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August 2017

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July 1, 2017
Revised: August 19, 2017

Abstract

During the last decade, governments have shown increasing interest in curbing the growth of regulation by requiring that one or more regulations be removed before a new regulation can be added. We provide a comprehensive review of this innovation in regulatory policy. There are three main conclusions that flow from our analysis: First, while some governments claim this policy has made regulatory agencies more sensitive to regulatory costs, none of the countries we review has demonstrated that this policy innovation has actually led to improvements in economic efficiency. Second, *all* of these policies are implemented in conjunction with a requirement related to the economic impact of regulations. Typically, the economic requirement is that the costs associated with the new regulation be less than the costs associated with the regulations being removed. For existing applications, these costs have been defined narrowly, and they do not provide a good measure of the full social costs of a policy. The US appears to be adopting a markedly different approach that will consider both economic costs and benefits. Third, we find support for the hypothesis that centrist or conservative political parties are more likely to implement these policies. We argue that the requirement to remove one or more new regulations before adding a new regulation is best understood in terms of symbolic politics.

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1. Introduction

The way an economy is regulated can have an important impact on its overall performance (Djankov *et al.*, 2006). Regulation has many dimensions: these include paperwork, or what is sometimes referred to as administrative burdens or "red tape"; regulation of prices, service quality, product offerings, and entry in specific industries -- sometimes referred to as economic regulation; and regulations that deal with problems across several economic sectors or society at large -- sometimes referred to as social regulation. An example of paperwork is the requirement to fill out tax forms. An example of economic regulation that occurs in many countries is the regulation of energy and water prices. Examples of social regulation include rules aimed at curbing pollution from automobiles, or protecting consumer or worker safety.

Because regulation can have a marked impact on economic performance, scholars and policymakers have explored ways to improve how the economy is regulated. Politicians, some of whom are concerned with the growth of regulation, have developed their own set of interventions. During the last decade, governments have shown increasing interest in curbing the growth of regulation by requiring that one or more regulations be removed before a new regulation can be added. We call this regulatory policy innovation "One-in-N-out," where N is most often one, but in the cases of the US and UK is now two and three, respectively.

We provide a comprehensive review of this innovation in regulatory policy, as it is being implemented in nations around the world. In addition, we explore whether the political party in power when One-in-N-out policies are implemented is more likely to be conservative, or favor limited government. We also develop lessons that may be learned for researchers and practitioners from applications to date.

There are three main conclusions that flow from our analysis: First, while some governments claim this policy has made regulatory agencies more sensitive to regulatory costs, none of the countries we review has demonstrated that this policy innovation has actually led to improvements in economic efficiency.[1] In fairness, in most cases, this mechanism is designed to achieve regulatory cost savings, such as paperwork burden, so it is not surprising that the mechanism does not necessarily increase overall net benefits to society. However, even claims about cost savings are hard to assess because of the difficulty in specifying a clear counterfactual from which to measure these savings.

Second, *all* One-in-N-out policies have been implemented in conjunction with a requirement related to the economic impact of regulations. Typically, the economic requirement is that the costs associated with the new regulation be less than the costs associated with the regulations being removed. For existing applications, these costs have been defined narrowly, and they do not provide a good measure of the full social costs of a policy.

Third, it appears that political parties that are centrist or conservative are more likely to implement these One-in-N-out policies than other kinds of parties, though our sample of countries is small. We argue that the requirement to remove one or more new regulations before adding a new regulation is best understood in terms of symbolic politics (Edelman, 1964; Radaelli, 2009). We also argue that the economic results associated with this policy could likely be achieved at lower overall social cost if the particular requirement for removing one or more regulations before adding a new one were dropped.

Section 2 of the paper of the paper examines country experiences with One-in-N-out. Section 3 discusses the political hypothesis that conservative governments are more likely to introduce targets for constraining the growth of regulation. Section 4 examines lessons for the US and other countries. Finally, section 5 concludes.

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[1] Economists often support the goal of increasing economic efficiency through regulation, but also note there is room for other considerations, such as equity (Arrow *et al.*, 1996).

2. Country experiences

Before exploring country experiences in detail, it is useful to consider the economic rationale for trying to limit government regulation. In theory, if a government selected regulations that maximized expected net benefits, then there would be little, if any, rationale for limiting regulation based on economic efficiency. However, there are reasons that government might choose economically inefficient policies generally, and specifically with respect to regulation.

Legislators may not have an incentive to select policies that are efficient, and may instead be driven by incentives to get reelected (Buchanan and Tullock, 1965; Mayhew, 1974). Furthermore, bureaucrats may not have an incentive to choose economically efficient policies, but instead may be interested in maximizing their budgets, services provided, prestige, or authority (Niskanen, 1971). Justice Stephen Breyer (1995) noted that bureaucrats in agencies with a single mission may have a kind of tunnel vision, where they tend to place undue emphasis on the particular set of problems they have been asked to address. If a person works in an environmental agency, for example, she may tend to place too much emphasis on the environment relative to other worthy causes. The same logic would hold true for a professional in a defense agency, a safety agency, or any other regulatory agency.

There is also much empirical work suggesting that many regulations that are promulgated would not pass a benefit-cost test (Morrall, 1986; Morrall, 2003). Research by Hahn (2004) suggests that a significant fraction of US federal environmental, health, and safety regulations would not pass a benefit-cost test based on the government's numbers.

Because of a perception that regulation may be excessive, scholars have examined different mechanisms for limiting the growth of regulation. One such mechanism is a "regulatory budget," which is supposed to provide agencies with a budget constraint, usually measured in terms of the regulatory costs the agencies can impose on society.

Early versions of this idea were suggested by Crandall (1978) and DeMuth (1980). One rationale for imposing a regulatory cost constraint on agencies is that they may then prioritize the regulations that have the highest net benefits to society. However, it is not clear why agencies would necessarily pursue such an agenda.

A variation on the idea of the regulatory budget is the One-in-N-out idea (Better Regulation Task Force, 2005). As reported by Renda (2017), there at least seven countries that have adopted or are adopting rules that use a version of One-in-N-out, and two countries that are considering using this general approach. To this, we add the Netherlands, which uses a target of reducing compliance costs for businesses by €0.5 billion per year over a five year period without an explicit One-in-N-out rule. Our country case studies represent different approaches that have set various targets for reducing regulations or their associated costs, and typically use One-in-N-out as part of their approach. Sometimes they also use a concrete economic measure as well, such as substantive compliance costs (Renda 2017).[2]

Table 1 summarizes the activities of 8 countries.[3] Seven of these countries have a program in place to reduce the number of regulations and/or the scope of regulation. These countries are: Australia, Canada, France, Germany, the Netherlands, Portugal, and the UK. The final country is the United States, which has announced its intention to implement a version of One-in-N-out.[4] Two other countries, Finland and Poland, are considering implementing One-in-N-out rules, but they are not included in Table 1 because they have not yet been implemented and no further information is available.

Table 1 reveals several key points. First, most of these programs are relatively recent, with all the One-in-N-out programs starting in the last decade. Second, most of the programs that use this mechanism or are considering using this mechanism define it in terms of One-in-One-out. The UK moved from One-in-One-out to One-in-Two-out and is

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[2] More specifically, the Netherlands considers compliance costs for businesses; the UK focuses on compliance costs for businesses and professionals; Germany expanded the analysis to citizens and public administrations; Canada looks only at administrative burdens. See Renda (2017).
[3] See Renda (2017) for a discussion of some of these countries in more detail.
[4] See Section 4 for a more detailed discussion of the US version of this policy.

now at One-in-Three-Out. The US announced One-in-Two-out, but that has not yet been implemented. Third, the programs for One-in-N-out are always combined with a measure of regulatory costs. Fourth, the measure of regulatory costs that is used is usually quite narrow. It typically represents administrative burdens or compliance costs, but does not include a broader measure of economic impact. Fifth, only five countries have provided evaluations of their programs to date in terms of actual economic impacts. Below, we highlight a number of issues related to the implementation of One-in-N-out, the estimate of economic impacts, the source of regulatory cost reductions, and measurement issues.

Implementation of One-in-N-out

One-in-N-out as implemented in practice, typically has two components. First, in a One-in-N-out scheme, for each new regulation added at least N regulations must be removed (where N is typically 1)[5]. Second, it is required that the cost of regulations being added must not exceed the costs of regulations being removed. Australia, Canada, Germany, and the UK – the countries with One-in-N-out that estimate their regulatory costs savings – each use both of these components.

Though the requirement for removing one or more regulations before adding a new regulation is often highlighted by politicians (Lam, 2017), it is the offsetting burden requirement (usually in the form of the offsetting of costs) that prompts a real decrease (or avoids an increase) in regulatory burden. Without the offsetting burden requirement, the One-in-N-out rule might not have the intended economic impact. Suppose for example, two innocuous, low-cost regulations, were replaced by one onerous regulation with significant associated costs. This example illustrates why the One-in-N-out rule,

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[5] In some cases, such as in the US and the UK, a thorough revision of the regulation is allowed. These revisions typically require the elimination of burdensome regulatory requirements in an existing regulation, such that overall administrative burdens or compliance costs are significantly reduced. See Renda (2017) on the US experience; for the UK, see UK Department of Business, Innovation and Skills (2015) for an explanation of the One-in-Two-out rule, where the government clarifies that "when policymakers do need to introduce a new regulation, and where there is a cost to complying with that regulation, they have to remove or modify an existing regulation with double the cost to business".

without an explicit requirement of reducing regulatory burden, may not achieve the desired result.

There are at least three other important dimensions in which One-in-N-out programs differ in practice. One is in their ability to bank regulatory cost savings over time so that additional regulations can be introduced. A second is in what regulations are exempted from the requirements. A third is in what regulations can be traded off against each other to comply with One-in-N-out.

Banking refers to the practice of taking extra regulatory cost savings that are achieved and using them in the future. So, for example, if the regulation being removed costs $10 and the regulation being added costs $1, the $9 ($10-$1) could be banked for future use by regulators if they wished to add a new regulation later.[6] This banking provision is very similar to those allowed under cap-and-trade approaches to limit pollution. Of the four countries that estimate regulatory cost savings, only the UK explicitly allows banking.[7]

The exemption of categories of regulations is another area where national programs differ in practice. Though some countries are unclear about which regulations must be included in their One-in-N-out requirement, others are more specific. The UK exempts EU regulations, taxes, and self-regulation, with ministers sometimes given leeway to exclude regulations from the policy if a reason is provided. Recently, €8.3 billion in regulatory costs were not considered in the UK's measurement of savings. More than half of this came from costs associated with the National Living Wage, because ministers decided that tax reductions offset the costs of the new law (UK National Audit Office, 2016). Canada exempts taxes, emergency or crisis situations, and non-discretionary obligations from the savings associated with its One-in-One-out policy (Red Tape Reduction Act, 2015).

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[6] This banking provision is very similar to those allowed under cap-and-trade approaches to limit pollution.
[7] The US also contemplates a banking provision. See discussion below.

Estimate of economic impacts

Though the countries profiled in Table 1 have all taken a similar approach to reducing regulation via a One-in-N-out strategy or a burden reduction target, there is substantial variation in results across countries, taking the numbers at face value. At the upper end, Australia claims to have achieved $4 billion in savings over a three-year period, or an average of more than $1 billion in savings per year. At the lower end, Canada estimates annual cost savings of $21 million from 2013-2014. In 2014-2015, annual savings fell to $2.7 million, which is a very small number compared with the size of its economy. The savings for the UK, Germany, and the Netherlands were in between, with a range of €500 million to €1 billion in annual savings.

The methods used to calculate these savings vary, making direct comparison across countries difficult. Canada, Germany, the Netherlands, and the UK all rely to varying degrees on what is known as the Standard Cost Model to estimate administrative burdens, which includes documentation, paperwork, and information and data requirements (The Standard Cost Model, 2004). The original version of this model has been modified in many cases to capture substantive compliance costs. Today, the Netherlands focuses on compliance costs, which go beyond administrative burdens; the UK does the same, although it considers compliance costs and also so-called "transfers" (*e.g.*, revenues for targeted businesses); Germany considers regulatory costs, which include compliance costs and also enforcement costs for businesses and public administrations. Australia has an approach to measuring costs that includes the administrative costs of reporting data and managing records, the substantive costs of training employees and purchasing equipment to comply with regulations, and the delay costs of income losses incurred in waiting for regulatory review.

These differences make it difficult to meaningfully compare the results achieved by these countries. That said, the results shown in Table 1 give a sense of the relative ambition and ultimate impact of the cost reduction strategy adopted by the countries at hand. Canada's savings, in the tens of millions of dollars, appear to be minor in

comparison to the hundreds of millions in annual savings that the UK, Germany, and Netherlands report.

The source of regulatory cost reductions

Three countries provided detailed breakdowns on the amount of regulatory costs savings resulting from specific regulatory changes: Canada, the UK, and Australia. In Canada, 30% of the regulatory changes accounted for 94% of the cost savings (Treasury Board of Canada, 2015 and 2016). In the UK from 2010-2015, 5% of the regulations removed accounted for 90% of the €27 billion cost reduction; for the 2015-2020 goal, two regulations accounted for 75% of the so-far-realized €0.9 billion cost reduction (UK National Audit Office, 2016). In Australia, 23.9% of the regulatory changes accounted for 97% of the cost reduction (Australian National Audit Office, 2016).

This pattern suggests that a large part of the regulatory cost savings may, in general, arise from removing a few rules. It is unclear based on the data whether most of the "low-hanging" fruit has already been picked. If large net benefits or cost reductions are still possible over time despite the enactment of big reforms, then One-in-N-out may remain a useful mechanism for making significant changes to outmoded regulations and change the culture of regulatory agencies.

Measurement and counterfactuals

As already mentioned, those countries that have adopted a specific approach to measure and reduce regulatory costs use a fairly narrow definition of costs that typically focuses on administrative burdens (see, *e.g.*, Hopkins, 1998). The use of this definition is to some extent understandable, because these costs are relatively easy to measure. As one expands the measure of costs, or also attempts to include economic benefits in the calculations, the informational requirements on the regulatory agency grow (Lave, 1981).

To measure the impact on economic efficiency of the One-in-N-out regulatory innovation, a researcher would need to know the counterfactual of the costs and benefits of regulation, or at least the counterfactual of the cost of regulation without this innovation. However, even the latter cannot be easily estimated because it is very difficult to observe what regulatory costs would have been in the absence of the One-in-N-out system. In evaluating regulations, analysts typically use a fairly crude "before-and-after" calculation, in which they examine the change in a narrow definition of regulatory costs after they implement One-in-N-out for a particular set of regulations. This measure may be the best that can be hoped for under the circumstances, but it has well known problems. In particular, it does not control for other factors that may have changed (Angrist and Pischke, 2009). Furthermore, there is no reason to believe a reduction in this regulatory cost measure is likely to improve broader measures, such as economic efficiency: in many cases, reductions in administrative burdens can generate increases in enforcement costs, compliance costs, or reductions of regulatory benefits (Allio and Renda, 2010; Renda, 2015).

This review of One-in-N-out policies reveals that this institutional innovation can take many forms, but there are important similarities across countries. All of the countries that provide costs savings estimates add a regulatory burden offset requirement to the requirement that One-in-N-out requirement. This regulatory offset requirement has so far focused on narrowly defined changes in regulatory costs.[8]

3. **Politics of One-in-N-out**

This section explores two political aspects of One-in-N-out. The first relates to an association between the party in power and the adoption of One-in-N-out. The second relates to the rhetorical use of One-in-N-out as a political symbol.

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[8] The US intends to use full opportunity cost to society. See discussion below.

We examine the political affiliations of the parties in power when One-in-N-out rules are adopted. Our hypothesis is that, other things equal, these parties would tend to be more conservative, in the sense that they would support smaller or limited government.

We recognize there are many factors that could affect a government's announcement of such a policy (see, *e.g.*, Radaelli, 2005). One important variable may be the overall deadweight cost of regulation (Becker, 1983). Other factors could include pressure from the business community. For example, President Obama, a Democrat, announced a retrospective review of regulation, which appears to have been driven, in part, by concerns from the business community. The Obama review directed agencies to review and repeal unnecessarily burdensome regulations, and by the end of his administration showed modest success in achieving cost reductions and raising awareness of regulatory burdens (Sunstein, 2014; Raso, 2017).

In what follows, we do not consider specific factors that may have driven policy choices, because we do not have data on these factors across a wide number of interventions. Still, we think it is instructive to examine the party affiliation hypothesis because it comports with common sense that parties associated with limited government would be more likely to enact One-in-N-out rules.

Table 2 provides data on nine countries that have implemented or are planning to implement One-in-N-out. It builds on Table 1, adding countries that are considering but have not yet implemented this mechanism, and removing the Netherlands because it does not have a One-in-N-out rule. The table lists parties and leaders associated with the implementation of One-in-N-out. Because we do not have a formal way of locating these parties on a political spectrum, we use descriptions in Wikipedia.[9]

Notwithstanding the obvious measurement problems, the table shows that one of the parties is classified as right-wing, two are conservative, four are center-right, one is center, and one is center-left. Stated another way, only one out of nine countries that

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[9] For a more formal analysis of European parties, see Lo, Proksch, and Gschwend, 2013.

have implemented a One-in-N-out policy is on the left of the political spectrum. This is consistent with our hypothesis that parties that are right of center and/or support limited government are more likely to support this type of rule.

A second important question is why governments would adopt One-in-N-out at all, as opposed to simply adopting some kind of reduction target related to costs or opportunity costs. We think there are two possible answers to this question. The first is that One-in-N-out can serve as a potent political symbol, even if it may be devoid of precise economic content (Edelman, 1964; Radaelli 2009). A second reason is that political symbolism may matter not only for persuading the electorate that the government cares about limiting regulation, but also for changing the culture of agencies (Renda, 2017). This culture change could occur, for example, if bureaucrats were to begin placing more importance in One-in-N-out, or if they perceived that political leaders care more about that policy and deregulation more generally. This shift in culture is also consistent with a simple behavioral economics model of claiming more of the attention of bureaucrats by increasing the salience of an issue (see, *e.g.,* Dolan *et al*., 2012)

4. Lessons for the US and other Countries

This section briefly reviews the US approach to One-in-N-out and then offers some general lessons for countries considering adopting this approach.

The Trump One-in-Two-out initiative

To understand the current US approach initiated by President Trump, it is useful to provide some background on the US regulatory oversight process over the past several decades. Because of its economic importance, US presidents have initiated formal regulatory oversight at least since President Reagan. The economic tool of choice has generally been benefit-cost analysis for major regulations coming from executive agencies. Independent regulatory agencies are generally not reviewed in the same way, though there have been suggestions that such reviews would be desirable (Hahn and

Sunstein, 2002).[10] Presidents have typically used executive orders to require that regulatory agencies select regulatory options that maximize net economic benefits and that do more economic good than harm, to the extent permitted by law.[11] The focus is generally on economically significant regulations. In addition, presidents have called for reviews of regulations that are on the books with modest success (Sunstein, 2014).

The effectiveness of the US regulatory oversight process is subject to debate (Farrow, 2000). Scholars have noted, for example, that the benefit-cost analyses done by the government have been of uneven quality, and it is not clear they have had a marked impact on policy (Hahn and Tetlock, 2008).

In response to concerns about excessive regulatory burden, President Trump initiated an executive order on January 30, 2017 establishing a One-in-Two-Out as a goal (EO 13771, 2017). He then signed a complementary executive order establishing Regulatory Reform Units within agencies on February 24, 2017 (EO 13777, 2017). The Office of Information and Regulatory Affairs provided a memo with guidance on implementing the initial executive order on April 5, 2017 (OMB, 2017).[12]

Trump's One-in-Two-out program is broad. It covers significant regulatory actions (*e.g.*, those with an economic impact exceeding $100 million) for federal regulatory agencies. It does not formally cover independent regulatory agencies, but they are encouraged to comply. It exempts military regulations and those involving national security. It also has a provision for banking, though the details of this provision have not been worked out.

What distinguishes the Trump order from all of the One-in-N-out programs that have been implemented to date is its focus on "opportunity costs." This means that the Trump order may be using a definition of regulation that approximates economic efficiency

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[10] Examples of these agencies include the Federal Energy Regulatory Commission, the Federal Communications Commission, and the Security and Exchange Commission.
[11] The precise text of the executive orders varies across administrations, but this summary captures the gist.
[12] See Renda (2017) and Gayer *et al.* (2017) for more in-depth discussions.

closely. It is in sharp contrast to the other four One-in-N-out programs reviewed that focus on a fairly narrow definition of costs.

As Renda (2017) and Gayer *et al.* (2017) note, it remains to be seen whether the Trump One-in-Two-out policy will do more good than harm. There are significant issues with measuring and analyzing costs and benefits. There are also significant legal issues in terms of what is permissible under US law.

The size of the task facing government regulatory analysts and decision-makers is daunting if they are serious about improving economic efficiency, reducing the regulatory burden, or making American consumers better off. To appreciate the size of the analytical problem, one needs to consider both the existing stock of regulations as well as the flow. The existing stock of regulations that would have qualified as EO 13771 regulatory actions is probably on the order of thousands, considering that the flow of those regulations - that is, significant regulatory actions as defined in Section 3(f) of EO 12866[13] – has been about 275 per year from 1994-2016, with a low of 180 and a high of 360 (EO 12866, 2017; Regulatory Studies Center, 2017). In a world in which information and analysis were costless, the government would need to calculate the incremental benefits and costs not just of new regulations, but also of the existing stock of regulations. Furthermore, the best estimates of the incremental benefits and costs of a particular regulation change over time. Thus, the calculation would need to be redone periodically, such as on an annual basis.

This analytical exercise represents a substantial undertaking, and the government is unlikely to be able to do this exercise well without additional resources. Furthermore, if the agencies are charged with undertaking these tasks, there is a problem with the fact that agencies may have certain regulations that they or Congress wish to protect.

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[13] Section 3(f) of EO 12866 defines a "significant regulatory action" as one that may "have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs the environment, public health or safety, or State, local or tribal governments of communities; create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or raise novel legal or policy issues arising out of legal mandates, the Presidents' priorities, or the principles set forth in this Executive order."

Dudley (2016) notes that agencies will have an incentive to do analysis which is true, but it is not clear what the quality of this analysis will be.

The upshot is that President Trump's One-in-Two-out policy agenda represents a work in progress. While there is the potential to do more economic good than harm, the initiative may not succeed. To increase the chances of success, the administration should consider explaining how best to establish a current benchmark for estimating costs and benefits, and allocating more resources to analysis and review of these costs and benefits. In addition, it should promote the use of experimental techniques, such as the use of pilots, to shed light on the likely effectiveness of regulation (Greenstone, 2009).

As Renda (2017) and Gayer *et al.* (2017) argue, it is possible to imagine scenarios from a worst case to a best case. The worst case may be that the programs fails and perhaps is removed. A best case could be that it stimulates the removal of some regulations that do a lot more harm than good. To this, we would add that it may stimulate analysts inside and outside of the government to provide better assessments of the costs and benefits of regulations, particularly of existing regulations. We believe such analysis is worthwhile and will help furnish new insights about how to design more efficient regulations and regulatory processes. At the same time, some care should be taken to assess whether the increase in analytical costs associated with the Trump One-in-Two-Out policy is justified by actual improvements in regulation.

Five general lessons

We offer five general lessons for countries interested in using this general approach to reforming regulation based on the experience to date. Our lessons are predicated on the presumption that countries are interested in increasing the economic efficiency of regulation, which we understand can be debated in theory and practice.

1. *There is not a reason to introduce a One-in-N-out approach if the regulatory process is already doing a good job of maximizing economic efficiency*. This lesson is similar to the Hippocratic Oath: first, do no harm. For example, if it could be argued that US regulation already maximizes net benefits within legal constraints, there may be little benefit expected from the Trump order. If, as we believe, there are lots of inefficiencies in the system, there may be a rationale for a further oversight mechanism.

2. *The expected benefits of the oversight mechanism, such as One-in-N-out, should outweigh the costs.* In other words, the oversight mechanism itself should do more good than harm, an idea consistent with what many economists advocate (Arrow *et al.*, 1996).

3. *The objective of the policy matters for economic efficiency and whether consumers will be better off*. Most countries have used a narrow definition of costs, which may not be related to overall costs of *One-in-N-out* or the net economic benefits from this policy innovation.

4. *The domain for the regulatory innovation matters*. In general, the broader the domain, the better (*e.g.*, in the US, including independent regulatory agencies). But this is only true provided that the objective of the regulatory innovation is good for society in some sense (*e.g.*, it improves economic efficiency). A corollary is that the domain for trading (or offsetting regulatory burdens) should be as large as possible. Obviously, there may be statutory constraints that limit the ability to trade across different kinds of regulatory burdens.

5. *The specific requirement of One-in-N-out is not necessary for economic reasons*. The economic results associated with this policy could likely be achieved at lower overall social cost if the particular requirement for removing one or more regulations before adding a new one were dropped. Reducing the number of regulations is not a social good, because measuring the number of regulations

may or may not serve any broader social or economic purpose. In our view, it is preferable to focus on changes in net benefits, or, short of that, on changes in costs. Having said that, One-in-N-out may be necessary to develop political support for this approach, and it may be useful as a way of stimulating culture change at regulatory agencies.

5. **Conclusion**

This paper began by noting that many governments are interested in curbing the growth of regulation, particularly of regulation that is harmful to businesses and/or consumers. We provided a comprehensive review of regulatory processes in different countries that required one or more regulations be removed before a new regulation could be added. We found that none of these countries demonstrated that this policy innovation has actually led to improvements in economic efficiency. Furthermore, we found that all of the policies are implemented in conjunction with a requirement related to the economic impact of regulations. Most countries focus on reducing or limiting regulatory costs. In contrast, the US appears likely to use a broader measure of opportunity cost that includes both economic costs and benefits.

We also analyzed two salient features of the politics of this reform. We found that political parties that are centrist or conservative are more likely to implement these policies than other kinds of parties. We argue that the specific requirement of One-in-N-out could be understood through the lens of symbolic politics. The average voter can understand a politician who advocated that, say, two regulations have to be removed before one is added.

More work could be done on how these programs perform over time in terms of our understanding of the economics and politics of regulatory reform. We argue that implementation of the US program in particular could give rise to a deeper understanding among bureaucrats and scholars of the costs and benefits of regulation.

With respect to politics, we think it would be interesting to develop a deeper understanding of how One-in-N-out will fare as the political party in power changes. We have limited data on this now, but will have more with time. Of the 9 countries that have implemented One-in-N-out rules, 3 have experienced a change in the party in power since the rule was implemented: Canada and Portugal have seen shifts from right-leaning to left-leaning parties in power, and France has seen a shift from a left-leaning to a centrist party in power. None of these new administrations have been clear about their intentions for One-in-N-out. In the UK, though there has been no change in party in power, the new Conservative Prime Minister Theresa May has continued David Cameron's One-in-N-out policies, and expanded to the One-in-Three-out with a £10 billion reduction target by 2020 (UK Department of Business, Innovation, and Skills, 2016).

A final area worthy of exploration is how changes in regulatory policy are likely to affect overall economic efficiency, particularly when there are policy reversals.[14] If regulatory policies change dramatically with new administrations, this will affect business and investment decisions. Although it is too soon to know, the One-in-Two-Out policy being contemplated by the Trump administration could represent a sea change in how the economy is regulated. To the extent that these and related policies introduce substantial changes in the status quo, they will likely increase uncertainty over time in how the economy is regulated.

Such policy instability is an issue worth considering in its own right with respect to the regulatory process. If policy changes "a lot," even if the most recent change promotes economic efficiency, the policy uncertainty could be quite costly to businesses and consumers (Baker, Bloom, & Davis, 2016). This type of policy uncertainty underscores the importance of trying to design institutions that are flexible enough to accommodate changes in voter preferences without imposing undue economic costs on society.

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[14] An example is provided by the current US Federal Communications Commission. In a proposed regulation curbing utility-style regulation of broadband providers, the Commission seeks to reverse the position of the previous Commission led by an Obama appointee (Federal Communications Commission, 2017). While the new proposal likely increases economic efficiency for consumers, it raises the issue of policy stability.

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Table 1: Countries that Require Removing Old Regulations Before New Ones Are Added

Country	Years	Ratio (in:out) and Target	Measure	Evaluation	Economic Savings
Australia	2014-present	1:1	Administrative costs, substantive costs, delay costs	National Audit Office	2013-15: $3.97B
Canada	2012-present	1:1	Administrative burdens	Treasury Board	2013-14: $21M 2014-15: $2.7M
France	2015-present	1:1	Life events method plus methodology to measure delay costs	NA	NA
Germany	2015-present	1:1	Regulatory costs (includes compliance and enforcement); coupled with life events method	National Regulatory Control Council	2015-16: €1B
Netherlands	2003-present (with pilot projects since the 1990s)	25% reduction target; €2.5B reduction target	Compliance costs (includes administrative burdens, substantive costs and inspection/enforcement costs)	Ministry of Economic Affairs	2003-07: met target. 2007-11: on track to meet target as of 2009. 2012-17: on track for €2.5B reduction
Portugal	2014-present	1:1	Administrative burdens (from 2014); Compliance costs (from 2017)	NA	NA
UK	2010-present	1:1 (2010; 1:2 (2013; 1:3 (2016), w/€10B reduction target by 2020	Direct costs to businesses	National Audit Office	2010-15: €10B reduction. 2016-present: €0.9B
US	2017-present	1:2	Opportunity cost to society	NA	NA

Sources: Australia: Australian National Audit Office, 2016. Canada: Red Tape Reduction Act, 2015; Treasury Board of Canada, 2015; Treasury Board of Canada, 2016. Germany: Federal Statistics Office, 2011; National Regulatory Control Council, 2016; Renda, 2017. France: Renda *et al.*, 2013; Renda, 2017. Netherlands: Regulatory Burden on Business, 2017; Ministry of Economic Affairs, 2009; World Bank Group, 2009; Ministry of Economic Affairs, 2015. Portugal: Renda, 2017. UK: Department for Business, Innovation, and Skills, 2011; UK National Audit Office, 2016. US: OMB, 2003; EO 13771, 2017.

Table 2: Political Party in Power when Initiating One-in-N-out Rule

Country	Summary of Initiative	Year Initiated	Main Political Party in Power + Leader	Party Ideology
Australia	1:1	2014	Liberal Party – Rudd	Conservative
Canada	1:1	2012	Conservative Party – Harper	Center-right
Finland	1:1	TBD	Centre Party – Sipilä	Center
France	1:1	2015	Socialist Party – Hollande	Center-left
Germany	1:1	2015	Christian Democratic Union – Merkel	Center-right
Poland	1:1	TBD	Law and Justice Party – Szydlo	Right-wing
Portugal	1:1	2014	Social Democratic Party – Coelho	Center-right
UK	1:1, 1:2, 1:3, net reduction target	2010	Conservative Party – Cameron	Center-right
US	1:2	2017	Republican Party - Trump	Conservative

Sources: Selected Wikipedia pages, accessed August 10, 2017. For summary of initiative and year, sources match those from Table 1.