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World Trade in Services: Evidence from A New Dataset

by Prakash Loungani, Saurabh Mishra, Chris Papageorgiou, and Ke Wang

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I N T E R N A T I O N A L M O N E T A R Y F U N D

**IMF Working Paper**

Research Department

**World Trade in Services: Evidence from A New Dataset\***

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**Abstract**

Using a newly constructed dataset on trade in services for 192 countries from 1970 to 2014, this paper shows that services currently constitute one-fourth of world trade and an increasingly important component of global production. A detailed analysis of patterns and stylized facts reveals that exports of services are not only gaining strong momentum and catching up with exports of goods in many countries, but they could also trigger a new wave of trade globalization. Research applications of the trade in service dataset on structural transformation, resilience, labor reallocation, and income distribution are outlined.

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## 1 Introduction

The structure of economic production is continuously evolving, with trade in services playing an ever greater role. Services export is an increasingly important component of a nation's export basket. Services exports are also growing as a share of the world economy. The share of services export in total goods and services export has doubled from around 9 percent in 1970 to over 20 percent by 2014.

Although there are several likely channels that are responsible for driving up demand for world trade in services, none is as instrumental as advances in technological change. Technological innovations provide a wide array of services to be carried out in one location and consumed in many other places. Historically, buyers and sellers needed to be face to face. However, increasingly many services between buyers and sellers can be traded globally across and within borders almost instantly through satellite networks. The internet and other systems of network technologies like mobile phones, big data, and artificial intelligence are providing technical changes to production techniques and business processes. Software has become the main component of all hardware systems. This has given services a physical presence like goods; they can be produced, and stored. But perhaps it is the virtual capabilities of services, such as being transported cheaply and swiftly in binary bits, that make it even more desirable than exported goods. These structural changes are putting services at the center of world commerce, perhaps heralding a new wave of globalization.

Are the drivers of growth and development shifting away from manufacturing into services? It may be too early to tell, but rapid inter-and-intra sectoral resource reallocations are offering new investments opportunities in a variety of tradable service activities. More recently, there is also a growing sentiment in policy and media that the pace of globalization driven primarily by exports in goods, may have started to decelerate after two decades of uninterrupted progress. Could trade in services support a future wave of globalization, trade and growth? These questions have sparked an interest in understanding the implications for trade in services on productivity, jobs and growth, but very little is known about global services trade.

A nascent yet growing body of evidence has begun to challenge the long held tenets of economic development that industrialization is the prime engine of growth. However, due to deeply rooted prejudice against service sector, this classical view still remains prevalent. In *The Wealth of Nations*, Adam Smith questioned the social value provided by "churchmen, lawyers, physicians, men of letters

of all kinds, players, buffoons, musicians, opera-singers, opera-dancers, etc.” Similarly, William Baumol (1967) fostered the view that services are a sector resistant to improvements in productivity. Provision of services—such as restaurant meals, haircuts, and medical checkups—required face-to-face transactions. These did not lend themselves easily to standardization and trade, the source of growth in productivity and hence income. Furthermore, Kaldor (1967) put forth an argument for the supremacy of the industrial sector for the promotion of broad economic growth.<sup>1</sup> Recent evidence highlights that business services seem to allow productivity growth by the same Kaldorian mechanisms that have traditionally made manufacturing the key driver of growth (see, e.g., Meglio, Gallego, Maroto, and Savona, 2015; Flaaen, Ghani and Mishra, 2013). It is well accepted that the stages of diversification follow a non-monotonic path through the development pathway (see Imbs and Wacziarg, 2003). India’s idiosyncratic pattern of development has been driven by service-led growth, China’s growth as a manufacturing powerhouse quickly propelled its economy to a middle-income level (Kochhar, Kumar, Rajan, Subramanian, and Tokatlidis, 2006). However, at this juncture many middle-income countries including China are seeking new sources of growth to be service-led (McKinsey, 2013). Further, as many resource-rich and low-income countries face the Dutch-disease symptoms, service-led growth may propel the manufacturing base and offers opportunities for future growth strategies in these countries. The growing tradability of services will remain an imperative for diversification and competitiveness of nations across the development spectrum (Copeland and Mattoo, 2007; Reinsdorf and Slaughter, 2009; Gervais and Jensen, 2014; Leo and Philippe, 2014).

In this paper, we introduce a new disaggregated annual panel data set on global trade in services for 192 countries, more detailed than any earlier efforts. The data is broken down into one and two-digit disaggregation, providing as many as 27 services export sectors.

Using this rich dataset, it is shown that trading services are gaining momentum in world trade and are becoming an increasingly important component of global production. Our analysis documents global trends in trading services and provides stylized facts documenting how countries differ on various dimensions of exporting services. The paper makes the case that trading services are not only catching up with exports of goods in many countries, but they could help continue the strong globalization process started by exported goods. We argue that this development would have

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<sup>1</sup>For example, Kaldor’s “second law” states that there exists a positive relationship between growth in manufacturing production and growth in manufacturing productivity, with an implication for increasing returns in the manufacturing sector.

serious implications to shifts in structural transformation, labor allocation, and income distribution – issues that we start to consider later on in the paper.

The rest of the paper is organized as follows. The next section describes in simple language the construction of the dataset, leaving details for the Technical Appendix. Section 3 provides a rich set of stylized facts for the world, country-income groups, and a few selected country cases. Potential research applications of the dataset in the areas of structural transformation, macroeconomic volatility, labor reallocation and income inequality, are discussed in Section 4. Section 5 concludes.

## 2 Constructing a New Dataset

We construct new estimates by using information from the International Monetary Fund’s Balance of Payments Statistics (BOPS). More specifically, we merge one, two, and three-digit classification to obtain 66 categories of services exports for 192 countries based on the Balance of Payments Manual 6 (BPM6).

The IMF Statistics Department (STA) started publishing balance of payments (BOP) and International Investment Position (IIP) data on a BPM6 presentational basis with the August 2012 editions of the IMF’s International Financial Statistics (IFS) and the online Balance of Payments Statistics (BOPS) database. The data series began with 2005 data in electronic media and with 2008 data in the hard copy of IFS. To present data on a consistent BPM6 presentational basis, IMF Statistics Department (STA) had worked closely with IMF member countries. For each country, one of three approaches was followed:

- (i) economies implemented BPM6 and provided their own BPM6 estimates;
- (ii) economies reported BPM5 data to STA and opted for a “generic conversion” of their data to a BPM6 basis using standard rules that are broadly applicable to a large number of economies and over time; or
- (iii) economies opted for a “customized” conversion of their BPM5 basis data, by adjusting the results from the “generic conversion” in consultation with the IMF.

With the September 2015 edition of the IFS, STA started re-disseminating an economy’s own official BPM6-basis estimates for all years for which the economy developed such estimates, and

converted BPM5-basis estimates for years where there are no official BPM6-basis estimates. Major changes on BOP services classification from BPM5 to BPM6 include:

- (i) BPM6 introduces financial intermediation services indirectly measured (FISIM);
- (ii) methodological changes in insurance transactions;
- (iii) treatment of Intellectual Property; and
- (iv) addition of manufacturing services and maintenance services.

Countries report services data to STA as part of the balance of payments data collection for re-dissemination in publications (IFS/BOP database). These data are only available at world-partner level only, which means that information is only available for countries' export services to the rest of the world following the BOP standard classification, which can be found in the BPM6 Manual. Bilateral level data for services are published by WTO and the World Bank with much smaller coverage than the dataset we have constructed using BPM6. For convenience, users can refer to the classification of services as in BPM6/BOP and the MSITS 2010. The process of compilation and validation of services data, is done individually by the responsible agencies in each country and may differ according to the available source data by category of service.<sup>2</sup>

The BOPS is the only source of harmonized world data on services trade that includes developing countries. The final dataset that we use is in an annual panel form for the time period 1948 – 2014. Given data quality concerns in earlier years, we focus on the available data from 1970 – 2014.<sup>3</sup> Appendix Table 1 shows the BPM6 classification metrics. The details highlight the degree of disaggregation used for an integrated dataset for meaningful analysis.<sup>4</sup>

To improve the data quality and maximize available information, we have made the following modifications to the raw data. For one-digit level services data, the main modifications include:

- (i) Dropping any negative values of the export data because negative export values imply those observations are actually imports. We dropped 178 observations at one-

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<sup>2</sup>BOP data: <https://www.imf.org/external/np/sta/bop/bop.htm>. For more information on the compilation of services, we advise researchers to consult the BPM6 Compilation Guide (see link below), Chapter 12 on Services and Chapter 14 in the MSITS Compilers Guide (also including country examples), but also other relevant chapters, as needed. BPM6 Compilation Guide: <http://www.imf.org/external/pubs/ft/bop/2007/bop6comp.htm> and MSITS 2010 CG: <http://unstats.un.org/unsd/tradeserv/msits/CGmsits2010.htm>.

<sup>3</sup>While we make publicly available the entire dataset extending back to 1948, we urge caution in using the data before 1970 as in earlier years many sectors have seen drastic changes in definitions and measurement.

<sup>4</sup>See Technical Appendix and IMF's BPM6 Manual Chapter 12 for details of what is included in each service category.

digit level out of 50,582 of total one digit observations. Note that in sum, we dropped 315 observations out of total observations 158,602 at all digit levels.

(ii) Dropping 7,457 observations at the one-digit level with values equal to 0 which imply the export sectors do not exist. In sum we dropped 22,773 observations at all digit levels.

(iii) Generating the total sum of exports by summing up the export values at one-digit level and compare the sum with the reported total exports value.

(iv) Calculating total count of sectors at the one-digit level to provide information for data availability.

We processed two-digit level data with the following procedures:

(i) For three sectors “1.A.b.2 Maintenance and repair services n.i.e.”, “1.A.b.8 Charges for the use of intellectual property n.i.e.”, “1.A.b.12 Government goods and services n.i.e.”, we naturally used the one-digit data because by classification those sectors are reported at one-digit level.

(ii) For some sectors, if no two-digit level observations are available, we kept the one-digit level to represent the sector.

(iii) If a sector had partial information of the two-digit level observations, we compensated the data by generating “Other” categories at the two-digit level by subtracting one-digit level sector value with available two-digit level subsectors. For example, if a country only had data for one-digit “1.A.b.6 Insurance and pension services” and subsector “1.A.b.6.1 Direct insurance”, we kept the subsector “Direct Insurance” and compensated the other subsectors of insurance with “other” which is equal to the difference of the insurance sector and direct insurance.

(iv) If a sector had all categories of two-digit level sectors reported but the sum of the two-digit sectors does not equal to the one-digit level value, we recalculated the two-digit level values using the same ratio and one-digit level value to adjust for the differences.

(v) If a sector had all categories of two-digit level sectors reported but all the two-digit observations equal to 0, we contract the sector because no real data exist.

A data portal that includes the newly constructed dataset in its entirety along with tools to produce charts and stylized facts is made publicly available.<sup>5</sup> Figure 1 summarizes the number of countries by income groups reported in our dataset. In 2014, there is reliable aggregate data on services export reported for 56 advanced economies and 111 developing countries.

### 3 Patterns and Stylized Facts

This section uses the newly developed dataset discussed in the previous section to identify stylized facts on trading services for the world as a whole, different country-income groups, and selected country cases, highlighting the increasingly important role of services export in the global economy.

#### 3.1 World

Services export has become more important in trade. As Figure 2 shows, the share of services export has increased from around 9 percent in 1970 to around 20 percent in 2014. Similarly, the share of services export in world GDP has also increased from 1 percent in 1970 to over 6 percent in 2014.

The rise in services trade has brought about a shift in gains from trading services across variety of new activities. Many services sectors are gaining from reduced transportation costs thanks to technological changes and growing tradability. In addition, services export plays a central role in globally interconnected production networks and value chains. For instance, while Transport and Travel have declined in relative importance of national export bundle, they are increasingly a vital backbone for the rest of the economy. From the early 2000s, expanding merchandise trade and international air passenger traffic are responsible for significant growth in the transport sector. In 2008, world transport exports reached US\$ 891 billion (WTO, 2016).<sup>6</sup>

At the same time, services such as Telecommunication, Computer and Information services have emerged as one of the most dynamic sectors. Between 1995 to 2014, world exports of computer and information services expanded much more rapidly than any other services sector, recording as much as 18 per cent growth on average annually. In 2014, world exports of computer and information services reached an estimated US\$ 302 billion. Similarly, financial services are increasingly internationalized and growth of financial technologies (fin-tech) will likely continue to witness their

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<sup>5</sup>The data portal could be accessed through the IMF web site at: [<http://data.imf.org/ITS>].

<sup>6</sup>Interestingly, following WTO accession, growth in services exports is even higher than in other economies even if in the years prior to WTO accession, growth mirrored the world average (see WTO 2015).

exports in low income and developing countries. At the global level, financial services have grown rapidly in world exports and have bounced back since the financial crisis to US\$ 349 billion in 2014. Figure 3 illustrates the evolution of global services export basket between 1990 and 2014. We clearly notice the increasing importance of computer and financial sectors from the density shift.

### 3.2 Country-income groups

The rise in services trade is not just an advanced economy story. Our stylized facts show that globalization of services has been more significant for developing countries, where services export is growing much faster. Services export from developing countries have grown twice as fast compared to advanced economies, growing tenfold since 1990. Developing countries share in world services export market has increased from 3 percent in 1970 to over 20 percent in 2014. Figure 4 plots the share of world exports, with advanced economies on the left axis and developing countries on the right axis.

Figure 5 shows evolution of various services export sectors by income groups – High-income countries (HIC's), Middle-Income Countries (MIC's), and Low-Income Countries (LIC's). We note that developing countries are fast taking over market share across various service exporting sectors, not just in traditional but modern services as well. Travel and Transport service exports occupy a major share of exports from developing countries, occupying about 20 percent of global market share of transport services and around 30 percent of travel services. The growth of modern services such as Business, Computer and Information, Finance and Intellectual Property services from developing countries is also remarkable. Developing countries have been steadily increasing their global market share in modern services reaching almost 30 percent of global exports. In particular, developing countries have been consistently taking over the world market in Business services (including R&D, professional, and management consulting), as well as in Intellectual Property and Computer and Information service exports. Impressive also is the growing share of developing countries in Financial services (occupying over half of world financial services export) as well as Construction services. The range of modern services that can be digitized and traded globally is constantly expanding. India has been a pioneer (Dehejia and Panagariya, 2010), but many other emerging markets are also finding it easier to generate productivity growth in services than in industry.

Indeed, recent evidence suggests that expanding modern services may be a remedy for countries

facing the “middle-income trap”. This would work in practice, when traditional sectors with low productivity shed labor, and high productivity modern sectors (be they in goods or services) grow and hire more labor. Both processes are needed if a country is to climb out of the middle-income trap (see Flaaen, Ghani and Mishra, 2013).

### 3.3 Geographical regions

This section examines the evolution of trading services from a regional perspective. The intention here is to recognize that a country’s experience with exporting services depends not only on its stage of development and income level, but also the geographical region it belongs to. As we will see below, the experience of Asia over the last two decades is a very good point in case.

Europe is still the leader in services export. East Asia and Pacific region has been catching up and has recently become more significant than North America, a phenomenon primarily driven by Japan and China (Figure 6, Panel A). There is rapid inter and intra-sectoral reallocation taking place into services within South Asia (SAR), Latin American countries (LAC) and Middle East and North Africa (MENA) too. Figure 6 Panel B, illustrates the evolution of services export by individual sectors across geographical regions of the world. The charts show that East Asia & Pacific are catching up in sectors such as Travel and Intellectual Property. South Asia is catching up faster in Computer and Information services. MENA countries are impressively also catching up fast in export of Business and Computer and Information services. While North America and Europe dominate across a variety of service exports, Asian countries are fast catching up.

In reality, services account for a greater proportion of global trade and the export of services are a crucial component of productivity growth. Europe (which is the largest commercial service exporter) has two-thirds of its total GDP in the services sector, and for four-fifths of growth in recent years is due to the services sector (see e.g., Uppenberg and Strauss, 2010). Similarly, over 70 percent of the surge in labor productivity in the US economy post 2000 is attributed to productivity gains in services (see e.g., Bosworth and Triplett, 2008). Productivity growth driven by services requires both fixed investment in building and ICT technologies, but also requires intangible capital in terms of new computer software and skills in other disciplines so as to create new organizational structures and business models, sometimes based entirely on services.<sup>7</sup>

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<sup>7</sup>A growing body of literature has found that using intermediary inputs into the production process, services account for over half of world trade. This study is focused on the gross value of services trade. The goods and services we buy are composed of inputs from various countries around the world. However, the flows of goods and

### 3.4 Country trends

The growth in services export for some countries has been astonishing with almost 100-fold increase in the last 30-40 years. Table 2 lists the top service exporters in the world reporting the export value (in billions of current US\$) and world rank based on export value for respective years. The United States has remained the top services exporter while Europe as a region is the largest service exporter. Several European nations are near the top of the list, but many developing countries are catching up fast. China, India, are in the top 10, whereas Thailand, Brazil, Indonesia, Egypt are in the top 30 and moving up rapidly.

At the sectoral level, the dynamics of the largest exporters is also rapidly evolving. Figure 7 illustrates patterns for the top exporters across various exporting sectors. The United States is still one of the top exporters in many sectors, while the UK, France, Germany and some other European countries are key players too. Emerging countries like India and China show larger role in service exports in Transport, Travel and IT. In addition, Hong Kong has emerged as a prime Financial services export hub, similarly, Israel a Computer services export hub and Thailand in Travel services. These are only a few examples to demonstrate our new dataset's usefulness in exploring in more detail and depth the country-specific experiences with trade in services.

Figure 8 presents the share of country services export in world services export market in 1990 and 2014. It is clear that the importance of advanced economies like United States, France or Germany has declined significantly in world service export market (from 20 to 14, 10 to 5, and 7 to 5 percent, respectively). Other emerging markets like China, India, Singapore, Korea, and Hong-Kong have increased from almost negligible in 1990 to significant positions in 2014 (4.8, 3.2, 2.9, 2.3, and 2.2, respectively).

The United States has been the world leader in services export. Traditional large sectors such as Travel and Transport continue to contribute heavily to US services export, even as other modern services have grown quickly such as Business services, Financial services, and the use of Intellectual Property. From the 2-digit level data, the main growing subsectors under Other Business Services are, R&D and Consulting services (Figure 9).

There has been much attention regarding India's services export miracle defying the conventional laws of structural transformation and economic development (Dehejia and Panagariya, 2014).

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services within these global production chains are not always reflected in conventional measures of international Trade in Value-Added (TiVA). Many initiatives are improving data standards on the role of services in input-output tables.

Indeed, the share of services export in India has tripled to over 3 percent of world services export during the period 2000-2013. This stands in contrast to China, where export growth was driven by exported goods (Figure 10).

Less known beyond the common impression of being a prime manufacturing exporter is the fact that China has become one of the most important services exporter (rank 5th in the world in 2014), as well as one of the largest services importer. Travel, Transport, and Other Business Services have become the largest exporting sectors for China in the last few years. China has also made progress in exports in Computer and Information and Construction and building significant momentum in other service sectors as well (Figure 11).

Turning to India, the largest sectors that dominated exports in this dynamic economy were Computer and Information and other Business services (Figure 12). Indeed, India is the largest Computer and Information service exporter in the world at around US\$74 billion in 2014. This is quite impressive and highly unique for an emerging market. However, it is interesting to point out that India is behind China in more traditional export services, such as, Transport, Travel, and Manufacturing services with a gap of over US\$60 billion.

## 4 Research Applications

This section provides potential research applications using the newly developed dataset. Specifically, we report preliminary evidence of the emerging importance of modern services in the global economy, the role of exporting services in the process of structural transformation, and also consider implications of the upward trend in trading services for macroeconomic volatility, labor reallocation and inequality.

### 4.1 Modern services

A growing share of world trade takes place without proximity of buyer and supplier. These ICT enabled services are typically called modern services. Many other services, called traditional services, still require proximity of buyer and seller. Services such as Transport, Travel or Retailers still require physical presence, however, they too are gaining from network effects and technology enabled tradability (Loungani and Mishra, 2014). The line between the traditional-and-modern service activities will only become more blurred, with many traditional services becoming modern.

For simplicity, let us classify Computer, Information, Business, Intellectual property and Financial services as modern services. The results are presented in Figure 13. This shift to modern services export has spread across countries at different income levels leading hi-technology services export becoming one of the fastest growing sectors of the world economy. The gains from technological advancement and trade provide lower entry barriers for such modern services to be tradable, and also enable reduced transport costs. The rise of modern services is an important trend concerning global export reallocation, particularly related to growth strategies for developing countries.

Similarly, Figure 14 Panel A plots the world map where the color denotes the export value in billions of dollars for a country in 2014. The color spectrum of darker blue indicates services export value exceeds US\$200 billion, a dark red indicated export values below US\$10 billion. It is easy to identify countries like China, Russia, and Australia that have exported US\$230, US\$66, and US\$54, billion respectively. In similar light, comparing the level of services export and relative growth in services export can be viewed in Panel B. The color scheme is the same as above, however, the bubble size represents the compounded annual growth rate of services export between 2000 and 2014. It is interesting to note that many Middle East, African and Latin American countries have witnessed services export growth over 30 percent during this period.

## 4.2 Structural transformation

There is also some suggestive evidence that movements in service value added are more correlated to country level GDP growth outcomes. The relation of service growth with overall economic growth has become stronger overtime, hence we highlight results only for latest time period concerning 2010-14. Figure 15 Panel A below plots the average annual growth in services, manufacturing, and agriculture value added against per capita GDP growth for almost all countries in the world between 2010-2014. It is shown that the slope between services and GDP growth is steeper than the relevant slope for manufacturing and agriculture. Specifically, the magnitude of the correlation coefficient is 0.60 between services growth and per capita GDP growth, compared to 0.24 for manufacturing growth versus per capita GDP growth. In addition, the R-square for service value added plot is 0.51 and the R-square for manufacturing value added is 0.19.

Our evidence illustrates that exports of services is also associated with higher per capita GDP growth. Figure 15 Panel B plots the average per capita GDP growth between 2010-14 and sectoral

export growth. The magnitude of the coefficient on services export growth is substantially higher than other sectors. The coefficient estimates are 0.07 for Agriculture, 0.04 for Mining, 0.08 for Manufacturing, and 0.14 for Services.

### 4.3 Resilience

Services trade has been more resilient than trade in goods to shocks and financial crisis. Recent evidence from the United States shows that services trade has weathered the financial crisis much better than goods trade. For example, as of February 2009, the value of US goods imports had declined year-on-year by 33 percent and the value of goods exports by 21 percent; services imports and exports each had declined by less than 7 percent. Particularly important to note is that the range of modern services has continued to grow since the crisis. Perhaps more important is the fact that services export from developing countries has been more resilient than from advanced economies.

There are two potential reasons for the resilience of services trade: First, demand for a range of traded services is less cyclical, and second, services trade and production are less dependent on external finance (Borchert and Mattoo, 2009). Similarly, recent research using firm-product destination exports for Belgium has shown that the particular resilience of services is explained by a significantly lower elasticity to demand in export markets. Services exports declined on average 5 percent less than exports of goods following a 1 percent decrease in GDP growth in destination countries for Belgium. Again, modern business services have been substantially more resilient than traditional services (Ariu, 2014).

In this vein, Figure 16 plots the average annual growth in goods and services export for the world, highlighting the crisis years. We note that services export has been more resilient than goods exports globally.

### 4.4 Labor reallocation

Trade in services also offers opportunities for labor reallocation and job creation for the decades ahead to address the growing polarization of labor markets. The demand for jobs for the future global workforce would be led by the technology infrastructure that powers the internet and system of network technologies. As automation of routine tasks and codification of job tasks becomes more prevalent and macro-critical, national economies are already starting to reallocate labor based on

such consumer preferences and forces of global demand. Evidence from United States and European economies has shown that specialized local labor markets in routine tasks have differentially adopted information technology.

These technical forces have placed low-skill labor into service occupations (employment polarization) and evidence across various recent studies has reaffirmed that earnings growth are at the tails of the distribution (wage polarization), especially at low end of service occupations and at the very high end, with a hollowing out at the middle (Autor, 2010; Autor and Dorn, 2013). Jobs in manufacturing have witnessed a secular decline, not just in advanced economies but across developing economies as well.

For illustration purposes, Figure 17 plots the average annual growth in total employment of countries (for period 2010-2014) against the average annual growth in services export for the same time period. The upward sloping curve has many uncertainties, but provides some support to the hypothesis that on average, countries that experience higher growth in exporting services also experience fast job growth.

#### **4.5 Income inequality**

Finally, export of services may be more inclusive than the traditional goods based model of the world economy that is well accepted. Figure 18 plots the level of Gini coefficient (Solt, 2014) as an average for 1980-2014 against the average natural log of services export, across a large number of developing and advanced countries. The second chart shows the relationship between inequality and services exports in percent of GDP. Interestingly, it is shown that there is a negative correlation between the change in export services and income inequality. An explanation could be related to the previous discussion on labor reallocation which may trigger an upward labor mobility benefiting primarily low- and middle-income workers. Another plausible explanation is that female labor employment increases in countries with a sizable export service sector, thereby providing a downward pressure in gender inequality which in turn translates to lower income inequality. Examining these and other potential mechanisms by which export services could play a catalytic role in reducing inequality is a promising area of future research.

## 5 Conclusion

This paper constructs a novel dataset on trade in services covering 192 countries from 1970 to 2014 drawing on information from the IMF's Balance of Payments Statistics (BOPS). Using this new dataset, the paper then proceeds by assembling a rich set of stylized facts and emerging patterns on export services for the world as a whole, different country-income groups, geographical regions, and several selected country cases. Finally, research applications are outlined, including those on structural transformation, macroeconomic volatility, labor reallocation, and inequality.

The evidence from the analysis in this paper makes the case that trade is rapidly shifting away from manufacturing and into services. Could this be a good thing for the global economy which for so long depended on the stable engines of manufacturing production and exports? Could the future wealth of nations be written on the technological foundation and dynamism of exporting services? The industrial revolution built the manufacturing process with the steam engine, division of labor, electricity and mass manufactured production. The post WWII era provided the foundations of modern day computing and electronics. Today, structural changes are putting services at the center of world commerce, heralding a service revolution. Evidence from this paper suggests that export of services may indeed be a game-changer, offering an opportunity to revive and sustain globalization. Thanks to the growing tradability of services, service led growth could be the new norm for countries seeking an alternative growth strategy where manufacturing resources are exhausted. And in that case the economics literature on international trade agreements based on tariff agreements covering trade in goods should be revisited to seriously consider trade-in-services agreements (Staiger and Sykes, 2016).

Technological innovation is increasingly making services exportable at low prices, and thus causing a shift in a 60-year-old economic paradigm about tradable versus nontradable sectors (Meade, 1956; Swan, 1960; Corden, 1960), in that countries do not need to build a domestic market or invest first in a manufacturing sector, but rather "leapfrog" directly to exporting services. In such a case, service globalization offers new hope for countries at various stages of economic development. Growing tradability of services may help with the diversification strategies for resource-rich countries and low-income countries that are highly concentrated exporters. For advanced economies, harnessing the benefits of trade in services will likely remain a key factor to retaining their global competitive edge that powers the internet, and high value components in global value chains.

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**Table 1. BPM6 Service Credit Account Categories**

Service Sector: 1 digit level	2 digit level
Charges for the use of intellectual property n.i.e.	--
Construction	Construction abroad Construction in reporting economy
Financial services	Explicitly charged and other financial services Financial intermediation services indirectly measured (FISIM)
Government goods and services n.i.e.	--
Insurance and pension services	Auxiliary insurance services Direct insurance Pension and standardized guaranteed services Reinsurance
Maintenance and repair services n.i.e.	--
Manufacturing services on physical inputs owned by others	Goods for processing abroad Goods for processing in reporting economy
Other Business Services	Professional and management consulting services Research and development services Technical, trade-related, and other business services
Personal, cultural, and recreational services	Audiovisual and related services Other personal, cultural, and recreational services
Telecommunications, computer, and information services	Computer services Information services Telecommunications services
Transport	Air Transport Other mode of Transport Postal and courier services Sea Transport
Travel	Business Personal

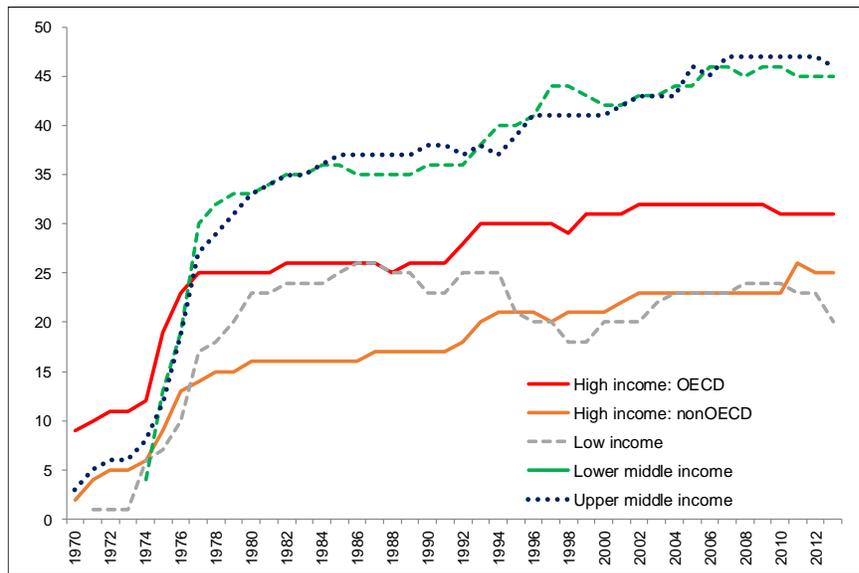
Sources: BPM6, IMF.

**Table 2. Largest service exporters in the world (in billions of current US\$)**

	1980	Rank (1980)	1990	Rank (1990)	2000	Rank (2000)	2010	Rank (2010)	2014	Rank (2014)
<b>Top Exporters</b>	7.6	1	147.9	1	290.4	1	563.3	1	710.6	1
	6.5	3	56.4	4	123.5	2	269.3	2	361.7	2
	1.5	4	61.3	3	83.1	4	227.0	3	277.6	3
	3.7	2	77.7	2	96.7	3	201.7	4	276.1	4
			5.9	23	78.7	5	117.5	7	232.0	5
	0.0	5	41.4	6	69.4	6	134.6	5	163.1	6
	3.0	21	4.6	26	16.7	24	117.1	8	156.3	7
	7.2	7	30.0	7	49.9	9	124.7	6	155.0	8
	3.0	128	0.0	141	0.0	156	0.0	174	140.4	9
	1.4	32	3.4	30	18.1	22	89.1	14	133.4	10
	1.6	8	27.9	8	52.8	8	112.9	9	132.7	11
							98.5	12	123.9	12
	3.9	12	18.3	11	45.9	10	95.0	13	118.4	13
	7.7	6	46.2	5	56.7	7	100.7	11	114.0	14
	5.0	16	10.8	17	32.7	12	83.3	15	112.1	15
<b>Emerging Markets</b>	1.5	30	6.4	21	13.9	27	34.3	29	55.3	23
							29.0	31	53.1	25
	3.7	48	8.0	19	19.4	20	36.5	26	51.9	26
	2.0	26	3.2	33	10.4	30	35.4	27	48.1	28
	1.1	37	3.9	28	14.0	26	34.7	28	41.9	29
	3.9	19	6.6	20	19.3	21	37.7	25	41.3	30
	1.7	29	3.8	29	8.4	34	30.8	30	40.0	31
	1.4	31	3.2	32	5.6	37	17.8	39	25.5	35
			2.5	37	5.2	38	16.7	40	23.5	38
	2.4	25	6.0	22	9.8	31	23.8	34	21.9	39
	5.4	14	11.6	16	13.5	28	15.2	43	21.1	40
	1.1	40	0.6	59	1.8	61	10.4	50	20.0	41
	2.5	24	3.4	31	5.0	39	16.1	41	16.8	42
					4.7	44	18.3	38	14.9	43

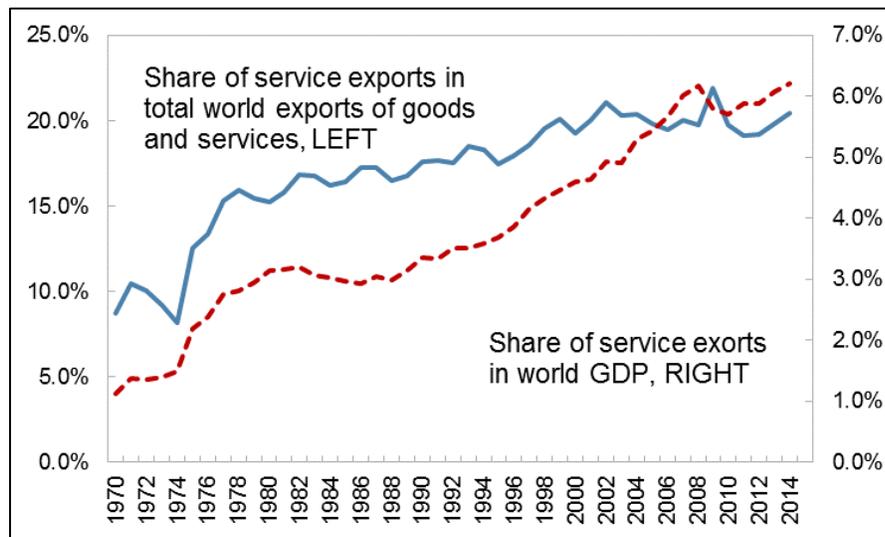
Sources: BPM6, World Economic Outlook, and authors' calculations.

**Figure 1. Countries reporting service exports data in BPM6, by income groups**



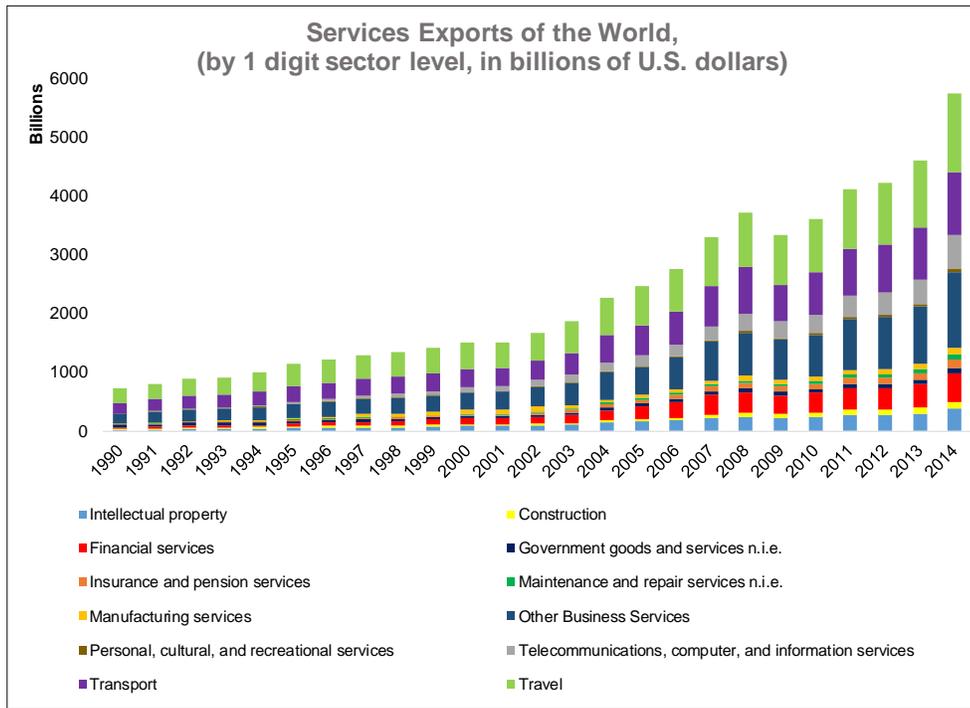
Sources: BPM6, and authors' calculations.

**Figure 2. Share of services exports in total world exports and world GDP**



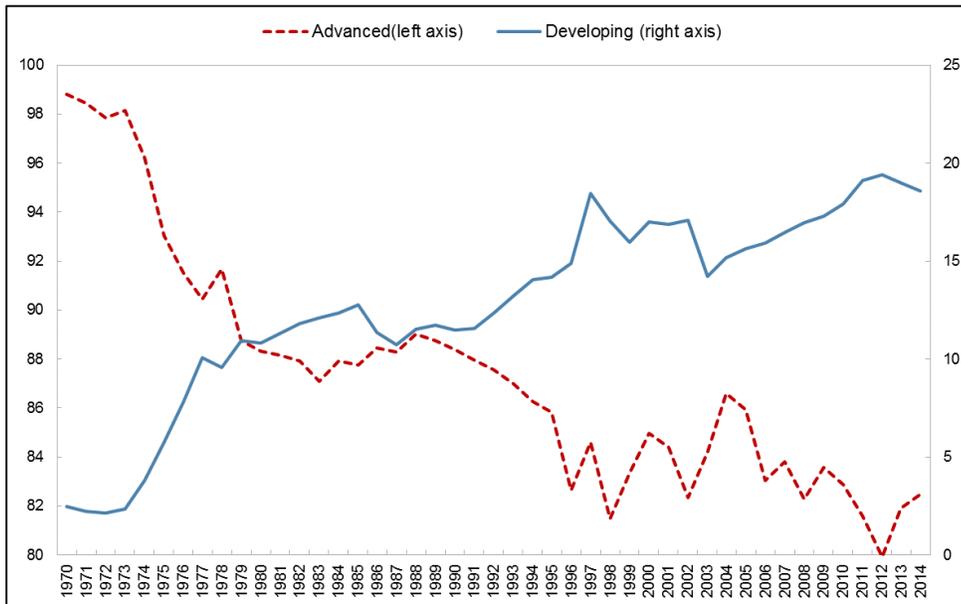
Sources: BPM6, World Economic Outlook, and authors' calculations.

**Figure 3. Service exports of the world by sector**



Sources: BPM6, and authors' calculations.

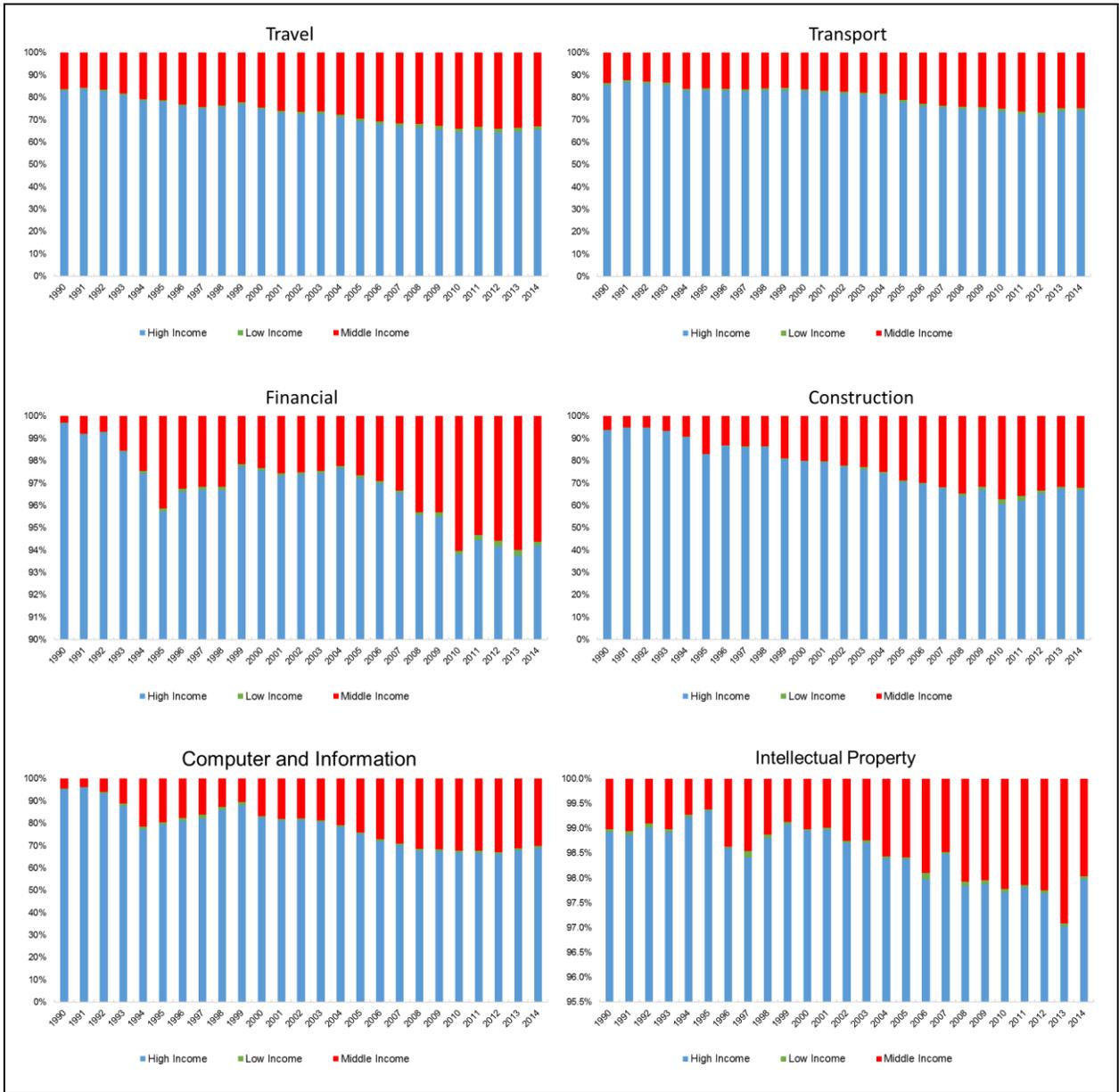
**Figure 4. Share of world service exports in Advanced vs. Developing countries**



Notes: Developing countries include low-income, and lower- and upper-middle income countries following the World Bank's country income classification.

Sources: BPM6, and authors' calculations.

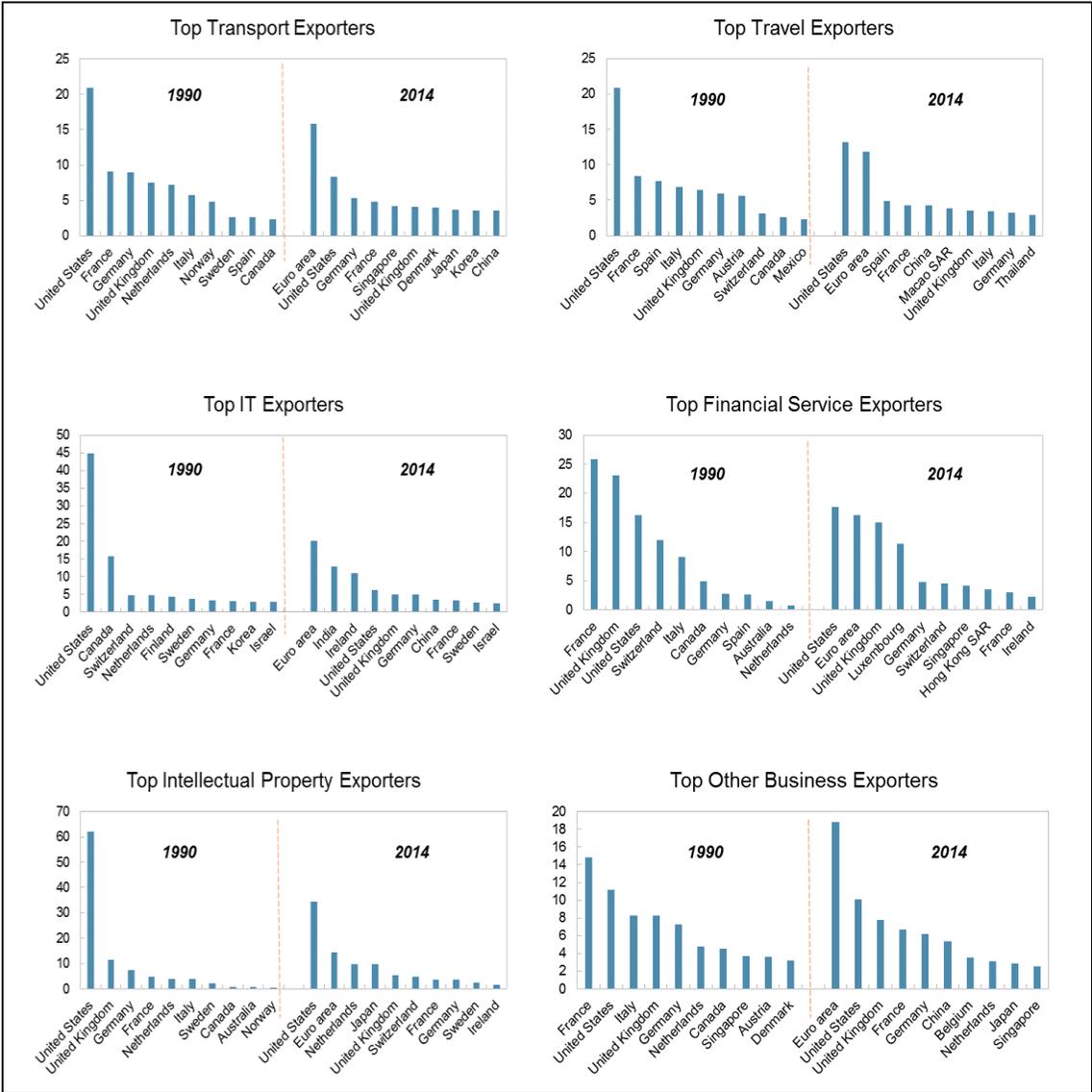
Figure 5. Services exports by sector and income group



Notes: High-, Middle-, Low-Income country groups follow the World Bank's country income classification.  
Sources: BPM6, and authors' calculations.

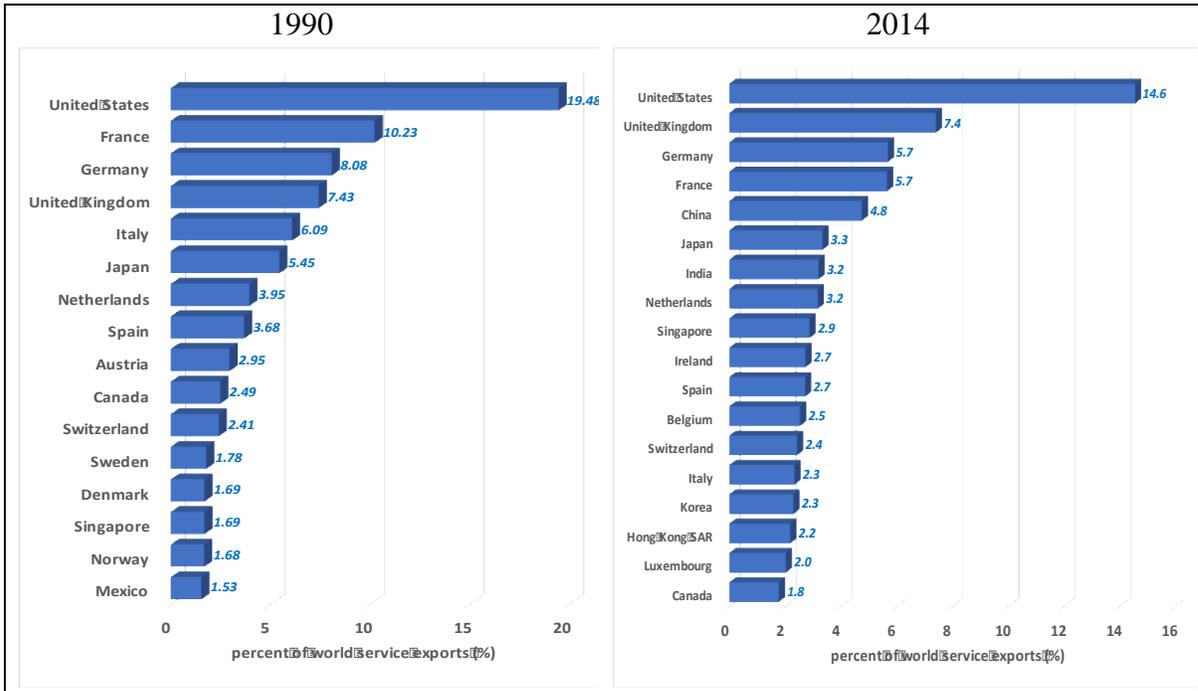


**Figure 7. Top service exporters of selected sectors**



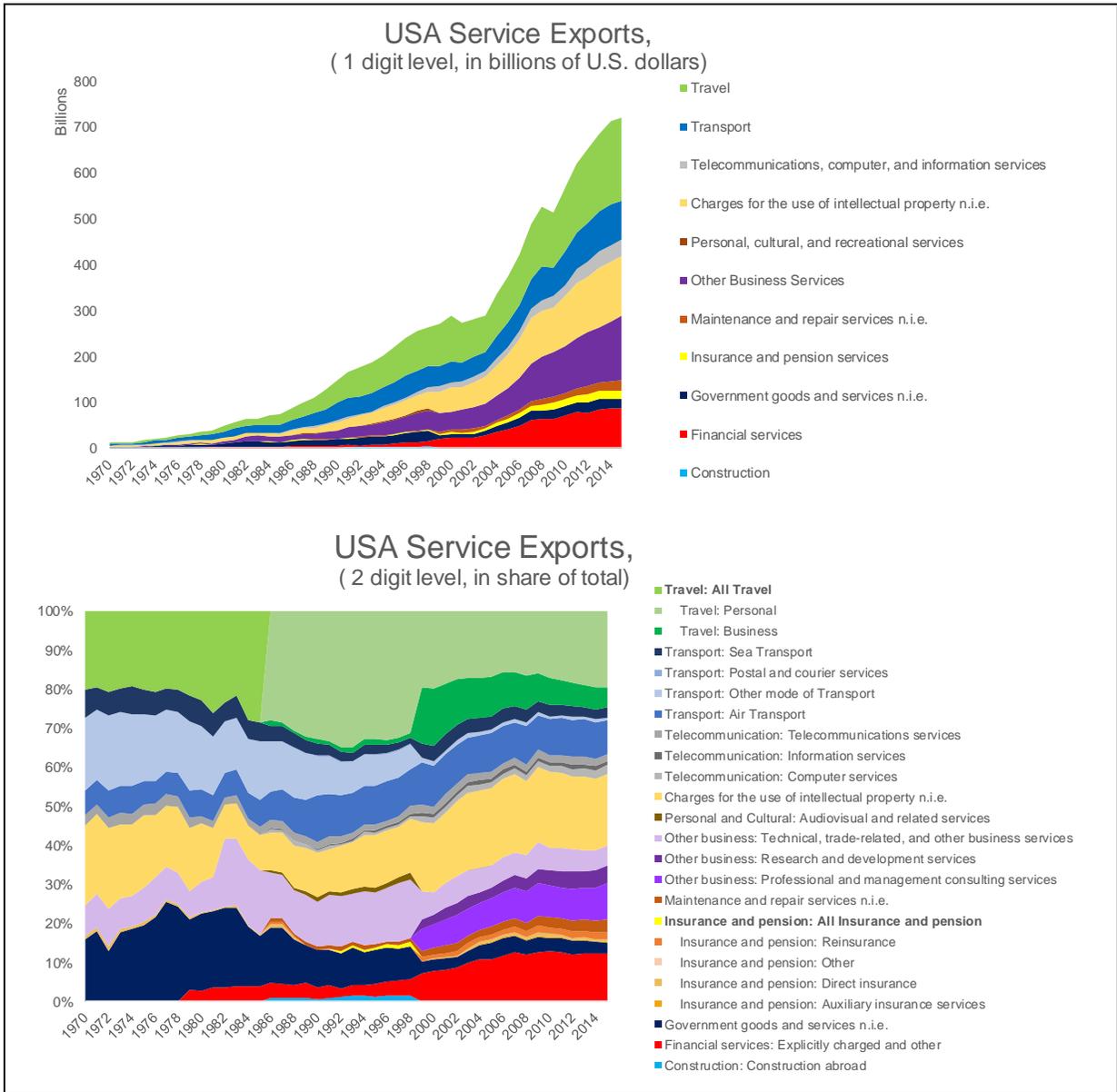
Sources: BPM6, and authors' calculations.

**Figure 8. Share of service exports in world service exports**



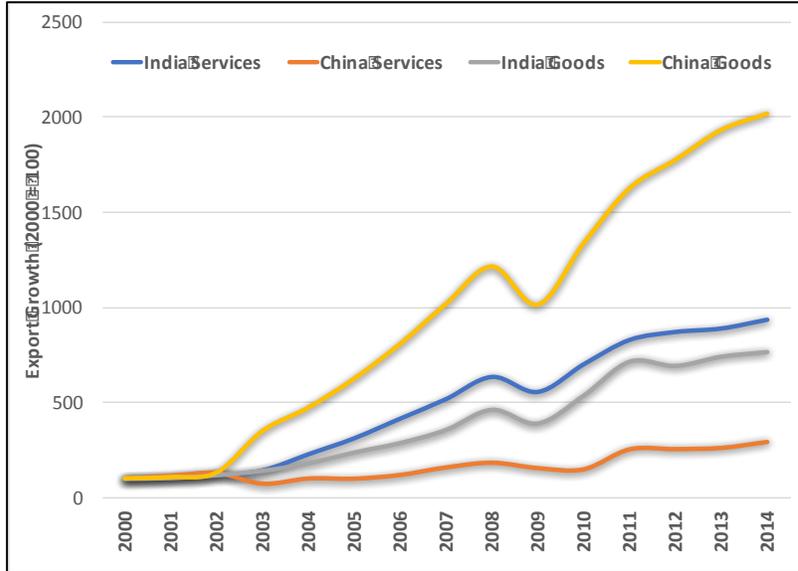
Notes: The Euro Area as a whole occupied the biggest world market share of almost 16% in 2014 (not shown in chart). Sources: BPM6, and authors' calculations.

**Figure 9. United States service exports: 1 and 2 digit levels**



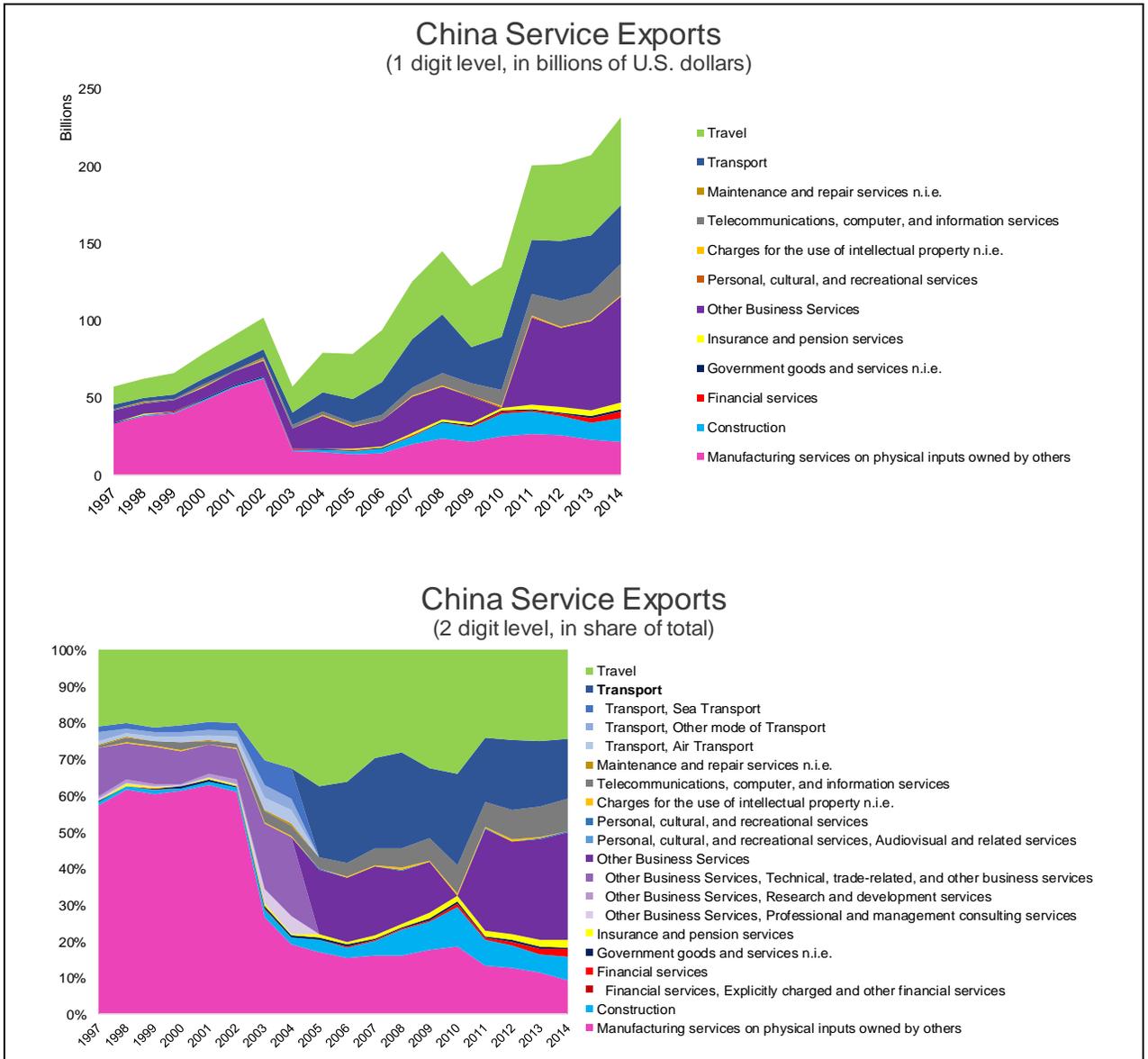
Sources: BPM6, and authors' calculations.

**Figure 10. Export growth, comparing China and India  
(2000 is indexed to 100)**



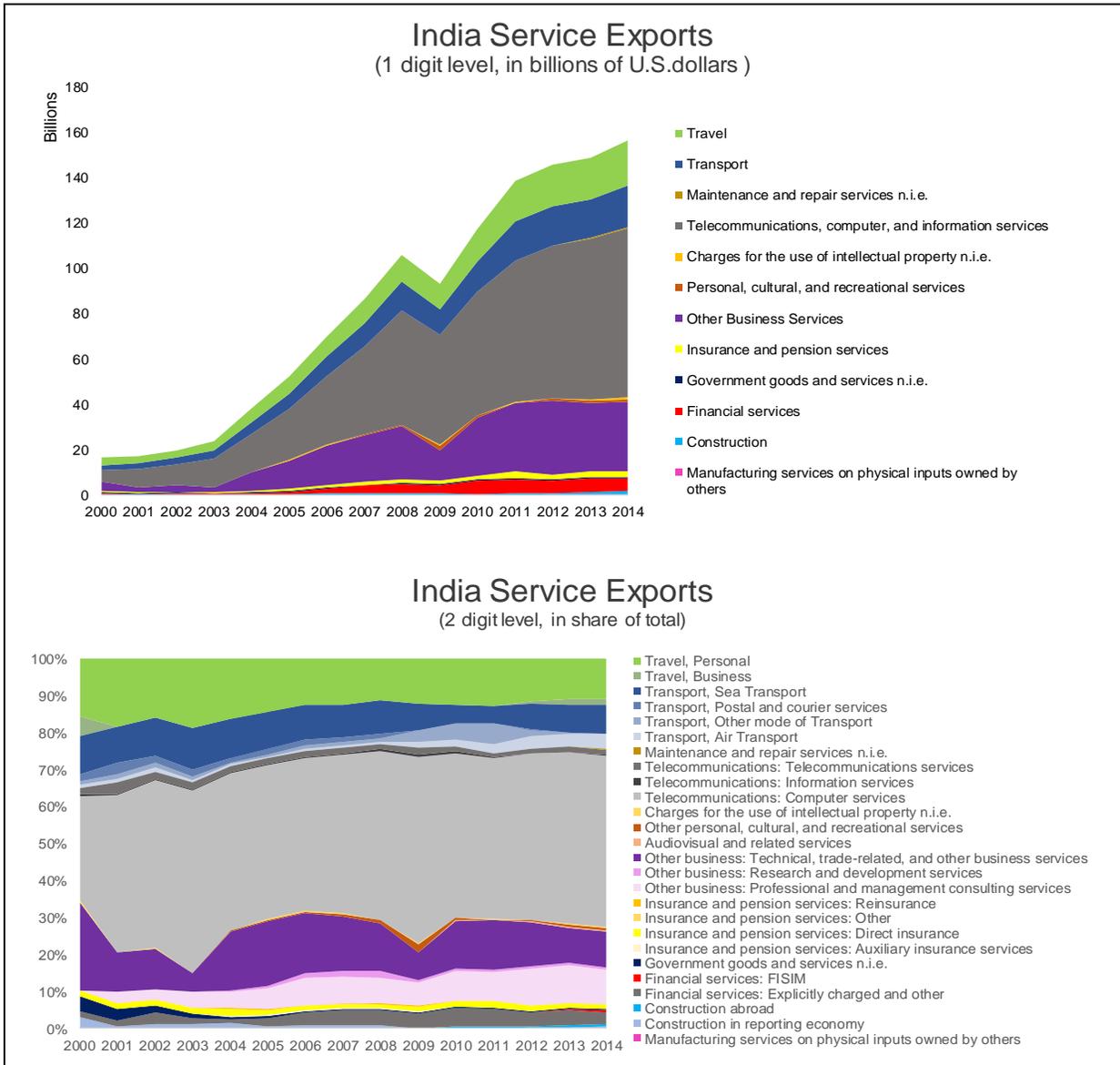
Sources: BPM6, and authors' calculations.

**Figure 11. China service exports: 1 and 2 digit levels**



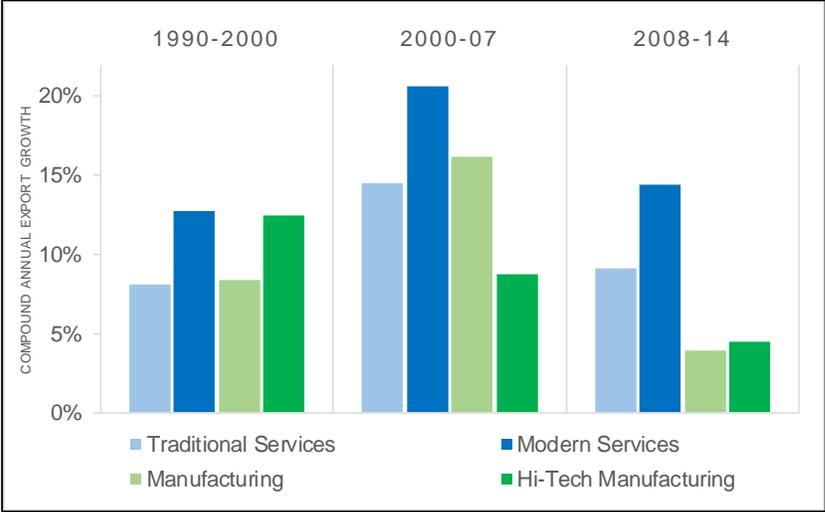
Sources: BPM6, and authors' calculations.

**Figure 12. India Service Exports: 1 digit and 2 digit**



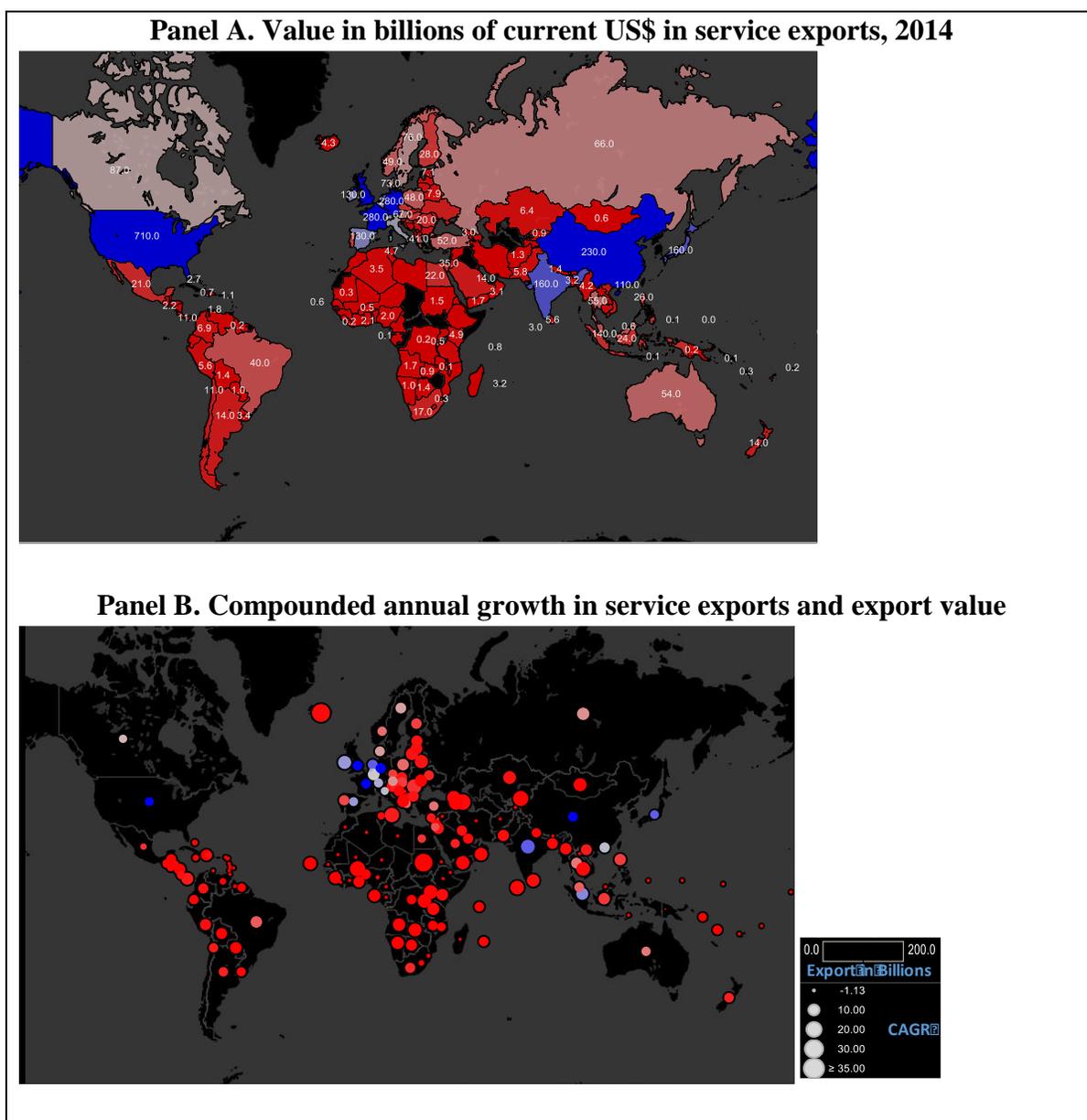
Sources: BPM6, and authors' calculations.

**Figure 13. Modern service exports are one of the fastest growing sectors of the global economy**



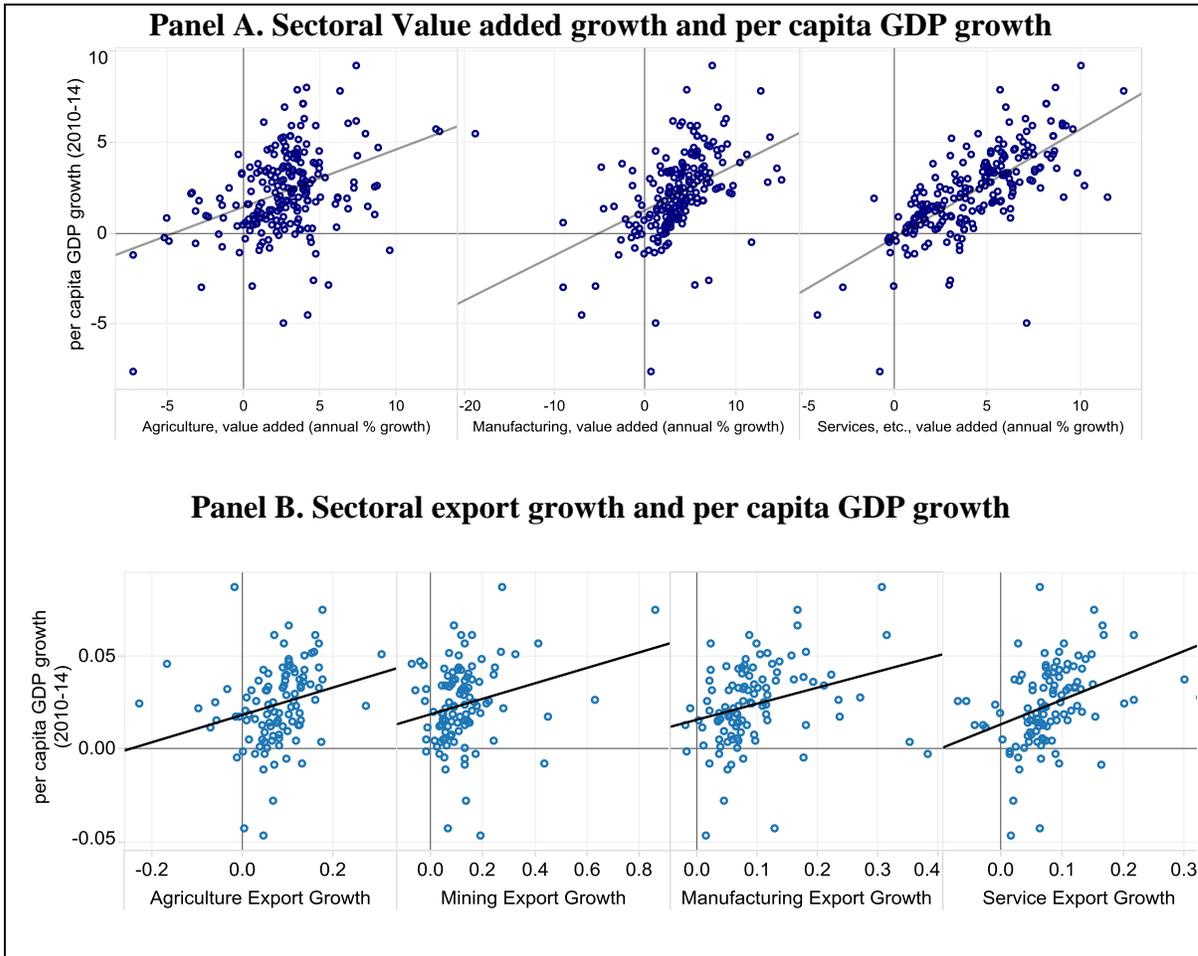
Sources: BPM6, 2016 UN COMTRADE, and authors' calculations.

Figure 14. World map of service exports



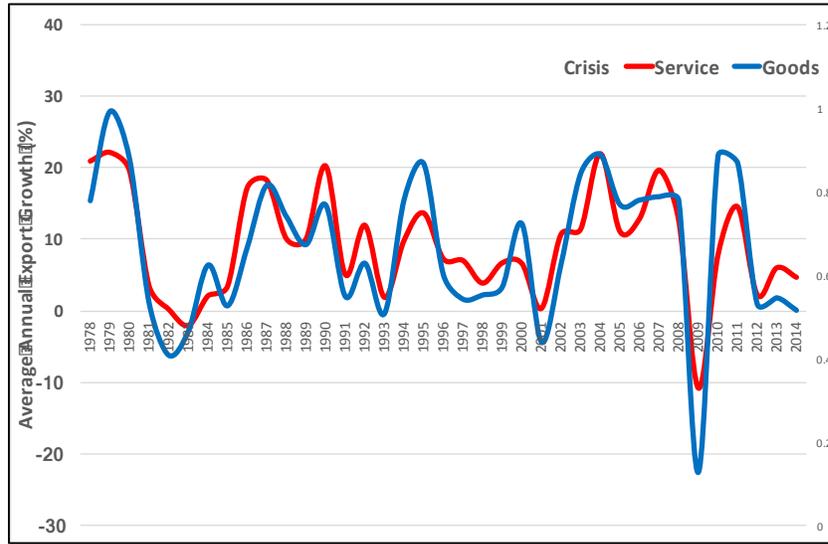
Notes: Panel A shows the service export value in billions of dollars. Panel B represents the bubble size as the compounded annual growth rate of service exports between 2000 and 2014. The color represents US\$ amounts. Sources: BPM6, World Economic Outlook, and authors' calculations.

**Figure 15. The contribution of services in economic growth**



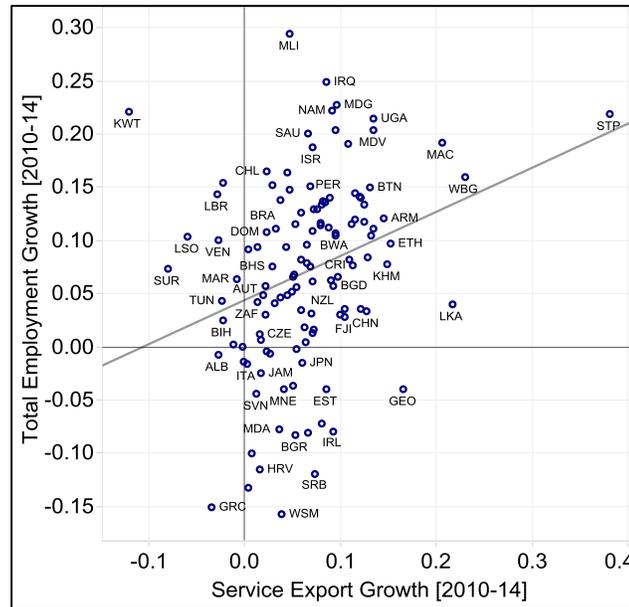
Sources: BPM6, World Economic Outlook, World Development Indicators, and authors' calculations.

**Figure 16. Resilience of service exports**



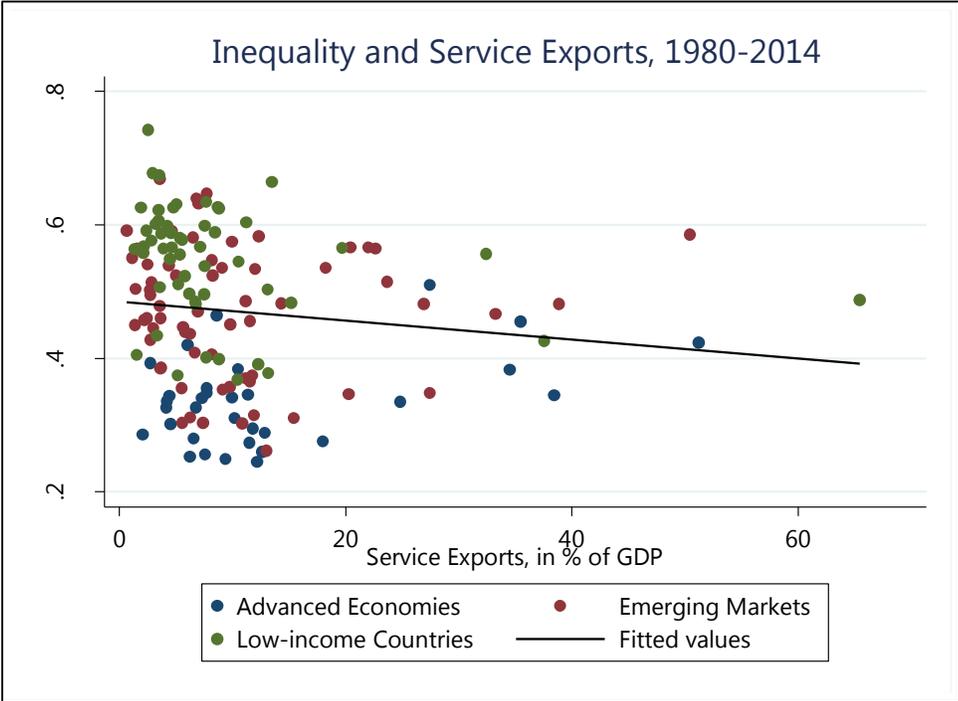
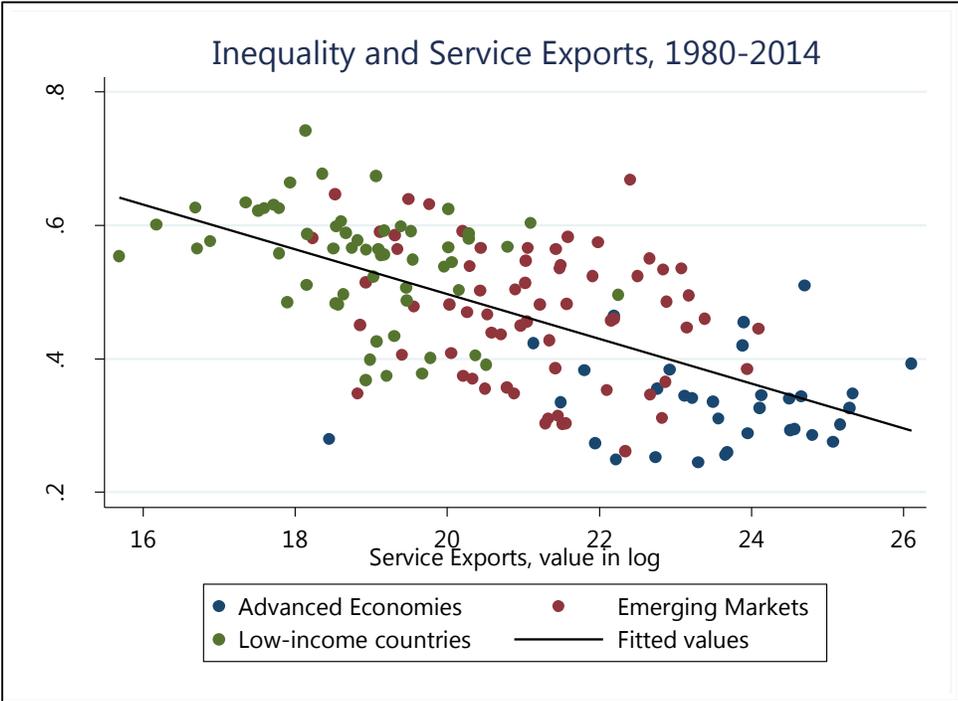
Sources: BPM6, NBER, and authors' calculations.

**Figure 17. Labor allocation and service export growth**



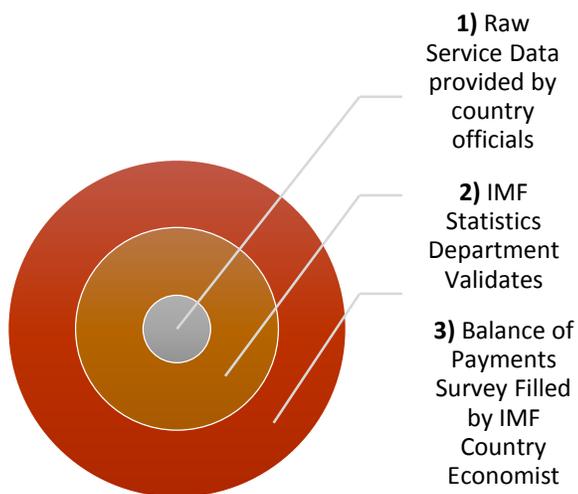
Sources: BPM6, ILO, and authors' calculations

Figure 18. Inequality and service exports



Sources: BPM6, UNU-WIDER, and authors' calculations

## TECHNICAL APPENDIX SERVICE EXPORTS DATA COMPILATION



1) Raw Service Data provided by country officials

2) IMF Statistics Department Validates

3) Balance of Payments Survey Filled by IMF Country Economist

**1) Which agency is primarily responsible for compiling BOP statistics?**

- Central Bank
- Statistics Office
- Ministry of Finance
- Department of Commerce
- National Planning/Economic Development Agency
- Other agency

**2) What is the main legal basis for BOP compilation?**

- Statistical law
- Foreign exchange/central bank regulations
- Other government directives
- None



**With which methodology does your compilation most closely conform?**

Services

**22) Please indicate your sources of data for the following types of services:**

	ITRS	Survey	Administrative-records	Statistical Model	Combination of sources	Not applicable
Manufacturing services on physical inputs owned by others						2
Maintenance and repair services, n.i.e.						
Transport						
Travel						
Construction						
Insurance and pension services						
Financial services						
Charges for the use of intellectual property.						

Country A	Country C	Country IS	Country IS	Scale	Unit	Indicator Code	Indicator Name	Time	Value
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1985	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1986	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1987	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1988	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1989	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1990	43900000
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1991	53900000
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1992	47715000
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1993	16600000
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1994	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1995	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1996	41786000
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1997	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1998	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	1999	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	2000	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	2001	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	2002	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	2003	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	2004	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	2005	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	2006	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	2007	0
Angola	614	AGO	AO	Units		BXSOGGS_BP6	Balance of Payments, Current Account, Goods and Services	2008	0

Table A.1 Classification of Services (BPM6)

Table 3.1 Classification of Services	
Balance of Payments (BPM6) <sup>1</sup>	Extended Balance of Payments Services Classification (EBOPS—MSITS 2010)
1.A.b.1 Manufacturing services on physical inputs owned by others <i>1.A.b.1.1 Goods for processing in reporting economy</i> <i>1.A.b.1.2 Goods for processing abroad</i>	1 Manufacturing services on physical inputs owned by others <i>1.1 Goods for processing in reporting economy</i> <i>1.2 Goods for processing abroad</i>
1.A.b.2 Maintenance and repair services n.i.e.	2 Maintenance and repair services n.i.e.
1.A.b.3 Transport 1.A.b.3.1 Sea transport <i>1.A.b.3.1.1 Passenger</i> <i>Of which 1.A.b.3.1.1.1 Payable by border, seasonal, and other short-term workers</i> 1.A.b.3.1.2 Freight 1.A.b.3.1.3 Other 1.A.b.3.2 Air transport 1.A.b.3.2.1 Passenger <i>Of which 1.A.b.3.2.1.1 Payable by border, seasonal, and other short-term workers</i> 1.A.b.3.2.2 Freight 1.A.b.3.2.3 Other 1.A.b.3.3 Other modes of transport 1.A.b.3.3.1 Passenger <i>Of which 1.A.b.3.3.1.1 Payable by border, seasonal, and other short-term workers</i> 1.A.b.3.3.2 Freight 1.A.b.3.3.3 Other 1.A.b.3.4 Postal and courier services For all modes of transport: 1.A.b.3.0.1 Passenger <i>Of which 1.A.b.3.0.1.1 Payable by border, seasonal, and other short-term workers</i> 1.A.b.3.0.2 Freight 1.A.b.3.0.3 Other	3 Transport Alternative 1: Mode of transport 3.1 Sea transport 3.1.1 Passenger <i>Of which 3.1.1.1 Payable by border, seasonal, and other short-term workers</i> 3.1.2 Freight 3.1.3 Other 3.2 Air transport 3.2.1 Passenger <i>Of which 3.2.1.1 Payable by border, seasonal, and other short-term workers</i> 3.2.2 Freight 3.2.3 Other 3.3 Other modes of transport 3.3.1 Passenger <i>Of which 3.3.1.1 Payable by border, seasonal, and other short-term workers</i> 3.3.2 Freight 3.3.3 Other 3.4 Postal and courier services 3.5 Space transport 3.6 Rail transport 3.6.1 Passenger 3.6.2 Freight 3.6.3 Other 3.7 Road transport 3.7.1 Passenger 3.7.2 Freight 3.7.3 Other 3.8 Inland waterways transport 3.8.1 Passenger

Table 3.1 Classification of Services (continued)

Balance of Payments (BPM6) <sup>1</sup>	Extended Balance of Payments Services Classification (EBOPS—MSITS 2010)
	3.8.2 Freight 3.8.3 Other 3.9 Pipeline transport 3.10 Electricity transmission 3.11 Other supporting and auxiliary transport services For all modes of transport: Alternative 2: What is carried 3a.1 Passenger <i>Of which 3a.1.1 Payable by border, seasonal, and other short-term workers</i> 3a.2 Freight 3a.3 Other 3a.31 Postal and courier services 3a.32 Other
1.A.b.4 Travel 1.A.b.4.1 Business 1.A.b.4.1.1 <i>Acquisition of goods and services by border, seasonal and other short-term workers</i> 1.A.b.4.1.2 <i>Other</i> 1.A.b.4.2 Personal 1.A.b.4.2.1 <i>Health-related</i> 1.A.b.4.2.2 <i>Education-related</i> 1.A.b.4.2.3 <i>Other</i> For both business and personal travel: 1.A.b.4.0.1 <i>Goods</i> 1.A.b.4.0.2 <i>Local transport services</i> 1.A.b.4.0.3 <i>Accommodation services</i> 1.A.b.4.0.4 <i>Food-serving services</i> 1.A.b.4.0.5 <i>Other services</i> <i>Of which 1.A.b.4.0.5.1 Health services</i> <i>Of which 1.A.b.4.0.5.2 Education services</i>	4 Travel 4.1 Business 4.1.1 <i>Acquisition of goods and services by border, seasonal and other short-term workers</i> 4.1.2 <i>Other</i> 4.2 Personal 4.2.1 <i>Health-related</i> 4.2.2 <i>Education-related</i> 4.2.3 <i>Other</i> Alternative presentation for travel (for both business and personal travel): 4a.1 <i>Goods</i> 4a.2 <i>Local transport services</i> 4a.3 <i>Accommodation services</i> 4a.4 <i>Food-serving services</i> 4a.5 <i>Other services</i> <i>Of which 4a.5.1 Health services</i> <i>Of which 4a.5.2 Education services</i>
1.A.b.5 Construction 1.A.b.5.1 <i>Construction abroad</i> 1.A.b.5.2 <i>Construction in the reporting economy</i>	5 Construction 5.1 <i>Construction abroad</i> 5.2 <i>Construction in the reporting economy</i>
1.A.b.6 Insurance and pension services 1.A.b.6.1 <i>Direct insurance</i> 1.A.b.6.2 <i>Reinsurance</i> 1.A.b.6.3 <i>Auxiliary insurance services</i> 1.A.b.6.4 <i>Pension and standardized guarantee services</i>	6 Insurance and pension services 6.1 Direct insurance 6.1.1 Life insurance 6.1.1 a <i>Gross life insurance premiums receivable (credits) and payable (debits)</i> 6.1.1 b <i>Gross life insurance claims receivable (credits) and payable (debits)</i> 6.1.2 Freight insurance 6.1.2 a <i>Gross freight insurance premiums receivable (credits) and payable (debits)</i> 6.1.2 b <i>Gross freight insurance claims receivable (credits) and payable (debits)</i> 6.1.3 Other direct insurance 6.1.3 a <i>Gross other direct insurance premiums receivable (credits) and payable (debits)</i> 6.1.3 b <i>Gross other direct insurance claims receivable (credits) and payable (debits)</i> 6.2 Reinsurance

Table 3.1 Classification of Services (*continued*)

Balance of Payments (BPM6) <sup>1</sup>	Extended Balance of Payments Services Classification (EBOPS—MSITS 2010)
	6.3 Auxiliary insurance services 6.4 Pension and standardized guarantee services 6.4.1 Pension services 6.4.2 Standardized guarantee services
1.A.b.7 Financial services 1.A.b.7.1 Explicitly charged and other financial services 1.A.b.7.2 Financial intermediation services indirectly measured (FISIM)	7 Financial services 7.1 Explicitly charged and other financial services 7.2 Financial intermediation services indirectly measured (FISIM)
1.A.b.8 Charges for the use of intellectual property n.i.e.	8 Charges for the use of intellectual property n.i.e. 8.1 Franchises and trademarks licensing fees 8.2 Licenses for the use of outcomes of research and development 8.3 Licenses to reproduce and/or distribute computer software 8.4 Licenses to reproduce and/or distribute audio-visual and related products 8.4.1 Licenses to reproduce and/or distribute audio-visual products 8.4.2 Licenses to reproduce and/or distribute other products
1.A.b.9 Telecommunications, computer, and information services 1.A.b.9.1 Telecommunications services 1.A.b.9.2 Computer services 1.A.b.9.3 Information services	9 Telecommunications, computer, and information services 9.1 Telecommunications services 9.2 Computer services 9.2.1 Computer software <i>Of which 9.2.1 a Software originals</i> 9.2.2 Other computer services 9.3 Information services 9.3.1 News agency services 9.3.2 Other information services
1.A.b.10 Other business services 1.A.b.10.1 Research and development services 1.A.b.10.2 Professional and management consulting services 1.A.b.10.3 Technical, trade-related, and other business services	10 Other business services 10.1 Research and development services 10.1.1 Work undertaken on a systematic basis to increase the stock of knowledge 10.1.1.1 Provision of customized and non-customized research and development services 10.1.1.2 Sale of proprietary rights arising from research and development 10.1.1.2.1 Patents 10.1.1.2.2 Copyrights arising from research and development 10.1.1.2.3 Industrial processes and designs 10.1.1.2.4 Other 10.1.2 Other 10.2 Professional and management consulting services 10.2.1 Legal, accounting, management consulting and public relations services 10.2.1.1 Legal services 10.2.1.2 Accounting, auditing, bookkeeping, and tax consulting services 10.2.1.3 Business and management consulting and public relations services 10.2.2 Advertising, market research, and public opinion polling services <i>Of which 10.2.2.1 Convention, trade-fair and exhibition organization services</i>

Table 3.1 Classification of Services (*concluded*)

Balance of Payments ( <i>BPM6</i> ) <sup>1</sup>	Extended Balance of Payments Services Classification (EBOPS— <i>MSITS 2010</i> )
	10.3 Technical, trade-related, and other business services 10.3.1 Architectural, engineering, scientific, and other technical services 10.3.1.1 Architectural services 10.3.1.2 Engineering services 10.3.1.3 Scientific and other technical services 10.3.2 Waste treatment and de-pollution, agricultural and mining services 10.3.2.1 Waste treatment and de-pollution 10.3.2.2 Services incidental to agriculture, forestry and fishing 10.3.2.3 Services incidental to mining, and oil and gas extraction 10.3.3 Operating leasing services 10.3.4 Trade-related services 10.3.5 Other business services <i>Of which 10.3.5.1 Employment services, i.e., search, placement, and supply services of personnel</i>
1.A.b.11 Personal, cultural, and recreational services 1.A.b.11.1 Audiovisual and related services 1.A.b.11.2 Other personal, cultural, and recreational services	11 Personal, cultural, and recreational services 11.1 Audio-visual and related services 11.1.1 Audio-visual services <i>Of which 11.1.1.a Audio-visual originals</i> 11.1.2 Artistic related services 11.2 Other personal, cultural, and recreational services 11.2.1 Health services 11.2.2 Education services 11.2.3 Heritage and recreational services 11.2.4 Other personal services
1.A.b.12 Government goods and services n.i.e.	12 Government goods and services n.i.e. 12.1 Embassies and consulates 12.2 Military units and agencies 12.3 Other government goods and services n.i.e.
<i>1.A.b.0.1 Tourism-related services in travel and passenger transport</i>	<i>4.0 Tourism-related services in travel and passenger transport</i>  C.1 Audio-visual transactions <i>Of which C.1.1 Licenses to use audio-visual products</i> C.2 Cultural transactions C.3 Computer software transactions <i>Of which C.3.1 Licenses to use computer software products</i> C.4 Call-centre services C.5 Total services transactions between related companies C.6 Total trade-related transactions C.7 Environmental transactions C.8 Total education services

<sup>1</sup>Italicized items are supplementary items.

**Table A.2. Country Coverage**

Country Name	Start Date	End Date	Country Name	Start Date	End Date
Afghanistan	1979	2014	Curaçao	2011	2014
Angola	1985	2014	Cyprus	1976	2014
Anguilla	1990	2013	Czech Republic	1993	2015
Albania	1980	2015	Germany	1971	2014
Argentina	1976	2014	Djibouti	1991	2013
Armenia	1993	2014	Dominica	1976	2013
Antigua and Barbuda	1977	2013	Denmark	1975	2014
Australia	1960	2014	Dominican Republic	1968	2014
Austria	1967	2015	Algeria	1977	2014
Azerbaijan	1995	2015	Ecuador	1976	2014
Burundi	1985	2013	Egypt	1977	2014
Belgium	2002	2015	Eritrea	1995	2000
Benin	1974	2014	Spain	1975	2015
Burkina Faso	1974	2014	Estonia	1992	2014
Bangladesh	1976	2014	Ethiopia	1977	2012
Bulgaria	1980	2014	Finland	1975	2005
Bahrain	1975	2014	Fiji	1979	2013
Bahamas	1976	2014	France	1975	2014
Bosnia & Herzegovina	1998	2015	Micronesia	2009	2014
Belarus	1993	2015	Gabon	1978	2005
Belize	1984	2014	United Kingdom	1970	2014
Bolivia	1976	2014	Georgia	1997	2014
Brazil	1975	2015	Ghana	1975	2014
Barbados	1970	2013	Guinea	1986	2013
Brunei Darussalam	2001	2009	Gambia, The	1978	2012
Bhutan	2006	2015	Guinea-Bissau	1982	2013
Botswana	1975	2014	Equatorial Guinea	1987	1988
Central African Rep.	1977	1994	Greece	1976	2015
Canada	1948	2015	Grenada	1977	2013
Switzerland	1977	2014	Guatemala	1977	2015
Chile	1975	2015	Guyana	1977	2014
China	1982	2014	Hong Kong SAR	1998	2014
Côte d'Ivoire	1975	2013	Honduras	1974	2014
Cameroon	1977	2013	Croatia	1993	2014
Congo, DR	2000	2014	Haiti	1971	2015
Congo, Republic	1978	2007	Hungary	1982	2015
Colombia	1968	2014	Indonesia	1981	2014
Comoros	1980	2012	India	1975	2014
Cabo Verde	1977	2015	Ireland	1974	2014
Costa Rica	1977	2014	Iran	1976	2000

Country Name	Start Date	End Date	Country Name	Start Date	End Date
Iraq	2005	2012	Mauritania	1975	2014
Iceland	1976	2014	Montserrat	1986	2013
Israel	1952	2015	Mauritius	1976	2014
Italy	1970	2015	Malawi	1977	2014
Jamaica	1976	2015	Malaysia	1974	2014
Jordan	1972	2014	Namibia	1990	2014
Japan	1977	2014	Niger	1974	2013
Kazakhstan	1995	2014	Nigeria	1977	2014
Kenya	1975	2014	Nicaragua	1977	2015
Kyrgyz Republic	1993	2014	Netherlands	1967	2015
Cambodia	1992	2014	Norway	1975	2015
Kiribati	1979	2014	Nepal	1976	2014
St. Kitts and Nevis	1980	2013	New Zealand	1972	2014
Korea	1976	2015	Oman	1978	2014
Kosovo	2004	2014	Pakistan	1976	2014
Kuwait	1975	2014	Panama	1977	2015
Lao P.D.R.	1984	2013	Peru	1977	2015
Lebanon	2002	2014	Philippines	1977	2015
Liberia	1979	2014	Palau	2005	2014
Libya	1977	2013	Papua New Guinea	1976	2014
St. Lucia	1976	2013	Poland	1976	2015
Sri Lanka	1975	2014	Portugal	1975	2014
Lesotho	1975	2014	Paraguay	1975	2014
Lithuania	1993	2015	Palestine	1995	2014
Luxembourg	1999	2015	Qatar	2011	2015
Latvia	1992	2015	Romania	1971	2014
Macao SAR	2002	2014	Russia	1994	2014
Morocco	1975	2013	Rwanda	1976	2014
Moldova	1994	2015	Saudi Arabia	1971	2015
Madagascar	1974	2013	Sudan	1977	2014
Maldives	1977	2014	Senegal	1974	2011
Mexico	1979	2015	Singapore	1972	2014
Marshall Islands	2005	2014	Solomon Islands	1975	2014
Macedonia, FYR	1996	2015	Sierra Leone	1977	2014
Mali	1975	2013	El Salvador	1976	2014
Malta	1971	2015	Somalia	1977	1985
Myanmar	1976	2014	Serbia	2007	2014
Montenegro	2007	2015	São Tomé & Príncipe	1974	2014
Mongolia	1981	2014	Suriname	1977	2015
Mozambique	1980	2014	Slovak Republic	1993	2014

Country Name	Start Date	End Date
Slovenia	1992	2015
Sweden	1970	2015
Swaziland	1974	2014
Sint Maarten	2011	2014
Seychelles	1976	2014
Syria	1977	2010
Chad	1977	1994
Togo	1974	2013
Thailand	1975	2014
Tajikistan	2002	2014
Turkmenistan	1996	1997
Timor-Leste	2006	2014
Tonga	1971	2013
Trinidad and Tobago	1975	2011
Tunisia	1976	2014
Turkey	1974	2015
Tuvalu	2001	2013
Tanzania	1976	2014
Uganda	1980	2014
Ukraine	1994	2014
Uruguay	1978	2015
United States	1970	2015
St. Vin & Grenadines	1978	2013
Venezuela	1970	2014
Vanuatu	1982	2014
Samoa	1977	2014
Yemen	1990	2014
South Africa	1948	2015
Zambia	1978	2014
Zimbabwe	1977	1994