating employment, the public would not see this as consistent with good growth. The priority for economic policy is therefore to drive the creation of jobs, particularly in the light of current economic conditions.

However, notwithstanding the uncertain and volatile current economic backdrop, the analysis also strongly suggests that the government should follow the public and take a wider view of the success of economic policy. After all, between around 63% and 74% of the public's definition of 'good growth' is accounted for by other factors. This has important consequences for the choices made by government in the allocation of its constrained resources in a number of policy areas, to which we now turn.

Health

Our analysis suggests that keeping people mentally and physically healthy should be considered part of a government's economic policy. Within a tight budget, this will require that resources are shifted into early intervention and preventative measures. For example, this would include greater investment in early screening for treatable illnesses, clear route-maps back to work for those who are absent from work due to stress and other mental health conditions and reform of statutory sick pay to put a greater focus on early rehabilitation.

Such an approach should not only lead to savings on acute care for the taxpayer, but also yield financial dividends for employers and the economy as a whole by keeping workforce participation rates higher and for longer (as retirement ages increase) as well as reducing absence through illness.

The Treasury could explore with the Department of Health how hospital trusts can be incentivised to invest more in primary care in order to be able to accrue some of these savings for their own priorities.

But not all responsibility lies with government and the NHS. Many businesses already see it as a priority to maintain the health of its workforce. We therefore support further consideration of incentives for business to pay towards private health services for their workforce (either for prevention or to help earlier return to work of those absent through illness).

Business too could benefit from working with the grain of the views of their workforce on this issue and support their staff to maintain a healthy lifestyle. We recognise, however, that some businesses on low margins, particularly small and medium sized companies, may struggle with the cost of meeting the health needs of their employees and need help to find cost effective options, for instance, through shared services for occupational health schemes.

Work-life balance

According to our polling, we are nowhere near achieving what people want on so-called work-life balance. Employers, particularly smaller companies tend, rightly or wrongly, to associate moves to greater work-life balance with greater legislative and regulatory burdens. But the fact that the public in aggregate appear prepared to accept a lower wage for more free time (provided they are actually in work) might also turn out to be an opportunity for business to increase the engagement of their staff, which in turn is the key driver of motivation and performance. For instance, employers can gain greater loyalty from staff if they offer more flexible working arrangements, from offering appointments with a total number of hours, rather than days per week, to advertising all vacancies as being potentially part-time or job-share.

Employers, particularly larger ones, should actively consider other ways in which they can make life management easier for their staff and so make themselves more attractive to potential recruits as well as retaining existing staff.

For instance, many leading employers now offer, as part of their reward package, a range of benefits beyond pay and pensions such as preventative health checks, childcare vouchers, on-site crèches and occupational health services.

Providers, from local authorities and primary care trusts to voluntary and private sector ones, should seek out and take account of the views of those working locally, particularly in small companies, when designing similar services which could be shared across the local economy. And following on from our first suggestion, all NHS and wider health economy services should be designed with the needs of working people in mind, including evening and weekend appointments for working age people. Saturday is the busiest shopping day because fewer people are in work; there is no reason why this should not be the busiest day for routine health activity as well.

Infrastructure

Given the priority accorded by the public (as well as many employers) to issues of jobs, health and work-life balance, government should prioritise and, where feasible, accelerate its investment in infrastructure to support these priorities. This is because well directed public infrastructure spending in general not only directly creates jobs but also drives economic growth at both national and regional levels by opening up labour and product markets and reducing business costs.

In particular:

- **Transport infrastructure:** investments which either expand capacity and/or make better use of existing capacity can reduce the cost of travel as well as travel to work times and can both impact on work-life balance. This has the dual benefit of addressing a high priority for the public whilst also increasing the productive potential of the economy. Our research suggests that these benefits should be given more weight when appraising transport investments.

- **Affordable housing:** There is also an important role for local authorities, housing associations and the construction industry as health is integrally linked to housing. Good health depends inter alia on access to good quality affordable housing which in turn requires a sustainable planning regime. In addition, building houses in areas of high demand further builds the productive potential of the economy.

Training and skills

There is a more nuanced message to be drawn from our research on the issue of training and skills[5]. It was not something that the public prioritised, despite being given the opportunity to do so. However, jobs and income were valued, both of which are correlated to skills acquired (although the value of different types of skills clearly varies). And businesses do value skill levels – indeed it was the most important global issue that emerged from PwC's *Annual Global CEO Survey* in 2011 where government and business were seen to have joint responsibility for tackling the issue.

There are various conclusions that might be drawn from this, which require further examination. It may simply be that the working age public do not understand – or believe – that a commitment to continuous skills development and lifelong learning will affect their employability in the same way that they understand their level of health does: do people 'stop education, start work and stop learning'?

A variant of this might be that the public do not see formal training (or indeed the education they received at school) as being relevant to their working lives, or they may take it for granted and view it as a means to an end. Alternatively, they may see more need for others to engage in education and training: the qualitative stage of our research demonstrated more support for training others (their children to give them opportunities in future, the unemployed to fill vacancies) than training themselves.

In contrast, the public's inability to connect training, skills and jobs could explain why business attaches such urgency to the issue; perhaps businesses are frustrated that the education system does not generate the skills needed to make new entrants to the labour force immediately employable or that people lack the innate motivation to develop new skills in emerging occupations.

Either way, the policy recommendation is the same. Government and business should work together to ensure the workforce has access to training that will not only enable them to access good jobs, but be seen to do so. This might include more emphasis on vocational training, work experience, internships and work placements, industry-led qualifications such as tailored degrees with matched

government-business funding and paid-for courses that lead directly to job opportunities. There may also be a need for re-branding – for instance, apprenticeships tend to be associated with manual skills-based occupations rather than the more prevalent service-based occupations. It is in the direct interests of business to take a lead in this area.

Spatial policy

There are also implications from our results for spatial policy. The allocation of public spending across the UK currently results from a mix of delivery mechanisms e.g. the Barnett formula allocating funds to the three Devolved Administrations, the funding formula from DCLG to the English local authorities and the intended (and unintended) regional/spatial consequences of all the spending and policy decisions by Whitehall departments. It would not be surprising if the end result of this process did not necessarily reflect relative need.

While any conclusions in this area understandably arouse high emotions, it flows from our analysis that greater support to people's economic lives is required in London, such as investments in transport to reduce costs and speed up travel to work times. Support across the board is still also required in the North East, Wales and Yorkshire.

In comparison, the South East, South West and East are perhaps in less need, when taking account of the economic desires of the population as a whole. Future research might also try to re-create the index using sub-regional data to understand further the relationship between cities and their hinterlands.

Sectoral policy

We initiated this research expecting the balance of economic activity between sectors such as financial services and manufacturing to be a substantive theme for the public. Whilst the public did recognise this as an issue, in practice specific sectors did not appear as significant to the public in our polling as export-oriented businesses, which were seen as important for UK plc to pay its way in the world. In addition, and linked to the earlier discussion on spatial policy, through our engagement discussions it appeared that debate was more focused on local economies having sufficient 'anchor' companies around which clusters and supply chains could form, rather than particular types of industry. The public also emphasised the nature and quality of jobs as having a close link to economic wellbeing.

This is important to consider when looking at labour as well as skills intensive occupations which are likely to increase in future and will have a bearing on income inequality. For instance, in the care sector we can expect an explosion in demand as the population ages but currently the roles of carers tend to be perceived as low status and low skilled, and as a result with low wages.

Affordability

There is also something to be said around the general issue of affordability. It was noticeable throughout our research that pay, and indeed employment in general, was valued not so much for status but to keep one's financial head above water. People were

concerned about their post-tax disposable income. It therefore might be meaningful and useful for government to monitor wage levels against objective local calculations for instance of a living wage (the proportion of income spent on 'basics') and/or the number of people in fuel poverty. The prism of affordability might also be a good way to start a discussion around housing and the impact of asset price inflation (and deflation) on household wealth.

Sustainability

It was noticeable in our research that sustainability was important but not in the top three factors of importance to the public. Yet climate change and a low carbon economy have become drivers not only of government policy but also key to certain industries such as automotive and aerospace. In some ways, it may be that business is now ahead of public opinion. This may reflect another issue of affordability: high energy prices may be seen by the public as being connected to the cost of switching to a low carbon economy with more renewable energy, and be seen as a result as too high a price to pay at a time of austerity. A task for government is therefore to re-engage the public on low carbon issues and ensure their support for actions today which result in longer term economic gains.

---

5   It should be noted that our focus was not on school education in this study.

Methodology

Finally, we have two methodological suggestions. First, we conclude that the government, through the ONS, should consider using our broad methodology of starting with what the public thinks and publish its own 'good growth' index to track progress over time. This may entail perhaps re-basing the index against a new survey say every five years recognising the timing of the economic cycle (in the same way that the weights of the retail price index are re-based). Only by measuring economic performance in the same way as the public can government focus on the most important pressures in people's economic lives.

The second methodological suggestion is that there is potentially a greater role for conjoint analysis in public policy debates where it is important to consider complex trade-offs between different priorities. Whereas, in the past, policy-makers have tended to explore policy tensions between economic efficiency and equity in a qualitative setting, the methods used here give the potential for greater rigour in policy analysis by exploring the amount people are prepared to pay for different policy outcomes.

Examples of where it might be particularly useful are where choices are being made on how much taxation people can bear for a certain outcome or bundle of outcomes, the relative importance of different components of a regeneration project, or how much different groups of people on different incomes would be prepared to pay, when they were forced to choose, for example, guaranteed higher quality or choice in specified public services.

Conclusions

In summary, we now have an opportunity to respond to the recent economic crisis in a way that develops the type of economy that we want to see. We hope that by presenting this work in the context of the wellbeing debate we can sharpen the understanding of policy-makers as to the various methodological and conceptual tools that are available to them as they seek to make progress in a way that is not only economically productive, but also socially and environmentally sustainable and in tune with the wishes of the public.

Appendix A
Methodology and results
of the conjoint analysis

Conjoint analysis:
A general introduction

Conjoint analysis is based upon the (psychological) concept that it is more realistic for people to assess their preference for a product or service and all its attributes together (e.g. a car of a specific brand, price, speed, fuel efficiency, etc.) than for each of the attributes separately. If a person is presented with sufficient choice exercises – "trade off" questions in a survey context – it is possible to derive from the stated preferences the relative importance the person attributes implicitly to the various individual attributes[6]. For more details discussion of conjoint see e.g. Louviere, Hensher and Swait (2000)[7].

Each characteristic, for instance of a product or service, is referred to as an attribute and defined in terms of a number of levels (usually 2 – 5 in total to be manageable – in the present survey we chose to have 3 levels). Using the example of a car, rate of acceleration could be one of the attributes considered, defined in terms of 3 different attributes: slow, normal, fast. **Table A** contains an example of two attributes (rate of acceleration and price) with each three levels.

One level from each attribute is then chosen (using an experimental design plan) to create hypothetical products or services, after which two (or possibly more) alternatives can be presented to a respondent in the form of a choice exercise.

Table A: Illustrative conjoint example: motor car attributes and levels

	Attribute		
	Rate of acceleration (0-60mph)	Price	...Other attributes
	8 seconds	£10,000	…
Levels	6 seconds	£15,000	…
	4 seconds	£20,000	…

Source: PwC, example of Conjoint with two attributes and 3 levels.

6 The survey options which are shown to the respondents are carefully defined such that the attribute levels are not correlated with each other ("orthogonal") and ensure that the data gathered is as useful as possible.

7 Louviere J., D. Hensher and J. Swait (2000): *Stated Choice Methods: Analysis and Application*, Cambridge University Press

The analysis of respondent's choices to conjoint survey questions is carried out using a type of regression analysis in which the attributes and levels (independent variables) are used to explain the decision or preference expressed (dependent variable)[8]. The coefficients of the regression can be interpreted as "utility values" – i.e. the value the "average" respondent places on each attribute included.

Utility values for each attribute can then be used to calculate an importance metric (e.g. for use as an index weight as in the present study) by relating the size of these values to each other.

Conjoint analysis: Good Growth

This section describes the use of conjoint analysis in the context of this pamphlet and provides additional technical details. By confronting respondents with different, hypothetical countries (situations) we aim to get a better understanding of what is important for "good growth".

Framework

Based on the results from the focus group and large scale polling the conjoint was designed as shown in **Table A.1**. We decided to include 6 attributes (more would be difficult for people to process) with 3 possible levels each[9]. The low and high levels for each of the attributes were chosen to span the range of actual data observed in high income OECD countries broadly comparable to the UK (excluding any extreme outliers). The middle levels for each attribute were defined to be equivalent to the UK average level (after rounding to avoid spurious precision).

Table A.1: Attributes and levels to test in conjoint survey

Factor	Attribute	Low	Mid	High
Employment	Unemployment rate	5 million (16% of labour force)	2.5 million (8% of labour force)	1 million (3% of labour force)
Healthcare	Unable to work due to health issues	4.5 million (12% of 20-64 year olds)	2.5 million (7% of 20-64 year olds)	750,000 (2% of 20-64 year olds)
Income	Average monthly household income after tax	£1,400	£1,700	£2,300
Time with family	Average working hours per full-time employee	45 hours per week	37 hours per week	30 hours per week
Housing	Owner occupation rates for housing	50% of properties	70% of properties	80% of properties
Distribution of wealth	Extent of income inequality	Richest 10% are 16 times richer than poorest 10%	Richest 10% are 13 times richer than poorest 10%	Richest 10% are 6 times richer than poorest 10%

Source: PwC assumptions based on various data sources. Note that the ordering of the levels corresponds to (expected) utilities (i.e. "low" represents level with lowest expected utility value).

A variety of hypothetical countries were then created that spanned the range of these attributes and levels and then shown to respondents during the online survey as the choice between two such alternatives (country A vs. country B).

Survey and Analysis

Each respondent was shown twelve screens online with two hypothetical countries each and asked to select the preferred (hypothetical) country. After the fieldwork, a data quality check was conducted. This check included the calculation of the elapsed response time and a "trading" analysis: respondents who did not trade (i.e. always choose either the left or right country with no variation), or who had response times for the whole survey below five minutes suggesting insufficient time had been taken to reflect adequately on the choices presented, were dropped from further analysis.

8   Because respondent's preference for each alternative (dependent variable) is binary (preferred or not preferred) the regression model used is a so called "Logit" model which accommodates this type of data.
9   When using conjoint analysis there is a trade-off between survey length and the number of attributes and levels that can be analysed. With longer surveys and those presenting a large amount of information to respondents, there is a risk of respondent fatigue, which can lead to poor quality responses.

Table A.2 shows results of the estimation of two Logit regression models: Model I, our baseline model, is used to derive the indicator weights. The model is additive and therefore ideal for the calculation of index weights[10]. Model II, which follows a multiplicative structure, allows the expression of attribute importance in monetary (i.e. income) terms.

Technically, Model I is based upon a standard dummy variable (i.e. zero-one) specification, whereas Model II links increases or decreases in levels to the values actually shown to the respondent (e.g. for income these are £1,400, £1,700 and £2,300).

Conjoint weights (shown in the column "Implied weights" for Model I) were calculated by dividing the utility value (coefficient) for each attribute by the sum of utilities (sum of all coefficients). Income equivalents for Model II were calculated as described in the following example for working hours:

The working hours coefficient (utility per weekly working hour) was divided through by the income coefficient (utility per £ monthly income). This identifies the increase in monthly income that the "average" respondent would require to do an additional hour of work per week. To calculate hourly values this was multiplied by twelve (months) and divided by 52 (weeks).

At this stage, the specific Model II estimates in monetary terms are probably somewhat less reliable based just on this one survey than the weights derived from Model I. The latter have therefore been used as the basis for calculating good growth indices in the main text of the paper. However, if further such exercises could be done to increase confidence in the Model II estimates, then potentially these could be a more accurate way to derive index weights in future variants of these indices.

Table A.2: Results of Logit Model I and Model II

Model I

	Coefficient	Standard error	z-statistic	Implied weight
Unemployment	1.062	0.047	22.57	0.27
Health	0.754	0.035	21.36	0.19
Income	0.751	0.034	21.84	0.19
Working hours	0.910	0.050	18.31	0.23
Home ownership	0.218	0.038	5.71	0.06
Wealth distribution	0.219	0.046	4.80	0.06

Source: PwC Calculations. Note that the model included a constant (not shown)

Model II

	Coefficient	Standard error	z-statistic	Measured in terms of income
Unemployment	-15.463	0.665	-23.25	£1,200 (1% point reduction)
Health	-14.837	0.705	-21.03	£1,200 (1% point reduction)
Income	0.002	0.000	20.80	
Working hours	-0.128	0.007	-19.20	£20 per hour
Home ownership	1.233	0.234	5.26	£100 (10% point rise)
Wealth distribution	-0.062	0.008	-7.85	£480 (reduction 13 to 12)

Source: PwC Calculations. Note that the model included a constant (not shown)

10 When using conjoint analysis there is a trade-off between survey length and the number of attributes and levels that can be analysed. With longer surveys and those presenting a large amount of information to respondents, there is a risk of respondent fatigue, which can lead to poor quality responses.

Appendix B
Variables and data sources

The composition of the international and UK regional indices is described in **Table B.1** and **Table B.2**.

Table B.1: Composition of international good growth index

Category	Weight in different variants*	Specific indicator	Data source	Measured in terms of income
Jobs	15-22%	Unemployment rate as % of labour force	OECD	£1,200 (1% point reduction)
Income	11-15%	Real adjusted disposable income per head	OECD	£1,200 (1% point reduction)
Health	13-15%	% of working age population receiving long-term disability benefits**	OECD	
Work-life balance	9-18%	Average annual working hours per worker	OECD	£20 per hour
Sectoral balance	5-8%	Manufacturing share of employment	OECD	£100 (10% point rise)
Housing	4-9%	Home ownership rates	OECD	£480 (reduction 13 to 12)
Transport	5-8%	Road fuel costs	IEA	
Providing for future generations	7-10%	Gross domestic savings as % GDP	World Bank	
Income distribution	4-8%	Ratio of disposable incomes of richest 10% and poorest 10% of households	UN	
Environment	5-9%	CO2 emissions per $ of GDP at PPPs	BP	
Total	100%			

*As shown in Table 2 in the summary report. **We also considered using total or healthy life expectancy, but this seemed less relevant to the work and money side of people's lives. However, further research may uncover better variables to capture health at work here.

Table B.2: Composition of UK regional good growth index

Category	Weights in different variants*	Specific indicator (changes between years)	Data source	Measured in terms of income
Jobs	15-22%	Unemployment rate as % of labour force	ONS (LFS)	£1,200 (1% point reduction)
Income	11-15%	Gross household disposable income per head	ONS	£1,200 (1% point reduction)
Health	13-15%	% of working age population unable to work due to disability or long-term illness	ONS/DWP	
Work-life balance	9-18%	% working more than 45 hours per week	ONS	£20 per hour
Sectoral balance	5-8%	Manufacturing share of gross value added	ONS	£100 (10% point rise)
Housing	4-9%	House price to earnings ratio and owner occupation rate (total weight split equally between these two variables)	Halifax, ONS	£480 (reduction 13 to 12)
Transport	5-8%	Average commuting time to work	ONS	
Providing for future generations	7-10%	% of households holding longer term savings instruments such as equities, ISAs etc	ONS	
Income distribution	4-8%	% of population in UK top and bottom quintiles	ONS	
Environment	5-9%	CO_2 emissions per £ of real GDP	ONS	
Total	100%			

*As set out in Table 2 in the summary report. Weights used are the same for all UK regions (and same as in international index).

About the authors

John Hawksworth
+44 20 7213 1650
john.c.hawksworth@uk.pwc.com

John Hawksworth is Chief Economist at PwC. He is the editor of our regular *UK Economic Outlook* publication and many other reports and articles on macroeconomic and fiscal policy issues. He first developed PwC's public finance model in 1992, which has since been refined and updated to provide the basis for the projections in this paper and many other analyses. He also has over 20 years of experience as an economics consultant to leading public and private sector organisations, both in the UK and overseas.

Nick C Jones
+44 20 7213 1593
nick.c.jones@uk.pwc.com

Nick Jones is the Global Director of PwC's Public Sector Research Centre (www.psrc. pwc.com) and has authored, and contributed to, reports on a wide range of public services issues, including co-authoring with John *Dealing with Debt* and *The regional and sectoral impact of the fiscal squeeze* reports. He is a member of the Editorial Team for *PwC's Annual Global CEO Survey*, commenting on the relationship between business and government. As part of this role, he is also responsible for commissioning and directing PwC's input into major research studies with think tanks.

Kitty Ussher
+44 20 7367 4331
kitty.ussher@demos.co.uk

Kitty is an associate at Demos. She was the Economic Secretary to the Treasury at the start of the credit crunch, covering the collapse of Northern Rock and the run-up to the Lehmans crisis. In October 2008 she moved to the Department for Work and Pensions. From 2001-04 she worked as a special adviser to the then Department for Trade and Industry on industrial and trade policy.

About PwC

At PwC we focus on three things for government and the public sector: assurance, tax and advisory services. Working together with our clients, we look for answers on how to increase efficiencies while improving quality and outcomes, and help to develop solutions that add value and are practical to implement.

As well as bringing our insight and expertise to this sector, we contribute our thinking and experience to the public policy debate through our Public Sector Research Centre. To join this free online community, go to **www.psrc.pwc.com** and register today for our research and analysis.

About Demos

Demos is a think-tank focused on power and politics. Our unique approach challenges the traditional, 'ivory tower' model of policymaking by giving a voice to people and communities. We work together with the groups and individuals who are the focus of our research, including them in citizens' juries, deliberative workshops, focus groups and ethnographic research. Through our high quality and socially responsible research, Demos has established itself as the leading independent think-tank in British politics.

In 2011, our work is focused on five programmes: Family and Society; Public Services and Welfare; Violence and Extremism; Public Interest and Political Economy. We also have two political research programmes: the Progressive Conservatism Project and Open Left, investigating the future of the centre-Right and centre-Left.

Our work is driven by the goal of a society populated by free, capable, secure and powerful citizens. Find out more at **www.demos.co.uk**

Join the debate. www.psrc.pwc.com

The Public Sector Research Centre is PwC's online community for insight and research into the most pressing issues and challenges facing government and public sector organisations, today and in the future.

The PSRC enables the collaborative exchange of ideas between policy makers, opinion formers, market experts, academics and practitioners internationally.

To register for this free resource please visit www.psrc.pwc.com