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COMPARATIVE ANALYSIS OF REGULATORY REGIMES IN GLOBAL ECONOMIES

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The views and interpretations expressed are the authors' and do not necessarily reflect those of the Department for Business, Energy and Industrial Strategy

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Executive summary

The UK has been a leader in regulatory innovation. In a number of areas it has developed regulatory solutions that have helped deliver positive outcomes for businesses, consumers and the economy. Other countries have drawn lessons from the UK approach to regulation.

The UK can also learn from regulatory approaches in comparable countries, looking in particular at those areas in which there is scope for improvement in the UK regulatory regime. Such a comparative exercise can shed light on what features of UK regulatory regimes could be changed, and provide ideas on how regulatory regimes could be reformed.

This report presents the findings from an investigation of the regulatory regimes of eight chosen global advanced economies – Australia, Belgium, Denmark, Germany, Ireland, the Netherlands, Norway and South Korea – and three regulated areas – skills, pensions, and recycling. The approach was in terms of regulatory regimes, which means to include the organisations that implement regulation, the frameworks used to set expected behaviours and outcomes, and the systems in place to measure compliance and enforce compliance. In other words, the study has considered regulatory policy from a holistic perspective.

The study has relied on a review of the published evidence completed by 13 expert interviews. It has considered the features of regulatory regimes and their overall performance in terms of their impact on businesses and consumers, in terms of costs as well as the level of protection provided by the regulatory regime. The study considered also wider benefits to the economy, such as impact on innovation and growth.

The comparative analysis has identified a range of area-specific and more general features that differentiate highly successful from less successful regimes. While lessons relevant specifically to the areas of skills, pensions and recycling are discussed in annexes, the main report presents the following cross-cutting findings:

- Effective regimes used a heavier **regulatory touch** relative to their UK counterparts. This appeared to contribute to more robust business practices and better risk management by regulated entities. It was also associated with more effective market mechanisms, through the imposition of shared standards and requirements for transparency on business practices. As a consequence, there was better protection, better quality of products or services, lower costs for customers, and fewer significant failures in the regulated market. A heavier touch in the markets investigated did not appear to stifle innovation. It was also associated with higher costs to business and some pressure to consolidation in the regulated sectors. By contrast, the light touch characterising UK regimes in the three areas studied was associated with low innovation and a variety of poor outcomes, for individual customers as well as businesses.

- Both effective regimes and UK regimes relied on private third parties to act as ‘surrogate regulators and deliver certain regulatory functions, such as standard setting, monitoring, or support and guidance to regulated entities. However, effective regimes differed from the UK regimes in terms of *who* they relied on to act as ‘surrogate regulator’. They also differed in terms of what oversight they applied to these surrogate regulators’ activities. Thus, leading regimes included frameworks for the activities of those ‘surrogate regulators’ that coordinated their relationships with those of other surrogate regulators, or that set quasi-contractual terms for them to deliver regulatory objectives. This was in contrast to greater reliance on market mechanisms and monetary incentives in the UK to steer the activities of such ‘surrogate regulators’.

- Effective regimes were characterised by a significant degree of consistency between different elements of the regime, both in terms of the coherence between the different tools used, and in terms of the institutional structure of regulating organisations. Effective regulatory regimes appeared to be structured around well-defined principles and a logical organisation of the different elements of those regimes so that they together could interact in a logical way to achieve the intended objectives. This was in contrast to greater complexity and fragmentation in the UK regimes examined, as well as logical tensions between various elements of those regimes. This contributed to making the regulated market more difficult to navigate for individual customers and businesses, and to tools not having as much an effect as intended, or even unintended effects.

Building on these findings and on the literature on lessons drawing and policy transplant, the study has provided additional insights on the promises and pitfalls or identifying best practices in comparable countries and transplanting them into a different policy, regulatory, social and economic context.

Introduction

Practitioners and scholars have come to speak of regulation increasingly as 'regimes'. The notion of 'regulatory regimes' acknowledges that the regulation of an issue or a market cannot be described or understood without considering together a variety of elements that interact to regulate behaviours: the organisations that implement regulation, of which there may be several; the frameworks used to set expected behaviours and outcomes; and the systems in place to measure compliance and enforce compliance. This study has investigated the manner in which global advanced economies regulate various issues and markets, to draw lessons for UK policy-makers and regulators.

Study background

Regulatory innovation has been a hallmark of regulatory regimes in the UK across a number of markets (Black et al. 2005; Moran 2003). For instance, the UK was a pioneer in risk-based regulation (following the Hampton Review; Hampton 2005), and spearheaded the move toward New Public Management in the 1980s (Hood 1995). UK's regulatory reforms have drawn the interest of scholars and policymakers in other countries. Some have learned from the UK's experience and replicated regulatory tools or frameworks that were initially developed in the UK. For instance, much of the Better Regulation drive at EU level can be traced back to UK initiatives. Recent new transversal regulatory initiatives, such as the Business Impact Target (BIT), are also having an impact in other countries.[2]

This study has aimed to contribute to a similar learning process, yet one that would benefit the UK. The UK may draw lessons from other countries' regulatory approach to various markets or issues, especially in those areas in which there is scope for improving the UK regulatory regime, and where good evidence exists on alternative, and effective regulatory frameworks.

The backdrop for this investigation is the ongoing debate in the UK on the effectiveness of some regulatory regimes. Indeed, a number of failures in recent years have been linked to weaknesses in various regulatory frameworks, such as the collapse of Northern Rock and the forced partial nationalisation of Royal Bank of Scotland, or the mis-selling of Payment Protection Insurance. In these instances, regulatory regimes proved ineffective. An appetite for rethinking regulation can also be found in the context of Brexit. The negotiations between the UK and the European Union to agree on the terms of their future relationship could open up new options for regulating various markets, which may then be taken up to reform the current regimes. Finally, regulatory regimes may also be reformed

[2] 'Populists push to roll back rules'. *The Financial Times* 22 February 2017

to encourage and benefit from technological change and innovation, and thus contribute to making the UK's economy more innovative.

In this context, looking towards other global advanced economies, including most of the OECD countries, can yield learning points for UK policy-makers and regulators, to reform existing regulatory regimes to secure positive impacts on growth, businesses and consumer outcomes.

Study objectives

The purpose of this study has been to draw lessons for UK regulators by investigating the regulatory regimes of other, comparable advanced economies. More specifically, the study has aimed to explore areas in which the UK has scope to improve, and in which other, comparable countries are leading in terms of a range of relevant outcome indicators. For that purpose the study investigated the areas of skills, pensions, and recycling, and the regimes of Australia, Belgium, Denmark, Germany, Ireland, the Netherlands, Norway and South Korea. Through that comparison, the study has aimed to identify which features of these alternative regulatory frameworks could be linked to their higher outcomes, and comparatively which features of the UK regimes they were being compared to appeared to contribute to lower outcomes. The study has also aimed to qualify the extent to which the effectiveness of these regulatory regimes was also linked to other, non-regulatory factors, such as social or economic institutions. Finally, the study has sought to assess the extent to which regulatory features that appeared to contribute to regulatory effectiveness would be transferable to the UK context. While the evidence base for the study has come from a few selected areas and countries, its main purpose has been to draw out cross-cutting findings that may inform reflections across a wide range of departments and agencies.

Study approach

The key concept and level of analysis for the study is in terms of 'regulatory regimes'. A regulatory regime combines the organisations that implement regulation, the frameworks used to set expected behaviours and outcomes, and the systems in place to measure compliance and enforce compliance. In other words, rather than focusing on a specific tool, a particular target population, or a particular regulator, this approach encompasses the whole range of features and entities that contribute to the regulation of an area.

An approach in terms of regulatory regimes has been developed and implemented in scholarly studies of regulation for some time (e.g. Hood et al. 2001; May 2007). It has two main justifications and advantages.

Firstly, considering regulation in terms of 'regimes' enables accounting for its multiple components and the manner they interact with one another. A regulatory regime approach takes account of the manner a regulatory policy has been designed to operate as a 'policy mix’ of tools, organisations, principles interacting with one another to achieve the policy’s intended outcomes. Besides, it enables assessing the manner in which these components interact with one another in practice, including in unintended and possibly undesirable ways. As such, an approach in terms of regulatory regimes enables questioning the extent to which a regulatory policy is coherent, logical, comprehensive, and functional.

Secondly, an approach in terms of regulatory regimes brings also in focus the range of extra-regulatory processes, actors and institutions that may contribute to relevant outcomes. Indeed, it is generally understood that regulation operates in a wider societal context, and that it interacts with it. For example, the institutions that structure economic activities, such as the level of organisation and coordination of businesses, have a significant role to play, in interaction with regulation, to shape the outcomes of regulatory policy. Therefore, this approach also enables questioning the extent to which a regime’s features would deliver the same outcomes if they were transposed in a different country, and a different context and environment.

Report structure

This report presents the cross-cutting findings from the study, as they emerged from the investigations of specific areas and a number of comparator countries.

After a short methodological section outlining the principles for selecting areas and countries, and the steps followed for collecting and analysing evidence, the report moves on to discuss three cross-cutting themes.

The first addresses the issue of the ‘regulatory touch’ and explores how different weights and forms of ‘regulatory touch may contribute to regulatory effectiveness. The second section discusses the role of private parties as surrogate regulators and how the manner in which those are involved in the performance of some regulatory function may be associated to outcomes. The third section discusses the broader issue of regime coherence, exploring how successful regimes in other countries and comparable UK regimes are structured, and how that appears to be linked to their relative degrees of effectiveness. The final section of the report brings these various elements together into conclusions. It discusses the extent to which the features of policy regimes can be transplanted from one country into another. It elaborates further on the promises as well as the pitfalls of such enterprises, and puts forward a number of principles to guide the practice of lesson-drawing in regulatory policy.

The main body of the report is supplemented by Annexes. These provide the detailed methodology for the study, followed by three annexes presenting a detailed account of the evidence collected and the comparative analysis for each of the three regulatory areas that were investigated: skills, pensions and recycling. The last annex lists the references reviewed.

Methodology

This section presents a brief outline of the method followed for completing this study. A more detailed outline of the methodology can also be found in Annex 1.

The methodology followed to carry out the study had three components: scoping, data collection, and analysis.

The *scoping* phase refers to the steps taken to select regulatory areas and countries for further investigation.

The approach followed for the identification of regulatory areas first identified those areas of regulatory policy that have a strong link to innovation. This was based on the evidence on innovation-inducing policies that has been collected and communicated by the OECD and the World Bank[3], and additional information on specific sectors with a link to innovation. From the long list of regulatory areas that was thus obtained, ICF selected those areas for which (i) there is scope for improving the UK regulatory regime / the UK is not leading in that area and (ii) sufficient documentation could be found regarding other countries' regulatory regimes and performance. The list of areas selected eventually included skills (apprenticeships), workplace pensions, and recycling.

The selection of countries for review was based on (i) evidence of leading performance in the area considered, (ii) scope and level of detail of the information available on the country's regime and (iii) comparability of the country with the UK. Evidence on performance was taken from a variety of sources, including indexes and databases held by the OECD and the World Bank, and academic studies. Area-specific sources were reviewed, such as the Melbourne Mercer Global Pension Index, or data on patents related to recycling. Adverse events, such as the collapse of pension funds, were also taken into account. The countries selected for comparison with the UK are: Australia, Belgium, Denmark, Germany, Ireland, the Netherlands, Norway and South Korea.

The *data collection* phase involved desk research to identify and review relevant documentation. This included reports and papers from government bodies and international organisations (such as the OECD), academic reports, articles and book chapters, newspaper articles and articles from specialised outlets, as well as primary legislation. The desk research was completed by 13 interviews with experts and policy officials.

The *analysis* of the evidence collected consisted in the first instance in a case study approach: each individual country/regime was studied as a case, triangulating the information obtained from various sources to describe the regime and qualify its strengths

[3] https://www.innovationpolicyplatform.org/

and weaknesses. This was then followed by a comparative analysis, whereby the regimes of each country studied (including the UK's) in a given area were compared with one another. Finally the team compared the findings emerging from each regulatory area, so as to identify cross-cutting findings.

When interpreting the report's findings, it is important to note that they are based on secondary evidence from desk research and expert interviews, rather than on primary evidence. This limitation was partially mitigated by the study team's efforts to triangulate evidence from different sources.

Furthermore, the study focused only on the regulatory aspects of policies to influence behaviours and achieve outcomes in three different areas. Non-regulatory aspects, whether policy related, or not, were noted during the study, although their nature and impact were not reviewed in as much detail as regulatory aspects.

Finally the findings are based on country cases selected on the basis of their effectiveness, rather than on the basis of factors that may explain it. This selection on the dependent variable means that the report's findings are by necessity tentative. A wider sample of countries selected on the basis of independent variables could help to test and refine them.

Findings

Cross-cutting findings from this study relate to three different topics: the ‘regulatory touch’, surrogate regulators, and regime coherence. In this section we discuss each category in turn, illustrating the findings with examples drawn from the policy areas and the countries that were investigated. Findings specific to each area are presented in the Appendices to this report.

Regulatory touch

Regulatory discourse is rich in catchphrases. ‘Light touch’ regulation is one of them, which means to translate a general principle of restraint in all matters regulatory: prescribing, monitoring and enforcing.

This expression relates to broad ideas on how the economy should be regulated, having regard to the role that other mechanisms than regulation – notably market mechanisms – may also play. The notion of ‘light touch’ regulation echoes also discussions within regulatory and scholarly circles on the extent to which excessive regulation may stifle innovation. In that regard, the notion of ‘light touch regulation’ evokes also the notion of ‘flexible regulation’ and its various manifestations (such as ‘principles based regulation’). The current state of the debate, as reviewed and developed by Cristie Ford in particular (Ford 2013; 2017; also Black 2011), points to the limitations of these approaches, particularly in the field of financial regulation. While it does not claim that the idea of flexible regulation should be scrapped, it has taken stock of its shortcomings.

Behind the notion of ‘regulatory touch’ one can also find a multitude of area-specific debates on what the right approach to regulating particular issues or sectors should be. Such debates consider corresponding risks, their probability and magnitude, and the extent to which their materialisation would be socially and politically acceptable. For instance, one may think of the risk of pension funds collapsing, and pensioners losing savings and the prospects of a revenue in their old age as a result. Is pension regulation’s ‘touch’ appropriate to addressing this risk, given its likelihood, impact, and acceptability? Some scholars have thus debated the relative benefits of alternative ways of regulating issues and target groups in various contexts and sectors (e.g. Coffee 2004; Kirwan et al. 2002). In other words, the notion of ‘regulatory touch’ raises the question of what the ‘right balance’ between regulatory intervention and market self-regulation may be, and whether regulatory regimes are tailored to address the challenges that are specific to their area.

Lastly, the debate on the level of regulatory touch also addresses the costs that regulation imposes on the populations it is impacting.

The review of regulatory regimes for skills, pensions and recycling across the countries selected found that regulation in the UK tended to be lighter touch than in any other country investigated. For example:

- At the time of the study, trust-based pension funds were subject to lighter requirements than their peers in Australia or the Netherlands. In particular, British trust-based pension funds were not subject to the capital requirements and the competence requirements (fit and proper test) for trustees that have been implemented in those two countries.
- Beneficiaries of workplace pensions in the UK have the freedom to draw down their pensions as a lump sum and spend it as they wish, or to receive it as an annuity instead. By contrast, Australian pensioners all perceive some of their pensions in annuities even if they choose to draw the rest as a lump sum. In the Netherlands all pensioners receive their pension in the form of an annuity.
- Regulatory requirements on 'Extended Producer Responsibilities', which aim to push packaging producers to use recyclable materials and contribute to recycling greater proportions of their production, apply in the UK above a threshold (of company output) that is higher than in all better performing countries investigated. Some have no threshold.
- The role of state authorities in the design and approval of new qualifications and apprenticeship programmes in the UK is very limited in comparison to what it is in better performing countries such as Denmark and Norway.

While the lighter touch of the UK's regulatory regimes is not in itself surprising, given the long-standing policy of promoting and relying on markets and market mechanisms for regulating a variety of areas and issues, the question this study has sought to answer is whether that difference in the 'regulatory touch' mattered to the poorer outcomes of the UK regimes relative to that of the other countries'? The comparative analysis suggests that regulatory touch does matter. A heavier regulatory touch contributed to regulatory effectiveness in the following manners.

A heavier touch can contribute to more robust business practices and better risk management. One of the key challenges of 'light touch regulation', and especially regulation that is 'principles-based' or 'goals-based', is to ensure that the regulated entities have the competence and the resources to manage their own risks, and that they actually do what is necessary to obtain that competence and allocate those resources to that objective. That is especially problematic with smaller entities (Kirwan et al 2002).[4]

[4] Their willingness to actually manage their risks is the other main challenge.

In the field of pensions, the lack of competence of trustees and the vulnerability of trust-based funds against the risks of insolvency and collapse have been central to debates on the UK's regulatory regime.

To ensure trustee competence, both the Netherlands and Australia have put in place a fit and proper test that any individual should pass before they can begin working as a trustee of a pension fund. At the time of completing this study, trustees in the UK were not required to pass such a test, but rather were expected to consult relevant pieces of regulatory guidance and to behave accordingly. Furthermore, the Netherlands has imposed to funds the creation of a role as 'fiduciary manager' to input into board discussions and decisions. Remarkably, while the UK regime may be called 'light touch' and the comparator countries' 'heavy touch' on trustee competence, all three countries (the UK, the Netherlands and Australia) were equally 'light touch' in the manner they regulated the investment of pension fund assets in financial markets. In other words, the contrast between them was a matter of how they balanced different degrees of regulatory touch at different points in the regime.

The risk of insolvency is another matter, for which the only meaningful comparison here is between the UK and Netherlands: both countries are exposed to a similar kind of insolvency risk to their workplace pension funds.[5] The Dutch regulatory regime imposes capital requirements to trust-based funds. This is combined to minimum coverage ratios that funds need to maintain. 'Weak' funds that cannot comply with these ratios are subject to a specific procedure, which means to restore their solvability through a pluri-annual plan under the close supervision of the regulator. The UK's approach, by contrast, has been not to impose capital requirements on trust-based funds as a condition for them to begin operating. Furthermore, the UK regime has provided for an insolvency guarantee fund, the Pension Protection Fund, the like of which does not exist in the Netherlands. Accordingly there have been no funds collapsing in the Netherlands while several have known such fate in the UK in the past few years. In other words, a heavier touch in the Netherlands has also been associated with better outcomes for pensioners.

In this field of pension regulation, one by-product of a heavier touch has been industry consolidation, whereby weaker operators have been driven away from the market or have merged to create larger entities. This has been observed in Australia and the Netherlands. Whether intentional or not, such an outcome of the regulatory touch may mean the removal of entities that are highly likely to fail, and as such contributes to the effectiveness of the regime. Obviously, there may be a point where industry consolidation goes against the interests of consumers, which is a matter of appreciation for policy makers in fine-tuning their approach. Nonetheless, the general lesson from the comparison here is that a heavier regulatory touch can improve the ability of regulated entities to operate and thus

[5] Both the UK and the Netherlands have many Defined Benefit workplace pension funds. Australia has close to none. Pension funds that have collapsed in the UK in recent years all are Defined Benefit schemes.

contribute to managing the risks, especially for those entities that would otherwise not devote sufficient resources to that matter.

Uniform standards contribute to making markets more transparent for operators and consumers. While a light touch approach to regulation may mean leaving entities setting their own standards for a variety of issues, without any coordination, a heavier touch may involve imposing shared standards that all operators should comply with, for example to harmonise the manner they deal with their customers.

The comparative analysis of regulatory regimes for skills and for pensions has shown how such standards, when imposed onto regulated entities, could contribute to better outcomes. Standards had a positive impact in two ways.

Firstly, standards reduced complexity and facilitated choices. As a result, it enabled key ‘customers’ of the regime (employers looking for skilled youngsters, youngsters in search of skills making them employable, individuals and organisations active in the field of pension funds) to participate in the market in a manner consistent with regulatory objectives.

Secondly, standards facilitated competitive processes in the market by making practices and features of products easily comparable. This has been the case with administrative management fees charged by pension funds to their beneficiaries. In Australia, legislation imposed a limited list of allowed fees that may be charged by the managers of default funds (the fund to which employees are registered into by default when they become employed). This has been combined to strict transparency requirements. The competitive pressures that have ensued have pushed administrative management fees down, thus reducing costs to customers.

In other words, market competition appeared to work best when embedded in a robust regulatory regime. Indeed, most good practice cases set clear administrative guidelines to private providers, impose requirements (e.g. on pension fund board membership, on skills qualification standards, etc.) and monitor them pro-actively. This is associated with a simpler environment for businesses and consumers, one in which market mechanisms, when present, appear to deliver results.

Heavier touch regulation does not necessarily stifle innovation. The scholarly and policy discourses of the past two decades have emphasised how heavy touch regulation – and particularly prescriptive regulation – may stifle innovation. However, the relationship between regulation and innovation is ambivalent and depends greatly on context (Blind 2012; Blind et al. 2017; Wachsen & Blind 2016), so that heavier touch regulation is not necessarily associated to a less innovative economy.

For example, the comparative analysis of recycling regulatory regimes in the UK, Ireland, Germany, Belgium and South Korea has found that the most innovation in terms of packaging materials or recycling technologies – measured in terms of registered patents –

occurred in regimes with a heavier regulatory touch than the UK’s. For example, Germany and Belgium have applied higher requirements for packaging producers, closer supervision of their activities, and stricter enforcement of non-compliance than the UK. While their regulatory regimes have imposed a greater burden on business, that has been associated with a dynamic recycling industry and the development of several new technologies and business solutions.

This example does not imply that a heavier touch is always good for innovation. As mentioned earlier, the relationship between standards and regulation on the one hand, and innovation on the other, is a matter of sector and context. The example drawn from this study shows, however, that the assumption that a light touch regulation is always preferable in the interest of innovation does not always hold.

The rigidity of a heavier touch regime requires a high degree of coordination between players. Heavier touch regulation can mean that regulators are slower to adjust to changes in the circumstances of the regulated entities. The regime itself may evolve only slowly. Some countries with a heavy touch regulatory regime present also a high degree of coordination between all players involved.

The Dutch regime for regulating workplace pensions is a case in point. It is fundamentally anchored in the principle that all parties – employers, employees, and the state – should coordinate to make the pensions system work. This principle applies to the regulatory solution to insolvency risk: when a fund cannot maintain its funding ratio targets, a process of recovery is engaged, through which all parties get involved and negotiate in order to bring the fund back to where the regulator wants it to be.

Other regimes also rely on coordination between regulated entities (and regulators), which provides flexibility in a regime otherwise characterised by a heavier touch. For example, the regime for apprenticeships in Denmark provides for the coordinated actions of employer representatives and regulators, the latter steering the former to actively monitor and forecast the needs of the Danish economy so that the offer of apprenticeship programmes may be adapted accordingly.

This kind of coordination can be hard to achieve in another context, such as the UK’s, because of a different experience of social partner involvement in governance. Ongoing efforts to involve social partners in the regulation of apprenticeships in the UK should provide further evidence on the availability of such mechanisms to balance regulatory rigidity with flexibility.

Summary

The comparative analysis of leading foreign regimes and their UK counterpart in the areas of skills (apprenticeships), pension and recycling has identified a link between performance and regulatory touch. While a heavier touch was associated with greater regulatory burden on business (for example, the Dutch regime for pensions and the

German regime for recycling and more costly for businesses than their UK counterparts), it was also associated with better protection, better quality of products or services, and lower costs for customers, more innovation, and fewer significant failures (in this context: no collapse of workplace pension funds). A heavier touch was also found to be associated with greater rigidity in the regulatory regime, which would need to be balanced with mechanisms enabling flexibility and responsiveness in the regime. A heavier touch was also found to be associated to consolidation in the regulated sectors (fewer and larger regulated entities over time), which may mean that weak and corrupt entities are removed, but could also generate new problems (insufficient competition, low innovation) should it go too far.

Surrogate regulators

The second cross-cutting theme to emerge from the comparative study is 'surrogate regulators': private third parties that are not the primary target of regulation, yet contribute to the delivery of one or several regulatory functions.

The expression 'surrogate regulators' comes from the scholarly literature. In the late 1990s and early 2000s, several regulation scholars showed a keen interest in the idea of giving private third parties roles in the delivery of regulatory functions (Gunningham et al. 1999; Kunreuther et al. 2002; Ayres & Braithwaite 2001). That literature emphasised how reliance on surrogate regulators may free up resources that may then be allocated differently, for example to high risk regulated entities.

These (mostly) theoretical ideas built on the observation that, in numerous regulatory sectors, some private actors contributed already to regulatory regimes rather than being themselves the target of standards, tools, and regulators. The conditions in which the idea of 'surrogate regulators' may work effectively have not been discussed extensively in the literature, however, except for the particular case of third party auditors and certification schemes (e.g. McAllister 2012, 2013).

In this study, 'surrogate regulators' were found almost in every country and in every area investigated. For example:

- In recycling regulatory regimes, private 'compliance schemes' play the role of intermediaries between packaging producers and public authorities. Their roles vary from one country to another, but always involves some level of support or service to the packaging producers with regard to their compliance with 'extended producer responsibility' regulations.

- In the UK pension regulatory regime, fund trustees are tasked with monitoring the level of employer contributions into the funds, and should inform the regulator should they find those contributions to be insufficient.

- In the skills regulatory regime, awarding organisation (in the UK) and employer representatives (in the UK, Denmark and Norway) contribute to setting standards by designing apprenticeship schemes and qualifications.

The comparative analysis provided indications on the conditions in which those ‘surrogate regulators’ contributed to policy effectiveness.

The choice of surrogate regulator can shape the outcomes of the regulatory regime. Regulators may have the choice between a range of players that they could potentially rely on to act as ‘surrogate regulators’: a different category of businesses (such as waste management companies in recycling, training providers in skills, third party auditors in a wide range of areas), representatives of a group of businesses (such as trade bodies in skills), representatives of employees (such as employee representatives in health and safety), or various non-governmental organisations. Regulators might even create a new entity at the intersection between public authorities and their target population of regulated organisations or individuals. This is the case for compliance schemes in the recycling regulatory regime of some countries.

The case of skills (and particularly apprenticeship) regulation suggests that what surrogate regulator is relied on matters. A key feature of the UK regulatory regime for skills is its reliance on awarding organisations and training providers to steer the offer of qualifications and apprenticeship schemes. This has meant that apprenticeships, for example, have been organised through a triangular relationship, in which both employer and apprentice deal with a training provider as an intermediary. Such a set-up, which was paired with perverse incentives to training providers, has been dysfunctional, leading to a proliferation of low quality training programmes.

The Danish and Norwegian regimes present a very different picture, in that employer representatives in those countries play a central role in setting the standards that then shape apprenticeships. Furthermore, training providers do not have the role of intermediary that one observes in the UK. Rather, apprenticeships remain organised as a direct relationship between an employer and an apprentice. Such a set-up, in which employer representatives (through their trade bodies) are the main ‘surrogate regulator’ in the regime, has been linked to greater buy-in from employers into the regime, better quality apprenticeship programmes, a high level of recognition of those skills in the national labour market, and a better alignment between the offer and supply of skills. The UK regime has recently evolved to give a greater role to employer representatives in setting standards.

As this example demonstrates, the choice of which private third party to rely on to play a role as ‘surrogate regulator’ can have an impact on a number of outcomes of the regime, and notably its legitimacy in the sectors concerned and the quality of products and services offered in the regulated market.

The manner surrogate regulators are overseen by public regulators also contributes to regulatory effectiveness. Besides the choice of which private actors to rely on, the approach to overseeing surrogate regulators can also have an impact on the overall effectiveness of the regime. There, as in other areas, the 'regulatory touch' as discussed earlier may vary.

The case of recycling regulation provides an example of different set-ups. In all the countries studied, including the UK, compliance schemes are relied upon to help achieve regulatory objectives, and recycling targets are set. However, in all the countries but the UK, those targets apply to the compliance schemes themselves. They apply to individual businesses (which may or may not be registered with a compliance scheme) in the UK. The incentives for compliance schemes to coordinate and push regulated businesses towards compliance differ therefore significantly between the UK and those other countries.

In Germany, compliance schemes are also required to sign agreements with regional authorities that effectively set the terms of their licence to operate. The regulation imposes also that compliance schemes coordinate their activities, since the costs of collecting and recycling are divided between compliance schemes on the basis of market share. Compliance schemes in Belgium and Ireland are also subject to pluri-annual contracts with public authorities that set terms and targets. In other words, those regimes did not rely on the incentives that were already present in the market to drive the behaviours of surrogate regulators. By contrast, the UK regime has light requirements on compliance schemes, which consist essentially in obligations to report periodically on their activities.

In the area of skills regulation, employer representatives in Denmark have been required by regulatory authorities to invest resources into forecasting the needs of the economy and how those should be addressed through apprenticeship programmes. The insights gained from such horizon scanning then feed into the offer of skills, which is defined jointly by public authorities and social partners. By contrast, in the UK awarding organisations and training providers, and the market in which they operate, have been relied upon to achieve the same objective, with comparatively much less oversight than in Denmark.

In other words, the comparative analysis suggests that surrogate regulators contributed to the effectiveness of regulatory regimes when they were subject to a sufficient level of oversight and to appropriately defined incentives. This is confirmed by the scholarly literature on the topic of third party auditors and the role they may play in the regulation of various issues, such as for example food safety. The incentives those 'surrogate regulators' are subject to as a result of their position in the market may put them in a situation of conflict of interest (e.g. Rosenthal and Kunreuther 2010; McAllister 2013). The quality and reliability of what they do may therefore be problematic, which is why their inclusion into regulatory regimes may often require the provision of additional incentives, and a robust oversight of their activities by public authorities.

Summary

While all regimes, whether they performed well or not, relied on surrogate regulators, the comparative analysis suggests that *who these surrogate regulators were*, and *how they were overseen and incentivised*, contributed to the regime's effectiveness. This indicates that the idea of surrogate regulators and the conditions of its implementation should be carefully considered.

Regulatory coherence

The last theme to emerge from this study is regime coherence. There is relatively little literature addressing regulation from such a perspective (but see Kirwan et al. 2002; Rothstein et al. 2006). Notions of 'policy mixes' drawn from economics, 'policy design' drawn from public policy studies, and 'intervention logics' drawn from policy evaluation all convey the notion that regulatory policy should be logically organised in all its elements so that together they achieve the policy's intended outcomes.

The review of the three UK regimes investigated in this study found that complexity and fragmentation were recurring issues. For example:

- The regulatory regime for apprenticeships has provided two different paths to apprenticeship. One of them is employer-led and is not tied to a qualification. Another is provider-led and is tied to a qualification. The regime overall is complex and hard to read for its key customers: employers.
- The regulatory regime for pensions has included two sub-regimes for workplace pensions, depending on whether they are contract-based or trust-based schemes. The former category has been the object of a robust regime implemented by the Financial Conduct Authority. The latter category has been the object of a light touch regime implemented by the Pensions Regulator.

Furthermore, the review identified tensions and lack of integration between different components of those regimes.

- The pensions regime has been paternalistic towards employees in that it has applied nudges to auto-enrol employees into workplace pension schemes. It has followed a completely opposite approach to regulate the moment beneficiaries can claim their rights to pension, however, leaving them the possibility of drawing down the full amount of their pension as a lump sum and spending it as they pleased.
- The pensions regime has relied on trustees of trust funds to monitor employer contributions and to manage pension funds. However, it has not tested trustees for their competence, nor trust funds on the level of capital that they hold.
- The recycling regime has imposed recycling targets on packaging producers, but it has not required from those producers that they demonstrate their compliance by their own practices. Rather, compliance should be demonstrated through the

purchase of Package Recovery Notes (PRNs) issued by recycling facilities. The PRNs purchased should be for an amount of recycled material equivalent to the proportion of the company's packaging materials that should be recycled (as determined by targets set at national level).

- The obligations of packaging producers are enforced with civil sanctions, in the form of donations to nature conservation charities, rather than donations to recycling charities or fines.

- The recycling regime has not been integrated enough with other elements of waste policy, such as measures relative to the export of waste and measures relative to landfilling. As a result the current regime presents greater incentives to exporting packaging waste rather than recycling it in the UK. Besides, disincentives to landfilling (landfill tax) are not having the impact they are found to have in other countries, where they are also used.

More effective regimes tended to be more coherent. Their regulatory framework tended to be better integrated with their surroundings, and particularly with existing socio-economic institutions (in the fields of skills and pensions). They tended to have a more coherent set of tools, such as the Dutch suite of capital requirements, coverage ratios, oversight, and procedure for strengthening weakened funds in pension regulation. They were also characterised by comparatively fewer regulating organisations, and better coordination between them. This applies in particular to skills regulation: the UK regime is characterised by a large number of regulating organisations intervening at different points in the system.

Other countries' regimes tended to be organised in terms of a few key principles, such as for example the notion of 'occupational self-governance' in the Danish apprenticeship regime, which contends that social partners should have autonomy and a steering role in this matter.

Better performing regimes were not free of tensions either, although those tended to be less consequential than have been observed in the UK regimes.

- The Australian pension regime combines mandatory enrolment into workplace pensions with the freedom to draw down one's pension as a lump sum. This causes fewer issues than in the UK because Australian pensioners can still receive annuities from the generous public pension even if they draw down their workplace pension as a lump sum. Nonetheless, Australian policymakers have been considering withdrawing the possibility of drawing down one's pension as a lump sum.

- The Danish apprenticeship regime has been designed in terms of different governance principles: it combines state regulation, co-regulation by social partners ('occupational self-governance') and market mechanisms in the form of competition between technical colleges to develop a better offer for their audience of students and businesses. In practice, market mechanisms have not played an important role, as the other two (and particularly occupational self-governance) dominate. As a result the regime’s ability to maintain an offer of good quality training programmes adapted to the economy’s needs very much rely on the state in its interactions with social partners.

Summary

The comparative analysis suggests that better performing regimes showed a higher degree of coherence. Their standards and tools tended to be complimentary and mutually consistent. They were also well integrated with other institutions in their broader environment. By contrast, low performance was associated with fragmentation and complexity of the regulatory regime. The complexity of regulatory regimes (such as the regime for apprenticeships in the UK) made the area more difficult to navigate for its intended beneficiaries. Fragmentation also caused poor coordination between different regulating organisations. Tensions between the tools of the regulatory regimes were linked to unintended effects (such as incentives to exporting waste rather than recycling it at home) and poorer outcomes.

Discussion and conclusions

This investigation of regulatory regimes in global economies and their comparison with the UK has identified themes that cut across the specific areas that were studied. Below, we discuss lessons learned and their potential applicability to a broader range of areas. We then discuss the broader project of learning from others and the promises and challenges of transplanting lessons from one country context into another.

Investigating 'regulatory regimes' means adopting a holistic approach to regulatory policy. It enables unpacking regulatory policy into its many components and exploring the manner they interact with one another. A regulatory regime approach means also considering the manner in which regulation interacts with its broader environment of markets and institutions. In this study, such a holistic approach was applied to the areas of skills, pensions and recycling.

This investigation identified '**regulatory touch**' as the first notable difference that separated leading regimes from their less successful counterpart in the UK: better performing regimes were characterised by a heavier regulatory touch. This translated into greater requirements for regulated entities, including sometimes restrictions to market entry.

A heavier touch than that observed in the UK regimes was associated with various benefits: better protection, better quality of products or services, lower costs for customers (through competitive processes facilitated by standardisation and transparency rules), more innovation, and fewer significant failures. These benefits also involved costs to regulated entities, and sometimes rigidity of the regime or of the manner regulated entities were being regulated.

The argument here is not that a heavy regulatory touch should be inherently beneficial: the case has been made on the shortcomings of applying a heavy hand in regulation (e.g. Bardach & Kagan 1982). Rather, the evidence points to the trade-offs and the ambivalence of regulation's impact. For example, as the literature and these findings suggest, the relationship between the degree of regulatory touch and innovation can be a negative one in some sectors, but a positive one in others.

The study points also to the role of regulation in steering and enabling market processes. The evidence from the comparison shows that leading regulatory regimes have provided a framework for market mechanisms to operate, for example by limiting the range of acceptable business practices with regard to a given product or service. Rather than undermining competitive dynamics, such standards combined to requirements for transparency have exploited them and contributed to reducing costs to customers. This is in contrast with initiatives to rely on existing markets (such as the market for training courses and qualifications) or set-up new markets (such as the market for Package Recovery Notes) in the UK, combined to light touch regulation, which have failed to deliver.

The second theme to emerge from the study is that of '**surrogate regulators**'. While both leading countries and the UK relied on private third parties to perform some regulatory function, across all three areas, they differed in terms of who they relied on to act as surrogate regulators, and how they oversaw their activities. In particular, leading regimes distinguished themselves by the comparatively higher requirements and closer supervision they applied to surrogate regulators. Since private third parties played an important role in all three regimes, we can assume that this difference of approach might also contribute to their relative performances.

This echoes the scholarly debate on how 'private regulation' may be harnessed (e.g. McAllister 2013). While the theoretical idea of 'surrogate regulators' has been drawn out some time ago, providing only little direction on the manner it may be implemented, a nascent literature has begun exploring the conditions in which it may be successful. This literature highlights the need to incentivise private third parties appropriately and monitor them to ensure they behave in a manner consistent with regulatory objectives. These parameters will differ from one area to the next, so that the experience of relying on surrogate regulators in one may not necessarily be relevant to another.

The last theme to emerge from the comparative study is the **coherence of regulatory regimes**. Leading regimes showed greater coherence than UK regimes. Their various parts were better integrated together than those of UK regimes. They appeared to work in a complementary fashion as well, whereas the standards and tools from UK regimes appeared to be sometimes misaligned.

For example, there is a low level of integration between the different elements of recycling policies in the UK, illustrated by (but not limited to) the lack of alignment between regulatory prescriptions and enforcement tools used to sanction non-compliance. The regulatory regime for apprenticeships is notoriously complex and fragmented as well, and the regime for pensions is also split between two sub-regimes, which adds further complexity.

This fragmentation and complexity can be linked to various shortcomings: the markets thus regulated may be less easy to navigate and engage with; regulatory tools may fail to incentivise regulated entities as intended, or may even generate perverse incentives.

The broader question of how regulatory regimes may become fragmented and inconsistent deserves some attention. The historical process of regulatory policy making can be characterised by numerous and frequent reforms (as have been experienced in the area of skills in the UK) in response to demands from within or outside the regulated area. Each reform may add to the previous one without sufficient regard to the manner those different layers may interact with one another. As a result, the regime may grow complex, contradictory, and ineffective. Changes to the remit of different ministerial departments and agencies can also add to the complexity and fragmentation of regulatory regimes, for example by splitting between different regulatory organisations the regulation of issues that in practice are tightly linked.

Some tools may be usefully employed to organise the thinking of all parties involved in reforming and implementing regulatory regimes: ‘theories of change’ and ‘intervention logics’ thus map the issues, objectives, principles, tools, actions, outputs and impact of regulatory policy. When used well, they include consideration for the factors that, in the broad environment of regulatory policy, can contribute or rather constitute barriers to the achievement of its objectives. As logical maps, these tools can be used to assess the extent to which any reform to a regulatory regime may strengthen or weaken the overall regime.

More generally, approaching regulatory policy from a holistic point of view, rather than in terms of specific tools, makes it easier to assess how reform may enhance regime coherence, or rather undermine it.

The premise of the present study has been to investigate in comparative fashion regulatory regimes in different countries with a view to draw lessons for the UK’s regulatory approach. Lessons-drawing (Rose, 1993; 2005) and legal transplants (Watson 1993, Nelken & Orucu, 2007) are considered important mechanisms through which countries’ legal, political, and regulatory regimes evolve and through which countries learn from each other. Yet, the academic literature in both comparative law and political science also acknowledges that such transfers or transplantations are by no means a straightforward process.

Transplants of formal institutions such as laws and regulations can produce different effects in the host country than the ones observed in the country of origin (Berkowitz, Pistor, & Richard, 2003; de Jong & Stoter, 2009; Pistor & Berkowitz, 2003). This is often due to the lack of legitimacy of the transplanted legal rules in the host country which leads to avoidance, rejection, and modification (De Jong & Stoter, 2009; De Jong 1999). This can ultimately mean that the formal institution does not translate into actual practice, or that the practices that do develop around the new institution as substantially different from the expected ones.

Beyond legitimacy, however, this study points towards an additional reason why transplantation of regulatory and legal tools from one context to another may not work in the expected way, namely ‘regime coherence.’ The holistic approach adopted in this study suggests indeed that regulatory tools do not deploy their effect in isolation, but in interaction with other elements of the local environment and the regulatory regime as a whole. If certain factors supporting a given regulatory tool’s functioning in the home country are absent in the host country, the functioning of the tool may be undermined or substantially altered.

To be successful, regulatory transplantation needs therefore to take into account the systemic nature of regulatory regimes and the interactions among different parts of a regulatory regime. Indeed, viewing regulatory instruments in isolation may lead to situations where the transplanted tool produces perverse effects and may even reduce rather than enhance the effectiveness of a regulatory regime by decreasing the overall coherence of the regime.

Taking these challenges into account, a lessons-drawing (reference) approach to regulatory reform should address the following questions in order to avoid the so-called ‘transplant effect’ (Berkowitz et al, 2003).

Firstly, one should consider how the regulatory tool or approach of interest operates in its country of origin, not in isolation, but as an element from a regulatory regime. The focus should be on identifying which supporting factors (both regulatory and non-regulatory) allow it to work effectively in the country of origin.

Next, one should ask whether these supporting factors are present in the UK. If they are not, one should ask whether they could be created at reasonable cost. If the answer to that question is negative, regulators may – conversely – consider whether the tool could be adapted to the UK context to draw on existing supporting factors. If that is not the case, an assessment should be made of what the effectiveness of the transplanted regulatory tool might be given the absence of the supporting factors present in the country of origin. This assessment may lead to rejecting the idea of the transplant, in spite of the fact that regulatory tool in question may be considered international best practice.

Annex 1 - Methodology

This annex presents the methodology followed to deliver against the study's objectives, including a discussion of the challenges identified and how they have been addressed.

Approach to identifying areas for investigation

The choice of regulatory areas for investigation was informed by an analytical framework centred around innovation and, specifically, the role of regulation in encouraging or stifling innovation.

Innovation is a widely-studied topic, notably from a comparative perspective. Innovation is present across numerous markets and sectors, including very specific ones, which therefore enables articulating even very specific areas to more cross-cutting regulatory regimes. The study team unpacked regulatory regimes influencing innovation by considering how regulation may affect (i) the various input factors that contribute to innovation and (ii) the broader environment of innovation. This approach relied largely on resources published jointly by the OECD and the World Bank on innovation,[6] as well as additional literature on the role of innovation in regulation (Blind et al. 2017; Ford 2017).

Building on the resources just mentioned, the following areas were considered initially for investigation:

- Labour regulation.
- Access to credit for innovation, financial innovation.
- Intellectual property regulation.
- Bankruptcy regulation.
- The regulation of competition.
- Corporate governance regulation.
- The regulation of contracts and contract enforcement mechanisms.
- Regulation influencing skills.

[6] https://www.innovationpolicyplatform.org/

ICF also considered specific areas with a relationship to innovation, either sector-specific (such as recycling), or cross-cutting areas (such as pensions). These areas are:

- Product safety.
- Recycling.
- Digital infrastructure.
- Pensions.

Each of these areas was the subject of a rapid evidence review, drawing from (i) the most commonly-used indicators to document the content of regulatory regimes (e.g. Cambridge's Centre for Business Research's Leximetric datasets[7]), the impact on business (e.g. the OECD's Product Market Regulation Index[8]) and consumer outcomes (e.g. Eurostat datasets); (ii) published academic and government reports; (iii) media reports.

The rapid review of evidence aimed to respond to the following questions:

1. How does the UK perform in this area and how does its performance relate to UK regulations and their implementation?
2. If the UK is not leading, which countries are?
3. Is there objective, reliable evidence to characterise the regulatory regimes in these countries?

The evidence review found that, in a number of the areas considered the UK was in a leading position (e.g. digital infrastructure, access to finance and financial innovation), therefore those areas were not retained for further investigation. Other areas are the subject of extensive comparative analysis and specific recommendations for improvement, already available in the public domain (e.g. contract enforcement). Such areas were not selected for further investigation either.

On the basis of the evidence collected, and in discussions with BEIS, the list of areas to consider was narrowed down to the following three areas:

- Skills.
- Pensions.
- Recycling and waste.

[7] https://www.cbr.cam.ac.uk/research/research-projects/completed-projects/law-finance-development/#item-1

[8] http://www.oecd.org/eco/growth/indicatorsofproductmarketregulationhomepage.htm#indicators

These areas were selected for further investigation because they satisfied the following conditions:

- there is prima facie evidence to suggest scope for improvement in the UK regulatory regime in those areas;
- they are all related to innovation and industrial strategy to various degrees, providing together a broad overview of the many ways regulation can be related to innovation; and
- regulation in those areas affects a very large proportion of the UK business population.

The full justification for the investigation of these areas is presented alongside the findings in the next section.

Approach to selecting countries and regions for further investigation

For each of the areas selected, ICF carried out further desk research to inform the selection of countries and regions to investigate and with which to compare the UK. The scope of the search for comparable countries was limited to advanced economies, namely members of the OECD and South Korea. Three considerations informed choices of comparator countries:

- evidence of leading performance from the country or region in the area considered. This was based on both qualitative assessments and quantitative indicators;
- scope and level of detail of the information available on the country's regulatory regime; and
- comparability of the country with the UK (or England when the area considered was devolved, which is the case for both skills and recycling). This involved considering the broad features of the UK regime and those of presumptive comparator countries.

Framework for the systematic documentation of regulatory regimes

The regulatory regimes of the countries considered were systematically described using categories drawn from scholarly definitions of regulatory regimes. More specifically, all regimes were described using the following categories:

- Issue or entity regulated.
- Regulator(s).

- Standards and regulatory tools.
- Principles underpinning the approach (e.g. market-based).
- Relevant outcomes.

A list of issues and entities to be regulated was defined in generic terms for each of the three areas considered, and used consistently to describe each country's regime.

The information for documenting the regimes was collected from publicly available reports, articles and books, the list of which is referenced at the end of this report. In addition to desk research, 13 interviews were conducted with policy officials and experts from academia and non-governmental organisations. The aim of these interviews was to address any gaps from the desk research as well as gain additional insights into the strengths and weaknesses of the regime investigated, and a better understanding of how it operates.

Approach to assessing the strengths and weaknesses of third country regimes

Once the regulatory regimes had been fully documented, they were reviewed individually, particularly with a view to qualify which factors – both originating from the regulatory regime and from elsewhere (e.g. other institutions, or non-regulatory factors) – appeared to be contributing to which outcomes. This assessment relied largely on commentaries from experts rather than policy officials, and from the triangulation of the evidence collected by the team.

After an investigation of each country's regime, the team carried out a comparative analysis across the different countries considered, including the UK, so as to further examine what features of the regulatory regimes appeared to be contributing to the differences in outcomes that had been documented. This followed broadly the principles of comparative analysis across a limited number of cases (also known as 'small-N' comparisons, or structured, focused comparisons; George and Bennett 2004).

Annex 2 – Review and comparative analysis of apprenticeship regulatory regimes in the United Kingdom, Denmark and Norway

Rationale for investigating skills

Key objectives of skills regulation

A well-functioning economy depends on the ability to recruit individuals with the skills businesses need to develop and expand. This is key to innovation as well.[9] The ability of firms to fill posts with suitably skilled individuals depends on a variety of factors.

As discussed extensively in the UK in the context of Brexit (e.g. CIPD 2017), numerous sectors depend on foreign workers to fill vacancies. Hence, this issue is to some extent addressed by the rules and incentives in place to facilitate or, on the contrary, to hinder the hiring of foreign workers.

Skills can also be fostered through on- and off-the-job training of young people and workers, or through Vocational Education and Training (VET). VET is to a large extent a non-regulatory issue, yet it is also one of the areas in which the regulatory state has grown. The UK in particular has witnessed a multiplication of regulatory bodies with some involvement or responsibility in the regulation of VET (Wolf 2011). Familiar debates around ways of structuring regulatory institutions, standard-setting, monitoring and enforcement, and alternative modes of regulating the behaviours of employers and training providers as well as students have been held in relation to VET.

Regulatory intervention in this area aims to achieve a number of objectives. An overarching goal is to match the supply and demand of skills. Taking the perspective of individuals that pass through VET to obtain a stable occupation, another objective of these regimes is to ensure a fast and stable school-to-work transition (SWT).

The objectives of VET regulation can also be thought of in terms of the market failures it means to address. As per the above, **'skills mismatch'** is one of those failures that motivates and justifies regulatory intervention, and scholars have qualified alternative VET systems in terms of the extent to which they resolve these skills mismatches (e.g. Hadjivassiliou et al. 2016). There are coordination issues underpinning this issue, between employers on the one hand, and training providers on the other. This is also a matter of adaptation to new needs and the dwindling value of some skills, particularly as a result of

[9] https://www.innovationpolicyplatform.org/

changes to the economy, and the disruptive effect of new technologies. As such, the capacity of regulatory regimes to anticipate trends (i.e. horizon scanning capabilities) and to be flexible and respond to changing needs can contribute to the overall regime's performance.

Another market failure that regulation may aim to address is a **lack of trust in and recognition of the education and training provided**. This can translate into regulatory measures and tools targeting qualifications themselves, as well as qualification providers. Various alternative tools to regulating entry into the market for qualifications may be applied by regulators. Standards of teaching may also be set and enforced, through a range of tools that may vary from 'soft' (e.g. league tables) to 'hard' (de-authorisation of individual teachers or training organisations).

A lack of trust in and recognition of VET is linked to another market failure: the **low quality and transferability of VET qualifications**. If VET qualifications are not of good quality and cannot be transferred between firms and/or geographical areas, then the purpose of the VET qualification is and its impact is limited considerably, particularly given it is increasingly common for individuals to switch jobs regularly and work for different employers in their lifetime. Regulatory intervention to address such an issue aims to achieve, again, a sufficient level of coordination and consistency in the provision and accreditation of qualifications, so that investment in VET pays off, for students / workers and employers.

Another type of market failure that VET regulation aims to address is the **lack of investment in VET**, to fund training both off-the-job – in VET organisations – and on-the-job – i.e. through apprenticeships in firms. Key alternatives in this area involve reliance on direct public funding, public grants, tax incentives and levies.

Ultimately, the regulation of VET should deliver the following outcomes, which can be measured to assess regulatory performance, notwithstanding the contribution of other, confounding factors (e.g. labour protection legislation, ease of access to skilled foreign workers, etc.) (HM Government 2015):

- Employee/student benefits:
  - Higher level of qualification.
  - Transferable skills that are recognised by the job market.
  - Increased employability.
  - Higher quality of employment (stable; higher salary).
- Employer benefits:
  - Securing and retaining the skills needed.

The UK's regulatory regime for skills

Historically, employer-led apprenticeships were a key feature of the VET system in the UK. This was later displaced by a Government-led 'supply-side' approach where the state invested in increasing the supply of qualified labour, with the expectation that this would result in higher employment and productivity (Steedman 2014, Green & Hogarth 2016). This has meant centrally-designed training schemes and qualification descriptions, combined with a competitive market for training provision centred on awarding organisations and private training providers, instead of employers (Wolf 2015). Recently, the regime was reformed to re-introduce an employer-led element, so that at present the regime includes two parallel paths for apprenticeships: one provider-led, and the other employer-led.

Awarding organisations (and training providers) have had a leading role in the provider-led sub-regime through the development of the training courses on offer. Qualification regulation provides a high degree of freedom to awarding organisations and training providers: any qualification can be developed, as long as it meets certain criteria. This has resulted in the development of thousands of qualifications. This diversity might not always be beneficial: pupils may be unable to identify, among many qualifications, what type of training is best suited to them, and what is more valued by employers.

Recently, the regulation of qualifications has moved from requirements for creating and recognising qualifications, and detailed rules for designing qualifications, to a more descriptive qualifications framework for all Further Education, including – but not limited to – apprenticeships (Ofqual 2015). It gives awarding organisations more freedom to design qualifications, with the aim to better adapt them to labour market demand (UK NARIC 2016). It is unclear to what extent this may encourage a consolidation and simplification of the set of qualifications available to students and employers.

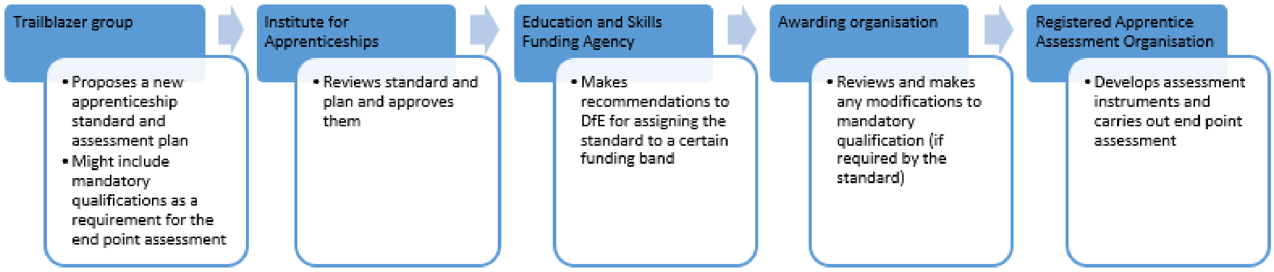
Awarding organisations are funded in proportion to the number of qualifications awarded. This incentivises them to develop courses that are 'easier to teach and easier to pass', with consequences on the overall quality of VET provision, and on determining skills mismatch (Chankseliani et al. 2017; Musset and Field 2013; Wolf 2015)[10].

The employer-led sub-regime means to involve employers more in design, delivery and investment in VET (Green & Hogarth 2016). This should render the offer of skills more responsive to employers' needs, thus addressing the skill gaps that have been a core weakness of the UK regime (also CIPD 2017; Gessler and Herrera 2015; Hadjivassiliou et al. 2016). These apprenticeships are unrelated to a qualification, and they are funded by an apprenticeship levy, to be paid by large employers to fund apprenticeships. The levy is designed to address insufficient employer investments in apprenticeships (HM Treasury 2015). Only employers with a pay bill greater than £3 million are required to pay the levy, and the Government still plays a significant role in funding apprenticeships (Department for

Education 2016). Employers who do not pay the levy are required to cover 10 per cent of the costs of training any apprentices they choose to engage. The government covers the remaining 90 per cent.

An online platform – the apprenticeship service – has been designed for the benefit of employers, to help them set up, manage and pay for apprenticeship training (ESFA 2017). Through this new system, employers who pay the levy can select the apprenticeship training they want to purchase, providing direct insight into employer demand (Wolf 2015). Guidance has also been published to create groups of employers (called “trailblazer groups”) to develop apprenticeship standards and end-point assessments in cooperation with a new employer-led organisation, the Institute for Apprenticeships, that was created at the Government’s initiative (see Figure 1 below).

Figure 1. Development of a new apprenticeship standard

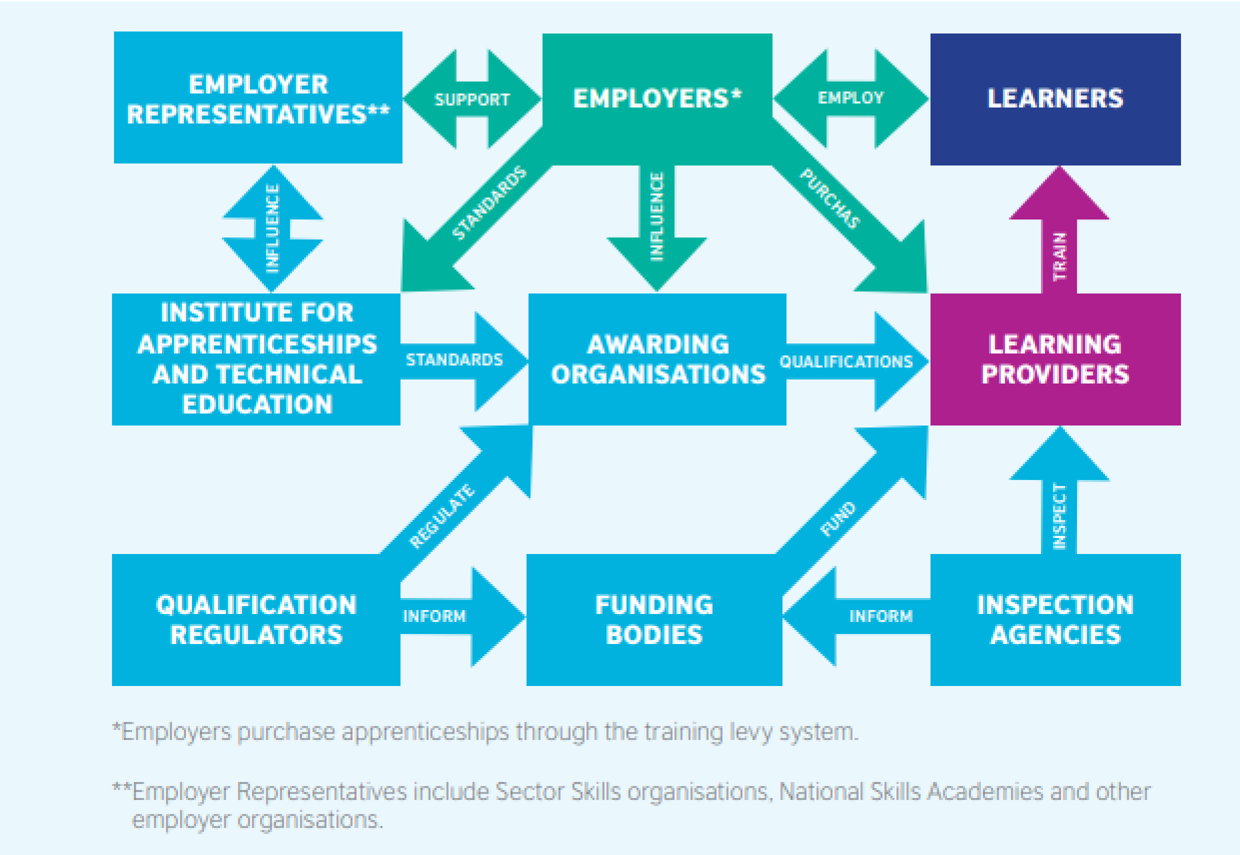


Source: Institute for Apprenticeships (2017) 'How to' guide for trailblazers. Available at: [*https://www.instituteforapprenticeships.org/media/1033/how_to__guide_for_trailblazers_-_v2.pdf*](https://www.instituteforapprenticeships.org/media/1033/how_to__guide_for_trailblazers_-_v2.pdf)

A variety of regulating organisations are responsible for some aspect of VET and apprenticeships in the UK, including the Institute for Apprenticeships (IfA), the Office of Qualifications and Examinations Regulation (Ofqual), the Office for Standards in Education, Children's Services and Skills (Ofsted), the Education and Skills Funding Agency (ESFA), the Office for Students (OfS) and the Quality Assurance Agency for Higher Education (QAA). Their role is defined essentially in functional terms: each performs one or several functions in the regulatory regime, such as inspecting training providers or funding training. All operate at the national level.

A summary of the resulting structure of VET provision in the UK is provided in Figure 2, below.

Figure 2. Overview of the structure for VET provision in the UK



Source: British Council (2017). The UK Skills System: An Introduction. Available at: [*https://www.britishcouncil.org/sites/default/files/bc_uk_skills_sector-an_introduction-june_2017_0_0.pdf*](https://www.britishcouncil.org/sites/default/files/bc_uk_skills_sector-an_introduction-june_2017_0_0.pdf)

In England, local actors (including Local Enterprise Partnerships) have also been encouraged to provide inputs in sub-regional skills policy, by carrying out area-based reviews of local skills needs (British Council 2017). This is one of the very few elements from the UK regime that provides for a different level of intervention, or contribution to the regulation of skills than the national level.

Table 1 describes the regulatory regime in further detail in terms of the issues and entities that are regulated, who is regulating them, and with what tools. This includes information on the underpinning principles of the regime and relevant outcomes.

Table 1: Overview of the UK (England) regulatory regime for skills

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
Providers of VET / end-point assessment organisations	**Ofsted** inspects providers **ESFA**[11] maintains register of providers; performs financial health checks; monitors EPAOs **OfS**[12] (for degree apprenticeships): allocates funding (i.e., distributing government grants) to colleges **QAA** (independent, non-profit organisation): conducts independent inspections of training providers. **IfA** responsible for external quality assurance of all end-point assessment organisations.	**Registration of apprenticeship training providers** Providers must apply to be included, application process considers "due diligence, capability, quality and financial health to assess their capability to deliver high-quality apprenticeship training."[13] ESFA places requirements on end-point assessment organisations (EPAOs), or organisations that provide certification at the end of an apprenticeship[14] **Self-reporting of activities** EPAOs are required by ESFA to fill out quarterly surveys on their activities for monitoring purposes. **Quality Inspections (Ofsted)**	Any VET provider can enter the market as long as it satisfies key requirements	In 2017, there were 207 further education colleges. In 2017, 69% of these colleges were judged as “good” or “outstanding” as a result of Ofsted inspections[15]. There are 210 registered awarding organisations[16].
Qualifications	**Ofqual**: reviews applications to have qualifications on register of	**Register of Regulated Qualifications** **Coordination tools:**	Any awarding organisation can apply to have their	The Register of Regulated Qualifications

[11] https://www.gov.uk/government/organisations/education-and-skills-funding-agency/about
[12] http://www.hefce.ac.uk/skills/skillspolicy/
[13] https://www.gov.uk/guidance/register-of-apprenticeship-training-providers
[14] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/663968/EPAO_Conditions_of_Acceptance_Version_2.2.pdf
[15] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/666871/Ofsted_Annual_Report_2016-17_Accessible.pdf
[16] https://register.ofqual.gov.uk/Search?Category=Organisations

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
	regulated qualifications; maintains register; recognises awarding organisations (i.e. examination boards) **ESFA** establishes rules for funding qualifications[17]; assigns apprenticeship standards to a certain funding band **Institute for Apprenticeships**: develops criteria for the approval of apprenticeship standards and assessment plans[18]. **Professional bodies** develop standards for apprenticeships, work with	Local authorities gather data on young people not in education, employment or training (NEET) in their areas (Client Caseload Information System). This information is used to help training providers address the issue of NEET[21]. There are plans to roll-out area-based reviews of educational needs. Reviews may be initiated by a group of institutions in a local area, or by Government, and will involve local authorities and local enterprise partnerships[22] **Monitoring of apprenticeships**: ESFA produces outcome indicators on e.g. quality measures for provision of apprenticeships[23] **Trailblazer groups** Bring employers together to develop apprenticeship standards	qualification included in the register. Market-based, bottom-up and decentralized system Recent reforms require all new apprenticeships to include an end-point assessment/ externally audited	System lacks **employer engagement**[24] Currently, there are 17,023[25] possible qualifications (this number includes all regulated qualifications, not only those that are related to VET). Large range of qualifications included, from ones that take several years, to Health & Safety certificates that take a few hours, to A-Levels.[26]

17 https://www.gov.uk/government/publications/qualifications-getting-approval-for-funding
18 https://www.instituteforapprenticeships.org/about/what-we-do/
21 https://ec.europa.eu/epale/sites/epale/files/leaving_education_early_putting_vocational_education_and_training_centre_stage_vol2.pdf
22 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/446516/BIS-15-433-reviewing-post-16-education-policy.pdf
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/484209/BIS-15-651-english-apprenticeships-our-2020-vision-executive-summary.pdf
23 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/638379/ESFA_Business_Plan_2017_to_2018.pdf
24 http://www.oecd.org/education/skills-beyond-school/OECD_VET_Key_Messages_and_Country_Summaries_2015.pdf
25 https://register.ofqual.gov.uk/Search?Category=Qualifications
26 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/544310/bis-16-360-fe-market-england.pdf

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
	employers to match with professional standards[19] **Employer groups** (e.g., LEPs and trailblazers): define skills needs; ensure that training is relevant to the job market; develop standards and assessment plans for apprenticeships[20]			The qualification system is regarded as highly complex; this might be a challenge e.g. for migrants[27]
Employers	**The Institute for Apprenticeships**: cooperates with employer groups in the development of apprenticeship standards **ESFA**: manages apprenticeship grants for employers[28]	**Apprenticeship Levy** (since May 2017) Requires all employers with pay bills of over £3 million to pay 0.5% of their bill (minus a £15k yearly allowance depending on company status) to fund apprenticeships **Apprenticeship Service online platform / funding** Employers can use the Apprenticeship Service online platform to receive levy funds to spend on apprenticeships, manage apprentices and pay training providers. Employers can also use the service to choose a training and a training provider.[29]	Approach is to incentivise employer investment in VET through tax and funding support	The Apprenticeship Levy has come under recent criticism[30] and planned 2020 targets are unlikely to be met.[31]
Students	Requirements to access VET are defined by the	**NCCIS database**[33]	Flexibility for students to	The use of the NCCIS database

19 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/484209/BIS-15-651-english-apprenticeships-our-2020-vision-executive-summary.pdf
20 http://fisss.org/about-us/
27 https://www.cityandguildsgroup.com/~/media/CGG%20Website/Documents/CGGroupUK%20pdf.ashx
28 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/695007/2018-19_AEB_funding_rules.pdf
29 https://www.gov.uk/government/publications/apprenticeship-levy-how-it-will-work/apprenticeship-levy-how-it-will-work
30 http://www.bbc.co.uk/news/business-42818613
31 https://feweek.co.uk/2017/11/23/revealed-3-million-apprenticeship-target-slipping-away/
33 CEDEFOP Leaving education early: putting vocational education and training in centre stage.

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
	description of qualifications within the qualifications registers (see above). Requirements to progress within a VET programme are set by education providers[32].	Used by LAs to monitor the activities of 16-19 year olds No statutory obligation for use The data collected is shared with VET institutions and providers, and may be used by authorities to decide whether any interventions are needed to address problems such as presence of NEET in specific regions or among certain population groups.	transfer credits between qualifications; opportunities to move from VET to higher education through recognition of vocational qualifications[34]	varies widely between LAs

[32] https://cumulus.cedefop.europa.eu/files/vetelib/2016/2016_CR_UK.pdf
[34] https://cumulus.cedefop.europa.eu/files/vetelib/2016/2016_CR_UK.pdf

UK's performance

The performance of the UK VET system can be qualified in various ways. As mentioned earlier, one broad measure is the extent of skills mismatch in the country. This has been a recurrent issue in the UK, which has been noted in multiple studies, particularly comparative studies (e.g. Hadjivassiliou et al. 2016). Skill gaps are identified in various areas, such as in the STEM and digital sectors (HM Government 2015).

The UK also performs poorly in terms of providing intermediate professional and technical skills, compared to OECD peers (Hadjivassiliou et al. 2016; CIPD 2017; Wolf 2015). Indeed, in other countries (such as Germany, Austria, Switzerland and Denmark), close to all apprentices are provided at a level that is equivalent to UK advanced programmes, while this is not the case in the UK (Wolf 2015).

Engagement of UK employers in apprenticeships is below levels found in many other countries: in England, only 15 per cent of employers offer apprenticeships, while 25 per cent of employers in Austria have apprentices, 24 per cent in Germany, and 30 per cent in Australia (HM Government 2015). This suggests that there is less buy-in from employers into the system or that there are other barriers to taking on apprentices.

A well-recognised problem is the complexity of the incentives and institutions in the UK system, as well as the fragmentation of the training landscape, which discourages employer participation (OECD/ILO 2017). A more general observation made by numerous commentators (e.g. CIPD 2017; Wolf 2011) is the lack of stability in the regulatory regime, which has experienced multiple and frequent reforms in recent decades.

The recent reform of apprenticeships in England has drawn criticism from the industry, particularly for the apprenticeship levy.[35] It remains complex and fragmented. As reported by practitioners the new employer-led path has begun delivering positive outcomes, however. Early evidence shows that the proportion of apprenticeship starts on the new, employer-designed Trailblazer standards is growing, displacing apprenticeships starts on the old-style frameworks. Although the overall total of people in apprenticeships has dropped, this trend also appears to be supporting a shift from the lower level frameworks particularly in those sectors with arguably lower wage returns. The VET system is transitioning from a 'provider-led' regime towards an employer-led regime, and the overall picture is therefore mixed (CIPD 2018b).

Better performers and their regulatory approaches

Selected countries

There are distinct challenges in comparing regulatory regimes for VET. This is because they tend to be embedded within a network of institutions to which they are co-dependent:

[35] 'CBI criticises short-term policies to improve skills base', *BBC News*, 17 January 2018; 'Apprenticeship levy is not working, employers say', *BBC News*, 25 January 2018; 'Revealed: 3 million apprenticeship target slipping away', *FE Week*, 23 November 2017.

educational institutions, and institutions of representation and coordination for business organisations, at local, regional and national levels, and at sector and cross-sector levels.

While some systems share distinct characteristics that permit a meaningful comparison to be undertaken, with some limitations – such as, for instance, comparison between Nordic countries (Jorgensen et al. 2018) – other systems are significantly different from one another, so that comparing them and seeking to draw lessons from one to the other is a challenging exercise. For instance, much has been written about 'dual' VET systems with an employment-centred approach, such as those from Germany, Austria and Switzerland. They are performing well, especially in the area of apprenticeships. These countries have a well-established dual system for VET, combining on-the-job apprenticeships and school-based education (Bliem et al. 2016). The systems ensure a smooth school-to-work transition and are arguably more successful than others at matching skills and jobs, although all countries struggle with skills mismatch (DualVET 2015). This contributes to low unemployment rates among young people (ibid). However, it would be difficult to transpose the features that make the German system effective into a country like the UK. That is because the underpinning institutions that make the German VET system work are not present in the UK (also Mazenod 2014).[36] That is notwithstanding employer-driven efforts to replicate these features in foreign countries, which has sometimes been effective in a decentralised and local context (Fortwengel and Jackson 2016).

The UK VET system is sometimes labelled 'market-led' (Gessler and Herrera 2015) or 'liberal' (Hadjivassiliou et al. 2016). That reflects the traditional reliance on individual initiative to invest time and resources into the acquisition of skills, and on private providers to offer the qualifications needed, responding to the demand. Ireland has also a market-led VET system, although its performance is comparable to the UK's, which makes a comparison between the two systems largely inconsequential for the purposes of drawing lessons for the UK.

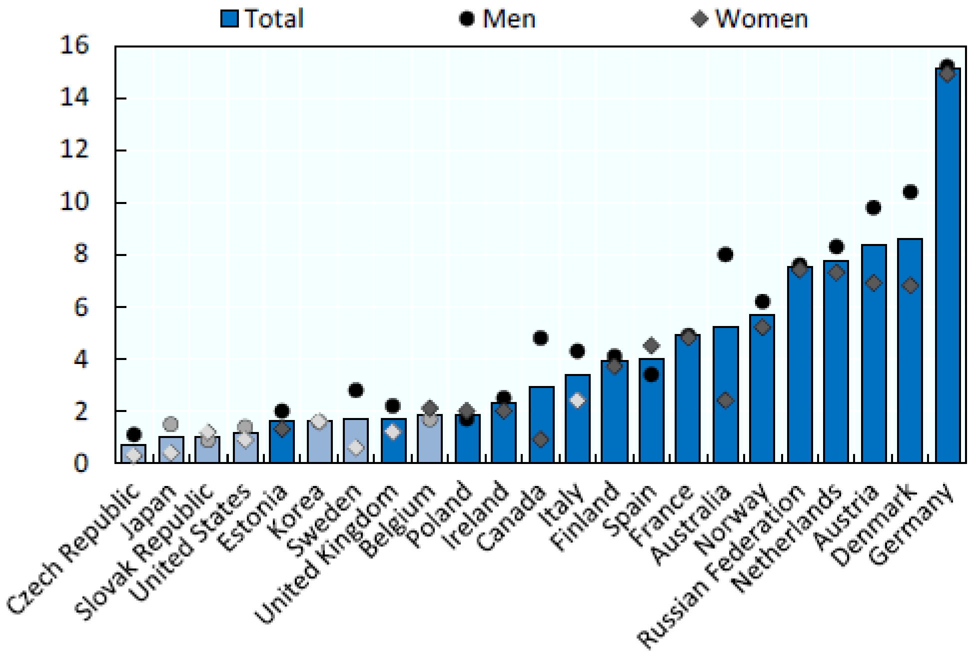
In other words, there are no easily identified 'leading' regimes that are comparable to the UK.

To alleviate these challenges, the study team has selected representatives from the so-called 'universalistic' regimes (Hadjivassiliou et al. 2016), namely Denmark and Norway. The Danish VET system is known to achieve a smooth transition from school to work for students following a vocational education programme, contrary to what has been observed in other countries, which identify this transition as a growing problem (Jørgensen 2014). The Norwegian system is also a high performing system which relies however on slightly different principles than the Danish system. While the Danish system is a 'dual' system (like Germany), relying on the combination of at-work and off-work training, the Norwegian system relies on a sequential provision of school-based training and apprenticeship-based training.

[36] 'Germany's apprenticeship scheme success may be hard to replicate', *The Financial Times*, 21 April 2017.

As Figure 3 below indicates, Norway and Denmark have also high levels of participation in apprenticeship programmes relative to the UK.

Figure 3. Participation in apprenticeship programmes (% of youth aged 16-29 who are apprentices, 2012)



Source: Keese, 2014

There are some elements from these regimes which can form the basis of a comparative analysis, although there are a number of differences between these systems and the UK. This comparison is most useful to understand why the UK regime has not been performing well, rather than to offer solutions to improve its performance. Nevertheless, the following points of comparison and, to some extent, similarity, are identified:

- The UK relies on a regime for employer contributions to fund apprenticeships that is relatively similar to those in place in Denmark and Norway, albeit nuances between the different regimes present an opportunity for learning through comparison.

- There is a strong drive to define and implement VET policies at the local level in Norway, which echoes the strong preference in the UK for the local delivery of many (regulatory) policies, including VET.

- By contrast to the UK, the Danish and Norwegian systems are praised for the extent to which they match the skills employers need with those that young people may acquire through the VET system (e.g. Hadjivassiliou et al. 2016).

Review of regulatory regimes

This sub-section presents in turn the regulatory regimes for VET in Denmark and Norway.

Denmark

The Danish system of VET is a dual system: it relies on the combination of school-based and work-based education. Its dominant principle of regulation is the so-called 'occupational self-governance', whereby the intervention of the state is avoided, and social partners – representative organisations of employees and employers – play the central role instead (Bøndergaard 2014). This materialises in various ways, and especially in the role of *trade committees*, which represent social partners at the national level. Trade committees play a decisive role in the governance of the VET system, by shaping not only the manner in which work-based vocational training is delivered but also the manner in which school-based vocational training is delivered. Thus, trade committees specify the content of vocational programmes, revise qualification profiles, and even approve companies delivering training.

The regulation of VET in Denmark is, however, not only based on trade committees. As noted by Jørgensen (2014), there are also elements of state regulation and market mechanisms shaping and organising the VET system. Some aspects of the regime are led more directly by the state (such as the funding of schools), whereas others (such as the development of course offerings) rely on the input of social partners or market mechanisms.

Within the part of the system that is school-based, the state (the Ministry of Education) has a key role in the regulation of vocational schools, which it approves and publicly funds. In other words, vocational schools are very much part of a public system organised and paid for by taxpayers. The state also trains teachers at VET providers. The Ministry of Education's action plan for VET sets targets, plans to match offers and demand for apprenticeships and sets-out strategies to achieve consistency in the delivery of vocational education.

These top-down tools do not preclude vocational schools from innovating and taking initiatives, particularly to adapt their offer to the circumstances of the local economy and student population. In fact, the regulatory regime encourages them to do so by linking funding to outputs, yet that flexibility appears not to have been taken up by schools (Jørgensen 2014). Furthermore, schools are also encouraged to compete with one another. Overall, however, there is little evidence that these market mechanisms have worked, arguably because the regime is fundamentally anchored in the principle of social partner governance, with a large degree of input from national labour market partners, even at the local level at which vocational schools operate.

At the national level, the Ministry of Education is also advised by the Advisory Council for Initial Vocational Education and Training (REU), on such topics as the accreditation of vocational institutions and the framework through which training providers are assessed. The REU is comprised of representatives of employees, employers, teachers and students.

The definition of standardised occupation descriptions forms the backbone of much of the system: courses and qualifications are defined according to the occupations described centrally, by social partners. Because social partners, and notably employers, have such a core role, there is considerable buy-in from their part into the VET system: training places are being offered (although not in sufficient numbers to satisfy the demand), and the qualifications obtained are recognised by employers nationwide. This benefits individuals taking part in a VET programme, by providing them with mobility and flexibility throughout the market. As noted by Jørgensen (2014), this contributes to Denmark having one of the highest levels of job mobility in Europe.

One of the weaknesses of the regime is the lack of individual choice and flexibility it offers to students in terms of the skills they wish to acquire. There is a growing perception in Denmark that the vocational education and training system provides a limited range of qualifications and jobs, relative to the more open-ended nature of the skills acquired through the general and higher education system. As a result, the proportion of students taking the VET route has been declining, which is seen as a problem, given that a large number of skilled workers will retire in the coming years and will need to be replaced.

Another challenge raised in Denmark is the perceived lack of flexibility of the regime to accommodate innovation. There has been a sense that a regime steered by social partners may not anticipate and adapt well enough to changes in the economy, and the corresponding needs for adjusted sets of skills.

A market mechanism could potentially help address this issue, as attempted by incentivising vocational schools to adapt their offer to local demand, and to compete with one another for students. However, this was unsuccessful due to the strong influence of social partners. The regulatory regime was adapted instead to enrol these trade partners in the task of scanning the horizon and adjusting occupational and qualification profiles to new developments. Trade committees and the REU are now required to submit annual development reports at the national level that consider the changes in skills requirements and any consequent need for restructuring educational offerings. The Ministry of Education is responsible for establishing development committees specially for the purpose of assessing training needs in areas that are not already addressed by existing trade committees.

This solution – which combines the state control with the input of social partners– provides flexibility and an ability to innovate in a non-market based regime.

One last feature of the regulatory regime is its approach to incentivising employer participation. Social partners represented in trade committees (at the national level) and local education committees (which serve as a bridge between local industry and vocational schools at the local level) advise employers, and seek to encourage the creation of apprenticeship positions. They also draft local training plans that seek to match the demand for and offer of skills. This provides engagement and support that is individualised and coordinated.

Financially, employers are supported by the Employer’s Reimbursement Fund, which reimburses employers for the wages of their apprentices. The Fund pools resources contributed by all Danish companies in the form of a fixed annual fee.

Overall, Denmark presents a regime that is heavily reliant on a bedrock of institutions representing social partners, themselves present across the country and the different sectors of the industry. While the regime appears founded on the notion that stakeholders are better placed than the state to define their needs and determine how they are to be delivered, the state retains a key steering role nonetheless, to provide directly (through the funding of vocational education institutions, and the training of teachers), to set and enforce standards (through the approval of new vocational schools and the monitoring of their actual performance), and to focus social partners on the need to regularly adapt to a rapidly changing economy. Market mechanisms, when present, are not unfamiliar, yet appear to play a minor role in shaping the regime’s outcomes.

Studies of the Danish regime conclude that it endures because it benefits firms, as it saves them costs they would otherwise need to incur. Deregulation would effectively transform the system radically, by doing away with certified and standardised skills.

The regulatory regime is described in further detail in Table 2, in terms of the issues and entities that are regulated, who is regulating them, and with what tools. This also includes information on the underpinning principles of the regime and relevant outcomes.

Table 2: Overview of the Danish regulatory regime for skills

<table>
<tr><th>Issue / entity regulated</th><th>Regulator</th><th>Regulatory tools</th><th>Underpinning principles</th><th>Relevant outcomes</th></tr>
<tr><td>Providers of VET</td><td>Ministry for Education: approves new institutions, sets the overall legislative framework for VETs.

Danish Centre for the Development of Vocational Education and Training (NCE): trains teachers at VET providers

The Advisory Council for Initial Vocational Education and Training (REU)[37]: advises the Ministry of Education on the accreditation of institution and the framework for assessing providers[38].

Trade committees appoint local training</td><td>Approval regime for new providers
New institutions get approved based on criteria set by Ministry for Education. New institutions must be approved based on a national or regional programme which assesses the expected need for such institutions. Approval can be revoked should there no longer be a need for the institution.[40]

“Action plan for increased implementation”
• Targets
• Plan to match apprenticeships offer to demand
• Plan to achieve consistency in delivery (pedagogy, didactic foundation)
• Annual objectives

Output monitoring[41]
• VET providers are measured by the Ministry for Education against set output targets and indicators.
• Schools should develop quality plans to assess the quality of training delivered.
• Schools submit yearly activity reports and additional information to the Ministry of education; this includes information on plans to</td><td>Occupational self-governance

State regulation

Market mechanisms (competition between colleges)</td><td>Denmark has 111 different VETs, organised in 12 basic areas/clusters[46]. It has recently reformed the structure of its VET system, to reduce and streamline the access channels to VETs: it has introduced a basic one-year programme, where students can choose between four subject areas (rather than 12). Students can then choose their specific VET[47].</td></tr>
</table>

[37] The Council involves social partners representatives, representatives of managements, teachers and students http://eng.uvm.dk/upper-secondary-education/vocational-education-and-training--vet-

[38] http://eng.uvm.dk/upper-secondary-education/vocational-education-and-training--vet-

[40] Chapter I https://www.retsinformation.dk/Forms/R0710.aspx?id=194941

[41] https://www.apprenticeship-toolbox.eu/governance-regulatory-framework/monitoring-research/37-monitoring-research-in-denmark

[46] http://eng.uvm.dk/upper-secondary-education/vocational-education-and-training--vet-

[47] https://www.apprenticeship-toolbox.eu/files/143/Recent-Developments/132/Denmark---Improving-Vocational-Education-and-Training.pdf

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
	committees: the latter support cooperation between colleges and industry to increase the number of apprenticeships39.	increase the number of certified students, and address any shortcomings identified through schools' self-evaluation reports[42]. **Teacher training** • The **NCE** provides training services and continuing education to teachers at VET providers.[43] **Funding** • VET colleges are self-governing institutions but receive their funding from the Ministry of Education.[44] The school-based part of VET programmes is publicly funded; providers receive funds that are proportionate to the number of students ("pay per student"). The apprenticeship part of VET is funded through the Employers' Reimbursement Fund (see more details below in the Employers section).[45]		
Qualifications	**REU:** monitors labour market trends, existing programmes, makes recommendations for new qualifications, as well as discontinuing,	**Horizon scanning** • Vocational committees are in charge of analysing job market trends and report on the need for additions or changes in the course offerings[50] • The Ministry of Education can appoint development committees charged with assessing whether training should be offered in areas that	Occupational self-governance, backed up by state intervention Articulated with occupation definitions	High level of recognition for qualifications Qualifications are transferable easily within the Danish job market

39 http://eng.uvm.dk/upper-secondary-education/vocational-education-and-training--vet-
42 https://www.apprenticeship-toolbox.eu/files/130/Legal-Framework/49/Denmark---Act-on-VET.pdf
43 https://www.devex.com/organizations/danish-centre-for-the-development-of-vocational-education-and-training-nce-27393
44 https://www.apprenticeship-toolbox.eu/financing/funding-arrangements/45-funding-arrangements-in-denmark
45 http://eng.uvm.dk/upper-secondary-education/vocational-education-and-training--vet-
50 https://www.apprenticeship-toolbox.eu/files/130/Legal-Framework/49/Denmark---Act-on-VET.pdf

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
	adapting or merging existing programmes. **Ministry for Education**: implements the recommendations of the REU, draws up regulation for individual programmes **Trade committees**: prepare proposals for establishing VET programs and courses[48] **Local training committees**: advise colleges on education programmes' content[49].	are not already addressed by existing trade committees[51]. **Planning** • Plans for specific courses (VET program handbooks) are prepared by schools in cooperation the local VET program committee; the school should regularly assess if the handbook needs updates[52] **Monitoring:** • Vocational committees, local VET committees and employers must develop quality plans and regularly verify the quality of apprenticeship courses[53] **Evaluation of programmes:** Vocational committee for a VET program should make follow-up evaluations of whether the program meets the demands for quality education[54].		Lower range of choices than available through general education
Employers	**Trade committees** advise employees on the possibilities for creating apprenticeship positions and encourage the creation	**Incentives**: Employers' Reimbursement Fund reimburses employers for the wages paid through apprenticeships. All companies contribute a fixed annual fee to the fund[56].	Apprenticeships and employee further training are subsidised according to a	High level of employer participation in apprenticeship programmes

48 https://www.apprenticeship-toolbox.eu/files/130/Legal-Framework/49/Denmark---Act-on-VET.pdf
49 http://eng.uvm.dk/upper-secondary-education/vocational-education-and-training--vet-
51 http://eng.uvm.dk/upper-secondary-education/vocational-education-and-training--vet-
52 https://www.apprenticeship-toolbox.eu/files/130/Legal-Framework/49/Denmark---Act-on-VET.pdf
53 https://www.apprenticeship-toolbox.eu/files/130/Legal-Framework/49/Denmark---Act-on-VET.pdf
54 https://www.apprenticeship-toolbox.eu/files/130/Legal-Framework/49/Denmark---Act-on-VET.pdf
56 http://eng.uvm.dk/upper-secondary-education/vocational-education-and-training--vet-

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
	of more positions; together with **local education committees and employers**, they draw quality plans and do quality checks of apprenticeship programs[55].	**Monitoring and evaluation:** Trade committee, local committee and employers should prepare quality plans and regular quality assessment studies to assess apprenticeship courses (e.g., studies on large cohorts of students who enrolled in apprenticeships).[57]	**solidarity** principle.	
Students	**Ministry of education**: sets the overall conditions for apprenticeships **Employer**: sets the apprenticeship plan for individual apprentices	**Funding** • The state pays for the education aspect of apprenticeships.[58] **Apprenticeship contract:** • Following the basic vocational training, students must enter in a formal apprenticeship agreement (contract) with an employer[59]. **Certifications:** Once the VET programme and apprenticeships are completed, pupils receive, respectively, a Certificate of Vocation and a Final Declaration of Apprenticeship	Apprenticeship is underpinned by contract with employer	Smooth school-to-work transition

[55] https://www.apprenticeship-toolbox.eu/files/130/Legal-Framework/49/Denmark---Act-on-VET.pdf
[57] https://www.apprenticeship-toolbox.eu/files/130/Legal-Framework/49/Denmark---Act-on-VET.pdf
[58] https://www.apprenticeship-toolbox.eu/financing/funding-arrangements/45-funding-arrangements-in-denmark
[59] http://eng.uvm.dk/upper-secondary-education/vocational-education-and-training--vet-

Norway

The Norwegian system combines elements of dual VET systems and elements of school-based VET systems with a strong state influence (Michelsen et al. 2014).

The characteristic features of its governance include:

- state involvement in VET, with the government responsible for setting the overall VET framework;
- strong involvement of social partners in designing the content of VET programmes (as in the Danish system); and
- full integration of the VET system into the broader system of upper secondary education.

The Ministry of Education is the main institution responsible for setting overarching rules on the VET levels and programmes in the school-based part of VET education. It also establishes the subjects, educational objectives, the scope and content of education and training. The Ministry of Education also selects the subject areas for VET training in enterprises, and rules on the training schemes for the different subjects (The Education Act 1998).

For both off-the-job and on-the-job training, social partners play an important advisory role, as they are able to influence the content of training programmes. They are involved in representative institutions both at a national and local level:

- *Regional vocational training boards*: these organisations include employer organisations and trade unions, and advise county councils on the approval of new training establishments. They also advise on the content of training programmes delivered at a local level, to make sure they meet employers' needs.

- *Vocational training councils*: these also include social partners. These councils are organised by vocational training subjects, and are also involved in advising on the content of training programmes.

- *The National Council for VET* operates at a national level and advises the Ministry for Education on VET. It involves representatives from both the government and social partners, and advises on the formation of vocational training councils.

These institutions are formally recognised and regulated by the Education Act. These well-established forms of cooperation between government and social actors are key to ensuring that the labour market can secure the skills needed.

For school-based training, social partners are also involved in designing apprenticeships and advise the government through several formally-recognised committees and institutions. Businesses establish local training centres that provide apprenticeship training in local areas. These centres are a voluntary initiative; however, they have a legal status and their role is recognised as part of national regulation.

Apprenticeships are partly financed by the state, and partly paid by employers. The state's contribution is relatively substantial, and this is essential to enable many firms (such as small firms) to train apprentices. Norway does not have a levy system in place as in Denmark or the UK. Public funds for apprenticeships are allocated from the public purse, sharing the cost of apprenticeships more broadly across Norwegian society.

The Norwegian system is facing high levels of drop-outs (especially in areas such as food processing and food services), which may be linked to the system's low barriers to entry and pupils' decisions to accept job opportunities before graduation. Prima facie, this suggests a need to increase the appeal of some courses to improve retention levels (OECD 2018).

In summary, the regulation of the Norwegian VET system is centralised, with the state setting the overall structure of the VET system and taking decisions on the content of VET programmes. The state also invests considerably in training to ensure access to all, and is committed to promoting apprenticeships. Social partners are considerably involved in designing and delivering training through representative bodies, whose role is recognised in legislation. This cooperation system involves representative bodies at local, national and sectoral level. Collective skill formation is seen as essential to develop the competences needed by employers. Furthermore, the system ensures buy-in from employers: their engagement in training supports their commitment to then give stable employment to VET graduates.

The regulatory regime is described in further detail in Table 3, in terms of the issues and entities that are regulated, who is regulating them and with what tools. This includes also information on the underpinning principles of the regime and relevant outcomes.

Table 3 Overview of Norway's regulatory regime for skills

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
Providers of VET	**Ministry of Education[60]:** sets overall conditions for approval of VET providers; appoints the local vocational training boards. **Public authorities at county level**: run public schools; verify that companies providing VET training meet criteria established by regulation; decide on the approval and loss of approval of training establishments, after consulting with the vocational training board[61]. **Regional county vocational training boards[62]:** asses training establishments prior to approval by public	**Requirements for teachers in VET programmes** **Requirements for training providers[64]:** • Training establishments should have internal quality assurance systems to ensure compliance with regulations; they have to submit an annual report to the county authority, providing information on the training provided. • County training boards evaluate these internal QA systems. • Training establishments have to implement the quality system for VET established by county authorities and county training boards. **Registry of accredited courses and organisations:** • The Norwegian Agency for Quality Assurance in Education (NOKUT) holds a registry of accredited courses and organisations, which includes the results, for each organisation, of student satisfaction surveys. Results are publicly available, and	State regulation with strong input from social partners	Norway has 435 upper secondary schools and 111 tertiary vocational schools[67]

60 http://nord-vet.dk/indhold/uploads/report1b_no.pdf
61 https://www.regjeringen.no/contentassets/b3b9e92cce6742c39581b661a019e504/education-act-norway-with-amendments-entered-2014-2.pdf
62 Members have knowledge of VET and industrial and employment issues. Members include social partners (employer organisations and trade unions) and pupils.
64 https://www.regjeringen.no/contentassets/b3b9e92cce6742c39581b661a019e504/education-act-norway-with-amendments-entered-2014-2.pdf
67 https://www.ssb.no/en/utdanning/artikler-og-publikasjoner/_attachment/211355?_ts=14a393592e0

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
	authorities at local level.[63]	feedback can be consulted by institution and study program[65] **Funding**: ● Most students attend public VETs, which do not require any school fees and are publicly-funded by the Ministry of Education or county authorities. Only a small proportion of pupils attends private schools[66].		
Qualifications	**Ministry of Education**: issues regulations on training schemes; establishes the content, scope, subjects etc. of training; sets teaching hours and duration of training. **Public authorities at county level**: may establish training programmes outside those determined by the Ministry (in this case, the authority should ask for the Ministry's permission to deviate from regulated curricula). Issue trade	**Appointment/licencing of examination boards** ● Undertaken by **public authorities at county level** **Recognition of study programmes:** ● Programmes are accredited or recognised by NOKUT or by educational institutions with accreditation authorisation[71]. NOKUT may launch supervision processes of programmes, which can result in revocation of accreditation or recognition. **Registry of accredited courses and organisations:** ● NOKUT holds a registry of accredited courses and organisations, which includes	The system is decentralised: local authorities have strong input into the development of curricula. The system is built to ensure that qualifications meet local needs of the labour market, and to ensure participation of social partners in defining training courses. Local cooperation is a special feature of	There are eight VET programmes, providing about 190 certificates[74] There is a trend towards increasing demand for skilled workers: by 2035, it is expected that there will be a shortage of almost 100 000 skilled workers. To face these issues, the government and social partners are engaging to increase apprenticeship places.

63 https://www.regjeringen.no/contentassets/b3b9e92cce6742c39581b661a019e504/education-act-norway-with-amendments-entered-2014-2.pdf
65 http://studiebarometeret.no/en/student/sammenligne/1130_m-bce
66 http://www.unevoc.unesco.org/wtdb/worldtvetdatabase_nor_en.pdf
71 https://www.nokut.no/en/norwegian-education/supervision/
74 http://www.cedefop.europa.eu/en/publications-and-resources/publications/8117

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
	and journeyman's certificates.[68] **Regional county vocational training boards (and their committees)**: advise local authorities on the content of training programmes, to ensure that they correspond to labour market's needs. Advises on how programmes should be quality assured. **Vocational Training Councils** (nine, one for each vocational study programme)[69]: give advice on the content of training programmes in specific groups of trades **National Council for VET**[70]: give high-level advice on qualifications	the results, for each organisation, of student satisfaction surveys[72]	the Nordic system, and businesses can voluntary cooperate for the creation of local training centres for the delivery of apprenticeship training[73].	Local training agencies represent 80% of apprentices[75].

68 https://www.regjeringen.no/contentassets/b3b9e92cce6742c39581b661a019e504/education-act-norway-with-amendments-entered-2014-2.pdf
69 Involves employers and their organisations
70 Involves the Ministry, social partners, students, teachers.
72 http://studiebarometeret.no/en/student/sammenligne/1130_m-bce
73 https://www.regjeringen.no/contentassets/b3b9e92cce6742c39581b661a019e504/education-act-norway-with-amendments-entered-2014-2.pdf
http://nord-vet.dk/indhold/uploads/report1c_no.pdf
75 http://nord-vet.dk/indhold/uploads/report1c_no.pdf

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
Employers	**Public authorities at county level:** responsible for dispensing public funds for VET (including apprenticeships)	**State subsidy for apprenticeships**[76] • Around 500 EUR per month per apprentice. • Dispensed by public authorities at county level. • Local training centres created by employers are almost entirely relying on public funding: they receive state grants based on the number of apprentices enrolled and training completed[77].	Both public and private bodies can be approved as training establishments. This includes training centres created from the collaboration between different employers[78].	High level of participation from employers into the system
Students	**Ministry of Education** sets the conditions for the assessment of students and their admission to VET courses[79].			

[76] http://nord-vet.dk/indhold/uploads/report1b_no.pdf
[77] http://nord-vet.dk/indhold/uploads/report1c_no.pdf
[78] https://www.regjeringen.no/contentassets/b3b9e92cce6742c39581b661a019e504/education-act-norway-with-amendments-entered-2014-2.pdf
[79] https://www.regjeringen.no/contentassets/b3b9e92cce6742c39581b661a019e504/education-act-norway-with-amendments-entered-2014-2.pdf

Comparative analysis

In spite of the significant differences between the three systems compared, the comparative analysis between the UK (England), Denmark and Norway provides insights on a number of aspects.

There are some differences in the overall structure of VET systems in the countries investigated. Nordic VET systems have a limited number of organisations regulating apprenticeships, a relatively stable regulatory framework and a well-established system to engage with social partners (i.e. 'occupational self-governance'). The overall structure of regulatory institutions is organised principally around key constituencies contributing to regulation – state, social partners, training providers – and in geographic terms – national, regional, and local level. By contrast, the UK system is complex and fragmented. It is organised in terms of functions – funding, inspection, registration, accreditation – and does not have a comprehensive network of local or regional organisations in place to shape skills policy at those levels. In addition, it has been subject to several changes in recent years. This may have discouraged employer participation in the VET system in the UK.

In Denmark and Norway, avenues to VET qualifications are simple and streamlined: for example, most training in Norway is offered according to a system which involves two years of school-based education followed by two years of firm-based training. The Danish system is also straightforward and efficient in that it offers a smooth transition from school to work. In the UK, there are various alternative paths to VET qualifications, involving different mixes of school- and work-based training. This flexible approach may be valued by some employers, but contributes to the complexity of the overall regime (OECD/ILO 2017).

The state in Denmark and Norway has a long history of engaging with social partners, and employers' advisory bodies are well-established within the regulatory regime. The forecasting of skills needs is part of this institutionalised collaboration process, which contributes to making these systems better able to adapt to changing needs than others. These elements are absent in the UK, although the establishment of the Institute for Apprenticeships and trailblazer groups may contribute to a better performance of the UK system in future. These new forms of employer engagement and the decentralisation of 'skills needs reviews' may take inspiration from the tripartite system in Norway and Denmark, where representative bodies established at a local, sectoral and national level are involved in the development of VET. The UK may further support the creation of local training centres under voluntary industry initiatives, as has been done by the Norwegian government.

The design of funding for VET, and particularly apprenticeships, appears to be a key feature of successful regimes. All involve a substantial level of state funding support. In particular, while the Danish and English funding systems for apprenticeships include an apprenticeship levy, Denmark's levy applies to all companies, while the UK levy only affects a limited proportion of firms. UK rules for the apprenticeship levy, including restrictions to certain companies, are perceived as confusing for employers (CIPD 2018a). These issues may discourage employers from engaging and using the tools provided. The fact that Norway (and other successful countries) does not have an apprenticeship levy suggests that it is not in itself a factor for success,[80] but if not set up correctly it can be a contributor to failure.

As outlined in Table 4, in the UK, awarding organisations' funding is outcome-based. This funding system, combined with the high degree of freedom in the creation of qualifications, has created perverse incentives which resulted in the development of lower-quality VET programmes. By contrast, in Denmark and Norway, training providers are partly funded on an outcomes basis; however, there is very limited freedom for providers to introduce new qualifications, as this responsibility rests primarily with the central government. The latter feature of these regimes, together with these providers' incentives, appears to have contributed to the contrasting outcomes that we observe between the UK and Denmark/Norway: a simpler environment and a simpler set of qualifications in Denmark and Norway, and better recognition and portability (across employers) of the qualifications acquired by completing a VET programme. Arguably, the downside of this approach, namely more limited choice for students taking the technical education route, appears to be compensated by the high relevance of those qualifications for employers.

Finally, another difference between the systems relates to how apprentices are recruited: in the UK, this process has to go through training providers, while in Denmark and Norway there is more direct engagement between employers and students. The role of training providers as intermediaries (as defined by regulators), combined with a set of perverse incentives to the latter to provide only certain types of training, has been highlighted as a core weakness of the UK regime (e.g. OECD/ILO 2017; Wolf 2015).

Table 4: Comparative analysis of regulatory regimes for vocational education and training

Variable	Denmark	Norway	United Kingdom
Levy on employers to fund apprenticeships	Fixed annual fee to Employers Reimbursement Fund	None – apprentices are partly paid by employers, and partly through a state grant.	Apprenticeship levy – fraction of pay bill
Threshold above which levy should be paid	None	None – no levy is in place	Pay bill of over £3m

80 "The evidence on the effect of training levies from other countries is sparse and what does exist is inconclusive. Gospel and Casey (2012: 18) suggest France, the Netherlands, Denmark, Australia, Singapore and Korea have levy schemes that might offer some insight into the effect of a levy in the UK, but go on to note that there is no firm evidence of a positive effect on the quality or quantity of training in any of these countries. They also note that the countries with the most highly regarded apprenticeship schemes (Germany, Austria and Switzerland) do not have levy systems." (Dolphin 2016, p. 13)

Variable	Denmark	Norway	United Kingdom
Financial incentive to employer	Apprentice's wages reimbursed to the employer	Subsidy of about €500 per month per apprentice	Funding support to spend on apprenticeships, manage apprentices, pay training providers
Approach to the regulation of new qualifications	Authorisation	Authorisation	Registration
Definition of new qualifications	Centrally-defined by the state, with inputs from social partners	Centrally-defined by the state, with inputs from social partners	Provider-led, with growing employer involvement in defining standards,
Provider's freedom to introduce new qualifications	Some – not used	Some – exceptional	Extensive
Employer's recruitment of apprentices	Direct - employers establish apprenticeship agreements with VET pupils	Direct - employers establish apprenticeship agreements with VET pupils	Can be indirect – employers rely on training providers for recruiting apprentices – or direct
Output-based incentives to training providers	State funding based on the number of credits obtained by students each year, multiplied by a rate which varies for each programmes[81].	Funding to institutions is only partly output based[82]	Output-based: funding is largely based on the number of students trained and on the qualifications obtained
Entry of new qualification providers	Approval	Approval	Registration
Supervision of training organisations	Output-based	Based on regulatory compliance	Mixed (includes checks on outputs, quality, and financial soundness)

[81] http://www.oecd.org/education/EDUCATION%20POLICY%20OUTLOOK%20DENMARK_EN.pdf

[82] http://www.oecd.org/norway/EDUCATION%20POLICY%20OUTLOOK%20NORWAY_EN.pdf

Variable	Denmark	Norway	United Kingdom
Outcome: number of registered VET qualifications	**106**[83]	**190**	**17,023**[84]
% of young people who are not in employment, education or training[85] ***(2016)***	**7.7%**	**7.4%**	**14%**
Share of enterprises providing training to workers	**91%**	**97%**	**80%**

Lessons for the UK

In summary, this analysis has identified the following lessons for the UK:

- The regulation of VET, and particularly that of apprenticeships, is correlated with better outcomes (in terms of youth employment) when employers of all sizes play a central role and have substantial autonomy and the ability to influence key features of the regime. Engaging employers is a key issue, and particularly ensuring that they coordinate to establish shared standards. This is a collective action problem that regulation cannot solve. In the absence of institutions of coordination of the type that exists in continental Europe (social partnership), alternative strategies could be implemented to contribute to this objective. This would require cooperation between employers themselves and a sustained effort over a longer period of time. The Institute for Apprenticeship may help coordinate or broker such engagement activities.

- Some market incentives applied to apprenticeships do not work well as applied to providers of training. The British experience suggests that incentives that are purely outcome-based interact with the profit-maximisation motives of providers at the expense of quality.

[83] https://cumulus.cedefop.europa.eu/files/vetelib/2016/2016_CR_DK.pdf
[84] This figure includes all qualifications accredited by Ofqual, including non-VET qualifications. The number of VET qualifications is still substantial, however, and there is an understanding that qualification organisations in the UK have multiplied beyond what is needed and with insufficient input from employers.
[85] http://www.cedefop.europa.eu/en/publications-and-resources/statistics-and-indicators/statistics-and-graphs/30-how-many-young-are-not

- Employer-led regimes are better aligned with the intended logic of apprenticeship. The guiding relationship in such regimes is between the employer and the apprentice, rather than between either of them and a training provider. This also contributes to better outcomes in matching skills. Recent UK reforms, including the Apprenticeship Levy and the establishment of the Institute for Apprenticeships, are looking to move the system toward an employer-led regime.

Annex 3 – Review and comparative analysis of workplace pension regulatory regimes in the United Kingdom, Australia and the Netherlands

Rationale for investigating workplace pensions

Objectives of pensions regulation

As outlined by numerous commentators (int. al. Barr and Diamond 2009; Ebbinghaus 2015; Natali 2009; Mabbett 2011; Leisering 2012; Whiteside 2017), the combined effects of 'increasing life expectancy (…), declining fertility, and earlier retirement' (Barr and Diamond 2009) have led to changes to pensions in many countries. These changes have sometimes been referred to as 'privatisation', meaning that responsibility for retirement income has been increasingly passed on from the state to private actors, and among private actors from the employer-sponsor to the employee-beneficiary. One of the salient features of this privatisation trend has been the phasing out of 'Defined Benefit' (DB) schemes[86] in favour of 'Defined Contribution' (DC) schemes,[87] and the creation of personal pension schemes to supplement public and occupational pensions.

Another feature has been what Ebbinghaus (2015) calls 'marketisation', meaning the increasing reliance on financial markets to provide sufficient returns on pension assets, and the commodification of pensions. These changes have been accompanied by a significant expansion of the regulatory state in pensions, including the creation of regulators specifically tasked with overseeing pension funds in some countries (such as the UK).

Financial crises in the early 2000s (the crash of the so-called 'dot-com' bubble) and then late 2000s have challenged the merits of these trends, as the value of assets in pensions funds have dipped significantly as a result, particularly in the UK and the Netherlands. Achieving sufficient returns in the current environment is particularly difficult, leading to greater scrutiny on such issues as the administrative fees that intermediaries in the pension chain levy on pensioners. At the same time, the current context of significantly reduced public funding for investments has made governments keener to draw resources

[86] A defined benefit pension plan is designed so that 'the risks are absorbed by changes in the contribution rate, which in the case of a shock is adjusted to meet the target benefit level' (Chen and Beetsma 2014)

[87] A defined contribution pension plan 'fixes the contribution rate, while the benefit level absorbs the risk associated with the plan' (Chen and Beetsma 2014).

from pensions funds and invest them into the economy, for instance to finance infrastructure development and innovation, as it can be observed in many countries.

Against this background, the objectives of regulatory intervention against which regulatory regimes can be evaluated can be defined as follows:

- Ensure maximum coverage of the working population – this is a core objective of pensions policy that is often addressed through legislation, but can also be addressed through regulation (Antolin et al. 2012).
- Protect pensioners against risks to their savings – this has become a central issue for regulators in the context of *funded* (invested in financial markets) pensions and market volatility. Legislation giving pensioners rights of choice between multiple pension products has also created opportunities for fraud, which need also to be addressed. These various issues tend to fall within either prudential regulation or consumer protection regulation.
- Encourage investments from pensions funds into the economy – this is also a relatively more recent policy objective, which reflects constraints on the public purse and the attractiveness of very large assets held in workplace pensions.

The UK's regulatory regime for pensions

This section does not provide an exhaustive description of the UK regulatory regime for pensions. It is a complex regime, adapted to a complex environment of multiple pension scheme designs and stakeholders. Rather, this section provides an overview of the regime, presenting its most salient characteristics, as well as giving an idea of how the regime addresses the objectives listed above.

However, this section also presents a few non-regulatory features of pensions in the UK to appreciate what regulation may or may not achieve. One salient characteristic of the current pensions system, which is somewhat reflected in the regulatory regime, is its complexity. Data indicate that there were around 40,000 private pension schemes in the UK in 2017[88] . That is well in excess of what may be found in other countries where the same type of pensions are to be found, yet where the number of pension schemes is much smaller.[89] Various commentators (e.g. Whiteside 2017) argue that this weighs heavily on the regulatory regime, by limiting the reach and effect of a number of regulatory tools, whether they are already used or could be used in the future.

[88] http://www.pensionspolicyinstitute.org.uk/pension-facts/pension-facts-tables/private-pensions-table-17

[89] There are about 200 superannuation funds in Australia, and about 300 pension funds in the Netherlands. There is an ongoing drive towards consolidation in the Netherlands, and the regulator expects that this will continue until there are about 100 funds (https://www.ipe.com/reports/special-reports/regulation/europes-pensions-regulation-country-by-country/10023444.article).

The regulatory regime is described in detail in Table 5, in terms of the issues and entities that are regulated, who is regulating them, and with what tools. This includes also information on the underpinning principles of the regime and relevant outcomes. It can be characterised (and simplified) as follows.

First, the regime for trust-based pensions is market-based with few conditions of market entry for individuals and firms. Rather than relying on public regulators to set requirements for funding and governance, it relies on trustees to self-regulate and regulate employer-sponsors. The state regulator has been conceived as a recourse for trustees, rather than as a proactive supervisor of trusts, trust funds and their sponsors. While much is left to the market, not everything is, and the UK has introduced a cap to the fees that may be charged to beneficiaries for the management of their pensions. There is evidence that funds get around caps by creatively generating new sources of revenue from pensioners' accounts (Whiteside 2017), however caps can deliver benefits to customers overall (expert interview).

Second, it is a regime that relies less and less on employees to make their own choices in terms of contributing to a pension fund or not, by introducing obligations of auto-enrolment and nudges to adopt favourable default saving options. At the same time, elements of the regime are meant to incentivise individuals to make their own choices at the time of drawdown / claiming pension rights when those are due. The introduction of Pension Freedom, which enables the withdrawal of one's savings in one lump sum, has created a new range of challenges for regulators to consider, and particularly how to address the risks of mis-selling and fraud.

The regulation of financial advisors, who play a central role in a regulatory regime that lets individuals decide what to do with their pensions, appears largely based on insurers. However, recent reports that insurers are withdrawing cover from financial advisers out of concern that the advice given to pensioners may be inadequate have led some to claim that recent UK pension reforms are in danger of being derailed.[90]

Third, the regime is split between two regulators, the Financial Conduct Authority (FCA) and The Pensions Regulator (TPR), the former having responsibility for contract-based pensions and the latter for trust-based pensions. There is some overlap between the two regulators, which raises some challenges given their otherwise distinct sets of powers and approaches (Echalier and Luheshi 2015).

Forthcoming changes to the regulatory regime (following the passing of the Pensions Schemes Act 2017), to be implemented in 2018, are expected to lead to consolidation in the industry.[91] The new law announces a reversal in the regulatory approach to trust-based pension funds, transitioning away from a reactive, registration-based regime to a proactive, authorisation-based regime. Furthermore, while the UK regime has historically

[90] 'Insurers pose risk to pension reform, body warns', *The Financial Times*, 12 March 2018.
[91] "UK to impose capital rules on multi-employer pension schemes', *Financial Times,* October 19, 2016.

imposed no capital requirements for employer-led funds (as noted, for example, by Blome et al. 2007) while providing a sponsor insolvency insurance fund (the Pensions Protection Fund), it is moving towards the introduction of capital requirements, converging in that regard with other countries' regimes.

Overall, the UK regulatory regime for pensions can be characterised as mixed, combining a relatively light-touch regulation for one type of funds (trust-based), and a robust one for another type of funds (contract-based). The regime as it applies to employees is also mixed, combining principles that could be labelled 'paternalistic' on the one hand (nudging employers towards the most socially desirable option), and individualistic-rational on the other. A last, striking feature of the regime is the manner in which it acknowledges and prepares for failure (in the form of fund insolvency), and relies on the principles of enforced self-regulation (of trustees) to prevent it. That is in stark contrast to an alternative design in which the public regulator would have the mandate, the tools and the resources to pre-empt the risk of insolvency in weakened funds. One could interpret this design as a way of striking a balance between industry self-regulation on the one hand, and the protection of assets in pension funds on the other, acknowledging that, as a result of that trade-off, some funds will need to be saved from collapse by integrating them into an insurance fund.

Table 5: Overview of the UK regulatory regime for occupational pensions

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
Pension fund trustees / board members	TPR	*Tools to regulate entry into the market:* no fit and proper test for trustees until the Pensions Schemes Act 2017, to be implemented in 2018; suspension or prohibition of trustees *Tools for influencing behaviours*: guidance, codes of practice, other communication, Master Trust Assurance Framework (voluntary framework), requirements on communication to beneficiaries, fines *Rules on the investments the funds are allowed to make:* employer-related investments limited to 5% of current value of scheme assets / principle of diversification / no other prescriptive investment rules *Tools to address costs charged to beneficiaries:* charge cap to 0.75% for default funds used for automatic enrolment	Reactive approach Transitioning towards a proactive, authorisation regime Assumes that the trustee will act responsibly	About 40,000 pension funds in the UK Unregulated advisers have set up master trusts Evidence of use of unregulated investments by Master Trusts Significant impact of financial events on asset value / high volatility
Entities providing trust-based pensions / pension schemes	TPR (from 2018)	*Tools to regulate entry into the market:* authorisation regime for master / multi-employer trusts, including capital requirements (from 2018) *Tools to address insolvency risk:* Pensions Protection Fund (sponsor insolvency insurance fund)	Reactive regime, transitioning towards a proactive authorisation regime Regime acknowledges that funds will fall into insolvency Assumes that the trust will act responsibly	About 40,000 pension funds in the UK Several cases of DB fund insolvencies in the recent past
Entities providing contract-based pensions	FCA	*Tools to regulate entry into the market:* fit and proper test for managers of companies; threshold conditions to operate *Supervision tools:* risk-based approach to supervision	Proactive approach Restrictions to entry	About 40,000 pension funds in the UK

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
		Tools for influencing behaviours: requirements on communication of information to beneficiaries; regulations, fines, suspension or prohibition of firms, prosecution, guidance *Tools to address insolvency risk:* Pensions Protection Fund (sponsor insolvency insurance fund)		
Employer-sponsors	TPR	*Tools for influencing behaviours*: self-certification of pension schemes; auto-enrolment obligation; obligation to maintain contributions; communication to employers on their obligations and how to comply with them; informal action, statutory notices, penalties, court action	Reactive regime Reliance on trustees to monitor employer behaviour and blow the whistle	Several cases of insolvent pension regimes as a result of insufficient payments from employer (BHS, Monarch, Carillion)
Employee-beneficiaries	TPR, FCA	*Tools for influencing behaviours*: auto-enrolment as default / opt-out as choice; tax relief joined to auto-enrolment, information campaigns National Employment Savings Trust (NEST) to provide coverage to low-wage workers Financial Services Compensation Scheme (FSCS) Financial Assistance Scheme (FAS)	Nudges / paternalism on enrolment Rational person principles on decumulation	Growing coverage ratio Some concerns that some workers' profiles (part time, frequently changing jobs) might not be covered Mis-selling at decumulation stage
Financial advisors	FCA (Insurers of financial advisors)	*Tools for influencing behaviours*: FCA authorises 'advising on pension transfers/opt outs'; ban on commissions for all contract-based schemes and investments in trust-based schemes, and for schemes used for automatic enrolment	Authorisation regime Quasi-regulation by insurance operators	Corporate advisors / advisors to employers are not regulated Mis-selling of pension products Insurers withdrawing cover for pension advisors

Performance of the UK pension system

There are various ways of looking at the performance of the UK's pension system. International benchmarks, such as the Melbourne Mercer Global Pension Index (Mercer 2017) place the UK among good performers, although not a leader. Specific indicators suggest some shortcomings of the regime, such as the lack of pension coverage for a large share of the UK population, and that coverage is skewed towards the well-off (Antolin et al. 2012; Whiteside 2017).

Additional evidence on the performance of the UK regime is found in recent events, such as the collapse of company pension schemes at BHS, Monarch or Carillion (due to a failure from the employer to pay enough into their pension fund), and the perception that regulators had failed to act to protect pensioners.[92] Shortcomings have been acknowledged, and the Department for Work and Pensions has recently responded with a set of proposals to better protect DB schemes (DWP 2018). The lack of competence of trustees at trust-based funds has been another long-standing issue in the UK (expert interview).

Other reports have discussed the risks of mis-selling that result from the incentives financial advisers have to recommend cashing in one's pension as a lump sum (as allowed under the Pension Freedom reform) even where that may not be in the person's best interests.[93] These risks appear to have materialised in the case of the steel pensions scheme at Tata Steel in South Wales, leading to criticism that the regulatory regime, and particularly the two regulators of pensions – the FCA and TPR – had fallen short of addressing the problems early and decisively enough.[94] Based on a review of advice provided to beneficiaries of DC schemes, the FCA announced it would not extend further the possibility of drawing one's pension as a lump sum, given significant evidence of potential mis-selling.[95]

Better performers and their regulatory approaches

Selected countries

Pensions in the UK are unusual in many respects. As mentioned earlier, the presence of a significant financial services industry in the UK, and the overall complexity of pensions, make the task of identifying comparable countries somewhat challenging. In other words, there are not many comparable countries to choose from when it comes to the regulation of pensions. Some notable differences notwithstanding, the countries selected – Australia and the Netherlands – share distinct features with the UK that underpin the comparison:

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[92] E.g. 'Carillion trustees alerted watchdog twice over pensions shortfall', *Financial Times*, 20 February 2018.
[93] 'The great British pensions cash-in', *Financial Times* 25 October 2017; 'Insurers pose risk to pension reform, body warns', *The Financial Times*, 12 March 2018.
[94] 'Steel pensions scheme victim to 'major mis-selling scandal', *BBC News*, 15 February 2018.
[95] 'FCA reverses plan to free up pension transfers', *Financial Times,* 26 March 2018.

- The Netherlands, Australia and the UK have most of their pension assets falling into the so-called “second pillar”: most of their pensions are occupational pensions rather than public social security pensions (“first pillar”) or personal pensions (“third pillar”) (Amzallag et al. 2014, Brown 2016).

- The Netherlands, Australia and the UK all have very large assets held in occupational pensions as a percentage of GDP, which sets them apart from most other OECD countries (Amzallag et al. 2014; Brown 2016).

- The Netherlands, Australia and the UK have both DC and DB schemes. However, the balance between DC and DB schemes varies greatly from one country to the other. While the overwhelming majority (81 per cent) of British pension assets are in DB plans, the reverse is true for Australia (13 per cent) (Willis Towers Watson 2018). However, membership in DC schemes in the UK has been growing very rapidly at the expense of DB schemes (Brown 2016), which makes comparison with Australia relevant. On the other hand, in the Netherlands, only 6 per cent of pension assets are in DC schemes (Willis Towers Watson 2018). This means that Dutch regulators need to address similar problems to British regulators in terms of the sustainability of DB schemes, and particularly their exposure to market liability and demographic trends. In that regard, the comparison between the UK and the Netherlands is also relevant, although for a different set of reasons and issues than for Australia.

- Australia, the Netherlands and the UK share a broadly similar legal form for a substantial share of their occupational pension funds (trusts in Australia and the UK, foundations in the Netherlands) in that a trust fund is set up, separate from the employer-sponsor, which act as agents of and on behalf of beneficiaries.

- Australia and the United Kingdom share a similar approach to decumulation, the moment when individuals become able to exercise their rights to their pension. In both countries, pensioners are able to obtain their pension as a lump sum to spend or manage as they see fit. This raises a similar range of issues for Australian and British regulators.

- A final key feature that justifies the choice of Australia as a comparator to the UK is the principle of competition between pension funds, which is equally central to the system in Australia as it is in the UK.

Australia and the Netherlands are also widely seen as highly mature and well-performing regimes. The Melbourne Mercer Global Pension Index (Mercer 2017) identifies the Australian and Dutch pension systems as among the best in the world (receiving scores of 77.1 and 78.8 overall; Denmark, which is at the top of the Index, receives a score of

78.9[96]). The evaluation of those two countries' regulatory and governance regime within the index also yields high scores (respectively 85.7 and 87.5) relative to the UK's (83.5). Another notable feature of the Australian system is the fact that pension funds have invested significantly into the national economy, and particularly into infrastructure, and are looking to invest further into long-term infrastructure projects abroad.[97]

Review of regulatory regimes

This sub-section describes in turn the regulatory regimes for occupational pensions (the second pillar) of Australia and the Netherlands.

Australia

The cornerstone of Australia's private pension system – known as superannuation – is its mandatory occupational pension scheme. The mandatory superannuation system was introduced 26 years ago[98] through the implementation of the Superannuation Guarantee (SG). The SG system uses the taxation power of the government to incentivise employers to pay sufficient superannuation contributions.

Employers are required to make a tax-deductible contribution of each employee's salary to a pension account, the so-called superannuation plan. For those employers who fail to pay the contribution, a non-deductible SG charge becomes payable together with an interest payment and an administration charge (Clare and Craston, 2017). Since the introduction of the SG, Australia's superannuation industry more than tripled in value (Heng et al., 2015) and, according to some projections, the total industry is forecast to reach 171 percent of Australia's GDP by 2031 (Murphy, 2017).

Hence, the Australian system is very strong at the accumulation phase, although there are some concerns about low pension contributions in the context of an ageing population and the fact that employee contributions started at 3 per cent when the system was introduced (since then it has been raised to 9 per cent and is expected to increase to 12 per cent by 2025). In the decumulation phase, however, the Australian system is exposed to similar challenges to the UK's.

While the state chooses for beneficiaries what is best for them when they are employed, it leaves them complete freedom when the time comes to choose retirement income products. According to the Australian Taxation Office[99], around 50 per cent of individuals choose to take a lump sum instead of an annuity. This creates an opportunity for dishonest financial advisors to extract revenue from pensioners. Australia has experienced mis-

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96 The Danish pensions system is very different from the UK regime, which is why it was not selected for comparison with the UK in this study.

97 https://www.bloomberg.com/news/articles/2017-07-09/fund-that-beat-australian-peers-is-hungry-for-infrastructure

98 Superannuation Guarantee (Administration) Act 1992; Superannuation Guarantee Charge Act 1992.

99 Australian Taxation Office, 'Super lump sum tax table' https://www.ato.gov.au/Rates/Key-superannuation-rates-and-thresholds/?page=12

selling of pension products in past years and to this day. As a result, the approach to regulating financial advisors has been increasingly strict, moving from a predominantly principles-based approach to a combination of principles and specific rules, including bans on a range of charges (Batten and Pearson 2013). Misselling remains an issue nonetheless.[100] However, contrary to UK pensioners, Australian pensioners choosing to withdraw their pension as a lump sum may still receive an annuity also from the rather generous public pension. As a result the risks of individuals not receiving any income in old age is reduced.

To ensure that pensioners are able to exercise their rights fully, even if they changed jobs frequently and therefore have their savings held in different accounts, the regulatory regime includes a central register, and regular nudges to pensioners to consolidate their pension savings.

Australia's regulatory system has been based on a dual regulatory regime. Superannuation funds (except self-managed funds) are regulated by the Australian Prudential Regulation Authority (APRA) and the Australian Securities and Investments Commission (ASIC). While APRA oversees funds' governance, investment management, compliance with standards and has primary responsibility for administering key pensions legislation, ASIC focuses on consumer protection, including disclosure requirements, complaint-handling, and licencing for funds and service providers (Murphy, 2017). In other words, Australia does not have a specialised pension regulator, but rather two regulators for the financial and securities industry, including pensions. The combined regulation of pension funds by APRA and ASIC has generally been effective. The effectiveness of the regime for smaller funds, and that for enforcing employer obligations (both within the remit of the ATO), is less clearly established (interview). The regulatory regime is described in further detail in Table 6, in terms of the issues and entities that are regulated, who is regulating them, and with what tools. This includes also information on the underpinning principles of the regime and relevant outcomes.

All Self-Managed Superannuation Funds (SMSF), which are generally small funds with less than five members, are governed by the Australian Taxation Office (ATO). Regulation is organised based on the risks that the regulators are designed to control (Brown, 2016). The ATO is also responsible for monitoring and enforcing employer compliance with the relevant legislation.

The regulatory regime is set up to combine the benefits of market discipline and regulatory discipline.

On the one hand, competition between superannuation funds is relied on to deliver satisfactory outcomes for pensioners, including low fund management costs. As

[100] Cadman E (2018) A Decade of Banks Behaving Badly is Laid Bare in Australia. *Bloomberg*, https://www.bloomberg.com/news/articles/2018-04-29/decade-of-banks-behaving-badly-laid-bare-in-australian-inquiry

decumulation products are mainly provided by the fund providers themselves, small funds are an important driver of competition since they have lower fees and better tax outcomes (Clare and Craston, 2017). Requirements on cost transparency, particularly for default funds (MySuper), mean that key stakeholders are able to compare costs between funds. Furthermore, individuals can compare the charges and investment options of their pension plans on comparison websites as well as newspapers' league tables. This has been credited for generating a culture of competitiveness between pension funds and has driven down management costs.[101]

On the other hand, a stringent proactive regime of licencing and supervision applies. The entry of new trustees and firms into the superannuation market is strictly regulated through a licencing regime. Governance requirements apply to trusts and there is ongoing discussion to add to these requirements, notably on the matter of trustee independence, to further strengthen the governance of superannuation funds.

Furthermore, the supervision of funds by APRA relies on a sophisticated 'risk-based' approach that imposes significant compliance costs on the pensions industry (Jones, 2005; Brunner et al. 2008). This has contributed to the rapid consolidation in the number of funds regulated by APRA (Jones, 2005). In contrast, there has been a five-fold increase in the number of ATO-regulated small funds (SMSFs) since 1996.[102] This may be attributed to three factors: members perceive that they have greater control, have to pay lower management fees and receive more effective tax management of investment income, compared to institutional funds (Clare and Craston, 2017).

The consolidation that has taken place in some the Australian pension industry is not only the product of regulatory processes. There has been a drive from the industry itself to create large players present across sectors: superannuation, banking, asset management, insurance, and brokering. This has been identified as an issue in relation to recent misselling scandals of pension products.[103]

While Australia has not experienced cases of fund collapse such as those recorded in the UK in the past few years, it should be noted that there are close to no DB schemes remaining in the country, which makes the risk of schemes running into insolvency very low indeed.

Overall, the Australian regime combines a strong market-based element and a strong legislative and regulatory element. Legislation provides a blanket obligation to enrol employees into superannuation funds as well as precisely defined terms for any private fund to be recognised as a default fund. The competitive market for pension funds is closely supervised on the basis of a sophisticated risk-based regime, which restricts entry

[101] Expert interview; What we can learn from Australia's 'super' retirement plan, *The Financial Times*, 27 February 2018.

[102] http://www.apra.gov.au/Super/Publications/Documents/2018-ASB-201706.pdf

[103] Expert interview; What we can learn from Australia's 'super' retirement plan, *The Financial Times*, 27 February 2018.

into the market to individuals and firms that can satisfy numerous financial and non-financial requirements. The regime aims also to make it easier on individuals to achieve a high level of protection by developing tools for them to use, and imposing on default funds requirements to provide a service that is effective, simple, and low-cost. The regime is also facing various problems, however, including misseling of pension products to consumers.

The merits of the Australian regime notwithstanding, the success of Australian pensions is at least partly attributable to a favourable economic environment, with more than two decades of economic growth in spite of global financial events. Pension funds have constituted a strong source of so-called ‘patient capital’, namely capital invested in the long term, which has helped weather the impact of the global financial crisis, and contributed to economic growth, notably through investments in the country’s infrastructure.

Table 6: Overview of the Australian regulatory regime for occupational pensions

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
Pension fund trustees / board members	APRA ATO ASIC	*Tools to regulate entry into the market:* Licencing of trustees (fit and proper test, resources, compliance with outsourcing rules, risk management) Requirements on board of trustees composition tailored for different categories of funds *Investment rules*: No prescriptive rules on investment in certain asset classes; principle of diversification; limits on self-investment; proscription of loans/assistance to members & investments in employer-sponsors	Proactive approach Strict restrictions to entry Trustee responsibility / duty "reasonable prudent person"	Limited / no impact of financial events on asset value Consolidation in the industry
Entities providing trust-based and contract-based pensions / pension schemes	APRA ATO ASIC	*Tools to regulate entry into the market:* Licencing of funds *Supervision:* Risk-based supervision based on fund size Self-reporting rules for pensions funds Restricted list of allowed fees for the default fund option Requirements on communication to beneficiaries Compulsory separate publication of fee information Publication of fee tables	Proactive approach Trustee responsibility / duty "reasonable prudent person"	Administrative management charges on MySuper funds (default funds) have fallen from 1.2% to 1% Consolidation in the industry
Employer-sponsors	ATO	Legal obligation to enrol employees into a superannuation fund and to contribute to that fund Tax incentives for contributing into superannuation fund Penalties for not meeting obligations	Mandatory	Very high coverage Some concerns that some workers' profiles (part time, frequently changing jobs) might not be covered
Employee-beneficiaries	ASIC	Compulsory enrolment into superannuation Pensions dashboard Nudges Information / campaigns	Encouragement / nudges to personal savings' consolidation Rational person at decumulation stage	Proportion choosing annuity at decumulation is marginal – overwhelming choice

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
		Choice of tax-free lump sum or annuity at decumulation stage Insolvency protection in cases of fraud		is in the form of a lump sum Mis-selling scandals
Financial advisors	ASIC	Principles-based regulation Ban on certain categories of fees Opt-in requirement every two years	Combination of principles and strict rules	Response to mis-selling scandals

The Netherlands

The Dutch pensions system is often called 'quasi-mandatory': while there is no legal obligation to subscribe to an occupational pension, in practice more than 90 per cent of employees are covered through their employment. That results from collective agreements between social partners, which constrain employers effectively to contribute to pension funds for their employees. Occupational pensions in the Netherlands are not individualised. On the contrary, there is extensive risk-sharing built-into the system. The element of risk-sharing is central to the regime, and coexists with the principle of funded pensions (i.e. with assets placed in the financial markets) and only few constraints on how pension assets may be invested (Chen and Beetsma 2014).

The Dutch pensions system is heavily shaped by the Netherlands' tradition and institutions of collective decision-making between social partners and the state. Yet it is also a very mature system in terms of its regulatory regime, designed to tackle similar challenges to those faced by other countries, including the UK. The steering of the regime has been effectively delegated to, and increasingly shaped by, well-resourced and sophisticated regulators as well as social partners. In other words, where the Australian regime combines market discipline with regulatory discipline, the Dutch regime combines the latter of those two with corporatist discipline.

The regulatory regime as it can be observed evolved as a result of a combination of factors. One such factor was the experience of the financial crisis in the early 2000s (when the so-called dot com bubble burst), which noticeably affected the value of pension assets, and convinced stakeholders and decision-makers that there was there a fragility in the regime that needed addressing (Brunner et al. 2008). The impact of the latest financial crisis from 2008 on asset value has led to further discussion in the Netherlands and raised some concerns that younger contributors might lose confidence in the mandatory, risk-sharing pension system (Chen and Beetsma 2014).

This contributed largely to the development of what is now a highly sophisticated risk-based supervision of pension funds. The threat of insolvency of pension funds is a significant issue for DB funds. In the Netherlands, most pension assets and memberships are with DB schemes. To tackle this challenge, the Dutch regime involves a proactive and rigorous articulation between the supervision of funds and solvency standards. The possibility of a fund's insolvency is simply not allowed to exist. In fact, the regulatory regime does not include any compensation or guarantee fund for pension liabilities.

Besides solvency requirements and the tools available to ensure them, the Dutch regime includes very stringent entry requirements into the market for individuals and funds, and particularly a robust fit and proper test specifically tailored to pension fund managers (PwC 2017).

Governance requirements for the funds are also particularly sophisticated. Specific roles are provided for (i.e. creation of a role of "fiduciary manager" to advise the board of pension funds). Dutch regulators also require and enforce communication standards to beneficiaries at different levels of detail and technicality, and high reporting standards.

These dispositions, and the tools that accompany them, are implemented by two regulators – the Dutch Central Bank (DNB), in charge of prudential regulation, and the Authority for the Financial Markets (AFM). The previous design involved several sector-specific regulators, including a pensions regulator, however this organisation was seen as ineffective, wasteful and outdated (Kremers and Shoenmaker 2010). It is noted that, while a specialist pensions regulator is absent from the Dutch regulatory regime, many dispositions and interventions from regulators are tailored to pensions (as the fit and proper test already mentioned). The regulatory regime is described in further detail in Table 7, in terms of the issues and entities that are regulated, who is regulating them, and with what tools. This includes also information on the underpinning principles of the regime and relevant outcomes.

The Dutch regime is therefore robust in terms of the quality of its governance regime and the technical level at which supervision is undertaken (expert interview). This has some downsides, however. The system is not easily changed, which is also by and large a result of the collective nature of decision-making involving social partners. The regime is also complex and demanding, and therefore costly for business. For example, recent requirements on fiduciary management have imposed significant costs on funds and led to changes in contractual arrangements between funds and their fiduciaries. [104]

More generally, the regulatory regime has been one contributing factor to a steady and ongoing process of consolidation in the pension fund industry, determined by both the formal implementation of the regime and informal interactions between the Dutch Authority for the Financial Markets and some pension funds, encouraging the latter to engage further with the Dutch Central Bank. At present, there are about 200 funds in the Netherlands, and recent projections indicate that their number may come down further to 100.[105]

Finally, in the Netherlands as in Australia steps have been taken to help individuals keep track of their savings in different pension funds (due to job mobility). A Pensions Dashboard has been created, which can be accessed using identifiers also used for various public services.

Like other countries, there have been growing calls for Dutch pensions to be invested in the national economy, and notably infrastructure as well as other ventures that could contribute

[104] https://www.ipe.com/pensions/country-reports/netherlands/fiduciary-management-foreign-fiduciaries-struggle/10023433.article

[105] https://www.ipe.com/reports/special-reports/regulation/europes-pensions-regulation-country-by-country/10023444.article ; Legislation has also been introduced in 2010 to allow corporate pension funds to be combined and achieve economies of scale (Chen and Beetsma 2014).

to the country's economic development. Pension funds have considered with interest investments that included an inflation component (since the guarantees provided by Dutch funds are nominal), which may be the case for utilities. Dutch pension funds appear to be modest players in the market for investment in infrastructure, compared to Canadian and Australian pension funds.[106]

[106] https://www.ipe.com/top-100-global-infrastructure-investors/realassets.ipe.com/top-100-global-infrastructure-investors/10020822.fullarticle

Table 7: Overview of the Dutch regulatory regime for occupational pensions

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
Pension fund trustees / board members	DNB AFM	Licencing of board members (fit for purpose test, including organisational management, past compliance, knowledge of pension schemes and types, financial and actuarial aspects, organisation, communication, outsourcing) Requirements for presence of a fiduciary manager to advise board members Various board composition requirements, all including independent members as either executive or non-executive directors	Proactive regulation High restrictions to entry	Ongoing consolidation of the industry Higher regulation induced costs
Entities providing trust-based pensions / pension schemes	DBN AFM	Threshold conditions to operate / assessment of fund finance against the requirements of the Financial Assessment Framework (FTK) Risk-based supervision based on fund size and articulated with solvency standards Benefit reduction recovery plans to bring funds to required coverage ratio No compensation or guarantee fund for pension liabilities Requirement to publish execution costs separately annually Requirements on 3-levels communication to beneficiaries Few investment rules (self-investment limit of 5%, 5% limit to investment in sponsor's shares)	High restrictions to entry Proactive escalation process to address fund weakness Sophisticated risk-based approach to supervision Regime denies the possibility of fund insolvency	Significant impact of financial events on asset value / high volatility Some evidence of decreasing administrative management costs Ongoing consolidation of the industry Higher regulation induced costs
Entities providing contract-based pensions	NA	NA	NA	NA
Employer-sponsors	NA	Legal obligation to contribute to a pension fund – linked to collective agreements	Quasi-mandatory	More than 90% of employees covered

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
		Tax incentives for contributions		
Employee-beneficiaries	DNB	Pension received in annuities No compensation or guarantee fund for pension liabilities	Solidarity Risk-sharing	No mis-selling scandals
Financial advisors	NA	NA	NA	NA

Comparative analysis

In different areas, the comparison of the UK regime to that of Australia and the Netherlands yields useful insights. The comparison between these three countries is particularly pertinent, because of the relatively similar pension system, namely a high proportion of employer-based pensions, and in spite of otherwise notable differences in the institutions that underpin the system.

The importance of these institutional differences should not be overstated. Similar challenges need to be addressed, and responses to these challenges, whether in the form of legislation or other modes of regulating, are not intrinsically dependent upon the institutions that otherwise contribute to shaping pensions policy in each of those countries. For instance, the central role of social partners in the Netherlands plays no determinant role in the supervision of pension funds by public regulators, either when it comes to ensuring solvency or to enforce high standards of governance. On the contrary, distinct features of these successful regulatory regimes – such as risk-based supervision of pensions – can be found in many countries with a wide range of social and political decision-making institutions.

From the discussion above, three broad areas emerge. First, the general regulatory approach to pensions and its impact on the structure of the industry and the governance of pension funds. Second, broad socio-economic trends and their impact on the viability and risk related to pensions. Third, the behaviours of different stakeholders in the pension investment chain.

Regulatory approach, industry structure, and pension fund governance

The three countries examined differ in the manner in which the regulatory regime impacts on the pensions fund industry, in terms of business costs of compliance, and in terms of industry consolidation. This contrast is summarised in Table 8, which shows in stylised fashion the differences between the regulatory regime of each of the three countries on the one hand, and their impact on the industry.

The notion that a pensions-specific regulator is required to effectively regulate pensions is not supported by the comparison, although the study has not considered other countries in which a pensions-specific regulator can be found. The investment of pensions in financial markets has motivated the integration of pensions regulation within the broader remit of prudential and financial regulators in Australia and the Netherlands. Moreover, the principle of freedom that both Australia and the UK apply to pension drawdown blurs further the distinction between pensions and other savings products, such as, for instance, life insurance.

The contrast between a highly-consolidated pensions sector in the Netherlands and in Australia (for APRA-regulated funds) on the one hand, and a more fragmented sector in the UK, appears to be linked to some extent to the proactive regulatory regime that has been in place in the Netherlands and Australia rather than the *structure* of the regulator(s) per se. The Dutch regime and the Australian sub-regime implemented by APRA limit market entry to individual trustees and trusts, and impose requirements on firms that smaller funds may find difficult to comply with. In particular, in the Netherlands, fit and proper tests and requirements on board composition and competence have pushed up the costs of compliance, leading to consolidation. While consolidation may mean that incompetent or weak business players are leaving the market, which is beneficial, it could also undermine regulatory objectives if going too far. In principle a large industry with many players is sustainable as long as the regulatory regime is adequate.

An important element of these stringent requirements concerns the governance of pension funds. Here, both Australia and the Netherlands impose stricter requirements on pension fund boards and higher standards on trustees/pension fund board members in terms of qualification and skills than the UK. This drives up compliance costs, but also helps improve the competence of boards and their ability to manage risks.

Table 8: Comparative analysis (1): regulating and shaping the pensions industry

Variable	Australia	Netherlands	United Kingdom
Regulation of trustees/board members	Proactive and stringent	Proactive and very stringent	Reactive and loose (pre-2018) *Proactive and stringent (from 2018)*
Governance requirements for boards	High	Very high	Low (pre-2018) *High (from 2018)*
Supervision of trust/foundation-based funds	Risk-based approach	Risk-based approach	Risk-based approach
Regulation of contract-based funds	Proactive and stringent	N/A	Proactive and very stringent
Supervision of contract-based funds	Risk-based approach – sophisticated	N/A	Risk-based approach - sophisticated
Pensions specific regulator	No	No	Yes (TPR)
Outcome: pension fund consolidation	**Mixed – about 2,300 APRA-regulated funds (decreasing trend); about 600,000 ATO-regulated small**	**Yes – about 300 corporate funds**	**No – about 40,000 funds (about 6,000 DB schemes and 33,500 DC schemes)**

Variable	Australia	Netherlands	United Kingdom
	funds (increasing trend)		
Outcome: Business compliance costs	**Medium**	**High**	**Low (before 2018) to medium (from 2018)**

Socio-economic trends and insolvency risk

A second set of challenges that emerges from the three cases pertains to the issues of socio-economic and demographic trends and their impact on the viability of the pension system.

Demographic trends towards lower birth rates and an aging population are generally considered a threat to DB schemes that face insolvency risks as the number of contributors declines in relation to the number of pensioners.

Table 9: Comparative analysis (2): dealing with the risks of fund insolvency

Variable	Australia	Netherlands	United Kingdom
Obligation of employer contributions	Mandatory	Quasi-mandatory	Mandatory
Monitoring and enforcement of employer contributions	By regulator	By social partners	Monitored by fund trustees and enforced by regulator
Regime for insolvency risks	Insolvency insurance limited to cases of fraud Capital requirements	Proactive – Capital requirements, strict monitoring of fund solvency risks	Reactive – sponsor insolvency insurance fund (before 2018) Proactive – capital requirements (from 2018)
Open DB funds	Very few (all in the public sector)	Most funds are DB funds	Significant proportion of DB funds
Investment restrictions	Very few	Very few	Very few
Outcome: instances of DB fund	**None**	**None**	**Several**

Variable	Australia	Netherlands	United Kingdom
insolvency in past 2 years			

The very marginal presence of DB schemes in Australia makes the comparison between Australia and the other two countries less meaningful, as shown in table 9. However, the comparison between the Netherlands and the UK suggests that the regulatory regime itself has a significant role to play in the distinct outcomes observable in each country. While the Dutch regime has built its authorisation regime and supervision regime around the risks of insolvency, providing for detailed (and stringent) routes to fund recovery, the UK regime has taken a reactive approach that does not impose capital requirements and does not authorise funds, but provides instead an insurance insolvency fund. While the Dutch regulatory approach seems effective in preventing DB scheme insolvency, the UK's approach has not prevented several pension funds from becoming insolvent. Recent reforms, when implemented, will bring the UK regime closer to the Dutch regime.

However, a question remains regarding the affordability of DB schemes in general and the impact that their maintenance has on other aspects of the pension system. Thus, an increasing mismatch between contributions and pensions may drive investment managers to seek riskier, higher-return investment opportunities, aggravating the insolvency risk. Requirements of a 'yield uplift' may also drive-up management costs, as more activist strategies may be pursued, for which fees are higher.

One solution to these challenges may simply be to move away from DB to DC schemes, which is a trend that is well underway in many countries. However, from a public interest perspective, this trend shifts the risk from the sponsoring company to the employees and in general goes together with a reduction in the revenue pensioners may draw from their pensions. As a result, the closing of DB schemes is unpopular and may affect retirement income negatively, putting additional pressure on public welfare systems. Therefore, new ways of dealing with changing demographic trends may become important. Thus, collective defined contribution (CDC) schemes have emerged in the Netherlands, which constitute a compromise between DB and DC schemes (Chen and Beetsma 2014; Schouten and Robinson 2012), and have been considered a few years ago by British policymakers, and recently again to reform some company schemes in the UK.[107] They are, hence, politically feasible, but also potentially more affordable than pure DB schemes. However, the regulatory basis for such flexible solutions is not currently provided in the UK.

[107] 'Royal mail looks to create hybrid pension scheme', *Financial Times ADVISER*, 11 December 2017; 'Canadian workers offer pension lessons for the UK', *Financial Times*, 1 May 2018.

Stakeholder incentives and behaviours

A third source of challenges to the occupational pension system relates to the incentives and behaviours of various stakeholder groups related to the pension fund investment chain.

The first stakeholder group includes sponsoring companies. A key issue concerns the level of contributions of employers. In different cases in the UK, pension schemes collapsed because the sponsoring company did not contribute enough to the scheme. Faced with the same issue, the Australian Superannuation Guarantee system solves this problem by imposing an extra tax on companies who do not contribute sufficiently.

Another issue is the coverage of the working population, which is being addressed through alternative means in the three countries. While the UK has relied on auto-enrolment, tax incentives and nudges, the Australian approach has been to make participation in a superannuation fund legally compulsory. In the Netherlands, participation in occupational pensions is backed up by collective agreements, which effectively make participation 'quasi-mandatory'.

Regarding the second stakeholder group, the beneficiaries of pension schemes, two issues emerge from the cases discussed above, namely the problem of lump sum decumulation and the issue of individuals losing track of their savings in different pension funds.

In Australia and the UK, pensioners are given the possibility of withdrawing their pension savings in a lump sum payment at retirement rather than as an annuity (although Australian pensioners effectively all receive at least some of their pension in annuities). This entails certain risks in terms of poor investment decisions by pensioners and subsequent reliance on public welfare. It may also create perverse incentives for employees to use occupational pension schemes as a way of avoiding taxes, while the money is then used for acquisition of real estate rather than as income after retirement. This possibility of using pension fund money for the acquisition of real estate may be intended by the legislator, but it may still lead to pension funds being misused as tax-saving devices. Here, the Dutch compulsory annuity-based system may constitute a solution, which may also help guarantee sufficient retirement income in the face of increased longevity (see also Brown 2016).

The second major issue for employees is the problem of individuals losing track of their savings in different pension funds. Both the Netherlands and Australia have addressed this issue by establishing centralised accessible tools for the consolidation of pension savings accounts. Pensions dashboards help address the issue of lost savings accounts by facilitating the identification of savers and encouraging them to consolidate different accounts. An industry-led project is currently being developed in the United Kingdom, which may lead to the coexistence of multiple dashboards.[108]

The third group of stakeholders in the occupational pensions investment chain are the financial intermediaries, such as investment managers and insurance brokers. Here, a key issue is the mis-selling of pension products by financial intermediaries. The Dutch system seems less vulnerable to this problem due to the compulsory annuity-based system in which the opportunities for mis-selling are much fewer. Australia, on the other hand, like the UK, has experienced cases of mis-selling. The regulatory reaction to these events in both Australia and the UK has been to tighten regulation, reducing issues of mis-selling, while maintaining the possibility of lump sum decumulation. This has not resolved the problem of mis-selling of pensions, however.

A further issue that arises in capitalised occupational pension systems related to financial intermediaries concerns the management fees of the funds. As noted above, management costs may become an even more important issue as funds may become managed more actively. While all three countries face similar issues in this respect, the Australian and Dutch systems seem to provide an efficient solution by encouraging transparency and competition on fees. There are requirements on the separate reporting of fund management charges. This leads to competition between pension funds that appears to be delivering results in both Australia and the Netherlands (in spite of the latter not having a truly competitive market, transparency on management costs and comparisons thereof by some stakeholders appear to be driving down costs), which is yet to be seen in the UK workplace pensions market[109]

Beyond market mechanisms, Australia and the Netherlands use limits on the categories of fees that may be charged on default funds: the set of rules required of Australian funds for them to be recognised as default funds (MySuper) imposes a limitative list of allowed fees, which prevents the creative generation of fees that has been observed in response to fee caps (Whiteside 2017). Such an approach is articulated to the definition of the specific terms of a default contract with set requirements on several aspects, which can be introduced by legislation (as also observed in the Netherlands).

Lessons for the UK

In summary, this analysis has identified the following lessons for the UK:

- A robust authorisation and supervision regime for trustees and trusts could contribute greatly to the consolidation of the pensions fund industry, which would increase its viability and the robustness of funds.

[108] https://www.abi.org.uk/globalassets/files/subject/public/lts/reconnecting-people-with-their-pensions-final-10-october-2017.pdf

[109] What we can learn from Australia's 'super' retirement plan, *The Financial Times*, 27 February 2018.

- Close monitoring of pension funds against solvency requirements would help avert the possibility that weakened funds may eventually collapse.
- Limits on the type of administrative fees that may be charged by funds on beneficiaries, combined to compulsory separate reporting of these fees by pension funds, should help reduce these costs for fund beneficiaries.
- A requirement that beneficiaries should take their pensions in the form of annuities rather than as a lump sum would reduce opportunities for insufficient or wrongful advice to be given to pensioners on drawdown options.
- A single Pensions Dashboard, as well as additional nudges to pensioners to regularly consolidate their pension savings from different accounts, would help avoid that pensioners lose track of their pensions' savings and lose out on their rights to pension.

A number of these changes to the regulatory regime have been introduced in the Pensions Scheme Act 2017, although the specifics of how they will be implemented in the UK will appear in regulations to be drafted in 2018.

Annex 4 – Review and comparative analysis of recycling regulatory regimes in the United Kingdom, Germany, Belgium, Ireland and South Korea

Rationale for investigating recycling

A strong recycling sector plays an important role in environmental sustainability and contributes to clean growth (see BEIS's Clean Growth Strategy of October 2017) and the Circular Economy. More recently, the importance of improving the UK's domestic recycling sector has been highlighted by a Chinese ban on waste imports, since the UK (and other countries in the West) had been exporting large quantities of waste to China instead of processing them at home (Financial Times 2017). Furthermore, there has been growing public concern around the impact of single-use plastics, as well as the proliferation of certain non-recyclable packaging materials, such as disposable coffee cups. In March 2018, the Government launched a public consultation on fiscal measures to reduce the use of single-use plastics (HM Treasury 2018). Also in March, the National Audit Office announced a review of the UK's Extended Producer Responsibility system (Commons Select Committee 2018).

A key component of clean growth, as highlighted by the BEIS strategy, is the need for innovation. Improving recycling outcomes is largely dependent on innovation, not only in recovery and reprocessing technologies, but also in packaging, collection and sorting. This suggests that regulatory regimes intended to improve recycling outcomes should ultimately also encourage innovation in the sector. This impacts not only the recycling and waste management industries themselves, but all businesses impacted by the regulations irrespective of the sector to which they belong. Developing recycling industries also contributes to job growth, and there is evidence to suggest that recycling generates more (and better paid) jobs compared to landfilling or incineration (European Environment Agency 2011).

The regulatory regimes supporting recycling cover a diverse range of actors and processes. The responsibilities for the production of materials, the generation of waste, its collection and disposal are spread between producers, consumers, municipalities, private waste collection companies and processors. All of these actors are the targets of regulatory regimes, and they contribute in different ways (and in interactions with one another) to the issues these regimes intend to tackle. Hence, identifying which steps in the process carry the greatest importance and thus where reform should be focussed can be challenging. However, a holistic approach and comparison of regimes can provide valuable insights. Table 10 indicates some examples of regulatory tools that target recycling outcomes across packaging waste streams.

This section examines specifically the role of Extended Producer Responsibility (EPR) for packaging[110] as part of recycling regimes. EPR holds producers responsible not only for the production of their products, but also their disposal. It is similar to the 'polluter pays' principle, but does not necessarily involve a full internalisation of environmental costs. It is a significant element of any recycling regime that can be found across many countries, and as such it constitutes an appropriate basis for comparative analysis. Furthermore, this is an area in which the UK regime has been found wanting. There is therefore scope for drawing lessons from abroad by investigating EPR specifically.

Table 10: Regulatory tools for achieving recycling objectives

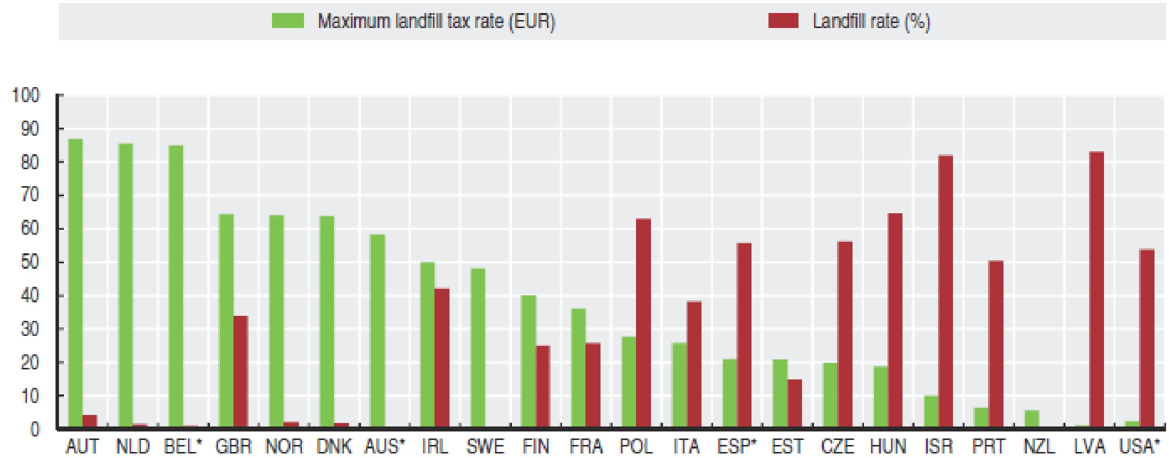
Actors and processes	Examples of regulatory tools
Producers	Extended Producer Responsibility regimes
Households	Obligations to present waste in a certain way Campaigns targeting household waste Weight or volume-based fees on non-recyclable waste
Businesses	Obligations to keep records or report on waste production
Municipalities	National recycling targets Obligation to collect waste in a certain way
Waste collection	Obligation to collect waste in a certain way Environmental certification
Waste disposal	Landfill levies and bans Financial support for recycling businesses and innovative technologies

EPR policies and regimes exist in a variety of forms, with different interpretations of how and where producer responsibility manifests itself (OECD 2016). In the European Union, EPR policies derive from Directive 94/62/EC on Packaging and Packaging Waste. This obligates Member States to meet EU-set recycling targets on packaging waste and enables them to adopt an EPR approach to help meet those targets.

[110] EPR systems cover a variety of waste streams, including batteries, waste oil and end-of-life vehicles. This report only looks at regimes related to packaging materials.

EPR regimes play an important role in determining recycling outcomes: EPR regulation is intended to encourage producers to both reduce the amount of packaging waste placed on the market and to increase rates of recycling. To this end, EPR can also encourage innovation in both the packaging and recycling sectors. EPR does not, however, fully-explain high recycling rates, as each part of the regime is dependent on the next and many factors influence recycling outcomes. Landfill taxes, for example, can generally be shown to correlate inversely with landfilling rates. As Figure 4 indicates, however, the UK and Ireland are exceptions to this trend. This suggests that although high landfill taxes provide a strong disincentive for landfilling, their overall impact is dependent on additional factors.

Figure 4: Municipal waste landfilling and tax rates, 2013 (OECD 2017)



Note: *tax rates refer to Flanders for Belgium, to New South Wales for Australia, to Catalonia for Spain, and to New Jersey, North Carolina, Mississippi and Indiana for the United States.
Source: OECD (2016b), "Municipal waste", *OECD Environment Statistics* (database); OECD (2017a), "Environmental policy instruments", *OECD Environment Statistics* (database).

This report therefore also briefly highlights regulatory tools in selected countries that are not part of the EPR regime, but are nonetheless important in supporting its goals and outcomes.

The UK's regulatory regime for packaging EPR

The UK's regime for EPR is unique as an EPR system that uses tradeable credits (OECD, 2016). Poland is the only country in Europe with a similar system, which was modelled after the UK's (Advisory Committee on Packaging 2016). Obligated producers (those handling over 50 tonnes of packaging and with a turnover greater than £2 million) are required to acquire evidence that recycling targets have been met for the packaging they produce. Producers must register either directly with an environmental regulator[111] or through a compliance scheme and supply information on the types and amount of packaging produced. This is then used to calculate their recycling obligation. Recycling

[111] This depends on the country the compliance scheme will operate in. The Environment Agency handles schemes in England, the Scottish Environment Protection Agency in Scotland, Northern Ireland Environment Agency in Northern Ireland and Natural Resources Wales in Wales.

obligations are based on legislated targets, amended annually and set by material (cardboard, glass, plastic etc.). Evidence takes the form of Packaging Recovery Notes (PRNs) or Packaging Export Recovery Notes (PERNs), which are generated by recycling companies or exporters based on the amount of packaging they process. These are then sold in an open market, allowing the price of PRNs to fluctuate depending on supply and demand.

To help businesses manage their packaging regulation responsibilities, compliance schemes have been established to act as intermediaries between the regulator and producers. This is a case of reliance on private third parties to carry out monitoring and implementation duties, as theorised by various scholars, particularly in the field of environmental policy (e.g. Gunningham et al. 1999). Compliance schemes take on the regulatory liability of their members and purchase PRNs on their behalf. There is no obligation to join a compliance scheme and businesses can choose to register directly with the regulator, but the vast majority (around 95 per cent) of obligated businesses choose to comply through compliance schemes (NPWD 2018).

There is a competitive market for compliance schemes in the UK. Each scheme must be registered and accredited with the appropriate environmental regulator. There are currently 48 accredited compliance schemes operating across the four devolved governments. The compliance schemes are operated by private companies, a majority (if not all) of which are actors in other areas of the packaging waste stream. For example, some companies operating compliance schemes also offer waste management services and produce their own PRNs/PERNs (e.g. Veolia or Valpak); others (e.g. Kite) also sell and design packaging materials.

Potential compliance schemes must submit an application to the environmental regulator detailing the nature of the agreement between themselves and their members, details on plans to increase the use of recyclable packaging among members, how packaging waste will be recovered and recycled and information on how users/consumers can assist the compliance scheme in achieving this goal. They must also pay a fee. Registered compliance schemes are required to submit a yearly compliance statement to the environmental regulator and keep records for four years. In 2017, all registered compliance schemes were deemed fully compliant with the regulations (NPWD 2017).

Compliance schemes in the UK are not responsible for conducting marketing or awareness campaigns. WRAP, a Government-funded non-profit organisation, conducts recycling and waste-related awareness campaigns on behalf of the Government.

The environmental regulators undertake audits of non-registered businesses and a small sample of registered businesses. There is an incentive within the system for other businesses or compliance schemes to identify and report non-compliant businesses, as these are either competitors or potential customers, although it is unclear to what extent this occurs. Civil sanctions are taken against non-compliant businesses, requiring them to donate an agreed-upon sum to a nature trust as a way to offset non-compliance (Environment Agency 2018).

The regulatory regime is described in further detail in Table 11, in terms of the issues and entities that are regulated, who is regulating them, and with what tools. This includes also information on the underpinning principles of the regime and relevant outcomes.

Table 11: Overview of the UK (England) regulatory regime for EPR

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
Packaging producers	Environmental regulators, depending on the country: • The Environment Agency (England) • The Scottish Environment Protection Agency • The Northern Ireland Environment Agency • Natural Resources Wales Packaging compliance schemes	Businesses required to register with either the environmental regulator or a compliance scheme. Reporting to the environmental regulator on quantities of packaging brought to market Targets set by the regulator Fixed registration fees paid to the regulator Fees paid to compliance schemes for services Purchasing evidence of recycling targets met through Packaging Recovery Notes. Environmental regulators audit non-registered businesses and a sample of registered businesses. Non-registered businesses subject to civil sanctions	Low business burden Reliance on private organisations to deliver compliance Market mechanism (PRN) to incentivize businesses	UK has met (but not exceeded) packaging and recycling targets Low level of innovation in recycling technologies Low domestic recycling capacity High levels of landfilling
Packaging compliance schemes	Environmental regulators, depending on country.	Registration and accreditation of compliance schemes Annual self-reporting to the environmental regulator Mandatory record keeping for four years Fixed fee for registration	Private enforcement Competition	48 compliance schemes across UK Low business burden

Performance of the UK's EPR policy

The UK's approach to EPR has been the subject of criticism on several counts. It has been claimed that the PRN creates an incentive for the export of recycling waste. That is because, for domestic recyclers, only the materials that are actually fit for recycling can be counted toward PRNs, while for PERNs, the entire weight of the recyclable material can be counted (Richardson 2016; Commons Select Committee 2018). The PRN system has also been said to provide incentives to businesses and compliance schemes to meet their targets only, rather than to exceed them, and there are concerns that the system is prone to fraud (Resource 2017).

Table 12: EPR performance indicators for the UK, Germany, Belgium, Ireland, South Korea, and EU average (sources: Eurostat, OECD data)

Indicator	UK	Europe	Germany	Belgium	Ireland	South Korea
Packaging recycling rate (2015)[112]	60.6%	65.7%	69.3%	81.5%	67.5%	74%[113]
MSW recycling & composting rate (2016)[114]	44%	43%	66%	54%	41% (2014)	59% (2015)
Municipal waste (kg/capita)[115]	482 (2016)	490 (2016)	630 (2016)	419 (2016)	559 (2014)	370 (2017)
Percent sent to landfill	19% (2016)	29% (2016)	0% (2016)	1% (2016)	21% (2014)	15% (2015)
Patents related to recycling and secondary raw materials (per million inhabitants, 2013)	0.37	0.72	1.15	1.38	0.43	Not avail-able

The UK has met EU targets for packaging recycling, but is behind other comparable countries and below the EU average, as indicated in Table 12. For overall recycling rates of Municipal Solid Waste (MSW), the picture is broadly similar. However, the statistical methods for establishing recycling rates vary considerably between countries. This renders them difficult to compare directly and they should be considered as proxies only (Eunomia

[112] Eurostat
[113] 2012 data from the OECD's Environmental Performance Review of Korea
[114] OECD
[115] OECD

2017b). A study attempting to rectify the discrepancies in methodologies and produce comparable rates did however find that Germany, Belgium and South Korea were strong performers (Eunomia 2017a). Further indications of the UK's performance compared to other global economies can be found in the proportion of waste sent to landfill. While the UK is not the worst performer, it is behind Germany, Belgium and, to a lesser extent, South Korea.

There is also scope for the UK to improve in terms of innovation relative to recycling technologies and packaging materials. As indicated in Table 12 in terms of the number of relevant patents registered, other countries have been more innovative in that regard, and particularly Germany and Belgium in Europe.

Better performers and their regulatory approaches

Selected countries

Better performers were chosen on the basis of their packaging recycling rate, as well as MSW recycling rates. Germany, Belgium and South Korea are strong performers in both outcomes. Both Germany and Belgium also have extremely low landfill rates. There is also evidence to suggest that recycling policy has helped support rapid innovation and develop a strong green market in Germany (UN Sustainable Development Knowledge Platform 2009). Ireland performs well on packaging, although less favourably on MSW recycling, presenting a relevant counterexample.

The comparison between the UK, Ireland, Germany and Belgium is facilitated by the common EU EPR framework underpinning each country's regulatory approach. The UK and Germany share a market-based approach to the implementation of the EPR through the operation of several competing compliance schemes.

The inclusion of South Korea provides an example of a system that has not been subject to EU legislation, but has developed a regulatory regime that addresses similar goals and delivers strong results.

Review of regulatory regimes

This section discusses in more detail the regulatory regime in each of the countries selected.

Germany

The German system for EPR has its origins in the Packaging Regulation (Verpackungsverordnung) of 1991. This established the concept of a 'dual system' of waste collection, whereby responsibility for the collection of waste is divided between municipalities and a compliance scheme. Initially, there was only one such compliance scheme, Der Grüne Punkt – Duales System Deutschland (DSD), formed in 1990 in anticipation of the legislation. DSD was owned by members and DSD's symbol, the Green Dot, was included on all member packaging to indicate that they were paid into the scheme and therefore compliant with the regulation. The Green Dot has since spread as a symbol across Europe, either as a mandatory or optional symbol to represent regulatory compliance (Valpak 2017).

In 2002, the German competition authority (the Bundeskartellamt) and the European Commission stepped in to end DSD's monopoly. DSD was privatised and new schemes entered the market (OECD 2013). In 2007, the dual systems established a coordinating company, the 'Gemeinsame Stelle dualer Systeme Deutschlands GmbH', which allows the dual systems to work together as needed. At present, there are ten dual systems in operation and the introduction of competition to the system has been said to have reduced costs to businesses by about 50 per cent (CIWM 2016). Membership in a dual system is mandatory in Germany for all producers of household packaging, irrespective of their size or throughput. There is no business threshold regarding either turnover or the amount of packaging produced.

The most recent reforms to the German system come from the new Packaging Law (Verpackungsgesetz), which replaces the Packaging Regulations and comes into effect on January 1st, 2019. This will bring several changes to the system, establishing a central office for registration and coordination, and requiring dual systems to provide financial incentives to their members for the use of recycled and renewable materials (BMUB 2017). Under the new regime, all businesses will be required to register with the new central office. When registering, businesses will be required to submit evidence that they are paid into one of the dual systems. Once registered, businesses must report packaging quantities placed on the market either on a monthly, quarterly or annual basis, depending on the producer.

The dual systems are responsible for the organisation and financing of packaging collection and recycling. These costs are divided between the schemes on the basis of market share. The collected packaging is then also divided between the schemes on this basis. Producers of packaging material in Germany therefore have comparatively high financial obligations, being fully responsible for both collection and recycling through their membership of compliance schemes.

Dual systems in Germany are required to obtain licences in all 16 Federal States. To obtain each licence, they must have signed agreements with all local authorities in the Federal State. The Federal States are also responsible for the enforcement of packaging regulation and carry-out inspections and audits of businesses. Non-compliant businesses are fined by the Federal States, with exact enforcement practices varying across the country.

The German EPR regime also relies on a bottle deposit scheme, requiring all manufacturers of beer, bottled water, soda and alcoholic mixed drinks to include a deposit of 0.25 EUR on bottles. The scheme is coordinated by the Deutsche Pfandsystem GmbH (BMUB 2014).

Overall, the German regime can be characterised as one that places a high degree of responsibility on producers. It is an integrated regime to the extent that it articulates together responsibility for collection and recycling. It is also one that aims to coordinate and streamline activities, through a coordinating body – the 'Gemeinsame Stelle dualer Systeme Deutschlands – and a forthcoming central registration system. Hence, competition between compliance schemes is coordinated and regulated. The regime's strengths are the resulting low need for public expenditure on packaging waste collection, high recycling rates and a well-developed and innovative recycling industry. Its weaknesses are high costs to businesses, which may not be fully justified by outcomes.

The regulatory regime is described in further detail in Table 13, in terms of the issues and entities that are regulated, who is regulating them, and with what tools. This includes also information on the underpinning principles of the regime and relevant outcomes.

Table 13: Overview of the German regulatory regime for EPR

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
Packaging producers	The Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) Dual systems Federal states	Businesses required to register with central registry Reporting to central registry on quantities of packaging brought to market Required membership with dual system Dual systems provide incentives to use more recycled and recyclable materials Federal states audit and inspect businesses Non-registered businesses subject to fines	Businesses responsible for the collection and sorting of packaging waste Coordination between EPR system and MSW systems	Met and exceeded EU targets Packaging waste collection is fully funded by industry High level of innovation in recycling technologies Low levels of landfilling
Packaging compliance schemes	Federal states Local authorities	Dual systems must obtain licences in each Federal State To obtain licences, dual systems must come to agreements with each local authority	Highly regulated competition between compliance schemes	High levels of innovation in recycling technologies

Belgium

Packaging Regulations in Belgium came into force in 1998. There are only two compliance schemes in Belgium, FostPlus for household packaging and Val-I-Pac for industrial packaging. Businesses handling more than 300 kg of packaging a year are obligated to comply with the packaging regulations, although they are not obligated to join one of the compliance schemes.

Other waste management responsibilities in Belgium are devolved between the three regions, but packaging regulations are handled at a national level. The Interregional Packaging Commission (IPC) is responsible for the regulation of businesses and compliance schemes. They provide permits to the two schemes, drawing up an agreement with each describing the responsibility and obligations the compliance scheme has to encourage the recycling of materials. The agreements are valid for four years. The IPC also requires businesses that produce over 300 tonnes of one-way packaging[116] per year to submit a Packaging Prevention Plan, subject to approval by the IPC (Belgian Government 2008).

FostPlus is member-owned and receives fees from its members. Those fees are used to support awareness campaigns and contribute to municipal waste collection authorities. FostPlus is also required to provide information, training and services to its members relating to the improved design of packaging to prevent waste and improve recyclability. Thus, in contrast with some other countries, the regime makes packaging producers contribute directly to 'soft' interventions such as information campaigns.

In the Belgian system, FostPlus reimburses municipalities for their packaging collection activities. All waste management is still organised and run by municipalities, but their costs for the collection and sorting of packaging materials are covered by FostPlus. There are several options for calculating how this reimbursement occurs, and each municipality is free to come to their own agreement with FostPlus on the nature of this calculation.

The Belgian EPR system relies on fines for non-compliance, although it is not clear how enforcement occurs in practice. The IPC is the regulator responsible for the implementation of such fines.

Overall, the Belgian regime can be characterised as one that places a high degree of responsibility on producers, but only for the financing of municipal waste collection. Its strengths are a low costs to business (in comparison to Germany, for example) accompanied by very high packaging recycling rates. It is not established whether the reliance on a monopolistic system may be limiting innovation and increasing costs for producers. Rather, the evidence suggests that there has been extensive innovation in the recycling sector in Belgium.

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[116] 'One-way packaging' refers to packaging used only once: 'the producer can get back the materials or they will go directly to the recycling company'. https://zerowasteeurope.eu/2010/09/beverage-packaging-and-zero-waste/ accessed on 28/03/2018.

The regulatory regime is described in further detail in Table 14, in terms of the issues and entities that are regulated, who is regulating them, and with what tools. This includes also information on the underpinning principles of the regime and relevant outcomes.

Table 14: Overview of the Belgian regulatory regime for EPR

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
Packaging producers	IPC FostPlus	Reporting to IPC or compliance scheme on quantities of packaging brought to market Fees paid to compliance scheme based on packaging put on market IPC audits and inspections Non-compliant businesses subject to fines Large businesses required to produce prevention plans	Businesses responsible for fully financing the collection and sorting of packaging waste EPR system is integrated into MSW waste regimes	Met and exceeded EU targets MSW collection receives significant funding from EPR High level of innovation in recycling technologies Low levels of landfilling
Packaging compliance schemes	IPC	Compliance schemes must apply for approval every four years Agreement between IPC and compliance schemes sets out conditions of operation Data collected by compliance scheme and municipalities and reported to IPC IPC conducts random audits of data	No competition, compliance scheme is member-owned Regulator and compliance scheme come to a detailed agreement on responsibilities and obligations	Low levels of MSW per capita

South Korea

In South Korea, the EPR system dates from 2003 and was born out of a series of reforms beginning in the early 1990s intended to tackle South Korea's waste problem. The legislation that establishes EPR describes and establishes duties and responsibilities not only for businesses and producers, but also for the national government, local governments and citizens. In that respect, it sets a framework that articulates together many of the components and actors contributing to waste. Korea has also established a quasi-governmental organisation called the Korea Environment Corporation (KECO), which collects data and monitors business and recycling activity, reporting on this to the Ministry of Environment. KECO also monitors and reports on MSW collection and disposal.

Whether a firm should comply with EPR regulations is determined solely by a financial threshold. Businesses with a yearly output of more than one billion KRW (approximately 660,000 GBP) or importers of goods valued in excess of three hundred million KRW (approximately 200,000 GBP) are required to comply with EPR regulations.

Compliance schemes in South Korea are monopolistic. Multiple schemes exist, but each scheme deals with a specific product type and only one exists for packaging. As it is the case in the UK, it is not mandatory to join a compliance scheme, and businesses can choose to comply with the regulations independently.

Producers are also required by the legislation to include a mark on their product, indicating to consumers its recyclability and the need for separation at the time of disposal.

The compliance scheme for packaging in South Korea takes fees from its members and in return, uses those fees to subsidise recycling activities and research and reports on recycling implementation to KECO. A small amount of members' fees are also used for information and awareness campaigns. Schemes and businesses are required to meet the targets set annually by the Ministry of Environment. If targets are not met, the producer or the compliance scheme is fined the cost of recycling the unmet portion, plus a 30 per cent surcharge.

South Korea also charges a tax on producers or importers of products that are considered difficult to recycle, providing a financial incentive for the use of recyclable materials.

State and local governments also subsidise recycling businesses, and KECO also provides support to recycling businesses through the provision of low-cost loans. Consequently, Korea has a well-developed recycling infrastructure and exports only a very small proportion of its waste (Heo & Jung 2014).

Overall, the South Korean regime can be characterised as one that places a strong focus on shared responsibilities and places a high degree of obligation on producers to fund recycling businesses and infrastructure. It is highly integrated in the sense that it is part of a broader policy that defines obligations for all contributors to the waste problem, and includes tools intended for all of those target groups. There is no market element in the regime. Instead, the regime is defined and steered in a centralized way, and through monopolistic, dedicated structures. It has achieved high packaging recycling rates and high domestic recycling capacity. However, it experienced a drop in the recycling rates of certain materials following the introduction of the EPR system for packaging (Kim & Mori 2015).

The regulatory regime is described in further detail in Table 15, in terms of the issues and entities that are regulated, who is regulating them, and with what tools. This includes also information on the underpinning principles of the regime and relevant outcomes.

Table 15: Overview of the South Korean regulatory regime for EPR

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
Packaging producers	Ministry of Environment KECO Compliance schemes	National targets set annually by Ministry of Environment Producers required to either take back packaging or join compliance scheme Producers report data on packaging to KECO KECO reports to the Ministry of Environment Fines issued to producers who miss targets Taxes on producers of certain non-recyclable materials	Responsibility is shared between actors and defined by legislation – businesses are responsible for partially funding reprocessors Reliance on quasi-governmental organisation for monitoring	High levels of packaging recycling and MSW recycling High domestic recycling capacity
Packaging compliance schemes	Ministry of Environment KECO	Compliance schemes must register as a corporation Compliance schemes report recycling information to KECO KECO reports data to the Ministry of Environment Fines issued to compliance schemes that miss targets	No competition Compliance schemes are held to obligations to fulfil targets and appropriately allocate funding by the regulator	High levels of packaging recycling

Ireland

In Ireland, producers, retailers, converters and importers who place over 10 tonnes of packaging on the market per year and have a turnover of over 1 million EUR per year are required to comply with packaging regulations. This means that they can either comply individually, by registering with their Local Authority and implementing a take-back system, or they can become members of the only compliance scheme in Ireland: Repak.

Repak is subject to a licence renewal every four years and develops a strategic plan with the Environmental Protection Agency (EPA). On behalf of its members, Repak is obligated to develop and produce an annual waste management plan.

Repak members pay either a fixed fee (for smaller producers), or per tonnage fees (for larger producers). Overall, the burden on businesses is relatively low compared to other European countries (IEEP 2017). The fees are used for Repak's marketing and awareness activities, and to subsidise the private companies responsible for the collection and recovery of recycling waste. This is partly because, unlike the other recycling regimes considered, the Irish waste management system is privatised and waste collection responsibilities are not in the remit of Local Authorities (Watson 2013). Repak is also required to contract with and audit the private waste management companies it works with.

In addition to paying fees, businesses are required to report compliance data to the relevant authority. For businesses registered outside of Repak with their Local Authority, this means reporting data quarterly. For those registered through Repak, data must be reported twice a year to the EPA. Local Authorities are responsible for the enforcement of the packaging regulations and conduct regular inspections of business premises (EPA 2014).

Overall, the Irish regime can be characterised as one that places a medium level of responsibility on producers but without strong integration into the MSW system. Its strengths are a high packaging recycling rate with relatively low compliance costs to business. Its weaknesses are comparatively low MSW recycling rates, low domestic recycling capacity and low levels of innovation in the sector.

The regulatory regime is described in further detail in Table 16, in terms of the issues and entities that are regulated, who is regulating them, and with what tools. This includes also information on the underpinning principles of the regime and relevant outcomes.

Table 16: Overview of the Irish regulatory regime for EPR

Issue / entity regulated	Regulator	Regulatory tools	Underpinning principles	Relevant outcomes
Packaging producers	Repak EPA Local authorities	Producers must register either with the compliance scheme or with their local authority Producers must report on packaging placed on market either quarterly to their Local Authority or bi-annually to the EPA Producers not part of compliance scheme have additional take-back obligations to fulfil Producers part of compliance scheme pay fees based on amount of packaging put to market	Businesses responsible for the subsidisation of waste collection activities	Strong performance on EU packaging recycling targets Weaker performance on MSW recycling High levels of landfilling Low domestic recycling capacity Low level of innovation in recycling technologies
Packaging compliance schemes	EPA	Repak is subject to re-approval every four years	No competition, compliance scheme is member owned Regulator and compliance scheme come to an agreement on responsibilities and obligations	Strong performance on packaging recycling targets

Comparative analysis

The vast differences between systems that all produce strong outcomes suggests that there is no single best solution to an EPR system. It is clear, however, that the UK's approach can be characterised by both a number of unique aspects and significant room for improvement in outcomes.

The UK's high threshold for obligated businesses stands out in comparison to better performing regimes, which tend to have lower thresholds for compliance. The high threshold in the UK is considered important to reduce/minimise unnecessary business burdens on SMEs (DEFRA 2017b) and the UK system has overall been shown to have exceptionally low costs for businesses (McCaffery et al. 2017). However, one could question whether reducing/minimising business burdens in this instance is inadvertently contributing to suboptimal recycling outcomes.

Both the UK and Germany have multiple privatised compliance schemes that compete with one another. The German system, however, is a highly-regulated competitive system compared to the UK system, and a coordination body has been established to ensure that all compliance schemes work together and that responsibilities are allocated based on market share. Belgium, South Korea, and Ireland all have monopolistic, member-owned compliance schemes. It is not clear whether one system leads to better outcomes than the other. The evidence from Germany suggests that a competitive market between compliance schemes is compatible with high performance (as measured by proportions of packaging waste recycled, and number of patents on recycling technologies) and low business costs, as the introduction of competition there has reduced costs and encouraged innovation (CIWM 2016). A higher level of coordination and regulation of that market appears beneficial. Whether coordination could be achieved in the UK without running the risk of encouraging collusion between compliance schemes (since a number of them are also private businesses operating in the same markets) is a matter that would need to be considered carefully. When compliance schemes have been created for the sole purpose of delivering the regulation and have no other interests, the tensions that may be generated through a coordinating mechanism may be less important.

Each regime treats funding and organisational responsibilities of compliance schemes differently. In Germany, compliance schemes are fully responsible for municipal waste collection and the sorting of packaging. In Belgium, they are responsible for reimbursing municipal waste collection. The Irish system requires its compliance scheme to partially subsidise waste collection activities. In South Korea, producers fund the cost of recycling treatment, although they do not fund collection or sorting. The UK system also funds treatment through the purchase of PRNs, but at a lower level and there is little transparency in how funds are being used. This is a marked difference from other systems and could contribute to the lack of investment in domestic recycling capacity and in municipal collection services.

Germany has the only EPR system where compliance scheme membership is mandatory. This does not appear to impact either way on recycling outcomes.

Businesses' incentives to comply differ from one country to the next, although they appear to point all in the intended direction of greater recycling and innovation in recycling technologies. The UK regime, and in particular the PRN regime, stands out in that it appears to generate perverse incentives to export waste rather than recycling it in the UK. It has been linked also to suspicions of fraudulent activity. One may question whether it is in fact contributing to landfilling, which in principle it should not, given that the landfill levy itself appears to fail to discourage landfilling. The somewhat simpler path to demonstrating compliance that can be observed in the other countries studied would seem to contribute to better outcomes.

Finally, the comparison suggests that, where EPR systems are connected to and reinforced by other areas of policy, they achieve better outcomes. The lack of coupling between EPR and other policies is demonstrated in Ireland, where strong packaging recycling rates are accompanied by comparatively low recycling rates for MSW. It is also highlighted by the UK and Belgium, where the EPR regime is the same across the country, but MSW policy is the remit of devolved governments, and the extent to which the latter articulate their other initiatives to EPR contribute to determining their outcomes. Thus, in Belgium, Flanders performs significantly better than both Wallonia and the Brussels Region. Within the UK, there is a marked difference between MSW recycling rates among the devolved nations. Wales has implemented several national policies to encourage municipal recycling and has consequently become one of the strongest performers in Europe, with a MSW recycling rate of 64 per cent. Wales is also now considering implementing changes to its EPR regime and has recently commissioned a study to look into additional options (Welsh Government 2017).

Wales

Welsh recycling rates have improved significantly, increasing from below 10 per cent in 2000 to 64 per cent in 2016 (Eunomia 2017a).Recently, Wales has invested heavily in recycling infrastructure and differs from England in several respects:

Wales sets statutory recovery targets for Local Authorities, reaching 70 per cent by 2025. If Local Authorities do not meet these targets, they are fined £200 per tonne missed. However, the Welsh Government has waived the fines on non-compliant authorities in recent years (BBC News 2017).

The Welsh Government has made an effort to encourage Local Authorities to collect recyclables separately, avoiding co-mingling. In 2011, they published a blueprint in partnership with WRAP outlining a best practice municipal waste collection system (Welsh Assembly 2011).The Government has established and funded the Collaborative Change Programme, which involves WRAP Wales and works together with Local Authorities to share best practices and fund developments to recycling and waste management infrastructure (Welsh Government 2016).

The key features of each regime are presented together, alongside outcome measures, in Table 17.

Table 17: Comparative analysis: features of the regulatory regimes for EPR and outcomes

Variable	UK	Germany	Belgium	Ireland	South Korea
Obligation threshold for packaging compliance	High threshold	No threshold	Low threshold	Medium threshold	Medium threshold
Role of competition	High competition	Medium competition	No competition	No competition	No competition
Nature of compliance schemes	Private	Private	Owned by members	Owned by members	Owned by members
Producer responsibility for funding collection activities	Low	High	Medium	Medium	Medium
Producer responsibility for organising collection	No	Yes	No	No Producer should contract with and audit waste service providers	No
Bottle deposit scheme	No (to be introduced in 2018)	Yes	No	No	No Incentives to develop private deposit schemes
Producer registration	Mandatory With national regulator or compliance scheme	Mandatory With national regulator	Not mandatory	Mandatory With compliance scheme or Local Authorities	No data / registration likely to be mandatory
Compliance scheme membership mandatory for businesses	No	Yes	No	No	No

Variable	UK	Germany	Belgium	Ireland	South Korea
Licensing requirements on compliance schemes	Low	Medium	High	Medium	Low
Enforcement tools	Civil sanctions	Fines	Fines	Fines	Fines
Targets	On producers	On compliance schemes	On compliance schemes	On compliance schemes	On compliance schemes
Outcome: Packaging recycling rate (2015)[117]	60.6%	69.3%	81.5%	67.5%	74%
Outcome: MSW recycling & composting rate (2016)[118]	44%	66%	54%	41% (2014)	59% (2015)
Outcome: Municipal waste (kg/capita)[119]	482 (2016)	630 (2016)	419 (2016)	559 (2014)	370 (2017)
Outcome: Percent sent to landfill	19% (2016)	0% (2016)	1% (2016)	21% (2014)	15% (2015)
Outcome: Patents related to recycling and secondary raw materials (per million inhabitants, 2013)	0.37	1.15	1.38	0.43	Not available

[117] Eurostat
[118] OECD
[119] OECD

Lessons for the UK

In summary, this analysis has identified the following lessons for the UK:

- The regime would usefully articulate Extended Producer Responsibility (EPR) better with other elements contributing to waste, such as the collection of Municipal Solid Waste (MSW). Other countries have used EPR systems to channel funding directly back into collection activities or recycling infrastructure. In the current UK system, there is no transparent link between the EPR regime and MSW collection, despite the symbiotic relationship between the two.

- There are indications that the current regime may be generating perverse incentives, encouraging exportation of waste, or landfilling, and thus potentially contributing to the lack of effectiveness of other tools, such as the landfill levy. A simpler system for demonstrating compliance with EPR, along the lines of those implemented in the countries reviewed, could help address this issue.

- A lower threshold to determine when a business is subject to EPR obligations could contribute to better recycling outcomes, and thus to a better balance between these and the necessity to reduce the burden on businesses.

Annex 5 – References

Literature on the regulation of skills

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