



TAX AND COMMERCIAL ILLICIT FINANCIAL FLOWS







Part II – Methods Partner Country Method

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Suggested methods – trade misinvoicing

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#2

	Partner Country Method (PCM) +	Price Filter Method (PFM) +
 Concept	Trade asymmetries	Abnormal prices
 Assumptions	Partner's trade data are accurate	Prices outside price filter -> mispricing
 Strengths	Partner country data available also globally	Not rely on partner data
 Limitations	Confounding reasons	Endogeneity of statistical filters
 Data sources	Trade data, 6-level HS	Transaction-level data
 Mitigation of limitations	Involve Customs experts	Involve Customs experts

#1

Trade misinvoicing: PCM +

- Concept and assumptions
 - Top-down method
 - Mirroring trade values by trading partners
 - (EX of A to B) vs (IM of B from A)
 - Assuming a correct value of one partner -> **critical!**

#1

Trade misinvoicing: PCM +

- Limitations
 - Many factors contribute to trade asymmetries
 - Partner country attribution
 - CIF and FOB valuation
 - Trade systems
 - Time lags
 - Misclassification
 - Statistical measurement errors
 - ...

#1

Trade misinvoicing: PCM +

- Overcoming limitations
 - Compare national data with (major) trading partners
 - Use granular national data (focus on prominent flows or products)
 - Resolve CIF-FOB differences – apply region/country/commodity specific ratios
 - Analyse remaining bilateral asymmetries
 - Apply reliability weighting procedure – to address the doubt that larger gap is not misinvoicing
 - Validate results using qualitative approach – interviews and consultations with customs and trade experts

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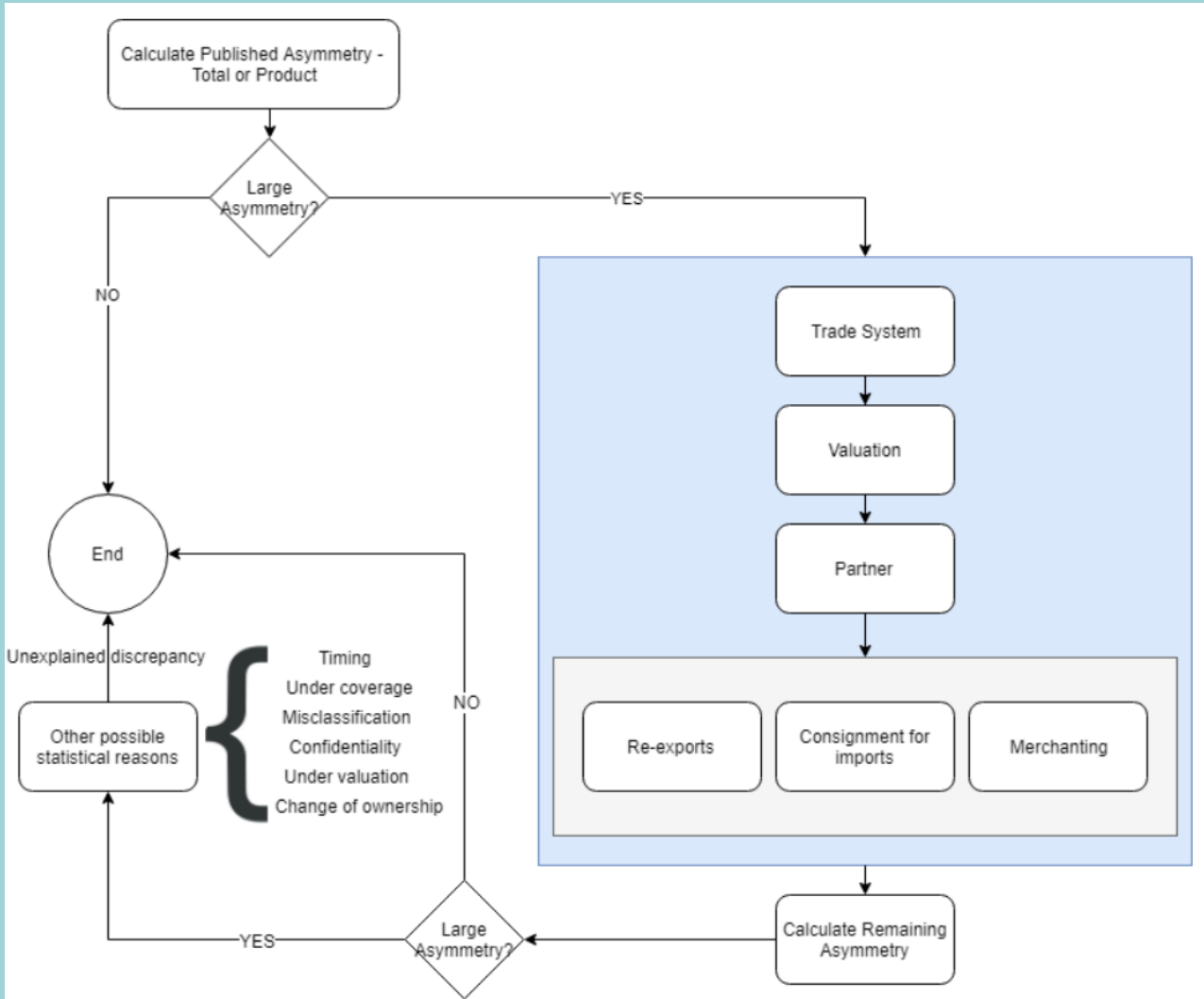
Trade misinvoicing: PCM +

- Source data
 - Trade data (value, volume, quantity, price, CIF and/or FOB valuation, trading partner, country of origin/destination, type of flow – IM, EX, reIM, reEX)
 - Collected nationally
 - Granular level
 - International sources:
 - UN Comtrade
 - IMF DOTS
 - UNCTAD Global Transport Costs database
 - OECD ITIC database

#1 Trade misinvoicing: PCM +

Flow chart for analysing and reducing bilateral asymmetries

- Calculation

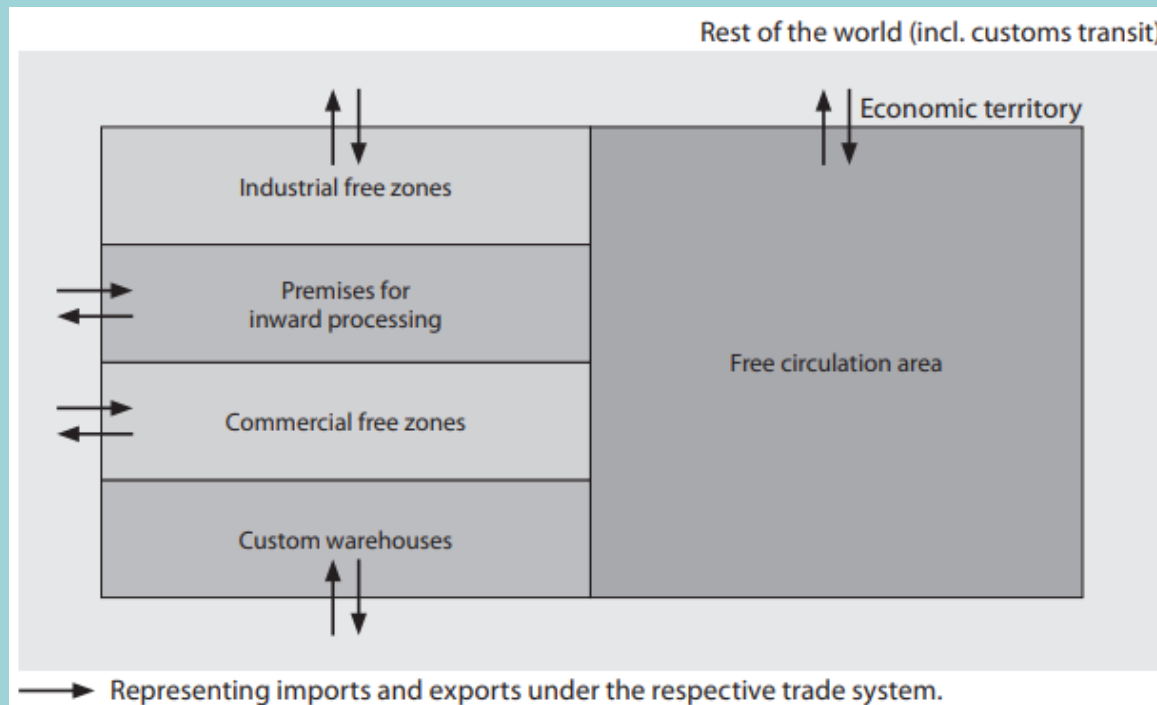


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Trade misinvoicing: PCM +

- Calculation – trade system

General trade system - territorial elements and potential imports and exports



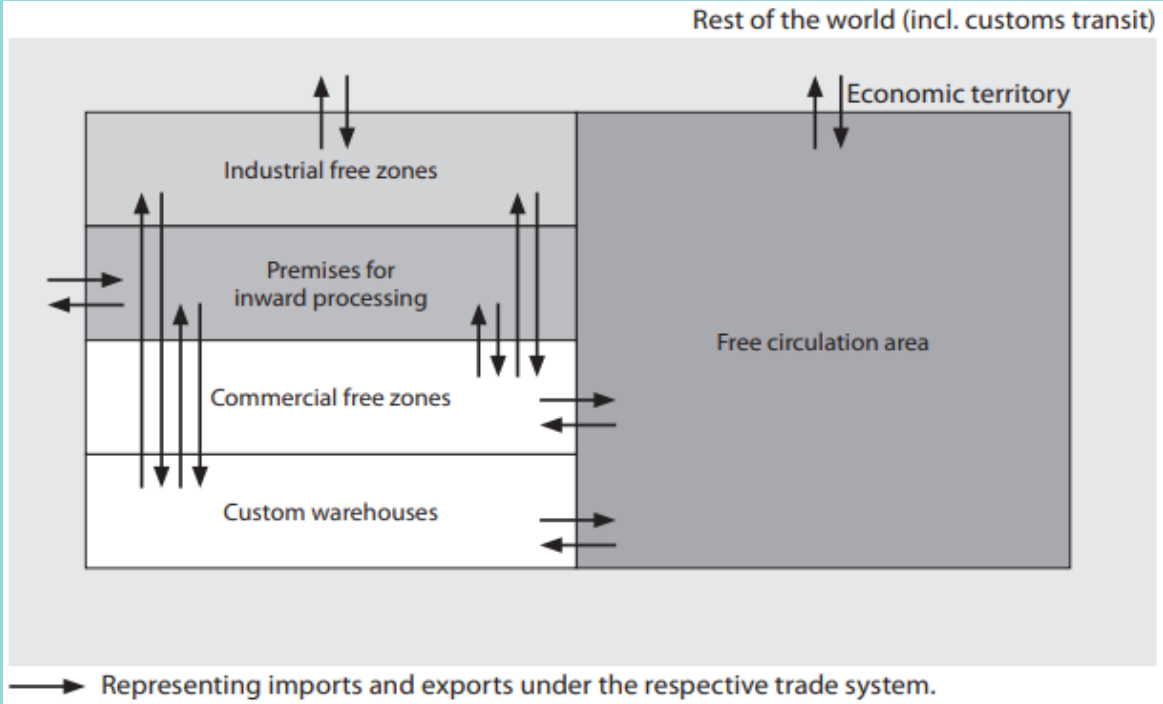
Source: UNSD (2011)

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Trade misinvoicing: PCM +

- Calculation – trade system

Special trade system - territorial elements and potential imports and exports



Source: UNSD (2011)

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Trade misinvoicing: PCM +

- Calculation – valuation
 - Imports in FOB valuation
 - CIF/FOB ratio

$$CFr_{c,r,p,t} = \frac{IM_{CIF,c,r,p,t}}{EX_{FOB,c,r,p,t}} = \frac{p_{CIF,c,r,p,t} * q_{IM,c,r,p,t}}{p_{FOB,c,r,p,t} * q_{EX,c,r,p,t}}$$

- Use of specific databases
 - UNCTAD Global Transport Cost
 - OECD ITIC

#1

Trade misinvoicing: PCM +

- Calculation – partner country attribution
 - Challenge: country of export does not know the final country of destination
 - IM
 - Country of origin
 - Country of consignment (country of exports)
 - EX
 - Country of final (known) destination
 - Re-export flows

#1

Trade misinvoicing: PCM +

CASE STUDY

- Calculation

Bilateral inbound trade of mobile phones

Inbound Trade	CAN imports	CHN exports
Official data	3 329	1 362
Published asymmetry		1 967
Adjustment: *CAN imports of CHN goods from countries of export (consignment) other than CHN	1 280	
Adjusted official data	2 049	1 362
Remaining asymmetry		687

Source: UNSD (2019)

#1

Trade misinvoicing: PCM +

- Calculation – remaining asymmetries
 - Time lags in shipments
 - Seasonal trade cycles
 - Coverage
 - Misclassification
 - Measurement errors
 - ...

#1 Trade misinvoicing: PCM +

- Calculation – remaining asymmetries

Adjusting imports of reporting and exports of partner country to calculate the remaining asymmetry

		R IMPORTS	P EXPORTS
ORIGINAL DATA	Official data	$IM_{CIF,c,r,p,t}$	$EX_{FOB,c,r,p,t}$
ADJUSTMENT	CIF-FOB	$A_{CIF-FOB,c,r,p,t}$	
	ADJUSTED DATA*	$IM_{FOB,c,r,p,t}$	
ADJUSTMENT	Trade system	$A_{TS,c,r,p,t}$	
	Indirect trade	$A_{IT,c,r,p,t}$	
	Re-exports		$B_{Re-Ex,c,r,p,t}$
	Merchandising	$A_{M,c,r,p,t}$	$B_{M,c,r,p,t}$
	Timing (time lags)	$A_{T,c,r,p,t}$	
ADJUSTED DATA		$IM_{FOB,c,r,p,t}^{Adj} = IM_{FOB,c,r,p,t}$ $- A_{TS,c,r,p,t}$ $- A_{IT,c,r,p,t}$ $- A_{M,c,r,p,t}$ $- A_{T,c,r,p,t}$	$EX_{FOB,c,r,p,t}^{Adj} = EX_{FOB,c,r,p,t}$ $- B_{Re-Ex,c,r,p,t}$ $- B_{M,c,r,p,t}$
REMAINING ASYMMETRY		$\text{InboundRA} = IM_{FOB,c,r,p,t}^{Adj} - EX_{FOB,c,r,p,t}^{Adj}$	

Source: UNSD (2019)

#1

Trade misinvoicing: PCM +

- Calculation – reliability weighting
 - Large trade gaps may not result from misinvoicing
 - Mitigate risk of unproportionally accounting

$$w = 1 - \frac{|q_{IM,c,r,p,t} - q_{EX,c,r,p,t}|}{\max(q_{IM,c,r,p,t}, q_{EX,c,r,p,t})}$$

$$Inbound_{c,r,p,t} = w * (IM_{FOB,c,r,p,t}^{Adj} - EX_{FOB,c,r,p,t}^{Adj})$$

$$Outbound_{c,r,p,t} = w * (EX_{FOB,c,r,p,t}^{Adj} - IM_{FOB,c,r,p,t}^{Adj})$$

#1

Trade misinvoicing: PCM +

- Calculation – inward IFFs

$$\text{InwardIFFs}_{c,r,p,t} = \text{Overinvoiced } EX_{c,r,p,t} + \text{Underinvoiced } IM_{c,r,p,t}$$

$$\text{Underinvoiced } IM_{c,r,p,t} = -1 * \min(0, \text{Inbound}_{c,r,p,t})$$

$$\text{Overinvoiced } EX_{c,r,p,t} = \max(0, \text{Outbound}_{c,r,p,t})$$

#1

Trade misinvoicing: PCM +

- Calculation – outward IFFs

$$\text{OutwardIFFs}_{c,r,p,t} = \text{Underinvoiced } EX_{c,r,p,t} + \text{Overinvoiced } IM_{c,r,p,t}$$

$$\text{Overinvoiced } IM_{c,r,p,t} = \max(0, \text{Inbound}_{c,r,p,t})$$

$$\text{Underinvoiced } EX_{c,r,p,t} = -1 * \min(0, \text{Outbound}_{c,r,p,t})$$