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The Good Jobs Plan

A new approach to industrial strategy

Contents

Executive Summary

George Osborne's Budget speech set lofty aspirations. He said it was about "reforming the nation's economy, so it can have enduring growth, and jobs in the future."[1] He wants a rebalanced, sustainable economy that promotes green employment. The Government's Plan for Growth aims for "strong, sustainable and balanced growth that is more evenly shared across the country and between industries".

These are fine words, and few would disagree with the aim. They are not, however, matched either by his analysis or action. Nowhere in the Budget or in The Plan for Growth is there any evidence that the business tax cuts, regulatory tweaks and relatively minor changes to public investment that are promised will deliver a major economic transformation. The Chancellor wants to 'put fuel into the tank of the British economy' and is spending £5 billion on tax cuts. But there is little point refueling a wreck.

The British economy is poor at creating new private sector jobs. Research by the Manchester Business School suggests that of the 1.3 million new jobs created during recovery from the last major recession, over half were due to public spending alone. Public sector employment increased, but so did employment, nominally in the private sector, that relied on public funding. 1.3 million manufacturing jobs were lost, but finance and banking created only 35,000 new posts. Public spending took up the slack.

If that pattern is repeated, even the optimistic official growth forecasts imply that only 780,000 new private sector jobs would be created. This would leave a shortfall of 520,000 jobs. Unemployment would remain stubbornly high, with poorer areas worse affected.

The evidence shows that successful attempts in the past to restructure an economy have relied on decisive and confident government action. Strategic government intervention will be needed to deliver it now. This requires a completely new approach to economic policy in general, and industrial policy in particular. This report starts to set out this approach.

Objectives

The starting point has to be clear economic objectives anchored in wider social objectives. UK industrial policy has failed when clear objectives have been absent. It has worked best when there have been objectives that fit both industry capability and wider social needs – as in the case of pharmaceuticals and aerospace.

These objectives need to be developed in a transparent and democratic way. They are about the direction of our society, not some narrow technocratic agenda. In this report we have developed the case for ten objectives that flow from three broad, progressive goals: high well-being, environmental sustainability and social justice (see Box 1). There should be

discussion about whether or not these are the right objectives – but not, we hope, about whether there should be objectives in the first place.

Why the government needs an industrial strategy

Some industries will be better placed than others to achieve any set of objectives, and this should guide any government strategy for selective intervention.

Of course, the choice is constrained by the realities of international competition, but neither the choice of industries nor decisions about how they should develop are totally constrained. We can *create* advantage rather than simply passively accepting our place in the world. We recognise that this argument will make some uneasy. Until recently, it was presumed that government attempts to steer the economy towards any destination would end up destroying the engine needed to get there. We believe, however, that the opposite is the case.

National competitive advantage is rather like individual company competitive advantage: it relies on developing a level of specialisation that cannot easily be reproduced by our competitors. It requires us to build up a complex array of strategic, interrelated supplies, institutions and companies. Taken together and co-ordinated, these separate elements may constitute competitive advantage, even if individually they do not.

But why is government needed to create this advantage? It isn't always - but sometimes it helps, for two reasons.

First, the benefits of this co-ordination flow to everyone involved, not just the initiator. This means that sometimes co-ordination is worthwhile for the whole of society but the necessary investment is not in any one firm's interest. Government then has to step in.

Second, sometimes the costs involved for some companies outweigh the benefits – even once an industry is successful. Government involvement is needed to adjust incentives so that everyone benefits – otherwise one player may drop out and the whole system may fail.

Government may also have a crucial role to play in overcoming generally recognised market failures, and in ensuring that UK industry is not disadvantaged by the activities of other governments.

How should government intervene? Seven lessons from the past

The following are seven lessons from past successes and failures, in the UK and Asia:

- In Asia, industrial policy was joined up to other government regulation, expenditure and public service provision. Policy-makers ensured that it was part of an integrated economic policy framework.

- It is essential to have intelligent targets for priority sectors, based on the kind of understanding of the current and potential future shape of the market that can only be discerned by working closely with industry. Interventions in UK car manufacturing in the 1970s failed because such targets were lacking.

- These targets should ideally be anchored to broader social objectives – such as those of the NHS in the case of British pharmaceuticals or UK defence in the case of aerospace. This gives them credibility and durability in the face of short-term pressures.

- Government procurement is a particularly powerful tool – especially when combined with the right regulatory regime, as the British pharmaceutical industry has found.

- It is important not to continue with interventions after they have achieved their purpose. This is a mistake that was made in some cases in Korea and Japan, where prolonged intervention led to capture by vested interests, excessive regulation, bubbles and bloated organisations that could not be allowed to fail.

- Allocation of credit and investment to individual firms should generally remain with the private sector. Government should normally avoid being an implicit or explicit guarantor for firms or an industry. It can, however, guide investment and credit to particular sectors.

- The autonomy and technical capacity of officials are critical, helping to guard against lobbyists and vested interests. This is often seen as part of the success of Japan and the Asian Tigers.

What is needed now

Policy makers need to build on lessons such as these, as well as on the kind of objectives set out in Box 1. The aim must be to develop an approach to industrial policy equal to the systemic challenges we face, together with institutional arrangements capable of applying this approach. **nef** (the new economics foundation) is embarking on a programme to do this, building on a range of existing work. It will be part of a broader analysis of the long term 'Great Transition' needed in the economy and society if we are to meet these twenty-first century challenges.

Box 1. Ten objectives of a progressive economic policy

1. *A decent income for everyone.* GDP is not the key variable. What matters is whether everyone has enough for a good life.
2. *Secure, full employment.* This is a key driver of well-being.
3. *Stable communities, with work spread throughout the country.* We need jobs where people are – not growth bought at the expense of social stability.
4. *Satisfying work.* The quality of their work is important to most people.
5. *Work in the right quantities.* Too little work damages well-being. But so does too much.
6. *An economy that encourages people to do things rather than passively consume things.* Active forms of consumption have been shown to enhance well-being.
7. *An economy and forms of consumption that flourish within environmental limits.* We need an economy that is compatible with sustainable forms of consumption.
8. *Investment in the infrastructure and human capital needed for a sustainable economy.* This requires a 'green new deal'. The results must be resilient and adaptable to change.
9. *Security of supply of vital goods and raw materials.* We need at least a contingency plan for a world without an efficient international trading system.
10. *An economy that allows us to prosper while encouraging other countries to adopt sustainable economic policies and to enter into effective international agreements.* We need economic policies that fit a foreign policy designed to advance these vital national interests.

Introduction

Industrial policy is back in fashion. Government can now intervene to help particular industries and specific companies. As Mario Monti, former EU Competition Commissioner, has put it: “Industrial policy is no longer taboo: there’s a revival of demand for it.”[2]

In January 2011 David Cameron said that his Government was planning “to invest in the industries of the future, such as aerospace, pharmaceuticals and green energy, while at the same time encouraging growth beyond the South East to balance the economy.”[3] A Regional Growth Fund is in place, and ten ‘enterprise zones’ have been announced by the Chancellor. The previous Labour Government was also enthusiastic about this area of policy, embarking on a programme of ‘industrial activism’.

This represents a real change in rhetoric if not yet in practice. Until 2008 there was a more limited view of how government should intervene in the economy. It was always felt that government should maintain the basic legal structures and macro-economic conditions required for a successful economy. It was also generally deemed responsible for correcting the various failures in the market that inevitably arise, involving light-touch regulation and investment in public goods such as education and training, infrastructure, research and the more risky forms of innovation.[4] The orthodoxy, however, was that it should not intervene beyond this, so as to support particular sectors in preference to others (even if in practice it sometimes did).[5]

There is a great danger that the new enthusiasm for intervention will not get beyond an ad hoc approach, repeating the failings of past industrial policy. There is a risk that there will be no industrial *strategy* to guide the policy. And as a result it will fail.

Urgency is required. The rise in public sector employment over the last decade is well known. But new research has revealed the extent to which major parts of the private sector also depend on public funding. Researchers at CRESC at the University of Manchester have suggested that 56 per cent of all jobs created during the preceding boom were dependent on public sector funding. They estimate that 1.7 million jobs in the private sector are now tied to public sector funding.[6]

This conclusion has serious consequences for the Government’s own plans. The Office for Budget Responsibility has forecast that 400,000 public sector jobs will go over the next five years, but that these will be replaced by 1.3 million private sector jobs. There will be a net gain in employment of 900,000, as the public sector retreats and the private fills the gap.

But if the UK economy retains its historic weakness at private sector job creation, that estimate will be too optimistic. Accounting for private sector jobs dependent on public finance reduces the total number of jobs created to 780,000. This leaves a shortfall of 520,000 jobs by 2015, relative to the official forecast. And without serious efforts to reform the UK economy, there is no reason to think that this structural weakness will simply disappear. Government intervention will be needed to overcome it.[7]

Consider the following quite basic questions.

- Where are the jobs coming from?
- How is entrepreneurship going to be encouraged?
- How is support going to be effectively funnelled into the deprived areas of the UK?
- How are regional imbalances going to be corrected?
- How is a green industrial sector going to be developed?
- How are we going to deal fairly with a rising carbon price (and rising oil prices)?
- How are we going to ensure that the UK population can adapt to an uncertain and turbulent climate and economy?
- How will we secure the private-sector finance for all these things?
- How will we ensure a stable financial sector that serves rather than distorts our economy?[8,9]

Of course the Government can produce answers to all of them. But can it produce convincing ones? In particular, if you add the words ‘on the scale necessary’ to each of the questions, can it convince us that its approach is a serious and strategic one?

Dealing with these questions ‘on the scale necessary’ requires a serious strategy, not ad hoc measures. It demands that decisions be made about which industries to support and how to support them. That in turn requires two underpinnings: a very clear set of objectives, and a proper understanding of the role of government in moving the economy towards those objectives.

These objectives need to address the immediate economic challenges faced by the UK, but also the longer term systemic challenges such as climate change and other threats to environmental sustainability, rising oil prices, the increasing economic power of the BRIC nations (Brazil, Russia, India and China), age imbalances between Europe and the developing world, regional imbalance within the UK, and instability in and inadequate governance of the international financial system.

This report starts to address what the objectives of policy should be and what the role of government should be in achieving them. We believe that industrial policy should be designed to produce not just jobs but *good* jobs, by which we mean jobs that help us deal with the systemic problems just referred to and reach three overarching goals: well-being, environmental sustainability and social justice.

In chapter one we translate these goals into ten more concrete objectives that could become the focus for policy making. In chapter two we discuss the role of government generally and, most importantly, the co-ordination of the complex array of activities that create national competitive advantage.

In chapter three we draw some lessons from experience, such as the need for sectoral targets anchored to wider social goals, the importance of high-level leadership, and the need to avoid doing too much while ensuring that there is serious investment in developing the capacity of officials.

In the final chapter we set out our plans for work in this area.

1. The ten objectives of a progressive economic policy

Over the 30 years to 2008, and perhaps longer, the critics of capitalism were marginalised. Mainstream progressive politics came to mean correcting a few market failures while maximising output and partially redistributing it. This was the process that was expected to deliver – and to some extent did deliver – improved chances of a good life.

Not everyone has abandoned this 'grow, tax and spend' model. But over the past two or three years it has become clear to a steadily widening group that this model cannot deliver the combination of goals increasingly at the heart of the progressive consensus: well-being, environmental sustainability and social justice.[10]

In the immediate term, well-being and social justice will depend on creating jobs above all else, and this will not be easy. Planned public spending cuts are likely to remove at least 330,000 jobs from the public sector, and further job losses are anticipated in the private sector.[11] These job losses are expected to arise disproportionately in regions where unemployment is already high.

The Office for Budget Responsibility (OBR) has predicted that the redundant jobs will be replaced by new private-sector jobs as the economy recovers. We are sceptical. Even if the OBR is right, however, and the private sector *does* create jobs in sufficient numbers, it is not at all clear that it will create *good* jobs – ones that help us reach the goals of well-being, sustainability and social justice.

This report starts to map out an alternative approach: one that will not just create jobs, but create good jobs and move us towards these goals. In this chapter we translate the three broad goals of well-being, sustainability and social justice into ten more concrete objectives that could become the focus for policy making.[12]

One thing is clear from the start: the intermediate objective that has dominated economic policy making in recent years – maximising GDP – no longer does the job. Under the 'grow, tax, and spend' model GDP was a useful metric, despite its well known imperfections. Now, growth in GDP and productivity cannot even be relied on to increase median earnings, let alone to help us achieve our broader social goals.

In the five years before the 2008-09 recession, productivity grew by 1.6 per cent a year but median wages remained constant. The earnings of the top 10 per cent, meanwhile, continued to accelerate upwards.[13] Similarly, over the past 20 years growing GDP has been associated with regional inequalities, as Table 1 shows:[14]

Table 1. Percentage variation of regional Gross Value Added from national average

	1989	1997	2008
North East	-18.2	-21.3	-24.9
North West	-10.5	-13	-17
Yorks and Humber	-12.3	-12.9	-19.2
East Midlands	-7	-9.1	-14.7
West Midlands	-10	-9.8	-17.4
East	-6.6	-7.2	-7.9
London	53.8	53.4	64.5
South East	-1.8	1.7	2.6
South West	-9.9	-9.6	-11.2
Wales	-17.2	-21.3	-27.9

If we acknowledge that GDP or productivity growth is an inadequate objective, then we need to ask what our key economic objectives should be. That is the question we attempt to answer in this chapter. We do not at this stage produce specific numbers and targets. Instead we focus on a framework that will be developed as part of our programme of work.

Some of the objectives we identify are not normally thought of as economic policy objectives. But that is part of the point: in the recent past we have not integrated our broader social objectives effectively into economic policy making. Indeed we have not really integrated clear objectives of any kind (other than GDP growth and inflation and unemployment minimisation) into economic policy making.

Well-being – the evidence[15]

Well-being, the positive state created by 'the good life', has been a goal for political economy and a source of controversy since at least the fourth century BC.[16] In line with Aristotelian ethics and modern self-determination theory, we believe (and have argued elsewhere)[17] that it is best defined as 'flourishing'. This implies a good relationship between the individual and the world, and the positive feelings that arise from this.

Crucially it is now possible to measure well-being, principally by asking people questions in surveys. Statistical relationships can be established between the survey responses and objective conditions (which can also, of course, be measured). This can then provide a foundation for concrete policy objectives.

Research into these statistical relationships, and the causal links underlying them, is ongoing. A significant step forward has been the launch of new work by the Office of National Statistics to measure well-being in the UK.

The evidence from this area of research so far supports the following propositions that are relevant to economic policy. In some cases the support from the evidence is very direct, in others the proposition is the best explanation of complex or even apparently paradoxical data.

- Income is important to well-being, but only up to a certain level which varies from society to society. That 'certain level' in the UK is probably around £30,000 on average, and more for a family with children.[18] Research compiled by **nef** suggests that there are similar levels in other European countries.[19] In the US the relationship between income and happiness reduces significantly at $50,000

and more or less disappears at $75,000.[20] There are reasons for believing that in developed countries, and for all but the poorest, the relationship between income and well-being is primarily driven by relative rather than absolute income, implying that universal growth in incomes on its own is a poor driver of well-being.[21]

- Equality is positively associated with well-being, although the relationship is complex. The diminishing returns and the importance of relative income just described explain much of this. There is also evidence that controlling for income levels, inequality has a negative impact on both mental and physical health.[22]

- Economic instability tends to have a negative effect on well-being, and unemployment is very damaging to well-being. The evidence on this is particularly clear cut. Loss of income damages well-being significantly more than a comparable gain enhances it.[23] The unemployed have sharply lower life satisfaction scores (5–15 per cent lower), and these results are stronger than can be explained by the effect of income loss alone.[24,25] The unemployed do not adapt to their circumstances in the way that those who gain or suffer income changes generally do, and the impacts of unemployment can be particularly long lasting.[26,27] High levels of unemployment are associated with loss of well-being among the employed too, presumably in part because they create fear of unemployment.[28] Job security is the job feature most commonly cited by employees as desirable.[29] Casual workers enjoy lower levels of well-being than permanent full-time workers.[30]

- The various components of a 'good job' are strongly associated with well-being. This is partly about the number of hours worked: well-being rises as hours worked rise, and there is a positive association between doing at least some work and well-being among the otherwise retired.[31] But this applies only up to a certain point: well-being starts to drop as hours become excessive.[32,33] Over 50 per cent of European Union workers surveyed wanted to reduce their working week to an average of 34 hours and would "even accept a corresponding drop in income to achieve this".[34] Similarly, and not surprisingly, long commutes significantly reduce well-being.[35] The work experience itself is also important: good social relations are highly valued,[36,37] as is the opportunity to do work that is interesting and that stretches the employee in what she is good at.[38,39] It is worth noting that overall job satisfaction in the UK has not risen in line with national income: it fell between 1989 and 1997 and then rose back to 1989 levels by 2005.[40]

- The way we consume does not optimise our well-being. There is evidence that our decisions about how to consume and spend our time do not maximise our well-being[41] and that in particular we spend too much time on passive pursuits at the expense of active pursuits.[42,43] It has also been shown that societies such as the UK that are more materialistic have higher levels of mental ill-health,[44] and lower levels of child well-being,[45] than societies (such as some in continental Europe) that are less materialistic. Advertising may lead us into consumption decisions that do not necessarily improve our well-being but contribute to this materialistic culture.[46]

- Short-term debt, such as credit-card debt or payday debt, has a negative effect on well-being. [47,48]

- There are other features of society that are strongly associated with well-being – features that are essentially 'non-economic' but are influenced by the design of the economy. These include

participation in the community and volunteering;[49,50] seeing family and friends;[51] social trust (i.e. trust in most other people);[52] and living close to open green space.[53] Negative externalities such as pollution and aircraft noise are (unsurprisingly) negatively associated with well-being.[54] Frequent moves of home for children are also negatively associated with well-being, both at the time and later in life.

Sustainability

We want to secure well-being now for ourselves, but also safeguard the well being of future generations. This highlights the importance of sustainability.

Throughout history, humankind has manipulated the natural environment to meet people's needs. Over the past 160 years, however, exponential growth in economic activity has led to climate change and overconsumption of renewable resources (e.g. fisheries, forestry, soil) and non-renewable resources (e.g. oil, minerals). [55] Taken together, these twin challenges are stretching ecosystem services and biodiversity to the point of transgressing critical limits.[56] These can be defined as,

> *"...non-negotiable planetary preconditions that humanity needs to respect in order to avoid the risk of deleterious or even catastrophic environmental change at continental to global scale."* [57]

This is unsustainable. As has been amply demonstrated elsewhere,[58] if we breach these limits future generations will suffer considerable and possibly catastrophic reductions in their well-being. Economic policy must be designed to prevent this happening.

Many environmental limits exist at a global level. As such, sustainability is primarily a property of the global economy. Should we fail to make the global economy sustainable, however, we *may* still be able to design a national economy that is resilient in the face of slow, long-term and sudden environmental change and natural resource scarcity. This will go some way towards sustaining well-being at the national level into the future.

Hence the three ways national economic policy can contribute to sustainability: 'doing our bit' for global sustainability, encouraging others to do their bit, and adapting to and coping with change.

- We need to do our bit for global sustainability, which for the time being means hitting our existing targets. We assume for current purposes that international negotiations, not just on climate change but also on other aspects of sustainability, will eventually be at least moderately successful. As part of the negotiation process it is likely that the UK will need to strengthen its existing targets and should be prepared to do so. However, in the mean time, we suggest that the most recent targets recommended by the Climate Change Committee are an adequate basis for economic policy. Pending an adequate international settlement, it is more important to get close to achieving the targets we have than to argue about their revision.

- Doing our bit involves a political as well as an economic task. Given an economy that is not working at capacity and the continuing export opportunities associated with investment in a low-carbon economy, meeting our sustainability targets (i.e. climate mitigation policy) may in the short to medium term (the next five–ten years) actually stimulate growth in consumption. In the longer term (beyond ten years), however, as the effect of higher energy costs become more severe this growth will probably stall. While this may

not be desirable, it is probably unavoidable if we are to meet emission reduction targets. The political task is to make this reduction in consumption growth acceptable. Economic policy has a central role in this. It can maximise the levels of well-being that the economy generates at any given level of consumption (as described in the previous section). It can also ensure a distribution of income that is fair and seen to be fair, resulting in a continuing increase in consumption for the least well off (we return to this in the next section). If well-being overall continues to rise, and any cuts in consumption fall in a fair and equitable way, then it will be a great deal easier to win the support needed to do our bit – i.e. meet our sustainability targets.

- National economic policy may be an instrument of a foreign policy designed to encourage others to do their bit. Economic policy can be a lever in global climate-change negotiations in three ways. First, it can demonstrate that the shift to a low-carbon economy is possible in developed countries. Second, it can stimulate the kind of economic activity, particularly in developing countries, that is consistent with an effective settlement. And third, trade and financial policy can potentially be used as negotiating tools to increase some otherwise resistant governments' short-term interest in a settlement.[59]

- We can and should integrate national economic policy with adaptation policy. Assuming major investments in the transformation of the economy are necessary anyway, the government should ensure that the investment increases rather than reduces our capacity to adapt to (and where possible reap benefits from) future change in the UK and internationally. This involves both an increase in the capacity to cope with *long term* changes (adaptation), and the ability to cope with external *shocks* (resilience). This is particularly important given the high levels of uncertainty regarding the direct and indirect impacts of climate change and resource scarcity. The changes involved will be human and political as well as physical, and the investment will be in human and social as well as physical capital. (**nef** will shortly be investigating how energy policy can be used to increase social as well as physical adaptability).[60]

Social justice

Economic policy should not just be about maximising sustainable well-being, but also about ensuring it is shared fairly – and seen to be shared fairly. Because well-being depends on work and relationships, among other things – there needs to be a fair distribution of the conditions needed for satisfactory work and relationships,[61] or as we put it in an earlier paper, "the fair and equitable distribution of social, environmental and economic resources between people, countries and generations".[62]

But what does this mean? What is fair? We can only answer these questions with value statements, but ones that we believe will resonate with many people in this country – so far this report has been light on values, and has simply drawn out the consequences of some fairly uncontroversial goals. We also believe that these value statements are best expressed as a direction of travel: an ideal that we do not expect to reach but one that we want to move towards. How far and fast we move will depend on a range of constraints, including social norms, but these social norms are themselves shaped by policy, rhetoric and where on the journey we are.

- *We should aim for equality of entitlement.* In an ideal world, everyone would have equal access to enough of those material and

non-material resources needed for a decent life (from health care to heating fuel to leisure time). This is essentially the idea set out by Amartya Sen, who argued nearly 30 years ago that an adequate 'living standard' for individuals is one that allows positive answers to questions such as:

> *Can they take part in the life of the community? Can they appear in public without shame and without feeling disgraced? Can they find worthwhile jobs? Can they keep themselves warm? Can they use their school education? Can they visit friends and relations if they choose?*[63]

- *We should aim for equality of reward*. In an ideal world, effort would be rewarded and the reward would reflect the effort not (as is now) where the individual sits in society when he or she decides to make the effort. At the moment a banker who makes a big effort gets a reward and a cleaner who makes a similarly big effort may also get a reward. But obviously the sizes of the rewards are different, because they are starting from different places.

- *We should aim for equality of short-term opportunity*. In an ideal world the opportunities open to an individual to use or develop his or her talents would be the same as those open to other individuals with similar talents. Of course different people have different talents, so the nature and extent of the opportunities will vary widely across society, but for those with similar talents the opportunities should be the same.

- *We should aim for equality of long-term opportunity*. In an ideal world there would be no correlation between the opportunities open to someone on completing their education and either their parents' occupational group or where they were brought up. Note that this implies some downward mobility among middle-class children, so is particularly difficult to achieve (and will be mainly the result of social and educational policies rather than economic policy).

The implications for policy – ten objectives

The argument so far implies, we believe, ten main objectives – for economic policy generally and for industrial policy in particular. Naturally there will be trade-offs between these objectives.

1. A decent income for everyone.
2. Secure, full employment.
3. Stable communities, with work spread throughout the country.
4. Satisfying work.
5. Work in the right quantities.
6. An economy that encourages people to do things rather than passively consume things.
7. An economy and forms of consumption that flourish within environmental limits.
8. Investment in the infrastructure and human capital needed for a sustainable economy.
9. Security of supply of vital goods and raw materials.

10. An economy that allows us to prosper while encouraging other countries to adopt sustainable economic policies and to enter into effective international agreements.

1. A decent income for everyone

The evidence is clear that simply targeting growth is not the most efficient way to maximise well-being. Similarly, experience in the UK and overseas shows that a growth-centred approach does not itself result in social justice as we have defined it. We believe that targeting an income band is a potential alternative: in other words, that there should be a target band of income based on the current income/happiness curve. The headline indicator of progress would be the proportion of the population living within this band.

Achieving the lower end of the band would mean that you could participate actively in society and that you could flourish, pursuing a fulfilling life without the distractions of insecurity and poverty. At the upper end of the band would be the point at which the relationship between further increases in income and happiness almost disappears. The lower end of the band should be considerably above subsistence but, depending on household size, below the £30,000 at which sharply diminishing returns kick in, as described above.

2. Secure, full employment

The evidence is very clear that high well-being is associated with low levels of unemployment and high levels of job security.

In some circumstances there is a trade-off between these two desirable outcomes. France, for example, is said to have chosen relatively high levels of both unemployment and job security, the UK relatively low levels of unemployment and job security. The challenge is thus to improve the levels of security and unemployment at which this trade-off takes place – to shift the curve, as it were – or perhaps even to eliminate the reasons that the trade-off exists. This should be an explicit objective of economic policy and could be captured in some compound measure of these two desirable components of economic security.

3. Stable communities and work spread throughout the country

Other desirable features of society contributing to high levels of well-being – stronger relationships, social trust, community involvement, children who are able to ‘put down roots’ – are associated with stable communities. A good economy is one that strengthens existing communities rather than requiring people to uproot themselves. The impact of economic development on communities and the extent to which it encourages dysfunctional geographic mobility should also be a priority for economic policy-makers.

Similarly a socially just economy is one in which opportunity is spread throughout the country. The ability to find employment and ‘get on’ should not be at the expense of established relationships and community – if it is, well-being and social justice will be undermined. It is also important to strive for a good match between the opportunities available and the talents of those seeking opportunity. A socially just industrial policy is therefore one that is well co-ordinated with training and education policy.

4. Satisfying work

Economic policy at the moment is almost entirely concerned with increasing output, although creating employment is seen as a desirable consequence of that. The evidence referred to above suggests, however, that economic policy should also be concerned with the quality of the jobs created. The level of job satisfaction should be a specific target.

5. Work in the right quantities

Long working hours are damaging to well-being. They may also make constructive use of leisure time difficult, reducing the time and energy available for the kinds of active pursuits and community engagement that are associated with high levels of well-being. Reducing the average number of hours worked should therefore be an explicit target for economic policy.

6. An economy that encourages people to do things rather than passively consume things

The evidence shows that the quality of consumption that we are engaged in matters to our well-being. As we have seen, it is likely that individuals will be exposed to pressures that may result in consumption decisions through which well-being is potentially undermined. An economic policy driven by well-being should be aimed at improving not only the quality of jobs but also the quality of consumption, with a view to steadily increasing the proportion of consumption devoted to those activities strongly linked to well-being. This does not, of course, imply state direction of leisure activities, pioneer camps and the banning of television. It does, however, imply identifying the biases and barriers that play a part in negative consumption decisions and attempting to remove them, as far as the constraints of a liberal society allow.

7. An economy and forms of consumption that flourish within environmental limits

If you did not care about well-being and social justice, it would be very simple to switch to forms of consumption that did not threaten environmental limits. You would simply increase the carbon price (and the price of other externalities) to reduce demand to acceptable levels. But this would cause enormous damage to well-being, both directly through higher prices and indirectly through job losses and instability. The task of a progressive industrial policy is therefore to create the regulatory regime and incentives needed for the switch to happen, but to do this in a way that does not cause too much disruption. This includes enabling industry to make the switch profitably. Policy initiatives in other areas are needed to manage the impact of increased prices and, as already noted, policies designed to increase levels of well-being and social justice may serve to soften the potentially negative long-term impacts on consumption growth.

8. Investment in the infrastructure and human capital needed for a sustainable economy

This is one particularly important part of the transition to a sustainable economy which we have described in our work on the Green New Deal.[64] It is estimated that investment in low-carbon infrastructure will need to amount to £550 billion over ten years for the UK to meet its commitments on CO_2 emissions.[65] The Green Investment Bank Commission acknowledged that a laissez-faire market approach will not deliver this because of market failures and barriers to investment.[66] In addition, the resulting physical infrastructure needs to be climate proof as well as climate friendly. The UK will need to define and invest in the human and social capital needed as we face the prospect of substantial change.

9. Security of supply of vital goods and raw materials

This kind of long-term contingency planning needs to be built into industrial policy. If we fail to secure a sustainable global economy and the global system is seriously disrupted, we can at least minimise the damage to well-being in the UK. We are not arguing for self-sufficiency in key raw materials or vital industries either now or perhaps ever. We *are* advocating the capacity to secure vital supplies in the event of a breakdown in the global market, whether through a switch to self-sufficiency or through bilateral trade.

10. An economy that allows us to prosper while encouraging other countries to adopt sustainable economic policies and to enter into effective international agreements

UK industrial policy should be designed so that prosperity in the UK is compatible with trade and overseas development policies designed to encourage other developing and developed countries to contribute towards creating a sustainable global economy – in a managed way. In this report we are not discussing what these trade and development policies should be, or exactly how they can be used as part of international negotiations. We simply note that there is significant potential for like-minded developed countries to band together and exert real influence in pursuit of what are vital national interests. It will be difficult to do this, however, if the consequence is damage to the national economy – hence the implications for industrial policy.

2. Why should government develop an industrial strategy?

Industrial policy may be back in fashion, but we know that there are those who don't approve; those who think it amounts to a kind of political expediency that defies theory and experience. There is a danger that this old orthodoxy will prevail, or at least undermine the coherence of any emerging industrial policy. As we will see, this has happened all too often in the past. For this reason we are setting out in this chapter why those who disapprove are simply wrong: why it is that we need to identify and then support the key sectors in which the UK can realistically compete.

In one sense, the case for an industrial policy is simply made by the conclusions of the previous chapter. It is self-evident that some industries will be more likely to deliver the ten policy objectives we outlined than others, and that the market will not automatically ensure that these industries are successful in this country.

Some industries are compatible with achieving a decent income for everyone, while others will depend on low wages. Some are more likely to be associated with economic and social stability than others. Some can be associated with an active regional policy that ensures work spread throughout the country. Some are more likely to provide satisfying work. Some will encourage people to do things rather than passively consume and will be associated with forms of consumption that flourish within environmental limits. Some will have commercial incentives to invest in the infrastructure and human capital needed for a sustainable economy. And some will help us achieve security of supply of vital goods and raw materials.

Industrial policy on its own will not achieve these various objectives. But it can certainly help.

What we are arguing may make some people uneasy. Aren't the kind of objectives we have set out ultimately dependent on economic success more conventionally defined? Up to a point: we do, of course, need to be competitive. Won't the kind of interventions we say are needed to steer us to our desired destination destroy the economic engine that is needed to get there? No.

In the rest of this chapter we will explain why this is, looking first at some of the history and then at some of the theory. We agree that achieving our objectives depends on thriving businesses and the potential for high wages that these create. However an enlightened, interventionist industrial strategy – one that includes selecting and supporting the sectors in which the UK has a potential competitive advantage and which will help us achieve our objectives – should create a positive environment for businesses to flourish.

Note that we are advocating industrial *strategy* in this sense, and not just industrial policy. Government already intervenes in an ad hoc way. And as Korean economist Ha-Joon Chang points out, many of the interventions designed to create the general conditions in which markets function already support some sectors more than others, and are therefore in practice a form of industrial policy.[67] This applies whether you are talking about research and development subsidies (which have often favoured high-tech industries), the location of major infrastructure projects, or greater state support for tertiary education in one subject area compared to another. Then there are defence contracts, regional policies and taxation policy – not to mention massive injections of public money into the banking system. If government intervenes at all, it will do so with differential effects.

In addition, despite the theoretical orthodoxy, UK governments have from time to time intervened in an ad hoc way to prevent industrial failure (from Rover to the banks). In effect successive administrations have been practising various forms of selective industrial policy over the past 50 years and more, even if most of the time they have denied doing so.

Despite this history of policy intervention, there have not been (with rare exceptions) any overarching industrial *strategies*: attempts to establish a set of coherent, credible, long-term goals, around which policies can be developed.[68] Pragmatism has ruled, with policy dictated too often by perceived short-term needs. For example, the National Plan of 1965 was mercilessly sacrificed in the devaluation crisis of 1966-7. Pragmatism killed off 1975's short-lived Industrial Strategy as the Wilson government broke with its own prescriptions to bail out the near-bankrupt Chrysler UK operation in 1976.[69] With the adoption of a broadly neoliberal approach to economic management after 1979, pragmatic adjustment to market forces came to substitute for even the pretence at a wider strategy.

We agree with David Green of Civitas when he writes: "We should look upon the Government as the servant of free enterprise, whose task is to ease the way for the creativity and drive of the people."[70] But the best servants are not just responsive and ad hoc – a bit of procurement here, a bit of trade policy there. They have a strategy. At the very least, given that government is already selectively intervening in the economy in the ways just described, a good government should examine whether the collective effects of these interventions are in the interest of business, the economy and the population as a whole. In short, our leaders need to take a strategic rather than an ad hoc view.

Successful industrial policy

In the mid-nineteenth century British economists following David Ricardo argued that Germany's comparative advantage lay in agriculture, and that attempts by the state to encourage a more robust industrial sector would be an inefficient interference in the international market. Fortunately for the Germans (and unfortunately for the British), Chancellor Otto von Bismark disagreed – and backed his instinct that the state had a strategic role to play in developing the industrial economy. By the end of the century, Germany's growing economic power was inspiring near panic in Britain.

A hundred years later, Finland, faced with a catastrophic recession following the collapse of its major market in the USSR, chose to shift its economy away from a dependence on raw material exports and into telecommunications. A national economic strategy was adopted to promote its nascent high-tech cluster, co-ordinating interventions. Its annual productivity growth rate rose by 30 per cent over the following decade, and companies such as Nokia became world leaders.[71]

Examples of industrial policies like these can be found across nations and across time. They include Japan and the south-east Asian Tiger economies

from the 1960s to the 1980s; [72] the US promotion of its tinplate industry in the 1890s,[73] and directed credit programmes in India in the 1990s. [74] There is Chile's highly successful salmon industry, which was built on a quasi-public agency that invested in and scaled up salmon farming, sharing the benefits of research and development with smaller firms.[75] There is the Brazilian aircraft company, Embraer, which was established and promoted through state ownership and became a leading global player. In both these last two cases, the businesses were privatised once they had become successful.[76]

In the case of Latin America and Asia, Dani Rodrik of Harvard University concludes that "it is rather difficult to identify instances of non-traditional export successes... which did not involve government support at some stage".[77] However, it is not just developing economies that can benefit from industrial policies. Rodrik goes on to comment that the United States "maintained its lead in those sectors, like aerospace or nuclear energy, where there was a substantial amount of government aid and support".

Turning closer to home, the superior industrial performance of Germany compared with the UK in the post-war period has been attributed to, among other factors, significant structural differences in the banking industries of the two nations.[78] Policy towards the banks is part of what is broadly understood by 'industrial policy', which should be thought of as referring to all the ways in which government impacts economic development, including how markets are designed and regulated. In terms of more specific and focused interventions, an intriguing monetary innovation used by Guernsey funded rapid development in infrastructure – despite the island's economy being overburdened with debt.

These last two examples demonstrate the importance of capital allocation in economic development: as Pavan Sukhdev of Deutsche Bank and the United Nations Environment Programme (UNEP) puts it, "misallocation of capital is at the centre of the world's current dilemmas".[79] At the same time the relative success of the UK pharmaceuticals and aerospace industries highlights the potential importance of government procurement policies.

Despite the positive performance of these two industries, some argue that the UK is different when it comes to industrial policy. Our economic history since 1945 shows that intervention is generally counter-productive, they argue, and it was only when the tired old approach of successive governments was swept away by Margaret Thatcher in 1979 that we started to succeed again. Perhaps the Germans and the Japanese can do this kind of thing, the argument goes, but it just isn't the British way.

In the next section we will show that this argument is based on a myth, not history. And in the section following that we will answer those who remain sceptical about the very idea of a UK industrial strategy.

Debunking some myths about post-war economic history

The history of industrial policy in the UK is not commonly supposed to be a happy one. There is a litany of failing 'national champions' – British Leyland, ICL, British Shipbuilders – and of government intervention that merely worsened the underlying problems. Economic growth in the UK was slower than in other leading industrialised economies; our share of world manufacturing exports shrank from 26.5 per cent in 1950 to just 9.1 per cent in 1979; government policy lurched wildly between fiscal expansion and sudden contraction. It took a fundamental reverse of policy from 1979, so the story goes, to rescue the economy. A sharp turn against inefficient manufacturing and inept intervention was made. A new, service-led, competitive economy was built.

British Leyland, ICL and British Shipbuilders were indeed examples of failure of course, and we return to British Leyland in the next chapter. Recent economic history, however, has challenged the broader picture of failure that seems to form part of our national myth. To the extent that Britain had weaker economic growth than its European counterparts, this can be attributed in part to its more limited scope for technological catch-up when compared to those nations that had been utterly devastated by war. As the years passed, the UK's significantly smaller agricultural sector also became a factor.

Agriculture was a ready repository of easy productivity gains and labour that could be quickly reallocated across much of the continent, but it was a tiny part of the British economy even by 1945.[80] The view of the UK as 'the sick man of Europe', popular in the post-war period, has been overstated.[81] For much of that period, British manufacturing productivity growth only slightly lagged Germany's, seriously falling behind only during the early 1950s and later 1970s. Germany was ahead, but not always decisively.[82] Similarly, engineering underwent a 'minor productivity miracle' as it closed the gap with the US over the same period.[83]

If the British disease was never so debilitating as sometimes claimed, the subsequent recovery was overstated. It is true that the UK economy was radically transformed from 1979 onwards – most obviously in the collapse of manufacturing, driven down from 30 per cent of the economy in the early 1970s to just 12 per cent today.[84] That huge shift, however, did not lead to noticeably improved economic fortunes.

Table 2 shows the average annual growth rate of GDP from 1950 to 2010. It is difficult to argue on this basis that in 1979 the British economy experienced a dramatic turnaround in long-term performance. Claims of a 'renaissance' appear overblown.[85] Productivity growth has undoubtedly improved in manufacturing but much of this can be attributed to the 'shaking out' of inefficient producers in the recession of the early 1980s,[86] when 20 per cent of manufacturing capacity was lost. The sector became smaller and leaner. But productivity growth in services, in particular, remains low.

Table 2. UK average annual growth by decade, 1950-2009

Decade	Average annual GDP growth (%)
1950-59	2.46
1960-69	3.14
1970-79	2.42
1980-89	2.48
1990-99	2.23
2000-09	1.68

The rise of the private service sector is another myth. Manufacturing employment fell from seven million in 1979 to under three million by 2008, with particularly damaging effects in regions outside the South East. Yet private sector services, supposedly the heralds of a new post-industrial economy, have failed to create enough jobs to compensate. Employment in financial services grew by only 332,000 over the entire period; and the bulk of this was in London and the South East.[87]

In this period of manufacturing decline it has been the state that has plugged the gap. Despite much rhetoric in the early Thatcher years about the need to 'roll back the frontiers of the state', 650,000 new public-sector

jobs were created between 1979 and 1987. A further 1.76 million were created between 1987 and 2007. In the absence of a private sector capable of sustaining job creation, whole regions of the country became dependent on state employment. In the north east, the public sector accounted for 55 per cent of jobs created between 1998 and 2008. In the West Midlands the proportion was 63 per cent over the same period.[88]

But does it work in theory?

Examples and history won't satisfy everyone. 'Does it work in theory?' some will ask. The answer is yes, and here we set out briefly why.

The traditional objective of industrial policy is to maximise people's wages. For a developed country, this depends on achieving a competitive advantage over other nations. Without competitive advantage, wages would be likely to sink to the global average. The question is thus how to achieve that competitive advantage.

Michael Porter, in his now-classic *Competitive Advantage of Nations,*[89] argues that a country's advantage is rarely built on traditional factor endowments, such as land, location, natural resources and labour. We would go further and say that a developed nation's competitive advantage can no longer be built on more modern factor endowments, such as advanced skills or university research departments. Just as with an individual company, at state level it is vitally important to invest in research and development and specialist skills. But these factors are far from sufficient to deliver competitive advantage in a globalised world where human and intellectual capital are rapidly moving east and south.

Porter went on to argue that advantage in fact arises through the creation of clusters of interconnected firms, suppliers, related industries and institutions, all arising in particular locations. While cluster theory has been criticised in recent years,[90] we believe the underlying point remains valid. Perhaps what Porter has to say about the competitive advantage of *companies* makes the point best. They achieve competitive advantage by "deliberately choosing a different set of activities to deliver a unique mix of value".[91] This is what he calls 'strategic positioning' – something that others find difficult to imitate. They find it difficult because the positioning permeates every aspect of the company.

As Porter puts it: "Different positions (with their tailored activities) require different product configurations, different equipment, different employee behaviour, different skills and different management systems." An essentially similar analysis of advantage arising out of complex forms of co-ordination is given by CK Prahalad and Gary Hamel[92] (although they use very different language), by John Kay[93] and by those writing in the tradition of evolutionary economics, such as Richard Nelson.[94]

Companies can appropriate value because the functions they perform are complex and difficult to imitate. The same form of argument can be used for the people of a nation: they can appropriate value because they are part of a complex and difficult-to-imitate system. This may or may not take the form of a cluster. In other words national competitive advantage relies on building up a complex set of strategic, interrelated supplies, institutions and companies that cannot easily be reproduced by another nation – and certainly not by a single company moving its facilities from one nation to another.

Taken together and co-ordinated, these separate elements may constitute competitive advantage, where individually they do not. Crucially there is a degree of specialisation at national level – allowing others to create advantage in other areas and reducing the incentives for imitation. To quote Porter again, "the essence of strategy is choosing what not to do".

But why is government intervention required to help this happen?

The answer is that it isn't always – but sometimes it helps. This is for two main reasons. First, the benefits of this co-ordination flow to everyone involved, not just the initiator. This means that sometimes co-ordination is worthwhile at the social level but the necessary investment is not in any one company's interest. Government then has to step in. Second, sometimes the costs involved for some companies outweigh the benefits – even once an industry is successful. In such cases government needs to adjust the incentives so that everyone benefits – otherwise one player may drop out and the whole system may fail.

Government can play these roles by being a catalyst and challenger. It can stimulate early demand for advanced products; it can help with the provision of specialised factors of production; and it can act to remove distorting subsidies from non-strategic industries. It can offer a shared vision, particularly when economic restructuring is needed in times of crisis.[95] In short it can overcome the pervasive failure of co-ordination that so often occurs when multiple, private firms and institutions need to co-operate to complete a shared goal.[96]

Calculations by firms about what is and is not worthwhile will depend in part on levels of certainty. Market participants are rarely – if ever – as well informed as the standard economic models suggest. They face an uncertain future, including challenges from other actors whose motivations may be unknown to them. In newly emerging industries and economies, this problem of uncertainty is especially acute. The kind of interventions by government just described help to reduce uncertainty. Increased certainty can in turn help increase the trust needed to make market behaviour viable, securing the conditions in which transactions can take place.[97]

In addition government may have to help overcome other generally recognised market failures and to ensure that British industry is not disadvantaged by the activities of other governments.

Dealing with the objections

There are a number of well established objections to industrial policy in the academic literature. These have centred around two related problems.[98] The first is the presumed inability of government to be as well informed as private firms and individuals. Because government is distant from the market, the argument goes, it is incapable of understanding fully what the market needs, whereas those who participate directly – and stand to gain or lose directly from their decisions – will of necessity be better informed.

The second objection is that government is far too vulnerable to manipulation by private interests. Once government is intervening in the market, businesses, organisations and individuals have a significant interest in trying to influence its decisions in their favour. This behaviour is inefficient, distorting market outcomes and undermining government policy.

It is true that making informed decisions about interventions for the creation of new industries and jobs will be challenging, requiring wide consultation on the part of government. It is also true that 'rent seeking', corruption and capture by private interests are all problems. But an open, transparent process – with well defined objectives – can help overcome these problems.

There are serious, practical challenges to overcome. But they apply equally to most areas of government activity – health, education, public services, infrastructure, business law and regulation, energy policy and the planning system to name the immediately obvious ones. The fact that something is difficult to do is not a compelling argument for not doing it at all. In some of

the examples described in the next chapter, these challenges have been met and overcome.

In any case those who make objections to industrial policy interventions tend to compare government action as it really is with free markets in their idealised form. So they assume that markets really are open and transparent, with all participants facing the same price and that price representing a fair communicator of information about the good or service being traded (its relative scarcity and value in particular, or its expected future value).

But of course market failure is pervasive. Important markets may not be competitive, with some participants holding monopoly power over others. Market participants may not be well informed. The institutions of the market may not function as smoothly as the theory demands, being subject to participation and transaction costs. It is therefore an empirical question, not a theoretical question, as to whether the imperfections of government outweigh the imperfections of any given market.

In any case the industrial policies we are discussing relate to the creation of new economic possibilities (new, green industries) and the promotion of wide social goals (decent, sustainable jobs). These are not objects for which markets currently exist, of necessity. Nor will private actors (firms, individuals or organisations) be likely to create them, since they are major social goods whose benefits will be felt across very large numbers but are very costly to produce. No private market participant will bear such large costs when the benefits are so diffuse.[99] It is government, in its role as co-ordinator, that is best equipped to overcome these hurdles.

In short, the objections amount to dangers and difficulties that can be overcome, not to reasons for inaction. The implication is that what is needed is a ‘strategic state’ – neither a ‘nanny state’ nor a ‘small state’, but one that is strategically addressing the current and future needs of the country and working in partnership with business and civil society.

3. How should government intervene? Some lessons from the past

In this chapter we describe a handful of industrial policy examples: UK car manufacture versus the UK aerospace industry, UK pharmaceuticals versus French pharmaceuticals, and the use of monetary policy in Japan, South Korea and China. The aim is not to produce a definitive set of lessons as to how government should intervene, but rather to show how reviewing even a small number of examples can produce lessons.

UK car manufacture versus aerospace

Perhaps more than any other industry, car manufacture has come to exemplify the failures of government intervention. Once there was a single British-owned firm, British Leyland, that employed 200,000 people at 46 factories, selling to nearly 30 per cent of the domestic market. Now there are no British-owned high-volume car manufacturers.[100] British Leyland, formed through a succession of government-sponsored mergers and nationalised in 1975, last achieved an annual net profit in 1978 – despite state aid totalling £2.9 billion ahead of privatisation in 1988. It was steadily dismembered until its final incarnation closed its doors in 2005.[101] The UK fell from being the largest exporter of cars in the 1950s, to the twelfth largest today.[102]

The UK aerospace industry, in contrast, is on some measures the world's second-largest. Airbus, a joint European venture, is one of only two major civil aircraft manufacturers globally.[103] Employment has declined, from approximately 250,000 in 1980, but productivity has skyrocketed – from £55,000 value-added per worker in the same year to £159,500 in 2006.[104] Rolls-Royce, meanwhile, is the world's second largest manufacturer of aircraft engines, headquartered in London.

Aerospace has been the direct target of UK government intervention on several occasions. Rolls-Royce was nationalised by the then Conservative government in 1971, after it hit major financial difficulties. British Aerospace was formed, in 1977, from the nationalisation and merger of four manufacturers, two of which were themselves the product of previous government-led consolidation in 1960.[105] British Aerospace was privatised in 1981, and became BAe Systems in 1999 following its merger with defence electronics specialist Marconi Electronic Systems. Rolls-Royce was privatised in 1987.

Even in private hands both companies remained subject to direct government influence by virtue of their heavy reliance on defence contracts. Close relationships were developed with the major government buying department, the Ministry of Defence. By 2005 the Government had explicitly identified "which industrial capabilities we require to be sustained onshore" in the interests of preserving 'sovereignty' in that year's Defence Industrial Strategy (DIS).[106]

Since only one domestic producer was able to meet the specialised defence needs the document laid out, it has been suggested that BAe Systems was, in effect, functioning as a national champion.[107] BAe's CEO at the time of the strategy's publication has indicated its importance to the company, claiming that "if we didn't have the DIS…then there had to be a question mark about our future stay in the UK".[108]

Airbus was the product of cooperation among European companies seeking to create an aircraft manufacturer that could enjoy the economies of scale needed to compete with the US giants. It began in 1970 as a consortium of French, German and later Spanish and UK companies, assisted in its early years by cheap public loans. By the 1990s it was a major global player, breaking Boeing's near-monopoly in large civilian aircraft manufacture.[109]

Both car manufacturing and aerospace emerged from the war in similar positions – as second-placed producers behind the US, with a strong legacy of engineering expertise and multiple, often rather small, companies competing domestically. Consolidations and mergers, often at government behest, were undertaken in both. Yet their fortunes diverged sharply over the decades. Why was this?

For cars, government consistently attempted to maintain high-volume production on the assumption that this would achieve low per-unit costs capable of generating profits in a mass market. But it never really understood how to reach that market, making unrealistic assumptions about demand in increasingly fragmented and globalised markets.[110] These unrealistic assumptions were built into the Ryder Report that recommended nationalisation in 1975, the rescue plan of hardline director Michael Edwardes (appointed in 1977), and the drive to privatise in the 1980s.

For aerospace, on the other hand, government understood the market very well – not least because it could act as its own intelligent buyer for defence products. It played an active role, implicitly at first but then quite explicitly in line with the DIS, in shaping its suppliers after its own requirements.

The European consortium, Airbus, was established explicitly to cater for the growing market for mass transit aircraft. Indeed, the single most dramatic failure for the UK government in aerospace was determined precisely by a failure to adapt to this rising demand. Concorde was an engineering triumph but a dismal commercial failure, exactly because it did not meet market requirements. Its construction was driven by a combination of diplomatic niceties and government triumphalism, and led by the engineers rather than the anticipated customers.[111]

A fundamental misunderstanding of the changing car market led to inappropriate targets, and undermined successive government policy for British Leyland. A close knowledge of its own needs for aerospace, tied to wider (defence) goals, helped deliver success for aerospace.

UK and French pharmaceuticals

Until very recently, the UK pharmaceutical industry has been hailed as a shining example of market-led success.[112] With government compensating for the 'market failure' in the provision of basic research, pharmaceutical companies have been free to conduct their own research and development. They have responded by investing a staggering amount of money, spending nearly £9 billion on research and development – about 35 per cent of the UK private sector total.[113]

Between 2000 and 2004 the UK was second only to the US in global drugs brought to market, while in 2003, 23 per cent of the top 75 drugs sold were

manufactured by UK companies. Two of the top ten global pharmaceutical companies are based in the UK.

But this has not been a success story of the market alone. The UK pharmaceutical industry has come to depend heavily on government intervention, aside from spending on basic research.[114] Most health-care provision was nationalised in 1948 with the creation of the National Health Service. Medical suppliers were, however, left in private hands; costs of health-care provision were borne directly by the government through general taxation, and many medicinal costs through the use of a fixed prescription fee (first introduced in 1952).

Drugs prices are not tightly controlled. Instead, the Pharmaceutical Price Regulation Scheme (PPRS) depends on voluntary negotiations between government and industry to establish 'fair' rates of return across UK operations, with individual drug prices freely established within that regime. Medical regulation, on the other hand, is strict – and historically dependent on the demonstration of a drug's medical efficacy to a panel of independent academic experts.

The combination of high allowable rates of return, a stable £9 billion-a-year customer in the NHS, and tight medical regulations propelled UK pharmaceutical companies increasingly towards research-intensive, 'blockbuster' discoveries. Only four new drugs a year were discovered (on average) between 1965 and 1985, but the majority of these were of global significance.[115] It is these drugs that have led the expansion of the sector for the past few decades.

The UK institutional arrangement is unique within Europe. In contrast the French Government adopted a tight price-regulation regime that concentrated on the provision of cheap medicine for the domestic market. Tight controls sharply depressed the earnings of drugs companies operating in France, counterbalanced by a relatively loose medical regulatory regime that required only a single official's approval for the release of a new drug onto the market. The official's role was to seek to establish a drug's purity, rather than applying the more stringent test of its medical efficacy. French pharmaceutical companies were thus driven towards the creation of large numbers of relatively generic, low-profit drugs, discovering roughly ten a year between 1965 and 1985. The difference in institutional arrangements between the two countries helps explain the divergence in the fortunes of their respective pharmaceutical sectors.

UK pharmaceutical policy has been so successful in building and sustaining a world-leading industry through a period of intense change that it has been labelled an 'implicit' industrial policy.[116] Importantly, the objectives of this implicit policy were not simply growth at all costs. Instead, close co-operation between industry and government – mediated by disinterested experts overseeing regulation – allowed space for economies of scale to be created and exploited, and provided the solid domestic base from which companies could compete globally. It was the co-ordination of policy, implicit at first but made explicit in recent PPRS agreements,[117] that delivered the industrial goods.

Asian industrial production: investment and monetary policy

In this section we describe the role of monetary policy in effective capital allocation in three key economies: Japan, South Korea and China.

The Japanese economy emerged from World War II in a state of disarray. Japan's manufacturing capacity had been reduced to pre-war levels, resulting in serious food and energy shortages.[118] The main thrust of the

Japanese strategy was selective guidance of lending and investment towards key industries, in an effort to promote a sustainable recovery.

This policy was implemented by directing commercial banks to give preferential rates for priority companies, while limiting the total loan finance available from each financial institution in order to contain inflation.[119] Energy, infrastructure and export industries were favoured while retail, real estate and consumption businesses were neglected.[120]

Recovery occurred, although more greatly in some sectors than others, while unemployment remained low and living standards rose. Loading financing in favour of specific industries did prove successful in jumpstarting production, as coal production reached its goal of 30 million tonnes in 1947 – and was thus able to support expansion in other sectors.[121] Growth over the following decades was exceptional, even by post-war standards. It was co-ordinated through the Ministry of Industry and Technology, and heavily reliant on direct credit controls and government investment.[122] Japan moved from a position of relative economic backwardness to clear technological leadership in critical sectors such as automobiles by the 1980s.

Most accounts regard these practices as losing efficacy from the 1980s onwards because of financial liberalisation.[123] Once there were plenty of other options for corporations to finance their operations, such as issuing corporate bonds, government efforts to steer lending ceased to be useful as a stand-alone policy tool.[124] Werner takes this analysis further to suggest that not only did this instrument outlive its usefulness, but stimulation of commercial bank credit by the central bank continued through the 1980s and was the primary cause of Japan's asset-price bubble of the same period.[125] Despite the clear early successes, it has also been argued that credit guidance gave rise to clientelism as industries continued to receive preferential financing 40 years later.[126]

In South Korea, an economy devastated by war and inflation (the inflation rate averaged 35 per cent between 1953 and 1957[127]) created the difficult task of fostering economic recovery without sparking the hyperinflation so common in post-war economies. The approach adopted was to control overall credit levels while directing the sectoral allocation of credit to ensure that strategic industries were not starved of capital. The Loan Priority System rationed credit according to its significance and necessity.

Loans given to productive activities, such as chemicals, textiles, machinery, metal mining and food production, were eligible for rediscounting from the central bank. Unproductive loans were classified vaguely (on purpose, so that the amount of categories included could expand easily). Service and consumer industries – such as beverages, furniture, cosmetics, and retail trade – were not eligible for rediscounting. Loans that weren't categorised as either productive or unproductive were not allowed to be extended at all.[128]

The Government's role extended beyond setting boundaries for credit allocation, however. In order to help ensure that credit was put to effective use, there was a close relationship between Government, banks and industry that helped overcome inadequately developed financial markets. The government held monthly 'export promotion meetings' between senior officials (including the President) and the heads of major banks and industrial firms, in order to share economic data, discuss market trends, and evaluate loan performance.[129] Industrialists' concerns were largely heeded by the government, yet they were at the same time held accountable for strict export metrics to determine their credit worthiness. This procedure helped South Korea to ration credit to successful, growing industrial firms, while minimising losses on non-performers.[130]

In our final example, China also retained strict control over the financial and monetary system as it deregulated its economy during the reform period from 1979 to 1993. The Government directly owned all banking assets, thus subordinating management of the banking system to central authorities. The State Planning Commission (SPC), together with the Ministry of Finance, issued the credit plan which dictated the investment policy to be followed by most financial institutions.

There were a number of issues with this credit plan. Unlike in South Korea, the roles of ensuring macroeconomic stability and delivering microeconomic credit allocation were blurred. The central bank, because it became a tool of fulfilling the government's investment and industrial ambitions, was unable to conduct proper monetary policy, so macroeconomic stability and price stability were both poor. The latter was further aggravated by the plan's inability to adequately control credit expansion.

The instruments were poorly designed; quotas were given as credit ceilings, yet it was in banks' best interest to expand beyond them, since that would mean receiving a higher quota for the following year. Coupled with an implicit guarantee by the central bank to cover any lending shortfall, the result was that banks faced a very soft budget constraint. This led to excessive and often unproductive credit extension. This is evidenced by the high degree of non-performing loans that state-owned banks had. According to China's published measures, as a percentage of total loans non-performing loans were 20 per cent in 1994, 25 per cent in 1997 and 35 per cent in 2000.[131]

The role of government in the rapid rise of Japan, the Asian tigers and China cannot be ignored. Undoubtedly lessons can be learned from the various ways in which governments have conducted monetary policy, and we consider some key points below.

Some conclusions from the past

The following are some initial conclusions from these examples:

- It is essential to have intelligent targets for the chosen priority sectors, developed with an understanding of the market and in close conjunction with the industry. Intervention in UK car manufacturing failed because this was lacking.
- These targets should ideally be anchored to broader social objectives – such as those of the NHS in the case of British pharmaceuticals, or those of UK defence in the case of aerospace. This makes them more credible and less likely to be undermined by pragmatic, crisis-driven economic management and the capture of policy by interested parties.
- Similarly, the successful Asian examples involved an industrial policy that was well joined up to other government regulation, expenditure, and public service provision. All of these elements together were part of an integrated economic policy framework. An example of this was the Japanese focus on rapidly achieving a certain tonnage of coal production before developing industries further along the supply chain.
- Government procurement is a particularly powerful tool – particularly when combined with the right regulatory regime, as the UK pharmaceutical industry has found.
- More generally, specific interventions need to be closely co-ordinated as part of a clear strategy to achieve the objectives, with

high-level leadership involving government, industry and wider civil society as appropriate.

- In the absence of this, and clear targets, there is a real danger of continuing with interventions after they have achieved their purpose. This is what happened in some cases in South Korea and Japan, leading to clientalism, regulatory accumulation, the housing bubble and too-big-to-fail organisations, such as China's state-owned enterprises or the Korean Chaebols.

- Allocation of credit and investment should remain with the private sector. Government should not be an implicit or explicit guarantor for firms or an industry. It can, however, guide private investment and credit to particular sectors. Interestingly, the proposed new HM Treasury financial regulation infrastructure under consultation at the time of writing[132] would allow the Bank of England greater scope to constrain credit growth *in particular sectors* if it saw risks of bubbles developing. It would be able to influence credit allocation and the growth of individual banks, and the system as a whole, through adjustments to capital adequacy ratios or risk weightings required for certain classes of loan, or by changing loan-to-value requirements for certain asset classes. This allows the central bank to set the envelope of sectoral bank lending with reference to macroeconomic objectives while leaving credit assessment of firms and projects firmly in the private sector.

- The autonomy and technical capacity of the bureaucracy are critical, helping to guard against lobbyists and vested interests. This is often seen as part of the success of Japan and the Asian Tigers.

4. Next steps: developing an industrial strategy for the UK

In the previous chapter we looked at some examples of selective support for particular industries. In designing an industrial strategy for the UK for the next ten years we can learn from these and similar lessons from the past – while bearing in mind of course that the problems we face now are different in kind from those facing Japan in the post war era or Britain in the 60s, 70s and 80s. Hence the importance of the objectives we set out in chapter one, designed to address the systemic problems we face. These include climate change and other threats to environmental sustainability, rising oil prices, the increasing economic power of the BRIC nations, age imbalances between Europe and the developing world, regional imbalance within the UK, and instability in and inadequate governance of the international financial system. The question is what would an industrial policy look like that addressed these issues – as well as the short term need for jobs – and really delivered well-being, sustainability and social justice?

Developing such a strategy will take time and the result will need to be constantly updated in response to changing circumstances. However we intend to start the process by providing some initial answers.

The first task is to identify which industries are likely to perform well against the ten objectives set out in chapter one, together with their employment potential region by region. The necessary analysis will build on relatively conventional competitive analysis: will the UK be in a position to compete effectively in these industries? Clearly, decent incomes, secure employment and stable communities will depend on that.

The second task is to identify the interventions needed to ensure that these industries are successful and deliver against the ten objectives. This requires an understanding both of where support will and will not be needed and of the likely impact of the different levers available to national and local government. We will draw on the extensive international experience of industrial policy to assess these impacts, modelling their impact in combination. The range of such levers includes but is not limited to indicative planning, direct investment of public funds, strategic direction of private investment through credit controls and other means, pricing of externalities through market or tax mechanisms, active use of regulation, promotion of demand, procurement, trade policy, education and training, science, research and innovation, regional and local support, land use planning and competition policy. We will consider the impacts on regions and nations within the UK that are in particular need of development. We will also consider the impacts on small and medium-sized business.

Because of its history, industrial policy is sometimes associated exclusively with big monolithic industries. We anticipate, however, that some of the most important benefits will be for small and medium-sized enterprises, which will be an important source of *good jobs*. **nef** has years of experience

in working with small businesses in deprived areas, and there are a number of important lessons about the kind of support such businesses need. These should be taken into account when considering the impact of different levers.

Box 2. Developing businesses in areas of deprivation

nef has helped create some 770 businesses in areas of deprivation with a four-year survival rate in excess of 90 per cent. We've found that the essential elements are:

- A coaching approach, combined with effective network support.[133]
- Demand stimulation, especially in the shape of effective purchasing policies by government and other actors.[134]
- Effective provision of financial support by community development finance organisations and locally focused banks. A key to building this section further would be the introduction of a UK Community Reinvestment Act similar to the one in the US.[135]

Finally, we will look at the institutional implications of our recommendations. How should strategy be developed and implemented over time? What capabilities will be needed within national and local government? What structures? How should industry be involved?

We are planning to work with both academic and industrial partners on this project, and would welcome discussions with those sympathetic to the overall objectives and approach.

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