

# INTERNATIONAL DELIVERY PRICES: EFFECTS ON NATIONAL POST AND E-COMMERCE

Impact of UPU terminal dues on Finland & Sweden

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11 March 2019

## EXECUTIVE SUMMARY

Finland and Sweden are members of the Universal Postal Union (UPU), a UN agency. The UPU international agreements include rules capping the cross-border postal rates (terminal dues) that the Finnish and Swedish post can charge the foreign sending postal company for inbound mail. This includes mail products used to ship many e-commerce items. However, shipment prices for domestic e-retailers are not governed (or directly affected) by the UPU rules. Thus UPU caps influence the price differential between shipment options available to domestic vs foreign e-retailers.

Specifically, terminal dues are payments between designated postal operators for the domestic transport, sorting and delivery of inbound cross-border letter post items in the destination country. These international tariffs (governed by the UPU) differ from the compensation, the domestic postal operators would require in a situation without the terminal dues system in place. As surveyed in our past work for the US postal regulator, this difference in prices gives rise to several distortive effects, including financial transfers between designated postal operators around the world. It also affects the competitive outlook for e-retail activities based in countries like Finland and Sweden.

As the first part of our investigation, we estimate the net financial transfers for the domestic postal operators in Finland and Sweden stemming from the terminal dues. We do this by comparing the terminal dues rates with prices that domestic postal operators would have charged for the shipment of mail in the absence of terminal dues (i.e. adjusted domestic rates). The difference between the terminal dues and the shipment fee is significant: after the necessary adjustments, the average fee for a domestic shipment in Finland is **46 per cent larger than the terminal dues on inbound mail. For Sweden, the differential is +57 per cent.**

We find that the difference between domestic shipment fees and terminal dues, combined with Finland and Sweden being net importers of letter items, results in a negative net financial transfer for the domestic postal operators in both Finland and Sweden. This negative financial transfer represents a significant cost component for the domestic operators: in Finland, the negative net financial transfer is also equal to € 10 million, a figure comparable to **22 per cent of Posti's annual profit**. In Sweden, the negative net financial transfer is equal to € 10 million, a figure comparable to **19 per cent of Postnord's annual profit for Sweden**. The financial transfers represent a missed opportunity of significant financial magnitude. As such, and given current

developments in the postal industry, it may have important impact on the behaviour in the market. This begs the question of how this shortfall is handled in Finland and Sweden.

Furthermore, we find that the negative net financial transfer mostly stems from trade with the Asia-Pacific. For Finland this trade makes up an estimated 70 per cent of the net financial transfer, while it makes up 90 per cent of the net financial transfer for Sweden.

To investigate how the differential between domestic shipment fees and terminal dues affects the domestic e-retailers in Finland and Sweden, we compare the e-retailers' disadvantage stemming from the terminal dues with their profit margins. We test multiple stylised yet realistic cases of e-commerce merchandise that are relevant to many consumers. We find that for domestic e-retailers the differential / disadvantage on shipping rates makes a significant dent into profit margin contribution from selling online of all the types of merchandise considered in the case studies. In many cases, the terminal dues disadvantage is even *greater* than the e-retailer's profit margin contribution expected from that item type.

As is well known, (e)retail is an activity with low profit margins. Against this backdrop, the disadvantage on shipping rates stemming from terminal dues makes a significant and broad impact. This implies that – for a broad range of merchandise types – the domestic e-retail activity in Finland and Sweden faces a significant challenge in sustaining profits, driven by the shipping disadvantage vis à vis foreign based e-retailers that can access shipping rates underpinned by the UPU terminal dues rules.

Finally, a note on method. We have stress-tested our results via a broad set of sensitivity checks, reported in appendix together with additional details on method. We also note that the aim and scope of this study is to map and identify the size and implications of the terminal dues at a high level and without updated detailed commercial figures from the postal companies themselves. In this way, it constitutes a documented, pilot study which presents novel evidence on the impact on domestic retail of the UPU terminal dues. Further research would be needed to establish the detailed implications on postal companies accounts and regulation, for example on net costs or other impact assessment measures.

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## 1. THE RISE OF E-COMMERCE AND THE UPU

### 1.1 Rise of international/global e-commerce

Overall, international mail volumes have been declining over the past few decades<sup>1</sup>. However, volumes of one category, namely the small packets, are going in the other direction. This is largely due to the increase in international e-commerce. From China alone, European customers bought more than 54 million items in 2018, which is 16 million more than in 2017<sup>2</sup>. 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 estimates that 80 per cent of “mail items” generated by e-commerce weight less than 2 kg and are processed in letter post streams.<sup>3</sup> 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.

### 1.2 The UPU and the Terminal dues

The Universal Postal Union (UPU) is an intergovernmental organization and a platform facilitating international cooperation between national postal operators. It is an body under the UN and was founded in 1874. Amongst other things, the UPU governs the terminal dues - payments between designated postal operators for the transport, sorting and delivery of cross-border letter post items in the destination country.

The regulation applies to all products that are classified as letter mail. Letters are under the UPU system divided into three categories: small letters (P), large letters/“flats” (G), and small packets (E).<sup>4</sup>

The compensation that designated postal operators receive from delivering inbound cross-border letter mail (i.e., *the actual terminal dues*) differs from the compensation that they would require in a situation where they charge commercially for the service (i.e., *the counterfactual terminal dues*). In practice, the compensation received (i.e. the terminal dues) are often less than what

the postal operator would charge for the equivalent service on its national market.

### 1.3 Recent developments leading up to the US announced withdrawal

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. This congress set the path for the 2018 through 2021 cycle of UPU terminal dues. The agreements made in Istanbul build on the previous system, but with adjustments to some key parameters. Perhaps most notably, the updated system separates terminal dues for small and large letters (category P and G) from those of bulky letters and small packets (category E). The updated system also included increases in the terminal dues rates. For example, the annual increase in the cap (i.e. the maximum rate) for countries in group 3 (including among other countries China) increased from 2.8 per cent annually to 13 per cent annually.<sup>5</sup>

On October 17<sup>th</sup> 2018, the U.S. government announced two important initiatives towards reform. Firstly, the President directed the American national postal operator to adopt new “self-declared” delivery rates for packages (which includes also the letter category E under the UPU) in order to eliminate preferences for foreign mailers “as soon as practical, and no later than January 1, 2020.” Secondly, the U.S. formally notified the UPU of its withdrawal in one year’s time. The U.S. however left open the possibility that it will repeal its withdrawal, if negotiations resolve the fundamental issues posed by the UPU.

The drastic action taken by the U.S. illustrates that distortions of the terminal dues system have real impact that is to be taken seriously. The UPU Council of Administration have after this launched a public consultation on the UPU remuneration systems. The consultation will be administrated via conference in April 2019 under the theme “UPU Remuneration Systems – New Frontiers for an Old World?”

<sup>1</sup> UPU ((2016) Research on Postal Markets)

<sup>2</sup> Postnord (2019) E-handeln i Europa 2018 page 14

<sup>3</sup> UPU (2017) About Letter Post Development

<http://www.upu.int/en/activities/letter-post-development/about-letter-post-development.html>

<sup>4</sup> Category E is also referred to as bulky letters. A specification of the product categories can be found in UPU (2017) Statistics and accounting guide.

<sup>5</sup> UPU (2016) 2016 Istanbul Acts, Universal Postal Convention

## 2. FINANCIAL TRANSFERS FOR NATIONAL POSTAL OPERATORS IN FINLAND AND SWEDEN

A report by Copenhagen Economics from 2014 identified six types of potential market distortions in the UPU terminal dues system:

1. Distortion of competition for last-mile handling of cross-border letter post items;
2. Distortion of competition for first-mile handling cross-border letter post items;
3. Distortion of demand for delivery within and outside the terminal dues system;<sup>6</sup>
4. Distortion of demand for domestic versus cross-border delivery;
5. Distortion of demand for cross-border delivery originating in transition versus target countries; and
6. Financial transfers between postal operators

In this chapter, we shed light on one distortionary effect for Finland and Sweden created by the terminal dues system, namely the financial transfers (#6).

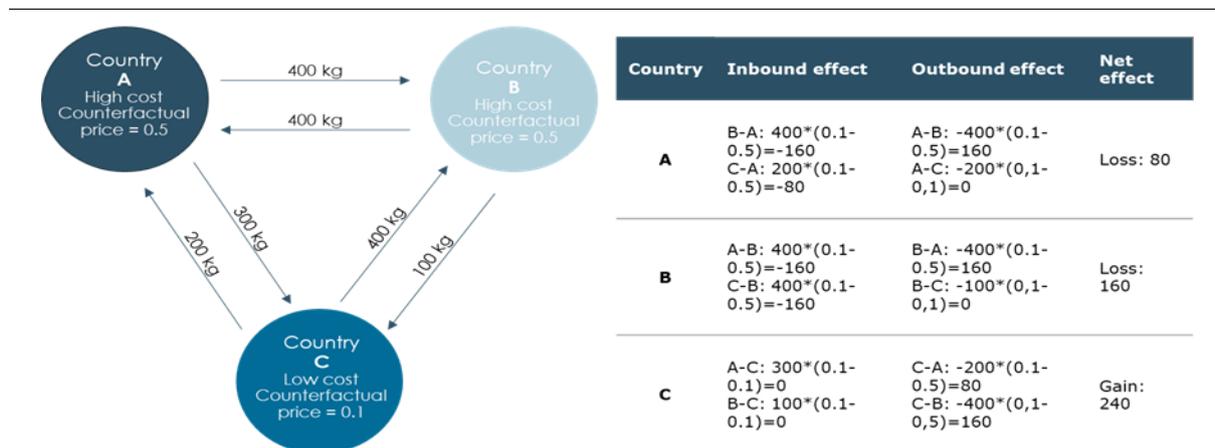
In this study, we also analyse the distortion between domestic and cross-border delivery – impact on where e-retail activities take place: domestic vs cross-border.<sup>7</sup> (distortion # 4 in the list above). This is a novel contribution to the literature.

### 2.1 Concept of financial transfers

Financial transfers emerge because the actual compensation that designated postal operators receive from delivering inbound cross-border letter mail (i.e., the actual terminal dues) differs from the compensation that would emerge if the operators could set their rates on commercial basis. We use the equivalent domestic rates as a proxy for these commercial rates (i.e., the counterfactual terminal dues). The distortion per letter sent (outbound) or received (inbound) is thus the difference between the actual and the counterfactual terminal dues rate.

In other words, a result of a negative financial transfer for one national postal operator signals a missed opportunity for that postal operator to generate more revenues on the international business – an opportunity which would be unlocked if the terminal dues rates matched the domestic ones.

Figure 1 Illustrating example of financial transfer



Source: Copenhagen Economics analysis

<sup>6</sup> This distortion (alike #1 and #2) affects several logistics players, i.e. courier/express/parcel and other non-designated postal firms – insofar as their services are in competition with the designated operators’ postal services remunerated via terminal dues.

<sup>7</sup> We note that it is outside the scope of this analysis the question of the impact on the manufacturing location; impact on retailing activity can occur irrespective of impact on manufacturing location.

Figure 1 illustrate the concept of financial transfers. It provides an example calculation of the net effect for three countries (A, B, and C):

- A has a high counterfactual price and is a net exporter of cross-border letters;
- B has a high counterfactual price and is a net importer of cross-border letters; and
- C has a low counterfactual price and is a net exporter of cross-border letters.

The terminal due per kg is assumed to be 0.1 for the three countries and the counterfactual terminal dues are assumed to be 0.1 for country C and 0.5 for country A and B. Based on the mail volumes exchanged between the countries, each country are exposed to a net financial transfer. Note that the total loss equals the total gain. Thus, the terminal dues system creates a pure transfer of money between designated postal operators, i.e. financial transfers.

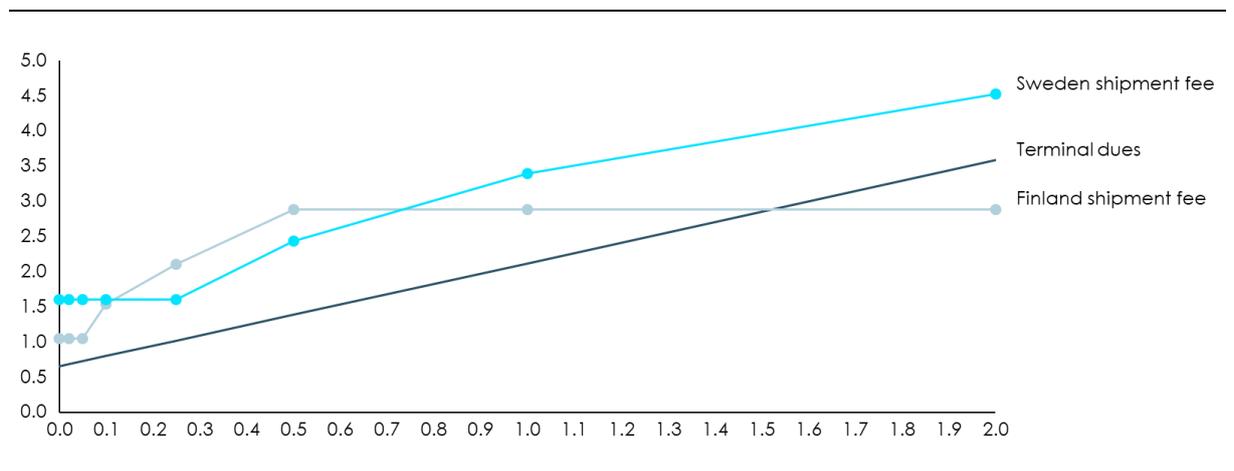
A country is certain to experience a net negative financial transfer if two conditions hold: (i) the difference between domestic shipment fees and terminal dues is greater for inbound mail than for outbound (ii) the country is a net importer of letter items. We show that these two conditions hold for both Finland and Sweden.

We quantify the net financial transfers for Finland and Sweden by use of publicly available data. The methodology follows the one used in our previous reports for the U.S. Postal Regulatory Commission<sup>8</sup>.

The methodology encompasses three main components, see appendix for detailed description. First, we model the terminal dues system according to the regulation set out by the UPU. Terminal dues are a complex tariff system in which the rates vary by group, number of items and weight. Second, we perform a “what-if” analysis of inbound rates absent the current UPU TD rules. As per past literature and research, we use as adjusted domestic prices (applying a 70% factor to remove acceptance costs) as proxy for of the shipment fee that foreign operators would pay in the absence of the terminal dues system – i.e. the counterfactual price.<sup>9</sup> Third, we make a global model of international mail flows based on publicly available data. We estimate the bilateral flows of the three product categories included in the UPU regulation both in number of items and weight.

Figure 2 illustrates the shipment fee for the domestic e-retailers in Finland and Sweden as well as a foreign e-retailer from UPU group 3, e.g. China.

**Figure 2 Shipment fee for sending a small packet domestically vs terminal dues**



Source: Copenhagen Economics based on Posti.fi, Postnord.se and UPU (2017)

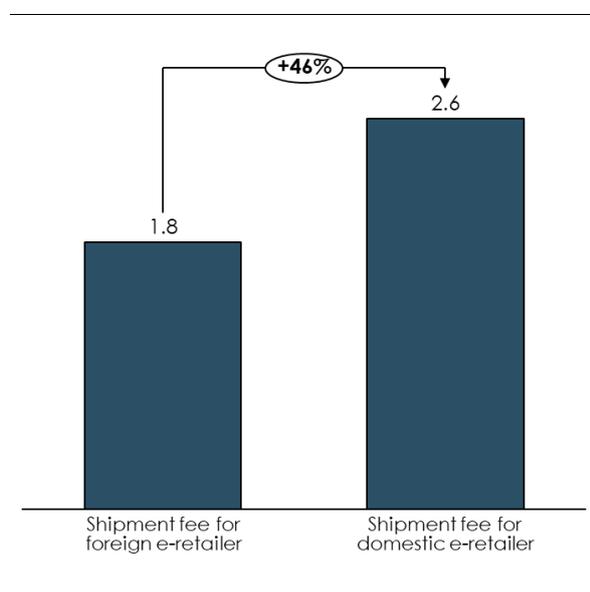
Note: The domestic fees are with a good margin above the terminal dues since the average weight is not expected to be in the range between 1.5 and 2kg. The foreign e-retailer is from UPU group 3, e.g. China

<sup>8</sup> See Copenhagen Economics (2016) Quantification of financial transfers caused by Universal Union Terminal Dues

<sup>9</sup> This adjustment factor is the same as used by the UPU for the calculation of uncapped terminal dues for operators in the target system.

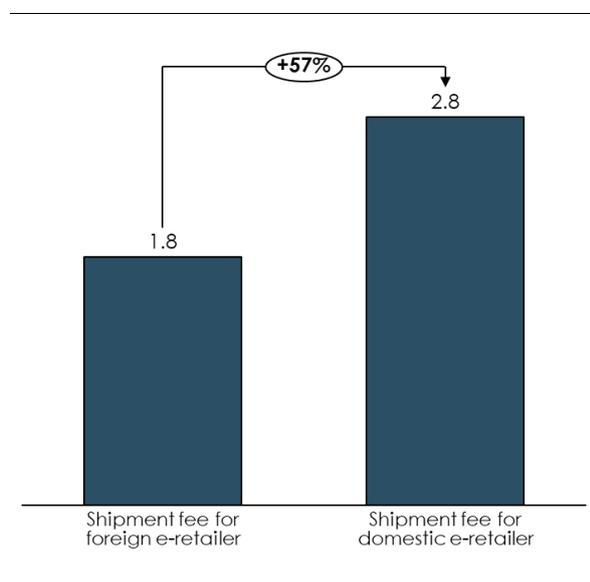
source: UPU (2012), UPU terminal dues system for the period 2014-2017, Joint Council of Administration and Postal Operations Council report.

**Figure 3 Average shipment fee for domestic and foreign e-retailer in Finland (EUR)**



Source: Copenhagen Economics analysis

**Figure 4 Average shipment fee for domestic and foreign e-retailer in Sweden (EUR)**



Source: Copenhagen Economics analysis

The terminal dues paid to postal operators in Finland and Sweden are illustrated by the capped terminal dues rates. Note that we do not expect the average weight to be in the range between 1.5 and 2 kg, as the shipment fees in Finland and Sweden on average lie well above the terminal dues, see Figure 3 and Figure 4. Furthermore, this is the upper limit of a packet’s weight and therefore unlikely to represent the average weight of a packet. The domestic fees are therefore with a good margin above the terminal dues. In the following, we present the net financial transfers for the Finnish and Swedish national postal operator respectively.

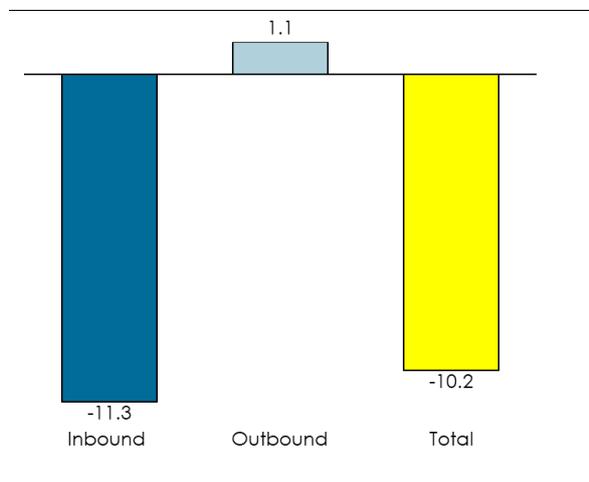
**2.2 Net financial transfers for the Finnish national postal operator**

We find that the Finnish national postal operator is exposed to a negative net financial transfer of € 10 million per year, see Figure 5. This is a significant amount for the domestic operator, as it is **equivalent to 22 per cent of Posti’s operating profit** for 2018.<sup>10</sup> The negative net financial transfer is due to a large negative effect from inbound volumes (€ 11 million), which is set against a relatively small positive effect from outbound volumes (€ 1 million).

The relatively large negative impact from the inbound volumes is a result of two factors. Firstly, the inbound volumes are relatively large. Based on our estimations, the number of letter mail coming into Finland is more than 100 per cent larger than the number of outbound letters and Finland is thus a net import of letter mail (condition (ii) holds). Secondly, the difference between the terminal dues and the domestic shipment rates (counterfactual terminal due) are larger for the inbound volumes than for the outbound volumes (condition (i) holds).

<sup>10</sup> Posti (2019) Posti Group Oyj:n tilinpäätöstiedote 2018, page 2: in 2018 adjusted operating profit was € 44.8 million

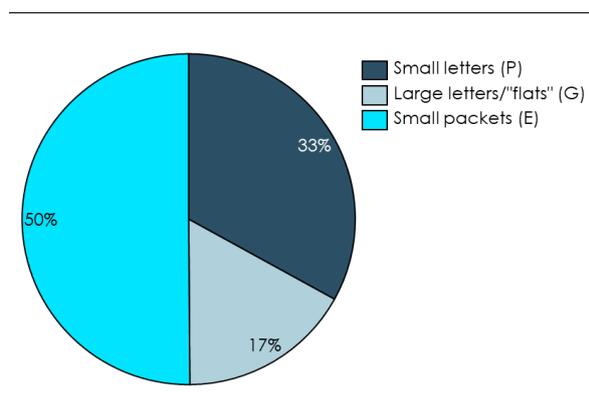
**Figure 5 Net financial transfer Finland (EUR m.), 2018**



Source: Copenhagen Economics analysis

The largest contribution to net financial transfers come from the small packets, the E-format. We estimate that 50 per cent of the net financial transfer stems from small packets, while 17 per cent of the net financial transfer stems from large letters, see Figure 6. This is primarily due to that the difference between the terminal dues and the counterfactual price is particularly large for packets.

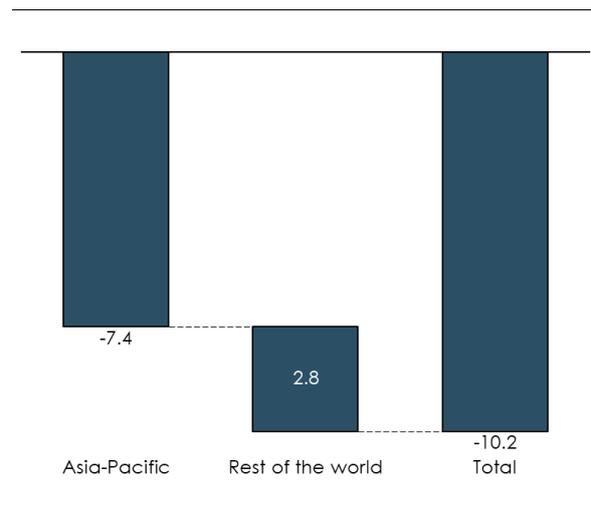
**Figure 6 Net Financial transfer Finland, by product category**



Source: Copenhagen Economics analysis

A relatively small number of trading counterpart countries account for much of the impact. We estimate that the financial transfers from the exchange with Asia-Pacific<sup>11</sup> constitutes 70 per cent of the financial transfer for the Finnish national postal operator, see Figure 7.

**Figure 7 Net financial transfer with Asia-Pacific for Finland (EUR m.)**



Source: Copenhagen Economics analysis

### 2.3 Net financial transfers for Swedish national postal operator

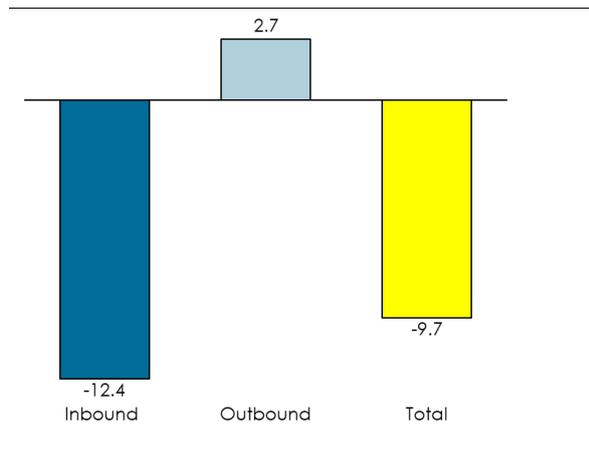
We find that the Swedish national postal operator is exposed to a negative net financial transfer of EUR 10 million per year (approximately SEK 100 million), see Figure 8. This is a significant amount for the domestic operator, as it is **equivalent to 19 per cent of Postnord's annual profit in Sweden in 2017**.<sup>12</sup> The negative net financial transfer is due to a large negative effect from inbound volumes (EUR 12.4 million), which is set against a relatively small positive effect from outbound volumes (EUR 2,7 million). The relatively large negative impact from the inbound volumes is a result of two factors. Firstly, the inbound volumes are relatively large. Based on our estimations, the number of mail items coming into Sweden is approximately 50 per cent larger compared to outbound volumes (condition (ii) holds). Secondly, the difference between the terminal dues and the counterfactual price are larger for the

<sup>11</sup> The Asia-Pacific constitutes e.g. Australia, Japan, China, Hong Kong, India etc.

<sup>12</sup> Postnord (2018) Års- och hållbarhetsredovisning 2017, page 2. Annual profits for Postnord in Sweden was 515 million SEK in 2017.

inbound volumes than the outbound volumes (condition (i) holds).

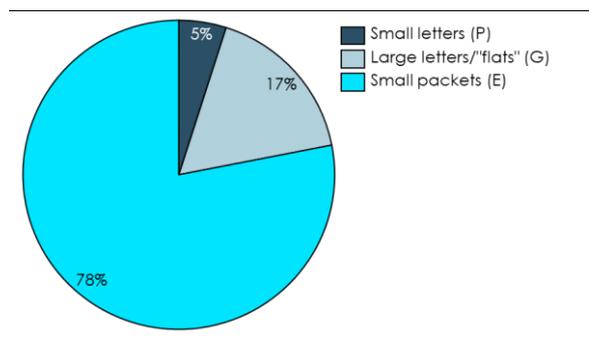
**Figure 8 Net financial transfer Sweden (EUR m.), 2018**



Source: Copenhagen Economics analysis

The largest financial transfers come from the small packets, the E-format. We estimate that 78 per cent of the net financial transfer stems from small packets, see Figure 9. This is while the E-format makes up less than 40 per cent of the inbound volumes. The reason is because the difference between the terminal dues and the counterfactual price is particularly large for packets.

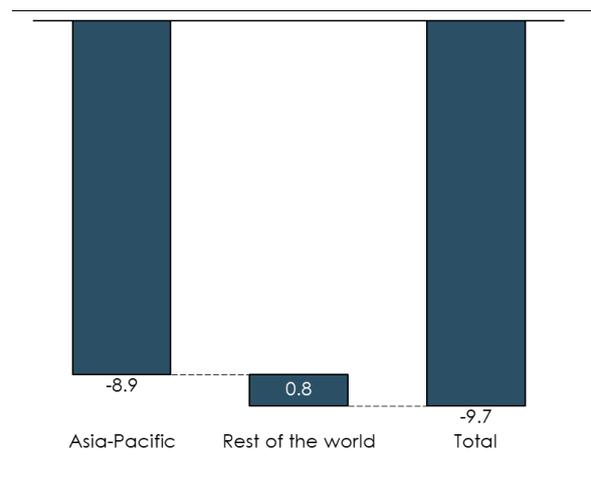
**Figure 9 Net financial transfer Sweden, by product category**



Source: Copenhagen Economics analysis

As for Finland, countries in Asia-Pacific make up a significant part of the net financial transfer for Sweden, see Figure 10. We estimate that the net financial transfers from exchange with East Asia constitutes approximately 90 per cent of the financial transfer for the Swedish national postal operator.

**Figure 10 Net financial transfer with East Asia for Sweden (EUR m.)**



Source: Copenhagen Economics analysis

### 2.4 Implications

The negative net financial transfer in Finland and Sweden naturally has implications for the domestic operators, as we showed that it accounts for a significant percentage of their operating profits.

The practical implications of a distortion of this kind are multiple and may include spillovers. The financial transfers represent a missed opportunity of significant financial magnitude. As such, and given current developments in the postal industry, it may have important impact on the behaviour in the market.

For example, in the US, there have been discussions on the extent to which the lower prices for delivery of inbound international mail are re-balanced by higher rates for domestic mail.<sup>13</sup>

<sup>13</sup> See for example review articles: <https://www.insidesources.com/stop-u-n-meddling-in-u-s-e-commerce/> and

<https://www.postalconsumers.org/the-trump-administration-international-e-commerce-and-reform-of-the-upu/>

Moreover, if the negative net financial transfer cannot be recovered, this may have implications on the quality of service and the sustainability of the universal postal service. Therefore, a key question for discussion is how the shortfall identified in this study is handled in Finland and Sweden.

### 3. DISADVANTAGE FOR E-RETAILERS IN FINLAND AND SWEDEN

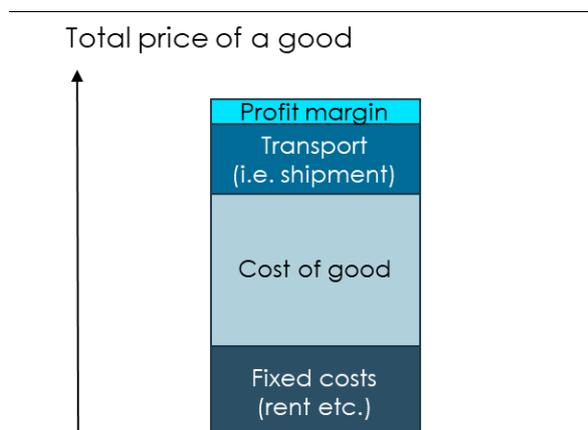
In this chapter we shed light on how the terminal dues create a relative disadvantage for e-retailers in Finland and Sweden vis-à-vis foreign e-retailers. We find that, to remain competitive and in order to compensate for the disadvantage stemming from the terminal dues, domestic e-retailers may have to lower their profit margins to such an extent that it forces some e-retailers out of business altogether.

In our analysis, we focus on how the terminal dues impact e-retailers' profitability via the shipment fee. In particular, we focus our analysis on shipping a small packet or bulky letter (the "E" category), as much of the e-commerce volumes are categorised as such.

#### 3.1 Factors determining the price of a product

For any retailer there are two aspects that determine its price of a product. Firstly, the price affects the volume of the product sold by the retailer. Since the e-commerce industry is very competitive, a price increase might lead to customers switching to an alternative retailer.

**Figure 11 Cost components of an e-retailer**



Source: Copenhagen Economics  
Note: Illustrative

Secondly, the cost of selling a product also affects its price. These costs include fixed costs (such as rent), the cost of producing the product and the transportation of the product, see Figure 11. As any firm, no e-retailer would sell for a price below its marginal cost.

We investigate how the terminal dues impact e-retailers' profitability via the fees that delivery operators charge e-retailers. Since we do not have information on the whole delivery cost, and the terminal dues are only compensation for border to end delivery, our focus is on the shipment fee. We keep other factors on an "all else equal basis", which implies that the analysis for domestic versus non-EU based e-retailers refers to goods that are comparable in terms of value, weight and volumetric.

#### 3.2 Comparing domestic vs inbound shipment fees

We observe that domestic e-retailers have a significant disadvantage compared to foreign e-retailers when it comes to the shipment fee. Looking at the overall average terminal dues rates and domestic shipment fee per E-item, we find that the domestic e-retailer are exposed to higher fee (see Figure 3 and Figure 4). The average shipment fee for domestic e-retailers in Finland is 46 per cent more expensive than for the foreign e-retailer. For Sweden, this number is 57 per cent.

#### 3.3 Impact on e-retail profit margin

To complement our analysis on the aggregate level, we carry out similar analysis for six specific examples. This gives us some observed data points and a more practical application. All our results in this section are based on an average between Finland and Sweden.

Pricing models of e-retailers can however be complex and whether the consumer is presented with a specific price for the delivery is a matter of marketing. It is key that we find items which can be purchased from domestic e-retailers in both Finland and Sweden as well as from a foreign e-retailer. This is to ensure that we indeed compare identical products and ensures that our results are not confounded by other factors, such as differences in the quality of the product.

We have chosen six products such that they vary in type (e.g. electronics and clothing), dimensions and weight. The items all fall under the packet (E) category because

of their dimensions and characteristics<sup>14</sup>. The six products are as follows:

- a high-performance USB memory (64GB),
- a mobile phone charger,
- a smartphone case,
- a package containing 20 sheets of instant photo paper,
- a toy (an abacus) and
- a pair of sport shoes

Figure 12 shows a description of the six products.

**Figure 12 Six product examples**

Dimensions (of package)	Weight (of package)	Product value
<b>USB memory</b>		
10cm x 10cm x 10cm	0.02 kg	21 - 25 EUR
<b>Mobile phone charger</b>		
2cm x 6cm x 8cm	0.1 kg	12 - 35 EUR
<b>Smartphone case</b>		
20cm x 10cm x 5cm	0.1 kg	2 - 7 EUR
<b>Instant photo paper</b>		
20cm x 12cm x 5cm	0.28 kg	16 - 23 EUR
<b>Toy</b>		
28cm x 20cm x 2cm	0.3 kg	9 - 13 EUR
<b>Sport shoes</b>		
40cm x 20cm x 10cm	1 kg	100 - 110 EUR

Source: Copenhagen Economics mystery shopping/shipping analysis.

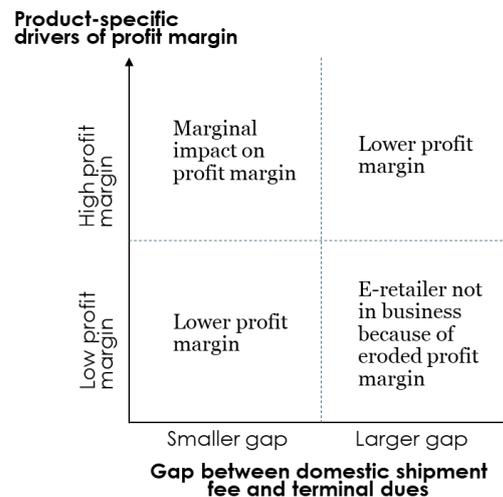
Note: The product value excludes publicly displayed shipment fee and is there to get an idea of the price range of the different products. The product value is taken with reference to the domestic price level. This is a conservative approach, as a lower price would result in an even larger impact of the terminal dues disadvantage on the profit margin. The investigation was carried out in January and February 2019.

The terminal dues are part of a shipment service the delivery operator offers to the e-retailer. We have shown above that the shipment fee for foreign e-retailers is lower than for domestic e-retailers. There are two ways how the difference in shipment fee may affect the domestic e-retailer. Firstly, the e-retailer can pass the disadvantage onto the final price of the consumers, and risk losing sales volumes to a cheaper alternative.

Secondly, the e-retailer can absorb the disadvantage and take a lower profit margin.

The severity of this disadvantage is dependent on the both the absolute magnitude of the gap between the terminal dues and the equivalent shipment fee to domestic e-retailers, but also the profit margins. *First*, different products have different profit margins (due to product-specific characteristics and demand). The greater the profit margin is to start off, the more the e-retailer can afford to squeeze the margin without going out of business. *Second*, not all products are equally disadvantaged by the terminal dues. Both terminal dues and domestic fees vary with the weight and dimensions of the product, which will affect the size of the domestic e-retailer’s disadvantage. Setting the terminal dues disadvantage in relation to the profit margin illustrates the severity of the impact. How the terminal dues affect an e-retailer’s margin if the disadvantage is absorbed by the e-retailer is illustrated in Figure 13

**Figure 13 Impact of terminal dues lower than domestic prices on e-retailers’ profits**



Source: Copenhagen Economics

Note: Illustrative

The lower-right quadrant illustrates that there may be e-retailers that have low margins and are very disadvantaged due to the terminal dues and are thus not on the

<sup>14</sup> UPU (2018) Updated Integrated Product Plan and Integrated Remuneration Plan 2019-2020, page 26: small packets (E) are letter-post items containing goods

market at all. E-retailers in the upper-left quadrant, on the other hand, only experience a marginal impact of the terminal dues. E-retailers in the lower-left and upper-right quadrants have either low margins and low impact or high margins and high impact.

We find that for products of the size and weight of the six examples, the domestic shipment fee is on average 82 per cent larger than the terminal dues, see Figure 14. We see that the domestic shipment fee ranges from being 48 per cent to 97 per cent larger than the terminal dues.

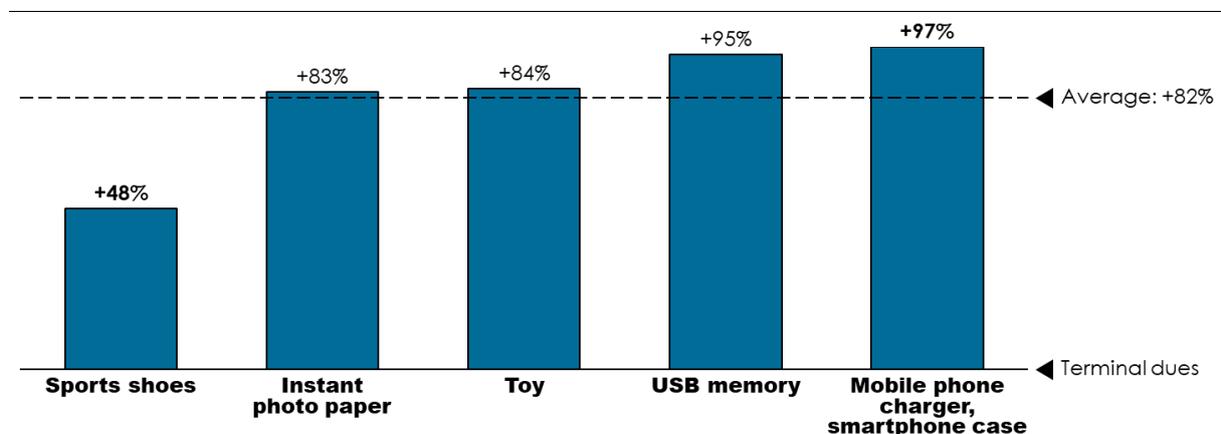
To investigate how large the terminal dues disadvantage is for the domestic e-retailers, we compare the disadvantage with their (expected) profit margins. In Finland, the average retail margin in 2016 was 1.4 per cent of operating income<sup>15</sup>. In Sweden, large companies with 50-99 employees obtained the largest margins of 4.4 per cent on average in 2015.<sup>16</sup> The median retail margin was 2.1 per cent in Sweden in 2015.<sup>17</sup> The median retail

margin is relevant because it tells us what the “common” retailer’s margin is. This way the margins are not biased by a few companies that earn very high profits compared to the rest.

To compare the terminal dues disadvantage and the retail margin we carry out two estimations<sup>18</sup>: first, using a “top down” approach, we multiply the shipment cost as a percentage of turnover<sup>19</sup> with the terminal dues as a fraction of shipment fees. This gives us the terminal dues disadvantage as a percentage of total turnover. We use the upper and lower values from Figure 14 (+48 per cent and +97 per cent) to get a range for the terminal dues disadvantage. In the appendix we carry out a consistency check of this. Second, we carry out a “bottom up” approach, where we in parity compare the difference between the domestic shipment fee and the terminal dues to the domestic e-retailer’s profit margin<sup>20</sup>.

These two methods both give us a fraction that represents how large the terminal dues disadvantage is

**Figure 14 The domestic shipment fee relative to the terminal dues for six examples (percentage)**



Source: Copenhagen Economics analysis

Note: The domestic shipment fee here is the average of Finland and Sweden. Across our six products investigated, the domestic shipment fee is 82 per cent larger than the terminal dues on average

<sup>15</sup> Kaupan Liitto (2018) Kaupan kannattavuus tunnuslukujen valossa, page 9

<sup>16</sup> Svensk Handel (2019) Nyckeltal för detaljhandeln, page 7

<sup>17</sup> Svensk Handel (2019) Nyckeltal för detaljhandeln, page 7

<sup>18</sup> In the appendix we give a more thorough explanation of the calculation of the terminal dues disadvantage

<sup>19</sup> We got the shipment costs in Finland from a contact in Kaupan Liitto on 5<sup>th</sup> February 2019. The Swedish shipments cost we obtained from

<https://www.svenskhandel.se/globalassets/gammalt-innehall/rapporter/2014/finansiella-nyckeltal-2014.pdf>, page 46. For both countries we got two numbers. To get one shipment cost per country we took the average of the two numbers for each country.

<sup>20</sup> This is without taking e.g. the compliance costs of product safety rules into consideration.

relative to the e-retailer’s profit margin. If, for example, the fraction is 0.5, then the size of terminal dues disadvantage is equivalent to 50 per cent of the e-retailer’s profit. If the ratio is greater than 1, then the terminal dues disadvantage is greater than the e-retailer’s expected profit margin.

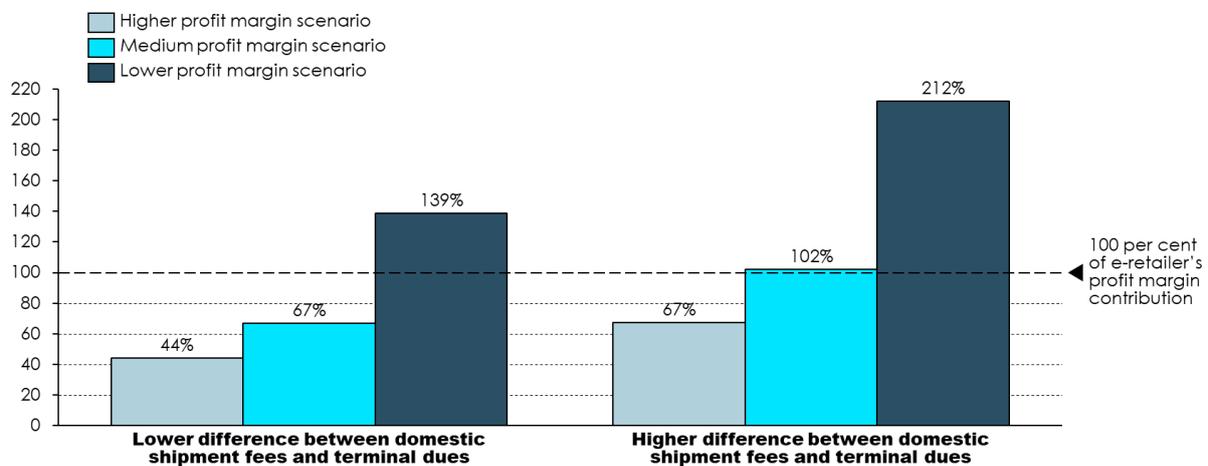
We base our calculations on three scenarios of e-retailer profit margins: a lower bound of 1.4 per cent, an upper bound of 4.4 per cent and a medium scenario, where the profits equal 2.9 per cent (the average of 1.4 and 4.4) of operating income.

Figure 15 shows how the size of the terminal dues disadvantage compares to domestic e-retailers’ profit margins in the three scenarios for our upper and lower bounds of the difference between domestic shipment fees and terminal dues, using the top down approach. We find that the disadvantage stemming from the terminal dues make up a large share of the profit margin.

In fact, the disadvantage is greater than both the upper and lower bounds in the lower profit margin scenario. Even for the higher profit margin scenario, the terminal dues disadvantage represents between 44 and 67 per cent of the e-retailer’s profits.

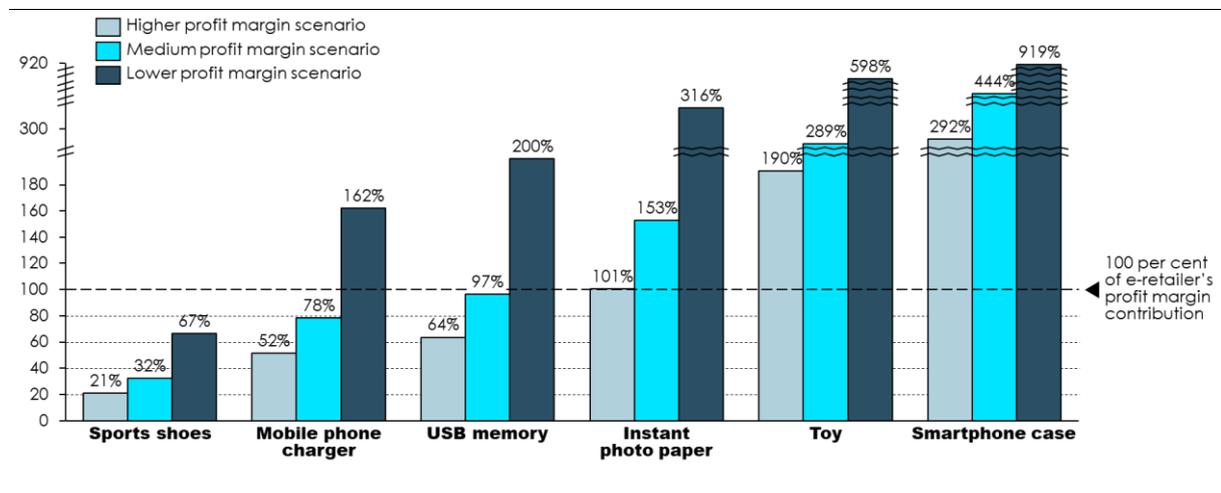
Figure 16 (next page) shows how the size of the terminal dues disadvantage compares to the domestic e-retailers’ profit margins using the bottom up approach. We support our previous finding that the disadvantage stemming from the terminal dues is large relative to the e-retailer’s profit margin. Except for the sports shoes, the terminal dues disadvantage is greater than the profit for all the items in the lower profit margin scenario. Even in the higher profit margin scenario, the terminal dues disadvantage represents between 21 and 292 per cent.

**Figure 15 Top down approach: the terminal dues as a percentage of e-retailers’ profits**



Source: Copenhagen Economics analysis

Note: this illustrates the average terminal dues disadvantage relative to the profit margin for Finnish and Swedish e-retailers using the top down approach, with shipment costs of 6 per cent (average of 9.6 per cent in Finland and 6.6 per cent in Sweden, multiplied by 0.75). We do this to make sure we have a conservative estimate of the terminal dues disadvantage. In the appendix we carry out a consistency check of this) of total turnover and a profit margin range from a lower bound of 1.4 per cent to an upper bound of 4.4 per cent. In the appendix we additionally provide the results of the top down approach with a range of shipment costs (5.8 – 10.9 per cent of turnover). The lower difference is equal to domestic shipment fees that are 48 per cent larger than terminal dues, while the higher difference is for domestic shipment fees that are 97 per cent larger than the terminal dues.

**Figure 16 Bottom up approach: the terminal dues as a percentage of e-retailers' profits**

Source: Copenhagen Economics analysis

Note: this illustrates the average terminal dues disadvantage relative to the profit margin for Finnish and Swedish e-retailers using the bottom up approach, with a profit margin range from a lower bound of 1.4 per cent to an upper bound of 4.4 per cent.

The two approaches result in the same conclusion (the terminal dues disadvantage is significant compared to the profit margin), albeit the exact ratios differ. Notably, the bottom up approach results in a greater variation in the size of the disadvantage relative to the profit margin. This is due to the parity comparison that we carry out – we compare the difference between the terminal dues and the domestic shipment fee directly with the expected profit of the investigated item. This means that the price of the item has a relatively large impact on the size of the disadvantage. Specifically, it increases the size of the disadvantage for the cheapest items for which the absolute difference in fees represents a large fraction (the smartphone case, the toy and the instant photo paper). At the same time, it reduces the size of the disadvantage of the more expensive items, for which the difference between the terminal dues and domestic shipment fee represents a smaller fraction (the sports shoes).

We can link this finding to the 2x2 matrix in Figure 13. The more expensive items are somewhat less affected by the terminal dues disadvantage, and thus lie somewhere in the left quadrants. The cheaper items, on the other hand, lie in the right quadrants as they are more affected by the terminal dues disadvantage.

The domestic e-retailers face low profit margins and the shipment fee represents a large proportion of total costs. This causes the terminal dues to be of high importance for domestic e-retailers' profit viability. We have shown that the domestic e-retailers in Finland and Sweden face a significant cost disadvantage compared to foreign e-retailers because the terminal dues are lower than the domestic shipment fees.

## CONCLUDING REMARKS

- The rapid increase in e-commerce volumes exacerbate the implications of the terminal dues system.
- The public consultation by the UPU gives government and other stakeholders a chance to voice their opinion on the terminal dues system.
- Further research on specific bilateral volume can improve the estimates on net financial transfer for national postal operators.
- The viability to operate e-retail business out of Finland and Sweden is hampered by the terminal dues disadvantage. Complementary research would benefit from better understanding of profit margins available for different product types.

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