

# Preferential tariffs and development of Norwegian rose import from Africa

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Accepted for publication in Journal of agribusiness in developing and emerging economies.

Doi: <https://doi.org/10.1108/JADEE-08-2019-0110>

**Keywords:** Rose import, Generalised system of preferences, Trade costs, Middlemen, Developing countries, Kenya, Norway.

**Acknowledgments:** We thank Åshild Auglænd Johnsen and Arne Melchior for comments and suggestions during the whole research process. Johnson also helped with the analyses of the quantitative data. Furthermore, we thank Karl Rich and representatives from the Directorate of Customs and Excise, in particular Reidar Knutsen. Finally, we thank Susan Høivik for copyediting. Research was funded by the Research Council of Norway, project 233836 'Traders in the Food Value Chain: Firm Size and International Food Distribution'. The funder had no role in study design; in the collection, analysis and interpretation of data; in the writing of the report; or in the decision to submit the article for publication.

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## **Structured abstract**

### ***Purpose***

Imports of cut roses increased after Norway implemented a preferential tariff scheme for the Least Developed Countries in 2002. When the scheme was extended to more countries in 2008 – among them Kenya – imports exploded. This article studies the subsequent changes in supply channels, import costs and the way Norwegian firms imported.

### ***Design/methodology/approach***

Qualitative data, obtained through interviews among five rose importers, are combined with quantitative data for *all* importing firms and transactions in Norway for years 2003–2014. These data are analysed in light of recent economic theories on international trade.

### ***Findings***

When Kenya was included in the scheme, imports from Europe and domestic production in Norway decreased substantially. Imports from some African countries with low income levels also declined. Importing under GSP involves high fixed import costs due to stringent procedures. Each firm's imports increased gradually, and over time learning may have facilitated importing. Direct trade with African producers and control over the logistics chain seem to have become more important.

### ***Research limitations/implications***

The analysis build mainly on data for Norwegian importers, not for African exporters.

### ***Managerial or Policy implications***

Simplifying the GSP procedures could increase Norwegian imports from developing countries and induce establishment of new trade relationships, perhaps also for other products than roses.

***Originality/value***

Using a mixture of original qualitative data as well as unique, detailed and comprehensive quantitative data, the article provides new insights into how a developed country's preferential tariff reductions towards developing countries affect trade and buyer-supplier relationships.

## 1. Introduction

In 2008, Norway drastically cut its tariffs on fresh cut rose imports. With a stroke of the pen, one of the world's largest exporter of roses, Kenya,<sup>[1]</sup> could enjoy zero tariffs during the Norwegian summer season (1 April – 31 October), as opposed to 249% previously. The policy was carried out under the Generalised System of Preferences (GSP), which involves preferential tariffs of zero on almost all merchandise for selected low-income countries (henceforth: GSP-0). Previously, the scheme had covered only the countries defined as Least Developed Countries (LDCs) by the UN; in 2008 it was extended to developing countries in the second-lowest income group, with the aim of helping them to increase their exports. And that was certainly the case for Kenya – its exports of fresh cut roses to Norway went from practically nothing in 2007 to USD 30 million in 2014 (see Figure 5 in Section 4.3 below).

Despite that all LDCs enjoy zero tariffs for practicality all their exports under GSP-0, overall, there has been little supply response to the preferences. The preferences are by far largest for agricultural products, and together with meat and certain vegetables, exports of fresh cut roses is one of the very few success stories of exports from Africa to Norway (Melchior et al., 2012). A likely reason for the lack of success is that complex supply chains, which can be particularly challenging for developing countries, are typical for agricultural products, i.a. because many such products are highly perishable (Routroy and Behera, 2017). Fresh cut roses are no exception: they require an unbroken cold storage chain during transport; and after being transported by air to Europe, vase life is about 10 to 15 days (Harkema et al. 2017).<sup>[2]</sup> However, both production and exports of roses already existed in some African LDCs when GSP-0 was introduced in Norway in 2002. East Africa has excellent physical and climatic conditions for year-round rose production, as well as access to cheap labour (Perry, 2011), and it is possible to grow a wide range of rose-types of varying exclusiveness<sup>[3]</sup> at different heights. Initially, GSP-0 did not involve Kenya; however, other eligible countries – including Tanzania, where production takes place in the Arusha area, only some 230 km from the Kenyan capital – could tap

into the logistics system already operating from Nairobi airport. With the 2008 extension of the scheme, Kenya was included, and supply response was no longer a problem. There was produce to buy in the African countries: the major challenge was to establish the direct trade links required by the system.

The objective of this article is to study how and for whom the Norwegian GSP-0 preferences led to development. This is done by examining changes in supply channels, import costs, and the way Norwegian firms imported and interacted with their foreign suppliers after the extension of the scheme. The focus is on the countries that were granted zero tariffs (henceforth: the *GSP-0 countries*), but, for comparison, we also study imports from other countries, in particular the members of the European Economic Area (*EEA*), of which the Netherlands accounts for the vast majority.<sup>[4]</sup> The extension of GSP-0 immensely expanded the market from which Norwegian firms could import roses. Imports exploded, and domestic Norwegian production was practically eliminated (see Figure 3 in Section 4.2 below). However, importing under GSP entails a demanding set of regulatory requirements, likely to involve high fixed and sunk costs of importing. We run a mixed analysis, combining qualitative data from in-depth interviews with importers with quantitative register data on all import transactions of roses in Norway, by firms, source countries and years. These data are analysed in light of recent economic theories on international trade, trade costs, trade liberalization and the use of trade intermediaries.

We find that imports from several African LDCs increased after the introduction of GSP-0. When the scheme was extended and imports from Kenya exploded, imports from some African countries with lower income levels declined. Imports from the EEA countries also decreased. Part of the explanation may well be reduced production in Europe, it may also indicate that the creation of trade possibilities for the GSP-0 countries to Norway came partially at the expense of diverting trade away from traditional supply sources. The increase in imports from Kenya was not a one-time event – it evolved gradually after the extension, and there was a sizeable increase in imports also during the Norwegian

winter season (1 November – 31 March), when preferential treatment does not apply. This indicates that various mechanisms were at work. Stable relationships with producers and service suppliers and network- and learning effect may have gradually reduced the import costs of incumbent firms. Further, apart from an initial leap in the number of importers, most import growth took place through an increase in the imports of each firm. This suggests that the high fixed costs associated with GSP-0 may act as a barrier to new firms wishing to start importing from the GSP-0 countries. There seems to have been a decrease in the use of trade intermediaries facilitating trade, and more vertical integration of the services provided by such firms.

The article is organized as follows: Section 2 describes the data and methodology, and Section 3 provides background information about tariffs and trade costs, including a description of the GSP. The development of Norwegian supply channels for roses is analysed in Section 4, and Section 5 offers some concluding remarks.

## **2. Data and methodology**

We draw on qualitative data obtained through semi-structured interviews with five major importers of cut flowers and roses in Norway, one distributor and one interest organization. These are supplemented with unique and confidential quantitative data from customs declaration- and balance-sheet registers, provided by Statistics Norway (SSB). In addition, we use publicly available data on trade, trade costs and business environments from various sources referred to in the text. These combined data are discussed in light of recent theories of international trade and trade intermediaries.

### ***2.1 Qualitative data***

Firms to be interviewed were identified through analysis of import data, internet search and snowball sampling. Variety between the informants was assured by selecting firms that differed in

several dimensions: industry history, ownership structure, size, age, sectoral affiliation and connection to producers. Two of the firms were rather young, having started business in 2010 and 2011, while three of them were rather old. Some were owned by cooperatives, while others were retailers and wholesalers of various types. Hence, despite that the informants were not randomly selected, we believe the information they provided gives a comprehensive picture of the cut rose importing business in Norway. Interviews focused on the value chain for cut roses, including import channels, trade costs and use of trade intermediaries. Importers were also asked about the development of the market in Norway. They completed a questionnaire on these matters; throughout this paper we report our respondents' answers to some of these questions.

## ***2.2 Quantitative data***

Customs declaration data cover all import transactions of all merchandise to Norway for the period 2003–2014. Each transaction contains a unique firm identifier for the importer (anonymized). In addition, for each transaction, there is information about the month in which the transaction took place, the firm that cleared the goods through customs, the value imported, the country imported from and the product imported (products given at 8-digit level in the Harmonised System, HS8). Here, we concentrate on imports of fresh cut roses. Before 2007, the HS8 category for this product during the Norwegian winter season included other types of flowers as well, leading to an upward bias of the related import figures for the period 2003–2006. However, this is likely to be relevant only for the EEA-countries, of which the Netherlands accounted for more than 95% of the exports: for the period 2007–2014, when separated figures are available, the data reveals that the GSP-0 countries did not export the other flowers that had previously been part of the fresh cut roses category. And thus, it is reasonable to believe that exports of these flowers were zero, or at least marginal also during 2003–2006. The HS8 category for fresh cut roses during the Norwegian summer season is consistently defined for the whole period, as is that for the winter season from 2007 and onwards.<sup>[5]</sup>

In some of our analyses, the data are merged with balance-sheet data (also from SSB), which contain information about the importers' main sector affiliation. However, the balance-sheet data cover only the period 2003–2013, and only stock-based companies, such as limited liability companies (AS), or public limited companies (ASA). This means we have sector affiliation for only 100 out of the 169 firms importing roses during the period studied here. Imports by stock-based companies are significantly larger, and have existed significantly longer than those not in the balance-sheet data, making the combined sample biased towards larger and more successful importers. Most importers for which we have sectoral information are in the wholesale or retail sector, and when using the combined data our focus will be on importers belonging to these two sectors.<sup>[6]</sup>

### **3. Tariffs and trade costs**

#### ***3.1 Norway's tariffs for cut roses under the GSP***

During winter, all countries enjoy zero tariffs when exporting cut roses to Norway. During summer, however, tariffs differ widely, with non-preferential tariffs amounting to a whole 249%. There are, however, several preferential tariff schemes in place, the most favourable one being the GSP, established in 1971. 'GSP' denotes a unilateral preference system where products originating from developing countries can receive preferential treatment (in the form of lower tariffs or quotas) when imported to Norway. Among countries eligible for GSP are those listed as DAC (Development Assistance Committee) countries by the OECD: these are countries receiving aid. The degree of preferences granted under the GSP has varied over time and between countries and products, with more preferential treatment for the poorest countries.

In 2002 Norway provided full tariff and quota-free market access under the GSP for almost all merchandise, including cut roses, for approximately 50 LDCs (Ministry of Foreign Affairs, 2013). Among these were African rose producers like Tanzania, Ethiopia and Uganda. From 1 January 2008, 14 low-income countries with somewhat higher income levels (and thus, not in the LDC group), were



also included in the provision for zero tariffs – among them Kenya.<sup>[7]</sup> Only eight GSP-0 countries, all African, exported fresh cut roses to Norway during the period covered by our quantitative data (2003–2014). In addition to those mentioned above, these were Mozambique, Mali, Zambia and Zimbabwe. EEA countries also benefit from trade preferences, but these are not as favourable as for the GSP-0 countries.<sup>[8]</sup> Also benefiting from (less favourable) preferences are other developing countries under the GSP, and countries with other free trade agreements with Norway. However, imports from such countries were marginal during the period under study: together, the GSP-0 and EEA countries accounted for more than 95% of all export of cut roses to Norway in 2003, and more than 99% in 2014.<sup>[9]</sup>

Central to the GSP are the rules regarding country of origin. The objective is to certify that the product originates in a GSP-country, as it is through documentation of origin that the tariff preference can be claimed. Documentation requirements are stringent in order to avoid cheating and to ensure that only the rightful products receive the advantageous tariff. For agricultural produce, the products must usually be *wholly* obtained: grown in the preferential country and transported directly from that country to the destination. This applies for cut roses, with the following exemptions: they may be loaded and unloaded, they may be watered, and the stems may be trimmed up to 3 cm (Customs, 2014). The produce may be transported through other countries, but must remain in transit halls and cannot be customs-cleared on the journey. The produce can be sold and split into smaller parcels, but foil or other ornamentation may not be added to the bouquets during transport. In practice, the rules of origin mean that the produce cannot be sold or bought in the Dutch flower auctions (personal communication, R. Knutsen, Senior Advisor, Directorate of Customs and Excise, 2015).

### **3.2 Trade costs**

There are many different types of costs related to international trade: transportation of goods must be arranged, tariffs must be paid, time must be spent completing the forms required by customs offices, etc. The study of trade costs has attracted increasing interest in economic research on international trade during the last decade. When analysing the impact of different types of costs, reality is often approximated by modelling two types of costs: fixed (or sunk) costs and variable costs.<sup>[10]</sup> Ad valorem tariffs are proportional to the traded value and as such are variable. Further, transportation costs are typically considered to be variable. Costs that often viewed as fixed or sunk are those related to dealing with customs procedures, legislative issues and documentation requirements; costs related to establishing contact with a foreign supplier; and risk – because they tend to be of similar magnitude in small and large trade transactions alike.

Table 1 shows selected *Ease of Doing Business* (EDB) indicators for GSP-0 exporters of roses to Norway, taken from the World Bank Indicators.<sup>[11]</sup> The EDB indicators reflect various aspects of the countries' business environments. The World Bank (2007) *Doing Business Report* rated sub-Saharan Africa as the least business-friendly region in 2007, with an average overall EDB ranking of 136. By comparison, the OECD high-income group had an average rank of 22. In 2008, Kenya was ranked in 72<sup>nd</sup> place, far ahead of the other GSP-0 rose exporters, with Ethiopia as its nearest contender. Kenya also had the lowest cost to export among these countries, followed closely by Tanzania. The number of documents required for exporting was more or less identical in the countries shown here, whereas the time to exports varied from 24 to 53 days.

TABLE 1 ABOUT HERE

In its *Doing Business Report* for 2015, the World Bank (2014) underlines that sub-Saharan Africa is the region with the largest number of countries with regulatory reforms during the period 2013/2014 – an indication of the emphasis placed on trade facilitation in the region. As can be seen from Table

1, in 2015, the other GSP-0 countries had approached and sometimes even passed Kenya. However, Kenya remains Africa's largest producer and exporter of cut roses; although it has fallen in the rankings relative to the other GSP-0 countries, we may assume that it still has a transport- and business facilitation advantage as regards exports of roses. This is supported by Figure 1, which shows trade facilitation indicators developed by the OECD in parallel with negotiations on the WTO trade facilitation agreement. Kenya is doing better on most of the indicators, with Ethiopia closing in. Both countries are doing better than most of the other regional trading partners.

FIGURE 1 ABOUT HERE

Although tariffs are zero under GSP-0, implying a substantial reduction in variable trade costs as compared to countries without preferences, fixed costs of importing from the GSP-0 countries are likely to be high. In addition to the fact that trading procedures in the GSP-0 countries are bureaucratic and tedious, importing under GSP-0 requires stringent procedures with extensive documentation requirements (see Section 3.2). This is confirmed by our qualitative data. Although all informants reported that it was fairly easy to import under GSP-0, they also noted several cost-increasing factors: heavy and costly documentation requirements; high risk, implying high capital costs; relationship costs, due to most importers having personal interests and connections to rose producers in Africa.

All respondents agreed that GSP documentation involved high costs, and mentioned the following cost factors: documentation and paper work, transit rules and logistics, little or no consolidation of the products in the producing countries and communication with the producers. The GSP documents are issued by the farms concerned, so all importers have buying contracts with the producing firms in Africa. However, some importers use intermediaries to handle the direct contact with the farm (see Section 4.4). The documentation requirements were said to reduce business flexibility and drive up costs. In particular, respondents mentioned the destination and time specification: 10 days prior to

delivery they must know the place and time (within a 4-hour time band) the produce is to be delivered in Norway. It should be noted, however, that this requirement is not related to GSP in particular.<sup>[12]</sup>

The importers perceived importing under GSP-0 as risky and capital demanding because the fine for making mistakes is equal to the 249% preferential margin. In other words, the penalty for human mistake such as drivers forgetting documents etc. is 249%. As a result, many importers regularly have a substantial amount of capital at the customs, to enable them to pay the tariff until they can provide correct documentation. It is felt that the fine for possible human errors is very high, and represents a non-tariff barrier for trade with developing countries.

As regard relationship costs, our informants generally favoured maintain stable relationships with exporters in Africa. They saw the exporters' ability to provide the correct type of roses and also their competence in the GSP procedures as important. Rose demand in Norway (as elsewhere) is characterised by large peaks at special days, like Mother's Day, Valentine's Day and Christmas; and the exporters' ability to supply roses on a timely and regular basis was seen as more important than low price (see Table 2).

TABLE 2 ABOUT HERE

An important factor affecting variable trade costs, apart from tariffs, is that rose import requires an unbroken cold storage chain during the whole transport route. In addition, variable trade costs are affected by durability of the flowers and flower quality during the rainy season. Losses during transport, on the other hand, do not seem to be a major problem according to the informants. This is demonstrated Table 3. Losses and breakage during transport are generally low – around 1% of the traded amount. Interestingly, losses at the final retail level seem to represent a larger problem: importers see domestic distribution and breakage in the final retail store as a bigger obstacle. Most importers have access to or own their own distribution system in Norway, and find distribution in

Norway relatively more expensive than transport to Norway. Consequently, how and to whom a firm sells in Norway seems more important for its operating costs and thus competitiveness than how it imports.

TABLE 3 ABOUT HERE

## **4. Changes in supply channels for roses in Norway after extension of GSP-0**

### ***4.1 The various margins of Norwegian rose imports***

If trading conditions should improve, e.g. due to an increase in the market size or a fall in trade costs, trade could be expected to increase. With the initiation of the GSP-0 for LDCs in 2002 and the later extension of the scheme in 2008, both these took place: Kenya was one of the world's largest rose exporters (see endnote 1), but tariffs to Norway were prohibitive prior to 2008. The inclusion of Kenya in GSP-0 thus led to a tremendous increase in the size of the market from which Norwegian firms could import. It is also likely to have led to a decrease in importing costs from the GSP-0 group as a whole, as Kenya is a more experienced and professional exporter with better trade infrastructure and more streamlined trade procedures than the other GSP-0 countries (see Table 1 and Figure 1 in Section 3.2).

Figure 2 shows the evolution of Norway's imports of cut roses from the four largest GSP-0 exporters, 2003–2014. The left part of the Figure shows development during the summer season; the winter season is shown in the right part. The first row displays the total import value from each country. As can be seen, imports increased sharply after the extension of GSP-0 in 2008, and Kenya was by far the largest source of this. The increase was not a one-off event, however. After an initial jump in 2008, imports continued to grow in the following years. Perhaps somewhat surprisingly, there was import growth in the winter as well as the summer season. From 2003 to 2014, imports increased from almost zero to approx. NOK 150 million in the summer, and to NOK 116 million in the winter (in

real 2014 NOK). One reason for this increase, also during wintertime, may be that the introduction of GSP-0 in 2002 led to a gradual eradication of domestic cut-rose production in Norway, and greater demand for imports. An additional reason can be that import costs decreased gradually, due to learning and network effects as the trade channel evolved. These factors are further discussed Section 4.2.

An increase in trade may come about through an increase in the number of trading firms (the 'extensive margin') and/or an increase in each firm's trade (the 'intensive margin') – see e.g. Lawless, 2010. The second row in Figure 2 shows the extensive margin of Norwegian rose imports; the third row presents the intensive margin. For Kenya, both margins were practically zero in 2003; but by 2014, there were more firms importing from Kenya than from any other GSP-0 country. Imports per firm were also considerably higher. In 2008 there was a sizable increase in the extensive margin in the summer season: the number of importing firms went from almost zero to about 20, remaining at that level in subsequent years. Also in the winter season, there was an upsurge in the extensive margin, but that was less pronounced, as a few firms had been importing even prior to 2008. The intensive margin increased gradually during both summer and winter after 2008. Thus, apart from the initial rise in the extensive margin, most of the increase in Norwegian imports of cut roses under the extension of GSP-0 involved the intensive margin. This suggests that there are entry barriers into rose importing. Such barriers create economies of scale implying that only a few firms find it profitable to engage in importing when the market is small. In consequence, the trade activity is highly concentrated. When market conditions improve, as was the case when Kenya was included in GSP-0, typically only a limited number of new firms start to import, and increases in trade come about mainly through the intensive margin. Hence, market concentration may still be quite high. This is exactly what we see among the Norwegian importers. In the beginning of the period, the market became somewhat less concentrated, with the Herfindahl index (HHI) declining from 0.20 in 2003 to 0.15 in 2008. The main source behind this was that 1–2 large firms became less dominating. After 2008, however, HHI index was fairly stable.<sup>[13]</sup>

FIGURE 2 ABOUT HERE

There are likely to be several entry barriers in Norwegian rose imports: Firstly we have already seen that there are high fixed trade costs and risk associated with GSP-0. Secondly, the need for an unbroken cold storage chain along the whole transport route can make it difficult to ship small amounts roses, especially from long distances like Africa. In consequence, the Norwegian importer must have the capacity to handle relatively large shipments. Thirdly, in order to bring the flowers to the consumers, the importer needs access to a good distribution network in Norway. As demonstrated in Section 3.2, distribution in Norway can be relatively costly. Many retailers like supermarket chains have their own systems for distributing groceries which can also be used for roses, but this may be a larger challenge for other types of firms. Indeed, retailers import more than wholesalers (although the latter are more numerous). This is demonstrated in Table 4, which displays the number of firms and average imports within these two groups. The Table also demonstrates that retailers grew more in number than the wholesalers after the extension of the GSP-0 scheme. Note, however, that the overall increase in the intensive margin was due to an increase among wholesalers not retailers. This may indicate that some relatively small retailers were able to establish, perhaps facilitated by their already established distribution networks.

TABLE 4 ABOUT HERE

#### ***4.2 Traditional supply channels***

The introduction of GSP-0 in 2002 put domestic production of roses in Norway under pressure; and after the extension of the scheme in 2008 it was almost eliminated. As shown in Figure 3, Norwegian production peaked at almost 40 million stems in 2002, but had declined to 2 million stems in 2014. Roses were previously produced domestically all year round, and the producers were able to supply roses for peak days during winter like Valentine's day, Mother's day and Christmas. Even so, the major part of the domestic production was harvested during summer, and roses were imported

during winter. Norwegian rose demand is by far largest for unicoloured red roses. There is also some demand for pink and white ones, whereas roses of other colours or multi-coloured roses are in low demand.

FIGURE 3 ABOUT HERE

The traditional foreign supply channel for fresh cut roses in Norway during winter were the Netherlands with the flower auctions. In Figure 4, where we compare imports originating from EEA with that from two other groups of countries: all the GSP-0 countries and a remaining group of *other* countries. Among the EEA countries, the Netherlands completely dominates.<sup>[14]</sup> Both fixed and variable trade costs are likely to be considerably lower with imports from the Netherlands and other EEA countries than from the GSP-0 countries. This is due not only to the extra requirements involved in importing under GSP-0, but also to the proximity of the other EEA countries to Norway, geographical as well as legislative and cultural; their better infrastructure, more streamlined customs procedures and fewer document requirements, as well as lower risk (see discussion in Section 3.2). Even so, we see from the first panel in Figure 4 that imports from the GSP-0 group completely dominated during summer in all the years covered by the data. Imports originating from EEA was only marginal, due to the almost-prohibitive summertime tariffs.

FIGURE 4 ABOUT HERE

By contrast, in the winter season, all countries benefit from zero tariffs, with no preferential advantages for GSP-0 countries. It may therefore be surprising to note the considerable imports from the GSP-0 countries also during the winter season (second panel of Figure 4). Imports from EEA group was largest in the beginning of the period, constituting 41% of total imports in 2003, but that from the GSP-0 group grew the whole period, accelerating in the initial years after 2008 and reaching high levels towards the end of the period. By 2014 imports from the EEA had plummeted to a mere 6.1 %. However, this development has a natural explanation: the decline in Norwegian rose



production was in fact part of a larger European trend. GSP similar to the Norwegian one have been applied in the EU (Melchior, 2005); and this, in combination with inflow of foreign capital and knowledge in the GSP-0 countries, particularly in Ethiopia (Keane, 2014), has enabled them to leverage their comparative advantages in rose production on the world market.<sup>[15]</sup> Production has increased in Africa, with Kenya as the hub – whereas Dutch production has declined sharply.<sup>[16]</sup> Consequently, there has been a gradual dethronement of the traditional import channel to Norway during the winter season.

What is less expected is that customs declaration data show that about half of the *wintertime* transactions from the GSP-0 countries to Norway were conducted under the GSP – even though there were no tariff benefits involved. In other words, importers from GSP-0 countries opted to bear the high fixed costs associated with the scheme throughout the whole year, not only in summer. One reason might be that the fixed costs associated with handling GSP import procedures are sunk costs: once an importer has paid the cost of acquiring the knowledge on how to deal with the procedures, the fixed costs of continuing to comply with these procedures are low – so the importer might just as well use the same procedures throughout the year. That also has the advantage of mitigating the risks associated with switching importing procedures in the course of the year. Our qualitative data indicate that mechanisms like these have been at work. Our informants said that they preferred to import under GSP-0 the whole year due to the risk of paying the 249 % tariff in case of missing documentation during the summer season. They also found it difficult to explain to the African exporters how the regime varied with the season. To avoid risks, importers developed various types of coping strategies, including:

1. Importing under the same regime throughout the year (i.e. using the same documentation regime all year around).
2. Paying the tariffs if the roses arrive without the necessary documentation (for example, if the drivers have forgotten the documents in the Netherlands).

3. Having good routines and employees that are well-trained in the GSP procedures, both at the exporting, transporting, and importing side. Zero tolerance for human error.

Consequently, importing under GSP-0 during winter seems to have become a way of lowering the costs related to risk-handling during the summer season. This increases the importers' need for liquidity – and capital.

In addition to reduced production in Europe, there are two other possible reasons for the growth in imports from the GSP-0 countries during the winter season. These concern supplier relationships and learning.<sup>[17]</sup> Establishing new relationships can be costly, whereas the costs of maintaining existing relationships can be less burdensome. In addition, risks related to quality, timely delivery, etc. can be reduced by continuing to buy from the same supplier year after year; moreover, that may also mean greater efficiency in dealing with trading procedures over time. Similarly, by establishing a buyer channel in the GSP-0 countries, Norwegian importers can learn about the business culture, procedures, and legislation in these countries in general, and requirements under GSP-0 in particular. Over time this can reduce the fixed costs of importing from the GSP-0 countries. Keane (2014) has pointed out that the floriculture industry is knowledge-intensive, requiring strong links between sellers and buyers. Our qualitative data give indications of mechanisms like these, as informants mentioned their preference for buying from the same suppliers year after year (see Table 2 in Section 3.1). The value of maintaining stable, long-term relationships was further strengthened by the high potential cost of 249% in case of error.

If establishing stable supplier channels and learning is important, the costs of importing from the GSP-0 countries are likely to have fallen gradually for incumbent importers. This can have important consequences. Once a trade channel with the GSP-0 countries is established, imports could be expected to increase gradually, during summer and winter alike – which is precisely what happened (see Figure 2 in Section 4.1). This may have accelerated the phase-out of traditional trade channels:

Viner (1950) posited that lower trade costs from some countries may result in increased trade with those countries (*trade creation*), but also in diversion of trade away from other countries, even if there has been no change regarding the trade costs involved (*trade diversion*).

The phase-out of traditional trade channels is reflected in our qualitative data. Table 5 reports the perceived importance of the various importing channels in 2015 and in 2005. Importing directly from producers was clearly deemed far more important in 2015, whereas the Dutch flower auctions were seen as less important. Among our respondents, the first firm to start importing directly from Africa had begun in 1999; the last one, in 2012. All firms but one indicated that importing directly from producers had been unimportant in 2005: only one firm reported it as being ‘very important’. Thus, the past decade has seen a shift in importance from the Dutch flower auctions to producers in Africa. There has also been a decline in Norwegian importers’ use of non-African firms as intermediaries (this is further discussed in Section 4.4).

TABLE 5 ABOUT HERE

However, there are also indications that the Netherlands have remained an important marketplace. Most informants were part owners or had a sister/daughter company in Netherlands; and all reported that they also imported from the Netherlands, particularly during the duty-free winter period. However, some used this channel only occasionally when a customer asked for a particular rose-type that was not part of the standard assortment. Hence, these informants were less dependent upon the Dutch market channel.

There also seems to be little that differentiates the various import channels as regards price, selection of roses, stability of delivery and transportation solutions – see Table 6. Importing directly from the producer is valued slightly higher on all these attributes, but particularly with regard to price and quality. On the other factors, all channels seem to do equally well. This indicates that the

shift in the importing channel is driven partly by the prohibitive tariffs involved in buying from the Dutch flower auctions during the summer.

TABLE 6 ABOUT HERE

Table 6 also shows that quality differences between the various import channels are perceived small. When it comes to quality differences between African and Norwegian roses, the informants had different opinions. One informant pointed out that, due to the transport time required, African roses must be harvested earlier than Norwegian ones, and this reduces vase-life. Another informant held that the African roses are of higher quality due to better cultivation conditions and more dedicated farmworkers.

#### ***4.3 Imports from separate GSP-0 countries***

We have noted indications of diversion of imports away from Europe and towards the GSP-0 countries, with Kenya dominating. Similarly, the inclusion of Kenya in GSP-0 could have led to a diversion of imports away from other, less developed GSP-0 countries and toward Kenya alone, which has several advantages (see Section 3.2). Figure 5 shows exports of cut roses to Norway from the four major GSP-0 countries for the period 2003–2014. Again, we see clearly that overall exports increased significantly after the extension of GSP-0, for Kenya in particular.

Ethiopia experienced a temporary fall in its exports in 2008; but after one year, export was back on the growth track from earlier in the decade (apart from a decline in summer season of 2014). A contributing factor to this growth is likely to be the various schemes implemented by the Ethiopian government to support the country's floriculture industry (Perry, 2011; Keane, 2014; World Bank, 2013). Ethiopia's export growth has not been as strong as that of Kenya, however.

Uganda and especially Tanzania experienced large and lasting reductions in their exports to Norway after Kenya was included in GSP-0. These findings could indicate crowd-out of exports from certain

LDCs. However, firm conclusions should not be drawn: Rose production in Tanzania takes place near Nairobi airport in Kenya, and exports are flown out from there. The Norwegian Customs authorities have reported problems with rules of origin documentation for flower import (Melchior et al., 2012), and one may speculate in exports from Tanzania prior to 2008 being produced in Kenya, but reported as 'Tanzanian' due to the preferential tariff treatment. However, we have no hard evidence to back up this speculation.

FIGURE 5 ABOUT HERE

#### ***4.4. The use of trade intermediaries***

While economic theory has traditionally assumed that goods are passed directly from producers to consumers, in real life they often change hands several times along the way. At each step, buyers and sellers may hire the services of other firms to deal with issues like asymmetric information, logistics, insurance, and customs procedures. Recent economic research on international trade has focused increasingly on these issues, with a new strand of literature devoted to the role of trade intermediaries. There are various types of intermediaries, but they generally all contribute to facilitating trade. They may be trading companies like wholesalers or retailers that actually take hold of the traded goods, or they may be agents offering trade-related services, like shipping agents and freight forwarders that organize transport and clear goods through customs. Intermediaries may operate in the exporting country, in the importing country, or in a third country.

A few recent articles have presented trade models that focus on company decisions as to whether to use intermediaries when engaging in international trade (see e.g. Ahn et al., 2011; Crozet et al., 2013; Felbermayr and Jung, 2011; Akerman, 2018). According to these models, the use of intermediaries is closely related to trade costs. They posit that firms trading directly without using intermediaries face high fixed costs, as they must handle all trade-related procedures by themselves. On the other hand, firms that use intermediaries pay these a proportion of the traded value, but do not have to bear

such high fixed trade costs. Hence, firms that use intermediaries achieve lower fixed trading costs at the expense of higher variable ones.<sup>[18]</sup> Below, we present results on intermediary-use from our informants as well as the register data.

In the qualitative study, importers were asked whether they used trade intermediaries of various types during the process of bringing the roses from Africa to Norway. The term *intermediary* was used in a wide and comprehensive way, to refer to wholesalers, handling agents and shipping agents.<sup>[19]</sup> However, most firms understood it to mean a wholesaler or a handling agent with a general contract with producing farms in Africa.

From the theories of trade intermediaries referred to above, we should expect higher fixed trade costs to imply greater use of intermediaries. However, although importing costs under the GSP are likely to be high, the inclination to trade directly with producers has increased (see Table 5 in Section 4.2). This is also confirmed in Table 7, which presents our informants' responses on using intermediaries and on the types of firms traded with, in the GDP-0 countries from which they imported. We see a clear preference for buying directly from the producing farms in Africa.

TABLE 7 ABOUT HERE

From Table 8, we see that importers reported having a large degree of control over transportation along the route from Africa to Norway. Although trading firms commonly use freight forwarders and other agents to handle cross-border transport,<sup>[20]</sup> only half of the Norwegian rose importers paid an intermediary to do this. The others managed it by themselves. In addition, most firms transported the cut roses dry, and postponed putting them in water until they reached Norway. Only two firms put them in water in Amsterdam; one firm even flew the flowers directly from Africa to Norway. These results may indicate that GSP-0 has led to an increase in direct trade with the producers, thereby reducing the need for external intermediaries. One reason might be that roses imported under GSP-0 cannot be customs cleared in the EU: thus, they cannot be bought at the Dutch flower

auctions (see Section 3.1). An implication of this is a shift towards importing under contractual arrangements rather than at open auctions.

TABLE 8 ABOUT HERE

Another reason can be the massive increase in the size of the import market in Norway caused by the extension of GSP-0, and the corresponding increase in traded value per firm (see Figure 2 in Section 4.1). According to some theories on intermediaries mentioned above, the use of intermediaries is less common for large firms or in trade with large markets.<sup>[21]</sup> The reason is that when firms can trade more, they are likely to earn higher operating profits, putting them in a better position to cover the fixed trade costs. By contrast, when trading with small markets, the scope for operating profits is limited, and firms may not be able to earn enough to cover the fixed cost of trading directly. To reduce such costs, they may be willing to share some of their revenue with an intermediary. Consequently, increases in market- and/or firm size seem likely to enable vertical integration of the services provided by trade intermediaries into their own activities.

A final reason can be risk management. We have already noted how importers value stable relationships with the producers, and that stable delivery is deemed more important than price (see Table 5 and discussion in Section 4.2). The model developed by Felbermayr and Jung (2011) predicts that trading firms will insource services provided by trade intermediaries when the trade-related risks are high. Similarly, the Norwegian importers may seek to reduce the risk of committing errors by trading directly. This is further confirmed in Table 9, which presents a frequency table of respondents' views on three statements regarding the use of intermediaries. It shows that four of the importers agreed, partly or fully, that transport-related loss was greater when the roses were handled by an intermediary and not transported directly.

TABLE 9 ABOUT HERE

The moderate importance of trade intermediaries is also confirmed in Table 9, as importers did not consider it necessary to use intermediaries in the producing countries to get the certification required for importing under GSP-0. Furthermore, costs and price concerns did not seem to be major drivers for using intermediaries, as there was only one firm that (partly) agreed that the Norwegian import price of cut roses would have been affected if there were no trade intermediaries.

Even though the need for external intermediaries may have decreased due to GSP-0, Table 7 (above) also showed that using intermediaries was not uncommon, typically varying with the producer country. Firms importing from Kenya and Ethiopia were divided on the issue; about half of them used intermediaries. Dutch wholesalers were used in imports from both countries, whereas one of the firms that imported from Kenya bought from local wholesalers. However, the two firms that imported from Tanzania and Uganda always bought directly from the producer. All the importers knew where the roses were produced: that is a direct result of the documentation required for achieving GSP preferences. However, some firms reported organizing and maintaining steady contact with the producers themselves, whereas others left this to an intermediary. The firms with close relations to their suppliers also reported visiting the producing farms regularly, another indication of several firms investing in personal business relationships.

The register data do not contain information about the use of intermediaries in Africa. However, there is information about one type of intermediary located in Norway: customs brokers. For each transaction, it is registered whether the importer handles the customs declaration by itself or hires the services of another firm to do this. Such customs brokers often also offer other trade-related services, like organizing logistics and freight (Medin, 2017); and importers that use them are likely to outsource more tasks than customs clearance as such.<sup>[22]</sup> The register data show that the majority of import transactions – 82 % – are cleared by such customs brokers. Furthermore, in accordance with results from the qualitative data, also the quantitative data indicate that intermediary-use has fallen during the sample period. This is demonstrated in Figure 6, where we show development of the



share of import transactions handled by brokers, for all countries pooled together (upper panel) and for countries in the three different groups: GSP-0, EEA and *other* (lower panel). There was a sharp fall in intermediary-use after 2008, originating from declines among transactions from EEA as well as from GSP-0. However, there was generally a larger inclination to use customs brokers to clear transactions from EEA than from GSP-0 during the whole period. On average, 89% of the former were handled by customs brokers, whereas this was the case for only 72% of the latter.

FIGURE 6 ABOUT HERE

## **5. Discussion and conclusion**

The intention behind the Norwegian GSP scheme is to help developing countries participate in international trade. As such, GSP-0 for the Least Developed Countries, and in particular the extension to countries with somewhat higher income levels in 2008, has been highly successful when it comes to the export of fresh cut roses to Norway. We have shown that the inclusion of Kenya in the scheme in 2008 led to an enormous expansion of the import market for cut roses in Norway. Importing under GSP yields considerable benefits in terms of preferential tariff treatment, and a vast increase in imports from Africa was followed by a sharp and strong reduction in Norwegian cut rose production, together with a decline in the traditional import channels in Europe. The source countries of the increased imports were mainly Kenya and, to some extent, Ethiopia; whereas imports from Uganda and especially Tanzania actually declined after Kenya was included in the scheme.

The extension of GSP-0 did not only lead to a one-time increase in imports from Africa, but seems to have opened up an additional channel for development of African rose export. Norwegian import from the continent continued to grow in the years after the extension, and it grew also during winter when there is no preferential treatment. Moreover, many importers preferred to import under GSP-0 also then, despite that it is not required. These findings may indicate that importing costs were reduced over time, possibly through learning, networks and relationships effects.

Apart from an initial jump in the number of importers when the scheme was expanded, growth happened through an increase in each firms' import rather than entry of new importers, suggesting that there are economies of scale, which favours large importers. While there are several sources of such scale economics, one is likely to be high fixed or sunk import costs; results presented in this article indicate that importing under GSP-0 entails high documentation costs and risk. This adds to the fact that trading procedures in the GSP-0 countries are already bureaucratic and tedious.

The stringent documentation requirements under GSP-0, and the long distance between Africa and Norway combined with the need for an unbroken cold-storage chain for cut roses during transport, appear to have made importers more inclined to buy directly from producers in Africa and reduce their use of trade intermediaries.

The success of GSP-0 has been varying when it comes to other products than roses. Whereas the main reason for this is likely to lie on the supply-side, a contributing factor may be that the stringent GSP procedures prevent new importers, smaller ones in particular, from introducing new products from the GSP-0 countries. It might be advisable to consider simplifying these procedures.

The research presented in this article has been based on quantitative register data as well as qualitative interview data for Norwegian importers of fresh cut roses. A weakness is that no interviews with African actors were undertaken. A topic for future research is to dig deeper into the developmental impact of GSP-0 in Africa and study effects on employment and enterprise development.

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## Tables

**Table 1. Selected Ease of Doing Business (EDB) indicators, 2008 and 2015. Trading across borders.**

Country	EDB rank		Documents to export (number)*		Time to export (days)*		Cost to export (USD per container)*	
	2008 <sup>1,2</sup>	2015 <sup>3</sup>	2008	2015	2008	2015	2008	2015
<b>Ethiopia</b>	102	132	8	8	47	44	2 037	2 380
<b>Kenya</b>	72	136	8	8	29	26	1 955	2 255
<b>Mozambique</b>	134	127	7	7	28	21	1 055	1 100
<b>Tanzania</b>	130	131	7	7	24	24	1 212	1 090
<b>Uganda</b>	118	150	7	7	35	28	2 940	2 800
<b>Zambia</b>	116	111	7	7	53	51	2 098	5 165
<b>Zimbabwe</b>	152	171	7	7	52	53	1 879	4 265

Note: <sup>1</sup> Ranking taken from the Doing Business Report 2008, <sup>2</sup> Number of countries ranked in 2008: 178, <sup>3</sup> Number of countries ranked in 2015: 189. \*Old methodology is applied. Source: World Bank Indicators (2016).

**Table 2. Frequency table, statements about trading relationships**

Statement	Disagree fully ---- Agree fully					Mean	# obs
	1	2	3	4	5		
<b>We buy from the same exporters year after year</b>				2	2	4.5	4
<b>Stable delivery is more important than price</b>				5	1	4.2	6

Note: Number of firms that selected each alternative. Answers on a scale from 1= disagree completely, to 5= agree completely, - do not know.

**Table 3. Frequency table, statements about transport of cut roses**

Statement	Disagree fully ---- Agree fully					Mean	# obs
	1	2	3	4	5		
<b>Loss and broken necks are a big problem in the rose trade roses</b>	1	2	2	1		2.5	6
<b>Quality reduction in the final retail outlet is a greater problem than losses during transport</b>			1	3	2	4.2	6

Note: Number of firms that selected each alternative. Answers on a scale from 1= disagree completely, to 5= agree completely, - do not know.

**Table 4. Retailers and wholesalers importing of cut roses from GSP-0 countries to Norway**

Firm type	Import value 2003–2007					Import value 2008–2013				
	Mean	SD	Min	Max	# obs	Mean	SD	Min	Max	# obs
<b>Wholesalers</b>	9.32	6.09	4.13	26.06	21	25.76	16.97	8.80	77.30	29
<b>Retailers</b>	43.47	10.50	19.13	49.85	12	32.84	13.98	13.35	68.59	27

Note: SD= standard deviation. Figures are based on the combined sample of customs declaration and balance-sheet data. Values in NOK million (NOK 8.65 = USD 1, per 15.12.2015), adjusted for inflation using the Norwegian consumer price index (KPI) with base year 2014.

**Table 5. Perceived importance of importing channels, 2015 and 2005**

Channel	2015		2005	
	mean	# obs	mean	# obs
<b>Direct import from producer</b>	4.20	5	2.50	4
<b>Dutch flower auctions</b>	2.50	4	4.25	4
<b>German trading firm</b>	1.00	2	3.00	2
<b>Dutch trading firm</b>	3.25	4	5.00	3
<b>Trading firm in the producing country</b>	3.33	3	2.00	3
<b>Økern Torv</b>	1.50	2	2.50	2
<b>Norwegian trading firm</b>	1.00	2	2.67	3

Note: Answer on a scale from 1=unimportant to 5=very important.

**Table 6. Evaluation of various importing channels**

	Price	Quality	Selection	Stability of delivery	Transport
<b>Direct import from producer</b>	5; 5; 4	5; 5; 5	4; 5; 3	4; 5; 4	5; 4; 4
<b>Dutch flower auctions</b>	4; 3; 3	3; 3; 4	4; 4; 5	4; 4; 4	5; 4
<b>Dutch trading firm</b>	3; 4	3; 4	4; 4	4; 4	4; 5

Note: Each number indicates a response from one firm. Answer on a scale from 1=not good to 5=very good, - do not know. The number of respondents varied between 2 and 3.



**Table 7. The use of middlemen in trade with Africa**

Country	Trading with country	Knows where the roses are produced*	Buying from producers	Buying from wholesalers in producer country	Buying from Dutch wholesalers	Use of intermediary
Kenya	5/5	5/5	3/5	1/5	1/5	3/5
Ethiopia	5/5	5/5	4/5	-	1/5	2/5
Tanzania	1/5	1/5	1/5	-	-	1/5
Uganda	1/5	1/5	1/5	-	-	1/5

Notes: Figures indicate the number of firms that replied in the affirmative (nominator) out of all that responded (denominator). \* All the firms knew where the roses were produced, and most had a contract directly with the producers. However, some used intermediaries that had a general contract with the various producers and handled the relationship.

**Table 8. Transportation from Africa to Norway**

From	Flight	Trailer to	Dry transport (box) to Norway	Paid transporters
Kenya*	Nairobi–Amsterdam	Norway	2/4	2/4
Kenya*	Nairobi–Dubai–Oslo	-	1/1	1/1
Ethiopia	Addis Ababa–Amsterdam/Brussels	Norway	2/4	2/4
Ethiopia	Nairobi–Amsterdam–Oslo	-	1/1	1/1

Notes: The figures indicate the number of firms that replied in the affirmative (nominator) out of all those that responded (denominator). \* Flowers from Tanzania are also flown from Nairobi.

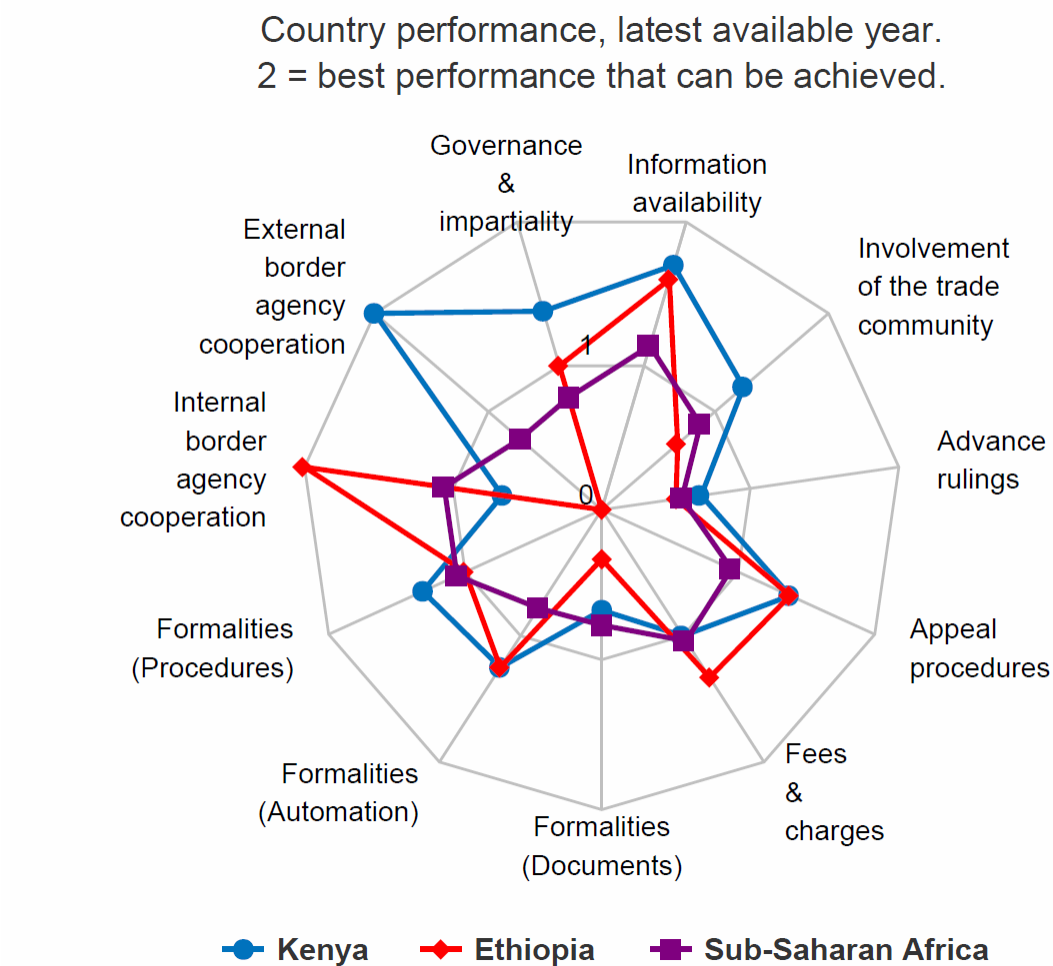
**Table 9. Frequency table on statements about trading relationship and the use of intermediaries**

Statement	Disagree fully ---- Agree fully					Mean	# obs
	1	2	3	4	5		
Transport-related loss is greater when the transport is organized via an intermediary rather than directly	1		1	3	1	3.5	6
It is necessary to use intermediaries in the producing country to get the certification required for achieving preferential tariff treatment	1	3				1.8	4
Without intermediaries in trade, the imports would have affected the Norwegian price even more	1	2	1	1		2.4	5

Notes: Number of firms that selected each alternative. Answers on a scale from 1= disagree completely, to 5= agree completely, - do not know.

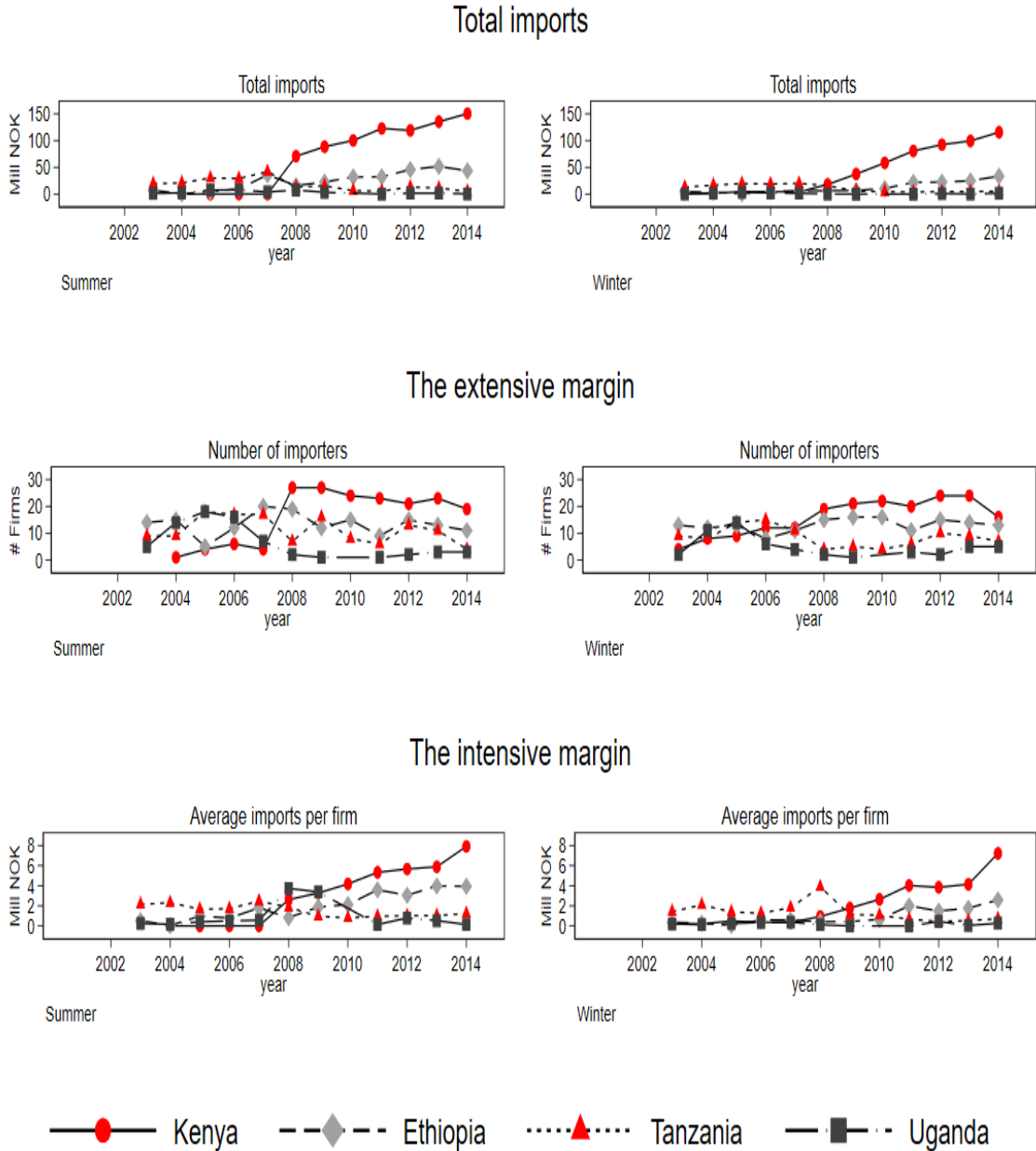
**Figures**

**Figure 1 Trade facilitation indicators Kenya, Ethiopia and sub-Saharan average**



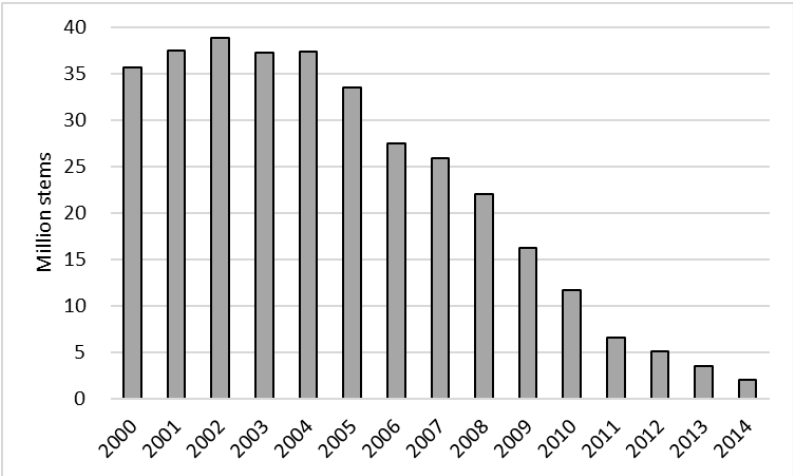
Source: OECD internet page compare your country: <http://compareyourcountry.org/trade-facilitation>. These data can be reused under OECD’s terms and conditions, which state that “You can extract from, download, copy, adapt, print, distribute, share and embed Data for any purpose, even for commercial use.”

Figure 2. Total imports, extensive margin and intensive margin of fresh cut roses to Norway



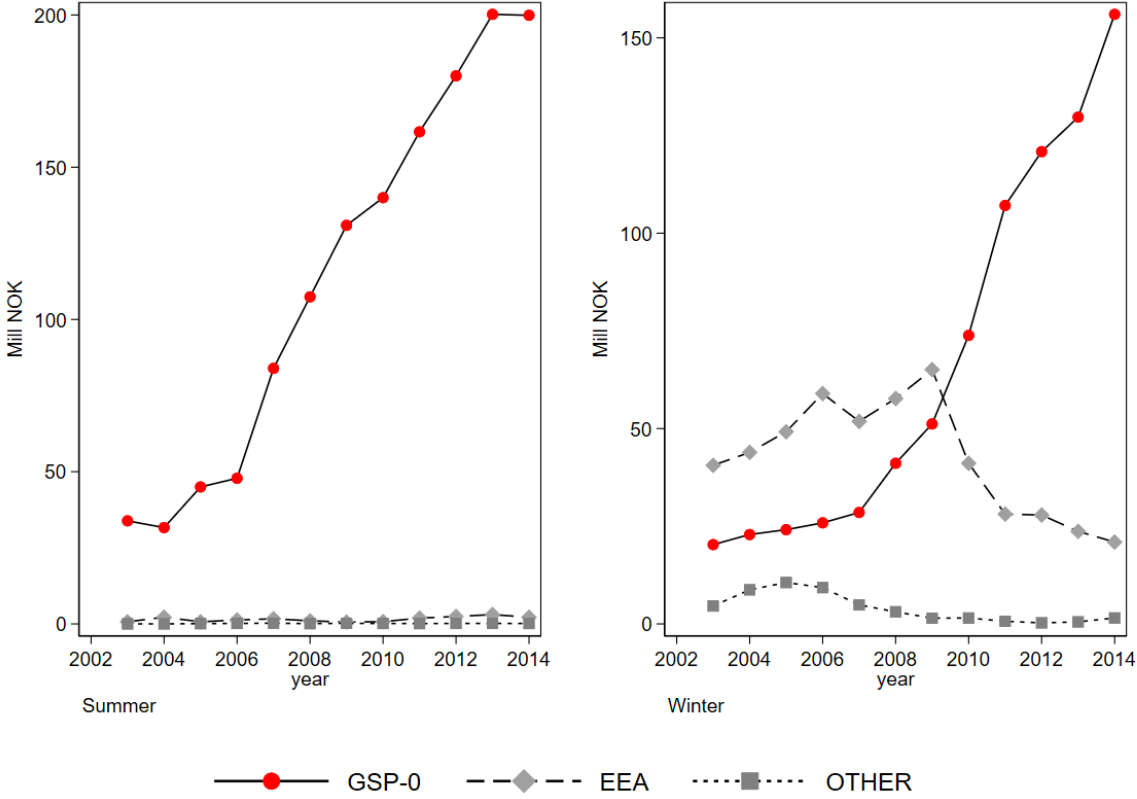
Note: Values in NOK million (NOK 8.65 = USD 1, per 15.12.2015), adjusted for inflation using the Norwegian consumer price index (KPI) with base year 2014. Summer=1 April–31 October, winter=1 November–31 March. Average import by firms is total annual imports divided by the number of firms in each year, for each country separately.

**Figure 3. Domestic production of cut roses in Norway**



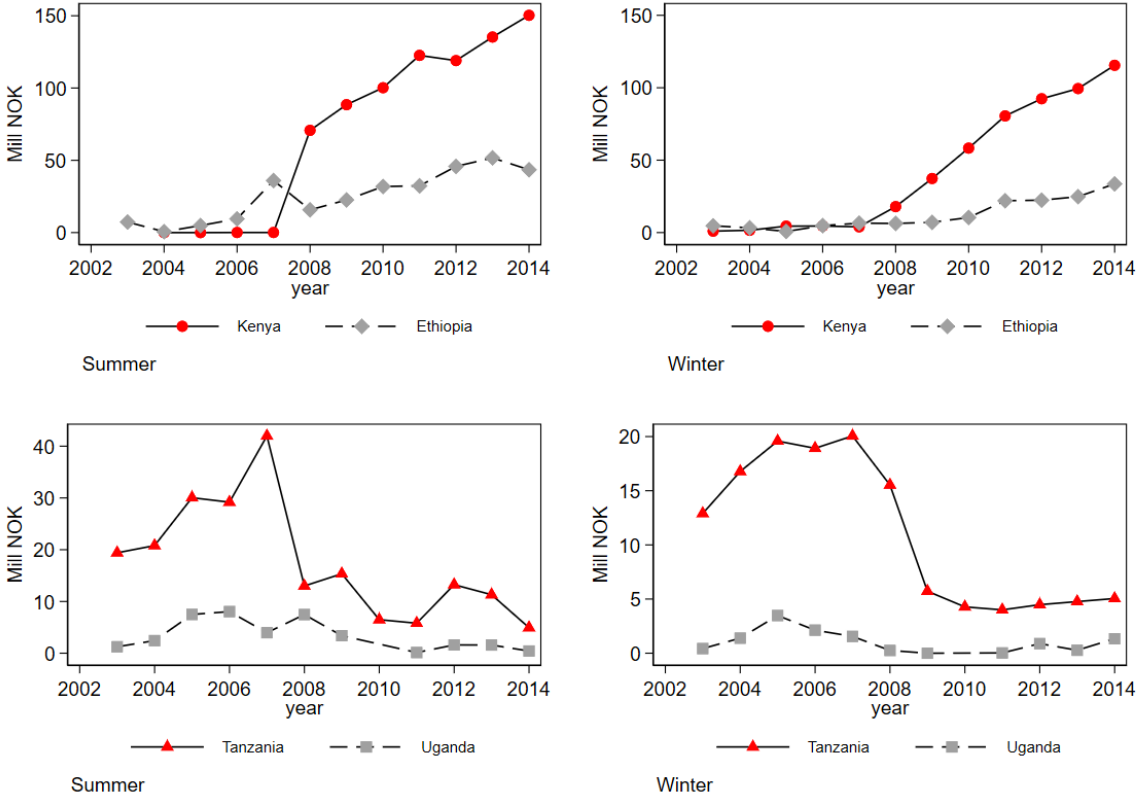
Note: Data are collected by the Norwegian Horticultural Growers Association and obtained by personal correspondence.

**Figure 4. Total Norwegian imports of cut roses from three groups of countries**



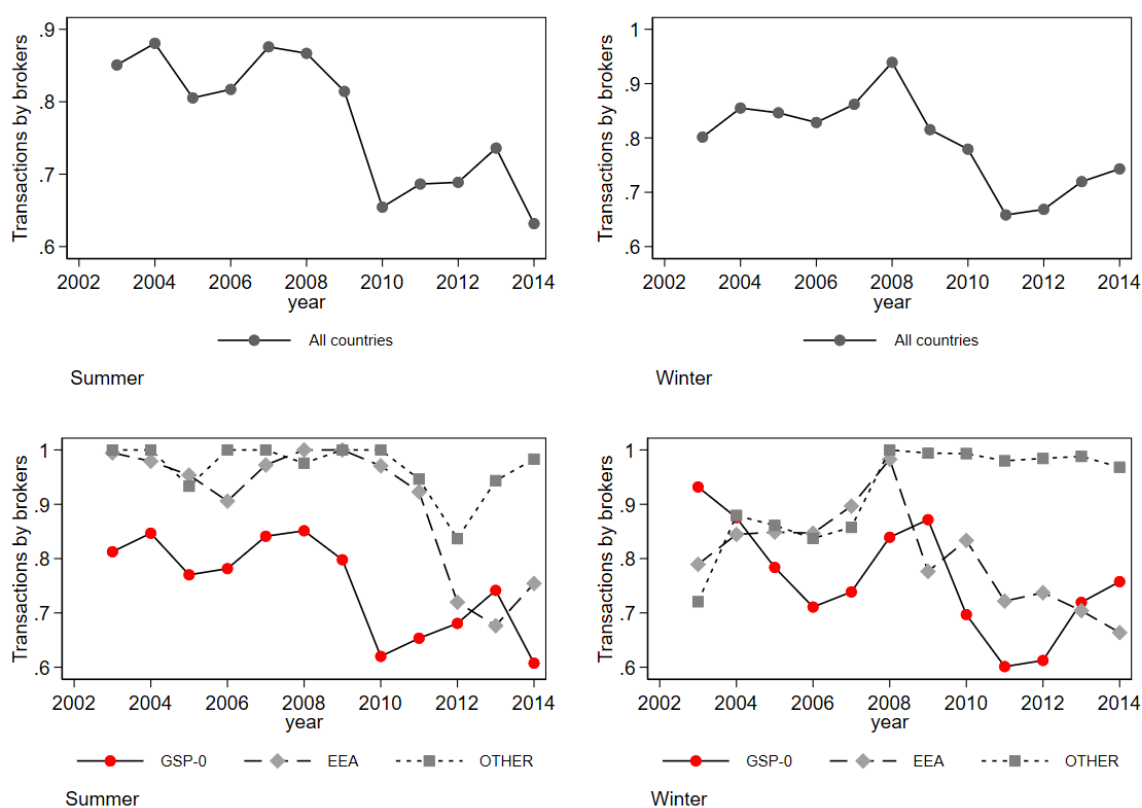
Note: Values in NOK million (NOK 8.65 = USD 1, per 15.12.2015), adjusted for inflation using the Norwegian consumer price index (KPI) with base year 2014. Summer=1 April–31 October, winter=1 November–31 March. GSP-0 comprise Ethiopia, Kenya, Mali, Mozambique, Tanzania, Uganda, Zambia and Zimbabwe. Prior to 2007, the category for fresh cut roses during winter also included other flowers, and thus, import values before that are most likely upward biased. This is probably only relevant for the EEA and the OTHER group: For the period 2007-2014, when the other flowers were separated out from the rose category, there were no exports to Norway of these flowers from the GSP-0 countries. Consequently, it is fair to assume that such exports were zero, or marginal also during 2003–2006. The assumption is supported by the notable decline in exports from the EEA and OTHER together with the steady development for the GSP-0 countries from 2006 to 2007.

**Figure 5. Norwegian imports of fresh cut roses from the four main GSP-0 exporters**



Note: Values in NOK million (NOK 8.65 = USD 1, per 15.12.2015), adjusted for inflation using the Norwegian consumer price index (KPI) with base year 2014. Summer=1 April–31 October, winter=1 November–31 March.

**Figure 6. Share of import transactions of fresh cut roses to Norway handled by customs brokers**



Note: Summer=1 April–31 October, winter=1 November–31 March.

[1] See Keane (2014) and also <https://www.worldatlas.com/articles/global-leaders-in-cut-flower-exports.html> and <https://www.economist.com/special-report/2016/04/14/coming-up-roses> (both accessed 10.05.2019).

[2] The roses are often flown to the Netherlands and then transported by truck to Norway (also see Table 8 in Section 4.4). With the right methods, a transport time for cut roses by ship for as long as 4 weeks has become possible. This is not relevant here, however, as imports from East Africa to Europe is by air (Perry, 2011).

[3] A rose is considered more exclusive the longer the stem and the larger the head.

[4] Imports from countries not belonging to one of these two categories are only marginal. EEA is a free trade agreement between Norway, Iceland, Liechtenstein and the members of the European Union (EU).

[5] In the customs declaration data for the summer season, we include only those transactions from EEA or GSP-0 countries where preferential treatment was applied for and granted. This does not affect the results we present throughout the paper, as preferential treatment was applied for and granted in most transactions.

[6] Consequently, most firms from the register data are trading companies and hence are themselves trade intermediaries. Even so, they may of course use other trade intermediaries. Wholesale and retail sectors are consistently defined over the period using information provided by SSB. <http://stabas.ssb.no/ClassificationFrames.asp?ID=342101&Language=nb>. SIC2002 valid from 01.01.2002 to 31.12.2008, SIC2007 afterwards.

[7] The extension comprised Cameroon, the Democratic Republic of Congo, Côte d'Ivoire, Ghana, Kenya, the Democratic Republic of Korea, Kyrgyz Republic, Moldova, Mongolia, Nicaragua, Papua New Guinea, Tajikistan,

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Uzbekistan and Zimbabwe.

<https://www.regjeringen.no/globalassets/upload/ud/vedlegg/handelspolitikk/wtonotifisering080410.pdf>

<sup>[8]</sup> EEA countries that exported fresh cut roses to Norway during the period under study in this article were Belgium, Denmark, Estonia, France, Germany, Greece, Italy, Liechtenstein, the Netherlands, Poland, Spain and Sweden. For information on the different tariff schemes, see

[http://tolltariffen.toll.no/templates\\_TAD/Tolltariffen/Publication.aspx?id=279243&epslanguage=en](http://tolltariffen.toll.no/templates_TAD/Tolltariffen/Publication.aspx?id=279243&epslanguage=en)

<sup>[9]</sup> See Melchior (2005) and Melchior et al. (2012) for more details about the GSP and other types of preferences.

<sup>[10]</sup> Earlier models of international trade commonly assumed only one type of trade costs: variable ones. Among the first studies to introduce fixed trade costs into trade models were Smith and Venables (1991), Venables (1994), Melitz (2003) and Medin (2003).

<sup>[11]</sup> <http://datatopics.worldbank.org/world-development-indicators/themes/states-and-markets.html#business-environment> (accessed 10.05.2019)

<sup>[12]</sup> Information obtained through email communication with the Directorate of Customs and Excise in Norway.

<sup>[13]</sup> The HHI is a measure of market concentration and is calculated based on total imports of each firm in relation to total imports in the sector. It is defined as the sum of each firm's squared market share. It is equal to 1 when there is a single monopolistic importer, whereas it is close to 0 when the market shares are spread out fairly equally on many importers.

<sup>[14]</sup> Towards the end of the sample period, in 2014, the country accounted for more than 99% of all Norwegian imports of fresh cut roses from the EEA countries (summer as well as winter). In 2003, the share was equally high for the summer season, but slightly lower for the winter season – 95.4%.

<sup>[15]</sup> Production costs are lower in Africa than in the EEA – particularly in the, by far, most important exporting country, Kenya. The costs of rose production in Europe involve 30-40% energy costs to heat greenhouses, not necessary in Africa. Capital costs are also around 30–40% (Steen, 2010). However, since imports from Kenya were very low before 2008 (see Figure 2, Section 4.1), this factor alone should not be decisive.

<sup>[16]</sup> Between 2000 and 2014, the number of rose producers was reduced by 81%, counting only 142 producers in 2014. The production area was reduced with 66% and stood at 311 ha in 2014. (Statistics Netherlands, 2015)

<sup>[17]</sup> See Schmeiser (2012) for a model of learning effects in exports. Maurseth and Medin (2017) find that learning may affect sunk as well as fixed export costs in Norwegian seafood exports.

<sup>[18]</sup> These models focus on exporting and, thus, on the characteristics of exporting firms and export markets. However, many of the same effects can be expected to hold for importers when there are fixed or sunk costs involved in importing (Medin, 2017).

The intermediaries themselves can readily earn enough to cover the fixed trade costs by pooling trade from many producers. Some models also posit that the intermediaries face lower fixed costs than direct traders because they have specialized in handling trade procedures (Akerman, 2018).

<sup>[19]</sup> In the interviews, the term used was *middlemen*. They are referred to *intermediaries* in this article.

<sup>[20]</sup> See survey in Medin (2017).

<sup>[21]</sup> In Felbermayr and Jung (2011), market size is irrelevant in this respect.

<sup>[22]</sup> Little is known about systematic patterns of the use of customs brokers based on large-scale representative data. An exception is Medin (2017), who used register data to study the use of customs brokers in Norway.