

Competition and the Social Cost of Regulation in the Postal Sector

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Swiss Economics Working Paper 0032

July 2012

ISSN 1664-333X

Published as:

"Competition and the Social Cost of Regulation in the Postal Sector" (2013). In: *Reforming The Postal Sector In The Face Of Electronic Competition*. Crew, M. A.; Kleindorfer, P. R. (eds), pp. 294-305.

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1. INTRODUCTION

Increased direct and indirect competition in the postal sector represents a great challenge to the traditional business model of postal operators. It is often put forward that regulatory institutions need to evolve in parallel and coherently with developments in the market place in order to allow postal operators cope with these challenges. Crew and Kleindorfer (2008) note that finding an appropriate co-evolution of regulation and market development is one of the primary challenges of postal reform. Jaag and Trinker (2011) argue that regulatory institutions are intended to remedy market failures and reduce transaction costs. However, they also cause governance costs, including costs resulting from distorted investment and innovation, if these institutions do not respond adequately to changes in consumer preferences and technologies.

Maegli et al. (2009, 2010) develop an analytical framework for the assessment of regulatory governance and its costs in regulated industries. So far, the framework focuses on static effects. In this contribution, the approach is amended by an analysis of the impact of regulatory institutions on investment and innovation; i.e. dynamic effects. The main questions of this chapter are:

- (1) How do regulatory institutions in the postal sector affect incentives for product and process innovation?
- (2) What is the way forward for these institutions in an age of increasing direct and indirect competition?

Section 2 presents the framework of regulatory governance costs. Section 3 extends it with dynamic governance costs. It then systematically discusses the effect of various institutional aspects on innovation in the postal sector, referring to practical examples, e.g. the scope of the Universal Service Obligation (USO), price regulation or access regulation. It also briefly

discusses examples and effects of dynamic costs of regulatory governance in postal markets in Switzerland, Germany and the UK are. The last section concludes.

2. FRAMEWORK OF REGULATORY GOVERNANCE COSTS

In line with Bauer (2005) and his definition of administrative burdens, the governance costs in a regulatory context are defined as the costs related to tasks performed to sustain competitive but fair markets, to set incentives for involved actors to provide a certain level of public service, and to coordinate public authorities involved in regulation. Governance costs are inherently present in any institutional arrangement and as such are influenced by (1) the institutional design and the alignment of competences, (2) the choice of regulatory instruments as well as (3) the behavior of the actors within an institutional framework.

The costs are related to tasks and transactions in regulatory regimes concerning bargaining and decision-making processes in policy making and policy enforcement, the control of institutional actors and the industry as well as the search and supply of information.

The choice of adequate or optimal regulatory tools and mechanisms is often related to specific characteristics and the market structure in a particular industry or geographical market. Knieps (2005) argues that many monopolistic bottleneck areas in dynamic sectors gradually disappear owing to rapid technological progress. Arising from the emergence of intermodal competition, it is actually possible for the original need for regulatory intervention to disappear. The regulatory interventions should be reviewed regularly. In this context Knieps (2007) explains two categories of possible regulatory failures: a “false positive” occurs if regulators intervene in the market while competition is functioning and there is no need for intervention; a “false negative” occurs if regulatory authorities do not intervene, when the need for regulatory intervention exists from a competition-policy point of view. Other potentially negative impacts of regulation are due to the tendency of the regulatory

process to respond slowly to change. If regulated operators link the design of their business model too closely to regulatory rules, their market position may be deadlocked in the long run. Furthermore, the elimination of regulation endangers the companies' means of existence. Today's regulatory institutions always affect future regulation. Knieps (2007) argues that by the time the characteristics of the current market disappear partially (or entirely) – e.g., as a result of technological progress – current regulatory intervention may be obsolete. Armstrong and Sappington (2006) state in this context: “Consequently, although liberalization should ultimately lead to reduced regulatory oversight and control, more pronounced regulatory and antitrust oversight may be required on an interim basis to ensure that regulatory policy is tailored appropriately to the evolving level of competition and that competition is protected“ (p. 360). Following Knieps (1997) the process of so-called “phasing out” of sector-specific regulation may be delayed by regulator's self-interested behavior and his interest in on-going regulation. It is fairly obvious that regulators are rarely interested in reducing their influence and cutting their own competences. Regulators have some concern for their own survival and may act in their own interests and contrary to the intentions with which they were originally established.¹

There is a distinction between static and dynamic costs of regulation. Two types of static costs can be identified which are the consequence of the institutional design and the interaction of the actors. While direct costs affect the actors in a rather monetary and resource-based way, indirect costs affect the actors' decisions and, therefore, the outcome in the market. The sub-category of static-direct costs occurs in connection with the institutional design of the regulatory framework and the behavior of actors. In contrast, the category of static-indirect costs arises out of false incentives, resulting in an inefficient supply of goods and services. The category of the dynamic costs is the consequence of direct and indirect costs in relation to distorted innovation and investment incentives.

Direct Costs of Regulation

Regulatory interventions come at a cost. On the one hand, the relevant authorities have to be set up and furthermore get granted with the resources which enables them to monitor markets as well as the involved actors and consequently to implement the regulatory guidelines. This includes the creation of independent bodies which control the activities of regulatory authorities and coordinate different authorities involved in regulation (e.g. competition regulators vs. sector-specific regulator) and compliance requirements. On the other hand, also operators in regulated industries face costs related to regulation. There are three different types of *direct* regulatory governance costs:

monitoring costs arise because of informational asymmetries in their relationships of principals with their agents: Regulators have to gather and process information which is costly.

compliance costs are the costs the industry face in order to comply with regulatory requirements. *coordination costs* result from multiple institutional actors involved in regulated industries which have to be coordinated. Table 1 summarizes these three aspects of direct regulatory governance costs.

Table 1: Summary – Categories of Static-Direct Governance Costs

Category	Key Assumption	Drivers	Components / Indicators
Monitoring	<i>Agents/Actors do not implicitly share the objectives of their principals and need to be monitored</i>	Agents behavior Information Asymmetries Accountability of Agents Operators behavior/ Strategy	Annual budgets of agents Salaries and consultancy fees Staff size Number of active operators in public services Labor costs related to compliance activities
Compliance	<i>Operators face costs when they comply with regulatory directives</i>	Relationships (formal/informal) Modalities of information exchange Distribution of Power	Administrative overhead Adjustment to regulatory changes Consultancy fees Number of institutional actors involved in regulatory processes
Coordination	<i>There is more than one single actor involved in regulatory processes and their activities have to be coordinated</i>	Institutional design Alignment of regulators Regulatory processes Interaction of sector specific regulation	Degree of independence of the regulator Accountability of regulators

Indirect Costs of Regulation

While the objective of regulatory intervention is to improve market functioning, actions of regulators can have unintended negative outcomes as well. These outcomes may have effects on the nature of the market and the availability of products provided in the market. They may even discourage firms from entering into markets. Hence, *indirect* regulatory governance costs are the costs related to distorted *quantities and prices* as well as *capacity and technology choice*. Table 2 summarizes these aspects of indirect regulatory governance costs.

Table 2: Summary – Categories of Static-Indirect Governance Costs

Category	Key Assumption	Drivers	Components / Indicators
Quantities and Prices	<i>Actions of regulators (or policy makers) can have negative effects on the regulated industries and the consumers</i>	Sector specific characteristics Degree of liberalization Regulators knowledge about the industries Regulators economic knowledge/ expertise Price regulation	Degree of competition Regulatory tools to improve competition and sustainability of public services. Evolution of product prices Market entry barriers Access regimes/ bottleneck regulation
Capacity and Technology Choice	<i>Regulation may prevent the regulated operators from aligning their supply with the effective demand and needs an affect</i>	Incentives to invest in infrastructure for operators Labor conditions	

	<i>investment</i>		
	<i>activities</i>		

3. DYNAMIC COSTS OF REGULATION

In addition to static effects, regulatory institutions also affect incentives for innovation and investment. In 2005, in a report on the application of the Postal Directive to the Council and European Parliament, the European Commission (2005) stated that the Directive intends to “remove barriers to competition in the postal sector so as to boost innovation and efficiency which in turn should benefit consumers” (p. 2). OECD (1999) published a report on promoting competition in postal services and similarly states that “introducing competition in postal services [...] has the potential to lead to important improvements in efficiency, productivity and innovation within the postal sector with consequences for overall welfare and growth” (p. 60).

The most important aspect of dynamic costs related to distorted innovation and investment incentives is regulatory risk. There are not only technological and systemic risks, but also risks and uncertainties in relation to regulation and the socio-political goals of the USO. Oxera (2004) defines regulatory risk as “the risk that arises when the interaction of uncertainty and regulation changes the cost of financing the operations of the firm” (p. 16). Investment activities and thus the development of an efficient market are seriously constrained if these risks are borne by operators (see Jaag et al. 2011).

The important questions regarding the dynamic costs of regulation are whether adequate regulatory models and methods are implemented, if the chosen means are capable of correcting a market failure rather than result in regulatory failure and finally if the chosen means set the right incentives for investment and innovation.

Friederiszick et al. (2008) explain that innovation can generally be interpreted as a form of investment that results in new or better quality products and services or in more cost-efficient processes. As long as the incentives and protective measures are sub-optimal and do not protect investments, there is less innovation and no investment in new technologies or products and services in the sector. This has in turn the effect that the market does not develop to the desired extent.²

Therefore, dynamic costs are related to the degree of innovation at the level of products and processes. Concerning *product innovation* regulation may prevent operators from introducing new products or services because of uncertainty about their investment and pricing. It may also result in a delay of time to market. Furthermore, regulation may result in suboptimal processes and keep operators from optimizing existing processes or introducing *process innovation*. Table 3 summarizes these aspects of dynamic regulatory governance costs.

Table 3: Summary – Categories of Dynamic Governance Costs

Category	Key Assumption	Drivers	Components / Indicators
Product Innovation	<i>Regulation may prevent operators from introducing new products/services</i>	Changing consumer needs and demand Technology change Scope of the USO Production cost structures	Degree of innovation in an industry Time to market for new products Regulatory tools to improve competition and sustainability of public services.
Process Innovation	<i>Regulation may result in suboptimal processes and prevent operators from optimizing existing processes or introduce process innovations.</i>	Regulatory risk Labor conditions Time needed for institutional change Political willingness for institutional change	Institutional changes in the regulatory frameworks and governance

The impact of regulatory institutions on innovation can be explained as follows. In a very simple setting, the marginal benefit of innovation equals marginal cost in the profit-maximizing equilibrium. Marginal benefit is affected by changes in quantity and optimum mark-up. Increased costs of innovation due to regulatory institutions decrease optimum investments in innovation. Specifically, marginal benefit with respect to product innovation consists of the larger quantity base to which the mark-up over marginal cost applies. This effect varies directly with the operator’s markup.

As to process innovation, marginal benefit emerges from two sources: First, from higher quantity demanded of a lower optimum price. This effect is also the smaller the lower the operator's markup. However, the absolute markup is reduced. This effect is the smaller the lower the operator's quantity. Hence, increased competition which reduces quantity and markup affects innovation incentives at these margins ambiguously.

An increase in marginal production costs, which may be induced by regulation, also has two opposite effects on innovation: The absolute markup increases, which spurs product innovation and reduces process innovation. It also induces a higher optimum price and thereby decreases quantity which reduces the incentives to innovate.

There is interaction between the two dimensions of innovation: Higher quantity due to product innovation strengthens also process innovation. Hence, the two kinds of innovation complement each other. The following table summarizes the effect of institutional dimensions of regulation on direct and indirect costs and subsequently dynamic costs.

Table 4: Institutional Dimensions and Regulatory Governance Costs

Institutional Dimensions & Cost Drivers	Regulatory Governance Costs			
	<i>Static Cost</i>		<i>Dynamic Cost</i>	
	<i>Direct Cost</i>	<i>Indirect Cost</i>	<i>Product Innovation</i>	<i>Process Innovation</i>
<i>Number of Regulatory Actors</i>	Unclear responsibilities, necessary coordination	Might result in entry barriers for suppliers	Uncertainty reduces innovation payoff	Uncertainty reduces innovation payoff
<i>Modalities and Subject of Information Exchange</i>	Information exchange and processing	Might result in entry barriers for suppliers	Delayed introduction of innovative services	Delayed introduction of process innovations
<i>Interaction of Sector-Specific Regulation and Competition Law</i>	Concurrent jurisdiction may lead to ambiguous responsibilities	Might result in entry barriers for suppliers	Uncertainty reduces payoff	Uncertainty reduces payoff
<i>Regulatory Processes</i>	Approval process and control leads to costs in information exchange		Approval process delays introduction of innovative services	

Institutional Dimensions & Cost Drivers	Regulatory Governance Costs			
	<i>Static Cost</i>		<i>Dynamic Cost</i>	
	<i>Direct Cost</i>	<i>Indirect Cost</i>	<i>Product Innovation</i>	<i>Process Innovation</i>
<i>Stability of Institutions (Organizational Perspective)</i>	Reduction of direct costs	Certainty about investment payoff and cost	Certainty about innovation payoff and cost	Certainty about innovation payoff and cost
<i>Scope of USO</i>	Rigid requirements need strong control		Existing products cannot be abandoned	Existing processes cannot be replaced
<i>Degree of Liberalization</i>	High information requirements and Monitoring Costs	Uncertainty about investment	More competitors → higher competitive pressure (lower mark-up) → less volume per firm	More competitors → higher competitive pressure (lower mark-up) → less volume per firm
<i>Financing of the USO</i>	Implementation and execution of compensation mechanisms	Might result in entry barriers for suppliers	Possibly reduced innovation payoff	Low attractiveness of cost reduction programs

Institutional Dimensions & Cost Drivers	Regulatory Governance Costs			
	<i>Static Cost</i>		<i>Dynamic Cost</i>	
	<i>Direct Cost</i>	<i>Indirect Cost</i>	<i>Product Innovation</i>	<i>Process Innovation</i>
<i>USO Price Regulation</i>		Inefficient pricing	New product may not be attractive for firm / consumers	Cost savings from efficient processes have to be passed on to consumers
<i>Access Regime</i>	Control and monitoring of access conditions / arbitration process in case of disagreement between operators	Affected market development and end to end competition		Reduced economies of scale due to bypass of upstream processes
<i>Stability of Institutions (Policy Perspective)</i>		Certainty about investment payoff and cost, but time to adopt new Technologies might be delayed	Certainty about innovation payoff and cost, but time to react on changing consumer needs is very long	Certainty about innovation payoff and cost, but time to react on changing consumer needs is very long

Institutional Dimensions & Cost Drivers	Regulatory Governance Costs			
	<i>Static Cost</i>		<i>Dynamic Cost</i>	
	<i>Direct Cost</i>	<i>Indirect Cost</i>	<i>Product Innovation</i>	<i>Process Innovation</i>
<i>Norms and Standardization Requirements</i>	Approval process and control mechanisms in order to be compliant	Foster interoperability but might appear as market entry barriers		Increased cost of process innovation due to necessary compliance
<i>Labor Conditions</i>	Negotiations with unions and control of labor conditions	Distorted wage rates		Innovation may result in capital replacing labor; innovation is itself capital intensive

In the following, examples of dynamic costs of regulatory governance and its effects on product and process innovation in the postal sector in Switzerland, Germany and the UK are discussed. In general, the costs occur as a consequence of static costs and in combination with unclear regulatory ruling ending in juridical proceedings, with too rigid regulatory regimes that hinder the development of markets or with unforeseen consequences of regulation.

Dynamic Effects on Product Innovation

A first category of dynamic effects on product innovation is related to the USO. Although the stability of institutions has a positive effect on investment security, the influence of the USO on product innovations is rather negative. This is the case if legal stipulations on the USO cannot be adjusted quickly enough per changes in the market. Excessively rigid definitions of the USO prevent the further development of products.

The example of the Swiss postal market shows that the connection of stable institutions can have both positive and negative effects. In effect today is a postal act that was originally enforced in 1997 and later adapted in 2003 and 2009. As early as autumn 2002, the parliament discussed the full opening of the letter market and decided to approach it. The emergence of the new Postal Services Act in the UK also lasted several years. The bases for the adjustments in the regulatory regime were missing, and due to rigid price regulation, together with the access regime and the requirements in the USO, the incumbent got more and more into trouble.

The USO in the postal sector traditionally includes an obligation to deliver nationwide at least five days per week. There have been various attempts at reducing the cost associated with this obligation. Examples include delivery to centralized Post Office boxes in remote regions instead of doorstep delivery, reduced delivery frequency in remote areas, outsourcing of rural deliveries

to partner firms with more flexible labor cost, or differentiated pricing (zonal pricing) to reflect differences in delivery cost across regions.

The most important hindrance for the introduction of such relaxations to the USO is lacking consumer consent. However, from a technology point of view, in many places, giving away free e-readers would cost considerably less than printing and delivering postal items. Hence, the USO could be adjusted so that convenient alternative forms of delivery means may be chosen as alternatives to physical delivery. The commercial viability of such a service depends on the regulatory possibility of substituting physical delivery processes which itself depends on the formulation of the USO. Hence, innovative processes and products may only display their full potential in an accordingly formulated or adjusted regulatory regime.

Price control has a decisive influence on product innovation. In some countries, price regulation is part of the USO. In others, there is additional regulation due to presumed market dominance of the incumbent postal operator.³ Long-lasting approval processes increase the time to market. Moreover, timely reactions to changes in a quickly altering environment, e.g. due to intermodal competition and declining volumes, are impossible (see Kleindorfer and Szirmay, 2009). Innovative price models are therefore prevented by extensive price regulation. This used to be the case in the UK. In the former regulatory framework, 80 percent of the turnover of Royal Mail was under price control. As a consequence, the regulatory authority became rather a product manager – but with limited knowledge regarding cost and market development

A third category of dynamic effects on product innovation is related to labor conditions. The lengthy debates and the legal disputes concerning the introduction of a minimum wage in the German postal market has hindered the development of competition and therefore had a negative effect on investment incentives in the German postal market.⁴ The legal uncertainty and the

introduction of minimum wage was followed by a wave of bankruptcies. During the first quarter of 2008, the PIN Group let 7000 employees go. Between 2007 and 2009, a total of approximately 19'000 jobs disappeared, about 17'000 of which in 2008 alone. It is clear that the economic downturn during this period also played a part in these figures. While TNT did not pay minimum wage, it had to make provisions for the case that the minimum wage should be fixed after all. During a period of legal uncertainty of more than two years, TNT could invest fewer means into the development of networks and into the end-to-end process. As a consequence there was more effort in the cost reduction in existing processes than in developing new products. The example shows how the length of the procedure leads to high costs for the industry and to regulatory uncertainty.

Dynamic Effects on Process Innovation

The regulatory costs regarding process innovations can be illustrated using the example of the letter market in the UK. Since the market was opened, almost no innovation has taken place. Competition concentrates on prices in the upstream range, and there is no product innovation.

Hence, the de facto regulation of downstream access had various effects: First, it prohibited the development of competing delivery networks. It also created regulatory risk for all involved operators because their business models very much depended on the terms of network access. This translated into investment risk, so that investments in innovation and infrastructures were deterred. Concerning the development of end-to-end competition in the UK, the Hooper Report (2008) concluded that there was uncertainty about the future development of the market, which made it difficult for operators to assess the likely return on the investment. The consequences of falling volumes, developments in new technologies, and regulation at the end of current price control were difficult to predict. Furthermore, some operators claimed that any investment in an

end-to-end delivery network would be threatened by the ability of Royal Mail to hamper competition in the future.

As a consequence, only little investments were made and innovation incentives were low. In Germany, the access conditions are monitored ex-post. Consequently, also the market development differed from that of the UK. Both, the competitors and the incumbent became innovative at all levels of the postal value chain. Smaller providers have looked for innovative solutions in order to realize an area-wider delivery. Hindrances in the development of competition were due not to the definition of access conditions, but to uncertainties in connection with the discussion of minimum wages, as discussed above.

4. CONCLUSION

Various reports provided by the European Commission and OECD state the one of the original goals of the implementation of the European Postal Directives was to remove barriers to competition and to foster innovation in the postal sector. Have the goals been achieved and does current regulation actually support more innovation in the sector?

There is hardly any discussion in practice and neither in academia about the impact of regulatory institutions on innovation in the postal sector. In order to fill this gap, this contribution introduced the concept of dynamic costs of regulatory governance. Dynamic costs of regulatory governance are a consequence of direct and indirect costs. They result in distorted innovation and investment due to adverse incentives and uncertainty.

The main drivers of the dynamic governance costs are the scope of the universal service, price regulation and approval mechanisms, access regimes and labor conditions, and certainly the

stability of institutions itself. In order to allow postal operators cope with challenges, regulatory institutions need to steadily evolve concurrently with developments in the market place.

NOTES

¹ Actors react differently to external threats, constraints and opportunities because they differ in their intrinsic perceptions and preferences but also because these are shaped by the specific institutional setting within which they interact (Scharpf, 1997, p. 37). Crozier (1964) interprets such a behavior as “the active tendency of human agent to take advantage, in any circumstances, of all available means to further his own privileges” (194).

² Armstrong and Sappington (2006) give a detailed overview on the role of innovation in regulated industries in general while Dietl et al. (2008) concentrate on innovation incentives for postal operators in particular.

³ The discrepancy of antitrust regulation and competition is increasing in the postal sector where incumbents are often still considered dominant in mail even though they continue to lose market share to alternative means of communication.

⁴ Dieke and Wojtek (2008) as well as Heitzler and Wey (2010) analyze the impact of the minimum wage discussion in the German Postal market in more detail.

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