Regulatory Institutions and Governance Costs: The Case of the Postal Sector

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Abstract

In recent decades, the European postal industry has undergone profound reforms, which aim to promote competition while simultaneously maintaining a high level of universal services for consumers. It is often put forth that market opening and the emergence of competition will foster innovation in the postal sector. Indeed, increased direct competition with new market entrants and indirect competition with information technologies in the sector represent great challenges to the traditional business model of postal operators.

In order to allow postal operators to cope with these challenges, regulatory institutions need to evolve coherently with developments in the market place and the society. One of the findings of this thesis is that in many cases, current regulatory institutions do not respond adequately and in a timely manner to changes in consumer preferences or technologies. The actual development in the British postal sector clearly demonstrates how the regulatory regime failed to adapt early enough and how the delay in the adaption of the regulatory institutions influenced the development of competition as well as the structure of the market.

The main theoretical contribution of this thesis is the development of a framework of regulatory governance costs. The framework contains three different types of costs: static-direct costs, static-indirect costs and dynamic costs. The static-direct costs of regulatory governance refer to the interaction and transactions between the involved actors in the short term, and only marginally concern the overall market. These costs are:

- Monitoring Costs which arise on the regulatory institution's side because of informational asymmetry in the relationships of principals with their agents.
- Compliance Costs which are the costs that the industry faces in order to comply with regulatory requirements.
- Coordination Costs which result from the fact that multiple actors are involved in regulation, which in turn have to be coordinated.

The second type of regulatory governance costs, the static-indirect costs, pertains less to the individual actors than to the overall market. In addition to reducing security on investment in the short term, static-indirect regulatory governance costs are the costs related to:

- Quantities and Prices: Actions of regulators (or policy makers) that have effects on the regulated industries and the consumers in terms of supply, demand and the development of prices.

- Capacity and Technology Choice: Regulation may prevent the regulated operators from aligning their supply with the effective demand and affect production technology.

The third type of costs, the dynamic costs of regulatory governance, results in an inefficient level of product and process innovation. These costs occur mainly in combination with regulatory uncertainty ending in legal disputes or too rigid regulatory regimes that hinder the developments of markets. The dynamic costs reduce investment security in the long-term and encompass a more dynamic perspective than the static costs. The costs concern:

- Product Innovation: regulation may prevent operators from introducing new products/services because excessive investment cost or limited gains from investment. It may also or result in a delay of time to market.
- Process Innovation: regulation may result in suboptimal processes and prevent operators from optimizing existing processes or introduce process innovations.

In summary, our approach to the appreciation of regulatory governance costs contributes to a better understanding of the consequences of regulation and the role of regulation regarding the development of markets. The insights about the costs and their impact on market evolution will be useful to analyze in the development of regulatory policies in the postal sector as well as in the network industries. The framework of regulatory governance costs is applied in three case studies in the postal market (Switzerland, Germany, Great Britain). The analysis of the cases provides insights into the impact of different institutional dimensions of the governance costs and the need for action in adapting current regulation. As a result, a set of policy recommendations is formulated in the conclusion.

Keywords:
Regulation, Regulatory Institutions, Regulatory Governance, Governance Costs, Postal Sector, Network Industries, New Institutional Economics, Competition

Zusammenfassung

Der Europäische Postsektor durchläuft eine tiefgreifende und anhaltende Reform. Diese verfolgt zwei Ziele, die nicht immer im Einklang stehen: Einerseits soll in den Postmärkten der Wettbewerb eingeführt und gefördert werden. Andererseits soll ein hohes Niveau der postalischen Grundversorgung sichergestellt werden. Gleichzeitig verändert sich auch das Marktumfeld drastisch. Die Postunternehmen stehen vermehrt im direkten, teilweise globalen Wettbewerb mit anderen Postdienstleistern und im Zusammenhang mit der E-Substitution auch immer mehr im indirekten (intermodalen) Wettbewerb mit neuen Informationstechnologien. Diese Veränderungen im Markt fordern die bisherigen Geschäftsmodelle der Postunternehmen stark heraus.

Damit die Postunternehmen angemessen und schnell auf die Herausforderungen im Markt und die Veränderung der Kundenbedürfnisse reagieren können, müssen auch regulatorische Rahmenbedingungen parallel und kohärent mit den Veränderungen im Markt angepasst werden. Eines der Untersuchungsergebnisse dieser Dissertation ist, dass regulatorische Institutionen häufig nicht rechtzeitig auf die Veränderung von Konsumentenpräferenzen reagieren bzw. angepasst werden. Das in dieser Dissertation beschriebene aktuelle Beispiel im Britischen Postmarkt zeigt deutlich, wie das vorherrschende regulatorische Regime zu spät angepasst wurde und wie sich die Verzögerung auf die Entwicklung des Wettbewerbs und die Markstruktur auswirkt.

Der theoretische Beitrag der Dissertation ist die Entwicklung eines Frameworks zu Kosten der regulatorischen Governance. Das Framework beinhaltet drei unterschiedliche Arten von Kosten: statisch-direkte Kosten, statisch-indirekte Kosten und dynamische Kosten. Die statisch-direkten Kosten betreffen Interaktionen und Transaktionen zwischen den involvierten Akteuren aus kurzfristiger Sicht. Der Gesamtmarkt ist von diesen Kosten nur marginal betroffen. Die drei Arten der statisch-direkten Kosten sind im Folgenden kurz erklärt:

- Monitoringkosten entstehen aufgrund von Informationsasymmetrien in den Beziehungen sowie im Informationsaustausch zwischen Regulatoren und den regulierten Unternehmen (Principals and Agents).
- Compliance Kosten sind die Kosten der Industrie, weil sie die regulatorischen Vorgaben einerseits einhalten und die Einhaltung andererseits auch nachweisen müssen.

- Koordinationskosten entstehen, weil mehrere institutionelle Akteure in die Regulierung beziehungsweise Überwachung eines Sektors involviert sind und die Aktivitäten der Behörden koordiniert werden müssen.

Die zweite Form, die statisch-indirekten Kosten der Regulierung, betrifft weniger die individuellen Akteure als den Gesamtmarkt. Zusätzlich zu der Tatsache, dass sie die Investitionssicherheit in Märkten beeinflussen, verursachen sie Kosten in Verbindung mit:

- Mengen und Preisen: Aktivitäten von Regulatoren und politischen Entscheidungsträgern haben Effekte auf den regulierten Sektor und die Konsumenten in Bezug auf Angebot, Nachfrage und Preise.
- Kapazitäten und Wahl der Technologie: Regulatorische Eingriffe können die Unternehmen davon abhalten, ihr Angebot mit der effektiven Nachfrage abzustimmen und auch die Wahl der eingesetzten Produktionstechnologie zu beeinflussen.

Die dritte Art der Kosten, die dynamischen Kosten, treten einerseits in Verbindung mit unpräzisen regulatorischen Vorgaben auf, die in langwierigen juristischen Verfahren enden. Anderseits hängen diese von zu starren regulatorischen Rahmenbedingungen ab, die eine Weiterentwicklung des Marktes verhindern oder unvorhergesehene Folgen haben. Sie enden in verzerrten Innovations- und Investitionsanreizen und beeinflussen die Entwicklung der Märkte nicht nur kurz-, sondern auch langfristig entscheidend. Die dynamischen Kosten betreffen Produkt- und Prozessinnovation:

- Die Produktinnovation ist betroffen, weil regulatorische Rahmenbedingungen Unternehmen davon abhalten können, neue Produkte und Dienstleistungen einzuführen, da hohe Investitionskosten nicht amortisiert werden können. Regulatorische Eingriffe bzw. Prozesse können auch die Markteinführung von Produkten zeitlich verzögern.
- Regulierung kann Prozessinnovation dahingehend beeinflussen, als dass suboptimale Prozesse bestehen bleiben und Prozesse nicht optimiert oder erneuert werden.

Zusammenfassend soll der Ansatz zur Bestimmung und Beurteilung der regulatorischen Kosten dazu beitragen, dass die Folgen von regulatorischen Eingriffen und auch deren Einfluss auf die Entwicklung von Märkten besser eingeschätzt werden können. Die Erkenntnisse über die Kosten und deren Einfluss auf die Marktentwicklung ist nützlich, um regulatorische Grundsätze im Postsektor und auch in andern Infrastruktursektoren zu analysieren und künftig weiterzuentwickeln. Im Rahmen der Dissertation kommt das

Framework der regulatorischen Governance Kosten im Schweizerischen, im Deutschen und im Britischen Postmarkt zur Anwendung. Die Analyse der Fallstudien zeigt auf, wie unterschiedliche institutionelle Ausprägungen und Dimensionen die regulatorischen Kosten beeinflussen und dass die bestehenden regulatorischen Rahmenbedingungen teilweise angepasst werden sollten. In der abschliessenden Würdigung der Dissertation werden daher acht Empfehlungen abgegeben, die abgeleitet von den Untersuchungsresultaten eine Reduktion der regulatorischen Kosten ermöglichen.

Stichworte:
Regulierung, Regulatorische Institutionen, Regulatorische Governance, Governance Kosten, Postmarkt, Netzindustrien, neue Institutionenökonomie, Wettbewerb

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LIST OF ABBREVIATIONS

AEI	Air Express International
AG	Aktiengesellschaft (limited company)
AIE	Air International Express
ARCEP	Autorité de Régulation des Communications Electroniques et des Postes
ART	Autorité de Regulation des Telecommunications
Art.	Article
BAKOM	Federal Office of Communications
BMWI	Federal Ministry of Economics and Technology
Ca.	Circa
CEN	European Committee for Standardization
CEO	Chief Executive Officer
CHF	Swiss Francs
CIFS	Copenhagen Institute for Future Studies
COM	Commission
ComCo	Federal Competition Commission
ComCom	Federal Communication Commission
DETEC	Federal Department of the Environment, Transport, Energy and Communications
DG	Directorat General
DP AG	Deutsche Post AG
DSL	Digital Subscriber Line
E.g.	for example
EC	European Commission
Eds	Editors
EFTA	European Free Trade Association
EN	European Norm
ERGP	European Regulators Group for Postal Service
Esp.	Especially
Et al.	and others
Etc.	Et cetera
EU	European Union
EUR	Euro
FDEA	Federal Department of Economic Affairs
FDF	Federal Department of Finance
GDP	Gross Domestic Product
GDR	German Democratic Republic
GER	Germany
GWB	Act Against Restraints of Competition (Germany)

I.e.	that is
IPC	International Postal Corporation
IPO	Initial Public Offer
KfW	Kreditanstalt für Wiederaufbau (Reconstruction Loan Corporation)
Kg	Kilogram
L	Level
Ltd	Limited
MIT	Massachusetts Institute of Technology
NIE	New Institutional Economics
NRA	National Regulatory Authority
NZZ	Neue Zürcher Zeitung
OECD	Organization for Economic Co-operation and Development
Ofcom	Regulator and competition authority for the UK communications industries
OFT	Office of Fair Traiding
OPTA	Independent Post and Telecommunications Authority of the Netherlands
P.O. box	Post Office box
PostG	Postal law
PostReg	Swiss Postal Regulatory Authority
PUDLV	Postal Universal Service Ordinance
PWC	Price Waterhouse Coopers
RPI	Retail Price Index
SMS	Short Message Service
SNV	Swiss Association for Standardization
TFEU	Treaty on the Functioning of the European Union
TNT	Thomas Nationwide Transport
UK	United Kingdom
UMTS	Universal Mobile Telecommunications System
UPU	Universal Postal Union
US	Universal Service
USO	Universal Service Obligation
USP	Universal Service Provider
VAT	Value Added Tax
Vs.	Versus
WEKO	Federal Competition Commission
WIK	Wissenschaftliches Institut für Infrastruktur und Kommunikationsdienste
WTO	World Trade Organization

1. INTRODUCTION

In recent decades, the European postal industry has been undergoing a profound reform, which aims to promote competition while simultaneously maintaining a high level of universal services for consumers. It is often put forth that market opening and the emergence of competition will foster innovation in the postal sector. Indeed, increased direct competition with new market entrants and indirect competition with information technologies in the sector represent great challenges to the traditional business model of postal operators.

In order for postal operators to cope with these challenges, regulatory institutions need to evolve in parallel and coherently with developments in the market place. Crew et al. (2008) noted that finding an appropriate co-evolution of regulation and market development is one of the primary challenges of postal reform. Thus, it is periodically necessary to review regulatory regimes and their impact on both the development of the market and the involved actors.

Regulation plays an important role in the implementation of sector reform, as regulatory institutions are intended to remedy market failure and reduce transaction costs in the regulatory regime. However, the net benefits of regulatory intervention to society can be achieved only if regulation provides benefits that are greater than its costs: indeed, regulatory intervention not only has positive consequences for the market and its development;[1] it also causes "costs of regulatory governance." These costs can result from consequences caused by the behavior of regulators and other involved actors, regulatory requirements as well as from the implementation of regulatory instruments. Regulatory governance costs also include the social costs resulting from dynamic inefficiencies due to distorted incentives, when regulations do not respond adequately to changes in consumer preferences and technologies. In the remainder of this introductory chapter, the research context is outlined, followed by the definition of the research questions and objectives. Then, we describe the methodology and give an overview of the content of the different chapters.

[1] See Armstrong and Sappington (2006), section 6, about 'Entry assistance and anti-competitive liberalization policies'.

1.1. Research Context

In recent years, several books on liberalization and re-regulation have addressed the question of how to regulate infrastructures and have described the developments in several network industries.[2] The topic of reregulation in infrastructure sectors is increasingly important, because liberalization occurs in all network industries and almost all countries in the world.[3] Liberalization in the postal sector (and in other network industries) is accompanied by new institutional arrangements with new actors, notably sector-specific regulators. Despite the strong trend toward independent, sector-specific regulatory authorities across sectors and countries, liberalization has not resulted in a unified European regulatory model. Most of the emerging institutional arrangements do indeed have at their core an independent sector specific regulator, but there are still significant differences among countries.[4]

Each regulatory arrangement is reflected in a different set of institutions. The actors' behavior and the relationships among the different actors are shaped by the particular institutional arrangement in a given country. Any regulatory framework has a significant cost, which is influenced by the various actors and the definition of institutions within an institutional framework. Furthermore, Coen (2005) observes that newly created regulatory authorities deal differently with various national institutional arrangements. The regulatory arrangements differ in the degree to which regulatory authorities are accountable to governments, active alongside or related to courts and other regulators, or related and responsible to operators and interest groups.

The various actors in the network industries relate to each other within a broader institutional framework, that is, within formal and informal rules.[5] The operation of such an institutional framework as well as its impact on all actors has costs.[6] We call these kinds of costs 'costs of regulatory governance'. These overall costs of regulatory governance are still largely underestimated or even ignored. Theorists, as well as practitioners do, so far, not pay sufficient attention to these particular costs of a regulatory system. Therefore, we assume that there are three different types of costs: static-direct costs, static-indirect costs and dynamic

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[2] E.g., Finger and Künneke (2011a), Crew et al. (2008), Ménard and Gerthman (2009) or Baldwin et al. (2010).

[3] See Finger and Künneke (2011b).

[4] See WIK (2009b).

[5] See Ménard and Shirley (2005).

[6] See Arrow (1969), Williamson (1975, 1985, 1991 and 1999), Epstein and O'Halloran (1999) and Estache and Martimort (1999).

costs.[7] The overall assumption is that the same institutional characteristics or dimension can have various effects on different types of costs in the short-, mid- or long-term.

The distinctions between these different regulatory governance costs are not always very clear-cut. While it is relatively easy to distinguish static-direct costs, static-indirect costs in most cases do not only lead to direct costs in the short-term but also to dynamic costs in the long-term. Static-indirect and dynamic costs might even appear as a consequence of static-direct costs. Thus, there seems to be a causal link between the different types of regulatory costs. With reference to the three case studies in Switzerland, Great Britain and Germany we are able to illustrate that not all types of regulatory governance costs can be assessed in the same way in different regulatory regimes and that the causal interdependences of the costs might differ.[8] Static costs and particularly static-direct costs can be observed and assessed in all the three postal markets. This is due to the fact that static-direct costs occur in relation with clear transactions between the different actors (e.g., information exchange). The identification and the clear distinction between static-indirect and dynamic costs is rather difficult, because they are rather an outcome of ruling or actions in a particular regulatory context and not connected to a single transaction between actors.

For instance, the dynamic effects of regulation can hardly be assessed in Switzerland, since the implemented regulatory framework is very recent and the primary goal of the present regulatory framework is not the promotion of competition. But, still one of the indirect or dynamic effects is that practically no market entries take place. In contrast, dynamic costs and their effects in the markets of Germany and Great Britain can be observed relatively well. The effects can be best seen in Great Britain, due to the fact that it has been more than six years since the market opened and that very strong regulatory interventions have taken place. The British case illustrates clearly how the causality of the different types of costs works: the regime failed to adapt the regulatory intervention early enough and the delay in the adaptation of the regulatory institutions influenced the development of competition as well as the structure of the market. Therefore, we assume that there is a strong interdependency between the three different types of regulatory governance costs. It's seems therefore plausible and necessary to put regulation into a broader context in order to better understand the causal interdependencies between regulatory intervention and it's outcomes in the short- and the

[7] See Chapter 5 for a detailed explanation.

[8] See Chapters 6 and 7.

long-term. Building a systematic approach to evaluating and analyzing regulatory governance is thus a relevant challenge.[9]

1.2. Research Questions and Objectives

We assume that governance costs are inherently present in any institutional arrangements and as such are determined (1) by the institutional design of the regulatory regime and (2) subsequently by the behavior of the various actors involved. The overall aim of this thesis is the definition of a generic analytical framework of the costs of regulation in the network industries and to apply it in the postal sector. Benham (2005) argues that a single static view on regulation is insufficient to understand the development of institutions. This thesis should help to explain how different regulatory approaches have affected and continue to affect governance costs within a regulatory framework. Moreover, it aims to give a definition of different regulatory governance costs that enables a qualitative analysis of governance costs in network industries. Different characteristics of institutional dimensions (e.g., the number of regulatory actors involved, the scope of the universal service or the characteristics of the access regime) have an impact on the degree of regulatory governance costs. Therefore, the thesis aims to find relevant institutional dimensions and to assess their impact on governance costs. Thus, we formulate two theoretical and one practical research questions:

(1) *What are the different costs of regulatory governance in regulated industries?*
(2) *Which criteria and institutional dimensions are useful in assessing regulatory governance costs in institutional arrangements?*
(3) *What are the regulatory governance costs in the postal sector, and how can they be minimized?*

The first two questions, answered in chapter 5, provide the basis for the third and main question, answered in chapter 7. Using the framework of regulatory governance costs, we conduct an analysis of the postal sector: the aim is to find the institutional dimensions that act

[9] See Chapter 4. Ehrlich and Posner (1974) introduce a first framework on costs of regulation, Deighton-Smith (1997) did an analysis of regulatory impact and best practices and see Hopkins (1997) for an earlier contribution on indicators of regulatory costs. Den Butter et al. (2009) analyze costs and benefits of government regulation based on the transaction cost approach. Schatz et al. (2009) develop a regulatory cost model. Andres et al. (2009) introduce a framework on regulatory governance and sector performance and apply it in the electricity sector.

as drivers for regulatory governance costs and to derive a set of policy implications that can reduce the costs of regulation.

It is not the goal of the thesis project to analyze the costs of regulation in a quantitative manner. Rather, by way of a qualitative approach, we investigate under which premises regulatory interventions impact the regulatory governance costs in the postal sector in particular and the network industries in general. The thesis makes the following contributions:

The theoretical component of this thesis makes two main contributions: it (1) conceptualizes and clearly defines a framework of regulatory governance costs and (2) describes criteria and institutional dimensions in order to assess regulatory governance costs and their drivers.

The practical contribution of this thesis is the first-time application of a framework of regulatory governance costs in the postal sector by conducting three case studies in the sector. The recommendations for policy makers and practitioners involved in the postal sector's regulatory reform suggest how to develop and re-design regulatory regimes and instruments in the future. A better understanding of regulatory institutions and regulation's possible negative outcomes is the first step to better institutional policies and improved allocation of rights and duties among different regulators in (re-)regulated network industries.

1.3. Methodology

This section describes the chosen methodology approach (case studies) used to conduct the empirical research and characterizes the field of research as well as the units of analysis.

1.3.1. The Empirical Study

Considering the relative youth of the regulation field, both in network industries and the postal sector, case study research is useful in understanding the behavior of actors and the description of institutions in regulated industries. Case study research seems to be the appropriate approach to investigating the impact of different institutional dimensions and understanding the consequences for the evolution of regulatory regimes and the corresponding governance costs. As a research method, the case study approach is used in many situations, so as to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena. Case studies have been a common research method in psychology, sociology, political science, anthropology, social work, business, education, nursing, and community planning. Case studies are also found in economics, in which the structure of a given industry or the economy of a city or a region may be investigated. In all of these situations, the distinctive need for case studies arises out of the desire to understand complex social phenomena.[10]

The case-study approach involves "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident and it relies on multiple sources of evidence" (Yin, 1994, p. 13). This form of research investigates predefined phenomena but does not explicitly rely on control or manipulation of variables. The aim is to understand, in-depth, a phenomenon in its context.[11] Case studies typically combine data collection techniques such as observation, interviews questionnaires and document analysis and are considered to be useful where research and theory are at a relatively early and formative stage.[12] It is an adequate research strategy where a contemporary phenomenon is to be studied in its natural context. The overall focus of case study research is the understanding of the dynamics in present settings.[13]

In brief, the case-study method allows researchers to gain insights into the holistic and meaningful characteristics of real-life events, such as individual lifecycles, small group behavior, organizational and managerial processes, neighborhood change, school performance, international relations, or the maturation of industries.[14]

Since the goal of our research is to gain insights on regulatory institutions and their costs, we will use a multiple case study design. As in quantitative analysis, the dependability of qualitative research results tends to increase with sample size. The drawback is a parallel increase in the time and cost of collecting data. Consequently, the question of sample size is similar to quantitative samples: the goal is to determine the minimum size that will enable a satisfactory level of confidence in the results.[15]

By taking a comparative case-study approach, we are able to show the variance of the different institutional dimensions in regulatory regimes and regulatory practice and the impact on the environment. Concerning comparative approaches in the analysis of institutions, Aoki

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[10] See Yin (2009).
[11] See Darke et al. (1998).
[12] See Benbasat et al. (1987, p. 396).
[13] See Yin (1994, p. 13) and Eisenhardt (1989, p. 534).
[14] See Yin (2009).
[15] See Royer & Zarlowski (2001).

(2001) states: "Institutional arrangements can be diverse across economies even if they are exposed to the same technological knowledge and are linked to the same technological knowledge and are linked through the same markets. Thus, we need to rely on comparative and historical information to understand why particular institutional arrangements have evolved in one economy but not in others" (3). Therefore, we use the case study approach to gain insights into how particular institutional regimes work and what the roles of institutional actors are. This finally helps to understand what the strengths and weaknesses of a regulatory regime are.

A particularly important task is the selection of the cases.[16] It seems plausible to increase the variance between the cases in order to achieve comparability. The diversity facilitates the analysis and comparison of the regulatory institutions and its evolution, as well as the different actors in the setting. The postal sectors in Switzerland, Germany and the UK will be analyzed, as they constitute particularly illustrative cases in terms of liberalization, institutional setting, and responsibility in the sector's regulatory regime.

1.3.2. Research in the Postal Sector and the Units of Analysis

In recent years, the development of network industries and the transformation of infrastructures have been emerging fields of research. Due to the importance of the network industries to the socio-economic development of countries, it is imperative to look at different infrastructures and to investigate what the results of regulatory interventions are. Many publications focus on specific sectors or countries.[17] An interesting area for future research will be the comparison of regulatory arrangements across network industries in a more general way. Therefore, we would like to develop a general framework that allows for comparison and to start with the analysis in one single sector: the postal sector.

Present postal research focuses on discrete topics such as the costs of universal services in more and more liberalized markets[18], access pricing and the outcomes of access regulation[19], and the evolution of the postal sector under full competition.[20] Only in recent years has a

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[16] See Yin (2009).
[17] See Finger and Künnke (2011a).
[18] E.g., Panzar (2008a) or Bergum (2008).
[19] E.g., De Bijl et al. (2006) or Crew and Kleindorfer (2008).
[20] E.g., Crew and Kleindorfer (2010) or Finger (2006).

handful of researchers started to investigate how regulatory institutions might evolve in the future postal sector.[21]

Relevant for a number of reasons are the comparison of different regulatory regimes; the analysis of the behavior of the involved actors; the analysis of regulatory institutions in the postal sector:

- In many countries, the implementation of new regulatory arrangements (e.g., establishing sector-specific regulatory agencies) is a relatively young phenomenon, though already undergoing extensive reform.[22]
- As markets and delivery volumes are shrinking, the sector faces the challenges of a full-market opening, e-substitution and safeguarding a sustainable universal service simultaneously.[23]
- There is no general model for postal regulation in Europe. Regulatory regimes differ widely all over Europe (e.g., definitions of universal services, access regimes, price controls). [24]
- Policy makers need to find the balance between promoting competition and not putting the universal service and its financing at risk.[25]

Therefore, the postal sector offers a stimulating empirical field to analyze regulatory arrangements, providing an excellent opportunity to investigate what the results of regulatory interventions are..

The units of analysis are the institutional frameworks (rules and actors) of regulation in different postal markets, namely Switzerland, Germany and the UK. The postal sectors in these three countries will be analyzed because they constitute particularly illustrative cases in terms of organization, institutional design, and responsibilities in the sector's regulatory regime. Furthermore, they are in different stages of liberalization:

- Switzerland: there is still a reserved area in Switzerland that includes addressed domestic letters up to 50 g in weight. The sector-specific regulator PostReg was set up in 2004. Organizationally attached to and funded by the Department of Environment,

[21] E.g., Maegli et al. (2010a) and (2011) or Panzar (2012).
[22] Crew et al. (2008).
[23] See Maegli et al. (2010a) and (2011).
[24] See WIK (2009b).
[25] See Knieps et al. (2009), Finger (2006) and Henry (2011).

Transport Energy and Communication, PostReg is not yet independent from the government. A new law has been approved with anticipated enforcement as of the second half of 2012. A new regulatory framework, as well as changes in competences of regulatory agencies, will be established with the new law. The incumbent Swiss Post is wholly owned by the government and is highly diversified.

- Germany: the postal market has been fully opened since January 2008. There is no designated universal service provider and Deutsche Post fulfils the universal service obligation on a voluntary basis. The Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway is a separate federal authority within the German Federal Ministry of Economics and Technology. The agency's task is to provide the further development of the German network industries. Competitors provide end-to-end competition and gained market shares of about 11 percent of Germany's letter volume. The Deutsche Post DHL was privatized in 2000 and the Government still holds 30.5 percent of the shares. The company operates the largest logistic networks all over the world.
- United Kingdom: the market has been fully liberalized since January 2006. Established in 2000, the British Postcomm is a very powerful regulatory body with a relatively large budget. Responsible for the postal sector only (unlike other countries), Postcomm is funded by the operators and not by the government. A new law has been in force since October 2011.The previous regulatory regime failed in both promoting competition and sustaining the universal service. The responsibilities for postal regulation are new in the responsibility of Ofcom as of October 2011. Despite the fact that the market has been opened since 2006, there is no end-to-end competition in the UK postal market. Privatization of Royal Mail has been planned with the new legislation. The incumbent operator faces serious financial troubles in the financing of the universal service and the funding of pension funds because of the former regulatory regime and a lack in modernization. A far-reaching modernization and transformation program for Royal Mail is under implementation.

1.3.3. The Research Project

The research project has been done in five different phases, outlined below, along with their corresponding tasks and methods.

Phase 1: Definition of Research Objectives and Literature Review

In the first phase, the research context and the central objectives of the research were defined. Moreover, different workshops on research methodology, new institutional economics and regulation in network industries were absolved. The major task was the screening of the existing theories, namely new institutional economics, organizational behavior theory and different theories on regulation and regulatory governance.

Phase 2: Conception of the Framework

The second phase included the first theoretical conception and definition of the framework of regulatory governance costs. A research stay at the University Paris 11 was conducted. "Groupe Réseaux Jean Monnet" is a well-known research center for network industries and for its research competences in new institutional economics. Initial feedback on the framework was given. At this stage, we started to present the framework of regulatory governance costs at academic as well as on practice-oriented conferences and workshops.[26]

Phase 3: Improving and Publishing the Framework

In the third phase, the draft of the framework on regulatory governance costs was exposed to extensive feedback from practitioners and scientists during workshops and conferences. As a result of this improvement process, two contributions were submitted to academic journals for publication and passed through the journals' peer-review process. The outcomes were the following two articles:

- Maegli, M., Jaag, C., Finger, M. (2009) "Coûts de la régulation des industries de réseaux: enseignements du réseau postal," Revue d'économie industrielle, 127 (3): 47-68.
- Maegli, M., Jaag, C., Finger, M. (2010a) "Regulatory Governance Costs in Network Industries: Observations in Postal Regulation," Competition and Regulation in Network Industries, 11 (2): 207-237.

Phase 4: Empirical Research

Three cases on the postal sectors in Switzerland, Germany and the UK were constructed in the fourth phase. The multiple case studies are predominately based on secondary data sources like industry reports (e.g., official studies of the European Union, reports of national

[26] For a list of conference contributions and workshop presentations see the CV in the appendix.

regulatory authorities, annual reports of operators or studies of consulting firms), sector case studies, historical documentation, legal texts, conference proceedings, academic articles, industry workshops and press releases. The report of the multiple cases covers each of the cases separately. Each case covers the historical development of the postal market, the major regulatory obligations, the institutional setting, the course of market opening and the development of markets as well as the recent developments and outlook.

Moreover, semi-structured in-depth interviews with industry experts were conducted to get a final feedback on the framework of regulatory governance costs.[27] The semi-structured interview approach, allowed the researcher to address a series of subject areas concerning various institutional dimensions and the framework defined in advance.[28] This interview guide was completed during the course of the discussion, with the aid of some other questions.[29]

Interview partners were the deputy secretary general of the Swiss Federal Department of the Environment, Transport, Energy and Communications, Post NL's (former TNT) head of EU Affairs, the director of strategic and regulatory affairs of Belgium Post, and chairman of the European affairs committee of Posteurop as well as an economist of Belgium post. The first aim of the expert interviews was to get final, independent feedback on the framework of regulatory governance costs. Moreover, another goal was to evaluate the different institutional dimensions of regulatory regimes and to discuss their impact on the degree of the various governance costs. The semi-structured interviews were conducted before the final analysis, and the outcome of the interviews contributes to the analysis in chapter 7.

Phase 5: Analysis of the Cases

In this last phase, the analysis and the comparison of the three cases were done. In addition to the three individual case narratives, the thesis contains a chapter on cross-case analysis and results. The same set of criteria was repeated for every case; a comparative structure for cross-case comparisons was applied. The analysis was done along the framework of regulatory governance costs. The purpose of this structure was to show the similarities and differences

[27] Materials used to conduct the semi-structured interviews are included in the appendix.
[28] See Merton et al. (1990).
[29] See Ibert et al. (2001).

between the three cases[30] in order to gain insights about the impact of different types of governance costs in combination with different institutional dimensions.

This final phase aimed to evaluate the results. Furthermore, the policy recommendations and findings of the three case studies were derived and formulated.

1.4. Outline of the Thesis

This first introductory chapter provides a general introduction with the problem definition, the research objectives, the methodological approach and an outline of the thesis. Chapter 2 introduces the theory and practice of postal regulation. The chapter discusses the different rationales for regulation in general and the postal sector in particular, before giving an overview on the development of regulation. The chapter then summarizes the properties of the postal sector and discusses different trends affecting regulation in order to elucidate the challenges in future postal regulation.

Chapter 3 and 4 introduce the theoretical foundations for the development of the framework on regulatory governance costs. Chapter 3 offers an overview of New Institutional Economics and its main approaches with an emphasis on transaction cost and agency theory. Additionally, it introduces the dynamic perspective on the economics of institutions. Chapter 4 examines different theoretical perspectives on regulatory governance and links regulatory governance with the transaction cost approach and agency theory.

Chapter 5 then provides the theoretical contribution of the dissertation by introducing the definition of regulatory governance costs and by developing a corresponding framework. Before introducing and describing the different types of governance costs (static-direct, static-indirect and dynamic costs), the chapter outlines the institutional dimensions that have an impact on different types of costs – and thus act as a cost driver in regulatory regimes.

Chapter 6 includes three separate case studies on the postal markets in Switzerland, Germany and UK. The cases describe the history, the central regulatory obligations, the institutional setting, the course of market opening and the recent development. Each case ends with a summary of the characteristics of the institutional dimensions as introduced in chapter 5.

Chapter 7 analyzes the three cases along the framework of regulatory governance costs. The different types of costs are discussed for all of the three cases in order to give an overview of

[30] See Yin (2009).

where the costs occur in different regulatory regimes. Building on that, the different institutional dimensions are evaluated regarding their impact on regulatory costs.

The overall conclusions and recommendations are formulated in chapter 8. This chapter summarizes the content of the thesis, discusses the limitations of our research and also offers a set of recommendations regarding future regulatory policies in post and future research.

2. THEORY AND PRACTICE OF POSTAL REGULATION

This chapter covers theory and practice of postal regulation. It starts with an outline of the rationales for regulatory intervention from both an economic and a socio-political perspective. After offering a short overview on the characteristics of network industries and the need for regulation, the chapter emphasizes the rationales for regulation of the post and the recent development of the postal sector. An overview of the development of the European postal regulation policy then leads to a discussion on the current situation in postal regulation as well as on the most important future trends with impact on regulation in the sector. The chapter ends with a conclusion.

2.1. Theory of Regulatory Interventions

This section introduces the theoretical background on the properties and rationales of regulatory intervention. Furthermore, we introduce the characteristics of network industries and discuss the rationale for regulation in these industries.

Regulatory interventions can have different reasons and goals. On the one hand, they may include purely economic, market-related goals (such as the functioning of competition or interoperability between suppliers). On the other hand, there are socio-political reasons (such as a high-quality public services for the entire society).[31]

2.1.1. Economic Rationales for Regulatory Intervention

The rationales for regulation had been based on different sources of market failure.[32] Before discussing the different sources of market failure, we present the main ways of introducing competitive forces in the market when competition is absent or poor. Basically, these are competition *for* the market, competition *in* the market and competition *between* markets:[33]

1. Competition for the market: when elements of a market exhibit natural monopoly characteristics, e.g., due to a state monopoly, competition can be enforced through tendering for the market or for parts of it. The desired outcome is that the most efficient supplier provides services without realizing monopoly rents by bidding for a

[31] See Alexiadis and Cave (2010).

[32] See Jaag and Trinkner (2011). Market failures as a starting point for economic regulations are proposed by many authors. E.g., Ogus (2002), Knieps (2007) or Baldwin and Cave (1999). The latter also summarize different theories of regulation: the positive theories of regulation, including public interest theories, interest group theories, and private interest theories.

[33] See Klein (1998) and Finger et al. (2009).

monopoly franchise. E.g., auctions for public transport lines or bandwidth frequencies.

2. Competition in the market or direct competition: in liberalized markets competition arises between the operators and different existing networks, e.g., between different suppliers of telecommunication services and mobile networks.
3. Competition between markets or indirect competition: indirect competition arises if there is substitution between networks or infrastructures. It is also known as intermodal competition between different technologies or platforms. There are conditions under which competition between different networks and bypass with other means within a network are desirable. E.g., rivalry between different communication platforms like landlines, mobile, Voice over internet protocol (VoIP) and e-mail.

According to these three ways of introducing competition, regulation should only be implemented where unregulated markets fail to achieve the desired outcome. Following Ogus (2002) and Knieps (2007), the introduction of a regulatory instrument has to depend on the need and justification for the intervention. The main economic reasons for market failures are:[34]

- natural monopolies[35] or considerable obstacles for the development of competition,
- imperfect or asymmetrical information that affect the relationships between firms and consumers,
- externalities (or spillovers) resulting from suppliers' activities with impact on third parties and their welfare that are not reflected in prices,
- coordination problems, because the desired outcomes in principle could be realized by private provision, though the costs of coordination are so high that it is cheaper for the state to provide the desired outcome.

Economic regulation is necessary if there is persistent market power from economies of scale, scope or density in combination with sunk costs.[36] This allows an operator to set prices above the efficient level, resulting in an inefficient allocation. Regulation counteracts this inefficient

[34] See Ogus (2002).

[35] A natural monopoly arises when the market is served best by a single firm, rather than by multiple competing suppliers. See Baldwin and Cave (1999).

[36] See Viscusi et al. (2005) and Knieps et al. (2009).

allocation by applying access regulation to those stable bottleneck facilities.[37] Such regulation can include both antitrust laws and sector-specific regulatory approaches.[38]

The need for regulation of market power might arise if the cost structure simultaneously exhibits cost subadditivity[39] and irreversible costs. This theory of contestable markets has its origins in the work of Baumol et al. (1982). The presence of cost subadditivity and sunk costs are the defining characteristics of a “monopolistic bottleneck.” Such bottlenecks are called stable monopolistic bottlenecks if they cannot be duplicated or substituted by other means.[40]

Infrastructures with monopolistic bottlenecks constitute natural market power for the owner of the facility. As a result, the owner of the bottleneck may be incentivized to charge very high access tariffs, which excludes potential entrants unable to enter the market. The economic rationale for regulation, therefore, is to prevent the abuse of market power and to ensure that new market players get timely, non-discriminatory access to stable bottleneck facilities at reasonable terms and conditions. Where competition law is not sufficient to ensure such access, sector-specific regulations are necessary. When applying sector-specific regulatory intervention, the property rights infringement inherent to access regulations should be kept to the minimum amount necessary.[41]

The intervention can be minimized in two different ways: First, there are different regulatory instruments to ensure non-discriminatory access, such as ex-post or ex-ante regulation of access prices and vertical separation. The instruments range from light regulation to profound interventions like divestiture, depending on the characteristics of the infrastructure.[42] Second, there are various options that are contingent on how precisely the bottleneck can be identified. Knieps (2000) argues for a disaggregate approach, where only the bottleneck network layers or processes with monopolistic characteristics are regulated, all other services remain outside the scope of access regulations. Each layer has a specific function in the network: some layers may be fully competitive while others constitute stable monopolistic bottlenecks. The first

[37] For an explanation on stability of bottlenecks see below.

[38] See Viscusi et al. (2005).

[39] Subadditivity implies that the cost of producing a set of outputs as a whole are less than the costs of producing the same output divided in any combination of subsets. See Baumol (1977) and Baumol et al. (1982) for a definition.

[40] In US antitrust law this is referred to as an “essential facility.”

[41] See section 2.1.3. for a discussion on antitrust law vs. sector-specific regulation.

[42] See Jaag and Trinkner (2011) for a discussion of various models and a normative approach to assess the right regulatory remedy.

step of the disaggregate approach is to differentiate between those network layers or processes in which there is stable market power and those in which workable (actual and potential) competition is assured. The former can be expected in layers or processes that are monopolistic bottlenecks. In practice, regulatory intervention does not only occur based on economic principles but also include political arguments. After all, politics specifies the respective rules and regulatory process. The political approach to regulation is different from the purely economic approach. Therefore, the next paragraph explains the socio-political reasoning for regulation.

2.1.2. Socio-Political Rationales for Regulatory Intervention

Some products or services are not provided under competition or the service does not result in the desired outcome: the unregulated market results in outcomes that do not correspond with what is perceived. Moreover, individuals are not trusted to act in accordance with what is in their own best interest or are not trusted to act in good faith. Therefore, the socio-political regulation deals with matters like health and safety, environmental protection and consumer protection. [43] Usually, socio-political arguments for regulatory intervention aim for supply goals or socially desirable results (e.g., universal service and default service regulation) and do not consider economic reasons. Universal service obligations usually require firms to provide certain services that they otherwise would not supply. Therefore, the socio-political regulation assures the ubiquitous availability of good-quality services at affordable prices–a service or product to which a consumer is entitled no matter where he lives. The universal service is generally defined from an individual consumer's perspective in terms of access to the service, as well as its quality and affordability. This implies the provision of a service or good at a politically desired price. The question about the definition and the scope of the service is answered explicitly in a political decision making process.

Among other things, the universal service regulation outlines obligations concerning the service level and financing. It mostly designates one or several operators responsible for providing these services in an economy. Traditionally, labor conditions are subject to socio-political aims as well.

[43] See Ogus (2002).

2.1.3. Regulatory Approaches: Competition Regulation vs. Sector-Specific Regulation

As mentioned in the section on the economic rationale for regulatory intervention, there are two different regulatory approaches: competition regulation and sector-specific regulation. Competition (or antitrust) regulation is an ex-post mode of regulatory intervention covering all sectors of an economy. Antitrust regulators observe the actions of market players, take corrective action and intervene when a violation of antitrust law has been detected. Hence, antitrust authorities are concerned with competition and efficiency considerations, rather than other market failures or social-political objectives. Competition authorities typically address problems concerning cartels, anti-competitive behavior or excessive pricing, as well as mergers (the latter in ex-ante manner).

In sector-specific regulation, regulators act primarily on an ex-ante basis and the coverage of sectors is more limited. Traditionally, they have been concerned with market failures and socio-political objectives concerning distributive issues, security and quality of supply, consumer protection, monopoly pricing and finally the functioning of markets. They set up policies before the market participants take action. This may require tradeoffs in order to find the balance between more competition and socially desirable outcomes.[44]

Furthermore, there is a distinction to be drawn between sector-specific regulators in recently liberalized network industries and regulators in markets where market failures otherwise occur. The former are installed in industries characterized by natural monopolies in some parts of the vertical production chain. Examples are fixed telecommunications, electricity, gas, and railways. Here, the main task of the regulators is to ensure a smooth transition from the former monopoly to sustainable competition. In other sectors, the sector-specific regulators may have other reasons for regulation: for instance, the financial sector with its systemic risks in absence of an obstacle for competition or the social objectives in healthcare services.[45]

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[44] See Panzar (2008b, p. 16).
[45] See Oxera (2004, p. 4).

2.2. Regulation of Network Industries

Network industries differ in their characteristics and consequently in the extent of regulatory intervention. This section contains a comprehensive overview on the main characteristics of network industries, including a brief comparison of the characteristics, and their implications for regulation.

2.2.1. Rationales for Regulating Network Industries

The infrastructure of network-based industries is usually a collection of nodes connected by transport links. In general, network industries are complex and dynamic. There can be various reasons for regulation in network industries depending on their specific characteristics. The main characteristics are[46]:

- There are high, irreversible and indivisible risks in investments, which will pay off only in the long term. In summary, the capital investments are typically (1) considerable, (2) upfront, (3) fixed, and (4) irreversible.
- There are always few players (oligopoly), and consequently there is always some form of market power or former natural monopoly. Economies of scale are often pervasive because of the relatively high investment costs to install the infrastructure, contrasting with the low operational costs to provide a service once the network is installed.
- Technologies in the network industries are always interdependent in some way or other.
- There is often a need for coordination and for standards in order to allow for interoperability between networks and operators.
- For the above reasons (i.e., market power, risks, and technology complementarities), there exist barriers to market entry (and to exit for that matter).
- There will always be asymmetry of information.
- There are generally significant and varying network externalities and public good characteristics.

In general, network industries face problems of market failure and also provide services of socio-political interest. As a result, they are subject to both economic and socio-political regulation.[47] The characteristics of network industries imply for a third reasoning of

[46] See Bergmann (1998) and Klein (1998).
[47] See Alexiadis and Cave (2010).

regulation:[48] the technical regulation. The need for regulation of interconnection and interconnectivity can be explained by externalities between operators. This alludes to mutual termination and standards among operators. However, these are technical interconnection issues rather than stable monopolistic bottleneck facilities; they do not justify or furnish arguments for sector-specific ex-ante regulation.[49]

2.2.2. Comparison of Regulation in Different Network Industries

Among others, seco (2005), Knieps (2007) and Swiss Economics (2009) have examined the need for regulation in the telecommunications, electricity, railway and postal markets. The authors agree that the different industries show monopolistic bottlenecks of varying stability and, in particular, intermodal competition of varying intensity (i.e. competition between carriers or networks).

The most stable monopolistic bottlenecks are found in the electricity and railway markets (due to power distribution, railway networks, railway stations). Consequently, the most extensive regulatory interventions are advisable in these two sectors. In contrast to power transmission, which is hardly subject to substitution, the railway market is in intermodal competition with other transportation networks like roads, air transport and freight shipping. Thus, access regulation in electricity should be more extensive than in the railways. Historically, the “last mile” in the telecommunication sector is a monopolistic bottleneck. Today, parallel infrastructures covering the same markets or similar services exist due to technological convergence (cable suppliers vs. telecommunication suppliers). In addition, technological innovations lead to a high degree of dynamism (mobile technologies, optical fiber connections, etc.). Depending on the forecast regarding future dynamism, different conclusions can be drawn on the type of access regulation needed in this market. In the postal market no monopolistic bottlenecks are found.[50] Table 1 compares the four different infrastructure sector from an economic perspective. The combination of the columns ‘bottleneck facilities’ and ‘substitution of infrastructure’ results in the third row, the assessment of the need for regulating market power.

[48] See section 2.1.1. on economic reasoning and section 2.1.2. on socio-political reasoning.
[49] See Fratini et al. (2010).
[50] See Jaag and Trinkner (2009, p. 8).

Table 1: A Comparison of Different Network Industries

	Electricity	Railways	Telecommunication	Post
Bottleneck Facilities	Transmission networks as well as regional and local distribution networks are stable monopolistic bottlenecks.	The railway network as well as freight- and passenger railway stations are stable monopolistic bottlenecks, with increasing costs for replacement investments.	Partially the last mile shows subadditivity and irreversible costs, with the copper cable being increasingly replaced by optical fibers and the existing technology becoming obsolete.	In spite of a subadditive cost function in delivery, no monopolistic bottleneck can be found in the postal market (it mainly consists of personnel costs).
Substitution of Infrastructure	There are no substitutes for power transmission. At the same time consumers cannot replace electricity by other forms of energy. Therefore, there is no impact of infrastructure-or platform competition for the time being.	Passenger traffic is in intermodal competition with other forms of passenger transport. They include road- and air-based public or private means of transport (bus, car, aircraft, bicycle). The same applies to freight traffic (air, road, water)	Technological progress always produces wired, wireless and mobile substitutes. If a transmission technology is not attractive, it is replaced by a new one.	Postal services are increasingly competing with alternative forms of written communication (E-Mail, SMS, internet platforms such as online banking). As a consequence traffic volumes are declining. Postal networks are also competing with other logistic networks.
Market Power Regulation	Disciplining of market power in the field of power transmission and distribution, safeguarding of non-discriminating access to power suppliers, free selection of suppliers by consumers, safeguarding of system security.	Disciplining of market power of owners of rail facilities and railway stations. Non-discriminating award of time slots, safeguarding network effects and optimization of synchronized timetables.	Disciplining of market power of owners of the last mile drawing to a close, promotion of platform competition by safeguarding investment security and equal treatment of different platforms	No sector-specific market power regulation needed

Source: Adopted from Finger et al. (2009, p. 70).

2.3. Postal Regulation in Practice

In this section we give an overview of the characteristics of the postal sector with regard to its properties and discuss the economic and socio-political rationales for regulation in post. Additionally, we describe the development of the European policy on the single postal market and discuss the current regulatory framework and future trends.

2.3.1. Characteristics of the Postal Sector:

In the postal sector, like in the other network industries, operators face high economies of scale and scope. Nevertheless, the postal network differs from other network industries: while utility networks are physically connected, the postal network is more likely to be a virtual network that is built from scratch daily.[51] Moreover, several other characteristics, including technology, investment and employment, substitution and prices of postal services make the postal sector a unique network industry. These characteristics are briefly summarized below.

Technology: The postal sector is less technology intensive than most network based industries. Technological innovations, which might help to address USO funding issues, are scarce in postal services. This does not imply that there is no innovation. Postal innovation is more related to processes such as sorting techniques or complementary services with respect to postal products. However, in spite of rapid technological change, the core services, transportation and delivery of postal items, remain largely the same.

Investment and Employment: Traditionally, there was less technological innovation than in other industries (e.g., the telecom or the energy sector) and postal networks are very labor intensive. Accordingly, the installation of the postal infrastructure is not related to high investments and sunk costs. The costs are mostly variable and occur anew (about 55 percent) in the sub-process of daily delivery.[52] Due to the decreasing average costs, postal markets can be characterized as natural monopolies, which are easily contestable because of the lack of long-term sunk costs and substitution with other communication means.[53]

Substitution: Unlike most other network industries, the postal sector is shrinking rather than expanding. The demand for postal services is declining because of alternative means of communication and intermodal competition by telecommunication networks. Nevertheless, some segments of mail items, particularly advertising mail, have still been growing in recent years. Even if most national postal operators are publicly owned enterprises, the postal networks have almost always competed with other logistic networks and will continue to do so.

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[51] Crew and Kleindorfer (2000).

[52] In this respect, they sink every single day anew. See Cremer (2004, p. 8) on direct costs of the sub-process distribution.

[53] See Panzar and Willig (1977) and Panzar (2008b).

Prices of Postal Services: Receivers of postal services do not have to pay in order to have access to the service. In almost every case, postal rates are paid by the sender. This is noteworthy insofar as not only the paying sender but also the receiver may be interested in the communication.[54]

2.3.2. The Evolution of the Postal Sector

Postal services are an important industry for both the economic and the social development of countries. Postal networks provide for the comprehensive collection and delivery of postal items (and sometimes payment services), thus including remote regions. Economic development is supported as far as postal services provide for the exchange of information and goods at affordable prices. Furthermore, the postal sector is a major industry in terms of sales and employment: Around 90 billion Euros, or 1 percent of the European GDP EU, are realized in the sector and around 1.6 million workers are directly employed by the postal operators.[55] Another aspect is that there has been considerable involvement of governments, because most postal services are or were state owned monopolies. Postal operators were (and are, in most European countries) traditionally state-owned enterprises, providing consolidated postal and telecommunication services. In the wake of the liberalization of telecommunication markets, the two (completely different) networks were separated and converted into autonomous companies. Liberalization in the postal sector (and in the other network industries) is accompanied by new institutional arrangements with sector-specific regulators.

Historically, the governments have mainly been involved in the reform or modernization of incumbent operators, rather than with the structuring of the postal sector. But with the ongoing liberalization process, this has changed. The postal sector has been going through different stages of change: The first stage is driven by the separation of the traditionally state-owned postal operator from the telecommunications operator. This started in the 1980s with a peak in the 1990s in Europe. In general, this is accompanied by setting up a new postal legislation. The second stage is characterized by the conversion of the postal operator's legal status into public companies, separated from the state. Simultaneously, public companies started internal restructuring processes in order to separate the business units along the different activities: mail, logistics, express and/or financial services. At this stage,

[54] See Jaag and Trinkner (2008).

[55] See WIK (2006) and Ecorys (2008a).

governments generally introduce an initial regulatory framework. Stage three concerns the partial privatization resulting from the government's decision to privatize the business after the restructuring action taken during stage two. Most of the operators are still owned by the governments. Furthermore, stage three is accompanied by the establishment of sector-specific and independent regulators, as well as the implementation of an exhaustive regulatory framework. The fourth stage then brings about full privatization and the stock listing of the incumbent, starting in the 1990s.[56] The status of the transformation process varies widely across different countries. Only few countries have reached stage four (e.g., the Netherlands and Germany), while the majority of European countries is at stage two or three. In spite of the high diversity in the structure of postal markets across different countries, postal markets in industrialized countries nevertheless share some market-related institutional characteristics:[57]

- The incumbent postal operator is (or was formerly) a state-owned enterprise.
- The incumbent is monitored by a sector-specific regulator.
- The incumbent post is the dominant operator (at least in the letter market).
- The dominant incumbent is also subject to the competition authority, particularly concerning charges of abuse of the dominant position in the market as well as mergers and acquisitions.
- The incumbent is subject to a form of price regulation (at least in the dominant or the reserved area).
- Despite the increasing competition the incumbent faces an obligation to provide the universal service.
- In spite of the dominant position the incumbent faces direct and indirect competition in some market segments.

These characteristics cannot be observed clearly in all postal markets and of course there are exceptions. Nevertheless they show how postal markets are structured and how they evolve in the wake of liberalization from a regulatory point of view.

[56] See UPU (2004, p. 8ff).
[57] See Panzar (2008b).

2.3.3. The Rationales for Regulation

Postal markets (postal operators respectively) were historically isolated from anti-trust laws and regulatory intervention. They were not only state-owned but also integrated in ministries and therefore flush with regulatory bodies. This has changed radically with the conversion in public enterprises and the corporate share of postal operators. They are nowadays subject to sector-specific as well as competition regulation. On one hand this occurs due to ongoing liberalization and on the other hand due to the privatization of the operators in some countries. In this context, the regulation of postal markets is subject to different sets of questions:

- *Economic Regulation:* Is the delivery of postal items a natural monopoly? What are the costs of the universal service? How do different regulatory models and instruments affect the market? Other economic or rather technical questions arise in connection with the postal infrastructure: Are postal sorting facilities or the network of postal outlets monopolistic bottlenecks? Do postal operators have a dominant position in combination with the abuse of market power in some market segments, which should be disciplined by the anti-trust authority?
- *Socio Political Regulation:* The achievement of socio-political goals is concerned with questions related to the provision of universal services: What is the definition of universal service? Who fulfils the universal service and what is its price? Who bears its costs?

Against the background of the different problem areas (socio-political or economic), sector-specific regulatory bodies in postal markets are principally concerned with tasks related to the supervision of the universal service, the extent of monopoly and reserved services, the quality and the accessibility of services, consumer complaints, issuing of licenses and concessions, access to the established postal infrastructure and finally price regulation.

Concerning the functioning of markets and the financing of the universal service, license- and concession-regimes become increasingly important in more liberalized postal markets. The background of such a system is an authorization to operate in a particular market. The reasons for the granting of licenses are that (1) the market should be regulated, (2) the political mandate of the provision of the universal service needs to be assigned to a particular operator and (3) money needs to be leveraged and redistributed among the market players in order to finance the universal service.[58]

Economic Regulation in Posts: Are there Monopolistic Bottlenecks?

The issues concerning economic regulation are monopolistic bottlenecks and the discussion of whether this type of facility exists in postal markets. From a strictly economic perspective, the existence of bottleneck facilities would legitimate government intervention in the form of access regulation for some elements of the existing postal infrastructure. Government regulation of access is not justified in the other parts of the network and regulation would interfere with efficient negotiations between the parties involved.[59] It becomes evident that there are different opinions and interests, particularly in connection with access regulation regarding the economic nature of postal markets. The possibility of having access to the established postal network facilitates market entrance for potential new competitors. From an incumbent's perspective, negotiated access could bring advantages as well as drawbacks: individual parts of the infrastructure or processes could be used to better plan and use the capacities, but this results in the (new) opportunity of a selective market entrance with the corresponding risk of cherry picking by competitors.[60] Knieps (2002) argues that there are no monopolistic bottleneck facilities in the primary processes (clearing, sorting and delivering mail items).[61] The European jurisdiction supports this proposition with its court ruling:[62] The European commission finally came to the same conclusion, since there is no mandatory access regulation in the Postal Directive 2008/06/EC.[63]

Even though there are no bottleneck facilities, the daily delivery of mail items constitutes a natural monopoly. However, the necessary resources are not related to significant sunk costs (fixed costs respectively); rather, they are scalable variable costs (such as labor costs) or disposable assets (e.g., vehicles or immovables).[64] The very labor-intensive sub-process of

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[58] See UPU (2004).

[59] See Knieps (2002).

[60] Cherry picking concerns the conveyance of cost-efficient mail items of business customers (bulk mail) in urban and dense regions. See Maegli (2010).

[61] This view is also supported by several European studies, e.g., Ecorys (2005).

[62] The existence of monopolistic bottleneck facilities is in the early-morning newspaper delivery is negated in 1998 in the so called 'Bronner'-case. See Plaut Economics (2007) and Knieps (2007, p. 166).

[63] See European Commission (2008).

[64] See Knieps (2007, p. 166).

delivery represents approximately 55 percent of the costs of mail conveyance.[65] Thus, the postal monopoly is a contestable monopoly and was successfully attacked in (partly) liberalized postal markets, notably Sweden's, Finland's, and Germany's. As mentioned above, physical postal products are further subject to potential substitutions through electronic communication and media (intermodal competition). In spite of the absence of monopolistic bottlenecks and the contestability of the monopoly, a sector-specific access regulation is not necessary in postal markets from a purely economic perspective.[66]

The only two impediments to competition are (1) access to P.O. boxes and (2) information on change of address. It is generally agreed in the literature that to foster competition in the sector, entrants should be allowed to access P.O. boxes and incumbents should make address change data (which historically only the incumbent operator had) available for interchange. However, these are technical interconnection issues rather than stable monopolistic bottleneck facilities, and they do not justify or furnish arguments for sector-specific ex-post regulation.[67]

Socio-Political Regulation: The Universal Postal Service

Universal service obligations usually require firms to provide certain services that they would not supply otherwise. The traditional definition of the universal service in the postal sector implies ubiquitous delivery at a uniform price at least for letter mail but in many cases also for parcels. Because of the characteristics of their networks, providers of postal universal services can even be obliged to provide services that go beyond postal services. These can include public missions such as the nationwide delivery of daily newspapers before a specific hour or the provision of financial services. The provision of universal services and its financing in the future with respect to public interests are related to the following dimensions of postal universal service:

- The accessibility of postal services to customers in terms of distance,
- affordable prices,
- collection and delivery points,
- density of postal outlets and collecting points,
- delivery and collection standards in terms of frequency in rural and urban areas and

[65] See NERA (2004).

[66] See de Bijl et al. (2006) for a discussion on access regulation in the postal sector. They conclude: "Our finding that there are no monopolistic bottlenecks in the delivery chain implies that the essential facility doctrine cannot be used to impose downstream access obligations upon the dominant postal operator" (169).

[67] See Fratini et al. (2010).

- the definition of the different categories of postal items (letters and parcels) in terms of size and weight that are covered by universal service.

Customers in sparsely populated and non-central areas are especially less attractive from a supplier's point of view, and less likely to receive attractive competitive offers. Second, they are also the most vulnerable with respect to price increases. The universal service was originally financed by the reserved area. But, as already mentioned above, markets are nowadays expected to be more and more liberalized in order to avoid monopolistic market structures. Under a reserved area the rural (decentralized) areas are cross-subsidized by urban (centralized) areas. Furthermore, in contrast to other network industries, the receivers do not pay for the services they consume. Mail to rural areas is not only subsidized by urban areas, but also by large business customers with high volumes. These volumes are mostly pre-sorted and centrally collected. As a result, the uniform prices of postal items for private customers do not necessarily reflect the actual cost of delivery.

Price Waterhouse Coopers (2006) states that it is the source of "obligation" in the discussion about universal services which leads to a number of problems. In liberalized markets, this type of cross-subsidization as a general way of funding universal services is no longer feasible, because there is no reserved area and bulk-mail is mostly excluded from universal services. The customers who have large volumes of mail sent to low-cost areas will be most attractive to entrants. New competitors that are not expected to provide full universal services would penetrate into the more profitable segments in which incumbents still offer higher prices to cross-subsidize the non-profitable segments, which they are obligated to serve. At worst, the funding of universal services is no longer guaranteed. Therefore, the operator(s) fulfilling the obligation must at least be compensated for the cost of the universal service; otherwise, they might be economically forced to set higher uniform tariffs to compensate market share losses in rural areas. Hence, the centralized ex-ante regulation of postal universal services and the monitoring of its development is a means to ensure the provision of all customers at affordable prices–no matter which financing mechanism is chosen and how competition evolves.

2.3.4. Postal Regulation in the European Union

Regulation in the European postal markets has evolved over a period of more than twenty years, starting in 1988: At this time, the Commission decided to conduct an expansive review of the postal sector with respect to the development of a unified single market for goods and services. The first Green Paper on this development was published in 1992.[68] After a period of five years of public consultation, the first Postal Directive was adopted in 1997. The original purpose of the Community Policy in the postal sector and its regulation is "to complete the internal market for postal services and to ensure that efficient, reliable and good-quality postal services are available throughout the European Union to all its citizens at affordable prices. The importance of postal services both for the economic prosperity and social well-being and cohesion of the EU make this a priority area for Community action."[69]

To achieve this purpose, the Commission identified eleven specific objectives for action at Community level:[70]

- To define a universal postal service at community level. It was conceived as a right of access to postal services for users, encompassing a minimum range of services of specified quality which must be provided in all member states at affordable prices for the benefit of all users, irrespective of their geographical location
- To set a common maximum limit to the extent of the postal reserved areas, which each member state may grant to its provider(s) of the universal service, in order to ensure the economic and financial viability of the provision of the universal service
- To develop a process of gradual and controlled market opening to competition while giving the member states means to ensure that the provision of universal service is guaranteed on a lasting basis
- To improve the quality of postal services by setting, at Community level, common quality of service standards for intra-Community cross-border mail and ensuring that standards for national mail are set and publicized (in line with those intra-Community standards) and that performance results are published

[68] See WIK (2010, p. 12ff) for a detailed overview on the evolution of the European Postal Directives.
[69] Adopted from: European Commission (2012).
[70] See European Commission (2012).

- To establish the principle that tariffs should be related to costs and to ensure that the financing of the provision of universal service is carried out in a transparent manner compatible with community law
- To encourage harmonization of technical standards, taking users' interests into account
- To ensure that fair conditions of competition exist outside the reserved sector
- To encourage and assist the postal sector to adapt rapidly and effectively to technological progress and changes in demand
- To ensure that the needs of users, the interests of employees and the general importance of the postal sector for the economic, cultural and social development and cohesion of the community (including the special difficulties encountered by remote regions) are taken into account when regulating the sector
- To co-ordinate the development of postal policy with other Community policies and to ensure a consistent approach to overlapping issues
- To adopt an approach to international postal traffic (in particular in relation to the EFTA countries and the countries of Central and Eastern Europe, particularly in the light of the EU enlargement), which is consistent with the above objectives and reflects the same priorities, in co-operation with third countries and international bodies

With respect to the reserved areas, the adoption of the Directive 2008/6/EC implies that in general full market opening of the postal markets has to be provided by 31 December 2010. Some countries (mainly new EU member states) are allowed to postpone the full market opening till 31 December 2012. Table 2 summarizes the evolution of the Postal Directives and the successive reduction of the reserved area towards a fully liberalized postal market.

Regarding access regulation, the EU, in its latest Postal Directive 2008/6/EG, clearly contrasts the telecommunication, electricity and railway markets, and does not postulate a mandatory regulation of access. Instead, the Directive provides general principles concerning non-discrimination and transparency, and in the field of access to P.O. boxes and address data states the necessary prerequisites.

Table 2: Legislative and Regulatory Timetable of the European Union

Year:	*Postal Directives:*
1992	Green Paper on the development of the single market for postal services (COM/91/476).
1994	Council Resolution of 7 February 1994 on the development of Community postal services (COM/93/247).
1997	**1st Postal Directive (97/67/EC).**
1998	Notice from the Commission on the application of the competition rules the postal sector and on the assessment of certain State measures relating to postal services (98/C39/02).
1999	**1st reduction of the "reserved area" to 350g**
2002	**2nd Postal Directive (2002/39/EC**). 1st Commission Report to the European Parliament and the Council on the application of the Postal Directive (COM/2002/632).
2003	**2nd reduction of the "reserved area" down to 100g**
2004	2nd Commission Report to the European Parliament and the Council on the application of the Postal Directive (COM/2005/102).
2006	**3rd reduction of the "reserved area" down to 50g**
2006	Commission Prospective study on the impact on universal service of the full accomplishment of the postal internal market in 2009.
2006	3rd Commission Report to the European Parliament and the Council on the application of the Postal Directive.
2006	Proposal of the 3rd Postal Directive (COM/2006/594 final). This proposal is accompanied by the Commission's prospective study in the impact of full market opening (COM/2006/596 final), an Impact assessment and the third Report on the Application of the postal Directive (COM/2006/595 final).
2008	**3rd Postal Directive (2008/06/EC)**
2008	4th Commission Report to the European Parliament and the Council on the application of the Postal Directive.
2010	**Full market opening for 16 Member States, which represent 95% of the internal postal market.**
	Commission decision establishing the *European Regulators Group for Postal Services*, ERGP (2010/C 217/07).
2012	Full market opening for remaining Member States that may use the possibility of transitional period.

Source: European Commission (2012).

Not all postal services are universal services. Under Article 3 of the Postal Directive, a universal service is a postal service that is ensured and regulated by the Member State and complies with minimum requirements laid down by the Postal Directive. The Directive describes the minimum requirements of the universal services, which include clearance and delivery (at least 5 days per week) and the scope of products in the universal service (clearing, sorting, transport and distribution of postal items/parcels up to 2/10kg).[71] Article 12 of the Postal Directive outlines how to regulate prices of universal services. Prices for each one of the universal services should be “geared to costs,” “transparent and non-discriminatory” and “affordable.” According to Article 12, “special or individual tariffs” for large mailers and consolidators[72] are allowed, but they must correspond to the same principles as other services of the universal service.

With the definition of the universal service, the Directive makes clear that express services and services for heavy weight parcels are not universal services. Consequently, the two main universal service categories are basic letter post services and basic parcel post services. Four member states (Belgium, Denmark, Portugal and the United Kingdom) treat bulk parcel services as a universal service. One third to one half of the member states treat services for bulk letters and direct mail as a universal service. Belgium and Portugal even ensure and regulate all services as universal services.[73] Switzerland is not a member of the EU and therefore not obliged to implement the European Directive. But in order to illustrate how different the universal Service definitions are, it is worth mentioning that the Swiss incumbent is the only supplier that is obliged to provide financial services within the postal retail network. This illustrates that definitions and the scope of the Universal services differ widely across European countries.

Another aspect of the scope of universal service is the accessibility of postal services or outlets. Member states typically allow the incumbents to convert a post office into a postal agency without approval of the regulatory agency, but most member states require approval before ultimately closing postal outlets. Concerning the access to postal outlet networks, the Postal Directive requires that member states maintain a minimum density of postal outlets (post offices or postal agencies) and public collection boxes, but requirements vary substantially among member states.

Table 3 illustrates by way of examples the diversification of the definitions in European countries concerning the delivery of items and the access to post offices.

[71] See European Commission (2008).

[72] Consolidators are intermediaries that take advantage of price differences offered by postal operators to business customers. In general, they do not directly generate mail volumes.

[73] See WIK (2010, p. 21).

Furthermore, the Third Postal Directive specifies that designated postal operators can ask for compensation if the net costs of the universal service represent an unfair burden and result in a financial loss. The Directive defines these costs as the difference between the net costs of the universal service provider with and without the universal service obligation.[74]

[74] See European Commission (2008): "The net cost of universal service obligations is to be calculated, as the difference between the net cost for a designated universal service provider of operating with the universal service obligations and the same postal service provider operating without the universal service obligations. The calculation shall take into account all other relevant elements, including any intangible and market benefits which accrue to a postal service provider designated to provide universal service, the entitlement to a reasonable profit and incentives for cost efficiency" European Commission (2008).

Table 3: USO: Requirements Concerning the Retail Network and Delivery of Items

Country	*Products*	*Delivery of Items*	*Postal Network*
Germany	- Conveyance[75] of items of correspondence up to 2 kg (including registered, insured and cash-on-delivery items) - newspapers and magazines, - addressed parcels up to 20 kg.	- Once per day from Monday to Saturday. - Delivery has to be provided to the residence or business premises of the addressee.	- 12,000 fixed location facilities. At least 1 permanent facility in any municipality with more than 2,000 residents. - Customers in any municipality with more than 4,000 residents or in adjoining built-up areas shall in general be able to reach a permanent facility within no more than 2,000 m. - Additionally, in every district (Landkreis) one permanent facility shall be located per 80 km². All other locations must be served by mobile postal service units.
Austria	- Conveyance of postal items up to 2 kilograms, - Conveyance of parcels up to 10 kg, - Services for registered items and for insured items - Newspapers and periodicals	- Daily on weekdays - The USP shall deliver postal items to all addresses in Austria, if applicable, to mailboxes. - The new Austrian Postal Act provides for access to these mailboxes, not later than 31st December 2012.	- The Austrian Postal Act determines both the minimum number of 1650 postal branches (operated by Austrian Post or others) and their density in Austria.
Netherlands	- The domestic mandatory postal service includes the conveyance of single piece items - Letters, newspapers or magazines with a maximum weight of 2 kg - Postal parcels up to 10 kg - Registered and insured items	- Once a day, at least 6 days a week (except public holidays) - Delivery takes place by depositing a postal item in the letter box belonging to the address indicated on the item - If the mail is not suitable to be put in a letter box (parcel, registered or insured item) it shall be handed over at the home of the addressee	- In residential centers with less than 5,000 inhabitants, there must be 1 postal outlet within a 5km radius. - If the number of residents exceeds 50,000, an additional service location shall be present for every 50,000 residents. - The universal service provider shall provide access to at least 2,000 postal service points including at least 902 service points with full assortment of services over the country.

[75] Conveyance: services of receiving, collecting, sorting and delivering postal items.

Country	*Products*	*Delivery of Items*	*Postal Network*
UK	- Conveyance of postal items and parcels up to 20 kg[76] - Provision of registered post services	- 6 times per week, once every working day, including Saturday - The home or premises of every individual in the UK	- License requirement to provide facilities such that the premises of not less than 95% of users are within 5km - Not less than 95% of users in each postcode area are within 10 km of such access points.
Switzerland	- The conveyance of addressed letters and - addressed parcels up to 20 kg - newspapers and magazines; - outbound international letters - financial transactions.	- Conveyance every working day, at least 5 times a week (6 times for newspapers and priority mail) - Delivery to all residential areas occupied all year-round;	- A nationwide post office network physical network according to the needs of the population and the economy. - At least 90 % of the population must be able to reach a post office within 20 mins by foot or on public transport on average.

Source: IPC (2011).

[76] In Royal Mail's current license the regulator (Postcomm) has defined the services that should be provided in the discharge of the USO. First class stamped mail, First class metered, Second class stamped mail, Second class metered, Standard parcel, Airmail Europe, Airmail world zone 1, Airmail world zone 2, Surface mail, Special delivery (next day) non-account as well as a wide range of bulk mail products. See IPC (2011).

Article 22 of the Third Postal Directive provides that "the national regulatory authorities shall have as a particular task ensuring compliance with the obligations arising from this Directive."[77] This implies that a minimum range of regulatory functions must be commissioned to an independent regulator. The Postal Directive does not state which functions must be commissioned to the regulatory authority.[78] In principle, the allocation of regulatory authority over postal affairs should serve the overall objectives of the Directive. So far, all European member states have some sort of regulatory authority, which appears to be formally independent from postal operators, but in some cases the incumbent postal operator and the regulatory authority are still under the control of a ministry. Ecorys (2008a) notices that "both the regulatory frameworks and the mandate and resources of the regulatory authorities differ considerably from country to country, making it difficult to identify best practices…. The developments in the regulatory (legal) framework have not always been driven by the regulatory authority in isolation, and may involve legal changes instigated by the state, and competition authorities" (87).[79] Therefore, there are considerable difficulties to identify best practices for postal regulation.

2.4. Theory and Practice in Postal Regulation: Where Do We Stand?

The original goal of the European postal market reform was the complete liberalization of the sector while maintaining a high-quality universal service. In the following, we briefly assess the various aspects of regulation and record today's status. The section aims to provide an overview on various aspects like (1) market opening and the development of competition, (2) universal service definition and its financing, (3) the role of regulators and (4) on the importance of labor conditions in the sector.

2.4.1. Market Opening and Development of Competition

The goal of market opening should be achieved by 2013. So far hardly any competition has developed among the providers. For instance, Copenhagen Economics (2010a) states in the study on the 'Main Developments in the Postal Sector 2008-2010': "Our main conclusion is that competition in the postal sector remains challenged. National operators maintain dominance in a number of segments, a number of important entry barriers are outstanding and

[77] See European Commission (2008).
[78] See WIK (2010, p. 39).
[79] See Ecorys (2008a).

a number of competition issues are reported… Competition is stronger outside the letter post segment, especially in express and parcels and to a lesser extent in cross-border mail, direct mail and publications”(80).[80]

Dietl and Waller (2002) identify several potential business models for new entrants: local mail services, networked local mail services, document exchange, mass mail provider, spot operator, consolidator, the provision and the national full service provider. In addition, de Bas and van der Lijn (2008) describe the niche provider as a further entry model. Market entrants can be former customers of postal operators (like publishers or letter shops), existing local works for unaddressed mail, incumbent postal operators from abroad or completely new players.

Generally, we can say that today competition takes place mainly in the sector bulk mail, time-critical items and non-addressed items. In addition, market entrants do not have to comply with delivery directives such as five- or six-day delivery frequency. They often operate with two to three delivery days and focus on a specified delivery day (e.g., mail delivery on Friday or Saturday to ensure the attention of the receivers during the weekend).

So far, the debate on liberalization and more competition in the postal market has primarily focused on the establishment of the complete single European market and the integration of postal services in connection with other communication markets. It has to be said that in the meantime other forms of communication (telecom, mobile telecom and internet) have been subject to considerable technological progress, with a great influence on postal services. The big technological competition to the letter and the substitutes put the current business model of postal enterprises under pressure, since in most national postal markets the letter volumes are declining. The decline in volume is particularly high in Northern European countries. At the same time customer needs are changing together with customer behavior in connection with new technological possibilities such as e-commerce, e-governance and the new options of mobile devices.

The study Copenhagen Economics (2010a) concludes that the current development of competition is below the degree to be expected for the status of market opening attained so

[80] See Copenhagen Economics (2010a).

far. Even in the postal markets in Finland, Germany, Netherlands, Sweden or the United Kingdom liberalized at an early stage there is hardly any end-to-end competition. [81]

Conclusion: The development of competition makes very slow progress. Competition originates less from market entrances, than from new technologies and changed communication behavior.

2.4.2. Universal Service Definition and Adequate Financing Mechanisms

With respect to regulation the universal service remains an important topic. The market developments are in contrast with a definition of the universal service, which was developed in the 90s and became part of the Postal Market Directive. So far, developments like changed communication behavior and decreasing letter volumes have not been taken into account. As Table 4 shows, the definition of the universal service strongly varies from country to country. Still, the Directives (e.g., delivery frequency) are adhered to and the traditional definition of the universal service is applied. From 2012 various postal operators, such as Post NL or the Danish Post, will introduce new delivery models, which rely on lower delivery frequencies in the bulk mail business without affecting the universal service. The Finnish postal operator Itella played a role in the future development of the universal service. For the first time, field tests with combinations of electronic and physical delivery were performed in 2010.[82] This development shows that discussions on the scope of the universal service will continue to be important. Also, the behavior of sender- and addressee customers will have to be observed in the future, so that the further development is not only based on the aspects considered so far and takes into account the situation in the communication markets.

In 2011, the European Commission commissioned a first study dealing with consumer preferences regarding the postal universal service.[83] Moreover, the Commission communicated at the end of 2011 that in 2012 a study on the determination of net costs and financing of the universal service would be conducted. With the full liberalization, the monopoly as the original financing mechanism for the universal service is omitted. Since the forecasts for the development of mail volumes and competition are, based on past experience, rather skeptical, it is important that this topic continues to be dealt with.

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[81] See Copenhagen Economics (2010a).

[82] See the next section for a deeper discussion on developments in physical and electronic delivery.

[83] Results are not yet available.

There is practically no experience regarding the practice of financing the universal service.[84] Therefore, an important question remains: Which is the appropriate and efficient mechanism to finance the universal service? Accordingly, Copenhagen Economics (2010a) state: "Regarding the financing aspects of the USO, the most frequently cited problem concerned the lack of legal certainty surrounding the possible mechanisms of financing that can be deployed under the conditions that the USO makes a loss – as well as the possible extent of contributions to be paid by private firms" (114). As a consequence, there is only little experience in Europe on how the different funding solutions affect the development of the mail market in general and the universal service in particular.

Until now, this issue has mainly been dealt with in an academic and economic context. The sketched funds solutions, according to which all providers are to contribute to financing the universal service, were hardly ever put into practice. At the same time there is no consensus or broad-based method on the definition and calculation of net costs for the universal service obligation.

Conclusion: The definition of the universal service is and will continue to be an important issue in postal markets. However, the question arises of whether the definition should be revised, so that in the future the universal service would correspond to technological developments and the changed communication behavior in today's society. Financing aspects must be discussed, and approaches for compensating the costs of the universal service in case of a deficit must be found.

2.4.3. Regulatory Approaches and the Role of Regulators

Traditionally, the responsibility for the national postal services has been assumed by the competent ministry, which on one hand directs the postal enterprises and formulates the public policy. After lengthy public debates, it has been generally agreed that the role of policy advice and the operative and administrative control must be separated. In lieu of the previous postal ministries, various authorities with different roles have established themselves. Even if

[84] Deutsche Post DHL, for example, provides the universal service although they are not legally obliged to render it. In France La Poste is obligated by law to provide the universal service and it is fully financed by the reserved area. In the case of a full liberalization of the French postal market, a kind of fund solution is planned, but its concrete design has not been defined yet. Today, La Poste gets compensated for the operation of the nationwide post office network. See Oxera (2007) for a detailed description of different financing mechanisms for the postal universal service.

the countries' regulation systems differ strongly in their institutional organization, it can be said that the following actors are typically present in today's postal sectors:

- A ministry responsible for the postal policy.
- A national regulation authority performing tasks pertaining to the sector-specific control
- A national competition regulator with trans-sectoral tasks.
- A public postal operator wholly or partially state-owned or a designated universal service provider[85]

At present, practically all European countries have an appointed independent regulation authority dealing with sector-specific issues.[86] However, these authorities strongly differ with respect to their institutional organization and to their independence.[87] Together with the sector-specific regulation, the competition authorities in the postal sector have gained in importance in past series. The postal enterprises were confronted with a great number of claims and complaints with respect to competition law. Last but not least these proceedings also influence the further development of postal markets, just as in case of sector-specific regulation. According to Copenhagen Economics (2010a), there were 26 competition cases in EU countries between 2007 and 2010.[88] Most of these cases concerned predatory pricing, cross-subsidization, illegal rebates and anti-competitive agreements and therefore violated the rules of competition of the Treaty on the Functioning of the European Union (TFEU).[89] Most of these cases concerned the market for unaddressed items and direct marketing. Presumably, the antitrust law will gain in importance. In other network industries, the application of the antitrust policy has increased with growing liberalization.[90] The division of roles and work between sector-specific regulation authorities and the competition regulators in the postal sector is not entirely clear: there are uncertainties with respect to the application of antitrust law in postal practice.[91]

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[85] See WIK (2009a, p. 35).

[86] See WIK (2009a) for a detailed description of the role of sector-specific regulators in the postal sector.

[87] A detailed overview on institutional trends is given in the next section.

[88] See Copenhagen Economics (2010a, p. 92ff) and WIK (2009a, p. 117ff) for a more detailed overview on competition cases in the postal sector.

[89] See European Union (2007): Article 101 (prohibits anti-competitive agreements) and Article 102 (prohibits abuse of dominant position).

[90] See WIK (2009a, p. 199), Garzanti (2009, p. 67).

[91] See Copenhagen Economics (2010a, p. 26).

Chapter 2.1 on economic regulation in the postal market states that there are no monopolistic bottlenecks in the postal sector and that the monopoly is contestable. This implies that the economic basis for the sector-specific regulation of the partial performance access is missing. Consequently, the Postal Directive provides no regulation in this sector. If discrimination charges are brought forward during access negotiations between providers, the competition authorities can assess and rectify the situation. As mentioned above, sector-specific regulation is an important instrument during the transition phase in network industries. In the long run, the question arises what role the sector-specific regulation should assume after the complete reform resulting in an open postal market. As far as socio-political goals are concerned, the authorities would still control the basic services and the compliance with labor conditions.

Conclusion: In most countries sector-specific and competition regulators exist in the postal market. It is expected that the antitrust law will gain in importance. The relationship between antitrust and sector-specific regulation has not been clarified yet. The discussion on the future role of sector-specific regulation authorities must be conducted, and if need be, a "phasing out" of this form of regulation in the postal sector has to be considered.

2.4.4. Labor Conditions

Despite the fact that letter volumes are declining/have declined, the postal sector is still one of the largest employers in Europe. And as explained above, the delivery of postal items is very labor-intensive and represents 55 percent of the whole process overhead. But the technological change and the increasing substitution of physical mail will necessarily have an impact on production processes and thus on the structure of employment in the sector.

Furthermore, market entrants usually develop low-cost business models because they are not able to realize economies of scale in the niche markets. The business models often imply that a less educated workforce is hired on a part-time contract basis. Traditionally, employees in the postal sector have received higher wages compared to other sectors.[92] As it were, they received a kind of a wage premium, which will be under pressure towards a marked-based level after liberalization. The liberalization process, in combination with the new business models of entrants, has created a fear of worsening employment conditions (e.g., wage dumping). There are discussions about whether minimum wages are a reasonable solution to solve the problem. On one hand, the public operators and the labor unions are in favor of

[92] See Maegli (2010).

setting minimum wages close to today's wages. On the other hand, a sector-wide wage that fixed above market wages would raise the cost of competitors while leaving the costs of the incumbent less affected. This might act as an important entry barrier.

Copenhagen Economics (2010a) concludes that competition and liberalization have not been the major drivers for changes in employment in the sector. Technological development through automation and e-substitution seems to be a more important factor driving the employment in the sector. However, employment conditions remain an important topic in the postal reform and the discussions on the further development of the postal market.

Conclusion: The structure of employment will change in the future. It seems that the main driver of the structural change of employment is technological change rather than liberalization. The topic will remain important in debates on the future reform of the sector.

2.5. Beyond Liberalization: Future Trends in Postal Regulation

After summarizing the current status of regulation in the sector, this section goes beyond the present situation to give an outlook on the future of the sector. Therefore, the most important current trends and the corresponding challenges for the sector are discussed. The explanations cover the trends and its implications for the sector in society (changing behavior), institutions (independent cross-sectoral regulators), industry (intermodal competition) as well as technology (technology neutral universal services).

2.5.1. Trends in Society: Digitization, Globalization and Sustainability

The social trends briefly sketched below will shape the further development of postal markets in the future. The three most important trends challenging the postal sector concern digitalization, globalization and sustainability. [93]

Digitalization: In many areas, the traditional physical post- and payment transaction services are replaced by new electronic alternatives such as E-Mail, SMS, E-Banking or Social Media. In this context the digitization of everyday life will be pushed on further by the exponential development of technologies (processor- and memory capacities, bandwidths, contactless transmission, mobile equipment). This continuously lowers the inhibition threshold for the substitution of physical information carriers.

[93] See Swiss Post (2011d, p.3).

Globalization: The globalization of competition increases the pressure on postal enterprises to position themselves across national boundaries and to neutralize disadvantages with respect to size or geographical range through specific co-operations.

Sustainability: The scarcity of natural resources increases the sensibility of customers, investors and lawmakers about sustainability and the corporate policy of the post. Accordingly, the demand for "green" products is on the rise. For the enterprises, an optimal mix of energy efficiency and renewable energies becomes a strategic factor. On one hand, an improved efficiency in the use of resources in the medium term leads to an economic advantage and, on the other hand, provides the enterprises with a new competitive edge.

Impact on Regulation: From these trends, a change in customer needs can be expected: customer demand for simple and integrated solution continues to increase. In addition, a trend toward classical values such as quality, reliability and security can be observed. More and more, "Digital Natives" shape business models, communication channels and performance characteristics that the postal enterprises offer.

2.5.2. Institutional Trend: The Emergence of Independent Regulators in Europe

The European trend of establishing regulatory institutions has lead to integrated regulatory bodies. Most agencies are responsible for more than one sector: in fact, the majority of the EU members combine postal and electronic communications in one regulatory agency. In some member states, the postal regulator is also involved in other network industries like gas, electricity, rail and even road safety.[94] Below, we describe institutional solutions of cross-sector or integrated regulatory bodies, namely in Germany, France, Netherlands, UK and Switzerland.

The Federal Network Agency (Bundesnetzagentur) for Electricity, Gas, Telecommunications, Post and Railway is autonomous higher federal authority within the German Federal Ministry of Economics and Technology. In 2005, the regulatory authority for telecommunications and postal services, which had replaced the Federal Ministry of Posts and Telecommunications and the Federal Office for Posts and Telecommunications, was renamed the Federal Network Agency. The agency also acts as the root certification authority as provided by the German Electronic Signatures Act. The Federal Network Agency's task is to provide, by liberalization and deregulation, the further development of the German network industries. For the purpose

[94] See WIK (2009a, p. 49).

of implementing the regulation goals, the agency has effective procedures and instruments at its disposal, including rights of information and investigation as well as the right to impose graded sanctions.[95] In practice, the various branches of the sector-specific regulators in the Federal Net Agency have only little to do with one another and function as separate sector-specific regulators.

The ART (Autorité de Regulation des Telecommunications) was created by the law of 1996 to regulate the telecommunications sector. In 2005, the Parliament decided to assign the responsibility of postal service regulation to the authority. Therefore, ART was renamed ARCEP: Autorité de Régulation des Communications Electroniques et des Postes. The former telecommunications regulator is charged by the legislature with the additional responsibility of overseeing the opening and operation of postal markets as well as the financing and safeguarding of the universal service. The new French postal law of 2005 reorganized the statutory and regulatory governance of the postal sector. The French postal law (Code des Postes et des Communications Electroniques) covers postal services as well as the electronic communications.[96]

The Independent Post and Telecommunications Authority of the Netherlands (OPTA) was established in the Netherlands in 1997. OPTA is allowed and required to set out the Independent Post and Telecommunications Authority Act, the Postal Act and the Telecommunications Act. On its website, the regulator states: “The domains of telephony, post, internet and television are changing every day. New businesses are starting up and services are developing in a flash. There is a growing wave of new opportunities and subscriptions. OPTA ensures that there is competition and confidence in the communications sector in the interests of consumers. This mission revolves around two key points: the promotion of competition and the protection of consumers.”[97] Moreover, they conclude that today’s electronic communications will already be obsolete tomorrow. The integration of telecom and postal regulation seems to be motivated by technological reasons rather than by efficiency gains.

Established as a regulatory body by the Office of Communications Act 2002, Ofcom is the regulator for the UK communications industries, with responsibilities across television, radio,

[95] See Federal Network Agency (2012).

[96] See ARCEP (2012).

[97] See OPTA (2009).

telecommunications and wireless communications services.[98] The "Hooper Report" (2008) shed light on various risks and uncertainties concerning the future of UK's postal services. With respect to the shape of the sector-specific regulator Postcomm and the regulatory regime, the report proposes: "A new regulatory regime is needed to place postal regulation within the broader context of the communications market" (15).[99] The Hooper Report mentions several arguments for transferring responsibility of postal regulation from Postcomm to Ofcom: Postal services (1) are facing competition from digital media and Ofcom has a deep understanding of the entire communications sector as well as (2) experience with the regulation of markets facing fast technological change. Furthermore, the telecommunication regulator is (3) supposed to have experience with the creation of a regulatory framework for British Telecom while faced with the challenge of modernization and liberalization. Nevertheless, Ofcom is (4) a large organization and has economies of scale and has (5) a deep understanding in market analysis and competition law.

A unique combination of responsibility is implemented in Switzerland. The Federal Communications Commission (ComCom) is the regulatory authority for the telecommunications market. The commission is not subject to any federal council or department directives. Organizationally and legally, it is independent from the administrative authorities.[100] The Postal Services Regulation Authority (PostReg) is the regulatory authority for the postal market, which is not fully independent from the Federal Department of the Environment, Transport, Energy and Communications. The peculiarity of the Swiss solution is the governance structure: currently, the two regulators are organizationally separated, but share a single chairman. The institutional setting of actors is subject to change according to a new postal legislation.[101]

Most European countries have already merged the postal and telecom regulators organizationally in order to realize economies of scale and concentrate expertise as well as experience. However, even if several countries cover the regulation of the two markets in the same bill, the responsibilities are still separated institutionally, because the responsibilities for the two markets are typically completely separated in different departments of the regulatory

[98] See Ofcom (2012).
[99] See Hooper et al. (2008).
[100] See Comcom (2012).
[101] See the case on the Swiss postal market in chapter 6 for a detailed explanation of future changes.

authority. The transformation of regulatory institutions argued for here suggests the need for a more unified and coordinated approach across postal and telecommunications, not only from an organizational but also from a regulatory point of view. This is so because the historically separately regulated services are becoming increasingly interdependent: (1) Telecom infrastructures are likely to substitute last mile mail delivery, and (2) consumers are likely to demand a secure combination of electronic and physical mail.

Impact on Regulation: In the course of the increased substitutability of physical mail by electronic communication, it is not obvious how regulation in general and regulatory institutions in particular should co-evolve. However, it is clear that there are increasing interdependencies between these two sectors, suggesting that a coordinated regulatory strategy for sector-specific regulation and antitrust policy for the two sectors will be required.

2.5.3. Industrial Trend: Converging Communication Markets

In liberalizing postal markets, the concern for cost efficiency arises both for the universal service provider (USP) and the regulatory authority, since the monopoly as the traditional financing mechanism falls apart. The costs of some elements of the postal universal service are presumably high; therefore, USPs seek ways to abate them. As a result, an increasing number of postal operators have started to invest in digital solutions to combine them with traditional physical postal services (e.g., Maegli et al. (2007)). Current pilot projects include virtual mailboxes (e.g., Belgian Post, Post Denmark, and Canada Post), electronic billing and e-government efforts. Incumbent operators increasingly aim at installing secure digital identities and provide complementary services based on the telecommunications network. The relevant questions are whether the universal service will be the same in the future and whether the evolving technologies and customer needs are changing the definition and role of the universal service. Even though postal universal services might be considered as a fairly constant business during the past few centuries, a slow but constant change occurred during long history. From Victorian London, where mail delivery routes went up to twelve times per day, delivery frequency has been reduced over the years to five or six times per week. Today, rapid and data-intensive communications are secured by electronic means rather than by physical delivery of letter mail. During the coming decade, technological innovation will further expand communication possibilities and as market liberalization impacts postal operators, the operators' historical and social role is likely to change further. [102]

Hybrid solutions could herald a new era in postal universal services. For example, Swiss Post introduced "Swiss Post Box": a hybrid alternative and complement to the last mile delivery to households. Itella recently started a similar pilot project testing alternative delivery solutions, where physical mail is delivered twice a week. Arriving mail is stored in a P.O. box at the local postal office and receivers are informed via SMS. At the same time, the letters are opened and scanned in order to send them electronically to the receiver by means of a special system. Other examples including telecommunication solutions to meet consumer needs and facilitate delivery are Swiss Post's PickPost-Solution and Austrian Post's PickupPaket. In the latter case, the addressee is alerted instantaneously when a parcel is delivered at a designated shop defined by the receiver.[103]

These solutions have something in common: Components of the telecommunication infrastructure partially complement and substitute the traditional last mile delivery (e.g., safe electronic mailboxes). At the service level, new services have the potential to substitute traditional universal services (e.g., secured mail). Therefore, distinct universal service regulations across the two sectors are becoming more and more blurred. Going ahead, a key question will be: Is it necessary and efficient to have letter mail delivered every day? What are the alternatives?[104]

Electronic communication infrastructures and services allow for a nationwide use of telecommunication services at relatively low rates as well as for more flexibility in use than in physical communication. At the same time, national postal providers are mandated by law to provide cost-intensive postal services to every household nationwide due to the universal service obligation. The European definition of universal service in telecommunication services does not include explicit services and applications but requires the physical connection between households at affordable prices. Table 5 briefly summarizes various aspects of convergence in the telecommunications and postal markets concerning electronic communication. As mentioned in this table, the two markets are converging in different areas. The main driver of convergence is the evolution of consumer needs towards fast and secure

[102] See Maegli et al. (2010b) and (2011).
[103] See Maegli et al. (2010b) and (2011).
[104] ibidem.

access to messages (see CIFS (2009)). The telecommunication network allows for acceleration of delivery at low costs while physical mail is more reliable but more costly. The convergence therefore relies on a combination of the strengths of both means to overcome their weaknesses.

Impact on Regulation: The increasing convergence between postal products and telecom applications is a new phenomenon, which needs a corresponding co-evolution of regulation in order to exploit synergies and find proper universal service definitions in tune with changing customer needs.

Table 4: Aspects of Converging Physical and Electronic Messaging Services

	Post	***Telecommunications***	***Trend Towards Convergence***
Consumer Need	Reliable written communication over long distances	Written communication over long distances	Yes, consumers ask for fast and reliable access to messages
Product / Technology	Letter mail and parcels	DSL, wireless	Yes, substitution by electronic messaging
Frequency of Service	One per day (5 to 6 days per week)	Continuous	Driver for convergence -
Speed	Low; Trend: lower (fewer deliveries per week)	High; Trend: differentiated (net non-neutrality)	Driver for convergence
Coverage	Nationwide	Nationwide	-
Reliability	Reliable	Less reliable	Yes, by digital IDs provided by postal operators
Confidentiality, Integrity	High	Rather low	Yes, people trust in brands of postal operators
Price	High Trend: higher	Low Trend: lower	Driver for convergence
Accessibility	Postal retail outlets or post box criteria based on distance	All residences and business offices on request	Driver for convergence
Scenario for USO Reform	Reform in delivery models and frequency	Electronic convergence (fix and mobile infrastructure) or technology neutrality Increased minimum speed	Yes, by hybrid services

Source: Maegli et al. (2010b) and (2011); partially adopted from IPC (2010).

2.5.4. Technological Trend: The Concept of Technological Neutrality

The concept of technological neutrality is also applicable to the telecommunication and the postal sector. For example, Japan chose to regulate access to the last mile to the consumers independently of the technology applied (copper or new fiber wires). Similarly, universal services are often defined in technologically-neutral terms. Consumer needs may also be technologically neutral. For example, the main needs of recipients concerning postal services are physical and timely delivery. Generally recipients do not care about how these needs are satisfied as long they are satisfied; that is, the technology that the operator uses to fulfill these needs does not primarily concern the receiver. In other words, if the delivery of a particular type of correspondence serves the needs of the recipient, independently of different technologies, its delivery is technologically neutral. However, it is important to ask: do such technologies exist to assure that the delivery of letters and other items of correspondence can be accomplished in a technologically-neutral manner?

Hybrid services like Swiss Post Box, the secure electronic complement to the physical letterbox, improve physical delivery. It guarantees worldwide, twenty-four-seven access to physical mail by scanning and emailing it in a secure unit as soon as it arrives at the sorting center. Moreover, customers can then decide to have the mail physically delivered, archived or shredded. Managing physical mail during a temporary absence becomes as easy as handling electronic messaging. As a prerequisite, broadband and mobile penetrations have to reach a critical mass. Thus, countries and governments that strategically push forward their digital communication infrastructure will gain a substantial and long-lasting competitive advantage. In the cases where mail delivery can occur either physically or via hybrid services, universal services become a technologically neutral multi-channel concept. Technological convergence establishes the technology of the two markets into closer substitutes than they were in the past, functioning therefore as the cutting-edge process of a technologically-neutral universal service.[105]

Impact on Regulation: The concept of technology neutrality in post is a consequence of the convergence of telecommunication and postal services. A technologically neutral universal service has an all-encompassing meaning in the communication sector and could also be referred to as "communication universal service," and the corresponding obligation as the

[105] See Maegli et al. (2010b) and (2011).

"communication universal service obligation." A combination of the two universal service definitions would have an impact on sector-specific regulation in the postal sector as well as in the telecom sector.

2.6. Conclusion

The present chapter identified the main characteristics of the postal market and rationales for regulatory intervention. The distinction between economic and socio-political reasons for regulation is particularly important in the postal sector. Socio-political regulation, the questions in connection with universal postal services respectively, plays an important role in the sector. In contrast to other network industries, technological change has played a rather secondary role. However, changing communication behavior within society and increasing e-substitution demonstrate a considerable impact on the sector and an increase in the pressure on labor conditions and the necessity for process optimizations.

The current approach to postal universal services is based on European Directives from the 90s. The number of delivery days and the access conditions to the postal basic services are largely defined. Nevertheless, postal enterprises begin to deal with alternative delivery forms and new universal service models. But in many cases, political authorities are not prepared for this type of discussion, since a transitional phase from former state monopolies to a fully liberalized postal market is taking place at the moment. At the same time, the further development of full competition in post is debatable. Competition is developing in the express delivery and logistic sectors, but much less in the collection and delivery of letters.

The discussion concerning sector-specific and antitrust regulation clearly shows that there is need for further clarification, and that there is no clear division of roles. The comparative analysis with other network industries confirms that from an economic point of view no sector-specific regulation is needed in the postal sector. Moreover, the increasing number of antitrust cases in the postal sector leads to the conclusion that the competition law will continue to increase in importance, as will the convergence of communication channels and markets.

3. LITERATURE IN NEW INSTITUTIONAL ECONOMICS

In this chapter, we outline the theoretical foundations of new institutional economics. The content of the chapter sets the theoretical cornerstones for the framework of regulatory governance costs that will be presented in chapter 5. Before introducing transaction costs, agency theory and property rights, the first section points to the general background and the origins of New Institutional Economics.

3.1. New Institutional Economics and Economics of Institutions

The New Institutional Economics (NIE) links different approaches to explain economic activities and economic behavior. NIE builds on, modifies, and extends neoclassical theory. It retains and utilizes the fundamental assumption of scarcity and hence competition. The approach has developed as a movement within the social sciences, especially economics and political science, unifying theoretical and empirical research, and exploring the role of institutions in facilitating or hampering economic growth. An initial paper was written by Ronald Coase in 1937 called “The Nature of the Firm.”[106] Most scholars name the work of Ronald Coase as the foundational work in the field of new institutional economics.[107]

The field of NIE experienced a productive evolution in recent decades. Nowadays, new institutional economics has two main branches. One is dominated by the focus on the institutional environment; the other focuses on contractual relationships and on different modes of governance. Ménard (2005) points out that NIE-Theory includes work in transaction costs economics, property rights theory, agency theory and a mix of resource-based and evolutionary-view as the leading approaches. The growing importance of NIE is underlined by the awarding of three Nobel Prizes to the following scholars:

- Ronald Coase in 1991 for the discovery and clarification of the significance of transaction costs and property rights related to the institutional structure and functioning of the economy.
- Douglas C. North and Robert W. Fogel in 1994, for having renewed research in economic history by applying economic theory and quantitative methods in order to explain economic and institutional change.

[106] See Coase (1937).
[107] E.g., North (1991).

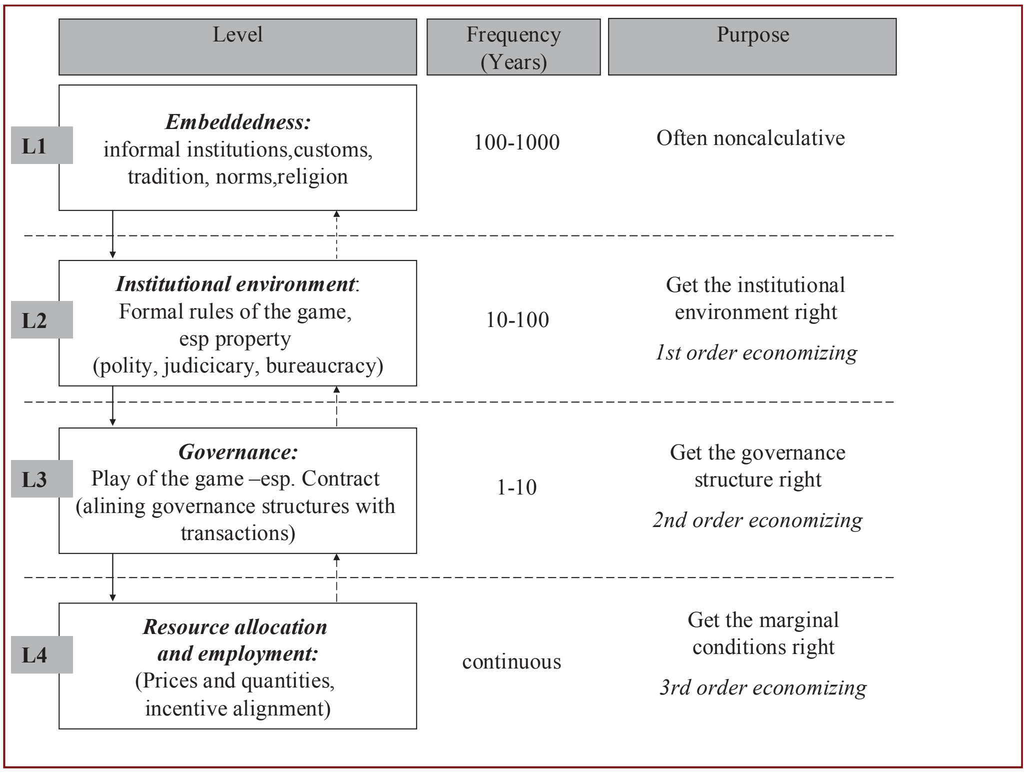
- Elinor Ostrom and Oliver Williamson in 2009, for the analysis of economic governance, especially the commons (Ostrom) and the boundaries of the firm (Williamson).

Matthews (1986) implies two central propositions of the NIE-approach: “institutions (1) do matter and (2) are susceptible to analysis by the tools of economic theory” (903). Concerning the first proposition, institutional economists, new and old alike, agree on the fact that institutions matter. Williamson (2000) indicates that the second of these two propositions is what distinguishes NIE from neoclassical economic theory: NIE disputes the standard neoclassical assumption that an individual has perfect information and unbounded rationality and that transactions are costless and instantaneous. The institutional environment is affected by imperfect actors and individuals with a limited rationality. North (2005) states that neoclassical economics was not designed to explain processes of economic, political or social change. The aim of institutionalists is to understand changes by understanding human incentives, intentions and beliefs as well as the norms and rules they create to reach their goals. Commons (1931) notes that “since institutional economics is behavioristic, and the behavior in question is none other than the behavior of individuals while participating in transactions, institutional economics must make an analysis of the behavior of individuals” (654). NIE studies institutions and how institutions cooperate with organizational arrangements. From the perspective of institutional economics, institutions are formed to reduce uncertainty in human exchange[108] or rather to reduce risk and transaction costs[109].

In the analysis of institutions (e.g., the analysis of a certain regulatory regime) and its evolvement, it is important to anticipate their development over time. To that end, Williamson (1998b) develops a framework of four levels of social analysis (Figure 1). The solid arrows connect higher with lower levels and imply that the higher level imposes limitations on the subsequent level. The reversed and dashed arrows signal feedback to the upper levels.

[108] See North (1991, p. 29).
[109] The construct of transaction costs will be discussed later in the text.

Figure 1: Four Levels of Social Analysis: Economics of Institutions



Source: Williamson (1998b, p. 26).

Level 1

The first level (L1) is the social embeddedness, where norms, informal rules, customs, tradition religion, etc. develop. Level 1 is a given for most economists. At the level of embeddedness, institutions change very slowly.

Level 2

The second level (L2) represents the institutional environment. The structures observed in L2 are the outcome of political processes, and provide the rules of the game and how economic activities are organized. The important outcome of L2 is the definition of laws according to property rights. Much of the economics of property rights[110] and the building of institutions are integral parts of level 2. [111] North (1991) describes institutions as "humanly devised constraints that structure political, economic and social interactions" (97). Ménard and Shirley

[110] The main ideas of property rights theory are discussed later in this review.

[111] See Williamson (2000, p. 598).

(2005) define institutions as "the written and unwritten norms, rules and constraints that humans devise to reduce uncertainty and control the environment" (1). These imply

- written rules and arrangements that govern contractual relations and corporate governance,
- constitutions, laws and rules that govern politics, government, finance and society
- as well as unwritten codes of conduct, norms of behavior and beliefs.

North (1994; 2005) denotes institutions as the rules of the game, not only the formal but also the informal norms and the characteristics of enforcement. Following these details, the informal constraints are located on level 1; the formal rules, like polity, judiciary and bureaucracy, are located on level 2. The purpose of this first order economizing level is to "get the institutional environment right."[112]

Level 3

Institutions of governance are located on level 3 (L3). On L3 the governance of contractual relations becomes the focus of analysis. Moreover, Transaction costs economics become an important role for level 3. By taking the rules of the game introduced at the second level, L3 addresses the play (contracts) of the game. The players of the game are organizations. The organizations consist of groups of individuals with some common objectives. Williamson (1998b) distinguishes economic, political and educational organizations. Economic organizations are firms, trade unions, cooperatives, etc.; political organizations are parties, legislatures and regulatory bodies; and universities and schools are defined as educational organizations.[113] Every issue that can be reformulated as a contractual matter can be regarded as advantageous in a transaction cost economizing term. Williamson (2000) asserts that a "huge number of phenomena turn out to be contractual variations on a common theme" (599). Therefore, second order economizing schedules the setting of the right government structures (markets, firms or bureaus) in order to align those structures with transactions.

Level 4

On level 4 (L4), the analysis moves from a structural to a marginal one. This level is embedded in neoclassical economics and, in recent decades, agency theory. The neoclassical economics decision variables are price and output. Agency theory, which stresses ex-ante

[112] See Williamson (1998b, p. 27).
[113] See North (1994) and (2005).

incentive alignment rather than ex-post governance, still makes provisions for non-neoclassical complications of which multi-tasking is one.[114] The third order economizing achieves the aim of getting the marginal conditions right.

The next section offers an overview of NIE's three main approaches, which were introduced in Williamson's framework of social analysis and the economics of institutions.

3.2. Main Approaches of New Institutional Economics

As explained above, there are three main areas of NIE: "transaction cost theory," "property rights theory," and "agency theory." This section introduces the main ideas and assumptions of the three branches. The focus of transaction costs is on the explication of the existence of alternative modes of organization and some underlying tradeoffs. The core of agency theory is the observation of incentives or, in other words, how principals act to influence the behavior of agents in their particular interest. The property rights approach deals basically with the idea of ownership and the allocation of decision rights as an element to describe relationship-specific investments. The transaction cost approach and the agency theory are the basic concepts behind the development of the regulatory governance costs framework presented in chapter 4. The property rights approach is less substantial for the development of the framework. However, since property rights theory is one of the foundations of agency theory, it is included in the review in order to give a complete overview on the NIE.

3.2.1. Transaction Costs

A specific characteristic of the NIE is the emphasis on the costs of transactions. The beginning of transaction cost theory is related to Coase (1937) especially to the "make or buy" decision introduced in this context. Arrow (1969) defines transaction costs as the "costs of running the economic system" (48). It seems to be obvious that the existence of institutions (or organizations) is based on available resources used to create and operate institutions and to secure the implementation of institutional rules. In other words: Building and maintaining institutions results in costs. These costs are referred to as transaction costs. Commons (1932) prefigured the idea of transaction costs with his observation that "the ultimate unit of activity…must contain in itself the three principles of conflict, mutuality and order. This unit is a transaction" (4).

[114] See Williamson (2000) as well as Holmstrom and Milgrom (1991).

Williamson (2005) describes transaction cost economics as an effort to better understand sophisticated economic organizations by alternatively linking economics, law and organization theory. He defines the scope of transaction cost economics as an approach that allocates economic activity across various modes of organizations, adopts structural analysis, and characterizes the firm as a governance structure. This definition sets it apart from neoclassical economics, which mainly highlights price and output and describes the firm as a production function. Transaction cost economics describes the problem of economic organization as a problem of contracting.

Williamson (1985) indicates two types of transaction costs that can occur in processes of contracting. *Ex-ante* costs occur before and *ex-post* costs occur after the contractual relationship has been established. Ex-ante costs are costs of drafting, negotiating and safeguarding an agreement. Ex-post costs of contracting may appear in several forms: These include bargaining or renegotiation costs to correct ex-post misalignments, set up and running costs associated with the governance structures and the bonding costs of effecting secure commitments.

Williamson (1971) recognizes that influencing factors like institutional and technological changes need to be considered in a transactional analysis. He then (1981) points out that some transactions are simple and easy to mediate, but others seem to be complex and require more attention. In order to analyze organizational design and coordination in a transactional way, Williamson asks: "Can we identify the factors that permit transactions to be classified as one kind or another? Can we identify the alternative governance structures within which transactions can be organized? And can we match governance structures with transactions in a discriminating (transaction-cost-economizing) way?" (553). [115]

The preoccupation with these questions led him to the design of the "organizational failures framework." In this particular framework, the transaction costs consist of search costs, contracting costs, monitoring costs, and enforcement costs. Furthermore, this market and hierarchies approach tries to identify a set of environmental factors (uncertainty, asset specificity and frequency), which, together with a related set of human factors (opportunism

[115] See Williamson (1981).

and bounded rationality), explain the conditions under which complex contingent claims contracts will be costly to write, execute and enforce.[116]

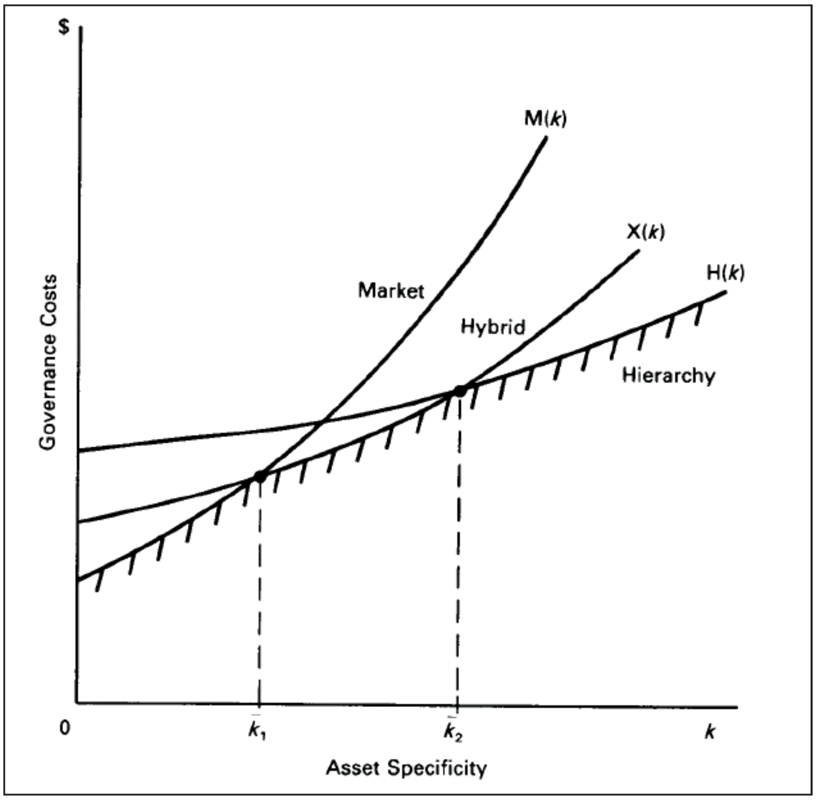
- Human Factors: The two behavioral assumptions referring to transaction cost are (1) human agents are subject to bounded rationality and (2) that at least some agents behave opportunistic.[117] Bounded rationality refers to rate and storage limits on the capacity of individuals to receive, store, retrieve and process information without error. Opportunism is taking advantage of others (e.g., business partners) through a lack of truthfulness or honesty in transactions. The most common opportunistic behavior is purposely, asymmetrically distributed information by individuals to raise individual gains.[118]
- Environmental Factors: They are defined as *uncertainty*, *asset specificity* and the *frequency* of transactions. The specificity of assets is described as the value of investments that would be lost in an alternative use. Highly specific assets create mutual dependence, which allows for the threat of a "hold up" that results from the incompleteness of a contract and an appropriation of economic rent by one or some partners.[119] Another significant type of cost in terms of transactions is the cost of uncertainty. These costs originate from agents' behavior, organizational deficiencies, inadequate institution or the state of nature. The third, most difficult parameter of transaction costs is the frequency of transactions. Williamson (1985) indicates the frequency as important, because the more often it is performed, "the more widely spread are the fixed costs of establishing a non-market government system" (76).

In 1991, Williamson conducted a study in which he combined institutional economics with aspects of contract law and organization theory to identify and interpret the differences that distinguish the three generic forms of organization: market, hybrid and hierarchy. One outcome was the awareness about governance costs as a function of the above-introduced concept of asset specificity.[120] Figure 2 shows that the more specific and the higher the costs of a transaction, the more hierarchical (vertical integrated) the form of organization. Low

[116] See Williamson (1975).
[117] See Williamson (1981).
[118] See Williamson (1973).
[119] See Ménard (2005).
[120] See Williamson (1991).

costs and low specificity imply a more market-oriented organization. These findings indicate that there is an intuitive trade-off between transactions and institutional environment.

Figure 2: Governance Costs as a Function of Asset Specificity



Source: Williamson (1991, p. 184).

The variables of transaction costs are difficult to measure, and the majority of scientists refrains from any attempts at measuring transaction costs directly, using instead a reduced form model (like Williamson (1991)) in which transaction costs are assumed to be minimized. Ménard (2005) states that the more complex a transaction is, the more costly and difficult it is to determine its characteristics and the value of its components.

3.2.2. Agency Theory

In an economic environment, there are many situations in which an economic actor delegates to an agent the authority to act on its behalf. A reason to delegate this authority is that an agent has an advantage regarding expertise or information. The advantage in expertise and the information asymmetry cause a problem for the one who delegates – the principal.[121] The

[121] See Miller (2005).

elementary questions in agency problems are: How can the principal be sure that the agent acts in the best interest? And is it possible to define incentives in a contract, which gives the principal the certainty that the agent will take the same actions the principal would take?

An initial paper in the field of agency theory was written by Jensen and Meckling (1976). In their article "The theory of the firm: Managerial Behavior, Agency Costs and Ownerships structure," they draw a blueprint by combining property rights, the theory of agency and financial aspects to develop a theory of ownership structure for the firm, the concept of agency costs respectively. They focus on the behavioral implications of the property rights specified in the contracts between the owners and managers of the firm.[122] The theory of agency relationships has been developed independently from the property rights literature. The questions addressed in both branches are similar, and the two approaches are in fact highly complementary to each other.

Jensen and Meckling (1976) define an agency relationship "as a contract under which one or more persons (the principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent" (5). Agency costs are defined as the sum of (1) the monitoring expenditures of the principal, (2) the bonding expenditures of the agent, and (3) a residual loss.[123]

The principal agent theory is based on studies in information asymmetries. The behavioral assumptions in the principal agent approach are nearly the same as in transaction cost economics. The construct of bounded rationality should express the inability of economic actors to obtain perfect information. Principal agent theory picks out the affinity of individuals to take a risk as a central point, which is a further development of the transaction cost theory. It studies the arrangement of risk sharing in terms of efficient risk allocation. There are three environmental conditions according to information problems: Adverse selection, moral hazard and hold up. All of them are subject to problems of coordination and motivation. *Adverse selection* bears the risk of principals selecting the wrong contractual partner. *Moral hazard* contains the risk that a party not enter into a contract in good faith (opportunistic behavior), while *hold up* problems cause the purposely, asymmetrically distributed information by individuals to raise individual gains. The instruments used to avoid these risks are signaling, screening, self-selection and negotiation in an ex-ante situation. In

[122] For further illustrations on the property rights theory are given below.
[123] See Jensen and Meckling (1976, p. 6).

an ex-post situation, the principal has the choice of monitoring, renegotiating, and setting incentives. The overall purpose is to minimize the gap in information among principals and agents.[124]

The relevant questions of agency theory in a new institutional perspective are: How to prevent employees from shirking? And how to keep managers aligned with the interests of property right holders?[125] The focus of NIE linked to agency theory is on incentive issues while trying to find contractual solutions (e.g., regulation). In the context of this dissertation, these contractual solutions are the rules (and actors) implemented in a regulatory regime.

3.2.3. Property Rights

Demsetz (1967) illustrates that in the world of Robinson Crusoe property rights do not play a role. However, Ronald Coase provides a fundamental insight into the role of property rights and its importance. In his seminal paper "The Problem of Social Costs" (1960), Coase demonstrates that in a hypothetical world in which it is free to measure and monitor goods, to ascertain ownership, and to transfer goods, initial ownership would have no effect on the efficient allocation of goods. Coase (1988) then states that the world we live in is not a world with zero costs: measuring, monitoring, enforcing, ascertaining ownership, trading, and obtaining information is costly. In the real world, transaction costs determine property rights, ownership, the extent of trade, specialization, and productivity.

The main proposition of the property rights literature emphasizes that ownership matters. An extensive definition of property rights is given by Barzel (1997). There are two distinct meanings: economic property rights and legal property rights. The legal property rights are those recognized and enforced by the government. The economic property rights of an individual over a commodity or an asset are the individual's ability, in expected terms, to consume the good or the services of the asset directly or to consume it indirectly through exchange. These include[126]

- the right to use an asset in any manner a user wishes,
- the right to exclude others from the use of the same asset,

[124] See Picot et al. (2005).
[125] See Ménard (2005, p. 290).
[126] The definition of Barzel (1997) is supplemented with some extensions from Alston and Mueller (2005).

- the right to earn income from an asset and contract over the terms with other individuals, and
- the right to transfer ownership rights permanently to another party.

The ownership of property rights provides the consent of others to act in a certain way. Furthermore, the owner expects the community to keep others from interfering with his actions, provided that these actions are not prohibited in the specifications of his rights. [127] Coase (2005) remarks that these rights, with their duties and privileges, will determine the law. Therefore, the legal system in his view has a profound effect on the economic system and should indeed control it. He further concludes that these rights should be assigned to those who can use them most productively and with incentives to do so. Through clarity in the law and by making the legal standard for such transfers less burdensome, the costs for the holders of the rights should be low. A set of property rights, which allows sales, improves the allocation of resources in two ways: First, allowing sales supports signal scarcity value. Second, markets provide those who value the asset most with the ability to purchase it.[128]

It is understandable that the fundamental idea of property rights tends to influence incentives and behavior. Furubuton and Pejovich (1972) describe the predominant system of property rights as a set of economic and social relations which defines the position of each individual with respect to the utilization of scarce resources.

Williamson (2005) points out that the important lesson of transaction costs, of bounded rationality respectively, for the study of contract is that "all contracts are unavoidably incomplete" (46). A completely perfect contractual formulation of all property rights involves perfect knowledge and information about the behavior of actors and the present and prospective development of technological and institutional changes. Due to the behavioral assumptions of institutional economics, it is assumed that the access to these sets of information would not be free of charge. Rather, the acquisition of perfect information to formulate perfect property rights tends to generate extraordinarily high economic transaction costs. The integration of the construct of transaction costs in property rights theory has lead to the concept of incomplete contracts. Hodgson (1988) implies that every contract contains an element of uncertainty and that although the contractual elements are dominant, the non-contractual components are necessary attributes of the contract as a whole. Incomplete

[127] See Furubuton and Pejovich (1972).
[128] See Alston and Mueller (2005).

contract theory as a relatively young discipline in NIE and a combination of transaction costs and property rights has its roots in the late 1980s.

The insights into the system of property rights in the words of Alston and Mueller (2005) lead to the following conclusion: First, property rights determine the incentives for the use of resources. Second, property rights consist of a set of formal and informal rights to use and transform resources.

3.3. Conclusion

The NIE-approach provides a useful framework for the analysis of state regulation. Libecap (2005) explains that the consideration of transaction costs supports the analysis of how property rights and sets of regulation take the form they do. Luis-Manso and Felisberto (2006) further state that there are two other approaches to regulation in institutional theories. One focuses on Williamson’s transaction costs approach; the other focuses on how regulatory strategies are affected and constrained by the institutional environment.

There are many questions in connection with the perspectives of new institutional economics concerning regulated industries like infrastructures. Sappington (1991) offers an illustrative example of principal-agent relationship among regulatory authorities and the regulated firms: “In regulated industries the regulator might act as a principal, designing an incentive scheme for the firm (agent) whose activities being regulated” (46). It seems possible to draw a blueprint of structures of regulated industries with regard to principal-agent relationships.

Concerning the field of regulated industries, it is important to understand how the processes of building and changing regulatory conditions work. In particular, the transaction cost and agency theory, or combinations thereof, provide insight into how institutions influence and act upon developments in regulated industries. A starting point from an NIE perspective are Williamson’s four different types of transactions costs: search costs, contracting costs, monitoring costs, and enforcement costs.

4. REGULATORY GOVERNANCE AND THE NEW INSTITUTIONAL ECONOMICS

The main contribution of Chapter 4 is to give an overview of regulatory governance, by linking it to new institutional economics. The two approaches of transaction cost and agency theory are discussed in combination with regulatory governance.

4.1. What is Regulatory Governance?

In their article called “Governance as a bridge between disciplines,” van Keersbergen and van Waarden (2004) state that classical economics assumes markets to be spontaneous social orders that work best in the absence of intervention, while new institutional economics, economic sociology and comparative political economy start from the opposite assumption: These theories emphasize that markets are not spontaneous social orders, but need to be created and maintained by institutions. Institutions are the instruments used to monitor and enforce rules of the game, to ensure property rights and decision rights, and to reduce information asymmetries, risk and uncertainties.

Ruiter (2005) describes governance as a wide and ambiguous term that refers within the public sphere to institutional arrangements serving public interests. He compares government approaches and governance approaches: Governance approaches rely on the assumption that even though some objectives may be realizable by direct government action, various other public objectives can be efficiently realized through the agency of individuals or by private organizations pursuing their own interests.[129]

In their seminal article on institutional foundations of regulatory commitment, Levy and Spiller (1994) emphasize that there are multiple regulatory regimes which are consistent with good performance. They define regulatory governance from an institutional perspective as “the mechanisms that societies use to constrain regulatory discretion and to resolve conflicts that arise in relation to these constraints” (205). Following Levy and Spiller (1994), regulation is an implicit relational contract between regulated firms and the government. This contract is characterized by opportunistic behavior, commitment, specific investment and governance. They see regulatory design as a set of two components: regulatory governance and regulatory incentives. Furthermore, Levy and Spiller argue that regulatory incentives only become

[129] See Ruiter (2005).

important if an effective regulatory governance regime has been established.[130] They conclude that the credibility and effectiveness of a regulatory governance framework vary with the political and social institutions of a country.

Dassler (2006) defines regulatory governance more accurately as the "way the regulatory office acts under the aegis of the government, in the form of legislative acts and other forms by which control can be maintained over the regulated sector" (33). Majone (1996) discusses traditional forms of regulation and control (regulatory governance structures) in Europe, including public ownership, the assignment of regulatory functions to departments of governments under direct control of political executives, and various self-regulatory arrangements. These modes of regulation have been gradually displaced, as regulatory policies are nowadays rarely implemented by politicians themselves. Following Majone (1996) in European regulatory regimes, governments tend to delegate regulatory competencies to specialized authorities.

The implementation of regulatory regimes or systems involves a number of tasks to be performed. Bauer (2005) defines administrative burdens in a regulatory context as factors to (1) sustain competitive but fair markets, (2) set incentives for involved actors to provide a certain level of public service, judged politically desirable and (3) coordinate public authorities related to (1) and (2). In his article on regulatory institutions, Ogus (2002) examines different parts of regulatory processes. As part of the policy-making procedure, the goals of the regime must be established and transformed into the principles and rules, which control behavior. Furthermore, there must be reliable procedures for explicating and enforcing those principles and rules and for adjudicating the disputes that arise from them. Important structural decisions concern the determination of how these tasks are allocated to different institutions and actors. Ogus (2002) states that this allocation has a vertical (the degree of control over these institutional actors) as well as a horizontal (the extent to which authority should be conferred to institutional actors other than the legislature or executive) dimension.

According to Minouge (2002) and Ogus (2002), a proper regulatory governance system specifies:

- what the institutions of rule-making are,
- who the rule makers are,

[130] See Levy and Spiller (1994) and Veljanovski (2010).

- how and by whom the rules are implemented
- what forms compliance and accountability of the actors take.

In the following, we explain different approaches regarding economic analysis of governance taken so far and explain the need to link regulatory governance and NIE.

4.2. The Need for a Link: Regulatory Governance and New Institutional Economics

Various attempts at analyzing different regulatory approaches, impacts of regulation and explaining modes of regulation have been made.[131] For instance, Baldwin and Cave (1999) summarize different theories of regulation: the positive theories of regulation, including public interest theories, interest group theories, and private interest theories. Critical contributions on the analysis of regulation and the outcomes were formulated as well. Willman et al. (2003) criticize the purely economic approach to regulation: the economic approach to the design of institutions tends to focus on outcomes, rather than on the analysis of the process, and does not therefore adopt a dynamic perspective on institutional change. It is prescriptive rather than analytical, focusing on the properties of institutions rather than taking the regulatory relationship as a unit of analysis. Concerning the theory of regulatory economics, Laffont and Tirole (1993) state critically that economic theory ignores incentive issues to a large extent, and the theory does not consider the standards of the newly developed principal-agent theory. They further argue that the simplified economic models, which ignored the presence of imperfect information, were unrealistic because they implied policy recommendations that require information, which is not available to regulatory authorities in practice. Thus, Laffont and Tirole (2000) abandon the standard economic assumption which defines regulators as well-informed and benevolent actors whose mission it is to perfect an imperfect market and to achieve the best results for society. They argue that regulators, like other economic actors, are self-interested: “They, like anybody, must be provided with incentives to become (economic and technological) experts, to think hard about specific regulatory issues and to shun putting their career concerns or the stakes of their favored interest groups or causes first” (274). But, so far only a handful of researchers and academics have addressed the particular costs of regulatory governance. The most important contributions are discussed in the following.

[131] E.g., Baldwin and Cave (1999), Baldwin et al. (2010) or Ménard and Ghertman (2009).

A first attempt of analyzing costs of regulation was done by Ehrlich and Posner (1974). They point out, that in legislative bodies the costs of production (e.g., for rule-making) are extremely high. They outline a theory on "the legal process according to which the desire to minimize costs is a dominant consideration in the choice between precision and generality in the formulation of legal rules and standards" (257). In their seminal article "An economic Analysis of Legal Rule-Making," Ehrlich and Posner (1974) defined a first set of regulatory cost categories. They come up with four different types of costs:[132]

- rule-making costs: the fixed costs of designing and implementing legal standards
- enforcement costs: the costs of enforcing the standards
- compliance costs: the costs that the standards impose on the regulated industry
- harm costs: the social costs imposed by regulatory offences

Veljanovski (2010) later added a fifth category –"error costs"– to the costs of Ehrlich and Posner. Error costs are those that occur because regulators (and judges) are not error proof. They may set up legal rules that do not encourage efficient behavior and lead to type one or type two errors. Type one errors arise when regulators find infringements or irregularities where there is none. The type two errors occur in the opposite case: the regulator finds no infringement when in fact there is one.[133]

As introduced in the previous section, the work of Williamson and his colleagues describes transaction cost economics and agency theory. The first applications of transaction cost economics in regulation and antitrust were in the field of industrial organization.[134] Regarding regulation and deregulation in regulated sectors, Williamson (2005) states that transaction cost economics are still underused with regard to its potential. Concerning the analysis of public policies, Dixit (1996) points out critically: "Economists studying business and industrial organization have long recognized the inadequacy of the neoclassical view of the firm and have developed richer paradigms and models based on the concept of various kinds of transaction costs. Policy analysis also stands to benefit from such an approach, opening the black box and examining the actual workings of the mechanisms inside" (9). Through the lens of transaction cost economics as well as agency theory, different modes of regulation can be described as alternative modes of governance, which are well-suited for some objectives but

[132] See Ehrlich and Posner (1974).
[133] See Veljanovski (2010).
[134] See Williamson (2005) and Williamson (1996).

poorly suited for others. Williamson (2005) states that whether the chosen governance mode works well or poorly depends on the nature of a transaction and the particulars of governance.

Estache and Martimort (1999) further argue that in the analysis transaction costs have to be isolated in order to draw policy relevant lessons from transaction cost economics. Considering regulated industries, such a view with emphasis on transaction costs is related to the principal agent framework: heterogeneous parties, politicians, bureaucrats and courts, will act with limited or asymmetric information in bargaining processes.

To summarize, the protagonists in new institutional economics reach the conclusion that regulation has a cost which can be of course minimized, but which nevertheless will be unevenly distributed among the actors of the broader institutional framework. According to new institutional economics, these regulatory costs depend on the formal and informal rules among the involved actors, upon the allocation of property rights among these actors, as well as upon the various principal-agent or more generally contractual relationships among these actors. As these costs are not easy to quantify, we ask how to concretize the definition costs of regulatory governance.

One potential path towards establishing such a definition can be found in another small and practically oriented body of literature on the cost of regulation: the consultancy firm Oxera (2004) conducted a study for the Dutch Ministry of Economic Affairs on “costs and benefits of market regulation.” In this report, Oxera distinguishes (1) direct costs of the market regulator, (2) direct cost of regulated firms, (3) economic costs, (4) indirect costs, and (5) social cost of regulation.

However, theorists as well as practitioners have not yet paid sufficient attention to these costs of a regulatory system. Building a systematic approach with emphasis on regulation in order to evaluate and analyze regulatory governance and its impact on the developments of markets, infrastructures as well as on society is an essential challenge. A crucial question to be asked is what governance costs in infrastructure regulation are made of and which theoretical approaches help to identify and analyze the relevant costs.

An attempt to distinguish between different sorts of costs caused by regulation, including a dynamic perspective, and their impact on regulatory institutions has not done yet been done in academia. The development of the major branches of new institutional economics took place with the intention of applying more institutional realism to neoclassical economics. The overall aim of this extension is to better explain and predict the behavior of utility maximizing individuals and profit maximizing firms in market relationships. We assume that the implications of new institutional economics on regulation theory and practice are enormous, though still largely unexplored. We would therefore like to combine the insights on regulatory governance with the transaction cost approach and agency theory in the following section.

4.2.1. Regulatory Governance and the Transaction Cost Approach

Dollery (2001) explains that bounded rationality unambiguously implies that complexities of actual economic exchange cannot be fully captured by hierarchical contracts or market mechanisms. Since bounded rationality prevents the construction of complete contracts between agents and principals, there is room for economic agents to behave opportunistically by hiding their preferences and actions from contractual partners.[135] Indeed, it is because of real-world phenomena, such as bounded rationality and incomplete contracts that economic activities have to be conducted in an environment characterized by asymmetric information and costly transactions.

As already mentioned above, Arrow (1969) defines transaction costs as the "costs of running the economic system" (48). Williamson (1998b) briefly sketches the transaction cost economic perspective of the public bureau. He describes the public bureau as an alternative mode of governance that is, as mentioned above, well suited for some purpose but poorly suited for others as well. Williamson (1998b) summarizes that "there is no one, all-purpose, superior form of organization. Transactions vary in their attributes; governance structures vary in their costs and competencies, efficient alignment is where the predictive action resides. The unchanging lesson of transaction cost for all feasible forms of organization, of which the public bureau is one, is this: a place needs to be made for each generic form, but each generic form needs to be kept in its place" (46).

In the article "Public and Private Bureaucracies: A Transaction Cost Economics Perspective," Williamson (1999) then characterizes three different forms of public governance: (1) full privatization, (2) regulation, and (3) the public agency which are briefly described below:

1. Full privatization is described as a relational contract, which establishes an enduring exchange between firms and the state that regulates transactions related to goods or services that the firms supply.

[135] See Williamson (1975).

2. Regulation denotes a complex governance structure which includes a long-term contractual exchange regime between a firm and the state that regulates transactions concerning the goods and services the firm supplies. Firstly, it is an authority regime between the state and an organ that regulates the supervision of the firm. Secondly, it implies an enduring supervision regime between the authority and the firm that is based on a relational contract between the firm and the state.
3. The public agency relies on an enduring authority regime between the state and an organ, which regulates the organ's provision of goods and services to which the state is authorized.

Furubotn and Richter (1992) describe the transaction cost approach as "most easily understood as embracing all those costs that are connected with (i) the creation or change of an institution or organization and (ii) the use of the institution and organization" (8). To summarize: to establish and to maintain institutions results in costs. Epstein and O'Halloran (1999) describe transaction costs economics as an approach for comparative institutional analysis where a given set of transactions may be characterized by its variety of costs; and different modes of governance might affect the level of these costs. In their perspective, the task of the transaction cost approach is to predict how optimal governance structures change as the formation of transaction costs changes. We suggest that these two ways of looking at transaction costs are the most likely approaches to be applied to regulatory governance.

Estache and Martimort (1999) identify two types of transaction costs related to regulatory institutions. The first type of transaction costs depends on the degree of informational problems faced by the government and on the limitations in the scope of governments when they implement regulatory responsibilities. The second type of transactions costs is related to the difficulties in establishing fully contingent contracts. Because these sorts of contracts often cover a limited period of time, it is not compulsory for future generations or governments; this often leads to renegotiations.

4.2.2. Regulatory Governance and Agency Theory

Jensen and Meckling (1976), in their seminal contribution, applied the agency theory exclusively to the firm. But already at this early stage, they mention the generality of the theory: "The problem of introducing an agent to behave as he (or she) were maximizing the 'principal's' welfare is quite general. It exists in all organizations and in all co-operative efforts – at every level of management in firms, in universities, in mutual companies, in co-operatives, in governmental authorities and bureaus, in unions and in relationships normally classified as agency relationships such as are common in the performing arts and the market for real estate" (309).

Gilardi (2001) states that although principal-agent models have been widely used by American political scientists for more than twenty years, their application to the European system of regulation is much more recent. The debate in the European context has been launched in a special issue of the European Journal of Political Research (37/3, 2000), where parliamentary systems have been analyzed as a chain of delegation. The major steps of delegation have been considered from a principal-agent perspective: delegation from citizens to their representatives in parliament, from the parliament to the government, from the government as a whole to single ministers, and finally from the government to the bureaucracy.

The governmental actors and the political principals, create the agencies and define their legal shape, formal objectives and decision-making procedures, appoint the key personnel and later monitor the regulators' activities. According to Majone (1999) and Horn (1995), agency theory suggests that the following variables are critical when political principals structure the relationships (to the independent regulator) in a manner such that the outcomes of the agent's efforts comply with democratic accountability:[136]

1. The extent to which decisions are delegated to an independent agent rather than taken by the principle himself, with the choice ranging from "no delegation" to "full delegation."
2. The governance structure, which includes both organizational forms–single headed agency, multi-headed commission, self- regulatory organization, and so on–and methods of appointment of key personnel. The nature of the governance structure to

[136] See Majone (1999, p. 13-14).

a large extent determines the agency's degree of independence from the political process.

3. The rules that specify the procedures to be followed in agency decision-making. Examples are substantive legitimacy, as well as rules defining the right of various groups to participate directly in the decision-making process.
4. The procedures to be followed when principals wish to overrule agency decisions.
5. The allocation of resources, particularly the agents' employment conditions, and the extent to which the agency is financed by government or by the sale of its services.
6. The extent of ex-post monitoring through ongoing legislative and executive oversight, the budgetary process, judicial review, citizens' complaints and peer review.

Following and summarizing Majone (1999), the key findings of agency theory for regulatory governance are that the control of agents is to a large extent a question of good institutional design. The following section concludes by summarizing the main findings of chapter 4 in combination with chapter 3.

4.3. Conclusion

We assume that the implications of transaction costs and agency theory on regulation theory in general and regulatory governance in particular are relevant, but remain (save for a few exceptions mentioned in the review above) widely unexplored. It therefore seems appropriate to briefly recapitulate before developing the framework of regulatory governance costs. The most important findings from chapter 3 and 4 regarding the development of the framework in the next chapter are the following:

- Arrow's (1969) definition of transaction costs: The "costs of running the economic system" (48).
- Ehrlich and Posner (1974) define four categories of regulatory costs: rule making costs, enforcement costs, compliance costs, harm costs.
- Veljanovski (2010) adds a fifth category: error costs.
- Williamson (1981) introduces four different types of transaction costs: search costs, contracting costs, monitoring costs, and enforcement costs.

- According to new institutional economics, these costs depend on the formal and informal rules, the allocation of property rights, and the various principal-agent relationships among these actors.
- At the most general level, new institutional economics concludes that regulation has its cost, which can of course be minimized, but which nevertheless will be unevenly distributed among the actors of the broader institutional framework.
- Through the lens of transaction cost economics as well as agency theory, different modes of regulation can be described as alternative modes of governance, which are well suited for some objectives but poorly suited for others.
- The transaction cost approach interprets governance as organizing transactions in order to economize on transactions.
- Williamson (1998b) describes the public bureau as an alternative mode of governance, which is well suited for some purpose but poorly suited for others.

The following chapter is concerned with proposing a framework of regulatory governance costs by which regulatory regimes can be appreciated and compared in a uniform way.

5. THEORETICAL CONTRIBUTION: A FRAMEWORK OF REGULATORY GOVERNANCE COSTS

Chapter 5 synthesizes the previous two chapters. As a result of the discussion on regulatory governance and New Institutional Economics, we come up with the framework of regulatory governance costs. The section is organized as follows: First, a definition of regulatory governance costs is given. In a second part, we outline a set of different institutional dimensions that potentially have an impact on regulatory governance costs. This is followed by the introduction of the concepts of static and dynamic costs of regulatory governance.

5.1. The Definition of Governance Costs

In line with Bauer (2005) and his definition of administrative burdens, we define governance costs in a regulatory context 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.[137] We assume that governance costs are inherently present in any institutional arrangement and as such are influenced by:

1. the institutional design and the alignment of competences (rules and actors),
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.

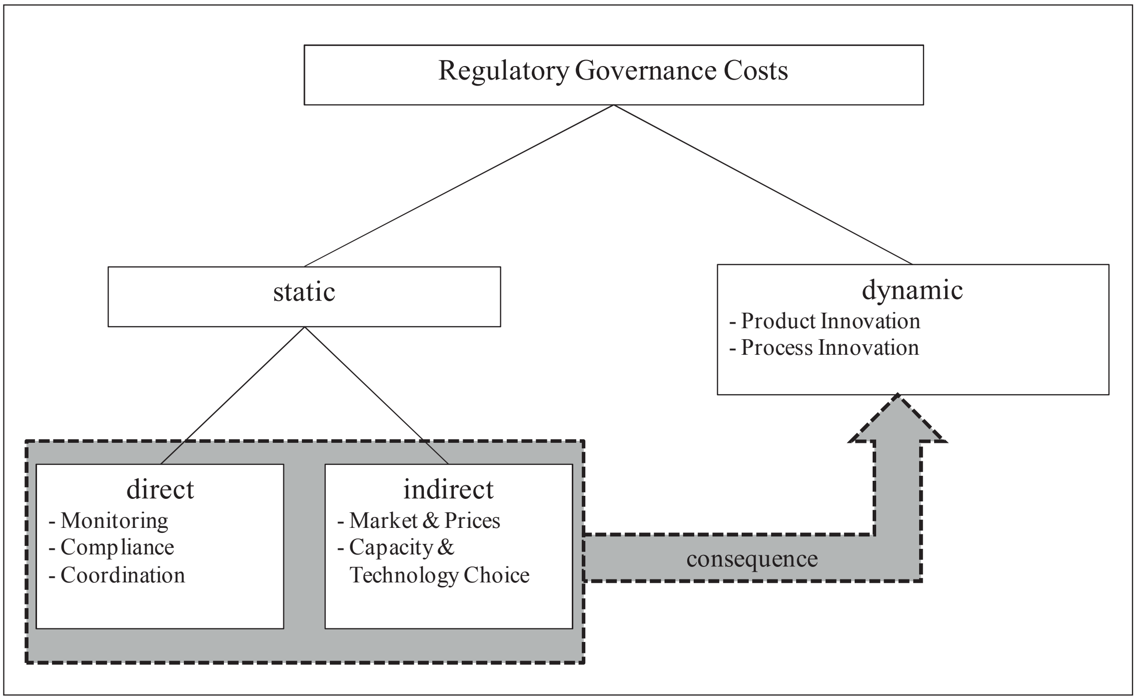
In the following, we distinguish between static and dynamic costs of regulation. Figure 3 illustrates the hierarchy of the different categories. The two types of static costs are the consequence of the institutional design and the interaction of the actors. While direct costs affect the involved actors in a rather monetary and resource-based way, indirect costs rather 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

[137] We assume that regulatory governance costs differ in different regulatory situations and with the degree of liberalization.

of the dynamic costs is the consequence of direct and indirect costs in relation to distorted future innovation incentives.

The amount of static-direct cost may in some cases be quantified (e.g., the annual budget of regulators or administration costs). In contrast, the negative impacts of the static-indirect as well as the dynamic costs are often hardly quantifiable and may have to be analyzed on a qualitative basis.[138]

Figure 3: Categories and Hierarchy of Regulatory Governance Costs



Source: by author.

[138] See Oxera (2004, p. 15).

5.2. Institutional Dimensions and Assumptions About Governance Costs

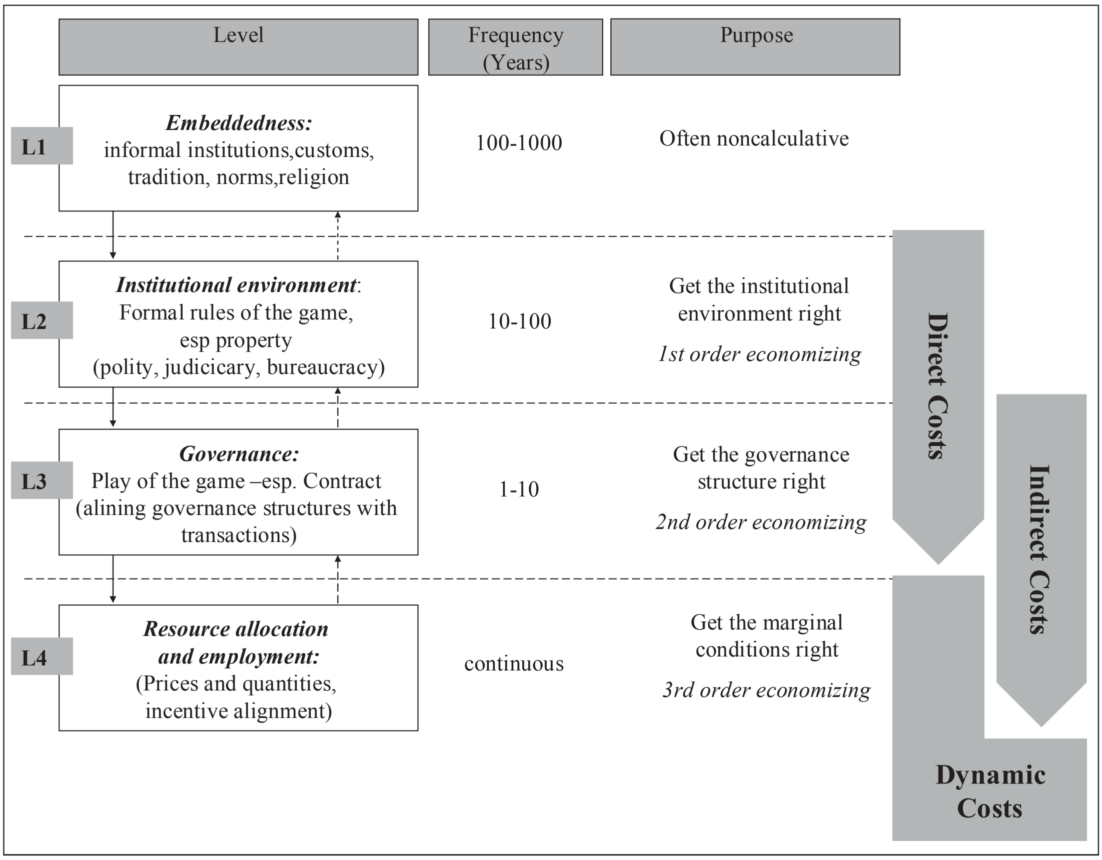
Before introducing the different types of governance costs, we provide an overview of different institutional dimensions (e.g., the number of involved regulatory actors or the definition and the scope of the universal service) that potentially have an impact on the different regulatory governance costs introduced in the next section. We assume that the various dimensions have different impacts in terms of both time (static or dynamic) and substance (outcome): The direct costs refer to the interaction between the involved actors and only marginally concern the overall markets. The indirect costs act less on the individual actors than on the overall market, basic investment decisions of the actors at a certain moment respectively. The dynamic costs, on the other hand, influence the future situation of product and process innovation.

In chapter three, the economics of institutions were illustrated according to Williamson (1998b). If the different costs are allocated to the levels, the following dynamic allocation as shown in Figure 4 seems appropriate:

- Direct Costs: They are strongly influenced by Level 2 “Institutional Environment,” when institutions are formed, and they definitely also accrue at the “Governance” level – the play of the game.
- Indirect Costs: They are determined at Level 3 and take effect at Level 4 “Resource allocation and employment.”
- Dynamic costs: Dynamic costs occurring as a result of direct and indirect costs can best be allocated to Level 4. However, they take effect beyond that, and the costs vary, depending on the correct organization of marginal conditions.

In order to ascertain where the different costs accrue and what impact they have, we first have to make assumptions about the accompanying institutional dimensions and determine the possible cost drivers generically.

Figure 4: Economics of Institutions and Regulatory Governance Costs



Source: Adopted from Williamson (1998a).

Along the well known distinction between actors and rules introduced by NIE, roughly two groups of institutional dimensions can be distinguished. One group rather refers to the organization of the actors and interactions between them (institutional organization of actors, sharing information, procedures and processes), while the other group concerns policy aspects and the material definition of institutions and rules (definition of universal service, access regime, degree of liberalization). The different dimensions are summarized in Table 5 and the corresponding assumptions are set out in the next section.

Table 5: List of Institutional Dimensions

Institutional Dimensions	
Organization and Interaction of Actors	*Policy and Regime*
- Number of regulatory actors - Modalities and subject of information exchange - Interaction of sector-specific regulation and competition law - Regulatory process - Stability of institutions (organizational perspective)	- Scope of universal service - Degree of liberalization - Financing and financing mechanism of the USO - Universal service price regulation - Access regime - Norms and standardization requirements - Labor conditions - Stability of institutions (policy perspective)

Source: by author.

5.2.1. Institutional Dimensions: Organization and Interaction of Actors

The different institutional dimensions concerning the interaction of actors are briefly outlined and described in the following.

Number of Regulatory Actors: In particular, the number of regulatory actors influences the direct costs of regulatory governance. A higher number of actors increases monitoring- and coordination costs and may also increase the compliance costs of enterprises. The larger the institutional actors are, the higher the costs; unclear competences may also result. Depending on the requirements and the expenditure of each institution, costs for market entrance can be very high, especially for smaller enterprises. This may also lead to dynamic costs. Costs increase with the degree of information exchange between the involved institutions, since some of the information is requested or collected twice.

Modalities and Subject of Information Exchange: The information exchange between authorities and enterprises is always cost-intensive. The so-called "administrative burdens" are repeatedly brought up in national economies. Cost drivers here are certainly the types of interfaces between enterprises and authorities, as well as the extent of the duty to supply information. Often, the duties to supply information do not apply to incumbents and entrants are not the same, and additionally, the information requirements are higher in the field of universal service. Here, too, the general rule applies that the more obligations exist, the higher the costs for a new entrance into a market will be (licensing regime, information about labor conditions or quality of services).

Interaction of Sector-Specific Regulation and Competition Law: The interaction between sector-specific regulation and competition law is cost-driving as far as the competences are not clearly discriminated. Moreover, sector-specific regulators and competition authorities may have divergent goals and apply different assessment criteria: while the competition authority mainly assesses agreements and market dominance, sector-specific regulation authorities are concerned with market failure and social objectives (e.g., a certain level of public service available to all citizens at equal and affordable prices).[139] It is equally important to note how the horizontal coordination between the competition authorities and sector-specific regulators is organized. If the information exchange is good, competition between the authorities is reduced, along with the costs for the market actors. Within an advancing liberalization process with an increasingly functioning market arises the question of phasing out sector-specific regulation. As soon as sector-specific regulation becomes redundant, the competences in ex-post control of markets could be delegated to competition authorities.

Regulatory Processes: While requirements (e.g., regarding pricing, price regulation or universal services) are established, compliance with these requirements must also be verified. The requirements and the amount of information to be provided have a decisive effect on costs. The more extensive the requirements are and the shorter the time intervals for enterprises to provide information and authorities to verify it, the higher the static costs. Ad hoc analyses, such as a procedure for cross-subsidization, are cost-intensive for all actors involved. Regarding innovation, such procedures may lead to delays in time to market and thus influence the pay-off and break-even of new products.

Stability of Institutions (Organizational Perspective): It can be assumed that a high stability of institutions generally has a positive influence on the amount of the regulatory governance costs. The more stable the institutions are, the higher the legal and investment security. At the same time, processes between the different actors become common practice, learning effects decrease and a long-term information exchange leads to know-how transfer. It can be an obstacle that as technologies are developed further or consumer behavior changes, the institutions cannot be adapted in their substance in due course. Policy processes are very time-intensive, and the adaptation of institutions through a political debate or a legislative

[139] See Oxera (2004).

procedure takes a lot of time. We therefore distinguish between the “organizational perspective” and the “policy perspective” with regard to the stability of institutions.

5.2.2. Institutional Dimensions: Policy and Regime

This section lines out the several institutional dimensions in relation with policies and regimes that may have an impact on regulatory governance costs.

Scope of Universal Service: The scope and requirements at the level of universal service influence regulatory costs insofar as they set up requirements regarding product range, product design, service quality, prices, access and affordability. In the majority of cases, it is determined who has to provide the universal service, and what verification criteria and information obligations exist. The more rigid the requirements are, the higher static governance costs will be. There is an impact on dynamic costs if the institutions cannot adapt to market conditions, i.e., existing products are not replaced by more modern solutions or the existing processes are not improved.

Degree of Liberalization: The degree of liberalization co-determines the intensity of competition in the market and influences financing of the universal service. The more actors are active in the market, the higher direct costs of regulation might be. The degree of liberalization co-determines investment decisions; for instance, unclear decisions regarding liberalization steps lead to insecurities of potential market entrants. Depending on the degree of liberalization, the dynamic costs are influenced. When competition is intensified without market growth, cost pressure for suppliers in the market increases.

Financing and Financing Mechanism of the USO: The original financing mechanism for universal or public services in network industries was the monopoly. The continuing trend for liberalization in these former monopoly industries has the effect of new mechanisms being found and introduced. Possible instruments are government-support, self-financing by the universal service providers or participative fund solutions, where market players commit to paying for the costs of the universal service. The regulatory governance costs change with the mechanism, since the control commitments and the compliance requirements in the various mechanisms differ. With some mechanisms, the market entrance barriers for potential entrants are too high. If the costs have to be borne by the incumbent alone, he might be unfairly burdened. Hence, the selection of the financing mechanism has an impact on direct and indirect costs. Dynamic costs are equally affected, because depending on the mechanism the payoff for innovations is also reduced or the cost pressure in the processes increases.

Universal Service Price Regulation: In most cases, price regulation refers to the products of the universal service. Products and services outside the universal service are mostly subject to competition law. Price regulation, too, can pursue different objectives and consequently influence the regulatory governance costs in different ways. Price cap regulation and profit regulation do not have the same consequences. It is also relevant to consider whether the focus is on consumer protection (affordable prices) or financing of universal service. As mentioned above, rigid price regulations may also prevent new, innovative price models and thus lead to inefficient prices in the market. At the same time, one must note whether a duty to supply information or an authorization requirement exists for the products in the universal service. If this is the case, the time to market for new products may be delayed.

Access Regime: Access regulation also influences the static and dynamic costs. Depending on the regime, the access conditions must be negotiated and/or monitored among the competitors. In case of disagreements, the regulatory authorities must mediate between the competitors. As mentioned above, the access regime also strongly influences the development of end-to-end competition and the employment of new technologies. With respect to dynamic costs, access regulation or bargaining processes for access agreement can take effect on innovation insofar as the processes become less flexible due to the interface between competitors, and uncertainties regarding economies of scales occur.

Norms and Standardization Requirements: Norms and standards take effect in two ways. On one hand, they can facilitate the interoperability between suppliers and guarantee the quality and security for the customers. On the other hand, they can imply high barriers with regard to a market entrance. Static costs accrue when the compliance with standards or with measuring criteria in testing the service quality must be monitored.[140] Dynamic costs accrue when certain norms must be complied with, making process innovations more difficult.

Labor Conditions: Labor conditions can influence regulatory governance costs in many ways. Direct costs result from negotiations with labor unions and from monitoring compliance by the regulatory authorities and partially by the labor unions themselves. At the same time, labor conditions strongly influence the market development. By defining industry standards

[140] E.g., the European Standard EN 13850: Postal service –Quality of service– Measurement of the transit time of end-to-end services for single piece priority mail and first class mail.

the costs for the provision of services in work- and personnel-intensive sectors and therefore influence the number of competitors. Regarding dynamic costs, the labor conditions have an influence insofar as the motivation for optimizing processes and to reduce man-power is high due to high labor costs.

Stability of Institutions (Policy Perspective): As mentioned above, the stability of institutions can have both positive and negative effects on regulatory governance costs. From a policy perspective, the costs are rather high in terms of a high time requirement of political processes, since in many cases the adaptation is realized via a legislative procedure. This means that in some cases new technologies and consumer behavior change at a rate faster than institutions can respond to those developments. Politics must agree to an adaptation of institutions, especially in regards to public service. In most cases, this is preceded by a lengthy opinion-forming process. In sectors with high investment costs (sunk costs), the stability leads to legal and investment security. From the policy perspective, the static costs are less relevant than the dynamic ones, since existing products or processes cannot be replaced by new, dynamic services due to requirements.

In the following, the different categories of regulatory governance costs and their characteristics are described in detail. The description starts with static-direct and -indirect costs before introducing dynamic costs.

5.3. Static Costs of Regulatory Governance I: Direct Costs

As mentioned above, regulatory interventions in markets are not free of cost. On one hand, the institutional regime has to be defined. On the other hand, the relevant authorities have to be set up and provided with the resources that enable them to monitor markets and 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 authorities vs. sector-specific regulator) as well as compliance requirements.

5.3.1. Monitoring Costs

Monitoring costs are those that arise from the supervision of various agents assigned with regulatory intervention. If the free market does not result in an economically or socially desirable outcome, the desirable result may be provided or at least stimulated by the state. A principal-agent problem occurs, if the state itself doesn’t provide the required service (e.g., through a state owned enterprise): First through the delegation of the surveillance to one or more specialized authorities and second through the relation of the regulator to the designated operator. In the first case, the political principals define the agents (the regulatory authorities) their constitution, their goals and competences; they also designate the agencies' head and finally monitor the activities of regulatory bodies. The original rationale of the transfer of regulatory tasks and the control of the regulatory process to regulatory authorities is based on the assumption that the transaction costs of a change in regulation (and in a sector) are much lower when decisions are made by specialized authorities than when they are implemented through statutory changes within political institutions. Posner (1974) argues that for instance the size of parliaments leads to circumstances where politics delegate recurring decisions and functions, which require a certain expertise, to specialized authorities and organizations. Thus, the statutory or regulatory guidelines are mostly designed in such a way that regulators have the power to choose among different regulatory measures or instruments to achieve the regulatory goals defined by their principals.[141] Even if the total transaction costs are lower, the delegation of the regulation from the political authorities to a specialized authority causes (from a principal-agent perspective) monitoring and information costs. In a dynamic regulatory context, regulators have their own interests: They behave discretely and strategically while trying to expand their powers vis-à-vis the other actors.[142] Regulators may well tend to act in their own interests and contrarily to the intentions with which they were originally established; their activities therefore must be monitored. Monitoring costs arise because the agents (regulatory authorities) do not pursue exactly the same objectives as their principals. Consequently, agents' actions must either be guided by (inefficient) incentive contracts or tightly monitored and controlled by their principals.

Another serious principal-agent type problem, which is related to monitoring and information costs, is the relationship between regulators and the regulated companies. In regulated network industries, principal-agent chains occur: The government or the ministry has to control the regulatory authorities, because they benefit from better expertise in the regulated industry and from superior information. Furthermore, regulatory authorities (both sector-specific and competition authorities) have significant information problems in the relationship

[141] See Knieps (2007, p. 185).

[142] Prior research highlights that regulatory agencies' objective functions are multidimensional, e.g., regulators tend to maximize their budgets, enlarge the number of employees or enhance career prospects and political reputations (Waetherby, 1971; Mueller, 2003).

with the companies and markets they monitor. There is a lack of knowledge about the technologies used and the pattern of demand in the markets they regulate.[143] The principals also hardly know the cost structure of operators, their internal incentive systems, as well as the contracts with other suppliers and customers.[144]

Monitoring costs may not always be clearly quantified, but may be related to personnel costs, consultancy fees, costs of administrative overhead and resource consumption. These costs are not static in the long run, but change because of external–often political–influences and, for example, if the objectives of the regulation change or whenever new regulatory tools or mechanisms get implemented.

5.3.2. Compliance Costs

Compliance costs are the costs of the industrial actors, which have (1) to comply with regulatory guidelines and (2) to provide information to regulatory authorities. They are borne by the operators and also related to principal-agent problems. Since in general the historical operator is more heavily regulated than its competitors (through asymmetric regulation) and designated to render a certain level of universal service, the historical operator is likely to bear the largest portion of the compliance costs.

Moreover, they have to be on good terms with the regulator. The costs are particularly high when regulatory guidelines change radically or get modified. Costs of compliance do not only arise in compliance departments or departments of regulatory affairs. In most cases, these costs are spread over all departments or business units. The drivers of these costs include costs like labor costs, costs of administrative overheads, legal expenses and consultancy fees as well as costs that occur in connection with the adjustment to new regulatory requirements.

Regarding monitoring and compliance costs, Coen (2005) states that there emerges something like a resource dependency between regulators and regulated firms. In order to obtain their mandate, the regulators try to gather detailed information on, and gain credibility in, the market they regulate. At the same time, the regulated business, wishing to understand the regulatory principles and processes, is likely to exert influence on the development of regulatory institutions and the regime.

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[143] See Armstrong and Sappington (2006, p. 330) about the control of regulators over monopolists and information asymmetries.

[144] See Estache and Martimort (1999).

5.3.3. Coordination Costs

We call costs that are related to coordination within the regime "coordination costs"; this third type of static-direct governance costs is based on the assumption that there is more than a single institutional actor involved in regulation. Apart from a sector-specific regulatory agency, ministries and competition regulators also play important roles in regulatory regimes. Böllhoff (2005) describes a political administrative context, where regulatory regimes even include more than these three institutions: besides the sector related ministries, departments like the treasury can be involved in regulatory processes. Administrative courts may also play a crucial role in decision-making processes. Furthermore, parliamentary actors and committees have an impact on regulatory regimes, since they try to influence the evolution of the regulatory environment in consideration of their political attitudes.

There is a strong need to coordinate the different institutional actors and their activities in order to avoid over-regulation and overlapping regulatory competences. In line with Bauer (2005), we suggest that the more dispersed the regulatory regime becomes (ministries, regulators, competition authorities), the more likely are administrative fights over power and competences. Furthermore, based on theories of bureaucratic politics and organizational behavior, we assume that the involved public authorities try to enhance, or at least to stabilize, their own role in the regulatory system.[145]

Stemming from the fact that different regulators and institutional actors, such as the sector-specific regulatory agency and the traditional competition regulator, are intervening into a sector, the different authorities need to be coordinated. If coordination is not optimal, there is the probability of many additional costs resulting from the duplication and inconsistencies of the activities. Another source of governance costs, which are related to coordination, are the various additional costs caused by court cases and different types of watchdogs. However, a proper definition of competences of different regulators as well as an adequate level of standardization may lead to a reduction of coordination costs.

We distinguish three different types of *static direct regulatory governance costs* that are summarized in Table 6:

[145] See Bauer (2005, p. 56).

- *Monitoring Costs:* arise because of informational asymmetries in the relationships of principals with their agents: Regulators have to gather and process information, which is costly.
- *Compliance Cost:* are the costs the industry faces in order to comply with regulatory requirements.
- *Coordination Costs:* result from multiple institutional actors involved in regulated industries, which have to be coordinated.

Table 6: Summary – Categories of Static-Direct Governance Costs

Static Costs of Regulatory Governance (I): Direct Costs			
Category	**Key Assumption**	**Drivers**	**Components/ Indicators**
Monitoring	*Agents/Actors do not implicitly share the objectives of their principals and need to be monitored*	- 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
Compliance	*Operators face costs when they comply with regulatory directives*	- Relationships (formal/informal) - Modalities of information exchange	- Labor costs related to compliance activities - Administrative overhead - Adjustment to regulatory changes - Consultancy fees
Coordination	*There is more than one single actor involved n regulatory processes and their activities have to be coordinated*	- Distribution of Power - Institutional design - Alignment of regulators - Regulatory processes - Interaction of sector specific regulation	- Number of institutional actors involved in regulatory processes - Degree of independence of the regulator - Accountability of regulators

Source: by author.

5.4. Static Costs of Regulation Governance II: Indirect Costs

The original model of perfect competition leads to many desirable results: only the most efficient suppliers survive and produce at the lowest possible prices; prices are optimal; welfare is at its maximum; and consumers cannot become better off without making all others worse off. The original rationale behind government intervention and the introduction of regulation in network industries was to correct market failures linked to persistent monopolistic bottlenecks.[146] The result of regulatory intervention (such as network access or price regulation) is ideally positive, so that an existing market failure is corrected. But when economic regulation is more costly than beneficial, it results in an overall welfare loss. Indirect costs of regulation rarely arise because of the institutional design of the regulatory system, but are nonetheless a consequence of the mode of regulation and the instruments implemented to achieve the regulatory objectives. The economic assumption was that without regulatory intervention, prices would be too high, restricting demand and creating excess profits; all these inefficiencies lead to high social costs and a loss of welfare. But it is possible that policy makers and/or regulators use wrong or imperfect models to guide their decisions, with a major impact on the investment incentives of firms, a misallocation of resources, and a decline in social welfare. These indirect negative effects of regulatory governance may result from a distorted static and dynamic allocation through improper pricing, technology choice and innovation incentives.[147] The characteristics of these issues are often a result of regulatory governance and regulatory decisions.

We call negative consequences for and effects of regulation on the market static-indirect costs. The overall assumption behind the indirect costs is that 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, consumer choice, the level of innovation, or may even discourage firms from entering into markets.

[146] See section 2.1.

[147] See Viscusi et al. (2005).

5.4.1. Market and Prices

Crew and Kleindorfer (2006) argue that price regulation does not necessarily result in economically optimal prices in monopolies. The optimal (Ramsey) access price, for example, considers not only the marginal costs but also the price elasticity of demand and the substitutability between the full service and partial access to sub-processes. The determination of Ramsey charges often fails in practice due to its sophisticated econometric calculation and the analysis of costs.[148] Whenever regulators try to determine the efficient Ramsey price, they face considerable information asymmetries because they have to know price elasticities as well as the marginal costs of the operators. This information may be inaccurate or simply not available. Crew and Kleindorfer (2006) conclude that expectations from Ramsey price regulation and the incentive regulation intended to motivate operators toward more efficient pricing and production are limited due to the predominant information asymmetries,. These instruments are not likely to result in efficient pricing. According to Knieps (2005), regulators should not oblige operators to apply rigid pricing structures since doing so would constrain the entrepreneurial initiative for innovative pricing. Furthermore, it is possible that more favorable pricing rules and tariff systems can be found in the future. The development of innovative pricing schemes should be open to all competitors (incumbents and new entrants) and not be hindered by inadequate authorization procedures of regulatory authorities. If some pricing systems can be offered exclusively by entrants, this will constitute a structural handicap for competition and discrimination for other operators. Moreover, the pricing structure of a functioning market has an important signaling effect on new competitors: If prices are reduced excessively through price regulation, it may prevent potential competitors from market entrance.

Other factors associated with the development of a market are structural or institutional entry restrictions. A general attribute of network industries is that governments (or regulators) grant licenses and concessions. The aim of the licensing system is (1) to oblige the operators to render a certain level of public services or (2) conversely to limit the scope of the provided service. But who defines based on which information what the optimal and efficient number

[148] See Elsenbast (1999, p. 59).

of operators in the market is? Depending on the criteria applied, there are different effects on competition.[149]

Another restriction with effects on the market may be the setting of minimum wages. The setting of minimum wages in the German postal sector shows that potential competitors have not entered the German market.[150] This measure and the exemption of Deutsche Post DHL from VAT have been criticized by many competitors (especially TNT) as market access barriers: Noting that market deregulation in Germany remains incomplete, the Dutch government has already postponed complete liberalization twice. The example of Germany shows that no new competitors have entered the market and that the opening of a foreign postal market has been delayed.

Other negative consequences of regulatory intervention (and thus constituting cost of regulation) may occur by weighing market power and competition distortion against efficiencies in the market. Thus, potentially anti-competitive mergers, agreements or business practices could also have positive effects on the market. While a merger leads to a higher concentration of firms in a market, it might also lower costs through economies of scale. Exclusive supply or purchase contracts may result in more efficient sales and improved information exchange, but also protect operators from (desired) competition.[151] This does not imply that competition regulation in general, and merger control in particular, has only negative effects on markets.

5.4.2. Capacity and Technology Choice

An excessive regulation with rigid social, regional or even environmental objectives might prevent the regulated operators from aligning their supply with the effective demand and consumer needs. This may adversely affect investment activities: regulation should provide innovation and investment incentives in a manner that allows the companies to exploit their investments. 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 in the sector. In turn, the market may not develop to the desired extent.

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[149] In 2000, the Swiss government tendered for example four UMTS licenses in the telecom market. Even if rational considerations led to the perception that the number of licenses is four, this does not necessarily imply that four players are the optimal number of competitors. See Vantomme and Fratini (2008) about licensing systems in the postal sector.

[150] See Ecorys (2008a).

[151] See Oxera (2004, p. 15).

An illustrative example for this kind of phenomenon is access regulation to monopolistic bottlenecks. Access regulation leads to a situation where access prices are under constant pressure by the customer. Thus, access customers are interested in low prices that cut their costs and enable them to offer their services below the incumbent's price level. However, the owner of the monopolistic bottleneck has been traditionally motivated to negotiate access prices in order to maximize profits. The incentives for innovation are therefore negatively influenced by the fact that on one hand the facilities' owner is not interested in developing his facilities and pass efficiency gains to rivals at a low price. On the other hand, other operators or new entrants have little incentive to invest in their own infrastructure and potential substitutes. The problem worsens when regulators set access prices ex ante and on a low level. Depending on the characteristics of the industry, it might happen that the more efficient market situation results from no regulation rather than from excessively tight regulatory rules.

Knieps (2005) and Sidak and Spulber (1998) argue that potential new competitors have no incentive to enter a market with new technology if they can buy the necessary capacity at the same (or even better) conditions from the incumbent and fulfill parts of the services by means of the existing infrastructure. This is increasingly the case when entrants have reason to fear that the new technology has been substituted by more efficient solutions and therefore devaluated in a short time period. Furthermore, the incumbent operators lack incentives to invest in the network infrastructure because they can hardly expect to recover their capital expenditures. A crucial question related to investments is: Who bears the risks? There are not only technological and systemic risks[152], but also risks and uncertainties in relation to regulation and the socio-political goals of universal service. Investment activities and thus the development of an efficient market are seriously constrained if these risks are unilaterally borne by the incumbent operators.

Thus, static-indirect regulatory governance costs are the costs related to:

- Quantities and Prices: Actions of regulators (or policy makers) can have negative effects on the regulated industries and the consumers
- Capacity and Technology Choice: Regulation may prevent the regulated operators from aligning their supply with the effective demand.

[152] Systemic risk refers to the risks imposed by interdependencies in a system or market, where the failure of a single unit or network of entities can cause a cascading failure.

Table 7: Summary – Categories of Static-Indirect Governance Costs

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

Source: by author.

5.5. Dynamic Costs of Regulation

In addition to the correction of market failure and the protection of a minimum level of public service, 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 Commission 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" (2).[153] An OECD report in 1999 on promoting competition in postal services 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" (60).[154]

Regulatory mechanisms do not work adequately in other markets or industries without any adjustment. Therefore, 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

[153] See European Commission (2005).
[154] See OECD (1999).

geographical market. Knieps (2005) argues that many monopolistic bottleneck areas in dynamic sectors gradually disappear owing to rapid technological progress. Due to the emergence of intermodal competition, it is actually possible for the original need for regulatory intervention to disappear. The regulatory interventions (especially their necessity) should be reviewed regularly. In this context, two categories of possible regulatory failures exist: a “false positive” occurs when regulators intervene in the market while competition is functioning and there is no need for intervention; a “false negative” occurs when 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 arise because of a lack of regulatory dynamics.[155] If regulated operators link the design of their business model too closely to regulatory rules, prices 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. By the time the characteristics of the monopolistic bottlenecks and network-specific market powers disappear within parts (or the entirety) of the network (e.g., due to technological progress), regulatory intervention may be obsolete.[156] 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“ (360). The process of so-called “phasing out”[157] of sector-specific regulation may be delayed by regulator’s self-interested behavior and his interest in on-going regulation.[158] It is fairly obvious that regulators are rarely interested in reducing their influence and cutting their own competences. Regulators have some bureaucratic self-interest and tend to act in their own interests and contrary to the intentions with which they were originally established.[159] Bonardi et al. (2006) argue that agency decisions can have

[155] See Knieps (2007).

[156] See Knieps (2007, p. 191).

[157] “Phasing Out”: The period of time when the rationale for regulatory intervention is no longer tenable and the sector-specific regulation is likely to be abolished.

[158] See Knieps (1997).

[159] 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).

important consequences for stakeholders (especially firms) and that agencies behave differently from elected political institutions. Since regulators are generally appointed rather than elected, they do not face the election constraints that typically motivate elected politicians' behavior. Mueller (2003) and Wheaterby (1971) emphasize that regulatory agencies' objective functions are multidimensional: regulators tend to maximize their budgets, enlarge the number of employees or enhance career prospects and political reputations. Wilks and Bartle (2002) argue that the agencies were not expected to be extremely active in developing and implementing policies. However, the regulatory agencies have become more active than expected and have contributed to policies in the process.

Another aspect of dynamic costs 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 universal service. 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" (16). Investment activities and thus the development of an efficient market are seriously constrained if these risks are unilaterally borne by some operators or even solely by the incumbent operators.[160]

The extent of regulatory risk is strongly related to the modality regulators apply to the operators: Inconsistent decisions, new control mechanisms and the application of new regulations may result in or lead to an increase in regulatory risk. Previous work on the issue with regard to the UK highlights that inconsistencies in the actions of regulators at price reviews may result in an increase of cost of capital.[161] Furthermore, regulatory risks may occur on different levels of regulatory activities. Knieps and Weiss (2008) for example state that as long as the competence to specify the areas and the instruments of sector-specific regulation is delegated to regulators, a clear and economically-founded regulatory basis will not be applied. Following their example, the market power regulation might be either oversized or undersized or even leave areas of network specific market unregulated. Another example that they examine demonstrates that the application of price-cap regulation in a competitive section of markets may reduce economic risks but should be rejected because functioning market signals get disturbed. The important questions regarding the dynamic costs of regulation are whether adequate regulatory models and methods are implemented, if

[160] This is also highly related to the section on investment and technology.
[161] See Oxera (2004) and Bishop et al. (1995).

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.

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.[162] 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.[163] The dynamic costs of regulatory governance result from distorted innovation and infrastructure investment incentives. The dynamic costs arise as a consequence of direct and indirect costs of regulatory governance. They result in an inefficient level of product and process innovation.

To summarize: Dynamic costs of regulatory governance are the costs and effects related to the development of suppliers' innovation (dynamic costs). Therefore, dynamic costs have a direct impact on the degree of innovation at the level of products and processes.

- *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.
- *Process Innovation*: Regulation may result in suboptimal processes and keep operators from optimizing existing processes or introducing process innovations.

[162] See Friederiszick et al. (2008).

[163] See Armstrong and Sappington (2006) for a detailed examination of the role of innovation in regulated industries in general and Dietl et al. (2008) about innovation incentives for postal operators in general.

Table 8: Summary – Categories of Dynamic Governance Costs

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

Source: by author.

5.6. Conclusion

By defining regulatory governance costs, we aim to establish a method of comparing regulatory institutions in different regimes. We have therefore developed three different types of regulatory governance costs: static-direct, static- indirect and the dynamic costs. Direct costs of regulatory governance refer to the interaction between the involved actors, and only marginally concern the overall markets. The indirect costs act less on the individual actors than the overall market. The dynamic costs, on the other hand, influence the future situation of product and process innovation. The concept will be tested on the basis of the case studies in chapter 6 and then applied in the analysis in chapter 7.

The following table summarizes the estimated effects of institutional dimensions of regulation on direct and indirect costs and subsequently dynamic costs (distorted product and process innovation). The assumptions in this section form the basis for the analysis of regulatory governance costs in the postal sector.

Table 9: Institutional Dimensions and Regulatory Governance Costs

Institutional Dimensions & Cost Drivers	**Regulatory Governance Costs**			
	Static Cost		***Dynamic Cost***	
	Direct Cost	*Indirect Cost*	*Product Innovation*	*Process Innovation*
Number of Regulatory Actors	Unclear responsibilities, necessary coordination	Might prevent Suppliers from entrance	Uncertainty reduces innovation payoff	Uncertainty reduces innovation payoff
Modalities and Subject of Information Exchange	Information exchange and processing	Might prevent Suppliers from entrance	Delayed introduction of innovative services	Delayed introduction of process innovations
Interaction of Sector-Specific Regulation and Competition Law	Concurrent jurisdiction may lead to ambiguous responsibilities	Might prevent Suppliers from entrance	Uncertainty reduces payoff	Uncertainty reduces payoff
Regulatory Processes	Approval process and control leads to costs in information exchange		Approval process delays introduction of innovative services	
Stability of Institutions (Organizational Perspective)	Reduction of direct costs	Certainty about investment payoff and cost	Certainty about innovation payoff and cost	Certainty about innovation payoff and cost
Scope of Universal Service Obligation	Rigid requirements need strong control		Existing products cannot be abandoned	Existing processes cannot be replaced
Degree of Liberalization	Higher 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
Financing of the USO	Implementation and execution of compensation mechanisms	Might prevent suppliers from entrance	Possibly reduced innovation payoff	Cost reduction programs
US Price Regulation		Inefficient pricing	New product may not be attractive for firm / consumers	Lower cost has to be passed on to consumers

Institutional Dimensions & Cost Drivers	**Regulatory Governance Costs**			
	Static Cost		***Dynamic Cost***	
	Direct Cost	*Indirect Cost*	*Product Innovation*	*Process Innovation*
Access Regime	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
Stability of Institutions (Policy Perspective)		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
Norms and Standardization Requirements	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
Labor Conditions	Negotiations with unions and control of labor conditions			Innovation may result in capital replacing labor; innovation is itself capital intensive

Source: by author.

6. EMPIRICAL PART: CASES IN THE POSTAL SECTOR

In this chapter, the three cases in the postal sector are constructed. It begins with the descriptive case on the Swiss postal sector, before the German postal sector is examined. The chapter ends with the description of the postal sector in the UK. The analysis of the cases is then provided in chapter 7.

6.1. Case Switzerland

In this section, the Swiss postal sector is described in detail. The case study starts with a brief overview on the historical development of postal matters in Switzerland, before the major regulatory obligations are described. The major regulatory obligations are the Universal service obligation and its financing mechanisms, the licensing system, price controls, and the access regime. This is followed by a paragraph on the institutional design as well as by a short section about the process of market opening and the development of competition. Moreover, on overview on recent developments and an outlook is provided. The case ends with a brief summary. The other cases on Germany and the UK follow the same structure.

6.1.1. History

At the beginning of the 19th century, the postal system of Switzerland was a private concern. In Zurich and St. Gallen, there were "merchant's posts"; in Bern, the Fischer family operated the 'Fischer'sche' post. In fact, the young entrepreneur Beat Fischer established the first postal network in Bern during the second half of the 17th century. He originally envisioned taking over the entire Swiss postal network and, based on Switzerland's geographical position, to establish a connection from North to South across the entire continent. He therefore concluded contracts with the Republics of Wallis, Geneva and the Principality of Neuenburg at an early stage. He also negotiates on cooperation with competitors in other states such as Zurich and St. Gallen.[164] After having been conquered by French troops in 1798, Switzerland became a republic divided into 19 cantons. A first law was adopted, requiring the government to create a central administration for the postal system. Switzerland was then divided into five postal districts.[165] However, the Bernese Post, as well as influential merchants from Zurich, opposed the centralization of the postal system and demanded high financial compensation. Due to the strong opposition, the centralization was postponed and in

[164] See Finger (2004).
[165] See Wyss (1988).

1803 the central administration dissolved again, leaving the cantons once again responsible for postal services. Subsequently, as cooperation between cantons proved difficult,[166] postal services within the Swiss Confederation became more and more chaotic.[167]

After 1830, the cantons nationalized the different private posts. In 1843, the Zurich Post issued the first Swiss postage stamps. Previously only England had introduced postage stamps. There, the legendary 'One Penny Black' was first issued in 1840. In 1847, the Swiss postal system consists of 17 different cantonal postal administrations. At that time, the Canton of Schaffhausen was part of the German postal territory, served by the German postal dynasty Thurn and Taxis. Upon the foundation of the Swiss Confederation in 1848, all cantonal postal administrations were unified.[168] Article 33 of the Federal Constitution established the federal prerogative for the organization of the Swiss postal system: 11 postal districts were created, and the Swiss Post was born on 1 January 1849.[169] It assumed the central administration of passenger transports, as well as the delivery of mail and cash remittances. In 1849, the first two federal postal laws were passed: the law on postal regale and another on postal organization. For the first time, uniform postal tariffs were applied to the entire postal territory. Prices were kept distinctly low and uniform across the country. In 1852, the telegraph was introduced in Switzerland and with the Federal Constitution of 1874, the responsibilities for the operation of telephone services were assigned to the General Postal Directorate.[170]

Between 1859 and 1910, the volumes of delivered mail increased by a factor of twenty and again by a factor of three leading up to 1950. This mail included letters, newspapers, catalogues, postcards, trade-samples, non-registered packages up to one kilo, postal check correspondence, collection documents and consignments of valuables.[171]

In 1862, the post introduced money orders, which enabled individuals and companies to send money within the country and partially abroad. The early influence that money orders had on the mail demonstrated the interconnectedness of financial and postal services in Switzerland.

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[166] At that time there are more than 300 different currencies in Switzerland and more than 400 road and bridge tolls are levied. See Finger (2004).

[167] See Wyss (1988, p. 204).

[168] See Knobel (2011).

[169] See Wyss (1988, p. 201).

[170] See Wyss (1988, p. 214).

[171] See Knobel (2011).

The law on the postal check and giro service was established in 1906. Based on this law, Swiss Post has had to provide basic services in payment transactions through the present day.[172]

As early as 1849, there were around 1500 post offices in Switzerland, and the federal state considerably expands the network beginning in 1850. By 1914, a record number of 4049 post offices have been established. Even today, Swiss Post still operates around 2300 access points as a mix of independently-operated post offices and partner agencies, making the Swiss network of post offices one of the densest worldwide.[173]

After the European Commission presented the Green Paper of postal enterprises in 1992, in which it distinguished between universal service and competitive service, Switzerland, too, began to discuss the organization of the postal enterprise and the service public. Already at an early stage, representatives from the business world advocated a privatization of the post, admitting at once that such an option would not be politically enforceable. An expert’s report recommended that Switzerland also distinguish between basic and competitive services. The postal universal services are part of the Swiss “service public” and define what services the post has to provide for citizens. These services were divided into reserved monopoly services and non-reserved services: the non-reserved services were also open to private postal operators, but the post was under obligation to provide it. Today about two-dozen enterprises are mainly active in the package business.[174]

At the end of the 20th century, technical developments in communication, the simultaneous worldwide liberalization fostered by the WTO, and the emergence of a single European market called for structural changes within the Swiss postal and telecommunications network. In a total revision, the laws are adapted to the new conditions. In 1997, a new postal services act was presented in Switzerland. Subsequently, the two units in charge of the postal, telephone and telegraph services, the postal business, and the telecommunication services were separated into two different enterprises. As a result, the telecommunication sector was given the status of a limited company in 1998, the same year that Swisscom went public. The postal system was newly-regulated in both a technical ordinance (Postal Services Act) and an organizational ordinance (Postal Organization Act of 30 April 1997).

[172]See Wyss (1988, p. 281).
[173] See Knobel (2011).
[174] See Knobel (2011).

Through this restructuring process, Swiss Post developed from an organizational federal unit to a federal enterprise and finally to an independent enterprise. In 2002, the Federal Council, in a national overview, took stock of the 1998 postal reform, which was basically seen as a success. In this overall view, the Federal Council planned to open up the market in two steps:

- first, the package market was to be fully opened by 2004,
- second, the same was to be done for the letter market in 2006, with the exception of addressed letters of up to 100 g.

For definitive decisions regarding market opening, the Federal Council reserved the right to commission an evaluation of market opening steps taken so far before he further opens the postal market for letters. A further market opening also called for regulatory adjustments. Switzerland had previously known no sector-specific regulatory authority for the postal market. With an amendatory ordinance to the postal services act, the Federal Council created the postal regulatory authority, PostReg.[175]

In 2004, the service contract of the post was supplemented with an infrastructure contract in Article 2 of the postal services act. Since then, the post has been obligated to operate a countrywide network of post offices, ensuring that universal services are available in all regions to all segments of the population and at reasonable prices.

Prior to a gradual opening of the market for letters 100g or less, an evaluation report on the already realized effects of the market opening had been commissioned. In this report, published in 2005, WIK Consulting concluded that lowering the monopoly for addressed letters to 100g does not jeopardize the universal services and their funding.[176] Following this recommendation, the Federal Council opened the market to letters of up to 100g as of 1 April 2006.

In 2009, the Federal Council revised the Postal Services Ordinance again. In it, the Federal Council reduced the postal monopoly for letters from 100 grams to 50 grams, effective as of 1 July 2009. As an accompanying measure, the Federal Council strengthened the postal regulatory authority. The Federal Council proposed to parliament to open the market fully on occasion of the total revision of the postal laws.[177]

[175] See Swiss Federal Council (2009).
[176] See WIK (2005).
[177] See Detec (2009).

In the course of this revision in the years 2010-2013, Swiss Post is to be converted into a limited company under special law. At the same time, the sector for financial services, PostFinance as limited company under private law, is to be hived off and placed under the control of the Swiss Financial Market Supervisory Authority. As a state-owned enterprise, Swiss Post has always been subject to political influence.

Today, the incumbent operator Swiss Post is an autonomous public corporation, owned entirely by the Swiss Confederation. Its transformation into a limited company under special law is decided within the revision of the Swiss postal legislation. Swiss Post operates within the institutional limits laid down by the federal legislation. The government not only determines the scope of postal products, services and prices of universal services, but also defines the strategic objectives of Swiss Post every four years.[178]

6.1.2. Major Regulatory Obligations

After having set forth the historical development of the postal market and the relevant institutions, we will now present the main regulatory obligations in the Swiss postal market. [179] Since Switzerland is not a member of the EU, it is not obliged to implement the directives of the European Commission. However, it often does consider a similar timing, following the European philosophy of liberalization. The current law reform is to ensure universal service as well as to promote competition. The parcel market has been fully liberalized in 2004. An intermediate step of market opening was the reduction of the reserved area down to 50g from July 2009 onwards.[180] Depending on the further course of the law's revision, the full liberalization of the Swiss postal market is not to be expected before the end of 2014.

Universal Service Obligations and Financing Mechanisms

According to the Postal Services Act, Swiss Post is under the obligation to provide basic postal services. The incumbent has to meet various requirements regarding universal services, which include postal services, payment transactions, and public transport. At the same time, Swiss Post is required to consider regional interests.

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[178] See IPC (2011) and the Federal Act on Swiss Post's organization.

[179] The statements refer to current provisions. Planned updates during the revision of the laws will be treated later on in this chapter.

[180] From July 2009, the reserved area contains addressed domestic and inbound letters up to a weight of 50g. Non-reserved universal services are addressed letters (domestic and inbound) heavier than 50g, parcels up to 20 kg and all outbound letters. See Swiss Federal Council (2009).

Postal Services: Paragraph two of the Postal Services Act of 1997 regulates the requirements to be met by the postal universal service. As introduced above, the Postal Services Law divides the universal service into a reserved sector, in which only the post may be active (monopoly for addressed domestic letters and letters of up to 50 g received from abroad) and into a non-reserved sector. The latter includes addressed domestic letters and letters received from abroad over 50 g, letters sent abroad, subscription newspapers and journals with regular delivery and packages up to 20 kg. The post must offer services in the non-reserved sector, though there it faces competition from private operators.

Delivery of items is required on every workday and at a minimum of five times per week. The Postal Ordinance requires the universal service provider (USP) to deliver mail and parcels at least five days per week; subscription or press items, such as newspapers and magazines are delivered six days per week. Additionally, Swiss Post decided to deliver priority mail six days per week as well, with collection being required every workday, at least five times per week. Delivery must be made to all residential households occupied all year-round.[181]

Payment Services: In Switzerland, financial services are part of the universal services. Payments-in, payments-out and money transfers are considered universal services within payment transactions. They have to be provided by the network of post offices.

Infrastructure: The prerequisite for the basic services is an area-wide network of post offices. The post must ensure that the universal services are available in all regions, to all groups of the population, and at a reasonable distance. Consequently, Swiss Post is required to operate a nationwide post office network. As a rule, on average at least 90 percent of the population must be able to reach a post office within twenty minutes by foot or public transport. When measuring such availability, postal agencies were placed on the same level as post offices, though there are no legal requirements regarding the relationship between post offices and agencies. Furthermore, the new postal act requires at least one letterbox per locality.[182]

Public Transport: As a further task outside the postal legislation, the post has to ensure regular passenger road transport. This is provided by Swiss Post’s public transportation unit

[181] See Postal Act (1997a).
[182] See Swiss Federal Council (2004).

PostBus. For this, the unit PostBus receives compensations within the legislation on public transport.[183]

Table 10: Universal Service Obligations in Switzerland

Legal Statute	*Products*	*Delivery of Items*	*Postal Network*
The Postal Act of 1997 and the Revised federal ordinance of 2004	- The conveyance of addressed letters and - Addressed parcels up to 20 kg - Newspapers and magazines; - Outbound international letters - Financial transactions. - Reserved Area: Standard letters and direct Mail up to 50g and priority tariff x 3	- Conveyance every working day, at least five times a week (six times for newspapers and priority mail) - Delivery to all residential areas occupied all year-round	- A nationwide physical post office network according to the needs of the population and the economy - At least 90 % of the population must be able to reach a post office within twenty minutes by foot or on public transport on average

Source: IPC (2011).

The current Postal Act foresees a multistage model for funding the universal service:

1. Earnings from the monopoly – the reserved sector of the universal services up to 50g
2. Earnings from non-reserved services
3. Earnings from competitive services
4. Levying of license fees on the turnovers of private operators in the non-reserved sector, if below-cost selling in the universal service can be proven

Today, the basic services in Switzerland are funded exclusively by the monopoly earnings.[184]

Licensing System

Paragraph 3 of the Postal Act and Paragraph 7 of the Postal Ordinance regulate concession agreements in the Swiss postal market. The Swiss Post needs no concession, because it is under the direct obligation from the Postal Act to provide the basic services in the reserved

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[183] The obligation of providing a universal service in public transport is mentioned for the sake of completeness. In the following discussions we exclude the public transport obligation and the 'universal service' includes postal and payment services only. See DETEC (2009).

[184] See Swiss Federal Council (2009).

and non-reserved sector.[185] If private operators regularly and commercially forward items within the universal service and, in doing so, achieve a turnover liable to VAT of at least CHF 100 000, they need a concession. Competitive services −express deliveries in particular− do not require a concession. If the companies do not attain the turnover of CHF 100 000 they are subject to a simple obligation to report. In order to obtain a concession, enterprises must substantiate the logistic and financial means, comply with the applicable laws and concessional terms as well as guarantee labor conditions customary in trade for their own employees and those of their subcontractors.

Thus, the licensing obligation serves as an instrument for the surveillance of the providers of postal services particularly to control the compliance with statutory provisions and minimum standards required by employment law. As mentioned above, in case of proven below-cost selling of basic services, fees as a contribution to funding of basic services may be levied from the concessionaires.

Price Controls
Sectoral price regulation in Switzerland is limited to monopoly services. Basically, Swiss Post can fix the prices for services according to economic principles. For services within the reserved sector, they must obtain authorization from the competent ministry, the Federal Department of Environment, Transport, Energy and Communications. The prices have to be (1) independent of the delivery distance, (2) cost-covering and (3) defined according to the same principles. In addition, the ministry fixes the reduced prices for the daily delivery of newspapers.[186]

Every year, the post must prove that the products provided under competition are not cross-subsidized by universal services. This proof must also be furnished to the regulator, when and if they suspect cross-subsidization in individual cases.

Access Regime
Existing legislation does not regulate access to the postal infrastructure. Hence, there are no requirements regarding access to the incumbent's infrastructure for alternative operators. Competitors negotiate access conditions on an individual, commercial basis. For instance,

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[185] See PostReg (2011).

[186] The delivery of newspapers in ordinary daily delivery is subsidized by the government with 30 million Swiss Francs per year. Early delivery of Newspapers is not subsidized by federal press aid.

already today the post grants DHL access to its post-office boxes at negotiated conditions.[187] However, the new postal act foresees that technical[188] access to receiver's address information and post-office boxes will eventually be regulated.

6.1.3. Institutional Setting and Actors

The Postal Act and the Postal Organization Act regulate the rights and duties of the Swiss Post and the relationship to its owner. In the 2003 Postal Ordinance, the Federal Council defined the specification of important Directives of the Postal Act and an extension of the regulatory frame.[189] Two authorities provide postal compliance with its basic service obligations: the Post Regulator PostReg and the Commission Post Offices. The Federal Council constituted the Post Regulator (PostReg) and the Commission Post Offices, effective 1 January 2004, in order to assume the regulatory tasks of the postal market. Prior to this, there was no sector-specific regulatory authority for the postal market in Switzerland. PostReg now regularly examines the quality of universal services and treats complaints from citizens regarding basic services. In controversial cases of post offices being closed down, the Commission Post Offices investigates if the criteria of postal legislation are complied with.

Other actors are the Competition Commission (ComCom) and the price supervisor, which are both functionally independent but organizationally accountable to the government. Since the State is the formal owner of the incumbent postal operator Swiss Post, the Federal Council is involved in the financial control of the incumbent and responsible for the appropriation of its profits. The ministry responsible for the postal sector is the Federal Department for Environment, Transport, Energy and Communication (DETEC).[190]

- The sector-specific regulator (PostReg) is functionally independent but organizationally attached to the DETEC.[191] The further opening of the package and letter market called for regulatory adjustments, which the Federal Council implemented in 2003 with a new Postal Ordinance, creating the Post Regulatory

[187] See Swiss Post (2009).

[188] See Chapter 2.

[189] See WIK (2005).

[190] Other at least partially involved, ministries are the Department of Finance (FDF) in its function as part owner of the incumbent and the Department of Economic Affairs (FDEA), which is the governmental principal of the competition commission and the price supervisor.

[191] The European Postal Directive requests a complete separation between the regulators and the regulated company.

Authority (PostReg). The authority monitors the Swiss postal market and ensures the provision of high-quality and affordable universal services. It deals with complaints from the public about universal services and ensures a fair and functioning competition in the postal market (by controlling, for instance, the operators' compliance with sector-specific labor conditions or the prohibition of cross-subsidization). In addition, the authority provides policy advice to the DETEC. The Department is simultaneously responsible for the Swiss Confederation's owner interests and for the sector-specific regulator PostReg.[192]

- The ComCom, a group of twelve experts from different disciplines, manages competition regulation in the classical sense (ex-post regulatory intervention in anti-trust and abuse of dominant position matters). The commission's main tasks are the elimination of harmful cartels, monitoring dominant or monopolistic companies for signs of anti-competitive behavior, enforcing merger control legislation and preventing the imposition of restraints of competition by the state.
- As mentioned above, Switzerland established the function of the so-called price supervisor (Mr. Price), who has the authority to sanction prices in the public sector and among firms with significant market power in an ex-ante manner.

In the course of the total revision of postal legislation, the regulatory authority will be reorganized by mid-2012. According to this reorganization, the PostCom commission will be introduced, similar to those already established in the infrastructural sectors energy and telecommunications (Elcom and ComCom).[193] PostCom will assume the tasks of the present Commission Post Offices and the PostReg. Moreover, the commission is given an office used to prepare the commission's business operations. The PostCom is no longer responsible for monitoring the basic payment services. This task is transferred to an office in the DETEC and in the future will be assumed by the Federal Office of Communications (BAKOM). The (BAKOM) will also take over the policy-advice functions for the DETEC. In addition, an

[192] See WIK (2005, p. 11). But some substantial regulatory responsibilities concerning price regulation outside the reserved area are subject to the price supervisor, which acts in complete independence from the DETEC and the Federal Council.

[193] E.g., Elcom (2012) or Comcom (2012).

arbitration board will be installed. In the future, the arbitration board can be consulted in case of disputes between operators and consumers.[194]

6.1.4. Market Opening and Development of the Postal Market

The gradual opening of the postal market since 1998 has brought about changes in Switzerland's market situation. Various private operators succeeded in conquering market shares in individual sub-segments (courier and express services, package market). Especially in the courier and express market, opened in 1998, competition has established itself. In the package market, fully opened in 2004, growing competition can also be observed. Here, the market share of private operators amounted to 19 percent in 2010, having only slightly increased since the opening of the package market. The share of concessionaires in the market for packages sent abroad has a volume of more than 75 percent. Deutsche Post Global Mail (Switzerland) AG and DPD (Switzerland) Ltd cover the major part of this share.[195]

The letter market shows the weakest development of competition, primarily because it was opened up to a monopoly limit of 100g only in 2006. This opening made only about 12 percent of the entire letter volume accessible to competitors In the first year after the monopoly was lowered, the post still held 99 percent of the market shares. Data provided by Swiss Post shows that since the monopoly was lowered in 2009, about 24 percent (29 percent with respect to turnover) of all domestically-addressed letters were are open to competition in 2010.

Although more concessionaires have been active in the Swiss letter market since the reduction of the monopoly, the development of competition has been slow. According to data provided by Swiss Post and the concessionaires for the business year 2010, the entire volume of the letter market in the basic services sector amounts to 2.65 (2009: 2.7918) billion items, with a turnover of CHF 2.25 (2009: 2.32) billion. Just less than 8 percent of the entire quantity of letters are those sent abroad; 6 percent are those coming from abroad.

By far the biggest sub-segment of basic postal services −with respect to volumes of items and turnover− is the market for domestically-addressed letters. According to information provided by Swiss Post and the concessionaires, the volume in 2010 amounts to 2.37 items, with a

[194] See Swiss Federal Council (2009). The new Postal Act will be treated later in this chapter in the paragraph on current developments.

[195] See PostReg (2010).

turnover of CHF 1.86 billion.[196] Based on the remaining monopoly, the end-to-end competition has hardly developed.[197] Nevertheless, a first competitor named Quickmail entered the letter market, targeting addressed mail heavier than 50g, catalogues and customer magazines. Quickmail operates a business model with focus on business customers: customers hand in their mail items on Mondays and Tuesdays, the volumes are sorted in a single sorting centre in Eastern Switzerland on Tuesdays and Wednesdays. The delivery is carried out on Thursdays and Fridays. In January 2010, Quickmail covered 6.3 percent of Swiss households. Quickmail planned to expand its network to 30 percent of households by the end of 2010 and to 85 percent by the end of 2011. In the early entrance phases, Quickmail centralized its operations and delivered in three cantons only.[198]

6.1.5. Recent Developments and Outlook

The most important development, without doubt, was the new postal legislation with the new Postal Act and the new Postal Organization Act. According to the new Postal Organization Act, the post is to will be converted into a limited company. By doing this, Switzerland follows the European trend toward corporatization. In its dispatch on the Postal Organization, the Federal Council writes: with a new Postal Organization Act, the Swiss Post is to obtain the legal basis required to meet the manifold challenges of the future.[199] The Postal Organization Act also anticipated separating the postal financial service provider PostFinance and converting it into a limited company. At the same time, it is put under the control of the regular Swiss Financial Market Supervisory Authority, Finma. The Postal Act regulates (1) the new market organization, (2) the universal services, and defines (3) the organization and interaction of authorities.

Market Organization:

The new Postal Act regulates access to post-office boxes and address information. In the future, the conditions of the Act are to be negotiated between competitors on a commercial basis. The future postal regulation authority PostCom will be able to terminate contract negotiations, if the parties cannot reach an agreement. Furthermore, the new organization foresees no regulated partial service access to the further postal infrastructure and leaves it to

[196] See PostReg (2010).
[197] See WIK (2010, p. 9).
[198] See Maegli (2010).
[199] See Swiss Federal Council (2009).

the operators to negotiate this point. This corresponds to the European Postal Directive. In addition, the Act regulates the reporting system and the operators' duty to supply information to the regulator. With respect to labor conditions, all postal service providers are under the obligation to conduct negotiations on a collective labor agreement with personnel associations.

Universal Service

In a paragraph on universal services, the Act regulates the requirements concerning the area-wide network of access points, delivery and the promotion of press. Regarding the accessibility of post offices and agencies, the 90/20-rule will probably remain in place. The act also contains a paragraph on countrywide basic financial services, which have to be provided by the Swiss Post. The new act does not propose a different financing mechanism for the universal service as residual monopoly to 50g, as alternative financing models were eliminated during parliamentary discussions. The funds solution, planned at first, was dropped after the total market opening was postponed. It is foreseeable conceivable that due to decreasing letter quantities, the letter monopoly in the long term will not suffice to fund the universal service and alternatives will have to be sought. This implies financing risks not only for the incumbent but also for the competitors. If an enterprise wants to enter the postal market today, it does not know in which form it will have to contribute to the funding of basic services. Hence, there are uncertainties about the time after the abolition of the residual monopoly.

Organization of Authorities

The Postal Act creates the new regulatory authority PostCom with a technical secretariat. In the new postal legislation, its tasks are specified and in particular it is determined what duties to provide PostCom with information the post and the private providers of postal services have. PostCom must procure information in order to perform its core tasks:

- monitoring the quality of basic services
- observing the development of the postal market with the purpose of ensuring the provision of the country with postal services.

In addition, PostCom is to install an arbitration board for customers and postal enterprises. Administratively, PostCom is attached to the General Secretariat DETEC. While the future PostCom will be given new tasks within the new legislation, it no longer has to accomplish today's tasks in the area policy and international affairs. In the future, these tasks will be managed by the Specialized Unit Post in BAKOM, which will also be responsible for press promotion duties. With BAKOM, the specialized Unit for postal services, a new actor is created, which, in addition to policy tasks (such as the further development of general regulatory conditions), assumes roles associated with the control of basic postal and payment services. BAKOM is also expected to coordinate the participation and distribution of roles in international bodies (e.g., UPU) and, in particular, to assume press promotion tasks which in the past were the responsibility of the post.[200] Organizationally, the specialized unit is attached to BAKOM. This institutional separation ensures that regulatory tasks (PostCom), policy tasks (BAKOM) and owner function (General Secretariat DETEC) are managed by different organizations.[201]

On one hand, the future legislation will separate owner function, policy function and monitoring. On the other, thanks to the new specialized unit in the BAKOM (with monitoring function and press promotion tasks), an actor is created who accomplishes both executive and policy tasks. BAKOM will monitor the accessibility of basic payment services, and PostCom will do the same for the basic postal services. A new arbitration board will be created. In addition, Price Supervisor and ComCom will continue to play their roles in the postal market. There is still no clear delimitation. Moreover, in this environment, another actor, the bank regulator FINMA, will pursue its interests within universal financial services and their funding. Moreover, by converting Swiss Post into a limited company, the new legislation causes the post to be subject to taxation. Consequently, tax authorities will increasingly become a stakeholder of the postal enterprise.[202] In the new institutional setting, the number of involved authorities has increased.

6.1.6. Summary of Institutional Dimensions in Switzerland

The Swiss postal market is in transition. A new legislation will be implemented in the summer of 2012, which will convert the Swiss Post into a limited company under special law as of 1 January 2013. Static regulatory costs can be said to be relatively high due to the many actors involved. With respect to dynamic costs in the Swiss postal market, however, few

[200] In the present organization, the post assumes conflicting roles: on hand it is provider of delivery services in a competitive market, on the other hand it is responsible for the execution of legislator's press-political directives.

[201] See Swiss Federal Council (2009).

[202] See Swiss Federal Council (2009).

conclusions can be drawn, largely because the letter market is in a transitional phase. The impacts are not yet clear and therefore cannot yet be estimated and determined. The following table briefly summarizes the institutional dimensions.

Table 11: Institutional Dimensions of the Postal Market in Switzerland

Institutional Dimensions & Cost Drivers	Summary of Characteristics
Number of Regulatory Actors	High number of actors involved, with even more regulatory actors anticipated in the future
Modalities and Subject of information exchange	Different among regulatory actors, ranging from institutionalized information exchange to ad-hoc information
Interaction of sector-specific regulation and competition law	Not clear. Three actors involved (Postreg, Price Supervisor, ComCo)
Regulatory Processes	Different interests in price regulation; extensive reporting
Stability of Institutions (Organizational Perspective)	Very stable in general, though subject to change in 2012
Scope of Universal Service Obligation	Relatively wide; not in postal product definition but including financial transactions and in unique definition of accessibility to the network
Degree of Liberalization	Monopoly up to 50g; partly liberalized in 2009
Financing of the USO	Reserved area up to 50g; Self-financing through incumbent; Concession levys
US Price Regulation	Sector-specific: only for prices in the reserved area and reduced price for press distribution; Cross-sectoral: antitrust law and price supervisor outside the reserved area
Access Regime	No access regulation for incumbent's infrastructure, commercial agreements between competitors; access for information about address information and P.O. Boxes in future law.
Stability of Institutions (Policy Perspective)	Very stable
Norms and Standardization requirements	Standardization requirements for quality measures concerning the universal service
Labor Conditions	Collective labor agreement between incumbent and trade unions; Control of compliance with customary labor conditions, relatively high average wages compared to other sectors; Public and private law contracts

Source: by author.

6.2. Case Germany

This section contains the case on the German sector. The case is organized in the same structure as the previous case and starts with an overview on the historical development of the German postal sector.

6.2.1. History

The modern postal system originates in Germany. Franz von Taxis and his successors from the Taxis dynasty installed by order of the widely-ramified Habsburg family a courier network, which by the middle of the 16th century had been expanded to cover all of Western Europe. At distances of a day's journey, fixed postal stations were established and gained considerable economic importance over time.[203] In 1646, the Prussian state post was founded. Elector Friedrich Wilhelm introduced the first postal regime, which organized a regular postal service between Berlin, Münster, Osnabrück, Kleve and Königsberg. With this edict, private persons, particularly merchants, were authorized to send their letters with this electoral post.[204] By introducing the first postal regime, Friedrich Wilhelm defied the state monopoly on the post. In fact, Prussia took over the entire postal rights from the Thurn und Taxis family in 1867. The "Thurn and Taxis"-era came to an end: postal services were converted into the then newly-founded North German Federal Post.[205]

When the German Empire was founded in 1871, it introduced a postal law for the entire empire, regulating tasks and service of the imperial post. This development led to a kind of monopoly. By 1899, the Empire had prohibited all other commercial institutions that accomplished postal tasks.[206] In 1924, according to the State Finance Law, the German imperial post was integrated into the State Post Ministry as an independent enterprise. After the end of World War II, the post was reorganized under the control of the Allies: The Federal Post Office as a state enterprise with public functions was tasked with the accomplishment of national and international postal and telecommunication services. The services were divided into three sectors: the German Federal Post Office Postal Service, the Post Office Bank and the Post Office Telephony.

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[203] See North (1988, p. 31ff).
[204] See North (1988, p. 36).
[205] See Deutsche Post DHL (2012b).
[206] Ibidem.

Within the first postal reform, the German Federal Post Office was restructured by the Postal Structure Law of 1 July 1989. The former German Federal Post Office was divided into the sectors German Federal Post Office Postal Service, German Federal Post Office Bank and German Federal Post Office Telekom. In 1990, on the occasion of the German reunification, the German Post Office in the German Democratic Republic (GDR) became part of the German Federal Post Office. To this day, the headquarters are in Bonn.[207]

In 1995, the second postal reform went into effect. This was mainly an administrative reform, aimed at strengthening the competitiveness and productivity of the postal enterprises. For this purpose, the former postal enterprises were converted into limited companies under private law.[208] The Federal Government kept the majority of shares for at least five years, though private shareholders were essentially permitted. A sale of shares was to take place slowly and in increments. The Postal Services Ltd. was under obligation to continue to provide countrywide postal and infrastructural services. Simultaneously, the Federal Posts and Telecommunications Agency was founded. It had to represent the interests of the Federal Government as a shareholder in the three limited companies. At the time, the required regulatory tasks were performed by a division within the Federal Ministry of Posts and Telecommunications. The focus of this second postal reform was on privatization and the preparations for further liberalization of the postal markets and on the external liberalization pressure exerted by the European Commission.[209]

A new postal law was adopted in the course of the third reform in December 1997. This reform resulted not only in a further opening of the postal market in 1998, making Germany a pioneer in liberalizing the European postal markets; it also dissolved the Federal Ministry of Posts and Telecommunications in 1997. The regulatory tasks were transferred to a new regulatory authority for telecommunications and post, the Federal Network Agency, which still functions today.[210] The considerations behind this development were sector-specific: basic countrywide postal services at affordable prices were to be guaranteed.[211]

In advance of the decision to transfer the responsibilities to the Federal Network Agency, experts and politicians discussed the transference of the regulatory tasks to the Federal Cartel

[207] See Deutsche Post DHL (2012b).
[208] See Cox (1999, p. 83).
[209] See Pohl (2010, p. 3).
[210] See Pohl (2010, p. 4).
[211] See Postal Act (1997b), Paragraph 51.

Office. However, the idea to give the responsibilities for universal service supervision to the cartel office was dismissed, because a pure competition authority like the Federal Cartel Office might be unable to cope with such a regulation.[212] In the summer of 2005, the office was made responsible, in addition to the regulation of telecommunication networks and postal services, for the energy regulation (power and gas): It was therefore renamed Federal Network Agency. Since 2006, the Federal Network Agency has also been responsible for surveying the access to the railway infrastructure; hence, it is called the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railways.[213]

Germany originally planned to open the market completely as early as 2002. However, since other European countries followed considerably slower liberalization schedules, the German Government decided to reduce their letter monopoly gradually until end of 2007, opening the market completely on 1 January 2008.[214]

As mentioned above, the privatization of the Deutsche Post was initiated by the second postal reform, which hit its peak when the enterprise went public in 2000. The steps toward privatization and the related expansion of the Deutsche Post shaped the German postal market and made the Deutsche Post one of the biggest logistic groups worldwide.[215]

In 1998, after its conversion into a limited company, the Deutsche Post participated in the express company DHL International Ltd with a share of about 25 percent. This established the basis for a strategic cooperation between Europe's largest postal enterprise and the worldwide market leader for international courier deliveries. The courier enterprise DHL was founded in San Francisco in 1969. With a new business idea, the foundation was laid for a company operating worldwide. At the same time, a new industrial branch of international air express service–that is, the quick transport of documents and the use of airplanes to deliver said documents–emerges.[216] DHL quickly expanded its network across the world. As of 1979 DHL extended its services to offer the delivery of not only document, but packages as well. In 1999, the Deutsche Post further invested in the establishment of a worldwide logistic

[212] See Cox (1999, p. 94ff).

[213] See Federal Network Agency (2012).

[214] See Brandt et al. (2007, p. 66).

[215] The following historical information regarding the development of the German Post was taken from Deutsche Post DHL (2012b).

[216] Initially, the company founders transport freight documents personally by aircraft from San Francisco to Honolulu. This makes it possible to start customs clearance of the ship's freight prior to its actual arrival, which considerably reduces the waiting time at the harbor.

network: it purchased the Swiss logistic company Danzas, as well as the biggest American service provider in the field of international air freight, Air Express International (AEI).

At the end of 1998, the Federal Government sold its shares in the Postbank AG to the Deutsche Post AG. In November 2000 the Deutsche Post AG went public, the largest going public in Germany and the third largest worldwide. In early 2001 Deutsche Post increased its share in DHL to 75 percent. At the end of 2002, DHL became a one hundred percent subsidiary of the Deutsche Post. In 2003, the Deutsche Post concentrated its entire express and logistic business under the DHL brand.[217]

In June 2004, Postbank went public, effectively representing one of the biggest IPO announcements ever in the German capital market. In the same year, the international letter services began to be operated under a new overall brand: Deutsche Post Global Mail became DHL Global Mail. In December 2005, the Deutsche Post took over the British logistic group Exel. Around 111,000 employees worked for Exel in 135 countries. In June 2005, an additional 126.5 million shares of the Deutsche Post were sold; as a result, more than 53.8 percent of all postal shares were then held by diverse shareholders. By 2010, the Federal Government still held 30.5 percent of the shares via the Reconstruction Loan Corporation (KfW).[218]

In 2008, DHL began operating its own European air-freight hub at the Leipzig/Halle airport. Since 2009, the Deutsche Post operates under the name Deutsche Post DHL. That same year, the Deutsche Post AG sold a minimum participation in Postbank of 22.9 percent to Deutsche Bank. Over the next three years, Deutsche Bank had the option of taking over an additional 27.4 percent of Postbank. In this way, Deutsche Post gradually withdrew from the bank business and began to focus on logistics. Due to this consistent extension of the logistic network, the Deutsche Post DHL became the leading postal and logistic group worldwide. In 2010, a group turnover of more than 51 billion Euros was generated. In addition, the Deutsche Post DHL employs a staff of more than 470,000 in over 220 countries, making it one of the world's largest employers.[219]

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[217] The courier and express business of DHL-, the package business of Euro Express and the logistic business of Danzas are concentrated worldwide under the DHL brand.

[218] See Deutsche Post DHL (2012a).

[219] See Deutsche Post DHL (2011).

6.2.2. Major Regulatory Obligations

Universal Service Obligations and Financing Mechanisms

The German Postal Act was unique insofar as the Deutsche Post was not under the exclusive obligation to provide universal service and the provision of the universal service relied on market forces. The universal service products were defined in the PUDLV (Postal Universal Service Ordinance), as letters up to a weight of 2000 g, as well as newspapers, journals and packages up to a weight of 20 kg. For letters, additional services, such as registered, insured and cash-on-delivery items, were also part of the universal service. The items of the universal service must be delivered at least every working day, i.e. six times per week. The quality requirements for priority items (E+1) dictated that at least 80 percent of the items were to be delivered on time, with 95 percent for non-priority items.[220]

Regarding the access points, the PUDLV specified the following: nationwide 12 000 permanent postal facilities must exist nationwide; there must be at least one post office in municipalities with more than 2000 residents; in communities with more than 4000 inhabitants, a mailbox should be reachable within a 1000 meter distance; and, finally, in developed contiguous areas, a mailbox should be available within one kilometer.

In Germany, the regulatory authority was not permitted to take steps with respect to the universal service obligation, as long as the basic services were guaranteed through market forces without a universal service obligation. The Postal Act specified that the universal service be provided by the DP AG and by other contractors. So *de jure* there is no explicit obligation for the Deutsche Post, de facto the Deutsche Post provides it on a voluntary basis (no designated operator). However, the Deutsche Post was under the obligation to announce, within a six-month period if it could no longer provide certain parts of the universal service. As soon as this was the case or the universal service was no longer properly guaranteed, the regulatory authority had to commit a postal enterprise to provide the missing services. The Federal Network Agency investigated if a licensee was prepared to provide the universal services without compensation. If no enterprise volunteers, one or several enterprises can be committed. However, this happens on condition that these licensees have a market dominating position. The corresponding procedure is provided for in the Postal Act.[221] The German Postal Act contains no specific directives regarding the calculation of net costs for

[220] See Postal Universal Service Ordinance (1999).
[221] See Postal Act (1997b) Art12-17 and Art 56.

the universal service. If the licensee suffers a deficit due to the obligation to provide the universal service, he may request compensation by the other licensees in the form of a fonds solution.[222]

In a WIK report (2009b) titled "The role of regulators in a more competitive market," the German example is called best practice with respect to "reliance on market forces to ensure universal service where feasible" (284).

Table 12: Universal Service Obligations in Germany

Legal Statute	*Products*	*Delivery of Items*	*Postal Network*
- Postal Act amended 22nd 1997 - Postal Universal Service Ordinance amended 15th December 1999 - Postal Rates Regulation Ordinance 6th October 1999 - Postal License Fees Ordinance 4th February 2002 - Postal Services Ordinance 21st August 2001	- Conveyance of items of correspondence up to 2 kg (including registered, insured and cash-on-delivery items) - newspapers and magazines - addressed parcels up to 20 kg.	- Once per day from Monday to Saturday - Delivery has to be provided to the residence or business premises of the addressee	- 12,000 fixed location facilities, with at least 1 permanent facility in any municipality with more than 2,000 residents - Customers in any municipality with more than 4,000 residents or in adjoining built-up areas shall in general be able to reach a permanent facility within no more than 2,000 m - Additionally, in every district one permanent facility shall be located per 80 km². All other locations must be served by mobile postal service units. - Customers in contiguous built-up residential areas should have a letterbox within 1,000m

Source: IPC (2011)

Price Controls

Within the German letter market, the sectoral price regulation refers to items subject to license of market dominating enterprises. But ex-ante price regulation only applies to mailed quantities up to 50 pieces. Bulk mail (and thus the entire business customer segment) is not

[222] See Ecorys (2008b, p. 90). A case for the use of the instruments foreseen in the Postal Act (to designate and compensate a universal service provider) has not yet occurred.

subject to ex-ante price regulation.[223] However, all prices of market dominating enterprises are subject to ex-post control by the Federal Network Agency.

The regulatory authority does not interfere as long as the prices correspond to the following criteria:

- They are based on the costs of an efficient service
- They do not include any surcharges due to a market dominating position
- They do not include any discounts disadvantageous to other competitors.

The prices must be fixed in a cost-oriented manner. At the same time, the universal services must be affordable according to Article 11 of the Postal Act. The Federal Network Agency can apply two different price regulation procedures. The regulation can be carried out both by single price approval and by a price cap procedure. However, the price cap procedure is predominant in price regulation.[224] On this point, the Federal Network Agency (2011a) writes: “Price cap controls are an appropriate means of ensuring that the prices charged for licensed postal services under the Postal Act are based on costs and that abuse is prevented ex-ante in the regulated sector. The risk of excessive pricing, prohibited cross-subsidies, price dumping and predatory discounts in the ex-ante regulated sector can also be effectively limited under a price cap regime. Furthermore, price cap controls are marked by increased flexibility and planning certainty for the regulated operator and competitors of the dominant company” (1).

Licensing System

Paragraph 2 of the Postal Act of 1997 regulates the license domain. Before the monopoly was abolished, the Postal Act contained a limited exclusive license for the Deutsche Post. Basically, the access to the letter market became available to every interested enterprise after the gradual reduction of the monopoly. However, a license must be acquired for the commercial consignment of letters.[225]

The license is granted by the Federal Network Agency. There is no limit to the number of licenses, though the postal providers must meet certain requirements before they are granted a license. An applicant may be denied the license if his performance, reliability and know-how

[223] See Postal Act (1997b), Article 19-27.
[224] See Federal Network Agency (2011a) for a more detailed examination of the German price-cap regime.
[225] See Federal Network Agency (2011a, p. 46).

are challenged by the regulatory authority. Further reasons may include the endangerment of public safety or the non-compliance with labor conditions customary in this line of business.[226] In connection with granting of licenses labor conditions are an important issue. They will be treated later in this chapter.

Access Regime

German network access is regulated and described in Paragraph 6, Article 28-32 respectively, of the Postal Act. According to Article 21, a market dominating enterprise is under the obligation to offer access to the partial services to other providers of postal services. Both providers of postal services and end customers are entitled to access to the network of the DP AG at the same conditions. According to Article 30, the access agreements with competitors and end customers must be submitted to the Federal Network Agency one month after the conclusion of their negotiations.

In addition to the right to network access competitors also have the right, according to Article 29, to access post-office boxes and information about address changes.[227] Based on various decisions of the regulatory authority, the DP AG grants access to inward sorting centers and outward sorting centers. There is no access to local delivery offices.[228]

Generally, access prices and conditions are to be negotiated among market participants. The negotiated contracts have to be submitted to the Federal Network Agency. The regulatory authority does not intervene as long as the prices correspond to the following criteria: If no agreement between the parties can be reached, the Federal Network Agency can be called upon to mediate. If the partners cannot draw an agreement within three months, the regulatory authority will define the contractual terms. If the DP AG abuses its market dominating position, the Federal Network Agency can declare the contracts void. The regulation of access tariffs fundamentally changed after the complete market opening in 2008. The ex-ante regulation, in application until end of 2007, was replaced by an ex-ante control.

[226] See Ecorys (2008a, p. 48) and Pohl (2010, p. 6).

[227] Outward sorting = to other sorting centers; inward sorting = for the local area.

[228] See Pohl (2010, p. 27) and Federal Network Agency (2007, p. 75).

6.2.3. Institutional Setting and Actors

As mentioned above, the Postal Act of 1997 and the associated ordinances were applied to the postal service in Germany.[229] The Federal Ministry of Economics and Technology (BMWI), the competent ministry for the postal market, is responsible for the postal policy.[230] The two postal market authorities are the Federal Network Agency, responsible for sector-specific regulation, and the Federal Cartel Office, responsible for antitrust.

Found in 2008, the Federal Network Agency is reports to the government, existing under the control of the Ministry of Economics and Technology. The agency employs 2,600 people, 100 of which deal with the postal market. Its principal task is to foster competition and guarantee non-discriminating network access by regulating the sectors post, telecommunications, energy and railway. [231] The main duties of the agency in the postal market are monitoring the provision of the universal service, ensuring accounting separation of the postal operator, setting price control, issuing licenses and ensuring compliance with those licenses.[232]

The Federal Cartel Office, an independent federal authority, is also assigned to the Ministry of Economics and Technology. Its primary task is to apply and enforce and the “Act Against Restraints of Competition” (GWB). As a result, the duties of the Federal Cartel Office also include the enforcement of the cartel ban, merger control, the control of abusive practices by market dominating, market strong enterprises, and, as of 1999, the review of awards in public procurement. The Federal Cartel Office has around 320 employees, about half of whom are lawyers and economists. [233]

In case of abusive behavior of operators within the regulated sectors (such as telecommunications and post), the Federal Cartel Office is prohibited by the GWB from becoming active in parallel with the Federal Network Agency. However, the Federal Cartel Office becomes active to enforce the European prohibition of abuse of market power in Article 102 in the Treaty on the Functioning of the European Union.[234]

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[229] See Table 13.
[230] See BMWI (2012).
[231] See Federal Network Agency (2011, p.110).
[232] See IPC (2011).
[233] See Federal Cartel Office (2010, p. 14).
[234] Former Art 82 of the Treaty establishing the European Community. See Federal Cartel Office (2012).

The Monopoly Commission, a third actor within the regulatory environment, is an independent advisory board in the field of competition policy and regulation. Required by law to oversee competition in Germany in general as well as in individual economic sectors, the Commission determines whether competition in individual markets is impeded by excessive amalgamation and examines the practice of merger control by the cartel authorities. Every two years, the monopoly commission prepares an expert's report on the status and development in postal markets, submitting this report to the legislative authority. The Commission has 5 members and an office, which provides the Commission with scientific, administrative and technical support. Organizationally, it is part of the Federal Cartel Office.[235]

6.2.4. Market Opening and Development of the Postal Market

As mentioned above, the German letter market was fully opened in 2008. Prior to this, however, there had been competition: In 2003, the market share of the Deutsche Post AG was 96.3 percent and 93.3 percent of the number of letters in the licensed sector in 2005.[236] In 2007, before the market was fully opened, the market share of the Deutsche Post was 91.7 percent according to the Federal Network Agency (2009). All this was true despite the fact that until the end of the year lightweight items (50g or below) and direct mail were still part of the monopoly.

In 2007, the total turnover of the division of the letter market that was subject to license was about 10 billion Euros for around 17.5 billion items.[237] Since the letter market was fully opened, the number of items in the licensed sector up to 1000 g was declining. According to the Federal Network Agency, there was a decline from 17.5 billion items in 2008 to 16.3 billion items in 2009 to 16.6 billion items in 2010 due to the economic crisis. During the same period, the turnover in this segment declines by 600 million from 9.6 billion to 9 billion Euros.[238]

For letter services, there was no distinct change in market shares. In 2008, the Deutsche Post delivered 91.9 percent of the letter volume in the licensed sector, a figure that develops from 90.8 percent in 2009 to 89.8 percent in 2010. The competitors could continuously increase

[235] See Monopoly Commission (2012) for further information.
[236] Federal Network Agency (2009, p. 41).
[237] See Federal Network Agency (2007).
[238] See Federal Network Agency (2011b).

their market shares, but at a rather low level. Three years after the market had been fully opened, they increased their market shares by about 2 percent to 10.2 percent letter volume.[239]

A similar development can also be observed regarding turnovers. The development of turnovers and volumes since 2008 is summarized in 13.

Table 13: Development of Market Shares in the Licensed Letter Market[240]

	Market Shares in %					
	Turnover			Letter Volumes		
Year	2008	2009	2010	2008	2009	2010
DP AG	91,5	90,7	89,6	91,9	90,8	89,8
Competitors	8,5	9,3	10,4	8,1	8,2	10,2

Source: Federal Network Agency (2011c, p. 34).

From 1998 to 2011, the Federal Network Agency issued a total of 2685 licenses. In 2010 and 2011, the number of issued licenses strongly declined. While 127 licenses were issued in 2008, the number went down to 20 in 2011. According to the Federal Network Agency, this downward trend indicated that the market for the commercial delivery of letters had been saturated. On the other hand, the Federal Network Agency pointed out in its activity report that there was fierce cutthroat competition in the licensed sector of the letter market.[241]

In the years 2010 and 2011, as in previous years, several operators left the market due to insolvency or in view of the market situation. According to estimates by the Federal Network Agency, around 600 to 650 licensees are currently active in the market. The other enterprises do not make use of their licenses. Most competitors operate locally or regionally, and many of these enterprises were originally founded by local publishers. They traditionally offered early-morning delivery for newspapers. However, many of these small companies fell victim to the wave of consolidation or were bought up.

It is interesting to look at the different business models of enterprises active in the licensed letter market. WIK distinguishes among three models in the German market: letter deliverer, consolidator and networker:[242]

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239 Ibidem.

240 Source: Federal Network Agency (2011c, p. 34).

241 See Federal Network Agency (2011c, p. 58).

242 See WIK (2009a, p. 16ff).

- *Letter deliverers* offer the entire postal value-chain process from collection to delivery. Hence, they offer their beginning-to-end service and are guided by product design and the Deutsche Post.
- *Consolidators* collect big quantities mail items from various customers, pre-sort them and furnish them to a letter deliverer. Their business model is based on the credit of discounts, which they obtain from the delivery of big pre-sorted quantities.
- Offering neither collection nor delivery services, *networkers* concentrate on the provision of logistics and distribution services for letter deliverers. They have no collection and delivery service of their own.

The largest competitor of Deutsche Post is the Dutch incumbent TNT. In 2000, TNT and the Hermes Logistik group founded EP Europost, which was recently renamed TNT Post AG. The strategy was to succeed 10 percent of addressed mail in Germany by concentrating on B2C and B2B mail volumes. The interesting point in TNT's entry model is that the company predominantly provides centralized services, such as sorting and transportation as well as support functions, while two thirds of the collection and the delivery are mainly delegated to local and regional postal operators. By cooperating with their partner networks, TNT covers 90 percent of German households without operating its own nationwide delivery network.[243]

In addition to TNT Post, the DP AG's biggest competitors are some regionally operating delivery services, most of which are owned by newspaper publishers. These delivery enterprises offer their services locally and regionally. Some competitors currently endeavor to establish an area-wide delivery network through co-operations.[244] This initiative, called "Mail Alliance," is an operational association of 140 partners offering an alternative countrywide delivery of letters. Using this network, regional letter deliverers can offer national delivery of letters to their customers. According to the website, 75 percent of German households are covered as of January 2012.[245]

Since 2005, the DP AG has been under the obligation to treat competitors and consolidators equally, and the upstream access volumes of the DP AG have strongly increased.[246] While between 2000 and 2004 no more than 25 contracts were concluded between DPAG and

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[243] See Maegli (2010).
[244] See WIK (2010, p. 8).
[245] See Mail Alliance (2012).
[246] In 2005 the Federal Cartel Office prohibited the DP AG from denying consolidators access to partial services, since this constitutes an unequal treatment of deliverers, for which there is no objective justification.

competitors, the total number of contracts increased to 483 by the end of 2008.[247] Accordingly, the quantities of mail items delivered by competitors or consolidators jumped from 29 million to 1.14 billion between 2005 and 2008. In 2009, the corresponding figure was 1.2 billion; in 2010 the quantity of items delivered via the partial service access increased to 1.6 billion, an increase of 33 percent compared to the preceding year. In its report, the Monopoly Commission assumes that due to the partial service discounts the partial service quantities will continue to increase and that at large the partial service access will gain in importance.[248]

WIK (2010) states that in Germany end-to-end competition and network access are currently establishing themselves side by side. While the quantity of items delivered via network access has significantly increased in past years, there has been less increase in the volume of items delivered by the competitors.[249]

6.2.5. Recent Developments and Outlook

In the second half of 2010, the Deutsche Post launched the "E-PostLetter." This is a hybrid (physical and electronic) product, combining the hybrid and fully electronic dispatch of messages. The sender can choose if he wants to send his message purely electronically, or electronically with a physical delivery to the receiver. With the E-PostLetter offer, the Deutsche Post wants to compensate for the decreasing quantities in the physical letter business. In addition to the Deutsche Post, other enterprises like Deutsche Telekom, GMX and Web.de offer similar products.[250] Thus, the E-product directly competes with other hybrid offers. At the same time, the fully electronic solution of the E-PostLetter competes with operators that provide either electronic signatures or legally-binding electronic communication solutions.

The biggest competition for the E-PostLetter is the fully electronic solution of DE-Mail. DE-Mail is a project coordinated by the Federal Ministry of the Interior, which is meant to enable the binding and confidential delivery of documents and messages via Internet. Enterprises like Deutsche Telekom, GMX and Web.de offer DE-Mail. Since DE-Mail constitutes no physical postal service, it is fully governed by the Telecommunications Act. The E-PostLetter, on the

[247] See Federal Network Agency (2009, p. 72) and Dieke et al. (2010, p. 48).
[248] DP AG raised the access rate discounts as of 1. July 2010. See Monopoly Commission (2011).
[249] See Dieke et al. (2010, p. 48).
[250] See Spiegel Online (2010).

other hand, is subject to the privacy of correspondence, since it is in the physical sector. According to the Federal Network Agency[251], it is not yet possible to know whether DE-Mail and E-PostLetter will be able to establish themselves on the market. Consequently, it remains unclear what impact these products will have on the letter market. According to Dieke et al. (2010, p. 26ff), the market volume of hybrid post is estimated at less than 1 percent of mailouts.

The Federal Network Agency (2010) concludes that the new technological developments also call for adjustments on the legal level: "Moreover, new technically innovative products such as hybrid letters require an adjustment of the postal act to the developments of the postal market" (5).

In January 2012, the European Union came to a decision regarding subsidies which can have considerable consequences for the Deutsche Post: the European Commission thinks that the DP AG received unjustified subsidies of up to one billion Euro. Therefore, the state must reclaim between 500 million and one billion Euros from the enterprise. The Commission states that a combination of highly-regulated prices and subventions for pensions payments resulted in an illegal subsidy. These subsidies gave the Deutsche Post an advantage over its competitors, though the exact amount will have to be determined by the German authorities. The Post does not want to accept the claim: it states the repayment decision of the EU Commission is unfounded and assumes that there is no legal basis for it. In fact, according to spiegel.de, the group is confident that law courts will not uphold the EU Commission's decision. The Post has coordinated this resistance with the Federal Government. It therefore remains open if and in what amount the Post will have to reimburse funds.[252]

In its current activity report, the Federal Network Agency estimates that by now more than 600 licensees are active in the German letter market. Three quarters of them are mainly operating locally and achieve a turnover of less than 500 000 Euro. As mentioned above, the market share of the Deutsche Post AG decreased by three percent to 89 percent between 2008 and 2010.[253] Since the letter market as a whole shrunk simultaneously, the Post during this period lost almost 10 percent of items to competing operators and electronic alternatives to

[251] See Federal Network Agency (2011b).
[252] See Spiegel Online (2012).
[253] See Federal Network Agency (2011).

the letter. The decline considerably contributes to halving the profit margin of the Post for letters from 16 percent to 8 percent.[254]

In a special expert's report published at the end of 2011, the Monopoly Commission comments on the development of the German postal market: the commission concluded that the competition development in the German letter market had been stagnating and that effects of competition do not have the anticipated impact. According to the Monopoly Commission, the market share of the Deutsche Post was very high and had hardly changed. For the stagnating development of competition, the commission held responsible economic entry barriers such as economies of scale and scope of the DP AG and cost disadvantages suffered by the competitors. For the Commission, additional reasons were to do with institutional entry barriers. According to the Monopoly Commission, the current Postal Act is still is inadequate and does not offer the instruments needed to boost competition. The Federal Network Agency is not in a position to control the DP AG and it thinks that the DP AG has too much room for maneuver in the market. Furthermore, it states that the VAT exemption for universal services de facto favors the DP AG. Prior to July 2010 the DP AG had been exempted from VAT for letter services. After having been admonished by the European Court of Justice, the German Parliament decided that from then on, the exemption only applied to the universal service for private customers and that competitors were also exempt from VAT if they provided parts of the universal service all over the country. Since then, the Deutsche Post had paid VAT in the amount of half a billion Euro.

In order to create a more competitive environment, the Monopoly Commission recommended renewing the Postal Act. Regulations are to be introduced, which allow a stronger control of the DP AG as market-dominating enterprise and an extension of the Federal Network Agency's powers of investigation. Consequently, the Monopoly Commission (2011) proposed a number of institutional changes in the existing regulatory provisions in order to promote the development of competition. Examples are

- tightening the regulation of access tariffs,
- an obligation for presentation of DP AG's contracts with major business clients,
- adaptations of material requirements for pricing,
- or a further adaptation of exemption from VAT.

[254] See Trinkner (2012).

For the Monopoly Commission, no convincing reason exists to exempt universal postal services from VAT. Services in other sectors of public utilities, which are part of the population's basic needs[255], are also not exempt from VAT.

The CEO of the DP AG does not support an extension of the existing regulation and in view of the market situation calls instead for a deregulation: "The existing price regulation procedure made sense in times of increasing volumes. But now the quantity of items is declining. And we must pay VAT, the minimum wage has gone down. It is about time that like all other enterprises we could fix the prices in line with the market. Whether we will do this in the end, remains to be seen. This also depends on competition."[256]

In addition, the Monopoly Commission also criticizes the role of the Federal Government, which acts as shareholder of the DP AG and as a competition watchdog that should establish competition on the postal market. According to the Monopoly Commission, the Federal Government has not been very motivated to do this, since the higher the profits of the DP AG are and the less competition there is on the postal market, the higher the stock price of the DP AG will be. In summary, the commission states that the Federal Government would harm itself, if it created general conditions on the postal market that boost competition. It therefore postulates that the Federal Government should part as quickly as possible with all financial instruments, which give the state a special interest in the DP AG.

In its activity report, the Federal Network Agency summarized the development of the German letter market. The agency came to the conclusion that the market opening of 2008 hardly brought about any fundamental changes in market conditions. The agency assumes that in the future there will be more competition in market access, although it also expects end-to-end competition to tend toward decline.

As a consequence, the agency will determine if the existing ex-post regulation of access prices is sufficient or if a new ex-ante regulation should be introduced. In its report, it calls for a strengthening of the existing regulatory instruments and for the introduction of new instruments to be used to accompany and strengthen competition.[257]

With respect to a revision of the postal act, the agency demands the following:

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[255] E.g., water, gas, energy or telecommunications

[256] Interview with CEO Frank Appel in the Wirtschaftswoche (2011) in May.

[257] See Federal Network Agency (2011b, p. 53).

- strengthening the powers of investigation in the field of abuse control,
- the possibility of an ex-post control for tariffs which according to today's law are subject to ex-ante control,
- an ex-ante regulation for bulk mail.[258]

The requests of the Federal Network Agency are chiefly based on provisions contained in the German Telecommunications Act. In summary, the agency therefore calls for an adjustment of postal regulation to the regulation in the telecommunications market.

In its outlook, the Federal Network Agency (2011b) sums up that there is no functioning competition in the letter market and that a regulation of the market-dominating enterprise is still necessary. It gives a positive assessment of the competitors' efforts to offer area-wide services through co-operations. The agency believes that a stronger abuse control and ex-ante access tariff regulation are necessary for the success of these networks. Regarding the substitution of letter services by electronic alternatives, the agency hopes that this will make the future scope of services offered more manifold. It sees it as an opportunity for the postal and telecommunications sectors to move closer together and for existing structures to be divided. Moreover, the technical innovations require that the Postal Act be adjusted along the development of the postal market.

6.2.6. Summary of Institutional Dimensions in Germany

Although the German postal market has been open for quite a long time, no effective competition has developed. Therefore, the Monopoly Commission and the Federal Network Agency demand a stronger one-sided regulation. Moreover, the view of the authorities involved in postal matters is advanced that competition does not develop because of the market-dominating enterprise DP AG. As a result, a revision of the Postal Act has been requested. The harmonization of exemption from VAT for all operators seems plausible, as it would increase the equal treatment of the different operators; however, other proposals go in the opposite direction. The DP AG is to meet requirements that do not apply to other operators. Such a one-sided regulation does not seem to make much sense in a fully opened market.[259] Moreover, the authorities think that the act has to be adjusted according to the changing market conditions and particularly due to the e-substitution.

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[258] More than 50 items.
[259] See Trinkner (2012).

Table 14: Institutional Dimensions of the Postal Market in Germany

Institutional Dimensions & Cost Drivers	Summary of Characteristics
Number of Regulatory Actors	Two institutions with monitoring function (Federal Network Agency and Federal Cartel Office) and the Monopoly Commission
Modalities and Subject of Information Exchange	Different between regulatory actors; the Monopoly Commission and the Federal Network Agency demand more competences toward the market-dominating enterprise
Interaction of Sector-specific Regulation and Competition law	Not fully clarified. The Federal Network Agency requests more competences as in case of the Telecommunications Act
Regulatory Processes	Very formal. Ex-post regulation only for private customer services (fewer than 50 items). Particularly with respect to the pricing for access remunerations the Federal Network Agency would like to be involved earlier ex-ante.
Stability of Institutions (Organizational Perspective)	Very stable in general; the setting of institutions is stable. Especially the Federal Network Agency is established.
Scope of Universal Service Obligation	Relatively wide
Degree of Liberalization	Fully liberalized in 2008
Financing of the USO	No designated operator but self-financing through incumbent; No net cost approach.
US Price Regulation	Price cap: ex ante regulation only for prices for private customers. Access tariffs are under ex-post control. The federal network agency demands higher ex-ante competences regarding access tariffs
Access Regime	No access regulation for incumbent's infrastructure so far, commercial agreements between competitors; The federal Network Agency demands more ex-ante regulation in order to foster competition.
Stability of Institution (Policy Perspective)	Very stable
Norms and Standardization Requirements	Standardization requirements for quality measures concerning the universal service
Labor Conditions	High degree of uncertainties because of minimal wage decision of the government. Finally solved in court cases: no minimum wage for the sector

Source: By Author

6.3. Case Great Britain

Section 6.3 contains the last of the three case studies and explores the postal market in the UK. The case starts with a brief overview of the history of the UK postal sector. In the following, the organization of the sector corresponds with that of the other two cases.

6.3.1. History

Despite its role in the reform of other public utilities, the UK acted rather as a follower than a leader in the European postal liberalization debate, seeming to be less optimistic about the liberalization of postal services than in other areas of liberalization.[260] Today, Royal Mail is still the national postal service in Great Britain.

Historically, the UK was the founder of the traditional post office model, and the role of the state in the provision of postal services goes back many centuries.[261] The history of Royal Mail can be traced back to the year 1516, when Heinrich VIII appointed a "Master of the Posts." In 1635, Charles I opened the Royal Mail postal service to the public. In 1660, under Charles II, the General Post Office started operations. Before 1840, the British postal system was highly complex and very expensive. Letters were charged by distance and the number of sheets of paper they contained. The recipient mostly paid the charge. In January 1837, Rowland Hill published his pamphlet "Post Office Reform: Its Importance and Practicability." He had no doubt that the source of trouble lay in the complexity of the charges and the mixture of paid and unpaid letters. His solution was prepayment. The charge should be low and uniform: he recommended that it be 1d up to one ounce in weight.

In 1840, the post underwent fundamental reforms and the so-called Penny Post was introduced. For an item delivered within Great Britain, there was a single charge to be paid by the sender. In order to prove that he had paid the charge, the sender affixed the first self-adhesive postage stamp, the "One Penny Black."[262]

The development of Roland Hill's Penny Post in 1840 has been widely recognized as a dominant principle of postal service administration and the provision of services. Hill's postal reform was an immediate success. The number of chargeable letters in 1839 was only about 76 million items. By 1850, the number of items increased to almost 350 million and continued

[260] See McGowan (2002).
[261] See Coase (1939) and Daunton (1985).
[262] See British Postal Museum (2012).

to grow dramatically. Adhesive postage stamps were gradually introduced throughout the world. With the change to charging by weight, envelopes became normal for the first time.

In the course of the technical development, Royal Mail introduced telegraphy in 1870 and telephony in 1912. Before the foundation of British Telecom, Royal Mail was responsible for the British telephone network. The National Giro Bank was founded in 1968 and sold to Alliance & Leicester in 1989.

Organizationally, the British Post Office was operated as a civil service department until 1969, when it was transformed into a public corporation. In 1984, the telecommunications business was separated from the postal business. In contrast to earlier state monopolies, such as the Stationery Office, British Gas and British Telecom, it was not privatized in the 1980s and 1990s.

In the 1970s, the overall British discussion on postal office reform emphasized organizational matters, like the separation of telecommunications, more than questions about the development of competition and ownership. In the late 1970s, the Post Office went from a loss generating to a profitable enterprise. As part of the improvement in 1985, the Post Office restructured its operation by splitting into four businesses: Letters, parcels, counter services and banking.[263] The British “Post Office” was renamed “Consignia” in 2000. This change was very unpopular, both with the public and the staff. The organization’s name then changed again in 2001 to “Royal Mail Group plc,” operational with three units: Royal Mail (delivering letters), Parcelforce (delivering parcels) and Post Office Limited (managing the nationwide network of post offices). At the same time, Royal Mail became a public limited company in March 2001. Today, Royal Mail is 100 percent government-owned. The company was renamed again in March 2007 and changed from “Royal Mail Group plc” to “Royal Mail ltd.”

The initial debate on postal reform began in the late 1980s, and the first substantial proposals were presented in 1991 in the wake of the “Citizens Charter,” a government initiative on public sector reform.[264] The initiative proposed the possibility of a further reduction of the postal monopoly and the implementation of independent regulation in the UK. Therefore, the government announced plans to reduce the monopoly and to privatize. Competition was expected to increase under the control of a postal regulatory agency while meeting the

[263] As mentioned above, the banking unit was sold off in 1989. See McGowan (2002).
[264] See Government of the UK (1991).

universal service obligations. Although several proposals were provided[265], they failed due to a combination of differences in the government (e.g., doubts on the possible financial losses of the treasury and the popularity of such a policy), as well as the governing party (which was worried about the reduction of universal services in rural areas and the closure of post offices).

Moreover, trade unions waged a campaign against privatization that was backed by many other groups. The campaign challenged the effects of privatization and liberalization on the quality of services and social cohesion. During this time, the Post Office's management, which was strongly in favor of privatization, not only failed to ensure privatization but also missed the opportunity to obtain greater autonomy in the public sector. In this rather uncertain situation concerning the development of the British postal market, the government supported the European Commission's proposals for the liberalization of the postal sector.

In the negotiations, they positioned themselves between the enthusiastic liberalizers and the opponents of change: The UK adhered to the primacy of universal services and uniform tariffs, supported only gradual liberalization and had reservations about the commission's intentions to implement a competition policy in the postal sector. The Post Office itself had been highly skeptical about the initial proposal of the Directive, since it was seen as a potential threat to the postal system in the UK.

In 2011 the new Postal Services Act 2011 entered into force. While hardly any adjustments in the universal service were made, the regulation of the sector was reorganized. The Postcomm, responsible so far for the postal market, was integrated into the regulatory authority for the telecommunications sector Ofcom. In addition, the new act permits the privatization of RoyalMail, but only on certain conditions: e.g., the Royal Mail personnel must be offered at least 10 percent of the shares. Thus, private investors can buy 90 percent of the shares of Royal Mail.

Post Office ltd. is not to be sold. It is to be converted into a mutual ownership structure, whose organization has not yet been defined. In addition, the state has confirmed it will continue to subsidize the Post Office with 180 million pounds in 2011 and 2012.[266] At the beginning of 2012, the exact date of privatization had not yet been fixed.

[265] Notably the Green Paper on postal reform in 1994. See Department of Trade and Industry (1994) .

[266] See Department for Business, Innovation and Skills (2010).

In the past, Royal Mail faced very big problems with the pension funds. At the end of 2011, the deficit of the pension funds amounted to 8.4 billion pounds. According to the Postal Services Act 2011, this deficit is now covered by the state.

6.3.2. Major Regulatory Obligations

In the following, we give a short overview of the most important regulatory issues in the British postal regulatory regime.

The Universal Service Obligation

The regulator is responsible for the definition of the universal postal service. In June 2004, following a year-long review, Postcomm listed areas of postal services offered that the incumbent operator Royal Mail was required to provide as universal postal services at an affordable flat rate:[267]

- priority and non-priority mail services up to 2 kilos
- a non-priority service for parcels weighing up to 20 kilos
- a registered and insured service and a range of support services to ensure the security and integrity of the mail[268]
- international outbound service[269]

Furthermore, it was decided that Royal Mail's universal service obligation should also include its recorded (signed for) product and at least one bulk mail product. Stakeholders were consulted on which bulk product or products should be included in the universal service. In June 2005, Postcomm announced that it had decided to include "Mailsort 1400" (first and second class) and "Cleanmail" (first and second class).[270]

There are special provisions that include free postal services for items specifically produced or customized for blind as well as partially sighted people. Moreover, item collection and

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[267] See Postcomm (2009).

[268] Royal Mail's re-direction (up to 12 months), Keepsafe, Poste Restante, certificate of posting and business collections.

[269] Royal Mail's international public tariff and international signed-for products. The UK is also subject to the Universal Postal Union's requirement to deliver mail coming from abroad.

[270] Mailsort 1400 covers mail of all formats up to 2kg in weight and pre-sorted according to the location of the 1,400 delivery offices, and Cleanmail does not require users to have sorting machines and is the 'entry level' bulk mail product most often used by smaller businesses.

delivery should be provided six days per week (excluding public holidays). This means that at least one delivery of postal items must be provided on every working day to the home of every individual in the UK. Likewise, at least one collection of postal items per working day must be effected from each access point.[271]

In regards to the financing of the USO, Postcomm assessed whether and to what extent providing the universal service imposed a cost or a benefit on Royal Mail in 2001. The incumbent operator Royal Mail, the only provider of the universal service in the UK, was required to provide the service under the terms of the license granted by Postcomm. At this time, Postcomm came to the conclusion that Royal Mail's capability to deliver to every address in the UK was a commercial advantage rather than a burden. Postcomm estimated that the cost of Royal Mail's universal service provision was about £81 million, representing about 1.7 percent of its revenues from its mail business. This excluded any quantification of the benefits of being the universal service provider and was based on actual rather than efficiency costs. Postcomm finally concluded that the universal service did not represent a significant burden in the market at that time.

Ten years later, Ofcom (2011) gave a completely different assessment of the situation: The agency concluded that the provision of the universal service was threatened by Royal Mail's then-current financial position. The part of Royal Mail responsible for delivering the universal service made a loss of 120 million Pounds in the period of 2010-2011 on a cost base of 7 billion pounds. Royal Mail's negative operating cash gap had widened, and it reported an outflow on its mail activities of over 600 million pounds in 2010, in part due to its contribution towards the 300 million pound annual costs of servicing its pension deficit and the cash cost of its modernization program. Since Royal Mail's current price control was imposed in 2006, its cumulative cash performance had been around 3 billion pounds below the result expected by the regulator Postcomm in 2006.

In 2011, Royal Mail identified the cost of regulation as a major burden for the universal service provider. As mentioned above, Royal Mail was still making a loss in its core letter business. Funding and servicing the regulatory regime cost Royal Mail around £50 million British pounds in 2011; this figure included payments for the regulator's running costs and Royal Mail's costs to comply with the license and answer the regulator's questions. also It

[271] See Eccles (2009). Access points: post boxes and other facilities provided by Royal Mail for the collection of postal items into its network.

also included the cost of running a unit to manage access to our network as required by Royal Mail's license.[272]

Table 15: Universal Service Obligation in Great Britain

Legal Statute	*Products*	*Delivery of Items*	*Postal Network*
Postal Service Act of 2011 and the Consumers, Estate Agents and Redress Act 2007	- Conveyance of postal items and parcels up to 20 kg[273] - Provision of registered post services. - services to blind or partially sighted - Reserved area: Full market opening in 2006	- 6 times per week, once every working day, including Saturday - The home or premises of every individual in the UK	- License requirement to provide facilities such that the premises of not less than 95% of users are within 5km - Not less than 95% of users in each postcode area are within 10 km of such access points.

Source: IPC (2011).

Licensing Regime

The former standard license granted by Postcomm to the operators is effective for ten years. The original license framework sets out the standards and requirements for the licensees with the goal to balance between protecting customers and encouraging new competitors to come into the market.[274] An individual license enables, but does not require, the provision of postal services. The framework applies to all operators and came into force on 1 January 2006 and was amended on 16 January 2008. The license area covers most types of mail items (unaddressed direct mail is not included) costing less than 1 pound or up to 350 grams.

The mentioned standard license:

- is issued for a rolling ten years period. [275]
- requires each licensee to provide information about its own performance.
- requires license holders to set up systems to handle customer complaints

[272] See Royal Mail (2011).

[273] In Royal Mail's former license the regulator (Postcomm) has defined the services that should be provided in the discharge of the USO. First class stamped mail, first class metered, second class stamped mail, second class metered, standard parcel, airmail Europe, airmail world zone 1, airmail world zone 2, surface mail, special delivery (next day) non-account as well as a wide range of bulk mail products.

[274] See Public Sector Review (2011).

[275] Notice of ten years cannot be given until 25 March 2016, which brings other licenses into line with that of Royal Mail. Postcomm believes this will provide operators with enough certainty to invest into the newly-opened market.

- introduces two codes of practice, to make sure that all operators meet common standards when handling mail.[276]
- requires some licensees to pay an annual fee. Only those licensees with a licensed area turnover in excess of £10 million per annum have to pay an annual license fee, which is based on market shares.

There are additional requirements that apply to Royal Mail. As the dominant company, Royal Mail is subject to rigid price and service quality requirements. The incumbent Royal Mail was granted its current 15-year license on 23 March 2001. The special license sets out in detail Royal Mail's obligation to provide a universal postal service across the United Kingdom, as well as the service standards it is expected to meet. Royal Mail's license contains the following obligations related to competition:[277]

- Negotiate access to Royal Mail's network without illegitimate discrimination between users (condition 9 part 1) or on the basis of an access code to be agreed with Postcomm (condition 9 part 2).
- Avoidance of any unfair commercial advantage in favor of Royal Mail's business or any other contracting party involved with the grant of network access (condition 10-2).
- Not to disclose any information gained through the provision of access to the facilities to any other business of the Royal Mail group (condition 10-2).
- To grant no more favorable terms of access to Royal Mail's business than those on which access is made available to other persons (condition 10-5).
- Avoidance of undue discrimination and/or undue preference between persons and classes of persons (condition 11-2a)
- Avoidance of excessive or predatory pricing (condition 11-2b)
- Transparency of pricing of postal services by submitting detailed tariffs to Postcomm and the consumer council (condition 7)
- To provide Postcomm with copies of merger control notifications and informal submissions to be made to the European Commission or the Office of fair trading (condition 12).

[276] (1) A mail integrity code, requiring licensees to ensure the safety and security of the mail they handle, and (2) a common operational procedures code, is designed to manage inter-operator issues and dealing with operational issues, including handling wrongly addressed and misdelivered mail.

[277] See Eccles (2009).

- Employment of a competition compliance officer to facilitate compliance with the regulatory obligations under the license (condition 13).
- Accounting separation as regards individual types of licensed services, other universal postal services and individual types of postal services outside the scope of universal service, and non postal services, not to reduce the scope of its regulated services or to offer less favorable terms to users without Postcomm's approval (conditions 15 and 21), respectively.

Furthermore, Royal Mails services are subject to quality and performance obligations based on its license. These obligations are backed up by a compensation system for business customers.[278] Moreover, Postcomm is allowed to impose a monetary fine if it considers that Royal Mail has not made all reasonable efforts to achieve the service targets.

The new Postal Services Act 2011 provides for the introduction of a regulatory framework based on "general authorizations" to replace the licensing regime which was introduced under the Postal Services Act 2000. There are 59 UK holders of postal operator licenses under the old arrangements, including Royal Mail Group, who have become regulated postal operators. The new postal regulator Ofcom has designated Royal Mail as the universal service provider, which requires us to provide a universal postal service at a uniform price throughout the UK.

All license holders in the UK are required to conduct accounts that separate revenue and costs in relation with postal services within the licensed area from other operations and to provide the information to Postcomm on an annual basis. Furthermore, all licensees are required to provide the NRA with quarterly revenue and volume data for the licensed as well as the non-licensed areas of their operations.[279]

Access Regime

Due to its license, Royal Mail has been required to provide access to its facilities since 2001. Therefore, Royal Mail provides downstream access to services concerning the mail conveyance and delivery facilities of its network. Condition 9 of Royal Mail's license lays down the access rules for the incumbent.[280] Access is open to mail consolidators, competing

[278] The compensation scheme involves a one percent reduction in postal charges for each percent that Royal mails falls below the national delivery time target and a retail compensation system to compensate customers for domestic first class mail failed to deliver within three working days.

[279] See Ecorys (2008c).

[280] Condition 9 was adapted in May 2006.

operators as well as some bulk-mail customers. The access point is usually at the delivery or sorting office for downstream conveyance and delivery by Royal Mail.

Access prices are not strictly regulated and to be negotiated between the involved parties. Access terms must be on prices that are based on reasonable allocations of costs and must not unduly discriminate between parties having access to Royal Mails Network. According to Postcomm, prices should be based on costs of the downstream delivery. In the event that negotiations fail, the parties can appeal to Postcomm to determine the conditions in the form of a direction to Royal Mail concerning the terms of access.[281]

The postal act does not regulate the cost-price relation for access pricing. The price control is also settled in the license in condition 21, which says that access prices should be set with reference to a margin between the corresponding retail and access services (the so-called head room margin).[282]

A first access agreement was implemented in 2004 between Royal Mail and its competitor UK Mail after a two-year negotiations period and only after a preparatory intervention by Postcomm. The regulator regulated the minimum headroom as a minimum percentage price difference ex-post. Today, Royal Mail offers a 'National Condition 9 Access Agreement' that sets out detailed standard terms and conditions on which access customers can feed in mail into Royal Mail's network. The mail entered by the access customer must comply with the national geographic posting profile requirements.[283] The National Condition 9 Access Agreement is based on the access agreement with UK Mail. The consequence of such an agreement seems to be that access for customers who would like to hand over items only for rural areas where delivery is expensive have to pay more than the basic access price per item specified in the Condition 9 agreement. During 2004, another pricing access agreement was negotiated which is based on average zonal tariffs.

Price Controls

Condition 21 of Royal Mail's license defines the pricing framework within which Royal Mail is required to operate. The current price controls apply from 2006 to 2010, and Postcomm

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[281] See Eccles (2009).

[282] We do not discuss the definition of the headroom margin in detail here.

[283] Each posting handed over by the customer must contain items for delivery to 31 postcode areas defined as mandatory and must also hand over postal items for delivery to a minimum of 60 postcode areas. Based on this profile, the prices charged are geographically uniform.

decided recently not to change the system after 2010. The price control provision in condition 21 includes a complex formula for Royal Mail retail prices. The price control is in the form of an RPI-X, across two different baskets.[284] Eccles (2009) contends that it is "important to note that the pricing provisions contain no reference to the price being geared or oriented to costs as required by the relevant provision of the EU Postal Services Directive 97/67 and the further amending Directive 2008/6/EC" (347).

Based on the license, Royal Mail is under the obligation to apply affordable prices and a uniform tariff to services within the universal service. The price control applies not only to products within the universal service but also to all regulated services. For instance, the price control mechanisms also apply to bulk-mail services outside the USO. Due to condition 7, Royal Mail is obliged to ensure transparency of its prices and not to offer discounts without submitting details of the tariffs to Postcomm and the consumer council. Price controls currently apply to approximately 80 percent of Royal Mail's revenues at a time when they are declining every year. Royal Mail states that in the UK, prices for stamps are low compared to those of other countries.[285]

6.3.3. Institutional Setting and Actors

In 2001, the British Government created a regulatory body for postal affairs called Postcomm. In the same year, the Consumer Council for Postal Service, better known as Postwatch, was founded to ensure that customers could express their problems with postal services. The Postal Services Commission (Postcomm) is an independent regulator established by the Postal Services Act 2000. The agency is answerable to Parliament for ensuring the provision of a universal postal service throughout the UK.

The primary goal of the regulatory agency under the Postal Service Act 2000 is to assure the provision of universal services. The service has to be provided at affordable and uniform prices nationwide in the UK. An additional objective of the regulator is the promotion of competition between postal operators. Nevertheless, the promotion of effective competition is subordinate to the protection of postal service users' interests.[286] Postcomm's annual budget, funded by license fees, is around 10 million pounds; the agency has about 60 employees.

[284] See Royal Mail's license for further details.
[285] See Royal Mail (2011).
[286] See Eccles (2009).

Postcomm has a full set of regulatory powers. In summary, Postcomm is in charge of and active in the following areas[287]:

- Protecting the universal service
- Licensing postal operators
- Introducing competition in the mail market
- Regulating Royal Mail
- Advising Government in questions concerning the post office network
- Complaints and redress procedures[288]

The Postal Services Act 2011 designates Ofcom –the independent regulator and competition authority for the UK communications sector–as the new regulatory authority for postal services in the UK from 1 October 2011. Under the new Postal Act, Ofcom's primary duty is to secure the provision of the universal postal service, also having regard to its financial sustainability. Ofcom regulates television and radio, telecommunications and bandwidth.

Other national actors involved in postal matters are the 'Office of Fair Trading' (OFT) and the cross-sectoral Competition Commission. The Competition Commission conducts investigations concerning mergers, markets and the regulation of the major regulated industries. The OFT can enforce competition and consumer protection rules after their own investigation.[289] There is a memorandum of understanding with the OFT, which aims to promote cooperation and coordination between the two agencies when dealing with cases of anti-competitive behavior for which they have overlapping responsibilities.[290]

Even though this is not part of postal law, the Consumers Estate Agents and Redress Act 2007 sets up the merger of the postal consumer body Postwatch and other consumer protection bodies in "Consumer Focus," which results in a formal abolition of the sector-specific watchdog. Consumer Focus is an agency that represents consumer interests. It has strong legislative powers, including the right to investigate consumer complaints if they are of broader interest, the right to demand information from operators, the power to conduct

[287] See Ecorys (2008a) and www.postcomm.gov.uk.

[288] Postcomm is not in charge of individual complaints. On an individual level the former consumer body Postwatch and today's cross-sectoral consumer watchdog 'Consumer Focus' helps with individual complaints about postal services.

[289] See IPC (2011).

[290] See Ecorys (2008c).

research and the right to investigate an official super-complaint regarding failing services. Consumer Focus publishes reports on the quality of services on a regular basis.[291]

6.3.4. Market Opening and Development of the Postal Market

In late 2001, the British Council of Ministers reached an agreement on the further liberalization of postal services, and Postcomm published a report, recommending a phased opening of the market with full competition, which was implemented in 2006. The original Postal Services Act contains a reserved area up to 100g for incoming cross-border single items. Direct mail was liberalized above 100g for mailings over 4000 items.

Finally, the mail market has been fully liberalized since January 2006 with respect to the Postal Services Act 2000, which regulates the provision of postal services. The act has been revised at the end of 2003 after several consultations undertaken by the British regulatory authority Postcomm. These include the definition of an industry code of practice for common operational procedures and protecting the integrity of mail.

The British postal sector is one of the largest in Europe, but the sector has also seen the steepest decline in volumes. The volume of mail has fallen by 25 percent since 2006, as consumers have moved away from traditional mail and towards digital means of communication.[292]

Since the market was fully opened in 2006, no sustainable end-to-end competition has developed in Great Britain. The licensed enterprises are mainly active in the consolidation business. They offer preliminary services such as pre-sorting to major customers, post items to Royal Mail and take advantage of the low access prices of Royal Mail wholesale.[293] Based on the low access prices, the competitors have made only few investments into their own infrastructures. While the delivered volume of competitors for items to 350g was at 39 million items in 2005, they declined to around 24 million items until 2009.[294] The market shares in this segment are at about 0.01 percent. With almost one hundred percent market share, the delivery organization has a de facto delivery monopoly in the liberalized letter market.

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[291] See IPC (2011) and Consumer Focus (2012).
[292] See Ofcom (2012).
[293] See Pohl (2010).
[294] See Postcomm (2009).

Today, the main competitors of Royal Mail are the DX Group, TNT Post UK and the DP AG subsidiary DHL Global Mail. They are mainly active in the business-to-business segment.[295] At the same time, the DX Group, with around 10 million delivered items, is the main competitor of Royal Mail in the end-to-end sector. But here, too, it mainly concentrates on business customers.[296]

According to Pohl (2010), the number of licensees in the British postal market is rather low. At the end of 2010, 51 licensees were in the market.[297] In the case of active competitors, these are mostly big enterprises. Pohl attributes the small number of licensees to the strict requirements (e.g., regarding proof of performance) and relatively high license costs. These strict requirements were somewhat relaxed in 2008, in order to induce small and medium enterprises to enter the market.[298] How the situation will develop after a renewed relaxation of licensing terms aiming at a “general authorization” at the end of 2011 remains to be seen.

6.3.5. Recent Developments and Outlook

In order to analyze the situation of the universal service, an independent review entitled “Modernise or decline - Policies to maintain universal services in the United Kingdom” was conducted. The so-called Hooper Report (2008) sheds light on various risks and uncertainties concerning the future of UK’s postal services. With respect to the shape of the sector-specific Regulator Postcomm and the regulatory regime, the report proposes: “Effective competition can help realize a positive future. A new regulatory regime is needed to place postal regulation within the broader context of the communications market” (15).

Therefore, the report recommends not only transforming the self-contained Postcomm to Ofcom[299], but also conducting a comprehensive analysis of the postal markets and examining the extent to which Royal Mail has market power in the different segments. According to the report, changing to a new system of regulation would first require a greater clarity of Royal Mail costs. However, even though the report outlines other suggestions for improving the situation of British mail market (and of Royal Mail itself) and therefore reducing risks for the

[295] See Ecorys (2008c).
[296] See Pohl (2010).
[297] See IPC (2011).
[298] See Postcomm (2008).
[299] Ofcom is the independent regulator and competition authority for the communications industries in the UK.

USO, it also gives rise to uncertainty: it proposes radical changes in the regulatory regime which affect the operator's businesses and consequently their ultimate return on investment.

Back in 2010, Hooper produced an updated report called "Saving the Royal Mail's Universal Service in a Digital Age." The report recognized the deterioration of Royal Mail's financial position in the interim and reaffirmed the following policy recommendations[300]:

- That the Royal Mail needed to be opened up for private investments;
- Addressing the pension deficit by moving it to the governmental treasury;
- That responsibility for regulating the postal sector should definitely be transferred to Ofcom.

The revision of the law considered in the first Hooper Report (2008), further specified in the second report (2010)[301], was completed by putting into force the new Postal Services Act 2011. Since October 2011, Ofcom has been responsible for the regulation in the postal market. With this, Great Britain follows the trend presented in Chapter 2 toward bigger regulatory authorities in charge of several sectors.

Ofcom's evaluations of the present regulation are very sobering. In a public consultation on the topic "Securing the Universal Service – Proposal for the future framework for economic Regulation," the Agency summarizes past developments and criticizes the present regulatory regime.[302]

According to Ofcom, the present regime is very extensive:

- Over 80 percent of the turnover of Royal Mail is subject to price regulation. The approach to price regulation is similar to that in the other regulated public utilities. The strict price control reduces the flexibility of Royal Mail to adjust to unexpected changes in the market.
- Far-reaching reporting and publication regulations regarding prices and general terms of business for products inside and outside the universal service (requirement to publish commercial proposals three months in advance).
- The requirements to be met by Royal Mail in the universal service are higher than in most European countries. E.g., Royal Mail must deliver items 6 times per week, while

[300] See Hooper (2010).
[301] See Hooper et al. (2008) and Hooper (2010).
[302] See Ofcom (2011).

the European Directive foresees 5 days only. Inevitably this has an impact on the costs of the universal service.

- Royal Mail is under the obligation to grant relatively low priced access over the entire value-added chain.
- Direct ex-ante regulation of access prices and fixed margins for access operators.
- Quality requirements directly influence the permitted turnovers of products under price regulation.[303]

Regarding regulation of the postal market, Ofcom (2011) states: "Traditional approach of Regulation has failed" (5). For the agency, this is due to the fact that price regulation has not been protected against price increases and that the incentive mechanisms have not worked. Due to the financial situation in past years, Royal Mail repeatedly had to ask for price increases. In spite of repeated price increases, the incumbent currently makes no excessive profits. In addition, Royal Mail is strongly limited in its development, while the market and the proportions are subject to rapid change.[304]

The main changes proposed by Ofcom intended to secure the universal service in the long term at the end of 2011 include an extensive deregulation[305]:

- The very detailed license system is to be converted into a model with general authorizations (this measure has already been realized).
- The abolishment of a major part of price regulation in the retail and wholesale sector.
- The abolishment of direct regulation of access prices and of the fixed margin for access operators.
- More commercial independence for Royal Mail.

However, Ofcom also points out the risk of this deregulation. The behavior of Royal Mail in particular can have different effects on the development of the universal service and competition. Royal Mail can be tempted to increase the prices instead of making its services more efficient. Such behavior would in turn harm the universal service, since consumers react to higher price. In addition, Royal Mail may try, based on deregulation, to inhibit the development of competition. The Agency proposes different protective measures. Beside Royal Mail's continuing obligation to grant access, the performance of Royal Mail and the

[303] See Rowsell (2011).
[304] See Ofcom (2011).
[305] See Rowsell (2011).

increase in efficiency of operations are to be monitored. With respect to the development of end-to-end competition, Ofcom remains rather skeptical. This would certainly be desirable, but it could also have a negative impact on the universal service. Regarding competition in the postal market, Ofcom (2011) states that the challenge for the postal enterprises is considerable: “Postal services inevitably face some degree of competition from other modes of communication. This has the potential to provide a real constraint on Royal Mail’s ability to raise prices, although at present it is not possible to be certain about its strength” (8).

The consultation on the proposals regarding the deregulation of the postal market was started in December. By the time this study was completed, the results were not yet available. It will be interesting to observe how the British postal market develops and whether the financial situation of Royal Mail improves.

In its Business Report 2010-2011, Royal Mail (2011) comments as follows on the adjustment of the regulatory regime: “The time is right to review and significantly change the regulatory structure. Solid progress has already been made” (14).

According to the outlook of Royal Mail, the postal market is in a phase of change. Letter volumes continue to decrease. During the last five years, the volume of delivered individual items has diminished by 40 percent. For the future, Royal Mail expects a decline of 5 percent per year. In addition, Royal Mail calls the old regulatory regime a burden for the provider of universal service. The incumbent requests that Royal Mail and other market actors be treated equally. At the same time, Royal Mail also commits itself to basic services, the “one-price-goes-anywhere, six-days-a-week”- rule remains part of the Postal Services Act 2011.[306] However, by March 2012 Ofcom allowed Royal Mail to set the price of first-class and business mail. As a consequence, Royal Mail announced record increases of a first class stamp from 46p to 60p by 30 April, with second class rising from 36p to 50p - the steepest stamp price increase in over ten years.[307]

[306] See Royal Mail (2011).
[307] See Hellmail (2012).

6.3.6. Summary of Institutional Dimensions in the UK

In Britain, the postal market was fully opened on 1 January 2006. The universal service essentially remained as it was before (meaning it remained subject to more stringent requirements than stipulated in the EU Directive), and the regulatory body PostComm was assigned new, extensive competencies. The British postal market is thus one of the most strictly regulated in Europe, and its universal service provider the Royal Mail is the postal service with the biggest financial difficulties in Europe. The network of postal outlets had been outsourced to Post Office Ltd. many years before. It is operated by franchisees and runs a deficit despite the fact that it receives state subsidies. The British regulator Postcomm enforced a de facto regulation of access to Royal Mail's network. This regulatory intervention led to very low access prices. As a result, downstream competition is less severe than in other liberalized postal markets; there are hardly any new competitors across all stages of the postal value chain. Instead, the trend in consolidation (collection and sorting) is growing faster than in other European markets. Mail items are handed over to Royal Mail's network for delivery at low prices. This kind of access regulation strengthens the delivery organization and thus the position of Royal Mail in the market. The example shows that the original interventions may cause a follow-up regulatory intervention.

From a regulatory-economic view, the situation in the British postal market is problematic. Universal service regulations are combined with asymmetric access regulations. It seems important that these asymmetries can be corrected with the new regulatory regime.[308]

Ofcom currently proposes a deregulation of the British postal sector. The agency took over the responsibility for regulation in the postal sector from the former regulator Postcomm. A public consultation on the proposals for amendments of the regulatory framework was opened by the end of 2011 in line with the new postal service act of that same year. The overall objective of the Postal Services Act is to safeguard the universal service by ensuring that Royal Mail can attract external capital and deliver a commercial rate of return.[309]

[308] See Knieps et al. (2009).

[309] See Royal Mail (2011).

Table 16: Institutional Dimensions of the Postal Market in Great Britain

Institutional Dimensions & Cost Drivers	Summary of Characteristics
Number of Regulatory Actors	In the UK the number of involved institutions is relatively high. In addition to Ofcom, the Competition Commission and the Office of Fair Trading also play their part. Moreover, Consumer Focus has extensive competences in the postal market. Before the merger with Consumer Focus, there was also the sector-specific Watchdog Postwatch.
Modalities and Subject of information exchange	In the old regime the requirements are very severe. Royal Mail has extensive obligations to inform with respect to quality, prices and terms of business.
Interaction of sector-specific regulation and competition law	Not fully clarified. PostCom was a very strong institution. How this will work with Ofcom remains to be seen. A memorandum of understanding with the OFT exists.
Regulatory Processes	Extensive regulations for reporting and publication for royal Mail. The price approval process is lengthy and intensive. The license fees for incumbent and competitors are very high. License holders are required to conduct accounts which separate revenue and costs in relation with postal services within the licensed area from other operations and to provide the information to Postcom on and an annual basis.
Stability of Institutions (Organizational Perspective)	Not very stable: Transfer of regulatory competence from Postcomm to Ofcom at the end of 2011. Repeated adjustments in the license regime. Conversion of Postwatch to Consumer Focus in 2008.
Scope of Universal Service Obligation	Relatively narrow
Degree of Liberalization	Fully liberalized in 2006
Financing of the USO	At present the USO is financed by licensed area revenue of Royal Mail ensured by price control. No net cost approach and no provision for a compensation fund.
US Price Regulation	Price-Cap Regulation (RPI-X). Price control mechanisms are also applied to bulk-mail services outside the USO. Due to condition 7 Royal Mail is obliged to take steps to ensure transparency of its prices and not to offer discounts without submitting to Postcomm and the consumer council details of the prices. More than 80 Percent of Royal Mails Revenues are under price control. Price controls are subject to major changes according to the new postal services act.
Access Regime	Mandatory access to Royal Mail's Infrastructure. The price control says that access prices should be set with reference to a margin between the corresponding retail and access services (the so-called head room margin). De facto this implies a maximum price cap. Very low access prices.
Stability of Institutions (Policy Perspective)	Not very stable. E.g., the licensing regime has been changed. The whole regulatory framework and price controls are subject to change in 2012.
Norms and Standardization Requirements	High standardization requirements for quality measures. Condition 4 of Royal Mail's license specifies standards and levels of compensation. The range of measures set is very extensive.

Labor Conditions	There is a collective bargaining over terms and conditions of employment at the national level; these may differ (for example, over issues like maternity leave) between the various parts of Royal Mail. National agreements' implementation is often delegated to local areas, which has resulted in local disputes. Royal Mail faces serious troubles with its deficit in pension funds.

Source: by Author

6.4.Conclusion

The three cases clearly show that there is a huge variance in the institutional settings, the market structures and the development of competition in the described postal markets. The summarizing tables in the end of each case illustrate how different the characteristics of the institutional dimensions are. E.g., there is still a monopoly for letters up to 50g in Switzerland, while the other two postal markets had been opened for a couple of years. Another example is the completely different access regulation approaches chosen while pursuing the same objectives: namely to promote end-to-end competition. At the end, the outcomes and impacts of the chosen approaches differ as well. But, since the cases are presented in a purely descriptive manner, there is no analysis on how the different characteristics of the institutional dimensions influence the regulatory governance costs in the regulatory regimes. This analysis is done in the next chapter. Each type of regulatory governance costs (static-direct, static-indirect and dynamic) is discussed for each case before a comparative appreciation is given.

7. ANALYSIS & EXAMPLES: APPRECIATION OF REGULATORY GOVERNANCE COSTS

In the following, we provide an overview of where and how the different costs of regulatory governance in the three different postal markets accrue. The chapter first compares the different types of governance costs per country, before concluding with an assessment of governance costs.

7.1. Static Costs of Regulatory Governance I: Direct Costs

As previously mentioned, the direct costs of regulatory governance accrue due to the institutional design and depend on the relationships and the separation of competences of the involved institutional actors.

7.1.1. Monitoring Costs

The analysis of the different costs is structured as follows. Every category of costs is briefly discussed per country and a short comparative appreciation per category is given.

Switzerland

PostReg is a rather small agency with 6.4 full-time equivalents (9 persons) dealing with postal affairs. The Annual Budget, financed by the Ministry, is around 1.3 Million Euros.[310]

In 2006, the OECD published a report, in which Switzerland was criticized for its rather unusual approach in regulatory matters in most infrastructure sectors, even though the function of the Price Supervisor was not studied in detail.[311] The OECD report highlights, among others, “the absence of a coherent framework for the regulatory authorities” (69), which means that “Switzerland currently only is at an early stage of really independent sectoral regulators” (70), and concludes that the “evolution of regulation in the network industries has been slower in Switzerland than in the European countries” (139). It also criticizes the lack of independence of sector specific regulators when it comes to sector specific regulation. While Switzerland generally follows the EU Directives in substantive matters, it has yet to do so in institutional matters.

[310] See Copenhagen Economics (2010b).
[311] See OECD (2006).

In the course of the legislative process, PostReg is interested in expanding its regulatory responsibilities and the competences in monitoring to sanction the operator(s). It is evident that the regulator has tried to influence the process and to stipulate its concerns in the new postal law. As part of the consultation process, PostReg already commented on the draft law and on the intention to transform Postreg into a PostCom. The regulator's comment calls for (1) broader authority, (2) access regulation, (3) price cap regulation and (4) a clear competence in the price-setting process. The latter concern is supported by operators, since this may lead to a reduction of coordination costs mentioned in the section below.[312]

Germany

With its 2600 employees, the Federal Network Agency is a very big authority. According to IPC (2011) one hundred persons are dealing with the postal sector. WIK (2009b) estimates the number of persons dealing with postal issues at 48. Thus, the postal division seems to have grown. The budget is financed by the government.

Every two years, the authority publishes a report on the postal market. According to Postal Act Art. 47, the network agency is obliged to inform legislative organs and the public about its activity and the developments in the postal sector. In doing so, it provides information about developments of the general conditions, corporate structure, net access, prices and competition. In the section on activities, licensing, price regulation, control of abusive practices, and monitoring of the universal service are described. Monitoring costs accrue, particularly in the areas of licensing, price regulation and universal service.[313] Enterprises, which provide postal services, are under the obligation according to Art. 37 of the Postal Act to provide the Federal Network Agency with the information it needs to accomplish its duty to report.

Although the DP AG is not specifically obligated by law to provide the universal service, it can be assumed that as a market-dominating enterprise it is more strongly monitored than the others. The tariffs of the market-dominating enterprise in the licensed sector have to be approved annually by the Federal Network Agency.[314] In connection with the price approval, the Federal Cartel Office is also assigned with the responsibility of establishing market dominance and delimiting the relevant markets. The other prices of Deutsche Post are

[312] See PostReg (2008).

[313] See Federal Network Agency (2011b).

[314] Bulk mail with more than 50 sendings is not subject of ex-ante regulation.

monitored ex-ante. The Federal Network Agency and the Monopoly Commission call for a revision of the law, making possible a stronger ex-ante monitoring of access prices.

Until 2004, the Federal Network Agency carried out its own end-to-end measurement for monitoring the compliance with quality requirements for letters. At the end of 2004, however, this approach had to be abandoned after the German Federal Court of Auditors criticized the Agency and Deutsche Post's double end-to-end measurement . Since then only the DP AG has measured the processing time of letters. This resulted in a reduction of monitoring costs. In its Activity Report (2011b), the Federal Network Agency points out that an own, independent measurement of processing times is necessary. But so far this measurement could not be resumed, because the agency could not raise the financial means needed for an independent measurement.[315]

United Kingdom

The former regulatory authority Postcomm is one of Europe's biggest postal regulators; it also has a large budget of about 10 million pounds. According to WIK (2009b), about 65 persons are dealing with postal issues.[316] The budget is financed by the licensees, with Royal Mail bearing the biggest share. As mentioned above, today's license fees in the British letter market are rather high for the competitors, too.

Royal Mail is obligated by an extended license to provide the universal service. At the same time there are extensive requirements with regard to network access. Under the present regulatory regime the monitoring costs are rather high. As already mentioned above, Royal Mail, in its Business Report 2010-2011, quantifies the costs based on the license (for financing the Postcomm, supply of information and the costs for compliance) at about 50 million British pounds.

It remains unseen how the monitoring costs under the new regulatory regime will develop. In the new regime, Royal Mail is no longer obligated by a license to provide universal services, but has been appointed provisionally as provider of universal services by Ofcom. According to Ofcom (2011), the majority of price controls is to be abolished, and Royal Mail is to obtain more commercial freedom. However, according to the regulatory authority, Royal Mail has to become more efficient, and there is the risk that predominantly Royal Mail will make price

[315] See Federal Network Agency (2011b).
[316] See WIK (2009b).

adjustments. Therefore, Ofcom already announced that the performance of Royal Mail will be closely monitored and that the balance between the increase in efficiency and price measures will be ensured.

Comparative Appreciation:

The comparison shows that the monitoring costs in the three countries differ. In all three countries there are far-reaching duties to supply information regarding the universal services. The main reason for the monitoring costs seems to be the universal service, the corresponding price control and access conditions.

The size and the budget of the regulatory authority cannot be the sole criterion for determining monitoring costs. We notice, however, that while the biggest authority has been installed in Great Britain, the funding of universal services is at risk there. Moreover, the size of the regulatory authority did not guarantee the development of competition after liberalization. The means are predominantly used to monitor Royal Mail. Due to the high requirements to be met by the quality measurement in the universal service and the great number of products under price control, the monitoring costs are very high, particularly for the incumbent Royal Mail. Even several years after liberalization, it is mainly the incumbent who is monitored.

7.1.2. Compliance Costs

Switzerland

Due to the incumbent's profit situation in recent years and that there is a certain market power, the price supervisor conducts extensive assessments of postal tariffs.[317] The increasing involvement of different regulators also implies higher liabilities for operators regarding the provision of information. Furthermore, given that various regulators apply different methods and have different perceptions when they analyze postal matters, the operators have to increase their knowledge of the various methods, which increases compliance costs.

In addition to reporting to the Federal Council (based on Article 42 of the Swiss Postal Ordinance), the incumbent is obliged to submit a comprehensive report about the compliance with the postal legislation to PostReg. The reporting requirements include the following issues:

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[317] See the section about coordination cost in the Swiss postal market.

- Density and evolution of the postal network
- Costs of the universal services and the postal network
- An outline of services classified as reserved, non-reserved and services under competition
- Costs and revenues of the different services (reserved, non-reserved, competition) as well as the applied transfer prices and cost allocations
- Results of the independent quality inspection concerning the quality of universal service and customer satisfaction
- Intentions of development and changes in the universal service
- Development of employment

In its annual report, PostReg judges if the postal incumbent correctly discloses the financial regulatory statement, if the incumbent complies with the rules concerning prohibition of cross-subsidization, and if the quality requirements have been fulfilled.[318]

The requirement that 90 percent of the population be able to reach a post office within 20 minutes is unique throughout the world, no benchmark to measure this availability therefore exists. Accordingly, a new method that would make such a measurement possible had to be developed. The result was a complicated method: by means of geocoded population data provided by the Swiss national census and based on electronic geoinformation systems the value for the accessibility of the postal network is calculated at an annual basis.. This method was developed by Swisspost, tested and certified by an institute of the Ecole Polytechnique Fédéral and finally approved as the official measuring method by the postal regulator in 2004.

In Switzerland, 97 percent of letters must be delivered on time. When tenders for the quality measuring system were invited, the post regulator was closely involved. In addition, the measurements are to correspond to the CEN Quality Standard EN 13580.[319] Hence, the Swiss Post is free to choose its quality measuring systems. According to the new postal legislation, PostCom will have to approve the method for the end-to-end transit time measurement of letters and packages. The approval procedure and the need to verify the compliance with requirements and standards will also result in compliance costs.

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[318] See PostReg (2010) and Postal Ordinance (2003) Art. 42.
[319] See SNV (2002).

Germany

The Federal Network Agency exercises a special control over the market-dominating enterprise DP AG in case it should abuse its position. In particular, this applies to the access to post office boxes and to the infrastructure. At first the Federal Network Agency asks the incumbent to stop the detected abuse. If there is no reaction, the authority can prescribe a behavior to DP AG or prohibit abusive behavior. Moreover, it can void contracts in whole or in part.[320]

An important issue in connection with compliance costs is that of minimum wage in the postal sector. Due to its impact on the German postal market, minimum wage is dealt with under the section on dynamic costs.

United Kingdom

License holders in the UK are required to conduct accounts, which separate revenue and costs in relation to postal services within the licensed area from other operations and to provide the information on an annual basis to Postcomm. Furthermore, the licensees are required to provide the NRA with quarterly revenue and volume data for the licensed as well as the non-licensed areas of their operations.[321]

Furthermore, Royal Mail services are subject to extensive quality and performance obligations based on its license. These obligations are backed up by a compensation system for business customers. The compensation scheme involves a one-percent reduction in postal charges for each percent that Royal mails falls below the national delivery time target and a retail compensation system to compensate customers for domestic first class mail that fails to be delivered within three working days.

Moreover, Postcomm is allowed to impose a monetary fine if it believes that Royal Mail has not made every reasonable effort to achieve the service targets. Due to condition 9 of the former license, Royal Mail is obliged to employ a competition compliance officer to facilitate compliance with the regulatory obligations under the license.

To resolve risks concerning claims about unfair commercial advantages and as a reaction to a number of complaints regarding discriminatory behavior (as regards negotiations as well as Condition 10 of Royal Mail's former license), Royal Mail established its separate wholesale

[320] See Postal Act (1997b), Art. 32.
[321] See Ecorys (2008c).

unit in early 2006. The unit was formerly based within the regulatory affairs department of Royal Mail. Postcomm claimed the lack of physical separation of Royal Mail's wholesale unit and the retail teams. The Agency asked for a full separation of data systems, accounting, and security systems.[322]

Comparative Appreciation:

In the first instance, the compliance costs depend on the duty to give information for the providers and the organization of the exchange of information. The providers of universal services, which for the most part are also the market-dominating enterprise, have the greatest duties to give information. Where costs accrue based on the terms of license, the incumbents bear the biggest share of costs. The compliance costs get even higher if several authorities ask for information and the number of interfaces for the enterprises increases. This is particularly true for Switzerland.

Royal Mail is even obligated to appoint a compliance officer. With the organizational displacement of the wholesale unit the compliance requirements have an impact on the existing organization. A special form of compliance costs is the imposed compensation payments for customers of Royal Mail for noncompliance with the quality requirements. The regulator can also impose a fine. Of the compared postal markets, Great Britain seems to have the highest compliance costs, which Royal Mail quantifies at 50 million pounds. Moreover, with respect to the license costs in Great Britain, they are also relatively high for the competitors with a standard license.

So far no country charges license costs to finance the universal service. With the charged fees, the procedural costs and operating costs of the regulatory authorities are covered.

7.1.3. Coordination Costs

Switzerland

As a specialized department for postal matters, representative of the owners' interests, and principal of the sector-specific regulator, the DETEC holds different positions. On one hand, it prepares (in consultation with the FDF) the Federal Council's decisions about the achievement of the strategic goals of the incumbent. Simultaneously, PostReg is

[322] See Ecccles (2009). Royal mail was in contravention of condition 10-2 of its license, which says not to disclose any information gained through the provision of access to the facilities to any other business of Royal Mail.

administratively attached to the DETEC, the same department that holds the administrative lead in the postal legislation reform.

As mentioned in Section 2, postal markets (postal operators, in particular) were historically isolated from anti-trust laws and regulatory intervention. At the beginning, DETEC, the competition commission, and the price supervisor were concerned with regulatory issues in the Swiss postal market. In 2000, the price supervisor began to pay attention to postal tariffs for the first time since the postal reform in 1998. The new sector-specific regulator PostReg was set up simultaneously with the implementation of the new postal ordinance in 2004. This institutional rearrangement not only increased the number of involved regulators, but the particular interests of the various regulatory authorities in the postal market as well. The non-specific regulators are increasingly active and tend to expand the competences in the former monopolistic postal market. Except for the verification of compliance with the prohibition of cross-subsidizing, the current regulatory framework does not give any competences to the sector-specific regulator with respect to the surveillance of competition. Issues concerning the incumbent's potential abuse of market power are subject to the ComCo. In the course of the legislative process, PostReg tries to expand its responsibilities and competences to impose sanctions related to the surveillance of competition.[323]

The incumbent postal operator criticizes the lack of legal certainty regarding PostReg's competences and enforcement capacity under the postal act of 1997 and its modification ordinance in 2004. In the meantime, the regulator and Swiss Post bargained and accepted a rather informal modus vivendi for the interim period until the new law will be enacted.

The price supervisor is increasingly interested in postal product prices in the non-reserved area (postal items heavier than 50g). In the reserved area, where prices are verified and finally fixed by the DETEC (following the recommendation of PostReg), the price supervisor has the right to give a recommendation but no power to enforce it autonomously. In this context, it is worth mentioning that the various regulatory bodies involved and the Federal Council (in its role as owner) have different criteria to assess profits and hence the prices of the incumbent:

- Price Supervisor: Due to the incumbent's current profit situation (910/728/825 million CHF in 2010/2009/2008)[324], the price supervisor examines whether Swiss Post has

[323] See PostReg (2008).
[324] See Swiss Post (2011b).

been realizing inadequate profits. He argues that current postal tariffs are too high and that earnings should be redistributed to the citizens in the form of tariff reductions.[325]

- PostReg: The Regulator is less interested in the incumbent's profit situation than in the cost structure behind the prices, as long as there is no reasonable suspicion regarding an abuse of market power.
- Government: As the owner and the strategic principal, the state profits largely from a well-performing incumbent.[326]
- Competition Commission: ComCo is unlikely to be interested in the profits of the postal incumbent. However, ComCo became active in the postal sector at the end of 2008 as Swiss Post announced various acquisitions in the field of early newspaper delivery, and a potential abuse of market power was suspected.[327]

Nevertheless, considering the coordination of regulators the mentioned OECD report highlights a coordination deficit between sector specific regulation and cross-sectoral regulation (e.g., competition regulation and price regulation).

Germany

In the German letter market, a total of 3 actors–the Federal Network Agency, the Federal Cartel Office and the Monopoly Commission–are concerned with the postal matters. While the Federal Network Agency and the Federal Cartel intervene actively in the market, the Monopoly Commission has more of an observer status in the field of policy advice.[328]

In its expert reports, the commission makes policy recommendations. In its 2011 report, the Monopoly Commission pointed out that in contrast to the other infrastructures (power, gas and telecommunications), it had no right to inspect the files of the Federal Network Agency in postal regulation. As a policy recommendation, it therefore invites the legislator in its report to create the legal basis that would give the Monopoly Commission the right to inspect those files.

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[325] In March 2009, the Price Supervisor reached an agreement with Swiss Post: Swiss Post lowers some of its letter prices (especially large letters) and simplifies its range as of 1 July 2009. The intended adjustment of parcel prices and prices for international consignments, originally planned for April 2009, got deferred by a year. See Price Supervisor (2009).

[326] In the accounting year 2007, Swiss Post realized a profit for the first time, which allowed for a payout of 300 million CHF (200 millions in 2008) to the Swiss Confederation.

[327] See ComCo (2009).

[328] See Federal Cartel Office (2010, p.15).

The cooperation between Federal Network Agency and Federal Cartel Office is regulated under Article 48 of the Postal Act. Together with the Federal Cartel Office, the Federal Network Agency decides on the delimitation of factually and territorially relevant markets and on the identification of a market-dominating position within the Postal Act. When the Federal Network Agency reaches decisions in the field of price regulation[329] or network access[330], the Federal Cartel Office has the right to comment before the procedure is completed.

United Kingdom

The number of regulatory actors in the British postal market is rather high. Today they include the Ofcom, the Competition Commission, the Office for Fair Trading and Consumer Focus. The sector-specific regulation is very pronounced and aims almost exclusively at Royal Mail. The cooperation between Ofcom and the Competition Commission is regulated in Section 59 and 60 of the Postal Services Act 2011.[331]

There is a cooperation agreement between Postcomm and the OFT. Whether it will be transferred to Ofcom remains unclear. Since the regulatory regime is to be adjusted in 2012, the coordination among the involved authorities will in all likelihood also be discussed.

Comparative Appreciation:

The more actors are in charge of regulatory tasks or with the observation of the market, the higher the coordination costs will be. In all three compared markets several actors are involved in the postal market. While the division of roles is quite clear in Germany, there are strong overlaps in the Swiss postal market. In this connection, the different goals and the assessment criteria seem to be problematic.

As a result, there are uncertainties about competences. The new Swiss postal legislation foresees another actor, the BAKOM, which is given tasks of implementing the promotion of the press, monitoring universal payment services, international relations and policy advice. This will make the regime even more complex and coordination costs will increase.

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[329] See Postal Act (1997b) section 5.

[330] See Postal Act (1997b) section 6.

[331] See Postal services Act (2011).

The division of roles in policy advice also remains unclear. The postal regulatory authority is not expected to assume policy advice functions. In Germany, a good solution seems to have been found with the installation of the Monopoly Commission. In Great Britain, the regulatory authority itself conducts the consultations on the future regulatory regime. In Switzerland, PostReg accomplishes some policy tasks, and this function will be assumed by BAKOM in the future.

In the three postal markets, the regulation of market power has not yet been clarified. In all three cases, the competition commission and the sector-specific regulatory authority play their part, confirming the statement in chapter two about the unclear division of roles between the different authorities: even in liberalized letter markets no phasing-out can be identified. The sector-specific authorities maintain their strong role in the postal markets. It is interesting to compare the developments in Germany and Great Britain: while the newly installed regulatory authority Ofcom has a tendency to relax regulation, the Monopoly Commission and the Federal Network Agency request a stronger ex-ante regulation (particularly for access prices). From an economic view, the call for more ex-ante regulation in the field of network access is incomprehensible. And also when we observe the development in the German letter market, we see that more end-to-end competition has evolved here than in Great Britain.

7.2. Static Costs of Regulatory Governance II: Indirect Costs

As noted above, the indirect costs of regulation are somehow related to the direct costs, though mostly as the outcomes and effects of regulation in the market. In particular, indirect costs are in relationship with the allocation of competences and the instruments implemented to regulate.[332]

7.2.1. Quantities and Prices

Switzerland

Prices in the Swiss letter market are relatively stable. The last increase in prices for letters took place in 2004; a planned mark-up was postponed until April 2010 due to an agreement with the Price Supervisor. Since 2004, the price of a single piece priority letter has been 1 CHF. The expectation of falling prices in the postal market has always been mentioned as an argument for the full liberalization of the postal sector. But currently the pieces will not be lowered, at least not for private customers, because about 85 percent of the revenue is earned through business and bulk mail. As mentioned above, a rigid regulation of prices means that new or innovative pricing models cannot be established by the operator. In Switzerland, prices in the reserved area are fixed by DETEC. So far, universal service has been funded by the residual monopoly.[333]

Furthermore, the Swiss experience in the parcel market shows that in the course of the full market liberalization in 2004, suppliers were able to negotiate the mutual use of infrastructure on a commercial basis. In 2006, Swiss Post implemented a basic agreement with private postal service providers, which defined the mutual access to the infrastructure. Based on this contract, Swiss Post and DHL negotiated the access conditions to the incumbent’s P.O. box facilities in summer 2008.[334]

In 2009, the incumbent is expanding its operations in the early newspaper delivery. This is done mainly through the acquisition of established delivery organizations of the large publishers in the Swiss midland. There is a certain risk that a large manufacturer builds a

[332] See Jaag (2007) to read more about costs of regulation in relation with universal service.
[333] See Maegli et al. (2010a).
[334] See Swiss Post (2008).

natural monopoly and gains considerable market power.[335] But one also has to consider whether a duplication of logistic networks in the night and early morning hours is economically reasonable and efficient. Furthermore, the horizontal integration of early delivery organizations facilitates the achievement of substantial economies of scale. The willingness of publishers to sell the vertically integrated early delivery organizations (which are actually far away from their traditional core business) shows that they assume that the early delivery can be operated more efficiently.[336]

The Competition Commission therefore evaluates both situations, deciding which consequences it is willing to accept. If it does not approve the acquisition, economies of scale are difficult or impossible to achieve in the early newspaper delivery. If the merger is approved, however, it leads to a concentration of suppliers. Both solutions have different impacts on the further development of the market. The competition commission finally approved the acquisition in autumn 2009.[337]

Germany

The development of the price for a 20 g standard letter of the DPAG has been mostly constant since the year 2000. In 2003, the respective postage was lowered by EUR 0.01 to EUR 0.55. Thus, the price development for the 20 g standard letter is slightly declining, both nominally and in real terms.

WIK (2010) observes that at the moment end-to-end-competition and network access exist in parallel in Germany. While the volume of items received via network access showed a relatively strong increase in past years, the increase of the volume of the items directly delivered by competitors was weaker.

Most of the competitors‘ letter prices including VAT are below the prices of the Deutsche Post AG (DPAG), which until mid 2010 was exempt from VAT.[338] Effective as of 1 July 2010, the VAT privilege of the Deutsche Post is abolished. The revision of the VAT law in

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[335] However, a natural monopoly in the early delivery business is even easier contestable than the natural monopoly in the traditional daily mail delivery: sorting costs are much lower and the costs accrue in the sub-processes of transport and delivery.

[336] Knieps (2007) states that the implementation of separate home delivery systems by different publishers and operators constitutes an inefficient duplication of costs.

[337] See ComCo (2009).

[338] See Federal Network Agency (2009, p. 45).

the postal market draws a line between universal for private customers exempt from tax and tax liability for bulk deliverers and business customers.

In connection with the market development in Germany, minimum wage is certainly an interesting issue: the fixing of minimum wage by the government resulted in a long legal dispute, which led to much uncertainty regarding security of investment.[339]

United Kingdom

The Ecorys Study (2008b) includes a survey that asked the three biggest competitors (among other things) for their opinion about the UK price control. The statements are fundamentally different. Whilst royal Mail states that it is prevented from competing with the other operators from the pricing perspective. The competitors UK Mail and TNT claim that Royal Mail's pricing policies are irrational and aimed at finding opportunities for competitors rather than recognizing needs of customers. Therefore, TNT filed a complaint with Postcomm about the pricing policies of Royal Mail. In their conclusion on pricing, Ecorys (2008b) states that the main battlefield in the next few years will be the pricing policies of Royal Mail and how Postcomm will deal with the issue.

A couple of years ago, the definition of the USO and its financing came under discussion because (1) Royal Mail reported as of 2007/2008 an estimated loss of £100 million for the universal service[340] and (2) because Royal Mail was exempted from VAT for its universal services. Thus, the competitor TNT filed a court complaint to dispute the validity of the VAT exemption from services provided by Royal Mail, saying it provided comparable services but was subject to VAT. The European Court of Justice took the view that the services provided by the two companies were not comparable and that Royal Mail supplies postal services under a legal regime, which is substantially different from that of an operator such as TNT. Royal Mail was designated in 2001 as the only universal postal service provider in the United Kingdom. Later, in 2006, the UK postal market was fully liberalized, without affecting the status and obligations of Royal Mail, the court said.[341] Hooper (2008) states that the VAT distortion in the British mail market does almost not apply in the access case but nevertheless it constitutes a key barrier, which hinders end-to-end competition.[342] Between 2003 and 2011,

[339] A detailed description of the situation in Germany is given in the next section.
[340] See Ecorys (2008b).
[341] See European Court of Justice (2009).
[342] See the Hooper Report (2008).

the prices for standard letters, first class stamps respectively, increased from 26 pence to 46 pence. During the same period, the prices for second-class stamps increased from 20 pence to 36 pence.

The prices have increased, although the majority of prices of Royal Mail have been subject to price control since 2006. Originally, the control was set up so that in real terms the letter price would decrease by 1 percent per year. But the price control mechanism also includes various corrective measures. According to one of these mechanisms, the volume of mail items is considered when the price is set and approved. Since the volume of letters was declining strongly, Royal Mail was able to increase the prices between 2006 and 2010 to compensate partially for the falling volume through price adjustments. According to Ofcom (2011), the prices for private customers have risen faster and stronger than the bulk mail prices. Ofcom (2011) concludes that in the future there will be further price increases in order to ensure the universal service in a sustainable way. In March 2012, Ofcom relaxed its rules and allowed Royal Mail to set the price of first-class and business mail. Royal Mail quickly announced record increases of a first class stamp from 46p to 60p on 30 April, with second-class rising from 36p to 50p, the steepest stamp price increase in over ten years.

According to the Agency, this is not the only measure. Due to the high fixed costs and to the slow implementation of the modernization plans, Royal Mail was not able to reduce the process costs or to keep up with the decreasing volumes. As a consequence, unit costs have significantly gone up. Now the regulatory authority Ofcom asks Royal Mail to realize significant cost reductions and increases in efficiency.

Comparative Appreciation:

The costs regarding quantities and prices depend on the degree to which regulation influences the development of the market and therefore the consumers. This mainly applies to the price level. What is expected of the liberalization of the postal markets is the improvement of services and a decline in prices. In all three countries, the prices in the universal service (at least in the reserved service) are subject to approval by an authority. In Switzerland and in Germany, the retail prices remained constant during the last ten years. In Great Britain, they have increased considerably. However, the original price level was very low.

With respect to prices the current developments of volumes play an important part. When letter volumes decline, unit costs increase. As long as the costs of the universal service are borne by the incumbents themselves and no financing mechanisms exist, the prices will have to adjust to market developments. Otherwise, the funding base for the universal service breaks away in the medium term. A rigid price regulation system combined with high requirements for range of services, quality and accessibility in the universal service endangers the funding of the universal service. This becomes clear in the case of the United Kingdom and is confirmed by both regulator and incumbent. The approval procedure for product prices also has its impact. If it lasts too long, the situation in the market may have changed in the meantime and new price adjustments may already be required when the price measures are implemented. The prices in the postal markets of Switzerland and Germany have been relatively stable so far. The faster market conditions change, however, the shorter the reaction time has to be.

The price situation for bulk mail (major customers, consolidators or competitors) has improved in the compared markets. Based on the organization of the access regime, this has different effects. Access prices are very low and specified via headroom margin, especially in Great Britain. Royal Mail has declared that it de facto subsidizes its competitors due to the low access prices, since the prices do not cover the costs: because the volumes decrease and the unit costs increase, Royal Mail bears the load of these costs.[343] The respective effects on the development of end-to-end competition have already been described above. In summary, the regulation has the opposite effect of the one originally planned. The result:

- no end-to-end competition and lacking incentives for competitors to establish their own networks
- no efficiency gains in the incumbent’s value chain
- a monopolization of the incumbent’s delivery system
- universal service is endangered
- bad financial situation of the incumbent Royal Mail

In comparison, the end-to-end competition in Germany has already developed relatively even before the market was opened. Today, the access prices are controlled ex-post and not predetermined. Since 1998, the competitors have attained about 10 percent market shares with their own delivery networks, demonstrating that both end-to-end competition and upstream competition can exist side by side. The increase of DP AG’s discount tariffs in 2010 lets us assume that the access business model is gaining in importance for the DP AG.

[343] See Hooper (2010).

The structure of operators active in the German letter market differs from that in Great Britain. Even after a consolidation phase, the number of active licensees (around 600-650) is relatively high. There are many regional providers with regional collection and delivery services and few big competitors who by means of regional providers could offer area-wide delivery. In Great Britain, the number of licensees is rather small.

An important element of short and long term market development in a personnel-intensive sector - such as the post - are the terms of employment, specifically minimum wage. Minimum wage can turn into a high hurdle for potential competitors who start their business from scratch, preventing market entrance or impairing the financial situation of the competitors. Even if this was not the main reason for the financial difficulties and the failure of the PIN Group in Germany, the fixing of high minimum wages certainly played a role in this case.

A VAT regime, where the exemption from VAT is too one-sided, can have a similar effect. It can certainly be argued that the exemption from VAT for the designated universal service operator constitutes a financial assistance for the universal service. Depending on the scope of VAT exemption, it can also be a competitive advantage. The type of regime introduced in Germany after the decision of the European Court of Justice, according to which operators provide the area-wide services of the universal service, seems to make sense. However, this only applies to products for private customers and not for bulk mail. As a consequence, many competitors are again excluded from exemption. In Great Britain, only Royal Mail is excluded from VAT, though there is no other provider active in the universal service. In Switzerland, Swiss Post has paid VAT on a voluntary basis since 2009, although there is an exemption for items below 50g.

7.2.2. Capacity and Technology Choice

Switzerland

Switzerland maintains one of the densest postal outlet networks in the world. Even in a fully liberalized market, it is in the incumbent's commercial interest to have a modern and nationwide postal network in order to provide adequate and cost efficient services. Therefore, it is debatable whether a legally regulated infrastructure contract is needed or whether this leads to an efficient provision of postal services. Even though the definition of the availability of postal access points delivers a certain value-added for residential customers, future-oriented and innovative solutions with focus on the changing customer needs and technological developments get partially disabled through excessively rigid definitions. Examples of modern solutions are postal agencies operated by third parties, a definition of the Universal Service that allows for electronic delivery of postal items (which allows for flexibility in physical delivery frequencies). Agencies operated by third parties have much longer opening times than traditional post offices, which is in line with changing customer needs. Whether the design of the postal network is advantageous to the citizens depends more than ever not only on geographical accessibility, but also on whether the offered portfolio of products and services is in accordance with changing customer needs.

In its business report, Swiss Post (2011b) states that it is in competition with 80 percent of its turnover, and (with the remaining 20 percent) in competition with electronic means of communication with its products in the reserved, the regulated service respectively.[344] This means that the post is in competition with other technologies. Swiss Post, therefore, wants to position itself at the interface between physical and electronic products. The market segment assigned to the letter is no longer called letter market, but, more comprehensively, communication market. However, today's regime, which refers exclusively to the letter, does not take this fact into account. Only the new act takes up the idea of a technologically neutral delivery (physical or electronic) in the universal service. In this way, the legislator allows for the social and technological change. Whether this possibility will really be put into practice and what impact the development of the universal service[345] will have on the delivered quantities remains open. Swiss Post already offers corresponding products outside the universal service.[346]

In recent years, the incumbent has been investing heavily into his sorting facilities. The investment into three new sorting facilities and the centralization of the sorting process grant Swiss Post long-term savings of about 150 million CHF annually. Furthermore, the reorganization results in substantial efficiency gains in the provision of postal services.

During the second half of 2011, Swiss Post introduced the so-called sequencing in some regions. This technology makes it possible to sort a considerable part of the mail

[344] See Swiss Post (2011b).

[345] For example the delivery days in rural and remote regions.

[346] The Swiss Post has established itself at the interface between the physical and digital world. According to a study by UPU, Swiss Post, with its hybrid and digital products and services is among the best postal enterprises in this field. See Swiss Post (2012) and UPU (2012).

automatically down to the sequence of personal mailboxes. Manual sorting is no longer necessary. This is a reaction to the increasing cost pressure in delivery. The introduction of sequencing requires infrastructural investments. At the same time, the new technology reduced the workload for the post by a total of around 270 personnel units compared to today.[347] Additionally, Swiss Post has invested into new delivery vehicles in recent years. In 2008, it started converting its vehicle fleet. By 2016, all mopeds are to be replaced by electric scooters.[348]

Germany

As mentioned above, competition in relation to other competitors developed well in Germany. The competitors of Deutsche Post found ways to set up end-to-end delivery networks. Local providers of postal services join platforms like Mail Alliance in order to offer area-wide services. By 2011, Mail Alliance has already attained a service coverage of 75 percent of German households. It is certainly decisive that the different small networks are interoperable and that the processes have been successfully approved.

The German postal market is also affected by declining letter volumes. Therefore, Deutsche Post also outs its hope on innovation in delivery. In order to meet changing customer needs, for instance, it introduced the so-called pack station. The pack station is an automatic parcel delivery system of DP AG. Countrywide there are currently about 2500 automats (as of November 2011), where the customer can pick up and deliver certain items around the clock. The E-PostLetter of DP AG is an example of the necessary preoccupation with new technologies that are not directly connected to the original workflow of postal enterprises. Here, the DP AG competes not with other postal enterprises, but directly with enterprises like 1&1 and the Deutsche Telecom. The E-PostLetter is expected to help compensate the decline in the physical sector. The Federal Network Agency has also given attention to the E-PostLetter. Since the physical delivery of the E-PostLetter corresponds to the delivery of a standard letter, the price for it is subject to approval. At the request of the Deutsche Post the price was fixed at 0.39 Euro.[349] And thus the physical delivery of the E-Post letter has been regulated. As mentioned above, the Federal Network Agency requests, that because the technological developments and E-Substitution, that the regulatory framework must change.

[347] See Swiss Post (2011a).
[348] Around 7500 electro scooters. See Swiss Post (2011c).
[349] See Federal Network Agency (2011c).

United Kingdom

The combination of mandatory access and headroom regulation was originally intended to accelerate the evolution of competition. Postcomm estimated that new entrants would be likely to use the opportunity of access to royal mail's facilities to realize economies of scales, which in turn facilitates the development of their own end-to-end networks. Instead, the trend in consolidation (collection and sorting) has been growing much faster than in other European markets. Mail items are handed over to Royal Mail's network for delivery at low prices.

After the full market opening in the UK, the universal service essentially remained, and the definition of the USO in the UK is still more extensive than required in the European Directive. Royal Mail therefore claims that the definition of the USO should be narrowed. Futhermore, Royal Mail states that stamp prices should cover economic costs of providing the service. TNT argues that the number of days for deliveries and collection could be reduced to five days, but that the decision should be left to Royal Mail. The other major competitor, UK Mail, is also in favor of reducing the delivery days and mentions that there is a potential opportunity to reduce the costs of the USO.[350] In the end the access regime had the consequence that competitors have not established their own access networks. They are not motivated to invest into other technologies because of the low access prices. If competitors do not invest into their own networks based on the attractive access conditions, the product range will be predominantly geared to the products and services offered by the incumbent.[351] Consequently, the competitors' business model will rely on the incumbent's business model. That is exactly what happened in the UK.

Due to the definition of the universal service, the range of products offered by Royal Mail is strongly standardized. As the strong reduction of letter volumes shows, consumer behavior changed significantly during the period after the market was fully opened, and the products in the universal service were not adjusted. The requirement of six delivery days per week remains enforced. If no investments into new technologies are made, there will be no innovation in the postal market. According to Hooper (2010), the competitors of Royal Mail complain that its delivery, compared to the best in class, is very inefficient. Therefore, the

[350] See Ecorys (2008b, p. 960ff) for detailed statements of the operators concerning the definition of the USO in the UK.

[351] See De Bijl et al. (2006, p. 168f).

competitors also wonder why they should finance such an inefficient system with higher access prices.

In contrast, Royal Mail has not been motivated to invest into new technologies, since the existing infrastructure is used to full capacity by the competitors' letters. Together with strongly declining volumes, this has fatal consequences: Royal Mail is in bad financial condition and at the same time has to realize an extensive modernization program. The modernization program of Hooper (2010) also proposes technological measures:

- higher degree of automatization in the processes of Royal Mail
- rationalization measures within the network of mail centers
- diversification into new revenue streams[352]

Another issue with access agreement is the length of negotiations of the parties. TNT, for example, states that one of the most important reasons to opt for the standard national access agreement instead of negotiating its own conditions with Royal Mail was that a potential long period of negotiations could be avoided. In turn, this is a compromise where TNT chose to reduce the time to market instead of optimizing its access conditions.

TNT stopped its own end-to-end delivery and now concentrates again on the consolidation business in the UK. Even if the overall mail volumes in Britain are declining, the other operators succeeded to increase their volumes in the upstream markets. Approximately more than every third letter in the UK is collected by competitors of Royal Mail, but finally handed over to Royal Mail for the delivery. In January 2012, TNT commented as follows on the possibility to resume end-to-end delivery: "It's something that's been under consideration, but nothing is being launched. The company cannot roll anything out until there's changes in the VAT regime, and that's something the government has to agree to change."[353]

Comparative Appreciation:

The examples show different aspects of the selection and further development of technologies. On one hand, increases in efficiency in the traditional value chain of the letter must be achieved through investments into the sorting and delivery technology. On the other hand, the preoccupation with technologies becomes necessary which so far were not known or used in the postal sector. Basically, potential entrants into the postal market have to ask

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[352] Hooper (2010) states that Royal Mail hardly invests into revenue streams like the digital business.

[353] See Post & Parcel (2012).

themselves whether they should invest into a shrinking market or not. If the market is entered, the selection of the business model very much depends on the general market structure and the corresponding volumes.

If access conditions and prices of the postal infrastructure are fixed by law in an ex-ante manner, this may cause negative impacts on the amortization of the sorting devices. Moreover, it prevents the development of new pricing solutions in the form of negotiations between the incumbents and market entrants.

In Great Britain, the costs regarding capacity and technology choice are very high to access regime and price regulation. The shows illustratively how regulatory conditions have their effect on the products and technology choice.

The example of Great Britain clearly shows that access regulation promoted the business model of consolidators. Neither Royal Mail nor the competitors made sustainable investments into new technologies. This kind of access regulation not only strengthens the traditional delivery organization, but also weakens the position of Royal Mail in the upstream market. Royal Mail has hardly invested into increases in efficiency and new technologies. After TNT made efforts to establish its own delivery system in towns, the enterprise has withdrawn again and now concentrates on the consolidation business. As already mentioned above, the conclusion that the new regulatory authority Ofcom has drawn about the present regulatory regime is very clear: Regulation has failed in Post.

By comparison, these costs concerning capacity and technology choice are rather low in Germany and Switzerland. The example of Germany shows that competitors invest into end-to-end networks. Here, in addition to deliverers of letter mail and consolidators, the additional business model of the networker has established itself. The latter invests into platforms, making the interoperability between regional providers of letter services work. They offer the associated partners a platform for the central control of letter mail delivery and services such as marketing and quality management.

In Switzerland and Germany, investments of the incumbents into new technologies can be observed. Particularly in the field of hybrid solutions and electronic delivery, the two enterprises have made investments. It remains to be seen how these investments will pay off. Here, the new Swiss Postal Act points in a new direction. New technologies are made possible as alternative delivery forms in the universal service. This motivates operators to invest into the respective technologies.

7.3. Dynamic Costs of Regulatory Governance

In the following, we give some examples of dynamic costs of regulatory governance in the postal sector. In general, they 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. Since the impact on product and process cannot be considered in total isolation from each other, the comparison for both types is made without a clear separation.

Switzerland

As of yet, it has been difficult to estimate how regulatory dynamics affect the evolution of the market. The example of the Swiss postal law reform clearly shows that the sector-specific regulator is trying to influence the formation of regulatory institutions, and hence the evolution of the regulatory environment. Due to the pursuit of broader powers to direct, legal access regulation, price cap regulation and a clear assignment in the pricing process, the regulator seeks to defend its own interests and tries to enhance its institutional legitimacy. There is a risk of over-regulation, and of inhibiting rather than stimulating the development of the market.[354] Against this background, it is of great interest that no unnecessary requirements be laid down and fixed in new postal laws: regulation should not hinder the market's development but rather facilitate the phasing-out of regulation after a successful liberalization.

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. Historically, the development was as follows:[355]

Originally, the Federal Council foresees a gradual procedure for the market opening. As a first step in 2004, the parcels market should be fully opened; as a second step in 2006, the same should be done for the letter market except for letters to 100 g.

For the final decisions, the Federal Council reserves the right, before opening the postal market further, to commission an evaluation of the market opening thus realized. On 1 May 2006, the Federal Council took note that the policy of a gradual, controlled opening that had

[354] See Knieps and Weiss (2008).

[355] See Swiss Federal Council (2009).

been followed since 1998 was successful. The two central goals–to offer basic services of good quality to the population in all parts of the country, and to safeguard the funding of these basic services–could be achieved. At the same time, the Federal Council observed that for the further opening process a total revision of the Postal Act and of the Postal Organization Act had to be initiated, because the then-current legislation did not permit a total opening of the market.

After the consultation procedure, concluded in 2008, the new Postal Act and the Postal Organization Act were submitted to parliament. In political circles, the bill gave rise to some controversy. The most controversial points of the bill were the time schedule for the market opening presented by the Federal Council and the line of action proposed for lowering the letter monopoly from 100g to 50g, and finally down to 0g. The Federal Council took into account the objections: in the draft act, the full market opening was formulated separately as a federal decree subject to a possible referendum. Thus, the eligible voters were given the opportunity to demand for a popular vote on the full market opening. This decision did not satisfy the parliament and politics. In December 2010, the new legislation was approved by parliament. The original decision to implement the total market opening in stages was again postponed.[356] The new act was expected to enter into force in the second half of 2012.

Consequently, the current revision of the law in Switzerland does not include a total opening of the market. Three years after entry into force of the new legislation, the Federal Council has to present to parliament a report on further steps that could be taken to reduce the monopoly. This report will probably propose full market opening. As mentioned above, this full opening will not be realized before 2015; thus, from the time of the original decision in 2004, it will likely take more than 10 years to implement. Consequently, the major part of letter mail will remain in the reserved sector for years to come. It will be interesting to see how competition develops. It can be expected that no new enterprises will become active in the market. Another interesting aspect is the development of the market entrant Quickmail, and the question of whether it can achieve its goals under the given conditions.

Although it will not open the market for the time being, Switzerland, with its new Postal Act, is more progressive than other European countries with respect to the definition of the

[356] See Swiss Federal Council (2009).

universal service.[357] Switzerland was the first country to include a discretionary provision permitting technology-neutral delivery in the new Postal Act of 17 December 2010.[358] While so far this idea did not become part of the corresponding decree of the federal council, it remains possible as an option. It remains open, therefore, what dynamic effect this will have and whether the definition of the universal service will be implemented. Politics, it seems, are not ready for this. Since questions about the definition of the universal service are closely connected to the question of market opening, as shown above, a political debate on a possible adjustment will probably only become possible upon a decision on market opening.

Germany

Expecting that operators with low wage strategies will enter the market, unions and some political parties demand a minimum wage for the postal sector. They argue that without a minimum wage, the DP AG cannot effectively stand its ground under competitive conditions.[359] Furthermore, they state that low wage strategies are immoral, since employees depend on additional social security transfer payments.

As an accompanying measure to the complete opening of the market, the Federal Ministry for Labor and Social Affairs, on 28 December 2007, fixed a binding minimum wage in the letter services sector. This minimum wage was negotiated by the Verdi union and the Employers' Association for Postal Services. The negotiated minimum wage of 9.80 Euro per hour exceeds the average wage paid by the competitors of DP AG by 20 to 30 percent. As a result, the introduced minimum wage has been criticized by the Ministry of Economics and Technology, the Federal Network Agency and the Monopoly Commission. The biggest competitors of the DP AG, especially TNT and the PIN group complain publically and accuse the government of not considering the counterproposal of 7.50 Euro per hour. Several parties (TNT, PIN and the association of couriers) filed a lawsuit against the German Government with the intention of having the decision declared null and void. They argued that the fixing of the minimum wage infringes on the competitors' right to negotiate their own Collective Wage Agreements with the unions. Although in March 2008 the Administrative Court of Berlin and in December 2008 the Higher Administrative Court of Berlin-Brandenburg confirmed the legal opinion of

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[357] Regarding the dynamic costs of regulatory governance, the definition of the universal service plays an important part. If this definition is too rigid, it prevents a dynamic further development of services along the changing customer behavior.

[358] See Postal Act (2010) Art. 14.

[359] See Dieke and Wojtek (2008) for the political history of postal minimum wages in Germany.

TNT Post, the legal dispute continues. The existing legal uncertainty hinders the development of a market-based competition on the German letter market. 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 19000 jobs disappeared, about 17000 of which occurred in 2008 alone.[360] It is clear that the economic downturn during this period also played a part in these figures.

At the same, it remains uncertain whether the two biggest competitors, PIN and TNT, will remain in the market.[361] Owing to the fixed minimum wage, TNT has been considering withdrawing from the German letter market. During the first quarter of 2008, the PIN Group filed for bankruptcy. While PIN dropped out, TNT decided to stay in the market, but without paying the decreed minimum wage. At the same time, TNT must make high provisions to prepare for the case that it should lose the lawsuit. After the lawsuit had been filed in 2008 and passed through the legal system, the Federal Administrative Court came to a decision in January 2010: The court declared the decree on the minimum wage by the Federal Ministry for Labor and Social Affairs null and void.[362]

Another example for dynamic effects is the unilateral exemption from VAT of the DP AG. Prior to 1 July 2010, the turnovers of DP AG are exempt from VAT.[363] As the only enterprise, the post doesn't have to raise VAT on postal items. The reason given for this is that the DP AG has to provide the universal service. The services of the competitors are fully liable to VAT. Competitors like the Dutch TNT protest vehemently against this treatment.

In April 2009, the European Court of Justice decides that the exemption from tax of one market operator only is unlawful.[364] After several attempts, the lower and upper house of German Parliament decided in March 2010 to change the Value Added Tax Act. In the private customer sector the Deutsche Post AG remains exempt from VAT, but becomes liable to VAT in the business customer sector. The new regulation enters into force on 1 July 2010. Since then, other providers of postal services have been exempt from VAT, so long as they provide at least part of the universal services, such as the transport of packages, permanently and area-wide. At the same time, many postal services of Deutsche Post (e.g., bulk mail) are

[360] See Heitzler and Wey (2010) and Federal Network Agency (2009).
[361] See Dieke and Wojtek (2008, p. 294).
[362] See Heitzler (2010, p. 5).
[363] See Monopoly Commission (2011).
[364] See Reuters (2010).

fully liable to VAT, which so far were tax-privileged. TNT-Post comments the decision of the Bundesrat and observes that this is “an important step toward fair competitive competitions.”[365]

United Kingdom

Royal Mail believes that the regulatory framework creates a disincentive to postal operators, which leads them to concentrate on price rather than innovation. Permitting cost-reflective pricing will facilitate sustainable competition, which creates the right incentives for efficient entry. The current regulatory framework enables competitors to enter the market with very little risk; in order to facilitate innovation, there must be incentives for all operators to invest. Deregulation will allow greater investment certainty and thus innovation, by enabling normal competitive forces to shape the industry.[366]

Since the launch of the access regime, the access volumes have grown rapidly. In 2010, around 40 percent of letter volumes (7 billion items) were processed via access agreements. Due to the headroom margin system Royal Mail lost money on these items. Therefore, they called for an adequate regulation, which took into consideration the changed situation in the sector.

Concerning the development of end-to-end competition, the Hooper Report (2008) concludes that there is uncertainty about the future development of the market, which makes 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 are difficult to predict. Furthermore, some operators claim 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.[367]

The fact that the competitors’ business models are predominantly based on the offered services and the business entail a very high risk in the medium and long term: The changes in the regulatory regime proposed in 2010, which are now adopted by Ofcom, also have far reaching consequences for the competitors. The competitors entered the market under the present regulatory regime after the market opening and the price regulation of 2006.

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[365] See Reuters (2010).

[366] See Ecorys (2008c).

[367] See Hooper Report (2008, p. 155).

Now this regime is to be adjusted. Of course, these adjustments also have commercial consequences for the competitors. If the present ex-ante regime is abolished, competition law has a stronger significance in the postal market. While this gives Royal Mail more commercial flexibility, the uncertainty for the competitors increases, as it will take a while during the transition phase for the legal means regarding anti-competitive behavior to take effect. Under extreme circumstances, cases can last so long that smaller competitors are forced out of the market. [368]

Both product innovation and process innovation are appreciated in the following.

Comparative Appreciation: Product Innovation

Although the stability of institutions has a positive effect on investment security, the influence on the universal service is rather negative in connection with product innovations. This is the case if legal stipulations on the universal service cannot be adjusted quickly enough per changes in the market. Excessively rigid definitions of the universal services prevent the further development of products.

All in all, the legislative process in Switzerland has lasted very long and remains uncompleted. 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 universal service, the incumbent got into more and more trouble.

As mentioned above, the traditional Universal Service Obligations in the postal sector often include an obligation to deliver countrywide at least five days per week.[369] In all three examined countries, the incumbents deliver six 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

[368] See Hooper (2010).

[369] See European Commission (2008).

free e-readers such as Kindle or iPad 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.

An example for such an electronic delivery service complementing and potentially substituting physical delivery is reverse hybrid mail.[370] The commercial viability of such a service depends on the 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.

In the long term, an adjustment of the universal service due to declining letter volumes and changed customer behavior will be unavoidable. In the future, electronic alternatives and flexibility regarding delivery time and days have to be made possible. Although the regulatory framework has not yet been adjusted, postal enterprises have to prepare for these adjustments today. A difficult decision must be made: should the postal enterprises substitute their current business and their letter volumes with digital products? In order to do this, the postal enterprises have to be certain today that the investments into new technologies and the development of products will be worthwhile also in connection with the universal service.

Ex-ante price control has a decisive influence on product innovations and the pricing of products. Long-lasting approval processes increase the time to market. Moreover, timely reactions to changes in a quickly altering environment are impossible. Innovative price models are prevented by extensive price regulation as in case of the UK. In the present regime, 80 percent of the turnover of Royal Mail is under price control in England. As a consequence, the regulatory authority sees itself more in the role of a product manager of prices than in that of a supervisor. It is in the nature of things that the regulatory authority does not have primary information about the markets and their development and that it can hardly observe the changes in customer behavior. All experience regarding developments is missing, since this is a new state authority. Therefore, most market changes are recognized with a certain delay.

While volumes are strongly declining, the requirements remain the same, which leads to a shrinking financing basis for the universal service. Since the turnovers have to be used to fund

[370] Envelopes of letter mail are scanned and emailed to the customer's computer or cell phone. The customer then has the options to have the letter opened and scanned, recycled, archived or delivered to the physical address. Hence, not all letter mail needs to be delivered physically and daily. See Jaag et al. (2011).

the universal service, fewer financial means are available for innovations. Today flexibility in pricing is required, since hardly any financing instruments other than the turnovers of incumbents are applied.

The selection of the financing mechanism for the universal can also influence the innovation incentives of the competitors. In case of a funds solution, which is funded by all market operators, the amount of the contributions plays a crucial role. The higher the contribution of a provider, the fewer means are available for innovation. This is true both for the incumbent and the competitor. The uncertainty regarding the financing concepts to be applied in the future can therefore also have an impact on investment incentives.

The lengthy debate and the legal dispute 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. 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. It is certainly true that economic reasons also played their part in the bankruptcy of the PIN Group and the Springer Publishing House withdrew as an investor. But shortly after the introduction of minimum wage, the structure of the market changed significantly.

Comparative Appreciation: Process Innovation

The regulatory governance costs regarding process innovations can also be shown using the example of the letter market in Great Britain. 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, in the UK, the de facto regulation of downstream access has various effects: First, it prohibits the development of competing delivery networks. Due to the possibility of partially bypassing Royal Mail's upstream operations, economies of scale and scope are lost in these processes. It also creates regulatory risk for all involved operators because their business models very much depend on the terms of network access. This translates into investment risk, so that investments in innovation and infrastructures are deterred.

As a consequence of ex-ante regimes, no investments are made and no innovation incentives are offered. In Germany, the access conditions are monitored ex-post. Here the market development differs from that of Great Britain, and both competitors and the incumbent realized innovation at all levels of the postal value chain. Smaller providers have looked for innovative solutions in order to realize an area-wider delivery. In this case, 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.

7.4. Synthesis and Conclusion

After the analysis has been concluded, this section will provide the synthesis. The purpose of the section is to determine which institutional dimensions and cost drivers have a relatively high influence on the different regulatory governance costs.

7.4.1. Different Stages of Regulatory Regimes

In chapter 3, different levels concerning the economics of institutions were introduced. The three compared postal markets in Switzerland, Germany and the UK are all in different phases regarding regulation and liberalization.

With reference to chapter 3 and the different levels of analysis, Switzerland is most likely on Level 2 (get the institutional environment right) in transition to Level 3 (get the governance structures right): in Switzerland the full opening of the letter market has not yet been taking place and was further postponed in the new Postal Act, although this was originally a goal when the revision started. A postal legislation has been adopted and will be put into force during the second half of 2012. The institutional setting is being redefined; new actors in postal market regulation are created. The Swiss Post is in good commercial shape and will be converted into a limited company.

Germany is already one level further and is on the threshold to Level 4 (get the marginal conditions right): In Germany, the market was fully opened in 2008. Subsequently, discussions about the introduction of minimum wage and the exemption from VAT led to legal disputes and uncertainties. Competitors have a share of about 11 percent in the letter market; DP AG provides the universal service on a voluntary basis. There are calls for an amendment to the postal legislation, and it is very likely that this will happen in the near future. Today Deutsche Post is one of the biggest logistic enterprises worldwide.

Great Britain is on Level 4: In Great Britain, the market was fully opened as early as 2006. Regulation did not achieve the original goal of well-functioning competition with sustainable maintenance of the universal service. The strong regulatory interventions and their consequences have to be corrected through a new postal legislation. This has been in force since October 2011 and is currently being implemented. The former regulatory authority PostComm is dissolved and the tasks of postal market regulation are transferred to Ofcom. The effects of the institutional adjustments cannot be assessed at this point.

Due to the fact that the three postal markets are not in the same phase, not all types of regulatory governance costs can be assessed in the same way. Static costs and particularly direct costs can be assessed in all three markets. For instance, the dynamic effects (dynamic costs) can hardly be assessed in Switzerland, since the primary goal of the present regulatory framework is not the promotion of competition and practically no market entrances take place. In contrast, dynamic costs and their effects in the markets of Germany and Great Britain can be observed relatively well. The effects can be best seen in Great Britain, due to the fact that it has been more than six years since the market opening and very strong regulatory interventions have taken place.

7.4.2. Institutional Dimensions and Impacts on Regulatory Governance Costs

In Chapter 5, a list of different institutional dimensions was introduced.[371] Not all dimensions have the same strong impact on regulatory governance costs. In the following the different dimensions and their impact are discussed. The appraisals of the different institutional dimensions and their influence are based on the observations from the case studies, and on the semi-structured expert interviews on the framework of regulatory governance costs.

Number of Regulatory Actors:

The number of involved actors mainly affects the direct costs. The higher the number of actors, the higher the different need for information will be. Compliance costs also increase, since different actors have a need for information. The coordination costs also rise. In particular, this was confirmed in the case of Switzerland. Depending on the degree of horizontal exchange of information between the authorities, this may lead to a duplication of the provided information. The examples in Germany and Switzerland show that the regulatory authorities generally call for more rights of inspection and competences. The effects on the

[371] See tables 5 and 9.

indirect and dynamic costs are rather slight. In the German letter market, many smaller enterprises are active in the market, which shows that they are not deterred from a market entrance. In general, it can be said that the larger these actors are, the higher the direct costs will be.

Modalities and Subject of Information Exchange:
Regarding the exchange of information, five different drivers can be identified in the postal market. There are information exchanges with reference to the universal service, to prices under price control, to access conditions, labor conditions and turnovers in the market. Generally, it can be said here that in the three markets the obligation to provide information is very much concentrated on the incumbents. The reason for this is that while they are the providers of the universal service, they are also market-dominating enterprises. The exchange of information therefore has an impact mainly on the direct costs of the incumbent (monitoring and compliance). If the obligation to provide information is generally excessive, smaller enterprises are deterred from entering the market. In the UK, the direct costs have so far been particularly high due to extensive obligations to provide information about the high number of products under price regulation, quality requirements, and the access regime. The main problem with information exchange is the asymmetry that exists at the expense of the incumbent. The organization of information exchange has only little impact on indirect and dynamic costs.

Interaction of Sector-Specific Regulation and Competition Law:
The analysis of the three markets confirms that the division of roles in the postal market has not been fully clarified. In the UK, the former Postcomm has extensive competences in the area of access conditions; however, the strict regime did finally not result in the desired effects. Hooper (2010) concludes that competition law will play a more important role in the future British postal market, since the ex-ante regulation is to be abolished. This development corresponds to the economic rationales for regulation.[372] In Germany, however, the regulatory authority and the Monopoly Commission call for stronger ex-ante regulation in order to foster the development of competition. In view of the developments in the UK, these requests are to be reconsidered. Generally, it can be said that with respect to the access regime the competition authorities have enough competence and expertise to intervene in case of market

[372] See Chapter 2.

abuse. Here, too, the question arises of whether it would make sense to duplicate the knowhow for the assessment of network access abuse. Observations of some cases show that it probably would not. Ex-ante regulation increases both the static-direct costs, as the example UK shows, and the indirect and dynamic costs in the postal market to a considerable degree. The costs are mainly borne by incumbents and customers.

Regulatory Processes:

Regarding the regulatory process, similar statements as those made above on information exchange apply. Here, too, an extreme example is provided by the UK, where Royal Mail is in the present license regime under the obligation to appoint a compliance officer to ensure the compliance processes. Here, the more obligations to provide information that exist, the higher the direct costs are. Static-indirect costs and dynamic costs are rather low. Dynamic costs accrue if the universal services are concerned and have to be approved based on lengthy processes. This is the case in Switzerland, where every year a list of services in the universal has to be approved by DETEC, the responsible department, in coordination with the postal regulator. Approval procedures for methods in quality measurement have similar effects. For instance, new technologies may permit more effective and efficient measurements, though due to the long approval process and the exchange of information, the implementation and introduction take very long.

Stability of Institutions (Organizational Perspective):

The stability of institutions has a considerable impact on all types of costs. As far as direct costs are concerned, the monitoring, compliance and coordination costs decrease over time, since the processes have begun to work out (learning effects). Stable institutions also have a positive effect on market development and investments into postal markets. The transfer of the regulatory tasks from PostComm to Ofcom certainly had a positive impact. But there are also uncertainties regarding the organization of the future regime. As mentioned above, the business models of the competitors are largely based on the product range and the current price system of Royal Mail. Adjustments of the access regime, which lead to price increases by Royal Mail, directly influence the competitors. The new institutional features of the postal legislation in Switzerland will certainly affect the costs by increasing the number of regulatory actors. The enterprises must set up institutional practice and the exchange of information has to be restarted.

Scope of Universal Service:

The scope and definition of the universal service influence all three types of costs. There are direct costs, since the compliance with the requirements regarding the universal has to be monitored. The higher the number of products and the stricter the respective requirements, the higher monitoring and compliance costs will be. The interaction of competition and universal service obligation is also significant. In the UK, for example, the sustainable funding of the universal service has become endangered, since no adequate instruments for the promotion of competition were selected. Additionally, it must be possible to adjust the definition and scope of the universal service to the changed customer behavior and market conditions. As a consequence of rigid definitions, existing products, which are no longer in demand or in demand in a different, cannot be taken from the market or renewed. The scope of the universal service greatly influences regulatory governance costs. Therefore, the definition must anticipate and assimilate future developments or adjustments must be possible, when the conditions change.

Degree of Liberalization:

The degree of liberalization has had a big impact on regulatory governance costs. This is particularly true since letter volumes decline, thereby increasing unit costs per letter, if no cost reductions and increases in efficiency are realized. The more providers there are in the market, the smaller the volumes per provider, if the mail volumes further decline. In addition, it becomes evident that end-to-end competition develops hardly at all or very slowly. In the compared cases, end-to-end competition can be observed, though even in this respect, the competitors have only about one tenth of the market shares. We see that the original goals of securing the universal service and simultaneous promotion of competition strongly diverge. In a liberalized market, the right incentives for providing the universal service must be given and not be based on rigid requirements. In open markets, the universal service must be organized in line with the market. Here, Germany seems to be successful. A legal basis for the provision of the universal service in conformity with the market has existed since 1997. In this connection, the example of Germany is presented as best practice by WIK (2009b).[373] Even if the creation of end-to-end competition remains a goal in England, the preservation of a financeable universal service is given preference over competition in the new postal act. Hence, the challenge is to find a balance between adequate universal service regulation and to

[373] See Knieps et al. (2009).

set sufficient incentives for incumbent operators to develop in market-oriented companies.[374] The impact of the degree of liberalization is particularly strong for dynamic costs.

Financing and Financing Mechanism of the USO:

The manner of financing also influences all three types of costs. Depending on the financing mechanism, the direct costs for the incumbent increase due to compliance requirements. In case of self-financing by the incumbent, it has to be ensured that market-driven and cost-covering prices permit the funding of the services. In case of fund solutions, it must be made sure that the burden of financing is not borne by the incumbent alone. At the same time, the shares to be paid by market entrants should not be so high that they do not enter the market or have no financial means to invest into innovation. As described in chapter 2, no financing mechanism has prevailed in the postal market so far. In the compared markets, only Switzerland has a residual monopoly. The legislator foresees that the universal service continuous to be self-financed by Swiss Post. In Germany, the financing fund fixed in the Postal Act of 1997 has not yet been applied, since the DP AG provides the universal service on a voluntary basis. In the UK, funding is endangered because Royal Mail does not cover its costs. Here, the solution entails more commercial freedom (hence deregulation) for Royal Mail and a modernization program. If the total financial load for the providers is too big, the resources needed to realize innovations are lacking. The uncertainty about the method that will be applied in the future can have direct and dynamic effects.

Universal Service Price Regulation:

A form of price regulation exists in all three of the compared postal markets. In the UK, 80 percent of Royal Mail's turnover is under price regulation. Based on the headroom margin, the retail prices also have an influence on the access prices. This results de facto in an ex-ante regulation of access prices. Even under price control, the prices for private customers have increased in the UK. Access prices are rather low. In the future, price regulation in the UK will be strongly reduced, and the ex-ante regulation of access prices abolished. In this way, governance costs are to be reduced. In Switzerland, the services in the reserved area are subject to approval, and the price supervisor monitors the prices ex-post. In Germany, the prices of the DP AG (market-dominating enterprise) are in the licensed sector. As a rule, price approval procedures are very time-consuming and last too long when the market situation

[374] See Henry (2011).

changes. In order to avoid excessive regulatory governance costs, it must be possible for the enterprises to demand market-driven and cost-covering prices. Price regulation should be limited to as few products as possible (standard letters). Since the letter market is subject to very strong substitution competition, it can be assumed that prices will not increase when price regulation is reduced: If the products are too expensive, they are not in demand, and the enterprises price themselves out of the market. Consequently, a phasing-out of price regulation can be envisaged. In this way, regulatory governance costs could be reduced.

Access Regime:
The impact of access regulation in the UK shows what effects such regulation can have. Its influence on all types of regulatory governance costs is strong. Both according to economic theory[375] and to practical experience, an access regulation that goes beyond access to post-office boxes and address data does not make sense. From the view of regulatory governance costs, direct costs, based on the need for monitoring, are too high. Dynamic costs are also very high. During the present access regime, there was barely any innovation in the UK: in fact, Royal Mail worked inefficiently and hardly any new products were developed. In spite of low access prices, no end-to-end competition developed in the UK. Consequently, the dynamic costs are very high. In Germany, where a moderate access regime without ex-ante regulation and control was chosen, competition developed much more effectively. We can conclude that there is no case for access regulation in the postal market. The instruments of the competition authorities suffice to intervene in cases of market abuse. A phasing out of sector-specific regulation does not only lower regulatory governance costs, but also contributes to further clarifying the roles of sector-specific regulation and competition law.

Stability of Institutions (Rules and Policy Perspective):
When conditions change, it must be possible to adjust institutions. Since the political opinion-forming process takes a lot of time, this is difficult. Early signals were sent to political circles in the UK in the form of two Hooper Reports (2008 and 2010), which stated that the stability of the universal service was in danger, Royal Mail was in bad financial shape, and access regulation was not leading to the best possible results. However, it took until 2012 to adjust the regulatory framework. As already mentioned above, the current and future definition of the universal service must take into account the changes in communication behavior and in

[375] See Chapter 2.

the postal markets. Therefore, the developments will have to be under constant observation. As another requirement, the general regulatory conditions have to be scrutinized for their compatibility with consumer behavior, technological development and the market. While in the short term this will increase direct governance costs, it will reduce dynamic costs in the future. It is important that policy tasks for the review of general conditions are not performed by the regulators, but by actors, who are neither involved in the regulatory process nor dependent of the involved actors' interests.

Norms and Standardization Requirements:
The norms and standards predominantly influence direct costs, since, for instance, the review of quality requirements leads to long approval procedures between regulatory authorities and postal enterprises. In addition, the compliance with standards must be monitored. Examples here are measuring the accessibility of post offices or end-to-end measuring methods in the delivery of letters.

Labor Conditions:
Since the postal market is very personnel-intensive, labor conditions have a considerable impact on the regulatory governance costs. As the example of Germany has shown, fixing a minimum wage and the resulting uncertainty influenced the development of the market. Establishing a minimum wage for the entire sector is a rather drastic measure, one that has a decisive influence on production costs. Since it is essential that competition not take place at the expense of the personnel alone, the use of measures like the compliance with customary labor conditions and collective labor agreements seem to make sense: these measures give the parties room to negotiate and enable them to react to future developments. Although this leads to monitoring costs, as compliance must be kept under surveillance, those costs are not very high and can be understood as accompanying measures to the maintenance of fair labor conditions in the postal market.

7.5. Summary of the Results

The analysis shows that the transitions between different regulatory governance costs are not always very clear-cut. The same dimension can have its effect on different types of costs. Different combinations of institutional dimensions can also have various outcomes. While it is relatively easy to distinguish static-direct costs, static-indirect static costs in most cases do not only lead to direct costs in the short-term but also to dynamic costs in the long-term.

To conclude, the institutional dimensions have various effects and influence the degree of governance costs differently. Table 17 gives a final summary of the above appreciation of static and dynamic costs. We differentiate whether an institutional dimension has high, medium, low or no impact on regulatory governance costs. Resulting from the analysis provided in this chapter, the eight institutional dimensions with the greatest influence on regulatory governance costs are: (1) the number of involved regulatory actors, (2) the interaction of sector-specific regulation and competition law, (3) the stability of institutions, (4) the scope of the universal service obligation, (5) the degree of liberalization, (6) price regulation, (7) the access regime, and (8) labor conditions. A set of policy recommendations with the view of reducing regulatory governance costs is formulated in the next and final chapter.

Table 17: Impacts of Institutional Dimensions on Regulatory Governance Costs

Institutional Dimensions & Cost Drivers	***Impact on***		
	Static Costs		**Dynamic Costs**
	Direct	*Indirect*	
Number of Regulatory Actors	**High**	Low	Low
Modalities and Subject of Information Exchange	**High**	Low	No
Interaction of Sector-Specific Regulation and Competition Law	**High**	Low	**High**
Regulatory Processes	**High**	Low	Medium
Stability of Institutions (Org. Perspective)	**High**	**High**	Medium
Scope of Universal Service Obligation	**High**	Medium	Medium
Degree of Liberalization	Medium	**High**	**High**
Financing of the USO	Medium	Medium	**High**
US Price Regulation	**High**	Medium	**High**
Access Regime	**High**	**High**	**High**
Stability of Institutions (Policy Perspective)	Low	Medium	**High**
Norms and Standardization	Low	Low	No
Labor Conditions	Medium	**High**	**High**

Source: by author.

8. GENERAL CONCLUSIONS AND RECOMMENDATIONS

This final chapter contains the overall conclusions and recommendation of the thesis. Beginning with a general summary of the content and the contributions of the thesis, the chapter then offers policy recommendations for the future regulation in the postal sector. The chapter concludes with a reflection on the limitations of the thesis and some recommendations for future research.

8.1. Summary

The distinction between economic, technical and socio-political reasons for regulation is particularly important in post. The socio-political regulation regarding universal services and minimum wages plays a significant role in the sector. In contrast to the other network industries, technological change has played so far a rather secondary role and only recently the postal sector faces the rather new phenomena of intermodal competition with other communication means. Yet, changing communication behavior within society and increasing E-substitution have had a considerable impact on the operator's traditional business model and the further economic development of the whole sector. Consequently, the pressure on labor conditions and the necessity for process optimizations in order to cut costs is on the increase. Moreover, the former logistics operators start to cope with new technologies and are often forced to cannibalize their own physical products with new hybrid or E-products. In order to allow postal operators to cope with these challenges, regulatory institutions need to evolve coherently with developments in the market place and the society. One of the findings of this thesis is that in many cases current regulatory institutions do not respond adequately and in a timely fashion to changes in consumer preferences or technologies. The observed development in the UK illustrates clearly how the regulatory regime has failed to adapt early enough and how the delay in the adaption of the regulatory institutions has influenced the development of competition as well as the market structure. The impact on the commercial situation of the designated universal service provider Royal Mail and the postal network has been considerable as well.

Existing literature on regulation in the postal market has mainly addressed single institutional dimensions (e.g., the access regime or the universal service). In this thesis, we give a broader overview of how different institutional dimensions and their characteristics can act as drivers of regulatory governance costs and influence not only the development of the market, but also individual operators. The literature on regulation in network industries is to a large extent concerned with positive effects and desirable outcomes of regulation in the context of market failures. Based on the literature in new institutional economics (Chapter 3), regulatory governance (Chapter 4) and economic regulation (section 2.1.), we have defined a framework to appreciate the different institutional dimensions and potential effects of regulation. Hence, the main theoretical contribution of the thesis is the development of the framework of regulatory governance costs. The framework, aimed at analyzing the costs of regulatory governance in regulatory regimes, contains three different types of costs: static-direct costs, static-indirect costs and dynamic costs. The static-direct costs of regulatory governance refer to the interaction and transactions between the involved actors in the short term, and only marginally concern the overall market. These costs are:

- Monitoring Costs which arise on the regulatory institution's side because of informational asymmetry in the relationships of principals with their agents.
- Compliance Costs which are the costs the industry faces in order to comply with regulatory requirements.
- Coordination Costs which result from the fact that multiple institutional actors are involved in regulation, which have to be coordinated.

The second type of regulatory governance costs, the static-indirect costs, pertains less to the individual actors than to the overall market. Static-indirect regulatory governance costs are the costs related to:

- Quantities and Prices: Actions of regulators (or policy makers) that have effects on the regulated industries and the consumers in terms of supply and the development of prices.
- Capacity and Technology Choice: Regulation may prevent the regulated operators from aligning their supply with the effective demand and affect investment.

They also reduce the security on investment in the short-term. The third type of costs, the dynamic costs of regulatory governance, results in an inefficient level of product and process innovation. They occur mainly in combination with regulatory uncertainty that end in legal disputes and too rigid regulatory regimes that hinder the developments of markets. The dynamic costs reduce investment security in the long-term and encompass a more dynamic perspective than the static costs. The costs concern:

- Product Innovation: regulation may prevent operators from introducing new products/services because of excessive investment cost or limited gains from investment uncertainty. It may also result in a delay of time to market.
- Process Innovation: regulation may result in suboptimal processes, either introducing process innovations or preventing operators from optimizing existing processes.

The framework of regulatory governance costs was applied in three case studies in the postal market (see chapter 6). The analysis of the cases shows that the distinctions between the different regulatory governance costs are not always very clear-cut and sometimes hard to identify. While it is relatively easy to identify static-direct costs, static-indirect costs in most cases do not only lead to direct costs in the short-term but also to dynamic costs in the long-term. Static-indirect costs might even result as a consequence of static-direct costs. Thus, there seems to be a causal link between the different types of regulatory costs. Furthermore, the analysis of the cases provides insights concerning the impact of the different institutional dimensions on the governance costs and the need for action in adapting current regulation. As a result, a set of policy recommendation is formulated in the next paragraph of this concluding chapter.

Even if the costs of regulation are not operationalized in a quantitative manner, the analysis shows how governance costs impact the development of the regulated markets, the operators, and the consumers. Incumbent operators may well tend not to invest in new products and technologies because the costs and the corresponding risks are too high. Furthermore, the universal service definition and the implemented regulatory regime might incentivize the former monopolists to remain with the traditional postal services instead of adapting their business models and searching for innovative communication solutions in combination with their core business. Market entrants might struggle with their business models and drop out of the markets because of a lack of flexibility caused by regulation and market entry barriers that reduce the security on investment. As a result, the supply in the market does not align with consumer needs and the development of competition is hampered.

The analysis of the cases illustrates which institutional dimensions influence the different governance costs and therefore impact the development of markets. According to the findings of the synthesis in chapter 7 and the summary in Table 17, the eight institutional dimensions with the greatest influence on regulatory governance costs are: (1) the number of involved regulatory actors, (2) the interaction of sector-specific regulation and competition law, (3) the stability of institutions, (4) the scope of the universal service obligation, (5) the degree of liberalization, (6) price regulation, (7) the access regime and (8) labor conditions.

As a starting point and to stimulate the discussion on how to develop future regulatory regimes, we formulate policy recommendations on how to adapt regulatory institutions in the postal sector in the next section.

8.2. Critical Reflections on the Limitations of our Research

The thesis is original since it provides a new approach for assessing present regulatory regimes and tries to bring in a static as well as a dynamic perspective when it comes to the analysis of regulatory institutions. Nonetheless, the chosen approach has some limitations as follows.

First of all, the distinction between the different types of regulatory governance costs is not always clear. The definition of static-direct costs is quite distinctive and the category is the one that is most easily quantifiable, because the costs are related to distinct actions. Furthermore, we assume that the category of static-direct cost is applicable in all network industries. But, the other two types of costs are rather a consequence of different regulatory interventions and strongly depend upon the characteristics of the investigated network industry (e.g., the appearance of monopolistic bottlenecks). For instance, static-indirect and dynamic costs differ in postal and telecom regulation, because the characteristics of the networks are completely different.[376] A cross-sectoral comparison of indirect and dynamic costs would therefore be interesting but has not yet been included in this thesis.

When it comes to the discussion of transactions in regulatory regimes, we face some difficulties in defining the exact transactions in regulation. Even if we come up with our definition of regulatory governance costs, we do not provide an exact definition of what the transactions in regulation are. A more detailed discussion on the definition of the transactions would definitely help to better understand the causal connection between static observations of costs and the indirect or dynamic effects of the regulatory transactions. Therefore, an extension of the framework could be to take the indirect and dynamic costs as the outcome variable that is to explain.

[376] See Chapter 2.

Furthermore, we do so far not fully understand the causal link between the different cost categories. In chapter 5 we assume that the various institutional dimensions have different impacts on the cost categories (in terms of both time and outcome). The direct costs refer to the interaction between the involved actors and only marginally concern the overall markets. The indirect costs act less on the individual actors than on the overall market and actor's investment decisions in the short term. The dynamic costs, on the other hand, influence the future situation of product and process innovation. The analysis of the cases shows illustratively that there is a certain interdependence. But, we are not yet able to draw a very clear distinction between the cost categories, their interactions and the impact regarding the evolution of regulated markets.

Nevertheless, our framework of regulatory governance costs is certainly a first step and basis for future empirical studies and theoretical developments.

8.3. Policy Recommendations: Reducing Regulatory Governance Costs in Postal Regulation

In light of the findings about the different institutional dimensions and their impact on regulatory governance costs, we can formulate policy recommendations for the future design of institutions in postal regulation. Since not all dimensions are of equal importance, policy recommendations are given for those that have the greatest influence on regulatory governance costs. The following eight recommendations aim at reducing regulatory governance costs while preserving the overall positive effect of regulation on the postal sector.

Recommendation 1 – The Number of Regulatory Actors:

The examples of Germany and Switzerland show that regulatory authorities call for more (ex-ante) competences in regulation. Furthermore, the objectives of different regulatory agencies might not be congruent. The more actors involved in regulation, the higher the information requirements for operators and the more information exchange is needed in the short term. The new Swiss Postal Act even raises the number of involved regulatory actors.

In order to reduce the static costs of regulatory governance over time, the number of involved regulatory authorities should be kept as low as possible. To conclude, the more actors involved, the higher the static costs of regulatory governance.

Recommendation 2 – Interaction of Sector-Specific Regulation and Competition Law:
The analysis shows that the division of roles in the postal sector has not been fully clarified. In the UK, the sector-specific regulator had extensive competences in competition or access regulation which might be reduced in the future. In Switzerland, the various regulators pursue different objectives when regulating the same enterprise. Competition authorities should exclusively perform tasks concerning the assessment of market power abuse. In this way uncertainties about responsibility are clarified and roles are clearly allocated. This lowers static-direct and results in a reduction of dynamic costs because of a decrease in uncertainty for operators. There is a strong need for a clarification of roles following the economic rationales of regulations. A phasing out of sector-specific regulation must be possible, if the cost of regulatory intervention exceed its benefit. The control of undesirable anti-competitive behavior (e.g., excessive pricing, price discrimination and foreclosure of access to the infrastructure) has been covered by ex-post instruments of competition law.

Recommendation 3 – Stability of Institutions:
Stable institutions are important to lowering direct regulatory costs in the short- and medium-term that results in the reduction of indirect costs by ensuring investment security. However, the experience in the UK concerning the access regime and price control shows that a renewal of the regulatory regime was urgently required. Therefore, the regulatory rules will have to be reviewed on a regular basis. The following questions, among others, have to be answered: Do the rules correspond to the development of consumer needs? How did the market change (in terms of volumes, competition, new products or prices) since the last adjustment of the regulatory regime? What technological developments have taken place and have an impact on the market? Have the original goals of regulation been achieved?

To conclude, even if stable institutions are very important to reduce the governance costs in the short- and mid-term, a periodical review of the regulatory framework is needed. Only an independent re-evaluation of the regulatory institutions (with transparent criteria) helps to determine if the present regulation is still justified and if regulatory governance costs can be reduced to a greater extent in the future.

Recommendation 4 – The Scope of the Universal Service:
The higher the number of products and the information requirements in the area of the universal service, the higher are the static costs of regulatory governance. The definitions as

well as the scope of universal services are quite far-reaching and rigid in all three of the presented case studies. As a consequence, the existing products that are no longer in demand cannot be adapted or taken from the market (dynamic costs). If letter volumes decline, this also has its implications for the postal universal service: the unit costs per delivered item increase. Moreover, the operation of a six-day delivery network is very costly. As it is the case in Switzerland, changes in communication behavior and technological developments must also be taken into account in the definition of the universal service.

We come to the conclusion that only the most important products should be included in universal service (e.g., standard letters and parcels and corresponding services), as in the future, alternative forms of delivery and combinations with physical delivery must be possible and relevant for the definition of postal universal services.

Recommendation 5 – The Degree of Liberalization:
As shown in the analysis, the three postal markets covered by the case studies are in different stages of market reform. After the liberalization of the UK's postal market in 2006, there was hardly any development of end-to-end competition. There is fierce up-stream competition however. In Germany, approximately 90 percent of mail volumes are processed by DP AG after a stepwise reduction of the reserved area and the full market opening in 2008. As shown in the case studies, competition develops slowly, and it is uncertain whether it will develop sustainably in the future. In addition, the sector faces strong intermodal competition. Regulatory conditions should be geared to promoting end-to-end competition, and entry barriers (e.g., VAT exemptions) should be abolished.
The analysis shows that there is greater potential for innovations in end-to-end competition than in upstream access. Moreover, there must be a balance between the requirements in the universal service and the restrictions for market-dominating operators. The challenge consists in finding the balance between adequately regulating universal service and giving incumbents incentives to change into market-oriented enterprises. The regulation in liberalized markets must not be focused on the incumbents alone, because this would mean that they have to bear the entire regulatory governance costs.

Recommendation 6 – Price Regulation:
All three of the discussed regulatory regimes include some sort of a price regulation, and the approaches differ widely. In the UK, 80 percent of Royal Mail's products are subject to price

control. But UK stamp prices have increased and doubled in the last ten years. In Switzerland, only the products in the reserved area are subject to authorization by the government (however, there is general price control). In Germany, prices for products under the license are part of price regulation. Prices for business customers with a minimum of 50 items are exempt from ex-post price control.

At most, ex-ante price control should apply to the standard products in the universal service only. The control must allow for cost-covering and market-oriented prices. Due to strong intermodal competition (E-Substitution) and the decline of delivered mail volumes, the sector-specific ex-ante price control will have to be reconsidered in principle. Given that competition with alternative means is high, postal operators are incentivized to set their prices at the efficient level. Otherwise, the physical products would be even more substituted and no longer in demand. Competition authorities guarantee ex-post price control.

Recommendation 7 – Access Regime

The example of the UK shows that far-reaching access regime does not lead to the promotion of end-to-end competition and results in undesired outcomes. In addition, no innovation incentives are set: Royal Mail worked inefficiently, and hardly any product innovation was introduced. The business models of entrants rely heavily on the business model of Royal Mail. In Germany, where a more moderate access regime with no ex-ante components was chosen, end-to-end competition developed.

The conclusion drawn from the case study analysis is that there is no need for ex-ante regulation of access conditions. The access regulation is not to be extended, and where it exists, it is to be abolished. This is not economically legitimated and access regulation should be limited to the non-discrimination between customer groups and ex-post control. The ex-post control should be implemented by the competition authorities. As result all three types of governance costs will decline.

Recommendation 8 – Labor Conditions:

Labor conditions and especially costs are important cost drivers in the business models of postal operators. The example of the intended introduction of minimum wage in Germany caused a considerable impact on the development of the market and therefore on indirect and dynamic costs.

The fixing of a minimum wage must not endanger the business model of competitors and market entrants. At the same time, competition must not take place exclusively through labor costs, thus discriminating against the incumbents. Flanking measures such as customary labor conditions in the sector and the obligation to negotiate collective labor agreements are potential solutions.

The recommendations aim at supporting policy makers and practitioners involved in postal regulation and in shaping future regulatory regimes, as well as reducing regulatory governance costs in the postal sector.

8.4. Recommendations for Future Research

As a result of the discussion in section 8.2, we formulate a number of recommendations for future research in the following.

Firstly, the framework of regulatory governance costs in its presented form does not allow for a quantification of the costs in the governance regimes and at this stage the analysis comes only on a qualitative level. The appreciation of the different dimensions of regulatory institutions and the impact on governance costs is difficult to quantify. Nevertheless, the present framework helps to identify where the different costs occur and enables statements on the degree of the costs in a qualitative way. Future research regarding the quantitative impact of regulatory institutions would be of value for improving the validity and the comparability of the different outcomes in different regimes. Therefore, other researchers may take the framework as a starting point and develop models in order to support the findings with figures.

Secondly, an issue that has not been addressed in this study is the "accountability" for regulatory governance costs. We exclude the question of who is accountable for the different costs in a regime. In some cases, such as the direct costs, it is clearly evident that compliance costs are borne by the industry and the government mainly bears monitoring costs. This is considerably more difficult when it comes to the accountability for the indirect or dynamic cost. Is the German government, for example, accountable for the impact of the minimum wage dispute on the development of the market? Or is the former British regulator Postcomm accountable for the regulatory failure of the price control regime and the corresponding loss of Royal Mail? Therefore, we call for more research to better understand the accountability for the direct and the dynamic costs of regulatory governance costs or more generally for regulatory failure.

Thirdly, the exact definition of the transaction in regulatory regime remains open in this thesis. An interdisciplinary discussion on such a definition would be helpful in order to better understand the origin of costs in regulatory regimes. This would allow for a more distinctive categorization of governance costs than in the present framework.

Fourthly, since the framework of regulatory governance costs could be considered a preliminary one and the results of the case studies apply to the postal sector only, a number of possible future studies using the same experimental set up are apparent. What is needed now are studies involving other network industries like telecommunications, railways or electricity. This should help to prove whether the present framework is generic enough to be applied to other sectors and to understand the causality of the different types of governance costs. The overall goal of future research should be to develop a generic framework with a clear distinction of cost categories in that enables the comparison of regulatory principles and thus the identification of best practices in regulation. This would then engender sound recommendations for the design of effective and efficient regulatory regimes in the infrastructures.

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APPENDIX I: Interview / Discussion Guideline

Interview Guideline: Regulatory Institutions and Governance Costs in the Postal Sector.

Duration of interview: min 1,5h

1. **Background and Introduction**

- Market opening and intermodal competition put traditional postal business models at risk.
- Regulatory institutions are intended to remedy market failure and reduce transaction costs.
- But, they also cause governance costs.
- Literature on Governance Costs:
  Maegli et al. 2010 (Governance Costs)
  Armstrong / Sappington 2008 (Regulated Industries)
  Friederizick et al. 2008 (Investment in Telecom)
  Jaag 2007 (Innovation in the Swiss Postal Sector)
  Dietl et al. 2008 (Process and product innovation in post)
- Hardly any discussion about consequences of regulation on innovation in the postal sector.

2. **The Framework 2010: Regulatory Governance Costs**

- Governance costs are determined by:
  (1) The institutional design and the alignment of competences (rules and actors)

  (2) The behavior of actors

  (3) The choice of regulatory instruments
- Regulatory governance costs are the costs of establishing, maintaining and coordinating, evaluating and adjusting a regulatory arrangement.
- Governance costs are related to tasks performed
  (1) to **sustain** competitive but fair **markets**,
  (2) **to set incentives** for involved actors **to provide** a certain level of **public service**, and
  (3) to **coordinate** public **authorities** involved in regulation.

3. **Direct Costs of Regularory Governance**

- **Monitoring costs** arise because of informational asymmetries in the relationships of principals with their agents.
- **Compliance costs** are the costs the industry faces in order to comply with regulatory requirements.
- **Coordination costs** result from multiple institutional actors involved in regulated industries which have to be coordinated.

Examples:

- Modalities of information exchange: Information exchange and processing

- Price regulation: Approval process and control leads to costs in information exchange
- Access regime: Control and Monitoring of access conditions

4. **Indirect Costs of Regulatory Governance**
   Indirect regulatory governance costs are the costs related to:

- **Quantities and Prices:** Actions of regulators (or policy makers) may distort market outcome; have negative effects on firms and/or consumers
- **Capacity and Technology Choice:** Regulation may prevent the regulated operators from aligning their supply to demand and distort technology choice.

Examples:

- Degree of liberalization: Uncertainty about investment
- Price regulation: Wrong signals about scarcity
- Access regime: Suppressed end-to-end Competition

5. **Dynamic Costs of Regulatory Governance**

- Innovation: A form of investment that results in new or better products and services or in more cost-efficient processes.
- The dynamic costs of regulatory governance result from distorted innovation and infrastructure investment incentives.
- The dynamic costs are a consequence of direct and indirect costs of regulatory governance.

Dynamic costs of regulatory governance result in an inefficient level of product and process innovation:

- **Product Innovation:** Regulation may prevent operators from introducing new products/services because of uncertainty about their investment and pricing. It may also or result in a delay of time to market.
- **Process Innovation:** Regulation may result in suboptimal processes and prevent operators from optimizing existing processes or introduce process innovations.

Examples:

- Scope of Universal Service: Existing processes / products cannot be replaced
- Price regulation: New product may not be attractive for firms / consumers

Examples: Regulatory Institutions and Governance Costs

The following table and shows the effect of institutional aspects of regulation on direct and indirect costs and subsequently dynamic costs.

Table 1: Institutional Aspects and Regulatory Governance Costs

Institutional Aspects & Cost Drivers	Regulatory Governance Costs			
	Direct Cost	Indirect Cost	Dynamic Cost	
			Effect on Product Innovation	***Effect on Process Innovation***
Number of Regulatory Actors	Unclear responsibilities, necessary coordination		Uncertainty reduces innovation payoff	Uncertainty reduces innovation payoff
Modalities of information exchange	Information exchange and processing		Delayed introduction of innovative services	Delayed introduction of process innovations
Interaction of sector-specific regulation and competition law	Concurrent jurisdiction may lead to ambiguous responsibilities		Uncertainty reduces payoff	Uncertainty reduces payoff
Scope of Universal Service Obligation	Rigid requirements need strong control		Existing products cannot be abandoned	Existing processes cannot be replaced
Degree of Liberalization		Uncertainty about investment	More competitors → higher pressure → less volume per firm	More competitors → higher pressure → less volume per firm
Financing of the USO	Implementation and execution of compensation mechanisms		Possibly reduced innovation payoff	
US Price Regulation		Inefficient pricing	New product may not be attractive for firm / consumers	Lower cost has to be passed on to consumers
Process of Price Regulation	Approval process and control leads to costs in information exchange		Approval process delays introduction of innovative services	
Access Regime	Control and Monitoring of access conditions / arbitration process in case of disagreement between operators	Affected market development and end to end competition		Uncertainty about economies of scale and prevention of process innovation
Stability of Institutions		Certainty about investment payoff	Certainty about innovation payoff	Certainty about innovation payoff
Norms and Standardization requirements	Approval process and control mechanisms in order to be compliant			Increased cost of process innovation due to necessary compliance
Labor Conditions	Negotiations with unions and control of labor conditions			Innovation may result in capital replacing labor; innovation is itself labor intensive

APPENDIX II: Curriculum Vitae

Martin Maegli April 2012

Head of Regulation, Public Affairs and Corporate Responsibility, Swiss Post
Research Associate, Chair of Management of Network Industries, Ecole Politechnique Fédérale Lausanne

Address

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CH- 3013 Bern

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Personal Information

Date of Birth:	December 14, 1977
Hobbies:	Literature, Music (Playing Drums), Cooking, Football

Education

2007-to date	External PhD-Student, Chair Management of Network Industries, College of Management of Technology, EPFL
2006-2007	Studies of Business Administration, University of Berne; Degree: MSc in BA
2001-2006	Studies of Business Administration, Politics and Law, University of Berne; Degree: BSc in BA
1994-1999	Staatliches Seminar Hofwil, Münchenbuchsee; Degree: Primary School Teacher

Work Experience

2011-to date	Head of Regulation; Public Affairs and Corporate Responsibility; Swiss Post
Mid 2010-2011	Regulatory Economist, Public Affairs and Corporate Responsibility; Swiss Post
2008- mid 2010	Regulatory Economist, General Secretariat, Swiss Post
2007- 2008	Regulatory Economist; Corporate Development PostMail, Swiss Post
2006-2007	Junior Research Assistant, University of Berne, Institute of Marketing and Management, Department of Innovation
2005-2006	Staff Member Facility Management at Zentrum Paul Klee, Berne
2003	Research Associate, State Secretariat for Economic Affairs (Seco), Berne
1999-2001	Primary School Teacher, in Rüdtligen-Alchenflüh, Switzerland

Activities:

- Guest Editor: Network Industries Quarterly in 2010
- Member of the Organizing Committee and Jury since 2009: "Conference on Postal and Delivery Economics" Presented by: CRRI Center for Research in Regulated Industries Rutgers Business School – Newark and New Brunswick
- Member of Paper Selection Committee since 2010: "TIP Conference - Trends in Innovation in the Postal Market" Presented by EPFL-MIR chair of Management in Network Industries – Lausanne
- Reviewer: Journal for Competition and Regulation in Network Industries Since 2010
- Guest Lecturer at EPFL

Awards:
September 2010: Best Paper Award at TIP Conference - Trends in Innovation in the Postal Market

Languages
Native speaker of German, fluent in English, fair knowledge in French

Research Interests
Regulatory Governance
Regulatory Economics
Economics of Network Industries
New Institutional Economics

Publications and Contributions

2011
Scientific Publications

- Maegli, M., C. Jaag, M. Koller and U. Trinkner. Postal Markets and Electronic Substitution: Implications for Regulatory Practices and Institutions in Europe. in Reinventing The Postal Sector In An Electronic Age, p. 178-195, Advances in Regulatory Economics 6, 2011.

Conference Contributions and Papers

- Maegli, M., Jaag, C. (2011) Regulatory institutions, governance costs and innovation in the postal sector. TIP Conference on Trends and Innovation for the Postal Market, Lausanne, September, 2011.

2010
Scientific Publications

- Maegli, M., Jaag, C., Koller, M., Trinkner, U. (2010) Postal Markets and Electronic Substitutions: What is the Impact of Intermodal Competition on Regulatory Practices and Institutions , in Competition and Regulation in Network Industries, vol. 11, num. 4, p. 382-397.
- Maegli, M., Jaag, C., Finger, M. (2010) Regulatory Governance Costs in Network Industries: Observations in Postal Regulation. in Competition and Regulation in Network Industries, vol. 11, num. 2, p. 207-237.

Other Publications

- Maegli, M., Jaag, C. (2010) Intermodal Competition: What strategies can posts adopt to combat increased competition in the communications market, and what will be the effect of regulation?. in Postal Technology International, vol. Special Issue: 2010 Annual Showcase, p. 41-43.
- Maegli, M. (2010) Liberalization and Competition in Postal Markets: Decentralized Infrastructure versus Cherry Picking. The Network Industries Quarterly, vol. 12, num. 1, p. 11-13.

Conference Contributions and Papers

- Maegli, M., Jaag, C., Koller, M., Trinkner, U. (2010) Postal Markets and Electronic Substitution: What is the Impact of Intermodal Competition on Regulatory Practices and Institutions. TIP Conference on Trends and Innovation for the Postal Market, Lausanne, September 13-14.
- Maegli, M., Jaag, C., Koller, M., Trinkner, U. (2010) Postal Markets and Electronic Substitution: What is the Impact of Convergence on Regulatory Practices and Institutions?. ECPR conference: 'Regulation in the Age of Crisis', Dublin, Ireland, June 10-12.
- Maegli, M., Jaag, C., Koller, M., Trinkner, U. (2010) Postal Markets and Electronic Substitution: What is the Impact of Convergence on Regulatory Practices and Institutions?. 18th Conference on Postal and Delivery Economics, Helsinki, Finland, June, 2-5.

2009

Scientific publications

- Maegli, M., Jaag, C., Finger, M. (2009) Coûts de la regulation des industries des réseaux: Enseignements du réseau postal. Revue d' Economie Industrielle, Vol. 123, No. 3 pp.47-68.
- Maegli, M. (2009) Book Review: Handbook of Worldwide Postal Reform. Competition and Regulation in Network Industries. Vol. 10, No.3 p.305-307.

Conferences Contributions and Papers

- Maegli, M., Jaag, C. (2009) Regulatory Governance Costs in Network Industries: Implications for Postal Regulation. Global Postal research and Education Network GPREN 2009. Lausanne Switzerland, April 27.
- Maegli, M., Jaag, C. (2009) Regulatory Governance Costs in Network Industries: Implications for Postal Regulation. European Consortium of Political research ECPR General Conference 2009, Potsdam, Germany, September 11-12.
- Maegli, M., Jaag, C. (2009) Regulatory Risk and Uncertainty in British Postal Regulation - A Governance Perspective, Second Annual Conference on Competition and Regulation in Network Industries CRNI 2009, Brussels, Belgium, November 20.
- Maegli, M. (2009) Governance Costs in Postal Regulation: Towards a proper definition of Regulatory Governance Costs. Journées Francophone de l'ESNIE 2009, January, Paris.

2008

Working Paper

- Maegli, M., Finger, M., Jaag, C. (2008) Regulatory Institutions and Governance Costs in the Postal Sector: The Case of Switzerland. MIR Working Paper 2008-005.

Conference contributions and papers:

- Maegli, M., Jaag, C., Finger, M. (2008) Regulatory Institutions and Governance Costs in the Postal Sector: The Institutional Setting in Switzerland. 2nd GPRN, April, Lausanne.
- Maegli, M., Jaag, C., Finger, M. (2008) Regulatory Institutions and Governance Costs in the Postal Sector: The Case of Switzerland. ECPR-Standing Group Regulatory Governance, Uttrecht.
- Maegli, M. (2008) Governance Costs in Postal Regulation: Towards a proper definition of Regulatory Governance Costs (and its Evidence in the postal sector).CRNI 2008, November, Brussels.

Presentations:

- Maegli, M. (2008) PhD-Project: Regulatory Institutions and Governance Costs in the Postal sector. European School of New Institutional Economics 2008, May, Cargese.
- Maegli, M. (2008) Regulating Risks in the Postal Sector and the Funding of Universal Service Obligations. Seminar on Risk Regulation in Network Industries 2008, September, EPFL:
- Maegli, M. (2008) Regulatory Challenges in the Postal Sector. GRJM Lunch Seminar, October 2008, Université Paris Sud.
- Maegli, M. (2008) Towards a proper definition of Governance Costs. GRJM Working Paper Day 2008, October 08, Université Paris Sud.