

Development strategies for the postal sector: an economic perspective



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DEVELOPMENT STRATEGIES
FOR THE POSTAL SECTOR:
AN ECONOMIC PERSPECTIVE



Development strategies for the postal sector: an economic perspective

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PREFACE

Bishar A. Hussein, Director General of the UPU International Bureau



I am delighted to present this second book on postal economics, produced by the International Bureau in response to requests from our member countries.

The research delves into issues seldom studied by postal economists. It looks at the specific features of postal markets in developing countries and traces the emergence of new legislative and regulatory frameworks in Sub-Saharan Africa. The book examines the impact of the European Green Paper, which has driven postal reform policies in the European Union. The authors also present the role and strategies of post offices in the delivery of basic financial services to all citizens, since financial inclusion as a means of fighting poverty is now again a priority in the developing world.

The analysis of long- and short-term trends based on UPU data and statistics offers fresh insights into the challenges facing the postal sector in this age of connectivity. The real-time modelling of international exchanges by our researchers is a major leap forward for the UPU and will enable our experts to develop scenarios, and to measure, test and evaluate our postal network. The UPU will be able to identify and remove hurdles in the postal supply chain and reduce information asymmetries.

Moreover, two major lessons can be drawn for the Sub-Saharan region. First, for postal reform to succeed, the development agenda must include an evidence-based postal policy. Second, there is no “one size fits all” regulatory solution. Regulatory approaches in industrialized countries cannot be automatically applied to developing countries.

I thank our external contributor Professor Toledano Bialot for her invaluable contribution in reviewing the research work. Professor Toledano Bialot is a leading theoretician and practitioner who successfully chaired the UPU’s postal economics groups over the last two cycles.

This project benefited from the generous funding by France's La Poste Group, which has always been committed to postal economics research. I express my most sincere thanks to La Poste and to France, on behalf of the entire UPU, and invite other member countries to imitate this support in the future.

Finally, I thank the members of the International Bureau's Economic and Regulatory Affairs Directorate for their remarkable efforts in putting this book together and bringing UPU big data to the forefront within the UN. I look forward to having this directorate become a centre of information and excellence on postal statistics and economic analysis.

ACKNOWLEDGEMENTS

This book is the product of a collective effort to shed light on the economics of postal markets worldwide – an effort that goes far beyond the authors' own contributions. Numerous experts from the UPU International Bureau and other institutions have furnished insightful comments and suggestions. The authors also wish to thank the UPU's member countries for providing the information and data that feed their research and studies.

The release of the book in English and French was made possible through the support of the International Bureau's translation services. The authors thank them wholeheartedly.

The design of a book's layout is always a time-consuming and challenging task. Here, special thanks go to the International Bureau publishing team.

Finally, the authors also thank Edward Elgar Publishing for authorizing the reprint of the article "Status of the postal service twenty years after the Green Paper: a Franco-European perspective", by Joëlle Toledano. The original version of this research can be found in chapter 15 of the book *Reforming the Postal Sector in the Face of Electronic Competition*, edited by Michael A. Crew and Paul R. Kleindorfer, and published in the "Advances in Regulatory Economics" series (2013).



INTRODUCTION

Development strategies for the postal sector: an economic perspective

This book examines the economics of the postal sector through three lenses: **snapshot and trends**, **models**, and **opportunities**. In the years to come, the Universal Postal Union plans to develop its role as a knowledge centre for the postal sector from these perspectives.

At this time of radical transformation of the postal sector, it is important to understand how the sector has evolved historically, how it is connected with the economic system, and where it is heading. This book thus first presents a long-run view, focusing on incumbent operators over the last three **decades**, and then describes their development in the last five to ten years. It also offers a real-time picture based on **daily** “big postal data”, revealing one of the greatest opportunities for the sector in terms of forecasting and product design.

The book seeks to present the variety of situations in the world and their evolution, and to explain why some sector **policies cannot easily be transposed** from one place to another – or the “what not, when not, why not, where not”. It introduces the European postal economic model, and then turns to developing and emerging countries to discuss the circumstances underlying the lack of development of their postal markets. Of paramount importance is an understanding of the structural differences between industrialized and developing countries if the sector is to survive, let alone develop, in this fast-changing world abounding with threats but also opportunities.

No less critical is the need to provide decision and policy makers with economic intelligence tools and applications built on a **modern data analytics framework** so that they can seize **tomorrow's opportunities**.

The last part of the book presents the opportunities offered by both financial inclusion policies and the facilitation of international postal exchanges in the era of e-commerce.

Our **view is truly global** because, as highlighted in the first UPU book on postal economics for developing countries (Ansón and Toledano ed., 2008), the scope of postal economic research has often been confined to industrialized countries. A focus on developing countries is now required. In the new connectivity era, with more than seven billion inhabitants in the world, it would be a strategic mistake not to build and develop “click and mortar” postal networks that potentially allow every citizen and enterprise to be connected to an integrated worldwide logistics and communication network. The “club effect” is a well-known property in network economics: the greater the participation in a network, the higher the utility of this network for each of its participants individually, and the higher the overall value of the network itself. In fact, the most successful historical developments of the postal sector have been rooted in the **inclusion of all in the postal system**, ever since Sir Rowland Hill’s stamp revolution in Great Britain in the 19th century, followed by Gladstone’s use of the post office retail network for the collection of small savings. These developments helped turn the utopian vision of universal access to postal services into a reality in industrialized countries.

The first part of this book (chapters 1 and 2) looks back at the postal supply of universal service – or incumbent – operators in postal markets from both a long and short perspective on the basis of UPU postal statistics. In contrast, chapters 7 and 8 cull from the huge quantity of data that postal operators collect in real time through track-and-trace systems and electronic data interchange (EDI) messages in the international postal process. The research outcomes show the immense potential value of further leveraging these big postal data for business and sector development. Furthermore, big postal data can be merged with other macro-economic data for a deeper understanding of the intricacies of domestic and international exchanges and supply chains and their impacts on citizen welfare. Social and economic globalization is evolving with the explosion of e-commerce and can now be pictured in real time. For Posts and governments, data analytics of the 21st century not only offers a real-time picture of the sector, but paves the way for new services and new policies and strategies in this high-velocity world.

The long perspective shows, through a focus on the incumbents, the fundamental economic trends of the sector. These trends point to the decoupling of letter-post traffic from gross domestic product; the (re)diversification of business and increasing share of some activities in

postal consumption (e.g. parcels versus letters); the critical role of the labour force as a major factor of production; and the evolution of the retail network's contractual architecture, to transform fixed costs into variable costs through business alliances, or to share fixed costs with partners. This perspective highlights the lack of long-term convergence between industrialized and developing countries in postal sector development, in contrast with the greatest economic convergence ever between industrialized and developing regions over the past three decades.¹ This disparity suggests a **postal economic development failure in most less advanced economies**. The solution? Different postal strategies for operators in those economies, better postal market organization, and postal economic models that encourage the participation of most citizens in the postal system. An exception to this lack of sector convergence – indicative of **the overall untapped potential** – can be found in the development of postal financial services. However, so far only a limited number of developing countries have entered this area, particularly in the group of emerging BRIC economies, and most notably China and Brazil.

This weak **postal convergence** raises many structural questions. The second part of the book (chapters 3, 4 and 5) thus sheds light on the variety of postal market situations around the world, by acknowledging different drivers of postal economic development in advanced and less developed economies, and showing how a lack of market organization and regulation has hindered postal exchanges in a number of developing countries and regions around the world. This section analyzes the consequences of limiting access to postal delivery in a developing country and draws lessons from various *de facto* and *de jure* regional liberalization policies. For the first time, an in-depth survey covers the issue of postal market organization and regulation in Sub-Saharan Africa, contrasting heavily with the development of postal markets in the European Union presented in an earlier chapter. The lesson: artificially converging postal economic models does not ensure sector convergence in terms of production of postal services.

The third and last part of the book (chapters 6, 7 and 8) is clearly oriented towards opportunities. It does not exhaustively cover all opportunities but highlights various areas of **untapped potential for the postal sector**, most notably in terms of financial inclusion as well as the development of international postal exchanges in the era of e-commerce. For example, with more than two billion unbanked people in the world, postal

networks are well positioned to serve customers without proper access to banks and other financial institutions and to facilitate government-to-person (G2P) payments, such as social assistance. We believe financial inclusion could be an area for further postal convergence in the coming decades. With many countries reporting two-digit figures for e-commerce growth, the international postal network can facilitate trade for all, including micro, small and medium-sized enterprises and lower-income citizens. However, if these goals in line with the UN Millennium Development Goals and poverty reduction strategies are to be achieved, the current **international postal exchange imbalances** (intra- and inter-regional) **and development asymmetries** must be addressed. Given the relatively low levels of international postal exchanges in some developing regions, the potential exists for a much stronger postal convergence. Though further research must be carried out on these topics, we recommend that our international postal economic insights be fully taken into account in the design of future postal strategies.

This book shows only a selection of analytical outcomes from an extensive research programme on the economics of postal markets regulation and postal financial inclusion, and only some of the potential uses of the massive amounts of real-time data that the Universal Postal Union has been consolidating on international postal exchanges over the last few years. Research is an ongoing process and must continue, so that surveys like the one on the economic regulation of postal markets in Sub-Saharan Africa can be done for other regions, so that new panoramas of postal financial inclusion can be produced, and so that concrete global postal economic tools and applications relying on big postal data can be developed for the benefit of all UPU member countries and the international postal community at large. **Most stakeholders in the postal sector cannot afford to lose another three decades.**

CHAPTER 1

Postal economics and statistics for strategy analysis – the long view

José Ansón and Matthias Helble

1. Introduction

The postal sector has been undergoing a paradigm shift over the last 30 years, from a relic of the industrial era to a facilitator of exchanges of goods and messages in the era of global Internet connectivity. The transformation has taken place from a perspective of both supply and demand. In this transition period, opportunities abound and many remain untapped. Besides adapting to the rapidly changing environment, postal policy makers and operators have also driven these changes, first by separating Posts from telecommunications, and then – particularly in industrialized countries – by refocusing on a narrower range of activities and increasing productivity, before diversifying into new (or not so new) activities. Technology substitution, as well as to a lesser extent liberalization and globalization, has dramatically increased competitive pressure. In developing countries, some successful postal economic models have developed towards greater outreach, and new opportunities have been seized. All in all, a radical transformation of the postal sector seems to be under way.

Since the beginning of the 1980s, a key driver of change in the postal sector has been the introduction of new means of communication, which have entered into direct competition with the traditional postal communication business. The rise in the transmission of documents via fax in the late 1980s and the introduction of e-mail services in the 1990s challenged the postal sector on two accounts: not only was the communication transmitted almost immediately, but the cost of sending the information was low and would continue to decrease.

However, innovation in the field of information and communication technologies also offered important opportunities for the postal sector. It

became possible to organize the collection and distribution of postal items more effectively. The postal sector further embraced the new technologies by offering new products and services, sometimes through public-private partnerships.

As a result of the above-mentioned factors, today's postal sector looks very different to that of the 1980s or 1990s. This chapter aims to retrace this change by analyzing several key variables. It provides a long-term analysis, with a focus on incumbent postal operators, and signals an untapped potential for growth.

The International Bureau of the Universal Postal Union has been collecting postal statistics since its foundation in 1874, with the objective of better understanding the state and trends of the postal sector worldwide. The postal data are collected by means of questionnaires, sent each year to the incumbent postal operators and regulators of all UPU member countries and territories.¹ These questionnaires constitute a unique and comprehensive international survey on the evolution of postal markets from a long-term perspective, including all postal industry stakeholders. The key data are published in the Postal Statistics Yearbook and made available on the UPU website.

While chapter 2 will cover the most recent developments of the incumbent postal operators, this chapter focuses on the evolution of the consumption of traditional letter-post services over the last three decades and the incumbent postal operators' strategic reactions. Chapter 1 also raises issues related to the operators' contribution to the economy at both national and international level.

2. Consumption of letter-post services over the last three decades

The consumption of letter-post services has been dominated by incumbent postal operators. Letter-post services include postal items up to 2 kg, with letters accounting for most items (in terms of number of items). Table 1 provides letter-post indicators for the incumbents operators, categorizing them into six groups: one group of industrialized countries and five groups of developing countries (Africa, Latin America and Caribbean, Asia-Pacific, Eastern Europe and CIS, and Arab countries). It is important

to keep in mind that the traffic figures for these operators, as provided in table 1, almost coincide with the overall letter-post market figures. Indeed, while competition has developed in a number of markets, the incumbents' competitors do not have a significant share in the world letter-post market. One regional exception (i.e. Latin America) is documented in chapter 4 but has no impact on the analysis that follows.

The latest postal statistics and estimations indicate that incumbents processed 368.4 billion letter-post items in 2011. A total of 98.7% of the overall traffic was generated domestically, whereas 1.3% came from the international segment. It is interesting to observe that almost 80% of letter post is generated in industrialized countries. Combined, the developing Arab and Africa regions account for less than 1% of the world's letter-post exchanges. These major regional differences have changed little over time. From 1980 to 2011, letter-post volumes declined in three of the six groups listed in table 1, particularly in Eastern Europe and the CIS, where letter-post volumes contracted sharply following the disintegration of the former Soviet Union. The region that has shown the strongest growth over the past three decades has been Latin America and the Caribbean. A single country, Brazil, has been largely responsible for this regional growth. As highlighted in chapter 4, which discusses new postal economics models for developing countries, the other countries of the region were in a totally different situation until recently. Excluding Brazil, the regional compounded annual growth rate would have been 0.7% (growth from 1.8 billion in 1980 to 2.2 billion in 2011).

The number of letters per capita (last column in table 1) shows how the regions differ in terms of demand for letter-post services. Whereas in developing African and Arab countries the average number of letters per capita per year was 2.3 and 3.3, respectively, this figure topped 300 in the industrialized countries. Chapter 4 shows the implications in terms of postal economic models and describes two cases highlighting the different postal economic fundamentals in industrialized and developing countries. If we compare these figures to the gross domestic product (GDP) per capita (in constant 2005 international dollars, and in purchasing power parity, or PPP), we see that the postal world is even more imbalanced than the economic sphere. In 2011, according to the World Bank's World Development Indicators, the GDP per capita in Sub-Saharan Africa was 16 times smaller (2,085 USD) than in high-income countries

(33,566 USD). In contrast, in the postal world, the letter-post volume in Sub-Saharan Africa was 132 times smaller than in industrialized countries.

TABLE 1
Letter-post items by region
(volume in millions, domestic and international services combined)

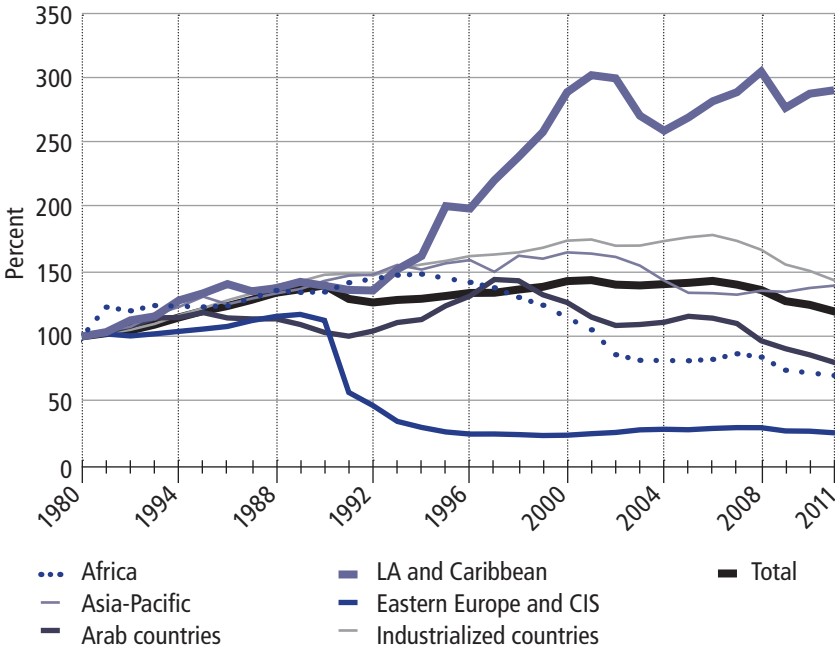
Letter post (domestic and international service)	2011	% of total in 2011	1980	Annual growth 1980–2011	Letters per capita in 2011
Africa	1,892	0.5%	2,427	-1.2%	2.3
Latin America and Caribbean	10,998	3.0%	3,254	3.5%	18.3
Asia-Pacific	45,866	12.4%	32,084	1.1%	12.0
Eastern Europe and CIS	16,096	4.4%	62,516	-4.3%	33.4
Arab countries	1,210	0.3%	939	-0.7%	3.3
Industrialized countries	292,339	79.4%	197,838	1.2%	304.2
TOTAL	368,499	100%	307,717	0.6%	52.3

Source: UPU Postal Statistics

The evolution of letter post in the six groups is depicted in figure 1, which allows for a more detailed analysis. We can see that Eastern Europe and the CIS experienced a sharp drop between 1990 and 1996. Since then, the level has stabilized at around 25% of the level prior to the collapse of the Communist Bloc. In Africa, the letter-post volume (domestic and international combined) declined significantly between 1994 and 2002 and is now less than 70% of what it was in 1980. The only other developing region with lower volumes in 2011 than in 1980 is the Arab region, whose letter-post volume increased by almost 50% by the end of the 1990s, only to then decline to its current level of around 80% of its 1980 level. The other three groups have seen their volumes significantly increase compared with the 1980 volumes, particularly Latin America and the Caribbean. Thanks to Brazil's strong performance, the region's letter-post volume is today three times higher than in 1980. The Asia-Pacific region saw its letter-post volumes increase almost continuously between 1980 and 2000 (165% of its initial 1980 level). However, since then, the evolution has been less positive, with the current level standing at 139% of its 1980 level. Finally, in industrialized countries, the incumbent operators saw their volumes increase constantly until 2006, when they reached 178% of their 1980 level. Since then, incumbents have reported shrinking annual letter-mail volumes, down to 144% of their 1980 level in 2011.

The global letter-mail volume has closely followed the trend in industrialized countries and currently stands at 120% of its 1980 level.

FIGURE 1
Evolution of letter-post volumes (domestic and international combined)
from 1980 to 2011 (indexed on year 1980 = 100)



Source: UPU Postal Statistics

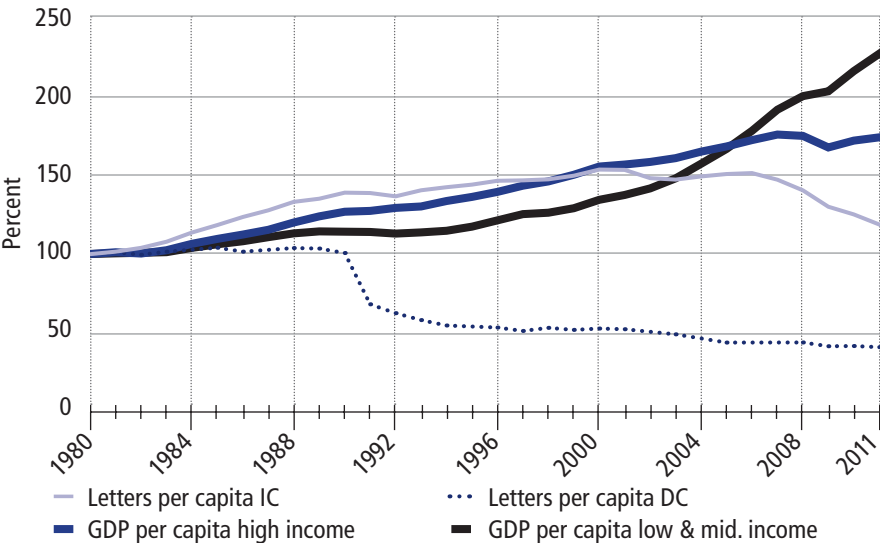
Economic and letter-post growth are increasingly disconnected, regardless of the level of economic development.

Figure 2 depicts the evolution of letter-post volumes per capita in developing and industrialized countries between 1980 and 2011. In addition, it shows the evolution of GDP per capita (expressed in constant 2005 international dollars, PPP) in high-income and low- and middle-income countries.² For industrialized countries, the letter-post volume per capita grew at almost the same pace as the GDP per capita until 2000, at which point both variables were about 50% higher than in 1980. Since then, there has been a clear decoupling of the two trends. Whereas the

GDP per capita has continued to grow (174% of its initial 1980 level in 2011), the number of letters per capita has declined considerably during the last decade, to 118% of its 1980 level in 2011.

The picture is even more dramatic for developing countries. Even at the beginning of the 1980s, the GDP per capita was growing faster than the number of letters per capita. This divergence increased throughout the 1990s and even accelerated in the 2000s, when the GDP per capita shot up, whereas the number of letters per capita further declined. Today, the difference between the two is enormous: the number of letters per capita in developing countries is at 41% of its 1980 level, whereas the GDP per capita has increased to 227% of its initial value in 1980.

FIGURE 2
Evolution of letter-post volume per capita (domestic and international combined) and GDP per capita in industrialized and developing countries from 1980 to 2011 (indexed on year 1980 = 100)



Source: UPU Postal Statistics

An increasing heterogeneity between postal operators can be observed.

Over the past three decades, letter-post exchanges have developed differently across countries and regions. Back in 1980, one would probably have predicted some kind of convergence in the years to come. In other words, developing countries with relatively low letter-post volumes would have been expected to increase their volumes more dynamically than industrialized countries. Two key reasons would probably have been evoked: first, stronger economic growth in developing countries would be a push-and-pull factor for an improved postal sector; and second, in 1980, almost everybody in industrialized countries had access to and used postal services intensively, and therefore the growth potential seemed limited without major innovations in the mail industry. The outcome of this predicted scenario would thus have been that developing countries would catch up with industrialized countries in terms of mail services consumption, mimicking the trend in relation to economic output.

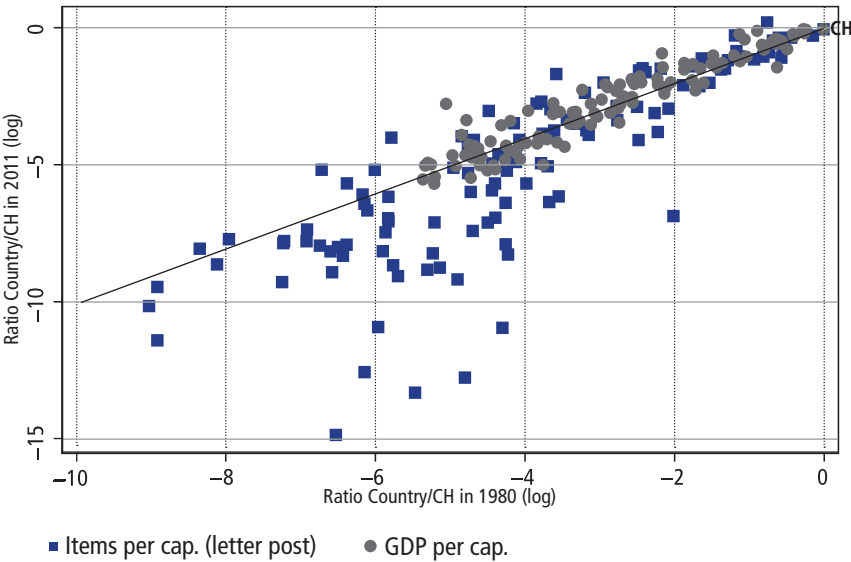
We would like to test this hypothesis by looking at the number of letters per capita from a long-term convergence perspective, contrasting this variable with a more general variable that measures economic development, namely, the growth of GDP per capita (in constant international dollars) for the same countries and period.

Figure 3 plots in blue squares the number of letters per capita in 2011 (y axis) against the number of letters per capita in 1980 (x axis). All country observations are normalized against the reference country, Switzerland, where the number of letters per capita amounted to 523 in 1980 and to 660 in 2011.³ Switzerland was chosen as the reference point because it had one of the highest numbers of letters per capita. Countries that developed at the same rate as Switzerland over the past three decades are on the 45-degree line. Countries that developed less dynamically are below this line, and those with stronger growth in letters per capita are above. The same graphical representation was done for the GDP per capita (in constant international dollars) between 1980 and 2011. Each grey circle represents the economic development of one country measured in GDP per capita between 1980 and 2011. If a country outpaced Switzerland in the economic growth measured as GDP per capita, then the grey circle for that country appears above the 45-degree line.

Figure 3 shows that for letters per capita (blue squares) most of the countries lie below the 45-degree line. The divergence seems to be particularly strong for countries with low levels of letters per capita in 1980 compared with Switzerland. The graph clearly indicates that many countries, and especially developing ones, have not performed as well as Switzerland in terms of increasing the number of letters per capita. Exceptions to this pattern are countries above the 45-degree line, such as the Republic of Korea and Thailand.

In contrast, the picture looks rather different in terms of the changes in GDP per capita (grey circles). In many countries, especially emerging economies, the GDP per capita has grown faster than in Switzerland (a significant number of grey circles lie above the 45-degree line). In the poorest countries, the growth in GDP per capita has often been slower than in Switzerland over the past three decades. However, most of these countries have fallen less behind in terms of economic growth than in terms of postal development.

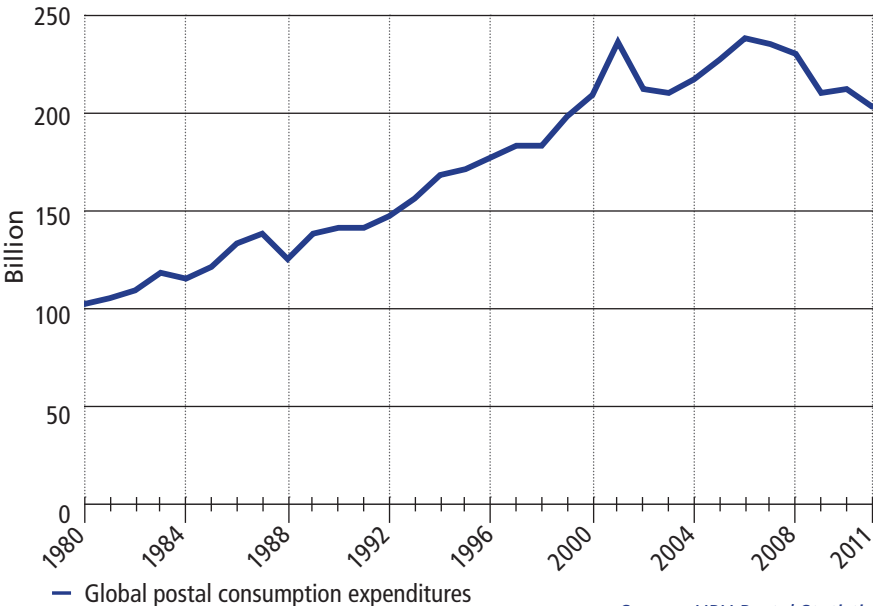
FIGURE 3
Letters per capita and GDP per capita
(in constant international dollars) between 1980 and 2011



Source: UPU Postal Statistics

The evolution of letter-post exchanges has contributed to flattening the growth of overall postal consumption adjusted for inflation (at the level of incumbent postal operators), as can be seen in figure 4, which also includes consumption of postal financial services and logistics. The decline in real letter-post consumption expenditures seems to have been at least partially offset by the growth in other real postal consumption expenditures, namely, in parcels, logistics, financial and other services provided by incumbents. Figure 4 shows a steady real increase of absolute real postal consumption expenditures from 100 billion constant international dollars (PPP) in 1980 to more than 200 billion in 2000, with a stagnation over the last decade for incumbent postal operators for which figures are available for the entire period. This stagnation coincides with the beginning of decoupling between economic and letter-post traffic growth, as seen in figure 2. Under these circumstances, many operators have introduced cost-reduction programmes in response to lower economies of scale induced by the delivery of lower volumes. However, in addition to reducing costs and targeting efficiency gains, incumbent postal operators have looked into diversifying their services.

FIGURE 4
Evolution of absolute global real postal consumption expenditures
(domestic and international service combined, incumbents only)
in constant 2005 international dollars from 1980 to 2011



Source: UPU Postal Statistics

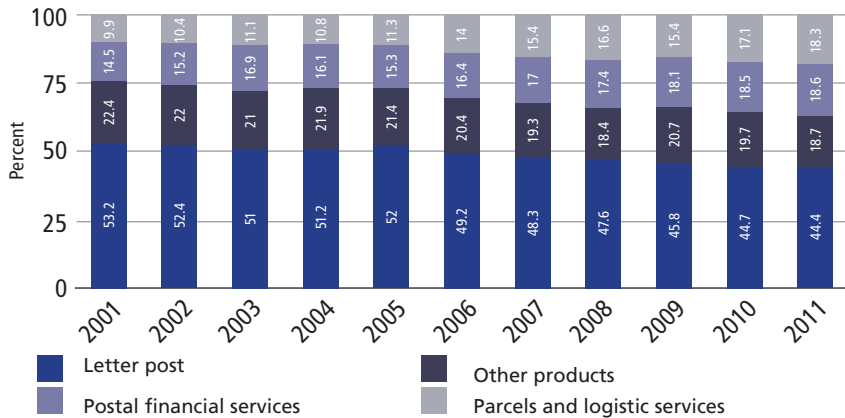
3. Strategic reactions of incumbent postal operators to the evolution of letter-post services consumption over the last three decades

Postal operators are branching out into parcels, logistics and financial services.

For incumbent postal operators, one of the responses to the evolution of letter post in recent decades has been greater diversification. This can be seen in figure 5, which shows the distribution of postal consumption across four categories: letter post, parcels and logistics services, postal financial services, and other products. The average figure gives the same weight to each operator, irrespective of its size, thus providing a view of business diversification. Statistics on the distribution of postal consumption expenditures in these categories have only been available since 2001. However, incumbents are clearly increasingly diversifying their business into categories other than letter post, particularly in areas such as parcels, logistics and financial services.

Parcels and logistics services, which also include express services, have doubled their share in the total postal consumption of services provided by incumbents to their customers, moving from 9.9% to 18.3% over the first decade of the 21st century. Financial services also have a larger share in postal consumption. However, we must bear in mind that a number of consumption expenditures related to financial services are recorded under the “other services” category (e.g. for shared fees related to making the retail postal network available to other financial services providers).

FIGURE 5
Distribution of global postal consumption expenditures
(domestic and international services combined, incumbents only, simple average)
from 2001 to 2011



Source: UPU Postal Statistics

Home delivery that is free of charge for letter-post recipients is the main delivery mode in most parts of the world: what about tomorrow's postal items?

One of the key advantages of the postal sector compared with other service sectors is its extensive network and global reach. A postal item can be sent from almost anywhere in the world and delivered to almost anywhere in the world. This enormous logistical capacity constitutes the backbone of the postal sector and has changed little over the past three decades.

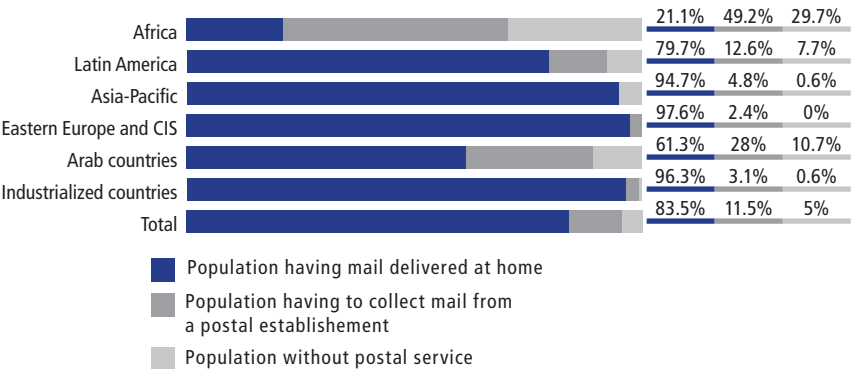
In figure 6, we show the regional distribution of mail delivery for 2011, weighted by the population of each country in the region. The incumbent has two delivery options regarding letters: home delivery, or delivery via post office box. While the recipient is not charged for the former, a fee is usually applied for the latter. In the worst case, the incumbent offers no delivery service whatsoever. Figure 6 shows the delivery breakdown for each region, as well as the total.

Except in Africa (see also chapters 4 and 5), the letter delivery is predominantly by home delivery, at no additional cost to the recipient. It is worth

noting that, even in regions in which there are countries with large populations, such as China and India in the Asia-Pacific region, incumbents are able to provide home delivery for letters to the overwhelming majority of people. In the Arab countries, 61.3% of letters are in the home delivery category, compared with only 21.1% in Africa.

In total, 83.5% of the world's inhabitants have mail (mostly letters) delivered at home, 11.5% collect their mail from a postal establishment, and only 5.0% are without access to postal delivery services. This high rate of penetration has not changed substantially over time. For 67 countries with data available for 1980 and 2011, we calculated the following: in 1980, 80.9% of the population had access to home mail delivery, 14.6% had to collect their mail from a postal establishment, and 4.6% had no access to postal services; in contrast, in 2011, 77.1% of the population had access to home mail delivery (mostly letters), 17.9% had to collect their mail from a postal establishment, and 4.7% had no access to postal delivery services. However, with the emergence of delivery modes related to the development of e-commerce, such as drop boxes for packages, the distribution of postal items other than letters or documents could be channeled to a wider and more heterogeneous range of final delivery points than has been the case for letters over the last three decades. So far though, fee-based delivery options for recipients have had little success.

FIGURE 6
Delivery modes across regions (2011)



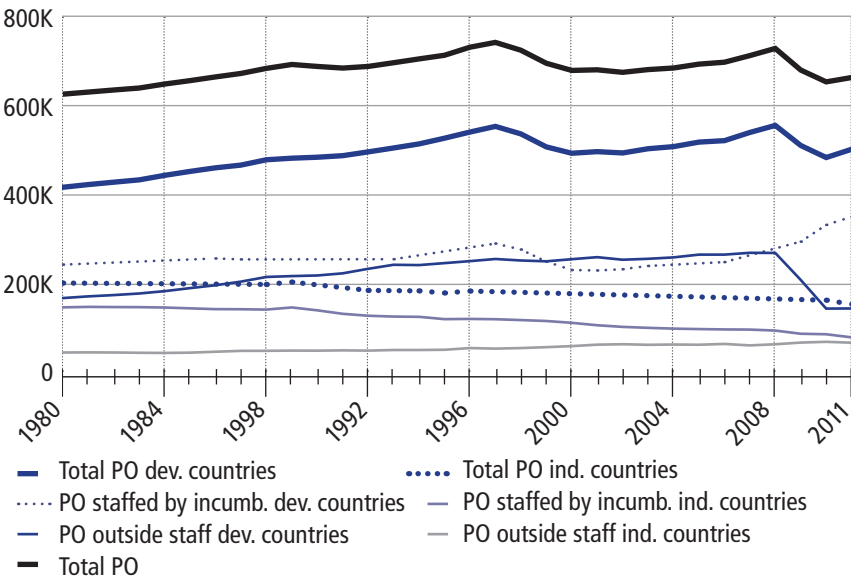
Source: UPU Postal Statistics

Postal operators give a different strategic value to their retail network.

The number of permanent post offices increased slightly between 1980 (around 630,000) and 2011 (660,000). The upper curve in figure 7 shows that the evolution in the number of post offices over the past three decades has not been smooth. The number of permanent post offices reached a peak of 740,000 in 1997, and then declined until the beginning of the 21st century. It then increased to almost 730,000, before falling once again to its current level of around 660,000.

The UPU questionnaire asked incumbents to distinguish between the post offices managed by their own staff and those that are managed externally. The sum of the two categories gives the total number of permanent post offices. In industrialized countries, there has been a clear trend over the past 30 years to transform post offices managed by the incumbent's own staff into post offices managed externally, often through a franchising model enabling fixed-cost sharing with other services. The total number of permanent post offices managed by the Post's own staff thus declined from 205,000 to 160,000.

FIGURE 7
Evolution of the global postal network from 1980 to 2011



Source: UPU Postal Statistics

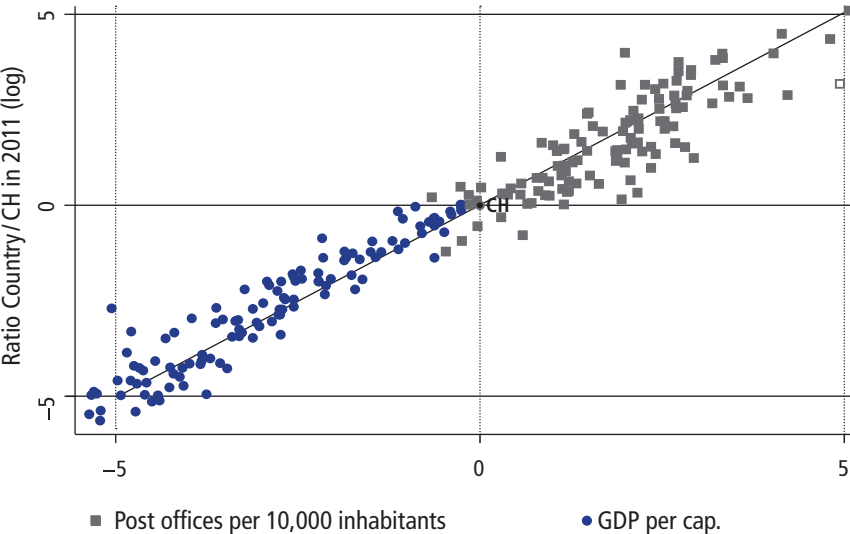
The trend has been rather different in developing countries: not only has the total number of permanent post offices increased from 420,000 to 500,000, but the number of post offices managed by the incumbent's own staff is higher than in 1980, and the number of post offices managed externally is lower. It thus seems that the two country groups follow different strategies to manage their post offices and give a somewhat different strategic value to their postal network.

Post offices are increasingly being used as agency contact points for private partners in the provision of a range of financial services. Operators are also leveraging their networks to distribute their own financial services. Postal networks now enable many incumbent postal operators to play a significant role in the accounts market, as indicated by the latest World Bank Findex-Gallup survey on account holders (see also chapter 6).

Figure 8 analyzes the convergence in the number of permanent post offices per 10,000 inhabitants across countries between 1980 and 2011, i.e. from a network coverage perspective. The reference point chosen for this purpose (Swiss Post) decreased its number of permanent post offices per 10,000 inhabitants from six to three between 1980 and 2011. In figure 8, we again find below the 45-degree line all incumbents that decreased their number of permanent post offices per 10,000 inhabitants even more strongly than Swiss Post. Above the 45-degree line lie all countries that performed the opposite way and thus might even have expanded their network. We depict the GDP per capita in blue circles between 1980 and 2011.

Figure 8 clearly shows that most grey squares are below the 45-degree line, which suggests that in most countries the number of post offices per 10,000 inhabitants decreased more than in Switzerland. If a catching-up process had taken place, the incumbents with a relatively weak postal infrastructure would have tried to increase access to postal services and to improve their postal network coverage. Our findings, however, indicate that the opposite was true in a large number of countries. In many developing countries, one reason for the reduced network coverage is that demographic growth has outpaced the growth of the postal network.

FIGURE 8
Post offices per 10,000 inhabitants and GDP per capita
(in constant international dollars) between 1980 and 2011



Source: UPU Postal Statistics

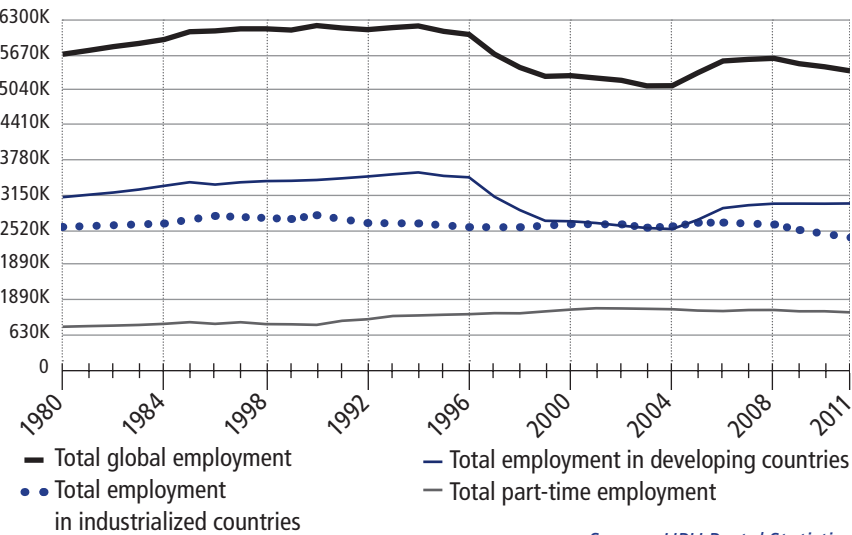
Despite technological progress, the postal sector continues to be labour-intensive.

Currently, incumbents have almost the same number of staff under contract (5.4 million) as in 1980 (5.7 million).⁴ Figure 9 shows the evolution of employment by designated operators in developing and industrialized countries between 1980 and 2011. In developing countries, postal sector employment rose strongly from 1980 until the beginning of the 1990s. However, it then dropped sharply from 3.5 million in 1994 to 2.5 million in 2004. Since then, it has increased to around 3 million. Essentially, one large country triggered these variations in postal employment statistics. The change has been less marked in industrialized countries. Between 1980 and 2009, it fluctuated between 2.5 and 2.7 million. In 2010, it fell for the first time below 2.5 million, and reached 2.4 million in 2011. Over the coming years, it will be interesting to see whether the positive trend in developing countries will compensate the job losses in industrialized countries.

The grey line traces the development of part-time employment. Since 1980, part-time employment has been increasing. It now represents some 20% of the sector's total employment, compared with around 14% in 1980. Flexible working arrangements will probably increase in the near future given operators' interest in transforming fixed costs into variable costs.

Over the past three decades, the postal sector has seen considerable productivity gains, thanks to the introduction of more sophisticated sorting machines and increased electronic connectivity. However, despite these gains, the postal sector seems to employ a fairly constant number of people around the world. One reason for this might be that many postal enterprises have transformed their business models, offering additional or expanded services. Another interpretation could be that, in spite of technological progress, the postal network remains a human infrastructure, which makes the postal industry labour-intensive. In that case, we could have expected a much stronger evolution of postal employment in developing and emerging countries, where labour is cheaper relative to capital, in response to their greatest economic convergence ever with advanced economies.

FIGURE 9
Evolution of global postal employment from 1980 to 2011

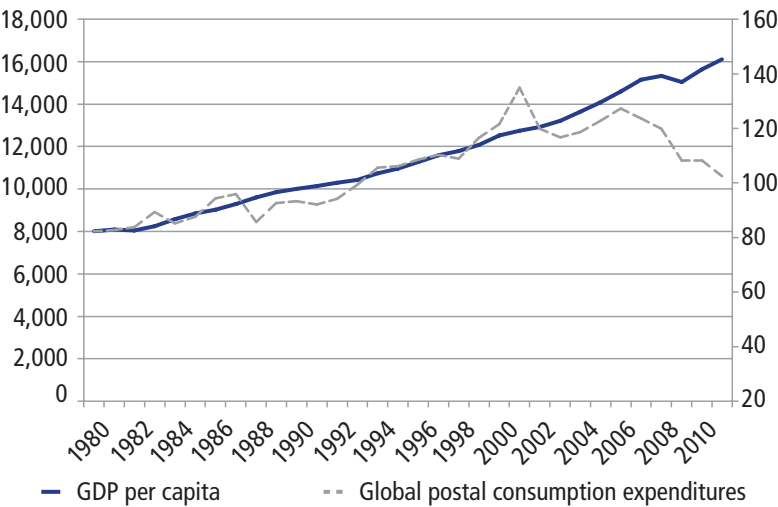


Source: UPU Postal Statistics

4. Challenges faced by incumbent postal operators in remaining essential components of the global economy

The strategic reactions of incumbent postal operators described above are aimed at helping those operators stay economically relevant as an infrastructure for people and enterprises in the 21st century. Besides risks and challenges, a changing environment offers opportunities. Moreover, without a critical contribution to their economy or a critical size, the achievement of some policy goals, such as the universal service obligations, might be jeopardized in terms of economic viability, and postal employment could be threatened.

FIGURE 10
Evolution of global postal consumption expenditures
(domestic and international, incumbent operators only) per adult and GDP per capita from 1980 to 2011(in constant 2005 international dollars, PPP)



Source: UPU Postal Statistics

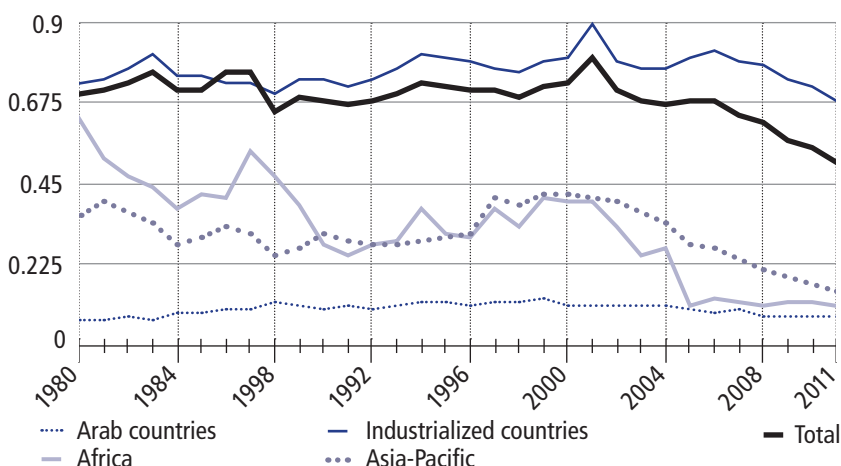
Figure 10 gives an overview of the evolution of annual postal consumption expenditure per adult, compared with GDP per capita. The data cover only postal operators in charge of universal service. Latin America and the Caribbean, as well as the CIS countries, were excluded from the analysis, given the impossibility of providing a meaningful macroeconomic benchmarking from the early 1980s to the mid-1990s. Globally, about 100 constant international dollars were spent on average per adult for postal consumption in 2011; this figure is back to its early 1990s level following a negative trend in the last decade. In the meantime, real income per capita as measured by the GDP steadily increased throughout the period. While the impact on industrialized countries of the global economic and financial crisis that unfolded in 2007–2008 was compensated for by the resilience and long-term macroeconomic convergence of emerging and developing economies, the same was not true for postal consumption expenditures. The decline in industrialized countries was not offset by increases in emerging and developing economies, given the lack of postal convergence discussed earlier in this chapter.

The implicit result is that the contribution of postal consumption expenditures to GDP has been declining around the globe, as shown in figure 11. This indicator measures the contribution of postal operators in charge of universal service to the overall economy. It reflects the weight of the services provided by the postal infrastructure relative to the production of other goods and services. Following a stable range of values for over two decades, there has been a clear negative trend since the early 2000s, leading to a lower contribution by universal postal service providers to GDP, irrespective of the region under consideration. Globally, the contribution of Posts (i.e. incumbents) has declined from 0.7% to 0.5% of GDP over the last 30 years. The coincidence of this decline with the development of electronic communication services and the Internet is striking. The ongoing transformation of incumbent postal operators, with strategic changes to their network and portfolio of services, has not yet managed to reverse this trend. It is very likely that further changes to their business models will be required.

The contribution of incumbent postal operators in charge of universal service to GDP has been steadily declining for the last decade, regardless of the level of economic development or geographical region, thus calling for new business models.

FIGURE 11

Contribution of postal consumption expenditures to GDP
(from 1980 to 2011, percentage of GDP)



Source: UPU Postal Statistics

Over the last three decades, the postal economy was not synchronized with the global economy in terms of the internationalization of exchanges.

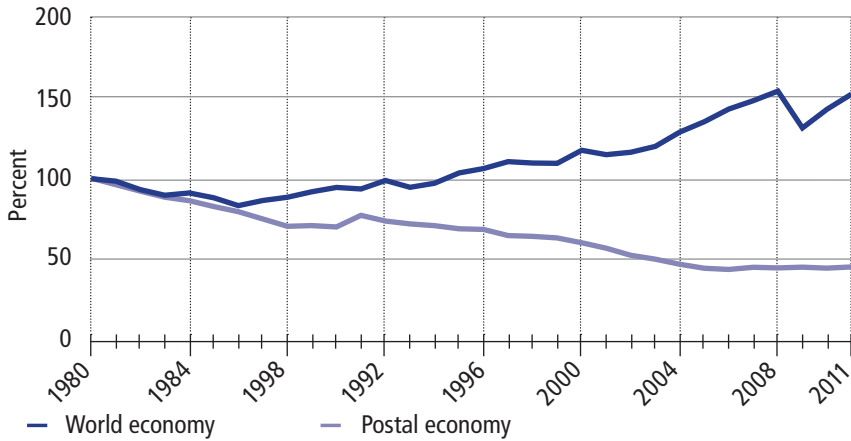
Figure 12 highlights an interesting phenomenon that challenges most incumbent postal operators in charge of providing universal access to postal services. The internationalization of most Posts has not followed that of the global economy. This is clearly visible if one compares, on the one hand, the evolution of the share of goods and services traded internationally relative to the worldwide production of goods and services with, on the other hand, the share of international postal traffic relative to all postal exchanges (both domestic and cross-border). While the internationalization index of the economy has increased by almost 60% over the three decades starting in 1980, the internationalization index of postal exchanges has decreased by the equivalent over the same period of time.

The internationalization of the world economy is now back to its pre-crisis levels of 2007–2008. There is thus considerable untapped potential for future growth in international postal traffic, particularly if a number of barriers and obstacles to international postal exchanges can be

overcome and the interoperability of networks strengthened (see chapter 8).

FIGURE 12

Internationalization of the global economy vs. the postal economy from 1980 to 2011 – international postal traffic vs. total traffic (postal economy), and exports and imports vs. global GDP (world economy) indexed on year 1980 = 100



Source: UPU Postal Statistics

5. Conclusion

Letter-post volumes and economic growth are currently decoupled, irrespective of the level of development. For incumbent postal operators in charge of universal service, other segments of postal consumption have not yet managed to replace the contribution of letter-post consumption to GDP, in spite of the introduction of diversification strategies. This suggests that further strategic changes need to be made to their business models.

A lack of postal convergence can also be noticed between incumbent postal operators in developing and emerging countries on the one hand, and industrialized countries on the other hand, in spite of the greatest economic convergence in economic history. There is a clear postal development failure in most less advanced economies. However, an increasing heterogeneity in all indicators across countries and regions signals that a few postal operators are faring better than others, which also suggests that there is untapped potential for most.

Indeed, the absence of a postal catch-up over the past 30 years does not mean that the situation is a permanent one. In this age of e-commerce development and globalization, the postal network is increasingly being used to transport goods. We might therefore expect a shift in the coming three decades, in terms of both postal volumes per capita and access to postal networks. However, this requires the right set of sector policies.

Other long-run findings highlight that postal operators seem to give different strategic values to their retail network of post offices: those willing to share fixed costs with other businesses, mostly in advanced economies, are reshaping their retail network through franchising models; others, in developing countries, are themselves becoming agents for providers of financial or other services. The labour force remains the major factor of production in the postal sector, although contractual arrangements are giving more room to part-time employment. Finally, the last-mile home delivery service is the primary delivery mode and remains free of charge for most mail recipients.

In a world that has evolved towards greater economic, social and political integration over the last three decades, international postal exchanges are being outpaced by other economic exchanges in terms of internationalization. This is another area of untapped potential that could be seized by most postal operators if the right international postal sector policies are set.

The second and third parts of the book will dig deeper into the reasons behind the postal sector's current challenges and opportunities from an economic perspective. In the next chapter, the analysis of postal indicators and statistics shifts from the last three decades to more recent years.



CHAPTER 2

Postal economics and statistics for strategy analysis – the short view

José Ansón and Matthias Helble

1. Introduction

After the long-run view presented in chapter 1, this chapter focuses on relatively short-term developments with respect to incumbent postal operators, on the basis of the traditional UPU postal statistics. As indicated, UPU postal statistical data is gathered by means of a questionnaire sent each year to the incumbent postal operators of all UPU member countries and territories. This contrasts with new ways of data collection in real time, which will be introduced in chapter 7 as an opportunity for the postal sector to leverage timely data in the future.

In this chapter, we provide an overview of the main results for 2011, present some preliminary results for 2012, and compare those findings with the most recent years in six areas: employment, postal infrastructure, mail delivery, financial results, letter post and parcel post.

The response rate by incumbent operators for the 2011 questionnaire was 77%, or 165 member countries and territories. The UPU postal services questionnaire therefore constitutes the most comprehensive international survey on the evolution of postal markets covered by incumbent operators. As in chapter 1, six country groups are analyzed: industrialized countries, Africa, Latin America and the Caribbean, Asia-Pacific, Eastern Europe and the CIS, and Arab countries.

Unfortunately, not all incumbent operators reply to all questions in the questionnaire. Some information may not be available to them or might be regarded as commercially sensitive (even though the UPU offers all incumbent operators the option of keeping their individual data strictly confidential). In order to still be able to produce global estimates, statistical estimations for all key figures are performed every year.

The figures presented below are therefore based first on answers received from incumbent operators. However, if the relevant information is missing, the numbers are based on statistical estimations.

2. Employment

Total employment by incumbent operators worldwide has been stable over the past decade. However, in Africa, employment by incumbent operators dropped by 3.2% from 2010 to 2011 and by almost 30% between 2001 and 2011.

Incumbent operators employed a total of 5.38 million staff in 2011, 1.3% less than in 2010 (table 1). Full-time employment continues to dominate, accounting for 4.34 million staff, or 81%, compared with 1.04 million part-time staff. In terms of the employment breakdown by group, around 2.39 million staff work for incumbent postal operators in industrialized countries. The Asia-Pacific region accounts for the next largest number of staff (1.69 million), followed by Eastern Europe and CIS countries (0.92 million). The remaining three regions combined account for only 7% of postal services staff employed by incumbent operators.

Using the population data for each group, we can calculate the number of people served by each employee of the incumbent operator (table 1, third column). The results illustrate how different the level of service can be across the six groups. Whereas in industrialized countries one postal employee offers services for approximately 400 people, in Africa the number averages almost 15,000.

Three out of six groups experienced a contraction of their number of staff between 2010 and 2011 (table 1, penultimate column). The decline was strongest in Africa (-3.2%), followed by industrialized countries (-3.1%), and Eastern Europe and the CIS (-1.5%). The regions where staff numbers increased were Latin America and the Caribbean (+3.6%), the Asia-Pacific (+0.7%), and Arab countries (+0.3%).

TABLE 1
Employment by incumbent operators by group in 2011

	2011	% of total	pop/staff	2010–2011	2001–2011
Africa	55,479	1.0 %	14,786	-3.2 %	-29.9 %
Latin America and Caribbean	200,651	3.7 %	2,992	3.6 %	17.3 %
Asia–Pacific	1,686,382	31.4 %	2,258	0.7 %	19.1 %
Eastern Europe and CIS	921,997	17.1 %	523	-1.5 %	6.6 %
Arab countries	126,518	2.4 %	2,869	0.3 %	14.1 %
Industrialized countries	2,385,913	44.4 %	403	-3.1 %	-8.5 %
TOTAL EMPLOYMENT	5,376,958	100.0 %	1,308*	-1.3 %	2.4 %

**Average weighted by population of each group.*

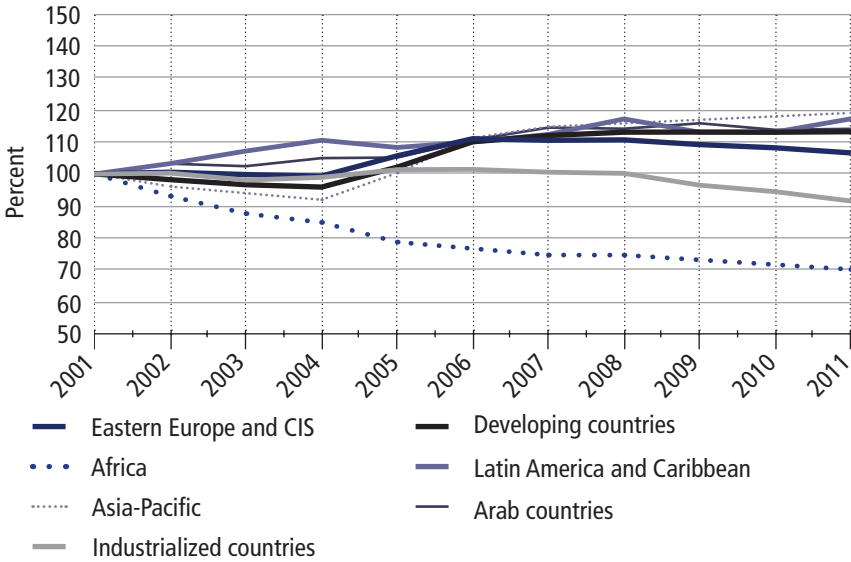
The global financial crisis in 2008, combined with the economic difficulties of several Eurozone countries, triggered an economic crisis in several regions of the world, especially in industrialized countries, with subsequent job losses that continued through 2011. The decline of employment in the postal sector has been in line with this negative trend. In addition, given the fact that the incumbent operators in many countries face heightened competition and lower letter-post volumes, the global decline of 1.3% can be regarded as rather moderate.

Taking a longer-term perspective and studying the evolution of total employment by incumbent operators from 2001 to 2011 (figure 1), we can distinguish different trends among the six groups included in our survey. Incumbent operators in two groups, namely, Africa and the industrialized countries, reduced their staff between 2001 and 2011. In Africa, incumbent operators have cut their workforce by almost one third within the past decade. Considering the fact that, at the same time, the population of Africa has continued to increase, the incumbent operators face an increasingly difficult task in ensuring the delivery of postal services to large portions of the population. Incumbent operators in industrialized countries reported relatively stable employment numbers until 2008. Since then, their number of staff has dropped by almost 10%.

In the other regions, the number of staff employed by incumbent operators has risen. In the Arab countries, as well as Latin America and the Caribbean, the workforce of incumbent operators has increased

markedly. In the Asia-Pacific region, the number of staff declined until 2004, but this trend has since been reversed, and incumbent operators are continuing to hire more staff. In Eastern Europe and the CIS, the workforce was rising until 2008, but has been falling slightly since then.

FIGURE 1
Evolution of total employment by incumbent operators from 2001 to 2011
(indexed 2001 = 100)



Source: UPU Postal Statistics

3. Postal infrastructure

In 2011, the number of post offices increased globally by 1.5% but decreased significantly in industrialized countries (-5.0%).

At the end of 2011, the total number of post offices stood at 662,701. Of that total, 439,376 were staffed by officials of the incumbent operator, and 223,325 were managed by people from outside the incumbent operator.

Compared with 2010, the total number of post offices worldwide increased slightly, by 1.5%. The total number of post offices, including

offices staffed by officials of incumbent operators and those staffed by people external to those operators, developed rather differently across the regions (table 2). In three groups, the number of post offices contracted: Latin America and the Caribbean (-0.4%); Eastern Europe and the CIS (-2.0%); and, most notably, industrialized countries (-5.0%). In the three remaining groups, it expanded: Africa (+1.6%), Asia-Pacific (+6.1%) and Arab countries (+17.3%).¹

TABLE 2
Number of post offices per region in 2011

	2011	% of total	2010–2011	2001–2011
Africa	12,638	1.9 %	1.6 %	-16.6 %
Latin America and Caribbean	52,616	7.9 %	-0.4 %	41.3 %
Asia–Pacific	310,726	46.9 %	6.1 %	-0.7 %
Eastern Europe and CIS	108,466	16.4 %	-2.0 %	-6.1 %
Arab countries	18,442	2.8 %	17.3 %	9.7 %
Industrialized countries	159,813	24.1 %	-5.0 %	-12.1 %
TOTAL	662,701	100.0 %	1.5 %	-2.5 %

Moreover, it is interesting to observe that incumbent operators now seem to take different decisions on how to manage their postal outlets. A growing number of incumbent operators in industrialized countries have decided to franchise a very large proportion, or even all, of their postal outlets. In other regions, such as Asia-Pacific, the incumbent operators have chosen to increase the number of post offices that they themselves manage.

4. Mail delivery

Home delivery is the model, but 350 million people still do not have access to postal services.

Respondents to the questionnaire were asked to indicate the share of the population that has mail delivered at home, the share that has to collect it from a postal establishment, and the share that is without postal services. In order to calculate percentages for the three types of delivery

service for each group, we used the most recent data for each country or territory, and weighted the result for each country or territory with the corresponding population. The results for the three categories of delivery differ markedly between the groups, as table 3 shows.

In the region with the most people (Asia-Pacific), almost 94.7% of the population have their mail, primarily letters, delivered at home. Given the size of the population in this region, this is an impressive achievement. Similarly high levels of home delivery are reached in Eastern Europe and the CIS (97.6%), as well as in the industrialized countries (96.9%). In Latin America and the Caribbean, almost 80% of the population benefit from mail delivery at home, while about 12.6% have to collect mail from postal establishments. The situation is less positive for Africa and the Arab countries. In Africa, almost 50% of the population collect letters from postal establishments, 21.1% get them delivered at home, but 29.7% remain without postal delivery services. In Arab countries, about 61.3% receive letters at home, while about 28% collect them from postal establishments.

TABLE 3
Mail delivery in 2011 (weighted by population of each country or territory)

	Population having mail delivered at home	Population having to collect mail from a postal establishment	Population without postal services
Africa	21.1%	49.2%	29.7%
Latin America and Caribbean	79.7%	12.6%	7.7%
Asia-Pacific	94.7%	4.8%	0.6%
Eastern Europe and CIS	97.6%	2.4%	0.0%
Arab countries	61.3%	28.0%	10.7%
Industrialized countries	96.9%	3.1%	0.0%
TOTAL	83.5%	11.5%	5.0%

The results at the global level indicate that around 83.5% of the world's population have their mail, primarily letters, delivered at home, 11.5% collect it from postal establishments, and 5.0% remain without postal delivery services. Globally, it is estimated that around 5.9 billion people have their mail delivered at home, while around 808 million have to collect it from postal establishments. A total of 353 million are not served by postal operators; of this group, more than 200 million reside in Africa, 46 million in Latin America and the Caribbean, and 40 million in Arab countries.

5. Financial results

The global aggregated revenues (in nominal terms) of all incumbent operators decreased by 3.1% in 2011. Letter post is still providing the lion's share in terms of income, but other products and segments are gaining ground.

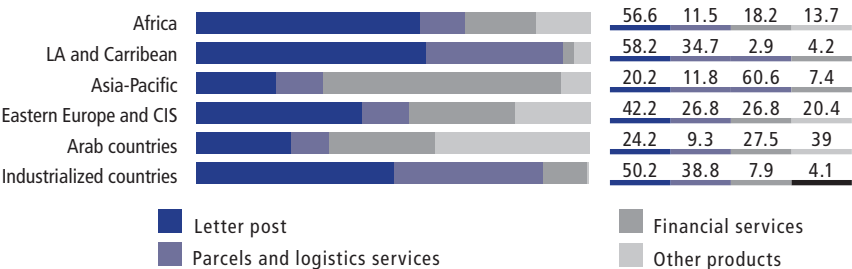
i) Total revenues

The aggregated revenues for 2011 decreased by 3.1% compared with 2010, amounting to an estimated 197 billion SDR. Over the past decade the total revenues have, however, increased annually by an average of 2.6% before discounting for inflation. Once the nominal figures are adjusted for inflation, aggregated revenues in real terms have been rather stagnant (see chapter 1 for a long-term perspective).

ii) Income per postal product

For 2011, the biggest share of financial income of all incumbent operators stemmed from the letter-post business (48.3%).² Parcels and logistics services constituted the second largest source of income (34.6%). The third was postal financial services (11.7%), and other products came fourth (5.3%). The overall picture seems to be that the financial income of most postal operators comes from an array of different sources, with letter post still taking the lion's share. If all incumbents are given the same weight when computing the average figure, then the letter-post share decreases from 48.3% of total postal income to 45%, as already highlighted in the previous chapter.

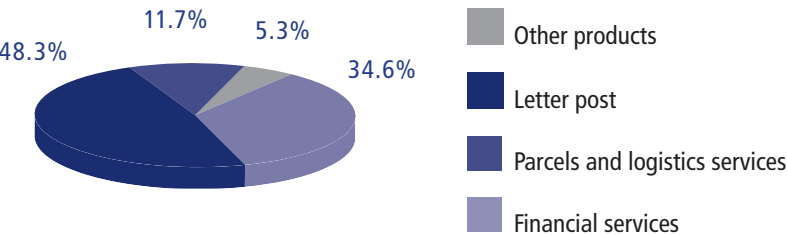
FIGURE 2
Sources of financial income of postal operators in 2011
(in percentage terms, weighted by total revenue of incumbent operator)



Source: UPU Postal Statistics

It is interesting to observe that the types of revenue are rather different across the six country group (figure 3). In Africa, Latin America and the Caribbean, and the industrialized countries, the letter-post business generates more than 50% of all revenues. In addition, in Latin America and the Caribbean and in the industrialized countries, over one third of the total revenues are generated by parcel post. In contrast, incumbent operators in Asia-Pacific seem to depend heavily on postal financial services. Arab countries, as well as the developing region of Eastern Europe and the CIS, have also strongly developed their postal financial services. In these two regions, the share of other products is the highest, which shows that incumbent operators there are discovering new business fields.

FIGURE 3
Sources of financial income of postal operators by group in 2011 (in percentage terms, weighted by total revenue of incumbent operator in every group)



Source: UPU Postal Statistics

6. Letter post

In 2011, the global letter-post volume (domestic and international service) decreased by 3.7%; however, about 30% of all incumbent operators saw their letter-post volume increase.

Incumbent operators handled a total of 368.4 billion letter-post items in 2011. Of the total traffic, 98.7% was domestic and 1.3% international. In 2011, the global letter-post volume declined by 3.7%. Domestic letter-post volume was more heavily affected, falling by 3.7%, while the international service declined by 2.2%.³

i) Domestic service

The picture does look more positive in certain regions (table 4). Between 2010 and 2011, two regions, namely, Latin America and the Caribbean (+1.0%) and Asia-Pacific (+1.1%) expanded their letter-post volumes. All other regions reported declines in the domestic service, most notably the Arab countries (-7.1%).

Eastern Europe and the CIS also experienced a contraction in the overall volume (-5.1%). However, in over half of the countries in this region, the incumbent operators expanded their volumes (see last column, table 4). A very significant drop was recorded for the industrialized countries, including Western Europe, where the volume dropped by 4.5%. Given that the industrialized countries constitute by far the largest market (79.4%), this drop was the biggest in absolute terms compared with the other groups.

From a more medium-term perspective (2006–2011), the incumbent operators in Latin America and the Caribbean, as well as in Asia-Pacific, were able to increase their domestic letter-post volumes. Incumbent operators in all other groups experienced a contraction in their volumes of domestic letter-post items. Arab countries experienced the sharpest drop (-6.6%), followed by industrialized countries (-4.2%). Smaller drops were recorded in Africa (-2.9%) and in Eastern Europe and the CIS (-2.5%).

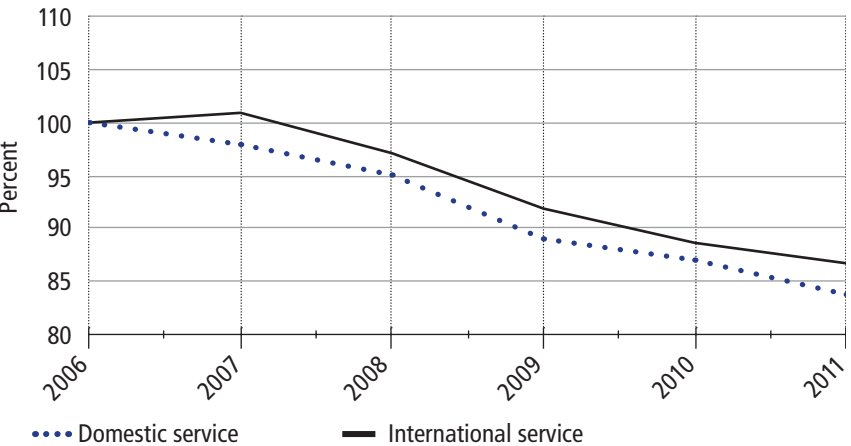
On the positive side, it is worth noting that Latin America and the Caribbean, as well as Asia-Pacific, which include countries with high economic growth rates, increased their domestic letter-post volumes between 2006 and 2011. On the other hand, it is rather puzzling to see that the letter-post volumes have been declining in Africa despite sustained economic growth in most countries of this region over recent years. A variety of reasons might explain this trend. The opening up of the postal market to other operators may have led to a drop in letter-post volumes for incumbent operators. Another reason may be a substitution effect from other information transmission technology, such as mobile phones.

TABLE 4
Domestic letter-post items (volume in millions) by region in 2011

Letter post (domestic service)	2011	% of total	Annual change from 2006–2011	2010–2011	% of countries experiencing growth in 2011
Africa	1,795	0.5%	-2.9%	-3.0%	27.9%
Latin America and Caribbean	10,931	3.0%	0.7%	1.0%	35.7%
Asia-Pacific	45,286	12.5%	0.8%	1.1%	31.4%
Eastern Europe and CIS	15,884	4.4%	-2.5%	-5.1%	51.6%
Arab countries	1,020	0.3%	-6.6%	-7.1%	19.0%
Industrialized countries	288,747	79.4%	-4.2%	-4.5%	28.2%
TOTAL	363,663	100%	-3.5%	-3.7%	32.7%

The volumes of letter-post items sent in industrialized countries dropped by an average of 4.2% per year between 2006 and 2011. Since almost 80% of the global letter-post market is located in industrialized countries, this drop is the main driver for the 3.5% annual reduction in mail volumes worldwide over the same period. The drop in the industrialized countries is probably due less to increased competition than to substitution effects. Figure 4 shows the evolution of domestic letter-post volumes from 2006 to 2011. The decline in global volumes seems to have accelerated since 2008, owing to the combined cyclical and structural impacts of the international economic turmoil on the one hand, and the ongoing electronic substitution of mail on the other hand. First figures collected through the UPU postal statistics questionnaires show decreases in the range of 3% to 9% for most industrialized countries in 2012, with a global decline of 4.7%, although 2013 figures are likely to show an improvement.

FIGURE 4
Evolution of global letter-post volumes
(domestic and international service) from 2006 to 2011 (indexed on year 2006= 100)



UPU Postal Statistics

ii) International service

International mail is the area subject to strong competition from private operators and among incumbent operators. The data and indicators presented here may not fully represent mail flows stemming from the commercial activities of incumbent operators, i.e. mail dispatched by extraterritorial offices of exchange. The indicators shown below should be interpreted with this in mind.

International letter-post items dispatched by incumbent operators worldwide declined slightly (by 2.2%) between 2010 and 2011. Similar to the domestic market, the international letter-post service is dominated by industrialized countries, which account for 75.8% of the global market. In second place is the Asia-Pacific region (12.2%). Interestingly, volumes in the Arab region (4.0%) almost match those in Eastern Europe and the CIS (4.5%), and come well in front of Africa (2.1%) and Latin America and the Caribbean (1.4%). The relative importance of Africa (2.1%) compared with the domestic letter-post service (0.5%) seems to indicate that the letter remains a key way of transmitting information across borders in Africa.

Comparing the change from 2010 to 2011 across groups, we can observe that the international letter-post service has contracted in all regions, except for Asia-Pacific (+1.1%). The contraction has been particularly strong in Latin America and the Caribbean (-9.6%), Africa (-6.8%) and Arab countries (-4.8%). The decrease was more modest in the industrialized countries (-2.3%) and in Eastern Europe and the CIS (-1.8%).

Studying the evolution from 2006 to 2011, we can observe that the international letter-post service is marked by a similar, but slightly lesser, contraction compared with the domestic service (see figure 4). Overall, the letter-post volume (international service) fell by 13.3% in total or by 2.8% annually. The decrease was most dramatic in Latin America and the Caribbean (-11.5% annually) as well as in Arab countries (-8.1% annually). The drop was also substantial in the developing regions of Eastern Europe and the CIS and in Africa (both -6.2% annually). Industrialized countries were slightly less affected (-2.6% annually). On the positive side, we can note the trend in Asia-Pacific (+2.0% annually).

TABLE 5
International letter-post service (dispatch, volume in millions) by region in 2011

Letter post (international service)	2011	% of total	Annual change from 2006 to 2011	2010–2011	% of countries experiencing growth 2011
Africa	97	2.1%	-6.2%	-6.8%	32.6%
Latin America and Caribbean	67	1.4%	-11.5%	-9.6%	21.4%
Asia-Pacific	580	12.2%	2.0%	1.1%	31.4%
Eastern Europe and CIS	211	4.5%	-6.2%	-1.8%	29.0%
Arab countries	190	4.0%	-8.1%	-4.8%	33.3%
Industrialized countries	3,593	75.8%	-2.6%	-2.3%	21.4%
TOTAL	4,738	100%	-2.8%	-2.2%	27.6%

7. Parcel post

In 2011, the global parcel-post volume (domestic and international service) continued its positive development, increasing by 2.1%. The volume growth in international parcels (dispatch) was particularly strong in Eastern Europe and the CIS (+10.0%).

i) Domestic service

The total number of postal parcels (domestic and international services) delivered by incumbent operators amounted to around 6.4 billion in 2011, representing a 2.1% increase over 2010. Out of the 6.4 billion parcels, 6.3 billion were delivered domestically, while 58 million were delivered across borders. The industrialized countries constituted the biggest market for postal parcels, with a share of 91.8%. The Asia-Pacific region had a share of 5.4%, with all other regions below 1.5%.

The change from 2010 to 2011 was very different across the six groups. The number of parcels delivered by incumbent operators decreased substantially in Africa (-7.5%). In contrast, it increased significantly in Latin America and the Caribbean (+21.7%) and in Asia-Pacific (+3.8%), and to a lesser extent in Eastern Europe and the CIS (+0.3%) and the Arab countries (+2.1%). As the market is concentrated in the industrialized countries, the increase of 1.8% there was the main driver of the global increase of 2.1%.

TABLE 6

Domestic ordinary parcel-post service (volume in thousands) by region in 2011

Parcel post (domestic service)	2011	% of total	Annual change from 2006 to 2011	2010–2011	% of countries experiencing growth 2011
Africa	4,137	0.1%	2.4%	-7.5%	58.6%
Latin America and Caribbean	78,094	1.2%	26.4%	21.7%	28.0%
Asia-Pacific	340,438	5.4%	3.8%	3.8%	55.6%
Eastern Europe and CIS	92,619	1.5%	7.5%	0.3%	37.9%
Arab countries	909	>0.1%	-1.4%	2.1%	46.7%
Industrialized countries	5,827,349	92.4%	5.2%	1.8%	44.4%
TOTAL	6,343,546	100.0%	5.3%	2.1%	45.3%

Studying the medium-term trends (2006–2011), we can observe that incumbent operators in all groups, except the Arab countries, have been able to substantially expand the business of delivering ordinary parcels domestically. Overall, the volume of ordinary parcels (domestic service) increased by almost 30% between 2006 and 2011 (from 4.9 billion to 6.3 billion), as figure 5 below illustrates.

ii) International service

The number of ordinary parcels dispatched internationally totalled 58.1 million, an increase of 3.5% compared with 2010. The lion's share of the international service was again taken by incumbent operators in industrialized countries (85.9%). Asia-Pacific had a share of 8.2%, with all other regions below 4.0%. Between 2010 and 2011, all regions experienced growth, most notably Eastern Europe and the CIS, with a growth rate of 10.0%.

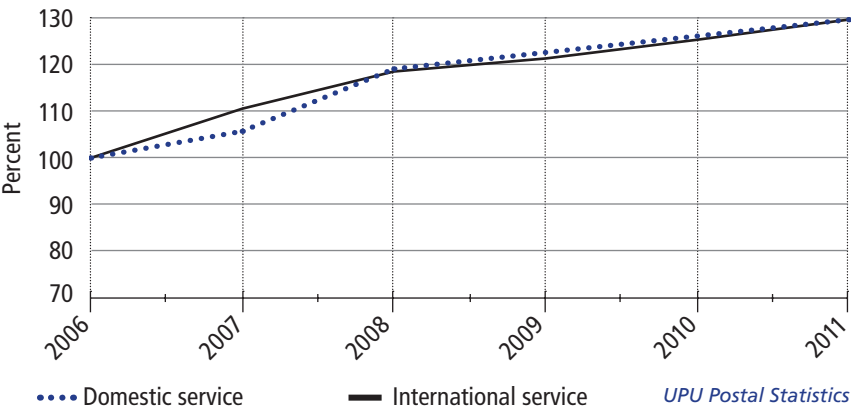
TABLE 7
International ordinary parcel-post service
(dispatch, volume in thousands) by region in 2011

Parcel post (international service)	2011	% of total	Annual change from 2006 to 2011	2010–2011	% of countries experiencing growth 2011
Africa	394	0.7%	-1.7%	-3.9%	35.7%
Latin America and Caribbean	587	1.0%	-1.0%	0.5%	61.0%
Asia-Pacific	4,771	8.2%	3.0%	3.7%	45.7%
Eastern Europe and CIS	1,968	3.4%	8.9%	10.0%	72.4%
Arab countries	483	0.8%	3.2%	4.2%	28.6%
Industrialized countries	49,892	85.9%	5.6%	3.2%	64.1%
TOTAL	58,096	100.0%	5.3%	3.5%	51.7%

From 2006 to 2011, all groups increased their volumes of international ordinary parcels, except the Africa and Latin America and Caribbean regions. The growth was most spectacular in Eastern Europe and the CIS (annual growth rate of 8.9%). Globally, the volume increased by almost 30%, closely mimicking the trend in the domestic service (see also figure 5). It is interesting to observe that growth was strong from 2006

to 2008, after which it was more modest, probably largely on account of an economic slowdown in the industrialized countries.

FIGURE 5
Evolution of parcel-post volumes (domestic and international service)
from 2006 to 2011 (indexed on year 2006 = 100)



8. Conclusion

In 2011, the incumbent operators of UPU member countries provided work to around 5.44 million people, which was 1.3% less than in 2010. This decrease was due in particular to continuing shrinkage in the business of incumbent operators in industrialized countries. This shrinkage was not entirely offset by positive trends in other regions.

In 2011, the total revenues of all incumbent operators fell by 3.1% in nominal terms; taking into account world inflation, the revenue drop in real terms would be even larger. From a longer-term perspective, the global trend is towards a stagnation of postal revenues in real terms, as already highlighted in chapter 1. The recent figures do not point to a reversal of this trend, although this could happen in the years to come should incumbent operators successfully reinvent their business models in response to the fast-changing postal business environment.

Letter post still represents the lion's share of incumbent operators' revenues. However, this share is declining as other business areas grow, such as parcels and logistics, and postal financial services. Parcels and logistics, including express services, are the major contributor to the structural change in postal income. The positive trend for parcels volumes continued in 2011, with an increase of 2.1% over 2010 (domestic and international services). Despite the fact that this business sector is subject to fierce competition, some incumbent operators have been able to benefit from positive market developments. Customers are also moving from express to parcel services, and this has benefited the parcel streams at the expense of higher-end express services.

To conclude, it should be emphasized that the business models of postal operators can vary between countries. There are growth opportunities for postal operators in all countries. At the same time, substitution effects and new distribution models put pressure on the incumbent. The postal sector therefore remains subject to considerable transformation and uncertainty regarding its near future. Capitalizing on the growth opportunities, while adjusting to risks and negative trends, will be key for the survival of incumbent operators and for the functioning of the postal sector. To that end, postal stakeholders should look beyond the traditional postal statistics framework to big postal data. The new analytics tools for big postal data presented in part three of this book have the potential to help postal stakeholders reduce uncertainty, introduce timely changes to services, successfully transform a business and determine appropriate sector policy.

CHAPTER 3

Status of the postal service 20 years after the green paper: a Franco-European perspective

Joëlle Toledano Bialot

"An idea that is simple but wrong will always carry more weight in the world than an idea that is right but complex."

Alexis de Tocqueville

1. Introduction

This chapter covers the policy development that has fostered a massive amount of postal economic research over more than two decades, namely, the *Green Paper on the Development of the Single Market for Postal Services*. Published in 1992, the Green Paper was the outcome of several years of work, consultation and coordination.¹ It stated that *"the absolute policy fundamental is the need to ensure the continuation of the universal service, and thus to ensure that the postal administrations' public service mission is carried out in good economic and financial conditions"* (p. 5).

To that end, the Green Paper advocated Europe-wide accessibility for all to national and cross-border services that are affordable and of satisfactory quality. It provided several options for achieving these objectives, ranging from total opening up of the postal market to the status quo, giving preference to a middle-way scenario of gradual market liberalization. At over 350 pages, this report described in detail the situation on the postal market and the economic, legal and social issues to be taken into account. It defined the basis for the joint regulatory rules to which postal services and markets in Europe were to be subject, with special rules covering universal service operators, while leaving member states extensive decision-making autonomy. It was welcomed by most stakeholders (governments, major customers, consumer and business associations, public and private postal operators), and the European Commission subsequently received more than 200 contributions to the debate.

The purpose of this chapter is not to write the History (with a capital H) of the transformation of the European postal market, which would probably be revealing as regards the motives behind and implementation of the European decision-making process (in terms of both the Commission and the member states). It is an initial attempt to understand the stakes and the economic debates that were current when the Green Paper was written. This approach is necessary in order to then take economic stock of the past 20 years, before considering the questions which need to be answered now. This strictly economic view of things is obviously very restrictive. In most countries, the postal sector has a centuries-old history and is often a symbol of both political and territorial unity and solidarity. In a country like France, for instance, it is regarded as one of the most symbolic public service operations. France is far from being the only country where the postal service cannot be reduced to a mere economic operation. Postal policies in the United States and the United Kingdom – to cite just two examples of countries which have accustomed us to more liberal practices – testify to this specific characteristic.

2. What economic problems did the Green Paper address?

Basically, the Green Paper's major achievement was getting economic players with conflicting interests to almost agree. What pleased some, namely, a broad-based universal service and the existence of a reserved area protected by the European Community's regulatory framework, was exactly what appealed less to those calling for "strict" regulation of monopoly operators, with a clearly controlled universal service to allow the broadest possible competition to develop. The objective of improving national and European quality of service advocated by the Green Paper met with general approval, primarily from consumers and political staff. Essentially, while the Green Paper opened the door to all possible interpretations, it also had the potential to address all concerns. To understand it, we have to go back briefly to the years preceding its publication.

For postal administrations, the 1980s brought two major institutional innovations: first, the gradual separation of postal and telecommunications services, and second, erosion of the postal monopoly, both of which undermined what we would now call the postal business model of the day.

In the early 1980s, postal and telecom operations were frequently combined in the same administration. The British led the way with the separation of Royal Mail and British Telecom in 1981. Then gradually, the two-fold separation (from the supervisory ministry on the one hand, and between the postal and telecommunication activities on the other hand) established itself everywhere.

In France, for instance, the process of telecom liberalization, begun in Brussels in the 1980s, gave a stronger voice and fresh arguments to those in favour of separating two activities with diverging technical and economic fundamentals.² In 1990, following numerous reports by postal stakeholders, work by experts, parliamentary reports and over 18 months of public debate, the French Parliament voted in favour of creating two separate establishments, La Poste and France Telecom.³ It is worth noting that, when faced with the same situation, the Netherlands made different institutional choices. There, the laws voted in 1988 created, with effect from 1989, a private holding company called KPN to be the shareholder of both PTT Post and PTT Telecom. Employee status was also transformed, with civil servants becoming private-law employees. This change was made possible by the negotiation of a specific collective agreement limiting the differences in status conditions. The two operations (Post and Telecom) were separated 10 years later in 1998 when KPN, which was floated on the stock market in 1994, divested itself of postal operations. These operations were henceforth listed under the name of TPG (TNT Post Group).

Independently of all other technical, political and social aspects, the separation of the two operations had the immediate consequence of highlighting the issue of postal service funding, which, in some countries, came partly from telecommunications. In this respect, the Green Paper stated that, in the great majority of the European Community's then 12 member states, postal services in the strict sense of the term, i.e. without taking account of postal financial services, were operating at a loss in 1988. In those days, only the postal services of the United Kingdom and the Netherlands were making a profit. In four countries (Belgium, Denmark, France and Ireland), the deficit was offset by the surplus generated by financial services.⁴

The second shock came with the advent of what were then known as “integrators” – now called “express couriers” – in Europe.⁵ As early as 1976, UPS had made an initial acquisition in Germany. Then in the 1980s, integrators (DHL, FedEx and UPS, to name the best known) appeared on the European market offering international mail services based on remailing or express services, or both. From the point of view of European postal services (and often of their governments), these American couriers were coming to Europe to do what they had already managed to do with the American Post, namely, to leave low-revenue letter-post business for the Posts and grab the parcels and express markets. In this connection, the 1995 article by E.R. Costich and W.G. Gillette perfectly illustrated the fears of European Posts. Indeed, the United States Postal Service lost the market dominance of the parcel to the integrator UPS with its confining and creaming-off strategy. European Posts did not want this strategy to be repeated at home.

Initially, postal administrations almost everywhere tried to oppose this trend head on. They often came to realize that, because of national regulations which had not changed much over the centuries, the legal monopoly they thought they held did not have a very sound foundation. These monopolies were all the weaker because Community regulations were fairly restrictive in the field of exclusive rights, and postal administrations were not sure of winning any disputes over competition.

Thus, member states gradually adopted the Commission’s interpretation and accepted that the express service did not legally infringe national legal monopolies. In 1990, after several legal episodes, two of the European Commission’s formal decisions against the Netherlands and Spain confirmed that national and international express services did not come under national postal monopolies. These decisions were later confirmed by the Court of Justice of the European Communities.

Integrators opened up another legal front – that of legalizing the opening of the international mail market to competition and calling the market practices of traditional monopolies into question. The Green Paper announced that the Commission would address the complaint brought by the International Express Carriers Conference as to whether the rules enforced by Posts about international mail, and in particular within European Union territory, were permissible under competition law.

The following year, the *Corbeau*⁶ decision once again highlighted the weakness of postal monopolies. Admittedly, the Court of Justice of the European Communities acknowledged that the Treaty of Rome did not prohibit postal monopolies and that they could be justified by the need to finance missions of general interest, such as the public postal service. However, by the same token, the decision established that the monopoly was not justified if economic sustainability was not compromised. The *Corbeau* decision was in a way the legal counterpart of the more political Green Paper. It was to the same effect as the Green Paper and accepted the principle of a monopoly, as long as it was necessary for providing the public service.

This question of the scope and limits of the monopoly was, in fact, the nub of the integrators' offensive. In a fascinating article, Campbell (1994) recounted how, under the banner of the International Express Carriers Conference, the couriers tried from 1983 on to force a change in European regulations so as to introduce competition on European postal markets: "Their goal [courier companies] is a legal regime that allows free, undistorted competition among delivery services operating between Member States and between the Union and the rest of the world" (p. 1).⁷ Campbell gave a detailed analysis of the strategies and methods developed by postal administrations, some governments and the International Express Carriers Conference to become involved in the process of drafting the Commission's texts.

Because Community law required the postal monopoly to correspond to a mission of general interest, the Green Paper made it possible to reformulate the discussion. For supporters of liberalization, the objective was to show that there was no need to define an overly wide universal service for operators and that the market would often be best able to meet customer needs.

The French believed – and they were not alone in this – that maintaining (or even improving) a public postal service in France justified embracing European ideas about putting in place a single postal market where ambitious goals would be defined for Europe as a whole. To paraphrase Lampedusa in his novel *The Leopard*,⁸ everything had to be changed for things to stay almost as they were. The 1980s had shown the fragility of the legal and institutional organization of postal services. Radical change was called for: a regulatory framework had to be put in place for the

Community, the universal service had to be defined, high quality targets set and then monitored for national and intra-European services, operator activities separated from those of the postal regulator, etc. This was the price postal operators would have to pay to preserve the core of the postal service's operational model – a monopoly implementing its internal cross-subsidization policies.

Twenty years thus passed between the Green Paper and the full liberalization of the postal market in 2011.⁹ Compared with the European process of opening up telecommunications and even energy markets, this period may seem very long. Perhaps the Green Paper's success provides the explanation. It managed to reconcile seemingly incompatible objectives. It took the economic and financial crisis to intensify the slide in traffic which had begun in the early years of the 21st century for these incompatibilities to resolve themselves. In actual fact, the problems have changed, and opening up markets to competition is no longer the central issue.

Consequently, total market liberalization in 2011 has not really had any tangible effect. In practical terms, a look at the countries where liberalization was not yet complete as of 1 January 2011 reveals no new market entrants and no new development plan of any significance in countries which are, on initial analysis, as different as France, Austria and Belgium. In more general terms, wherever competition has existed since the early years of this century, the question of the impact of loss of market share in recent years is largely relativized in the light of losses as the result of electronic-media substitution.

We will now review the actual economic impact of the postal regulatory framework in the 15 member states of Europe that participated in these changes from the 1990s onward. Countries that joined the Union between 2004 and 2007 are not included in this investigation.

3. Elements of the review

Each of the 15 countries conducted its own policy, as regards both liberalization and revised regulation of the market, within the framework of the minimally prescriptive Directive. Moreover, the initial economic,

geographic and regulatory situations differed quite considerably as regards traffic, quality of service, tariffs, population density and the types of services offered, as the Green Paper emphasized. While there was a common regulatory framework, it also left plenty of latitude for national “subsidiarity”, but not much for harmonization. Following on from the numerous studies requested by the European Commission since the Green Paper,¹⁰ two articles in the *Handbook of Worldwide Postal Reform*, published in 2008, one on regulatory aspects and the other on socio-economic aspects, clearly brought out the diversity of situations in Europe. Two studies supplemented this overview, making it possible to compile the main data needed for a review (ITA Consulting and WIK-Consult, 2009; Copenhagen Economics, 2010).

At a strictly economic level, it would be useful to evaluate the impact of policies by adopting two complementary methods (Winston, 1993). The first classic method is based on measuring social welfare, the sum of consumer surplus and corporate profits. It is, however, virtually impossible to implement because we do not have the price and volume indicators for effective measurement of these developments. Sweden is the only country with statistics. For the period under study (1990–2006), tariff increases were on average offset by decreases from which the corporate sector benefited.¹¹

The second approach provides less of an overall view but is more qualitative and systematically examines the impact of the new market regulation on competition, jobs, productivity and wages, quality of service, tariffs and any transfers between consumers, traffic volumes, innovation, and corporate profits, to mention only the most frequently cited parameters. The studies sponsored by the European Commission provide information about many of these topics but not all of them, because information about certain topics like jobs, tariffs and volumes is not standardized or does not exist. It is therefore hard to compare the data over time (e.g. postal jobs between 1992 and 2011, and prices for services paid by the corporate sector, in particular big mailers) and geographically (the definition of total traffic is not necessarily the same in the various countries). Moreover, there are surprising gaps in the information available, as some postal services seem to have a non-transparent information policy which hardly seems compatible with the need for transparency in respect of consumers, as implied when conducting a mission of general interest.¹²

In any event, the only economic objective set out in the Green Paper was the continued financing of a good quality, affordable universal service. On the whole, this objective has been achieved. Despite the economic and financial crisis and, above all, despite lower mail volumes, the postal operators responsible for providing the universal service were in much better shape at the end of the first decade of the 21st century than 20 years before. As mentioned earlier, the financial situation of almost all operators was poor in the late 1980s. In 2009, Greece was the only country in the red, as it had been in 1988. Following on from the general review for 1997–2008 carried out by ITA Consulting and WIK-Consult (2009), Copenhagen Economics (2010) gave results for all operators and brought out this improvement. Furthermore, both national and intra-European quality of service has improved overall – even if there is still room for progress in some countries – and tariffs are affordable (although this affordability is questionable for cross-border services).

At the same time, almost all universal service operators have managed to build a profitable economic model based on a more efficient production tool that concentrates and delivers substantial traffic volumes with considerable economies of scale and scope and moderate prices. They have also expanded their non-postal activities by means of diversification strategies on various scales in preparation for the expected slump in letter-post traffic.

Other developments were much more unexpected and need to be put in perspective. This review will go on to examine four aspects of the economic model that emerged from the Green Paper: (1) the process of “gradual” liberalization led to limited competition with virtually no innovation; (2) postal operation jobs decreased markedly; (3) tariff structures were considerably distorted; and (4) universal service operators have used strategies with various features, which will be outlined below.

All research is now focusing on the extent of the drop in mail volumes, and the related uncertainties. We will therefore try to see how this slump changes the characteristics of the present economic model; in any event, it destroys economies of scale. If the decrease in traffic is such that tariffs need to be substantially increased or quality of service is allowed to deteriorate, so as to ensure that funding of the universal service continues, member states and the Commission will have to raise the question of the future of the universal service. As far as universal service operators are

concerned, the resilience of their strategy is obviously the fundamental question. This will be dealt with in the conclusion.

4. What competition?

All recent studies have highlighted the weaknesses of competition on European mail markets (Dieke et al, 2009; ITA Consulting and WIK-Consult 2009; Copenhagen Economics, 2010). In actual fact, the international mail market is the only niche where competition is overtly present, even though the established operator still dominates this segment. What is more, this market is declining, or at best stagnating, even more than the others, except in terms of small packets which have been historically accounted for in the international letter-post stream (according to UPU definitions). The development of competition upstream of the mail delivery network is structurally linked to regulatory policy. The United Kingdom, where access tariffs allowed competition to develop on the fringe while preventing end-to-end competition, is of course a prime example. On the other hand, despite the repeated affirmations of both companies and regulators, no end-to-end competition has managed to develop by basing itself on customers acquired on the mail preparation (worksharing) market. The British and French examples, where there are sizeable players on markets upstream of mail delivery, testify to the difficulty (and even the impossibility to date) of relying on these operators to develop end-to-end competition.¹³

There are many explanations for the absence of effective end-to-end competition. The strictly economic reasons that are most often cited include the effects of reputation, economies of scale and the learning factor. Many regulatory entrance barriers exist, some of which vary from country to country. Examples include the different VAT procedures, problems with accessing letter boxes, and the coverage and service quality obligations imposed on new entrants in some countries. In recent decades, there have been no product innovations, as new players have managed to enter the markets on the strength of price-based competition.

In the Netherlands and Germany, competitors based their business on labour costs far below those of the incumbent operators. In Sweden, competition is basically confined to one market segment, namely, pre-sorted

bulk mail delivered to slightly over half of the country's inhabitants living in the most densely populated areas. To date, the product range and operational structure of Sweden's Citymail dating from the early 1990s, with time-certain delivery and two delivery rounds per week, are the only "innovations" generated by postal liberalization in Europe. Citymail needed almost 10 years to become profitable (Toledano, 2004). Sweden Post, the incumbent universal service operator, has an 88% market share of volume and well over 90% of value, after 20 years of competition confined to the cheapest service price category. In Sweden, service quality and reliability are good.

Very few countries have achieved the same level of competition in the 15 member states of the "old" Europe. Only in Germany, Spain and the Netherlands is there competition that is anything but marginal.¹⁴ In Spain and Germany, there is a system of local operators networking with a single lead operator covering 70% of the territory, for example, Unipost (the Deutsche Post satellite in Spain) and TNT in Germany. SANDD in the Netherlands is partly involved in a branch of Citymail and offers two rounds a week. However, fast national coverage was made possible by the Netherlands' high population density and by extremely insecure wage and social insurance conditions. These conditions should in principle improve following the recent postal legislation in the Netherlands. Sweden, Spain, Germany and the Netherlands are all countries where competition was allowed ahead of the Community framework.

The markets liberalized in the wake of the lower weight limits and tariffs provided for in successive European Postal Directives were not extensive enough to allow operators to develop a financially viable business. No gaining of ground by the competition has been observed in countries where full market liberalization did not come till 2011. The reason is simple. Market development is much too uncertain for new capital investment. Experience has shown that the only way of ensuring the eventual profit of new entrants, for whom balanced books could reasonably be expected only after several years, was for the new entrants to be sold to other countries' incumbent operators as a way of expanding their European coverage. Given the difficulties and uncertainty faced by these operators themselves (above all by Deutsche Post and PostNL), the source of new market entrants has dried up. The question is whether this is a temporary situation.

5. Jobs and productivity

The Green Book completely avoided employment issues: productive efficiency, working conditions, wages and the number of jobs. Based on traffic growth assumptions which turned out to be totally invalid (6% per year), the Green Paper expected 2% to 3% more new jobs overall and job stability for incumbent operators. It did, however, foresee structural problems in respect of skills. Five years later, the Price Waterhouse (1997) study noted the first signs of employment downturns and predicted they could continue.

Furthermore, this topic was at the heart of the political debate during the liberalization process, given the new forms of very part-time employment (as little as 15 hours a week or even less in the Netherlands, for instance) with considerably lower wages and very limited social benefits. The postal business is not very capital-intensive, even with maximum automation of sorting. It remains a labour-intensive industry. Opening up the market to competition could not reasonably be expected to create jobs unless, of course, there was strong traffic growth – and this was no longer the case – or the players became highly diversified. And even so, existing skills generally did not match those needed for the new jobs.

On the Swedish market, increased productivity and roughly 25% (i.e. 10,000) fewer jobs in the first 10 years of liberalization are the main features of liberalization. However, as Andersson (2008) clearly shows, these parameters are hard to quantify with any degree of rigour. Changes were made to the business area of the former monopoly, Sweden Post, which has gradually divested itself of its financial services, outsourcing operations to sub-contractors in the face of fluctuating traffic – slightly up during the first 10 years, before falling since 2000. These factors greatly complicate any evaluation (Andersson, 2008). Be that as it may, a considerable number of jobs have been shed in Sweden Post's postal business. The number of jobs created by new market entrants lags far behind, at less than one fifth of the jobs cut by the incumbent operator. In other European Union countries, the results are not always as simple to analyze because the necessary information might not be available, and because the jobs created are often part-time, making comparison of the resultant magnitudes difficult.

In fact, to fully evaluate changes in employment on the European postal market, the information we would require concerns only staff assigned to mail collection, sorting and delivery for the incumbent operator and for its competitors, but these statistics are not available. Hence the need to try to evaluate these changes country by country, largely by using the incumbent operator's employment figures, as for Sweden. However, many European countries have seen divestments and acquisitions that have greatly modified operators' area of activity. The report by ITA Consulting and WIK-Consult (2009) estimated that, between 1998 and 2007, jobs with postal operators responsible for the universal service in the 15 member states of Europe under study rose 17.5%, while in these same operators, jobs confined to their national territories were down 14.5%.

Nevertheless, the recent structural alterations to the operator in the Netherlands (described below) provide some idea of the magnitude of changes in manpower productivity there. As this operator has always been regarded as one of the most efficient, this evaluation may be seen as a useful benchmark. At the end of 2011, the number of jobs with the incumbent operator in the Netherlands was around the same level as in 1992 (roughly 65,000 employees). However, in terms of full-time equivalents (FTE), employment had fallen 20% (34,000 compared with 44,000). Furthermore, the current business area covers new postal operations (mainly abroad) accounting for roughly one third of turnover. Thus, in 20 years, the number of FTE jobs in connection with letter-post and parcel operations in the Netherlands has been halved (though subcontracting has increased). Moreover, industry-restructuring projects aimed at addressing an annual decrease in traffic of 7% in the years ahead will result in the shedding of 11,000 more jobs.

6. Prices and tariff structures

Sweden is the only country where price changes have been precisely analyzed. The finding that was least expected was probably the very marked change in tariff structure, with an increase in prices paid by private individuals and small mailers that was offset by a proportional decrease in the prices paid by big mailers. Basically, before Citymail, observers leaned more towards predicting the development of competition in the business-to-business (B2B) sector. The advent of Citymail

revealed underlying cost structures for non-urgent items and slightly heavier items that had previously been overlooked. Hence the price reduction of as much as 65% for non-urgent, pre-sorted items weighing 50 g and the price increase of 75% (including VAT) for single letters weighing less than 20 g.

Lower prices for corporate mail that are more or less offset by higher prices for single items are found almost everywhere. Obviously, everything depends on the initial situation and the intensity of the competition. In countries where end-to-end competition is virtually non-existent, like France, Belgium, Denmark or Austria, there is less downward pressure on bulk-item prices.¹⁵ In contrast, lower prices were noted in Germany and the Netherlands.¹⁶ Decreases (admittedly smaller ones) were also recorded for franking machine users. For those users, it is more a question of establishing customer loyalty and responding to competitive pressure from local operators. On the balance sheet, price transfers between private individuals and very small entities on the one hand, and large and medium-sized mailers on the other are higher where competition is sharper.

So far, price increases for single-piece items have been fairly limited and long-period studies show that in Western Europe, increases over the past 20 years have been lower than increases in the consumer price index in the majority of countries (ITA Consulting and WIK-Consult, 2009). However, this basic trend conceals considerable differences in phases. Germany and France are two examples of these differences. Germany is an exception in that Deutsche Post prices have remained stable and have even fallen slightly (euros, at current prices) since the year 2000 after being at what was considered a very high level at the end of the 1990s. In contrast, France's La Poste played catch-up in the last decade after a policy of very moderate price increases in the 1990s. Today, German postal tariffs for private customers are among the lowest in the former group of 15 member states of Europe, in terms of nominal value and purchasing power parity. However, new trends seem to be emerging with the traffic downturn, and we shall return to these later.

7. Changes in incumbent operators

Most incumbent operators have rolled out development strategies: by acquisition and/or internal expansion; on their national territory and/or at international level; upstream of mail delivery or in different market segments, such as express services, unaddressed items, or even banking or logistic operations (ITA Consulting and Wik-Consult, 2009, p. 77 et seq.). The regulatory framework adopted enabled this development into third-party markets, which was intended to offset, at least partially, the problems encountered on the mail market. This was one of the issues in the debate between integrators and postal operators. How should co-existence between monopoly operations and competitive operations be organized? How could cross-subsidization and state aid be prevented? This option of redeployment towards other activities is not, however, available in the United States, where USPS is not authorized to seek new markets beyond its traditional operations. There have been numerous disputes, and they are not over yet. In any event, Community competition rules did not forbid the introduction of these dynamic strategies.

In 2011, two operators thus had a turnover from mail that accounted for less than 30% of their total turnover (Poste Italiane and Deutsche Post), and four others a national mail turnover of less than 60% (France's La Poste, PostNL, Austrian Post and Finland's Itella). With the exception of Royal Mail, this list covers the biggest postal businesses in Western and Southern Europe. These changes came about very fast, starting in the 1990s in the Netherlands and Germany, and in the first decade of the new millennium for the others.

Changes in status and major institutional adjustments took place everywhere, with postal administrations becoming limited companies, mainly with state capital. Three of them (Austrian Post, Deutsche Post DHL and PostNL) are stockmarket-listed, while Belgium's bpost has a private shareholder, CVC, that owns half its capital. Almost all these companies have so far ridden out the traffic downturn quite well. Thus, after several years of quite sizeable decreases in some cases, very few operators are in the red. Among them, Finland's Itella recorded a loss for the first time in 2011. This loss came at a time when mail was still profitable, though less so than in previous years. The 2009 and 2010 figures for the Irish and Greek Posts place them in the red as well.

One last general comment: in almost all Posts, mail often contributes much more than its weight to generating profit margins. While these margins have fallen alongside traffic compared with their previous level, higher tariffs and improved productivity have often helped the Posts to stay profitable. This applies in particular to Germany, Austria, Finland, Sweden and Denmark. The United Kingdom and Italy, where the opposite is the case, seem to be exceptions. Italy is the only country where mail not only represents a very small share of postal business but also has a negative impact on group earnings.

The following pages go into greater detail about the changes undergone by three operators with very different profiles. In particular, they highlight that uncertainty about traffic developments will be at the core of many decisions by operators, shareholders and indeed all postal market players in the years to come.

8. From PTT Post to PostNL: a strange tale clearly illustrating that financial markets do not like uncertainty

Since the late 1980s, observers have regarded the incumbent operator in the Netherlands as the incarnation of a modern, efficient vision for the future of the postal service. With the KLM airline, starting in 1986, it capitalized on the liberalization of outward international mail for the United States, developing an extensive remailing business which had a turnover of roughly 1 billion euros in the mid-1990s. After remailing, this Post was also the first to develop a worldwide vision for parcels, express items and logistics (it made numerous acquisitions, the best known of which was TNT in 1996). Lastly, it tried to set up mail operators in neighbouring countries that were opening the market to competition, some faster than others. While Deutsche Post also achieved exceptional development, that of PTT Post seemed – rightly or wrongly – to be more “sensible”, resulting from management efficiencies, and financed with earnings achieved without unwarranted transfers from consumers or national government bodies.¹⁷

Judged by the yardstick of its managers’ strategic ambitions, the current situation of the Post in the Netherlands comes as a big surprise. In April 1999, Ad Scheepbouwer, who had been Chairman of the Netherlands’ postal operator since 1988 and remained so till 2001, summed up his

strategy to the French Senate under three main policy headings: improving profitability, increasing employee accountability and positioning in growth markets. He succeeded in positioning his company well. In 1996, KPN, the holding company of the incumbent Post and Telecom operators since 1989, took over its fourth integrator, the Australian courier and logistics company TNT, for just over 1.2 billion euros. PTT Post – which became TPG (TNT Post Group) after its separation from the KPN holding company – continued making numerous acquisitions, mainly in Europe, but also in Asia and South America. Its turnover rose from 3 billion euros in 1996 to 12.6 billion euros in 2004, spread over roughly three levels of about the same size: mail, express services and logistics.

The same does not apply to its profit margin, which is largely generated by mail and, to a lesser extent, express items. In contrast to the mail business, the logistics segment, while fast expanding (also in organic terms), was apparently hungry for capital, though critical mass had not yet been achieved in 2004. In 2005, TPG announced it was divesting itself of its logistics operations. Five years later, the financial markets forced the company to hive off its express operation (which became TNT NV Express) from its “classic” postal business (PostNL). This separation was finalized on 26 May 2011. Besides domestic letter and parcel operations, PostNL includes postal service providers that were established on several European markets in the first decade of the century (e.g. United Kingdom, Germany, Italy). The acquisition of TNT NV Express (with a turnover of 7 billion euros) by UPS, announced in March 2012, appears to mark the end – for the time being at least – of 20 years of strategic redeployment. PostNL’s turnover in 2011 is very close to its 1996 level in today’s euros, and staff numbers are the same, though down 20% in terms of FTE.

FROM PTT POST TO POSTNL VIA TPG AND TNT NV

Transformations undergone by the Netherlands' incumbent operator

	1992 PTT Post	1996 PTT Post	2004 TPG	2009 TNT NV	2010 PostNL	2011 PostNL	2011 (PostNL Netherlands)
Turnover (bill. €)	2.4	3	12.6	10.4	4.3	4.3	2.83
FTE (full-time equiv.) ann. average	(1990) 44,184	36,547*	89,265	117,503	37,662**	33,827**	24,780**
Total jobs	(1990) 64,535	98,137*	130,262	159,663	77,155**	65,508**	55,622**
EBIT (bill. €)	0.17	0.43	1.19	0.65	0.48	0.42	0.41

(*) The total number of jobs is observed end of year, while FTE employment is an annual average. TNT was acquired in 1996. In 1997, FTE employment stood at 82,119 jobs, and the total number of employees at the end of 1997 was 100,666.

(**) Jobs excluding joint ventures (2011 Annual Report, p. 80). The jobs given for PostNL are in letters and parcels.

Sources: Annual reports since 1997

So what happened? Why did this international expansion strategy collapse? In the 1990s, PTT Post and its shareholder, the state, sought avenues for growth, anticipating the traffic downturn. Were these divestments a sign of a gradual reduction in state participation? In 2005, the government authorities still had a “golden share”, which it did not use to prevent the resale of the logistics operations. The strategic explanation, namely, the absence of synergy and substantial funding needed to develop logistics, is compatible with the original vision. However, the 2010 divestment took place in a very different context. In the meantime, the Netherlands government had sold its last 10% share in TNT NV's capital, eliminating the “golden share” in accordance with Community rules. The company tried to resist market pressure before finally yielding to it. Paradoxically, it was just when the traffic downturn that it had originally predicted finally came about that it was forced to divest itself of its two potential avenues for growth.

It strikes us that the explanation lies in the undermining of the traditional postal economic model without the emergence of a stable new replacement model. PostNL is under pressure from two sides. First, competition makes significant price increases difficult (especially for business mail), and regulation of universal service item prices is restrictive.¹⁸

Second, the recent sharp fall in traffic is probably the largest factor, since the sizeable fixed delivery cost can no longer be absorbed by marginal efficiency gains.

If we look at the first decade of this century, the entire postal market in the Netherlands held steady until 2007, though with a change in structure; the decline in higher-priced letter-post items was offset by the increase in lower-priced advertising mail. Subsequently, domestic traffic fell by more than 5% per year on average. The combination of competition and electronic substitution slashed TNT traffic by one third.

NETHERLANDS POSTAL TRAFFIC VOLUMES
(in billions of items)

	2001	2002	2004	2006	2007	2008	2009	2010	2011
Total market	5.6	5.6	5.5	5.5	5.6	5.3	5	4.8	n.a.
PostNL traffic	5.56	5.5	5.3	4.9	4.8	4.7	4.5	4.1	3.8

Sources: OPTA, annual reports

By 2007, Sandd and Selektmail, the competitors on the advertising mail market, had captured about 15% of the incumbent operator’s market share in terms of volume, but only 7% to 8% in terms of value. They delivered mail twice a week, employing low-paid delivery staff. Despite efficiency gains, the profit from letters, which was for many years the main source of the group’s margin, fell to a still-limited extent from nearly 20% in 2005 to just under 15% in 2008. In 2007, TNT responded to the competition by opting to “self-skim” and create a low-cost operator (Netwerk VSP). This strategy enabled it to halt market-share losses but put pressure on prices. The price war ended with the merger of its two competitors (2010).¹⁹ In any event, the presence of an across-the-board competitor for bulk items since postal market liberalization in the Netherlands in 2009 restricts PostNL’s scope for increasing bulk-item prices, however little it fears substitution with electronic alternatives.

It was also in 2008 that the Dutch Group announced forecasts for traffic downturns that were much more pessimistic (between 4% and 6% a year) than its earlier ones. At the same time, it announced a major programme of work designed to overhaul its productive structure to make costs more flexible and effect savings. And indeed, plummeting traffic has impacted its overall profits even more severely since 2008. In 2011, PostNL’s

addressed mail fell a further 7.2%, and the operating margin for domestic mail was down 10% for 2011 and set to fall sharply in 2012, according to the operator's forecasts.²⁰

Putting it plainly, the incumbent operator's very driving force is affected, with the risk of revenue previously generated by mail disappearing – revenue that financed growth in new markets.

However, TNT NV does not seem to have either wanted or been able to increase its prices to contain the effects of electronic substitution, competition and compliance with regulatory constraints. Consequently, mail operations look extremely uncertain, and this has a very negative impact on the group's share prices. The pressure to divest responds to a very different analysis of the mail and logistics activities: risky domestic mail faced with regulatory constraints, and international express items, whose strategic value is compromised by mail.

From the financial theory angle, it was difficult for two different approaches to investment choices to coexist within the same company. In a stable environment, especially on the basis of revenue generated by future demand, corporate value is maximized by the value of all flows discounted to infinity (net present value), while, in a high-risk environment, the objective tends more towards minimizing the time needed to recover the investment committed. Hence the need to maximize short-term cash flow and dividends. In a nutshell, express items fell more into the first asset category and mail into the second. An attempt had been made to eliminate this contradiction by means of internal reorganization aimed at separate optimization of the two financial approaches.

Unfortunately, the market no longer has faith in the management of a portfolio of operations which differ so greatly in terms of maturity and security within the same corporation. Faced with a rocky future for one of these operations, financial operators preferred to trigger the clear separation of two very different assets. One of them, though profitable, was overshadowed by doubts about demand, and this prompted calls for a substantial dividend that was guaranteed in the short term. The other had greater growth potential that was not reflected in its global value creation. Thus, in mid-2009, Morgan Stanley expressed the following hopes for improvement on these lines: "Demerger of Mail and Express could become a catalyst for value creation if Market continues to

under-evaluate TNT".²¹ This did not happen, because TNT Express then achieved mediocre results before UPS expressed an interest in buying it. But that is another story.

The example of Austrian Post illustrates the same situation, but the other way round. A subsequent financial analysis by Morgan Stanley was entitled: "Cash is king in an uncertain world" and continued as follows: "Austrian Post's sustainable cash flow, rising unit letter revenues and prudent cost management will be evident from the fiscal year 2011 results, we believe, and will help the shares continue to re-rate in an equity market weighed down by macro uncertainty." This corporation has been stock exchange-listed since 2006, with the Austrian government owning 51%. Postal and telecom operations, which were previously in the same group, were separated in 1999, marking the start of the modernization trend. Even though Austrian Post has been pursuing regional acquisition since 2006, this strategy has been more restrained and prudent than that of TNT Post, and the mail downturn came later (2009) and in a more moderate form (an average of 4% over the last three years). Mail accounts for 57% of total turnover and for the entire margin. The margin for mail (measured in EBIT) exceeded 20% in 2011, after being higher than that of European Posts as early as 2004–2008 (ITA Consulting and WIK-Consult, 2009, p. 82). This increase is partly due to a tariff hike (+12.5% for urgent mail in May 2011).

Another major difference to the Netherlands Post is that competition is virtually non-existent. Austrian Post is currently still protected by non-tariff barriers, such as harder access for competitors to letter boxes. Moreover, the latest postal law obliges licensed operators to offer wages and social benefits which, in contrast to the Netherlands, make it impossible to roll out networks based on delivery agents who are badly paid by Austrian standards and have no job security.

In this way, Austrian Post has managed to regularly increase its earnings since 2002, in tandem with an extremely generous dividend policy (a market commitment of at least 75% of net earnings and, in practice, closer to 90% in 2010 and 2011).

9. France's La Poste: twenty years to implement "common law"²²

Unlike the Netherlands and Germany, France did not undertake major postal reforms before adopting the Community Directives. The 1990 reform had transferred postal (and financial) operations that had previously been organized under an ancillary P&T (Posts and Telecommunications) budget, to a public establishment called La Poste. La Poste enjoyed financial autonomy, but its relations with the French State were not totally clarified. The 1990 Law admittedly provided for the introduction of contracts intended to untangle financial relations between the government and La Poste. However, in practice and despite extensive work involving both players and several official reports stipulating the objectives to be achieved, it took further legislation, in 2005 and 2010, to properly regulate their relations.²³

Changes in the law led to the creation of La Banque Postale in 2006 (2005 law), the introduction of a pension contribution scheme secured by the general French system (law setting out the general principles in 2005, specific system subsequently ratified by the European Commission) and a conversion to a limited company, at the same time boosting capital by 2.7 billion euros. The 2005 law, as amended in 2010, specifies three of La Poste's four public service missions and their funding: the universal postal service, to be possibly financed by an offset fund; special tariffs for the Press that were partially government-financed; and development of post offices nationwide, financed by exemption from local taxes. The Monetary and Financial Code (amended by the law of 4 April 2008) set out the specific procedures for paying La Poste's "Livret A" commission in return for its obligations in respect of customers with very modest means. On several occasions, the European Commission ratified the arrangement put in place as part of its state-subsidy monitoring function.

La Poste Group has changed radically over the past 20 years. Sticking to the main features, during the 1990s, and above all until 1996, La Poste struggled to keep its accounts balanced. At the beginning of the decade, mail represented two thirds of turnover, and the group employed more than 300,000 FTE staff (slightly less than 300,000 for the public establishment). By the end of 2011, the group had been making a profit for several years, managing to keep earnings virtually stable (operating margin of between 3% and 4% in the last three years) despite sharply declining traffic (4% on average between 2008 and 2011). The mail

segment, which has expanded slightly, basically upstream of the mail preparation and delivery value chain, now accounts for roughly 50% of group turnover, compared with over two thirds 20 years ago, while the respective contributions of parcels/express items and La Banque Postale to the other 50% are roughly the same. At the end of 2010, La Poste, whose scope of operations is about the same as in 1991, employed 236,000 FTE staff, i.e. approximately 65,000 fewer than 20 years ago, while La Poste Group had 276,500 employees in 2010. Group turnover was not quite double (1.86), i.e. just over 3% annual growth in today's euros.

Initially, development of express services was vested in a subsidiary (which then became Chronopost) created as early as 1984 in response to the advent of international integrators. Then, from the late 1990s, La Poste made several acquisitions in Europe, in particular the second-largest German parcels operator, DPD (in 1998), which was to become its flagship brand in Europe as part of the parcels/express holding company of the Geopost Group. La Poste ranks itself as Europe's second-largest parcels/express operator after Deutsche Post DHL, with a market share of just under 15%. The relaunch of banking operations is more recent, dating back to the creation of La Banque Postale in 2006.

On the face of it, the scope of mail operations seems to have changed the least. Addressed-item traffic volumes were virtually the same at the beginning and end of the 20-year period at around 16 billion items (15.9 billion in 1988, 17.0 billion in 1992 and 15.3 billion in 2011, peaking at 18.6 billion in the early 2000s). Competition is extremely marginal (with less than 1% of market share), and over the 20-year period increases in single-item letter tariffs have kept pace with consumer prices. Domestic service quality has definitely improved, mainly over the past decade. However, this improvement followed a sharp deterioration, and today's measuring tools are not comparable with those of the early 1990s. In 2011, priority-letter service quality reached a hitherto unparalleled 87% for letters delivered in J+1. The 2010 results were poorer. La Poste has, however, not succeeded in meeting the target of 90% it had hoped for when it launched its major investment programme in the early 2000s. There has also been a marked improvement in intra-European quality of service, as everywhere in Europe.

In the light of developments in other European postal services, La Poste network has retained its specificity. Unlike the profound changes made almost everywhere else, it is still mostly made up of directly operated offices. Among the 17,000 contact points set by law, 7,000 are franchised. Ten years ago there were only 3,000 franchised points. The change is significant but still limited. Economically speaking, post office activity is rarely sufficient to justify having contact points that are totally dedicated to postal items. Furthermore, La Poste's contact points generate services with a relatively low unit value. Only banking, when it exists, requires the presence of company employees at the contact point. However, even banking cannot reasonably justify a network so large. In short, sharing fixed costs with other services, as the franchise model does, becomes a necessity. The question of the evolution of La Poste's network was raised by the report of the French Audit Office (Cour des Comptes, 2010).

The French Post's new economic model builds on three activities with cycles of differing degrees of maturity (letter post, parcels/express mainly in Europe, and banking in France). In recent years, its results have been moderate compared with those of several other postal operators (in particular, Belgian, Italian, Portuguese, German and Dutch operators) but always in the black (operating result of between 3.1% and 4.3% between 2008 and 2011), with financial services and parcels/express services partly taking over in terms of contribution to the margin.

Nevertheless, traffic downturns and uncertainty about future developments are also affecting La Poste. The French regulator thus recently felt that a new "price cap" (multi-year tariff framework) could not be put in place, as uncertainty about traffic developments and price elasticity are not conducive to robust economic guidelines for the universal service. It therefore extended the existing system by a further year. This uncertainty may also partly explain why the Caisse des Dépôts, a public group focused on long-term investment, has now participated in La Poste's capital, with the postal enterprise being valued at between 3 billion euros (fixed assets) and 4.3 billion euros, based on results achieved between now and 2015.

10. Future outlook

The mail traffic downturn is in the process of radically changing the issues. The future of the universal postal service and of the operators providing it may be at stake. As we have just seen, with the exception of the Italian Post, any significant deterioration in the mail business jeopardizes the survival of the incumbent operators. At a certain point, declining mail business necessarily means higher expenditure for universal service. The competition is so weak that there is no question of relying on them to help fund this service. So when that point is reached, governments will have to change the universal postal service or finance it, or both.

In a fixed-cost economy like postal delivery, the loss of economies of scale inevitably results in smaller margins, unless productivity gains are made. To date, operators have tended to demonstrate their ability to make productivity gains that offset the loss of economies of scale. To do so, they have used three basic levers: more mechanized sorting, restructuring of the post office network by rolling out franchise networks to replace proper offices and by making manpower more flexible, and lowering of wages to cut their wage costs for a set amount of work. In most European postal services, these different methods are used to varying degrees.

However, the reorganization process under way in the Netherlands shows the increasing difficulty of making efficiency gains with the same structure when traffic volumes have been falling by 5% a year for several years now, and corporate forecasts are for this trend to accelerate to 7% per year by 2015. Will the decreases be such that productivity gains will no longer be enough? Or will the gains be too costly in social terms?

Earnings may also be preserved by two other means that do not depend solely on the operators and their employees: increasing prices and compromising on service quality. Here, the involvement of regulators and even of governments, parliaments and the European Commission could be necessary. Operators would like to be freer to use the quality of service lever to better advantage through changes to universal service obligations. They think that, in the longer term, inflexible universal service obligations in a world where requirements change very fast could become dangerous. Delivery and quality of service obligations are those most often contested. Given the more or less manifest refusal of the authorities to lower service quality targets, some operators have created less urgent

services. Where these already exist, higher tariffs go hand in hand with encouragement to promote products with longer transmission times, while ensuring this does not result in lower turnover. To this end, Austrian Post created a non-priority letter product and France, a “green letter” in 2011. Higher tariffs in the United Kingdom (with priority letter tariffs rising from 46 to 60 pence, and non-priority letters from 36 to 50 pence) could also encourage the transfer of part of mail flows to non-urgent products. However, the decline in priority traffic, combined with the transfer of items to the non-priority stream, will generate net extra cost for priority letters because there will be much less traffic to finance the cost of daily delivery rounds. Consequently, either priority tariffs will have to be increased or more will have to be spent on the universal service, or both.

When it comes to prices, operators are less unanimous. In recent years, some countries have substantially increased their tariffs, apparently not fearing any negative impact on traffic volumes that would wipe out price-increase gains. At the end of April 2012, Royal Mail tariffs for stamped priority letter-post items up to 100 g rose 30%, and for non-priority stamped letters, nearly 40%. The price hikes in the United Kingdom mainly affect small consumers, with price increases for companies using franking machines being kept between +10% and +12%, depending on delivery times. These come hard on the heels of other increases. Between 2009 and 2012, the priority letter tariff for private customers rose 54%. Be that as it may, these increases are in the context of poor operating results. Until recently, United Kingdom tariffs were among the lowest in Europe. This is no longer the case.

In Belgium, letter-post tariffs have risen sharply since 2008, especially compared with those of PostNL; single-piece items rocketed nearly 40%, or “only” 20% if the tariffs for batches of 10 items are included. In addition, the economy letter service was abolished at the end of 2007, resulting in a de facto price increase for consumers of economy products. In a matter of years, and following substantial progress on productivity, the Belgian Post has become the most profitable universal service operator in Europe, with an operating result of 13.8% in 2010.

However, this is not the case everywhere, despite marked falls in traffic. In the Netherlands, for instance, PostNL seems reluctant to raise tariffs too much, not just because of the competition and the regulatory

framework, but also because of fears of driving traffic down even further. Apparently for the same reasons, France's La Poste has refrained in recent years from increasing its tariffs to the levels authorized by the price cap, even though there is no competition.

These diverging policies on tariff increases are obviously not directed solely by regulatory constraints but are grounded in considerable uncertainty about demand for mail services. How long will the mail traffic downturn last and how big will it be? Will it level out? How will future traffic uses, requirements and prices look? And, incidentally and in the shorter term, is price elasticity in the process of changing (Fève et al, 2012)?

How should one regulate in the face of an uncertain future? What checks should be put in place? What tariffs? What quality of service? These could be important questions for postal economists in the next few years. For postal operators, the answer is clear: less regulation. This is the right answer if one believes that new technologies obviate the need for a universal postal service. Working on this assumption, one nevertheless wonders whether it would not open the door to new exploitation of monopoly rent. Indeed, there is little chance for competition to establish itself where it does not already exist. And when it does exist, it is fairly well contained and likely to remain so in the years to come. Nevertheless, if the sole justification of regulators were competition, an economist might wonder whether competition authorities would not suffice for monitoring a sector where, in any event, uncertainty will make the regulators' task even more difficult. How can one determine what is due to the asymmetry of information, which the regulator will have to try to reduce, and what is due to a lack of information? How can capacities to adapt be given maximum scope?

Another alternative, and currently the most probable one despite declining mail traffic and the substitution of electronic services for part of the flows, is that the existence of the universal service is not only desirable but also wanted. In this case, it is far from just up to operators to assert the general interest. What does society need, and what is the cost of responding to those needs? It would be better for regulators to be able to verify whether financial changes are required. And if the universal service is to change, it would be better for regulators to be able to

contribute their expertise not just to the political and social, but also to the economic, debate which will undoubtedly unfold.

Although other regions of the world might share the universal access policy goals of the European Union, the following two chapters examine why the European liberalization policy, as a means instead of a goal in itself, cannot be easily transposed to other parts of the world, particularly to developing and emerging countries. The next chapters highlight fundamental differences in postal economics models in the developing world, as well as in the organization of markets at different stages of development. The postal development failure in many developing countries identified in chapter 1 usually stems from applying postal economics models that are ill-suited to the development of postal exchanges in those countries.



Chapter 4

The economics of postal delivery in developing countries: learning from the Latin American and Sub-Saharan African experiences

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1. Introduction

Research in the field of postal economics has been aimed primarily at the study of the postal sector in industrialized countries (ICs). In that regard, a growing body of literature shows important research achievements (e.g. Crew and Kleindorfer, 2012; Toledano, 2004). As in other network industries, these achievements are also due to the push for sectoral reforms in the most advanced economies, as highlighted in the previous chapter on European postal markets. Yet very little has been written about the analysis of the postal sector in developing countries (DCs), and policy makers in those countries are often tempted or asked to apply postal economics models and policies initially designed for high-income economies and relatively mature postal markets.

The dearth of economic studies on the postal sector in developing countries is very much at odds with the current lessons drawn from the reform experiences of other infrastructures in less developed economies. Although a few DCs have also experienced postal reforms, the outcomes triggered by these policies have scarcely been analyzed so far. For instance, the World Bank report *Reforming Infrastructures: Privatization, Regulation, and Competition* (Kessides, 2004) neither mentions nor analyzes reforms of the postal sector in DCs.

The debate about the appropriate economic policies for the postal sector of the 21st century in the context of a developing economy was opened only by a report published by the Global Information and Communication Technologies Department (GICT) of the World Bank (Guislain, 2004), and

a paper by Kenny (2005). The authors challenged the universal postal service obligation policy in DCs, and even advised that it be abandoned, particularly in economies whose very scarce resources should be allocated to other public policy goals, such as health or education. According to the authors, a postal monopoly enabling universal service does not seem to be sustainable in those countries. Opening the postal sector to competition, which may exist *de facto*, could thus lead to an increase in efficiency and reliability and trigger innovation.

Our chapter claims, both empirically and theoretically, that the specificities of DCs (Laffont, 2004), including the weaknesses in their governance systems and the lack of human resources for the implementation of sophisticated regulatory models, imply that the expected benefits of competition may well go unrealized in the absence of market organization and regulation. This is illustrated by two in-depth regional studies of the economics of postal delivery in Latin America and Sub-Saharan Africa. More generally, for developing countries open to competition, our research also suggests that better postal development can be expected in countries where the postal market is clearly dominated by one of the operators in terms of market shares.

Our approach attempts to encompass a number of specific economic factors that underlie DCs' various and complex postal economies and their growth, or lack of it. This approach contrasts with the modelling of the postal sector used in Guislain (2004) and Kenny (2005); their modelling transposes the analysis by Cohen et al (2004) of delivery costs in industrialized countries to DCs and does not go beyond the relationship between the income per capita and the postal traffic per capita to explain the different rates of sectoral growth across countries.

New postal economics models are needed for DCs, to enable them to increase over time the number of their citizens regularly accessing reliable and economically viable postal services. In order to provide DCs' policy makers with some guidance with respect to economically viable postal development that contributes to the general economic and social development of a country, it is paramount to rely on different models from those for ICs, and also to cluster the postal economic analysis within DCs in separate and more homogeneous groups.

Indeed, the realities of the postal sector in DCs vary considerably relative to the industrialized world. Table 1 summarizes two polar cases describing the postal stylized facts in industrialized and low-income countries. In between, various degrees of these stylized facts may exist; hence the value of clustering the analysis across DCs. The two polar cases in table 1 point out the striking differences between the postal models of industrialized and low-income countries. While industrialized countries dealt with an average domestic postal traffic of 304 items per inhabitant during 2011, many developing countries barely reached 10 items per inhabitant on the domestic letter-post market. At the far end of the spectrum, most low-income countries ranged from almost no traffic to three letters per inhabitant. As shown by Cohen et al (2004), volumes explain cost to a lesser extent for low-traffic countries, and factors other than volumes are probably more important in explaining costs in countries with very low volumes of mail per capita. Low-income countries are thus very far from a postal economic model exclusively relying on economies of scale at delivery. It follows that Kenny's approach (2005) is questionable when he transposes Cohen's model to countries with very low volumes of mail, with the resulting claim that a monopoly enabling universal service is unsustainable. Given the absence of a proper model fitting the costs of delivery in these countries, little can be said on the basis of existing research regarding the market structure that would ease a universal service policy in low-income countries. However, the econometric results reported below and economic analysis of the Latin American postal markets underline the lack of postal development in the presence of multiple operators, each representing a low share of the overall letter-post market. Although an operator's size is not the only important factor, this lack of development suggests that a dominant operator able to garner sufficiently large economies of scale is also more likely to help develop the overall postal market. Highly fragmented postal markets in Latin America have been a curse for their development.

Besides the issue of economies of scale, other differences must be taken into account when examining the development of delivery through the postal network in low-income countries compared with industrialized countries. Posts in ICs are well known for their dependence on large business-to-consumer (B2C) volumes, which frame their economy. Low-income countries' postal operators are very often not well aware of the relative importance of the different segments of mail, and self-delivery by business mailers to customers is widespread, according to our research

on the Sub-Saharan African postal markets. Unlike the situation in many ICs, the cost of labour in DCs is also cheap relative to capital, and is consistent with a much lower level of automation of the postal process.

One of the most striking differences, which completely modifies the economics of delivery in low-income countries compared with ICs, is the way delivery is organized. Home delivery, for which only the sender pays (since Sir Rowland Hill's revolution in the 19th century), may simply not exist. Instead, P.O. box delivery models are used, requiring the customer to collect mail from the post office, as in many Sub-Saharan African countries, and also in a number of other DCs around the world. This means that both the sender and the addressee, through the rental of the P.O. box, may pay for postal services. Whereas renting a P.O. box is a choice in ICs, it may be a necessary condition for accessing postal delivery services for citizens in many developing countries. For instance, according to the Universal Postal Union's postal statistics, only 21% of the population had mail delivered at home in Africa in 2011.

Finally, one must take into account that the share of international mail in low-income countries' total traffic may be large, and that the compensation received for incoming international mail, i.e. terminal dues, may be significant.

The last polar comparison between ICs and low-income countries encompasses the various features discussed above. Whereas ICs have been able to develop postal delivery everywhere, with a good quality of service at affordable prices, DCs lack the resources and organization to develop their own postal delivery network. Latin America (except Brazil) and Sub-Saharan Africa are certainly striking examples of this, which is why we examine their cases in some depth. However, the reader should keep in mind that the aim of the exercise is to understand their postal economic experience during a relevant period of time, rather than to provide the most recent figures (see the first two chapters of the book for that purpose).

TABLE 1
Postal economics: two polar cases

Industrialized countries	Low-income countries
High letter-post volumes	Low levels of letter-post volumes
B2C-driven traffic	B2C may not be a driver of traffic
High salaries and heavy automation	Lower salaries and limited automation
Large economies of scale for home deliveries	Often no home delivery
The sender pays for home delivery	The sender and the addressee may both pay for postal services
Universal service means efficient delivery everywhere at affordable prices	

2. Latin America and the economics of postal markets fragmentation

After highlighting above the factors that help or hinder the growth of the postal sector in developing countries, we will continue with the clustering of our analysis by focusing on one region in this section: Latin America. This region is an interesting case study in two respects.

First, while other non-postal infrastructures faced clear reform processes in the 1990s, such as privatizations and liberalization, Posts in Latin America have very often been excluded from any well-defined and time-consistent strategic economic development plan. Compared with other network infrastructures, the postal sector appeared less attractive to public and private investors. Consequently, a laissez-faire attitude was allowed to prevail in the sector, except in the case of Brazil.

Second, the UPU International Bureau has accumulated a great deal of experience in this region over time. Most notably, various internal studies and reports have estimated the total demand for mail services in these countries, instead of relying on the monitoring of postal service suppliers

– be it by the regulator (if there is one), a government agency or the public postal operator itself. The market demand estimates include volumes handled by all operators, licensed or not, and constitute an invaluable source of information about the functioning of Latin American postal markets. For reasons of confidentiality, no country names are indicated unless otherwise authorized.

Seven Latin American countries (out of 19) are included in table 2, according to various indicators assessing the performance of their overall postal market for the year 2003, their public postal operator's development between 1992 and 2003, and their economy. The period of time selected was a function of the purpose of our study and the availability of data. Table 2 also provides simple averages for the Latin American region, which includes all Latin American countries except Brazil, whose performance is shown separately.

As for the performance of the overall postal market for the year 2003, column (1) of table 2 gives an estimate of the number of domestic letter-post items per inhabitant, which includes the volumes of all licensed and unlicensed postal operators. Column (2) shows the share of the public postal operator on the domestic letter-post market, and column (3) computes the basic rate of the public postal operator relative to the average postal rate applied in non-Latin American middle-income countries belonging to the same class of income (i.e. either to the lower-middle-income class or to the upper-middle-income class).

For the period under consideration, domestic traffic ranged from three to seven letters per inhabitant for the cluster of Latin American lower-middle-income countries, and from 25 to 45 for Latin American upper-middle-income countries, with Brazil at the top of the range. The average domestic traffic per capita was only 10 for the Latin American region excluding Brazil, while non-Latin American middle-income countries reached an average of 27.

One might wonder why domestic postal traffic per capita for Latin America (with the exception of Brazil) was almost three times lower than in non-Latin American middle-income regions and Brazil. Could it be explained by differentials in economic development within middle-income countries? An examination of column (7) shows that this

TABLE 2
Postal markets in lower- and upper-middle-income Latin American (LA) countries

Country or region	(2003) Overall postal market			1992–2003 Public postal operator’s development			Economy
	# of domestic letter-post items per inhabitant (1)	Market share of the PPO (2)	LA PPO’s price/ average price of the rest of middle-income countries’ PPOs (3)	Average annual growth rate of the domestic letter-post volumes (4)	Average annual growth rate of the labour force (5)	Average annual growth rate of the number of post offices (6)	Average annual growth rate of the GDP between 1992 and 2003 (7)
A	25	36%	1.98	0.7%	-3.9%	-0.5%	[1%, 2%]
B	4	31%	2.09	-1.4%	-0.2%	-4.2%	[4%, 5%]
C	7	22%	n.a.	5.2%	2.4%	-3.3%	[0.5%, 2%]
D	3	20%	1.69	-8.0%	-0.6%	-3.8%	[3%, 4%]
E	5	15%	1.55	-12%	-10%	-5.3%	[1%, 2%]
F	3	25%	n.a.	-5.6%	-2.1%	-4.2%	[2%, 3%]
Mean for all LA region countries except Brazil	10	35%	1.38	-3.2%	-2.7%	-1.8%	3.0%
	upper-middle						
	15	45%	1.39	5%	-2.6%	-1.7%	2.9%
	lower-middle						
	5	28%	1.44	-7.9%	-2.9%	-1.9%	3.0%
Brazil	45	95%	1.21	8.5%	3.0%	-0.4%	2.8%
Mean non-LA middle-income region	27			0%	-1.1%	-0.5%	3.1%
	upper-middle						
	48	More than 70%	1.00	3.5%	0.4%	1.8%	3.5%
	lower-middle						
	10			-2.6%	-2.3%	0.2%	2.8%

explanation is not really plausible. Excluding Brazil, Latin American middle-income countries have shown an average of 3% for their average annual GDP growth rate, while non-Latin American middle-income countries reported a mean of 3.1% for their average annual GDP growth rate between 1992 and 2003. Brazil is also close to a 3% average annual GDP growth rate. Further clustering into upper- and lower-middle-income countries does not show significant economic growth differentials. So, once again, why would domestic postal traffic per capita in Latin America (except Brazil) be almost three times lower than in other non-Latin American middle-income countries?

Since we have not been able to identify any real macroeconomic differential capable of triggering such differences in the development of the domestic letter post, the next step is to examine the development of competition on those markets as a potential candidate to explain the relatively low levels of postal traffic in Latin America (again with the exception of Brazil). First of all, it is important to underline the nature of the competition we are analyzing. We are not talking about structured, organized and regulated competition in the case of Latin American postal markets. On the contrary, until recently, the competition has usually been unstable and purely opportunistic, featuring a high turnover of frequently unlicensed, and above all, unregulated operators. In the sub-sample of countries under examination, the market share of the public postal operators ranged from a low of 15% to a high of 95% in Brazil. On average, the market share of the public postal operator was about 35% in Latin American countries, excluding Brazil. During the same period of time, the market share was usually more than 70% in non-Latin American middle-income countries, and quite often close to a monopoly.

Whereas competition should have helped to lower prices, much higher individual prices (expressed in PPP) were observed for Latin American countries – on average 38% higher than in non-Latin American middle-income countries (as shown in column (3)). Yet the reality regarding price was more subtle, since anecdotal evidence revealed widespread price discrimination between individuals and business customers, with the latter sometimes paying three or four times less than the basic rates, which might even correspond to pricing below marginal cost. This was at times facilitated through the payment of bribes to the staff of any of the operators present on the market. More often, it was simply due to the operators' inadequate accounting systems, which did not reveal the

actual financial losses incurred by a price war between them, or by the pressures exerted by business customers for reduced prices and proof of mail delivery. However, as seen in columns (4), (5) and (6), which show the public postal operators' development between 1992 and 2003, the reality always emerges in the medium or long run.

For the public postal operators, the economic unviability of their pricing policy between 1992 and 2003 resulted in high negative annual growth rates with respect to the number of post offices (see column (6)), from -0.5% to -5.3% on average, with a simple mean of -1.8% across Latin American middle-income countries (except Brazil). It also translated into bigger reductions in the labour force, compared with other middle-income regions in the world, as shown in column (5). While public postal operators from Latin American upper-middle-income countries reduced their staff more, relative to non-Latin American upper-middle-income countries, public operators from Latin American lower-middle-income countries reduced their number of offices more, relative to non-Latin American lower-middle-income countries.

All this was ultimately consistent with a very large annual decrease in the mail volumes handled by public postal operators. The end result of the lack of development in many Latin American public Posts was a yearly negative growth rate of their domestic traffic of 3.2% on average (see column (3)).

The good news, however, was that public postal operators from Latin American upper-middle-income countries, even after excluding Brazil, seemed to better resist the overall negative trend in domestic mail volumes in Latin American countries: they showed a growth rate of 5% on average, even stronger than in non-Latin American upper-middle-income countries (3.5%), albeit lower than in Brazil (8.5%).

This also contrasted sharply with the very negative growth rate (-7.9%) of public postal operators from Latin American lower-middle-income countries. Yet this differential in domestic letter-post development between Latin American upper- and lower-middle-income countries was fully consistent with the increased participation by one of the postal operators acting in the market; public postal operators in upper-middle-income countries reached a higher market share (45% on average) than in lower-middle-income countries (only 28% on average). The dominant

operator in a Latin American upper-middle-income country was thus likely to benefit from some economies of scale, and a higher letter-post development followed.

A simple econometric analysis of Latin American postal markets confirms a close link between the weaker development of the domestic letter post in some Latin American countries and the relatively low share of the total volume of domestic mail handled by the public postal operator. This point is evident statistically from the following simple regression:

$$\ln(LA) = 3.31 + 0.94 \times \ln(MS)$$

(0.30) (0.21)

where LA is the number of domestic letter-post items per capita in any given Latin American country and MS the market share of the public postal operator. Standard errors are given in parentheses below the coefficients and show a statistical significance at the level of 1% for all estimates. The regression is kept simple due to the limited number of observations (17), and the adjusted R² reaches a value of 0.54. The MS coefficient indicates that the number of domestic letter-post items per capita is positively related to the market share of the public postal operator.

This anti-competitive effect is not new for economists: it has been described in the literature by Sharkey (1982) and studied with respect to the bus transportation system in Sri Lanka (Gómez-Ibáñez, 2003). Furthermore, the econometric results are consistent with the analysis in table 2, which compares the data available for a number of Latin American countries with the data available for non-Latin American middle-income countries, where the postal market structures are more monopolistic than those in Latin America.

3. Sub-Saharan Africa and the economics of P.O. box delivery

Following the above analysis of the challenges of fragmented postal markets for postal development in Latin America, this section examines the economics of postal delivery in Sub-Saharan Africa.

For this purpose, a survey on postal delivery in Sub-Saharan Africa was carried out in winter 2006, to gather information in four areas: the geography of the country, the delivery network with respect to its organization and costs, the prices of postal services relative to basic goods, and the postal market environment with a focus on big mailers and the level of competition.

As for geography, questions were raised at four levels: the most populated city of the country, the second most populated city of the country, the third most populated city of the country, and the rest of the country (i.e. less-populated cities and rural areas).

Various dimensions of the delivery network were covered. The purpose was to get a better knowledge of the level of access offered to postal services, as well as the organization of the networks and the relevant costs.

A questionnaire was prepared to serve as a basis for individual interviews with Sub-Saharan postal operators. Interviews were conducted either by phone or directly. Responses were analyzed and categorized to provide a view of the best, worst and median (average) case for each issue. Countries' comments, reactions and suggestions were acknowledged. Further anecdotal evidence was gathered through three field missions in Benin, Malawi and Niger.

3.1 Coverage of the survey

Out of a total of 47 Sub-Saharan African countries, 26 participated in the survey. These 26 SSA countries provided first-hand information about the organization of their postal delivery system. A vast majority of them (21 of the 26) belong to the group of least developed countries according to the United Nations ECOSOC definition. Twenty-five of them are also classified as low-income countries by the World Bank.

Within the group of participating countries, the gross domestic product per capita averaged 667 USD. In terms of economic production, the surveyed countries accounted for 72% of the overall GDP of SSA countries. The population was on average 17.3 million inhabitants per surveyed country, and the land area average was 641,000 km² per country. Our sample represented 64% of the overall population of SSA countries.

In terms of postal-specific indicators, the countries participating in the survey accounted for 91% of the total domestic mail volumes in SSA countries.

3.2 A focus on low-income countries

The Universal Postal Union's postal statistics for the low-income SSA countries in the sample showed a traffic varying from 0.01 to 2.9 domestic letters per capita at the time of the survey. It is important to bear in mind that, on average, only 33% of adults in the population were literate. This literacy rate thus represented the average share of potential postal users in low-income SSA countries. If we take into account each country's literacy rate, the volumes per potential postal user varied from 0.02 to 5.9 domestic letters.

In terms of network coverage, the number of inhabitants per post office ranged from 25,433 to 421,340 in our sample of low-income SSA countries, for an average of 93,000 (distribution of this statistic was skewed to the left).

3.3 Results: postal delivery network

The delivery network has been studied at four geographical levels as shown in table 3: the most populated city of an SSA country, where 9.3% of the population live at the median; the second most populated city, where 2.5% of the population live at the median; the third most populated city, where 1.2% of the population live at the median; and the rest of country, where 82.5% of the population live at the median. The geographical level named "rest of the country" encompasses small- and medium-sized cities as well as rural areas.

An examination of the geographical distribution of the postal delivery network reveals that access to postal delivery, in terms of receipt, tends to be low and is geographically unbalanced. This is because, out of 26 SSA countries, 24 have chosen to primarily deliver to P.O. boxes. Only two have free home delivery as their main delivery mode. Furthermore, only 32% of the countries offer partial home delivery, and when home delivery exists, the median number of inhabitants per postman varies from 70,000 to 176,580 across the four geographical levels. Thus, delivery coverage is low in terms of letter-post receipt: 50% of SSA countries have more than 297 inhabitants per P.O. box.

Furthermore, P.O. boxes, which must be rented to receive mail, are not distributed proportionally among the population of the various cities and regions in most SSA countries. At the median, more than half of the total P.O. boxes of a country are concentrated in the most populated city. The median number of inhabitants per P.O. box ranges from 67.4 in the most populated city, with a median share of total population of 9.3%, to 1,554.9 in smaller cities and rural areas where, at the median, 82.5% of the population live.

Unlike P.O. boxes, post offices and counters are distributed proportionally to the population of the various cities and regions in most SSA countries: at the median, the 13% of the country's population actually living in the three main cities benefit from 14.9% of total post offices, while the 82.5% of the country's population living in smaller cities and rural areas have access to 80.2% of total post offices. This is a remarkably well-distributed network with respect to counter access. However, access could be further improved, since the median number of inhabitants per post office ranges between 57,500 and 100,000 in the three most populated cities, compared with 151,222 in smaller cities and rural areas. Finally, compared with private networks such as money order transfer networks (MO operators), the postal network offers a much denser access in less populated cities and rural areas (see last line in table 3).

TABLE 3
The postal delivery network

	Most populated city	Second most populated city	Third most populated city	Rest of the country (smaller cities and rural)
Median share of the population living in	9.3% (2.9 to 22.3%)	2.5% (0.3 to 8.1%)	1.2% (0.2 to 5.198%)	82.5% (73.3 to 95%)
Median number of inhabitants per P.O. box in	67.4 (8.5 to 281.4)	107.2 (12.8 to 2,046)	136.2 (15.2 to 849.6)	1,554.9 (11.5 to 14,378.3)
Median share of total P.O. boxes placed in	53.1% (14.6 to 84%)	6.7% (1.2 to 26.1%)	3.5% (1.5 to 12.1%)	32.0% (10.7 to 79%)
Median number of inhabitants per post office in	100,000 (23,250 to 186,065)	77,077 (3,979 to 800,000)	57,500 (3,518 to 666,666)	151,222 (13,574 to 604,551)
Median share of total post offices placed in	10.1% (2.2 to 74%)	2.9% (0.5 to 21.7%)	1.9% (0.2 to 14.7%)	80.8% (23.0 to 95%)
Median number of inhabitants per postman	79,730 (5,440 to 244,171)	176,580 (1,968 to 365,533)	70,000 (1,568 to 515,723)	n/a
Posts/private MO operators	0.24	0.42	0.72	6.45

Note: Minimum and maximum values are indicated in parentheses below the median values for 25 low-income SSA countries. Data source: UPU survey of postal delivery in SSA.

Data source: UPU survey of postal delivery in SSA (2006)

3.4 Results: pricing of basic postal and delivery services

Table 4 provides a summary of the survey results for the pricing of postal services in Sub-Saharan Africa. Prices for postal services were compared to prices of basic goods and services, such as one kilogramme of bread, rice or meat, or one minute of mobile telephony (i.e. air time). The comparisons led to the conclusion that the price for sending a letter at the first weight step was usually very affordable in SSA. At the median, it corresponded to the price paid for 0.21 kg of bread, 0.33 kg of rice or 0.10 kg of meat, and to exactly one minute of a cellular phone call.

However, renting a P.O. box was much less affordable. P.O. box prices were compared with the price for sending a letter, as well as to the prices for the aforementioned basic goods and services. At the median, the P.O. box annual rental fee was equivalent to sending 56.3 letters, or buying 13.3 kg of bread, 19.7 kg of rice or 6.2 kg of meat. It cost almost the equivalent of one hour of mobile telephony. Considering that SSA citizens tend to consume goods and services with a very low unit cost, given their severe short-term financial constraints, the usual requirement of paying P.O. box rental fees by means of a single yearly payment further reduces the affordability of postal delivery services.

Once the overall transaction price is computed for a mail exchange, the letter post becomes very much less affordable. For example, the cost for a domestic letter exchange was equivalent to 0.54 kg of bread, instead of 0.21 kg, once the price for receiving a letter-post item was taken into account as well. Therefore, the affordability of letter-post services is more apparent than real in SSA.

TABLE 4
Pricing of postal and delivery services

	Median service price relative to bread price (1 kg)	Median service price relative to rice price (1 kg)	Median service price relative to meat price (1 kg)	Median service price relative to air time price (1 minute call)	Median service price relative to the price for sending a letter by the post
Sending a first-weight-step letter	0.21 (0.04 to 1.75)	0.33 (0.07 to 1.25)	0.10 (0.01 to 1.00)	1.00 (0.27 to 7.14)	1.00
Renting a P.O. box (annual fee)	13.3 (2.5 to 73.9)	19.7 (4.3 to 80.3)	6.2 (0.7 to 50.0)	57.3 (32.1 to 275.0)	56.3 (19.3 to 334.6)
Exchanging one letter (i.e. sender + addressee over-all charge)	0.54 (0.07 to 8.14)	0.69 (0.12 to 11.01)	0.25 (0.02 to 2.75)	1.76 (0.52 to 23.67)	
Receiving a "self-delivered" letter (e.g. utility bill)	0	0	0	0	0
Competitor's price for sending a letter (i.e. at the expense of the send-er)	1.11 (0.11 to 6.06)	3.33 (0.11 to 5.61)	1.00 (0.05 to 1.16)	8.75 (1.33 to 25.00)	7.5 (1.0 to 50.0)
Competitor's price for receiving a letter (i.e. at the expense of the addressee)	0	0	0	0	0

Note: Minimum and maximum values are indicated in parentheses below the median values for 25 low-income SSA countries.

Data source: UPU survey of postal delivery in SSA (2006).

Interestingly, incumbent postal operators' competitors in the domestic letter-post market never charge the addressee but only the sender in SSA. Likewise, firms delivering their own mail to customers never charge the addressee for delivering items. Competitors' prices are, however, much higher for sending a letter than the incumbent postal operators' rates. At the median in SSA, the competitors charge the sender 7.5 times as much as the incumbent postal operator.

3.5 Results: trust in incumbent postal operators

The survey indirectly assessed postal customers' trust in SSA incumbent postal operators. Self-delivery, illegal competition, and higher competitor prices might suggest public distrust towards the incumbent postal operator.

As far as utilities were concerned, seven out of ten utility companies delivered their mail themselves: 87% of the electricity companies, 86% of the water companies and 33% of the telecommunications companies. Utility companies also collected payment for their bills in 94% of the cases. As far as the financial sector is concerned, 24% of the banks did not contract the incumbent postal operators to deliver their mail.

Illegal competition was found in all countries participating in the survey. As already indicated, 50% of the competitors, either legal or not, charged 7.5 times more than the incumbent postal operator.

All these results tend to suggest that clients do not fully trust incumbent postal operators in SSA countries.

4. Two-sided market analysis and club effects: an application to postal delivery networks in SSA

It is worth highlighting that postal service pricing is an old debate in many countries. For a long time, addressees were charged for the mail they received, according to the distance covered from the origin to the destination. This was true for most European and North American countries until Sir Rowland Hill's reform in Great Britain in the first half of the 19th century. It was then that the principle of a delivery free of charge for the addressee was introduced (e.g. Crew and Kleindorfer eds., 1991).

Established in 1840, the Uniform Penny Post faced decreasing financial losses year after year, until the service became profitable in 1852. The reform spread to other countries, and the sender became the only party to be charged for any exchange of letters. The issue of who pays for a mail exchange has been periodically opened and discussed in a number of countries that have adopted free delivery. Yet so far none of them has decided to return to a model where the addressee is charged for usage or access, with the exception of Sub-Saharan Africa, where several countries gave up free delivery and established a paying P.O. box delivery mode.

In addition to postal history, economic theory brings important insights to this debate. Although very recent and in continuous development, two-sided market economic theories can help shed light on the current mechanisms underlying SSA postal markets.

The main result of the two-sided market literature (e.g. Armstrong, 2006; Rochet and Tirole, 2003) is that each side participating in a common exchange platform (e.g. the postal communication platform) is not charged according to the costs it triggers. A number of reasons could explain why one side of the platform is charged in a different manner. For example, if one side is more sensitive to price variations than the other, it might be that the side with the highest price elasticity is charged relatively less, or even not at all. It could also be that, if one side triggers a positive externality on the participation of the other, i.e. attracting the participation of the other, then again, that side would benefit from relatively lower prices. Following the same logic and approach, one could also wonder whether reducing transaction costs could be another reason for charging one side and not the other.

On SSA postal markets, too little is known with respect to the two sides' reactions to price variations (i.e. the reaction of senders to the stamp price and of addressees to the P.O. box rental fee). Therefore, little can be said with respect to the impact of price elasticity on two-sided pricing. Yet it is worth noting that almost all studies estimating price elasticity for sending mail on monopolistic postal markets in industrialized countries have found values lower than one, and very often much lower (Fève, Florens and Richard, 2006). Furthermore, while renting a P.O. box to receive mail is a choice in ICs (e.g. for earlier delivery or to benefit from other value-added services), it is a *de facto* obligation in SSA to receive

letter-post items. Therefore, reactions to price variations could be very different on postal markets in ICs, versus SSA.

While very little can be said in terms of price elasticity, this is not so in terms of intergroup externalities and transaction costs on SSA postal markets. Regarding intergroup externalities, the development of postal business-to-consumer communication requires a very high number of addressees to be reachable. One must keep in mind that B2C is the segment with the best prospects in terms of postal traffic growth for SSA countries. Businesses in SSA, particularly utilities, need to be able to communicate with an increasing number of customers. They need to reach more citizens in order to help their markets grow. When these customers are not reachable through the incumbent postal operators, businesses do not hesitate to organize their own delivery network, as the results of the survey show. The fact that these businesses are ready to bear extra costs for organizing delivery is also probably indicative of a low sensitivity to price variations for sending letter-post items to their customers, provided that the quality of service is high enough. This is likely not to be the case for the business-to-business (B2B) postal market segment: B2B is less likely to be sharply impacted by intergroup externalities, on account of the “closed club” communication between businesses.

With respect to transaction costs, a large number of addressees in SSA face very tight budget constraints in the short run, which prevent them from renting a P.O. box. The lack of human resources to manage complex pricing schemes probably further increases the real impact of the actual transaction costs on SSA postal markets.

Therefore, an examination into whether the addressee could receive mail free of charge is consistent with both the expected intergroup externalities related to the development of the B2C segment, and the reduction of transaction costs for highly budget-constrained citizens.

Should intergroup externalities be developed and transaction costs reduced, postal traffic would be expected to increase, given the potential for indirect network externalities in SSA, which are also referred to as “club effects”. This issue did not attract much attention in the postal economics literature developed for industrialized countries, because most potential addressees are covered by postal delivery services in the developed world. Therefore, it is taken for granted in ICs that addressees

have access to delivery. As highlighted by the survey, this is not the case in SSA. Only a very limited share of the potential addressees are reachable by the letter post, making the postal network less attractive. In SSA, there is little doubt that significant potential exists for the development of club effects through a much broader free-of-charge access to postal delivery for recipients.

Indeed, postal service can be viewed as a club good, where externalities suggest cross-subsidization of recipients by senders, namely, free delivery. Once an adequately dimensioned postal network offering a good quality of service is provided, the value of postal services increases in the absence of costs to recipients.

In order to remedy the problems that poor quality and high recipient costs create in reducing the value of postal service in SSA, any reform approach should implement free delivery, consistent with Sir Rowland Hill's revolution, although the details may vary according to the geographical areas to be served. With respect to implementation, little can be learned from the 19th century reform in Great Britain, since the geography and organization of the economy in SSA countries today may bear little resemblance to 19th century Great Britain. At the same time, one could easily have the sense that the value of the postal service today is higher the nearer it is to the final recipient, given the B2C postal delivery demand.

Adapting Sir Rowland Hill's revolution to SSA countries today may involve a controlled expansion of free delivery (for the recipient), with quality controls to ensure that congestion does not undermine the value of the service as volume increases in response to lower costs for recipients. The choice of delivery points likely presents the biggest challenge. While a more centralized delivery system, such as delivery into free satellite P.O. boxes (the recent experience in Israel), could dramatically reduce delivery costs, this offering would also represent a step back for large B2C mailers, whose recipients are already provided with home bill delivery in most of the largest cities in SSA. There is thus a trade-off between the savings generated through centralized delivery points and the value of postal services in terms of delivery proximity. This trade-off requires further local studies in order to achieve a balanced solution where maintaining the value of postal services does not trigger unbearable costs, but also where controlling costs does not jeopardize the present and future

value of postal services, or the fulfilment of B2C senders' needs. Mixed solutions featuring free home delivery in the largest cities and low-cost areas, and free satellite P.O. box delivery in high-cost and rural areas, could also be assessed.

5. Conclusion

Postal economists have produced a large number of models mainly tackling the organization and development of postal markets in industrialized countries. Postal policy makers in developing countries have more than once attempted, or been invited, to transpose policies applied in more advanced economies to their own country or region – with little success. The reasons for these failures lie in the fundamental differences between the postal economies of developing and industrialized countries.

To illustrate this, we analyzed the economics of postal delivery in two regions: Latin America and Sub-Saharan Africa. Our analysis of the situation in Latin America suggested that, with the exception of Brazil, the lack of reform and interest from public and private investors led to a laissez-faire situation in postal markets, which in turn hindered growth in the postal sector. We provided empirical evidence of the negative development impacts, triggered by unregulated competition and the lack of market consolidation. Furthermore, the absence of a dominant operator on the letter-post market made it difficult to generate economies of scale. These remain a key driver in reaching higher postal volumes, alongside governance, another important postal development factor. Recently, the situation has started improving in Latin American postal markets, with greater consolidation and better organization. However, the Latin American case study still holds valuable lessons for today's and tomorrow's sector policies in other countries.

The survey of postal delivery in Sub-Saharan Africa provides important insights into the organization of SSA postal markets: P.O. boxes are the main mode of delivery, at the expense of the recipient. Large mailers, such as utility companies, are dissatisfied with the service offered by the current incumbent postal operators and tend to organize their own delivery networks.

This case study suggested that any reform approach in SSA should involve free delivery for the recipient. Interestingly, this approach was featured in Sir Rowland Hill's famous reform pamphlet of 1837, as discussed by Crew and Kleindorfer (eds., 1991). Prior to Hill's reform, both senders and recipients were charged for exchanges of mail, usually according to the distance from the origin to the destination. Importantly, Hill also noted that there would be significant costs associated with free final delivery in certain areas. He therefore argued that his Penny Post proposal should apply only for "post town to post town", that is, for free delivery to some central location in each town (e.g. the post office). Final distribution (which he referred to as "secondary distribution") was to be left in the hands of local districts.

Rowland Hill's original proposal was nevertheless progressively extended beyond its original scope, and home delivery free of charge to the recipient became universal in Great Britain, as well as in other industrializing countries, in the 19th century.

Similarly, in Sub-Saharan Africa, a reform towards delivery free of charge for the recipient could dramatically change the evolution of the postal markets there. Along with this shift in delivery structure, the organization (including the economic regulation) of postal markets is a critical factor in achieving a successful postal reform. The next chapter offers the most extensive postal economic regulatory analysis ever offered to least-developed Sub-Saharan postal economies.

CHAPTER 5

Postal regulation in Sub-Saharan Africa

Marie-Odile Pilley

"Liberalization, competition and regulatory policies are very recent developments, especially in the very poor countries. The empirical evidence is limited and not of easy access. Moreover, it is never in a form that would allow for rigorous economic tests. Case studies and theory are the only available tools that can be used under these circumstances, but this should be done with a great deal of caution, in particular because the economic theory relevant for developing countries is so far only sketchy."

Jean-Jacques Laffont ¹

1. Introduction

In the past 30 years, the postal regulatory model of the industrial era has been put to test – first by the new integrators and then by the advent of the Internet together with the new geopolitical situation. As highlighted in the previous chapter, there are key structural differences between postal economies in developing and developed countries. The regulatory research focus to date has been more on information and communication technology and less on specific postal matters. Research on postal regulatory matters has been particularly scarce in developing countries. The purpose of this chapter is therefore to provide an initial overview of the regulatory developments in Sub-Saharan Africa set in their context. A regional approach has been chosen, since regions share common features as regards history, tradition, culture, language, types of law (civil or customary) and ways of doing business, despite idiosyncratic country features.

Launched at the Cotonou regulators' seminar,² the research is based on the results of a questionnaire on regulation, supplemented by desk research and UPU surveys on universal service and the status and structures of postal entities. The questionnaire itself was completed by 132 of the 192 UPU member countries (replies received mostly between

October 2011 and March 2012). The response rate in Sub-Saharan Africa was high (37 out of 45 countries), but owing to the relative newness of the subject matter and the lack of postal service definitions, often only a small subset of the questions were answered. Some answers were not entirely coherent, as is frequently the case in transition periods. The questionnaire is complemented by information available publicly on the Internet. The limitations of the desk research were offset in part by exchanges with the respondents for clarification and validation. Accounting for 60% of the number of least developed countries and 70% of the low-income countries in the world, Sub-Saharan countries contributed 80% of the responses in those two categories.

In this chapter, the market context will be presented first, then the questionnaire responses by themes, followed by an analysis of supplementary information in order to categorize the regulatory systems and account for their development.

The survey concerns only national regulation, which is a sovereign matter. It does not include the international obligations under UPU treaties. The term “designated operator” refers to the postal operator designated to fulfil domestic legal obligations, namely, the public service incumbents. “Regulator” refers to the case where there is a regulator separate from the government and the designated operator. “Non-separate regulatory authority” refers to the case where the regulatory functions are fulfilled by a section of the ministry or the designated operator itself, that is, not by a regulator. “Regulatory authority” is the generic term encapsulating both separate and non-separate regulatory authorities.

2. Context

2.1 Postal sector statistical features and trends

This section aims to show features and trends from existing data and the underlying organization of the market. The figures given are based on UPU statistics and refer to 2010. The trends from 2006 to 2010 are analyzed.

Sub-Saharan Africa is the world’s least developed region, comprising 31 of the 49 countries classified as least developed according to ECOSOC. As

additional difficulties, 14 of these countries are landlocked and 3 are small island states. According to the World Bank classification, the region includes only developing 14 middle-income countries.

The postal infrastructure in Sub-Saharan Africa is a reflection of the region's persistent infrastructural weaknesses (see table 1 in the appendix to this chapter). In what is still a labour-intensive industry, industrialized countries employ 38 times as many employees per inhabitant as African countries. The region employs 1% of the worldwide postal staff but is home to 10% of the world population.

Only nine designated operators, all located in countries with a large population, have more than 1,000 full-time employees. The remaining designated operators are small or medium-sized enterprises.

In the region, delivery is provided mainly through P.O. boxes, which are often very concentrated geographically and involve high rental costs. This was noted in previous UPU research as a major obstacle to network development, and the problem is compounded by the fact that a substantial number of households do not have an address (Ansón and Toledano, 2008).

The post office network, which used to represent the densest retail and financial services network in rural areas, is now being superseded by mobile operator networks. The clearest instance of this can be seen in Kenya, where Safaricom has a network of 32,000 connected agents, compared with the Post's 700 offices.

This weakness in infrastructure translates to low production (see table 2 in appendix).

The number of letters sent annually in Sub-Saharan Africa by inhabitant is particularly low: 2.4 compared with a world average of 56, or less than 1% of the world total. In fact, even in middle-income economies such as those of Botswana, Mauritius, Namibia, Seychelles and South Africa, this figure ranges only from 10 to 34. Kenya and Zimbabwe are the only low-income countries where more than one letter per inhabitant is sent. Instead of letter volumes increasing in line with growth in domestic product (GDP), as was the case in industrialized and some emerging countries until digital substitution took hold, they have been, with very

few exceptions, markedly declining.³ On the whole, large accounts (utilities, banks and even government services) do not use the postal network. Informal operators, such as bus companies, are commonly used to send items, without a proper postal logistic process. As a result, the postal market is very limited (Ansón and Toledano eds., 2008).

The domestic market in particular lacks depth. For letters, the domestic-to-international multiplier is 80 at world level. In contrast, the domestic market in the region exceeds the international market in only 13 countries.

The same pattern applies to the parcel market, where the number of domestic parcels per 1,000 inhabitants represents 0.1% of the world total. The ratio of domestic to international parcels is 10 to 1, versus an average world multiplier of 132. For international exchanges, parcel volumes exceed express volumes in only four countries. The picture is indeed more positive for express mail, which seems to have become a substitute for parcels with significantly higher volumes and a relatively deeper domestic market, although volumes are still low.

The weakness of Sub-Saharan Africa is reflected in its share in postal revenues: 0.4% of the world total (see table 3 in appendix). Interestingly, the statistics reveal the importance of financial services.⁴ In 44% of cases, these services represent at least 50% of total revenue. They are also the top source of revenue in 56% of cases. Letter mail represents the main source of revenue in only 37% of cases.

As can be expected from the volume figures, the gradual increase in revenues from parcels and logistics (including the express market) is accompanied by a decline in letter mail.⁵

Within the region, South Africa is a major player, accounting for nearly two thirds of the market by revenues. The upper-middle-income countries have a markedly superior infrastructure, measured in number of inhabitants per post office, and the highest postal revenue per inhabitant. Within this group, there are clear differences between the two leading countries, Namibia and South Africa: the former has postal revenues of 22 SDR per inhabitant and the latter, 11 SDR. The remaining upper-middle-income countries have revenues of between 5 and 8 SDR per inhabitant. There are also many more P.O. boxes per inhabitant, except where

delivery is “last mile”, which is the case only in the Seychelles and Mauritius. Another distinctive characteristic of this group is the existence of more than one sorting centre.

The lower-middle-income and low-income countries can be divided into two groups. The first group comprises relatively robust incumbents with between 20,000 and 100,000 inhabitants per post office (e.g. Tanzania, Kenya, Zimbabwe). The second group comprises incumbents with over 100,000 inhabitants per post office, mostly landlocked or in the Sahel region. In this second group, postal revenues per inhabitant amount to a maximum of 1 SDR, most often less, and are volatile. This low production reflects the incumbents’ deficient infrastructure and the difficulties they encounter.

Overall in Africa, postal growth has lagged behind economic growth.⁶ Economically, Africa is the second fastest growing region in the world, and its growth has been accelerating, although the quality of this growth may not be optimal (not enough diversification, excessive reliance on commodities, high inequalities and extreme poverty).

Like economic growth, average postal growth hides significant and increasing disparities between countries. For instance, certain upper-middle-income African countries, particularly concentrated around South Africa and the richer islands, have bucked the relative decline trend, starting with Namibia and Mauritius. But the situation is not promising in a number of Central African and landlocked Sahel countries, which show falling production and many negative indicators (when they are communicated, which is less and less often the case). A vicious circle is at play here, with poor infrastructure and staff reduction causing a drop in volumes and vice versa. Previous reforms, consisting in further reducing the scope and density of the post office network because of losses, have aggravated this trend. As described in Ansón and Toledano (eds., 2008), “the economic viability of postal networks in least developed countries was jeopardized after separating and selling the postal financial service institution attached to the Post, and financial exclusion fostered since the new financial institution was also losing access to most, if not all, post offices and often had to create new offices and counters. This was for instance the case in Mali.”

Determinism is not at play here, as seen in the catch-up performance of some post-conflict and least developed countries whereas the growth of several stronger incumbents has fallen behind economic growth (South Africa, Eastern Africa, Senegal, Seychelles and Ghana).

Looking to the future, despite the infrastructure weaknesses plaguing the region, opportunities abound with new and more affordable technology applications such as mobile telephony and cloud computing, not to mention “frugal innovations”. As an indication of the ability of African Posts to leapfrog outdated technology, Kenya, which invented and developed M-Pesa, one of the largest and most innovative mobile payment solutions, ranked 28th in the 2011 UPU postal e-service global index and 6th in e-finance. Other countries ranked somewhere in the middle of the league.

2.2 Market organization

According to the UPU publication Status and structures of postal entities in member countries (2011 edition), most designated operators in Sub-Saharan Africa are state controlled. A few are still administrations, and several others state-owned enterprises or limited companies. Only one has not yet totally split postal activities from telecommunications. None are privatized. The general trend is towards more commercial freedom.

A number of designated operators in the region still have a legal monopoly over letter mail that is often more theoretical than real. Boundaries are being reformulated as part of the ongoing postal reform. In two thirds of cases, the boundaries of the monopoly/reserved area are not defined, which makes it inoperable. When these boundaries are defined, those in charge of regulation report that policing the market is still a challenge, even when the regulatory authorities are entrusted with this task. This was a major concern for the Cotonou seminar participants.

According to the UPU universal service survey, last updated in 2011, the universal service area often applies to small packets. In most cases, countries that have a universal service for parcels also have one for express items. In seven cases, there is a universal service obligation for express, but no similar obligation for parcels. In some countries, though in diminishing numbers, it would seem that the reserved area is the same

as the universal service area, or that the universal service area implicitly corresponds to UPU mandatory services.

Out of this, three new trends are emerging: re-regulation of the parcels market; the introduction of express services into the universal service; and the licensing of operators in these areas, when they were not regulated before.

Where regulators have long been established and operating, the reserved area has usually been reduced in scope, although not significantly. Senegal, Tanzania, Uganda and Zimbabwe have confined their reserved area to letters under 500 g, Kenya and Malawi, 350 g, and Ghana, 100 g.

Few evaluations of postal reform (including regulatory aspects) have been carried out. One interesting case, however, is that of Togo, which completely liberalized its market. As already observed in Latin America (Ansón and Toledano eds., 2008), competition that was introduced too soon proved to be destructive. The UPU's 2008 assessment of the postal reform in Togo,⁷ where the reform has since continued, reads as follows:

"Traffic remains low in Togo both for the overall market and the designated operator. Furthermore, the liberalization of markets has gone too far. Authorizations are granted to private operators (seven) without sufficient due diligence, especially as regards ethical standards of management and without any guarantee of business economic sustainability and public service continuity."

3. Questionnaire on regulation: regulatory features by theme

3.1 Respondents

Among the 37 out of 45 Sub-Saharan African countries that answered the questionnaire, 3 countries (Mali, Equatorial Guinea and Chad) could provide only very partial answers, since they were in the process of restructuring and had been through a period of instability. Côte d'Ivoire indicated that it was too early in its reconstruction process, but that regulation would be dealt with in due course. Two Portuguese-speaking countries that have, in principle, a regulator covering the postal sector did not reply. All middle-income countries responded apart from one. The

non-respondents were essentially least developed countries (7 out of 31). Results were updated to July 2012.

3.2 Chronological regulatory development

3.2.1 First wave of creation of regulators

The questionnaire results clearly indicate that the entire region has been moving towards a regulator model.

For 15 respondents, a regulator was established before 2006, often as an integral part of post-conflict reconstruction or structural adjustment programmes. Within this group, the postal sector was most often placed under a multi-sector communications regulator, covering initially the telecommunication sector followed by electronic networks and radio frequency. Ghana is the only country to have established a specialist postal regulator, while Niger’s regulator has remained a public utilities and communication authority. Mauritius has a dedicated postal regulator, separate from the telecommunications regulator, though operating under a common information and communications technology (ICT) board.

TABLE 1
Official year of creation of regulatory authorities in first-wave countries

YEAR	1992	1998	1999	2000
Country	Mozambique	Uganda Togo	Kenya Malawi Niger	South Africa Zimbabwe
YEAR	2001	2002	2003	2005
Country	Senegal Gabon	Dem. Rep. of the Congo	Ghana Mauritius Tanzania	Guinea

Source: UPU questionnaire

Compared with the other ICT sectors, postal legislation and implementing regulations have often lagged behind. As a result, a number of these first-generation regulators have not functioned effectively in postal

matters, a factor that may have contributed to a prolonged governance vacuum. In some cases, owing to this vacuum, governance has even deteriorated when compared with the previous regulatory framework under the supervisory ministry or the designated operator (despite the conflicts of interest the latter case implies).

Various reasons account for these delays. First of all, the turnover of decision makers at government and operator level is high; this impedes decision making and implementation. Second, the subsidiary legislation to give effect to primary law remains incomplete. Third, the means are not given for enforcement: commissioners with relevant competencies are not appointed, and neither is the executive staff. Lastly, the regulated services are not properly defined.

After taking stock of these inefficiencies, public authorities have been reviewing their approach in depth, within the postal reform process and in line with the African Union's 2008 recommendation for the creation or reinforcement of independent regulators.⁸ They acknowledged in a number of cases that their initial attempt stalled somewhat.

Nevertheless, some of these first-wave regulators (Kenya, Mauritius, South Africa, Tanzania and Zimbabwe) have become more established. They have gradually developed in response to national policies and user priorities, while taking into account their resource constraints. Governance and enforcement capability have become stronger. Better market knowledge is the hallmark of such regulators.

Recently within some multi-sector regulators, the profile of the postal sector has been raised (as in Senegal and Zimbabwe, for example).

Even when they are only partly functional, the priority of regulators and non-separate regulatory authorities has been the authorization or licensing of operators in the competitive markets, primarily courier and express operators. Indeed, Nigeria, which does not yet have an independent regulator, was a pioneer in setting up the regulatory department in charge of courier and express operators in the late 1980s as an entity inside the public postal operator, an example that spread to other African countries, and a step that often preceded the creation of separate regulators.⁹

3.2.2 Second wave of creation of regulators

The second wave of postal regulator creation began in 2008 and involved 15 countries. Only Burkina Faso’s regulator is operational. In Seychelles, the transfer of power is imminent, pending final approval.

The second-wave process has involved much more consultation of private individuals, businesses and NGOs than was previously the case.

TABLE 2
Second-wave countries in transition towards establishing a separate regulator

YEAR	2008	2009	2010
Country	Burkina Faso (DO)	Congo (Rep.) (M) Zambia (M)	Burundi (M)
IN THE PROCESS			
Benin (TR) Botswana (M) Cameroon (M) Gambia (M) Lesotho (DO) Mali (M) Namibia Nigeria (DO) Rwanda (DO) Seychelles (DO) Swaziland (DO)			

Source: Questionnaire and African Union study on the postal sector, with an indication of previous/existing regulatory authority – designated operator (DO), ministry (M) and transitional regulator (TR)

Four years earlier, these same countries, except for Botswana, were all listed in the above-referenced African Union Commission study as requiring the development or improvement of a postal policy or law impacting on the regulator’s position and scope.¹⁰

Progress has been swift in Southern Africa:

- The recently adopted Lesotho Communication Act¹¹ maintains the existing reserved area and creates a licensing regime for postal operators, including the designated operator.
- Swaziland's draft postal policy¹² has also just been issued. The government must prepare the legal framework for separating postal services from telecommunications, establishing the postal business as a wholly owned, financially viable corporation. The regulator, to be known as the Swaziland Communication Commission, must be established as an autonomous body, mandated to observe the development of the postal sector and to ensure implementation of and compliance with the regulatory framework in place.
- In Botswana, the regulation and licensing framework¹³ is expected to be implemented through a converged regulator, the Botswana Communications Regulatory Authority, that has yet to be established by a bill now under review.
- In Namibia, the 2009 Communication Act has been adopted. However, the section dealing with the postal services licence has not yet been enabled.¹⁴

In the second wave, even more than in the first, the postal sector has often been a late addition to an existing multi-sector communication regulator. Only in two cases (Gambia and Rwanda) does the regulator cover the infrastructures of other public services/utilities besides communication. In Swaziland, a new communication regulator, including the postal sector, has been created from scratch. Seychelles, and recently Cameroon and Nigeria, have bucked the multi-sector trend by establishing a specialist postal regulator.

In reality, the merits of a multi-sector versus specialist regulator remain an open issue. On the one hand, in view of the policy trend towards a knowledge- and ICT-based economy in Africa, integrating postal regulation into a broader communications sector may allow for more effective development of synergies. Moreover, some resources may be shared and there are expectations (not often met) of cross-subsidization by the other

“richer” sectors. On the other hand, as is often seen, the postal sector risks being relegated to the last position. The regulatory and competition logic that applies to telecoms and electronic communication risks being applied inappropriately to the postal sector. Indeed, other ICT industries are capital-intensive rather than labour-intensive, as is the postal sector. Enabling innovation is a major consideration for any ICT regulator, while for a postal regulator, the top priority is to provide access to all, including physical access (i.e. universal service).

3.2.3 Countries in the third wave

Five other countries have not yet reached a decision stage, though they are moving in the same direction: Madagascar is planning to introduce a bill to create a regulator. Chad also hopes to do so. In the first case, regulatory powers are essentially in the hands of the ministry; in the second, these powers belong to the designated operator in principle. Ethiopia has transferred regulatory functions from its transport ministry to a semi-autonomous department in another ministry; as a result, there is uncertainty over the legal basis. A draft regulatory policy has been forwarded to the supervisory ministry, and it is hoped that this issue will soon be clarified (if it has not already been clarified). Post-conflict Liberia is rebuilding its postal sector but has not yet reached the stage where a separate regulator can be considered. Having formulated with stakeholders a postal policy based on three dimensions (physical, electronic and financial), the country is now in the process of separating supervisory and regulatory functions from operational functions.

Equatorial Guinea, which until now has been unregulated, has just begun a reform process and is planning to follow the prevailing trend.

3.3 Market knowledge

Market knowledge in the region appears to be limited, despite the fact that 22 regulatory authorities indicated in the questionnaire that they were responsible for maintaining a database. Five countries, all with established regulators, did provide the market shares of the three top operators for letter mail and parcels (Mauritius, South Africa, Seychelles, Tanzania and Zimbabwe). The Nigerian Post gave its own market share. Liberia and Swaziland, which did not indicate any obligation to maintain

a postal statistics database, did communicate their designated operator's market share.

Setting up a postal statistics database is now finally recognized as a priority. Gabon, Senegal and South Africa have begun developing a postal observatory. The Kenyan regulator already includes postal indicators in its annual report (starting with the postal sector's contribution to GDP), and Mauritius is working to develop a set of such indicators. Cameroon also indicated that it had developed postal indicators.

The few replies provided gave a fair idea of the degree of penetration of international integrators on the African continent. For example, in one country a single integrator on the parcels market has more than a 50% share. The designated operator often had a small share of the parcels market. In the courier, express and parcels markets, anecdotal evidence suggests that international integrators may well have a dominant share (>30%) in a substantial number of African countries.

This insufficient market knowledge points to a fundamental weakness of regulation in Africa. The creation of a separate regulator has often been seen and designed as a standard solution, unconnected to an evidence-based policy.

3.4 Scope of activities under postal legislation

Among the countries surveyed, under postal legislation, services other than physical postal services (letter mail and courier, express, parcels) most often fall within the purview of postal operators (designated operator only or sometimes other licensed operators). In all but six cases, non-postal services are included. Even in these six cases, other services may be offered under the general category of "ancillary services", such as in Mauritius.

Payment services fall within the scope of the postal law in 24 of the respondent countries, electronic services in 16 of them and postal account services in 14. Where electronic services are offered, payment services are as well, and postal account services are always combined with payment services. On the other hand, social security payments rank low (in only three countries in each case). In the majority of cases, a comprehensive

range of services is offered (more than three additional services in 18 cases).

After a period in which the focus had been more on strictly postal services, the recent trend has clearly been towards an integrated three-dimensional postal network (physical, financial and electronic), together with the modernization of mandatory basic and supplementary services. For example, hybrid mail is now being defined in Tanzania. The financial dimension, which had gradually disappeared over the last 20 years, is being revived, with ICT used for network connection and service delivery. This trend is even more obvious in countries under reconstruction.

Since the questionnaire covered mainly letters and parcels, with another questionnaire on financial inclusion sent out simultaneously, the complex issue of whether postal payments and other financial services fall under the universal service and how they are regulated has not been covered.

3.5 Governance

Good governance is essential to prevent “regulatory capture” and to enable a decision-making process aimed at developing the market to meet the needs of citizens and businesses alike. The many facets of governance include the following: appointment process and mandates of board members; duties assigned, and cooperation and coordination with other public bodies; transparency, audit and accountability; and enforcement powers and the binding nature of decisions.

In cases where the regulatory function is integrated into a ministerial department, governance is simple, since the administrative hierarchy prevails. However, there may be transparency obligations (publication of decisions in the official journal and list of licensed/authorized operators, along with the terms of their licences).

The procedure for designating a regulator’s board members or “commissioners” closely reflects the country’s political and administrative traditions. It is not that different from what used to apply to the incumbent’s board members and is in line with high-profile public service appointments. For one third of the respondents (totalling 25 for this question), the regulator’s board members are appointed by the head of the republic, the government or the supervisory ministry. For four

respondents, the same process is applied to the director general of the executive body or “secretariat”. The process sometimes requires consultation of the various executives or even the political parties (four cases). In Mauritius, for example, the opposition party is consulted, and the parliament is involved in the process.

The term of the board members’ mandate varies from two to six years, but is most often three to five years. The mandate is usually renewable. From the questionnaire replies and an analysis of the regulators’ websites, few of these boards, generally organized on a functional rather than sector basis, appear to include postal sector specialists, even when other sector specialists are involved. Exceptions are Kenya, South Africa, Niger, Zimbabwe and Tanzania. Tanzania has the only board with two postal members. In Kenya and Niger, a member of the designated operator’s board also sits on the regulator’s board; this influences the level of regulatory independence.

According to the questionnaire replies and the regulators’ annual reports and websites, reporting obligations do not appear to be extensive. An exception is South Africa, which is obligated to report to both the executive and to parliament as part of a particularly intricate system of checks and balances. Kenya, Tanzania and Malawi have developed what seem to be proportionate checks and balances. Only in five countries is a regulator’s auditing process mentioned. Any compliance and licensing reports prepared are limited in their coverage, particularly in comparison with those for the rest of the ICT sector.

The same applies to the regulatory authorities’ decisions: in only half of all cases are they required to be published. Little information is available on websites. In fact, very few authorities report having taken decisions. Only Mauritius (75 decisions) and Nigeria report a large number of decisions, mostly linked to licences and authorizations. In Kenya, Tanzania and Zambia, for example, only a few decisions have been made. As an indication of the lack of maturity of these regulatory systems, only four appeals were recorded in total for all respondents.

As regards cooperation with other relevant bodies, cooperation with consumer organizations and civil society tops the list (half of cases), followed by legislative and law-enforcing bodies. In two cases, cooperation with bodies in charge of public procurement is mentioned, and in another two cases, with statistics and standards bodies.

3.6 Resources

When staffing levels are reported, they are often found to be low, which might raise questions about the effectiveness of the regulators, especially in the light of a comment made in the WIK-Consult report on postal regulation in Europe (Dieke et al, 2009). The report pointed out that postal regulation was a complex issue that required a minimum level of staff, whatever the size of the country and its postal market.

The non-separate regulatory authority in the Madagascar ministry has six staff members, while the Nigerian courier regulator within the designated operator has eighteen.

The specialist regulator in Ghana employs six people, and the specialist department in Seychelles (in transition) has a staff of eight. In the multi-sector regulators of the Democratic Republic of Congo, Kenya, Malawi, Niger and Senegal, five staff members or fewer are assigned to postal affairs, most often one or two. South Africa, Tanzania, Gabon and Zimbabwe are exceptions, with more than five. Mauritius, a small country, is the only one in which the board chairman's duties involve a half-time post, and all employees are temporary. In Benin, the regulator employs multi-skilled staff rather than specialist staff. Among the cases considered, the percentage of dedicated postal staff varies between 1% and 5% of the total number of staff within a multi-sector regulator.

On the basis of the ratio of postal staff to total staff employed by the regulator, annual budgets of the nine respondent countries range from 10,000 to 200,000 SDR, with most falling between 30,000 and 70,000 SDR.

Regulatory units that are parts of ministries are funded through the state budget. Regulators are funded exclusively from the budget in six cases, and exclusively from operators' contributions in twelve cases; in five cases, the regulators are funded from both sources. According to Namibian authorities, funding from the budget has been chosen, since

funding from the operator's contributions is perceived as giving rise to regulatory capture risks, at least if appropriate checks and balances are not in place.

This information on the staffing and funding of regulators clearly shows that the postal sector has not been a priority.

3.7 Competition and regulation

If there is a distinctive feature in Sub-Saharan Africa, it is that regulators, besides monitoring the incumbent, also include competition within their scope of responsibilities, even when a separate competition body already exists, as is the case in most English-speaking countries, as well as in Senegal, Togo, Niger and Ethiopia. Gambia, where postal regulation is not yet part of the regulator's scope, is an exception, in that the competition authority is responsible exclusively for matters relating to ICT competition.

One aspect of competition monitoring is the regulation of private operators through registration, authorization and licensing (see section 3.9.1).

Market competition rules are also monitored in principle to ensure that access rules are complied with by the designated operator and, conversely, that the reserved area is respected. Most operational regulators, including the non-separate regulatory departments of Madagascar and Nigeria, have responsibilities in this area. However, in only half of the cases observed are regulatory authorities responsible for ensuring that there is no abuse of a dominant position. This applies to French-speaking countries, as well as to Botswana, Uganda, Tanzania and Zimbabwe. In practice, however, little seems to have been done on this front.

As regulators strengthen their authority, they tend to work more closely with competition authorities; this is the case for established regulators. An effective competition authority separate from the regulatory authority may reduce the risk of capture.

3.8 Regulatory authorities and the designated operator

In less advanced countries – which are often behind in the transition towards establishing a separate regulator – the incumbents have not always been officially designated for the provision of postal services in their country. Where they have been in the other countries, only in four cases (Benin, Malawi, Mozambique and South Africa) was the regulator and not the government responsible for the designation process. A joint process is sometimes involved (Botswana, Tanzania and Zimbabwe).

An increasing number of regulators, mainly in English-speaking countries (Ghana, Kenya, Malawi, Tanzania, Zimbabwe and Uganda), and in Mozambique, license the designated operator as part of the postal law. This is not so much the case in French-speaking countries like Senegal, where the designated operator is granted a concession, often together with a performance contract. It is worth noting that several countries with strong designated operators, especially in Southern Africa, do not yet have a licensing system.

Monitoring of designated operator compliance by the regulator is an essential regulatory function. A total of 24 countries indicated that this monitoring process was already in place. However, as can be expected, this is not yet the case in a number of countries in transition towards a separate regulator. Presumably, monitoring in those countries remains in the hands of those currently responsible for regulation.

A specific feature of African regulation is the responsibility of designated operators to develop an addressing system (12 countries, including both medium-income and least advanced countries).

Of the five designated operators with a last-mile obligation for EMS, four have it for EMS only, not for parcels.

Only Mauritius and Seychelles actually deliver to each address. In South Africa, the government's inclusion policy has resulted in a significant increase in home mail delivery and a concurrent reduction in the percentage of unserved inhabitants from 30% to 3%. Even among the few countries that indicated having a last-mile obligation (four), there does not appear to be compliance, and it is at odds with the widespread, if not exclusive, use of delivery to P.O. boxes. Cameroon's delivery objectives

are pragmatic in that the universal service definition sets out a last-mile obligation to deliver to administrations and large accounts, i.e. what is feasible and efficient given existing resources.

The last-mile express delivery obligation imposed on some designated operators for express and courier dispatches might in the future be replicated in other countries, thus showing that the basic postal network is adapted to the physical delivery of higher added-value parcels.

Furthermore, digital inclusion policies have led to a universal service obligation for operators in seven countries, most of which are low-income, thus making it possible to leapfrog outdated technology. Most often, this obligation means transforming rural post offices into ICT access points.

The questionnaire replies point to development of the network's two-dimensional aspect (financial and postal), after a period of decline for financial services, as well as the long-standing effects of current and former UPU treaties in determining the range of services. This also applies to reconstruction countries.

Rural post offices tend to offer reduced services. However, in some cases, there is an active policy and a public service obligation to promote additional Internet access or financial services in rural areas through the post office network.

Despite the importance of P.O. boxes in Africa, only three countries specified P.O. box availability as a legal obligation (Uganda, Tanzania and Lesotho). Nevertheless, as already mentioned, UPU research has identified high charges for P.O. box rentals as one of the main obstacles to postal development in Africa.

3.9 Other responsibilities of regulatory authorities

As already mentioned, primary among regulatory authorities' many responsibilities, apart from monitoring designated operator compliance, are the licensing and authorization of other postal operators, as well as the definition and monitoring of quality standards. As a note of caution, however, the South African regulator, which is among the most established, indicated in the 2010 UPU postal regulation seminar that monitoring was still in its infancy.

3.9.1 Authorization or licensing of private postal operators

Fifteen countries indicated that their regulatory authorities had granted licences or authorizations (registration in the case of Guinea). These include most of the first- and third-wave countries, and some of the second-wave ones, as well as countries that do not have yet a regulator. From the replies, it would seem that there is generally no clear distinction between parcels and letters, or between parcels/letters and express/courier, or even between licensing and authorization.

Where figures are given, the postal markets, mainly small in size, also appear to be highly fragmented. The reported number of operators licensed by country is as follows: Nigeria (nearly 300), Kenya (175), Ghana (54), Tanzania (53), Uganda (21), Mozambique (20), Zimbabwe (16), Senegal (13), Guinea (11), Mauritius (8) and Niger (5). In the previous African Union survey, a figure of 200 operators was indicated for South Africa. Madagascar reported nine parcels and seven letter-mail licensees and Gabon, a total of nine parcels and letter-mail authorizations. Operators are most often classified according to scope of geographical coverage (international, national, regional and local).

Several countries still without a functioning regulator (e.g. Botswana) indicated that their future regulator will be entrusted with licensing. Benin and Cameroon, in transition, are preparing a list of operators to be licensed or authorized, consulting with them and informing them of new developments. Zambia and Congo have introduced an intermediary licensing process.

Mauritius is the only country to require all licensees to fulfil universal service obligations. In other countries, licences often clearly indicate that the private operator is required to fulfil some public service obligations.

The following questions relating to the licensing or authorization of private operators were not asked in the questionnaire and should be studied further:

- Who levies contributions from the operators?
- Is funding of the universal service, if any, separate from funding of the regulatory authority?

- How much is the operator's initial and annual contribution?
- What measures are in place (including clear definitions of services) to prevent risks of capture, inappropriate levies and embezzlement?

As reported also by a number of regulators at the Cotonou postal regulation seminar, monitoring postal operators' compliance is proving to be a major challenge very often compounded by inadequate service definitions and operator classification; for example, some operators linked to large integrators are classified as "local". To illustrate the scale of the problem, following a review of the legal and regulatory environment in Ghana, the licences of 19 operators were recently revoked because, according to the regulator, they did not comply with the licensing conditions. Some neglected to make use of their licences. Other reasons included the non-payment of licence renewal fees and failure to notify name changes.

3.9.2 Quality

If there is a function to which regulatory authorities are dedicated, it is setting quality objectives (26 positive answers). A full array of sanction measures are available to the regulator in case of non-compliance, from fines to cancellation of licences. Tanzania leads in the development of an external twice-yearly measurement of service performance and customer satisfaction relating to the designated operator. Licensed operators must declare their quality standards in advance. In most other cases, monitoring is often carried out through inspections on operators' premises.

3.9.3 Rate setting

In ten countries, the supervisory ministry takes final decisions on pricing for the reserved letter and universal service areas; in nine countries, it is the designated operator, and, in seven, the regulator. In reality, regardless of who is officially responsible, a joint process is normally involved, i.e. the designated operator proposes rate changes, the regulator acts in an advisory capacity, and the supervisory ministry decides. Decisions on parcel prices are generally left to the designated operator where there is competition on the parcels market. Where there are other obligations (e.g. relating to postal payment services), the decision-making process is similar to the one for letters.

Pricing and costing methodology is a subject not extensively covered in the responses. Nine low-income countries did not reply to the relevant question, while others did so tentatively. Of the 18 countries that replied to the question, 2 countries specified a cost orientation, 6 said that they use individual cap pricing, 8 use basket-cap pricing,¹⁵ 10 use cost-plus pricing,¹⁶ and 11 use social pricing. Three countries claimed to use 3 pricing methods, while 7 use 2 methods and 10, only 1 pricing method. Uniform pricing is a general practice, with some exceptions for courier and express services.

The regulators of only three countries referred to separate accounts for their various lines of business.

In the open questions, no mention was made of any work on a P.O. box rental pricing methodology or on pricing in two-sided markets, or of the benefits and disadvantages of uniform pricing.

In cases of non-compliance, the regulatory authority or regulator in all countries can oppose the pricing proposed.

3.9.4 User complaints

In all but two countries, the regulators can deal with complaints from users (conducting investigations and imposing penalties). South Africa is unique in that its regulator refers cases of non-compliance and unresolved complaints to its complaints and compliance commission.

3.9.5 Access rules

In many countries, the law defines the rules of access to the postal network and post offices. For Ghana, however, all access rules and sanctions are a matter of postal policy. Kenya pointed out that sanctions for non-compliance with the relevant rules have not yet been established. Where the law does not define the rules, the decision-making authority is the designated operator (four cases), the regulator (two cases) or the ministry (four cases), normally in compliance with the universal service obligation rules defined in a licence or concession, or in the regulations. The same applies to connection rules (which are still in their infancy).

3.9.6 Sanctions

Sanctioning powers tend to lie with the established regulatory authorities, which can in a few cases, at least theoretically, withdraw the monopoly or licence and recover subsidies. Senegal is an exception in that sanctions are left with the ministry. Niger has adopted an administrative approach whereby the regulator can only suspend a licence. Administrative law and criminal sanctions tend to be used more in French-speaking countries.

Where all the operators are licensed, the same sanctioning logic applies to licensed operators and to the designated operator. Although financial sanctions and redress orders can be given by nearly all regulatory authorities, the powers to withdraw the monopoly or the reserved area from the incumbent appear to be theoretical, in that they have not been exercised.

In fact, very few regulatory authorities exercise their theoretical sanctioning powers, apart from sanctions applied to licensees. Since the beginning, Nigeria has withdrawn a total of 55 licences and 50 authorizations, Uganda, 46 authorizations or licences, Ghana, 19 and Madagascar, 2. Not a single appeal was mentioned (although one was recently mentioned in the Ghanaian press). In many cases, as mentioned by Kenya for access rules, sanctions have not been defined.

In the case of illegal operators, sanctions can be severe, often with recourse to criminal law, which is a distinctive African characteristic. Sanctions may involve confiscation; the closing down of illegal activities; and prosecution under administrative, civil and criminal laws. In Tanzania, only cases that do not come under competition law are referred to criminal court. In South Africa, cases are referred to courts and enforcement agencies.

4. Regulatory systems

In Sub-Saharan Africa, ever since the launch of structural adjustment programmes, the separate regulator model has been systematically applied, in line with African Union policy. The creation of regulators has tended to be seen more as an objective than as a tool enabling market development. The dominant factor behind what has been a somewhat

one-size-fits-all model was the assumption that liberalization and what was seen as its corollary – a separate “autonomous” regulatory authority – would produce the best outcome for both private individuals and businesses.

4.1 Common features

The most striking feature from the survey is the lack of market knowledge. Even where initial research has been conducted for the purpose of formulating postal policy, the research skills needed have not been sufficiently developed and mastered. The same applies to economic and accounting pricing and costing. The issue of P.O. box rental pricing, a Sub-Saharan feature representing an obstacle to network development, was not even alluded to. Few regulators have achieved a virtuous circle in which market knowledge and regulation reinforce each other. Because of the lack of progress made, some regulators established as part of the first wave have had to go back to basics to define services in the universal, reserved and competitive areas.

As far as the market is concerned, the monopoly or reserved area has been maintained in theory. Only a few established regulators have formally initiated market liberalization, and to a limited extent.

An emerging trend is the development of last-mile delivery for parcels and EMS items. Another significant shift is the inclusion of payment and electronic services within the designated operator's scope, as well as application of the principle of technological neutrality for modernizing postal services (hybrid mail).

With the exception of Ghana, Cameroon and Seychelles – and soon Nigeria, which has opted for a specialist postal regulator – the regulator is nearly always a multi-sector communication regulator in the ICT field. Within regulators, the postal sector is often the poor relative in terms of priority and resources (staffing and budget), although there have recently been some improvements. For the countries in transition, who currently regulates is not very clear (i.e. what of the old or new system applies). This creates a vacuum in governance, made more problematic in cases involving a longer transition process.

In theory, the scope of regulatory authorities is broad on market coverage (inclusion of all or some private operators) and range of responsibilities (competition, licensing, setting and monitoring of quality standards, direct involvement in user complaints, inspection powers, and access to operator information). Unlike in the European Union, couriers and express operators are normally considered part of the relevant market and fall within the regulatory authority's scope. Although all established regulators include competition within their scope, not a single initiative regarding potential abuse of dominant position was noted. Sanctioning powers include recourse to criminal law, a feature that clearly distinguishes African operators from those in Latin America.

Governance is in line with national administrative and political traditions. In addition to market knowledge, clear governance and proportionate checks and balances distinguish established regulators in the postal field from the others. This involves either gradually increasing cooperation between relevant authorities (Tanzania) or developing the required regulatory functions within a single regulator (Zimbabwe). A tendency noted in the second transition wave is to assign the future regulator an unreasonably broad range of responsibilities, in the expectation that the regulator will be able to remedy all deficiencies and perform virtual miracles.

Transparency is limited: few reports appear in the public arena, and regulators' compliance reports are very short on postal aspects. The auditing of regulators is also rare. On the other hand, where there is an established regulator, arms-length arrangements for the management of universal service funds have been introduced in countries such as Kenya, Tanzania, Zimbabwe and Mauritius, a sure sign of progress in the development of checks and balances.

It is difficult to assess from the questionnaire how genuine independent regulators are in their decision making. Their decisions appear to relate mainly to licensing. The negligible number of appeals against regulators' decisions implies that the system is not yet mature. In most cases, actual enforcement powers are limited, and regulators experience major difficulties in obtaining relevant data from operators (statistical and accounting information).

4.2 Diversity in emerging regulatory models

The common features discussed above tend to conceal a degree of heterogeneity. The piecemeal nature of the questionnaire results has made it difficult to put the puzzle together and to draft the outline of the emerging regulatory models by country. However, often in countries with more mature legislative and regulatory frameworks, more detailed information is posted on governments' or regulators' websites – organizational diagrams and reporting links between relevant bodies as well as regulators' remits. Upon cross-validation of the questionnaire results with this complementary information, four different regulator models could be identified among the existing established regulators; these models are strongly linked to political cultures and administrative traditions. As seen below, Namibia is a different case: after choosing to focus exclusively on its designated operator, it is now in the process of developing an innovative legislative and regulatory framework.

4.2.1 *Mauritius*

Mauritius is an upper-middle-income small developing island with a trading tradition. The scope of its regulator is broad and centred on a licensing process that covers all operators. The market is divided into three sub-divisions: postal, courier/express and ancillary services. Establishment of the regulator has led to tensions with the designated operator over its own licensing, a common situation where a transfer of power is involved. One feature of licensing in Mauritius is the requirement for all licensed operators to provide a universal service. The regulator also has an advisory role, with the additional responsibility of ensuring access to premises for the delivery of mail.

The functions of the Postal Authority of Mauritius can be summarized as follows:

- Licence, renew, amend, vary, suspend, cancel or revoke a licence issued under the Postal Services Act of 2002;
- Approve or fix rates for each type of postal, courier or ancillary service offered by licensees;
- Conduct surveys, tests and evaluations as regards the standard of services delivered by licensees;
- Determine uniform standards, best practices and codes of conduct applicable to service providers, and ensure compliance;
- Issue such directions as may be necessary to ensure that persons in control of premises provide effective access to premises for the delivery of mail;
- Advise the ministry on all matters relating to the provision of postal services by licensees.

4.2.2 Zimbabwe

Zimbabwe is a low-income country. Its regulatory model is based on self-sufficiency through internal coordination between the various departments of the communication regulator, thus ensuring simplicity in governance. The regulator's scope and power is broader than in Mauritius. It includes the implementation of national policies covering management of the country's postcode and addressing system, as well as the role of arbitrator in conflicts between operators (not dealt with in the questionnaire). The duties of "elimination of illegal operators" are specifically mentioned.

The postal division of the Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) is responsible for:

- Processing licence applications for postal and courier operators;
- Ensuring that postal and courier operators provide sufficient, reliable and efficient services throughout the country;
- Managing postcodes and the national address system;
- Advising POTRAZ, in collaboration with the tariffs and competition division, on appropriate rates and charges for basic postal services;
- Promoting, in collaboration with the tariffs and competition division, competition between postal service and courier service providers;
- Monitoring compliance with performance standards and codes of conduct in respect of postal and courier services;
- Acting as arbitrator in conflicts involving operators or between operators and customers within the sector;
- Providing advice to POTRAZ on postal matters;
- Administering implementation of the national postal sector policy;
- Undertaking regular inspections to monitor the performance of all licensed operators;
- Eliminating illegal operators from the sector.

4.2.3 Tanzania

Tanzania is a low-income and least developed country. Its regulatory model, similar to that of Kenya and differing from the self-sufficiency approach seen in Zimbabwe, is based on “co-regulation”. This means gradually developing skill building and checks and balances, in synchronization with other regulatory and supervisory bodies. Activities within the universal service area come under universal service obligations imposed on the licensed operators. Some characteristics of this co-regulation are as follows:

- An operator suspected of carrying out illegal postal activities is prosecuted before the courts (if a criminal offence) and before the fair competition tribunal for non-compliance with the regulations. The police also participate through the joint investigation of criminal offences.
- Price setting is a joint process. The prices are proposed by Tanzania Posts Corporation (TPC) on the basis of its own price policy and market conditions, and are then referred to the TPC price committee, management, the TPC board, and finally the Tanzania Communications Regulatory Authority for approval.
- New matters (which now include a definition of hybrid mail, customer compensation and penalties) are dealt with in accordance with a gradual plan agreed with stakeholders. Incidentally, the selling of TPC shares to Tanzanian nationals has been reserved since 2010.

Institutional building and co-regulation can be seen in particular in the integrated communication structure (called the Communication Universal Service Fund) set up to manage the universal service fund.

4.2.4 South Africa

ICASA, the Independent Communications Authority of South Africa, represents an exceptional case that would be difficult to replicate in other countries. Unlike in other countries where checks and balances on regulators are still being developed, ICASA is subject to a particularly complex set of checks and balances.

South Africa's constitution makes it the duty of parliament to establish an independent regulatory institution responsible for regulating electronic communication, broadcasting and postal services; the relevant parliamentary committee acts as an oversight body. ICASA is a licensing, regulatory and quasi-judicial body (acts as adjudicator, imposes sanctions and has an oversight role). One of the aims of the ICASA Act of 2006 was to promote the universal and affordable provision of communication services.

ICASA is mandated to receive complaints from the public and facilitate the resolution of those complaints, or, if unable to do so, to refer them to the Complaint and Compliance Committee (CCC). The CCC is an independent body headed by a judge of the High Court. The consumer affairs division is tasked with providing information on the role and functions of ICASA, and educating consumers on their rights and the procedures to follow for submitting complaints. In accordance with the Competition Act (1998), the Competition Commission has an *ex ante* and *ex post* jurisdiction over matters relating to competition. The Postal Services Act (1998) mandates ICASA to license and oversee the South African Post Office and to monitor its performance on the basis of customer care standards and universal service obligations (including the roll-out of street addresses to citizens).

South Africa is the only country that clearly indicated that the main objective of regulation was to develop a genuine universal service. Liberalization was not on the agenda at that time.

4.2.5 Namibia

Namibia is a particularly interesting case, in that the country is developing a new regulatory model, not yet implemented, combining re-regulation and interoperability. Most notably, a concession will be issued to the designated operator for a specific period of time, granting it exclusive rights, together with a performance contract specifying the scope and standards of the services, and penalties for not complying with the exclusive rights. Reserved services consist of the delivery of letters not exceeding 100 g and parcels not exceeding 15 kg to P.O. boxes, private bags and home letter boxes, excluding advertising material and newspapers. Hybrid electronic services (volume electronic mail, hybrid data interchange service

and electronic document interchange) are recognized as services complementary to postal services.

Interoperability is promoted on the basis of three principles. First, all postal networks should be fully accessible by all postal operators in a non-discriminatory manner, while protecting the privacy of the parties. Second, there should be interconnection facilities on commercial terms for mail presented by other licensed operators, so as to provide a seamless postal service to all locations in Namibia. Finally, interconnection should link up operators that provide postal networks or services in order to enable the users of one operator to deliver services to the users of another operator and to access services provided by another operator.

Checks and balances will be put in place. A communication and information unit may be set up to advise the minister in the performance of his duties and on any matters relevant to communication. An independent adviser will assess the designated operator's performance, as well as the separation of accounts. The regulator's main role is to enable implementation, which gives it powers similar to, but narrower than, those of the Zimbabwean regulator.

4.3 African regulatory developments in a wider context

In Africa, the trend has been first to regulate new postal operators (express and courier services) and then to apply the separate regulator model, somewhat inspired by the one being developed for the European Single Market.

In the European Union, the issue of incompatibility between national postal monopolies and a single market was addressed in 1992 by the European Commission's Green Paper. Subsequently, a compromise that guided the creation of the single postal market was reached, guaranteeing the sustainability of the universal service for letter mail and parcels, while gradually opening the market to competition. This arrangement was welcomed by the various stakeholders (governments, incumbents, express and courier operators, large and small businesses, and the public), since it meant different things to different parties.¹⁷ A corollary of the liberalization process was to set up "independent" regulators. A somewhat unproven assumption in this era of liberalization

(which did not sufficiently take the specific postal economic features into account) was that liberalization itself would improve social welfare (for both individual citizens and businesses). Twenty years later, now that the market is fully open, the results are mixed: the incumbents remain by a wide margin the dominant operators in a letter market that is diminishing as the result of technological substitution.

It is this liberalization component of the European Union's approach, together with a separate, autonomous regulator, that was adopted in Sub-Saharan Africa. However, the situation there was radically different. In the European Union, the postal system had been developed by the states over a century, in line with Sir Rowland Hill's postal reforms, through infrastructure investments, a monopoly, uniform pricing and charges for senders only. When the Green Paper was adopted, the postal market of the European Union (15 countries) was already extensively developed (224 letters per inhabitant), compared with a market in most African countries still in its infancy. In fact, because of the significantly smaller size of incumbent operators and the lack of infrastructure, the universal service could not be anything but very different from what it was in Europe.

Different models have emerged throughout Africa in countries with different levels of development (Tanzania, Zimbabwe, Namibia, South Africa and Mauritius). Features distinct from those in the European Union include the wide scope of activities (covering payments and accounts) often found in the universal service area and the de facto adoption of the United Nations' functional equivalence and technological neutrality principle, thus allowing hybrid mail, for example, to be included in the reserved or universal service area.

A number of countries, including Tanzania, have chosen an option of partial and gradual liberalization. With limited but sufficient resources, the Tanzanian regulator has gradually developed a system of checks and balances, and coordination with other bodies is under way. It established the rules of the game for all operators, including the incumbent operator, while strengthening its enforcement powers. It took into account changing needs and incorporated technology. Governance is clearer, and the institutional framework has been strengthened as a result.

The partial liberalization approach has been effective only where the model has been adapted to local conditions, given adequate resources, integrated into development policies, explained to and fully supported by governments and other stakeholders (including financial support), and accompanied by a sense of ownership among those involved. Keys to success have been clarity, enforceability and scalability in governance.

On the other hand, the failure to meet these conditions has led to a deficiency in regulation. Similar findings were reached by the African Union and the Pan African Postal Union. They confirmed what regulatory research had already taught us: that regulation must be tailor-made and not one-size-fits-all.

Total liberalization has been a failure. When introduced too soon, liberalization can be destructive, and competition finds its limits once traffic volumes fall too low and economies of scale and of scope are insignificant. This is similar to what was observed in Latin America (Ansón et al, 2008).

However, there seems to be little correlation in Sub-Saharan Africa between the choice of a separate regulator, even when it is “virtuous” (as in the case of Tanzania), and the development of the incumbent operator (in terms of volumes), which is the closest market proxy available in Africa in the absence of overall market figures. Tanzania, Kenya and South Africa have experienced slow and even negative growth, despite having an established regulator. In Ghana, this situation is even more pronounced, while Zimbabwe, in the same circumstances, has caught up somewhat. If there is a link as regards postal strength, it is more likely to be found with level of development, than with the existence or not of a separate regulator.

The Southern African countries of Namibia, Botswana, Lesotho and Swaziland have achieved some of the highest levels of postal development in Sub-Saharan Africa, in terms of postal revenue per inhabitant. Until now, these countries have not had a regulator or a licensing system for private operators, but rather relatively effective and simple governance regarding the incumbent operator through the incumbent’s board or the supervisory ministry. No doubt the Communication Regulators’ Association of COMESA (Common Market for Eastern and

Southern Africa) has contributed to the new regulatory dynamism in that part of the world.

In brief, strong postal policy and enforcement powers over the incumbent operator appear to be crucial in the early stages of development.

Particularly for regulatory functions – whether or not carried out by a separate body – a clear, simple, tailor-made, scalable and enforceable governance mould is necessary. In terms of enforceability, the use of criminal law in dealing with illegal operators and activities distinguishes African regulation from regulation in Latin America.

The 2011 United Nations Conference on Trade and Development report on development-led globalization stressed:

“Given the pressing need to build more inclusive development paths, as well as the successes achieved in several countries over time, the notion that the poorest countries should wait until their state institutions are judged by others to be good enough before they can exercise their national development prerogatives is both unrealistic and destructive of the prospect for development.”

Perhaps countries like Namibia have discovered their own development path in re-regulating the parcel market. The regulator will be responsible for implementation, and resilient checks and balances are being put into place. As another innovation, interoperability has been defined. Interoperability as a concept, though it has thrived in the telecommunications sector, has yet to prove effective in the postal sector.

5. Conclusion

In this analysis, beyond the urgent need to embed market and economic research skills, questions have been raised that need to be addressed through further in-depth case studies. As recalled by François Bourguignon (Chief Economist, Development Economics, World Bank) in his foreword to Laffont's (2005) book proposing an initial theory of regulation in developing countries:

"Today it is increasingly recognized that, in many instances, reformers disregarded the functioning of the regulatory institution, assuming implicitly that it would work as it does in developed countries. Regulatory institutions do not always function well in rich countries; the problems confronting developing countries are therefore more numerous and more serious."

The questions raised by this initial overview of postal regulation in Sub-Saharan Africa are the following:

- What impact does level of development have on the choice of an appropriate regulatory system and market organization, including in states emerging from conflicts? For example, under which conditions would it be more desirable to grant exclusive rights to an operator through a concession from the supervisory ministry without the need for a separate regulator?
- What are the criteria for integrating postal regulation into the scope of a multi-sector regulator, as opposed to a specific postal regulator, and what are the requirements for success in each case? Given the common choice of a multi-sector communication regulator, what about the transport dimension that is essential for forwarding physical items?
- Which pricing methodology should be adopted in view of the market's two-sidedness, the lack of market depth and costing data, and the infrastructure deficiencies? When should uniform pricing be adopted or not in view of inclusion and network funding considerations? What about the costing methodology? What is the impact of PO box pricing on network development?
- How should network access and interconnection be treated where there are severe infrastructure deficiencies? In particular, how should potential abuses of dominant position or non-compliance by private operators be dealt with?
- How should regulatory activity be funded, and by whom? What are the mechanisms to be put in place more generally to prevent capture and enable the objective monitoring and auditing of the regulatory functions?

- What are the conditions to be met by the regulatory system to enable it to develop the trust and predictability necessary for involvement in capacity building by donors and the private sector?
- How can the existing regulatory knowledge be embedded at subregional and regional level to enable constructive exchanges? Should a higher level of regulation be considered in economic regions for reasons of cost-sharing, reinforcement and independence of the regulatory functions, in line with the African regulatory forum for telecommunications or the central banks of West and Central Africa?

Pragmatic answers based on research outcomes are required to optimize postal infrastructure and markets as part of the development agenda. The postal network, through its physical and electronic reach, brings a multiplier effect to the overall economy by enabling the integration of domestic and international supply chains and providing basic service access to the many un(der)served citizens.

Since economic theory on postal regulation in developing countries is still in its infancy, it is a matter of urgency that peer groups should be formed at the regional and intraregional levels to test existing theories, disseminate benchmark practices, develop appropriate tools and evaluate current measures. Evidence-based advocacy targeting governments on the essential role of the postal sector in development is a prerequisite for success.

If there is one lesson to be drawn from this research, it is that, to be efficient, the legislative and regulatory framework must take account of specific local features. Securing the necessary funding to develop the postal infrastructure from lenders and donors, whether public or private, depends on the credibility and predictability of the framework itself, and more particularly, on the quality of regulation and its enforcement.

APPENDIX

TABLE 1

Infrastructure and revenues – 2010 ranking by postal revenues per capita

TABLE 2

Volumes – 2010 ranking by number of letters per inhabitant

TABLE 3

Evolving share of postal revenue in percentage

TABLE 1

Infrastructure and revenues – 2010 ranking by postal revenues per capita

Country***	Development level	Population	Staff number (FT)	Revenue in SDR	Number sorting centres	Number inhabitants/post office	Number inhabitants/post box	Postal revenue/inhabitant in SDR
Namibia	UMI	2,283,289	737	49,648,683	2	14,360	25	21.74
South Africa	UMI	49,991,300	16,704	562,137,522	26	20,125	12	11.24
Botswana	UMI/LL	2,006,945	914	15,677,429	3	9,378	15	7.81
Seychelles	UMI/SI	86,525	100	662,783	ND	17,305	52	7.66
Mauritius	UMI/SI	1,281,214	1,098	9,549,320	2	11,141	546	7.45
Swaziland	LMI/LL	1,186,056	195	7,998,433	2	13,034	36	6.74
Cape Verde	LMI/SI	495,999	220	2,609,183	3	15,030	100	5.26
Lesotho	LMI/LDC/LL	2,171,318	368	10,343,693	1	13,656	60	4.76
Togo	LI/LDC	6,027,798	386	7,845,645	1	87,359	221	1.30
Burkina Faso	LI/LDC/LL	16,468,714	ND	14,083,881	2	189,296	544	0.86
Zambia	LMI/LDC/LL	12,926,409	1,134	10,343,680	1	81,298	256	0.80
Benin	LI/LDC	8,849,892	700	6,416,528	1	88,499	145	0.73
Zimbabwe	LI/LL	12,571,454	2,734	9,089,680	1	37,527	118	0.72
Kenya	LI	40,512,682	4,301	24,955,364	2	58,124	99	0.62
Burundi	LI/LDC/LL	8,382,849	463	3,010,878	1	93,143	799	0.36
Malawi	LI/LDC/LL	14,900,841	935	4,461,776	ND	44,747	271	0.30
Eritrea	LI/LDC	5,253,676	240	1,418,167	1	77,260	298	0.27
Tanzania	LI/LDC	44,841,226	1,322	8,794,448	0	78,807	307	0.20
Niger	LI/LDC/LL	15,511,953	355	2,280,905	1	310,239	1,381	0.15
Mali	LILDC/LL	15,369,809	466	1,871,657	1	187,437	1,098	0.12
Mozambique	LI/LDC	23,390,765	702	2,626,722	ND	185,641	1,381	0.11
Nigeria	LMI	158,400,000	12,285	17,266,688	ND	60,806	153	0.11
Rwanda	LI/LDC/LL	10,624,005	154	1,080,692	1	0.10	-14%	0.10
Uganda	LI/LDC/LL	33,424,683	337	3,354,387	205	54,349	456	0.10
Central African Rep.	LI/LDC/LL	4,401,051	215	320,124	1	183,377	770	0.07
Sierra Leone	LI/LDC	5,867,536	241	411,493	1	104,777	1,579	0.07
Guinea	LI/LDC	9,981,590		235,851	1	262,673		0.02
Ghana	LMI/LDC	24,391,823	2,476		0		159	0.00
Ethiopia	LI/LDC/LL	82,949,541	1,387		0		553	0.00
Liberia	LI/LDC	3,994,122	351		0			0.00
Congo (Rep.)	LMI/LDC	4,042,899	336	0		275		0.00
Cameroon	LMI/LDC	19,598,889	1,260		0	248		0.00
Gabon	UMI	1,505,463	782	03	3			0.00
Chad	LI/LDC/LL	11,227,208	218		0		1,112	0.00
Gambia	LI/LDC	1,728,394	129		0		326	0.00
Equatorial Guinea	LI/LDC	700,401		750,342				0.00
Angola	LI/LDC	19,081,912	832		0			
Madagascar	LI/LDC	20,713,819	2,549	ND	1	33,572	1,866	
Senegal	LI/LDC	12,433,728	0	ND	1	80,218		

World bank ranking: LI (low income), LMI (lower middle income), UMI (upper middle income) LDC (least developed countries) (ECOSOC), SI (small island developing states), LL (land locked country). In bold, regulation questionnaire respondent.

TABLE 2 – Volumes – 2010 ranking by number of letters per inhabitant

Country***	Development level	Number of letters /inhab	International express volumes	International parcel volumes	Letters domestic/ international	Parcels domestic/ international	Express domestic/ international	Domestic parcel/ express	International parcel/ express
Mauritius	UMI/SI	34.54	160,845	1,808	5.73	0.10	8.76	0.01	1.14
South Africa	UMI	29.77			24.09				1.90
Seychelles	UMI/SI	21.91			1.13				12.02
Botswana	UMI/LL	15.32			9.73				
Namibia	LI	10		124,265					
Swaziland	LI/LL	3.81			0.62				
Kenya	LMI/SI	2.68	758,016	25,224	6.56	0.27	14.37	0.03	1.89
Zimbabwe	LI/LDC	1.5	109,325	46,214	2.11	1.75	18.41	0.42	3.16
Lesotho	LMI/LL/LDC	1.41	405,944	137	0.65	0.01	38.15	0.00	0.45
Malawi	LI/LL/LDC	0.66	17,157	1,733	1.22	0.21	5.92	0.10	0.90
Cape Verde	LMI/SI	0.6	75,874	72	0.53	0.01	11.96	0.00	0.03
Tanzania	LI/LDC	0.44	397,049	14,224	0.79	0.59	9.40	0.04	0.29
Senegal	LMI/LDC	0.25	79,693	1,295	0.39	0.05	2.97	0.02	0.54
Zambia	LMI/LL/LDC	0.24	405,944	137	0.65	0.01	38.15	0.00	0.45
Mali	LI/LL/LDC	0.23	1,200	165	1.80	0.02	0.12	0.14	0.11
Togo	LI/LDC	0.19	47,738	9	2.67	0.00	6.56	0.00	0.32
Burkina Faso	LI/LDC	0.17	104,874		2.70				
Eritrea	LI/LDC	0.14	96	2,759	0.89	0.09	0.02	28.74	4.66
Niger	LI/LDC	0.12		1,705	2.51	0.24			
Nigeria	LMI	0.12	56,319	8,744	0.72	0.09	0.15	0.16	0.23
Rwanda	LI/LDC	0.12	113,510		2.14		12.51		0.05
Madagascar	LI/LDC	0.09	312,648	5,412	3.71	1.27	122.42	0.02	
Uganda	LI/LDC	0.05			1.21				
Sierra Leone	LI/LDC	0			0.02				0.12
Benin	LI/LDC		55,406				20.93		1.23
Burundi	LI/LDC		432				0.09		0.67

TABLE 3 – Evolving share of postal revenue in percentage

Country	Letters		Parcels and logistics		Financial and other services	
	2006	2010	2006	2010	2006	2010
Benin	31	40	4	10	65	50
Burkina Faso	19	20	2	1	79	79
Cape Verde	37	29	0	7	63	64
Eritrea	21	26	16	69	63	5
Guinea	23	27	66	51	12	22
Kenya	51	48	0	4	49	48
Madagascar	70	62	1	6	29	31
Malawi	46	48	5	14	49	38
Mali	72	75	20	5	8	26
Mauritius	75	81	5	3	20	16
Mozambique	21	10	2	19	77	71
Namibia	22	19	8	11	69	70
Niger	29	22	4	3	67	75
South Africa	68	65	12	14	20	21
Zambia	32	18	20	28	48	54
Zimbabwe	58	24	2	2	40	74
Average	42	38	10	15	47	47

In bold, activity with highest relative revenue in 2010.

CHAPTER 6

Financial inclusion, postal banking and the future postal economic model

José Ansón and Joëlle Toledano Bialot

1. Introduction

As highlighted in the first chapter, postal operators are transforming their economic models in reaction to the evolution of their core mail business. Their postal income sources are increasingly diversified, from a business line perspective for most, as well as from a geographical perspective for a few, with the purpose of achieving greater economic viability. In this respect, postal financial services are again playing a growing role in the offer to customers, especially those underserved by other financial institutions like banks. At the time of writing, 2.5 billion adults remain without a formal bank account according the Global Findex Database (2012), mostly in developing and emerging economies, although under-banked citizens are also a concern in more advanced economies, after the recent financial crisis.

Diversification strategies are highlighted by postal executives as a means of surviving and developing postal business in an era of electronic communications driven by the massive access of consumers to new information and communication technologies. Posts often mention two levers for achieving greater economic diversification of their activities besides targeting higher efficiency and value in mail delivery. Firstly, they claim to be well positioned to take advantage of the growth of logistics – through globalization or e-commerce – and to further develop the packets, parcels and express segments of their business. Secondly, with the largest physical communication network in the world, they are driven by their proximity to their customers and the trust shown by the latter to develop or reintroduce a range of financial services through their network. Historically, Posts have been major providers of financial services, although they found themselves in retreat in this segment over the second half of the 20th century. They have also gone through

different economic models for the provision of financial services since the creation of the Post Office Savings Banks in England in 1861.

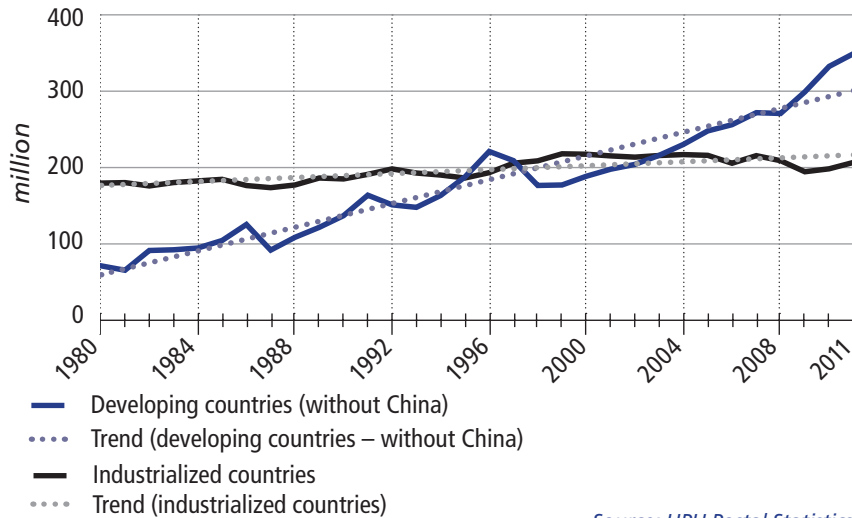
This chapter evaluates the outcomes of these diversification strategies with a focus on the financial channel. It examines the extent to which Posts have further developed financial services with a view to the financial inclusion of populations otherwise unserved or underserved by banks. It also compares different economic models of financial services provision, such as agent banking, where the Post acts as an agent for one or several banks (as was already the case in the Netherlands at the end of the 19th century), or the economic model of fully fledged postal banks. The merits and flaws of these models are assessed in terms of competitiveness of the Post as a provider of financial services. An empirical demonstration of the power of postal networks in reaching financial inclusion goals is provided, as well as the consequences on the local economic development of relatively deprived communities.

According to the January 1879 issue of the UPU's *Union Postale* magazine, "In view of the increasing extent and importance attained to by the Post Office Savings Banks in the vast territories of the Universal Postal Union, it will be interesting to gain a more intimate knowledge of the progress and present position of a branch of business so important to Postal Administrations." The archives thus show that the same economic and social policy concerns were driving the debate regarding the opportunity of providing the population with access to savings and payment services through the postal network in the 19th century. Indeed, in Great Britain for instance, "in addition to the great economical and moral advantages conferred by the British Post Office Savings Banks particularly on the working classes of that country, they have also proved a success from the point of view of the Postal Administration". For Italy, it was highlighted that "it is a remarkable fact that the Southern provinces, among whose inhabitants provident habits were almost unknown before the introduction of the Post Office Savings Banks system, contributed largely to the results obtained. The Neapolitan provinces and Sicily, for instance, deposited much more than 4 millions out of the sum of almost 12 millions. The principal object sought to be attained by the Post Office Savings Banks system, i.e. to encourage provident habits, especially where they are to a certain degree undeveloped, may, therefore, be considered as already achieved."

This chapter is organized as follows. Section 2 describes the evolution of a number of indicators related to the development of postal financial services. The evolution of these indicators can be considered as crucial for the economic survival of some postal operators. Section 3 introduces the various economic models of postal finance. Section 4 analyzes the competitiveness of these models in terms of market participation. Section 5 shows the benefits of postal financial inclusion for economic and social development.

2. A survival strategy for all?

FIGURE 1
Evolution of postal savings accounts (number of)

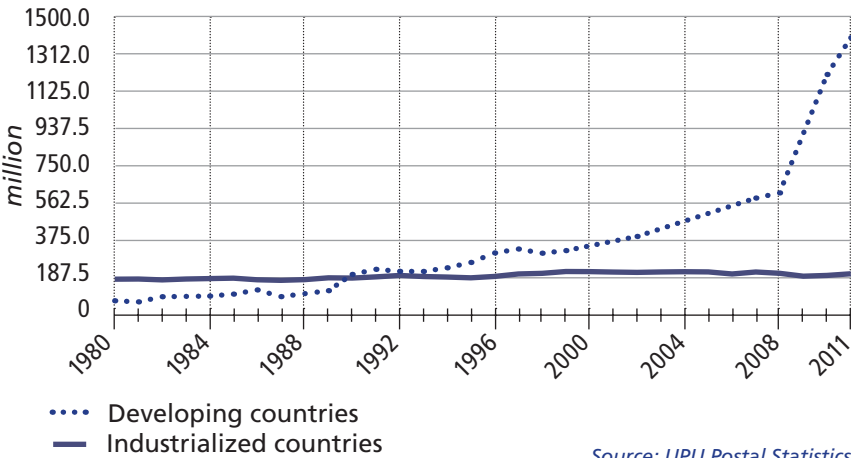


Source: UPU Postal Statistics

As has historically been the case, Posts continue to play an important role in savings mobilization. Figure 1 depicts the evolution of the number of savings accounts held by postal financial institutions over the last 30 years. Postal operators in developing countries have overtaken industrialized countries in terms of the number of savings accounts since the early 21st century, in what seems an exceptional area of convergence between the postal sector in industrialized and developing countries, in

contrast with the findings in chapter 1. Both groups of countries show a positive trend in the development of access to savings through the postal network; however, developing and emerging countries have seen their savings accounts grow at a compounded annual growth rate of 5.3%, compared with the 0.5% in developed economies over the last 30 years. Figure 2 shows that this movement is even stronger once China is added to the postal statistics.

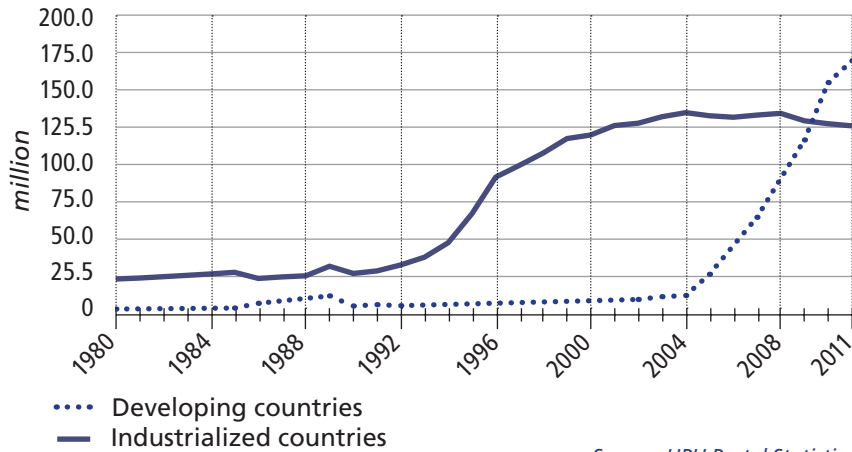
FIGURE 2
Evolution of postal savings accounts (China included)



The same sort of evolution can be noted for giro and deposit accounts at postal financial institutions (figure 3). The strong increase in the mid-1990s in industrialized countries coincides with the wake of the Japanese financial crisis: many Japanese depositors transferred their account to the Japanese postal bank in response to their lack of trust in the Japanese banking system (Scher and Yoshino, 2004).

Thanks to their networks, many incumbent postal operators now play a significant role in the market of accounts, as indicated by the 2012 World Bank Findex-Gallup survey results on account holders (figure 4). However, the untapped potential remains huge for postal operators, as a relatively low percentage of the adult population in many developing and emerging countries have formal bank accounts.

FIGURE 3
Evolution of postal giro and deposit accounts (number of)



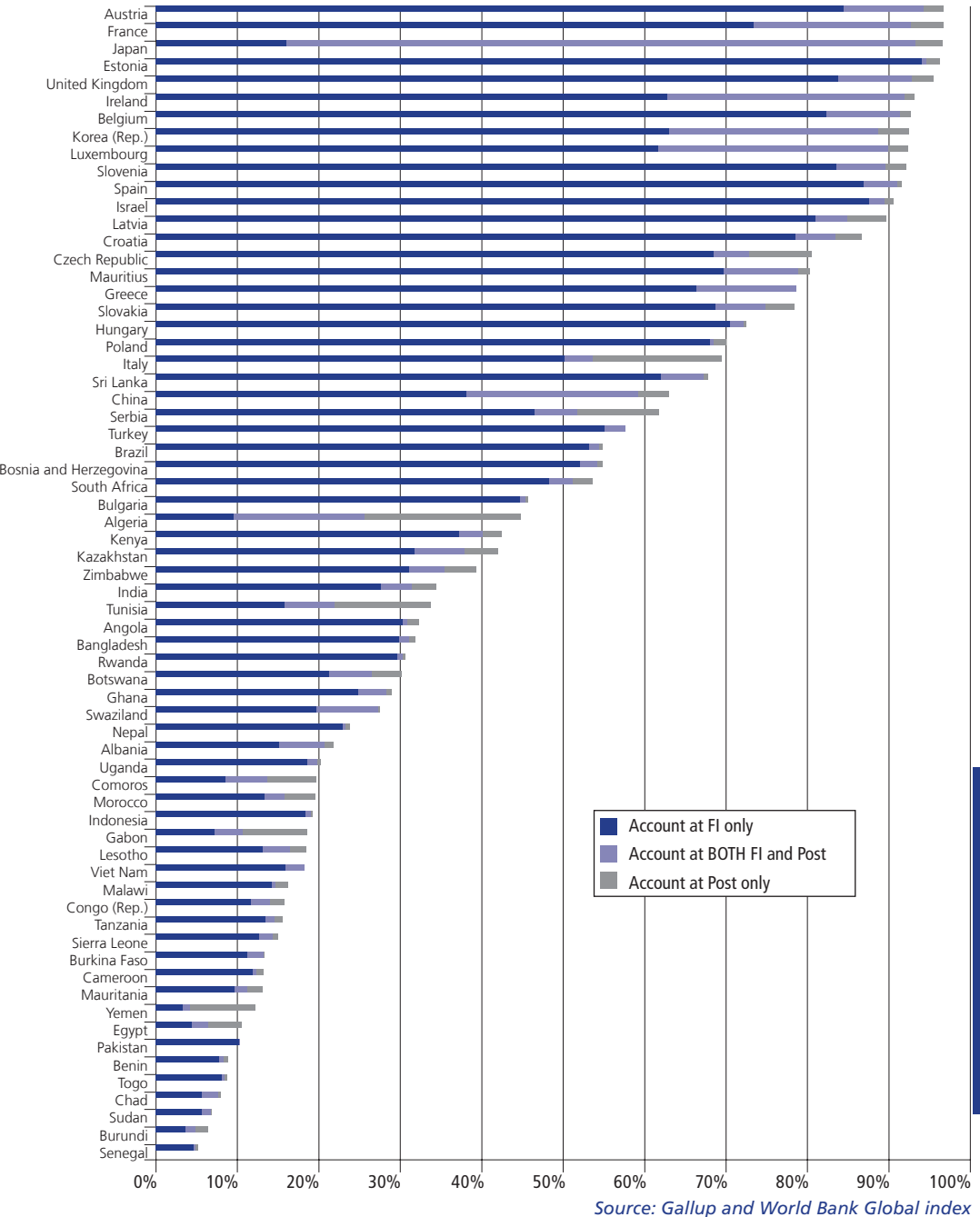
Source: UPU Postal Statistics

In terms of number of accounts, the overall size of the retail banking sector was estimated at 5.185 billion accounts worldwide by McKinsey in 2009, almost 1 billion of which were held in postal financial institutions at the time (i.e. a 19.2% market share of the global retail banking sector in 2009). Since then, the postal figure has grown to 1.5 billion under the influence of an extremely strong rural development of the Postal Savings Bank of China. This underlines the significant weight of postal banks and other postal financial institutions in customer deposits and savings. Even more interestingly, in recent years (more precisely from 2004 to 2008, according to the information available), this market share seems to have substantially increased for a number of postal operators in emerging and developing countries; three of the four BRIC (Brazil, Russia, India and China) countries are leading this evolution. In many countries, the increase in postal operators' market share of accounts has ranged from 5 to 20 percentage points over this period of time, as introduced in table 1 in the appendix. A dozen or so developing and emerging countries have reported a substantial increase in their market share and clearly drive the global figures on postal accounts. In 2011, the overall size of their postal networks topped 260,000 offices – almost as many as the total number of bank branches in the world.

Table 1 also shows that the market share is far less substantial in terms of the value of deposits (ranging from 6% to 11%), which signals either that postal financial institutions have attracted relatively more low-income depositors than banks (which is positive in terms of financial inclusion), or that there are numerous dormant accounts (which shows the limitations of financial inclusion), or a combination of the two. However, the recent increase in the number of accounts held by postal financial institutions, and in the market share associated with this trend, makes the latter hypothesis less likely in the subgroup of developing and emerging countries listed in table 1. Furthermore, the increasing number of pension benefits paid into these accounts by the governments of emerging and developing countries decreases the likelihood of their being dormant.

The positive evolution of the above indicators highlights the opportunities offered by financial inclusion to some postal operators, in order to strengthen their economic sustainability and ensure their economic survival in a time of transformation of their core postal business. The following section introduces the various economic models used for this purpose.

FIGURE 4
Percentage of population with accounts at financial institutions (FI) and the Post (2012)

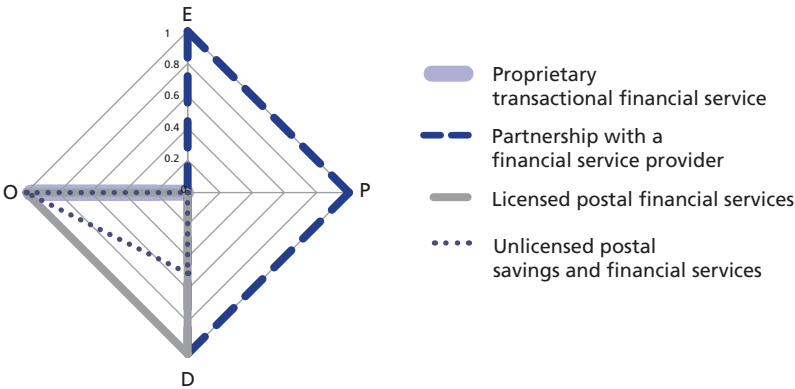


Source: Gallup and World Bank Global index

3. Economic models

The economic models for the provision of financial services by postal operators can be understood along the following four dimensions or inputs: the direct ownership and development of products offered to customers (O), the diversity of the range of products and services made available to customers (D), the partnerships involved in the provision of financial services to customers (P), and the degree of exclusivity in providing these services along with one or several partners (E). The spider diagram in figure 5 describes four major economic models applied by postal operators around the world that mix these four main inputs to various extents. Figure 6 adds another model widely applied by postal operators in their provision of financial services to customers.

FIGURE 5
Economic models of postal financial services and their inputs



The simplest economic model is the provision of proprietary transactional financial services. In its purest version, it consists in developing a very limited range of own financial services, generally payment services without a major involvement of external financial partners and no role for exclusivity agreements.

Another approach involves developing an economic model based on a partnership with an external financial service provider, most of the time exclusive in its purest form; this type of partnership enables a wide and diversified offer of financial services to customers while minimizing the

development of in-house financial services and avoiding exposure to any credit risk.

A third economic model is for the postal operator to act as an unlicensed postal savings and financial services provider that combines a wider, but not necessarily full, range of own financial services without the intervention of a partner or exclusivity issues. The postal operators applying this economic model are not involved in financial intermediation: their investments are legally restricted, and there is no money creation through credit.

The fourth economic model consists in offering postal financial services that are licensed from a central bank or financial regulatory authority's perspective, enabling the in-house development of an almost full range of financial services relative to banks' offers. In this case, the financial services are subject to the reserve requirements of central banks given the Post's role in financial intermediation.

Furthermore, as shown separately in figure 6, a very large number of postal operators apply an additional economic model for the provision of some financial services, by simply acting as cash merchant for an external provider of transactional financial services.

FIGURE 6
The cash-merchant model

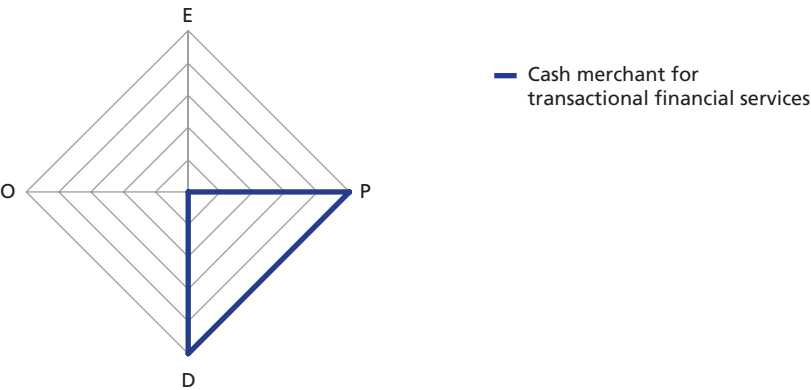
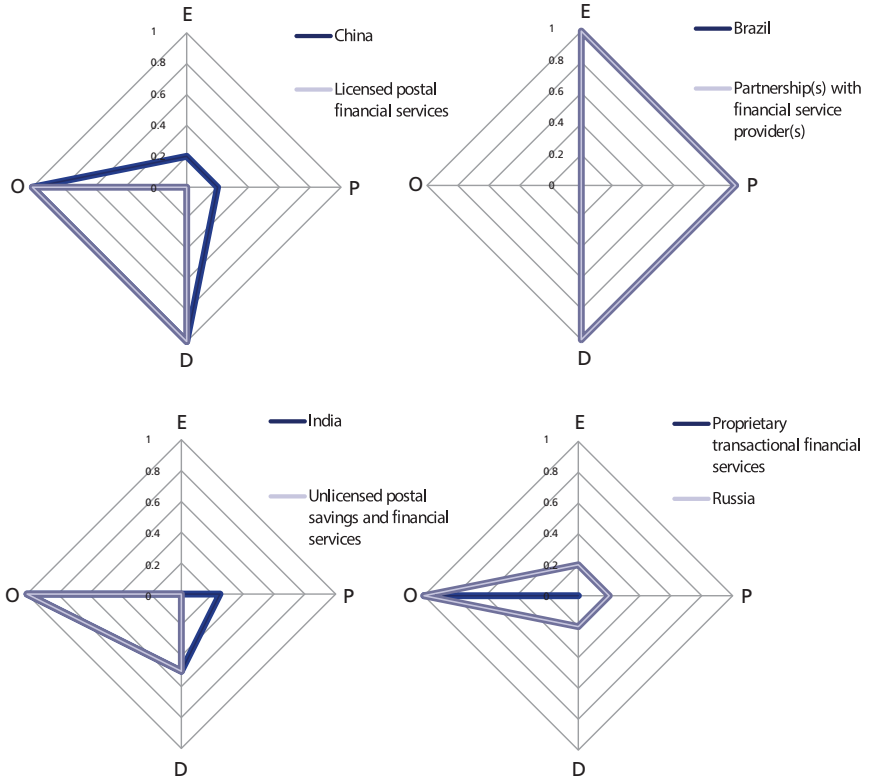


Figure 5 is very useful for describing the BRIC country cases. While the Russian Post comes the closest of all BRIC countries to the pure proprietary transactional financial services model described in figure 5, Brazil perfectly matches the model of partnership with a financial service provider illustrated in figure 7. The economic model currently applied by India Post corresponds the most to the case of unlicensed postal savings and financial services described in the spider diagram, while the Postal Savings Bank of China most closely reflects the pure model of licensed postal financial services (see figure 7).

While the BRIC countries illustrate a wide heterogeneity in terms of models for the provision of financial services through the Post, strong commitment to integrating the postal network in financial inclusion policies is shown by the government, the central bank or the financial regulatory authorities. A clear and proactive public policy of financial inclusion is at the heart of the successes (Brazil, India, China) and the future strategic development plans (Russia). This policy is also related to the progressive development of social government-to-person (G2P) payments that BRIC and other governments have promised to deliver to their populations (unemployment, pension and other benefits). As demonstrated for Brazil in section 5, Posts can become the first lever for formalizing economic and financial exchanges in relatively deprived communities. Formalizing the economy is paramount to the development of social security and safety nets.

FIGURE 7
BRIC and pure models



Source: UPU

How are these different models distributed among postal operators around the world? A survey conducted for a global panorama on postal financial inclusion in 2012 provides data on these different models. While 83.5% of postal operators supplying financial services are involved in cash-merchant models (business model 1), a lower proportion (63.3%) provide their own proprietary transactional services (business model 2, or “Russian model”). The proportion is much lower for postal operators involved in a partnership with an external financial service provider (business model 3, or “Brazilian model”: 24.5%) or in the provision of unlicensed postal savings and financial services (business model 4, or

“Indian model”: 24.5%). Finally, only 8.5% apply an economic model with licensed postal financial services (business model 5, or “Chinese model”).

The survey confirms that the aggregate figures provided in section 2 on the global evolution of accounts held by postal financial institutions result from the dynamic development of a dozen or so postal operators with large networks from developing and emerging countries. The economic reality of the vast majority of postal operators is still in the provision of payment services, and it remains to be seen whether they will be able to replicate the success of the countries involved in the provision of accounts.

What determines the choice of these different economic models for providing financial services through the Post? The provision of financial services depends on three main inputs, or internal factors: the financial and banking know-how of the institution, the information and communications technology in place, and the physical network of offices or branches. The experience of the countries studied in this paper also shows that these core competencies cannot be mobilized without the Post’s full commitment in terms of business strategy. As already highlighted, these resources cannot always be integrated into the Post’s own structure, but mutually beneficial partnerships can be formed.

Certain external factors are also important in determining the right model for a given environment: the willingness of the government, central bank or regulatory authorities to push for a financial inclusion agenda; the resistance of banks to the introduction of new competitors; the understanding of the role of the postal sector by its associated ministry or postal regulator; and the public trust in the Post relative to banks. These factors interact with the internal factors and lead to a choice with respect to the role of the Post in financial services, and more particularly in financial inclusion policies. They also frame the extent to which the services are integrated.

All of these elements lead to a wide range of possible situations. Thus, the economic model selected is likely to be the one that makes the best use of internal factors – both within the Post and the potential partner – while continuously adapting to the external environment. By matching these models with wider financial inclusion goals, governments, central

banks and other financial regulatory authorities can facilitate the most suitable choices for their population's economic and social welfare.

This section has identified a range of economic models of postal finance and related policies. Following is an empirical assessment of the impact of the different models in terms of market share, as well as some econometric results evaluating the effects of access to basic finance, by previously unbanked populations, on local economic development.

4. Competing on the retail banking market: the choice of model matters

This section provides a simple econometric model for estimating the impact on the market share of accounts of the different postal finance models described above. It tests the extent to which the features of some models facilitate or hinder the Post's market participation. It should be borne in mind that the link between market participation and profit is not necessarily linear. This approach constitutes only a first step towards a better understanding of what frames the Post's stake in one of the most important segments of the retail banking business: deposits and accounts. It aims to quantify and test more rigorously the recent aspects of postal finance already presented in the chapter.

In order to determine the model to which postal financial service providers are most closely aligned, we performed a qualitative assessment and allocated all country cases to at least one of the business models introduced above. Some countries may share important features with two different business models and are thus linked to two business models instead of one. Indeed, a continuum of models that share key features with the pure business models described in the previous section has been identified, underlining the wide range of situations.

The econometric model tests the following hypotheses. First, a network effect should be found: the impact of leveraging the postal network to increase access to finance and accounts is expected to be significantly positive, irrespective of the model of postal finance selected for this purpose. This is because of the potential offered by the widespread physical network of post offices. If this hypothesis cannot be rejected, the

quantitative measure associated with it could be called the “postal network effect”.

However – and this constitutes the second hypothesis – the model of postal finance adopted is not expected to be neutral in terms of the Post’s market participation. If various postal finance models are neutral in terms of the market participation outcome, then their respective potential contributions to the Post’s market share should not be significantly different. If this second hypothesis is true, we will refer to this result as the “non-neutrality of postal finance models”.

Third, if the second hypothesis is confirmed, some models would then be related to greater market participation and others, a more limited one. Models where the provision of financial services is more integrated into the structure of the Post are expected to result in relatively higher market shares of accounts than those relying on external partnerships and agreements. This is the “integration effect”. Integration of the services provided reduces possible conflicts of interests between the parties involved.

It is important to keep in mind that the model adopted by the Post is not necessarily a free choice. Rather, it very much depends on the local conditions and constraints faced when the service is launched. Only external institutions can usually change these conditions (government, ministry of finance, ministry of communications, central bank, financial regulator, postal regulator, etc.).

We would expect models sharing many features with business models 4 and 5 – where account-based and savings services are more or less fully integrated into the Post – to be more favourable in terms of the Post’s market participation than others where the interests of partner banks may conflict with those of the Post. Likewise, models relying on the building and development of an integrated customer relationship through the provision of own accounts would be expected to strengthen the Post’s market position relative to models focused on the provision of financial products and services and accounts on behalf of external partners. We do not conclude that a given model is superior to another in terms of profitability for the Post – the market share alone is not enough for this purpose. Rather, we simply analyze how a model determines the importance of the Post in the accounts market segment.

Taking account of heteroskedasticity, the following one-equation OLS regression, which explains the Post's market share in the retail banking business in terms of accounts as a function of the business model adopted by the Post, was run:

$$\begin{aligned} \text{Market share of accounts (\%)} = & a + b * \text{BUSINESS MODEL 5} + \\ & c * \text{BUSINESS MODEL 4} * \text{BUSINESS MODEL 5} + \\ & d * \text{BUSINESS MODEL 3} + e * \text{OUT} + \\ & (f * (\text{Initial market share})) + \text{error term} \end{aligned}$$

In this equation, the explanatory variables BUSINESS MODELS 3, 4 and 5 are dummy variables indicating whether the country's postal financial services provider shares some important features with business models 3, 4 and 5 described in the previous section (1 if yes, 0 otherwise), or with several of these models (1 being possible for each country). None are mutually exclusive for a country except for China (business model 5), India (business model 4) and Brazil (business model 3) as pure cases. The interaction term BUSINESS MODEL 4 * BUSINESS MODEL 5 takes the value 1 if a model shares relatively important features with both business models 4 and 5. OUT is another indicator variable for those countries where the postal financial branch has been sold off but operates through the postal network – or where the Post is a minority shareholder in the bank operating it. BUSINESS MODEL 4 alone is not part of the equation, to prevent a perfect co-linearity situation when it is combined with other variables. The constant a can be interpreted as the average market share brought by a postal network, irrespective of the model of postal finance adopted in the country. The terms a , b , c , d , e and f are parameters to be estimated econometrically. The full econometric results with more estimation details are provided in tables 3 and 4 in the appendix.

The first hypothesis – the significant “postal network effect” – not only means the non-negativity of the value of the constant a , but rejecting that its value is below a threshold of 10%. The second hypothesis – the “non-neutrality of postal finance models” – means that the coefficients b , $b + c$, d and e , measuring the marginal contribution of each business model to the market share, do not take the same values once the common “postal network effect” has been isolated by the constant a . The third hypothesis testing the “integration effect” – provided that the neutrality of postal finance models can be rejected – means that the coefficients b and $b + c$ (expected to be positive) are significantly higher than the coefficients d and e .

The first hypothesis of a significant “postal network effect” cannot be rejected. Generally, the positive value of the estimate of the constant term of the equation indicates an effect on the Post’s level of market share automatically brought by the postal network dimension, regardless of the specific postal finance model adopted by the country. This effect is estimated by our econometric model at between 15% and 26% of the market share of accounts, on average. Customers geographically excluded from access to finance due to the location choices of banks most likely originate it. This outcome of the econometric estimation also confirms that a substantial proportion of the population of a country previously excluded from access to bank accounts did not voluntarily choose not to use formal financial services, but were rather prevented from doing so. If this is so, the overall market size of the retail banking business will eventually grow through the significant participation of the Post.

The second hypothesis of “non-neutrality of postal finance models”, stating that the market share and importance of the role of the Post in the retail bank account segment is not neutral to the model adopted, is confirmed. Indeed, the importance of the role of the Post – as measured by its level of market participation – is framed by the features of the economic model chosen to provide access to accounts.

With respect to the third “integration effect” hypothesis, the econometric estimation results are striking in that, *ceteris paribus*, business model 5 appears to be the most effective in terms of market share gains and importance of the role of the Post in the opening of accounts, while a combination of business models 4 and 5 comes just behind. The features of business model 3 exert either negative or ambiguous marginal effects on the level of market participation once the “postal network effect” has been taken into account, and the OUT model features are associated with a statistically significant negative impact on the market participation. The main econometric estimation results are qualitatively robust to the introduction of a control variable for the initial level of market participation.

The results of the econometric model suggest that gains in market share and a greater role of the Post in the opening of new accounts are likely to be subject to the degree of integration of account-based and other financial services within the Post’s structure. Although by no means impossible, assuming greater importance in the accounts business

seems less easy when an exclusive partnership agreement is in place, such as in the Brazilian and OUT cases, compared with those where the postal institution has developed a full range of financial services by itself, without necessarily excluding partnerships, as is shown in the continuum of models sharing important features of the Indian and Chinese models (business models 4 and 5). Besides the pure Brazilian case reflected in business model 3, one of the least favourable options for the market position and associated importance of the Post is, unsurprisingly, the OUT model. Anecdotal evidence can be found on the cannibalistic strategy of banks acquiring or merging with former postal financial institutions or banks. More dramatically, the economic viability of a number of postal networks in least developed countries was jeopardized after the postal financial institution attached to the Post was hived off and sold. Further, greater financial exclusion resulted, since the new financial institution also lost access to most – if not all – post offices and often had to create new offices and counters. Such was the case in Mali and Tanzania.

The choice of business model is nevertheless influenced by a number of external constraints. A supply of integrated postal financial services is not always possible in the short run. Sometimes, partnerships and less integrated services are the only possible choice for Posts, given their initial limited knowledge of finance, or their country's financial sector policy. Nevertheless, different levels of integration lead to different intensities of the Post's participation in the retail banking business.

We have therefore discussed the possible outcome of a change in business model once the model has been allowed to evolve by the government, central bank or another financial regulatory authority. Now we will examine the possible impact of this decision on the role of the Post in terms of financial inclusion.

5. Posts at the heart of effective financial inclusion policies

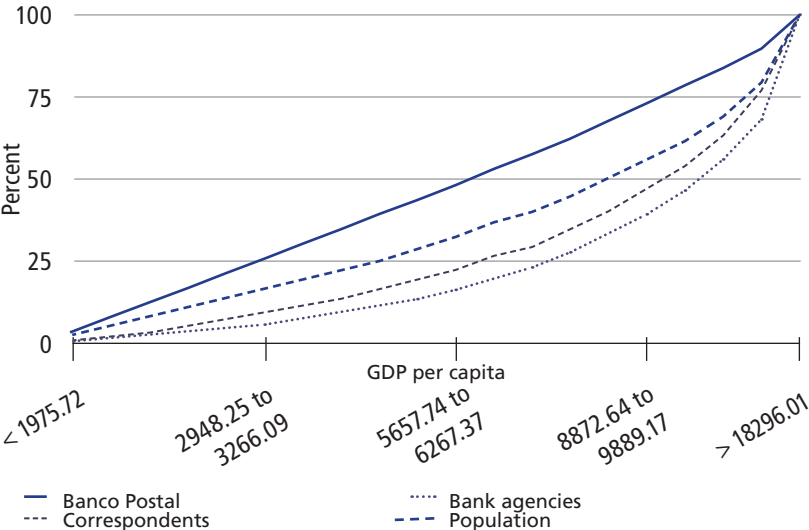
After having assessed the determinants that frame the Post's market participation, this section provides an econometric evaluation of the impact of the use of a postal network to achieve financial inclusion goals, as discussed in Ansón and Bosch Gual (2008).

The case of Brazil is used to evaluate the impact of a financial inclusion policy conducted through the postal network. The results were derived in Ansóñ and Bosch Gual (2008) after combining several Brazilian databases built for this very purpose. Three issues were studied: the impact of geographical access to finance, the use of postal bank (Banco Postal) services, and the effects of this initiative on local economic development (see also Kumar, 2004).

5.1 Geographical access

One way of analyzing the geographic distribution of financial intermediaries is to group municipalities according to their population or wealth by semi-decile (as applied in Boldron et al, 2006). We can infer from this exercise that Brazil's Banco Postal agencies, other correspondents and the traditional bank agencies all present different network topographies. Municipalities with higher overall GDP per capita and population tend to have a denser network of financial intermediaries. However, a comparison of these networks at different levels of income and population reveals that they complement each other in some cases and overlap in others, possibly creating some competitive pressure.

FIGURE 8
Distribution of the different networks and population according to GDP per capita semi-deciles, 2005

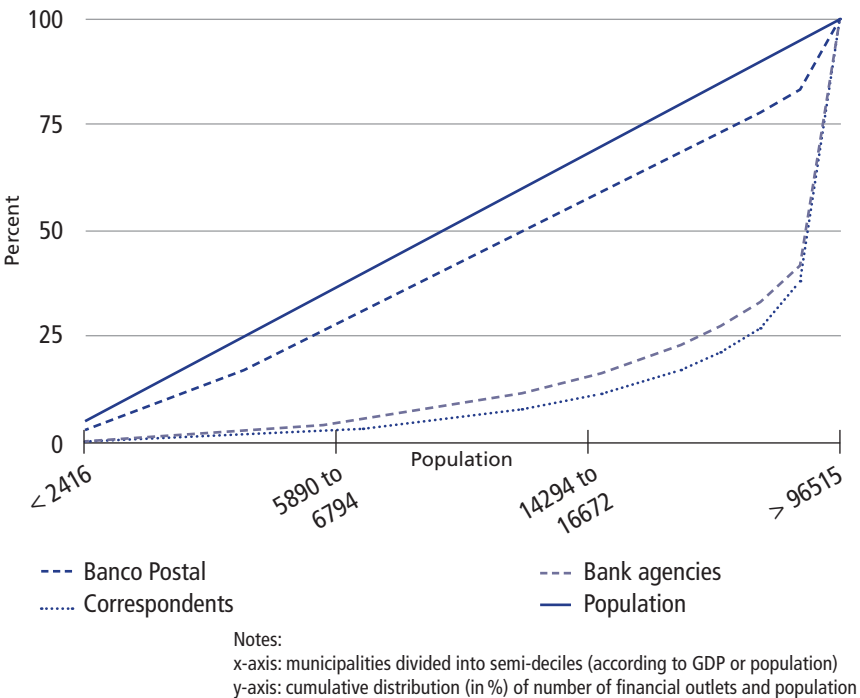


Notes:
x-axis: municipalities divided into semi-deciles (according to GDP or population)
y-axis: cumulative distribution (in %) of number of financial outlets and population

Source: UPU, IBGE

Figures 8 and 9 may help to illustrate the different distributions of the networks among municipalities according to their wealth and population. The population mainly clusters in the richer areas; half of the population is concentrated in the upper third of the wealthiest municipalities (in terms of GDP per capita). Banco Postal is the most evenly distributed network among semi-deciles, while most traditional bank agencies and banking correspondents are located in richer and more populated areas; less than one quarter of their outlets are located in the lower half of municipalities (by GDP per capita).

FIGURE 9
Distribution of the different networks and population according to population semi-deciles, 2006



Source: UPU, IBGE

5.2 Use of financial services provided through the postal network

Tables 5a and 5b in the appendix present the distribution of the use of different Banco Postal services and products across semi-deciles. Table 5a presents the number of current deposits and savings deposits, and the

number of remittances. At first glance, we can see that wealth and the per-capita demand for Banco Postal services and products are not proportionally related. In fact, those living in the poorest 50% of municipalities, which represent less than one third of the population (29%), account for some 50% of all Banco Postal deposits. This is a very positive result as regards financial inclusion, as it indicates that there are more Banco Postal deposits in poorer municipalities.

Access to credit is one of the most quoted constraints to business development by the self-employed and micro-entrepreneurs. From its creation until the end of 2006, Banco Postal granted 1.93 million loans. In table 5b, credit services are analyzed, including microcredit, loans and e-loans. In 2005, 10% of the total Brazilian population, concentrated in the poorest 20% of municipalities, received some 20% of all microcredit loans, while the richest semi-decile, containing some 20% of the population, received less than 10% of all microcredit loans granted. The effect is even more apparent with regular loans. Nearly one quarter of all loans were granted to the poorest two deciles, while only about 4% of loans were granted to the richest 5% of Brazil's municipalities.

5.3 Local economic development

We analyzed the treatment effect of a Banco Postal branch opening in 2002 on seven variables: number of new firms, variation in the level of employment, growth in the average number of employees per firm, growth in proportion of salaried employees, number of new bank agencies, number of new correspondents and growth in real GDP. All the outcome variables are presented as the difference in their values between 2001 (or 2000, if data was not available for 2001) and 2005. The results are presented in table 6 of the appendix.

The number of firms is used to study local entrepreneurship. The level of employment is used to assess job creation. To determine the size of the firms, we used the average number of employees per firm. In order to understand the level of formalization of the labour market, we used the proportion of salaried people compared with all employees.

To determine whether the launch of Banco Postal had generated a positive externality on other financial intermediaries (i.e. whether it had attracted bank agencies and other correspondents), we looked at the change in

the number of other correspondent agencies and bank branches. Lastly, we looked for any Banco Postal impact on local economic growth.

The average outcome for the treated groups and for the control (non-treated) groups is summarized in columns i and ii of each table; column iii represents the difference between columns i and ii. This can be interpreted as the average treatment effect. A positive difference means that the average effect on the treated group is greater than on the non-treated group, and vice versa.

The estimates given in table 6 reveal that the launch of a Banco Postal agency in a municipality in 2002 had significant average causal effects on most of the variables concerned. In a four-year period (2002–2005), the municipalities that had received the treatment experienced a formalization of their labour market and attracted more bank agencies and correspondents.

In concrete terms, the increase in the number of bank agencies was 56% higher in municipalities with a Banco Postal agency in 2002, compared with those without Banco Postal. A complementarity between postal and bank networks has been highlighted in the past. In 1879, *Union Postale* stated: “The statistics taken by the English Postal Administration afford, moreover, sufficient grounds for the conclusion that the Post Office Savings Banks are resorted to by the lower classes of the population to a much greater extent than was the case with the private Savings Banks. It may, from this, be presumed that the existing communal and district Savings Banks would suffer no considerable reduction in their business owing to the establishment of Imperial Post Office Savings Banks, but that a fresh field would be opened for the exercise of economy among the people.”

Another positive impact brought about by Banco Postal was the average of 37 additional new firms per municipality with Banco Postal in four years, compared with municipalities without Banco Postal. The treated municipalities experienced 20% more growth in the number of additional new firms than non-treated municipalities.

6. Conclusion

In concluding its 1879 report on postal savings institutions, *Union Postale* stated the following: “In one word, the weightiest opinions were, at the before-mentioned [international] Congress, in favour of a more extensive introduction of the system of Post Office Savings Banks. The conviction was general that such establishments would not cause competition detrimental to the existing Savings Banks, but form, on the contrary, a complement of the established local institutions, as useful as it is necessary.”

The finding on the creation effect of the introduction of Banco Postal in Brazil tends to confirm that, in absolute terms, greater access to accounts and financial services through the postal network supports the development of the overall financial markets from a retail banking perspective. However, the business models adopted by the Posts seem not to be neutral regarding the share, for the postal financial institution, of this larger market size.

This chapter has provided new insights on the economic models of postal finance. It has also identified a significant trend towards diversification of Posts in this area in a period of structural decline of mail volumes, further intensified by the last global economic and financial crisis.

A number of postal operators with large networks have been increasing their provision of financial services over the last decade, particularly to developing and emerging countries' unbanked people. The financial inclusion agenda of the governments of these countries often matches the willingness of the Post to strengthen the economic viability of its network. Despite the emergence of new information and communication technologies and mobile banking services, a physical and human network continues to be necessary for providers of innovative financial services.

There is no one-size-fits-all model for the provision of financial services through postal networks. As has always been the case in history, several models compete to serve more citizens and include them in the formal financial system. A continuum exists, ranging from the agent banking model where the Post acts as an agent for a bank, to the fully fledged postal bank model. Other operators focus only on non-account-based services on their own or as agents. Internal and external factors determine

the choice of model. Models featuring a greater direct control by the postal operator usually lead to a greater market participation for the operator. However, not all Posts are initially ready to develop their own financial and account-based services. Some start with an alternative model in order to “learn by doing” and then move towards a model in which they have more direct control over the provision of financial services through their network. Integration of the financial services offering at some stage appears to be decisive if Posts are to play a leading role in access to finance in their countries, while simultaneously securing their future economic viability.

From an economic development perspective, the case of Brazil’s Banco Postal has revealed powerful impacts in relatively deprived communities. In addition to formalizing local economies, the introduction of Banco Postal led to new firms, more employment and more banks. Again, these positive impacts are not new: they have been proven many times in many countries in the past.

However, the contribution of Posts to financial inclusion and development is far from over. A vast untapped market of almost 2.5 billion unbanked customers seems available for Posts if they are ready and determined to seize the opportunities. These ambitions have much better prospects, though, if they are closely linked to financial inclusion policies at the level of the government, central bank or financial regulatory authority.

As Mr Luzzatti, who contributed to the establishment of the Italian Post Office Savings Banks, said in the above-mentioned Congress, “Competition in good can never be attended with harm; on the contrary, based on good it always produces an increase of strength, an improvement, but it has never a weakening influence” (*Union Postale*, 1879).



APPENDIX

TABLE 1

Posts and accounts in emerging and developing countries

TABLE 2

Posts and accounts in advanced economies

TABLE 3

Estimating the share of Posts in the (bank) accounts market according to the postal finance model

TABLE 4

Testing of various hypotheses

TABLES 5a and 5b

Summary of the distribution of the use of Banco Postal services

TABLE 6

Summary of the results of the impacts of Banco Postal

TABLE 1A

	Evolution of the market share of the Post				Total of the Post and CAGR	
	Value of deposits (market share)		Number of accounts (market share)		Value of deposits	Number of accounts
Country (associated model(s))	Starting period (1999)	Ending period (2008)	Starting period (1999)	Ending period (2008)	Ending period (2008)	
Brazil (Brazil)			0%	7%		8 mio
India (India)	14%		20%	28%	5.5 tio (CAGR 13%)	206 mio (CAGR 7%)
China (China)	6%		25%	39%	2.32 tio (CAGR 19%)	342 mio (CAGR 9%)
South Africa (China)			12%	20%		6 mio (CAGR 15%)
Egypt (China, India)			30%	45%		18 mio (CAGR 11%)
Kazakhstan (China, India)			0%	27%		3 mio
Namibia (China)			50%	68%		0.5 mio (CAGR 10%)
Senegal (China, India)			3%	8%		0.3 mio (CAGR 20%)
Algeria (China, India)			29%	29%		4 mio (CAGR 2%)
Tunisia (China, India)			40%	50%		3 mio (CAGR 6%)
Yemen (China, India)			6%	13%		0.4 mio (CAGR 19%)
Comoros (?)						0.02 mio
Burkina Faso (China, India)				10%		0.4 mio (CAGR 3%)
Burundi (China, India)				85%		0.1 mio (CAGR 13%)
Belarus (?)				8%		0.2 mio (CAGR 0%)
Morocco (China, India)			13%	18%		3 mio (CAGR 9.1%)
Pakistan (China, India)				14%		3.2 mio (CAGR 0%)

1. Total number of accounts: 973 million (mio) postal (savings) accounts – 600 million (mio) in developing and emerging countries. Since very few relevant countries in terms of market size are missing, the total should approximate 1 billion (bio) accounts in authors' views. In turn, this total number of postal accounts corresponds to 19.2% of total personal (savings) accounts in the world (see sources of data and assumptions made below). It is worth to be noted that this number was also approximated recently by the World Savings Banks Institute (WSBI) (e.g. in CGAP Advancing Savings Services Meeting Briefing Note, Paris, 23-24 February 2010, or Peachy (2006)) yet a number of savings institutions are not postal financial institutions and vice versa.

2. One of the pure polar cases of postal finance according to section

3 – Russia – is not mentioned in the table since it does not provide accounts yet.

3. The data source for the number of postal accounts and value of deposits is a combination of UPU Postal Statistics and direct data provided in events such as the 2009 UPU-AFI Conference on Financial Inclusion and Postal Banking, the 2010 UPU POC Forum on Postal Financial Services or the 2010 UPU POC Plenary Forum.

4. The data source for the number of total retail banking accounts is the Financial Access Initiative Framing Note (October 2009) "Half the World is Unbanked" produced by McKinsey & Company, further developing a work started by Honohan (2008). In some cases, the total value of deposits in a country is obtained through central bank data.

TABLE 2

	Evolution of the market share of the Post				Total of the Post and CAGR	
	Value of deposits (market share)		Number of accounts (market share)		Value of deposits	Number of accounts
Country (associated model(s))	Starting period (1999)	Ending period (2008)	Starting period (1999)	Ending period (2008)	Ending period (2008)	
France (China)				21%		40 mio
Italy (India)			16%	20%		30 mio (CAGR 4%)
Switzerland (India)		9%	9%	17%	47 bio (CAGR 8%)	3.6 mio (CAGR 7%)
Germany (OUT)			10%	8%		22 mio (CAGR 0%)
Netherlands (OUT)				30%		16 mio
Japan (China)			53%	54%		
New Zealand (China)				20%		2.6 mio
SOUTH Korea (India)						21 mio (CAGR 0%)
Greece (Brazil, OUT)				6%		0.9 mio (CAGR 6%)
Slovenia (Brazil, OUT)				4%		0.3 mio (CAGR 0%)

5. The assumptions made on the number of banks account per banked adult are derived from the Financial Access 2009 report by the Consultative Group to Assist the Poor (CGAP). CGAP roughly estimates to three the number of deposits per banked adult worldwide. In our table, two accounts per banked adults were assumed in developing and emerging countries, while four accounts per banked adults were supposed in advanced economies.

6. The compounded annual growth rate (CAGR) corresponds to the most recent period 2004-8.

7. While the ending period (2008) market share is directly computed by dividing the number of postal accounts by the total retail banking accounts, the market share for the starting period is interpolated by establishing a relationship between the CAGR of postal accounts and the growth rate of the gross domestic product (GDP) during the same period. This means that the initial market share is significantly

lower than in the ending period if the CAGR of postal accounts or deposits was significantly above the GDP growth rate. It is assumed that the total retail banking accounts grow at the GDP rate.

8. The value of deposits is indicated in local currency, except if otherwise indicated between parentheses (often expressed in trillions (trio)).

9. Netherlands is considered as a special case in this table since the financial institution that partly took its roots in the Post is now an international banking group with a non-significant participation of the historical postal operator in its capital and strategies.

TABLE 3
Estimating the share of Posts in the (bank) accounts market according to the postal finance model

Variable (coefficient)	Eicker-White OLS regression 1	Eicker-White OLS regression 2	Eicker-White OLS regression 3
Constant (a)	21.6** (2.9)	20.3* (2.9)	8.8** (2.6)
BM 5	15.4* (9.0)*	16.7* (9.1)	7.4* (3.6)
BM 4 * BM 5	-7.1 (11.8)	-7.1* (11.9)	-3.9* (4.6)
BM 3	-14.3** (5.2)	-9.2** (3.8)	-9.4** (1.5)
OUT (e)	-2.4* (6.0)	-8.2** (3.8)	-9.4** (0.1)
Initial market share (f)			0.9** (0.1)
Number of observations	24	23	17
R2	0.23	0.25	0.87
F-stat	12.8**	9.3**	

- Notes:
1. Compared with regression 1, regression 2 does not include the Netherlands in the estimation samples since it is considered a special case (see comments to tables 1 and 2). The Netherlands and other countries for which it was not possible to estimate the initial market share are not part of the observations for regression 3. This last regression should be taken with extreme caution given the very low number of observations.
 2. ** and * denote, respectively, a 1% and 5% statistical significance level.

TABLE 4
Testing of various hypotheses

Tests	Specification of the hypothesis	Statistical result	Rejected or not
I. Postal network effect (rejection meaning significant network effect)	a = 0 (expected to be rejected a > 0)	48.9**	Rejected
	a = 10 (expected to be rejected and a > 10)	12.6**	Rejected
II. Non-neutrality of the postal finance model (if all as expected, then postal finance models are not neutral in terms of market participation)	b = (b + c) = d = e (expected to be rejected)	4.27**	Rejected
	b = (b + c) (not necessarily expected to be rejected)	0.36	Not rejected
	d = e (not necessarily expected to be rejected)	0.02	Not rejected
III. Integration effects (rejection meaning positive impact of integration on market participation)	b = d (expected to be rejected and b > d)	7.7**	Rejected
	b = e (expected to be rejected and b > e)	7.1**	Rejected
	(b + c) = d (expected to be rejected and (b + c) > d)	4.39**	Rejected
	(b + c) = e (expected to be rejected and (b + c) > e)	3.9*	Rejected

Note: ** and * denote, respectively, a 1% and 5% statistical significance level.

TABLE 5a
Summary of the distribution of the use of Banco Postal services (Ansón and Bosch Gual, 2008)

	Population		Current accounts (#)			Saving accounts (#)			Domestic remittances (#)		
Semi-decile GDP p.c.	%	% cumul	%	% cumul	average	%	% cumul	average	%	% cumul	average
<1,975.72	2.49	2.49	3.86	3.86	2,860	4.42	4.42	718	0.82	0.82	11.60
1,975.72 to 2,236.23	2.55	5.05	3.92	7.78	2,899	4.36	8.78	709	1.26	2.07	17.87
2,236.23 to 2,457.80	2.46	7.51	4.58	12.36	3,399	4.67	13.45	762	1.34	3.41	19.08
2,457.80 to 2,686.05	2.63	10.14	4.19	16.55	3,104	4.82	18.27	782	1.62	5.03	23.07
2,686.05 to 2,948.25	2.56	12.70	4.49	21.04	3,315	5.04	23.31	816	2.18	7.21	30.85
2,948.25 to 3,266.09	2.74	15.43	4.58	25.62	3,401	5.58	28.88	909	3.76	10.97	53.68
3,266.09 to 3,782.46	3.23	18.67	5.55	31.17	4,092	5.55	34.44	899	6.05	17.02	85.76
3,782.46 to 4,413.16	2.93	21.60	4.90	36.07	3,640	5.20	39.63	847	2.80	19.82	39.90
4,413.16 to 5,035.39	3.29	24.89	5.07	41.14	3,753	5.70	45.33	926	2.51	22.33	35.69
5,035.39 to 5,657.74	3.76	28.66	4.78	45.92	3,539	4.58	49.91	744	2.65	24.98	37.66
5,657.74 to 6,267.37	3.61	32.27	4.47	50.39	3,309	3.66	53.57	594	3.27	28.24	46.48
6,267.37 to 6,846.34	4.45	36.72	4.78	55.17	3,526	4.17	57.74	676	3.83	32.07	54.23
6,846.34 to 7,480.50	3.18	39.90	4.22	59.39	3,125	3.68	61.42	598	3.80	35.87	54.08
7,480.50 to 8,139.71	4.73	44.63	4.55	63.94	3,369	3.77	65.19	612	3.92	39.80	55.77
8,139.71 to 8,872.64	5.76	50.39	5.22	69.16	3,865	4.92	70.11	799	5.85	45.65	83.22
8,872.64 to 9,889.17	5.49	55.88	5.65	74.81	4,180	4.83	74.94	785	5.13	50.77	72.92
9,889.17 to 11,249.74	5.60	61.47	4.59	79.40	3,409	3.95	78.90	645	4.63	55.40	66.08
11,249.74 to 13,484.76	7.50	68.97	5.14	84.54	3,794	4.23	83.12	684	5.91	61.32	83.81
13,484.76 to 18,296.01	10.38	79.35	5.53	90.07	4,095	5.26	88.38	854	7.15	68.47	101.73
>18,296.01	20.65	100.00	9.93	100.00	7,374	11.62	100.00	1,894	31.53	100.00	449.95

TABLE 6
Summary of the results of the impacts of Banco Postal (Ansón and Bosch Gual, 2008)

Table for the whole sample

Outcome variable	Treated (i)	Controls (ii)	Diff. (iii)	S.E.	T-stat
No. of new firms	201.041	163.357	37.683	17.467	(2.16)**
Growth of average firms' employees	0.665	0.184	0.480	0.319	(1.5)*
New employees	1381.21	1209.49	171.720	133.004	(1.29)*
Growth in share salaried	0.026	0.015	0.011	0.005	(2.06)**
No. of new bank agencies	0.138	0.088	0.050	0.029	(1.73)**
No. of new correspondents	2.919	2.608	0.311	0.260	1.190
Growth of real GDP (2005)	0.034	0.038	-0.004	0.005	-0.780

TABLE 5b
Summary of the distribution of the use of Banco Postal services (Ansón and Bosch Gual, 2008)

Non-domestic remittances (#)			Microcredit loans (#)			E-loans (#)			Loans (#)		
%	% cumul	average	%	% cumul	average	%	% cumul	average	%	% cumul	average
0.00	0.00	0.00	3.94	3.94	15.73	4.34	4.34	17.51	6.93	6.93	153.55
0.00	0.00	0.00	4.01	7.94	16.01	4.14	8.48	16.71	5.72	12.65	126.65
0.00	0.00	0.00	7.38	15.32	29.60	3.98	12.46	16.12	6.62	19.27	147.05
0.02	0.02	0.00	4.30	19.62	17.17	4.81	17.26	19.40	6.15	25.42	136.12
0.10	0.12	0.01	4.14	23.76	16.47	4.28	21.54	17.20	6.19	31.61	136.53
0.02	0.15	0.00	6.09	29.84	24.40	5.63	27.17	22.82	5.89	37.50	130.90
0.00	0.15	0.00	5.28	35.12	21.01	5.96	33.13	23.96	5.91	43.41	130.41
0.27	0.41	0.04	5.05	40.17	20.25	7.17	40.30	29.05	4.77	48.17	105.92
0.24	0.66	0.04	5.09	45.26	20.33	7.49	47.78	30.22	5.87	54.04	130.01
1.19	1.84	0.18	5.71	50.97	22.82	6.24	54.03	25.21	4.53	58.57	100.27
1.46	3.30	0.22	4.79	55.76	19.13	5.16	59.18	20.81	4.05	62.62	89.73
1.99	5.29	0.29	3.73	59.48	14.84	4.92	64.10	19.77	3.94	66.57	87.00
1.38	6.67	0.21	2.80	62.29	11.20	4.96	69.06	20.03	4.16	70.72	92.08
4.42	11.09	0.65	4.46	66.75	17.83	4.77	73.83	19.25	4.30	75.03	95.30
6.21	17.31	0.92	5.58	72.33	22.29	4.14	77.97	16.73	4.29	79.31	94.90
3.18	20.49	0.47	4.97	77.30	19.86	4.48	82.46	18.10	4.66	83.97	103.10
8.96	29.44	1.33	4.59	81.88	18.39	3.82	86.28	15.48	3.80	87.77	84.44
8.40	37.84	1.24	5.35	87.24	21.32	4.36	90.64	17.54	3.45	91.22	76.16
12.14	49.98	1.80	6.64	93.87	26.51	4.44	95.08	17.93	4.49	95.71	99.42
50.02	100.00	7.44	6.13	100.00	24.57	4.92	100.00	19.94	4.29	100.00	95.33

TABLE 6 – cont.

Table for municip. with 1 to 5 banks in 2001

Outcome variable	Treated (i)	Controls (ii)	Diff. (iii)	S.E.	T-stat
No. of new firms	136.477	127.420	9.057	8.452	1.070
Growth of average firms' employees	0.890	0.347	0.345	0.001	0.132
New employees	860.73	796.08	64.65	61.74	1.05
Growth in share salaried	0.020	0.018	0.002	0.005	0.410
No. of new bank agencies	0.051	0.011	0.040	0.025	(1.39)*
No. of new correspondents	1.881	1.868	0.013	0.148	0.090
Growth of real GDP	-0.070	0.023	0.026	-0.003	0.007

TABLE 6 – cont.

Table for only unbanked municipalities in year 2001

Outcome variable	Treated (i)	Controls (ii)	Diff. (iii)	S.E.	T-stat
No. of new firms	26.830	27.338	-0.509	1.913	-0.270
Growth of average firms' employees	1.213	0.490	0.723	0.809	0.010
New employees	263.75	186.27	77.48	86.170	0.90
Growth in share salaried	0.038	0.019	0.019	0.011	(1.76)**
No. of new bank agencies	0.135	0.270	-0.135	0.026	(-5.19)***
No. of new correspondents	0.370	0.438	-0.068	0.049	(-1.39)*
Growth of real GDP (2005)	0.045	0.045	-0.001	0.008	-0.390

Table for municipalities with more than 5 banks in 2001

Outcome variable	Treated (i)	Controls (ii)	Diff. (iii)	S.E.	T-stat
No. of new firms	1,091.218	970.135	121.083	155.615	0.780
Growth of average firms' employees	0.267	0.209	0.059	0.137	0.430
New employees	8,014.35	7,127.62	886.74	1,227.55	0.72
Growth in share salaried	0.012	0.006	0.005	0.006	0.950
No. of new bank agencies	0.553	0.142	0.411	0.297	(1.39)*
No. of new correspondents	14.963	17.220	-2.257	2.439	-0.930
Growth of real GDP	0.047	0.034	0.013	0.013	0.950

Note: ***, ** and * denote, respectively, a 1%, 5% and 10% statistical significance level.

CHAPTER 7

Big postal data, nowcasting and the global pulse of the economy

José Ansón and Matthias Helble

1. Introduction

The first two chapters of this book made use of only a very small portion of the data consolidated at the UPU. From 1 January 2012 until 30 June 2013, more than 2.7 billion events were recorded through the POST*Net information technology infrastructure. The UPU and the international postal community could further leverage the billions of data points available. This chapter seeks to open a new perspective on how this information could contribute to the successful transformation of the postal sector, and to show its relevance in today's global economy.

"Big data" is a generic term that represents another way of collecting data and statistics. Unlike traditional statistics derived from well-defined and structured questionnaires, big data covers the electronic collection of unstructured bits of information from various sources, such as sensors, electronic platforms, track-and-trace systems, posts on social networks and even satellite images. According to recent estimations, 90% of the data in the world was created in the past two years alone. The UN's Global Pulse (2012) elaborates: "In our digital age, a growing ocean of data is now available. Most of this data is being generated at almost no cost, in real time, merely as a by-product of people and businesses going about their daily lives and transactions."

While traditional statistics can collect data only on a limited number of variables and rarely exceed the gigabytes dimension, the real-time aspect of big data generates terabytes and even petabytes of data. The challenge is then to take this unstructured information and structure it for purposes other than those for which the data was initially collected. Only then can meaningful correlations for business or policy purposes be identified and monitored over time. A close and real-time monitoring of

these huge databases is a necessity for both businesses and governments today when designing new services or establishing new policies. The same holds true for postal sector stakeholders.

Indeed, Posts are facing turbulent times related not only to long-run structural changes, as described in chapter 1, but also to shorter-run ones. As for many other businesses, the 21st century is for Posts one of uncertainty, volatility and rapid evolutions spurred by increased connectivity. The acceleration of electronic substitution of traditional mail, the rise of new communication media and the rapid transformation of postal traffic towards the delivery of goods in response to the surge of e-commerce are leading many operators and governments to rethink the role of the postal infrastructure. Besides e-commerce, opportunities are also arising in the provision of financial and payment services, often in response to recent pro-active trade facilitation and financial inclusion policies (see chapter 6). Never before has the quick integration of good data and analysis, i.e. data analytics, been so absolutely critical for timely decision making at both the business and government level.

Many private companies, including major customers of the Post (e.g. eBay), are already finding ways to use powerful computing and data mining techniques to analyze this new data, so as to better understand customers, identify emerging market trends and inform decision makers with key insights about their markets. From a policy perspective, big data holds enormous promise for improving our understanding of how populations are impacted by regional and global shocks. It will allow development practitioners to monitor their programmes and policies in real time to strengthen long-term development outcomes.

So where is this big postal data? Posts are major big data generators. Postal operators and their transportation partners collect huge amounts of real-time data through their operating and track-and-trace systems, which log the geography, time and conditions of all sorts of exchanges, at national or international level. Posts “datify” the lives of millions of people and businesses in each country in the same way Google is able to generate data on all aspects of life through our searches. For instance, it can release flu alerts simply by monitoring the number of people searching for the word “flu”. Similarly, “Twitter datafies stray thoughts”, and “LinkedIn datafies professional networks” (Cukier and Mayer-Schoenberger, 2013).

Nevertheless, while Google, Twitter and LinkedIn take advantage of big data to continuously innovate and adapt their products and services, Posts leverage only a small proportion of the huge amounts of data and information they handle. This chapter provides an example of one of the potential uses of big postal data and the power of analyzing real-time international postal data for macroeconomic nowcasting. We then go on to highlight the benefits of using big data for sector-specific issues.

2. Big postal data and macroeconomic nowcasting

“Postal economics might be more central to understanding the economy than monetary economics,” wrote Edward Prescott, Nobel laureate in economic sciences, in a private correspondence with other economists in the early 1980s. Could the same hold true for measuring the pulse of the global economy in the 21st century, in spite of the rise in e-mail and the Internet? The first chapter pointed to an increasing decoupling of economic growth and domestic letter-post traffic growth. However, the story does not seem to be the same with respect to the relationship between the global economy and international letter-post exchanges, including small packets, measured in terms of weight.

Evidence of the strong link between international letter-post traffic and global macroeconomic conditions in the short term is provided below. International letter-post traffic seems to capture particularly well the short-term variations of the global business cycle, in the sense that it can determine the direction of most other macroeconomic indicators before their official release, as we will illustrate. Thanks to its nearly immediate reactivity, international letter-post traffic has great potential to become one of the lead indicators of global economic activity. It repeatedly reacts before other indicators record a deterioration or improvement in macroeconomic conditions.

Granted, some may find it counterintuitive to monitor the short-term evolution of the global economy with a communication medium that is perceived to be in decline. The reality, however, suggests otherwise: billions of letters, reflecting business and financial transactions and direct marketing, are still exchanged between countries. Moreover, the international letter post – made up of cross-border postal items up to 2 kg according to the UPU definition – covers much more than basic letters.

While it is transforming at a fast pace, and fewer letters are carried than a decade ago, the letter post is increasingly transporting heavier documents and merchandise in response to the development of e-commerce and global trade. In a sense, it is moving towards transporting the world economy.

International letter-post volumes have the potential to become a lead indicator of global macroeconomic conditions for two reasons. First, high frequency data on international letter-post volumes can be captured almost instantaneously, in real time, through the exchange of electronic data interchange (EDI) messages between postal operators located in different regions of the world, despite the fact that these systems – as usual with a “big data” approach – were not designed for this purpose.

Second, international letter-post exchanges seem to be highly reactive to changes in global macroeconomic conditions. As a vehicle for international economic exchanges, the Post immediately reflects changing conditions. This is likely due to the nature of international letter-post items, which include small formats like postcards and letters, larger formats like flat documents, and relatively heavy small packages. In a sense, the Post is a proxy for a composite indicator of various sorts of economic transactions, be they financial (bank statements), commercial (trade documents) or mercantile (small packets).

In spite of – or even because of – its heterogeneous composition, the international letter post could well prove a better indicator of the worldwide evolution of business cycles than most international trade statistics. As regards consumer choices, the underlying financial, trade and retail components of international letter-post exchanges, combined with the high frequency of the data available, feed a unique real-time indicator of the pulse of the global economy, namely, the International Letter-Post Weight Index (IPI). By fuelling existing macroeconomic forecasting models, this index could improve the accuracy of forecasts of the evolution of the global business cycle, becoming a leading indicator.

3. The IPI as a leading indicator: global vs. regional and BRICS

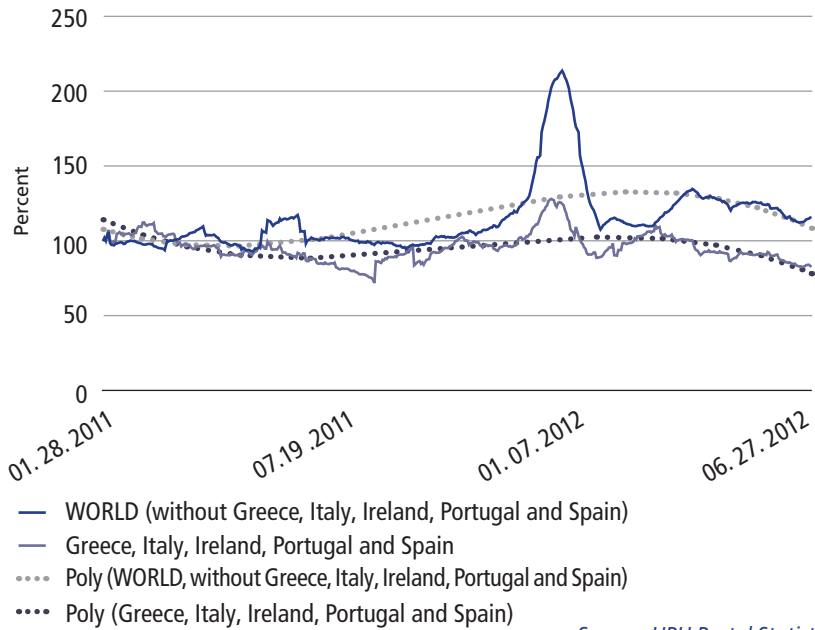
The International Letter-Post Weight Index measures the evolution of the total weight transported by the international letter-post network on a daily basis, starting from January 2011. It is a 28-day moving average of total international mail traffic for items up to 2 kg. The dark blue curve on figure 1 displays the value of this index over an 18-month period (28 January 2011 to 30 June 2012). A smoothed version of the index is also shown to account for seasonal effects and trends.

Starting from a basis of 100 as at 28 January 2011, the IPI reached a value of 108.3 on 30 June 2012, compared with 98.8 on the same day a year before. The peak of 194.3 occurred on 29 December 2011. The smoothed index shows a trough in April 2011 and a peak in February 2012. An apparent link between this international postal trough and peak and the global business cycle is identified below.

Figure 1 also illustrates the ability of the IPI to capture the evolution of various worldwide business cycles. To that end, the evolution of international mail traffic is compared between the group of European countries directly affected by the sovereign debt crisis, i.e. Greece, Italy, Ireland, Portugal and Spain, and the rest of the world. The European index for countries hit by a sovereign debt crisis comprises mail sent from these countries to the rest of the world, mail received from the rest of the world, and mail exchanged between countries in this group. The index for the rest of the world comprises total global traffic, after removing traffic to/from Greece, Italy, Ireland, Portugal and Spain.

The resulting figures, with an index value of 82.9 for Greece, Italy, Ireland, Portugal and Spain, versus 115.4 for the rest of the world (at 30 June 2012), capture well the evolution of the European sovereign debt crisis.

FIGURE 1
International Letter-Post Weight Index –
World vs. Greece, Italy, Ireland, Portugal and Spain



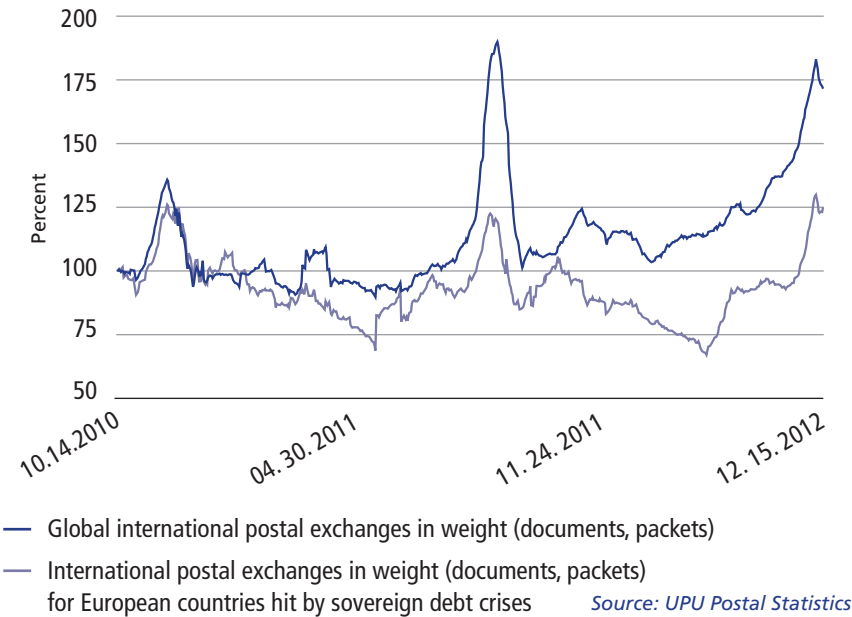
Source: UPU Postal Statistics

Moreover, the gap between the two IPIs widens each time the sovereign debt crisis worsens in Europe. This was the case in the spring of 2011 and the spring of 2012. A closer look at the smoothed curves also shows an increase in the gap between Greece, Italy, Ireland, Portugal and Spain, and the rest of the world.

Even more recently, the IPI trough for the sub-set of European countries facing a sovereign debt crisis in 2012 coincided with the intervention of the President of the European Central Bank to reassure financial markets, by stating that the ECB would save the euro “whatever it takes” (see July 2012 in figure 3). Since then, the gap between European countries that were casualties of the European sovereign debt crises and the rest of the world has stopped worsening and has stabilized, as can be noted on the same figure. The year-end peak of these countries was even slightly higher in 2012 than in 2011, although globally the IPI peak was slightly

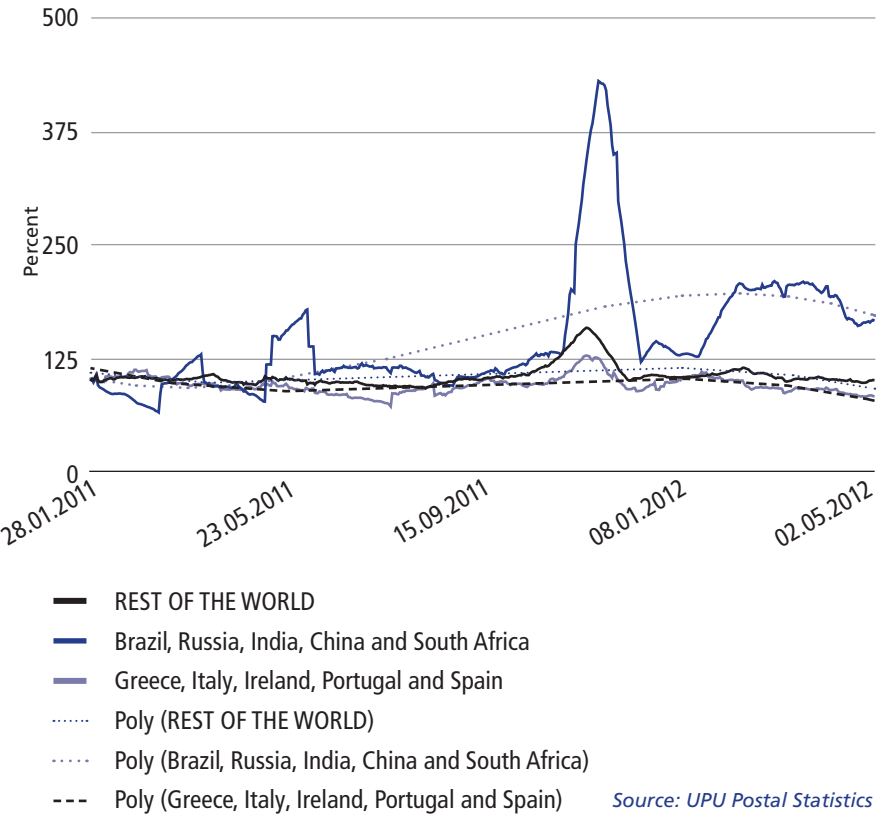
lower than in 2011. This lower 2012 peak shows how the effects of crises can be transmitted from one group to another in a systemic manner.

FIGURE 2
Most recent evolution of the IPI



In contrast to the real-time monitoring of the European sovereign debt crisis, Figure 3 shows the weight of Brazil, Russia, India, China and South Africa (the BRICS countries) in today's development of international trade, and the extent to which BRICS economies now contribute to global economic growth.

FIGURE 3
International Letter-Post Weight Index –
BRICS vs. rest of the world vs. Greece, Italy, Ireland, Portugal and Spain

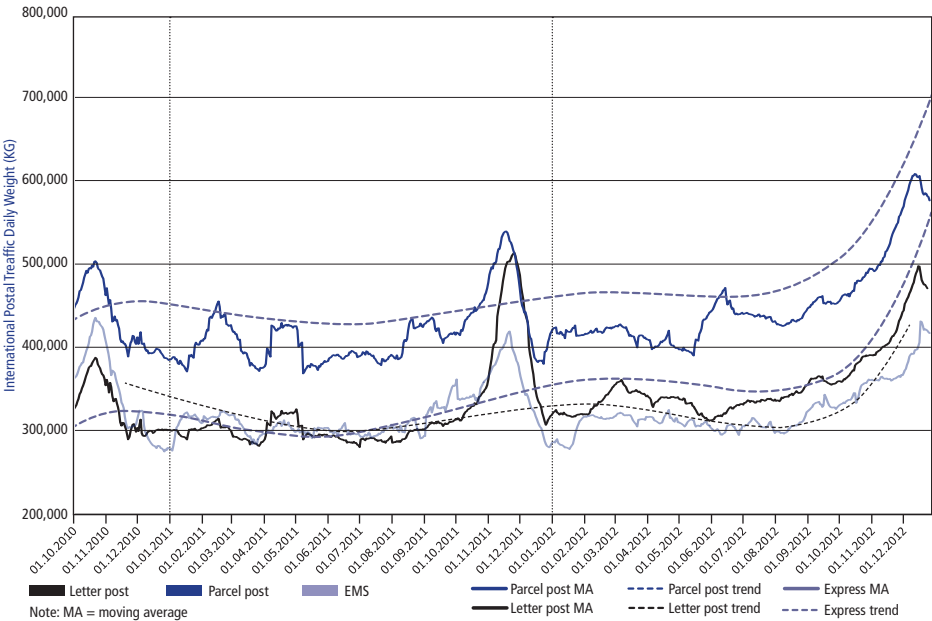


4. The IPI as a leading indicator: extension to parcels and EMS

Figure 4 shows that other segments, such as the parcel post and EMS, follow a similar dynamic pattern in terms of total weight transported through those channels. The stabilization of the high-end EMS segments at similar traffic levels over the last two years also signals a down-trading movement: customers confronted with the global economic and financial crisis prefer lower-end solutions for their cross-border shipments. In the

future, up-trading, that is, the opposite customer movement towards buying high-end services, could signal and anticipate a substantial improvement of global macroeconomic conditions.

FIGURE 4
Evolution of various segments of international postal markets



Source: UPU Postal Statistics

5. The IPI and other leading indicators: comparison with Citigroup's Economic Surprise Index

Having illustrated how the IPI captures different business cycle evolutions around the world, we will show how it can increase the forecasting accuracy of most global macroeconomic indicators. Indeed, the IPI can detect in advance whether these forecasts will prove to be pessimistic or optimistic in the coming weeks or months. There are two reasons for this: the IPI seems to be extremely reactive to changes in global business cycle conditions, and its data can be updated every day.

The power of the IPI to detect changing global business conditions can be shown by comparing it with the evolutions of the Citigroup G10 Economic Surprise Index. The Citigroup G10 Economic Surprise Index evaluates ex post the quality of macroeconomic forecasting. If the value of the index is 0, this means that all forecasts for key economic and business cycle indicators in the 10 major world economies were true, and the actual outcome was correctly predicted. An index value above 0 indicates that a majority of forecasts were overly pessimistic about the future global business cycle, while an index value below 0 indicates a majority of overly optimistic forecasts. Figure 5 depicts the Citigroup Economic Surprise Indices since 2006.

The dashed circles along the dashed line in figures 5 and 6 indicate the moment when the Citigroup Economic Surprise Indices reached the value of zero (figure 5), coinciding with the moment when the IPI returned to its initial value in the smoothed version, as can be seen by following the line in figure 6.

In early October 2011, the smoothed IPI signalled an improvement in business cycle conditions, while the Citigroup Economic Surprise Index was recording less optimistic forecasts. In fact, better-than-expected economic performances took the markets by surprise in the following period, and the IPI was able to predict them.

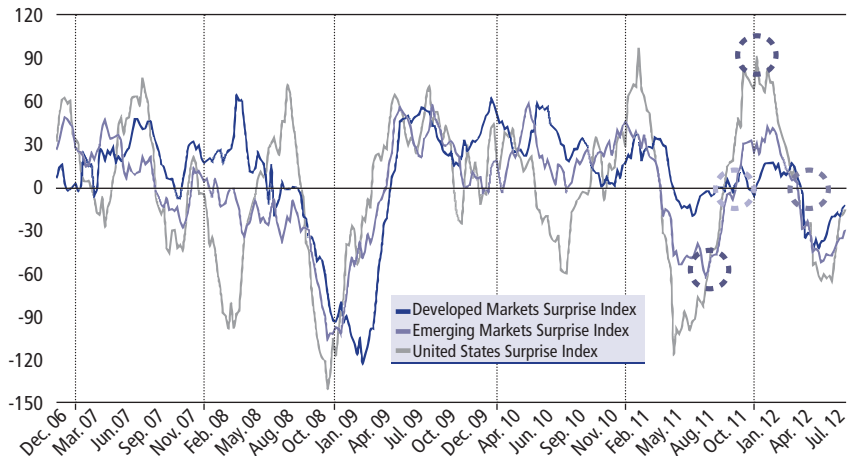
The exact opposite happened in mid-May 2012, when the smoothed IPI signalled a deterioration in global business cycle conditions, while the Citigroup Economic Surprise Index was recording overly optimistic forecasts. Worse-than-expected economic outcomes surprised markets in the following weeks, and the IPI was once again able to predict them.

Moreover, the Economic Surprise Indices and the IPI almost simultaneously bottomed out around May 2011 (see the lowermost dashed circle in figures 5 and 6). Further, they almost simultaneously reached their peak in February 2012 (see the uppermost dashed circle in figures 5 and 6).

The coincidence of the indices' tipping points implies the following: if the economic forecasters used the daily IPI as an input for their forecasts, they would be systematically more correct. The use of international postal data could dramatically reduce the level of error in economic forecasting.

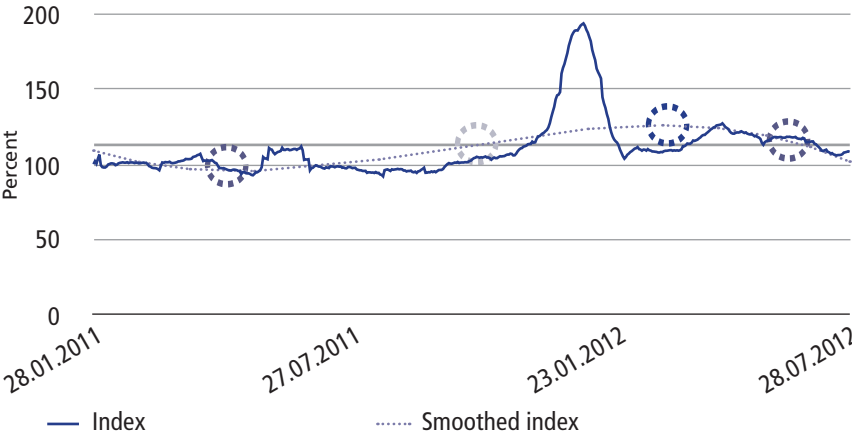
Citigroup Economic Surprise Index curves would then become flatter and, as a corollary, predictions concerning the global economy would become less uncertain.

FIGURE 5
Citigroup Economic Surprise Indices



Source: Citigroup, theshortsideoflong.blogspot.com

FIGURE 6
International Letter-Post Weight Index tipping points



Source: UPU Postal Statistics

If applied in the wake of the European debt crisis, the IPIs presented in figure 1 would have identified a clearly worsening trend of the real economy in this group of countries since March 2011. In turn, this would have helped with the production of more realistic forecasts for June 2011, when most forecasters were shown to be overly optimistic by Citigroup Economic Surprise Indices. The same would have held true for the forecasts for November 2011 released in August 2011, when forecasters were overly pessimistic, or forecasts for June 2012 released in March 2012, when forecasters were again overly optimistic.

6. Big postal data and sector-specific perspective

From a sector-specific perspective, the use of big postal data could be decisive for the future of the postal sector.¹ EDI messages generate a wealth of real-time data and information that is largely unexploited in the postal arena. Billions of records and scans are left unused in terms of data analytics beyond direct operational purposes. At the international level, billions of EDI records are consolidated by the UPU's Postal Technology Centre but are not leveraged for real-time market or policy analysis. As a result, 99.9% of the global data centrally available at UPU headquarters is not utilized for advanced data analytics purposes, while this wealth of information could play a critical role in the design of tomorrow's postal services and network architecture, and help strengthen the weakest links of the international postal network.

Moreover, this vast source of consolidated real-time data could be potentially leveraged through a web of market intelligence applications, policy evaluation tools and postal economic monitoring systems. The purpose would be to translate real-time data into actionable business and policy insights to support faster fact-based decision making on all UPU bodies. This would facilitate the development of an offer providing a seamless cross-border experience to customers. These tools would all rely on upstream state-of-the-art economic and statistical research. The work would also help identify the most promising development opportunities for the postal sector and support resource mobilization for investment in the postal infrastructure.

7. Conclusion

Only time will reveal the relevance of the IPI as a leading indicator of global business cycles. Nevertheless, the observations made above are encouraging. They should incite more economists to take a closer look at the evolution of international mail traffic, through the IPI, in order to limit economic surprises related to their global macroeconomic forecasts. From a research perspective, studying the correlations of these flows with the international trade flows newly available on a monthly basis, yet released with a three-month delay, could also solidify the IPI as a useful global lead indicator available on a daily basis.

In a world dominated by uncertainty, early warning systems are of the utmost importance, not only from a global macroeconomic perspective, but also for postal stakeholders when designing tomorrow's postal services and policies. The postal sector can only benefit from a more extensive use of the huge amounts of data generated through postal exchanges all over the world. The UPU could help postal stakeholders leverage this unique opportunity as they reshape the postal world in the 21st century. As in most modern industries, the way forward for the sustainable development of the postal industry is to unleash the power of its big data.

The last chapter of the book uses big postal data to analyze international postal exchanges, providing more granular insights into what hinders international postal development in the era of global e-commerce.



CHAPTER 8

Global postal connectedness

José Ansón and Matthias Helble

1. Introduction

Chapter 7 highlighted the potential of big postal data for business and postal sector policy development, with a focus on its value for the monitoring of global macroeconomic conditions. This chapter makes use of big data again, but this time from a sector-specific perspective, so as to understand the drivers of international postal exchanges and what may still influence their development in a globalized world. International postal connectedness has developed globally, albeit in an imbalanced manner, reflecting a number of factors that make the world less “flat”, in the sense that they hinder cross-border social and economic interactions, than many could have imagined at the beginning of the 21st century. However, with the right set of policies and new innovative services, postal systems could help reduce these obstacles to globalization, and at the same time make globalization truly inclusive for all citizens of the world. Well-targeted reductions in the impeding factors, along with innovation, as the experience of “containerization” of trade has shown (Bernhofen, El-Sahli and Kneller, 2013), could lead to a dramatic expansion in trade surpassing the expansion achieved through WTO-negotiated tariff reductions.

From North America to Asia-Pacific, and from Sub-Saharan Africa to Eastern Europe and Central Asia, there is no region that does not engage in international postal exchanges with the rest of the world. In this sense, postal communication and networks were universal long before the global rise of the Internet and e-mail, or the surge in mobile telephony and new social media. While today’s e-mail and social network interactions are global, the Post is still a medium for written communication, facilitating international trade and e-commerce exchanges every day.

To date, the data on international communication exchanges have been largely anecdotal. For example, there are still no reliable and comprehensive international figures available on the international exchange of e-mail or on international telephony. However, the UPU has recently begun to collect electronic information on daily postal exchanges between more than 150 countries worldwide, resulting in a big postal data cloud containing several billion records. This information was compiled and aggregated into a dataset offering unique insights into the geography of international postal exchanges. After the data was verified and adjusted slightly, all bilateral flows were aggregated at the regional level (seven regions have been defined: Asia-Pacific, Eastern Europe and Central Asia, North Africa and Middle East, North America, South and Central America, Sub-Saharan Africa, and Western Europe). As is often the case with a big data approach, visualization of the data analytics outcomes is key to the facilitation of business and policy making. We thus adopted a mapping approach.

The exercise brought to light some very interesting results concerning postal exchanges between the defined regions. The first observation is that considerable asymmetries exist in international postal exchanges. For instance, for each 20 g letter sent from South America to the Middle East in 2011, 50 such letters were mailed from North Africa to Western Europe.

In turn, for every 50 such letters mailed from North Africa to Western Europe, 12,600 were exchanged among Western European countries. Volumes of international mail communication (e.g. letters, financial statements, periodicals) exchanged between Western European Posts were therefore 10,000 times greater than those in the smallest interregional flows. Even more striking is the fact that Western European intra-regional flows represented almost as much as all interregional flows taken together, even though the population covered by intra-European exchanges is the smallest of all the geographical regions covered in this study.

Western Europe was also the only region that maintained a positive international letter-post balance with other regions in terms of interregional mail exchanges. In 2011, Western Europe sent to all other regions taken together more than twice the volume it received from them. This resulted in negative balances for all other regions, with ratios ranging from 1.5 to 5.3 kg of letters received for every kilogramme sent, except for North

America, which had a more moderate imbalance ratio of 1.1 kg of letters received for each kilogramme sent in interregional exchanges with the rest of the world.

The same imbalances in traffic between regions can be observed for international parcels and express network traffic handled by most incumbent postal operators: once again, two intraregional flows were found to be the largest of all flows, including interregional, although the differences across regions were less acute than in the letter-post segment and there were other sources of imbalance. While Western Europe maintains the lead in terms of cross-border parcels, the Asia-Pacific region is the most developed in terms of EMS (fastest mail service) item flows. North America shows the only clear positive balance with the other regions for parcels, while the same holds true for the Asia-Pacific region in terms of EMS traffic. With respect to parcel corridors, South and Central American flows to North Africa and the Middle East were again at the bottom of the scale. For EMS items, flows from Eastern Europe and Central Asia to Sub-Saharan Africa were the smallest.

The key figures introduced above raise a number of critical questions about the development of international postal exchanges. Above all, this research is aimed at prompting as many insights as possible, in order to understand the factors behind the uneven and asymmetric development, not only in terms of international letter-post traffic between countries, but also in the movement of goods and documents across borders through international parcel and express services. Before we introduce an econometric model identifying the determining factors for these traffic asymmetries, the next section provides an exhaustive description of all interregional and intraregional letter-post, parcel and EMS flows. Three intra- and interregional flow matrices are shown, along with a number of maps giving a better picture of international postal flows between the different regions of the world.

2. The economic geography of international postal exchanges

2.1 International letter post

The description and analysis of intra- and interregional postal traffic flows are based on the following seven geographical regions: i) Asia-Pacific, ii) Eastern Europe and Central Asia, iii) North Africa and the

Middle East, iv) North America, v) South and Central America and Caribbean, vi) Sub-Saharan Africa, and vii) Western Europe (see figure 1).

FIGURE 1
Intra- and interregional flows analysis: geographical definition of regions

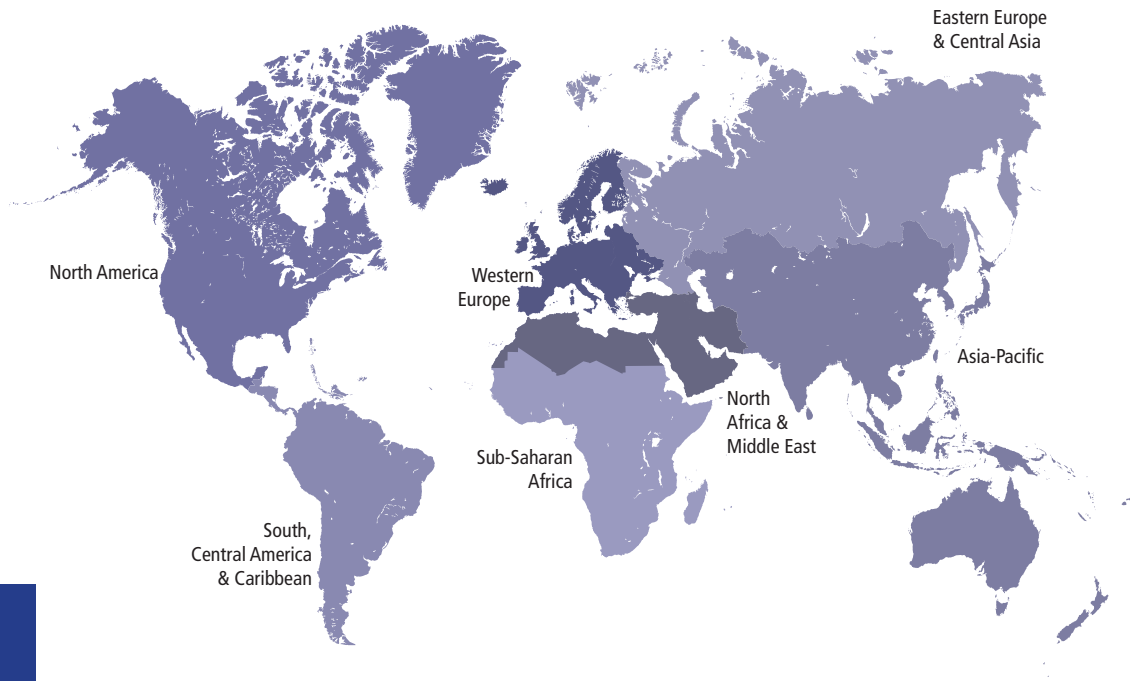


Table 1 below represents a full matrix of intra- and interregional letter-post traffic flows. The first column lists the regions of origin, or export, while the first row lists the regions of destination, or import. In order to build this table, data on international mail exchanges was gathered from EDI messages exchanged between postal operators during the period 1 January to 31 December 2011. In cases of missing data, estimates were made using the econometric model that will be introduced in the next section.

TABLE 1
International letter post: intra- and interregional relative
flows (per kg at the median flow – 2011)

Top 10	Bottom 10								
Origin/Destination	Asia-Pacific	Eastern Europe & Central Asia	North Africa & Middle East	North America	South, Central America & Caribbean	Sub-Saharan Africa	Western Europe	Total rel. interregional (dispatch)	
Asia-Pacific	30	3	0.595	18	2	1.5	15	40	
Eastern Europe & Central Asia	2	3	0.16	2	0.354	0.185	16	21	
North Africa & Middle East	0.259	0.116	0.023	0.231	0.047	0.032	1 kg	1.7	
North America	27	3	0.656	25	7	2	31	71	
South, Central America & Caribbean	0.625	0.093	0.02	1.5	0.495	0.072	0.982	3.3	
Sub-Saharan Africa	0.609	0.076	0.02	0.617	0.116	0.192	0.936	2.4	
Western Europe	29	35	4	55	8	6	252	137	
TOTAL REL. INTERREGIONAL (receipt)	59	41	5.5	77	17.5	9.8	65	275	

Note: The median flow (1 kg) is between the North Africa and Middle East region and the Western Europe region.

To make the table as readable as possible, we have listed all mail flows in relation to the median flow. In other words, all mail flows are measured in numbers of kilogrammes for each kilogramme of international letter post exchanged at the median flow level. The values indicated in table 1 therefore represent measurements of the relative size of each intra- or interregional flow. With the exception of the last row and column, the boxes where the origin and destination region are the same show the relative volumes of intraregional mail between countries within one region. No domestic mail exchanges are included in the figures. The top 10 flows in volume are highlighted in grey, and the bottom 10 are shown in lavender.

The median flow is represented by the international letter post sent from the North Africa and Middle East region to Western Europe. Half of all regional flows are lower in volume than this flow, while the other half are higher. As indicated above, the median flow constitutes the basis of

comparison for the remaining flows. For example, in 2011, for each kilogramme exchanged between the North Africa and Middle East region and Western Europe (i.e. the median flow), 29 kg were sent from Western Europe to Asia-Pacific.

The last column and row indicate the relative total interregional mail dispatch and receipt, respectively. Figures provided in dark blue indicate that the international letter-post imbalance for the region in question is negative in relation to the rest of the regions, i.e. the region receives more than it dispatches internationally. This can be seen by computing the difference between the relative total interregional dispatch and receipt values. For instance, for every 40 kg dispatched by the Asia-Pacific region to all other regions combined, it received 59 kg from the rest of the world in 2011. Figures in lavender indicate a positive international letter-post balance in relation to the other regions, i.e. the region in question is a net exporter of mail to the rest of the world.

Table 1 highlights the strong asymmetries in international letter-post traffic, as described above. Half of all inter- and intraregional corridors were at least 252 times smaller in volume than Western European intraregional letter-post flows, even though the population covered by intra-European exchanges is the smallest of all. Overall, intraregional exchanges represented more than half of international letter-post traffic in 2011. One can observe that the larger the intraregional flow, the better the overall external balance with other regions. This is probably also why, of the top 10 flows, the Western Europe, Asia-Pacific and North America regions were the originators of the largest interregional mail flows. Conversely, regions with relatively few intraregional exchanges also systematically had the least developed interregional letter-post traffic, as is the case with North Africa and the Middle East, Sub-Saharan Africa, and South and Central America and the Caribbean. These regions showed extremely negative imbalances: Sub-Saharan Africa received more than four times the volumes it sent, North Africa and the Middle East more than three times, and South and Central America and the Caribbean as much as five to six times.

Figures 2a and 2b below map the Sub-Saharan African international letter-post flows at the inter- and intraregional levels. Arrows were drawn proportionally to the volumes involved in each exchange, as shown in table 1. The short circular arrows refer to intraregional exchanges, while

the others cover interregional mail flows. Figure 2a maps the smallest flows of all, involving not only exchanges between Sub-Saharan Africa and the more remote regions in relation to it, such as South America, Eastern Europe and Central Asia, but also flows between Sub-Saharan Africa and relatively closer regions in terms of distance, such as North Africa and the Middle East. This suggests that factors in addition to geographical distance may drive the lack of development of interregional postal traffic. Figure 2b focuses on the largest flows, including the three largest outbound Sub-Saharan African flows to the Asia-Pacific, North America and Western Europe regions. It also illustrates that the corresponding inbound flows are much larger, in particular the flow originating in Western Europe. This leaves Sub-Saharan Africa with a highly negative imbalance in terms of international letter-post traffic with the rest of the world.

Having examined a least developed region, we mapped the international letter-post case of an emerging region. Figures 3a and 3b show the Asia-Pacific region's international letter-post flows to and from other regions, as well as the level of intraregional exchange. Figure 3a depicts the smallest interregional flows for the entire Asia-Pacific region, where geography seems to matter again. Figure 3b shows the highest outbound and inbound flows, namely, between the Asia-Pacific region and both North America and Western Europe, which seems to be a good reflection of the evolution in international trade. As a whole, the Asia-Pacific region was a net importer of international mail in 2011. Finally, figure 3b shows the largest of all flows for the Asia-Pacific region, i.e. the intraregional flow, highlighting the development of the economic and political integration process in the Asia-Pacific region over the past few decades.

Figures 4a and 4b map the case of a developed region, Western Europe, starting with the least significant flows in terms of weight (figure 4a), followed by the largest interregional flows (added in figure 4b). Geography helps to explain the relatively high level of international letter-post exchanges between Western Europe, and Eastern Europe and Central Asia. North America seems to be a natural partner for Western Europe, and the Asia-Pacific region is an emerging economic power in terms of trade. It is therefore no surprise that these regions are Western Europe's main international postal partners. The relatively large volume of international letter-post flows involving Western Europe could also be linked to the size of its financial industry, a great generator of mail.

However, the most striking of all stylized facts in this mapping analysis is the disproportionate development of Western European intraregional mail exchanges as depicted by the disproportionately largest arrow for intraregional exchanges in figure 4b. This is very likely related to the fact that, for more than half a century now, Western Europe has been engaged in the most advanced process of regional economic, political and social integration of all regions under consideration in this study. It has also benefited from the longest tradition in terms of postal exchanges.

FIGURE 2a
Intra- and interregional flows for international letter post within/from/to Sub-Saharan Africa: bottom flows

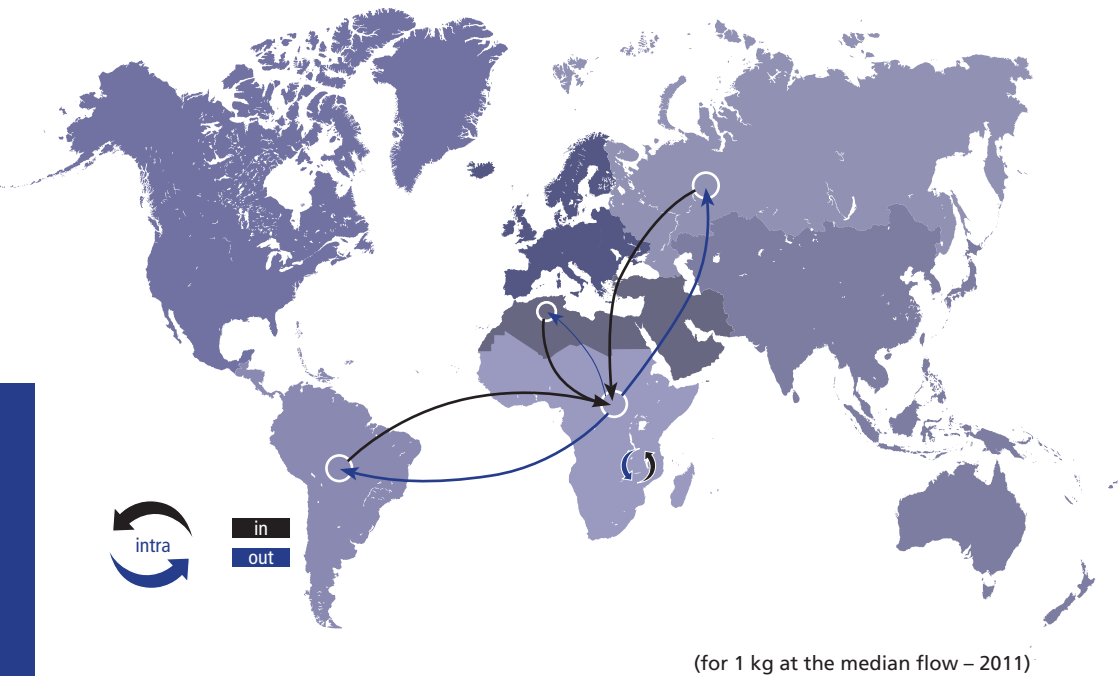


FIGURE 2b
Intra- and interregional flows for international letter post within/from/to Sub-Saharan Africa: top flows

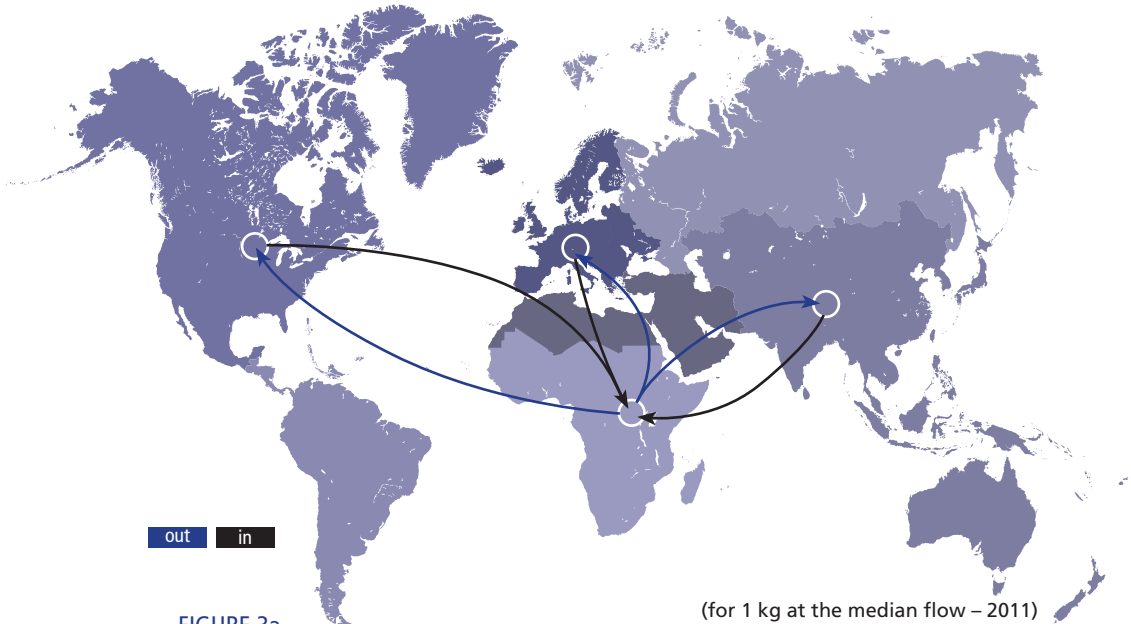


FIGURE 3a
Intra- and interregional flows for international letter post within/from/to Asia-Pacific region: bottom flows

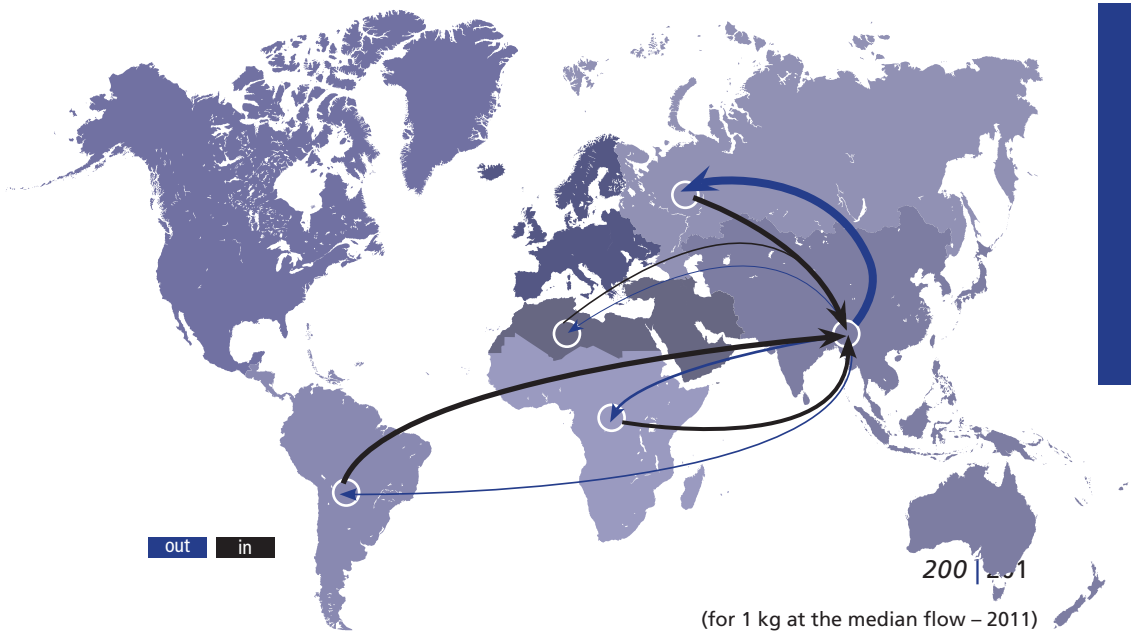


FIGURE 3b
Intra- and interregional flows for international letter post within/from/to Asia-Pacific region: top flows

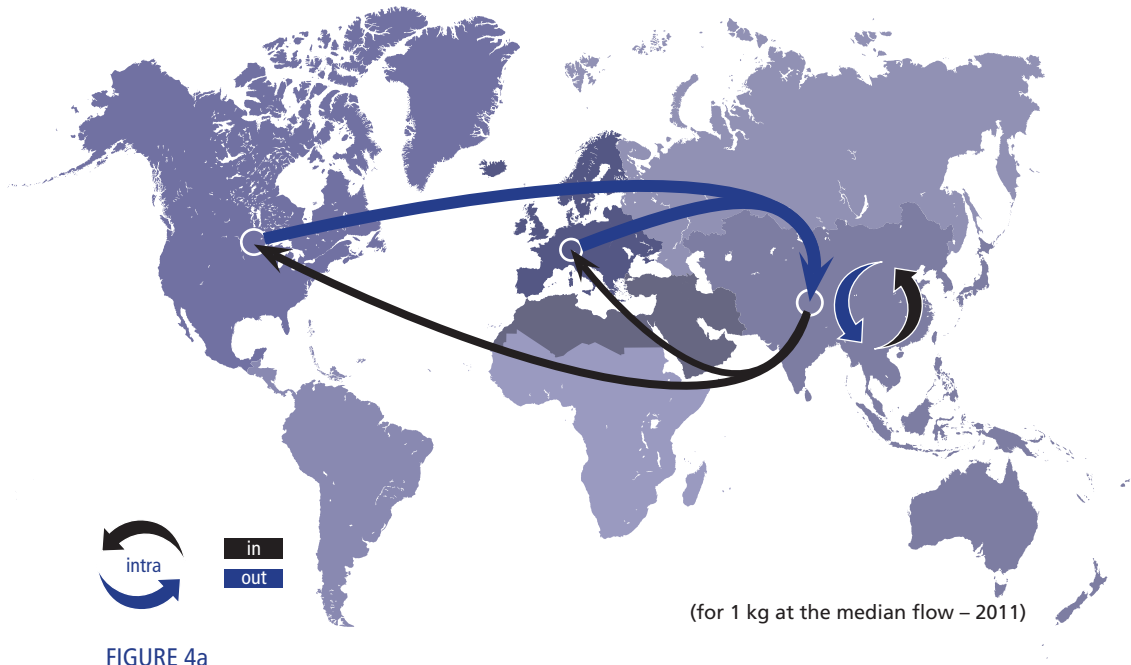


FIGURE 4a
Intra- and interregional flows for international letter post within/from/to Western Europe: bottom flows

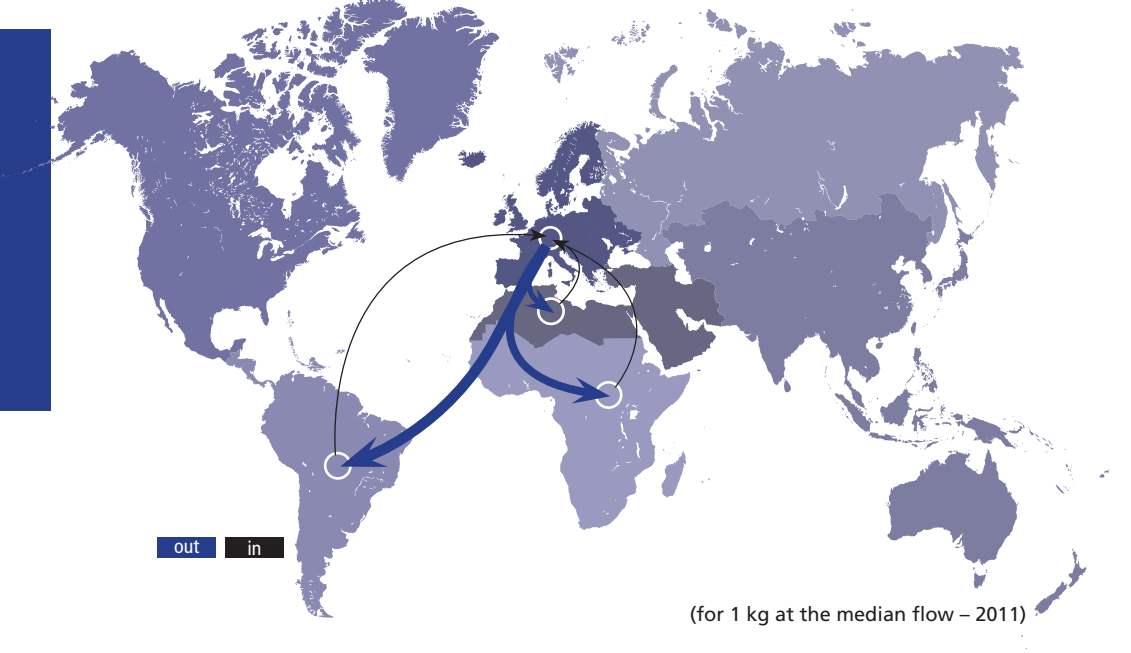
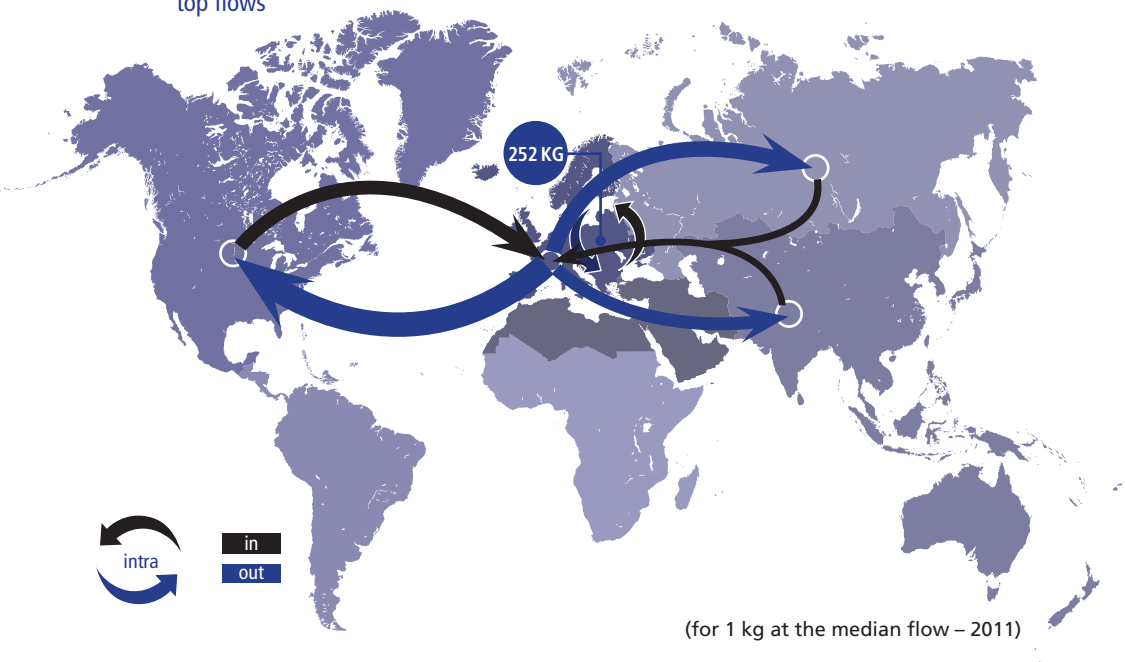


FIGURE 4b
Intra- and interregional flows for international letter post within/from/to Western Europe:
top flows



2.2 International parcel and EMS services

The same exercise as above can be carried out for the international parcel and EMS (fastest mail) services. Figures 5a and 6a below show the top 10 intra- and interregional flows for international parcel post and EMS items, respectively. Tables 2 and 3 provide the relative measurements of these flows, using the median flow as the basis for comparison (i.e. for 100 items at the median flow, x items are observed for any corridor between two regions or intraregionally). Figures 5b and 6b display the bottom 10 flows in these segments.

It is hardly surprising that intra-Western European, intra-North American and intra-Asia-Pacific parcels and express cross-border flows rank among the top 10 flows for both segments, with Western Europe leading international parcel-post exchanges, and the Asia-Pacific region leading EMS exchanges. The importance of geographical proximity and regional integration in driving international postal exchanges is once again

highlighted by these facts. This is even more true for trade merchandise sent through parcels and express services. Regional economic integration in North America (NAFTA), Western Europe (EU) and the Asia-Pacific region (ASEAN free-trade agreement) enables freer movement of goods, which may be reflected in the volumes of international parcels and express items exchanged within each region.

In turn, this intraregional basis seems to support the development of interregional exchanges between these three strong regional clusters. Only 2 of the top 10 flows in parcels and EMS cover exchanges between one of these three regional clusters and another region. There are no interregional flows in the top 10 not involving at least one of the three regional clusters at origin or destination. Figures 5b and 6b also show that none of the three regional clusters rank among the bottom 10 flows in terms of interregional exchanges.

The bottom 10 flows in parcels and express items seem to be concentrated among flows between regions with the least developed regional trade and economic integration, such as Sub-Saharan Africa, North Africa and the Middle East, South and Central America and the Caribbean, and part of Eastern Europe and Central Asia. Without a strong intraregional basis, the development of interregional flows is likely to be very limited, as illustrated by the weakness of intraregional exchanges of parcels in North Africa and the Middle East, and of EMS items in Sub-Saharan Africa.

TABLE 2

International parcel post: intra- and interregional relative flows
(for 100 parcels at the median flow – 2011)

	<div><div></div>Top 10</div>	<div><div></div>Bottom 10</div>								
Origin/Destination			Asia-Pacific	Eastern Europe & Central Asia	North Africa & Middle East	North America	South, Central America & Caribbean	Sub-Saharan Africa	Western Europe	Total rel. interregional (dispatch)
Asia-Pacific			2,740	545	46	1,205	201	84	906	2,987
Eastern Europe & Central Asia			173	365	13	150	38	13	798	1,185
North Africa & Middle East			50	27	13	40	10	5	113	245
North America			4,062	914	109	7,635	1,179	331	2,955	9,550
South, Central America & Caribbean			49	16	2	*100	76	4	65	236
Sub-Saharan Africa			66	15	2	79	11	16	84	257
Western Europe			1,148	1,970	186	1,186	472	159	13,337	5,121
Total rel. interregional (receipt)			5,548	3,487	358	2,760	1,911	596	4,921	19,581

Note: The median flow (100 items) is between the South, Central America and Caribbean region and the North America region.

TABLE 3

International EMS: intra- and interregional relative flows
(for 100 EMS items at the median flow – 2011)

Top 10	Bottom 10											
Origin/Destination		Asia-Pacific	Eastern Europe & Central Asia	North Africa & Middle East	North America	South, Central America & Caribbean	Sub-Saharan Africa	Western Europe	Total rel. interregional (dispatch)			
	Asia-Pacific	12,190	983	389	5,684	569	182	3,184	10,991			
	Eastern Europe & Central Asia	*100	86	16	132	11	4	272	535			
	North Africa & Middle East	88	31	33	106	11	6	215	457			
	North America	1,541	237	103	1,216	351	94	1,068	3,394			
	South, Central America & Caribbean	152	22	10	317	65	8	140	649			
	Sub-Saharan Africa	47	6	4	86	6	7	49	198			
	Western Europe	401	229	97	714	79	37	1,075	1,557			
	Total rel. interregional (receipt)	2,329	1,508	619	7,039	1,027	331	4,928	17,781			

Note: The median flow (100 items) is between the Eastern Europe and Central Asia region and the Asia-Pacific region.

FIGURE 5a
Intra- and interregional flows for international parcel post: top 10 flows

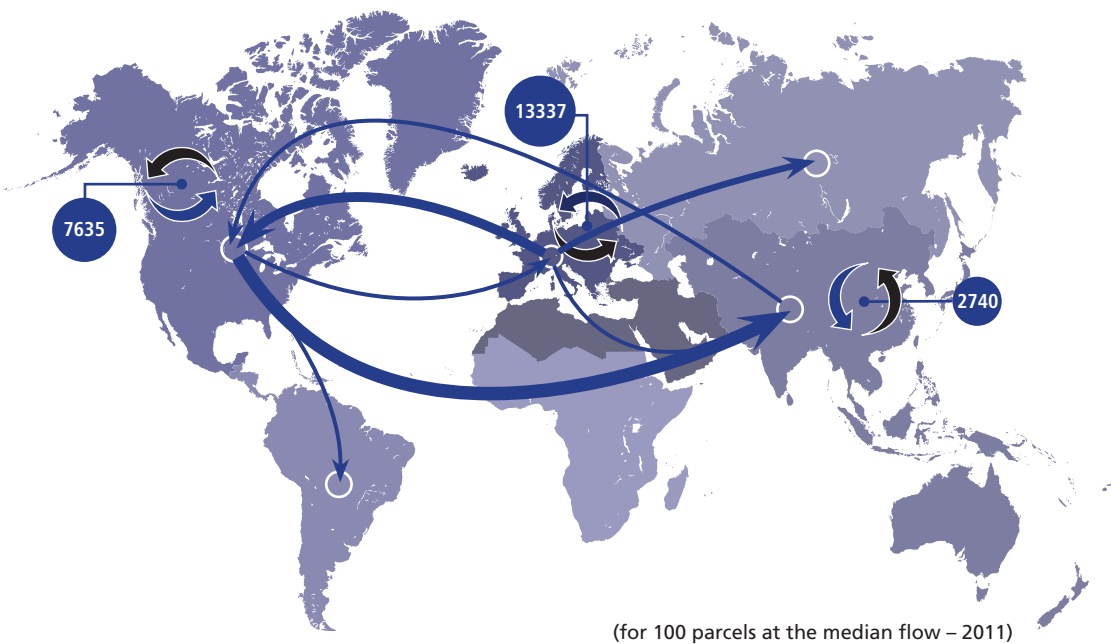
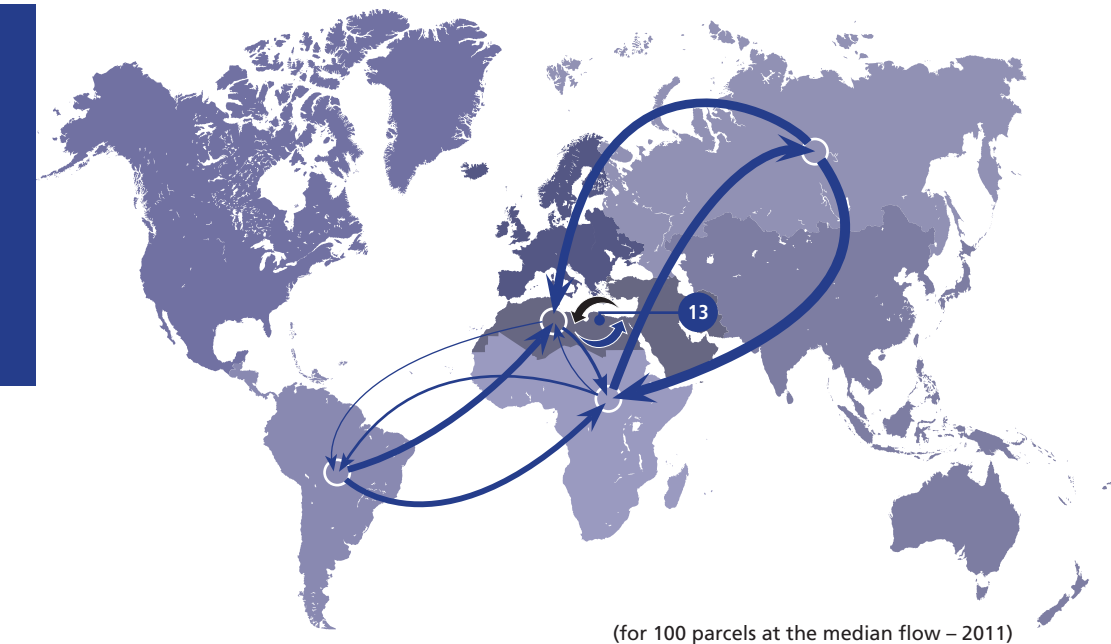


FIGURE 5b
Intra- and interregional flows for international parcel post: bottom 10 flows



3. A model of international postal exchanges

This section seeks to identify the drivers of the uneven and asymmetric development of international postal exchanges. To more easily understand the methodology applied for this purpose, it might be useful to look back at the first well-documented postal service in history: the Roman *cursus publicus*. Wishing to guarantee smooth and fast communication, Emperor Augustus established an imperial postal service throughout the Roman territory at the end of the 1st century B.C.E. The postal service consisted of thousands of stations located along the main roads, which provided a fresh supply of horses and food, and accommodation for riders and vehicles. It is estimated that the average distance covered each day was around 50 miles (Ramsay, 1925).

Physical distance was consequently the main barrier to the moving of information and goods. Further destinations not only meant longer transportation times, but also implied higher costs. The costs essentially doubled every 50 miles, and it was therefore extremely expensive to send information over long distances. However, given the critical value of receiving and sending information, the Roman Empire was prepared to finance this costly postal system right up until the Empire fell.

The *cursus publicus* is probably the best illustration of how and why distance matters in postal exchanges. Distance should be interpreted not only as the physical distance between sender and receiver, but also as a measurement of other types of differences. For example, while classical Latin was widely spoken on the Italian Peninsula, the number of Latin speakers decreased considerably in other areas, and in some cases populations even developed their own Latin-based dialects. The linguistic variation went hand in hand with cultural and other differences. What was true two millennia ago holds true today: physical distance remains a very good proxy for measuring the various differences that are proportional to distance.

The most robust evidence for this finding comes from the field of international trade, where it has long been observed that physical distance between countries largely explains trade volumes, when controlling for other variables, most importantly the economic size of the countries. In 1962, Dutch economist and Nobel laureate Jan Tinbergen formalized this

FIGURE 6a
Intra- and interregional flows for EMS: top 10 flows

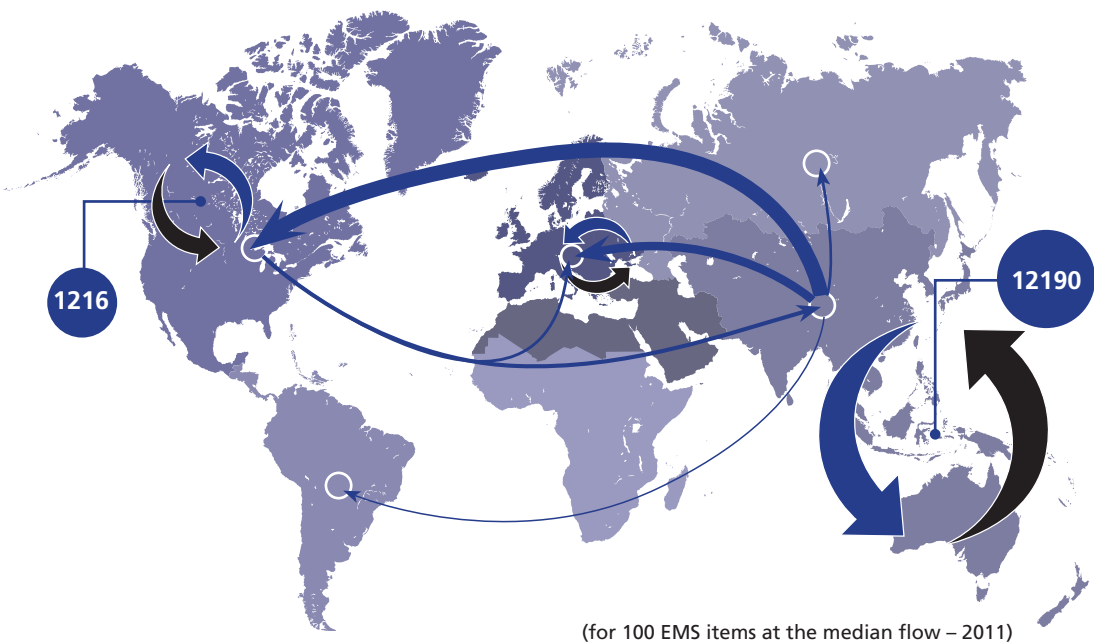
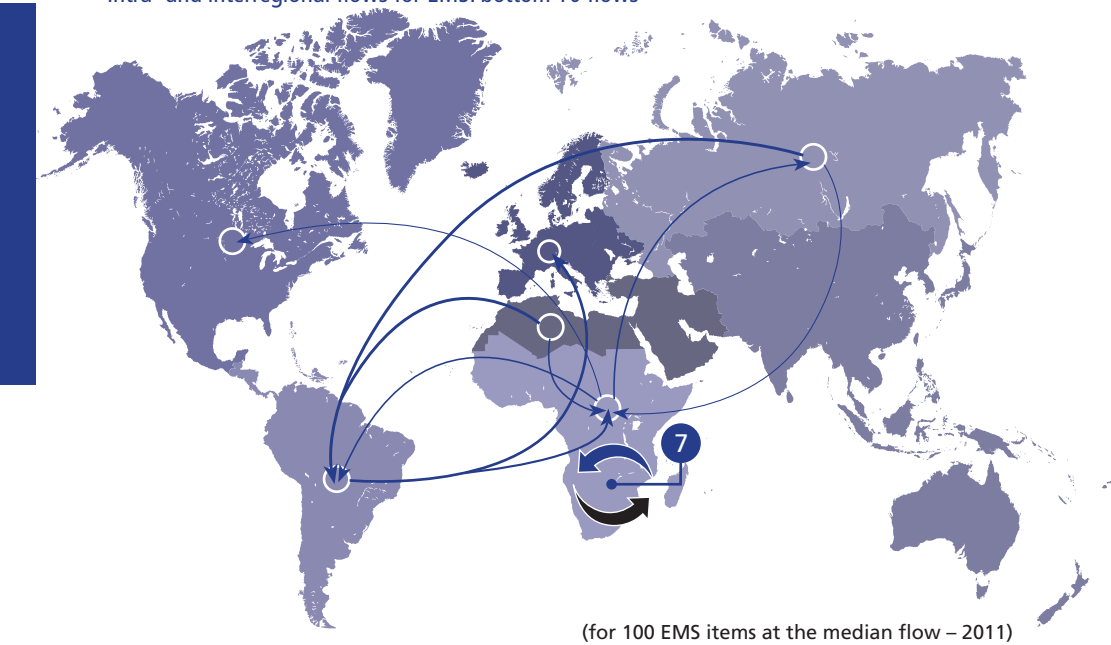


FIGURE 6b
Intra- and interregional flows for EMS: bottom 10 flows



relationship by applying Newton's law of gravity to describe the volume of bilateral aggregate trade (Tinbergen, 1962). His central hypothesis was that aggregate trade flows (T) between two countries (A and B) are proportional to the countries' economic size (usually measured as gross domestic product), but negatively related to the distance between them:

$$T_{AB} = \frac{(GDP)_A^\gamma (GDP)_B^\delta}{Dist_{AB}}$$

This rather simple model of international trade quickly became a workhorse for trade economists, as it correctly predicted most international trade flows. It was shown that the law of gravity applied to different samples of countries and the results were stable over time. The microeconomic foundations for the model were later added by the seminal contributions of James Anderson in 1979.

Over time, the model was further refined, in terms of both theoretical foundations and econometric methods to estimate it. On the theoretical side, researchers recently integrated the importance of network effects (Chaney, 2013) as well as informational barriers (Allen, 2011). The methodology has been improved by showing ways to better control for country specificities (Anderson and van Wincoop, 2003) and by taking into account zero trade flows (Santos Silva and Tenreyro, 2006).

International trade flows and international postal flows are closely related. Indeed, a portion of international trade in goods is processed through the postal network. Given the rising importance of e-commerce, this portion is steadily increasing. Furthermore, international exchanges of letters might trigger international trade flows or vice versa. In any case, the close relationship between the two types of flows led to conjecture that the gravity model might also be an important tool to estimate and predict international postal exchanges.

Adapting the trade gravity model to the postal world is rather straightforward. Instead of explaining bilateral trade flows, the postal gravity equation is used to explain bilateral postal exchanges (P) between countries (A and B). We assume that the forces at work in the trade gravity model also come into play in the postal world. In other words, the economic size is positively correlated with the volume of postal exchanges, whereas distance reduces volumes:

$$P_{AB} = \frac{(GDP)_A^\gamma (GDP)_B^\delta}{Dist_{AB}}$$

In order to estimate this equation, we simply transform it into a log linear function of the following form after adding other bilateral frictions F :

$$\ln P_{AB} = \alpha + \beta \ln \text{Dist}_{AB} + \gamma \ln \text{GPD}_A + \delta \ln \text{GDP}_B + \theta_i F_{AB} + \epsilon$$

3.1 Data

Nearly all designated postal operators worldwide use the UPU's International Postal System or other electronic data interchange (EDI) systems when exchanging postal items across borders. The systems are designed to facilitate the operational management of all classes of international mail exchanges between postal operators. Using these systems makes the scanning of outgoing and incoming mail compulsory. Data from every scan, exchanged via electronic data interchange, is recorded in real time at UPU headquarters in Berne. Given the large number of scans every day around the world, the total database for one year consists of almost two billion records of events.

In order to estimate our model, we used the total number of EDI messages sent between 170 UPU member countries in 2011. Before feeding this data into our model, considerable work was needed to verify the data and to correct for special cases. For example, some postal operators only began to fully implement the international mail management system in mid-2011. For every day, we have summed up all scans, resulting in 762,769 observations for letters, 576,180 for parcels and 516,666 for EMS items.

The key idea behind our approach is to utilize the large number of records in our big postal database in order to assess whether international postal exchanges obey the law of gravity. In other words, by feeding all the data into our model, we test whether distance (in the broad sense) and economic weight can explain the volume of postal exchanges around the world. As the three types of postal exchanges, namely, letters, parcels and EMS, might show different patterns, we have estimated the model separately for the three formats. The strength of daily data lies in the possibility of continuously monitoring the impact of these factors on a rolling basis and extracting value from these signals to further develop and improve international postal services.

3.2 Econometric estimation results

Table 4 shows the main regression results in three columns for the three postal products: letters, parcels and EMS. The table must be read as follows: the bilateral volume of letters, parcels and EMS items (first row), is explained by the variables listed in the first column, such as distance or common currency. To improve readability, we list only the main variables of interest. Following Anderson and van Wincoop (2003), all estimations have been made using a fixed-effects approach, which controls for all specificities of countries, including their economic weight.

TABLE 4
Main regression results (2011)

Variable	Letters	Parcels	EMS
<i>In dist</i>	** -0.47	** -0.34	** -0.14
<i>Contiguity</i>	** 0.19	-0.04	-0.02
<i>Common lang.</i>	* 0.12	** 0.25	** 0.23
<i>Lang. origin</i>	** 0.29	** 0.19	0.07
<i>Former colony</i>	** 0.75	** 0.46	** 0.40
<i>RTA</i>	** 0.11	0.07	** 0.11
<i>Common legisl.</i>	** 0.09	** 0.10	-0.00
<i>Common currency</i>	** 0.23	** 0.27	0.05
<i>Transition</i>	** -0.41	0.10	* -0.18
<i>Fit measure: R2</i>	0.75	0.60	0.68
Observations	762,769	576,180	516,666

Note:

** and * denote statistical significance at the level of 1% and 5%, respectively.

The list of explanatory variables explains variations in international postal traffic. Dist. measures the geographical distance between two given countries, also called country pairs. Contiguity indicates whether the country pair is made up of neighbouring countries or not, common lang. whether they share the same language (i.e. as a measure of cultural distance), lang. origin. whether their language roots are the same, former colony whether there is a historical tie between the two countries in the country pair in terms of one being the former colony of the other (i.e. a measure of political distance). RTA indicates whether the two countries in the country pair are members of the same regional trade agreement (another measure of both political and economic integration distance), common legisl. whether both countries have generally similar legal systems, common currency whether they are part of the same currency area (i.e. another measure of economic integration distance), and transition whether the postal exchanges between the two countries in any country pair are governed by the terminal dues transition system (a measure of postal development distance).

The first important observation is that the statistical fit, measured by the so-called “R square” (R^2), is high for all three regressions. In other words, the model is able to correctly predict between 60% and 75% of all international flows, depending on the mail class. This value increases to more than 90% for all three mail classes if all daily flows are aggregated to annual bilateral flows (not reported in this chapter).

The second important result is that distance has a negative impact on mail volumes, which confirms the conjecture that gravitational forces are at play. The distance coefficient is negative for all three mail classes, but for letters the coefficient is strongest at -0.47. In econometrics, this kind of relationship is called elasticity. A 10% increase in distance reduces international letter-post flows by 4.7%, international parcel-post flows by 3.4% and EMS exchanges by 1.4% in terms of weight, although the strong EMS development in Asia-Pacific may have skewed the distance coefficient for EMS downwards. Nevertheless, the comparison of distance coefficients across mail classes suggests that quality is more important than price; price is variable according to distance in the case of EMS and parcel traffic, but less so in terms of letters. It also shows that investment in quality can help mitigate the impact of distance to a great extent. Ideally, with the development of “perfect” quality of service, the distance coefficient should converge to zero over time, meaning that distance would no longer have an impact.

It is interesting to highlight that, generally speaking, distance matters relatively less in postal gravity than in traditional trade gravity equations, where the coefficient is often close to one. The postal world is “flatter” than the traditional trade world in the sense that geographical distance constrains exchanges, including of physical goods, between countries to a lesser extent than in traditional trade. This could mean that the international postal network intrinsically has greater trade facilitation power, in the sense of overcoming distance, than other more fragmented logistics systems in the international supply chain. While the international postal network is in essence universal and inclusive, other trade logistics networks are less accessible for peripheral or lower-income populations. Another explanation could be related to the nature of postal items transported through postal systems and the kind of international trade the postal sector supports.

As explained above, bilateral flows might be affected by additional frictions, or non-geographical “distances” (e.g. political, cultural or sectoral), between two countries. These non-geographical distances could actually have a greater impact on the development of cross-border postal flows than geographical distance. We have therefore added eight variables to control for such bilateral particularities. The first bilateral variable comes into play when the two countries exchanging mail are neighbouring countries, otherwise the variable is zero. The regression result of 0.19 means that the mail volume between neighbouring countries is 19% higher than between countries that do not share a common border. This effect is statistically significant at the level of 1%, implying that it is 99% certain that a common border enhances mail flows by 19%. The same variable is not statistically significant for parcels and EMS items.

Another important friction that might emerge between two partners could be the lack of a common language. A portion of postal flows originate from the exchange of information, rather than the delivery of physical documents or products. Common language can facilitate these exchanges enormously. It is therefore no surprise that the variable measuring whether a common language exists between two countries is statistically significant, and that a common language has a positive impact on trade. For letters, volumes are 12% higher, for parcels 25% and for EMS 23%. The variable “lang. origin” controls for situations where the languages of the two countries share the same origin. The results show that a common ethnology boosts trade for letters and parcels, but not for EMS. Comparing these values of language coefficients with the ones generally obtained in the international trade literature, one can notice that language matters much more in the postal world, including for the exchange of goods through the postal parcels networks.

Another remarkable result of our research is the strong influence of former colonial links on postal exchanges. In cases where sending and receiving countries were previously under the same colonial power, letter exchanges are 75% higher than between other countries. The international exchange of parcels and EMS between countries sharing a colonial link is between 40% and 46% higher.

The RTA variable measures whether the bilateral postal flow is between two countries that are members of the same regional trade agreement. With the exception of parcels, postal flows again increase in such cases. A common source of legislation and a common currency also have a positive effect on international postal exchanges. The coefficients are positive and statistically significant for letters and parcels, but not for EMS items.

Finally, it is possible to control for cases where bilateral exchanges are governed by the terminal dues transition system. In such cases, bilateral letter flows are 41% lower, compared with exchanges governed by the target system, all other things being equal. This highlights the potential value in terms of traffic growth for new participants in the target system. Quality incentives may play a central role in driving these traffic gaps.

Another reading of the main regression results in table 4 is to compare the impact of frictions across segments. While the international letter post is affected by the nine frictions listed in the table, the parcel-post and EMS services are impacted by six and five of the nine frictions, respectively. For instance, EMS does not suffer from a lack of contiguity, common language or legislation in the exchanges between any pair of countries. This means that these obstacles were overcome in the provision of the EMS service but not in the provision of the letter-post or parcel-post services. Ideally, a postal service would aim to not be impacted by any of the frictions under consideration. In a flat postal world, none of the coefficients in table 4 would be statistically significant.

Once the model has been estimated, it is possible to fill the data gaps. More than 75% of all possible corridors are covered by data gathered through EDI messages. However, the remaining bilateral flows must be estimated. Thanks to the good fit of the econometric model introduced above, the missing flows were estimated on an annual basis. We found the estimation outcomes to be quite reliable after checking with a number of postal operators involved in these exchanges. Tables 1 to 3 in the previous section were also completed using these estimates.

The econometric model of international postal exchanges, through the estimation of gravity equations, leaves many open questions but does provide a useful analytical framework that can be further improved and adapted. For instance, the model could incorporate more big postal

data on international postal exchanges if EDI messages circulating on networks other than the UPU's POST*Net became available. The model could also be enriched in several sector-specific dimensions, to analyze, for example, the impact of the barriers to online trade created by inefficiencies in postal services, differentiating between delays in the origin country's postal network, the customs office, and the destination country's postal network.

4. Conclusion

This research has revealed the power of big postal data analytics to identify and master the forces that govern international postal exchanges. The research is a breakthrough in several regards. First, it makes full use of more than a billion operational records – which would otherwise have been discarded – for market analysis and policy making. Second, it can be continuously run, thereby enabling greater reactivity of postal stakeholders to changes in their environment. Third, it aligns with recent research conducted by Google (Cowgill and Dorobantu, 2012) and eBay (Lendle et al 2012), using their own big cross-border e-commerce data. That research finds similar results and estimates some key parameters in the same range of values as the postal gravity model. Our research is also in line with the work developed for the production of the DHL Global Connectedness Index (Ghemawat and Altman, 2012); that analysis of global trade and finance clearly converges with our own analytical outcomes and conclusions. Fourth, it provides a key input to the UPU's operational and policy toolkits, so that we can start reducing postal development asymmetries and international postal imbalances. Never before has a single analytical framework shown such great potential for all UPU stakeholders, be they designated operators, governments, regulators or other international agencies.

For designated operators, big data is a tool for experiment and innovation, as well as for the continuous monitoring of the impact of investing in quality on the development of international postal traffic. It is also a postal economic warning system. Moreover, international postal traffic forecasts could be strengthened and updated with nowcasts; this seems particularly important in today's uncertain postal and economic environment.

For governments, it is a real-time policy evaluation tool that could increase the efficiency of a number of sector policies. Future international governance must improve its timeliness if it is to be effective. For regulators, it could provide international benchmarking for some domestic policies.

For other international agencies, it could signal all sorts of macroeconomic and social evolutions in real time, particularly regarding the most vulnerable parts of the world population. It could provide key leading indicators to the international community.

We have shown that the postal world is flatter in terms of the impact of geographical distance relative to traditional international trade, but not necessarily in terms of other political, economic and cultural “distances”. While the international postal network seems better able to facilitate exchanges across the world than other trade logistics networks when it comes to overcoming the challenge of geographical distance, other factors could well matter even more than in international trade development: history, politics, legal issues, economic integration, culture and other sector-specific issues. Reducing the negative impacts of these frictions could boost the development of international postal exchanges, with all the resulting benefits related to the inclusion and integration of people in the world trading system.

Beyond these issues, the research framework developed in this chapter will enable the testing of many other hypotheses regarding the governance of international postal exchanges. The model needs only slight adaptations to answer a number of more specific questions. A study of the impact of exchange rate variations on bilateral international postal traffic could be one of the most interesting developments of this research, given the growth in cross-border e-commerce. Forthcoming research will show an exchange rate elasticity of one, meaning that a 10% appreciation of the exchange rate of a destination country leads on average to a 5% increase in incoming international postal flows in that country.

The international big postal data analytics framework introduced in the last two chapters of this book might also make it possible to acquire a more precise estimation of the effect on international postal exchanges of termination charges, such as terminal dues for letters and inward land rates for parcels. Among many other questions, the impact of quality of service improvements or new service features, such as returns, could also be evaluated and monitored in real time thanks to big postal data, paving

the way for controlled experiments in the development of international postal services. Market opportunities, in terms of new corridors for international postal exchanges, could also be identified and international postal volumes forecasted.

The econometric model of international postal exchanges can be used to produce reliable international postal traffic indicators that could improve the UPU decision-making process in the coming years. The model is essential for the current and future development of international postal strategies, to strengthen the weakest links of the international postal network and foster trade facilitation. It will open the way for all postal stakeholders to seize the opportunities presented by globalization and make postal service more universal than ever. However, all this will depend on strengthening cooperation in data sharing, while ensuring the protection of commercially sensitive data, so that consolidated big postal data can be utilized to the benefit of all and at the expense of none.



CONCLUSION

Ten key takeaways

“In terms of political economic development, the postal sector has always had a wider significance than simply being another sector of the economy. It has been historically, and still remains, a key infrastructure providing access to networks and services, which are critical to the development of economic activity and the functioning of political and civil societies. The identification of households through effective addressing, the integrity of secure document communication and the capacity to facilitate payments and create a savings infrastructure have all been key components of economic and social development”.¹ So stated a 2007 study by the UPU. Moreover, as far back as the early 1980s, Nobel laureate Edward Prescott already understood that “postal economics might be more central to understanding the economy than monetary economics”.

The postal sector could become even more relevant in the new paradigm of connectivity and big data that has replaced the industrialization paradigm; some call it the third industrial revolution. Indeed trust, security, logistics, access to basic services and integrated multi-channel delivery are invaluable core sector characteristics in a world where more than 80% of the population will have Internet access by 2020.

Despite this, the postal sector is distinctly low profile. It is often perceived as lagging behind high technology communication sectors like mobile telephony and broadband Internet. So what potential development strategies exist for the postal sector? This book has provided a number of key economic perspectives to shed light on the factors behind its low profile relative to other sectors. They can be summarized in the following 10 key takeaways, which also describe the challenges to be overcome by the sector if it is to regain a high profile in tomorrow’s economy and society.

- 1. Addressing and reversing the structural decoupling between economic and postal growth, as measured by comparing the evolution of the main line of business (i.e. letters today and parcels and logistics tomorrow) with gross domestic product, is a matter of economic survival for incumbent postal operators and their millions of postal employees worldwide.**

The decoupling between letter-post traffic growth and GDP growth has now been at work in industrialized countries for more than a decade, as a result of electronic substitution of mail and virtualization of some types of physical goods (sounds, pictures and printed matter). This decoupling has also taken place in most developing countries over the last three decades for various structural reasons, not all related to technology. Most incumbent postal operators have struggled to reinvent themselves so as to align their main business with economic growth and development. The current levels of employment in the sector will only be sustainable in the medium and long run if sectoral growth is fully in line with economic growth. The need for the deepest ever sector transformation must be taken into account by governments and regulators through legislative and regulatory frameworks that facilitate the delivery of affordable universal services meeting societal needs and integrating new technology.

2. **The greatest postal catch-up process ever is possible. Indeed, the world has witnessed an unprecedented economic convergence between developing and industrialized countries over the last three decades. This is at odds with the lack of a similar postal convergence across countries over the same period of time and signals vast untapped development possibilities.**

Postal stakeholders have lost three decades of postal development in spite of the greatest economic convergence ever between advanced and less-advanced economies. This points to a major postal development failure. It also signals huge untapped opportunities. A catch-up process could take place in the coming three decades if the right set of sector policies are implemented. However, this will only be possible with the recognition by governments of the role of the postal sector, and with related infrastructure investments, appropriate and evolving legislative and regulatory frameworks, and a strong postal incumbent or possibly alternative connected delivery networks in each country.

3. **Increasing the weight of postal infrastructure in the production of goods and services depends upon postal operators' seizing opportunities that maximize the impact of their physical and retail network assets, as pointed out by successful experiences in the areas of financial inclusion and trade facilitation for micro, small and medium-sized enterprises (MSMEs).**

If postal delivery networks are not transformed quickly enough, the economic relevance of the postal infrastructure, in terms of contribution to production of goods and services, will be jeopardized, as when integrators entered the international express and logistics market in the 1980s. However, the legacy infrastructure of many postal incumbents and the unique reach of their networks can be leveraged to support financial inclusion, as well as the integration of MSMEs in the international trading system through a fully integrated postal supply chain. The infrastructure is also an ideal conduit for the delivery of a wide range of government services to citizens and the provision of Internet access to the 61% of the world population without Internet access as of 2013.

4. **The globalization of postal exchanges is a necessary response to the internationalization of the economy. Between the early 1980s and the first decade of the 21st century, the world witnessed the greatest internationalization of its economy since the first wave of globalization at the end of the 19th century and the creation of the UPU in 1874. Postal operators have generally not tapped into the potential of the steady internationalization of the economy, instead displaying an increasing focus on the domestic market at the expense of international exchanges.**

While production of goods and services has become more globalized over the last three decades, the opposite has actually occurred for international postal exchanges facilitated through postal operators. Given that globalization is far from complete, the potential for Posts is tremendous. International interconnectedness of postal networks could thus be further exploited if tailored to 21st century customer needs.

5. **Shrinking geographical distances to facilitate efficient exchanges has been the historical role of the Post. This role can be further leveraged in the new e-commerce era. The international postal network is better suited than other more fragmented international trade logistics networks to overcome the negative economic effect of geographical distance between countries on international trade. With globalization of the real economy still far from its full potential, Posts can further leverage this relative competitive advantage. However, the effects of other social, political, cultural and economic obstacles to trade, as well as sector-specific frictions, must be mitigated.**

The postal world is not yet flat: obstacles, or frictions, that prevent seamless cross-border exchanges are qualitatively the same as for other international trade transactions conducted through other (heavy) trade logistics networks. However, the quantitative impacts of each friction taken separately appear to be different. Interestingly, these research outcomes are in line with similar research carried out by big players in the e-commerce and Internet world. On the one hand, geographical distance between countries matters less for goods exchanged through postal networks than for traditional merchandise trade. This may be due to the relative efficiency of the globally interconnected postal network, facilitated by an intergovernmental organization (the UPU) and a treaty, compared with other more fragmented trade logistics systems. It may also be related to the nature of the goods traded through the postal network, namely, B2C cross-border flows, which are further developing through the expansion of international e-commerce. On the other hand, certain obstacles not directly related to distance – for example, if two trading partners do not share a common language or currency, do not belong to the same regional trade agreement, or have differing legal systems – may matter more than in classic international trade. Postal-specific elements governing exchanges between countries may also have a crucial impact for the development of postal flows between countries (e.g. charges related to termination and access to other networks). While the possible negative effects of postal-specific elements are under the control of postal policy makers and can be directly mitigated, other barriers require innovative solutions from the postal industry.

6. **Supporting a more symmetric development of postal exchanges across regions and countries will enable the UPU to achieve its goal of a single postal territory gathering all postal networks together worldwide and a sector built on universal postal service policies seeking to ensure affordable, accessible, quality postal services for all citizens.**

This UPU vision contrasts sharply with the asymmetric development of postal exchanges around the globe. Indeed, the performances of the postal sector are uneven, as measured by a wide set of postal indicators, such as the access of populations to the postal network infrastructure, the level of postal traffic and the relevance of postal services in the economic system of each country. These circumstances jeopardize the achievement of a universal postal service worldwide, in turn weakening the postal network. From a cross-border exchange perspective, each postal weakness at the level of the domestic network is multiplied by the number of postal partners abroad. This could have dire consequences for the development of the new “e-economy” and for future economic integration processes worldwide. Governments must seriously consider what a weak postal delivery infrastructure could mean for their 21st century e-economies, before entire populations, generally the most vulnerable ones, are left out of the new e-commerce logistics. The untapped opportunities are in the weak links of the network. In the connectivity economy, growth is achieved through cooperation, and the game has shifted from win/lose to win/win.

7. **Achieving a greater balance in international postal exchanges is key to preserving interconnectivity. The challenges created by strong imbalances in international postal exchanges must be managed so as to maintain and develop the value of interconnected networks. While some imbalances are externally driven (e.g. international trade, finance or exchange rate movements), others are sector-specific and can be mitigated by postal policy makers. The development of intraregional exchanges, particularly South–South, seems critical to achieve greater interregional balance.**

International intra- and interregional postal flows feature strong imbalances. These imbalances are posing increasing economic challenges to interconnectedness in a world where connectedness needs to be exploited to seize opportunities related to e-commerce and globalization. While these imbalances are partly attributable to trade and macroeconomics, others are clearly sector-specific and should be mitigated with the right set of interconnection policies. In this respect, the UPU plays a central role by developing appropriate remuneration policies for termination of services by the partner network, as well as common standards and incentives related to quality of service.

8. **Acknowledging the different factors and country characteristics that drive postal markets at different stages of development is vital for postal policy making and business development. This must translate into tailor-made postal policies and legislative and regulatory frameworks.**

The deep contrasts in postal economic and regulatory models in developing countries versus industrialized countries must be fully acknowledged by postal policy makers in their design of postal reform processes. Transposing postal policies from one level of economic development to another, or from one region of the world to another, does not work. Postal market development outcomes cannot be easily replicated through the application of a similar sector policy because of differing economies, postal economies and postal economic delivery models, which also call for different postal regulatory frameworks, as extensively illustrated for Sub-Saharan Africa in this book. There is definitely no one-size-fits-all solution, and intraregional or South-South approaches to postal development could be key to successful reforms. The greater the heterogeneity in postal economies, the more challenging it becomes to interconnect all networks through win-win solutions and meet the needs of postal stakeholders – most importantly, the connectedness needs of every citizen and enterprise. The individual challenges of each country must be taken into account and appropriate solutions devised, rather than transposing solutions blindly from developed to developing countries.

9. **Whether to develop new services and innovate independently or through alliances is a trade-off to be wisely managed. Postal operators often have to choose between transforming themselves through cross-sector alliances (transfer of expertise or lasting relationship) or by developing their own new range of services. There is a trade-off between loss of control on the one hand, and the cost and risks of in-house development or acquisitions on the other. In the choice between the two options, strong biases could lead to implementation of the wrong one from a development perspective.**

In a time of transformation, the choice between development through alliances, including the private sector, and in-house development, is particularly difficult, as shown by our research on postal financial services. A sort of trade-off between external cooperation and control of the business appears, but other considerations such as whether to share fixed costs or make fixed costs more variable are also at play in these strategic choices. A public-private mix in the supply of postal services, or in non-postal services offered through postal networks, will often depend on local circumstances, from both a business and policy perspective.

10. **Exploring and making growing use of big postal data, particularly at the international level, will empower postal stakeholders, enabling them to take control of the future of the postal sector, unleash all its untapped potential, and reinvent postal services for the 21st century. However, this also requires the greatest cooperation ever between postal stakeholders.**

The billions of data records generated by international postal exchanges through tracking and tracing systems and other sensors constitute a unique set of real-time data. Appropriate sets of tools could enable governments and postal operators to develop timely policies and strategies so as to navigate the modern high-velocity and uncertain world requiring unprecedented levels of reactivity. This data could help us take the pulse of the world economy and send real-time alerts on global and local economic and social conditions, ultimately protecting the most vulnerable members of the population. Citizens and enterprises, particularly small and

medium-sized, might trust the Post – unlike other organizations – to analyze and store their data in order to meet their needs, while ensuring their privacy and securing their communications and financial and economic transactions.

As highlighted by these 10 key takeaways, in the current context of unprecedented economic convergence and “coopetition”, the boundaries of the postal sector are likely to become ever more diffuse. However, as is often the case in a time of crisis and technology-induced changes, opportunities abound – among them, the development and implementation of strong public pro-poor policies, particularly in emerging countries. Security, trade facilitation and inclusion come high on the list of such policies. Developing countries may adopt cheaper state-of-the-art technologies such as mobile telephony and new flexible software, thus leapfrogging costly, outdated technology. Finally, electronic commerce is developing rapidly at both domestic and international level.

A multilateral intergovernmental approach under the auspices of the UPU, a unique sectoral organization, could help substantially reduce international trade frictions and information asymmetries while reinforcing the weakest links of the single postal territory. For example, customs formalities could be simplified and standardized and delays reduced through pre-notification and close monitoring. Indeed, these indirect frictions have proven to be a greater obstacle to trade than tariffs.

Big data is the key to exploiting the many opportunities in the postal sector, now and in the future. Governments and Posts that know how to use today's big data to set up scalable policies and synchronize their strategies and goals within a harmonious and effective regulatory framework will be able to seize the many opportunities ahead.

ENDNOTES

INTRODUCTION

1. Subramanian, A., & Martin, K., "The hyperglobalization of trade and its future," Working paper 3, Global Citizen Foundation, June 2013, www.gcf.ch/wp-content/uploads/2013/06/GCF_Subramanian-working-paper-3_-6.17.13.pdf.

CHAPTER 1

1. In this book, "incumbent postal operator" means the operator(s) designated by each UPU member country or territory to connect that country or territory to postal networks abroad.

2. The country classification by the World Bank is slightly different from the UPU classification, as 71 countries are considered high-income, whereas only 42 are classified as industrialized.

3. The ratios to Switzerland were in most cases between 0 and 1. Since the differences between Switzerland and other countries are substantial and therefore the ratio was close to zero, we have taken the logarithm. For this reason, almost all values were transformed into values below 0.

4. As stated above, the data presented in this chapter were gathered through a questionnaire sent to the incumbent(s) of each country. The employment data, therefore, do not cover employment by other postal operators. Depending on the region and country, this share of employment can be considerable. However, on the basis of the questionnaire regularly sent to postal regulators and covering all operators, the UPU estimates that other operators employ around one third of the world's postal workers. Total employment in the postal sector can thus be estimated at around 7 million.

CHAPTER 2

1. The incumbent operators in Sudan and Tunisia in particular have increased the number of postal outlets managed by people external to the incumbent operator.

2. The questionnaire asked for the total revenue to be split into four major income groups. When calculating the global distribution among the four groups, we took into account the relative weight in terms of aggregate revenue of each incumbent operator.

3. As mentioned in the introduction, these numbers are based on reported data, as well as on estimations, when the incumbent operators were unwilling to share the requested information. It is possible that not all commercial items handled by incumbent operators are represented in the estimations.

CHAPTER 3

1. In addition to the facts and economic analyses compiled on this period, the contextual data given in this introduction are mainly taken either from French parliamentary reports and legal or economic articles, or from Jim Campbell (1994 and 1995), that excellent legal historian who nevertheless lobbied for American couriers. To illustrate the influence of stakeholder intervention on development of the process, it can be pointed out that even the date when preparation of the Green Paper began differs according to the different points of view. A reading of the various French parliamentary reports – and there are many of them (see, for instance, Delfau (1994, p. 7), Hérissou (1996, p. 5)) – and the political standpoints in France indicates that the history of the Green Paper is always rooted in the impetus provided under the French presidency of the Union, in the shape of an informal meeting of telecommunications ministers in Antibes in 1989. As told by Jim Campbell, the Commission's work started from 1989 at the insistence of the European Posts (1994, p. 13). Thus, the Antibes meeting merely reinforced the approaches of European Posts to the Commission.

2. As early as 1974, a parliamentary investigative committee had proposed separating the two activities and creating a public company for telephony.
3. There is a great deal of literature on this subject. The Prévost report (1989) summed up the public debate.
4. Green Paper, p. 123.
5. Using the word “integrator” to describe the international transport of letters and goods was an attempt to reflect what actually happened in the mail transport and delivery process. Till then, Posts had set up a structure where items were processed by national postal administrations, which interchanged them in accordance with the technical and economic regulations defined within the framework of the Universal Postal Union. For their part, integrators set up end-to-end handling systems, based in particular on efficient information systems. These were high-speed (express) services that were the extension of courier operations.
6. European Union, European Court of Justice, case C-320/91 Paul Corbeau, 19 May 1993, [1993] ECR I 2563.
7. The article also stated, “This [meeting] was the beginning of the International Express Carriers Conference, which became the primary client for the long effort to untangle the restraints of the European postal monopolies” (p. 4).
8. *“Se vogliamo che tutto rimanga come è, bisogna che tutto cambi.”* Giuseppe Tomasi di Lampedusa, *The Leopard*, 1958. Translation: “If we want everything to stay as it is, everything has to change.”
9. Postal services studies available in the EU Single Market section of the European Commission’s website at http://ec.europa.eu/internal_market/post/studies_en.htm.
10. Regular studies by Swedish regulator PTS and academic Peter Andersson mean that we now have the most rigorous review possible of Swedish postal policy. The most recent are Andersson (2008) and PTS (2011). There are of course other sources, including Sweden Post, Citymail and government reports. The real difference is that PTS produced homogeneous information about volumes, market shares and prices that is not available elsewhere in Europe.
11. Astonishingly, for about 10 years, the Belgian Post (bpost) does not appear to have published any exact traffic data. Trends can, however, be identified from the verbatim account of public remarks by bpost’s Chairman. Indeed, information for stockmarket-listed companies seems to be the most accessible. However, only the archives of the Netherlands Post can be followed back to the 1990s.
12. For a description of the mailing-firm market in France, see Gallet-Rybak et al (2008).
13. In Italy too, there seems to be some competition. However, the information available is not very reliable.
14. In this respect, PTS recently expressed the view that rebalancing tariffs had made it possible to limit traffic loss in Sweden, compared with the Danish market. “One reason why the Swedish letter market has coped so much better than the Danish market, where the situation is virtually catastrophic, is that Sweden has a considerably lower price level for large customers due to the prevailing competition and consequent improvement to efficiency. This means that fewer Swedish customers are abandoning letters for electronic alternatives as regards transaction mail, while postal operators can compete with other media in the direct advertising market and even take market shares in this sub-market” (PTS, 2011, p. 8).
15. The rebates obtained by large mailers in the United Kingdom have less to do with pressure from competition and more to do, in certain respects, with regulatory pressure on network access tariffs. Royal Mail access tariffs had to comply with rules, and this resulted in a widening of the gap between its own tariffs and those of mail consolidators.

16. In Sweden, the difference is 11% and in the Netherlands, 12% (April 2012).
17. Contrasting with the results of the Community litigation concerning Deutsche Post's state subsidies and abuse of its dominant position.
18. Price increases for single-piece letters and parcels must not exceed consumer price index increases. A second rule concerns the maximum margin authorized for the universal service.
19. In July 2011, Sandd announced a 5% price increase.
20. See PostNL website, specifically its business report and presentations to financial analysts. PostNL expects traffic to fall by 7% per year between now and 2015.
21. Financial report, Morgan Stanley Research Europe, May 2009.
22. The figures in these paragraphs are taken from different sources. For the early 1990s, they are mainly taken from a Cour des Comptes report (2003) and the Green Paper. The most recent data are taken either from a 2010 reference document published by La Poste or from a 2010 Cour des Comptes report, and information published in the Press for 2011.
23. Senator Larcher's report (Larcher, 1997) provides a fairly balanced diagnosis of the situation of France's La Poste and the difficulties facing it. The report brings out all the drawbacks of competition and La Poste's specific characteristics in respect of a common law situation. This diagnosis is updated in the 2003 Cour des Comptes report.

CHAPTER 5

1. Laffont, 2005.
2. First UPU-PAPU forum on African postal regulation, Cotonou, 17–19 October 2011.
3. See chapter 1.
4. Financial services and third-party payments represent the lion's share of the "other services" category; therefore, these categories have been combined. The financial dimension and its regulatory element are not dealt with in this chapter.
5. See chapter 1.
6. See chapter 1.
7. UPU integrated postal reform and development plan for Togo (2008).
8. According to the African Union's Cairo Declaration, which first appeared in 2008 and was approved by the governments and the ministers of information and communication in 2010, a binding legislative and regulatory framework had to be developed, part of which was the establishment or strengthening of the regulatory authority and the recognition of the postal network and its services as another basic public utility. This framework was to be accompanied by a training programme for regulatory bodies and the establishment of framework agreements enabling partnerships with the private sector.
9. "Courier trends, the Nigerian experience", *Journal of Communications and Governance* (JOCAG), Vol. 1, No. 1, 2011, Lagos, Nigeria.

10. A study by the African Union Commission entitled "Harmonization of postal policies, regulations and strategies with a view to strengthening the postal sector" together with an annex on regulatory models, served as a basis for the African Union recommendations in 2008. Countries well in advance in the postal reform were identified.

11. Referred to in the questionnaire as a change to come, and adopted since then.

12. Referred to in the questionnaire as a change to come, and adopted since then.

13. Indicated in the questionnaire as about to be adopted.

14. "Postal Policy of the Republic of Namibia," Ministry of Information Communication and Technology, Palladium Strategy Consultants, 18 February 2009.

15. Regulatory ceilings or caps on individual or basket price (meaning that changes within these constraints can be made without authorization).

16. Price based on cost and additional margin.

17. See chapter 3.

CHAPTER 7

1. The UPU will not share any commercially sensitive data at the individual country level unless otherwise authorized by the owners of the data for specific and well-defined purposes.

CONCLUSION

1. The evolution of the postal sector – Implications for stakeholders (2006–12) – UPU–March 2007.

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