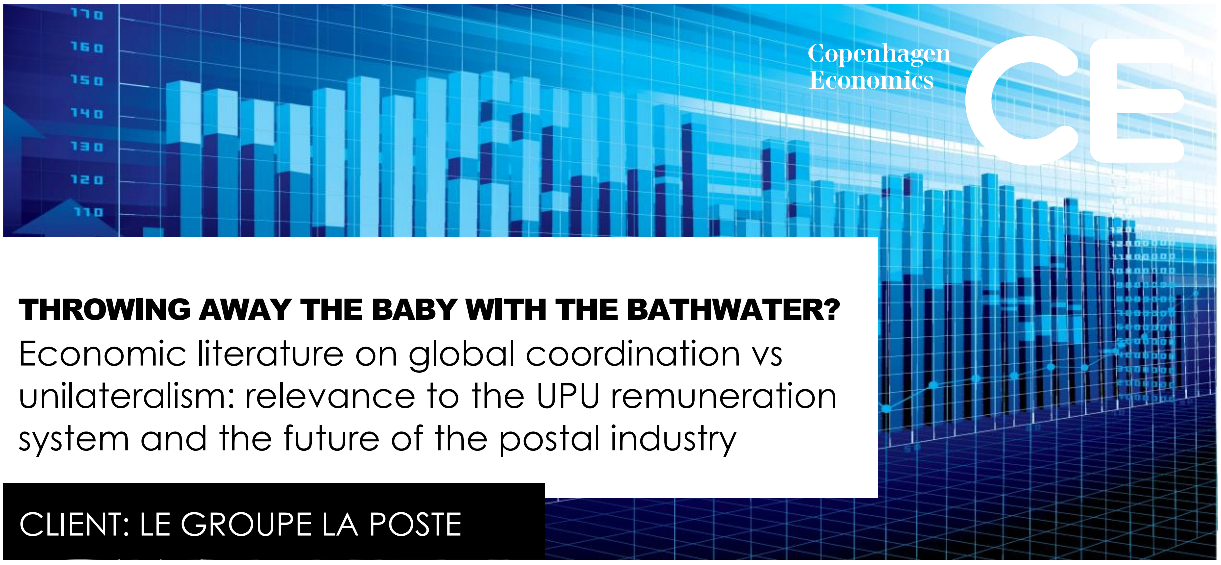



# THROWING AWAY THE BABY WITH THE BATHWATER?

## Economic literature on global coordination vs unilateralism: relevance to the UPU remuneration system and the future of the postal industry

CLIENT: LE GROUPE LA POSTE


Authors:
Dr Henrik B. Okholm
Dr Bruno Basalisco
Mindaugas Cerpickis
Dr Gerdis Marquardt
Jimmy Gårdebrink


8 March 2019

## KEY FINDINGS

- The UPU international mail remuneration system is an example of global multilateral coordination, alongside other multilateral institutional arrangements in the field of trade, standardisation, communications
- Several concerns are noted as to distortions stemming from the specific price rules currently in force
- Multilateral agreements serve a fundamental purpose of ensuring coordination as an alternative to complex webs of contractual agreements, which would carry costs and inefficiencies
- Several branches of economic theory have analysed the conditions for multilateral arrangements to yield a better global social welfare outcome than a scenario led only by unilateral action and bilateral agreements
- Transaction cost economics (following Nobel laureate Williamson) identifies several costs that can make pure market interaction an inferior approach to organised decision-making via an entity such as an international organisation
- Contract theory identifies several conditions (complexity, long-term nature of interactions, etc) under which governance structures can limit transaction costs and lead to better overall outcomes than direct negotiations
- Game theory (Nobel laurate Tirole) identifies a double-marginalisation problem leading to excessive price and insufficient quality in bilateral price setting where there is market power; besides, bilateral negotiations outcomes depend on outside options available, which diverge significantly across the globe
- International trade economics (Nobel laureate Krugman) finds that – absent multilateral coordination – “spaghetti bowl” and “hub&spoke” effects, together with high costs of negotiating FDAs, lead to trade diversion effects detrimental to global welfare
- Digital substitution of addressed mail implies that the postal industry has to face up to a “survival” challenge, while delivery of e-commerce products such as small packets is a key opportunity
- However, changes in the cost of using the international terminal dues system can have a significant volume impact in cross-border e-commerce
- Finally, timing constraints will likely affect the supply of international postal services at both the wholesale and retail level: cherry-picking and pricing spill-overs are ultimately likely to reduce consumer welfare

## TABLE OF CONTENTS



Copenhagen Economics is an independent, private-owned consultancy firm established in 2000, working for public-sector and private clients across industries. Our work is project-based and, as is standard in this professional field, the client defines the project study question and the consultant researches the question to the best of its expertise.

# INTRODUCTION AND STUDY PURPOSE

## The UPU terminal dues system

For historical reasons, most postal operators are only active in their national markets, and they must cooperate to deliver cross-border. Such cooperation implies that two or more operators contribute to different activities needed to transport a letter from a sender in country A to a recipient in country B. This process involves multiple activities which include

- origination (i.e. first-mile) and conveyance activities: collection in the country of origin and transport to the country of destination and
- termination (i.e. last-mile) activities: transport, sorting, and delivery in the country of destination.

In practice, postal operators typically cooperate in the following way:

- The first-mile operator in the country of origin hands over the cross-border item to the last-mile operator in the country of destination who delivers the item;
- The postal operator in the country of origin charges the sender for the full end-to-end delivery, and
- The postal operator in the country of origin pays the operator in the country of destination for granting use of its delivery network.

The Universal Postal Union (UPU) system of terminal dues governs payments for the sorting and delivery of cross-border letter post items. These rates are applicable to designated postal operators across the world.

The UPU system facilitates cooperation of cross-border letter delivery. A global multilateral system, such as the UPU, has to achieve two objectives:

1. Maximise the total welfare gained from the international activities through efficient cooperation (grow the pie).
2. Ensure a fair allocation of benefits between participants, so that all members benefit from cooperating (share the pie)

In any global multilateral system, (pricing) efficiency / inefficiency depends on setting rules (rates) rates that can both "grow the pie" while also ensure a "sharing of the pie" that ensures incentives for all members to participate in the system.

In the case of the UPU, the system of terminal dues has been subject to debate, with a main critique that some terminal due rates are too low. This hurts both objectives. The total welfare is not maximised due to distortions, and some Members argue that they lose on the system (i.e. their share of the pie is not fair). From the purely economic perspective, for a multilateral system such as the UPU to remain sustainable, each participant should gain at least as much as it would if acting independently, i.e. in a unilateral system.[1]

In game theory, this is achieved when a multilateral negotiation achieves an equilibrium solution within the "core" of possible solutions. Thus, from a game theory viewpoint, the tensions surrounding the UPU-driven remuneration system may be about achieving an outcome within this "core" [2].

Indeed, multiple studies have shown that not all participants in the terminal dues system are currently benefitting from participating. Moreover, studies show that in some instances low terminal due rates create trade distortions[3].

Therefore, considerable focus has been placed on the effect of UPU terminal dues on the two above points (growing the pie and sharing of the pie).

## The purpose of this study

This study focuses on understanding the drivers that underpin the economic welfare contribution of a global multilateral system, such as the UPU terminal dues remuneration. In doing so, it considers, based on several strands of economic theory, the likely effects of abandoning this type of system in favour of unilateral action. The purpose is to stimulate the debate of the economic implications of moving from the current multilateral system to a unilateral system of self-declared rates.

---

[1] See literature on Shapley value based on Shapley, L.S. (1953) and Shapley (1971).

[2] Shapley, L.S. & Shubik, (1971) The assignment game I: The core.

[3] Copenhagen Economics (2014) The Economics of Terminal Dues. A study for the US Postal Regulatory Commission.

### UPU terminal dues: concerns identified

Previous research has identified six types of market distortions created by the UPU terminal dues system: (i) distortion of competition for first-mile handling of cross-border letter post items, (ii) distortion of competition for last-mile handling of cross-border letter post items, (iii) distortion of demand for delivery within and outside the terminal dues system, (iv) distortion of demand for domestic vs. cross-border delivery, (v) distortion of demand for cross-border delivery originating in transition vs. target countries, and (vi) financial transfers between delivery operators part of the UPU agreement.[4] The first five distortions concern the first objective, i.e. maximising to total welfare, while the last distortion concern the second objective, i.e. the sharing of the pie.

In several studies for the US Postal Regulatory Commission (2014-2017), Copenhagen Economics has analysed the potential distortions created by the terminal dues system. Quantitative analysis has found significant financial transfers between delivery operators.[5]

## Methodology and definitions

In this study we apply a research approach involving four distinct (yet related) academic economic domains: namely, transaction cost economics, contract theory, game theory and the economics of international trade. In doing so, we consider contribution from a wide set of economists, encompassing **Nobel laureates such as Arrow, Coase, Hart, Krugman, Nash, North, Shapley, Tirole and Williamson**. Moreover, in order to ensure the relevance of our theoretical findings, we discuss each of our findings from the international postal economics perspective. Below we list key terms used in this report:

- Unilateral system, i.e. self-declared rates – a designated operator sets the terminal dues rate for inbound letter mail items on its own;
- Bilateral agreement – an agreement between two parties (operators);
- Multilateral agreement - an agreement between more than two parties, e.g. Interconnect (previously called REIMS);
- Global multilateral agreement – an agreement covering practically all states in the world, e.g. UPU, WTO.

### UPU remuneration: recent developments

The UPU terminal dues rates are effective in cycles of four years. The current rates were established in September 2016 at the UPU Congress in Istanbul (2018-2021 remuneration cycle). The agreements in Istanbul followed the same fundamental system but made some adjustments to key parameters in how the rates are set. The Istanbul agreement introduced a separation of the terminal dues rates for the product category now called small packets and bulky letters (E).[6] The latter rates were increased and by 2021, the floor rates and cap rates of groups I, II and III will have been harmonised. In addition, since 2018, letter-post items containing goods are remunerated as product category E.[7]

In October 2018, the US government published a statement in which two significant announcements were made. First, it directed the designated operator to adopt new "self-declared" delivery rates for terminal dues no later than 1 January 2020. Second, the US formally informed the UPU of its withdrawal in October 2019. The US however stated the possibility that it will halt its withdrawal, if negotiations resolve distortions created by the UPU.

---

[4] Copenhagen Economics (2014) The Economics of Terminal Dues. A study for the US Postal Regulatory Commission.
[5] Copenhagen Economics (2016) Quantification of financial transfers caused by Universal Postal Union terminal dues. A study for the US Postal Regulatory Commission.
[6] Letters under the UPU system are divided into three categories: small letters (P), large letters/"flats" (G), and small packets and bulky letters (E).
[7] UPU (2018) Congress–Doc 8.Rev 1. Second Extraordinary Congress. Page 26.

# PART 1: RISKS TO GLOBAL ECONOMIC WELFARE OUTCOMES UNDER A PURELY UNILATERAL SYSTEM

In this part of the study, we review findings from several branches of economic theory that are relevant to evaluate the economic welfare effects of international multilateral organisation such as the UPU. Economic theory gives insights into the expected implications of scenarios where unilateral initiatives replace global multilateral arrangements.

We start with transaction cost economics and contract theory. These provide an important conceptual background for the research question of this study. Further below, we consider the contributions in the economics literature from game theory and from the economics of international trade and its governance.

## 1. Lessons from transaction cost economics

Transaction cost economics focuses on the costs of conducting transactions, e.g. cost of searching, negotiating, enforcing contracts and coordinating. Transactions can take place in many ways, either organised internally within firms or via a market transaction. The basic idea in transaction cost economics is to find the most cost-efficient way to organise transactions.

It is natural to view international agreements, like the UPU, in this context since they determine the conditions for international transactions. The UPU is a form of governance by setting common rules on product standards and the global remuneration framework for the last-mile letter mail delivery services.

### Governance structure should minimise transaction costs

The raison d'être of governance structures, i.e. any hierarchies such as firms, organisations, institutions etc., derives from their usefulness in limiting transaction costs.

Without organisations, every single transaction must be completed on the market. According to Arrow-Debreu (1954), the market price ensure that aggregate supply equals aggregate demand. In other words, the willingness-to-sell is equal to the willingness-to-pay.[8]

However, many transactions are in fact conducted within hierarchies (e.g. within firms) and not on markets via the price mechanism as predicted by the Arrow-Debreu model. Hence, Coase (1937) raised the question, why firms (or any governance structure in general) exist and established the *theory of the firm*.[9]

Coase (1960) and Williamson (1983) showed that transaction costs play a major role in answering that question.[10] Transaction costs can be defined as all costs incurred in operating an economic system[11] to reach an efficient transaction and to handle market imperfections. Such costs include for example negotiation costs, contracting costs, costs of monitoring, and costs of enforcing a contract.[12]

Within a hierarchy, the transacting parties (as economic agents) can curtail these transaction costs by organising certain transaction within the hierarchy instead of on the market. In the context of firms this is so-called vertical integration. As Williamson put it, “To the degree that transaction costs are negligible, buying rather than making will normally be the most cost-effective means of procurement.”[13]

While transaction cost economics originated to understand firms, it evolved to a more general theory, inter alia, on how transactions can be organised in challenging decision environments. Put differently, the advantage of limiting transaction costs when forming a firm also apply to organising international interactions with many stakeholders that do not share the same objectives. Transaction cost economics provides insights

[8] Arrow and Debreu (1954), Existence of an equilibrium for a competitive economy, Econometrica 22, 265–90.
[9] Coase (1937), The Nature of the Firm, Economica 4, 386-405.
[10] Coase (1960), The Problem of Social Cost, Journal of Law and Economics, 3, 1-44. Williamson (1983), Credible Commitments: Using Hostages to Support Exchange, The American Economic Review, 73(4), 519-540.
[11] North (1992), Transaction costs, institutions, and economic performance, San Francisco, CA: ICS Press, p.6
[12] Gilligan (2009), The Transactions Costs Approach to International Institutions. Power, Interdependence and Nonstate Actors in World Politics. p.4
[13] Williamson (1979), Transaction-Cost Economics: The Governance of Contractual Relations, Journal of Law and Economics, 22 (2), p.245

into the formation of many types of governance structures, i.e. any institutional framework for transactions.[14] **Transaction cost economics provides guidance on how to govern transactions in a feasible and least-cost way.**[15]

**Reduction in transaction costs linked to the UPU terminal dues system**

The global remuneration framework for international letter mail delivery services set by the UPU reduces the following types of transaction cost.

- **Coordination cost**: The UPU defines the standards for different postal services.
- **Negotiation cost**: Having one multilateral agreement, the countries do not have to incur the cost of negotiating bilaterally with each country.
- **Enforcement cost**: The countries must only enforce *one* agreement instead of many bilateral agreements with various specifications. Moreover, the UPU aligns expectations and incentives across countries and thereby likely reduces disputes. It also provides monitoring.

*Source: Copenhagen Economics*

## 2. Lessons learned from the economics of contract theory

Especially in complex environments where the interacting parties have different objectives, transaction costs are high in the absence of governance structures.

To avoid opportunistic behaviour, economic agents commonly conclude *contracts* to organise transactions. Those contracts can take many forms, ranging from informal (sometimes even merely verbal) agreements to very detailed, well-specified written contracts. When the transacting parties do not share the same objective, they are less likely to rely on informal agreements and more inclined to specify the contracts.

Concluding contracts is not straightforward and generates transaction costs for the following reasons.

1. Agreeing on a transaction requires search, processing of information, bargaining, etc.
2. Putting the transaction into an agreement, i.e. a contract, that considers and provides for all contingencies requires careful drafting of the contract, hiring legal support, etc.
3. The enforcement of the agreement in case of disputes requires renegotiation, hiring lawyers, expensive arbitration or litigation procedures, etc.

Transaction costs in bilateral contractual arrangements are high when the environments are complex such that[16]

- transactions are subject to uncertainty
- transactions are recurring
- transactions involve commitments

In an environment that is bound to change, disagreements among the transacting parties with differing objectives likely arise in the future. With high uncertainty on how the environment will evolve and how the counterparty will ex post react to those changes, the parties usually want ex ante to specify the contracts in a manner as detailed as possible. However, writing *complete contracts* that provide for all possible contingencies and states of the world is almost impossible[17] and certainly most difficult and impractical in uncertain environments.[18] Therefore, the *incomplete* nature of contracting places a burden on the efficiency of bilateral negotiation.

[14] North, D.C. (1991), Institutions; Williamson (1979); Transaction-Cost Economics: The Governance of Contractual Relations, Journal of Law and Economics, 22 (2), p.235
[15] Ketokivi and Mahoney (2017), Transaction Cost Economics as a Theory of the Firm, Management, and Governance, Oxford Research Encyclopedia of Business and Management, p.2
[16] Williamson (1985), The Economic Institutions of Capitalism. Free Press, p.52
[18] Hart and Moore (1988). Incomplete Contracts and Renegotiation, Econometrica, 56(4), 755-785. Ketokivi and Mahoney (2017), Transaction Cost Economics as a Theory of the Firm, Management, and Governance, Oxford Research Encyclopedia of Business and

These contracting costs are even more exacerbated for recurring transactions and long-term relationships. Since they last long into the future, considering all possible future developments and capturing them in a contractual agreement is difficult.

**In complex environments, markets will typically have a higher risk of failure and the benefits of using governance structures instead of markets will likely increase.**

### Governance structures can decrease transaction costs overall

Whether or not economic activity should be organised via a certain governance structure (e.g. UPU terminal due system versus bilateral agreements) depends on the balance of the transaction cost arising in absence of governance versus the cost of creating and maintaining it.[19]

If transaction costs are negligible, creating governance structures is not necessary for efficient transactions. If transaction costs of creating governance structures are extremely high, it is not efficient to create them. In both cases, interacting via the market is optimal.[20]

**In many cases, however, governance structures are beneficial and the bargaining and enforcement costs in absence of governance are higher.**

The higher the transaction costs, the more governance structures matter.[22] Especially in very complex and changing environments with many involved parties, the transaction costs are likely to be higher. Governing institutions such as the UPU and the World Trade Organisation (WTO) can be valuable in reducing transaction costs and to achieve efficient economic performance.

**Table 1 Insights from transaction cost economics and implications for international letter post**

| LESSONS LEARNED FROM TRANSACTION COST ECONOMICS | IMPLICATION FOR INTERNATIONAL LETTER POST |
|---|---|
| 1. **Transaction costs (e.g. negotiation and contracting costs) are high** in the absence of governance structures, especially in complex environments where the interacting parties have different objectives. | Reaching a bilateral agreement on the renumeration of last-mile letter mail delivery is complex and involves various stakeholders interacting in different economic environments. Thus, such agreements create high transaction costs. |
| 2. **Governance structures can limit transaction costs** by reducing uncertainty/stabilising expectations among the parties, in reducing costs associated with the specification and enforcement of agreements, in providing information and monitoring. | The UPU specifies technical standards[21] and defines rates, the UPU reduce the transaction costs between countries by creating multilateral links. |
| 3. Economic activity should be **organised via a certain governance structure** when the transaction cost in its absence are higher than the cost of running it. | Without the UPU terminal due system, the parties would incur the transaction costs for negotiating and enforcing each of many bilateral agreements. However, with the UPU, the parties only incur the cost of reaching and maintaining one multilateral agreement. |

*Source: Copenhagen Economics*

Management, p.7

[19] Keohane (1982), International Institutions: Two Approaches, North (1992), Transaction costs, institutions, and economic performance, San Francisco, CA: ICS Press, p.6

[20] Keohane (1982), International Institutions: Two Approaches, International Studies Quarterly, 32 (4), p. 386

[21] Examples include: (i) items labels CN04-05-06 by flow type, used for parcels, letter-post, EMS; (ii) container labels CN34-35-36 by transport type, also used for package, PAL, EMS; (iii) bags contents' documentation CN31, CN33, CN43, etc; (iv) Customs labels / forms CN22-23; (v) bag container maximum weight standard of 25 pounds, in principle; (vi) global exchange office nomenclature e.g. ITMILA (Poste Italiane, Milan Linate), FRCDGA (La Poste, Roissy), GBLALA (Royal Mail, Langley); (vii) IPS mailing dispatch statement; (viii) CDS customs interface

[22] North (1992), Transaction costs, institutions, and economic performance, San Francisco, CA: ICS Press, p.6

## 3. Lessons learned from economics of game theory

In this section, we draw upon the economic literature of to illustrate two main points. First, when designated operators set access rates unilaterally, there is a risk of excessively high prices, that would be negative for both consumers and operators. This can be illustrated with the so-called double marginalization problem. Second, we demonstrate that the outcome of a unilateral system will vary significantly between countries and it comes with great uncertainty.

### a) A problem of double marginalization

The economic literature on access rates is comprehensive and provides good insights. Specifically, the economics of game theory provides valuable insights into the incentives of the access giver (the designated operator of the country of destination in our context). This is important to understand how designated operators may act under a given system.

As shown by Laffont, Rey and Tirole (1998), [23] letting operators set their international access prices unilaterally may lead higher prices than are socially optimal. The intuition is that – insofar as there is market power on either end of the international postal chain – that leads to externalities in pricing. In a nutshell, each operator (which serves a part but not all of the value chain) does not consider the effect of its pricing on the other part of the value chain. In this scenario, when each operator sets price unilaterally this leads to excessively high pricing and – for similar reasoning – to excessively low quality.

Whenever a firm has market power, it will set its price above marginal cost. If there are several firm, at different levels of the value chain that can exert some market power, both will set their price above marginal cost. This creates a loss, not only for consumers, but for total industry profits too.

In this type of model, the socially optimal outcome, that maximises the total global welfare including total profit and consumer welfare, is achieved when the access price is set at marginal cost.[24]

Thus, an international system that facilitates collaboration between designated postal operators can therefore mitigate the issue of double marginalisation and bring prices closer to a global welfare-optimal solution.

### b) Wide variation in outcomes depending on bargaining power

If the access prices for international letters were to be set unilaterally, the outcome will differ greatly between different designated operators. Some designated operators will be in a stronger position than other and the outcome would be very uncertain for many. A unilateral system may in practice become the foundation for a range of bilateral agreements between designated operators. In such a system, the outcome for each designated operator, or country, will be dependent on the bargaining power of that operator.[25]

National circumstances will be important for the outcome of each designated operator and the stakeholders in the associated country. We have identified 5 key factors:

1) The cost of providing delivery in the national market, e.g. geographic and demographic characteristics, wage level
2) The regulatory landscape.
3) The competitive landscape for delivery of letters and alternatives for senders.
4) Whether the country is a net importer or net exporter of letter mail.
5) Size of the mail volumes from or to the given country

The delivery cost of the operator in the country of destination to deliver last mile varies significantly, e.g. due to density of the population and geographical factors.

[23] Laffont, J-J; Rey, P; Tirole J (1998). "Network Competition: I. Overview and Nondiscriminatory Pricing", The RAND Journal of Economics, 29 (1), 1-37.;

[24] We note that if there exist positive externalities, based on the utility of the receiver that is not reflected in the willingness to pay of the sender, the optimal access rate may be below marginal cost. Conversely, due to e.g. quality investments, the optimal price may be above marginal cost, but the fundamental mechanism of our argument remains.

[25] Shapley, L.S. and Shubik, (1971) The assignment game I: The core; Nash, J. (1950). The Bargaining Problem.

Other factors can be the level of wages paid in the delivery sector.

Regulation may constrain wholesale prices (and access, non-discrimination and transparency conditions) for the delivery operator, as well as constrain retail prices for the sender operator. This would inform the outcome of any bilateral negotiation.

Equally, the extent to which competitive options are available to reach part or whole of a destination country is a key determinant of negotiating outcomes.

A country can, all else equal, obtain a better deal if the country is an interesting trading partner. This in turn depends on the mail traffic and the relative dependence of each other. Some open questions are worth monitoring. First, to what extent will operators of large mail volume countries gain some bargaining power because of the importance of striking a deal with them? And conversely, will a small country that does not represent a significant share of volumes find it difficult to enter negotiations and/or get a reasonable deal?

Second, how will each bilateral agreement be influenced by the complex interrelations with other bilateral agreements? The question is whether the price agreed in one bilateral agreement can send signals and influence the negotiations of other bilateral relationships. Each bilateral pair of designated operators would bargain over the access price on the outbound as well as the inbound. A designated operator may wish to balance the fact that it has some bilateral relationships in which it is a net importer, and want to push for a high access prices, but also some in which it is a net exporter and therefore wants to push for low prices.

In conclusion, a system based on a large number of bilateral negotiations where negotiating positions diverge significantly will lead to disparate outcomes that are hard to predict in full now. **While the drivers of these diverse outcomes can be summarised in a set of key factors (industrial, structural, market and regulatory), it is unclear whether each of the current UPU members can predict with confidence what outcome it would face in a scenario of pure bilateral negotiation.**

## 4. Lessons learned from economics and governance of international trade

In this chapter, we describe relevant lessons learned from trade economics, which is a natural source for information about the pros and cons of multilateral and bilateral agreements. In particular, within international trade, there are both examples of multilateral agreements – e.g. WTO, GATT and ITU – and bilateral agreements, e.g. Free Trade Agreements (FTA).

Based on our analysis of key academic literature underpinning international trade agreements, we find that academic literature has identified a very clear set of potential benefits, from a perspective of global welfare, linked to a multilateral arrangement covering all parties.

Moreover, bilateral agreements present multiple challenges for the implementation and enforcement of rules, for example, the so-called “Spaghetti bowl effect”.

We discuss each of these findings in more detail below.

### Trade theory is clear about what is the first best solution: Multilateral action

Multiple academic papers have analysed and compared the pros and cons of bilateralism and multilateralism. Academics are clear that the ideal from a global welfare perspective is a multilateral action.

For example, early theoretical work by Krugman demonstrated that given a regional system, **the optimal number of regions is equal to one** – hence a multilateral system.[26] Additionally, work examining the impacts of bilateral agreements consistently view multilateral trade action as the benchmark against which to measure the effectiveness of bilateral action.[27]

---

[26] See Krugman, P. (1993) Regionalism versus multilateralism: analytical notes.
[27] See Brown, D., et al. (2002) Multilateral, Regional, and Bilateral Trade-Policy Options for the United States and Japan; or Mansfield, E and H Milner (1999) The New Wave of Regionalism; & Yilmazkuday, D., Yilmazkuday, H. (2014) Bilateral versus Multilateral Free Trade Agreements: A Welfare Analysis.

**Table 2 Insights from international trade and implications to international letter post**

| LESSON LEARNED FROM THE ECONOMICS OF INT. TRADE | IMPLICATION TO INTERNATIONAL LETTER POST |
|---|---|
| **Key benefits of a multilateral action:** | |
| 1. **Global welfare is maximised** with an efficient global multilateral system | Global welfare is maximised with one efficient governing institution for international letter post |
| 2. A multilateral system can **prevent discriminatory practices** and the 'weaponisation' of trade (the *Most Favoured Nation Clause, MFN*) | In a unilateral system, there is a risk that countries will use an aggressive or retaliatory terminal dues policy for political purposes |
| **Six key challenges of bilateralism reducing global welfare:** | |
| 1. **Global inequality and information asymmetries** allow stronger countries to adopt discriminative trade policies which, in turns, reduce global welfare | Asymmetries in letter post markets – in terms of size, import/export balance, delivery costs etc. – mean that countries could adopt discriminative policies which would harm global welfare |
| 2. The negotiation process of **FTAs is a costly exercise** | The negotiation of bilateral TDs is a costly exercise, especially for small or developing countries |
| 3. The proliferation of bilateral agreements creates additional costs to the industry due to the so-called **"Spaghetti Bowl Effect"** | Complexity created by the proliferation of bilateral TD agreements would harm senders, operators and global welfare |
| 4. FTAs may lead to **Trade diversion**, i.e. trade being shifted from one country to another, rather than stimulating increases in net global trade | In the TD system based on bilateral agreements, there is a high risk of arbitrage of international terminal dues rates, e.g. remail ABA or ABC |
| 5. Trade diversion is particularly observed in the **hub and spoke** type of trade networks | Since the hub and spoke type of network is the most likely outcome for international letter post, the risk of arbitrage becomes even higher |
| 6. The imposition of **Rules of Origin** (RoO) in FTAs results in strict rules around product origins acting as prohibitively high barriers to trade | In absence of the global multilateral agreement, it would be difficult and costly to comply, enforce and improve technical standards for letter post (equivalent to RoO) |

*Source: Copenhagen Economics*

> **The welfare gains from multilateral trade liberalization are […] considerably greater than the gains from preferential trading arrangements and more uniformly positive for all countries.**
>
> *Source: Brown, D., et al. (2002) Multilateral, Regional, and Bilateral Trade-Policy Options for the United States and Japan*

Moreover, the outcomes of international trade practice support academic theory and show that there is value in a multilateral action. For example, the WTO agreement has created multiple benefits to the pharmaceuticals, information technology and other industries globally.

Another example is trade in IT, which was deemed relatively free in the early 90's but hindered to such a degree by bilateral agreements that it was still considered severely limited. The primary reason was the inability to integrate the various bilateral rates into production and pricing strategies.[28] The Information Technology Agreement (ITA) implemented via the WTO represented a multilateral agreement to bind tariff rates on IT goods to zero, thereby making it possible for business to develop export strategies in an economically efficient way.[29] Since implementation, studies have found a significant increase in the growth of trade in ITA products: between 1996 and 2015, ITA world exports more than tripled, reaching US$ 1.7 trillion and representing 15 per cent of total world manufactures exports, exceeding shares of automotive products, textiles and clothing, and pharmaceuticals. This growth has also involved many developing countries[30]: developing economies' share in world imports of ITA products increased to 51

[28] Baldwin, R. (2006) Multilaterilising Regionalism: Spaghetti Bowls As Building Blocs On The Path To Global Free Trade, Working Paper.
[29] Ibid.
[30] See Anderson, M., Mohs, J. (2010) The Information Technology Agreement: An Assessment of World Trade in Information Technology Products; and Stephen, J., et al (2017) Assessing the Benefits of Full ITA Participation for Indonesia, Laos, Sri Lanka, and Vietnam.

per cent in 2015; this is largely linked to the specialization of tasks and reliance on ICT global value chains. This in turn has supported future sector development.[31]

Another example of outcomes from international trade practice is the General Agreement on Tariffs and Trade (GATT). The founding principle of the GATT (and later the WTO) is the non-discriminatory principle or **"Most Favoured Nation Clause"** (MFN), which states that GATT country-members cannot discriminate between their trade partners. In this way, any special favour should be granted to all trade partners without distinction. This is an important caveat as it represents a systemic attempt to disincentivise aggressive or retaliatory use of trade policy for political purposes[32]. By maintaining this disincentive, a relative level of stability in international relations and trade can be maintained, as the use of tariffs as a trade weapon is minimised.

In contrast to this incentive, bilateral FTAs enable states to enforce different level of tariffs and trade barriers on a preferred basis[33]. This in turn allows significant variation in tariff rates, on a most favoured nation basis.[34] The great depression seen in the first half of the 20$^{th}$ century is a pertinent example of how the 'weaponisation' of trade policy can severely disrupt the international trading system as well as domestic economies.[35]

Similarly, bilateral negotiations of terminal dues rates could be used to discriminate smaller and developing nations by enforcing different level of terminal dues rates on a preferred basis, see section 3.b. above.

### An international system based on bilateral agreements suffers from six key challenges

In this section we discuss the challenges and weaknesses of a system based on a unilateral and/or bilateral agreement.

Multiple studies have shown that the proliferation of bilateral agreements in lieu of multilateral progress allows countries to adopt discriminative trade policies which, in turns, reduce global welfare.[36] This is so because of six reasons, which we describe below.

*Firstly*, global inequality and information asymmetries allow stronger countries to adopt discriminative trade policies which, in turns, reduce global welfare. Academics deplore the lack of political and economic equality characterising FTA relations.[37] Bigger states can use their larger market shares as leverage to introduce non-trade related measures concerning regulations, migration, labour standards or the environment.[38]

This is not to say, however, that freer trade leads to worse conditions for developing countries. Problems arise when the less developed or politically peripheral countries lack market and investment options. This lack of or specialisation in specific modes of production (such as agriculture) can simply lead to them being ignored when resources need to be spent on negotiating agreements. This lack of involvement in global trade can then severely compound difficulties with development or establishment or industries to trade with, thereby exacerbating existing inequalities.[39]

In contrast to this, multilateral negotiations would allow for a more equal liberalization since every country is allowed relatively equal platforms for negotiation in a transparent fashion.

Asymmetries in letter post markets – in terms of size, import/export balance, delivery costs etc. – mean that countries could adopt discriminative policies which would harm global welfare. See, section 3.b. above.

*Secondly*, the negotiation process of **FTAs should be considered a costly exercise**. Many smaller countries can be seen to possess only limited resources to negotiate FTAs, leading to either their exclusion from

[31] WTO (2017) 20 years of the Information Technology Agreement.
[32] Japan's Ministry of Economy, Trade and Industry (2012) Part II Chapter 1 Most-Favoured-Nation Treatment Principle.
[33] See Krugman, P. (1993) Regionalism versus multilateralism: analytical notes.
[34] Pinto, P., et al. (2017) The Consequences of Preferential Trade Agreements: Lessons for U.S.-Latin America Trade Relations.
[35] See Eichengreen and Irwin (2010) The Slide to Protectionism in the Great Depression: Who Succumbed and Why?
[36] See Krugman, P. (1991) The Move Towards Free Trade Zones and Krugman, P. (1989) Is Bilaterlism Bad?, NBER working paper.
[37] In terms of the international post, the negotiation of bilateral terminal dues agreements would be like the negotiation of FTAs.
[38] Bhagwati (2002) Trade and Poverty in the Poor Countries.
[39] See The National Board of Trade (2018) Free Trade Agreements and Countries Outside: An analysis of market access for non-participating countries.

trading agreements, or their inclusion, but with poor terms.[40] *Similarly, the negotiation process of bilateral terminal dues agreements would be a costly exercise.*

*Thirdly*, the proliferation of bilateral agreements would create additional costs to the industry due to the so-called **"Spaghetti Bowl Effect"** (the term used in Trade economics). In trade economics, this describes a dense network of overlapping agreements that resemble a bowl of spaghetti. This is problematic, as the benefits of these FTAs can only be obtained by firms after they have undergone costly registration and general administrative processes.[41]

As FTA agreements continue to be made, this leads to difficulty for firms to optimise their production and pricing strategies involving exports or imports.[42] Hence too many crisscrossing bilateral agreements would represent a costly complication of world trade.

In fact, Japanese Researchers from Keio University, observed 132 countries and established that, even though trade volumes were positively correlated with FTAs, this effect was characterized by diminishing returns.[43] In this way, the increasingly heavy and costly administrative burden caused by the multiplication of FTAs would deter firms to use FTA's preferential tariffs, thus adding evidence to a Spaghetti Bowl Effect.

We note that the Spaghetti Bowl Effect has a clear link to the international letter post system. Complexity created by the proliferation of bilateral TD agreements would harm senders, operators and global welfare. In absence of a global multilateral system governing terminal dues, each country would have to sign and manage up to 191 agreements (assuming all the UPU member states). In total, this would result in up to 36.672 agreements.

*Fourthly,* with the provision of greater FTAs, loss of global welfare has been argued to occur also through **trade diversion.[44]** Trade diversion is found to occur where FTAs lead trade being shifted from one country to another, rather than stimulating increases in net global trade (unlike multilateral agreements). One key implication is that this can lead to a suboptimal allocation of resources within the trading countries.[45] This diversion can also give rise to other political externalities, such as the exclusion of third countries in a manner that is potentially harmful to their economies (see the discussion above on the MFN principle).

Key implication to the international letter post is that in the TD system based on bilateral agreements, there is a risk of arbitrage of international terminal dues rates, e.g. re-mail ABA or ABC - challenges which UPU has put rules in place to solve.

*Fifthly*, trade diversion is particularly observed in the hub and spoke type of trade networks. This is because it will be cheaper to go via the hub rather than going directly to the country of destination.[46]

We note that the Hub and spoke is a likely outcome of going to a unilateral postal system. Some countries will be more aggressive and active in developing bilateral agreements with key exporting and importing postal markets. This will create regional hubs connecting other countries into an international postal network. In practice, this means that some countries will act as the gateway to some key postal flows, e.g. e-commerce flows from China to EU countries. Hence, the risk of arbitrage becomes even higher.

*Lastly,* another pertinent weakness of FTAs is **Rules of Origins (RoO)**, which define traded goods' eligibility for FTAs' preferential tariffs regimes. Every FTA sets its

---

[40] Yamamoto, K. (2014) FTA Negotiations with Side Payments: Asymmetric Countries and Asymmetric Information.
[41] See Schüle, U. & Kleisinger, T. (2016): The "Spaghetti Bowl": A Case Study on Processing Rules of Origin and Rules of Cumulation.
[42] See Bhagwati, J., Panagariya, A. (1996) Preferential Trading Areas and Multilateralism: Strangers, Friends or Foes? Discussion Paper Series No. 9596-04; Bhagwati, J. (2008) Termites in the Trading System: How preferential agreements undermine free trade, Oxford University Press.; and Baldwin, R. (2006) Multilaterilising Regionalism: Spaghetti Bowls As Building Blocs On The Path To Global Free Trade, Working Paper 12545.
[43] Kimura, F., Kuno, A., Hayakawa, K. (2006) Does the number of RTAs matter?
[44] Magee, C. (2004) Trade Creation, Trade Diversion, and Endogenous Regionalism.
[45] Viner, J. (1950) The customs Union Issue, Oxford University Press
[46] Horaguchi, H. H. (2007) Economic Analysis of Free Trade Agreements: Spaghetti Bowl Effect and a Paradox of Hub and Spoke Network.

own geographical conditions of production for concerned goods. Because of globalization and the development of international supply chains, rules of origins fail to reflect goods' complex international origins and are often impossible to enforce. The imposition of RoO in international trade is especially profound in FTA spaghetti bowl situations. Such situations result in strict rules around product origins acting as prohibitively high barriers to trade.[47]

In absence of the global multilateral agreement, it would be difficult and costly to comply, enforce and improve technical standards for letter post. This is so because Rules of Origin can represent an equivalent of the technical standards used in the international letter post system – e.g. Bar code symbology standards, Identification/codification standards, EDI messages standards, and Standards for document exchange.

Standards are necessary for effective postal operations and to interconnect the global postal network. Currently, the UPU's Standards Board develops the technical standards and EDI message specifications that facilitate the exchange of operational information between Posts.

### A postal system based on bilateral agreements would be particularly costly to small or developing countries as well as to low margin businesses

As discussed above, one of the key challenges of a system based on bilateral agreements is that global inequality and information asymmetries allow stronger countries to adopt discriminative trade policies which, in turns, reduce global welfare. As we discuss below, in the international postal system, this challenge would particularly affect both smaller governments and low margin businesses.

Firstly, the cost of bilateral arrangements is relatively higher to small and developing countries. The negotiation process of remuneration tariffs for postal services is a costly exercise. Many smaller countries possess only limited resources to negotiate such agreements with almost 200 members of the UPU, leading to either their exclusion from international remuneration system, or their inclusion, but with poor terms. Moreover, this is compounded by the lack of economic equality characterising international letter post flows. Bigger countries can use their larger market shares as well as more import-oriented states can leverage their importance as destination countries to introduce unilateral remuneration arrangements.

Secondly, the cost of bilateral arrangements is relatively higher to low margin services. Analysing the effects of bilateral agreements on the country level hides important service level heterogeneity. This implies that within the same operator some services might be impacted by the system based on bilateral agreements more than others.[48]

The empirical observation that some firms (or services) within the same industry gain less from a change in trade barriers[49], e.g., a trade agreement, is reflected in models of new trade theory.[50] These models show that the costs attached to exporting (e.g. negotiating, monitoring and enforcing agreements with foreign businesses and/or making use of existing bilateral agreements between countries) is an important factor determining the benefits attached to trade.[51]

[47] See Bhagwati, J. Panagariya, A (1996) Preferential Trading Areas and Multilateralism: Strangers, Friends or Foes? Discussion Paper Series No. 9596-04; Bhagwati, J (2008) Termites in the Trading System: How preferential agreements undermine free trade, Oxford University Press.; and Crook & Gordon (2017) Rules of Origin: can the noo-dle bowl of trade agreements be untangled? Produc-tivity Commission, Government of Australia.

[48] See similar observations at an industry vs firm level in Baccini, L., Pinto, P., & Weymouth, S. (2017). The distributional consequences of preferential trade liberalization: A firm-level analysis. International Organization, 71(2), 373–395.

[49] Bernard, A. B., Eaton, J., Jenson, J. B., & Kortum, S. (2003). Plants and productivity in international trade. American Economic Review, 93, 1268–1290.; Bernard, A. B., & Jensen, J. B. (1999). Exceptional exporter performance: Cause, effect, or both? Journal of International Economics, 47(1), 1–25.; Eaton, J., Kortum, S., & Kramarz, F. (2011). An anatomy of International Trade: Evidence from French firms. Econometrica, 79(5), 1453–1498.

[50] Melitz, M. J. (2003). The impact of trade on intra-industry re-allocations and aggregate industry productivity. Econometrica, 71(6), 1695–1725.

[51] Osgood, I., Tingley, D., Bernauer, T., Kim, I. S., Milner, H. V., & Spilker, G. (2017). The charmed life of superstar exporters: Survey evidence on firms and trade policy. The Journal of Politics, 79(1), 133–152.

Importantly, we draw attention that an increase in business uncertainty and compounded by additional costs attached to cross-border mail flows – as discussed in previous chapters of this report – could particularly impact provision of low margin services, e.g. delivery of letter packets.

# Part 2: risk to the postal industry

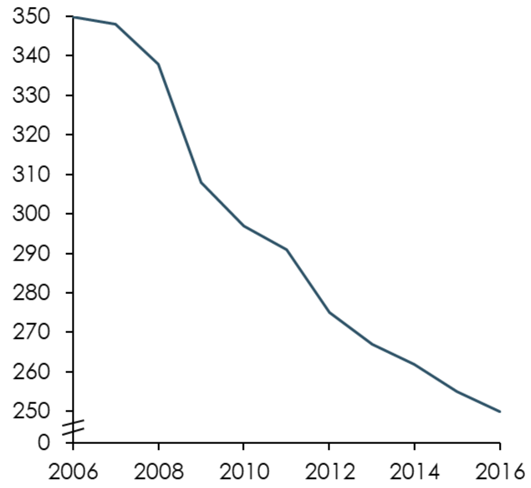
## 5. The postal industry has to face up to a "survival" challenge

In this chapter, we describe the challenges facing the postal industry and opportunities arising from e-commerce. The decline of traditional mail forces postal operators to look for new growth areas. One of the biggest opportunities is cross-border e-commerce. And since a large share of "mail items" generated by e-commerce is processed in letter post streams, any changes in the terminal dues system has a great significance to the postal industry.

### The decline of traditional mail and the difficulty to find new growth areas

The most prominent postal market trend observable in this decade is the declining demand for addressed letter post products. Domestic addressed letter volumes are declining globally at an average rate of 3%, see Figure 1. In Europe, domestic letter volumes declined by on average 4,2 per cent annually in Europe in the 2013-2016 period.[52] Moreover, international letter post volumes have been declining over the past few decades too.[53]

**Figure 1 Decline in global addressed domestic letter volumes**
Billion items




*Note: World includes data from 108 countries, EU includes data from 26 countries.*
*Source: UPU data.*

As a result, in the majority of postal markets, the USPs' profitability margin has been declining, going from 4,7 per cent to 3,8 per cent on average (incl. non-USO services). [54] Hence, securing an efficient and financially sustainable provision of postal services is one of the key challenges of the postal industry.

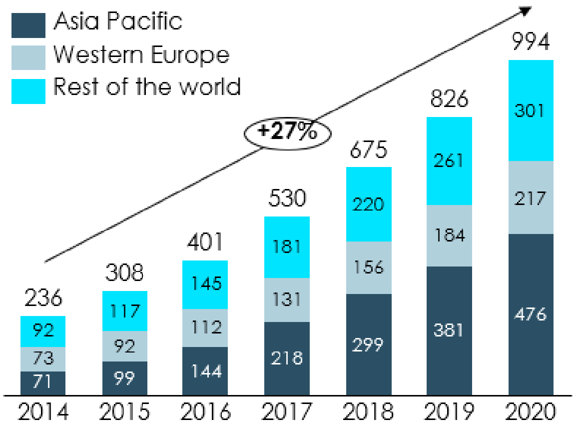
### The opportunity of cross-border e-commerce growth

However, volumes of one category of letters, namely the small packets, are going in the other direction. This is largely due to the increase in cross-border e-commerce, see Figure 2. According to research by Postnord, more than 54 million people across Europe purchased goods online from China alone in 2018, which is 16 million more than in 2017[55]. Since many of the items purchased online are small and of low weight, these do often not have to be delivered as parcel post but can instead be delivered as letter post (small packets). In fact, the UPU

[52] Copenhagen Economics (2018) Main developments in the postal sector 2013-2016, p. 38.
[53] UPU (2016) Research on Postal Markets.
[54] Copenhagen Economics (2018) Main developments in the postal sector 2013-2016, p. 47.
[55] For more information see Postnord (2019) E-handeln i Europa 2018 page 14, a survey conducted on behalf of Postnord.

estimates that 80 per cent of "mail items" generated by e-commerce weight less than 2 kg and are processed in letter post streams.[56] This development has large implications for the terminal dues system, since it means that a large share of the e-commerce goods can be delivered using the terminal dues system. It is important to ensure that postal operators tap into this cross-border e-commerce market opportunity.

**Figure 2 Cross-border B2C e-commerce market forecast by region**
US$ billion




*Source: AliResearch – Accenture, Global Cross Border e-Commerce Market 2020, Jun. 2015.*

As e-commerce volumes increase – and in particular cross-border e-commerce – this creates an opportunity for postal operators to rely on these additional revenues to support the business.

The impact of developing these lines of business will vary country by country, depending on the cost structure, extent of diversification of postal business, market situation and the domestic addressed letter trends.

**Cost coverage of inbound letters: the US**

The question of whether the current access prices cover cost is difficult to answer. First, one, there are not many countries that review, nonetheless publish, information on the cost coverage of inbound letters. Second, countries diverge on approaches to cost allocation and cost standards. Besides, the concepts of cost coverage and profit maximisation are distinct, with the latter subject to the regulatory framework in which an organisation operates.

One country where the designated operator does publish detailed information on international mail is the US. The designated operator, the USPS publish a regulatory account, which is reviewed by the postal regulatory commission.

In the 2018 annual compliance report, the USPS states that the revenue from the product set defined as inbound letter post covered 84 per cent of the attributable cost in financial year 2018. Further, the USPS expects this to increase with the annual increases agreed in the Istanbul congress of the UPU.

*Source: USPS (2018) United States Postal Service FY 2018 Annual Compliance Report*

## 6. Changes in the cost of using the international terminal dues system can have a significant volume impact

We note that consumers are sensitive to price changes and this has important implications to postal operators. If the total price of delivery and handling goes up – e.g. due to higher transactional costs, trade diversion, or the 'spaghetti bowl effect' – consumers can and will reduce cross border purchases (and find goods elsewhere).

[56] UPU (2017) About Letter Post Development http://www.upu.int/en/activities/letter-post-development/about-letter-post-development.html

The total price of delivery and handling consists of multiple elements – among them terminal dues – including custom duties and VAT. Although the focal point of this paper is on terminal dues, important knowledge about consumer reactions can also be found when looking at changes in different constituents of the total price of delivery and handling.

For example, in Sweden, changes in VAT treatment on low value consignments (items worth less than 21 EUR) suddenly meant a large increase in the cost of some UPU mail streams. This resulted in a significant volume decrease.

The Swedish example follows from an implementation change introduced at the start of 2018, when the customs authority and PostNord started to collect sales tax (more precisely, VAT) on imported goods from outside the EU, irrespective of the value, thus also on items previously treated as *de minimis*. As a result, due to VAT collection costs caused by the removal of VAT *de minimis*, PostNord has introduced a handling fee for low-value shipments to be charged to consumers. The handling fee is SEK 75 (around €7).[57]

On March 21st, i.e. 21 days after the change in VAT handling of *de minimis* items, PostNord reports suggested a significant drop in packet volumes.[58]

> **At the end of last week, 50,000 packets arrived per day, so that is a very large difference compared to the 150,000 packets per day that previously arrived.**
>
> *Source: Thomas Backteman, director of communication at PostNord. Interview on Breakit.se*

Since then, PostNord has introduced solutions that enable e-sellers to pre-pay VAT at the time of purchase and – in this case – e-shoppers will face no handling fee upon arrival of packets to Sweden.[59]

While every country and market has its own specificities, this example demonstrates two key points.

First, consumer demand for cross-border e-commerce items is elastic and will respond to the overall consumer price. E-shoppers are sensitive to price changes and may adjust their purchasing behaviour. This affects the incentives of players across the e-commerce and delivery value chain.

Second, the effects of UPU remuneration cannot be considered in isolation from effects of other national or regional (e.g. EU) regulation across different areas including taxation.

All of this has important implications to the postal and delivery industry, which has so far benefited from the growing mail volumes attached to the growth of e-commerce flows. **If the overall e-commerce experience is affected by price variations in of some UPU mail streams, the number of e-commerce goods sent cross-border via the postal network may drop significantly.**

## 7. Final remarks and open issues

As a final remark, we briefly discuss a series of issues that are related to the frictions and inefficiencies likely to arise under a transitional phase away from global coordination, towards unilateralism. This is in particular linked to the extent of time included in the planning and transition phase.

### Impairing continuity of timely service

A first point is the effect on continuity in global postal services. Several questions remain unclear.

- Is there a risk that some designated operators may be cut off for a period from global (or a wide international set of) postal flows?
- Moreover, could delay in international postal flow result from recipient operators facing uncertainty in whether and how (technical and pricing terms) to treat inbound mail flows?

[57] PostNord (2018) press release on 16 February 2018, postnord.com.
[58] Breakit.se (2018), breakit.se.
[59] PostNord (2018) press release on 14 June 2018, postnord.com

- In turn, could some designated operators formally (or de facto) refuse to accept consumer international mail for a period of time?

**Until these questions are addressed, it is expected that unilateral action could have an impact on the continuity of the universal postal service and impair the long-established single global postal territory.**

### Pricing complexity and consumer impact

A second key transitional issue is that the change in international wholesale pricing presents spillovers to pricing and efficiency at the retail level.

A system based on or underpinned by self-declared rates at the wholesale level can lead to a wide divergence in rates faced by sender operators. Furthermore, as discussed earlier in this study, bilateral negotiations are likely to lead to widely varying (and unpredictable) outcomes.

This divergence in wholesale agreements is expected to inform and affect the retail relationship between a designated (sender) operator and its consumers – depending on the potential responses by sending operators to the greater complexity in the terms and conditions applicable.

Sending operators may introduce a proliferation of retail rates due to wide differences in last mile charges across destination countries. This may be an understandable immediate reaction to changes in wholesale prices.

At the same time, consumers may not like complications in price structures. Therefore operators, upon setting international retail mail prices, would need to balance their new cost base with uncertain information on how consumers would respond to price changes. **Achieving a profit optimal outcome may require new research and several trial-and-error processes. This can also lead to impact on consumer demand.**

### New international networks and patterns: what coverage?

A final question relates to the extent to which – in a scenario where current global multilateral arrangements are dismissed – alternative networks and arrangements can emerge to serve the same needs catered by the UPU system today.

It is conceivable that entrepreneurial developments would respond to a situation and attempt to fill the gaps left in a scenario where the UPU system is abandoned. New or existing networks may be (re)purposed to aggregate and convey traffic into main international routes.

However, it is at this stage an open question whether such networks would focus exclusively on the main postal trade lanes or would also serve in a suitable manner all possible postal flows which are today covered by UPU arrangements.

The experience of developments across several domestic postal markets shows that postal entrepreneurship manages business model risk by cherry-picking strategies. This has been reflected in several domestic postal networks emerged after liberalisation to focus mainly on the most profitable types of business and more profitable territory – leaving behind, uncovered a considerable part of the services, which are then supplied under universal service obligations by the designated operator.

Therefore, it is an important question whether a similar pattern of cherry picking would apply also to international postal traffic in an unregulated world absent UPU arrangements – and what type of mail flows and what territories would be likely left behind.

As a conclusion, the following table provides a high level summary of the insights presented in the previous sections and their significance to the research question addressed in this study.

**Table 3 Insights from economic literature and the postal industry**

| RISKS TO GLOBAL ECONOMIC WELFARE OUTCOMES UNDER A PURELY UNILATERAL SYSTEM | |
|---|---|
| **Lesson learned from the economic literature** | **Implication** |
| 1. **Transaction cost economics**<br>Transaction cost economics is concerned with determining which is the most cost-efficient governance structure for conducting transactions. | The UPU is a governance structure that determines the conditions for transactions (i.e. last-mile letter mail delivery) and can be analysed in the context of transaction cost economics. |
| 2. **Contract theory**<br>Transaction costs are high in the absence of governance structures, especially in complex environments where the interacting parties have different objectives. Governance structures can limit transaction costs by reducing uncertainty or stabilising expectations. Economic activity should be organised via a certain governance structure when the transaction cost in its absence are higher than the cost of running it. | Reaching an agreement on the renumeration of last-mile letter mail delivery is complex and involves various stake-holders interacting in different economic environments. By specifying technical standards and by defining rates, the UPU reduce the transaction costs between countries. Without the UPU terminal due system, or an equivalent multilateral system that governs international postal tariffs, the parties would incur the transaction costs for negotiating and enforcing each of many bilateral agreements. However, with the UPU, the parties only incur the cost of reaching one multilateral agreement. |
| 3. **Game theory**<br>In a unilateral system, designated operators have incentives to set higher access prices than what is socially optimal due to double marginalisation. | Unilateral prices may be excessively high due to double marginalisation. The dominant strategy without a multilateral agreement will vary across designated operators and there would be likely to be a wide variation of outcomes. |
| 4. **Economics and governance of international trade**<br>Economic research on trade agreement show that multilateral solutions are superior to unilateral or bilateral agreements. | A dismissal of the multilateral system that the UPU provides would reduce total global welfare. There may also be a risk that countries will use an aggressive or retaliatory terminal dues policy for political purposes. An alternative system based on unilateral prices and/or bilateral agreements suffers from several weaknesses. We have identified six key challenges: (i) risk of discriminative policies (ii) negotiation is costly (iii) the complexity of many agreements creates cost (iv) bilateral agreements lead to risk of arbitrage (v) hub-and -spoke system increase the risk of arbitrage and (vi) costly to comply, enforce and improve technical standards. |
| **RISKS TO THE POSTAL INDUSTRY** | |
| **Lessons from the postal industry** | **Implication** |
| 5. **The postal industry has to face up to a "survival" challenge** | The traditional letter mail industry is declining, and delivery of e-commerce is one of the few areas of growth for designated operators. If lack of collaboration reduces the growth of cross-border e-commerce, this poses a financial risk to the postal industry. |
| 6. **Changes in the cost of using the international terminal dues system can have a significant volume impact** | When additional cost is added, low-value, low-weight letter post items, especially small packets, may decline significantly in volume. |

*Source:* *Copenhagen Economics*

## References

Anderson, M. and Mohs, J. (2010). The Information Technology Agreement: An Assessment of World Trade in Information Technology Products.

Arrow, K.J. and Debreu, G. (1954). Existence of an equilibrium for a competitive economy. Econometrica, 22, pp. 265–290.

Baccini, L., Pinto, P. and Weymouth, S. (2017). The distributional consequences of preferential trade liberalization: A firm-level analysis. International Organization, 71(2), 373–395.

Baldwin, R. (2006). Multilaterilising Regionalism: Spaghetti Bowls As Building Blocs On The Path To Global Free Trade. Working Paper 12545.

Bernard, A. B. and Jensen, J. B. (1999). Exceptional exporter performance: Cause, effect, or both?. Journal of International Economics, 47(1), 1–25.

Bernard, A. B., Eaton, J., Jenson, J. B. and Kortum, S. (2003). Plants and productivity in international trade. American Economic Review, 93, 1268–1290.

Bhagwati, J. (2002). Trade and Poverty in the Poor Countries.

Bhagwati, J. (2008). Termites in the Trading System: How preferential agreements undermine free trade. Oxford University Press.

Bhagwati, J. and Panagariya, A. (1996). Preferential Trading Areas and Multilateralism: Strangers, Friends or Foes? Discussion Paper Series No. 9596-04.

Bloom, N. (2009). The impact of uncertainty shocks. Econometrica, 77(3), 623-685.

Breakit.se (2018). Postnord: Drastisk minskning av Kina-paket till Sverige. Available at: https://www.breakit.se/artikel/12383/postnord-drastisk-minskning-av-kina-paket-till-sverige.

Brown, D. et al. (2002). Multilateral, Regional, and Bilateral Trade-Policy Options for the United States and Japan.

Coase (1937). The Nature of the Firm. Economica, 4, pp. 386-405.

Coase, R.H. (1960). The Problem of Social Cost. Journal of Law and Economics, 3, pp. 1-44.

Copenhagen Economics (2014) The Economics of Terminal Dues. A study for the US Postal Regulatory Commission

Copenhagen Economics (2016). Quantification of financial transfers caused by Universal Postal Union terminal dues. A study for the US Postal Regulatory Commission.

Copenhagen Economics (2018). Main developments in the postal sector 2013-2016.

Crook, W. and Gordon, J. (2017). Rules of Origin: can the noodle bowl of trade agreements be untangled? Productivity Commission, Government of Australia.

Eaton, J. Kortum, S. and Kramarz, F. (2011). An anatomy of International Trade: Evidence from French firms. Econometrica, 79(5), 1453–1498.

Eichengreen and Irwin (2010). The Slide to Protectionism in the Great Depression: Who Succumbed and Why?

European Commission (2018). Commission imposes provisional safeguard measures on imports of steel products.

Gilligan (2009). The Transactions Costs Approach to International Institutions. In Milner, H.V., and Andrew, M. Power, Interdependence, and Nonstate Actors in World Politics. Princeton University Press, pp. 50-65.

Hart, O. and Moore, J. (1988). Incomplete Contracts and Renegotiation. Econometrica, 56(4), pp. 755-785.

Horaguchi, H. H. (2007). Economic Analysis of Free Trade Agreements: Spaghetti Bowl Effect and a Paradox of Hub and Spoke Network.

Japan's Ministry of Economy, Trade and Industry (2012). Part II Chapter 1 Most-Favoured-Nation Treatment Principle.

Keohane, R.O. (1982). International Institutions: Two Approaches. International Studies Quarterly, 32(4), pp. 379–396.

Ketokivi, M. and Mahoney, J.T. (2017). Transaction Cost Economics as a Theory of the Firm, Management, and Governance. Oxford Research Encyclopedia of Business and Management.

Kimura, F. Kuno, A. and Hayakawa, K. (2006). Does the number of RTAs matter?

Krugman, P. (1989). Is Bilateralism Bad?. NBER working paper.

Krugman, P. (1991). The Move Towards Free Trade Zones.

Krugman, P. (1993). Regionalism versus multilateralism: analytical notes.

Magee, C. (2004). Trade Creation, Trade Diversion, and Endogenous Regionalism.

Mansfield, E and Milner, H. (1999). The New Wave of Regionalism.

Melitz, M. J. (2003). The impact of trade on intra-industry re-allocations and aggregate industry productivity. Econometrica, 71(6), 1695–1725.

Nash (1950) The Bargaining Problem. Econometrica, vol. 18, no. 2, 1950, pp. 155–162.

North, D.C. (1992). Transaction costs, institutions, and economic performance. San Francisco, CA: ICS Press.

North, D.C. (1991). Institutions, Journal of Economic Perspectives, 5 (1): 97-112.

Osgood, I. Tingley, D. Bernauer, T. Kim, I. S. Milner, H. V. and Spilker, G. (2017). The charmed life of superstar exporters: Survey evidence on firms and trade policy. The Journal of Politics, 79(1), 133–152.

Pinto, P. et al. (2017). The Consequences of Preferential Trade Agreements: Lessons for U.S.-Latin America Trade Relations.

PostNord (2018). press release on 14 June 2018, postnord.com

PostNord (2018). press release on 16 February 2018, postnord.com.

Postnord (2019). E-handeln i Europa 2018. pp 14.

Schüle, U. and Kleisinger, T. (2016). The “Spaghetti Bowl”: A Case Study on Processing Rules of Origin and Rules of Cumulation.

Shapley, L.S. (1953), A Value for n-person Games. In Kuhn, H. W.; Tucker, A. W. Contributions to the Theory of Games. Annals of Mathematical Studies. 28. Princeton University Press. pp. 307–317.

Shapley, L.S. and Shubik, (1971) The assignment game I: The core. Int J Game Theory (1971) 1: 111.

Spengler, J. (1950). Vertical Integration and Antitrust policy. Journal of Political Economy, 58, August, pp. 347-352

Stephen, J. et al (2017). Assessing the Benefits of Full ITA Participation for Indonesia, Laos, Sri Lanka, and Vietnam.

The National Board of Trade (2018). Free Trade Agreements and Countries Outside: An analysis of market access for non-participating countries.

Tirole, J. (1988). The theory of industrial organisation.

Trinkner, U; Jaag, C; Dietl, H; Haller, A; Verbeek, E; Fürst, O (2011). International Parcels - Review of Inward Land Rates. Report prepared for the Universal Postal Union.

UPU (2016). Research on Postal Markets.

UPU (2017). About Letter Post Development. http://www.upu.int/en/activities/letter-post-development/about-letter-post-development.html

Viner, J. (1950). The customs Union Issue, Oxford University Press.

Williamson, O.E. (1979). Transaction-Cost Economics: The Governance of Contractual Relations. Journal of Law and Economics, 22(2), pp. 233-261.

Williamson, O.E. (1983). Credible Commitments: Using Hostages to Support Exchange. The American Economic Review, 73(4), pp. 519-540.

Williamson, O.E. (1985). The Economic Institutions of Capitalism. Free Press.

WTO (2017). 20 years of the Information Technology Agreement.

Yamamoto, K. (2014). FTA Negotiations with Side Payments: Asymmetric Countries and Asymmetric Information.

Yilmazkuday, D. and Yilmazkuday, H. (2014). Bilateral versus Multilateral Free Trade Agreements: A Welfare Analysis.

## About Copenhagen Economics

Copenhagen Economics is one of the leading economics firms in Europe. Our economists provide advice and analyses in the fields of competition, regulation, international trade and impact assessment.

We solve complex problems for clients in the areas of

| | | |
|---|---|---|
| Auctions | Energy & Climate | Postal & Delivery |
| Competition | Greenland & Mining | Finance & Tax |
| Digital Economy | Health Care & Welfare | Trade & Internal Market |
| Dispute Support | IP Valuation | Transport |

We provide hard facts and clear stories, enabling our clients and their stakeholders to make superior decisions based on sound analysis.

We advise companies, authorities and policy makers when market meets regulation and conflicts arise. We help our private sector clients handle conflict cases and guide them on how to prosper through regulatory management. We help our public sector clients evaluate and devise new regulation.

Founded in 2000, the firm is based in offices in Brussels, Copenhagen, Stockholm and Helsinki

- Is partner-owned
- counts more than 80 employees, mostly with Ph.D. or M.Sc. in Economics
- includes economists from various nationalities / languages: Danish, Dutch, English, Finnish, French, German, Hungarian, Italian, Lithuanian, Norwegian, Portuguese, Romanian, Spanish, Swedish
- and operates across the world.

Global Competition Review (CGR) lists Copenhagen Economics as one of the top 20 economic consultancies in the world and has done so since 2006.

**www.copenhageneconomics.com**