# Government through business lenses

Government is not a business. But applying 'business lenses' to its issues can provide useful perspectives. As in previous years, *The State of the State* considers the public sector through the lenses of productivity, talent and the balance sheet.

**The productivity lens: Exposure to Brexit**

Through a public sector productivity lens, Brexit has significant implications. In the short term, the renegotiation process will place substantial new burdens on a number of government departments in Whitehall and the devolved administrations that will need to be resourced. In the longer term, Brexit could require the UK public sector to establish new processes or even new agencies to take on activities that it repatriates from the EU.

Brexit provides an opportunity for the Government to rethink – rather than recreate – every responsibility it takes back from the EU to make sure they are as productive and effective as possible.

**To explore these productivity implications further, *The State of the State* assesses ten of the most exposed aspects of the UK public sector to Brexit:**

**1. Public finances**

The state of the UK's public finances rests on the state of its wider economy, and is therefore highly exposed to Brexit's impact. HM Treasury modelling suggests that the deficit – the difference between what the state earns and what it spends – could be up to £19 billion more this financial year and £38.5 billion more in the next financial year as a result of the referendum result.[12] Making up that shortfall could see the government's debt rise by up to £17.3 billion this financial year and £53.5 billion in the next. How any shift in the public finances affects public spending would of course depend on ministerial choices and appetites for adjusting fiscal policy.

Changes to exchange rates also come with implications for the public sector as a major purchaser of goods and services. The post-referendum fall in the pound could push up the cost of imports like pharmaceuticals and fuel, for example.

While the public finances are exposed to Brexit effects nationally, the local public sector's finances are also exposed in the event of economic decline. Reform to council finances has made local government highly dependent on the strength of their local economy, and recessionary pressures increase demand on local services including housing, children's services and the NHS. Recalibrated fiscal plans could also have particular implications for non-protected areas of day-to-day public spending, especially if the Government weights investment towards infrastructure.

**2. Whitehall's capacity, capability in trade negotiations and engagement with business**

While all sectors of the UK economy may be affected by Brexit, just one – the public sector – is also responsible for its implementation. In the weeks following the referendum result, Whitehall moved swiftly to establish the Department for Exiting the European Union (DExEU) and take stock of its capability needs. However, there is little doubt that disentangling the UK state from the EU will present an era-defining challenge to the civil service. In fact, a memo to the Cabinet Secretary from the Hon Bernard Jenkin MP, chair of the Public Administration and Constitutional Affairs committee, described Brexit as Whitehall's biggest challenge since the Second World War. It went on to urge the civil service to build trade negotiation capacity quickly, fill gaps with external expertise as required and make sure that officials remain energised for the task ahead.[13]

That ability to negotiate trade deals will be particularly crucial if leaving the EU means leaving its single market and forging unilateral trade deals with the rest of the world. That appears likely unless the Government is prepared to maintain freedom of movement for EU and UK citizens alike, so the UK will need to seek its own Free Trade Agreement (FTA) with the EU rather than follow the Norway or Switzerland models where free movement is part of their arrangements. Such FTAs typically take between five and seven years to negotiate, with a further year for ratification. History suggests that caution will be required in negotiating trade agreements, as sudden loss of access to major markets has been known to cause dire economic impact. New Zealand's preferential market access to the UK ended abruptly in 1973 when the UK joined the European Economic Community (EEC), reducing New Zealand exports to the UK by half within one year. Finland's access to the Russian market similarly came to a halt in 1991 with the dissolution of the Soviet Union, accelerating a recession that saw unemployment rise from three to 18 per cent in four years.[14]

Brexit is also set to represent a step change in the level of government engagement with business. New trade arrangements and the UK's wider economic realignment will require reenergised support for exporters as well as new industrial strategies from Whitehall and the devolved administrations.

**3. Tax systems and laws**
If negotiations ultimately lead to a more remote relationship between the UK and EU, the implications for taxation could be far reaching. EU law covers customs duty, VAT and elements of excise duties, and so the UK could need its own customs duty and administration, even if it remains in customs union with the EU. If UK VAT law is decoupled from EU directives, transactions with EU states would become imports and exports rather than goods moved freely around a single market, with potential impacts on systems and cash flow. In both cases, the UK may ultimately gain greater freedom to make different choices but the short-term challenge will be one of systems and law. This will impose costs on businesses, which will need to adapt to such new systems. Direct taxes levied on income or profits are not expressly dealt with by EU treaties so are less likely to be affected – although some benefits from existing EU directives could be lost, depending on the future relationship.

**4. Regional and rural funding**
In 2015, the UK received around £4.5 billion of EU funding. Some 70 per cent of that was targeted support for rural communities and farm incomes, while most of the remainder came through the European Social Fund and the European Regional Development Fund. They help to finance projects intended to help disadvantaged places across the EU by boosting employment opportunities, building local infrastructure and forging links between regions.[15] Whitehall will need to work through the implications of Brexit on this funding.

**5. Regulation**
EU regulations exist to create consistency across the EU over issues as wide-ranging as health and safety, consumer rights and product specifications. For the public sector, such regulations affect its organisations in both generic and sector-specific ways. Generically, as employer for almost a fifth of the UK's workers, EU regulations shape the public sector's employment offer, including maternity and paternity leave as well as rights for part-time and fixed-term employees. More specifically, most parts of the public sector are also subject to detailed EU directives. In healthcare for example, EU rules govern blood and tissue use, ensure that clinical qualifications are recognised across member states and set expectations for reciprocal access to state healthcare for EU citizens. Whitehall and the UK's regulatory bodies therefore face a complex challenge in assessing how the detailed regulatory landscape will need to change as the UK leaves the EU, and what the implications will be for public bodies subject to EU directives.

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**6. Transport**
European legislation covers substantial elements of transport and in particular where it crosses national borders. As with many other areas of Brexit negotiations, the UK Government will need to balance the benefits of policy freedom with the benefits of market access, and the extent of its impact will be defined by the extent of the UK's departure from existing EU arrangements. For example, continued membership of the European Common Aviation Area would offer unbroken access to the single aviation market, but membership requires obligations under EU law. For the rail sector, negotiations will need to resolve whether UK companies can continue to tender for franchises in other EU states, and vice versa, as well as the future of Europe-wide rail interoperability. The UK's Rail Safety and Standards Board considers harmonisation of rail standards to be necessary for the functioning of an EU-wide rail market, but critics argue that most trains running in the UK are built solely for use in this country and interoperability is therefore unnecessary.[16]

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**7. Immigration**
The UK has never been part of the EU's Schengen agreement that allows for passport-free movement across borders, and has maintained an opt-out on EU border control measures. However, polling shows that many people who voted to leave the EU did so because of immigration, so the Government may seek to address their concerns in its approach to Brexit.[17]

EEA nationals have a right of permanent residence after a specific period of continuous residence in a host EU country and some qualify for dual nationality. The UK is also part of the Common Travel Area, essentially having a borderless agreement with Ireland, Isle of Man, and the Channel Islands. And while the UK has opted out of EU measures on third-country legal migration, it nonetheless received £240 million from the EU to assist in various programmes around irregular migration and integration.

Some fundamental issues that need to be considered and answered include, most importantly, determined rights – especially whether there will be a cut-off date for EEA migrants exercising their right to freedom of movement and the privileges that come along with it. Further questions arise around the treatment of people who acquire permanent residency but arrived after withdrawal negotiations as well as people with an offending history or a 'right to reside'. Other issues include evidential requirements, changes in circumstance, health and welfare entitlements, and non-EEA family members' rights.

**8. Policing and border control**
The UK's exposure to EU measures on policing is mixed. On one hand, the UK already has an opt-out on certain security and justice issues and cooperates within several international – rather than EU – frameworks. But on the other, the UK works across the EU extensively though measures including the European Arrest Warrant, reciprocal searching of national crime databases and cross-border initiatives. At the same time, UK police cite terrorism, organised immigration crime and cybercrime as growing threats that require extensive cross-border cooperation. The UK's Brexit negotiations will need to address serious concerns from the police. Before the referendum, Europol's director warned that Brexit would oblige the UK to leave the institution, making cooperation more costly and less effective.[18] In addition, a group of former police chiefs including two former Metropolitan police commissioners warned that Brexit would leave the UK at a disadvantage in tackling terrorism and organised crime.

Substantial changes to border controls would raise numerous complex challenges for a variety of government agencies. For example, passport controls at airports have for some years been designed around automated gates for EEA nationals that may need to be rethought, a change to the visa regime could ramp up the processing burden and the complexity of transactions that could be required at UK borders might require an entirely new operational approach.

**9. Workforce**
Depending on the outcome of negotiations, Brexit could have significant implications for the health and social care workforces. About 55,000 EU nationals work for the NHS and a further 80,000 work in the adult social care sector, which have a combined workforce of 2.6 million. While the number of EU nationals may seem limited as a proportion of the total, employers are already struggling to recruit and retain over both sectors. Public sector employers have acted fast to reassure EU nationals in the wake of the referendum result, but many employees remain understandably concerned. Research by the Chartered Institute of Personnel and Development (CIPD) found that 33 per cent of public sector workers feel less secure in their jobs as a result of the referendum, compared to 22 per cent of employees generally.[19]

**10. Higher education**
The UK's universities are particularly exposed to Brexit issues. The EU's Erasmus+ programme allocates around €1 billion over seven years to the UK to encourage and support student mobility, and the Bologna process has created a harmonised higher education system. Around 125,000 EU students study at UK universities and EU funding accounts for some 11 per cent of research income for the UK's top higher education institutions – so the UK Government will need to work with universities to mitigate the impact of an exit from any of the EU's higher education programmes or negotiate their continued membership.

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## The talent lens: Automation in the public sector

If viewing government through a productivity lens allows a distinctive perspective on the implications of Brexit for the public sector, applying a talent lens offers a new angle on the future for people in the public sector.

Recent technological advances have created a new era of automation in which repetitive and predictable tasks are increasingly undertaken by robots, either in the form of software or devices. For the public sector, automation has significant potential for supporting cost reduction, meeting citizen expectation, boosting productivity and freeing up employee time.

To assess the scale of potential of automation for the UK public sector, its occupations can be divided into three types of role:

**1. Administrative or operative roles** in which activities are mostly repetitive and predictable. They can be desk-based such as administrative jobs or more physical, such as hospital porters.

**2. Interactive or frontline roles** which mostly require a high degree of personal interaction, such as teachers, social workers and police officers. These roles often have case management layers that could be supported by technology.

**3. Cognitive roles** that mostly require strategic thinking and complex reasoning, such as finance directors and chief executives.

Data from Oxford academics Carl Frey and Michael Osborne, working with Deloitte, suggests that in the public sector administrative and operative roles are at high probability of automation over the next two decades while other public sector jobs – those in the frontline or requiring substantial levels of complex thinking – are highly resistant to complete automation but could be enhanced by such technologies. Around a quarter of public sector workers are employed in administrative or operative jobs which have a high chance of automation, based on Frey and Osborne's estimates. Automation would not displace employees overnight – its impact is gradual – but it could see 861,000 public sector jobs lost by 2030. That would deliver a saving of £17 billion off the public sector paybill in 2030 compared to 2015.

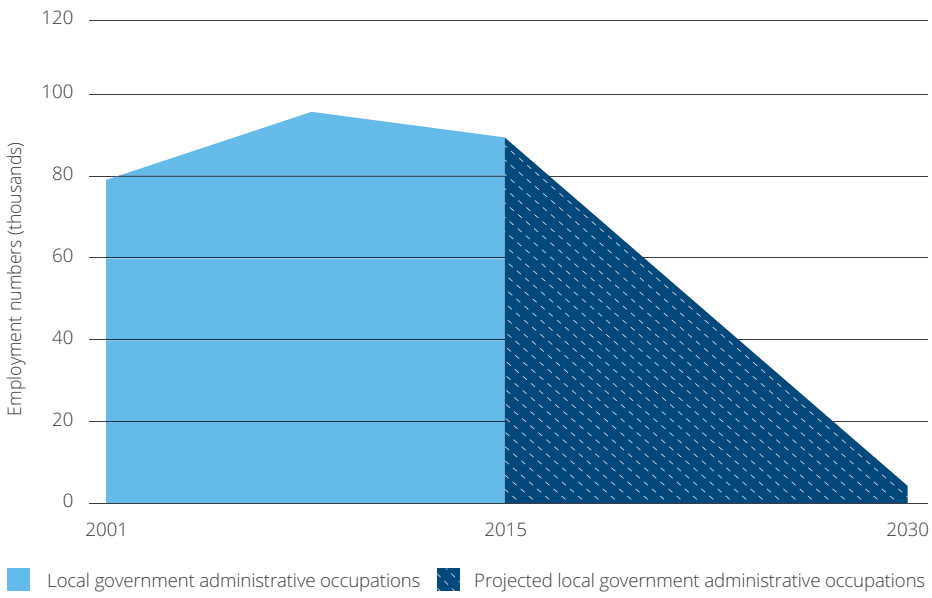
Automation could also help the sector release surplus real estate. While space might need to be adapted for the technology, it is likely a substantial proportion of office space currently occupied by the administrative or operative public sector could be released for sale. Disposing those surplus assets could reduce revenue expenditure and generate capital receipts.

For administrative roles, a typical example of how automation could replace human labour is where data needs to be manually fed into several systems. That is a current burden in shared service arrangements such as those in local government, where legacy systems may not be interoperable, and Robotic Process Automation (RPA) now provides a software alternative.

For operative roles, a typical example of automation is through autonomous vehicle technology which is increasingly popular in metro train systems such as the driverless Docklands Light Railway.

**Figure 4** shows actual and projected employment for local government adiministrative jobs to 2030.

**Figure 4. Local government administrative occupations**




**Source:** Osborne and Frey, ONS and Deloitte analysis 2016

About half of public sector jobs are interactive and have a relatively low probability of being automated over the next 10-20 years. However, automation offers potential in these occupations for complementing human capacity and minimising administrative elements of the roles.

In hospitals, sensor technology is starting to be used to monitor patients' vital signs, which frees up nurse time for interacting with patients more meaningfully.

"The increased ease of data collection, data accuracy and associated data analytics can help decision-makers form a deeper understanding of performance and future demand."

**Figure 5. Care workers, home carers and nurses**

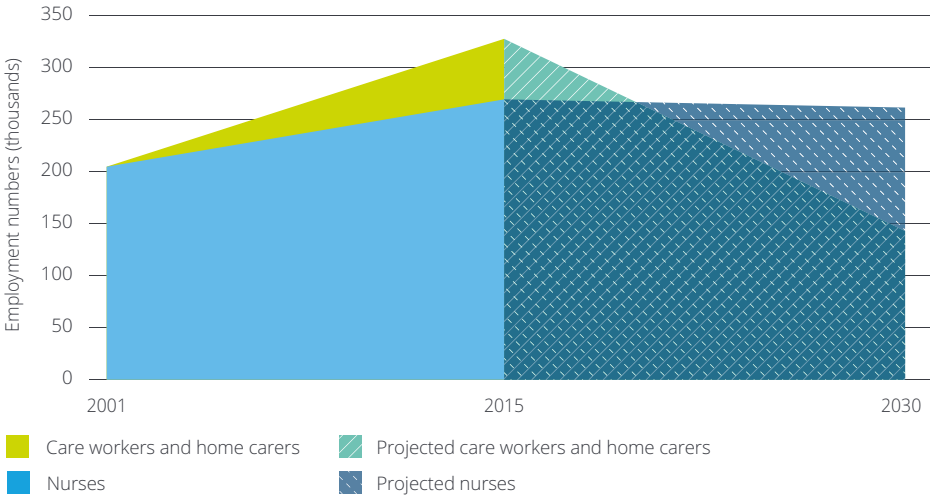
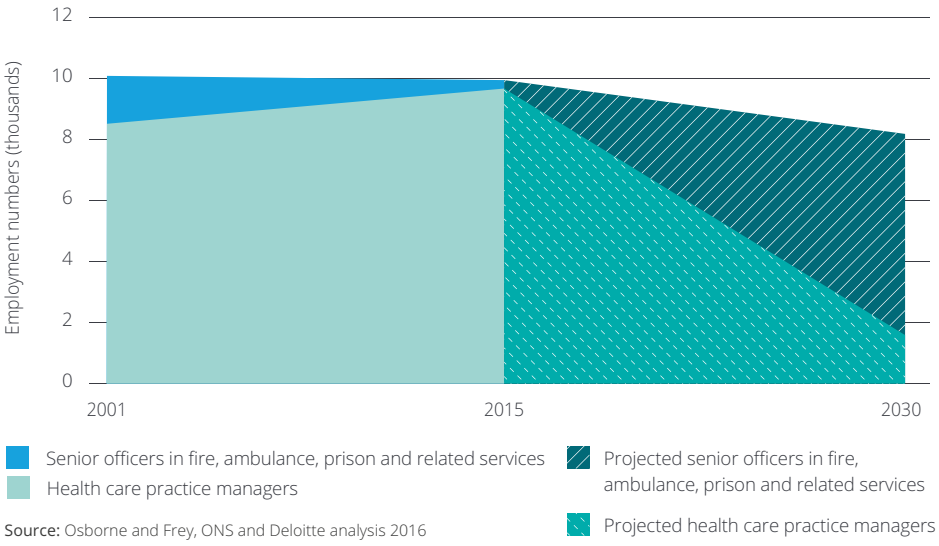



**Figure 6. Senior officers in fire, ambulance, prison and related services and health care practice managers**




**Source:** Osborne and Frey, ONS and Deloitte analysis 2016

In other care settings, including people's homes, devices can now be used to alert health professionals to problems such as falls. Again, such technology has the potential to free up professional time and minimise operative tasks.

Figure 5 shows actual and projected employment for these two example occupations.

Approximately one-fifth of public sector workers are in occupations that require complex problem solving, judgement and cognitive reasoning that could not currently be automated. However, as with interactive roles, there are often tasks within the occupation that can be more easily completed or enriched with automation.

For example, senior figures in policing, fire and prisons could utilise technology such as data analytics to inform decision-making but the complex nature of their roles means that automation is likely to complement their roles rather than replace them. The increased ease of data collection, data accuracy and associated data analytics can help decision-makers form a deeper understanding of performance and future demand.

Some roles with complex elements such as healthcare practice managers could see a decline in numbers where better information flows have the potential to increase the quality of resource allocation. Figure 6 shows actual and projected employment for these examples.

Realising the potential of automation will require data, the skills to exploit it and the software or devices to make it happen. *The State of the State* suggests that the Government should support the public sector in improving its collection and use of data, ensure that data can be shared across the sector with legislation if necessary and fund investment in automation projects. A sector-wide plan could provide a clear view of costs and potential savings over the next two decades.

## The balance sheet lens: Reading the Government's accounts

The UK Government is a world leader in public sector financial reporting, and 2014-15 represents the sixth year HM Treasury has published the largest consolidated public sector accounts in the world: Whole of Government Accounts (WGA). They allow for a view of the state through a balance sheet and income statement lens that provides a perspective on the public sector's underlying financial health and sustainability.

An extract of the most recent WGA report is shown in Figures 7 and 8.

**Figure 7. The state's income statement**

| | 09-10 | 10-11 | 11-12 | 12-13 | 13-14 Restated | 14-15 | Notes |
|---|---|---|---|---|---|---|---|
| **Revenue** | £583.4bn | £614.0bn | £616.0bn | £620.7bn | £652.9bn | £659.3bn | The primary source of revenue for the state is taxation. Taxation accounted for £566.7 billion in revenue in 2014-15. In addition to taxation, the state earned non-tax revenues of £33.4 billion from the sale of goods and services. |
| **Total expenditure** | (£667.2bn) | (£701.7bn) | (£715.1bn) | (£717.3bn) | (£718.4bn) | (£733.9bn) | Government's total expenditure covers all of its costs, including £217.7 billion paid in social security benefits, £193.8 billion in staff costs and £191.7 billion to purchase goods and services. |
| **Net financing cost** | (£78.6bn) | (£83.2bn) | (£88.1bn) | (£79.4bn) | (£79.9bn) | (£83.6bn) | Net financing cost includes £56.6 billion in pension interest payments, as well as £27.6 billion in costs of servicing government borrowing. |
| **Other** | (£0.3bn) | (£0.3bn) | £1.3bn | (£2.7bn) | (£0.3bn) | £6.2bn | In 2014-15, the state had revaluation gains on its financial assets and liabilities, as well as a profit on the disposal of assets. |
| **Net expenditure for the year** | (£162.7bn) | (£94.4bn) | (£185.3bn) | (£178.7bn) | (£145.7bn) | (£152.0bn) | Net expenditure describes the shortfall between the Government's income and its expenditure in accounting terms. |

Since WGA was introduced six years ago, there has been an overall reduction in net expenditure of £10.7 billion that illustrates austerity measures in accountancy terms. That reduction had been consistent year-on-year until 2014-15, when the accounts show an increase in net expenditure of £6.3 billion. However, that is largely driven by accounting adjustments rather than increases in spending levels. For example, a change to the discount rate used for public sector pension costs caused an increase of £5.3 billion in net expenditure.

As outlined in last year's *State of the State*, changes to the public sector boundary continue to bring new entities on to the Government balance sheet. The refreshed European System of Accounts 2010 resulted in the ONS reclassifying Network Rail to the public sector and the income statement and balance sheet have both been restated to include it, as well as the Pension Protection Fund. This continues to highlight the importance of early consideration by the Government on how ONS is likely to classify any new entity or arrangement, as well as existing entities which have ties to the public sector.

"Since WGA was introduced six years ago, there has been an overall reduction in net expenditure of £10.7 billion that illustrates austerity measures in accountancy terms."

The inclusion of Network Rail in the Government balance sheet drove an increase in infrastructure assets of £49.8 billion in the restated 2013-14 WGA. Infrastructure assets are expected to increase by billions of pounds in 2015-16's WGA, as Network Rail updates its valuation methodology to depreciated replacement cost, from an income based approach utilised previously.

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**Figure 8. The state's balance sheet**

| | 09-10 | 10-11 | 11-12 | 12-13 | 13-14 Restated | 14-15 | Notes |
|---|---|---|---|---|---|---|---|
| **Assets** | £1,249.5bn | £1,234.3bn | £1,270.6bn | £1,297.5bn | £1,414.9bn | £1,455.3bn | Assets - what the state owns – include £395.5 billion in infrastructure assets, £374.4 billion in property and £51.2 billion in land assets. |
| **Liabilities** | (£2,477.4bn) | (£2,420.0bn) | (£2,617.4bn) | (£2,925.4bn) | (£3,255.5bn) | (£3,558.5bn) | Liabilities – what the state owes – include £1,493.3 billion in public service pension liabilities and £1,174.5 billion in government borrowings. |
| **Net liability** | (£1,227.9bn) | (£1,185.7bn) | (£1,346.8bn) | (£1,627.9bn) | (£1,840.6bn) | (£2,103.2bn) | Net liability – the difference between assets and liabilities – have increased since 2013-14 by £262.6 billion. The primary driver of this increase was a change in the discounting rate used to value the public sector pension liability. |

Overall, the balance sheet net liability position has increased by £262.6 billion in the year. This increase has been driven largely by the change in the discount rate used for measuring the value of the public sector pension liability from 1.3 per cent to 1.8 per cent. The change of 0.5 per cent in the discount rate resulted in a significant £190.2 billion increase in public sector liabilities due to the long-term nature of this liability.

Previous years' WGAs have likewise seen significant increases in liabilities due to accounting provisions, for example, with increases due to nuclear decommissioning and NHS negligence claims. Alongside the pension discount rate change and the anticipated 2015-16 revaluation of the railway network, these adjustments illustrate how even small changes in accounting policies can have large scale ripple effects across how the public sector's assets and liabilities are measured. Accounting measures aim to recognise liabilities much sooner than measures of deficit and debt under the National Accounts.