



**Asymmetries in international  
merchandise trade statistics:  
A case study of selected  
countries in Asia and the  
Pacific**



**Marko Javorsek**

ASIA-PACIFIC RESEARCH AND TRAINING NETWORK ON TRADE

# Working Paper

NO. 156 | 2016

The Asia-Pacific Research and Training Network on Trade (ARTNeT) is an open regional network of research and academic institutions specializing in international trade policy and facilitation issues. IDRC, UNCTAD, UNDP, ESCAP and WTO, as core network partners, provide substantive and/or financial support to the network. The Trade and Investment Division of ESCAP, the regional branch of the United Nations for Asia and the Pacific, provides the Secretariat of the network and a direct regional link to trade policymakers and other international organizations.

The ARTNeT Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about trade issues. An objective of the series is to publish the findings quickly, even if the presentations are less than fully polished. ARTNeT Working Papers are available online at [www.artnetontrade.org](http://www.artnetontrade.org). All material in the Working Papers may be freely quoted or reprinted, but acknowledgment is requested, together with a copy of the publication containing the quotation or reprint. The use of the working papers for any commercial purpose, including resale, is prohibited.

**Disclaimer:**

The designations employed and the presentation of the material in this Working Paper do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries. Where the designation “country or area” appears, it covers countries, territories, cities or areas. Bibliographical and other references have, wherever possible, been verified. The United Nations bears no responsibility for the availability or functioning of URLs. The views expressed in this publication are those of the author(s) and do not necessarily reflect the views of the United Nations. The opinions, figures and estimates set forth in this publication are the responsibility of the author(s), and should not necessarily be considered as reflecting the views or carrying the endorsement of the United Nations. Any errors are the responsibility of the author(s). The mention of firm names and commercial products does not imply the endorsement of the United Nations.

## Asymmetries in international merchandise trade statistics: A case study of selected countries in Asia and the Pacific

Marko Javorsek\*

**Please cite this paper as:** Marko Javorsek (2016), "Asymmetries in international merchandise trade statistics: A case study of selected countries in Asia and the Pacific", ARTNeT Working Paper Series No. 156, 2016, Bangkok, ESCAP.

**Available at:** [www.artnetontrade.org](http://www.artnetontrade.org)

This paper is also posted in the Working Paper Series of ESCAP Statistics Division SD/WP/02/April 2016 and can be also downloaded from this link [http://www.unescap.org/sites/default/files/SD\\_Working\\_Paper\\_April2016\\_Asymmetries\\_in\\_International\\_Trade\\_Statistics.pdf](http://www.unescap.org/sites/default/files/SD_Working_Paper_April2016_Asymmetries_in_International_Trade_Statistics.pdf).

---

\*Marko Javorsek, Associate Statistician, Statistics Division, United Nations Economic and Social Commission for the Asia and the Pacific. The author expresses a special thanks to Tommaso Marinello, intern at ESCAP Statistics Division between 1 July and 4 September 2015, for conducting background research for this paper and pre-processing the data. The author also wishes to express his gratitude for comments to: Ms. Mia Mikic, Chief, Trade Policy and Analysis Section, Trade, Investment and Innovation Division, ESCAP; Mr. Ronald Jansen, Assistant Director, Statistics Division, United Nations Department of Economic and Social Affairs; Ms. Zeynep Orhun Girard, Statistician, Statistics Division, ESCAP; Ms. Rikke Munk Hansen, Chief of Economic and Environment Statistics Section, Statistics Division, ESCAP and to an anonymous referee. Any errors that remain are the sole responsibility of the author who could be reached at [javorsek@un.org](mailto:javorsek@un.org). A collaboration between the Statistics Division of ESCAP and ARTNeT in dissemination of trade policy relevant work is duly acknowledged.

## **Abstract**

This working paper introduces the concept of bilateral asymmetries in international merchandise trade statistics (IMTS), i.e. the discrepancies that can be seen in reported bilateral trade flows between trading partners. Such discrepancies mean that the value of exports reported by one country does not equal the value of imports reported by its partner, also called mirror data. These discrepancies impact bilateral trade balances and other economic variables reliant upon trade balance and thus are relevant from trade and economic policymaking. Asymmetries in bilateral trade statistics are a serious concern for the quality of statistics, especially from the perspective of consistency. They may also lead to misconceptions about trade balances among policy-makers, businesses and the general public. This paper provides an overview of the main concepts in IMTS and defines asymmetries in bilateral trade statistics. It outlines how to measure the discrepancies in bilateral trade statistics and provides a case study for 10 countries in Asia and the Pacific. The paper also provides an overview of the sources of bilateral trade asymmetries and suggests some basic actions that can be taken to improve the quality of IMTS and reduce bilateral asymmetries, or at least, allow researchers to balance bilateral trade flows for analytical purposes.

**Keywords:** international merchandise trade statistics, bilateral trade asymmetries, trade balance, valuation, discrepancies in mirror trade data, Asia and the Pacific.

**JEL classification:** C82, F13, F14, F15, F23, O19, O24

# Contents

Abstract.....	i
1 Introduction.....	1
2 Definition of basic concepts .....	1
2.1 International Merchandise Trade Statistics (IMTS).....	1
2.2 Bilateral trade statistics and asymmetries .....	2
2.3 Efforts to overcome the issues with bilateral trade asymmetries .....	3
3 Measurement of the degree of trade asymmetry.....	4
3.1 Bilateral trade discrepancy index .....	4
3.2 Interpretation of the discrepancy index.....	5
3.3 Presentation of data.....	6
4 Case studies .....	7
4.1 Regional case study.....	7
4.2 Case studies of selected countries.....	9
5 Sources of asymmetries in merchandise trade statistics .....	11
5.1 Differences in valuations of imports and exports .....	11
5.2 Differences in attribution of trade partners .....	12
5.3 Differences in recording re-exports .....	12
5.4 Other sources of discrepancies.....	13
6 Conclusion.....	14
References .....	17
Annex .....	19

## **Tables of Figures**

Figure 1: Bilateral trade discrepancy indexes for Cambodia and its partners, 2013 .....	9
Figure 2: Bilateral trade discrepancy indexes for Philippines and its partners, 2013 .....	10
Figure 3: Bilateral trade discrepancy indexes for Singapore and its partners, 2013 .....	11

## **Table of Tables**

Table 1: Possible interpretations of the bilateral trade discrepancy indexes for Country A .....	6
Table 2: Suggested presentation of bilateral trade statistics and associated discrepancies.....	7
Table 3: Bilateral trade asymmetries for the selected countries, 2013 .....	19

# 1 Introduction

International trade is regarded as a major driver of economic growth and its importance is recognized in many goals and targets of the 2030 Agenda for Sustainable Development.<sup>1</sup> Statistics are crucial to allow for evidence-based formulation and evaluation of policies, which means also that sustainable development is impossible without good data.<sup>2</sup> International trade statistics form part of this crucial set of data to inform policy-makers in their policy decisions and trade negotiations. Data to measure development challenges of countries need to be available. But, that is not enough, for data to be useful they need to satisfy certain quality standards, including being consistent between countries and over time.

International trade statistics suffer consistency challenges. Reported trade flows are not consistent between countries, creating discrepancies in international trade statistics, which can result in ill-informed policy. This paper discusses these discrepancies – called asymmetries in bilateral trade statistics, defines their measurement and illustrates their importance for the countries in Asia-Pacific. It also outlines the reasons for existence of the asymmetries and provides ideas for a further research agenda.

## 2 Definition of basic concepts

Trade statistics have a history dating back to the League of Nations in the 1920s, when the first international regulations were developed. These regulations have evolved substantially since then, most recently due to the increased globalization of production and distribution processes and the resulting increase in demand for more timely and accurate data on trade.

### 2.1 International Merchandise Trade Statistics (IMTS)

International merchandise trade statistics (IMTS) are concerned with data on physical movements of goods between countries, which are defined by the “International Merchandise Trade Statistics: Concepts and Definitions 2010” (UNDESA, 2011), referred to as the IMTS Manual in this paper. The Manual provides the basic framework of definitions and guidance to produce merchandise trade statistics,<sup>3</sup> and acknowledges that IMTS can be both the merchandise trade statistics compiled by the national agencies, as well as the consolidated and standardized trade statistics presented by international agencies. It also specifies that the terms ‘goods,’ ‘merchandise’ and ‘commodities’ can be used interchangeably for the purpose of trade statistics.

IMTS has traditionally measured the physical movements of goods across international borders or through special economic territories. The recording of IMTS depends on national legislation, mainly the customs regulations. As a result, customs records are traditionally the

---

<sup>1</sup> See A/RES/70/1.

<sup>2</sup> For a more detailed discussion see SDG 17 in Statistical Yearbook for Asia and the Pacific 2015 (UNESCAP, 2016).

<sup>3</sup> For detailed definitions see IMTS Manual (UNDESA, 2011) and IMTS Compilers Manual (UNDESA, 2013).

main source of IMTS for both imports and exports. However, some countries with more advanced statistical systems also use other data sources, such as enterprise surveys and administrative records associated with taxation. This dissimilarity in data sources could lead to some discrepancies in definition of trade, trade partners and in the valuation of goods traded between countries concerned.

The IMTS Manual establishes the important links between trade statistics and the broader frameworks governing economic statistics, such as the 2008 SNA and the BPM6, as well as the trade in services statistics, defined by the “Manual on Statistics of International Trade in Services 2010.”<sup>4</sup> Trade in services is increasing in amount and importance; however, it is also much more challenging to measure than trade in merchandise. This paper deals with trade in merchandise only.

It is important to note that some of the conceptual frameworks outlined in the 2008 SNA and the BPM6 differ with the concepts stipulated by the IMTS Manual.<sup>5</sup> The requirements for IMTS are to reflect the physical movement of goods across country borders, whereas national accounts and balance of payments compilation is more concerned with the change of ownership<sup>6</sup> of those goods. The former will include goods that enter and leave the territory of one country, but the latter will only include transactions that involve change of ownership between residents and non-residents.

Hence, trade statistics compiled on the basis of IMTS Manual will need to be adjusted to satisfy the needs of balance of payments compilation. One of the notable differences is in respect of goods for processing. In IMTS goods sent for processing to a different country are recorded irrespectively of the change of ownership. Whereas, goods that are sent abroad for processing without change of ownership and returned back after processing, are not recorded in the balance of payments.

## 2.2 Bilateral trade statistics and asymmetries

Bilateral trade statistics show bilateral merchandise flows between two countries, where one of the countries is the exporter of goods to the other, which is the importer of the goods. For each transaction there is a ‘reporting country’ – the country that reports the merchandise flow (can be either export or import), and a ‘partner country’ – the trading partner of the reporting country. As a result, a trade flow reported by country A can take two forms: (1) export of goods from country A to country B; or (2) import of goods to country A from country

预览已结束，完整报告链接和二维码如下：

[https://www.yunbaogao.cn/report/index/report?reportId=5\\_3015](https://www.yunbaogao.cn/report/index/report?reportId=5_3015)

