Analysis of the RIIO-GD2 Draft Determinations

A report for Wales and West Utilities

3 September 2020

Executive Summary

Ofgem's RIIO-2 Draft Determinations define a set of what they have said are challenging regulatory allowances. For Gas Distribution, Ofgem expects companies to deliver substantial cost efficiency improvements over GD2, with Ofgem's proposed allowances 20% lower than the companies' plans.

Wales and West Utilities have requested an analysis of the incentives, risk and uncertainty in the GD2 package.

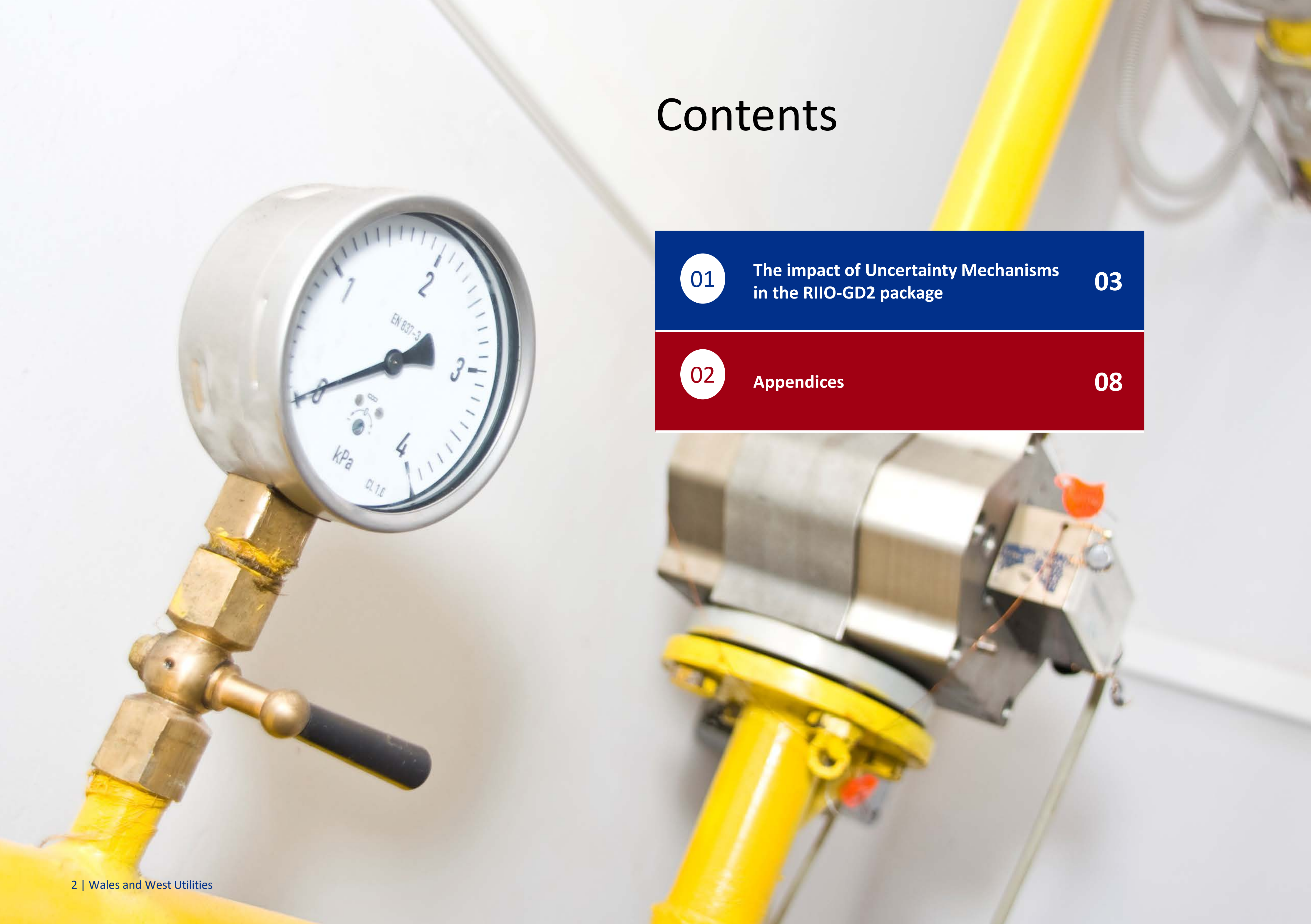
The analysis is drawn from RIIO data, research into comparable sectors, and wider research where appropriate.

This assessment is broken down into three areas of analysis (presented as separate chapters in this report):

1. **Risk and incentivisation in the RIIO-GD2 package.** This section covers:
   - The GD2 incentive package, compared to GD1.
   - A comparison with recent learnings on incentivisation in the water sector.
   - Precedent and principles of incentive regulation, and the extent to which GD2 meets these.
   - The results of an exercise to model for GDNs the risk introduced in the GD2 package.
2. **The impact of Uncertainty Mechanisms in the RIIO-GD2 package.** This section covers:
   - An analysis of the design and proposed use of Uncertainty Mechanisms in GD2, including a focus on the Net Zero reopener.
   - Lessons from reopeners in RIIO1.
   - An assessment of the impact of uncertainty on cost efficiency and delivery of customer outputs.

Our analysis highlights the potential implications of the proposed approach to managing the level of risk and uncertainty in the RIIO-GD2 period.

- There is a greater emphasis on penalties and down side in the RIIO-GD2 DDs for WWU than in RIIO-GD1, with potential rewards reduced when compared to RIIO-GD1.
- There remains potential cost subject to Uncertainty Mechanisms, with WWU subject to 29 UMs in GD2.
- Our research has found evidence that this uncertainty can lead to fragmented procurement programmes, leading to increased cost to networks (and, ultimately, customers).



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The impact of Uncertainty Mechanisms in the RIIO-GD2 package

Uncertainty Mechanisms in RIIO-2

The use of Uncertainty Mechanisms (UMs) was extended in RIIO-1, partly to respond to the longer 8-year control. Now at RIIO-2, the scope of UMs has grown further. One of the most critical strategic issues facing the energy networks today, investing to deliver the UK's Net Zero target, is now planned to be addressed largely through UMs at RIIO-2. Given their growing importance, this section discusses evidence on the advantages and risks of UMs as an input to the final determination process.

Ofgem has in the past stated that UMs may have downsides. Their use can weaken efficiency incentives and this should be considered as a trade-off in price control design.

Including UMs in RIIO-1 was partly a result of the RPI-X@20 review decision to move to an 8 year price control. The RIIO handbook, produced at the time[1], specifies a need to limit UM use where possible, given the risk of undermining efficiency incentives in the regulated firms.

For RIIO baseline allowances, the Totex Incentive Mechanism is designed to allow companies to share in the reward for finding efficiencies in the delivery of investments and network outputs. However, these incentives are weaker or absent for costs allocated to reopener mechanisms. UM costs are taken out of the control of network companies, reducing the scope for management to find efficiencies. In the case of reopeners, Ofgem will pre-determine the efficient cost during the reopener determination process.

Reduced scope for reward can make sense where the risk is also reduced for network companies. However, as more costs are loaded into UMs, the lack of incentives could build into a drag on efficiency across the sector, ultimately leading to customers paying more.

Research has shown that reopeners are best applied to clearly defined cost areas. Large, complex and strategically significant cost reopeners can increase uncertainty.

During RIIO-1, reopeners were used for costs which were clearly scoped, separable from other network investment activity, and had well defined drivers which could be assessed during the review process. The Net Zero reopener breaks with this trend, leading to potential risks on delivery and cost.

Net Zero investment is a fundamentally uncertain source of costs for networks. However, there are multiple cost areas associated with Net Zero, many of which are indistinguishable from 'business as usual' Capex or Opex programmes for the networks. There is also a system-wide level of uncertainty associated with Net Zero that is unlikely to reduce across RIIO-2. The reopener has only delayed, not reduced, the challenge of addressing the uncertainty.

This process gives an important role to Ofgem as a key decision maker and central coordination body on the transition to a Net Zero economy. With the significant informational challenge this brings, the risk that Net Zero investments are allocated in an inefficient or ineffective way in increased.

Research points to a reduction in the efficiency of network procurement and supply chains as a result of uncertainty of cost, which risks increased costs for customers.

As a result of businesses being prompted to delay investment decisions and pull back from project commitments (anticipating benefits of increased information gained by waiting), both procurement and supply chain events are disrupted into less efficient and fragmented activities.

Several sources (included in an appendix to this report) have cited the negative impacts of fragmented procurement and an associated lack of supplier involvement.

> *Uncertainty mechanisms add complexity to the price control and make it harder for companies, investors and consumers to know how much expenditure will be required over a price control period. Depending on how we design the uncertainty mechanism, there can also still be a lag between the timing of the need for expenditure and its remuneration. This could slow down the provision of infrastructure necessary to support Net Zero[2].*
>
> **Ofgem, 2020**

[1] Ofgem, 2010, Handbook for implementing the RIIO model, p.93
[2] Ofgem 2020, RIIO-ED2 Sector Specific Methodology Consultation, p.37

Uncertainty Mechanisms in RIIO-2

Decisions are being made for RIIO-2 in the context of significant uncertainty, with Uncertainty Mechanisms increasingly relied upon to achieve the core objectives of the price control process .

Price controls have long established approaches to managing uncertainty and allocating risk

Making decisions under conditions of uncertainty has always been a central part of the price control process. The economic regulator faces an 'information asymmetry'; uncertainty over the efficient level of costs incurred by regulated companies.

The RPI-X model was designed to overcome this challenge, creating a revenue incentive for networks to deliver projects efficiently[3]. However, as these efficiency incentives become stronger, financial risks to the network companies also increase. These risks increase because networks are given a fixed revenue base to deliver on uncertain network demands. In some cases, the network may not be able to finance investments under its revenue limits.

Uncertainty Mechanisms have been developed to balance these factors. Traditionally, UMs manage regulatory trade-offs between the **risk of cost inefficiency** versus the **risk of non-delivery**[4]. Using more UMs in a price control generally allows networks to pass costs more directly through to customers. This guarantees the delivery of critical infrastructure, but does not provide an efficiency incentive for networks to deliver these investments at the lowest cost. Incentives are reduced because companies cannot earn as much (or any) return on their investment.

Ofgem have previously recognised the need to keep UMs to a minimum, but the RIIO-2 package includes a suite of UMs

The decade between 2020-2030 is likely to involve continued disruption in the utility sector. Both Ofgem and the networks now face 'deep uncertainties' about the future of the energy system, meaning it is not possible to confidently assign a probability to any one future state[5].

Examples of these new forms of uncertainty include:

1. The impact of climate change and the transformation in the energy networks needed to deliver the UK's Net Zero target.
2. The future public health impacts and resulting economic trajectory under the COVID-19 pandemic[6].
3. The disruption created by new forms of digital technology being integrated into infrastructure, homes and businesses.

Faced with the need to respond to these deep uncertainties, Ofgem has increased the role of UMs in RIIO-2, particularly when compared to trends in other sectors (see Figure 1). WWU has 29 associated UMs at DD stage, 16 of which are reopeners (see Figure 2).

Figure 1: Number of UM's applied to WWU at GD2 DD[7]

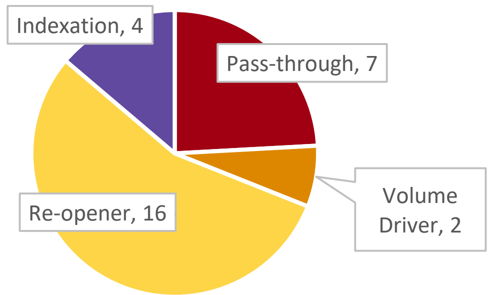
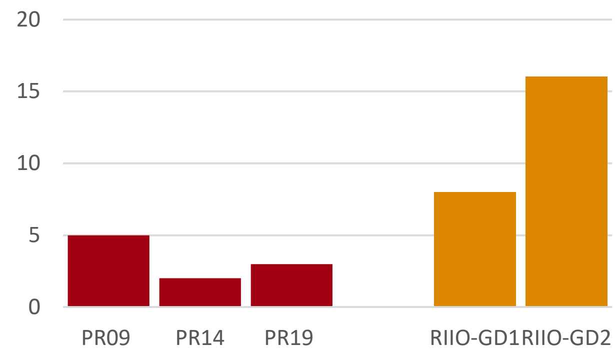


Figure 2: Number of reopeners in price controls[8]



> **Ofgem, 2010**
>
> *Uncertainty mechanisms would be selected at each price control review. They should be kept to the minimum necessary. We recognise that uncertainty mechanisms may bring their own downsides. Depending on their nature and the details of their implementation, they may dampen or even undermine efficiency incentives[9].*

[3] Sibley, 1989, Asymmetric information, incentives and Price-Cap Regulation
[4] Frontier Economics, 2003, Developing Network Monopoly Price Controls: Regulatory mechanisms for dealing with uncertainty
[5] Hallegatte, *et al.,* 2012, Investment decision making under deep uncertainty – application to climate change
[6] Citizens Advice, 2020, Meeting net zero - Options for network company highly anticipatory investments in a post-COVID-19 environment
[7] Ofgem, 2020, RIIO-GD2 Draft Determination
[8] Ofgem and Ofwat regulatory documents
[9] Ofgem, 2010, Regulating energy networks for the future: RPI-X@20, The length of the price control period

Impact of uncertainty on costs and customer outcomes

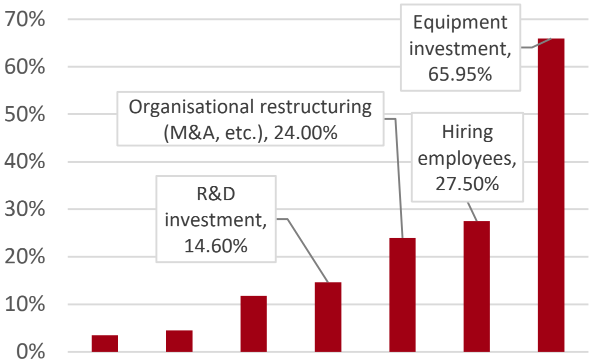
Reopener mechanisms make company allowances contingent on a future regulatory decision, which introduces a source of uncertainty for business planning. Research shows that managing this uncertainty creates additional costs for businesses.

Research suggests that demand uncertainty can impact the ability of management teams to plan efficiently for the future.

Regulatory uncertainty for network companies represents a form of demand uncertainty; allowances are released by the regulator as a judgement on customer demand for certain outputs or investments. Research across industries demonstrate that uncertainty is a key driver of management decisions on new investment.

Investing in new assets and innovating are central functions of the GDNs, and are also critical business activities for facilitating the Net Zero transition. Management surveys show that these are also the factors most impacted by uncertainty. An uncertain demand or regulatory environment can therefore weaken investment into new capex or innovation programmes[10].

Figure 3: Proportions of executives at listed firms who said uncertainty impacted their decisions in this area[11]



There is evidence to suggest that procurement programmes can become fragmented under situations of uncertainty, which can lead to increased costs throughout the supply chain. This can be applied to the current RIIO-2 proposals, where procurement fragmentation may impact on the efficiency of capex programmes delivered by the networks.

This could increase costs for several reasons:

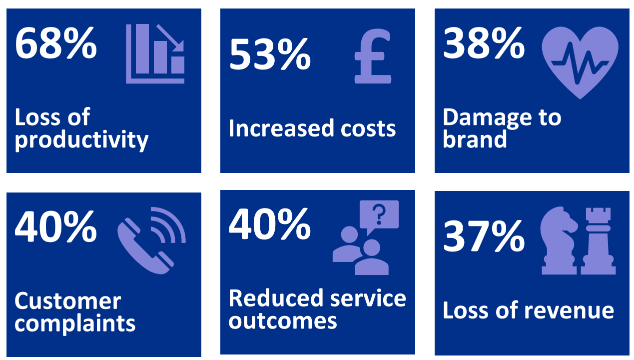
- Networks have less time to negotiate with suppliers for the best deal.
- Suppliers have less time to optimise their delivery of materials.
- Scope for collaboration and knowledge-sharing is reduced.

Research demonstrates that a key driver of efficiency in supply chains is early supplier involvement in procurement decisions. Results from the 2016 supply chain resilience report has shown that one in every three organisations report an annual loss of more than $1 million due to supply chain disruption or fragmentation[12]. On the other hand, early supplier involvement can reduce material costs and project cycle timescales by **up to 20%**[13].

Benefits from close supplier involvement in investment and product development[13]

	Early	Middle	Late
Reduction in material cost	20%	25%	10%
Reduction in development cycle time	20%	20%	10%
Improvement in material quality	20%	15%	15%
Reduction in manufacturing costs	10%	12%	10%

Proportion of companies reporting impacts from supply chain disruption[12]



[10] Bernanke, 1983, Irreversibility, Uncertainty and Cyclical Investment.
[11] Morikawa, 2013, Reducing policy uncertainty and the Japanese economy
[12] EPS News, 2016, Report: The Cost of Supply Chain Disruptions
[13] Saric, 2020, Early procurement lessons form the Covid-19 crisis

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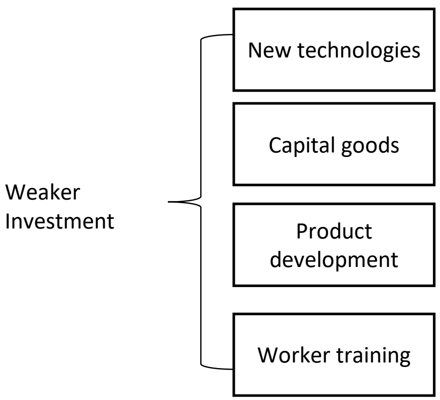
Appendices

Research into the impact of uncertainty on supply chain and procurement efficiency

Impacts of uncertainty on businesses

Various sources and studies on the impact of uncertainty on supply chain and procurement have shown weighted evidence towards significantly negative impacts.

Due to the costs of reversing an investment or hiring decision, an uncertain regulatory environment leaves business hesitant to commit to capital expenditures or job creation[14]. Therefore companies have to compromise between the extra returns & quality associated with early commitment against the benefits of increased certainty gained by waiting. This in turn leads to weaker investment in new technologies, capital goods, product development and worker training[15].



Management decisions affected by uncertainty

Studies have shown the types of management decisions which are significantly affected by policy uncertainty.

The Research Institute of Economy, Trade and Industry (RIETI), a Japanese thinktank, conducted a survey on publicly listed Japanese companies to find out which specific policies have had the most significant impacts on companies, and which management decisions are most affected. The results of this survey are shown in Table 1, which shows which management decisions are most affected by policy uncertainty, and Table 2, which shows which types of policy and regulatory decisions most affect businesses.

Table 1: Management decision significantly affected by policy uncertainly (%)

1	Equipment investment	65.95%
2	R&D investment	14.6%
3	ICT investment	4.5%
4	Advertising	3.5%
5	Entry into or withdrawal from overseas market	47.0%
6	Organisational restructuring (M&A, etc.)	24.0%
7	Hiring of regular full-time employees	27.5%
8	Hiring of non-regular employees	11.8%

Table 2: Economic policy and regulatory uncertainly and impact on business management (%)

		(1) High degree of uncertainty	(2) Significantly affected)
1	Tax policy	13.5%	47.1%
2	Social security system	39.1%	19.7%
3	Business licensing system	7.6%	15.5%
4	Labour market regulations	11.1%	23.5%
5	Environment regulations	15.2%	27.6%
6	Land use and zoning restrictions	4.9%	10.7%
7	Consumer protection laws and regulations	5.9%	9.7%
8	Corporate law and regulations	9.7%	22.6%
9	International trade policy	50.4%	30.2%

[14] Bernanke, 1983, Irreversibility, Uncertainty and Cyclical Investment.

[15] Davis, 2017, Regulatory Complexity and Policy Uncertainty: Headwinds of Our Own Making

Research into the impact of uncertainty on supply chain and procurement efficiency

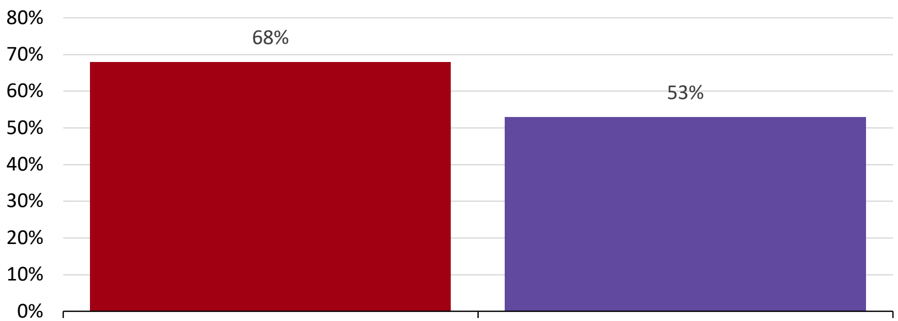
As a result of businesses being prompted to delay investment decisions and pull back from project commitments, both procurement and supply chain events are disrupted into less efficient and fragmented activities.

Supply chain disruptions

'Supply chain disruptions' is a general term used to describe any external causes to negatively impact on supply chain activities.

Results from the 2016 supply chain resilience report (an annual report published by BCI and Zurich Insurance Group), have shown that one in every three organisations report an annual loss of more than $1 million due to supply chain disruptions, and that the biggest negative impacts include a loss of productivity (68% of organisations reported this), and an increased cost of working (53%).

1 in 3 organisations report losses of over $1 million due to supply chain disruptions



Supplier involvement

A major part of supply chain disruptions is supplier involvement. Due to delayed commitments and uncertain timescales, supplier involvement is often delayed or even overlooked, and as a result businesses miss out from the benefits of an integrated supply chain approach with early supplier involvement that can lead to more effective collaboration and knowledge sharing.

Table 3 displays results from a study presented by Wynstra, van Weele and Weggemann (2001) which shows the potential for significant cost reductions and quality improvements in cases where suppliers are involved earlier in a project cycle.

Table 3: Benefits of supplier involvement in new product development compared to projects with no supplier investment

	Early	Middle	Late
Reduction in material cost	20%	25%	10%
Reduction in development cycle time	20%	20%	10%
Improvement in material quality	20%	15%	15%
Reduction in development costs	20%	10%	10%
Reduction in manufacturing costs	10%	12%	10%
Improvement in product functionality, features and technology	10%	10%	10%

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