

# Mind the \$2 trillion Gap

\$2 trillion of missing trade in the world cannot be ignored | Equant Analytics 2016

## Key messages

- **We have found \$2.1 trillion more trade in the world than official reported statistics suggest.** This comes about from under-reporting which Equant Analytics corrects by the process of mirroring\* trade data for over 200 countries and trading jurisdictions as well as 12,800 products and sectors.
- **We developed the EADR (Equant Analytics Divergence Ratio) which measures the extent of the difference between officially published and mirrored data.** It is a warning light indicating where a country's trade data should be interrogated more closely for 'hidden' data or impacts from sanctions and tariffs.
- **An average of 11% of global trade over the past 15 years has been unaccounted for.** This makes it invisible to the broader global economy, financiers and governments.
- **We found that Switzerland had the largest numerical discrepancy in 2014 with the top 10 countries making up \$873bn of the \$2.1 trillion difference.** Switzerland's mirrored trade divergence from its published trade has been particularly acute since 2013 and more specifically in 2014, with a significant increase in oil and gas trade between Russia and Switzerland.
- **China has the second largest divergence in its trade statistics by value at some \$123.9bn in 2014, while Hong Kong has the third largest at \$123.2 bn.** Since 2003 China's import trade has diverged progressively less in percentage terms compared to Hong Kong's where the divergence has increased.
- **The key driver of the health of the global economy as we know is growth of total world trade.** Achieving truly accurate and comprehensive data on this and so being able to look forward and assess future growth is a central goal for many key decision makers.
- **We aim to make global trade data more reliable.** Unreliable global trade data weakens the quality of decision making by banks, investors and governments which may deter decisions to invest, finance or trade.

\*A mirroring approach reverses the trade flow for two countries and creates a weighted average of the two so that import and export values are consistent. The approach is used by the World Trade Organisation (WTO) and the Organisation for Economic Cooperation and Development (OECD) and applied to the larger United Nations Comtrade dataset for over 200 countries and trading jurisdictions and 12,800 products and sectors.

## 1.0 Executive Summary

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- 1.1 Equant Analytics has calculated world trade at \$21.22 trillion compared with WTO's \$19.09 trillion, a difference of \$2.1 trillion, or 11% more trade in the world than reported statistics suggest for the latest available data in 2014. The Equant Analytics mirroring approach to calculating the real value of trade flows in the world covers over 200 countries and trading jurisdictions and 12,800 products and sectors.
- 1.2 Equant Analytics forecasts world trade to grow by 1.5% annually to \$21.5 trillion in 2015 and \$22.1 trillion by 2016. This is more conservative than the WTO's forecast of 2.8% for 2015 and 3.9% in 2016.<sup>1</sup> Despite our more conservative forecast, we expect global trade to be \$1.9 trillion more in 2015 and \$1.7 trillion more in 2016 than the WTO forecasts.
- 1.3 The extra \$527bn of trade we expect between 2015 and 2016 means that total world trade finance will increase by \$448 billion, of which \$148 billion is through bank intermediated finance via \$77 billion in loans and \$71 billion in additional letters of credit<sup>2</sup>. It also suggests a further \$2.2 billion of additional yield for the banking sector<sup>3</sup>.
- 1.4 The unreliability of reported statistics makes it hard for anyone involved in trade or trade finance as an advisor, financier, analyst or official, to know exactly what is being traded at any particular point in time. This creates risk for the regulatory and financial system in particular which may deter decisions to invest, finance or trade.
- 1.5 We have developed the Equant Analytics Divergence Ratio (EADR) which provides a measure of how different a country's mirrored data is from its reported data. Where the EADR is consistently high over time it suggests that there are risks from systematic under-reporting of trade. Where the EADR is sporadically high it suggests that a country's trade is responsive to changes in the geo-economic or geo-political climate for trade. The EADR provides a measure of trade divergence and trade volatility. It is a warning light indicating where a country's trade data should be interrogated more closely.
- 1.6 Switzerland's mirrored trade diverges by 68% from its published trade. Switzerland's divergence has been particularly acute since 2013, and more specifically in 2014 with a significant increase in oil and gas trade between Russia and Switzerland.
- 1.7 The top 10 countries with the largest numerical deviation between their officially published trade data and the Equant Analytics data are: Switzerland, China, Hong Kong, UAE, France, UK, Russia, Singapore, Philippines and Malaysia. In total these 10 countries account for \$873 billion of the \$2.1 trillion difference in global trade for 2014.

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<sup>1</sup>[https://www.wto.org/english/news\\_e/pres15\\_e/pr752\\_e.htm](https://www.wto.org/english/news_e/pres15_e/pr752_e.htm)

<sup>2</sup> Assumes, as does the IMF, that 85% of the value of world trade is supported by trade finance and insurances and that 33% of this is bank intermediated.

<sup>3</sup> Assumes a yield of 1.5% of the value of bank intermediated trade finance.

## 2.0 Mind the gap

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Equant Analytics has found that there is nearly \$2.1 trillion more trade between countries in the world than the World Trade Organisation (WTO) estimates. The Equant Analytics figure for the total of world trade in 2014 is \$21.22 trillion while the WTO's figure is \$19.09 trillion. This represents 11% more trade in the world than currently available statistics suggest. We have calculated this on the basis of a mirroring methodology applied to the Comtrade international goods trade statistics covering over 200 countries and trading jurisdictions and 12,800 products and sectors.

The key driver of the health of the global economy as we know it is growth of total world trade. Achieving truly accurate and comprehensive data on this and so being able to look forward and assess future growth is a key goal for many key decision makers. We aim to make global trade data more reliable. Unreliable global trade data weakens the quality of decision making by banks, investors and governments which may deter decisions to invest, finance or trade.

Further:

- World trade growth, even at Equant Analytics' conservative forecast of 1.5% between 2015 and 2016, will yield an additional \$527 billion in trade value
- Total world trade finance will account for \$448 billion, of which \$148 billion extra in bank intermediated finance via \$77 billion in loans and \$71 billion in additional letters of credit<sup>4</sup>
- This represents some \$2.2 billion globally in potential additional yield for the banking sector<sup>5</sup>

The differences in the data come about through the mirroring process and a few examples serve to illustrate the point:

- **Afghanistan:** raw data from Comtrade is missing data between 1996 and 2007. After that, exports are barely reported and, as a result Afghanistan's raw data trade with the world was \$10.1 billion by 2015. The mirroring process returns a value for Afghanistan's trade of \$14.4 billion.
- **Kenya:** raw data is missing in 2012 and 2014. In 2015 the raw data suggests a figure for total trade with the world of just over \$11 billion. The refinement and mirroring process, however, yields a figure of \$27.6 billion.

These examples alone represent around \$21 billion in trade but, multiplied across 200 countries and 12,800 products and sectors, it is easy to see where a gap of \$2 trillion might come from.

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<sup>5</sup> Assumes a yield of 1.5% of the value of bank intermediated trade finance.

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## Methodological note

The \$2.1 trillion is the product of the method we use to clean and harmonise international trade data. The approach we have taken is the same technique as the OECD and the WTO use to mirror data between two trading partners to make the value of imports and exports consistent. Where there is little or no trade data for one country, we capture their trade by looking at their partners' trade with them.

Our aim was to create a symmetric dataset where imports equal exports. To deal with all the discrepancies, where a trade flow between two countries is asymmetric, the data is weighted towards the stronger data; where there is no data for one country, the data for the partner is used. This ensures that imports and exports have the same value between countries and also uncovers trade between countries as well as systematic under/over-reporting by countries.

This is not a new phenomenon. The gap has remained reasonably consistent across the world, but as emerging economies have improved their data collection processes, the gap between what is published by the United Nations in its Comtrade database and individual emerging economies has narrowed. Where gaps persist, they are often systematic – in other words, countries provide different trade numbers to those that are reported directly to international authorities.

This is clearly a concern as it hides more trade, and therefore more business, than what is accounted for in the global economy. It also suggests that the fluidity of the trade system is itself a potential risk to investors, analysts, advisers and traders who need a precise picture of what is happening in order to manage risk appropriately.

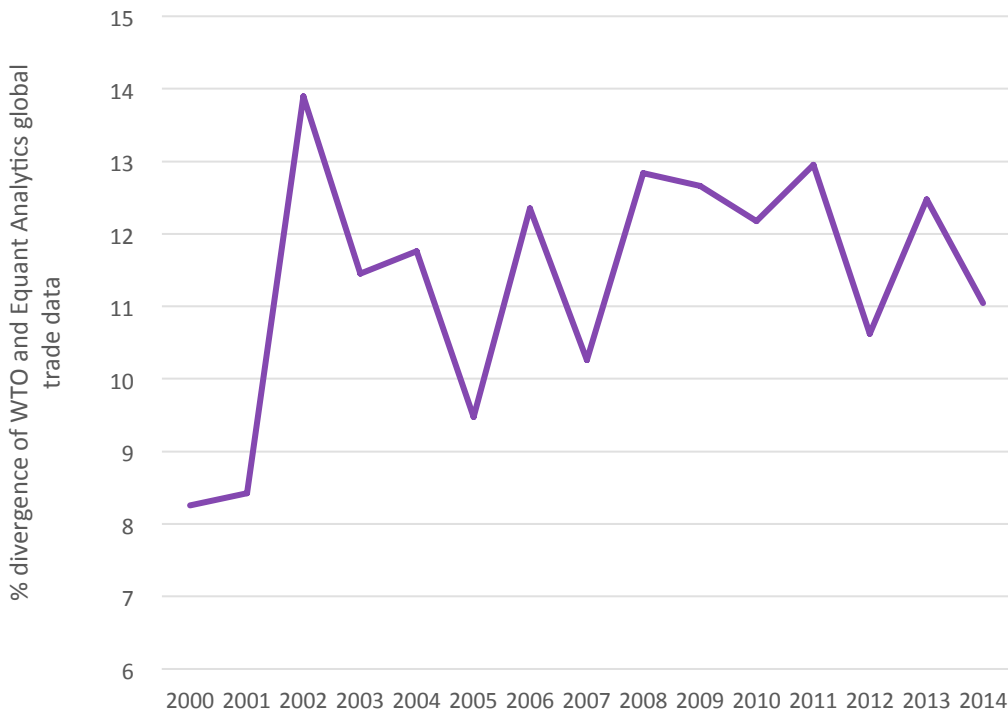
Analysts, investors, traders and even governments are missing the true value of trade. This means that:

- Potential opportunities are being missed, particularly in emerging regions
- Publicly available data is considered reliable leading to potentially erroneous decisions
- Risks from trends that are embedded in the data are not understood and therefore not managed
- Assumptions are made about geopolitical or regulatory effectiveness (e.g. on sanctions)

### 3.0 The Equant Analytics Divergence Ratio (EADR)

#### Measuring the gap

To provide a regular indicator of data reliability, we developed the Equant Analytics Divergence Ratio (EADR). This ratio is the divergence between Equant Analytics' comprehensive dataset and what is currently publicly available through Comtrade, the World Trade Organisation and country statistics. This ratio has averaged 11% over the past 15 years, as depicted in Figure 1 below, suggesting that there is always a significant amount of global trade which is not visible and thus unaccounted for in the global economy.



**Figure 1: The EADR for global trade, 2000-2014**

The EADR for global trade may be consistent over time with an average of 11% over the past 15 years, but that is not the case when analysing the EADR for specific countries. For example, the EADR for Ireland is over 30% today yet prior to the introduction of the euro it was just 7%. Similarly, Malta's trade has become one of the most divergent of all countries, particularly since the financial crisis. There tend to be spikes in the ratio lasting a couple of years, particularly around sanctions and trade agreements.

The EADR provides an alert for countries that are suddenly and substantially diverging from published statistics. As such it provides the trade, trade finance and trading community with a red flag where the divergence is significant enough to warrant further investigation.

Our EADR indicator helps measure two things:

- The **divergence** between a country's published trade data and the "mirrored" trade data over time. This suggests that the country in question has a poor record of trade reporting. This applies to some emerging economies, particularly in the Middle East, North Africa and Sub-Saharan Africa. This trade is missed or hidden not just from the governments but also from regulators and financiers.
- The **volatility** of a country's published trade data and the "mirrored" trade data over time. This is indicative of a country's sensitivity to national economic, geo-economic or geo-political events. High volatility could highlight distinct trends against sanctions policies or trade agreements. This often reflects a country's trade, tax or financial status.

Figures 2 and 3 below highlight a selection of emerging and developed countries with their respective EADRs for 2014. As expected, the ratio is mainly higher for emerging economies. Interestingly, however, amongst the developed countries some like Switzerland, Ireland and Luxembourg stand out as having high discrepancies with their published statistics and hence raise questions.

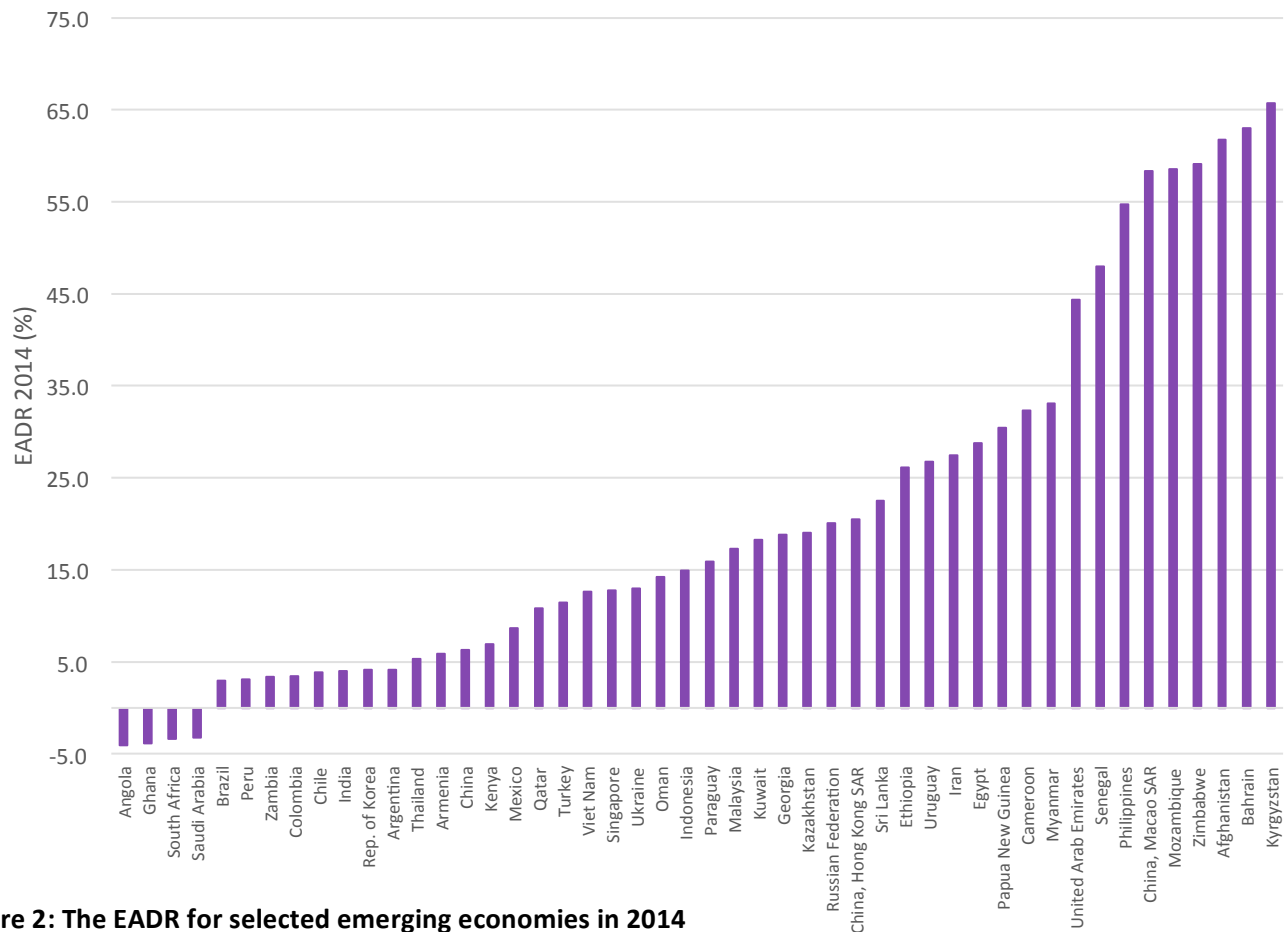
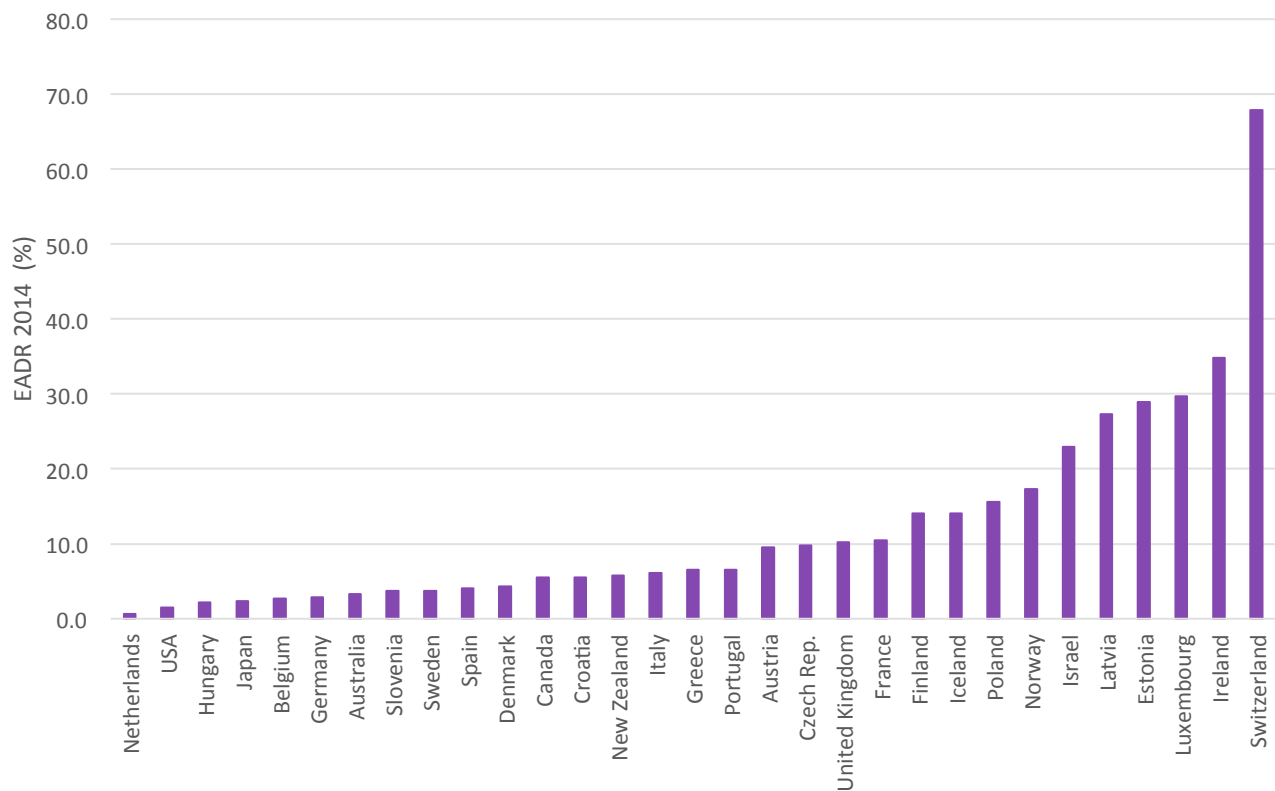


Figure 2: The EADR for selected emerging economies in 2014

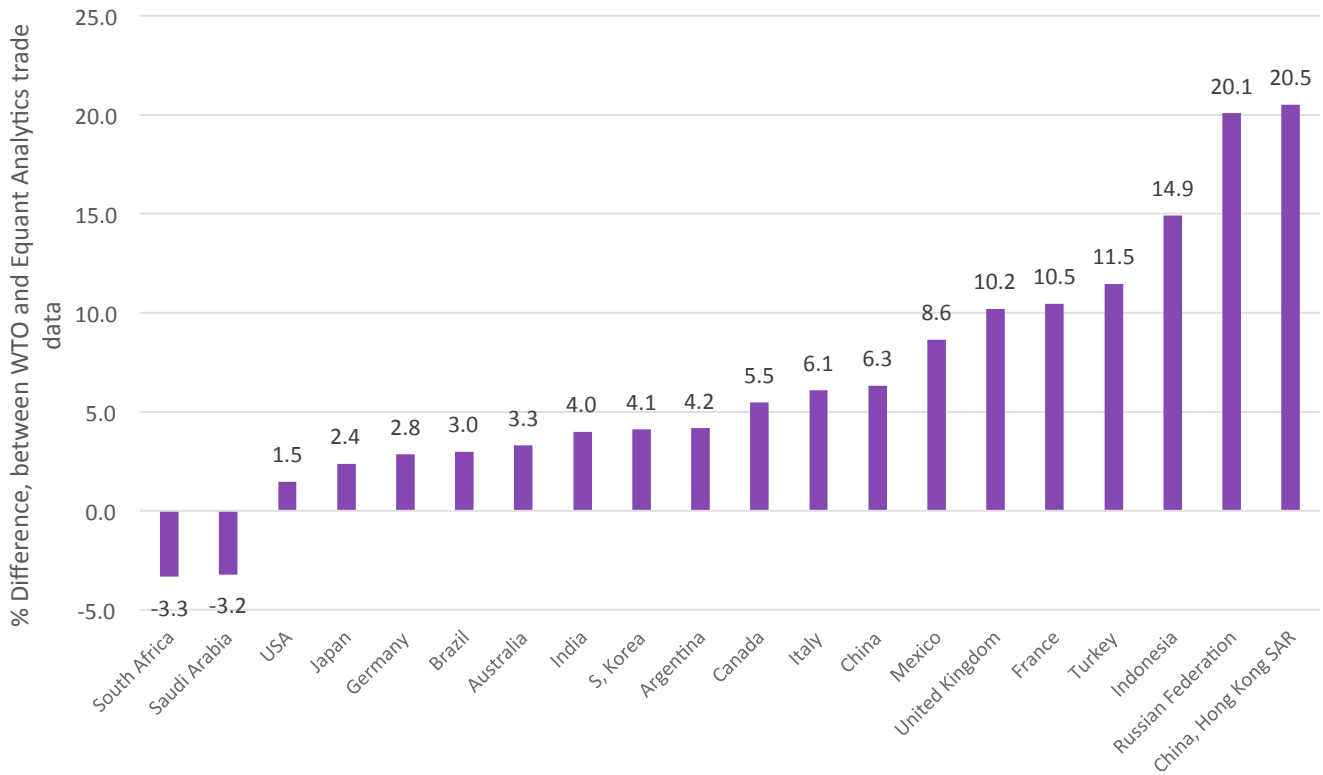
Further analysis into these questions on Figure 3 shows:

- Switzerland’s imports from Russia grew from \$23 billion in 2013 to \$169 billion in 2014; of which \$117bn was accounted for by oil and gas
- Ireland’s trade in aerospace grew by 261% between 2013 and 2014 while its imports of oil grew by 102%



**Figure 3: The EADR for selected developed economies in 2014**

With a few exceptions, the majority of the G20 countries fall within the average EADR of 11%, as can be seen in Figure 4. Russia, Hong Kong and Indonesia stand out but all other countries fall in line with or below the global average of 11%. In fact, even China which is so often criticised by the markets for the unreliability of its data, has a ratio of 6.3% which is lower and thus more reliable than both France and the UK. Worth noting that due to the size of the Chinese economy, this 6.3% is a smaller ratio than for the UK and France, but still represents a higher value of trade discrepancy.



**Figure 4: The EADR for the G20 in 2014**

As well as using EADR as a comparison across countries, we can also use it to analyse the reliability of a country's data over time. For example, Figure 5 shows the UK's data to 1996. The UK EADR was 10% versus the WTO data and 9% versus the UN Comtrade data in 2014. If we look at the time period from 1996 for exports and imports, there are actually only four occasions where trade has diverged from the official statistics by more than 6% since 1996. Hence, the UK has a low EADR over time with some periodic divergences and has always remained within the average 11% of global EADR.



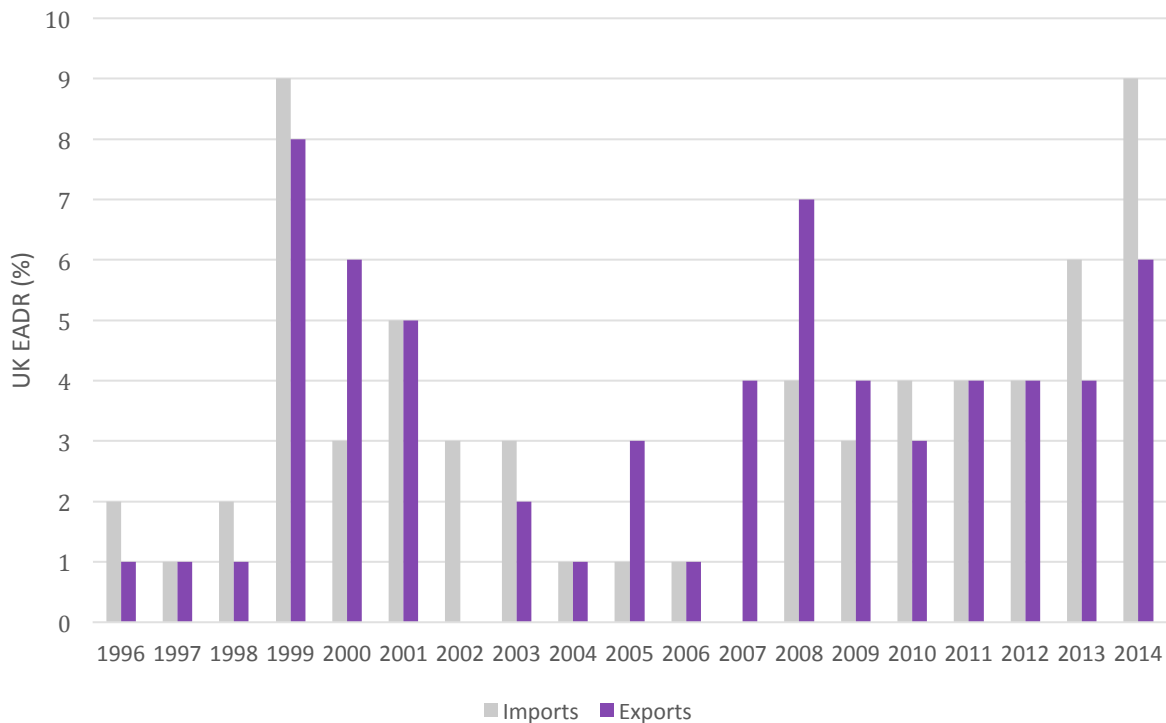


Figure 5: UK Export and Import EADR, 1996-2014<sup>6</sup>

### Why divergence is interesting

Unlike the UK where the divergence is sporadic, and marginal, over time there are many emerging economies, particularly within sub-Saharan Africa, where the differences can be large and significant. The gap for Liberia, for example, is over 1000%, whilst the top 10 countries (which include Bermuda, Benin, Gambia, Togo and Aruba) all have gaps of over 225% accounted for largely by poor reporting of trade statistics in those countries.

These large and persistent EADR divergences highlight that there is scope for trade that is less compliant with global regulations. Hence, very high divergence ratios are an automatic warning sign for lawyers and financiers.

<sup>6</sup> Note, in 2002 EADR of the UK for Exports was zero (0), the same was the case for imports in 2007.

## 4.0 How reliable is China's data? Hong Kong holds the answer

China has the second largest divergence in its trade statistics by value at some \$123.9 bn in 2014, while Hong Kong has the third largest at \$123.2 bn. Since 2003 China's import trade has diverged progressively less in percentage terms compared to Hong Kong's where the divergence has increased. This is because of the changing nature of trade between the two countries following the Closer Economic Partnership Agreement signed in 2003 and implemented in 2004.

The goal of the Closer Economic Partnership Arrangement (CEPA), was to achieve the status of "two countries-one system," creating "rules of origin" whereby good originating in Hong Kong can be treated as Chinese in origin, as with other Chinese semi-autonomous regions. All import duties between the two countries are removed giving Hong Kong businesses tariff-free access to the Chinese market and removing all tariff barriers to trade in goods and services between the two countries. China does not report its imports from Hong Kong, but Hong Kong reports its exports to China.

There is a common external tariff in some sectors (such as whisky) but because the agreement is a "common economic partnership agreement" as opposed to a Free Trade Area, the objective of a common external tariff across all sectors is an objective rather than specific goal. This appears to affect Hong Kong's EADR more than China's.

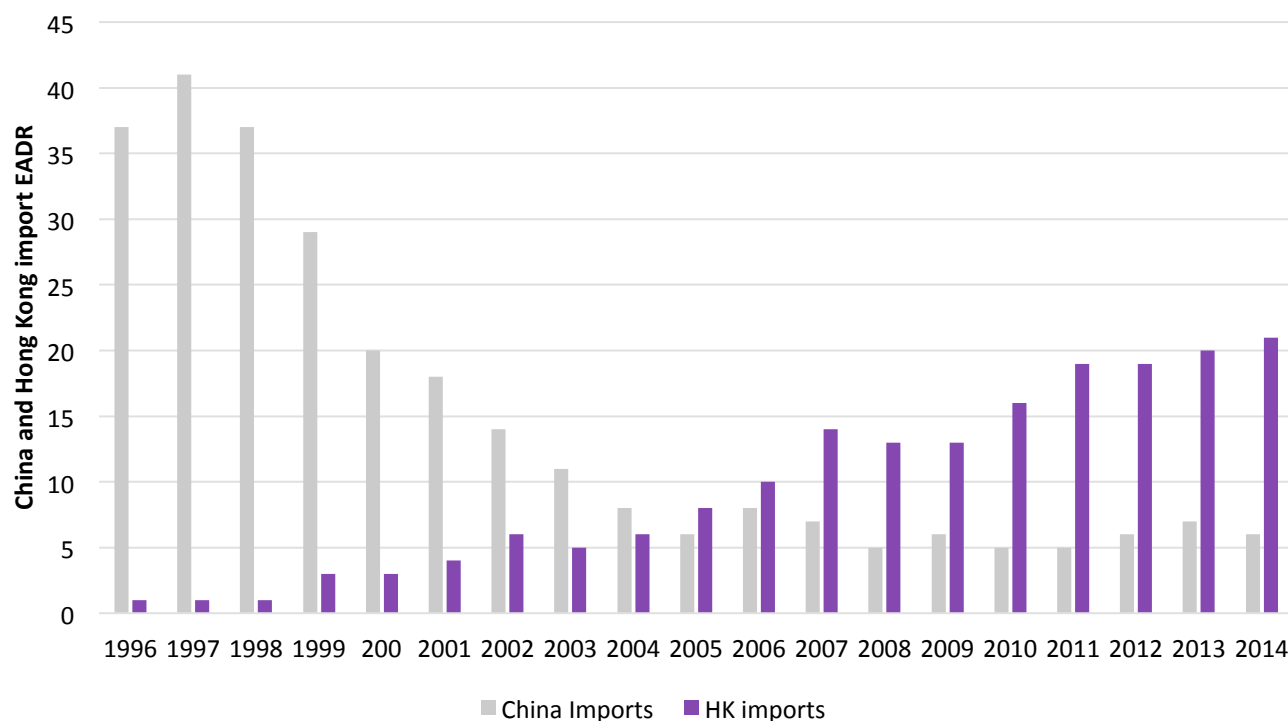


Figure 6: Hong Kong and China's EADR over time (imports)

## 5.0 Conclusion

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Trade flows are fascinating, not least because of their association with geo-politics and geo-economics. Wayward trade data is even more interesting because it has the potential to prove suspicions about trade diversion and data manipulation and the EADR approach is intended to create a mechanism whereby divergences can be identified and flagged for further investigation. The EADR does not substitute for published trade data, it simply adds a risk measure to that data assessing its divergence from what Equant Analytics sees in its data.

We believe that our analysis and development of EADR is helpful for all those involved in international trade, whether as an adviser, financier or investor. The EADR and the data it encompasses gives a more accurate picture of the \$2.1 trillion of trade that is hidden from the official statistics at any point in time.

As a key constituent of the health of the global economy, it is essential for decision-makers to have accurate and comprehensive trade data; our core aim is to make global trade data more reliable. Unreliable global trade data weakens the quality of decision making by banks, investors and governments which may deter decisions to invest, finance or trade.

**Dr Rebecca Harding**  
**Co-Founder & CEO**  
**+44 (0) 7511 873 544**  
[rh@equant-analytics.com](mailto:rh@equant-analytics.com)

**Thanos Papasavvas**  
**Co-Founder & CIO**  
**+44 (0) 7500 355 953**  
[tp@equant-analytics.com](mailto:tp@equant-analytics.com)

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