

ONLINE APPENDIX

Export Fraud in India

by Adrien Bussy and Mehtab Ahmed Jagil

A Additional tables

TABLE A.1: DESCRIPTIVE STATISTICS OF UNIT VALUES AND CAP-IMPLIED PRICES

	N	Mean	Std	25%	50%	75%
Reported unit value, exporter (UV^{India})	146,573	93.83	969.28	2.07	4.09	9.32
Reported unit value, importer (UV^i)	144,285	90.63	975.86	2.06	5.05	12.55
Cap-implied price (\bar{c})	148,550	94.31	1,006.36	1.79	3.62	7.78
$UV^i - \bar{c}$ (in USD)	143,454	6.80	37.93	-1.26	0.52	5.77
$UV^{\text{India}} - \bar{c}$ (in USD)	145,579	1.78	21.45	-1.50	0.10	2.89
UV^i / \bar{c}	143,453	2.82	4.93	0.65	1.23	2.73
$UV^{\text{India}} / \bar{c}$	145,578	1.85	2.35	0.63	1.06	2.02

Notes: Reported unit values UV_{ipt}^r (reported in US Dollars by reporter $r \in \{\text{India}, i\}$) are calculated as reported trade value divided by reported quantities for each trade flow between India and importer r , for product p at time t . Cap-implied prices are calculated as the drawback cap per unit divided by the drawback rate ($\bar{c}_{pt} \equiv \kappa_{pt} / d_{pt}$).

TABLE A.2: CONTROLLING FOR IMPORTER'S TARIFF

	(1) Value gap	(2) Value gap	(3) Quantity gap	(4) Quantity gap
Drawback rate	0.578* (0.086)	0.578* (0.086)	0.354 (0.657)	0.353 (0.657)
Tariff	0.271** (0.011)		0.253** (0.012)	
Importer \times product FE	✓	✓	✓	✓
Importer \times year FE	✓	✓	✓	✓
Adjusted R2	0.377	0.377	0.371	0.371
Observations	1,010,784	1,010,784	933,454	933,454

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. p-values shown below estimates. Standard errors are clustered at the year level. The dependent variable is the gap between reported exports by the exporter and reported imports by the importer, expressed in terms of value or quantity, and calculated according to expression (6). The sample is restricted to observations for which tariff data is available.

TABLE A.3: CORRELATION BETWEEN REPORTING GAPS (ALTERNATIVE MEASURE) AND DRAWBACK RATES

	(1) Value gap, alt.	(2) Quantity gap, alt.	(3) Value gap, alt.	(4) Quantity gap, alt.	(5) Value gap, alt.	(6) Quantity gap, alt.
Drawback rate	0.403** (0.024)	0.492 (0.181)			1.191*** (0.007)	1.047** (0.025)
Drawback rate (CENVAT availed)			0.101 (0.438)	0.073 (0.621)		
Drawback rate on similar goods					-0.880** (0.037)	-0.621 (0.115)
Importer × product FE	✓	✓	✓	✓	✓	✓
Importer × year FE	✓	✓	✓	✓	✓	✓
Adjusted R2	0.362	0.352	0.362	0.352	0.362	0.352
Observations	1,844,469	1,709,099	1,844,491	1,709,121	1,844,135	1,708,809

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. p-values shown below estimates. Standard errors are clustered at the year level. The dependent variable is the gap between reported exports by the exporter and reported imports by the importer, expressed in terms of value or quantity, and calculated as $\text{Reporting gap, alt.}_{ipt} = (2(\text{exports}_{i,pt}^{\text{India}} - \text{imports}_{i,pt}^{\text{India}})) / (\text{exports}_{i,pt}^{\text{India}} + \text{imports}_{i,pt}^{\text{India}})$. In columns (5) and (6), the drawback rate on similar goods is the trade-weighted average of the drawback rates on goods within the same HS 4-digit category.

TABLE A.4: DIFFERENT FIXED EFFECTS

	(1) Value gap	(2) Value gap	(3) Value gap	(4) Value gap	(5) Value gap	(6) Value gap
Drawback rate	0.720* (0.061)	0.733* (0.055)	0.546 (0.105)	0.578* (0.086)	1.718*** (0.008)	1.387** (0.013)
Tariff	0.625*** (0.000)	0.649*** (0.000)	0.174 (0.122)	0.271** (0.011)	0.180 (0.348)	0.257*** (0.009)
HS4 × year FE						✓
Importer FE	✓					
Importer × HS4 × year FE					✓	
Importer × product FE			✓	✓	✓	✓
Importer × year FE		✓		✓		✓
Product FE	✓	✓				
Year FE	✓		✓			
Adjusted R2	0.121	0.124	0.373	0.377	0.372	0.386
Observations	1,079,083	1,079,073	1,010,798	1,010,784	779,617	1,009,828

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. p-values shown below estimates. Standard errors are clustered at the year level. The dependent variable is the gap between reported exports by the exporter and reported imports by the importer, expressed in terms of value or quantity, and calculated according to expression (6).

TABLE A.5: DIFFERENT FIXED EFFECTS, NOT CONTROLLING FOR TARIFFS

	(1) Value gap	(2) Value gap	(3) Value gap	(4) Value gap	(5) Value gap	(6) Value gap
Drawback rate	0.826** (0.015)	0.818** (0.016)	0.744** (0.021)	0.747** (0.019)	2.234*** (0.002)	1.910*** (0.003)
HS4 × year FE						✓
Importer FE	✓					
Importer × HS4 × year FE					✓	
Importer × product FE			✓	✓	✓	✓
Importer × year FE		✓		✓		✓
Product FE	✓	✓				
Year FE	✓		✓			
Adjusted R2	0.113	0.117	0.348	0.352	0.397	0.363
Observations	1,917,313	1,917,273	1,844,535	1,844,469	1,479,108	1,843,856

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. p-values shown below estimates. Standard errors are clustered at the year level. The dependent variable is the gap between reported exports by the exporter and reported imports by the importer, expressed in terms of value or quantity, and calculated according to expression (6).

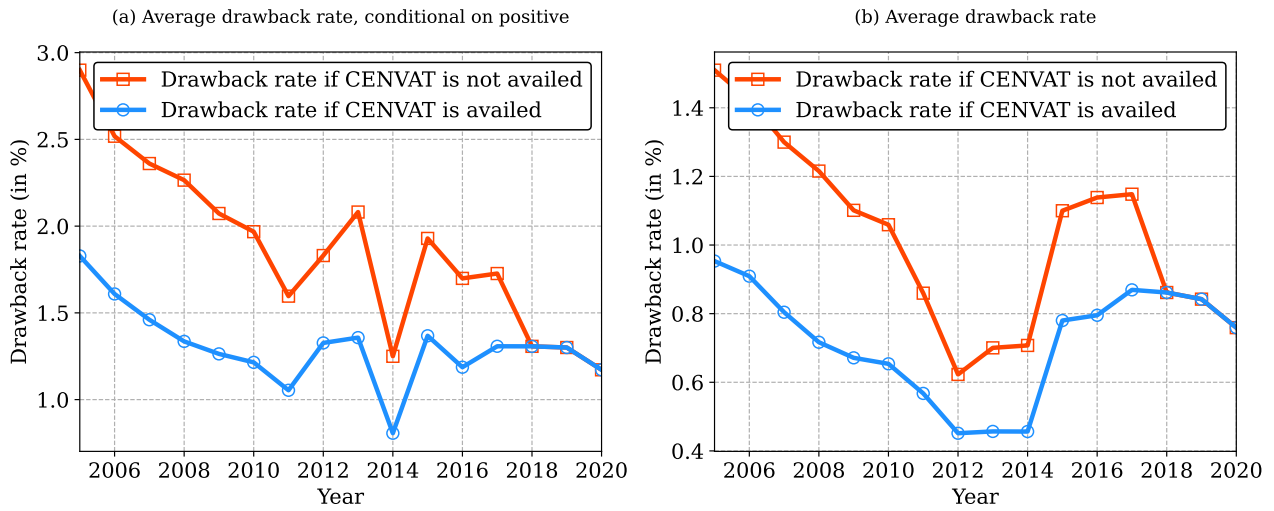
TABLE A.6: YEARLY AGGREGATE TRADE, DETECTED EVASION, AND DRAWBACK PAYMENTS

Year	Trade value (Bn USD)	Trade value w/ gaps (Bn USD)	Trade value s.t. drawback (Bn USD)	Trade value w/ gaps s.t. drawback (Bn USD)	Detected evasion (Mn USD)	Drawback paid out (Bn USD)
2005	121.8	107.1	24.5	29.7	16.9	
2006	142.5	114.3	33.9	42.2	14.5	
2007	166.8	146.7	42.7	49.9		0.7
2008	200.2	174.3	55.2	65.9	3.4	2.4
2009	195.3	134.0	39.2	55.4	5.5	3.1
2010	239.6	180.3	59.8	74.4	20.6	2.1
2011	317.7	221.5	72.3	94.8	18.8	2.1
2012	298.9	262.5	48.3	59.5	5.8	2.7
2013	342.5	295.5	44.5	54.0	302.9	3.3
2014	317.9	268.5	76.4	100.5	13.8	3.7
2015	264.4	219.4	70.1	85.9		4.5
2016	257.1	200.2	91.9	108.8	177.2	5.4
2017	284.6	231.6	104.4	126.6	14.4	
2018	304.2	239.1	111.3	141.8	5.8	
2019	299.7	227.8	100.4	133.7	10.3	

Notes: The columns contain the following, from left to right: total value of exports out of India in billion 2015 US Dollars; same, but only trade flows for which reporting gaps can be computed; same, but only trade flows of products subject to a positive drawback rate; same, but with gaps and subject to positive drawback rates; detected evasion by authorities in million 2015 US Dollars, as reported in various Directorate of Revenue Intelligence (DRI) reports; total drawback paid out to firms in billion 2015 US Dollars.

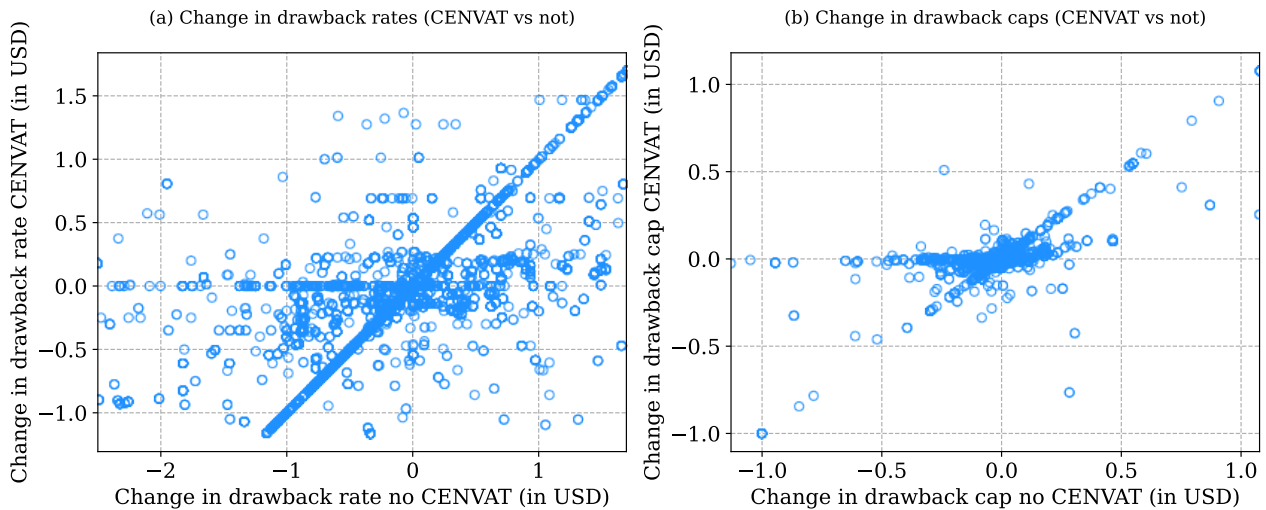
B Additional figures

FIGURE B.1: DRAWBACK RATES BY CENVAT STATUS



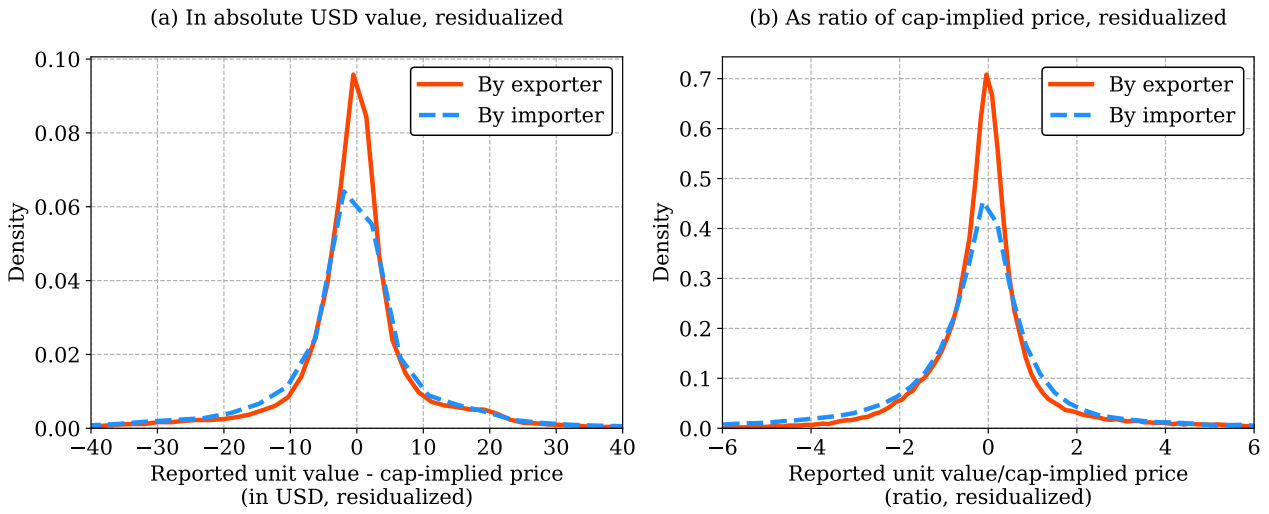
Notes: Average drawback rates across products applicable to transactions for which CENVAT has been availed (blue), or not (red). In panel (a), the average is conditional on the rate being positive. From 2017 onward, CENVAT is abolished and a unique product-specific rate applies. This switch took place in October 2017, so a distinction between rates existed for most of the 2017 calendar year.

FIGURE B.2: RATE AND CAPS CHANGES BY CENVAT STATUS



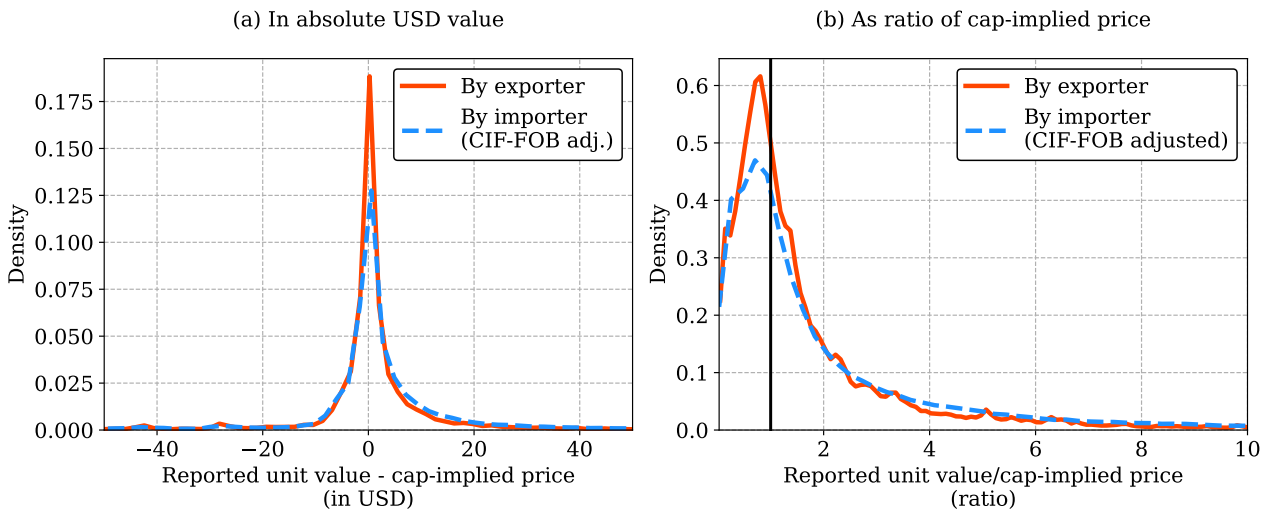
Notes: Panel (a): changes in drawback rates when CENVAT has been availed against changes in drawback rates when CENVAT has not been availed (in p.p.). Panel (b): changes in drawback caps when CENVAT has been availed against changes in drawback caps when CENVAT has not been availed (in USD/unit).

FIGURE B.3: RESIDUALIZED DEVIATIONS OF REPORTED UNIT VALUES FROM CAP-IMPLIED PRICES



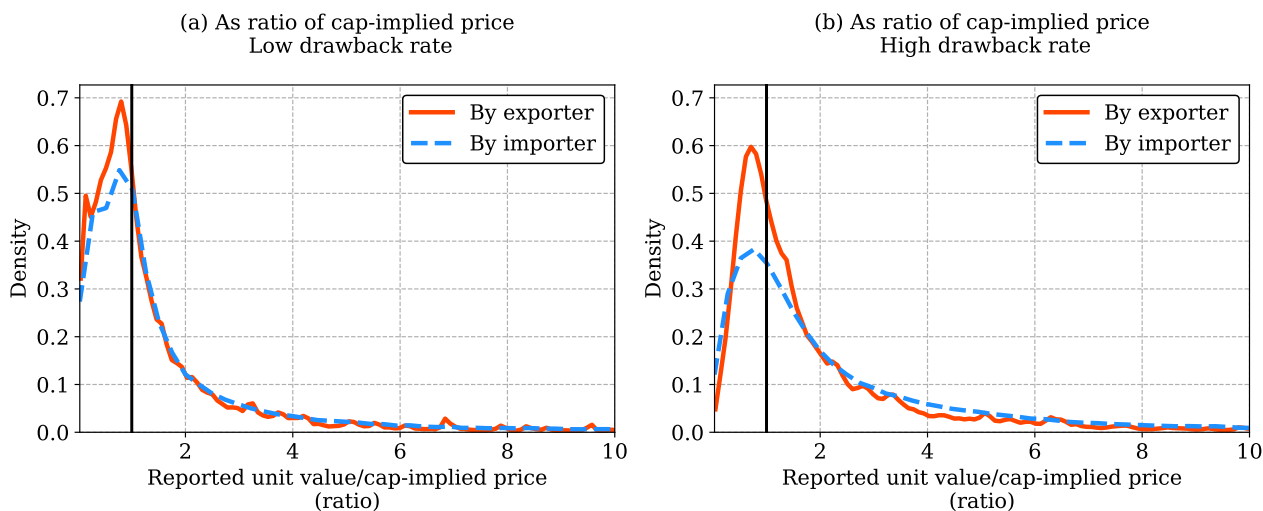
Notes: Kernel density estimates (Gaussian kernel, bandwidth=0.25) of the distributions of deviations of reported unit values from cap-implied prices by India (solid red) and importers (dashed blue) in absolute value (a); and as ratio of cap-implied price (b). Deviations are residualized on importer \times product and importer \times year fixed effects. Top and bottom percentiles in terms of reported unit values are removed from sample.

FIGURE B.4: DEVIATIONS OF REPORTED UNIT VALUES FROM CAP-IMPLIED PRICES – CIF-FOB ADJUSTED



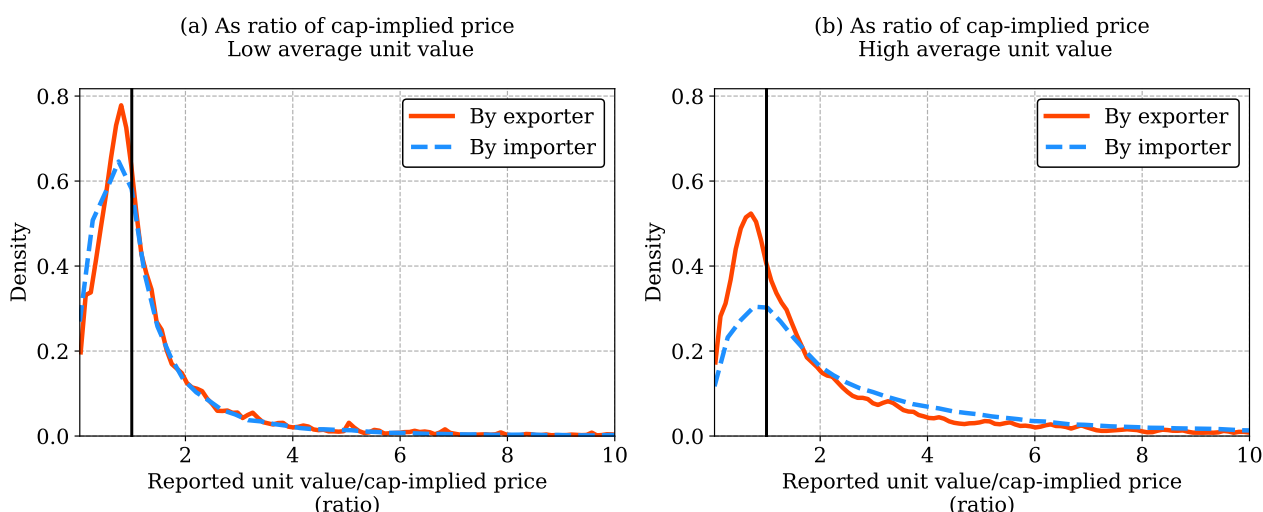
Notes: Kernel density estimates (Gaussian kernel, bandwidth=0.25) of the distributions of deviations of reported unit values from cap-implied prices by India (solid red) and importers (dashed blue) in absolute value (a); and as ratio of cap-implied price (b). The vertical black line indicates a value of 1, in which case the reported unit value equals the cap-implied price. Reported imports are adjusted to remove the CIF-FOB margin as estimated by [OECD Statistics](#). Top and bottom percentiles in terms of reported unit values are removed from sample.

FIGURE B.5: REPORTED UNIT VALUES VERSUS CAP-IMPLIED PRICES – BY DRAWBACK RATE



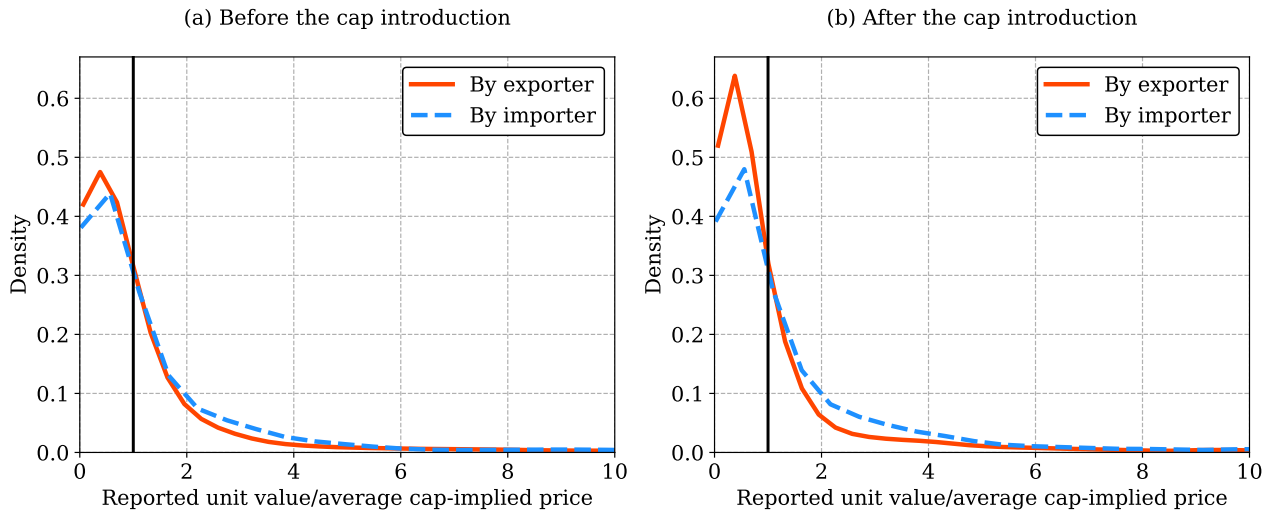
Notes: Kernel density estimates (Gaussian kernel, bandwidth=0.25) of the distributions of deviations of reported unit values from cap-implied prices by India (solid red) and importers (dashed blue) as ratio of cap-implied price. Panel (a) ((b)) is based on observations subject to drawback rates below (above) the median in the sample of products subject to caps. Top and bottom percentiles in terms of reported unit values are removed from sample.

FIGURE B.6: REPORTED UNIT VALUES VERSUS CAP-IMPLIED PRICES – BY AVERAGE UNIT VALUE



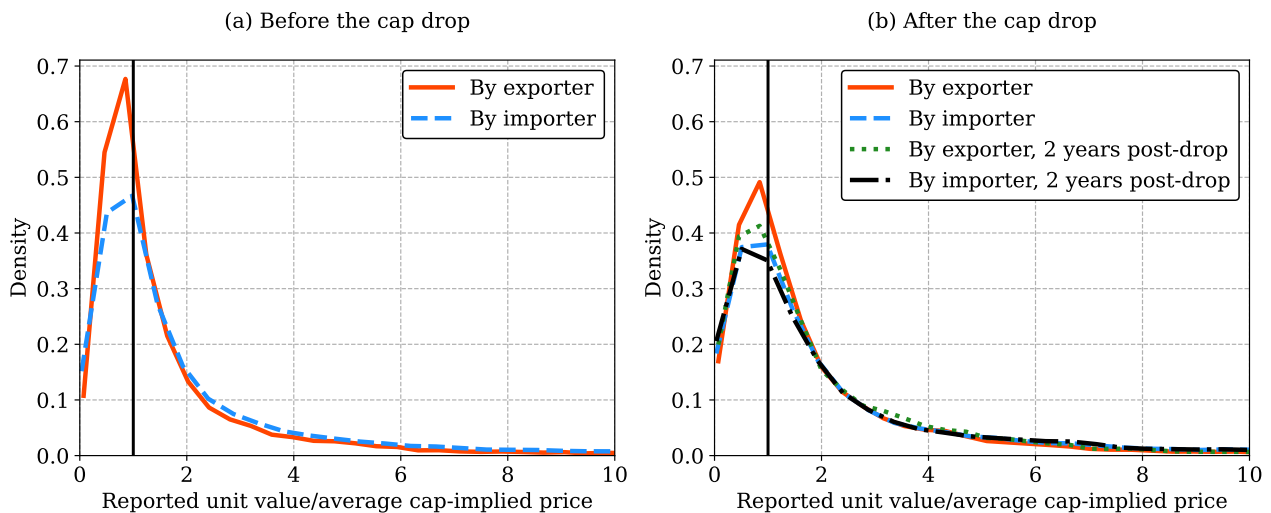
Notes: Kernel density estimates (Gaussian kernel, bandwidth=0.25) of the distributions of deviations of reported unit values from cap-implied prices by India (solid red) and importers (dashed blue) as ratio of cap-implied price. Panel (a) ((b)) is based on product-importer observations with an average unit value reported by importers below (above) the median in the sample of products subject to caps – product-importer observations do no switch panels over time. Top and bottom percentiles in terms of reported unit values are removed from sample.

FIGURE B.7: REPORTED UNIT VALUES VERSUS CAP-IMPLIED PRICES – PRE- VERSUS POST-CAP INTRODUCTION



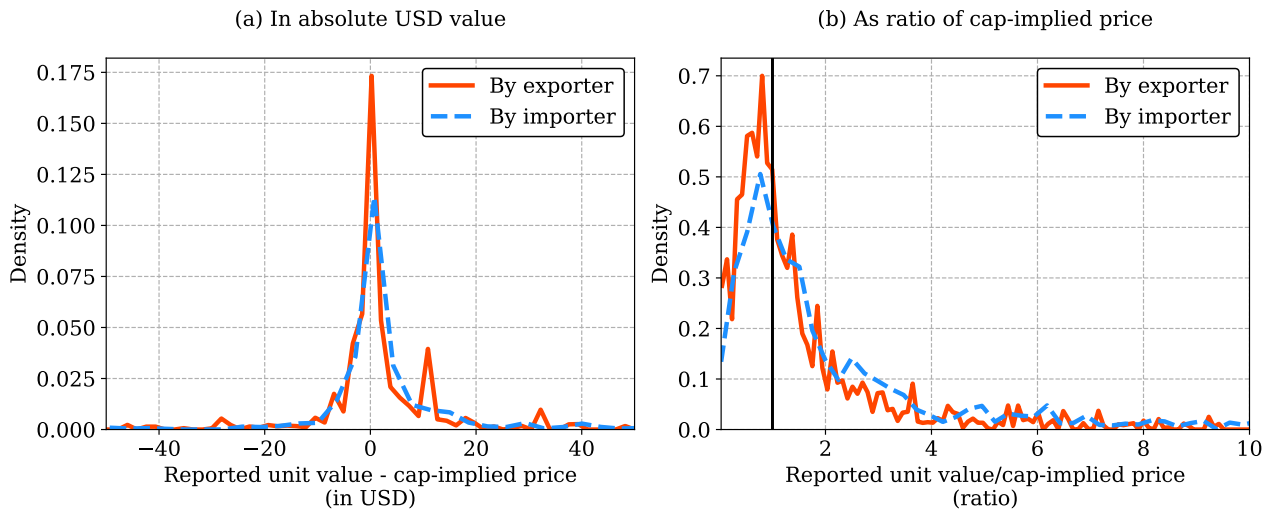
Notes: Kernel density estimates (Gaussian kernel, bandwidth=0.25) of the distributions of ratios of reported unit values over cap-implied prices by India (solid red) and importers (dashed blue) before cap is introduced (a); and after cap is introduced (b). For each product, the cap value used to compute the ratios is the average cap value over the time period (4 years) following the cap introduction. The vertical black line indicates a value of 1, in which case the reported unit value equals the cap-implied price. Top and bottom percentiles in terms of reported unit values are removed from sample.

FIGURE B.8: REPORTED UNIT VALUES VERSUS CAP-IMPLIED PRICES – PRE- VERSUS POST-CAP DROP



Notes: Kernel density estimates (Gaussian kernel, bandwidth=0.25) of the distributions of deviations of ratios of reported unit values over cap-implied prices by India (solid red) and importers (dashed blue) before cap is dropped (a); and after cap is dropped (b). For each product, the cap value used to compute the ratios is the average cap value over the time period (4 years) preceding the cap drop. In panel (b), the green pointed and the black dot-dashed lines are the distributions post-cap drop starting 2 years after the cap was dropped. The vertical black line indicates a value of 1, in which case the reported unit value equals the cap-implied price. Top and bottom percentiles in terms of reported unit values are removed from sample.

FIGURE B.9: DEVIATIONS OF REPORTED UNIT VALUES FROM CAP-IMPLIED PRICES – NARROWER BANDWIDTH



Notes: Kernel density estimates (Gaussian kernel, bandwidth=0.001) of the distributions of deviations of reported unit values from cap-implied prices by India (solid red) and importers (dashed blue) in absolute value (a); and as ratio of cap-implied price (b). The vertical black line indicates a value of 1, in which case the reported unit value equals the cap-implied price. Top and bottom percentiles in terms of reported unit values are removed from sample. In Panel (a), the peak in the distribution to the right of 0 (at around 11) reflects observations of HS product 731829 (screws and bolts) in 2010, for which the reported unit price by India is almost identical across all 84 importers).

FIGURE B.10: CENVAT DECLARATION WHEN CLAIMING EXPORT DRAWBACK

ANNEXURE-II

DECLARATION FOR CLAIMING DEEMED EXPORT DRAWBACK

1. I, (Name & Designation)on behalf of M/s. (Name and address of the supplier) hereby certify that we have supplied the following goods to M/s..... (Name and address of the recipient):

S.No.	Inv. No. & date	Description of goods	Unit	Qty.	Value
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2. We are the manufacturer exporters/suppliers and are registered/not registered with Central Excise Authority and have not availed and will not avail CENVAT credit facility in respect of duty paid on inputs/components and/or tax paid on input services, in aforesaid supplies. We have also not availed and will not avail rebate on the duty paid on inputs/components used in aforesaid supplies and/or tax paid on input services.

3. We also certify that we have not been issued any Advance Authorization/Duty Free Import Authorization in respect of the aforesaid supply of goods and have not availed any benefit thereon.

4. The complete address of the Jurisdictional Assistant/Deputy Commissioner of the Central Excise Division is given as follows:

Yours faithfully,

Signature (Authorized Signatory)
 Full Name
 Designation
 Name of the company
 Telephone Number
 E-mail
 Address
 Fax No.

Note: Declaration is to be given on letter head of the supplier. The Declaration furnished by the supplier to Office of the Development Commissioner or RA of DGFT should be in duplicate with complete address of the Jurisdictional Assistant/Deputy Commissioner of the Central Excise Division. The Development Commissioner/RA of DGFT would forward the second copy of this Declaration, duly stamped, to the addressed Assistant /Deputy Commissioner of the Central Excise Division for cross verification.

Notes: Declaration form used by firms prior to the abolition of CENVAT in 2017 to indicate that no tax credits pertaining to the exported goods had been claimed via CENVAT, which allowed firms to benefit from a higher duty drawback rate.