



# Bilateral Asymmetry in Merchandise Trade

Problem description

Reasons

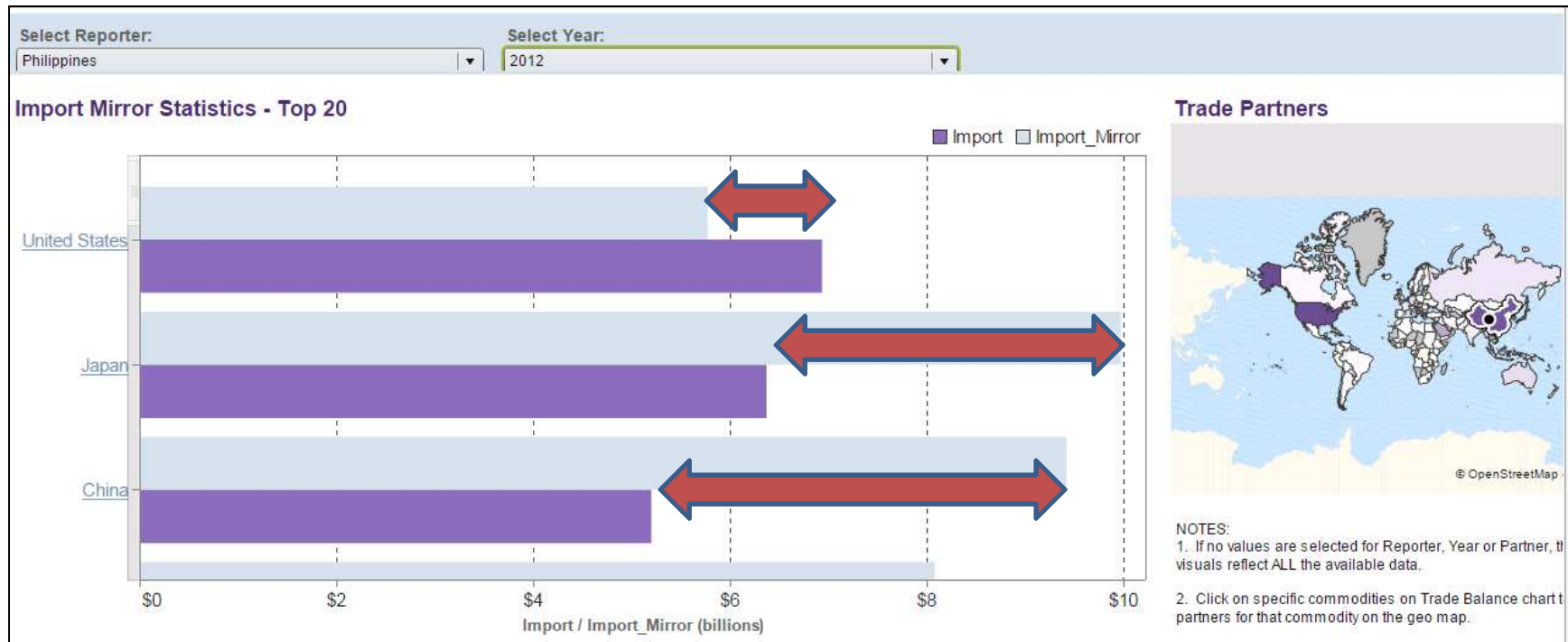
Ways to reduce

**“To link national input-output tables in order to carry out interdependent analyses across countries requires a consistent set of **harmonized international bilateral trade data** that ideally reflects recent output by the economic activities in question...”**

**Guo, D., C. Webb and N. Yamano (2009), "Towards Harmonised Bilateral Trade Data for Inter-Country Input-Output Analyses: Statistical Issues"**

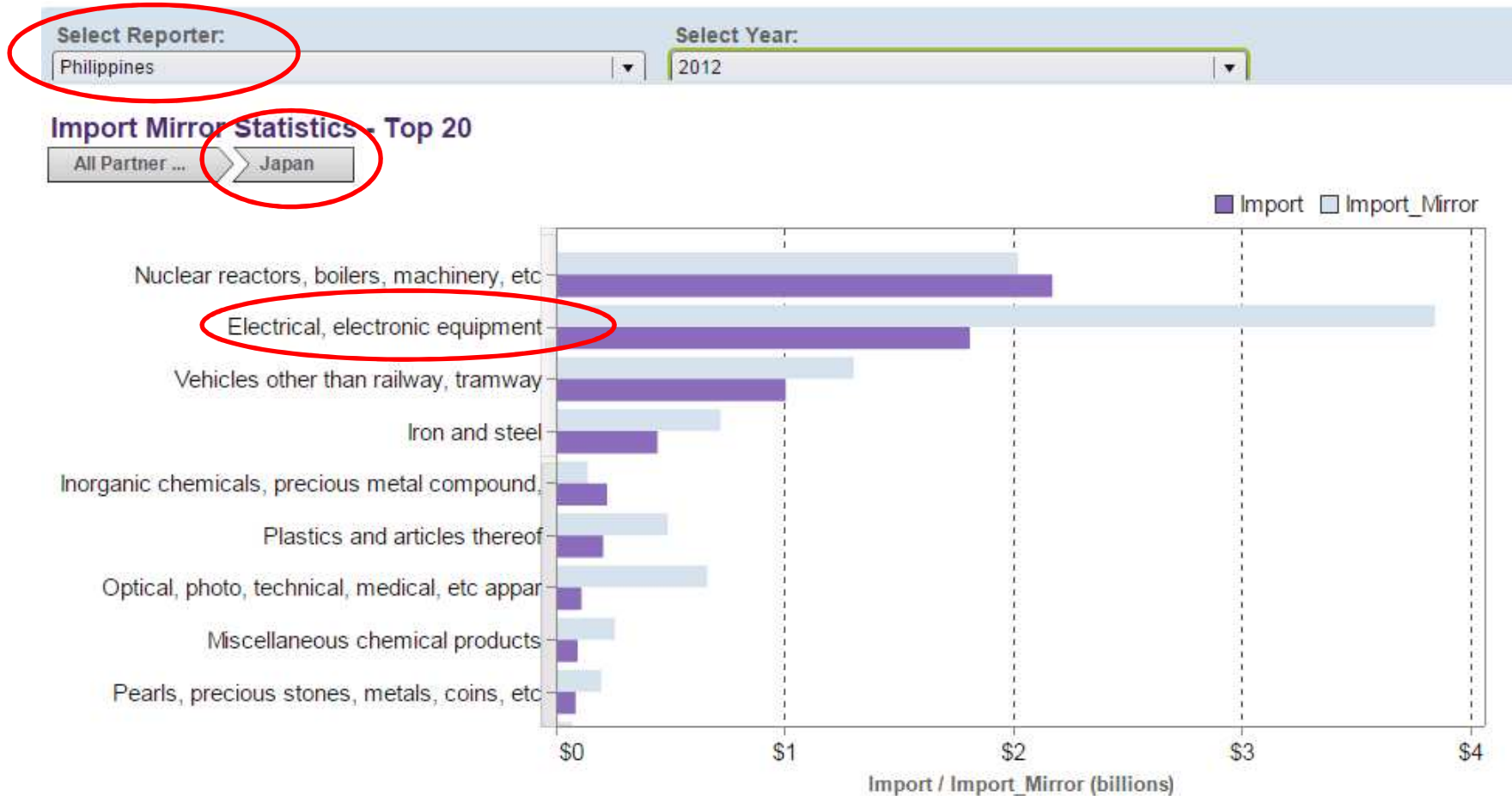
# Philippines data vs. Trading Partner data 2012

Asymmetry: 



Source: UN Comtrade @ SAS Visual Analytics

# Look at product breakdown



Source: UN Comtrade @ SAS Visual Analytics

Why?

# Reasons for asymmetry

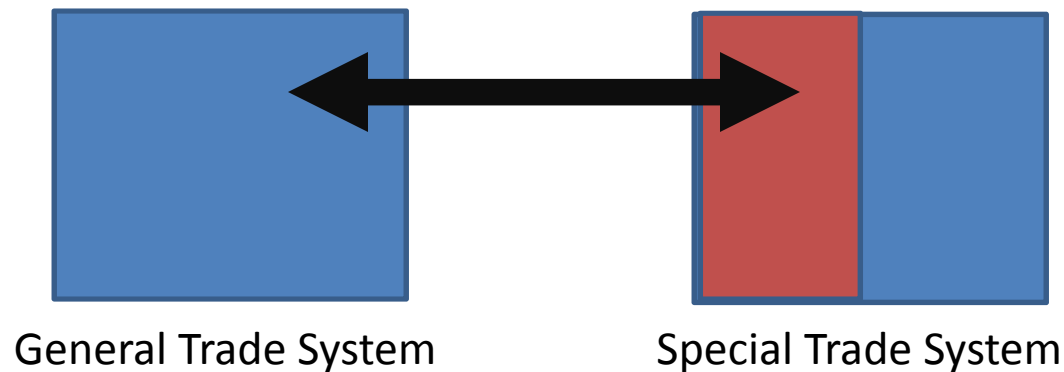
- (a) coverage;
- (b) trade system applied;
- (c) time of recording;
- (d) interpretation and application of the commodity classification;
- (e) valuation;
- (f) partner country issues;
- (g) confidentiality; and
- (h) other sources of discrepancy.

# Coverage

- Specific goods may be defined differently by trading partner, and be included by one partner but excluded by the other (e.g., military goods)
- Different provisions for the treatment of low-value shipments,

# Trade System

- If one partner country uses special trade system and other uses general trade system:
  - Goods moving between premises for customs warehousing and free zones of those countries will not be accounted for the country with special trade system





# Time of recording

- Time needed for transportation
- Time needed for completion of customs formalities
- Use of different timestamp
- Revision of incorrect record

# Misclassification

- Interpreting and applying HS
- Different thresholds are applied to different HS levels
- Different use of HS 00, 98 and 99

# Valuation

- Imports CIF vs. Exports FOB (  $CIF = FOB + \text{Insurance and Freight}$  )
- Undetected under and over-declaration of values
- Different value estimates for transactions without validation such as relief shipments
- Barter trade or related party transactions
- Different views on exclusion/inclusion of goods

# Currency Conversion

- Conversion practices for goods invoiced in foreign currency
  - Particularly, when the exchange rate between the partners fluctuates rapidly
- It may also due to conversion procedure during reconciliation study

# Partner Country Issues

- Due to application of country of origin for imports and country of last known destination for exports
  - US sold and shipped chemicals to Singapore, afterwards resold and dispatch to Indonesia [Singapore registers export to Indonesia, but Indonesia would register US as country of origin]
- Different application of rules of origin

## Partner Country Issues (cont.)

- Attribution in the case of re-exports and re-imports
- *Through trade* operations with the lowering of tariffs
- Unknown final destination

# Confidentiality

- Application of confidentiality in partner or commodity should be taken into account
  - Specific commodities may be confidential in one country but not in its trading partners

# Other sources

- If information on imports is more complete than exports
- Divergence of data sources (use of enterprise survey vs. use of customs records)
- Reporting errors



# Reducing asymmetry?

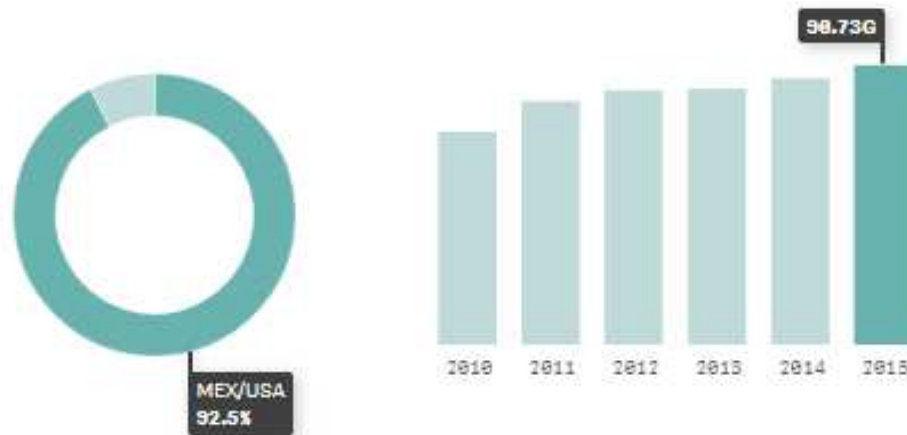
- Obtain partner data bilaterally or use internationally available data set (e.g., through UN Comtrade)
- Compare data at various groupings and level of details (use analytical tools)
- Analysis possible reasons (see previous slides)
- Align data as closely as possible or note the reasons of discrepancy as metadata
- Use the result to improve data quality (i.e., adoption of general trade system, addition of country of consignment, etc.)

Another example: North America

# Analyzing MEX Imports Asymmetries

We start by analyzing the absolute differences between MEX imports and USA/CAN exports at aggregated level (HS 2 digit level) between 2010 and 2015, in order to obtain a global overview and time series evolution.

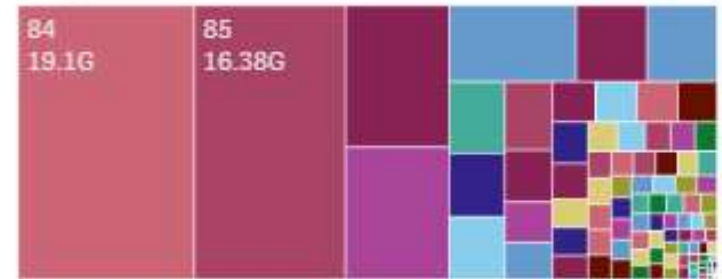
Note: The data are taken from UN Comtrade in June 2016 and extracted using a matching algorithm. No trade is considered as zero values, and the discrepancy is calculated accordingly.



Looking into the asymmetries of Mexican imports (compared to USA and Canada exports) in period 2010 and 2015, the biggest share is between MEX and USA (92.5%).

However, the asymmetries has been increasing in between 2010 and 2015, amounted to 98.7 bln US\$ in average.

## MEX/USA



Breaking down into commodity details, asymmetries with USA are in chapters 84 and 85 dominates the asymmetries (almost 50%). Chapter 84 consists of machinery products and chapter 85 composes electrical equipment.

## MEX/CAN



Whereas asymmetries with CAN are concentrated in chapters 87 (vehicles), 84 (machinery) and 85 (electrical equipment). Even though not visible, chapter 39 (article of plastics) is on the 4th position.

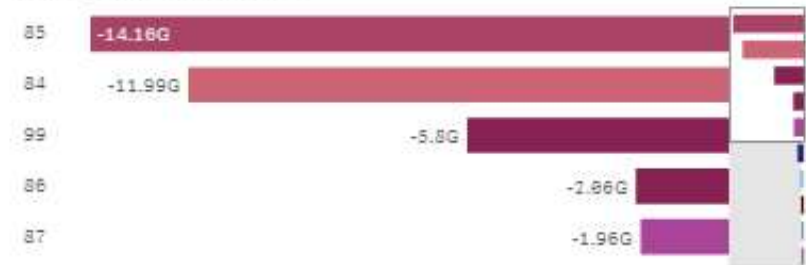
# Top Bottom HS 2 digit Analysis

**MEX/USA - Top 10**



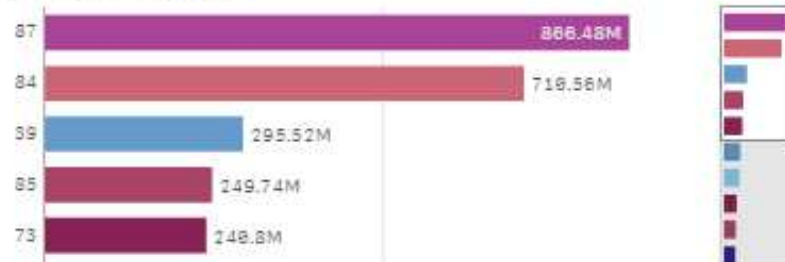
The positive asymmetry between MEX and USA (read: USA recorded more exports values than MEX imports values) is mostly in chapter 27 (mineral fuels), especially heading 2710 (petroleum products). This may be an issue of country consignment/origin or under coverage.

**MEX/USA - Bottom 10**



The biggest share of asymmetries are in chapters 85 (electrical equipment) and 84 (machinery) with negative discrepancies. It should be further investigated whether those goods are imported by programme IMMEX, and the asymmetries may be due to transfer pricing or country/consignment/origin.

**MEX/CAN - Top 10**

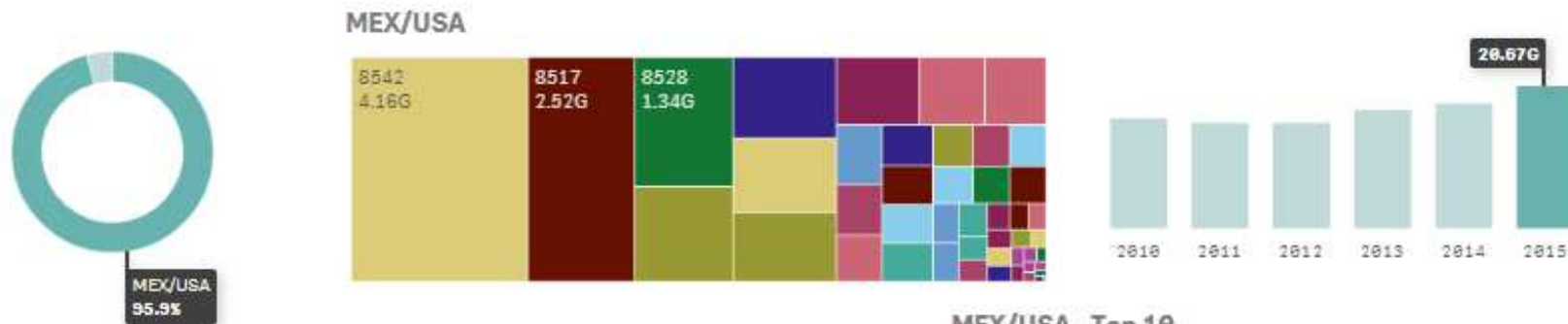


**MEX/CAN - Bottom 10**



MEX/CAN asymmetries are different than MEX/USA. The bulk of MEX/CAN discrepancies are positive, whereas MEX/USA are negative. However, the commodities are similarly concentrated in chapters 84, 85 with addition of chapters 87 (vehicles) and 39 (article of plastics). This may be an issue of country consignment/origin or under coverage.

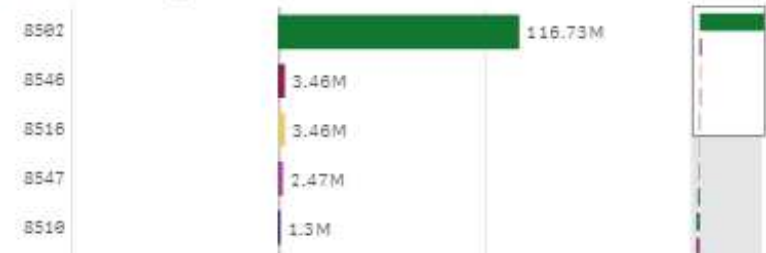
# MEX/USA Chapters 85: electrical equipment



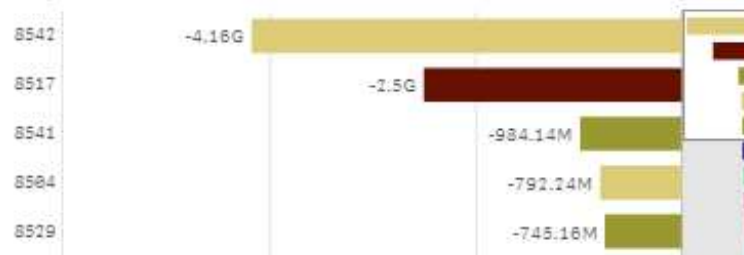
The asymmetry of MEX/CAN in chapter 85 (about 96% of total MEX/USA/CAN discrepancies) has been steadily increasing in the recent years. Drilling down at heading level, these commodities contribute to high asymmetries:

- \*HS 8542 (electronic integrated circuits) -4.2 bln US\$
- \*HS 8517 (electronic apparatus for telephony) -2.5 bln US\$
- \*HS 8541 (semi-conductors) -1.0 bln US\$
- \*HS 8504 (electric transformer) -0.8 bln US\$

**MEX/USA - Top 10**



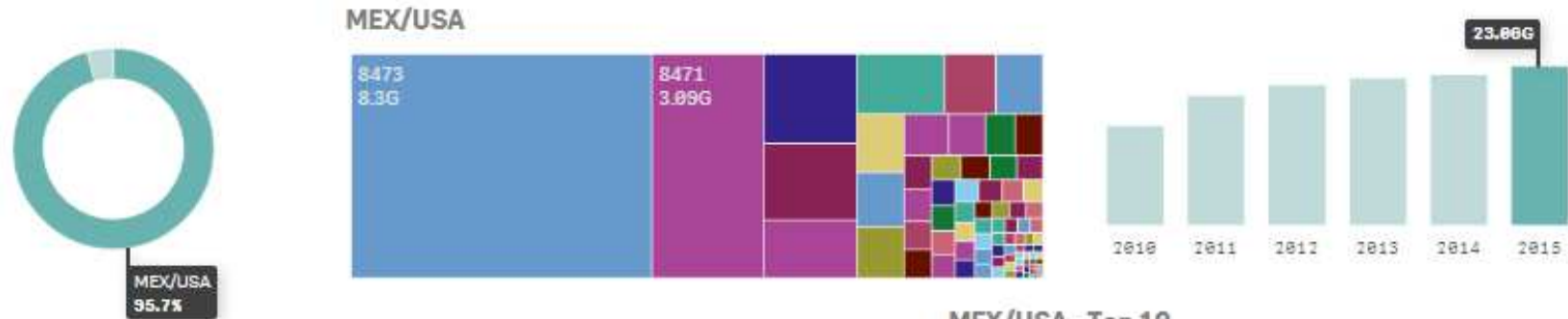
**MEX/USA - Bottom 10**



It's worth to point out that the major discrepancies in chapter 85 are all negatives (MEX recorded lower imports values then USA exports values).

It would be interested to investigate if any of it has to do with the affiliated trade (programme IMMEX), which could be a valuation issue (export at factory prices and imports at market value).

# MEX/USA Chapters 84: machinery



The asymmetry of MEX/CAN in chapter 84 (about 95% of total MEX/USA/CAN discrepancies) has been steadily increasing in the recent years. Drilling down at heading level, these commodities contribute to high asymmetries:

- \*HS 8473 (office machine parts and accessories) -8.3 bln US\$
- \*HS 8471 (computers) -3.1 bln US\$
- \*HS 8408 (compression-ignition engines) +1.0 bln US\$
- \*HS 8443 (printing machinery) -0.8 bln US\$

**MEX/USA - Top 10**



**MEX/USA - Bottom 10**



Theoretically, the major potential reasons of asymmetries are as follows:

- \* Country of origin vs. country of consignment
- \* Valuation issues (including transfer pricing)
- \* Trade system

Ref:

<http://unstats.un.org/unsd/tradekb/Knowledgebase/50657/Bilateral-asymmetries>

IMTS 2010 *new* data items may help in  
reducing bilateral asymmetries

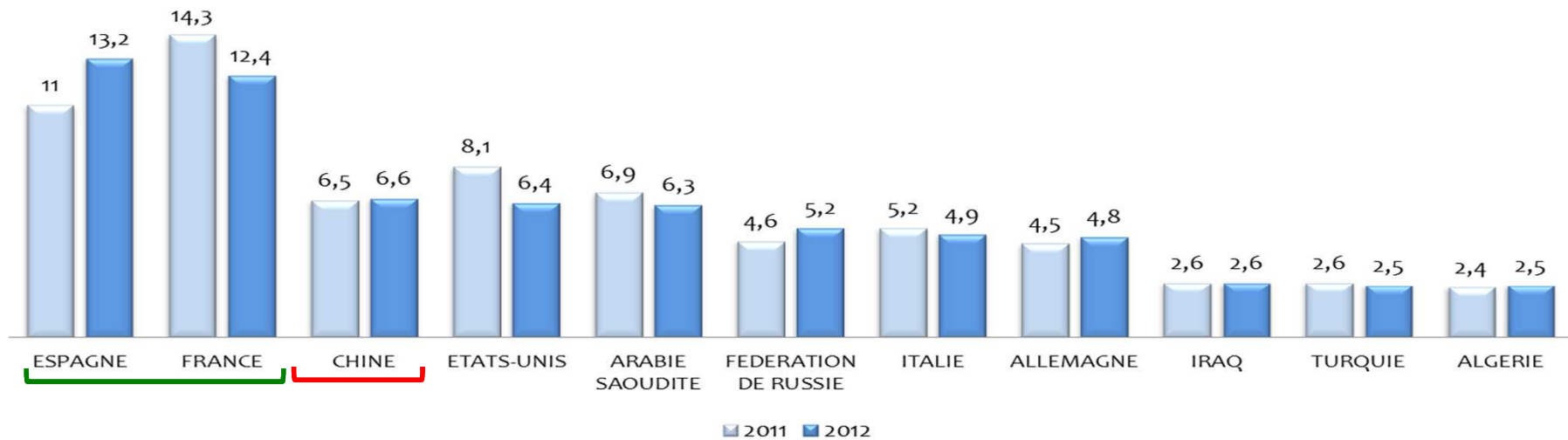
# Recommended data items as part of data dissemination

- Valuation
  - Imports on the FOB basis in addition to the standard CIF valuation;
- Partner country
  - Recommendation for the recording of a second partner country (country of consignment);
- Mode of transport
  - Add as additional data dimension;
- Customs procedure codes
  - Customs procedures applied to individual transactions to be made part of the data set provided by customs.

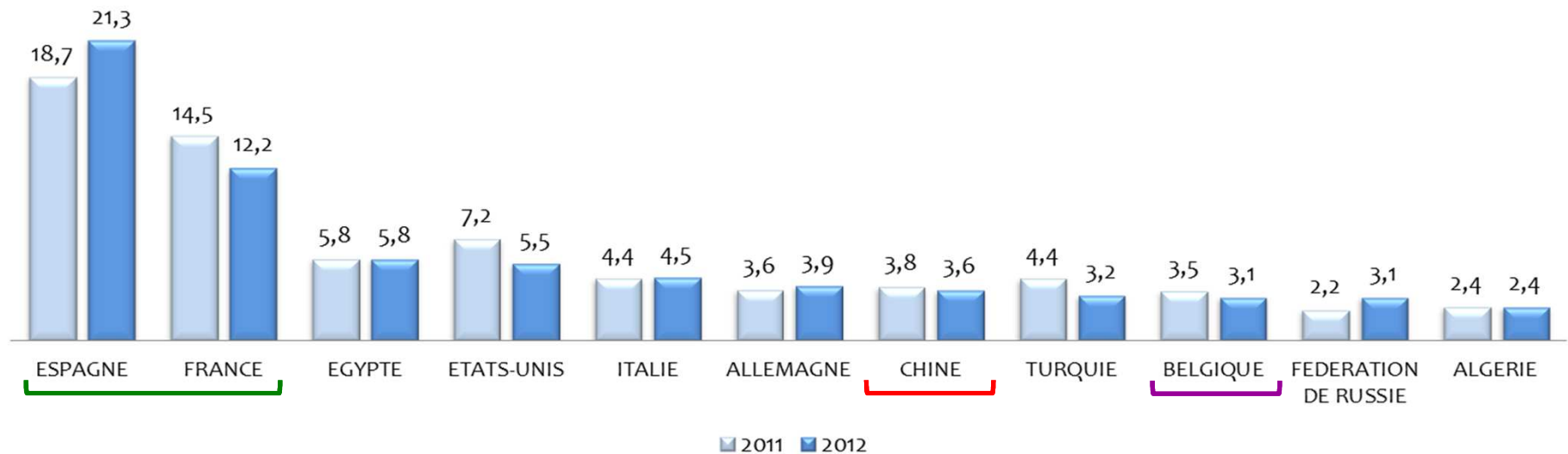


# Morocco: 2<sup>nd</sup> Partner Country

## Importations par pays d'origine



## Importations par pays de provenance



# Thank you

Please send your comments to  
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