

Postal economic outlook 2020

**Navigating accelerated change
during an unprecedented crisis**

Berne, Switzerland – September 2020



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About this report

This report presents an outlook for the postal sector in 2020, in the context of a fast-changing economic landscape. It does so by presenting the most recent postal statistics in conjunction with key macroeconomic variables. The global economy has been deeply affected by the outbreak of COVID-19, with great ramifications for international supply chains. Long-term trends affecting postal operators were accelerated during the first months of the crisis, with network disruption soaring as e-commerce boomed. As the barriers to international logistics eased following the relaxation of lockdown measures, e-commerce proved resilient, although not sufficiently to change the fortunes of postal operators. Information collected via the UPU's big data platform shows that international mail volumes remain depressed, with a 20% decrease in registered items compared with the previous year. In the absence of public support, accommodating policies and a rapid resolution of the health crisis, it seems unlikely that disposable income and e-commerce will grow enough to bring about a swift recovery in the postal sector. Estimates suggest that worldwide operating revenue losses stand at between 4.5 and 6.5 billion SDR.

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Glossary

5NN	5-fold nearest neighbour imputation algorithm
ARIMA	Auto-regressive integrated moving average
B2C	Business-to-consumer
CAGR	Compound annual growth rate
CIS	Commonwealth of Independent States
DO	Designated operator
EDI	Electronic data interchange
EmIS	Emergency Information System
GDP	Gross domestic product
ICs	Industrialized countries
PPP	Purchasing power parity
SDR	Special drawing rights
UPU	Universal Postal Union
USD	United States dollar
WDI	World Development Indicator
WTO	World Trade Organization
YoY	Year-on-year

Introduction

2019 was a significant year in the long history of the postal sector. Trends that had been developing gradually for decades gathered pace, as the sector's traffic, revenue, business models and infrastructure continued to change beyond recognition.

In the international arena, a landmark decision reached by the UPU's third Extraordinary Congress in September 2019 was instrumental in programming structural changes to pricing, postal flows and compensation between postal operators.

Nevertheless, in the (postal) history books, 2020 is likely to surpass 2019 as a tipping point for the sector. Indeed, the outbreak of COVID-19 has had a profound impact on great swathes of the world economy. Within a very short period, it has transformed social and economic life across the planet, causing immediate disruption to global supply chains and effectively paralyzing many economic activities.

The postal sector was not spared by the crisis, and operators have struggled to move mail across borders in the wake of international air traffic being brought to a near standstill. At the same time, as postal services have continued to operate during most lockdowns around the world, their relevance for populations has been heightened. In addition, in several countries, e-commerce sales have surged, thus boosting demand for postal services.

The full effects of the economic changes induced by this crisis have not yet been revealed for the medium and long term, or indeed even for the short term.

In this context of ongoing uncertainty, making accurate predictions for the postal sector is an arduous task, to say the least. However, it is possible to report on the structure of the sector prior to the outbreak and to set out a number of ways in which the variable factors could evolve. This is the key aim of this postal economic outlook.

This document is divided into six sections. Section 1 describes the latest macroeconomic trends that are relevant to the sector. Sections 2, 3 and 4 present the latest structural data for the

sector, with regard to traffic, revenue, and infrastructure and staff, respectively. Section 5 discusses the state of competition in the sector, and section 6 provides a number of conclusions.

1. Global trends during the pandemic

COVID-19 and economic growth

The outbreak of the novel coronavirus has altered the economic outlook for 2020. Before the crisis, global output was already showing signs of a slowdown, with timid growth in 2019.ⁱ However, the unanticipated economic shock created by the pandemic has resulted in most growth predictions dropping by several percentage points.

As the virus spread during the first half of 2020, governments around the world started to implement the requisite health policy responses, which have resulted, inter alia, in labour supply shortages, a reduction in domestic and international mobility, and the severance of global supply chains. Now, the questions being posed no longer relate to whether there will be a potential downturn, but, rather, to the depth of the recession and its long-term effects on the overall economy.

The World Bank predicts that 2020 will deliver the worst economic performance since World War II.ⁱⁱ The forecast of -5.2% growth (Table 2), although grim, is still only a baseline scenario that will come to pass if, and only if, the pandemic is eventually brought under control. In 2020, all regions will see their output shrink.

The group of industrialized countries, as well as Latin America and the Caribbean, are expected to see their real output dive by 7% in 2020. The economy of the latter region is particularly exposed to the crisis owing to the sharp fall in the price of commodities, exports of which constitute a major source of revenue for that geographical group. In the same vein, stringent lockdowns in South Asia have given rise to predictions of a 2.7% contraction in output. Major outbreaks of the virus in Europe and the CIS have also resulted in greatly diminished growth prospects (-4.7%). After years of sustained growth owing to their position at the heart of global value chains, countries in East Asia and the Pacific region are expected to record almost zero growth (0.5%) in 2020. The Arab region has also experienced a slowdown in

most economic activities unrelated to oil, which may result in a 4.2% reduction in real growth. In Africa, growth is predicted to plummet, reaching -2.8%.

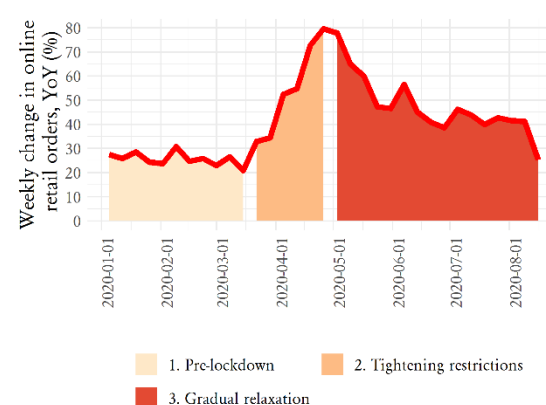
Postal operators are already feeling the effects of the worsening economic landscapeⁱⁱⁱ. In 2021, it is likely that they will be forced to operate within a context of low investment and increased operating costs. It remains to be seen whether the increase in demand for parcels and logistics will compensate, at least partially, for the slowdown of the economy.^{iv}

E-commerce during the pandemic

Lack of access to physical shops and the reduced mobility of consumers during lockdowns has appeared to offer a boost to the already flourishing e-commerce market. Given the policies implemented in response to the pandemic, demand from households and businesses for online services and digitally purchased retail products has soared.

The year-on-year evolution in the number of online orders per week for retail goods shows a marked increase with respect to 2019 (Figure 1). There was a noticeable spike in March and April 2020, when many countries started to impose lockdown policies.

Figure 1 YoY evolution of global e-commerce orders



Source: Emarsys, COVID-19 Commerce Insight.
Note: Simple average at the global level.

After the initial relaxation of sanitary measures, the level of online orders receded. As of August 2020, it continues to grow at a faster rate than before the “great lockdown”, but it is still too early to determine whether the new acceleration of this market will persist in the long run.

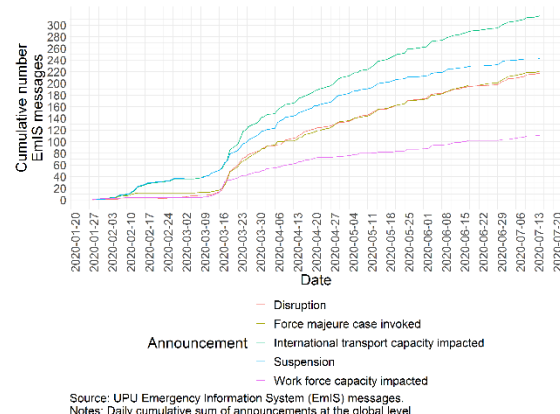
The greater level of demand for parcels and logistics has not necessarily been beneficial to the international market, for a number of reasons.

Disruption to the international network

Since the beginning of the pandemic, the UPU has been monitoring international mail via its big data platform. It has also been leveraging its Emergency Information System to collect essential information on the capacity of postal operators to provide services.

As of 16 July 2020, 137 countries had submitted EmIS messages announcing disruption to their operations. As shown in Figure 2, international transport capacity has been the most heavily affected area, with more than 316 EmIS messages sent to the UPU in this regard since the beginning of the crisis.

Figure 2 Emergency Information System messages



Problems relating to the availability of the labour force (111 EmIS messages) also resulted in delays in the clearance of items through customs, with an increase from an average of 2 hours to over 64 hours for barcoded parcels at the peak of the crisis (Table 1).

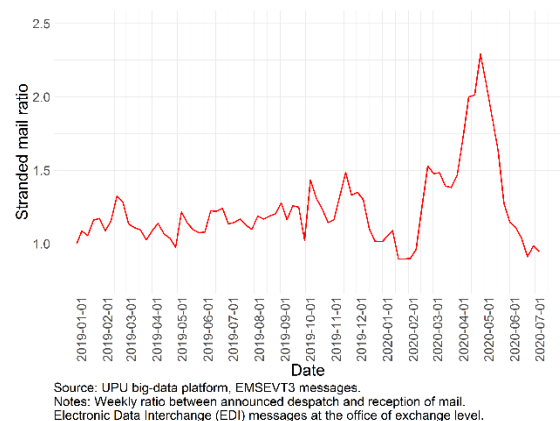
Disruption to air transport routes, coupled with labour shortages, has had an impact on the delivery of many postal items, revealing the extent to which the postal and aviation sectors are interconnected.

Figure 3 is based on postal big data captured from EDI messages embedded in barcoded mail items. By calculating the ratio between items ready to be exported and items received by the importing country, it is possible to quantify the

level of disruption to the international supply chain.

Under normal circumstances, this ratio, known as the stranded mail ratio, is close to one, as almost every exported item is received by the importing country in any given week. In February 2020, this ratio began to increase, reaching a historic peak during the week commencing 27 April 2020. At the height of the crisis, for every 2.3 items exported per week, only one was signalled as received (Table 1). Since then, the ratio has dropped again, eventually stabilizing at close to pre-crisis levels during the second week of June.

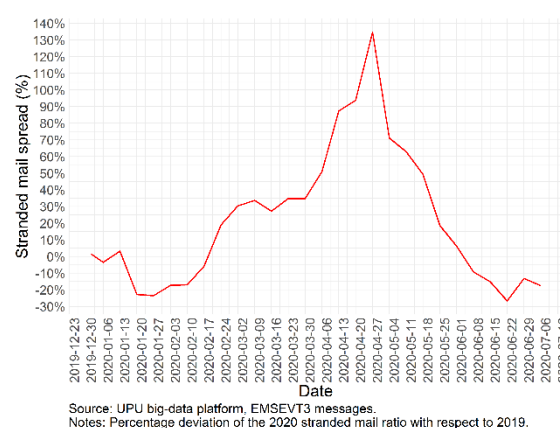
Figure 3 Stranded mail ratio



Drop in international volumes

Figure 4 shows the spread, in percentage points, between the stranded mail ratio in 2019 and 2020. The spike in April 2020 corresponds to the period of greatest disruption to the network. International mail flows were heavily affected by this disruption, in the midst of a surge in consumer demand for retail products via e-commerce.

Figure 4 Stranded mail spread



Overall, although the international postal supply chain has proved resilient during the crisis, volumes of cross-border mail have decreased. Estimates generated from high-frequency data indicate a 20% drop in international mail as a result of the pandemic, as shown in Figure 5. This is expected to compound long-term trends already observed prior to the crisis, as explained in the next section.

Figure 5 Drop in international mail

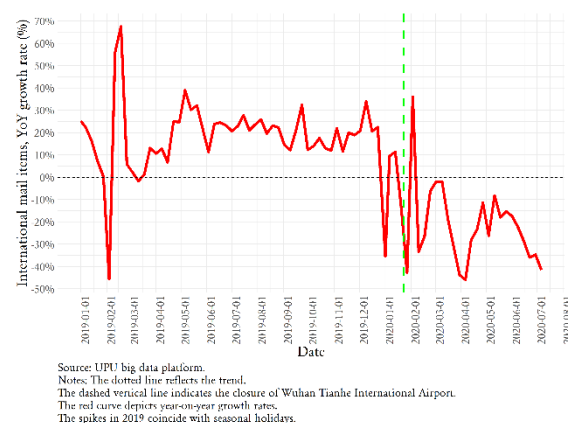


Table 1 Postal disruption owing to COVID-19

Number of EmIS messages relating to disruption to the supply of postal services	217
Number of EmIS messages relating to disruption to international mail flows	316
Maximum stranded mail ratio (outbound messages/inbound messages) reached during the crisis	2.3 (+134% compared with April 2019)
Drop in international postal volumes owing to the crisis (items in all mail classes)	20%
Average increase in customs clearance time (inbound parcels) at the peak of the crisis	from 2 to 64 hours

Sources: UPU big data platform. UPU EmIS messages. UPU Quality Control System.

Notes: Drop in volumes obtained by comparing the period from 1 January 2020 to 13 July 2020 to the period from 1 January 2019 to 13 July 2019.

Table 2 GDP projections

Real GDP growth (%)	2017	2018	2019	2020	2021
World	3.3%	3.0%	2.4%	-5.2%	4.2%
Industrialized economies	2.5%	2.1%	1.6%	-7.0%	3.9%
East Asia and Pacific region	6.5%	6.3%	5.9%	0.5%	6.6%
Europe and Central Asia	4.1%	3.3%	2.2%	-4.7%	3.6%
Latin America and the Caribbean	1.9%	1.7%	0.8%	-7.2%	2.8%
Arab region	1.1%	0.9%	-0.2%	-4.2%	2.3%
South Asia	6.5%	6.5%	4.7%	-2.7%	2.8%
Sub-Saharan Africa	2.6%	2.6%	2.2%	-2.8%	3.1%

Source: World Bank estimates and projections, Global Economic Prospects, June 2020.

Notes: Regional aggregates based on World Bank regions. The World Bank refers to industrialized economies as “Advanced economies”.

Table 3 Key macroeconomic indicators

Key indicators	2020	2021
World trade (annual growth)	-16.5%	13.6%
Retail B2C e-commerce sales (in billions of USD)	4206	4927
Retail B2C e-commerce sales (annual growth)	19%	17%
Remittance inflows (in billions of USD)	572	602
Remittance growth (annual)	-19.9%	5.2%
International postal tonnage (annual growth)	-20%	NA

Source: World Trade Organization, International Monetary Fund, World Bank, Statista, Universal Postal Union.

Notes: Estimates for 2020. The numbers concerning global trade are taken from the WTO’s U-shaped scenario.^v Data on remittances is taken from the World Bank.^{vi}

2. Postal traffic

Continuous decline of letter post expected to intensify

When the COVID-19 pandemic struck, postal operators had already been facing a continuing decline in the letter-post segment. Indeed, 2018 had marked a new contraction in both domestic and international letter-post flows.

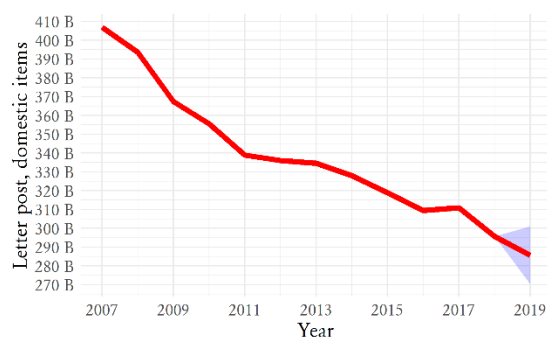
Table 4 Global postal traffic

	Items (2018)	Annual growth (2018, %)	10-year compound annual growth (%; 2008-2018)
Letter-post items, domestic	295.76 billion	-4.86	-2.82
Parcel-post items, domestic	14.88 billion	8.26	7.49
Letter-post items, international	3.55 billion	-2.99	-3.12
Parcel-post items, international	0.18 billion	3.15	12.98

Source: Global estimates based on UPU official statistics

As shown in Table 4, the volume of domestic letter-post items shrank by approximately 4.9% in 2018. This rate of decline exceeds the 10-year trend of -2.8% per year, which means that domestic letter-post volumes were decreasing at an accelerating rate. This trend is expected to be confirmed once the final figures for 2019 are available (Figure 6 and Table 5), with losses of 10 billion items every year. Volumes of international letter-post items have continued to decline in line with the 10-year trend of -3% per year.

Figure 6 Evolution of domestic letter post



Source: Global estimates based on UPU official statistics.

Note: Forecast based on Auto Regressive Integrated Moving Average (ARIMA) models.

Table 5 Forecast for domestic mail items

	Forecast items (2019)
Domestic letter-post items	285.7
Domestic parcel-post items	15.6

Notwithstanding the global trends, there are considerable differences in the evolution of traffic between regions.

With regard to domestic letter post, 2018 brought substantial volume losses in Africa (-23%), the Asia-Pacific region (-9%), and Latin America and the Caribbean (-11%). The ICs, which still account for 88% of global volumes, remain the region with the least decline in this segment (-2.5% per year since 2008), followed by Eastern Europe and the CIS (-4.2% per year over the same period).

International letter-post volumes have halved almost everywhere over the past decade, but have more than doubled in the Asia-Pacific region.

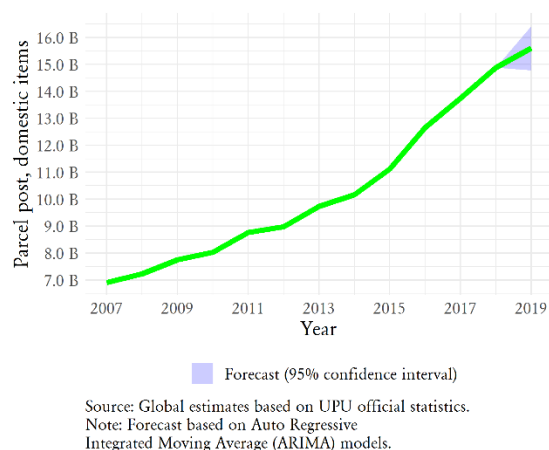
Traditionally, demand for mail products has been procyclical, i.e. economic downturns, such as the Great Recession of 2008-2009, have deeply affected postal flows. Admittedly, electronic substitution remains a key driver for the long-term decline of letter post. However, demand for services in this segment still correlates strongly with GDP per capita (Figure 8 and Figure 9). In this context, the projected sharp recession in 2020 and the 20% drop in international mail flows following the COVID-19 outbreak (see previous section) do not augur well for letter post in the near future.

While it is difficult to make a prediction for domestic mail in 2020, a panel data analysis of 170 countries for the period from 2000 to 2018 shows that the forecast 5.2% drop in GDP in 2020 may cause letter-post flows to decline by 4.1%. This goes beyond the -3% figure that would have been expected in line with long-term trends, i.e. in the absence of COVID-19.

Parcel post continues to grow, despite the pandemic

Unlike letter post, volumes of parcel post have continued to expand rapidly (Figure 7). In 2018, parcel-post growth once again exceeded the 10-year trend (i.e. 8.3% vs 7.5%). Further expansion is likely in the future, with the number of items per year in this segment predicted to exceed 16 billion in 2020, despite the impact of COVID-19.

Figure 7 Evolution of domestic parcel post



This global trend is perceptible in all regions; domestic parcel volumes have increased everywhere over the last decade. In particular, impressive double-digit yearly growth rates were recorded in 2018 in Africa (50%) and the Asia-Pacific region (31%). However, the overall dynamic is still driven by the ICs, whose share of global traffic in this segment is around 93%. For the other regions, it is estimated that volumes have tripled in Eastern Europe and the CIS and quadrupled in Latin America since 2009.

With regard to international parcels, the highest yearly growth rates were recorded in the ICs, Eastern Europe and the CIS, and the Asia-Pacific region, with figures ranging from 3% to 6%. In contrast, parcel export volumes in Latin America and in Africa have dropped in recent years.

As with all economic activities during the COVID-19 crisis, predicting parcel volumes is a difficult exercise. However, one aspect will undoubtedly remain true as the year draws to a close: in the absence of major logistical disruption or a sharp decrease in households'

disposable income, demand for parcel post will be driven primarily by the development of e-commerce. In this context, volumes in this segment are unlikely to deviate far from the long-term trend. Domestic parcel volumes should thus increase by at least 8% in 2020, while the evolution in international parcels will be more uncertain, given the severe bottleneck created at the height of the "great lockdown".

Figure 8 Letter post and GDP per capita

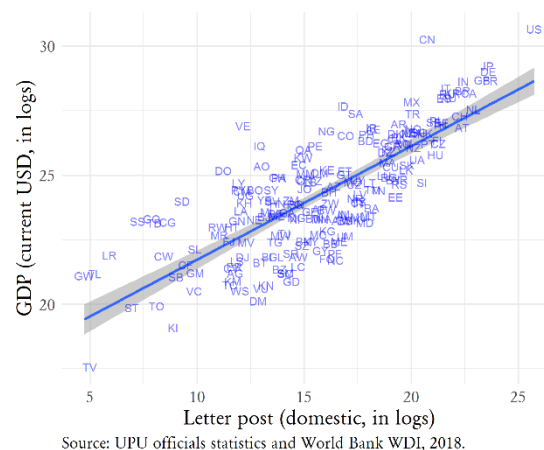


Figure 9 Parcel post and GDP per capita

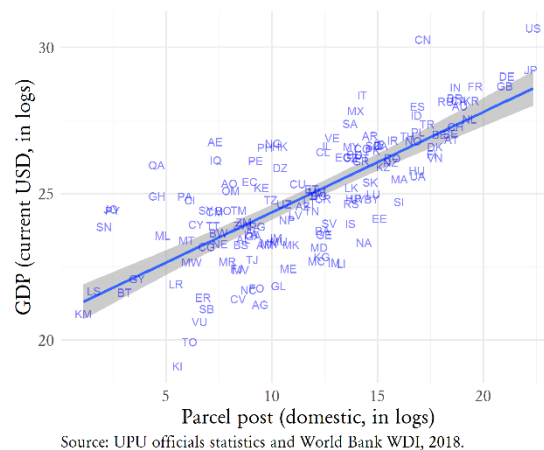


Table 6 Postal traffic numbers by region

Region	Measure	Millions of items (2018)	Annual growth rate (2018)	10-year CAGR (2008-2018)
Africa	Letter-post items, domestic	731.5	-22.75	-10.22
Africa	Parcel-post items, domestic	5.8	53.36	4.19
Africa	Letter-post items, international	41.8	-4.85	-9.18
Africa	Parcel-post items, international	0.3	0.08	-5.05
Arab region	Letter-post items, domestic	678.3	-1.20	-6.13
Arab region	Parcel-post items, domestic	10.9	NA*	NA*
Arab region	Letter-post items, international	46.1	5.84	-14.32
Arab region	Parcel-post items, international	0.7	-31.31	6.90
Asia-Pacific region	Letter-post items, domestic	15,118	-10.82	-5.51
Asia-Pacific region	Parcel-post items, domestic	530.6	31.05	5.45
Asia-Pacific region	Letter-post items, international	1,387.9	6.28	9.62
Asia-Pacific region	Parcel-post items, international	5.6	5.58	2.23
Europe and CIS	Letter-post items, domestic	12,001.4	-1.07	-4.20
Europe and CIS	Parcel-post items, domestic	214.0	7.90	13.12
Europe and CIS	Letter-post items, international	162.1	5.41	-4.25
Europe and CIS	Parcel-post items, international	4.6	5.47	12.52
Industrialized countries	Letter-post items, domestic	260,476.8	-4.50	-2.45
Industrialized countries	Parcel-post items, domestic	13,982.6	7.47	7.45
Industrialized countries	Letter-post items, international	1,881.9	-9.58	-6.45
Industrialized countries	Parcel-post items, international	167.6	3.41	13.91
Latin America and Caribbean	Letter-post items, domestic	6,755.9	-8.69	-5.09
Latin America and Caribbean	Parcel-post items, domestic	133.0	8.50	16.93
Latin America and Caribbean	Letter-post items, international	31.8	-1.80	-9.09
Latin America and Caribbean	Parcel-post items, international	0.4	-45.03	-5.10

Source: Regional estimates based on UPU official statistics.

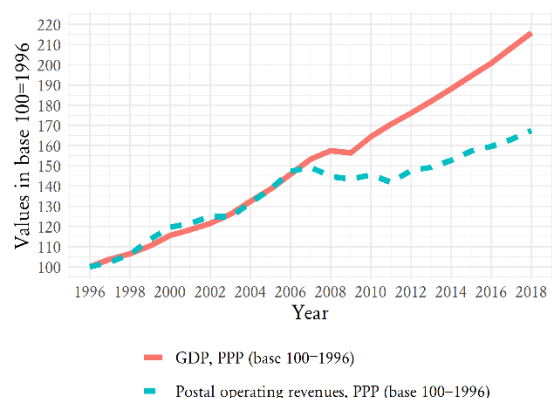
*Not available: new data from Morocco has resulted in a break in the time series.

3. Postal revenues

The postal decoupling phenomenon continues

In recent years, postal revenue has grown in nominal terms. In 2018, revenue amounted to 267 billion SDR, i.e. 3.9% growth compared with 2017.

Figure 10 Evolution of postal revenue



Source: World Bank WDI and estimates based on UPU official statistics.
Notes: Values normalized to 100 in 1996 to allow for trend comparison.

The numbers shown in Figure 10 reveal two important facts.

Firstly, the well-known phenomenon of “postal decoupling” is very much alive, i.e. the global postal sector continues to underperform relative to growth of the real global economy. This worrying trend is clear from a comparison of annual growth of GDP with that of postal revenue adjusted for purchasing power parity (i.e. in real, not nominal, terms).

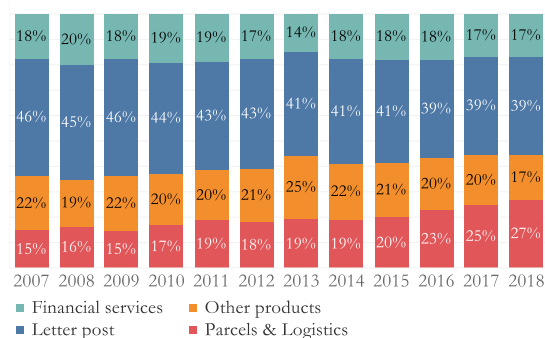
Secondly, there are disparities between country groups and regions. In the Asia-Pacific region, nominal revenue has tripled over the last decade, whereas it shrank by 17% in Africa and in Latin America, and stagnated in Eastern Europe and the CIS. The global trend is driven mostly by the ICs, which still represent 70% of global revenue.

Table 7 Postal revenue

	Revenue (2018)	Annual growth (2018, %)	10-year compound annual growth (%; 2008-2018)
Operating revenue	267 billion SDR	3.9	2.0

Source: Global estimates based on UPU official statistics

Figure 11 Evolution of business model



Source: UPU official statistics.

Notes: Simple average by year at the global level.

The shift in business model pursues its course

Although the largest source of financial income for postal operators remains the letter-post segment (39% over the last three years), the proportion of revenue stemming from parcels and logistics continues to expand (27% in 2018). This is a well-established trend, but it does mask some regional disparities. In the Asia-Pacific region, parcels and logistics outperform letter post in terms of proportion of revenue, thus effectively constituting core business. At the same time, the contribution of postal financial services has not changed significantly over the last decade.

The relationship between diversification, expansion of international services and revenue growth would require more detailed analysis. In any case, it remains to be seen whether counting on parcels and logistics will ensure revenue growth for operators in the long run.

Outlook for 2020 – revenue

Given its impact on postal traffic, COVID-19 will undoubtedly have made a dent in postal operators' revenue by the end of 2020. Based on a panel of 197 countries and territories over the period from 2000 to 2018, the long-term elasticity of postal revenue with respect to GDP is estimated to be between 0.32% and 0.47%. Taking as a baseline the -5.2% prediction for global GDP, the total loss of revenue for the postal sector in 2020 could therefore be between 4.5 and 6.5 billion SDR.

4. Postal infrastructure and staff

Access to postal services

Table 8 sets out the proportions of the population with access to different postal delivery modes. These figures were estimated based on a sample of 99 countries, and the proportions are weighted according to the population of these countries. The sample covers a global population of around 5.126 billion.

The proportion of the population without access to postal services is negligible in the ICs and Eastern Europe and the CIS, but continues to be of concern in Africa (above 10%). Nevertheless, it should be noted that this proportion is more difficult to estimate for Africa than for the other regions.

Access to postal services is not the same as home delivery of mail. Assuming that the countries in the sample are representative of the global situation, more than half a billion people worldwide have to collect their mail from postal establishments. This mode of access is predominant in Africa and relatively common in the Arab region.

Table 8 Delivery modes and access to postal services

	Population having mail delivered at home	Population having to collect mail from a postal establishment	Population without postal services
Africa	15.8%	71.5%	12.6%
Arab region	83.1%	14.4%	2.5%
Asia-Pacific region	96.7%	1.6%	1.6%
Europe and CIS	98.5%	1.5%	0.0%
Industrialized countries	99.3%	0.7%	0.0%
Latin America and Caribbean	90.3%	4.4%	5.3%
World	90.6%	7.0%	2.4%

Source: Estimates based on UPU official statistics.

Notes: Regional groups defined in the appendix.

Post offices

According to 2018 estimations, the global infrastructure of postal operators comprises approximately 656,000 post offices. This number has remained relatively stable over the

last decade, with an estimated average annual decrease of 0.12%. Furthermore, around one third of these offices (218,000) are outsourced.

However, as Table 9 shows, there has been a considerable reduction in this postal infrastructure over the last decade in some regions. A certain degree of variability in the number of permanent post offices over the years is observed in the Asia-Pacific region, attributable mainly to the fluctuation in collection points in Indonesia.

Moreover, although almost 50% of permanent postal offices are located in the Asia-Pacific region, the most dense network (in terms of post offices per capita) can be found in Eastern Europe and the CIS, followed by the ICs (21 and 18 offices per 100,000 inhabitants, respectively). By contrast, the African postal network is sparse, with only one office per 100,000 inhabitants.

The last decade was marked by ongoing outsourcing of postal offices in the ICs and in Eastern Europe and the CIS. Some of the leading European operators have completely outsourced their points of contact with their customers. At the same time, the proportion of outsourced offices decreased in the Asia-Pacific and other regions.

Postal staff

The total number of staff employed by postal operators in 2018 has been estimated at 5.23 million. Part-time staff represent 21% of this figure (1.11 million). The workforce has gradually shrunk over the last decade and is now 6% smaller than ten years ago.

Part-time employment is popular in the ICs and in Eastern Europe and the CIS. In these regions, part-time employees represent one quarter of postal operators' total staff. Moreover, this proportion is growing steadily in the ICs. Full-time employment is predominant in Africa, Latin America, and the Arab region.

The largest employers are postal operators in the ICs (46.6% of the total figure), followed by the Asia-Pacific region (32.3%) and Eastern Europe and the CIS (14.3%). Only about 1% of staff employed by postal operators work in Africa.

Even greater disparities between regions appear in terms of productivity expressed as the total

number of exported and domestic items (parcels and letters) per staff member in 2018.

In that year, the ICs generated more than 4.5 million items per staff member. In Eastern Europe and the CIS and in the Asia-Pacific region, these figures were 200,000 and 275,000 items per head, respectively. Finally, productivity in Africa and in the Arab region is almost 400 times less than in the ICs, at around 12,000 items per staff member.

In 2018, after a decade of stagnation, postal employment in Africa was estimated to have grown by more than 6%. However, the infrastructure does not appear to have followed, and the fast-growing population in that region has the highest percentage of individuals with limited or no access to postal services. It would seem that the very small volumes recorded in several countries of the region cannot be increased without the boost of government investment in postal network infrastructure.

Further pressure will mount on postal infrastructure

COVID-19 has exacerbated the pressures on postal infrastructure that have been accumulating over the years. The disruption caused to postal supply chains and the subsequent losses in volumes must be added to the increasing costs of running such a large and dense network. The low-margin nature of parcel post and the decline in letter-post volumes combine to compound the impact on the economics of the sector. In this context, productivity gains will become all the more critical for the sustainability of postal operators in the medium-to-long run.

Table 9 Number of post offices by region

Region	Measure	Value (2018)	Annual growth (%)	CAGR growth (2008-2018, %)
Africa	Total number of post offices	11,581	-0.80	-1.31
Africa	Offices managed by the operator	8,283	1.66	1.83
Africa	Outsourced offices	3,298	-6.47	-6.28
Arab region	Total number of post offices	17,201	2.56	0.96
Arab region	Offices managed by the operator	12,103	0.62	0.28
Arab region	Outsourced offices	5,098	7.46	2.80
Asia-Pacific region	Total number of post offices	327,094	-0.76	0.68
Asia-Pacific region	Offices managed by the operator	227,312	0.50	1.38
Asia-Pacific region	Outsourced offices	99,782	-3.51	-0.73
Europe and CIS	Total number of post offices	102,017	-1.53	-0.76
Europe and CIS	Offices managed by the operator	93,787	-2.51	-1.08
Europe and CIS	Outsourced offices	8,230	11.28	3.89
Industrialized countries	Total number of post offices	159,630	2.72	-0.26
Industrialized countries	Offices managed by the operator	83,584	5.17	-1.27
Industrialized countries	Outsourced offices	76,046	0.15	1.00
Latin America and Caribbean	Total number of post offices	38,213	-3.10	-3.61
Latin America and Caribbean	Offices managed by the operator	12,965	-1.68	-0.58
Latin America and Caribbean	Outsourced offices	25,248	-3.81	-4.84
World	Total number of post offices	655,741	-0.11	-0.12
World	Offices managed by the operator	438,039	0.65	0.18
World	Outsourced offices	217,702	-1.61	-0.70

Source: Regional estimates based on UPU official statistics.

Note: Regional groups defined in the appendix.

Table 10 Post office staff numbers by region

Region	Measure	Value (2018)	Annual growth (%)	CAGR growth (%)
Africa	Full-time staff	59,109	3.74	0.50
Africa	Part-time staff	2,776	205.05	2.39
Africa	Total staff	61,885	6.90	0.58
Arab region	Full-time staff	113,438	-1.42	-0.84
Arab region	Part-time staff	2,452	3.90	-0.12
Arab region	Total staff	115,890	-1.31	-0.82
Asia-Pacific region	Full-time staff	1,369,731	-0.05	0.73
Asia-Pacific region	Part-time staff	318,591	-4.11	-1.15
Asia-Pacific region	Total staff	1,688,322	-0.84	0.34
Europe and CIS	Full-time staff	551,526	-0.68	-3.64
Europe and CIS	Part-time staff	194,640	-4.98	2.97
Europe and CIS	Total staff	746,166	-1.84	-2.33
Industrialized countries	Full-time staff	1,838,297	-1.85	-1.50
Industrialized countries	Part-time staff	599,259	5.43	0.54
Industrialized countries	Total staff	2,437,556	-0.15	-1.04
Latin America and Caribbean	Full-time staff	176,882	-2.79	-1.03
Latin America and Caribbean	Part-time staff	2,260	-21.58	-5.96
Latin America and Caribbean	Total staff	179,142	-3.09	-1.11
World	Full-time staff	4,109,179	-1.05	-1.09
World	Part-time staff	1,119,978	0.75	0.37
World	Total staff	5,229,157	-0.67	-0.80

Source: Regional estimates based on UPU official statistics.

Note: Regional groups defined in the appendix.

5. Competition

Measuring competition in the postal sector

The decades-long trend of liberalization of postal markets has resulted in increased competition among postal operators in the traditional segments of letter post, parcel post and express mail. As designated operators have historically been the main providers of postal services, analyzing their market share provides a good indication of the degree and evolution of competition in the sector.

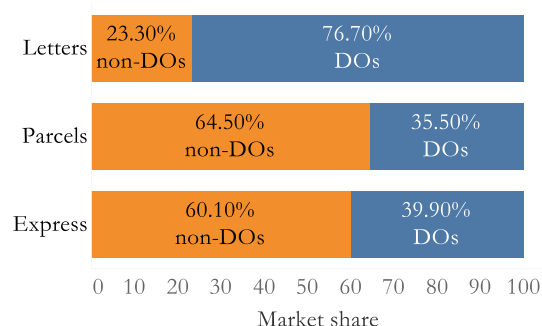
Every year since 2015, the UPU has asked regulators to complete an official statistics questionnaire on competition in postal markets in three key segments: letter post, parcel post and express mail services. The first results of this data collection process were presented in the 2019 edition of the postal economic outlook.

Based on representative data from 2016 to 2019, this report provides accurate information on a sample of 78 countries in the letter-post segment, 69 countries in the parcel-post segment, and 59 countries for express mail.^{vii}

Market share around the world

These findings can also be extrapolated, albeit with care, to a sample of 168 countries, using standard methods for the treatment of missing data (see detailed methodology in Annex 2 ^{viii}). The corresponding results are shown in Figure 12.

Figure 12 DOs' market share – global mean



Source: global estimates based on UPU official statistics (2016-2018).

Letter-post multiplier

DOs continue to hold the lion's share of the letter-post segment worldwide. Thanks to their strategic position as the incumbent, they control, on average, 76.8% of their domestic markets. In addition, more than 50% of DOs retain more than 79% of their domestic markets, which indicates that most domestic letter-post markets remain concentrated in the hands of historic operators.

Figure 13 illustrates the geographical distribution of the competition multiplier for letters. Averages at the regional level are still very homogeneous. In Africa, DOs have an average market share of 80% for letter post. In the ICs, the average market share is also high, at 82%, and it is only very slightly lower in Europe and the CIS, at 79%. Competition seems somewhat stronger in the Asia-Pacific region, where the market share of incumbents stands at 75%. The Arab region and Latin America and the Caribbean appear to have the highest degree of competition in the letter-post segment, with DOs holding a market share of 68% and 72%, respectively.

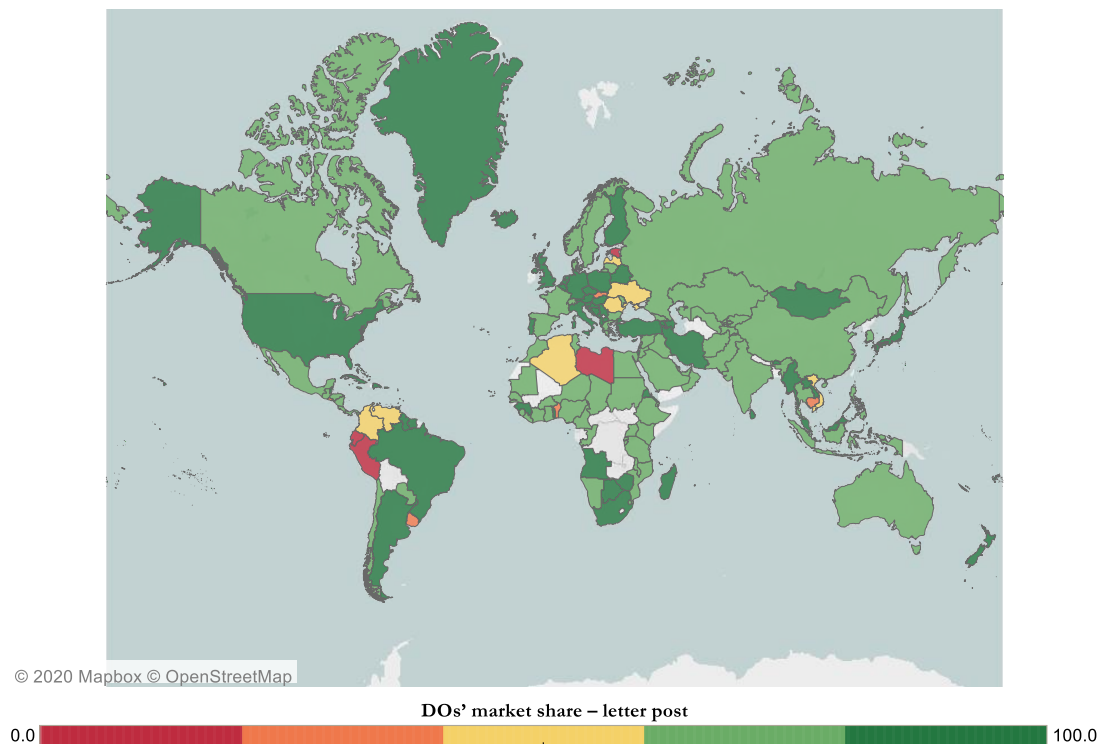
Parcel-post multiplier

In contrast to letter post, the parcel-post segment exhibits stronger competition, with DOs holding a much lower market share (35.5% on average). Around half of sampled DOs have less than 32% of their respective domestic parcel-post market.

From a regional perspective, only in the ICs do DOs appear to have a market share greater than 50% (their average multiplier is 52%), while in Europe and the CIS this figure is 44% on average.

DOs' average market share in the parcel-post segment in Latin America and the Caribbean is 25%, similar to both Africa (23%) and the Asia-Pacific region (29%). The Arab region, at 36%, stands in between these different groups.

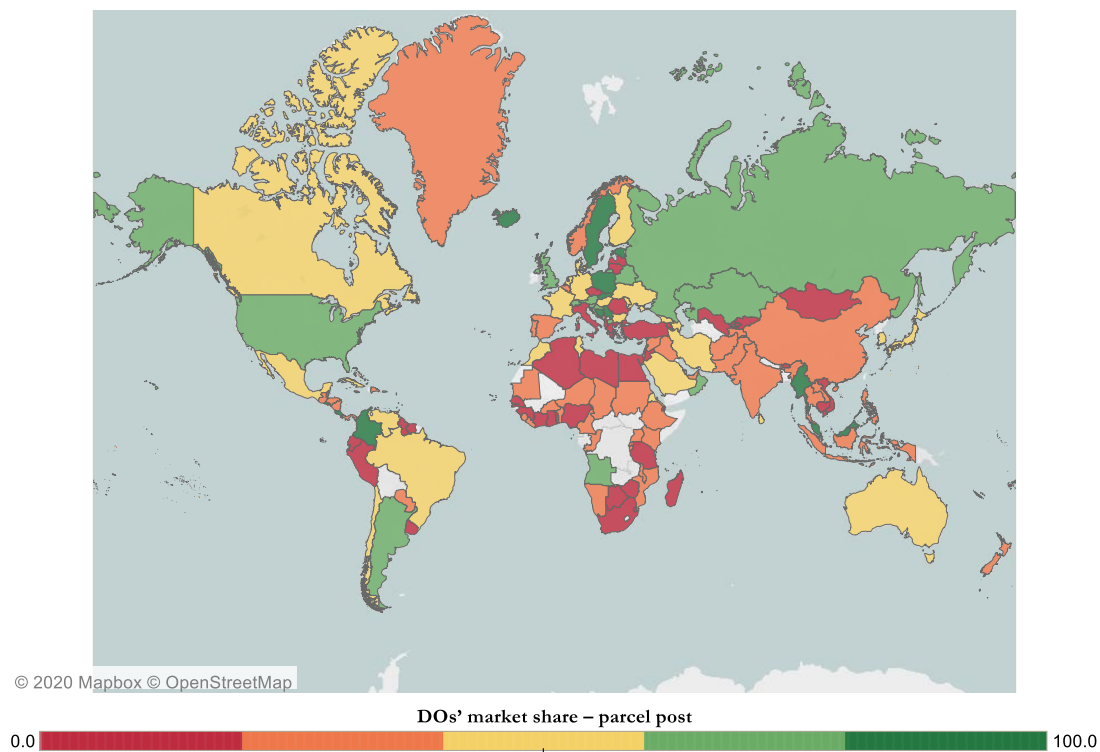
Figure 13 DOs' market share – letter post



Source: Estimates based on UPU official statistics.

Notes: The boundaries, colours, denominations and any other information shown on this map do not imply, on the part of the UPU, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.

Figure 14 DOs' market share – parcel post



Source: Estimates based on UPU official statistics.

Notes: The boundaries, colours, denominations and any other information shown on this map do not imply, on the part of the UPU, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.

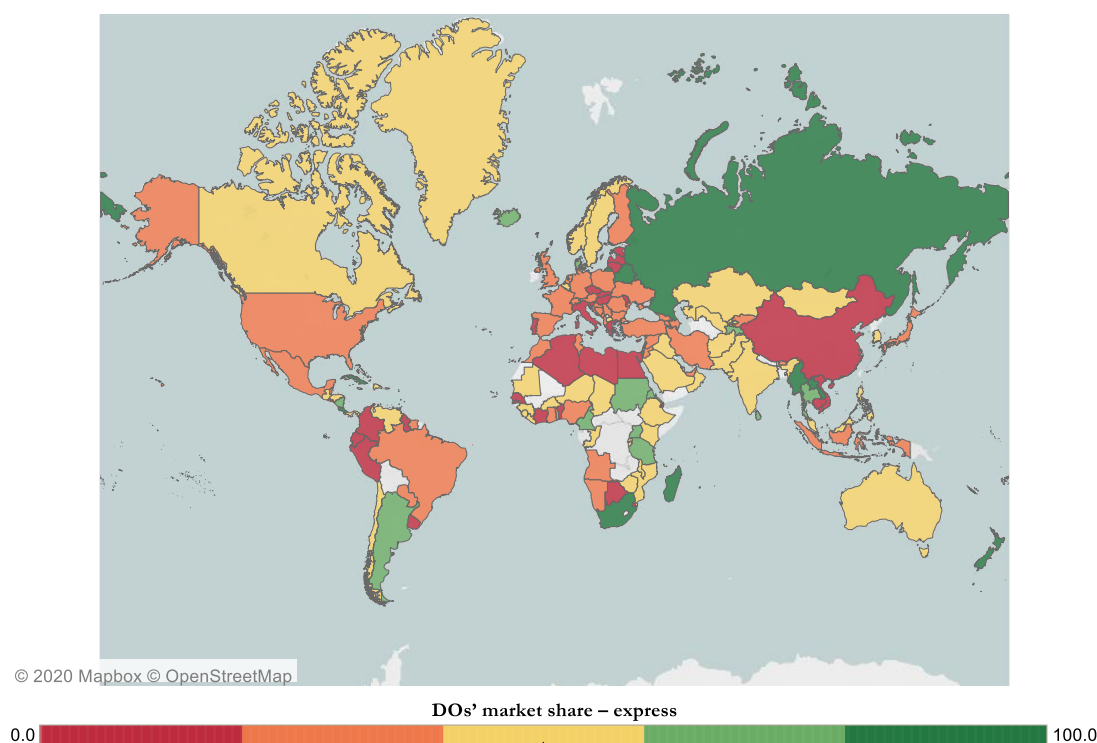
Express-mail multiplier

The market for express deliveries of goods and documents reflects a very similar structure to that of parcel post. On average, DOs hold 39.9% of their domestic express mail market.

This trend is also reflected across the different regions (Figure 15). Estimates indicate that DOs in the ICs hold on average 41% of their domestic express mail markets. In Europe and the CIS, this proportion is substantially lower, at 31%. However, the results are relatively homogeneous across the other geographical groups, with 36% in the Arab region, 44% in the Asia-Pacific region, 41% in Latin America and the Caribbean, and 45% in Africa.

Overall, the estimates suggest that DOs hold a slightly greater share of their domestic express mail markets than of their parcel post markets.

Figure 15 DOs' market share – express mail



Source: Estimates based on UPU official statistics.

Notes: The boundaries, colours, denominations and any other information shown on this map do not imply, on the part of the UPU, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.

6. Conclusion

As this report has shown, COVID-19 has accelerated transformations that might have taken years to materialize in pre-crisis circumstances.

Before the pandemic, international traffic, especially parcels, was one of the fastest-growing segments for DOs. Nevertheless, this emerging source of growth was by no means a panacea for the long-term decline of the traditional letter-post business, particularly as DOs' diversification of revenue streams had not been as extensive as the changes in postal markets.

In addition, postal infrastructure was also steadily declining, although the combined network of 656,000 post offices and 5.23 million employees remained a powerful asset for DOs worldwide.

Competition was strong in the postal sector owing to structural weaknesses and regulations conducive to market liberalization, with DOs holding on to more than three quarters of the declining letter-post segment, but less than 40% of the high-growth parcels and express mail sectors.

Moreover, the low-margin nature of delivery services and the continuous erosion of the letter-post segment mean that much higher growth volumes or margins are required than those offered so far by the parcel-post sector.

Several months into the COVID-19 crisis, the international logistics bottlenecks experienced from March to May 2020 appear to have been overcome. However, the loss in cross-border traffic stands at a whopping 20% over the year.

It is not yet clear whether this implies a net destruction of value, i.e. a situation in which the sector will have to start over with much lower volumes, or whether at least some of the lost ground will be recouped once the pandemic is under control.

It is true that e-commerce and the corresponding delivery services have experienced a surge during the COVID-19 crisis. However, at least in part, this appears to have been the result of a mechanical effect caused by the sudden lockdowns, which

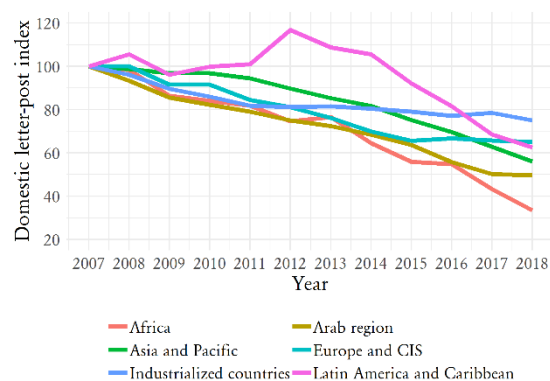
subsequently lost steam as restrictions were eased. Moreover, this effect was by no means uniform across the world: it was stronger in countries with higher purchasing power and much more muted in developing countries.

As a global recession in 2020 is inevitable, a short-term drop in disposable income is all but certain, in the absence of public support. Time will tell whether this downturn will intensify in the coming years, denting the growth prospects of postal operators worldwide, or whether a combination of accelerated e-commerce growth, accommodating public policies and investments, and a swift resolution of the underlying health crisis will be enough to prevent the most adverse scenarios.

Annex 1: Regional trends

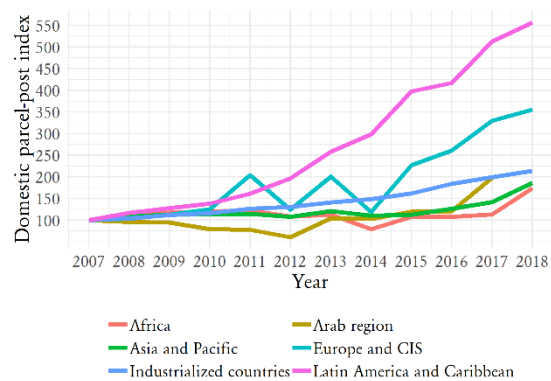
Regional trends – tables and graphs

Regional evolution of domestic letter post



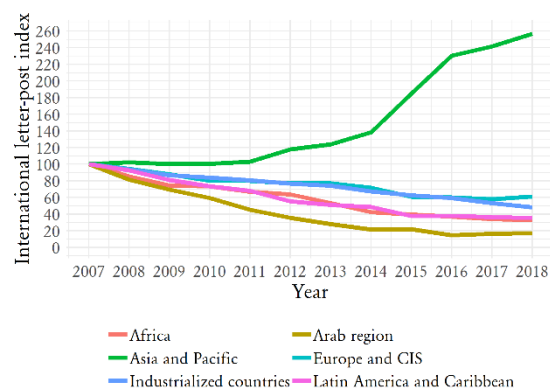
Source: Regional estimates based on UPU official statistics.
Notes: Letter items normalized to 100 in 2007 to allow for trend comparisons.

Regional evolution of domestic parcel post



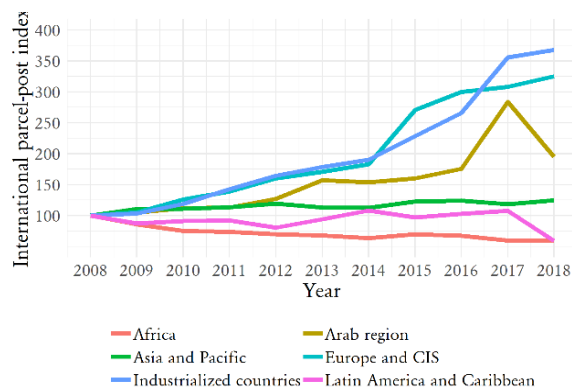
Source: Regional estimates based on UPU official statistics.
Notes: Parcel items normalized to 100 in 2007 to allow for trend comparison.

Regional evolution of international letter post



Source: Regional estimates based on UPU official statistics.
Notes: Letter items normalized to 100 in 2007 to allow for trend comparison.

Regional evolution of international parcel post



Source: Regional estimates based on UPU official statistics.
Notes: Parcel items normalized to 100 in 2007 to allow for trend comparison.

Annex 2: Methodology for the estimation of market share multipliers

The estimation of market share multipliers is an extrapolation of the statistical country database to a sample of 168 countries using standard methods for the treatment of missing data.^{ix} The procedure comprises two steps. Firstly, for all the countries with available data, a set of “competition multipliers” is defined as follows:

$$M_{letters} = \frac{DO \text{ letter traffic}}{Total \text{ letter traffic}}$$

$$M_{parcels} = \frac{DO \text{ parcel traffic}}{Total \text{ parcel traffic}}$$

$$M_{express} = \frac{DO \text{ express mail traffic}}{Total \text{ express mail traffic}}$$

Secondly, the missing data points are estimated using a five-fold nearest neighbour imputation algorithm.^x The algorithm requires that a number of similarity measures between DOs and countries be defined, so that missing values can be estimated on the basis of a weighted average of the closest available neighbours. For the purposes of this study, the following six similarity measures are used:

- i) **Income level of the country:** measured by GDP per capita in current USD;
- ii) **Digital environment:** measured by the percentage of the population with Internet access;
- iii) **Density of the postal network:** measured by the number of post offices per square km;
- iv) **Economies of scale in letter post:** measured by the designated operator’s per-capita letter traffic;
- v) **Economies of scale in parcel post:** measured by the designated operator’s per-capita parcel traffic;
- vi) **Competition in a mail segment:** value of the competition multiplier in one of the segments adjacent to that missing.

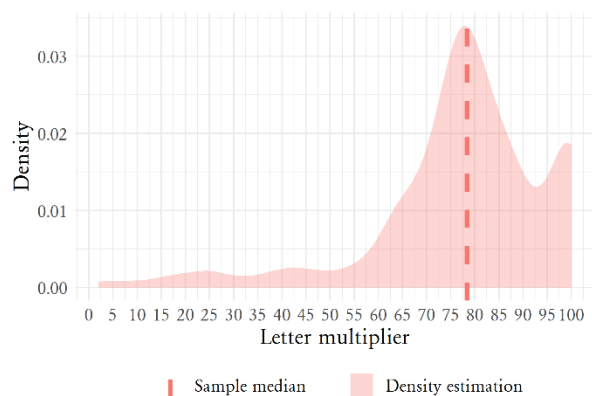
The detailed table of medians and means is provided below, together with density estimation graphs.

	Starting sample		Imputed sample	
	Mean	Number of obs.	Mean	Number of obs.
M letters	76%	78	77%	168
M parcels	42%	69	37%	168
M express	39%	59	40%	168

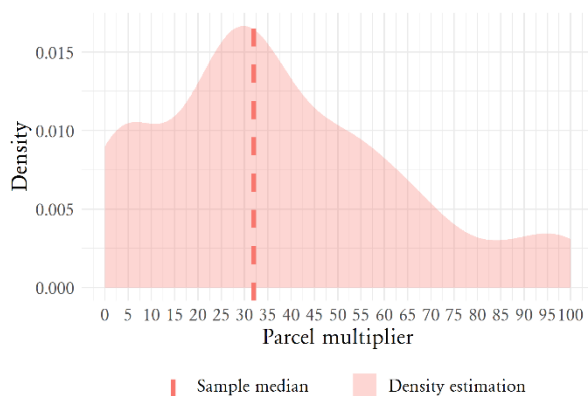
Source: UPU official statistics.

Notes: Imputed sample based on 5-fold nearest neighbour imputation algorithm. The results are presented both for the non-imputed and imputed samples for comparison purposes.

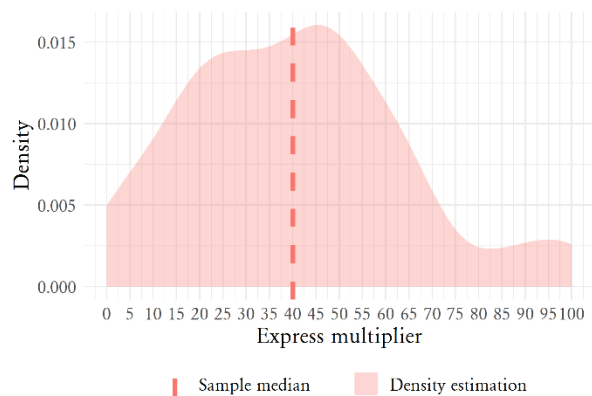
Market share estimates per postal segment – density distribution



Source: Global estimates based on UPU official statistics.
Notes: Kernel density estimate.



Source: Global estimates based on UPU official statistics.
Notes: Kernel density estimate.



Source: Global estimates based on UPU official statistics.
Notes: Kernel density estimate.

Annex 3: List of countries and regional classification

ISO	Country name	Region	ISO	Country name	Region	ISO	Country name	Region
AC	Ascension	IC	GM	Gambia	Africa	NL	Netherlands	IC
AE	United Arab Emirates	Arab Region	GN	Guinea	Africa	NO	Norway	IC
AF	Afghanistan	Asia Pacific	GQ	Equatorial Guinea	Africa	NP	Nepal	Asia Pacific
AG	Antigua and Barbuda	Latin America and Caribbean	GR	Greece	IC	NR	Nauru	Asia Pacific
AI	Anguilla	Latin America and Caribbean	GT	Guatemala	Latin America and Caribbean	NZ	New Zealand	IC
AL	Albania	Europe and CIS	GW	Guinea-Bissau	Africa	OM	Oman	Arab Region
AM	Armenia	Europe and CIS	GY	Guyana	Latin America and Caribbean	PA	Panama (Rep.)	Latin America and Caribbean
AN	Netherlands Antilles	Latin America and Caribbean	HK	Hongkong, China	Asia Pacific	PE	Peru	Latin America and Caribbean
AO	Angola	Africa	HN	Honduras (Rep.)	Latin America and Caribbean	PF	French Polynesia	IC
AR	Argentina	Latin America and Caribbean	HR	Croatia	Europe and CIS	PG	Papua New Guinea	Asia Pacific
AT	Austria	IC	HT	Haiti	Latin America and Caribbean	PH	Philippines	Asia Pacific
AU	Australia	IC	HU	Hungary	Europe and CIS	PK	Pakistan	Asia Pacific
AW	Aruba	Latin America and Caribbean	ID	Indonesia	Asia Pacific	PL	Poland	Europe and CIS
AZ	Azerbaijan	Europe and CIS	IE	Ireland	IC	PN	Pitcairn Islands	IC
BA	Bosnia and Herzegovina	Europe and CIS	IL	Israel	IC	PT	Portugal	IC
BB	Barbados	Latin America and Caribbean	IM	Isle of Man	IC	PY	Paraguay	Latin America and Caribbean
BD	Bangladesh	Asia Pacific	IN	India	Asia Pacific	QA	Qatar	Arab Region
BE	Belgium	IC	IQ	Iraq	Arab Region	RO	Romania	Europe and CIS
BF	Burkina Faso	Africa	IR	Iran (Islamic Rep.)	Asia Pacific	RS	Serbia	Europe and CIS
BG	Bulgaria (Rep.)	Europe and CIS	IS	Iceland	IC	RU	Russian Federation	Europe and CIS
BH	Bahrain (Kingdom of)	Arab Region	IT	Italy	IC	RW	Rwanda (Rép.)	Africa
BI	Burundi	Africa	JE	Jersey	IC	SA	Saudi Arabia	Arab Region
BJ	Benin	Africa	JM	Jamaica	Latin America and Caribbean	SB	Solomon Islands	Asia Pacific
BM	Bermuda	Latin America and Caribbean	JO	Jordan	Arab Region	SC	Seychelles	Africa
BN	Brunei Darussalam	Asia Pacific	JP	Japan	IC	SD	Sudan	Arab Region
BO	Bolivia	Latin America and Caribbean	KE	Kenya	Africa	SE	Sweden	IC
BR	Brazil	Latin America and Caribbean	KG	Kyrgyzstan	Europe and CIS	SG	Singapore	Asia Pacific
BS	Bahamas	Latin America and Caribbean	KH	Cambodia	Asia Pacific	SH	St Helena	Latin America and Caribbean
BT	Bhutan	Asia Pacific	KI	Kiribati	Asia Pacific	SI	Tristan da Cunha	IC
BW	Botswana	Africa	KM	Comoros	Arab Region	SI	Slovenia	Europe and CIS
BY	Belarus	Europe and CIS	KN	Saint Christopher (St. Kitts) and Nevis	Latin America and Caribbean	SK	Slovakia	Europe and CIS
BZ	Belize	Latin America and Caribbean	KP	Dem People's Rep. of Korea	Asia Pacific	SL	Sierra Leone	Africa
CA	Canada	IC	KR	Korea (Rep.)	Asia Pacific	SM	San Marino	IC
CD	Democratic Republic of the Congo	Africa	KW	Kuwait	Arab Region	SN	Senegal	Africa
CF	Central African Rep.	Africa	KY	Cayman Islands	Latin America and Caribbean	SO	Somalia	Arab Region
CG	Congo (Rep.)	Africa	KZ	Kazakhstan	Europe and CIS	SR	Suriname	Latin America and Caribbean
CH	Switzerland	IC	LA	Lao People's Dem. Rep.	Asia Pacific	SS	South Sudan (Rep.)	Arab Region
CI	Côte d'Ivoire (Rep.)	Africa	LB	Lebanon	Arab Region	ST	Sao Tome and Principe	Africa
CL	Chile	Latin America and Caribbean	LC	Saint Lucia	Latin America and Caribbean	SV	El Salvador	Latin America and Caribbean
CM	Cameroon	Africa	LI	Liechtenstein	IC	SY	Syrian Arab Rep.	Arab Region
CN	China (People's Rep.)	Asia Pacific	LK	Sri Lanka	Asia Pacific	SZ	Eswatini	Africa
CO	Colombia	Latin America and Caribbean	LR	Liberia	Africa	TC	Turks and Caicos Islands	Latin America and Caribbean
CR	Costa Rica	Latin America and Caribbean	LS	Lesotho	Africa	TD	Chad	Africa
CU	Cuba	Latin America and Caribbean	LT	Lithuania	Europe and CIS	TG	Togo	Africa
CV	Cape Verde	Africa	LU	Luxembourg	IC	TH	Thailand	Asia Pacific
CY	Cyprus	Europe and CIS	LV	Latvia	Europe and CIS	TJ	Tajikistan	Europe and CIS
CZ	Czech Rep.	Europe and CIS	LY	Libya (State of)	Arab Region	TL	Timor-Leste (Dem. Rep.)	Asia Pacific
DE	Germany	IC	MA	Morocco	Arab Region	TM	Turkmenistan	Europe and CIS
DJ	Djibouti	Arab Region	MC	Monaco	IC	TN	Tunisia	Arab Region
DK	Denmark	IC	MD	Moldova	Europe and CIS	TO	Tonga	Asia Pacific
DM	Dominica	Latin America and Caribbean	ME	Montenegro	Europe and CIS	TR	Turkey	Europe and CIS
DO	Dominican Republic	Latin America and Caribbean	MG	Madagascar	Africa	TT	Trinidad and Tobago	Latin America and Caribbean
DZ	Algeria	Arab Region	MK	North Macedonia	Europe and CIS	TV	Tuvalu	Asia Pacific
EC	Ecuador	Latin America and Caribbean	ML	Mali	Africa	TZ	Tanzania (United Rep.)	Africa
EE	Estonia	Europe and CIS	MM	Myanmar	Asia Pacific	UA	Ukraine	Europe and CIS
EG	Egypt	Arab Region	MN	Mongolia	Asia Pacific	UG	Uganda	Africa
ER	Eritrea	Africa	MO	Macao, China	Asia Pacific	US	United States of America	IC
ES	Spain	IC	MR	Mauritania	Arab Region	UY	Uruguay	Latin America and Caribbean
ET	Ethiopia	Africa	MS	Montserrat	Latin America and Caribbean	UZ	Uzbekistan	Europe and CIS
FI	Finland	IC	MT	Malta	Europe and CIS	VA	Vatican	IC
FJ	Fiji	Asia Pacific	MU	Mauritius	Africa	VC	Saint Vincent and the Grenadines	Latin America and Caribbean
FK	Falkland Islands (Malvinas)	IC	MV	Maldives	Asia Pacific	VE	Venezuela (Bolivarian Rep.)	Latin America and Caribbean
FO	Farøe Islands	IC	MW	Malawi	Africa	VG	Virgin Islands	Latin America and Caribbean
FR	France	IC	MX	Mexico	Latin America and Caribbean	VN	Viet Nam	Asia Pacific
GA	Gabon	Africa	MY	Malaysia	Asia Pacific	VU	Vanuatu	Asia Pacific
GB	Great Britain	IC	MZ	Mozambique	Africa	WF	Wallis and Futuna Islands	IC
GD	Grenada	Latin America and Caribbean	NA	Namibia	Africa	WS	Samoa	Asia Pacific
GE	Georgia	Europe and CIS	NC	New Caledonia	IC	YE	Yemen	Arab Region
GG	Guernsey	IC	NE	Niger	Africa	ZA	South Africa	Africa
GH	Ghana	Africa	NF	Norfolk Island	IC	ZM	Zambia	Africa
GI	Gibraltar	IC	NG	Nigeria	Africa	ZW	Zimbabwe	Africa
GL	Greenland	IC	NI	Nicaragua	Latin America and Caribbean			

Endnotes

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- ⁱ World Bank (2020). Global Economic Prospects, January 2020: Slow Growth, Policy Challenges. Washington, DC: World Bank. © World Bank. Available at openknowledge.worldbank.org/handle/10986/33044.
- ⁱⁱ World Bank (2020). Global Economic Prospects, June 2020. Washington, DC: World Bank. © World Bank. Available at openknowledge.worldbank.org/handle/10986/33748.
- ⁱⁱⁱ UPU (2020). The COVID-19 crisis and the postal sector. Available at www.upu.int/UPU/media/upu/publications/theCovid19CrisisAndThePostalSectorEn.pdf
- ^{iv} Several postal operators, including Swiss Post, La Poste and United States Postal Service, have already reported unfavourable financial results during first half of 2020 in comparison with 2019.
- ^v World Trade Organization (2020). Methodology for the WTO trade forecast of April 8 2020. Available at www.wto.org/english/news_e/pres20_e/methodpr855_e.pdf.
- ^{vi} World Bank (2020). COVID-19 Crisis Through a Migration Lens. Migration and Development Brief; No. 32 Washington, D.C.: World Bank Group. Available at documents.worldbank.org/en/publication/documents-reports/documentdetail/989721587512418006/covid-19-crisis-through-a-migration-lens
- ^{vii} The samples do not necessary overlap, thus generating more variability for the estimates.
- ^{viii} Acuña E. & Rodríguez C. (2004). The treatment of missing values and its effect on classifier accuracy. In: Classification, clustering, and data mining applications (pp. 639-647). Springer, Berlin, Heidelberg.
- ^{ix} Ibid.
- ^x Cover T. & Hart P. (1967). Nearest neighbor pattern classification. In: IEEE transactions on information theory, vol. 13, No. 1, pp 21-27.

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