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All These Worlds Are Yours, Except India

The Effectiveness of Export Subsidies in Nepal

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Abstract

This paper evaluates the effect on firm-level export outcomes of the Cash Incentive Scheme for Exports program provided by the Government of Nepal. The analysis utilizes customs-level data for 2011–14, combined with information on the subsidy payments made to individual firms provided by the Central Bank of Nepal. The Cash Incentive Scheme for Exports cash subsidy is available to firms exporting a select group of products, and requires firms to export to countries other than India. Overall, the subsidy has not produced a significant impact on firm-level export values, prices, quantities, or their growth rates. However, the study finds a small positive effect on the number of eligible products exported to countries other than India and the number of destination markets reached among firms that receive the subsidy. These results are consistent with the fact that the subsidy was granted primarily to large exporters that were already shipping eligible products to countries other than India. The findings suggest that although the cash subsidy has not produced a significant increase in exports, it has achieved a positive impact on export diversification for firms that were already satisfying the scheme's eligibility criteria.

All These Worlds Are Yours, Except India: The Effectiveness of Export Subsidies in Nepal

By

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1. Introduction

Export diversification matters for policy makers in developing countries for several reasons. A highly concentrated export basket can result in high aggregate volatility that is difficult to offset by fiscal or monetary policy (Brainard and Cooper, 1968; de Ferranti et al., 2002); moving away from a strong reliance on exporting commodities can be a stepping stone for industrialization and development (Prebisch, 1950; Singer, 1950; Young, 1991; Hausmann et al., 2007), and export diversification can also operate as an intermediate target for governments seeking to achieve what Bhagwati and Srinivasan (1969) call "non-economic" objectives.[1]

Largely due to being a landlocked country wedged between China and India, and its low level of GDP per capita, Nepal's exports are highly concentrated in a handful of products which are sold to very few countries. To be more precise, 85% of total exports in 2011 were sold to only 5 countries, with 80% of these sold in India alone. At the same time, the top five (in terms of value) HS 6-digit export products in the same year accounted for approximately one-third of exports. This staggering level of export concentration is a pressing issue for Nepal. As Figure 1 shows, the share of exports in GDP declined steadily between 2000 and 2011, falling from 23 to 9% of GDP, while imports, on the other hand, have consistently accounted for between 30 to 40% of output over the last 15 years. The combination of these two trends has resulted in a dramatic deterioration of Nepal's chronic trade deficit, which reached 24% of GDP in 2011.

In an effort to correct this imbalance, the government of Nepal introduced in 2010 the Cash Incentive Scheme for Exports (CISE), a program that provides cash subsidies ranging from 2 to 4% of the value of export transactions for a select group of products, subject to two conditions: (i) that the domestic value-added incorporated in the export shipment exceeds a minimum threshold, and (ii) that the exported product is sold in a country other than India.

Our objective in this paper is to evaluate whether this export subsidy has had any significant effects on export outcomes such as export values, quantities, prices, their

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[1] For a discussion on the normative justification for pursuing export diversification as a policy objective on its own right, see Panagariya (2000), Cadot et al. (2011) and the references therein.

respective growth rates and the number of products sold and foreign markets reached among the firms that have received the cash incentive.

Figure 1: Nepal's Total Exports and Imports of Goods and Services (as % of GDP)
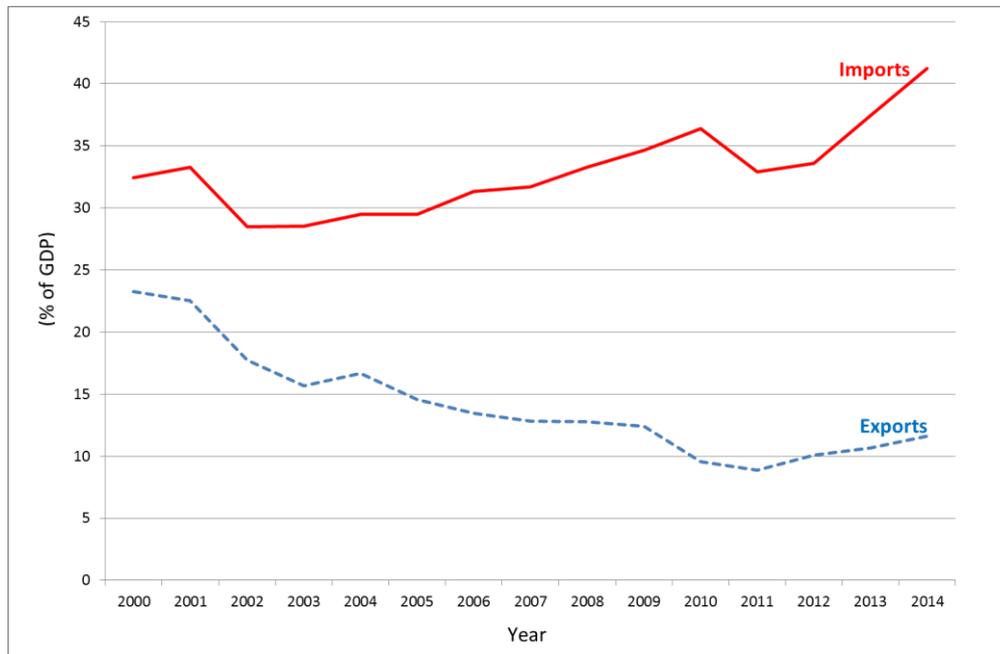
Source: World Development Indicators.

It is hard to overstate the importance of evaluating the effectiveness of the CISE scheme in promoting exports and fostering their diversification. As the 2011 Trade Policy Report presented by the Nepalese government to the World Trade Organization (WTO) notes, Nepal's *"ever-growing dependence on a single country indicates the urgency for trade diversification and indicates need for strengthening its competitiveness to attain this end."* In a context of reduced fiscal space following the disastrous earthquake in April 2015 −which killed more than 8,000 people and caused economic losses in the order of US$10 billion− it is crucial to determine whether a cash subsidy granted to exporters is an effective instrument to achieve Nepal's international trade objectives.

Our analysis proceeds in three steps. Firstly, we provide a broad range of stylized facts of product-level export patterns based on whether goods were eligible to receive the export subsidy or not, and whether they were sold in India or elsewhere, using transaction-level customs data for the period 2011-2014. We then merge these data with information on the firms that obtained the CISE subsidy and the amount they received from the

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Nepalese Central Bank, the entity in charge of disbursing the subsidy. This information allows us to determine the share of eligible firms that actually received the subsidy, as well as to identify the products that benefitted the most from the policy.

We find that although exports to India account for 70% of Nepalese exports on average throughout our period of analysis, their importance fell between 2012 and 2014. We also find that products for which the export subsidy is available are important in aggregate terms —accounting for about 40% of total exports; with the share of these products sold outside India showing a small increase over the same period. We next move to document the participation of Nepalese exporters in the CISE scheme. As we discuss in more detail in Section 2, delays in the design of the rules governing the program and in its implementation resulted in just a handful of exporters taking advantage of the subsidy in its first year in place, and only half of the allotted budget being utilized. Nevertheless, the usage rate of the scheme increased quite rapidly, and by 2014 the share of eligible exporters receiving the subsidy had increased fivefold, while subsidy outlays doubled relative to 2012. From a cross-sectoral perspective, our analysis reveals that 90% of all subsidy payments are enjoyed by firms exporting carpets, man-made fibers, edible vegetables, apparel and hides and skins.

In the second part of our analysis we investigate which firm-level characteristics determine the probability of receiving the CISE subsidy conditional on eligibility (i.e. carrying out at least one export transaction of an eligible product to a destination market other than India), as well as the characteristics that determined whether a product was included in the subsidy program. We find that exporters are more likely to receive the subsidy, the larger they are (in terms of the total value of their exports), the more important eligible products and sales outside India are in their total exports —and crucially— if they have received subsidies in the previous year. Interestingly, incorporating a high share of domestic value-added —which is one of the requirements imposed by the CISE scheme— does not appear to influence a firm's chances of obtaining the subsidy. From a product perspective, eligibility status under the CISE scheme is strongly associated with a product being sold primarily outside India and with it incorporating a high share of local input content.

Lastly, we investigate whether the CISE subsidy has produced a significant response in firm-level export outcomes among the firms that received the cash incentive. The

outcome variables we consider are export values, quantities, prices, their respective growth rates and the number of products and destination markets served by exporters. Our empirical specification includes firm-product category (i.e. eligible and non-eligible to receive subsidies)-destination (i.e. India and the rest of the world), as well as year-product category-destination-specific fixed effects. Thus, we estimate whether a given outcome, such as the value of eligible products exported to the rest of the world, changed substantially when a firm received subsidies relative to the situation in which the same firm exporting the same product to the same market was not incentivized; all this while controlling for broad demand and supply changes that could affect the exports of the four product category-destination combinations that we consider.

Our assessment of the effectiveness of the CISE export subsidy program in terms of its impact on firm-level export outcomes is strongly negative. We do not find any significant effect of the export subsidy on firms' export values, quantities, prices or their growth rates, regardless of whether a product was eligible to receive subsidies or not, or if the market served was India or elsewhere. If anything, our results suggest that firms that received the subsidy saw their export value and quantity of eligible products shipped to the rest of the world fall after receiving the cash incentive —although, as we noted above, this result is not statistically significant. In a similar vein to other studies that have evaluated the performance of export promotion agencies, such as Volpe Martincus and Carballo (2008) and van Biesebroeck et al. (2015), we find a small but significant impact of the subsidy on the extensive margin of exports. More precisely, firms that received the subsidy began to sell a wider range of eligible products across more export destinations. Thus, while there is evidence that the CISE program has had a significant effect in increasing product and market diversification at the firm-level, there is no substantive increase in size of export shipments.

Cash subsidies to exports targeted to specific products, subject to local content requirements and available only to exports sold in certain destinations, are commonplace among Nepal's main trading partners in South Asia. Bangladesh, for instance, offers cash subsidies to exports (with ad-valorem rates as high as 20 and 30%) to a wide range of products such as frozen shrimp, jute and straw products, leather goods and garments

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among others.[2] Similarly to the CISE scheme, subsidy rates increase with the share of domestic value-added incorporated in the export shipment. India also provides cash incentives ranging from 2 to 5% to more than 100 products under its Merchandize Exports Incentive Scheme with subsidy rates depending on the country that exports are sold to.[3]

Since Nepal belongs to the group of Least Developed Countries, as defined by the United Nations, it is not bounded by the WTO disciplines regarding the use of subsidies contingent upon export performance stipulated in the Agreement on Subsidies and Countervailing Measures. International trade theory, however, has shown that export subsidies are seldom desirable policies from a welfare standpoint. Exceptions include instances in which product markets are oligopolistic (e.g. Brander and Spencer, 1985), and when domestic distortions such an unemployment or externalities provide a rationale for export subsidies to be used as a second-best policy (Lipsey and Lancaster, 1956; Bhagwati and Ramaswamy, 1963). Crucially —given the specific eligibility requirements of the CISE program discussed above— Feenstra (1986) shows that export subsidies can be welfare-improving when products sold in different markets are not perfectly substitutable, while Itoh and Kiyono (1987) show that targeting subsidies to 'marginal' export products can also be appropriate. As noted above, our analysis will not speak to the desirability, from a welfare standpoint, of the cash incentive to exports, but will instead focus on its consequences in terms of export volumes, quantities, their growth rates, and diversification patterns.

Related work. This paper contributes to the flourishing literature that evaluates the effectiveness of export promotion policies (Bernard and Jensen, 2004; Volpe Martincus and Carballo, 2008; Görg et al., 2008; Lederman et al., 2010; Cadot et al., 2015; van Biesebroeck et al., 2015).[4] In contrast to other instruments of commercial policy such as tariffs or quotas, export subsidies are inherently difficult to define and identify, (WTO, 2006). They often encompass a wide range of measures such as cash payments, tax concessions, loan

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[2] See https://www.bb.org.bd/mediaroom/circulars/circulars.php and Global Trade Alert: http://www.globaltradealert.org/measure?tid=All&tid_1=286&tid_3=2210.
[3] See http://dgft.gov.in/exim/2000/highlight2015.pdf and Global Trade Alert: http://www.globaltradealert.org/measure/india-additional-products-added-under-merchandise-exports-incentive-scheme.
[4] Closely related to this literature and our paper, Girma et al. (2009) and Helmers and Trofimenko (2015) study the effect of broadly defined production subsidies recorded in the manufacturing surveys of China and Colombia respectively, on export outcomes.

guarantees, access to duty-free imports of intermediate inputs and machinery and preferential access to finance and public utilities, some of which would not be even classified as subsidies from an accounting perspective. Similarly, export promotion agencies also provide a number of services to firms using their services such as training, finance, participation in international trade missions and shows intended to help firms in their internationalization efforts. In this regard, the policy instrument that we analyze is an extremely well-defined one, simply "cold, hard cash". Moreover, the factors conditioning firms' eligibility to receive the subsidy —i.e. the product exported, its destination market, and to a certain extent, its domestic content— can be readily identified in the data available to us.

Given the product and destination-specific requirements featured in the CISE export subsidy, our paper also adds to the body of work that investigates the consequences of imposing performance requirements on export subsidies (Davidson et al., 1985; Rodrik, 1987; Defever et al. 2016; Defever and Riaño, 2017). We improve upon the existing empirical work studying the effects of conditional export subsidies, in that we are able to directly observe the subsidy disbursements made to each firm instead of just whether a firm is *eligible* to obtain incentives, for instance, based on its export intensity, location in a special economic zone or its ownership status.

The rest of the paper is organized as follows: Section 2 describes the Cash Incentive Scheme for Exports (CISE) subsidy program, spells out its eligibility requirements and summarizes the changes it underwent following its reform in 2013. Section 3 provides a stylized theoretical framework that we will use to guide our empirical assessment of the CISE program. Section 4 describes the data used in this paper and provides a wide range of stylized facts characterizing firm and industry-level export patterns in Nepal, as well as the main determinants characterizing the exporters that received cash incentives. Section 5 presents our evaluation exercise, in which we investigate if the CISE subsidy program affected export outcomes for firms that received the subsidy. Section 6 concludes.

2. Description of the Cash Incentive Scheme for Exports

The Cash Incentive Scheme for Exports (CISE) was first introduced in the Budget Speech for the fiscal year 2010/11 in April 2010, but due to delays in the preparation of guidelines for the scheme, it only started being implemented in 2012 (Sapkota, 2011).

The CISE program offered a 2% ad-valorem subsidy on export sales (denominated in Nepalese rupees) subject to two requirements: (i) the export transaction had to incorporate at least 30% of domestic value-added, and, (ii) the product under consideration had to be sold in a country other than India.[5] The subsidy rate provided increased with the proportion of local content incorporated in the exported good. Namely, if the share of domestic value-added embodied in the exported product exceeded 50%, the subsidy rate increased to 3%, and would, in turn, reach a maximum of 4% if the share of local content incorporated was greater than 80%. The subsidy was made available to both direct exporters and "Export Trading Houses" (i.e. wholesalers), with the latter being required to transfer 50% of the cash payment to the producers of the good in question. The subsidy was disbursed by the Nepalese Central Bank (*Nepal Rastra Bank*) upon receiving evidence that the payment for an export transaction in foreign exchange had been deposited in a Nepalese bank. The total budget allotted to the scheme was 240 million Nepalese rupees (approximately 3.2 million 2010 US dollars). The provision of subsidies was executed on a first-come first-serve basis. This means that not all eligible firms (i.e. those satisfying the two requirements listed above before 2013, or those exporting eligible products to countries other than India afterwards) received subsidies.

Two reasons were adduced to justify the exclusion of sales to India from the scheme. Firstly, as noted above, one of the goals of the scheme was to foster the diversification of Nepalese exports away from India, which in 2010 accounted for approximately 70% of the country's exports. Secondly, both the Ministry of Finance and the Ministry of Commerce and Supply (MOCS) noted that extending the subsidy to exports to India would create incentives for firms to export products which then could be reshipped back to Nepal through a different border point, thus obtaining subsidies for goods that were not actually exported (Sapkota, 2011). To further ensure that no subsidies were granted to exports to India, the

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[5] What Nepal's Customs Act Rules and Regulations refer to as "third countries".

CISE regulation stipulated that export transactions had to be denominated in convertible currencies, thereby excluding sales invoiced in Indian rupees, which are deemed non-convertible by the Nepalese Central Bank.

The CISE scheme was modified in the June 2013 budget speech (and renamed CISE 2070), partly in response to exporters' complaints about the complexity of the domestic value-added calculation required to receive the subsidies (World Bank, 2016). This can also help to explain the low share of eligible firms claiming the subsidy in 2012 and 2013 which we document below. The reformed scheme made the subsidy available to firms exporting a group of 24 industrial and 7 agricultural products that had been previously identified as having high export potential in the 2010 Nepal Trade Integration Strategy drawn by MOCS. The list of eligible goods and their respective subsidy rates are presented in Table 1 below. The scheme's budget was also increased to 300 million Nepalese rupees. Although there is a formal annual review procedure for the list of products incentivized and their subsidy rates, which is administered by the Department of Industry, no changes have been made to the scheme since 2013.

Table 1: Eligible Products and Subsidy Rates Introduced in CISE 2070

Industrial Products		Agricultural Products
2% subsidy rate	**1% subsidy rate**	**1% subsidy rate**
Processed coffee	Ready-to-eat chow chow	Seeds
Semi-processed hides & skins	Bran	Cut flowers
Handicraft & wooden craft	Wheat flour	Fruits
Crust skin	Polyester or viscous yarn	Vegetables
Handmade paper & rel. products	Ready-made garments	Ginger
Processed honey	Polyester textile yarn	Cardamom
Tea	Vegetable fat/oil	Herbs
Carpet & woolen products	Transfer	
Pashmina & silk products	Ball pens	
Processed herbs & essential oils	Lentils	
	Precious & semi-precious jewelry	
	Gold & silver ornaments	
	Turmeric	
	Dried ginger	

Source: CISE 2070, Government of Nepal Ministry of Commerce and Ohja (2015).

As Table 1 shows, subsidy rates in the CISE 2070 scheme are not increasing in the share of domestic value-added incorporated in the export transaction, but are product-

specific instead. Nevertheless, exports of eligible products still need to incorporate at least 30% of domestic value-added to be deemed eligible. Crucially, the requirement that only exports sold outside India are eligible to receive the incentive has remained in place.

In terms of simplifying the regulatory burden necessary to obtain the subsidy, CISE 2070 stipulates that firms exporting agricultural products do not need a value-added assessment to claim the subsidy. Industrial product exporters do not need to conduct new value-added assessments to receive the subsidy once they have been approved once.[6] Thus, the 2013 reform to the CISE program lowered the subsidy rates available to the few exporters that claimed the subsidy in 2012 by selling products with high domestic value-added outside India. On the other hand, however, it increased the program's budget and simplified the administrative procedure to claim the cash incentive.

3. Theoretical Framework

We explore the implications of offering an ad-valorem subsidy granted on the basis of export sales of a multiproduct firm in a specific product-destination combination. Our objective is to show that when products and/or markets are not perfectly substitutable from the perspective of the firm's cost, then the subsidy can affect the firm's sales across all products and markets in which it operates.

Consider an exporting firm that produces two goods, eligible (e) and non-eligible (n), and in turn, can sell these in two foreign markets, India (I) and the rest of the world (R). Suppose that demand for good k in market j is given by $q_{kj} = A_j p_{kj}^{-\sigma}$, where A_j is a country-specific demand shifter (e.g. the product of a country's income and price index when consumers have Dixit-Stiglitz preferences), p_{kj}, is the price charged by the firm and $\sigma > 1$ is the elasticity of demand. Let $S > 1$ denote the gross subsidy rate granted to firms based on their sales of eligible products sold in the rest of the world.

We assume that the firm's total cost is given by $C(Q) = cQ$, where $c > 0$ and Q is an aggregator of the firm's output sold in different markets. We assume that Q is a two-tiered CES aggregate of the form:

$$Q = \left\{ [q_{eR}^{\theta} + q_{eI}^{\theta}]^{\alpha/\theta} + [q_{nR}^{\theta} + q_{nI}^{\theta}]^{\alpha/\theta} \right\}^{1/\alpha}, \alpha, \theta \leq 1. \tag{1}$$

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[6] Industrial goods' exporters can use a copy of the value-added calculation sheet obtained for previous shipments of the same product to claim the cash incentive from their respective banks.

This representation of a firm's total output allows for different degrees of substitutability —in terms of production costs— between the same good produced for different markets and across different goods sold in the same destination.

The recent literature studying multiproduct firms in the context of international trade has drawn attention to the linkages arising in the production of different goods sold across multiple markets (see e.g. Eckel and Neary, 2010 and Nocke and Yeaple, 2014). For instance, pashminas to be sold in Europe could be a close substitute for Pashminas sold in India; conversely, they could be manufactured using very different inputs and techniques, which would render them less substitutable from the point of view of production. Similarly, the parameter α governs the degree of substitutability across different goods produced by the same firm (e.g. garments for men and women). Let $\epsilon_k \equiv 1/(1-\alpha)$ and $\epsilon_j \equiv 1/(1-\theta)$ denote the elasticity of substitution across products and destinations respectively. Thus, when $\epsilon_k > \epsilon_j$, eligible and non-eligible products are more easily substitutable for a firm than the same product tailored to customers based in different markets; in the converse situation, the differences in cost between products are more marked than across destinations.

The firm's profit maximization problem is therefore given by:

$$\max_{\{q_{kj}\}} \pi = S A_R^{1/\sigma} q_{eR}^{1-1/\sigma} + \sum_{j,k \neq \{e \cap R\}} A_j^{1/\sigma} q_{kj}^{1-1/\sigma} - C(Q). \tag{2}$$

When $\alpha = \theta = 1$, eligible and non-eligible products are perfect substitutes in production regardless of where they are sold, and there are no complementarities across products and/or markets from the point of view of the firm — just as in the model proposed by Bernard et al. (2010). In this case, it is straightforward to show that the introduction of the subsidy S lowers the price charged by the firm and increases the quantity and sales of eligible products sold to the rest of the world without affecting the firm's choices with respect to other product-market combinations.

In the more general case, the use of the subsidy targeted at one product-destination pair affects sales of other products and other markets depending on the degree of substitutability/complementarity across products and destinations. Since the firm always

chooses to produce all product-destination combinations,[7] it follows that its marginal cost has to be equalized across all varieties. Thus, once the firm increases q_{eR} in response to the subsidy granted to eligible products sold in the rest of the world, it also needs to adjust the quantities of all other varieties as well.

Assuming that products and destinations are equally but not perfectly substitutable in terms of the firm's cost (i.e. $\alpha = \theta \neq 1$), it follows, using the first-order conditions associated with problem (2), that the elasticity of sales of eligible products sold in the rest of the world relative to sales of eligible products in India and relative to the sales of non-eligible products in the rest of the world are equal, and given by:

$$\frac{d \ln(r_{eR}/r_{eI})}{d \ln S} = \frac{d \ln(r_{eR}/r_{nR})}{d \ln S} = \frac{\sigma - 1}{1 - \sigma(1-\alpha)}. \tag{3}$$

Thus, if products/markets are substitutable from the perspective of a firm's cost (i.e. when both α and θ are positive), an export subsidy granted to the sales of eligible products to the rest of the world will increase the sales of this product relative to those of the same product in India and also relative to those of non-eligible products in the rest of the world. The opposite result would obtain if products are complements in the firm's cost.

It also follows that if operating in foreign markets is costly, e.g. due to the existence of fixed costs related to market-access, providing a cash subsidy based on sales of eligible products shipped to the rest of the world can also affect a firm's decision to export products to markets that are not directly targeted by the subsidy. We will explore this possibility in our empirical assessment of the CISE subsidy program in Section 5.

Our main message in this section is that it is important to consider how the sales, quantities and prices of beneficiary firms change in response to the subsidy across product-market combinations other than the ones directly targeted in order to evaluate the effect of the CISE subsidy program on firm-level export outcomes.

4. Data Description and Summary Statistics

Our study exploits detailed export and import firm-level data provided by the Nepalese Department of Customs. The data contain the universe of international trade transactions (exports and imports) by product at the HS 6-digit level and by origin/destination for the

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[7] This is a consequence of the assumption of constant elasticity of the firm's demand functions.

period 2011-2014. Throughout this period, the universe of firms consists of 1,698 firms reporting at least one positive export transaction in at least one of 1,762 HS-6 digit products sold to/bought from 177 countries.

Table 2: Summary Statistics for Exporters

year	Number of firms	Median value per exporter	Average value per exporter	Average # of HS6 per exporter	Average # of destination per exporter
2011	1,310	80,083	644,968	5.27	4.02
2012	1,313	94,599	686,764	5.20	3.82
2013	1,346	80,786	635,086	5.28	3.62
2014	1,375	98,486	684,695	5.44	3.73

Source: Authors' calculations. Export values are denominated in US Dollars.

Table 2 provides several descriptive statistics on exporting firms for the years 2011-2014. The number of active exporters remains quite stable throughout our sample period, ranging between 1,300 and 1,400 firms each year. This figure is relatively high in comparison with other developing countries of similar size and income level reported in Fernandes et al. (2016).[8] Both the average and median size export transactions are in line with those observed in countries at a similar stage of development.

Table 3 provides a first view of Nepal's total exports throughout our period of analysis according to whether products are listed as eligible to receive the subsidy based on the CISE 2070 guidelines and the destination of export flows. It is important to note that although the CISE scheme was initially not restricted to a specific set of products; all the firms that received subsidies in 2012 obtained these for exporting goods included in the product list introduced in 2013. Therefore, we retain the 'eligible product' category for the years 2011 and 2012 in order to facilitate the comparison of export figures across time.

The table highlights several stylized facts characterizing Nepal's aggregate exports. Firstly, the importance of India as a trading partner is remarkable. In 2011, sales to India accounted for a remarkable 66.7% (= 15.4% + 51.3%) of the value of total exports, 77% (= 51.3%/66.7%) of which were in products not eligible to benefit from the CISE program. Over the following three years, however, there is a considerable fall in India's importance as an

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[8] The countries used for this comparison are Burkina Faso, Cameroon, Cambodia, Mali, Malawi, Niger, Senegal, Tanzania and Uganda.

export destination; its share of Nepal's total exports fell by 3.8 percentage points (= 66.7% - 62.9%), with the share of eligible products experiencing a larger decline than that of non-eligible ones. Table 3 also shows that the set of products targeted to receive subsidies under the CISE scheme are quite important in Nepal's export basket. They account for approximately 40% of aggregate exports, and are significantly less dependent on the Indian market than non-eligible products.[9]

Table 3: Share of Total Export Value by Product Eligibility and Country of Destination

	Eligible products			Non-Eligible products		
Year	India	ROW	**Total**	India	ROW	**Total**
2011	15.4%	25.6%	**41.0%**	51.3%	7.7%	**59.0%**
2012	16.5%	22.2%	**38.7%**	53.3%	8.0%	**61.3%**
2013	16.5%	23.5%	**40.0%**	51.5%	8.5%	**60.0%**
2014	13.1%	25.2%	**38.4%**	49.8%	11.8%	**61.6%**

Source: Authors' calculations.

Next we provide information on the size of export subsidies granted to firms participating in the CISE scheme. Table 4 shows that based on the products they sold in countries other than India, approximately two-thirds of Nepalese exporters were eligible to receive subsidies. It is important to emphasize that this figure constitutes an upper bound, since exporters are also required to incorporate at least 30% of domestic value-added in order to be eligible to claim the CISE cash incentive.

Table 4: Total Subsidy Disbursement, Eligible Exporters and Beneficiaries

Year	Number of exporters	Number of eligible exporters	Number of exporters receiving the subsidy	Total subsidy expenditure (US dollars)
2011	1,310	917	0	0
2012	1,313	878	28	1,569,547.5
2013	1,346	912	57	1,805,127
2014	1,375	921	151	3,812,752.6

Source: Authors' calculations.

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[9] The most important export destinations for Nepalese firms besides India during our period of study are, in terms of total export values, the US, Germany, Bangladesh, China, UK, Turkey, France, Japan and Singapore. Interestingly, a relatively larger number of firms (between 200 and 600) export to developed countries, whereas developing countries such as Bangladesh, China or Turkey were served by substantially fewer firms (20 to 40 on average).

The data on the total amount of subsidies disbursed, which were provided by *Nepal Rastra Bank*, show that in 2012 approximately half of the stated budget allocated to the scheme was disbursed to only 28 firms. Over the next two years, however, both subsidy outlays and the number of exporters receiving the incentives increased dramatically. Total expenditure on subsidies more than doubled from 1.57 million to 3.81 million US dollars, while at the same time the number of exporters receiving subsidies increased fivefold — from 28 to 151— reaching 16.4% of eligible exporters in 2014. Figure 2 shows that the dispersion in the amount of subsidies received per firm has also increased over time.

Figure 2: Distribution of Subsidies Obtained by Firm (conditional on receiving subsidies)
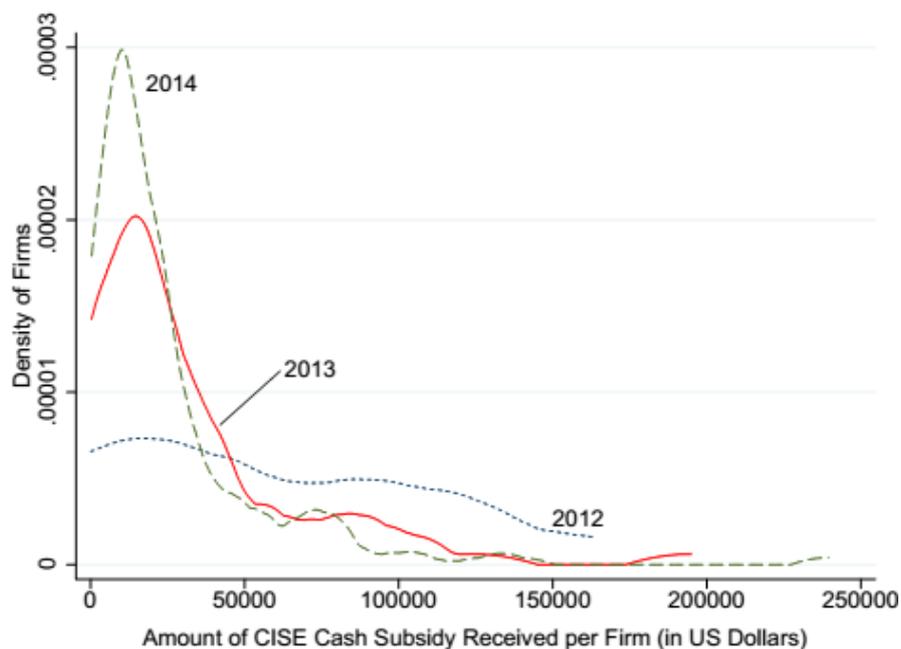
Source: Authors' calculations

We now move to investigate cross-sectional sectoral patterns of export outcomes, i.e. number of exporters, number of destinations served and share of exports sold to India as well as subsidy disbursements across Nepal's main export sectors. Table 5 shows that in contrast to the high level of concentration in terms of the number of foreign markets served, Nepalese exports are relatively well diversified across products, with no single HS 2-digit sector accounting for more than 10% of total exports. The table also shows that there is a strong negative correlation between the share of export value of eligible products and the share of exports sold to India across sectors.

Table 5 also shows that the disbursement of subsides has been highly concentrated among a few products — namely carpets, man-made fibers, edible vegetables, apparel and hides and skins. These sectors account for 88% of subsidy outlays between 2012 and 2014, with one-third of eligible firms exporting these products receiving subsidies on average.

Table 5: Descriptive Statistics at the HS 2-digit Sector, Top-20 Export Products

Product (HS-2)	% Total exports	Number of exporters	Number of destinations	% of exports sold to India	% of exports of eligible products	% of eligible firms receiving subsidies	% of total subsidy outlays
Iron and steel	10.2	15	3	99.9	0.0	0.0	0.0
Coffee, tea, mate and spices	8.2	193	35	95.8	99.3	0.5	0.3
Carpets and textile floor coverings	8.1	285	67	0.8	100.0	11.9	45.3
Man-made staple fibres	7.8	14	3	82.0	75.3	75.0	12.2
Man-made filaments	7.2	18	4	99.1	6.7	14.3	0.3
Apparel and clothing accessories	6.3	537	76	6.0	100.0	0.5	2.2
Preparations of vegetables, fruit, nuts	4.7	13	6	99.8	0.0	0.0	0.0
Articles of iron or steel	4.2	40	7	93.6	6.7	14.3	0.5
Other made up textile articles	4.1	307	96	76.5	0.9	0.0	0.0
Edible vegetables; roots and tubers	3.2	45	12	5.6	99.8	30.8	31.4
Copper and articles thereof	2.2	32	8	90.5	0.0	0.0	0.0
Footwear, gaiters and the like	2.1	14	8	99.8	0.0	0.0	0.0
Edible fruit and nuts	1.8	26	4	99.5	1.2	0.0	0.0
Miscellaneous chemical products	1.7	22	3	99.3	0.0	0.0	0.0
Plastering materials, lime and cement	1.7	106	9	99.7	0.0	0.0	0.0
Wadding, felt and nonwovens	1.6	163	39	54.2	0.0	0.0	0.0
Essential oils and resinoids	1.6	86	39	87.1	9.5	1.6	0.1
Raw hides; skins; leather	1.5	13	16	22.1	99.9	16.1	4.9
Other vegetable textile fibres	1.5	25	12	98.3	0.0	0.0	0.0
Food industry waste; animal fodder	1.5	79	9	82.1	18.0	13.6	0.3

Source: Authors' calculations.

Which firms are more likely to receive the subsidy? To provide a better sense of the firm-level determinants of receiving a cash subsidy under the CISE scheme, we estimate the following Probit model using data pooled at the firm-year level for the period 2012-2014, for the group of firms that are eligible to claim subsidies, i.e. firms carrying out *at least* one export transaction of an eligible product sold in a destination other than India in a given year:

$$\Pr[S_{it} = 1] = \Phi[\beta_0 + \beta_1 \ln EXP_{it} + \beta_2 ShrEXP_{it}^{ROW} + \beta_3 ShrEXP_{it}^{Eligible} + \beta_4 VA_{it} + T_t], \quad (4)$$

where the dependent variable, S_{it}, takes the value 1 if firm *i* receives the CISE cash incentive in year *t* and 0 otherwise. Table 6 reports the marginal effects evaluated at the mean based on estimating regression (4). Column (1) shows that larger firms, in terms of having higher export sales (EXP_{it}), are more likely to receive the CISE subsidy. Doubling the value of a firm's total exports is associated with a 3 percentage point higher probability of obtaining the cash subsidy. The share of a firm's exports destined to countries other than India, $ShrEXP_{it}^{ROW}$, and the share of its exports accounted for by eligible products, $ShrEXP_{it}^{Eligible}$, both have a positive and significant effect on the likelihood of receiving the CISE subsidy. These results suggest that the incentives have been granted to relatively large exporters specialized in eligible goods and that had experience operating outside India.[10] Conversely, the share of domestic value-added incorporated into a firm's exports, proxied by the ratio $\left(\frac{Exports_{it}-Imports_{it}}{Exports_{it}}\right)$ does not play a significant role in determining if a firm obtains the cash incentive. It is important to note, however, that our measure of domestic content is highly imperfect because it does not take into account the imported component embodied in materials purchased domestically, and can also be subject to measurement error, particularly for multi-product exporters.

Column (2) explores whether the reform to the CISE scheme in 2013 induced any noticeable changes in the probability of receiving subsidies. Consistent with the evidence presented in Table 4 above, exporters were significantly more likely to receive subsidies after 2013, although the main messages conveyed by column (1) still hold. Firm size and exporting eligible products to third countries are the strongest determinants of the probability of benefitting from the CISE subsidy scheme.

Table 6: Probability of Receiving Subsidies Conditional on Eligibility

	(1)	(2)	(3)	(4)	(5)
log export value	0.025***	0.019***	0.031***	0.027***	0.027***

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[10] We also investigate other determinants of the probability of receiving the subsidy such as the number of destinations to which a firm exports and the number of products exported. More precisely, the variable log(number of export destinations+1) has a positive and significant impact while the log(number of HS 6-digit products exported+1) comes up negative and significant. These results are robust and hold across all specifications. Our interpretation of these results is that firms are more likely to obtain the subsidy if they have a significant foreign presence but also when they tend to focus on exporting a narrow range of eligible products.

	(1)	(2)	(3)	(4)	(5)
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Share of exports to ROW	0.049***	0.037***	0.060***	0.049***	0.050***
	(0.009)	(0.008)	(0.013)	(0.013)	(0.013)
Share of exports of eligible products	0.054***	0.041***	0.065***	0.057***	0.057***
	(0.010)	(0.009)	(0.012)	(0.012)	(0.012)
Domestic VA ≥ 30%	0.000		0.003	0.004	0.004
	(0.006)		(0.009)	(0.008)	(0.008)
Domestic VA ≥ 30% in 2014		0.001			
		(0.006)			
Domestic VA ≥ 30% in 2012/13		-0.002			
		(0.006)			
Dummy year 2014		0.049***			
		(0.011)			
Dummy year 2013		0.020***			
		(0.009)			
Received subsidies in t-1			0.094***	0.083***	0.083***
			(0.024)	(0.022)	(0.022)
Eligible in t-1				0.052**	0.044*
				(0.021)	(0.025)
Exporter in t-1					0.017
					(0.040)
Observations	2,711	2,711	1,833	1,833	1,833

The table reports the marginal effects of the Probit model in equation (5) evaluated at the mean with standard errors clustered at the firm-level in parenthesis. ***, significant at the 1% level; **, significant at the 5% level; *, significant at the 10% level.

We now investigate whether having been successful in obtaining export subsidies in the previous year influences the contemporaneous probability of receiving subsidies. One of the key innovations introduced in the 2013 reform of the CISE scheme was that exporters that had already obtained a domestic value-added assessment for a previous export shipment could use the same documentation to claim the subsidy in the future without having to apply for a new evaluation —a change that sought to lower the administrative costs associated with claiming the incentive. An alternative hypothesis, of course, is that firms with stronger political connections are also more likely to repeatedly receive the incentives, as suggested by Nogués (1989) and Helmers and Trofimenko (2013). The results presented in columns (3)-(5) of Table 6 highlight the crucial role played by firms' past experience with successfully claiming incentives in explaining their current propensity to receive subsidies. Firms that obtained subsidies in the previous year have an 8-9 percentage point higher probability of receiving subsidies in a given year relative to firms that had not received the incentive before. Firms that satisfied the requirement of exporting an eligible product outside India in the previous year are also substantially more likely to obtain subsidies in the current year, while having exported in the previous year does not enter

significantly. Reassuringly, the magnitude of the effect of current level of exports, the share of eligible exports and the share of exports sold in the rest of the world on the probability of being subsidized remains largely unchanged relative to that reported in columns (1) and (2).

Which products were chosen to receive incentives? We now investigate the product-level characteristics driving the choice of which goods were chosen to be eligible to receive subsidies under the CISE 2070 program. To do so, we aggregate our data at the HS 6-digit product-year level and estimate a Probit model in which the dependent variable takes the value 1 if a given product was included in the 2013 list of CISE 2070 eligible products. Table 7 presents the marginal effects evaluated at the mean for this regression.

Consistent with the evidence presented in Tables 3 and 5 above, the share of exports sold outside India is a very strong predictor of a product's eligibility status. As column (3) reveals, the share of export transactions that incorporate at least 30% of domestic value-added also affects the likelihood of a product being selected in the CISE scheme. These results suggest that the set of products chosen to be subsidized was not random. The move towards using product-targeted subsidies in 2013 shows the Nepalese government's commitment to promote products on the basis of its 2010 Trade Integration Strategy. Nevertheless, following this approach could hinder the CISE scheme's objective of increasing export diversification given that a majority of firms producing eligible goods were selling those in third countries even before the subsidy was enacted.

Table 7: Probability of a Product being classified as Eligible in the 2013 Reform of the CISE Scheme

	(1)	(2)	(3)	(4)	(5)	(6)
Share of transactions sold outside India	0.511***		0.601***	0.509**	0.380*	0.484*
	(0.177)		(0.173)	(0.215)	(0.215)	(0.248)
Share of transactions with firm's VA$\geq$30%		0.022	0.397**	0.506***	0.424**	0.292
		(0.213)	(0.183)	(0.189)	(0.178)	(0.298)
Herfindahl Index				-0.078	-0.058	0.003
				(0.080)	(0.073)	(0.134)
Physical capital intensity				-0.229	-0.249	0.000
				(0.557)	(0.545)	(0.578)
Human capital intensity				-0.837	-0.920	-0.352
				(0.822)	(0.789)	(1.006)
Observations	3,902	3,902	3,902	3,270	3,258	733

The table reports marginal effects of the estimated Probit model evaluated at the mean with standard errors clustered at the HS-6 product level in parenthesis. ***, significant at the 1% level; **, significant at the 5% level; *, significant at the 10% level.

In column (4), we introduce some additional explanatory variables such as product-level Herfindahl indices for exports —since higher concentration could facilitate firms' coordination to lobby for subsidies, as suggested by Caves (1976) and Grossman and Helpman (1994)— as well as physical and human capital intensities, with the view that these characteristics can capture the potential for domestic value addition.[11] Introducing these additional variables has a very limited impact in our results. In column (5), we re-estimate the Probit model after dropping all eligible transactions for firms that actually received subsidies, with the view that the policy could have impacted the share of firms exporting to third countries or the share of firms with domestic value-added above 30%. Once again, the results remain very similar. Lastly, we re-estimate the model using only data for 2011, since due to its late implementation, there were no subsidy disbursements associated with the CISE scheme during fiscal year 2010/11. These results are presented in column (6). In this specification, only the share of transactions exported outside India remains a significant determinant of product eligibility.

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[11] Data on physical and human capital intensities come from Bartelsman and Gray (1996), and are available in Nathan Nunn's website.

5. Effectiveness of the CISE Subsidy Program on Export Outcomes

We now move to evaluate whether obtaining cash incentives under the CISE scheme affected firm-level export outcomes for firms that received the treatment. We consider the effect of the policy intervention on firm-level export sales, quantities, prices and their growth rates, as well as on the number of HS 6-digit products exported and the number of destination countries served. As noted in the theoretical motivation section above, it is possible that providing incentives to firms selling their output in a specific product-market pair would also affect exports of other product-market combinations if these different 'varieties' are not perfect substitutes from the point of view of the firms' costs. Therefore, our estimating equation —specified below— will take into consideration these effects when we evaluate the impact of the subsidy program on export outcomes.

In order to assess the effect of the CISE subsidy program, we first aggregate our data at the firm-product category (i.e. products eligible and non-eligible to receive subsidies)-destination (i.e. India and the rest of the world) level. Letting Y_{ipdt} denote the export outcome of interest for firm *i* producing product *p* sold in destination market *d* at year *t*, we formulate the following regression model:

$$Y_{ipdt} = \beta_1[S_{it} \cdot E_p \cdot ROW_d] + \beta_2[S_{it} \cdot E_p \cdot (1 - ROW_d)] + \beta_3[S_{it} \cdot (1 - E_p) \cdot ROW_d] +$$
$$\beta_4[S_{it} \cdot (1 - E_p) \cdot (1 - ROW_d)] + f_{ipd} + f_{tpd} + \varepsilon_{ipdt}, \tag{5}$$

where E_p is a dummy variable taking the value 1 for eligible products (i.e. those listed in Table 2) and 0 otherwise; ROW_d is a dummy variable taking the value 1 for export sales destined to countries other than India and 0 otherwise; and S_{it} is defined in the same way as in the Probit regressions reported in the previous section, taking the value 1 if firm *i* receives subsidies in year *t* and 0 otherwise. Regression (5) includes two sets of fixed effects: firm-product category-destination (f_{ipd}) and year-product category-destination-specific fixed effects (f_{tpd}). The inclusion of the first set of fixed effects means that our regression compares firms selling the same product category (eligible or non-eligible) to the same broad destination (India or elsewhere) before and after they receive the subsidy. The year-product category-destination fixed effects seek to control for aggregate factors that have affected Nepalese exports of each of our four product category-destination combinations. The estimated coefficients β_1-β_4 capture the possibility that receiving the CISE subsidy

might affect firms' exports of product-destination combinations other than that of eligible products sold outside of India, which is the main objective of the program.

Table 8 presents the results of estimating regression (5). The main message provided by our results is that there are no significantly positive effects associated with the CISE program on the level of export values, quantities or prices (columns 1-3) nor in terms of the respective growth rates of these variables (columns 4-6). Since the construction of the dependent variable used in the regressions reported in columns (4)-(6) requires information for two consecutive years, the estimates are based on data for the period 2012-2014. Our results remain unchanged when we estimate regression (5) using more disaggregated data, i.e. defining products at the HS-6 level instead of just eligible and non-eligible and using all destination countries instead of India and the rest of the world. These estimates are reported in Table A.1 in the appendix.

Table 8: Effect of Subsidies on Firm-level Export Outcomes

Dependent variable	(1) ln value	(2) ln quantity	(3) ln price	(4) %Δ value	(5) %Δ quantity	(6) %Δ price
Subsidy × Eligible × ROW	-0.124	-0.100	-0.024	-1.173	-13.107	0.432
	(0.089)	(0.104)	(0.077)	(0.962)	(10.501)	(1.416)
Subsidy × Eligible × India	0.036	-0.048	0.084	10.007	67.385	-1.240
	(0.192)	(0.186)	(0.092)	(9.902)	(68.629)	(1.742)
Subsidy × Non-eligible × ROW	-0.098	-0.037	-0.061	-6.656	37.559	-8.128
	(0.141)	(0.181)	(0.126)	(4.491)	(35.597)	(7.869)
Subsidy × Non-eligible × India	0.105	0.327	-0.222	5.254	12.176	-238.219
	(0.275)	(0.417)	(0.214)	(5.666)	(54.255)	(252.471)
Observations	8,198	8,198	8,198	4,995	4,995	4,995
R^2	0.825	0.830	0.832	0.372	0.430	0.501
Number of clusters	1407	1407	1407	1118	1118	1118

Standard errors clustered at the firm level in parenthesis. All regressions include firm-product category (i.e. eligible and non-eligible product)-destination and year-product category-destination-specific fixed effects ***, significant at the 1% level; **, significant at the 5% level; *, significant at the 10% level.

In Table 9 we re-estimate equation (5) using as dependent variables the number (both in levels and logs) of HS 6-digit product and destinations (again, defined as India and the rest of the world) combinations served by a firm (columns 1 and 2) as well as the number of HS-6 products sold in a given destination (columns 3 and 4) and the number of

destinations served for a given product category (columns 5 and 6).[12] This specification shows that the CISE subsidy increased the number of eligible products sold and destinations served by firms that received the subsidy. This result suggests that the CISE scheme has increased measures of export diversification at the firm-level. We do not find that the number of products sold among or the number of markets reached increased among non-eligible products.

Table 9: Effect of Subsidies on Firm-level Export Outcomes

Dependent variable	(1) # HS6-dest	(2) ln # HS6-dest	(3) # HS6	(4) ln # HS6	(5) # destinations	(6) ln # destinations
Subsidy × Eligible × ROW	0.974**	0.084*	0.399**	0.061	0.614***	0.102**
	(0.411)	(0.047)	(0.189)	(0.040)	(0.230)	(0.043)
Subsidy × Eligible × India	0.092	0.055	0.092	0.055		
	(0.236)	(0.079)	(0.236)	(0.079)		
Subsidy × Non-eligible × ROW	0.042	-0.011	0.210	0.044	0.076	-0.010
	(0.614)	(0.082)	(0.546)	(0.083)	(0.231)	(0.063)
Subsidy × Non-eligible × India	0.472	0.041	0.472	0.041		
	(0.418)	(0.118)	(0.418)	(0.118)		
Observations	8,198	8,198	8,198	8,198	8,198	8,198
R^2	0.912	0.829	0.827	0.789	0.892	0.856
Number of clusters	1407	1407	1407	1407	1407	1407

Standard errors clustered at the firm level in parenthesis. All regressions include firm-product category (i.e. eligible and non-eligible product)-destination and year-product category-destination-specific fixed effects ***, significant at the 1% level; **, significant at the 5% level; *, significant at the 10% level.

Within-firm reallocation. In our last regression we investigate whether receiving the CISE subsidy induced recipient firms to reallocate their exports towards eligible products sold outside India. To this end, we aggregate our data at the firm-year level, and estimate the following regression:

$$Share(Y_{it}^{E,ROW}) = \beta_1 S_{it} + f_i + f_t + \varepsilon_{it}. \tag{6}$$

Where $Share(Y_{it}^{E,ROW})$ denotes firm i's share of exports of eligible goods sold outside India in terms of export value (column 1), number of exported products (column 2) and number of destination markets (column 3). The inclusion of firm and time fixed effects results in the

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[12] Since there is only one destination available when selling to India, this means that the Subsidy × Eligible × India and Subsidy × Non-eligible × India variables are dropped from the regression. Note that the coefficients associated with these two regressors are identical in columns (1) and (3) and (2) and (4) respectively. This is due to the fact that for India the number of product-destination pairs sold by a firm is exactly identical to the number of products sold in India.

identification arising from within-firm variation over time in the exposure to the subsidy. The results, presented in Table 10, show that firms that received the CISE subsidy did not significantly tilt the composition of their exports towards eligible products sold outside India.

Table 10: Effect of Subsidies on Within-firm Share Reallocation across Products and Markets

	(1) Value	(2) # products	(3) # destinations
Subsidy	0.015	-0.008	0.020
	(0.015)	(0.037)	(0.012)
Observations	4,294	3,345	4,294
R^2	0.760	0.563	0.711
Number of clusters	1,470	1,470	1,395

Standard errors clustered at the firm level in parenthesis. All regressions include year and time fixed effects. ***, significant at the 1% level; **, significant at the 5% level; *, significant at the 10% level.

6. Conclusions

Nepal's exports have chronically been extremely narrow, both in terms of the number of products and destination markets, with sales to India consistently accounting for close to 70% of aggregate exports. In an effort to alleviate the lack of product and geographic diversification of its exports as well as an expanding trade deficit, the Government of Nepal introduced in 2010 a Cash Incentive Scheme for Exports that provides cash subsidies to firms exporting products with high local content to countries other than India. In this paper we use transaction-level data combined with information on the cash payments disbursed to firms by the Nepalese Central Bank over the period 2012-2014 to assess the extent to which this export subsidy program has achieved its objectives so far.

Our results show that the products chosen to be eligible to receive cash subsidies were primarily those that were sold outside India and that incorporated more than 30% of domestic value-added to begin with. From the firm's perspective, firms that received cash incentives, were relatively large ones (in terms of their export sales) for which sales of eligible products outside India constituted a higher share of their total exports. We also find a high degree of persistence in firms' success in receiving subsidies. This could be due to the fact that the rules of the subsidy scheme allowed firms to skip redoing domestic value-added assessments for new export transactions, thereby making them more likely to apply

for the incentives; or because the firms that receive subsidies are simply larger and have better political connections. All in all, it appears as if the product and destination requirements imposed by the CISE scheme were, to a large extent, not binding. The firms receiving subsidies did not have to radically change their product mix or destination markets they sold to; conversely, firms that were producing non-eligible goods or that sold mostly in India probably did not find the incentives generous enough to alter their export behavior. This diagnostic is clear when we investigate whether firms receiving subsidies changed their export sales, quantities, prices or growth rates in response to receiving the incentives. We do not find any significant effect of the CISE scheme in increasing exports of firms of eligible products to the rest of the world. We also do not find evidence of within-firm reallocation of export sales across products/destinations based on the requirements imposed by the CISE program.

Although we do not attempt to answer the normative question of whether a cash subsidy to exports of a select group of products to countries other than India is the optimal policy instrument to increase Nepal's diversification of its export basket (or whether this intermediate objective results in higher aggregate welfare), our results suggest that the imposition of product and destination-specific requirements on the CISE subsidy has reduced the effectiveness of the subsidy in boosting firm-level export outcomes. This is the case because the requirements already select firms that were already doing what the policy intended to achieve —selling high value-added products outside India— and also because the use of requirements increases the administrative burden involved in claiming the incentives.

References

Bartelsman, E. J. and W. Grey (1996): "The NBER Manufacturing Productivity Database," NBER Technical Paper 205, National Bureau of Economic Research.

Bernard, A. B. and J. B. Jensen (2004): "Why Some Firms Export," *Review of Economics and Statistics* 86: 561-569.

Bernard, A. B., S. J. Redding and P. K. Schott (2011): "Multiproduct Firms and Trade Liberalization," *Quarterly Journal of Economics* 126: 1271-1318.

Bhagwati, J. and V. K. Ramaswamy (1963): "Domestic distortions, tariffs and the theory of the optimum subsidy," *Journal of Political Economy* 69: 529-546.

Bhagwati, J. and T. N. Srinivasan (1969): "Optimal Intervention to Achieve Non-Economic Objectives," *Review of Economic Studies* 36: 27-38.

Brainard, W. C. and R. N. Cooper (1968): "Uncertainty and Diversification of International Trade," *Studies in Agricultural Economics, Trade and Development*, Vol. 8, Stanford University.

Brander, J. A. and B. Spencer (1985): "Export subsidies and international market share rivalry," *Journal of International Economics* 16: 83-100.

Cadot, O., C. Carrere and V. Strauss-Kahn (2011): "Export Diversification: What's behind the Hump?" *Review of Economics and Statistics* 93: 590-605.

Cadot, O., A. M. Fernandes, J. Gourdon and A. Mattoo (2015): "Are the benefits of export support durable? Evidence from Tunisia," *Journal of International Economics* 97: 310-324.

Caves, R. E. (1976): "Economic Models of Political Choice: Canada's Tariff Structure," *Canadian Journal of Economics* 9: 278-300.

de Ferranti, D., Perry, G., Lederman, D. and W. Maloney (2002): "From Natural Resources to the Knowledge Economy," The World Bank.

Defever, F. and A. Riaño (2017): "Subsidies with export share requirements in China," *Journal of Development Economics* 126: 33-51.

Defever, F., J-D Reyes, A. Riaño and M. E. Sánchez (2016): "Does the Elimination of Export Share Requirements Matters for Export Performance? Evidence from the Dominican Republic," World Bank Policy Research Working Paper 7874.

Eckel, C. and J. P. Neary (2010): "Multi-Product Firms and Flexible Manufacturing in the Global Economy," *Review of Economic Studies* 77: 188-227.

Feenstra, R. C. (1986): "Trade policy with several goods and market linkages," *Journal of International Economics* 20: 249-267.

Fernandes, A. M., C. Freund and M. D. Pierola (2016): "Exporter behavior, country size and stage of development: Evidence from the exporter dynamics database," *Journal of Development Economics* 119: 121-137.

Girma, S., Y. Gong, H. Görg and Z. Yu (2009): "Can production subsidies explain China's export performance? Evidence from firm-level data." *Scandinavian Journal of Economics* 111: 863–891.

Görg, H., M. Henry and E. A. Strobl (2008): "Grant Support and Exporting Activity," *Review of Economics and Statistics* 90: 168-174.

Grossman, G. M. and E. Helpman (1994): "Protection for Sale," *American Economic Review* 84: 833-850.

Hausmann, R., J. Hwang and D. Rodrik (2007): "What you export matters," *Journal of Economic Growth* 12: 1-25.

Helmers, C. and N. Trofimenko (2013): "The Use and Abuse of Export Subsidies: Evidence from Colombia," *The World Economy* 36: 465-486.

Itoh, M. and K. Kiyono (1987): "Welfare-enhancing Export Subsidies," *Journal of Political Economy* 95: 115-137.

Lederman, D., M. Olarreaga and L. Payton (2010): "Export Promotion Agencies: Do they work?" *Journal of Development Economics* 91: 257-265.

Lipsey, R. G. and K. Lancaster (1956): "The general theory of the second best," *Review of Economic Studies* 24: 11-32.

Ojha, P. (2015): "Translation of Cash Incentive Scheme on Export (CISE) Procedure-2070," Manuscript.

Nocke, V. and S. R. Yeaple (2014): "Globalization and Multiproduct Firms," *International Economic Review* 55: 993-1018.

Nogués, J. (1989): "Latin America's Experience with Export Subsidies," Working Paper 182, World Bank.

Panagariya, A. (2000): "Evaluating the Case for Export Subsidies," World Bank Policy Research Working Paper 2276.

Prebisch, R. (1950): "The Economic Development of Latin America and Its Principal Problems," *Economic Bulletin for Latin America* 7: 1-12.

Rodrik, D. (1995): "Taking Trade Policy Seriously: Export Subsidization as a Case Study in Policy Effectiveness." In: A. V. Deardorff, J. A. Levinsohn and R. M Stern eds. *New Directions in Trade Theory*, Ann Arbor, MI: University of Michigan Press.

Sapkota, C. (2011): "Cash Incentives for Export Promotion in Nepal," Manuscript, South Asia Watch on Trade, Economics and Environment (SAWTEE).

Singer, H. (1950): "The Distribution of Gains between Investing and Borrowing Countries," *American Economic Review, Papers and Proceedings* 40: 473-485.

van Biesebroeck, J., E. Yu and S. Chen (2015): "The impact of trade promotion services on Canadian exporter performance," *Canadian Journal of Economics* 48: 1481-1512.

Volpe Martincus, C. and J. Carballo (2010): "Is export promotion effective in developing countries? Firm-level evidence on the intensive and extensive margins of export growth," *Journal of International Economics* 76: 89-106.

World Bank (2016): "From Evidence to Policy: Supporting Nepal's Trade Integration Strategy," Manuscript.

World Trade Organization (2006): *World Trade Report 2006: Exploring the Links between Subsidies, Trade and the WTO*. Geneva: World Trade Organization.

World Trade Organization (2011): "Trade Policy Review: Nepal." Geneva: World Trade Organization.

Young, A. (1991): "Learning by Doing and the Dynamic Effects of International Trade," *Quarterly Journal of Economics* 106: 369-405.

Appendix

Table A.1 reports the results of re-estimating the regressions reported in Table 8 in the text after aggregating the data at the firm-HS 6-digit product and destination (individual country) level. The results remain are largely unchanged. The only difference is that under the new aggregation, we find that firms that received the subsidy marginally increased the price they charged on shipments of eligible products destined to India.

Table A.1: Effect of Subsidies on Firm-level Export Outcomes using Different Aggregation Schemes

	(1) ln value	(2) ln quantity	(3) ln price	(4) %Δ value	(5) %Δ quantity	(6) %Δ price
Subsidy × Eligible × ROW	-0.004	0.030	-0.034	0.289	1.709	0.122
	(0.068)	(0.078)	(0.038)	(1.338)	(2.237)	(0.571)
Subsidy × Eligible × India	0.036	0.009	0.027	16.401	11.933	0.391*
	(0.165)	(0.159)	(0.078)	(15.940)	(10.849)	(0.203)
Subsidy × Non-eligible × ROW	0.138	0.034	0.104	-3.873	-1.682	-0.327
	(0.294)	(0.318)	(0.101)	(15.666)	(16.629)	(0.235)
Subsidy × Non-eligible × India	0.078	0.003	0.074	1.985	-0.343	-0.345
	(0.120)	(0.150)	(0.105)	(2.467)	(5.347)	(1.810)
Observations	43,271	43,264	43,264	13,499	13,497	13,497
R^2	0.956	0.961	0.975	0.942	0.939	0.992
Number of clusters	1,762	1,761	1,761	1,289	1,289	1,289

Standard errors clustered at the firm level in parenthesis. All regressions include firm-product-destination and year-product-destination-specific fixed effects ***, significant at the 1% level; **, significant at the 5% level; *, significant at the 10% level.