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Europe and India: Relaunching a Troubled Trade Relationship

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Europe and India: Relaunching a Troubled Trade Relationship

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List of Acronyms

BIT Bilateral investment treaty

bn. Billions

BRICS Brazil, Russia, India, China, and South Africa

BTIA Broad-based Trade and Investment Agreement

CAP Common Agricultural Policy (of the EU)

EFSI Economic Freedom of the States of India report

CEPII Centre d'Etudes Prospectives et d'Informations Internationales (a think tank in Paris)

EFW Economic Freedom of the World report

EUR Euros

EU25 All official member states of the European Union as of 1 May 2004

EU27 All official member states of the European Union as of 1 January 2007

EU28 All official member states of the European Union as of 1 July 2013

FTA Free trade agreement

FDI Foreign direct investment

GATS General Agreement on Trade in Services

GATT General Agreement on Tariffs and Trade

GDP Gross domestic product

GPA Government Procurement Agreement

GSP Generalized System of Preferences

HDI Human Development Index

IIA International integration agreement

INR Indian rupees

IPC Indian Penal Code

IPR Intellectual property rights

ISIC International Standard Industrial Classification

ITES IT-sector and IT enabled services

mn. Millions

MFN Most favored nation

MSP Minimum support price

NTM Non-tariff measure

OECD Organization for Economic Cooperation and Development

PFS Protection for Sale

PPP Purchasing power parity

PTA Preferential trade agreement

RBI Reserve Bank of India

SPS Sanitary and phytosanitary (measures)

STRI Service Trade Restriction Index

TBT Technical barriers to trade

TFA Trade Facilitation Agreement

TPP Trans-Pacific Partnership

TRIPS Trade-Related Aspects of Intellectual Property Rights (Agreement)

RCEP Regional Comprehensive Partnership (a prospective trade agreement of China with 12 trade partners in South Asia)

UN United Nations

USA United States of America

USD United States Dollars

VA Value added

WEO World Economic Outlook (a publication of the International Monetary Fund)

WTO World Trade Organization

1 Introduction

Since the formulation of the Global Europe Strategy in 2006, the EU sees India as an important trade partner with which to conclude a preferential trade agreement. Negotiations started in 2007 but broke down in 2013. However, both sides have expressed their desire to revive the talks.[1] Discussions resumed in 2016 focusing on key outstanding issues, such as improved market access for some goods and services, government procurement, and sustainable development.

This report analyzes what the potential benefits of a deal would be, how these shape up in different scenarios, and which potential pitfalls exist. Clearly, one can expect that not all sectors would benefit from such an agreement (i.e., the EU textile workers, or the Indian motor vehicles sector) due to comparative advantages (i.e., lower Indian labor costs and the EU's strongly competitive car industry). The report also quantifies trade diversion effects and describes potential geopolitical implications for Southeast Asia as a consequence of a free trade agreement between the EU and India.

Measured at current market prices, India is the seventh biggest economy of the world (USD 2,250 bn. in 2016) according to the World Economic Outlook; its share in world GDP is just about 3.02%, about half the share commanded by Germany. So, India is still a developing country. This means that the EU bears special responsibilities and that an FTA should account for the status of India, granting it special and differential treatment as enshrined in WTO rules. Nonetheless, India's relative economic importance is steadily increasing. Its economy has grown strongly over the last years, driven by robust domestic demand. While the Eurozone managed an average growth rate of 0.7% in the five years from 2010 to 2015, India grew by a per annum rate of 7.2%. China grew slightly faster, but by now India has overtaken China as the fastest growing of the BRICS countries. This growth advantage is expected to increase in the coming years.

According to CEPII EconMap forecasts, India will contribute about 10% to the overall growth of the world economy from 2015 to 2050 (Felbermayr, 2015). This is primarily driven by population growth, but also by productivity catch up, a better educated workforce, and capital deepening. Today, India has a population of about 1.3 billion people, i.e., 18% of the global population. In 1960, its share was more than three percentage points smaller. According to CEPII EconMap forecasts, India will continue to contribute massively to the overall growth of global labor supply. From 2015 to 2050, about 28% of the overall increase in labor supply will be due to India alone (Felbermayr, 2015).

Bilateral trade in goods between the EU and India was worth EUR 75 bn. 2014. The EU is India's

[1] See e.g. EU Trade Insights at http://www.borderlex.eu/eutradeinsights/eu-and-india-continue-talks-towards-resuming-their-fta-talks/ or http://www.borderlex.eu/eutradeinsights/malmstrom-re-launch-of-fta-talks-conditional-on-indias-progress-on-eu-key-demands/

largest trading partner. India is the Union's ninth biggest trading partner. Given the size of the two economies, a deeper trade relationship could unlock substantial gains for both economies. However, since 2011 trade growth has been very sluggish (actually negative in nominal terms) and the traditional trade surplus of the European Union with India has turned into a deficit.

There are still highly relevant trade barriers in the relationship between the EU and India. India's trade regime and regulatory environment remains comparatively restrictive. The country ranks 132 out of 189 nations on the World Bank's Ease of Doing Business Index when it comes to international trade. According to a recent study by Prognos, a research firm, for Bertelsmann Foundation, only Argentina ranks lower than India according to their degree of economic openness Prognos AG (2016).[2]

India used to have substantial import duties in all areas. However, tariffs have fallen dramatically over time, in particular in the aftermath of the Uruguay Round, and they have gone further down due to unilateral liberalization. These reforms have spurred growth in India. They have also contributed towards reducing poverty; see Mitra (2016).

However, compared to the world average, India still maintains relatively high tariff barriers that hinder trade with the EU, in particular in the area of primary products and food. For example, despite India being the third largest spirits market in the world, it still applies a 150% tariff on imports of European spirits. In several sectors, average tariffs remain close to 10%. In addition to tariff barriers on imports, India also imposes a number of non-tariff barriers in the form of quantitative restrictions, import licensing, mandatory testing and certification for a large number of products, as well as complicated and lengthy customs procedures.

Together with China, India is the country with the most trade defense measures against EU imports in place; as of end of 2015, it has 19 anti-dumping, anti-subsidy and safeguard measures in place. The number of such measures has declined from 2014 on, but remains comparatively high. On the other hand, India is also an important target for defensive EU trade policy measures. From 2010 to 2014, the country ranked second after China, Indonesia, and Malaysia regarding the initiation of EU anti-dumping cases. Anti-dumping duties were imposed for certain chemical or steel products. Moreover, India was also the second most important target of EU anti-subsidies investigations.[3]

The relative closedness of India comes with a price that economists have tried to quantify in different studies. For example, Costinot and Rodriguez-Clare (2014) find that India's real GDP per capita is only between 2 and 12% higher in the current situation than it would be under assumed autarky. In this respect, the country ranks very amongst the 40 nations studied by the authors. The comparison with China is striking, where up to 78% of current GDP per capita can be attributed to the country's

[2]The report is available on $https://ged-project.de/$. The report analyzed 42 large economies.
[3]$http://trade.ec.europa.eu/doclib/docs/2015/august/tradoc_153702.pdf$

involvement in international trade. Prognos AG (2016) shows that the cumulative GDP per capita gains from deeper international integration from 1990 to 2014 amounts to about 128% of initial GDP in India. This is substantial, but the gains pale in comparison to other countries, most remarkably China (where the figure is at about 400%). Against the backdrop of these observations, it appears natural to inquire into the potential gains from a trade agreement between India and other leading economies in the world, such as the EU.

The plans for an ambitious FTA were set out in the report of the EU India High Level Trade Group in October 2006, right after the publication of the Global Europe Strategy, which called for an aggressive use of trade policy to foster employment and growth in the EU. Negotiations for a comprehensive FTA were started in June 2007, but they soon encountered major problems. The talks collapsed in April 2013 over numerous disagreements, including the liberalization of duties on cars, wine and spirits, as well as public procurement. However, much is at stake, in particular for India whose trade with the EU has been sluggish. In 2015, India's Commerce Secretary Rajeer Kher hinted towards the possibility of further concessions and said: "Textiles and leather sectors are facing the beating [in the EU market]. So by reducing tariffs, you can get greater market access. The benefits under the Generalized System of Preferences have also gone."[4] The EU imported EUR 7 bn. worth of textiles and textile articles from India in 2015. According to Indian media reports, since the talks, stopped New Delhi has moved ahead on many issues such as easing access for foreign direct investment to its telecommunications, insurance and banking sectors.

In its 2015 trade and investment strategy, the European Commission said it remained "ready to resume negotiations for a comprehensive and ambitious FTA" and stressed that "an ambitious outcome" of talks with India "would create new trade opportunities in a combined market of more than 1.7 billion people". However, the strategy did not set any target date for the relaunch of talks with New Delhi.

In June 2015, EU Trade Commissioner Cecilia Malmström and India's Minister of State for Commerce Nirmala Sitharaman agreed during their discussions in Paris to have a formal meeting in mid-2015 between chief negotiators to continue talks on the EU-India FTA. But at India's request the meeting scheduled for August 2015 was canceled. In February 2016, senior trade officials from the EU and India held a meeting in Brussels as part of their joint bid to re-launch bilateral EU-India free trade negotiations. In January 2016 chief negotiators met in New Delhi, the first time after the stop of formal negotiations. Indian Commerce Secretary Rita Teaotia and Director General of DG Trade in the European Commission, Jean Luc Demarty were trying to identify the "margins for maneuver of each party" to see whether there is room to formally resume negotiations. But no concrete decisions were

[4]This passage draws on press quotes and background information collected by EU Trade Insights (http://www.vieuws.eu/eutradeinsights/).

taken, according to EU sources.

On the political level, the idea to re-launch talks was considered on March 30, 2016, when India's Prime Minister Narendra Modi met the President of the European Council, Donald Tusk, and the President of the Commission, Jean-Claude Junker in Brussels. In a joint statement, the politicians "welcomed" the re-engagement of both sides "in discussions with a view to considering how to further the EU-India Broad-based Trade and Investment Agreement (BTIA) negotiations", but no decision to engage into formal negotiations has been taken.

Since the first talks in 2007, the situation has become substantially more complicated. First, parties have put additional demands on the table. The EU wants to add a chapter to the investment protection into the agreement, while India wants better access of highly skilled Indian professions to the EU services market as well as the recognition of India as a "data safe" country. Second, while Narendra Modi appears to be more strongly in favor of concluding free trade agreements than his predecessors, in India, there are doubts about the size of economic benefits that the agreement could yield for India (for a pessimistic view see Polaski et al. (2008) and Winters et al. (2009) for a more upbeat analysis). Moreover, the situation in the EU has changed dramatically: India's most obvious sparring partner in Europe, Britain, is bound to leave the Union. And in Germany, once a champion of a liberal world trade order, the public opinion has been turning against free trade agreements (Bluth, 2016).

In this study we take a step back and ask: is it worth to invest political capital into reviving this troubled trade relationship? What are the potential trade and income gains that both sides of the negotiation tables can hope to unlock? Would such an agreement lead to convergence in per capita incomes between the EU and India? Which are the industries that are most strongly affected? And what can be said about the internal effects of the agreement within the EU and within India? What could possibly go wrong?

The case of EU-India is interesting for several reasons. First, the potential free trade agreement is between two highly asymmetric countries: while India's population is twice as big as the EU's, its GDP is just about one-eighth. This is because the absolute average productivity of labor still is comparably low in India, even in its most advanced sectors. Second, while India has liberalized its economy over the last two decades, its average level of tariff protection is still about twice as high as the world average, and its international transactions suffer from thick layers of red tape. Third, India is a very diverse country. Market frictions between its federal states are substantial; in that sense it resembles the EU.[5] And, as in the EU, this begs the following questions: does imperfect internal integration put aggregate gains from a trade agreement in peril? If not, how are these gains distributed across states?

[5] A recent study by Melchior (2016) documents huge dispersion in food prices amongst Indian states which exceeds observed price differences within the European Union.

Our main findings can be summarized as follows:

1. In a few years, **India will overtake China as the world's most populous country.** The relative size of its economy will have tripled from a sliver above 1.2% in 1990 to almost 3.7% of world GDP in 2020. It is therefore reasonable that the EU seeks to develop its economic relationship with India. Also India, for which the EU is the largest trade partner, could benefit from deeper ties.

2. In 1991, a combination of IMF conditionality associated with emergency loans and a transformed mindset of technocrats and politicians brought about **deep economic, including trade, reforms** in India. The reform process is not completed yet and continues as there still is significant protection in certain sectors, especially services and agriculture.

3. It is possible that some **"status-quo bias"** arising from the uncertainty regarding the identity of winners and losers resulted in a delayed start of the reforms. The start of the reforms probably resolved this uncertainty. As a result, these reforms have not been reversed even after the debt crisis was resolved.

4. Since these reforms, **India has made impressive progress in lowering import tariffs.** In all broad sectors, average tariffs were at least 30%; some manufacturing sectors were protected by average tariffs above 60%. While high peak tariffs remain, today most manufacturing sectors feature average tariffs close at or below 10%. The agri-food sectors, however, remain strongly protected by import tariffs above 30%. Trade liberalization has driven trade growth from 1990 to 2010.

5. However, since 2011, **goods trade growth between India and the EU has been sluggish**. In terms of volume, it has even fallen, and stands today slightly below USD 100 mn., ranking 9th amongst all trade EU trade partners. While it is not clear whether this sluggish performance is due to cyclical or structural factors, a Broad-based Trade and Investment Agreement between the EU and India should be able to inject new dynamism into this relationship.

6. **Growth in services trade, too, has remained below expectations.** Both imports and exports have remained stable since 2011. While India has made up some ground in the last decade, today it is still only the 12th most important source country for EU services imports. It appears that the country has not yet been able to fully leverage its comparative advantage in this sector.

7. **India makes heavy use of trade defense instruments.** Since 1991 it has initiated more than 330 anti-dumping procedures, affecting more than 660 products. The EU has often been a

target; by the end of 2015, it was affected by 15 anti-dumping measures. India also makes strong use of safeguard measures, quantitative restrictions and sanitary and phytosanitary measures.

8. **India severely restricts services trade with the rest of the world.** The OECD ranks it as the most closed country, before India, China, and Russia. Areas such as legal or accounting services, air transport, insurance, or architecture face above average barriers. Other areas are more accessible: logistics, engineering, or distribution.

9. A Broad-based Trade and Investment Agreement between the EU and India has the potential to **approximately double trade between the two proponents in the long-run** (over a 10-12 years adjustment period). Both regions could register a large increase in trade of business services. India could also more than double exports of wearing apparel, textiles, and leather products. Europe could increase exports of transport equipment and machinery. Very substantial trade gains, sometimes up to several hundred percent, could occur in certain agri-food sectors, albeit often from very low initial levels. This is the case for processed rice exports from India, and for vegetable oils and fats exports from the EU.

10. **The trade deal could make India a much more open country.** About 10 to 12 years after entry of force of the agreement, the ratio of trade (exports plus imports) over GDP could increase from 53% to up to 61% as a consequence of the agreement. Across EU member states, this measure of openness would go up from 86% to 87%, with the strongest gains in Slovakia, Belgium and the UK.

11. **The EU-India FTA could increase per capita income in India by USD 1.3% in the long-run.** This is the result of a simulation exercise using a static general equilibrium trade model. The underlying assumption is that the EU-India free trade agreement (FTA) lowers trade frictions between the two parties by as much as other modern ("deep") trade agreements have. If the FTA falls short from these standards, it would still boost per capita income in the subcontinent by about 0.7%. These gains amount to USD 22.0 and USD 11.4 per year and person, respectively.

12. **In the EU, the proposed FTA has the potential to increase per capita income by USD 44 per year** in deep agreement and by USD 21 in a shallow one. These gains amount to 0.14 and 0.06% of current GDP per capita, respectively. This average hides substantial regional variation within the EU: Belgium and Ireland would benefit most, since they are beachheads for Indian firms in Europe. Croatia and Portugal would benefit least, as their exports (textiles, apparel) compete with India's. Germany could unlock per capita income gains of up to USD 61 per year. However, all EU members gain - a result that is by no means automatic in the used modeling setup.

13. **Outsiders to the agreement would remain largely unaffected.** While they tend to lose a market share in the EU and in India, this is compensated by higher incomes in the parties of the FTA. World income would go up by about USD 46 bn.. The small amount of trade diversion is a natural consequence arising from massive trade in inputs along tightly integrated value chains.

14. If the FTA does nothing more than eliminating tariffs, income gains would be close to zero in India, but about USD 6 per capita per year in the EU. This asymmetry arises, because India still has substantial tariffs on EU imports, often ranging in the double digits, while the EU's import tariffs are already very low. This fact also implies that an **EU-India FTA would have major budgetary effects in India**: the government's tariff income would fall by USD 7 bn. or 0.42% of GDP. The increase in economic activity is, however, sufficient to compensate these effects.

15. Almost all of India's potential welfare gains from the elimination of tariffs arises from the agricultural sector, where Indian firms still face high tariff barriers in Europe. **Lower costs of non-tariff barriers, in contrast, contribute to the bulk of the welfare gains.**

16. **India has a competitive business service sector.** This industry is the biggest potential winner from an EU-India FTA. It could increase its value added by up to USD 6.5 bn.. However, the gains come not so much from lower non-tariff measures (NTMs) but from increased demand for Indian business services due to greater activity in manufacturing sectors in both the EU and India.

17. **India would also see substantial gains in the textiles and apparel sectors.** These could increase value added by about USD 4 bn. and USD 3 bn., respectively. Reflecting India's comparative advantage, these sectors benefit from lower tariffs in the EU (which are still sizable in this area). However, only an ambitious agreement, which significantly reduces red tape, would do the trick.

18. **In India, the automotive and the machinery sectors belong to the industries which would suffer** from a contraction due to the FTA. This is because Europe is very competitive in these areas. However, these are also industries in which EU producers have used foreign direct investment to produce in foreign markets. If the EU-India agreement improves the investment conditions in India, these value added losses may be offset.

19. There is some evidence from the empirical political economy literature that the **government puts a much lower weight on aggregate welfare relative to political rents in India** compared to more developed countries. This work also suggests that a much smaller proportion of the population is politically organized in India. However, some sectors are expected to wield political power in a democracy like India by virtue of their size.

20. We expect the likelihood of success in the negotiation of the EU-India FTA to increase if certain large politically organized losing sectors in India are excluded from the FTA. Most importantly, **the probability of success is expected to be significantly higher if non-trade concessions (such as a stronger version of TRIPS, harmonization of labor and environmental standards) are not demanded by the EU.** Our simulations show that there are aggregate gains for both the EU and India without including these non-trade issues in the negotiations.

21. **An EU-India FTA would lead to structural change in India:** 0.9% of the workforce would have to change from a shrinking sector (such as motor vehicles or financial services) to a growing one (such as business services or apparel). The largest supplier of workers for expanding industries could be the public sector. In the EU, the agreement would have only very minor effects on job displacement.

22. **The exit of the United Kingdom from the EU (Brexit) lowers the potential gains** that India can hope to achieve by approximately one fifth. A new trade deal between the UK outside of the EU and India would be marginally more beneficial for Britain than if the country had remained in the EU, while India would not register any significant disadvantages. However, our simulations confirm that the costs of Brexit are more than ten times as big as the potential gains from a new India-UK deal.

23. **India is a very diverse country.** There are still substantial trade frictions between its states. Due to lacking data, this fact is not taken into account in the present analysis. In contrast, the EU is modeled as a collection of countries between which trade costs still exist. This implies that the results may underestimate the benefit of the agreement for both sides if it leads to more regulatory convergence within India.

The study is structured as follows: In Chapter 2, we start with a short presentation of the Indian economy and focus on some of its less well-known features such as its internal diversity. Next, we provide an overview of the EU-Indian economic relationship. Chapter 3 describes patterns and dynamics of trade volumes, investment positions, and migration patterns. Then, in Chapter 4 we show that India has a relatively high level of protection against foreign imports in many sectors. We provide tariff and non-tariff barriers in goods and services sectors. Next, Chapter 5 briefly describes the Ifo simulation model and chapter 6 contains results on three scenarios, for which general equilibrium consistent results on outcomes are provided. Chapter 7 discusses pitfalls and stumbling blocs of the agreement. The final chapter proposes a number of policy conclusions.

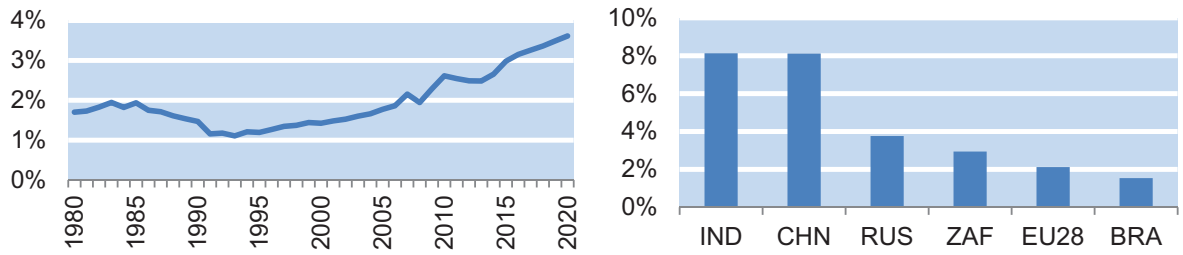
2 India: A Diverse Subcontinent

India is the world's second most populous country and, according to UN estimates, is bound to overtake China within the next years and to swell to more than 1.7 bn. people by 2100.[6] Nonetheless, many in Europe know very little about India. In this report, we certainly cannot fill this gap, but we still wish to present a number of facts about the Indian economy which matter for its trade relationship with Europe. The chapter portrays the recent growth experience, describes the economic and societal challenges, and pays special attention to the large degree of heterogeneity within the country. To this end, the study uses data from official Indian statistical sources.

2.1 India: Aggregate Performance

Figure 1a shows the development of India's share of total world GDP over time. After a decline of almost one percentage point in the 1980's, India has steadily increased its share of world GDP since the 1990s. In 2015, India accounted for 2.98% of world GDP. According to estimates of the World Economic Outlook (WEO), it is about to further increase its share in the years until 2020. When comparing the GDP growth rates (2013 to 2014) of the BRICS states (see Figure 1b), it becomes clear that the growth rates of India (8.13%) and China (8.12%) were more than twice as large as the ones of the other BRICS economies.

Figure 1: India's Role in the World Economy



(a) India's Share of Total World GDP, 1980 - 2020 (in %)

(b) GDP Growth in the BRICS and the EU28, 2013 - 2014 (in %)

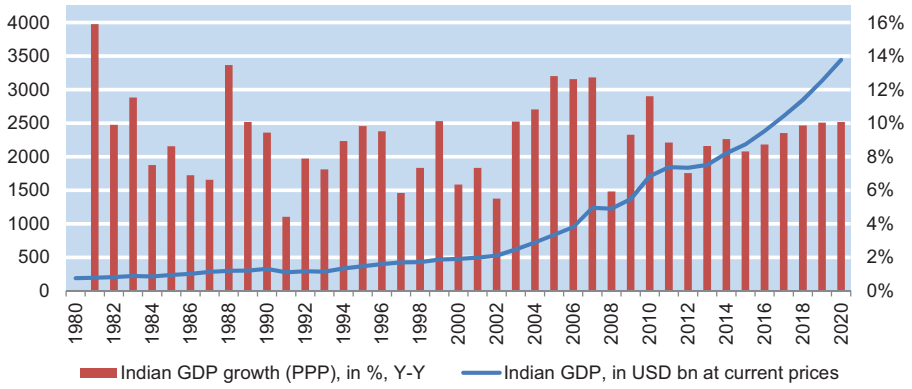
Source: (a) WEO, (b) Worldbank, WDI. **Note:** (a) WEO estimates after 2015.

The evolution of Indian GDP and its growth rates over time are displayed in Figure 2. While India's GDP increased steadily but slowly in the 1980s and 1990s, it really took off since 2000. In 1980 the

[6] UN World Population Prospects, 2015 Update, Medium Variant.

Indian GDP was USD 189.4 bn., in 1990 it had nearly doubled to USD 326.6 bn.. Between 2000 and 2015, the Indian GDP more than quadrupled from USD 476.6 bn. in the year 2000 to USD 2,182.6 bn. in 2015. Estimates of the World Economic Outlook predict a further increase to USD 3,443.6 bn. in 2020. At the same time, India experienced high growth rates, with some volatility in the 1990s and 2000s. Even though, growth rates have ranged between 4.42% and 15.9%, they have slightly flattened, but predictions until 2020 still range between 9% and 10%.

Figure 2: Indian GDP and GDP Growth, 1980-2020



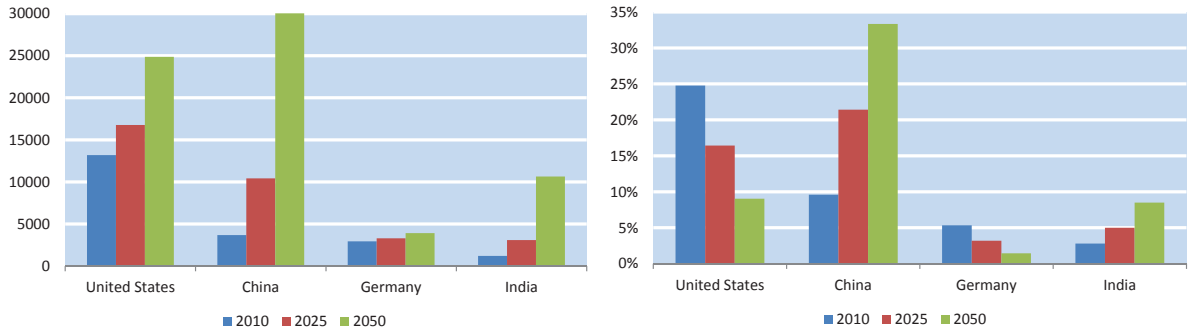
Source: WEO. **Note:** WEO estimates after 2015.

Figure 3 compares long-run predictions of GDP for the years 2010, 2025 and 2050 from the CEPII in Paris. Forecasts of this type are fraught with many problems; however, based on the neoclassical growth model, they do reveal broad patterns based on predictions of population growth, total factor productivity, and investment. Measured in constant 2005 USD, the size of the Indian economy is forecasted to increase by a factor of about 8.8 between 2010 and 2050; the German economy, in contrast, would increase by a factor of 1.3 only. By 2025, the total size of the Indian economy will have converged to the size of Germany's. The comparison with China is telling: China's economy is predicted to increase by a factor of 8.0. The latter finding reflects the fact that China has already made more progress on the catch-up process. However, the forecast suggests that India will remain a substantially smaller economy than China in 2050, despite its larger population size.

Panel (b) in Figure 3 depicts shares in global GDP, measured in current USD.[7] These data suggest that India will overtake Germany even earlier than 2025. Germany's share is predicted to fall from 5.3% to 1.5%, while India's is to increase from 2.8% to 8.5%, converging almost completely to the US size.

[7] To measure countries' purchasing power on international markets, international rather than domestic prices are adequate. Therefore, no PPP adjustment is required.

Figure 3: Long-run Projections of GDP, Selected Countries

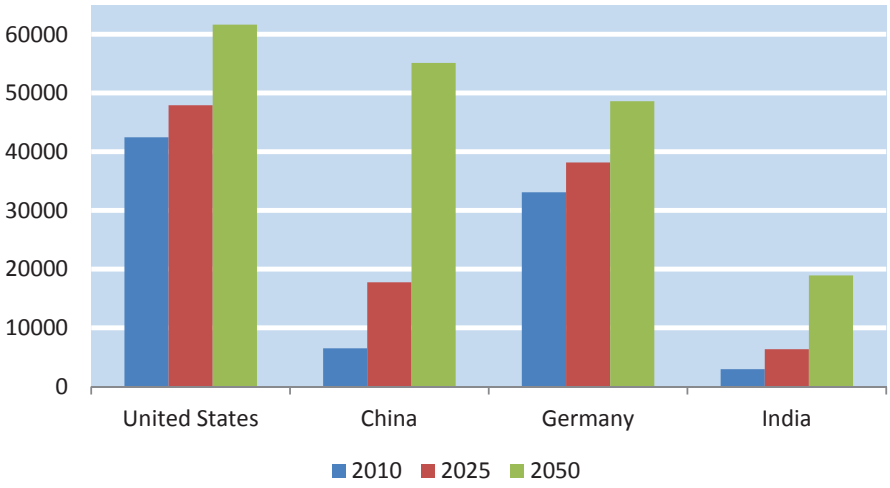


(a) 2005 USD, bn.

(b) GDP shares in global total (in %)

Source: CEPII, own calculations.

Figure 4: Long-run Projections of GDP Per Capita (in 2005 USD, PPP Adjusted), Selected Countries 1980-2020



Source: CEPII, own calculations. **Note:** PPP denotes purchasing power parity.

Figure 4 draws on the same data to show that India will probably remain a relatively poor country, despite its dramatic catching-up. Per capita income (in PPP units) will grow from about 7% of the US level to about 33%.[8]

This look into the crystal ball, while involving enormous uncertainties, makes one thing very clear: India

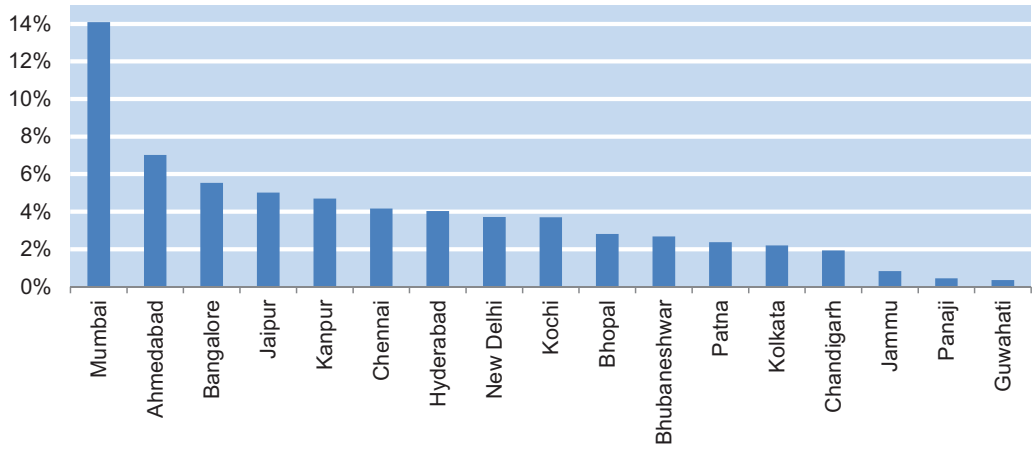
[8]Note that the predictions suggest that Germany will fall behind China in per capita income, mostly because of a very high dependency ratio (a small share of the population being economically active). Clearly, such predictions are prone to large uncertainty.

will become tremendously more important as export and import market for Germany. The Global Europe Strategy mentioned in the Introduction rightly puts emphasis on improving the EU's trade relationship with this emerging economy. However, these aggregate figures conceal large discrepancies within India. These are important in understanding the political economy of India's trade policy.

2.2 India: Heterogenous State-Level Performance

Figure 5 describes the share of total GDP by Indian regions for the fiscal year 2013-14.[9] The economically most powerful region is Mumbai, which contributes the highest share of GDP (14.1%). Mumbai is followed by Ahmedabad with a share of 7.0%, Bangalore with 5.5%, and Jaipur with 5.0%. Interestingly, New Delhi is only found on a middle place with a contribution to total GDP of 3.7%. At the other end of the spectrum are regions mostly in the northern and eastern part of India, such as Jammu and Kashmir with a contribution of only 0.8%, Panaji with 0.5% and Guwahati with a share of only 0.3% of total Indian GDP.

Figure 5: Share of Total GDP by Indian Regions, 2013-14 (in %)



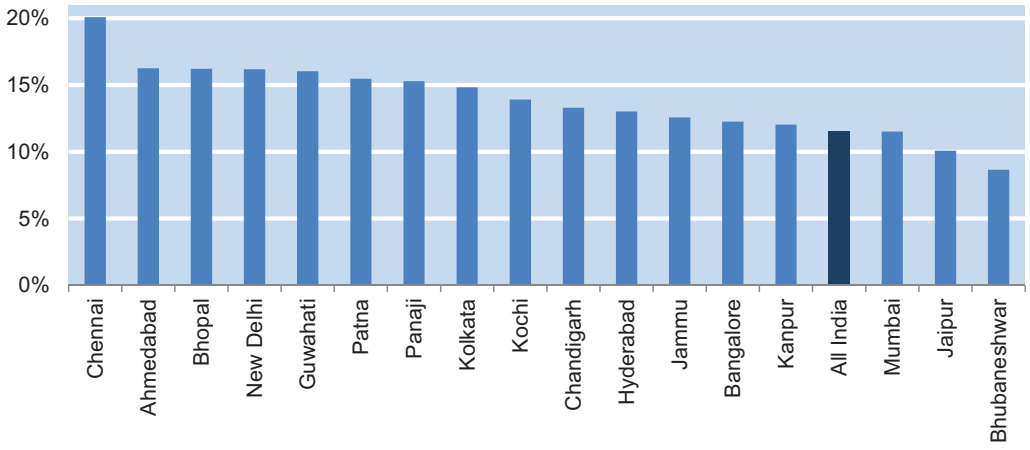
Source: Directorates of Economics & Statistics of respective state governments, and for all India: Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India. **Note:** The regions refer to the respective states covered by RBI's regional offices. The regional shares of total GDP are calculated by aggregating state-level data which is given in INR at current prices. The data covers shares of total Indian GDP of all 29 states and of 4 out of the 7 union territories. Data is missing for the union territories Lakshadweep, Dadra, Nagar Haveli, Daman, and Diu. The Indian fiscal year runs from 1 April to 31 March.

India as a whole has grown steadily over the last years. Between 2010 and 2015, India grew by a per annum rate of 7.2%. Figure 6 depicts by how much regions contributed to the overall growth

[9] Table A1 in the Appendix defines statistical regions.

rate between 2012-2013 and 2013-2014. Interestingly, the growth rate of Indian regions shows some heterogeneity and spreads out between 20.1% in Chennai to 8.7% in Bhubaneshwar.

Figure 6: GDP Growth by Indian Regions, 2012-13 to 2013-14 (in %)



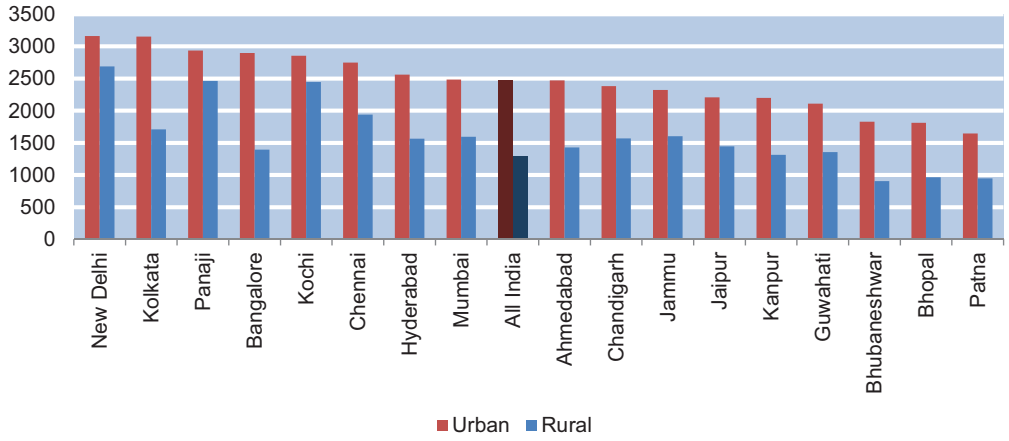
Source: Directorates of Economics & Statistics of respective state governments, and for all India: Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India. **Note:** The regions refer to the respective states covered by RBI's regional offices. The regional growth rates are calculated by aggregating state-level data which is given in INR at current prices. The data covers growth rates of all 29 states and of 4 out of the 7 union territories. Data is missing for the union territories Lakshadweep, Dadra, Nagar Haveli, Daman, and Diu. The Indian fiscal year runs from 1 April to 31 March.

Indian growth was heavily driven by robust domestic demand. Between 2004-2005 and 2011-2012, the monthly consumption expenditures per capita have, on average, more than doubled in urban but also in rural areas. In urban areas monthly consumption has increased from INR 1,052.4 to INR 2,477.0 , while expenditures have doubled from INR 558.8 in 2004-2005 to INR 1,287.2 in 2011-2012.

Figure 7 shows that the region of New Delhi is top of the list for urban and rural monthly consumption expenditures, which amount to INR 3,160.8 for urban and INR 2,690.2 for rural areas in 2011-2012. Kolkatta has a similarly high consumption expenditure in urban areas (INR 3,152.3), but in rural areas the expenditure rates are rather mid-table (INR 1,707.8), while Panaji has high consumption expenditures both in urban (INR 2,934.9) and rural areas (INR 2,460.8). At the lower end regions, such as Bhubaneshwar, Bhopal and Patna fall behind not only in rural, but also in urban consumption expenditure per capita. In these regions, urban area consumption expenditure is about 25% to 30% lower than the Indian average, in rural areas the expenditure rate is 26% to 34% lower.

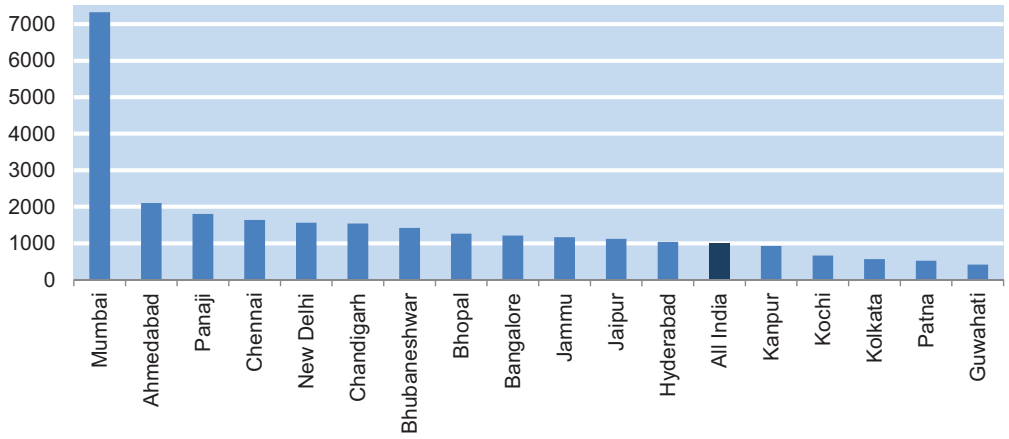
An indicator of productivity or development is electricity consumption per capita across Indian regions, shown in Figure 8 for 2014-2015 in kWh. Mumbai is by a long way the region with the highest electricity consumption per capita with 7,329 kWh, followed by Ahmedabad with 2,105 kWh and Panaji

Figure 7: Monthly Consumption Expenditures per Capita by Indian Regions, 2011-12 (in INR)



Source: Planning Commission, Government of India. **Note:** The regions refer to the respective states covered by RBI's regional offices. The regional monthly expenditures are calculated by aggregating state-level data which is given in INR at current prices. The data covers monthly per capita expenditures for all 29 states and all 7 union territories. The Indian fiscal year runs from 1 April to 31 March.

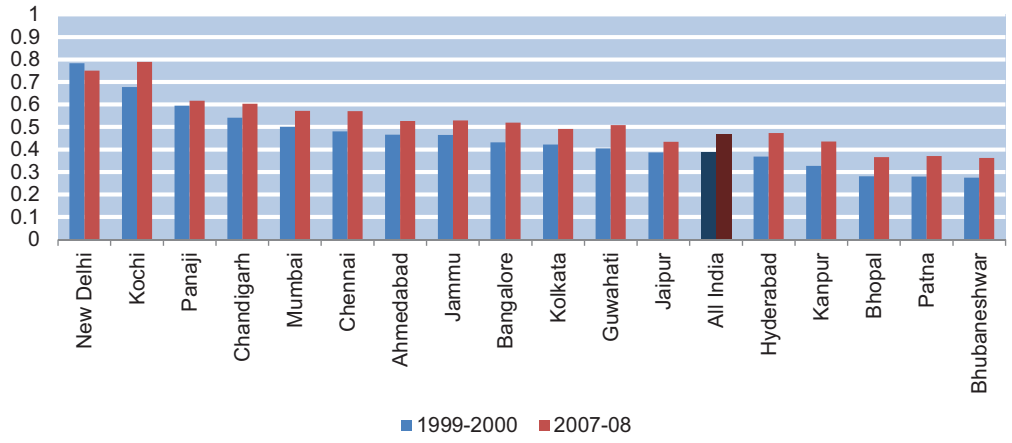
Figure 8: Electricity Consumption per Capita by Indian Regions, 2014-15 (in kWh!)



Source: Ministry of Power, Government of India. **Note:** The regions refer to the respective states covered by RBI's regional offices. The regional consumption values are calculated by aggregating state-level data. The data covers consumption values of all 29 states and of all 7 union territories. The Indian fiscal year runs from 1 April to 31 March.

with 1,803 kWh per capita. The Indian average amounts to 1,010 kWh per capita, the region with the lowest electricity consumption is Guwahati with only 414 kWh, the second lowest has is Patna with 519 kWh per capita.

Figure 9: HDI by Indian Regions, 1999-2000 and 2007-08



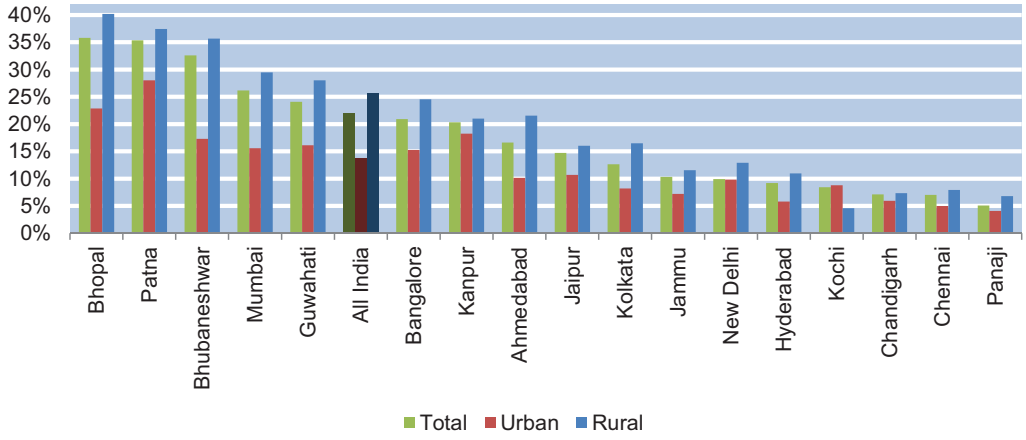
Source: India Human Development Report 2011 by the Institute of Applied Manpower Research, Planning Commission, Government of India. **Note:** The regions refer to the respective states covered by RBI's regional offices. Data is missing for Lakshadweep, Chandigarh, Dadra, Nagar Haveli, Daman, Diu, Sikkim, Andaman, Nicobar Islands, and Puducherry. In the original data, the regions Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura are reported together as "north-eastern" states. Here, this group was aggregated with Assam to calculate a value for the RBI region of Guwahati. The Indian fiscal year runs from 1 April to 31 March.

The Indian Human Development Report (HDI, 2011) estimates the HDI for Indian regions. The HDI is a composite index, consisting of three indicators – consumption expenditure (as a proxy for income), education, and health. The index ranges from 0 to 1. The overall HDI in India has increased by 21% between 1999-2000 and 2007-2008 from 0.387 to 0.467.

The regional HDI values are calculated by aggregating state-level data. The top five ranks in 1999-2000 and in 2007-2008 go to the states of New Delhi, Kochi, Panaji, Chandigarh, and Mumbai. According to the HDI (2011), regions that perform better on health and education are also those with higher HDI and thus higher per capita income. Regions with a HDI below the national average in 2007-2008 are the regions Kanpur (0.435), Jaipur (0.434), Bhopal (0.367), Patna (0.372), and Bhubaneshwar (0.362). All other regions show increases in the HDI. Kochi shows the largest increase from 0.677 to 0.79, while Panji has the lowest change (besides New Delhi) from 0.595 to only 0.617. Only the HDI of the region of New Delhi decreased between 1999-2000 and 2007-2008 by 0.033 from 0.783 to 0.750.

In this context, we also look at the distribution of poverty across Indian regions. In Figure 10, we find

Figure 10: Share of Population under Poverty Line by Indian Regions, 2011-12 (in %)



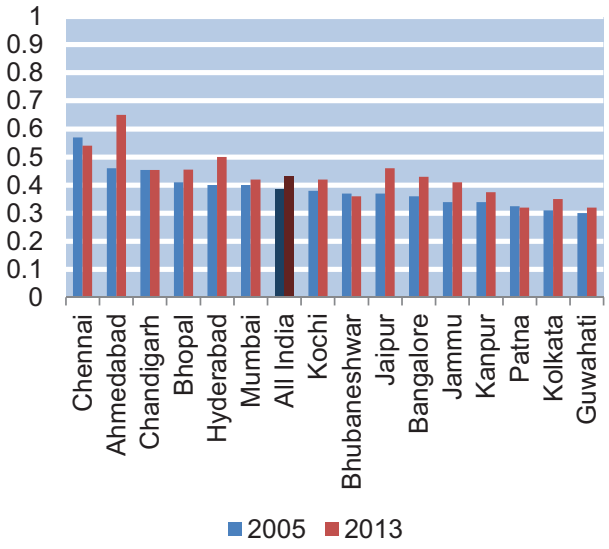
Source: Planning Commission, Government of India. **Note:** The regions refer to the respective states covered by RBI's regional offices. The regional shares are calculated by aggregating state-level data. The data covers the percentages of the population living under the respective state's or union territory's poverty line, for all 29 states and all 7 union territories. The Indian fiscal year runs from 1 April to 31 March.

that those regions (Bhubaneshwar, Bhopal and Patna) with the lowest monthly consumption expenditure per capita are also the ones with the highest share of population under the poverty line, with a total of more than one third in Bhopal, Patna, and Bhubaneshwar in 2011/2012. The spread between urban and rural areas is tremendous. In Bhopal, 22.9% of the population in urban areas live under the poverty line, while it is 40.2% in rural areas. In addition, large heterogeneity exists across regions. The share of population under the poverty line in urban areas ranges from 28.0% in Patna to only 4.1% in Panaji, while that in rural areas ranges from 40.2% in Bhopal to only 4.6% in Kochi.

To shed more light on the relation of prosperity and economic growth, we use the index of economic freedom devised for the Report on Economic Freedom (Debroy et al., 2011). The index is derived from the Fraser Institute's Economic Freedom of the World report, with adjustments relevant to regional entities. Indian regions are significantly different with respect to economic governance (Debroy et al., 2011). The top five states in economic freedom in 2005 were Chennai, Ahmedabad, Chandigarh, Bhopal, and Hyderabad. In 2013, the order has changed with Ahmedabad in the lead, followed by Chennai, Hyderabad, Jaipur (below the Indian average in 2005), and Bhopal. The bottom three states in 2005 were Patna, Kolkata, and Guwahati, and they are still in 2013.

The region with the fastest improvement in economic freedom was Ahmedabad, moving from 2nd to 1st position. Its index improved from 0.46 in 2005 to 0.65 in 2013 on a scale from 0 (no freedom) to 1 (high freedom); an improvement of about one third. The second fastest improver was Hyderabad,

Figure 11: Economic Freedom by Indian Regions, 2005 and 2013



Source: EFSI, Academic Foundation, New Delhi and Friedrich Naumann Foundation (see Debroy et al. (2011)). **Note:** The regions refer to the respective states covered by RBI's regional offices. The regional index scores are calculated by aggregating state-level index scores taken from the EFSI. The methodology of the EFSI index follows the one of Fraser Institute's EFW. The original index was calculated for 20 Indian states. Data is missing for Puducherry, Chandigarh, Dadra, Nagar Haveli, Daman, Diu, Lakshadweep, Sikkim, Andaman, Nicobar Islands, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Delhi, and Goa.

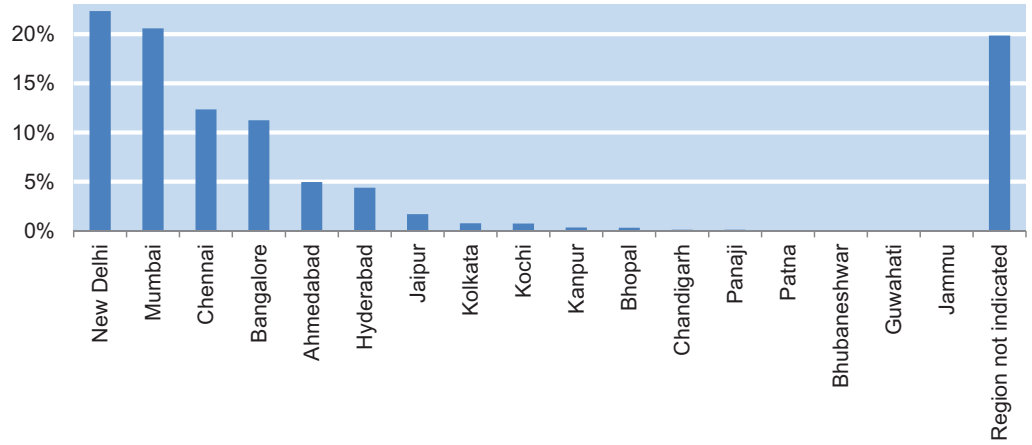
moving up from 0.4 in 2005 to 0.5 in 2013; an improvement of about one quarter.

Only two regions show large increases in economic freedom, most regions experienced a moderate increase in economic freedom, while others also show a lower index of economic freedom, indicating that there is no uniform overall trend in India. The three regions with a decrease in economic freedom are Patna, Bubaneshwa, and Chennai.

Turning to the attractiveness of Indian regions for firms and investors, we see in Figure 12 that Indian regions receive varying shares of FDI inflows. New Delhi and Mumbai receive by far the highest shares of FDI inflows 22.3% and 20.6%, respectively, in the fiscal year 2014-2015. They are followed by Chennai (12.4%), Bangalore (11.2%), Ahmedabad (5.0%), Hyderabad (4.4%), and Jaipur (1.7%). All other regions received below 1% of total FDI inflows in the fiscal year 2014-2015.

The world's biggest democracy is extremely diverse in languages, cultures, and traditions. It is organized in states which enjoy substantial autonomy in many respects, giving rise to institutional and policy differences between them. For example, states have vastly different tax policies. In that sense, India

Figure 12: Share of Total FDI Inflows by Indian Regions, 2014-15 (in %)



Source: Department of Industrial Policy & Promotion, Ministry of Commerce & Industry, Government of India. **Note:** The region-wise FDI inflows are classified as per RBI's regional offices received FDI inflows which are given in INR. The regional offices cover all 29 states and all 7 union territories. The Indian fiscal year runs from 1 April to 31 March.

is not too dissimilar to Europe.[10] Moreover, the subcontinent still suffers from inadequate transport infrastructure, which further fragments it into separate markets (Melchior, 2016). Therefore, it would be appropriate to conduct trade policy analysis at the state level, and treat India, like Europe, as a collection of states. Unfortunately, data on bilateral trade flows amongst Indian states is not available. So, in the simulation exercise, we will assume away any internal trade frictions within India, while we acknowledge their existence within the European Union.

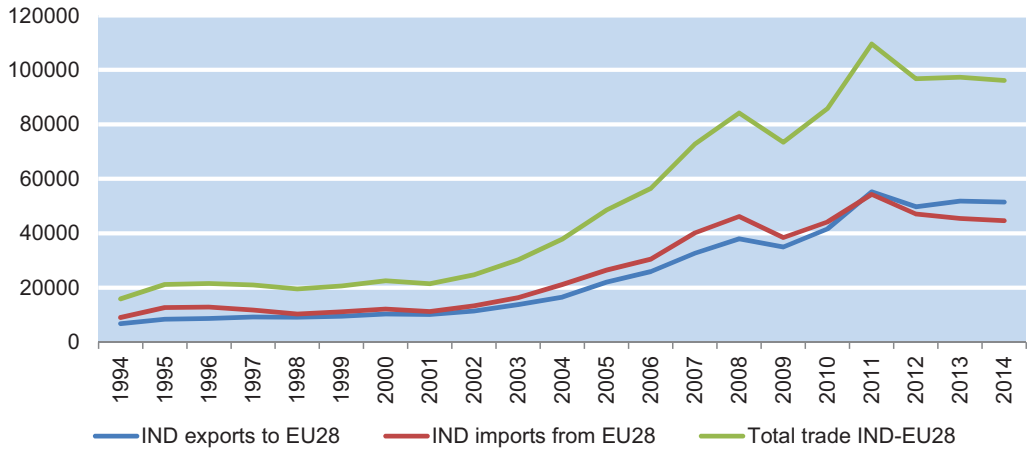
[10] See recent statements by Arvind Panagaryia on this matter, http://timesofindia.indiatimes.com/city/delhi/India-as-a-democracy-better-placed-than-EU-Arvind-Panagariya/articleshow/51561364.cms.

3 EU Trade and Investment with India

The third chapter describes the bilateral relationship between the EU and India. It discusses the evolution of trade volumes and patterns (goods and services), the bilateral investment position, and migration patterns. It provides insights on the relative competitive position of EU exports in India and of Indian exports in the EU.

3.1 Trade in Goods

Figure 13: Trade Volumes between the EU28 and India, 1994 - 2014 (in USD mn.)



Source: IMF DoTS.

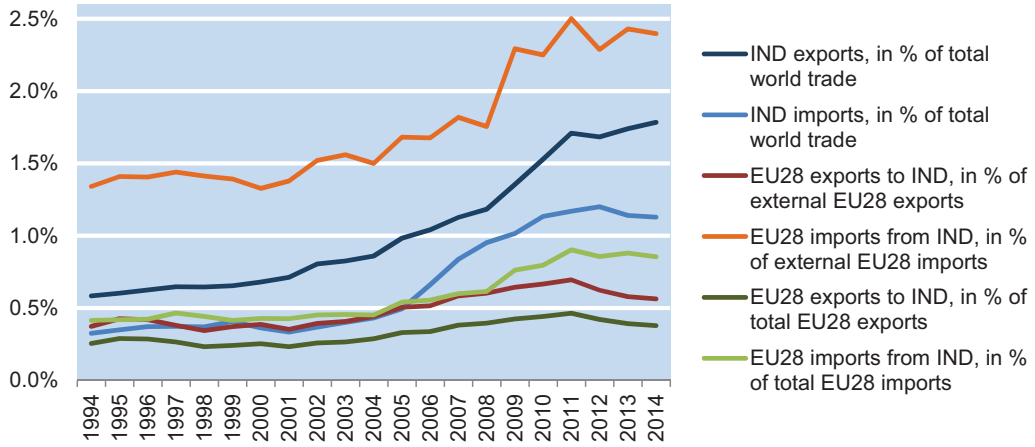
Figure 13 shows the trade volumes between India and the European Union between 1994 and 2014. After starting out at a relatively low level in the 1990's, the trade volumes, both with respect to Indian exports to the EU as well as with respect to Indian imports from the EU, started to increase most noticeably after the year 2001. The economic and financial crisis in 2008/2009 then came along with a breakdown of Indian exports and imports. After a period of recovery in 2010/2011, the trade volumes stagnated since 2011.[11] Interestingly, Indian exports to the EU28 surpassed Indian imports from the EU28 for the first time in 2011. However, the picture reversed again and the EU28 exports to India exceeded the EU28 imports from India again in 2015 (see Figure 17).

Although Indian trade volumes with the EU28 have increased over time, we take a closer look at the relative importance of India among the EU28 trading partners. The relative importance of Indian goods

[11] This is a common feature in many bilateral trade relationships of the EU. It is referred to as the great world trade slow-down by **?**.

exports and imports in total world trade as well as in trade with the EU28 is depicted in Figure 14. As it is the case with Indian GDP (see Figure 1a), the shares of Indian exports and imports among total world trade (blue lines) have increased over time.

Figure 14: Indian Share of Total World Trade and EU28 Trade, 1994-2014

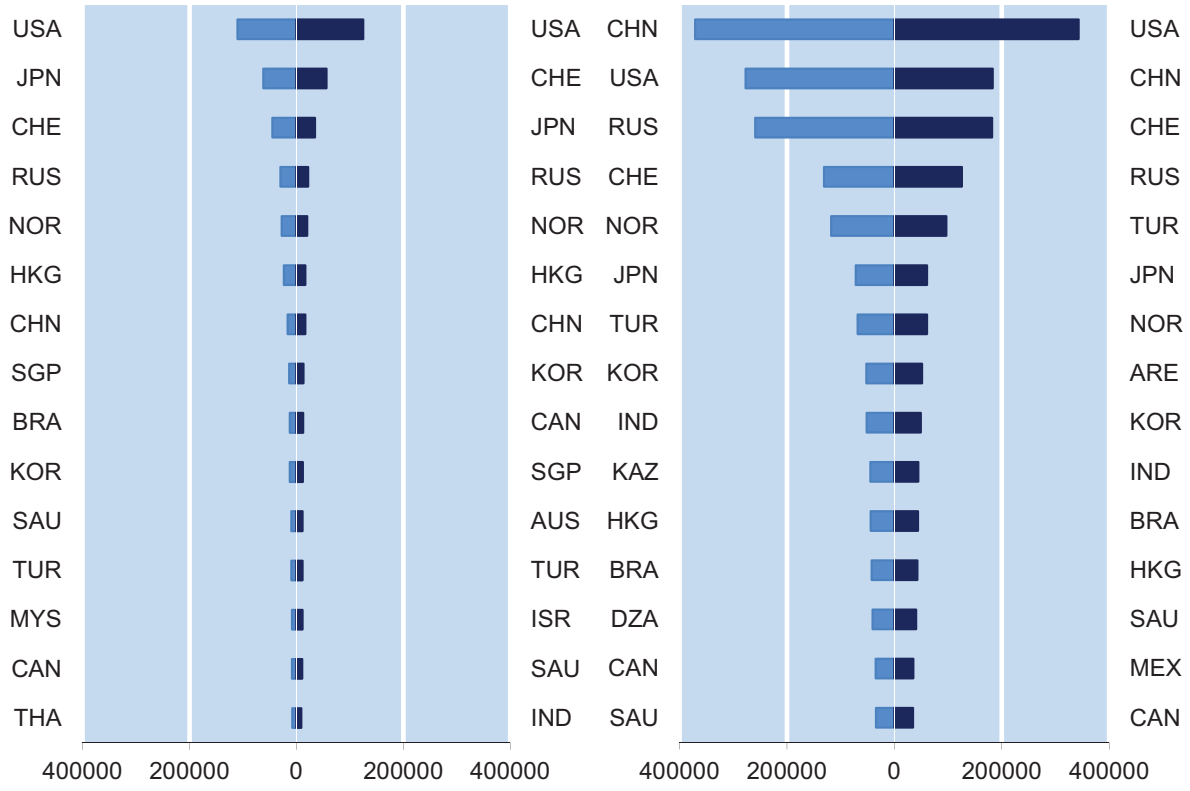


Source: IMF DoTS.

In 1994, Indian exports and imports accounted for 0.60% and 0.39% of world trade, respectively. In 2014, these shares have reached 1.79% (exports) and 1.13% (imports). The red lines show India's share of exports and imports with the EU28 among non-EU28 trading partners (i.e., in terms of extra-EU28 trade). India's relative importance as an export destination for the EU28 is low (0.56% of extra-EU28 exports were shipped to India in 2014), without any significant increase over time. However, the relative importance of Indian products among the extra-EU28 imports is relatively high (2.40% of the extra-EU28 imports stem from India in 2014). The share has increased over time, especially after the financial crises in 2008.

Not surprisingly, India's role as a trading partner for the EU is clearly smaller, when looking at its export and import shares not only among external trading partners but in terms of total EU28 trade (i.e. including intra-EU28 trade). The green lines show the respective export and import shares. 0.38% of total EU28 exports were shipped to India and 0.85% of total EU28 imports came from India. No matter whether we measure them in terms of external or total EU28 trade, India's role as a country of origin of EU28 imports is by far larger than its role as an export destination for EU28 products. Note that, although India's relative importance as a trading partner for the EU28 increased over time (at least in terms of EU28 imports from India), the Indian market is still relatively unimportant for EU28 compared to other trading partners.

Figure 15: EU28 Trading Partners (Top 15) by Import (light blue) and Export (dark blue) Volume (in USD mn.)



(a) 1994

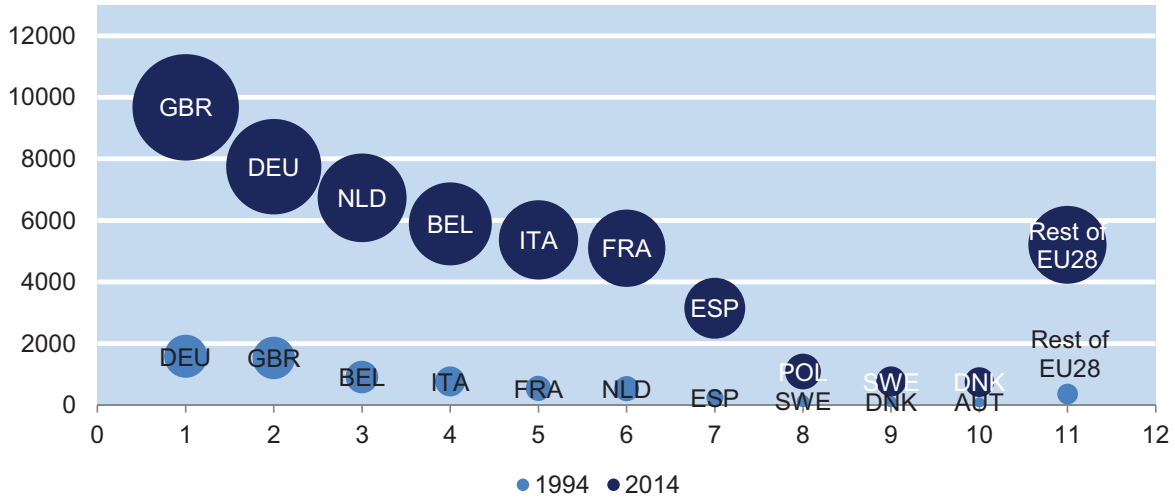
(b) 2014

Source: IMF DoTS. **Note:** The data refers to external trade of the EU28.

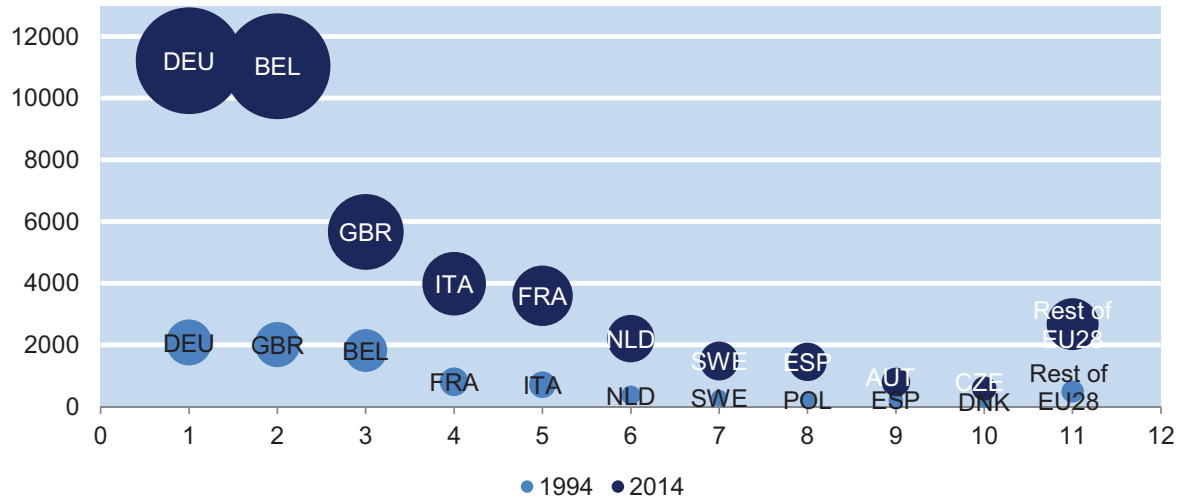
Figure 15 therefore displays a ranking of the EU28 top 15 external trading partners in terms of export and import volumes in 1994 and 2014. While India is not found to be a top 15 import trading partner in 1994, it ranks 9th in 2014 with a total import volume of USD 51,458 mn. (China, rank 1: USD 371,189 mn.). With an export volume of USD 9,120 mn., India ranks among the top 15 export destinations for EU28 products in 1994, and increased its rank to 10th position in 2014 with a total export volume of USD 44,653 mn. (USA, rank 1: USD 342,898 mn.).

Figure 16 lists India's EU28 trading partners in 1994 and 2014. As already shown in figure 13, figure 16 again demonstrates that India's export and import volumes with the EU28 increased significantly over time. As can be seen in figure 16a, the weights of the individual European states as India's export

Figure 16: India's EU28 Trading Partners (Top 10), 1994 and 2014



(a) By export volume (in USD mn.)



(b) By import volume (in USD mn.)

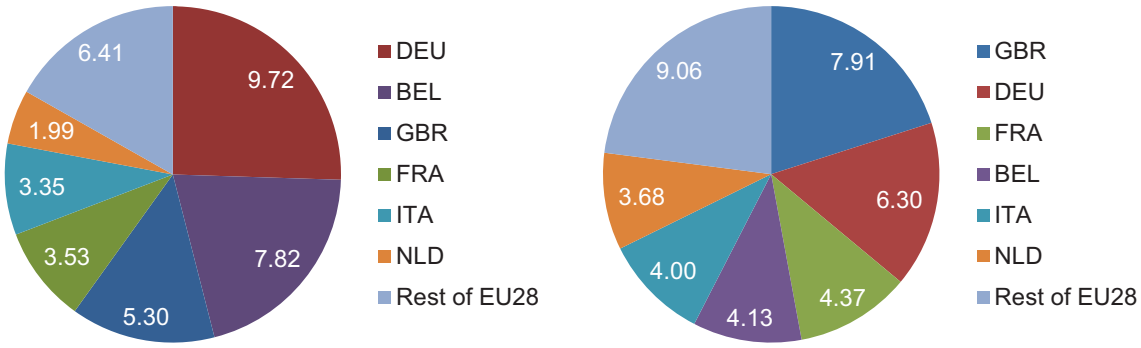
Source: IMF DoTS. **Note:** The data refers to the EU28. Data is missing for Luxembourg in 1994.

destinations have changed between 1994 and 2014. Whereas Germany was top of the list in 1994 with USD 1,586 mn., it ranked second in 2014 with USD 7,746 mn. behind the United Kingdom (USD 1,533 mn. in 1994 and USD 9,677 mn. in 2014).[12] The Netherlands were on the sixth rank in 1994 with USD 535 mn. but increased their position as an export destination for Indian products to the third

[12]We treat United Kingdom and Great Britain as synonymous.

rank with USD 6,734 mn. in 2014.[13] Because of the increase of Indian exports to the Netherlands, Belgium (USD 912 mn. in 1994 and USD 5,885 mn. in 2014), Italy (USD 768 mn. in 1994 and USD 5,366 mn. in 2014), and France (USD 545 mn. in 1994 and USD 5,095 mn. in 2014) each lost one rank. Spain remains the seventh most important export partner for India in 2014 with USD 3,146 mn. (USD 247 mn. in 1994). Sweden (USD 133 mn. in 1994 and USD 766 mn. in 2014) and Denmark (USD 109 mn. in 1994 and USD 747 mn. in 2014) remain within the top 10, but they are overtaken by Poland (USD 1,088 mn. in 2014), which was not among the top 10 destinations in 1994, whereas Austria (USD 90 mn. in 1994) dropped of the top 10 in 2014.

Figure 17: India's EU28 Trading Partners (Top 6), 2015



(a) EU imports from India, in bn. EUR

(b) EU exports to India, in EUR bn.

Source: Eurostat.

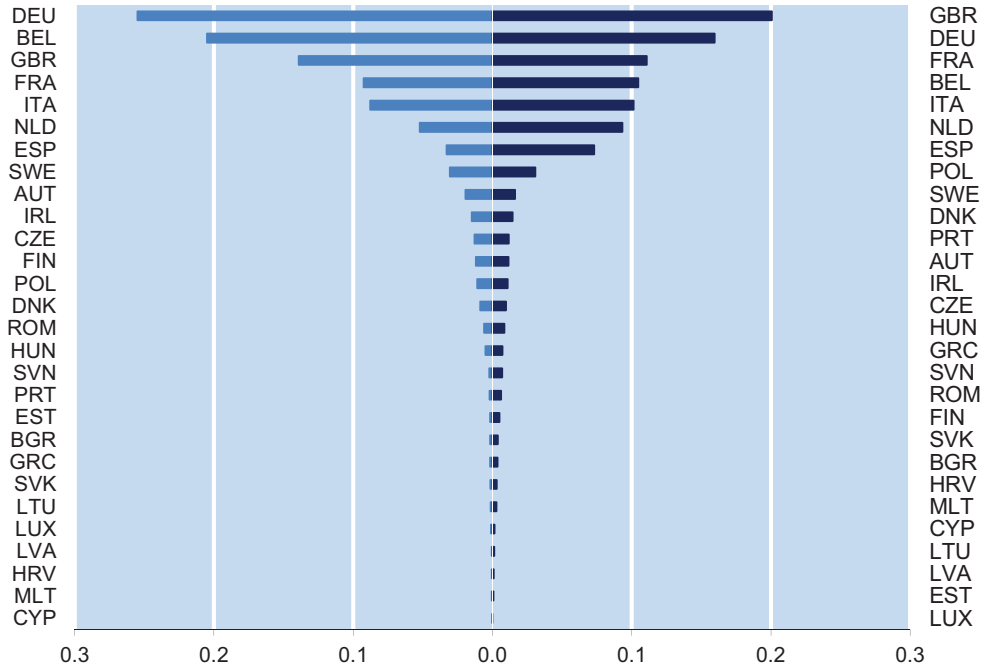
Figure 16b shows India's 10 most important EU import partners. Germany remains the most important country of origin of Indian imports from the EU28 in 2014 with a volume of USD 11,209 mn. (2,075 mn. USD in 1994). The United Kingdom (USD 2,009 mn. in 1994 and USD 5,660 mn. in 2014) and Belgium (USD 1,812 mn., in 1994 and USD 11,036 mn. in 2014) switched positions in 2014 as compared to 1994, and so did France (USD 803 mn. in 1994 and USD 3,592 mn. in 2014) and Italy (USD 707 mn. in 1994 and USD 3,979 mn. in 2014). The Netherlands (USD 367 mn. in 1994 and USD 2,200 mn. in 2014) and Sweden (USD 272 mn. in 1994 and USD 1,476 mn. in 2014) remain the sixth and seventh most important import partners for India in 2014, respectively. Spain (USD 205 mn. in 1994 and USD 1,449 mn. in 2014) stayed within the top 10, whereas Poland with USD 225 mn. in

[13] Trade statistics of the Netherlands and of Belgium are inflated by so called entrepot trade: A substantial share of imports is not meant for domestic consumption, but is re-exported to other EU countries. Similarly, a substantial share of exports is not from domestic production but reflects exports of items imported from other EU countries.

1994 and Denmark with USD 159 mn. in 1994 dropped out. They were replaced by Austria with USD 795 mn. in 2014 and the Czech Republic with USD 584 mn. in 2014.

Figure 17 takes a closer look at EU28 trade with India in 2015. Six countries – the United Kingdom (EUR 7.91 bn.), Germany (EUR 6.30 bn.), France (EUR 4.37 bn.), Belgium (EUR 4.13 bn.), Italy (EUR 4.00 bn.), and the Netherlands (EUR 3.68 bn.) – account for more than three quarters of EU export volumes to India in 2015. In terms of the import volume from India, only five countries – Germany (EUR 9.72 bn.), Belgium (EUR 7.82 bn.), the United Kingdom (EUR 5.30 bn.), France (EUR 3.53 bn.), and Italy (EUR 3.35 bn.) – make up three quarters. The total EU28 export volume to India was EUR 39.44 bn. and the total EU28 import volume from India was EUR 38.12 bn. in 2015.

Figure 18: India's EU28 Trading Partners by Imports (light blue) and Exports (dark blue) of total EU28-IND Trade, 2015 (in %)



Source: Eurostat.

The same is true when we look at the EU28 and Indian trade shares in 2015. Figure 18 ranks all the EU28 countries against each other. With respect to imports, Germany covers more than a quarter of total of the import volume from India (25.5%), while Belgium (20.5%) accounts for a fifth. They are followed by Great Britain (13.9%), France (9.3%), Italy (8.8%) and the Netherlands (5.2%). On the

export side, the picture again looks similar to Figure 17. The United Kingdom (20.06%) accounts for a fifth of total EU28 export volume to India. This is not at all surprising due to their close historical ties and colonial legacy. On rank two to six, we again find Germany with 16.0%, France with 11.1%, Belgium with 10.5%, Italy with 10.1%, and the Netherlands with 9.3% of exports from the EU28 to India.

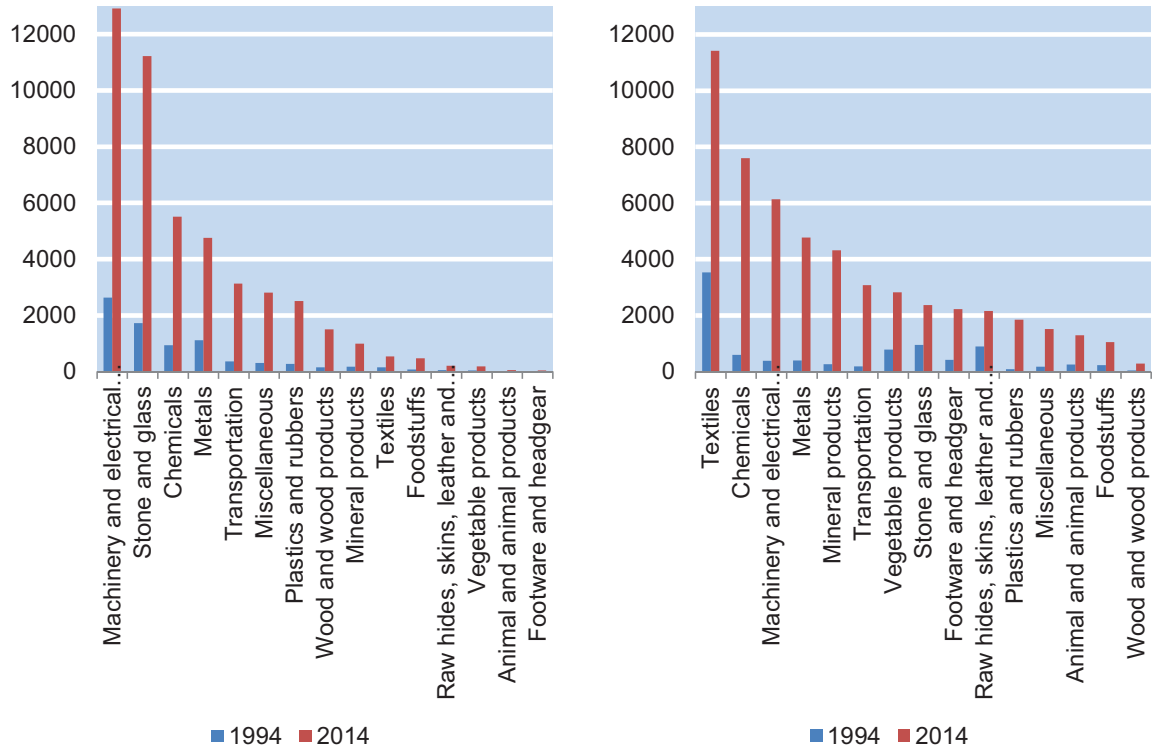
3.2 Sectoral Structure of Trade in Goods

Figure 19 shows the sectoral structure of India's trade with the EU28 of 1994 as compared to 2014. Note that both Indian imports from the EU28 and Indian exports to the EU28 have increased over the last 20 years. The most important export sector for the EU28 to India (see Figure 19a) were machinery and electrical products with USD 2,632 mn. in 1994 and USD 12,918 mn. in 2014, followed by stone and glass with USD 1,728 mn. in 1994 and USD 11,223 mn. in 2014. While metals were the third most important sector with USD 1,120 mn. in 1994 (USD 4,759 mn. in 2014), chemicals range on rank three for EU28 exports to India in 2014 with USD 5,514 mn. (USD 938 mn. in 1994). The textile sector was by far the most important import sector for the EU28 from India (see Figure 19b) in 1994 with USD 3,538 mn.. Textiles also remained the top import product group in 2014 with USD 11,418 mn.. In 1994, textiles were followed by stone and glass (USD 950 mn.), and raw hides, skins, leather, and fur (USD 900 mn.). In 2014, chemicals (USD 7,597 mn.), and machinery and electrical products (USD 6,134 mn.) became the second and third most important import products, respectively.

When we look at the shares of sectors in percent of total Indian imports from and exports to the EU28 in 2014 (compare Figure 20), it is noteworthy that machinery and electrical products (27.6%), and stone and glass (24.0%) together make up more than half of India's goods imports from the EU28 in 2014. By adding three more sectors – chemicals (11.8%), metals (10.2%), and transportation (6.7%) – these sectors make up for more than three quarters of Indian imports from the EU28. The Indian export structure to the EU28 in 2014 was more diversified than its import structure, since there were many sectors with relatively small shares (between 4% and 12%) and no sectors with very large shares among total exports from India to the EU28. The textile sector was the most important export sector for India with 21.6%, followed by chemicals (14.4%) and machinery and electrical products (11.6%).

Figure 20 also shows that the trade pattern of India has remained quite stable, in particular on the import side. The four largest sectors twenty years ago still are the most important today. On the export side, textiles still dominate, but the relative importance of vegetable products or leather products has declined significantly. India has become an important supplier of chemicals and of machinery (mostly components) to the EU. These changes show that there has been some upgrading in the export portfolio.

Figure 19: Sectoral Structure of EU28-Indian Trade Volumes, 1994 and 2014



(a) Indian imports from EU28 (in USD mn.) (b) Indian exports to EU28 (in USD mn.)

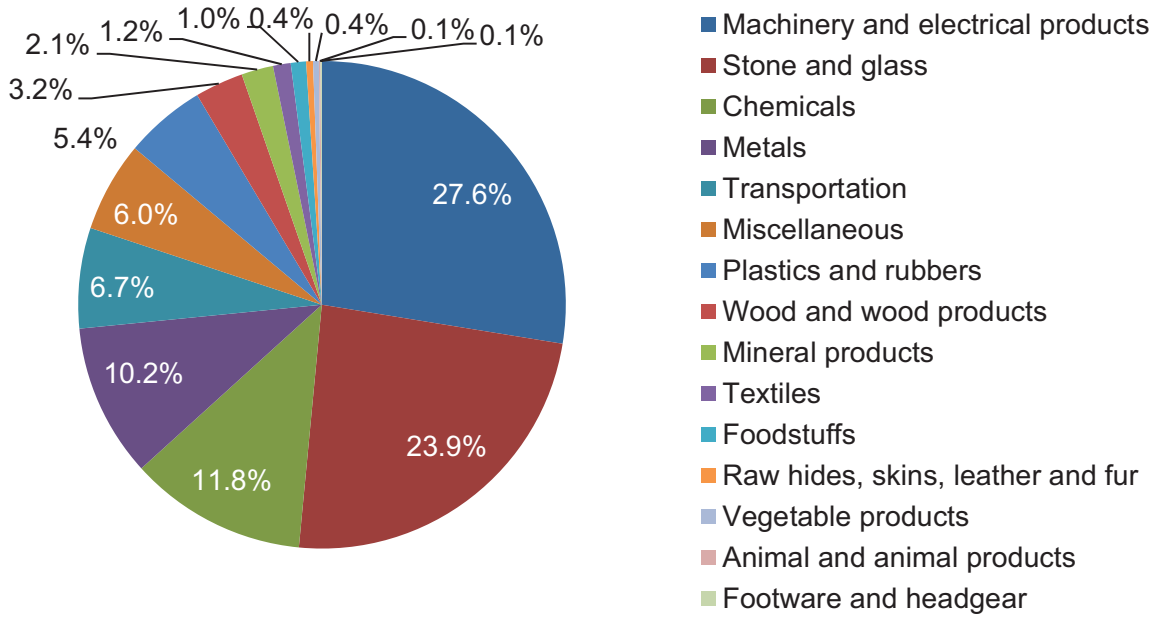
Source: UN COMTRADE, CEPII BACI.

3.3 Trade in Services

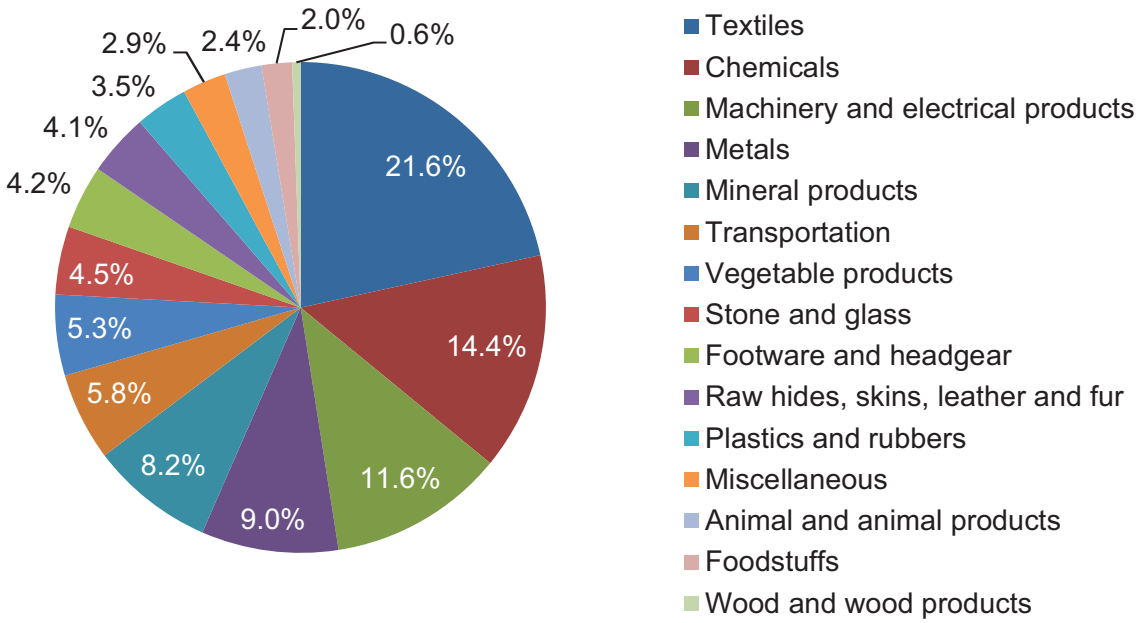
Trade in services between the EU27 and India steadily increased over time (see Figure 21). EU27 service exports to India more than tripled within the 10 years between 2004 and 2013, reaching a total value of USD 16,846 mn. in 2013. EU27 service imports from India also almost tripled between 2004 and 2013, with a total value of USD 14,893 mn. in 2013. Note that in most of the years, the EU28 exports of services to India amounted to larger values than its imports from India.

We look at the relative importance of India as a trading partner for the EU27 as compared to the other service trading partners of the EU. Figure 22 displays a ranking of the top 15 external service trading partners of the EU in terms of exports and imports in 2004 and 2012 (the most recent year available).

Figure 20: Sectoral Structure of EU28-Indian Trade Shares, 2014



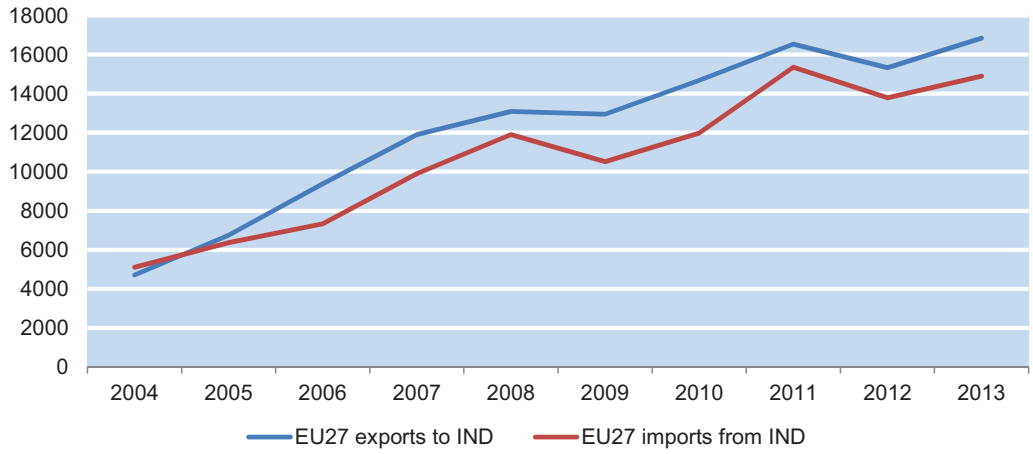
(a) Indian imports from EU28 by sector, in % of total Indian imports from EU28



(b) Indian exports to EU28 by sector, in % of total Indian exports to EU28

Source: UN COMTRADE, CEPII BACI.

Figure 21: EU27 - India Trade in Services, 2004-2013 (in USD mn.)



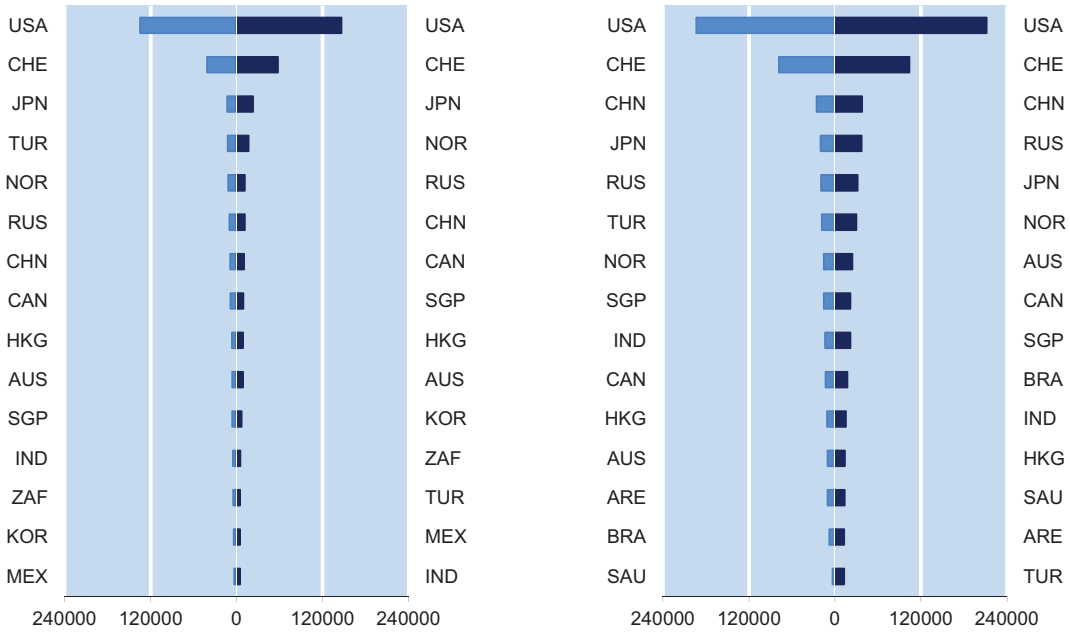
Source: OECD TiSP. **Note:** The data refers to the EU27 as Croatia is not listed in OECD TiSP.

Among the countries where EU27 service imports came from in 2004, India occupied rank 12 with USD 5,099 mn.. It increased its position in 2012 to rank 9 with USD 13,794 mn.. Thus, its relative importance as an import partner in services has increased.

In 2012, India's relative importance among the EU27 import partners in services is comparable to that of Canada (USD 13,099 mn.), Singapore (USD 15,566 mn.), or Norway (USD 15,782 mn.). The value of the EU27 service imports from India was only slightly smaller than EU27 service imports from Turkey (USD 18,345 mn.), Russia (USD 19,395 mn.), or Japan (USD 20,012 mn.). However, compared to the EU's top three service import partners – the USA (USD 193,675 mn.), Switzerland (USD 78,068 mn.), and China (USD 25,623 mn.) – India's role is relatively small.

A closer look at the EU27 top 15 external service export partners reveals that India was able to increase its relative position also as an export destination for the EU27. While India just made it into the top 15 in 2004 with USD 4,706 mn., it ranked 11th with an EU27 export volume of USD 15,331 mn. in 2012. Comparable trade partners for EU27 exports are Hong Kong (USD 13,964 mn.), Brazil (USD 17,337 mn.), Singapore (USD 21,394 mn.), Canada (USD 21,700 mn.), or Australia (USD 24,433 mn.) on the one hand and the top three export destinations – the USA (USD 211,547 mn.), Switzerland (USD 103,892 mn.), and China (USD 37,743 mn.) – on the other hand.

Figure 22: Trade in Services, the EU27's Trading Partners (Top 15) by Service Imports (light blue) and Service Exports (dark blue), 2004 and 2012 (in mn. USD)



(a) 2004

(b) 2013

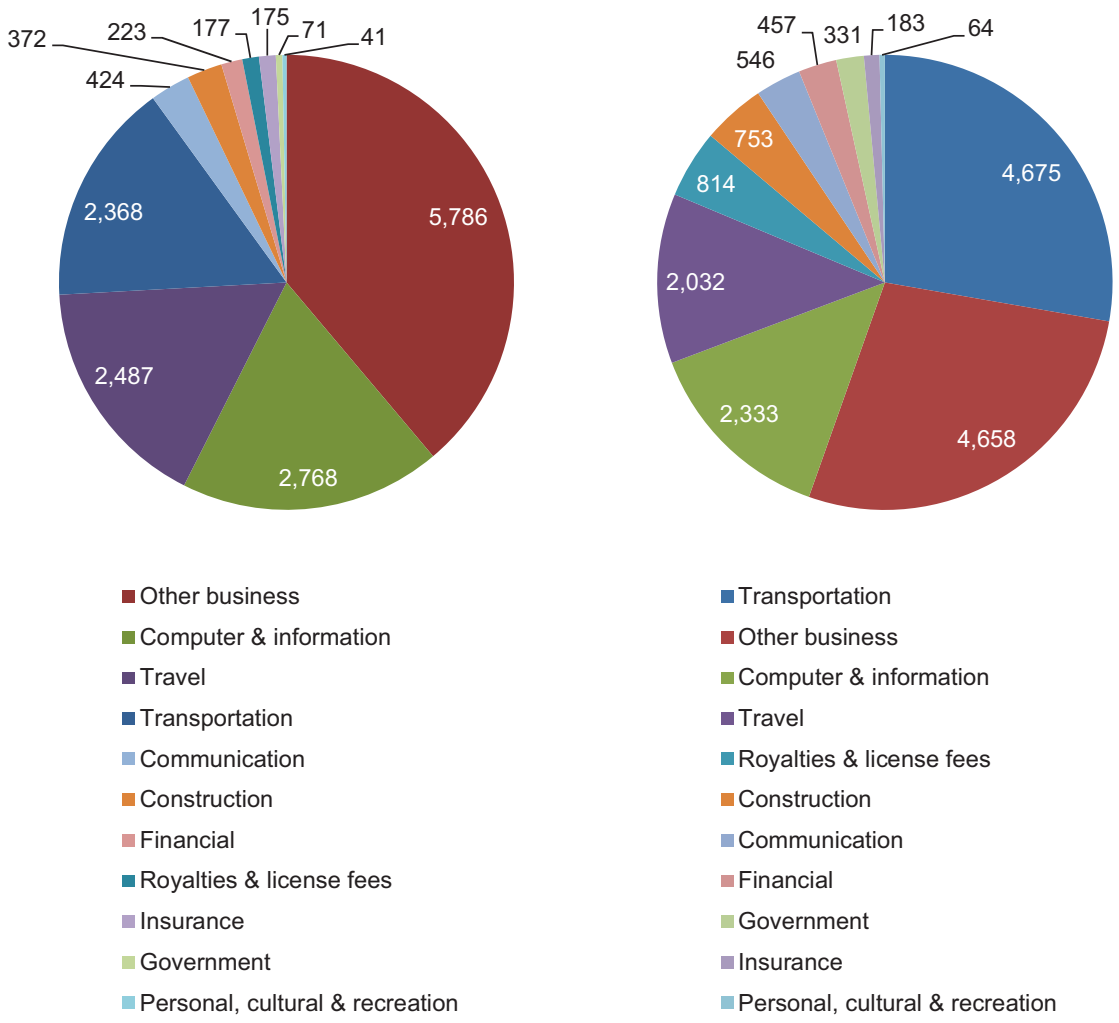
Source: OECD TiSP. **Note:** The data refers to external trade of the EU27.

3.4 Sectoral Structure of Trade in Services

The sectoral structure of EU28 trade in services with India in 2013 is shown in Figure 23. Service exports in the transport sector account for more than a quarter (27.75% or USD 4,675 mn.) of total EU28 service exports to India in 2013. Computer and information services and the travel sector follow with 13.85% (USD 2,333 mn.) and 12.07% (USD 2,032 mn.), respectively. In 2013, these three sectors make up more than half of the EU27 service exports to India. In total, the EU27 export services are worth 16,846 mn. USD to India in 2013. The same sectors are also the most important ones in terms of EU28 service imports from India. Each of them is approximately equal in value (computer and information services with 18.58 % or USD 2,768 mn., travel with 16.70 % or USD 2,487 mn., and transportation with 15.90 % or USD 2,368 mn.), and together they also account for about half of the total value of service imports, which was USD 14,893 mn. in 2013.

Figure 24 shows trade in services between the EU28 and India by sector as a share of total EU28 services

Figure 23: Trade in Services, 2013 (in USD mn.)



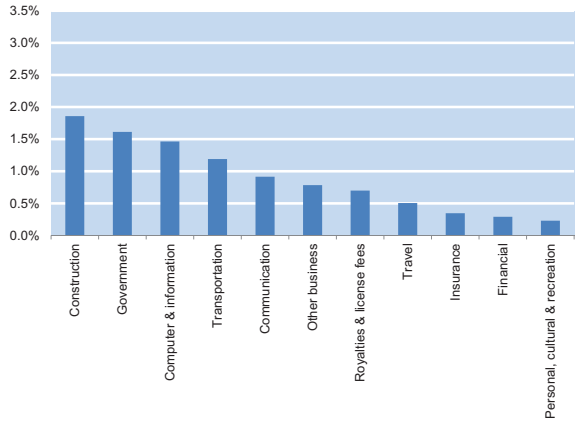
(a) EU28 service exports to India by sector (b) EU28 service imports from India by sector

Source: OECD TiSP.

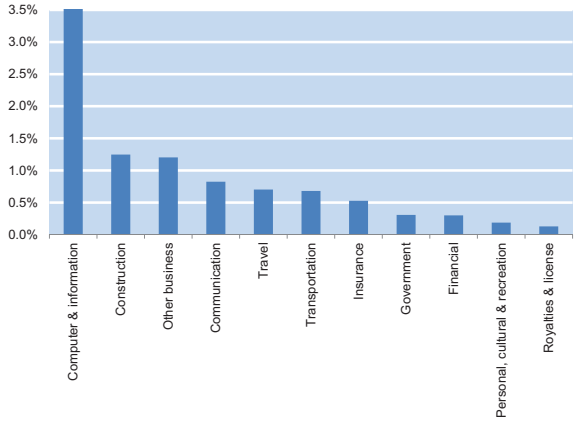
trade for the year 2013. Out of all EU28 exports, construction services account for the highest share of exports to India with 1.9%. Government services and computer and information services follow with 1.6% and 1.5% of total EU28 exports in these sectors to India, respectively. The fact that the shares of exports to India are below 2% in all export sectors in 2013 indicates that India's role as a destination for EU28 service exports is relatively small. The picture looks different when looking at India's role as a service supplier for the EU28. Although India's share of EU28 imports did not surpass 1.5% in almost all sectors in 2013, India's importance as a supplier of computer and information services is considerable.

Specifically, 3.6% of all EU28 imports in this sector in 2013 stem from India.

Figure 24: Trade in Services as Share of Total EU28 Services Trade, 2013 (in %)



(a) EU28 service exports to India by sector, in % of total EU28 service exports by sector



(b) EU28 service imports from India by sector, in % of total EU28 service imports by sector

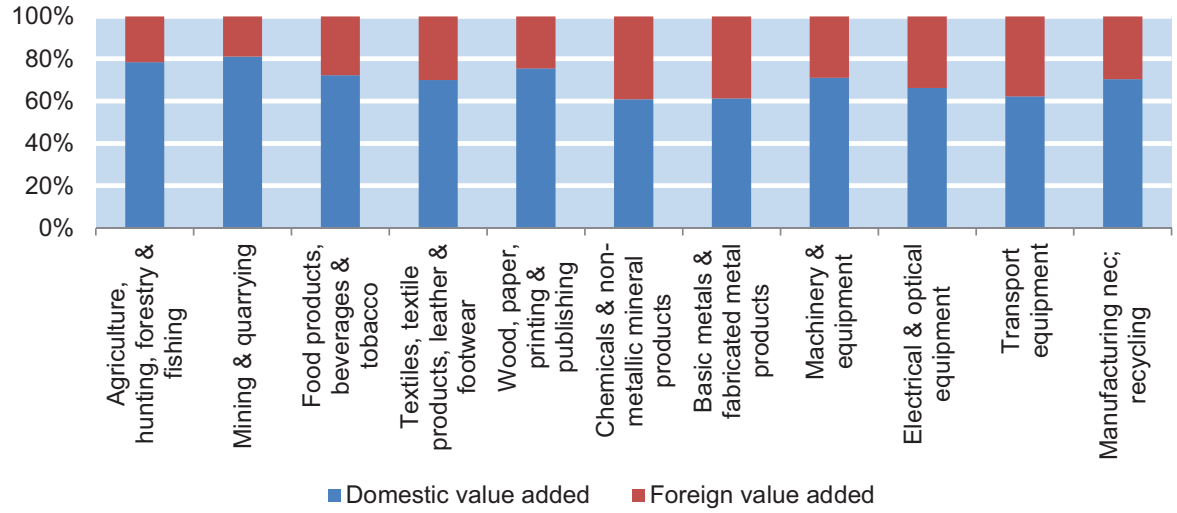
Source: OECD TiSP.

3.5 Value Added Structure between India and the EU28

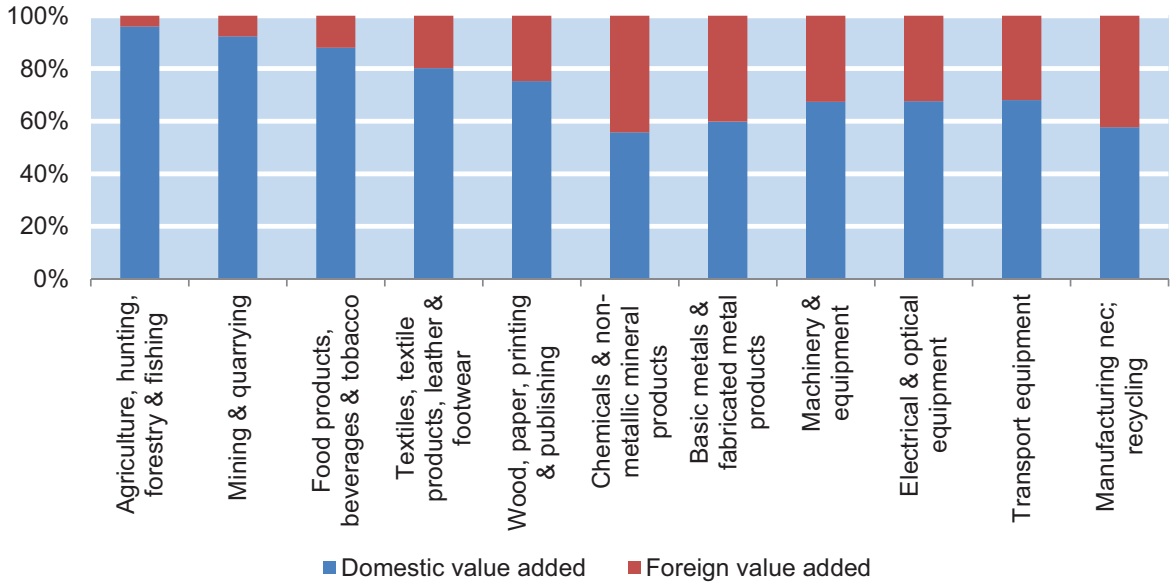
The globalization waves in trade of raw materials and final goods until 1992 and a wave of internationalization of value chains in trade in intermediate products since 1992 mark a new form of international division of labor. The global integration into value chains has become more important and possible with falling transportation and communication costs, especially since the mid-1990s. Due to international production networks, the trade in intermediate goods increased strongly, but the value added is consumed in third countries. This section investigates the structure of domestic and foreign shares of value added in EU28 exports within different sectors in 2011. Figure 25a shows that the domestic value added ranges between 81.1% in mining and quarrying and 60.9% for chemicals and non-metallic mineral products for EU28 exports. The share of foreign value added was 38.7% for basic metals and fabricated metal products and 21.6% in agriculture, hunting, forestry, and fishing. The average domestic share of value added in EU28 exports across all sectors has decreased by 9.1 percentage points between 1995 and 2011 (with 80.9% in 1995 and 71.8% in 2011).

The difference in the domestic share of value added in Indian exports across sectors in 2011 (see Figure 25b) is larger than in the EU28 with 95.9% in agriculture, hunting, forestry, and fishing and only 55.7% for chemicals and non-metallic mineral products. The foreign value added was 40.2% for basic metals

Figure 25: Share of Domestic and Foreign Value Added in EU28 and Indian Exports by Sector, 2011 (in %)



(a) EU28 exports



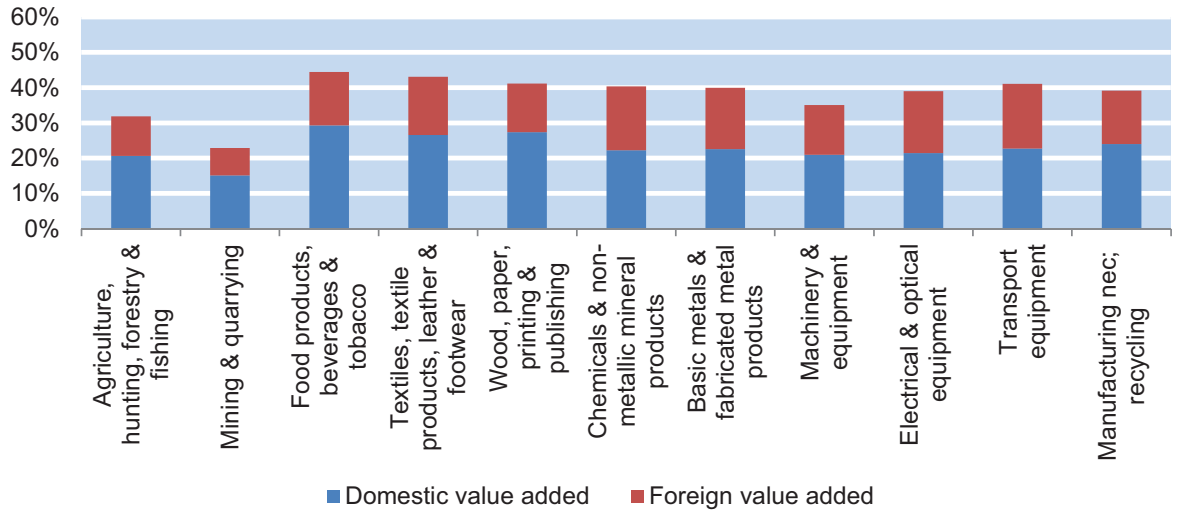
(b) Indian exports

Source: OECD TiVA.

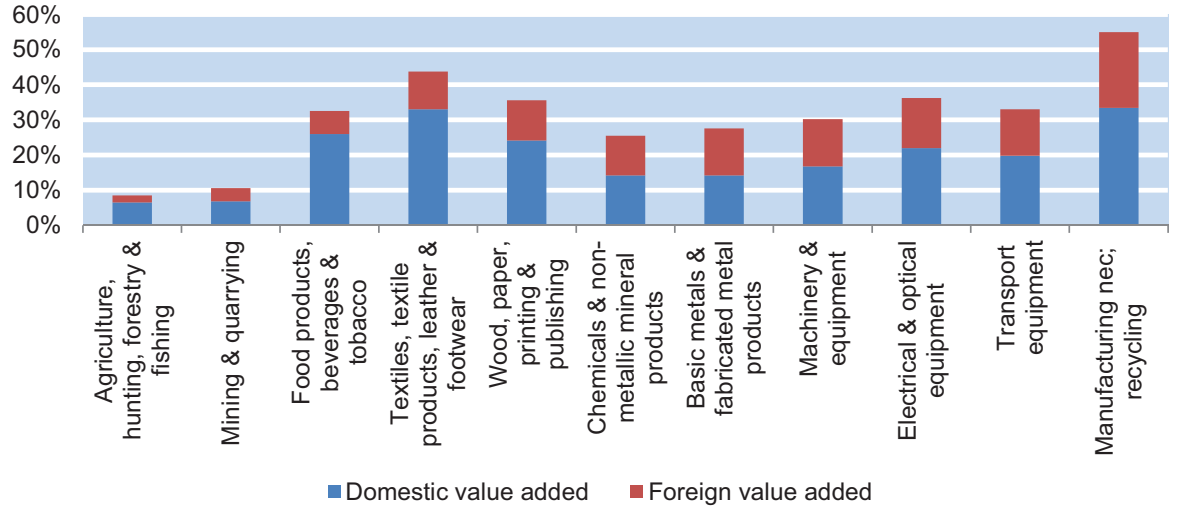
and fabricated metal products and 7.9% in mining and quarrying. When comparing the domestic shares of value added in Indian exports in 1995 and 2011, an even sharper decrease (14.7 percentage points) than in the case of the EU28 can be observed (with 90.6% in 1995 and 75.9% in 2011).

While the EU28 are already relatively well integrated into global value chains in 1995 compared to India (19.2% foreign value added in EU28 exports and 9.4% foreign value added in Indian exports), the relevance of global production processes for Indian exports has increased faster than that of the EU28. In 2011, the EU28 and India reached a similar foreign value added content in their exports across sectors (28.2% foreign value added in EU28 exports and 24.1% foreign value added in Indian exports).

Figure 26: Indirect Service Trade by Sector, 2011 (in %)



(a) Service shares EU28



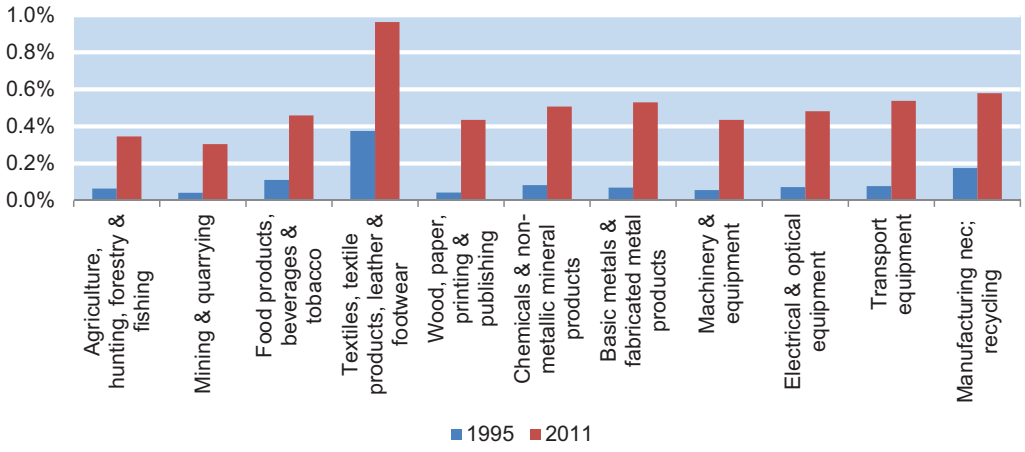
(b) Service shares India

Source: OECD TiVA.

Figure 26 shows the service shares incorporated in EU28 and Indian exports by sector in 2011. These shares of indirect service trade are further split up into domestic and foreign value added. Among the different sectors, mining and quarrying is the one with the lowest (22.9%) and food, beverages, and tobacco is the one with the highest (44.4%) service share in EU28 exports (see Figure 26a). Out of the total EU28 exports in this sector, 15.1% are foreign value added in services and 29.3% are domestic value added in services. This turns out to be the highest domestic value added share in services among sectors. The highest foreign value added share in services is observed in the transport equipment sector (18.3%).

In India, the service shares across sectors are generally lower than those in the EU28. Agriculture, hunting, forestry, and fishing is the sector with the lowest (8.5%) and textiles, textile products, and footwear is the one with the highest (43.7%) service share in Indian exports (see Figure 26b). In this sector, 10.7% out of the total Indian exports are foreign value added in services and 33.0% are domestic value added in services. This is the highest domestic value added share in services among the sectors. The highest foreign value added share in services is in the electrical and optical equipment sector (14.3%).

Figure 27: Share of Indian Value Added in EU28 Exports by Sector, 1995 and 2011 (in %)



Source: OECD TiVA.

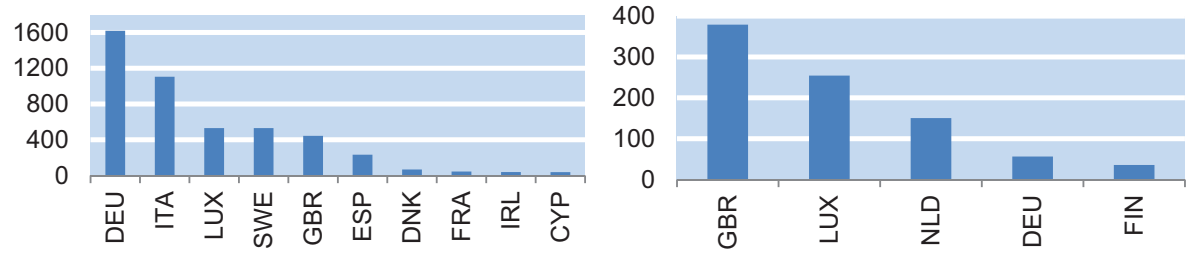
Figure 27 depicts the share of Indian value added in EU28 exports across different sectors. Although the share of Indian value added among EU28 exports has increased in all sectors between 1995 and 2011, India's role within the production chains of EU28 export products remains very small in 2011, not surpassing 1% in any sector. Only in textiles, textile products, and footwear, India's value added

share among EU28 exports reaches a noteworthy value of 0.96%. Thus, only in this sector India played a noticeable role as a supplier of intermediate products for the EU28, even though this role was very limited.

3.6 Foreign Direct Investments to and from India

In economic policy debates often the idea prevails that active FDI deprive the domestic economy of capital and thus employment. Against this background, reports on new active FDI are often seen critical, while passive FDI – for the same reason – are regarded as positive per se. As international trade and foreign direct investment are often seen in a complementary relationship, we investigate FDI flows from the EU to India and from India to the EU (see Figure 28). Figure 28a displays the top 10 EU countries where FDI flows to India originated from in 2012. Germany invested the most in India (EUR 1,620 mn.), followed by Italy (EUR 1,105 mn.). Luxembourg (EUR 531 mn.), Sweden (EUR 531 mn.), and the United Kingdom (EUR 444 mn.) all registered similar amounts of FDI flows to India. Figure 28b displays the top 5 EU countries in which India invested in 2012. The United Kingdom as the top destination attracted Indian FDI worth USD 379 mn..

Figure 28: Foreign Direct Investment between the EU and India, 2012



(a) EU25-IND FDI by origin (top 10), 2012 (in EUR mn.)

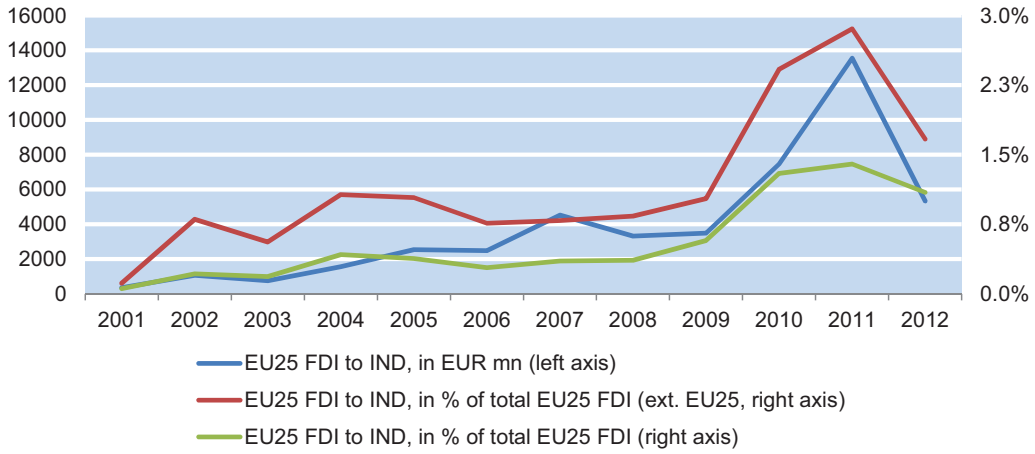
(b) IND-EU25 FDI by destination (top 5), 2012 (in USD mn.)

Source: (a) Eurostat, (b) UNCTAD Bilateral FDI Statistics. **Note:** (a) Data is missing for Estonia, Romania, Slovakia and Malta. (b) Data is missing for Spain, Greece, Cyprus and Slovenia.

The increased importance of FDI flows from the EU25 to India manifests itself over time. Figure 29 shows the development of EU25 FDI flows to India between 2001 and 2012. After a steady increase between 2001 and 2007, inflows (blue line) stagnated during the economic and financial crises in 2008/2009 but increased sharply afterward, reaching their peak with EUR 13,551 mn. in 2011. In 2012, there was a significant drop in FDI flows from the EU25 to India (EUR 5,337 mn.).

When illustrated as a share of total external EU25 FDI (red line), investment in India increased between

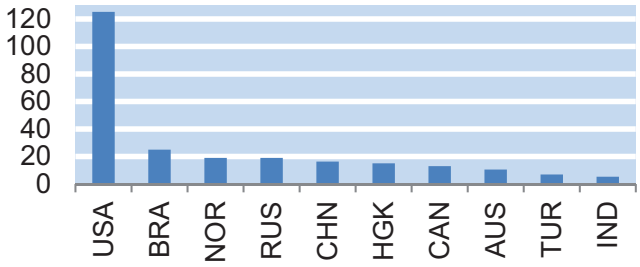
Figure 29: EU25-India FDI, 2001-2012



Source: Eurostat. **Note:** The data refers to the EU25.

2001 and 2004 from 0.12% to 1.07% of EU25 FDI. After a period of stagnation, the relative importance of India as a FDI destination for the EU25 increased significantly after 2009. The peak in total investment inflows to India in 2011 is also mirrored by a peak in India's share of EU25 external investment in the same year (2.86%). Although the drop in total inflows in 2012 also came along with a relative loss of importance of India as a FDI destination for the EU, it should be noted that India's share among EU25 external FDI has increased by 1.6 percentage points between 2001 and 2012, reaching a share of 1.67% in 2012. The share of India among total EU28 FDI (including intra-EU25 FDI, green line) shows the same development as the Indian share among external-EU25 FDI, but at a lower level.

Figure 30: EU25 FDI by Destination (Top 10), 2012 (in EUR bn.)



Source: Eurostat. **Note:** The data refers to the EU25.

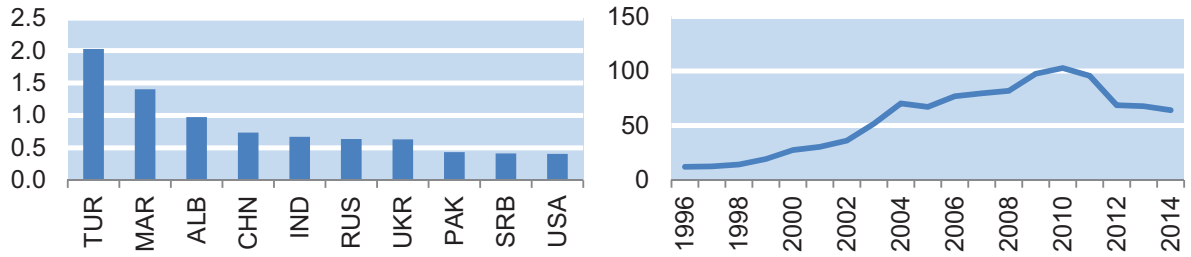
Although India's relative importance has increased over time, EU25 FDI flows are still at a low level as compared to other investment destinations. Figure 30 shows the top 10 external-EU25 FDI destinations

in 2012. India ranges with EUR 5,337 mn. and on rank 10 far behind other BRICS economies (Brazil with EUR 24,994 mn., Russia with EUR 18,958 mn., and China with EUR 16,340 mn.).

3.7 Migration patterns

To get an impression of migration from India to the EU, note that Indians are, with more than 670,000 persons, the fifth-largest group of non-EU citizens living in the EU in 2012 (see Figure 31a). There are only slightly less Indians than Chinese (735,000). The largest immigration group in the EU are people with Turkish nationality (more than 2,000,000). Figure 31b depicts the evolution of migration inflows per year from India to the EU between 1996 and 2014. The inflow in 2010 (102,716) was almost ten times as large as it was in 1996 (12,128). However, after 2010 migration inflows from India declined again, reaching 64,021 in 2014.

Figure 31: Indian Immigrants in the European Union



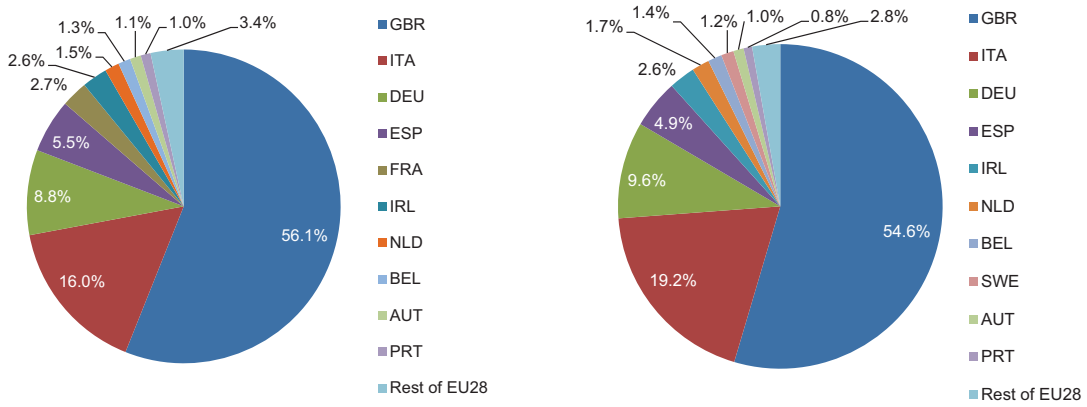
(a) Stock of immigrants in the European Union by nationality, 2013

(b) Inflow of Indian immigrants to the European Union, 1996-2014

Source: Eurostat and OECD International Migration Database. Whenever stocks or flows were missing for a year-origin-destination combination in the Eurostat data and OECD data was available for the respective combination, the OECD data was used. **Note:** (a) The data refers to the EU28. Inflows were obtained by adding up all available inflows of the countries displayed to any EU28 member state. (b) In order to get the same country base for every year, the data refers to the joint inflows per year to the United Kingdom, Italy, Germany, and Spain. The inflows to these countries accounted for more than 88% of total Indian immigration to the EU in 2013 (seen Figure 32).

When migrating to the EU, Indians clearly prefer the United Kingdom over all other EU member states (see Figure 32), due to language, historical, colonial, and cultural ties. Out of all people with Indian nationality in the EU in 2009, 56.1% were living in the United Kingdom. Together with Italy (16.0%) and Germany (8.8%), these countries account for more than three quarters of the Indian population in the EU. Although the share of Indians living in the United Kingdom decreased in 2012 as compared to 2009 – while Italy and Germany were becoming relatively more attractive –, it remained by far the country in the EU with the highest population of people with Indian nationality.

Figure 32: Preferred Destinations of Indian Immigrants in the European Union



(a) Share of immigrants with Indian nationality (stocks) by country, in % of all immigrants with Indian nationality in the EU, 2009

(b) Share of immigrants with Indian nationality (stocks) by country, in % of all immigrants with Indian nationality in the EU, 2013

Source: Eurostat and OECD International Migration Database. Whenever stocks were missing for a year-origin-destination combination in the Eurostat data and OECD data was available for the respective combination, the OECD data was used. **Note:** (a) 100% refer to the EU28 without Croatia, Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Romania, for which data is missing. Note that the relative importance of the United Kingdom, Italy, Germany, and Spain is approximately the same in a year for which data for France is available (2009) as compared to a year for which such data is missing (2013). (b) 100% refer to the EU28 without Croatia, Cyprus, France, Lithuania, Malta, and Poland, for which data is missing.

4 Trade Barriers between the European Union and India

4.1 Average Tariffs

This chapter provides details on existing tariff and non-tariff barriers in EU-Indian trade. Since tariff protection is still relatively high in India, and because India enjoys special treatment under the Generalized System of Preferences (GSP), a careful sector-by-sector analysis is particularly important. Quantitative restrictions also play an important role; in particular, agriculture deserves attention. We also analyze trade barriers in the services area (briefly surveying Indian GATS commitments) or in public procurement. Finally, we touch on other aspects that matter in the negotiations such as investment protection, intellectual property rights, labor rights, environmental protection, and competition.

Tariffs or import bans are generally applied to protect the domestic economy, specific industries, or sectors from foreign competition. However, the difficulty is precisely to identify the sectors that require protection, to limit protection in time, and not to inhibit innovation. The example of agriculture shows that despite high protection and high subsidies in some countries, agricultural sectors are often not competitive internationally. In addition, taxes are welfare disabling and broad liberalization is profitable for most countries. Generally, tariffs are applicable for all similar products of all countries. Hence, no difference in treatment is allowed among trading partners, but only among specific products. Exemptions are possible for developing countries under the GSP, or in free trade agreements of customs unions.

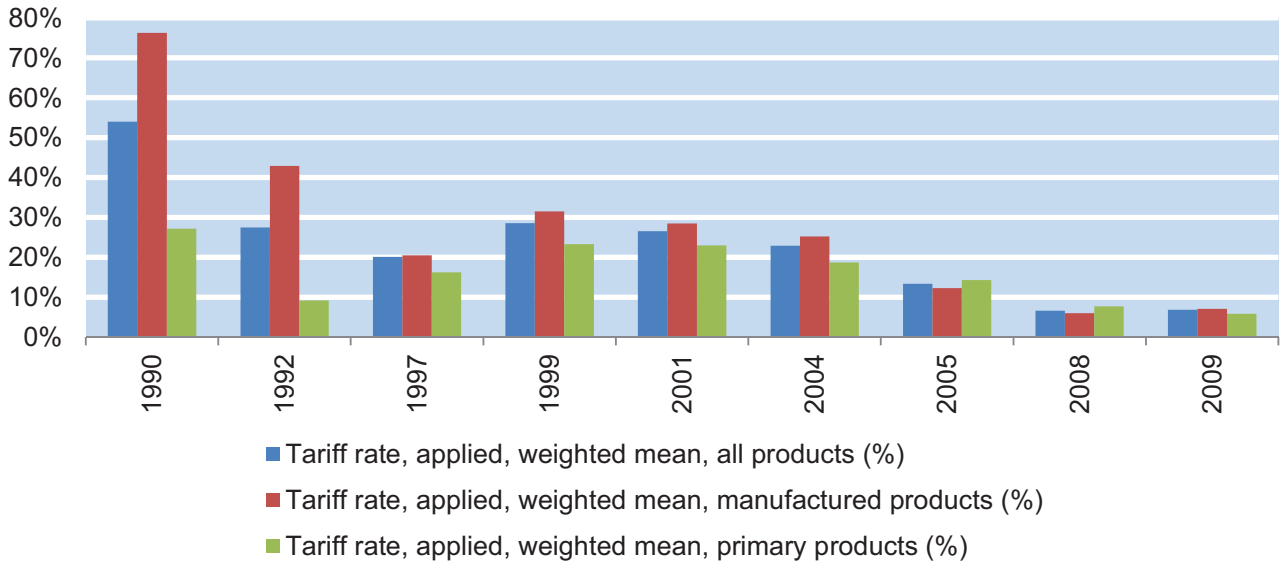
Figure 33 shows the applied tariffs of India, as a weighted mean over all products as well as for manufactured and primary products separately.[14] First, we observe that after a strong reduction in the 1990s (20.1% mean applied tariff rate in 1997), India again applied higher tariffs at the beginning of the new millennium (26.5% in 2001). In 2001 and thereafter, applied tariff rates have again been reduced. Within the 20 years between 1990 and 2009, India reduced its mean applied tariff rate by 47.1 percentage points from 53.9% to 6.8%. Thus, the country has quite substantially lowered its import duties over the last decades. It has done so in the context of the Uruguay Round (finalized in 1994) and in unilateral liberalization steps thereafter.

Interestingly, applied tariffs on manufactured products were most of the time higher than those on primary products. Only in 2005 and 2008, tariffs on primary products were higher. Starting at an extremely high level of 76.3% in 1990, tariffs on manufactured products have been reduced during the 1990's by more than those on primary products, which were even increased again towards the end of this

[14] We show applied tariffs. Bound tariffs (i.e., binding maximum limits on duties) often are substantially higher (for India, see `http://stat.wto.org/TariffProfiles/IN_e.htm`); the difference is called a "binding overhang". This is a major issue in trade negotiations, because further reductions in bound tariffs have little or no effect on applied tariffs, but they do reduce the importing country's policy space in the face of shocks.

decade, reaching a similar level in 1999 (23.3%) as in 1990 (27.1%). After 1999, tariffs were reduced gradually in both areas, reductions in manufactures always surpassed those in primary products. From 2008 to 2009, applied tariffs on primary products have been reduced to 5.8%, on average, whereas those on manufactured products have been increased again to 7.1%. However, they are still about twice as high as world averages.

Figure 33: Indian Applied Tariffs, 1990-2009 (in %)



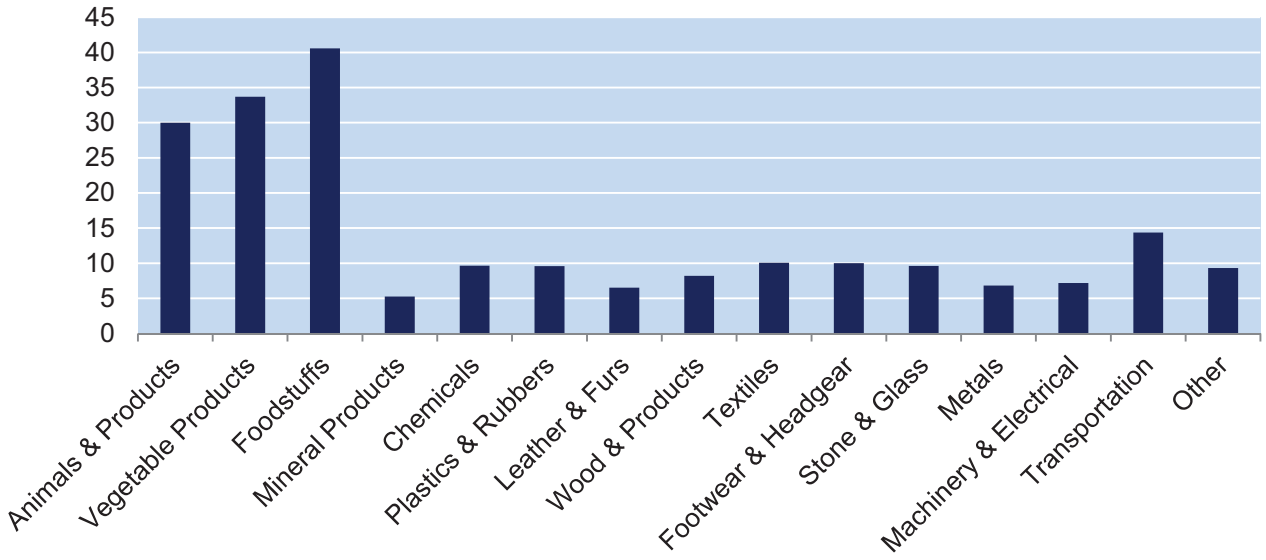
Source: Worldbank World Development Indicator (WDI) database.

4.2 Sectoral Analysis

India applies MFN duty rates to all partners except some least developed countries. A sector-by-sector analysis of average ad valorem MFN duties in 2015 reveals that the agriculture and food production are still highly protected with tariffs above 30% of the import value. India applies the highest ad valorem MFN duties to foodstuffs (40.4%), to vegetable products (33%), and to animals & products (30%) (compare Figure 34). At the lower end are mineral products (5.1%), leather & furs (6.5%), and metals (7.0%). At the middle ranks, we find transportation (13.5%), textiles and footwear & headgear (10%), stone & glass (9.8%), plastics & rubbers (9.7%), chemicals (9.6%), other (9.3%), wood & products (8.2%), machinery & electrical (7.2%).

If we look at the evolution of Indian average ad valorem MFN duties over time between 1992 and 2005 in Figure 35, we find that a significant drop in tariffs has taken place in all sectors over time (except

Figure 34: Indian Average Ad Valorem MFN Duties, 2015 (in %)



Source: WTO Integrated Database (IDB).

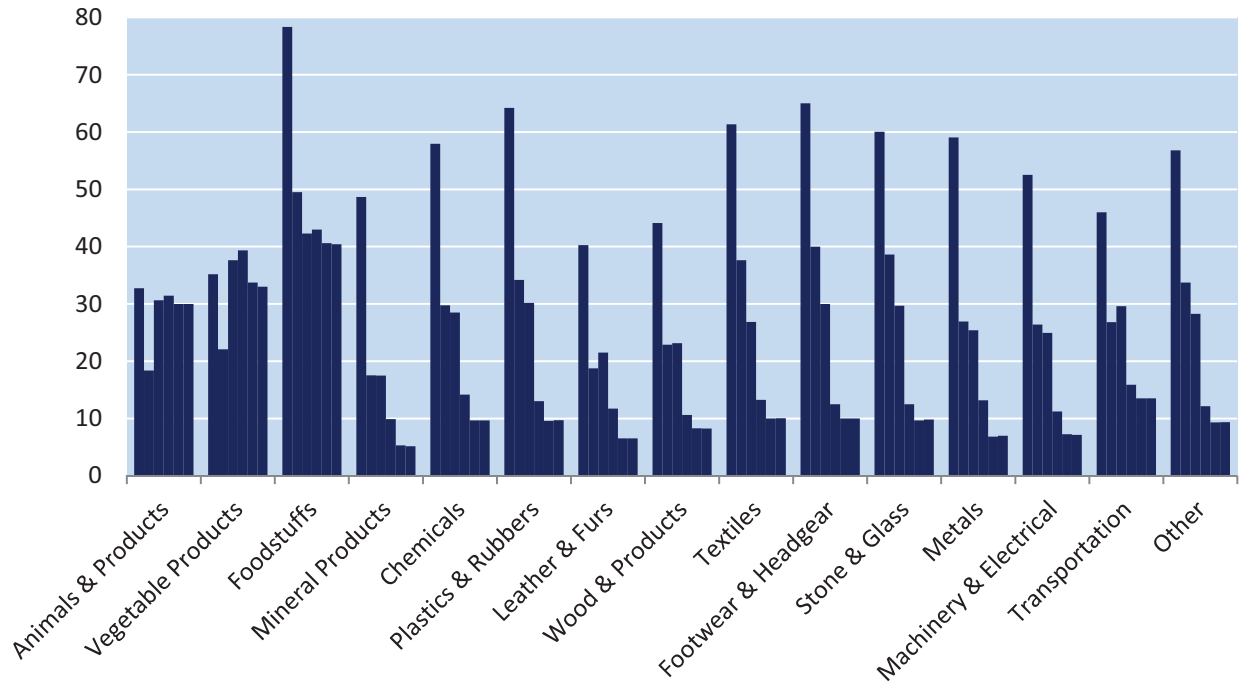
animal & products thereof and vegetable products).

The largest drop took place between 1992 and 1997 with reductions in tariffs of 13.1 percentage points in vegetable products (1992: 35.2%; 1997: 22.1%) and up to 32.2 percentage points in metals starting with a tariff of 59.1% in 1992 (1997: 26.9%). The highest initial tariffs are found in foodstuffs with 78.4% in 1992 (1997: 49.5%), plastics & rubber with 64.2% in 1992 (1997: 34.2%), and textiles with 61.4% in 1992 (1997: 37.6%).

Between 1997 and 2002, tariffs were further reduced in nearly all sectors but less dramatically than before, with reductions of 10.8 percentage points in textiles and 0.07 percentage points in mineral products, which already had the lowest tariffs across Indian import sectors (2002: 17.5%). Other sectors, however, again increased tariffs in this time period. Tariffs in animals & products increased between 1997 and 2002 from 18.4% to 30.6%, vegetable products experienced an even higher raise from 22.1% to 37.6%. While tariffs on leather & furs increased by 2.8 percentage points, those of wood & products thereof rose by only 0.26 percentage points, and tariffs in transportation by 2.8 percentage points.

Further reduction rounds took place in the ten years following. The sectors with the highest tariff reductions between 2002 and 2012 are plastics & rubbers (20.9 percentage points), stone & glass, and footwear & headgear (20 percentage points, respectively). Interestingly, animals & products, vegetable

Figure 35: Evolution of Indian Average Ad Valorem MFN Duties Over Time, 1992-2015 in 5-year steps (in %)



Source: UNCTAD Trade analysis Information System (TRAINS) and WTO Integrated Database (IDB). Applied tariffs.

products, and foodstuffs experienced another surge between 2002 and 2007 between 0.67 percentage points and 1.7 percentage points, but also fell between 2007 and 2012 by 1.5 percentage points, 5.6 percentage points, and 2.38 percentage points to 30.0%, 33.7%, 40.6% in 2012 (2007: 31.4%, 39.4%, 43.0%), respectively.

Even though tariffs in most sectors fell well below 15% in 2015 (the most recent year of data availability), animals & products, vegetable products, and foodstuffs still experience the highest tariffs (30.0%, 33.0% and 40.4%, respectively). Duties in some other sectors increased between 2012 and 2015 but at a marginal rate of 0.01 percentage points in leather & furs to 0.16 percentage points in metals.

The sector-by-sector analysis clearly shows that tariffs in agriculture and food sectors are still higher than in most other sectors. Even though most duties have fallen immensely since 1992, these three sectors are still highly protected in 2015 with duties over 30% on import values. Hence, there is still quite some potential for a FTA in reducing tariffs further across all sectors, and especially in agriculture, food, as well as in transportation.

One further issue deserves mentioning: In many sectors, India applies tariffs that lie substantially below

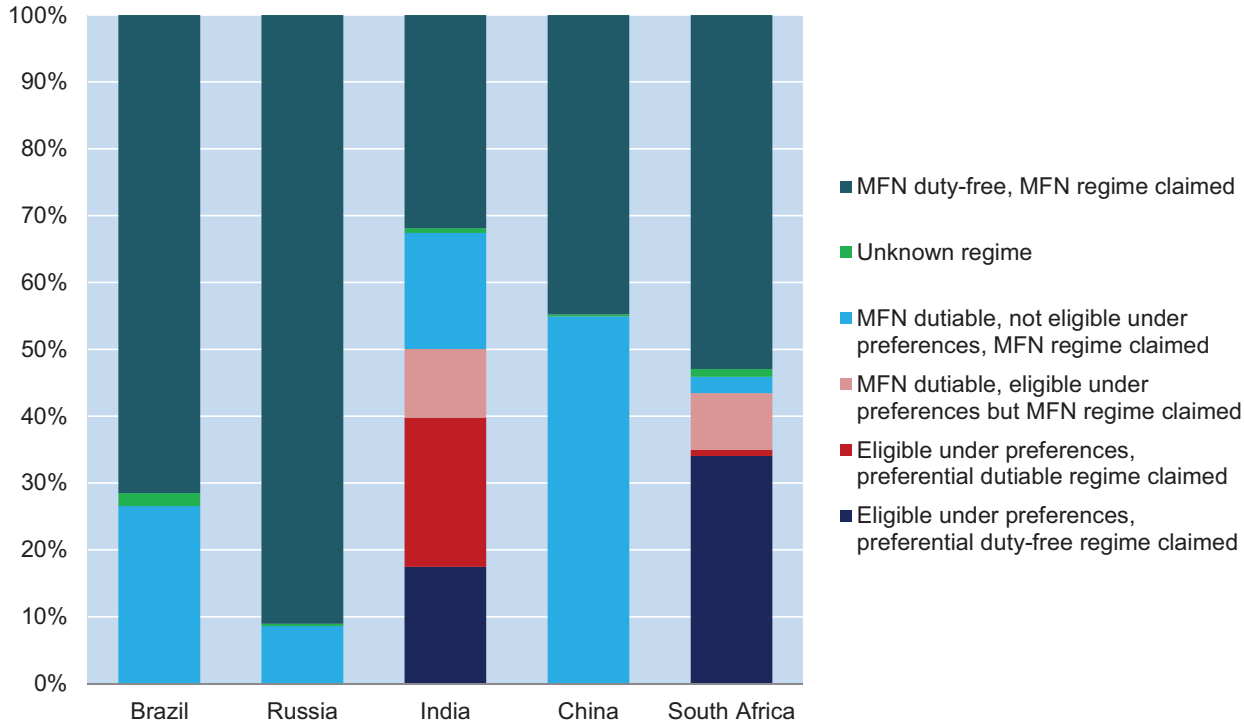
the binding maximum levels agreed upon in the WTO. In other words, India's tariff policy is voluntarily more liberal than what the country's commitments would mandate. The difference between bound and applied duties ("tariff water") introduces uncertainty since exporters are not sure about future tariff levels. However, India was reluctant to reduce those tariff bindings to the applied levels in the Doha talks, because that would take away policy space in the case of emergencies. This issue plays an important role in the FTA negotiations, and the EU will have to grant India some flexibility in certain contingencies.

4.3 Preference Utilization

An integral part of FTAs are rules of origin. A distinction is made in non-preferential and preferential origin. Preferential origin is the basis for the application of preferential rights (preference utilization), tariff reductions and exemption from duty. There are two types of preferential rights, those regulated by bilateral or plurilateral FTAs and those under the Generalized System of Preferences (GSP) on the basis of the enabling clause of the WTO, especially applicable to developing countries exports. As India enjoys special treatment under the GSP, the determination of the origin of the tariff classification of goods is a prerequisite. Following the methodology of Abreu (2013), we show that the use of tariff preferences in EU agreements is relatively high.

According to the World Trade Report (WTO, 2011), the granting of tax incentives or waivers is more widespread than previously thought. The implementation of the application of preferential treatment in the EU is between 87% and 92%. This indicates that between 87% and 92% of imports into the EU, which are eligible to receive tariff reductions make use of the preferences. Interestingly, EU tariff reductions are applied very differently and reveal a broad spectrum. We show for 2015 that 17.4% of imports, which are imported under preferential terms from India to the EU28 benefit from duty-free import (compared to 34.0% of South African imports, and 0% of Brazilian, Chinese or Russian imports), while 22.3% of imports that are imported under preferential terms fall under a preferential dutiable regime (compared to 0.9% of South African imports and again 0% of Brazilian, Chinese or Russian imports) (see Figure 36). Interestingly, 10.3% of Indian imports would be eligible for preferential treatment but are imported under MFN duty (the share is 8.5% for South Africa, and 0% for Brazil, China, or Russia). 17.4% of Indian imports are not eligible under preferential terms, but are imported under MFN duty (the share is 26.6% for Brazil, 8.6% for Russia, 54.9% for China, and 2.4% for South Africa), while 31.9% of imports that are imported under MFN benefit from duty-free import (compared to 71.5% of Brazilian, 91.1% of Russian, 44.8% of Chinese, and 53% of South African imports).

Figure 36: EU Imports: Use of Preferential Treatment by Selected Partners by MFN Duty and Regime, 2015 (in %)



Source: Eurostat Chapter 1-97.

4.4 Red Tape

Import and export transactions are subject to documentation requirements which can become extremely burdensome, in particular when trade and official agencies do not cooperate effectively. This results in lack of transparency, uncertainty about rules and their application, or duplication of procedures. This issue has become increasingly problematic in the context of tightly integrated global value chains. Despite advances in information technology, automatic data submission is still not commonplace. With the lowering of tariffs across the globe, the cost of complying with customs formalities has been reported to exceed in many instances the cost of duties to be paid. This is also true for India and the EU. Both parties have now signed and ratified the Trade Facilitation Agreement (TFA), negotiated at the WTO. The agreement makes progress concerning the harmonization of documents, the streamlining of customs procedures (such as pre-arrival clearance), and the predictability in customs regulations (such as advance rulings on what tariffs apply to specific products or clear rules of procedure and availability of trade-related information).

In the process leading to the signature of the TFA, India has played an important and ultimately also constructive role. It has ensured that developing countries maintain certain flexibilities under the special and differential treatment (SDT) principle of the WTO. The benefits of the TFA have been quantified. According to WTO (2015), the TFA could help increase global trade by about 1 trillion USD, improve the participation of small and medium enterprises in international trade, encourage FDI, and boost global GDP by 0.5%. According to the estimates, the benefits tend to be substantially larger in developing countries such as India.

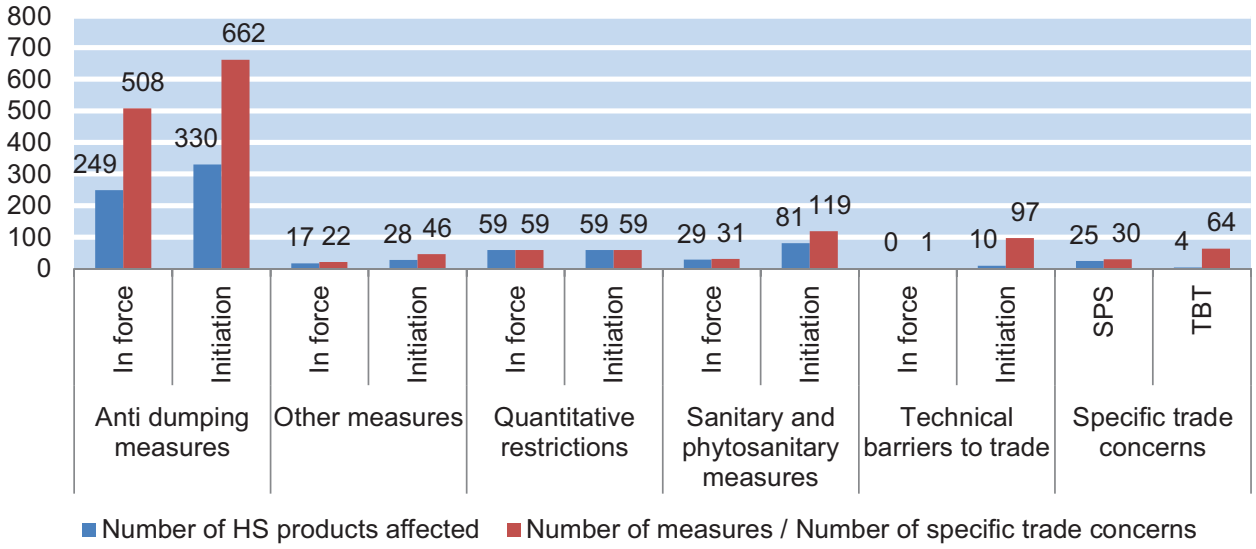
4.5 Non-Tariff Measures

A large number of domestic regulations meant to protect the environment, consumers, or workers are designed in such a way that they can potentially discriminate against foreign suppliers of goods or services. Indeed, there is some evidence that the reduction of tariffs has been accompanied by an increasingly discriminatory role of such regulation. The scope for these non-tariff trade measures (NTMs) is large, their nature is complex and constantly changing. This leads to challenges to ensure level playing fields between countries. The increased use of technical barriers to trade (TBT) and sanitary and phytosanitary (SPS) measures in goods and services trade represent new and urgent challenges for international integration (WTO, 2012).

Figure 37 shows that India initiated 983 NTMs between 1991 and 2015, out of which 621 were put into force. The measures put into force affected 354 product lines. Most of the NTMs applied by India were anti-dumping measures (508 put into force with 249 product lines affected, while 662 anti-dumping measures where initiated). SPS and TBT measures, as well as quantitative restrictions only play a minor role with 59 quantitative restrictions (59 initiated), 31 SPS (119 initiated) and one TBT measures (119 initiated), and 22 other measures (46 initiated) put in force by India between 1991 and 2015.

The last column in Figure 37 shows specific trade concerns about a SPS or TBT measure maintained by India on one or more products. Specific trade concerns are raised by exporting countries as a consequence of tariff reductions in importing countries, i.e. when non-tariff measures become barriers to trade. Some of the non-tariff barriers implemented by India have been reported by WTO member states as protectionist. This applies to 30 SPS and 64 TBT specific trade concerns, which concern 25 and 4 product lines, respectively.

Figure 37: Indian NTM and SPS/TBT Specific Trade Concerns, 1991-2015



Source: WTO Integrated Trade Intelligence Portal (I-TIP).

4.6 Barriers in Services

In recent years, international trade in services has become more important as advances in know-how and technology have permitted new means of providing services across borders. While services trade is important for economic growth and sustainable development, it is widely accepted that it can only make positive contributions if appropriately liberalized and implemented across countries (Copeland and Mattoo, 2007). For India, services have proven crucial for the economy and are thus increasingly reflected in the Indian policy agenda – ranging from liberalization to regulation efforts at national and international levels.

At the multinational level, the Uruguay Round results marked a first step towards services liberalization. The creation of the General Agreement on Trade in Services (GATS) brought trade in services under the multilateral trading system, with the aim to (i) create a credible and reliable system of international trade rules, (ii) ensuring fair and equitable treatment of all participants, (iii) stimulating economic activity through guaranteed policy bindings, and (iv) promoting trade and development through progressive liberalization. As in other multilateral agreements, the fundamental principles of GATS include most favored-nation (treating all countries equally), national treatment (treating foreigners and locals equally), and freer trade (reductions in tariffs and removal of non-tariff barriers).

Under the GATS, services are traded through four modes. The interests of India and the EU vary across various sectors and modes of services delivery. The EU is a major proponent of liberalizing the commercial presence (mode 3) or foreign direct investment (FDI) in services in major markets, such as India, and in sectors such as telecommunications, financial services, transport services, and energy services. The interest of the EU lies not only in securing the autonomously liberalized regime but also in ensuring regulatory certainty. India, however, pushes liberalization commitments in knowledge based services such as computer-related services and full liberalization in a broad range of sectors in information technology and business process outsourcing and temporary movement of foreign professionals.

The direct impact of GATS on services trade suffers from modest liberalization commitments (Snape, 2000; Hoekman, 1996). During the Uruguay Round, India was hesitant in its GATS commitments, and had a rather low level of liberalization with complicated and non-transparent regulations. Especially in telecommunications, distribution or environmental services, liberalization efforts do not reflect the current level of openness in the Indian market.

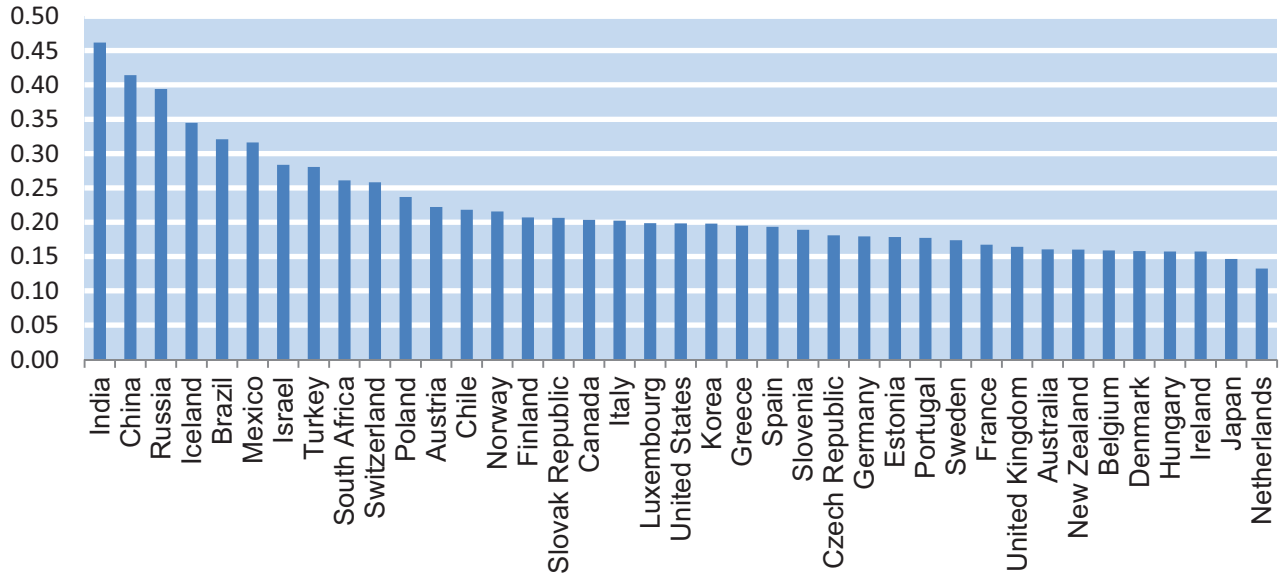
But, India's negotiating position has shifted fundamentally over time. In the Uruguay Round, India led the opposition against the inclusion of services in the multilateral trading system. Since the Doha Round, however, India has been a proponent of services negotiations and pushed the GATS agenda forwards – particularly with respect to cross-border supply of services and movement of labor. This change can be attributed to the fact that services are a dominant sector in the Indian economy and global competitiveness of Indian business services now drive and determine the offensive interest of India in services liberalization.[15]

During the Doha Round, India showed great interest in liberalizing the temporary movement of labor to supply services (mode 4). But its key target country – the US – has shown little to no movement. In addition, India sees domestic regulation as an impediment to market access on cross-border supply (mode 1). Since Doha negotiations turned out to be difficult, India took the approach to autonomously liberalize services within the last decades, but bound them to GATS. Yet, some sectors are beyond question for any GATS commitments, including retail, legal services, education, water distribution, and audio-visual services.

In a next step, we illustrate that international trade in services is often still impeded by trade and investment barriers as well as domestic regulations, especially in India. The Service Trade Restrictions Index (STRI) of the OECD helps to identify which policy measures restrict trade. In comparison to other countries listed by the OECD, India has the highest average STRI across all services sectors in 2015

[15]Indian information technology companies are the prime movers of GATS. The lack of opposition from services trade unions enables the Indian Commerce Ministry to push an aggressive agenda with the support from Indian services companies.

Figure 38: Service Trade Restriction Index, 2015



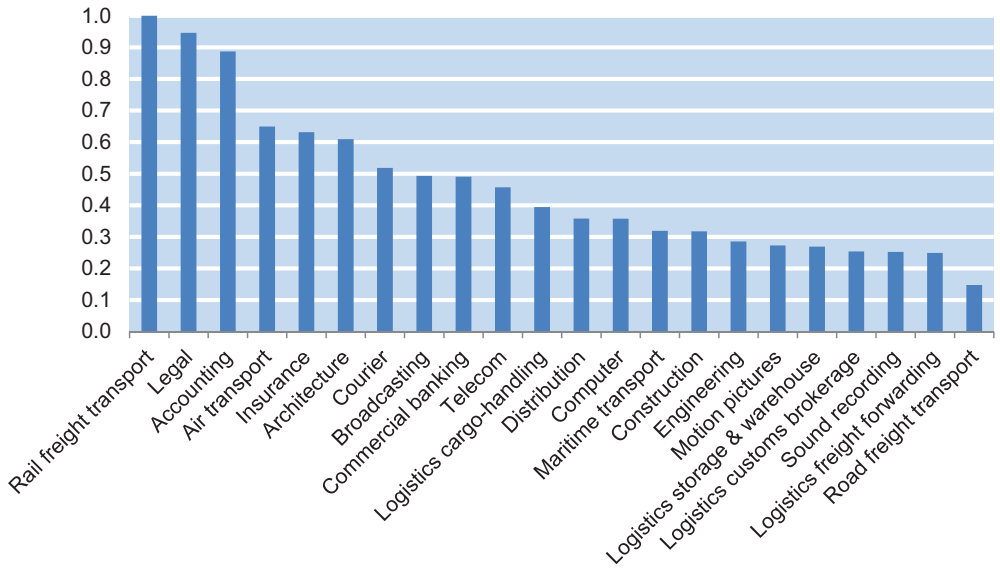
Source: OECD. **Note:** The OECD STRI index takes the value from 0 to 1, where 0 is completely open and 1 is completely closed.

with a value of 0.462, which means that it is relatively closed (compare Figure 39). Thereafter follow China and Russia, with an STRI of 0.414 and 0.394, respectively. At the lower bound are Ireland, Japan and the Netherlands which are relatively open with indexes of 0.157, 0.147, and 0.132, respectively. The mean STRI across all available countries is 0.222, which indicates that India still has relatively high barriers to trade in services.

When looking at the barriers in various sectors within India in 2015 in Figure 39, we find that six sectors show an STRI over 0.5, which means they are relatively closed. These sectors include rail freight transport as the frontrunner that is completely closed with an index of 1.000, legal (0.946), accounting (0.887), air transport (0.649), insurance (0.631), architecture (0.610), and courier (0.519). The five Indian services sectors that are most open according to the STRI in 2015 are logistics storage & warehouse (0.269), followed by logistics customs brokerage (0.254), sound recording (0.253), logistics freight forwarding (0.249), and the most open services sector is road freight transport with an STRI of 0.148.

In an international comparison in 2015, India is found in almost all sectors to be among the five most closed economies. In the service sectors motion pictures (top 6), maritime transport (top 7), logistics customs brokerage (top 7), we find India to be a little more open, but still among the ten most closed

Figure 39: Indian Service Trade Restriction Index across Sectors, 2015



Source: OECD. **Note:** The OECD STRI index takes the value from 0 to 1, where 0 is completely open and 1 is completely closed.

economies in these sectors. The only exception is road freight transport, where India occupies a middle rank among other countries such as Switzerland, the Slovak Republic, Spain, or UK (all with an STRI of 0.148).

4.7 Public Procurement

Public procurement in India is a major concern for EU companies. Indian bureaucracy requirements are rather burdensome for foreign companies and the grant procedures are often conducted in a non-transparent way. The EU favors greater openness, but many other countries are reluctant to open their public procurement markets to international competition. One particularly interesting – and possibly upgradeable – approach represent so-called plurilateral agreements within the WTO. These allow WTO members to accede to an agreement under negotiation on a voluntary basis and enables those, who wish to do so, to negotiate advanced rules in specific areas.

The oldest and most important plurilateral agreement is the one on public procurement (Government Procurement Agreement, GPA) from 1981.[16] It was revised in 2014 and ratified by 18 parties (the EU with its 28 members is counted as one party). Another 29 WTO members (including India since

[16] https://www.wto.org/english/tratop_e/gproc_e/gp_gpa_e.htm.

February 2010) participate in the GPA as observers; 9 of these members with observer status (including China but not India) are currently negotiating accession. The agreement contains provisions on the mutual opening of public procurement markets, but large parts of these markets are excluded (e.g., armaments) and relatively high minimum limits apply. Which procurement procedures are covered by the agreement is detailed in lists; these lists differ from member to member. They lay out which levels of public administration, which goods and services are liberalized, and which minimum limits apply. The details have been updated in several rounds of negotiations.

Accounting for 15-20% of global GDP, public procurement represents a substantial portion of the EU economy and also the Indian economy. In India, estimates of public procurement vary between 20% of GDP to 30% of GDP according to the OECD. For the EU, its market size indicates that even small percentage savings due to cheaper and better quality goods and services procured can hold large sums. If only half of the EU procurement spending (2.4 trillion EUR in 2011)[17] is covered by the GPA and this reduces costs by 2%, savings of 24 bn. EUR arise. There is no comprehensive quantitative evaluation of economic impacts of the GPA as data on international government procurement are very scarce. Until 2000, out of all agreements announced to the WTO 17 had stand-alone legal provisions on procurement. Since then 88 FTAs include separate articles or chapters on procurement. This indicates the importance and potential of cross-border public procurement markets also in bilateral negotiations.[18] As India is currently not part of the GPA, FTA negotiations with the EU should also cover public procurement to ensure access to procurement markets and improved transparency on both sides.

4.8 Investment Protection

According to the European Commission, the criteria for new trade agreements are market potential, openness for EU exports and existing FTAs of competitors, such as the US, Japan and China, which could disadvantage the EU (European Commission, 2006). In addition, issues such as patent protection, investment protection and the internationalization of production networks between trading partners should be governed by new generation FTAs. The new trade strategy of the European Commission since November 2010 continues the essential provisions of the Global Europe strategy European Commission (2010). Only recently, the Commission presented a realignment of strategy that addresses trade policy, especially on processes (i.e., transparency), on the compatibility with concerns of small and medium sized businesses, the consumer and worker protection, and on issues of the European Union's sustainability.[19]

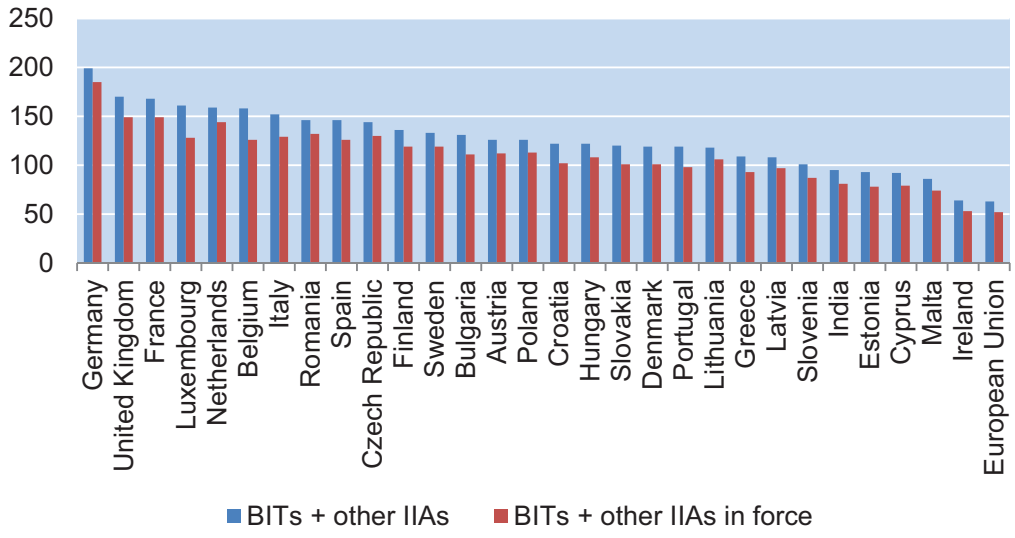
An effective investment policy contributes significantly to provide advantageous conditions for interna-

[17] http://trade.ec.europa.eu/doclib/docs/2015/april/tradoc_153347.pdf
[18] http://trade.ec.europa.eu/doclib/docs/2015/april/tradoc_153347.pdf.
[19] See also http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc_153880.PDF.

tional trade. This is important, among other reasons, because the general tariff level has become rather low, so that the potential for trade promotion, growth, and employment by further tariff reductions has decreased. Investment is often a prerequisite for trade in services, and is complementary to goods trade. Foreign investments are an integral part of intertemporal trade and thus contribute significantly to increase welfare. For this reason, international economic agreements should also reduce discriminatory barriers to foreign investment.

Important conditions for FDI are mainly legal certainty, guarantee of fair and non-discriminatory treatment in regulatory interventions, asset risks (formal expropriation or confiscatory measures equivalent), and barrier-free capital transfers. Since 1959, the conditions for FDI have been set by investment protection provisions in separate investment protection agreements (investment incentive and investment protection agreements) between EU member states and third countries.

Figure 40: BITs and Other IIAs



Source: UNCTAD Investment Policy Hub, `http://investmentpolicyhub.unctad.org`.

Investment protection agreements are divided into bilateral investment protection treaties (BITs) and other investment protection agreements (IIAs). India ranges internationally on rank 31 with 82 BITs (72 of which are in force) and 13 other IIAs (9 in force), while Germany with 135 BITs and 64 IIAs (185 in force), the United Kingdom with 106 BITs and 64 IIAs (149 in force), and France with 104 BITs and 64 IIAs (149 in force) are the top three in the list. The EU as a whole has 63 IIAs of which 52 are in force. Figure 40 provides an overview on the numbers of BITs and other IIAs for EU members, the EU as a whole and India.

One of these agreements is the EC-India Cooperation Agreement, which was signed in 1993 and is in force since 1994. The objective of this agreement was to achieve a closer and upgraded relationship between the EU and India. The agreement focuses in particular on six aspects: (i) development and diversification of trade and investment; (ii) strengthening of cooperation in technical, economic, and cultural matters; (iii) economic capacity building of India; (iv) provision of resources and technical assistance to accelerate India's development; (v) exchanges of business communities and creation of suitable environment for investment; and (vi) environmental protection and sustainable management of natural resources.

Whether investment protection agreements actually promote trade integration between partners concerned has not been conclusive in the literature, but they are also not harmful as long as there are not too many of them (Tobin and Busch, 2010).

4.9 Intellectual Property Rights, Labor Rights, Environmental Protection, and Competition

Indian legislation on Intellectual Property Rights (IPR) protection is often far from attractive for EU companies and provisions often remain unclear. The EU-India FTA negotiations should also focus on IPR issues, going well beyond the standards of the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement, and even including the pharmaceutical sector. However, India being the leading global producer of generic medicine, local producers have an interest in influencing negotiations, asking for a looser regulation of this specific sector. The EU, so far, has an IPR technical assistance program with India called the Capacity-building Initiative for trade Development (CITD). In future trade talks, IPR will play an important role as the strategic interests of the EU and of India diverge.

5 Methodological Issues

In this chapter, we describe the Ifo Trade Model of Aichele et al. (2014). Additionally, we define likely scenarios for an EU-India FTA pertaining especially to the extent of the expected reductions of NTMs.

5.1 The Ifo Trade Model: Methodology

The Ifo Trade Model, which is described in depth in Aichele et al. (2014), is a static, general equilibrium trade model.[20] It encompasses 140 countries and regions and 57 goods and services sectors. In the model, international trade flows are hampered by tariff and non-tariff barriers to trade. Sectors are connected nationally as well as internationally through input-output linkages. Thus, the Ifo Trade Model captures international value chains at a rich level of sectoral detail.

The model can be parameterized with simple econometric equations that result from the equilibrium conditions of the model. Two sector-specific parameters are of paramount importance: the elasticity that describes how tariff changes impact trade flows and the potential for reductions in NTMs. While there are established methods to estimate trade elasticities, there are substantial uncertainties surrounding the modeling and estimation of NTMs. In this report, the modeling philosophy consists in using the experience with existing FTAs to econometrically estimate their effect on sectoral trade flows using so called gravity models. Once causal effects of FTAs on sectoral trade flows are known, estimated trade elasticities and observed tariffs can be used to back out how large the reduction in other costs than tariffs must have been. Table A2 in the Appendix shows the results obtained from the regression model in terms of ad valorem tariff equivalents. Generally, existing FTAs – both shallow and deep ones – have managed to reduce NTMs significantly in the manufacturing sectors; the evidence is more mixed in agri-food. In services, there is robust evidence for cost reductions, but the effects are rather small in size.

These cost reductions are then used as the basis of scenarios for a possible EU-India FTA. Note that this strategy yields potentials, not forecasts. Whether negotiators are able to realize what has been possible in existing agreements depends on political circumstances.

While the method highlights feasible reforms (feasible, because they have been achieved in other trade relationships), it is absolutely possible that specific agreements go beyond what existing deals have done. In the EU-India case it is conceivable that the major interest in services trade from both sides leads them to achieve more than what other agreements have been able to do. In that sense, we might

[20] The basis for this model was laid down in Caliendo and Parro (2015). Their work extends the workhorse trade model of Eaton and Kortum (2002). The model is thus rooted in the "New Quantitative Trade Theory"; see Costinot and Rodriguez-Clare (2014) for a description of this class of models.

underestimate the potentials for certain areas.

In the analysis, we use data from Duer et al. (2014) to distinguish FTAs according to their depth, i.e. how far-reaching the provisions on non-tariff aspects are. Because measuring the depth of FTAs is again complicated and fraught with measurement error, we simply categorize the universe of FTAs into deep ones (such as EU-Korea, NAFTA, etc.) and shallow ones (such as EU-Morocco, or many older FTAs amongst developing countries). This allows us to assess the trade and welfare effects of different depths of trade liberalization. With this information at hand, we can simulate different levels of NTM reductions of an EU-India FTA.

The trade policy scenarios – described in more detail in the next subsection – are based on the following thought experiment: how would trade, sectoral production structures, and real income look like in 2011, if the EU and India had an FTA and eliminated all bilateral traffics and reduced NTMs? To create the scenarios, we assume that the extent of NTM reductions for the EU-India FTA would be similar to the ones observed in past (shallow or deep) FTAs.

The Ifo Trade Model is a general equilibrium model which simultaneously quantifies the effects of trade policy scenarios on sectoral trade flows, value added, employment, wages, tariff income, GDP, prices, and other variables of all countries involved. Thus, trade diversion effects are fully accounted for. For example, an EU-India FTA could lead to a redirection of European textiles imports away from sources such as Bangladesh towards India. Also, the agreement may divert Indian imports away from countries where imports are still dutiable to the EU where duties are eliminated; this would affect tariff revenue. These diversion effects are the root cause for the fact that the welfare effects of FTAs are generally ambiguous for the parties engaged in negotiating them and negative for the countries remaining outside of the agreement. The model allows for a very rich pattern of domestic and international sourcing patterns. This means that an expansion of economic activity in one country (in the Indian textiles sector, say) can lead to increased exports of third countries (of Egyptian cotton to India). This counteracts the trade diversion effects.

The model provides static level effects on real income and trade. Potential dynamic effects of trade liberalization, e.g. on the innovation activities of firms, are not taken into account. In other words, we provide a lower bound for the potential effects of an EU-India FTA. However, this does not imply that the static effects would result instantaneously after the FTA has entered into force. This is particularly relevant for NTMs: the increased regulatory cooperation between the EU and India will be slowly phased in. Evidence from existing FTAs shows that this phasing-in process usually takes between 10 and 12 years (see e.g. Jung, 2012).

Another caveat worth mentioning is that the Ifo Trade Model, like almost all other CGE models, does not explicitly include rules of origin. This means that the model may generate too little trade diversion,

since goods originating from third countries may enjoy preferential treatment when used as inputs in the parties' production systems. Note, however, that at the level of sectoral aggregation used in the model, the share of third party value added in exports is beyond the critical thresholds of 50% in almost all cases.

5.2 Scenario Description

The EU's intention is to negotiate what offers of the EU Commission have dubbed a broad-based trade and investment agreement (BTIA). The EU's negotiation mandate dates from 2006. Since then, India has unilaterally lowered tariffs and reduced barriers for foreign entry. The EU has acquired additional competencies (most importantly in the area of foreign direct investment). And the overall strategic landscape has changed towards more ambitious and more comprehensive agreements (such as the Transpacific Partnership agreement, or China's attempt to form a South-East Asian agreement, the so called Regional Comprehensive Economic Partnership (RCEP)).[21] Therefore, it is difficult to design credible scenarios based on a bottom-up analysis of existing trade barriers and an assessment of the technical as well as political feasibility to reduce them. In the following, we offer a scenario analysis based on a top-down approach, as described in Section 5.1.

Due to the uncertainty about potential details of a treaty, we investigate a variety of scenarios when quantifying the effects of a potential EU-India FTA treaty. We distinguish the scenarios according to the level of NTM reductions and to the sectors that are or are not exempt.

The following configurations are simulated:

1. Only **tariff elimination**, no NTM reductions
    a) The agricultural sectors are exempt from tariff reductions, i.e. tariffs are eliminated in manufacturing only.
    b) All tariffs between the EU and India are eliminated.
2. Tariff elimination in all sectors, and a **shallow reduction of NTMs**
    a) The agricultural and service sectors are exempt from NTM reductions, i.e. NTMs are reduced in manufacturing only.
    b) The agricultural sectors are exempt from NTM reductions, i.e. NTMs are reduced in manufacturing and services only.

[21] Given these facts, the question arises whether the EU Commission does not actually require an updated mandate if it were to enter into renewed negotiations with India.

c) The service sectors are exempt from NTM reductions, i.e. NTMs are reduced in manufacturing and agriculture only.

d) NTM reductions in all sectors.

3. Tariff elimination in all sectors, and a **deep reduction of NTMs**

a) The agricultural and service sectors are exempt from NTM reductions, i.e. NTMs are reduced in manufacturing only.

b) The agricultural sectors are exempt from NTM reductions, i.e. NTMs are reduced in manufacturing and services only.

c) The service sectors are exempt from NTM reductions, i.e. NTMs are reduced in manufacturing and agriculture only.

d) NTM reductions in all sectors.

Table 1 provides an overview of the scenario configurations.

Table 1: Overview of Scenarios

Treatment:	Tariffs eliminated		NTMs reduced		
Sectors:	Manufacturing	Agriculture	Manufacturing	Agriculture	Services
1. *Only tariff elimination*					
a)	x				
b)	x	x			
2. *Shallow EU-India FTA*					
a)	x	x	x		
b)	x	x	x		x
c)	x	x	x	x	
d)	x	x	x	x	x
3. *Deep EU-India FTA*					
a)	x	x	x		
b)	x	x	x		x
c)	x	x	x	x	
d)	x	x	x	x	x

Note that the EU and Turkey have formed a customs union. So, if the EU sets tariffs towards India to zero, Turkey has to follow and unilaterally set its tariffs towards India to zero as well, without receiving tariff reductions on the Indian market. We take this into account in our simulations.

Note also that, in 2013, Croatia acceded to the EU. Therefore, a potential EU-India FTA will be realized in a world where Croatia is already an EU member. However, in the Global Trade Analysis Project (GTAP) 9 data we use to simulate the model, the latest data is for the year 2011. Consequently, we first simulate the effects on trade, production and real income of Croatia's joining the EU.[22] Then, starting from this alternative simulated equilibrium, we implement the EU-India configurations discussed above.

Additionally, we compute scenarios which account for the probable exit of the United Kingdom from the EU (the Brexit). This requires a further step in constructing a hypothetical baseline, in which the Brexit has already occurred, and to compare the results from an EU-India FTA (without and with a separate UK-India agreement) with this baseline.

The baseline data, to which our model is calibrated, refer to the year of 2011. The data needed for the model are quite considerable. Amongst other things, we need information on sectoral value added, production, and domestic and foreign input-output linkages for each of our 140 countries in a uniform and harmonized format. Unfortunately, the most recent collection of such data available refers to the year of 2011. We refrain from updating these data using forecasting methods, as this would inevitably result in additional uncertainty. Therefore, our comparative statics exercise compares the status-quo of 2011 with a hypothetical situation, in which an EU-India FTA had existed in 2011. The only adjustment we undertake is that we have Croatia become a member of the EU. This does not preclude us from evaluating the effects with data from 2015 in order to account for the change in scale of the world economy. The underlying assumption, of course, is that the structure of the global economy (the description of technology and demand) has not significantly changed since 2011.

[22]For Croatia, the model predicts real income gains of 2.5% from joining the EU. Since Croatia is a small country, the effect from its accession on the EU as a whole is benign: on average, real income increases by 0.02%. Croatia's EU neighbors benefit most, e.g. Slovenia (+0.4%) and Hungary (+0.06%). In Germany, real income does not change noticeably with Croatia's EU membership (+0.01%). After the accession, Croatia is predicted to intensify its trading relation with the EU, which is already its major trade partner. Croatia imports and exports to the EU will increase by around 5 percentage points, starting from 64% and 70%, respectively.

6 Expected Effects of an EU-India FTA: Simulation Results

We are now ready to turn to the results of our model simulations. We look at macroeconomic effects, such as the effects on per capita income, then turn to the analysis of sectoral value added and employment impacts, and finally end with a description of the simulated trade changes. We discuss the role of Brexit and the importance of third country effects. As our default, we will treat the EU-India agreement as a deep EU-India FTA across all sectors. This strategy allows us to pinpoint the potentials of an agreement and to illustrate the structure of the mechanisms at play. However, we also present results for other scenarios, both to study the robustness of our findings and to assess alternative quantitative outcomes.

An agreement between the EU and India would lower trade costs: tariffs would be reduced or eliminated, and the costs of NTMs decreased. Lower trade costs allow countries to specialize more strongly on those sectors in which they have a comparative advantage. These specialization gains come in the form of higher real incomes and allow consumers to reach higher levels of utility. Consumers benefit from lower prices on imports, whereas governments lose tariff income – an effect that has to be taken into account as well. In particular, if tariffs are already low, eliminating them does redistribute income from governments to consumers, but aggregate welfare gains are small. Tariff income is still important for India, while it plays only a very minor role for the finances of the EU. If the agreement brings trade cost savings from reforming non-tariff trade barriers, there are no direct budgetary consequences. Moreover, welfare effects are more substantial because lower costs of NTMs mean that fewer resources are wasted.

This implies that, when two regions lower trade barriers in a multilateral world, effects on aggregate welfare are not clear ex ante. The reason is that lower tariffs may incite a country to shift imports away from the country where they are produced most efficiently to a less efficient partner, whose efficiency disadvantage is overturned by the preferential elimination of the tariff. These trade diversion effects have to be contrasted to the benefits of trade creation effects with the preferential partner. This ambiguity makes model simulations necessary.

6.1 Effects on Incomes and Aggregate Openness

Table 2 shows the effect of a deep EU-India FTA on GDP. We find that the agreement would increase annual real per capita income in India by about 1.30%. This is equivalent to an increase in GDP, valued at 2015 prices, of about USD 28 bn. or USD 22 per capita. The real wage change lies above the change in per capita income, mainly because of the reduction of tariff income. Tariffs count towards national income, but wage changes in the table are expressed in gross terms. Table 5 shows that, in 2011, India

had tariff income of about USD 32 bn.. This amounted to 1.78% of Indian GDP. A free trade deal with the EU would lower tariff income by about USD 7 bn.. We come back to this issue below.

Compared to India, if one looks at percentage changes, Europe gains much less from a deep FTA. Annual real per capita income would go up by about 0.14%, real wages by 0.15%. These rates of change are only about a tenth of what the model predicts for India. Thus, the FTA would lead to some convergence between the EU and India. Compared to the annual growth rates of up to 10% that India managed to achieve during the last years, a gain of 1.30% appears minor. Also, since initial levels of GDP per capita and of wages are so much higher in Europe, the absolute expected gain in per capita income is about twice as high, USD 44, as compared with India's USD 22.

Within the EU, the United Kingdom would be the biggest beneficiary amongst the large member states of a trade deal with the EU. The model simulations imply that the average UK citizen could hope to reap a gain in annual income of about USD 80. This value is substantially lower in Germany or France, where it stands at about USD 61 or USD 30 per year. Belgium and Ireland would see even higher gains, ranging up to 191 USD per person and year. This is due to the fact that Belgium is a major place of entry and exit for imports from and exports to India. And Ireland is strongly connected to India via services trade and would therefore stand to benefit from lower non-tariff barriers in this area.

All EU countries benefit from an EU-India agreement. It is important to note that this is by no means an automatic outcome of the model. The reason is that the agreement can affect terms-of-trade of EU member states in very heterogeneous ways. For example, if lower trade barriers with India mean that textiles producers from Portugal face lower cost competition from India and lose market share in other EU member states, this could push aggregate welfare gains into negative territory. However, these within-EU trade diversion effects are too small empirically to undo the gains. The tight fabric of value added chains within Europe help: when Germany increases its exports of cars and machinery to India, producers from other EU countries see demand for components go up, and this may ensure positive gains even if those other countries do not see strong increases of direct exports to India.

Outsiders to the agreement would typically lose. The exception to this rule is the US whose strong input-output links with the EU would help mitigate trade diversion effects. However, the other BRICS countries (Brazil, Russia, China, and South Africa), the rest of Asia, and the rest of Europe and Turkey would all lose from the agreement. But the simulated effects are very small for all regions mentioned. Given the various uncertainties surrounding the simulation, it is probably best to talk about statistical zeroes for all the outsiders where the negative diversion effects and the beneficial income effects tend to neutralize each other.

An EU-India trade agreement would make both economies more open. Table 3 shows that Indian openness (exports plus imports as a ratio of GDP) would go up substantially from currently 53% to

62%. This 8 percentage points increase is much more than what the EU would experience on average. There, the incremental increase would be less than one percentage point. This asymmetry is typical of a trade agreement between two rather asymmetric regions: Europe's GDP is almost eight times bigger than India's. While this fact also implies that India has more to gain (in relative terms), the amount of restructuring in the economy is also more substantial, and so there will be short-run adjustment costs.

Table 4 shows how the gains from an EU-India FTA can be broken down into different elements of the potential agreement. Focusing on India first, it is very clear that the elimination of tariffs alone will not generate any substantial welfare gains. Expressed in absolute per capita income gains, terminating all tariffs in manufacturing would not yield any measurable gain for the average Indian citizen. The reason is that European import tariffs are already low in this area, and the allocation inefficiencies associated to them in India are even smaller.[23] Also eliminating agricultural tariffs would unlock some measurable gains for the average Indian, but the gains are tiny. They amount to USD 30 cents, or 0.02% of Indian per capita income. The relative importance of agriculture is explained by the relatively high level of current protection in Europe in this area.

Any meaningful trade pact between the EU and India would have to tackle non-tariff barriers. The simulations show that the manufacturing sector is key: a shallow FTA which reduces the costs of NTMs in all sectors and also removes tariffs would generate an income gain of USD 11.4 per person. 81% out of this sum or USD 9.20 are generated by lower NTMs in the area of manufacturing.[24] NTM reform in the agricultural sector brings 80 cents more, and reform in the services sectors unlocks an additional USD 1.10. The reason for the importance of manufacturing is that differences in comparative advantage between India and the EU are larger in this area than in services, so that the potential gains from trade are also larger. Moreover, the experience with existing trade agreements indicates that the costs associated to NTMs in manufacturing can be successfully decreased quite substantially, while this is much more difficult in agriculture or services.

Moving to a deep agreement leads to larger gains, as the cost savings from reforming NTMs go up. However, the prominence of manufacturing remains: Ambitious NTM reform in manufacturing increases the gains by USD 17.80 to USD 18.10, this is about 82% of the full effect (USD 22). The contributions of reform in the agricultural and services sectors appear substantially smaller in comparison.

The picture is somewhat different for the EU. Tariffs matter more, because India still has relatively high import tariffs while EU tariffs are much lower. About 13% of the total gains from a deep agreement and almost 28% from a shallow agreement would be due to the dismantling of (mostly Indian) tariffs.

[23] Technically, the welfare losses from tariffs tend to be quadratic in their size, so that a reduction of tariffs, when they are already close to zero, brings only very small gains.

[24] Tariff elimination entails gains of USD 0.30, additional NTM reform in manufacturing of the shallow type yields a total gain of USD 9.50, so that the gains attributable to NTMs is USD 9.20, or 81% of the grand total of USD 11.40.

Within the EU, countries with large manufacturing sectors benefit most from a tariff reform: these are Ireland, Slovakia, Germany and Sweden. Interestingly, a tariff reform can actually yield negative effects in certain countries such as Luxembourg. The reason is that these countries do not export many goods to India (rather: services, which are, however, not subject to tariffs), but they would lose tariff income.[25] However, comparing NTM reform in the manufacturing sector with other NTM reforms in other areas, it is clear that manufacturing still dominates. In a shallow agreement, adding agriculture to manufacturing yields only an additional gain of USD 2.00; adding services to manufacturing brings USD 2.10. The deep agreement again features a similar structure.

Interestingly, a rather substantial share of the losses brought about by the EU-India agreement to third countries stem from tariff liberalization. The reason is that a redirection of Indian exports to Europe leads to a redirection of sourcing of these other countries towards nations with which a FTAs exist, so that tariff income is lost.

This does not mean that services could be left out of the negotiations without substantial losses. What the simulation shows is that the experience with existing agreements does not allow us to be overly optimistic in the area of services. However, there is no reason why India and the EU could not go beyond existing agreements if they wish so.

6.2 Effects on Government Budgets

Table 5 shows what happens to tariff income in India and in the EU. Tariff income amounts to about 1.8% of Indian GDP (about 3% to 4% of central government revenues), while it amounts only to 0.25% of the EU GDP. If all tariffs are eliminated (Scenario 1b), India would lose 6.3 bn. USD of tariff income, if the costs of non-tariff measures also fall, this loss would grow to about USD 7.0 bn.. This increase results from the fact that lower NTMs with the EU would divert Indian imports away from other sources where tariffs would remain in place even after the conclusion of an EU-India agreement. In contrast, the trade deal would reduce the EU tariff income only by USD 1.4 bn. to USD 1.9 bn. because India enjoys tariff-free access to EU markets in many industries already.

Table 5 breaks down the tariff revenue effects of an EU-India FTA for the EU member states. This is interesting, because it shows that consumers in Germany, for example, could potentially save up to USD 364 mn. worth of tariff payments. The assumption in the model is that perfect competition does not allow firms to pocket these gains. Moreover, it is important to bear in mind that lower tariff income in Brussels would have to be compensated by some alternative sources of income.

[25] 75% of the tariff income generated by imports into Europe and paid by European consumers goes to the EU's central budget; the rest remains at the member states.

The expansion of economic activity by 1.3% in India would increase the tax base. This implies additional tax income for the government due to higher income, corporate or sales tax revenues. If about a third of this income gain is taxed away by the state, no tax increases would be required. The EU income is predicted to go up by about USD 23 bn., while lost tariff income amounts to less than USD 2 bn.. So, if only one tenth of the aggregate income gains is taxed away, budgets would be balanced. If more is taxed away, the agreement would actually relax public sector financing constraints (holding expenditures constant).

6.3 The Role of the Brexit

Finally, we have to account for the fact that – as of today – it seems likely that any future trade agreement of the EU with India will not include the United Kingdom, which, on June 23rd 2016, has voted to leave the European Union. Table 6 provides the details of simulations which account for the changed role of Britain. We view the EU as a deep trade agreement, so that the Brexit would reinstate tariffs and lead to higher costs of non-tariff barriers in the trade of the UK with Europe. The right-most column of the table provides the per capita gains (in USD) for non-UK Europe under the assumption that the UK remains part of the EU. The left-most column reports the welfare losses registered by Brexit: India would remain almost unaffected, but the Brexit would cost the average European (non-UK) citizen about USD 68 a year. The average Brit would suffer a loss of USD 858. Within Europe, Ireland would be very strongly affected, because of its very tight links to the British economy. Also Luxembourg would suffer strongly, as its important financial market is closely connected to the City of London.

Clearly, an FTA of India with Europe excluding the UK would be worth less than a deal that includes the UK. We have seen in Table 2 that the UK would be a major beneficiary of the deal; Table 6 shows that it also matters for the gains that India can expect. A deep agreement with the EU27 yields USD 17.30 for the average Indian citizen, this is USD 4.70 less than what a deal including the UK would generate. In different words, for India, the Brexit lowers the potential gains from an FTA with the EU by 21% or more than a fifth. This is substantial and must be expected to weaken India's interest in the undertaking.

The table also shows that an agreement with India without the UK can actually benefit some EU members. For example, Germany would see larger gains from the FTA if Britain is excluded. The reason for this is that it would face smaller competition from UK competitors in the Indian market, e.g., for automobiles. Other countries would lose, for example Luxembourg, which offers financial products that are complementary to those provided by Britain (e.g., depository services). Of course, this does

not mean that Brexit would be beneficial in the first place for any of the countries listed in Table 6 except some third countries.

6.4 Effects on Sectoral Value Added

Next, we focus on sector-level effects of the agreement. Table 7 looks at the changes in sectoral value added that a deep EU-India FTA could bring about. The table lists the 57 sectors in our model in descending order of projected absolute changes in sectoral value added (VA). The sum of value added changes is higher than the effect on national income shown in Table 2, which has to subtract lost tariff income.

The industry with the largest projected gain is the business services sector which could see its activity expand by USD 6.5 bn.; corresponding to an increase of about 7%. India has a comparative advantage in this area: call centers, remote back office services in medicine, legal advice, IT, or finance are well-known examples for this. The share of this sector in aggregate value added is more than 5%; this is why a mid-size percentage change translates into relatively large absolute gains, accounting for almost a quarter of the total economy-wide gain. We have argued above that the removal of service barriers in the EU-India relationship will only add little to the overall gains from increased trade. This does not at all contradict the findings in the sectoral analysis. Rather, the comparison reflects the fact that India's additional manufacturing exports will increase the demand for domestic business services, so that lower tariffs and lower NTMs in manufacturing ends up boosting value added there as well. In that sense, business services differ from other service sectors such as trade services or construction, whose value added is expected to expand roughly at the same rate as GDP, since higher aggregate incomes in India add to demand for these sectors.

The second most important industry is the textiles sector. It is important for India's exports, but it is not a major component of overall national value added, accounting only for about 1.5% of the total. However, lower trade barriers will strongly boost India's exports to the EU; this is predicted to increase sectoral value added by almost 14%. By the same logic, exports of wearing apparel and of leather products should go up, leading to a very substantial increase in India's value added in this area (+43% and +42%, respectively).

There is also a number of sectors where India is likely to see a reduction of value added, as European firms occupy a higher market share and additional demand due to higher Indian GDP does not compensate the losses. This is the case in sectors, in which India has a comparative disadvantage, e.g., in the automotive industry, in machinery, or in beverages and tobacco. The latter sector is still very strongly protected in India, so that German beer and French wine can expect market share gains due to the

agreement. The situation in the automotive industry and machinery could be more complex than what the model projects. The reason is that, to the extent that the agreement includes a modern investment chapter which improves the conditions for European businesses to open shop in India, car or machinery producers could decide to produce locally rather than to export. This would keep Indian value added up in these areas.

There are also sectors, in which the agreement is expected to lead to little or no change. This is true in some agri-food sectors, e.g., meat. Here, EU producers will gain market share in India, but higher incomes will also translate into higher demand for Indian producers. Hence, sectoral value added goes up, but at a smaller rate than the nation-wide average. In other agri-food sectors, value added is going up by more than the average; this is the case in the plant fibers, cattle and animal products sectors.

Summing up, the sectoral changes predicted by the model will lead India to specialize further in the sectors in which it has its comparative advantage. This is so in business services and in the textiles / wearing apparel industries, and to a smaller extent also in some agri-food areas such as plant fibers, cattle, or other animal products. The importance of the machinery and automotive sector would, in contrast, shrink.

Tables 8 and 9 show changes in sectoral value added in the EU as a whole, and in Germany (for an interesting example of an EU member state). For the EU, the sector with the largest value added gains is the public sector. This might sound paradoxical, but has to do a lot with the aggregation level of our analysis: this sector expands at the rate of 0.1%, which is the same rate as the change in total EU-wide value added. As the agreement makes Europe somewhat richer, demand for public services goes up, and this translates in the shown figures. The second biggest winner is the machinery sector, whose value added would go up six times more than the EU-wide value. The relative boost to the automotive sector is even more pronounced; its value added could go up by 1.1%. Minerals and metals also figure high on the list; this is because these relatively unimportant sectors are expected to receive a comparably large relative improvement in demand for their outputs. Growth in the metals sector is largely a byproduct of growth in automotive and machinery, as metal inputs sourced in the EU are increasingly needed.

German value added is expected to go up particularly strongly in the sectors of motor vehicles and machinery, but also the chemical industry could register higher value added growth due to the agreement than the national average (0.2%). In Germany, the losing sectors would be textiles, wearing apparel and leather. For the right interpretation of this number it is important to note that we are not talking about value added generated within German multinationals, but about value added on the German territory. So, it is well possible that the FTA is, for instance, beneficial for Adidas, even if the leather industry in Germany is shrinking, as the company moves production (and, hence, value added generation) to India.

Comparing the value added effects expected in India to those in Europe or Germany reveals that the

comparative advantage is structured very differently across these regions. While India is posed to win in sectors like business services or textiles, and lose in sectors like machinery and transportation, Europe is in broadly the opposite situation. Thus, India's offensive interests coincide with the EU's defensive interests and vice versa. This difference in comparative advantage bodes well for the existence of aggregate welfare gains but also makes the negotiations difficult.

6.5 Effects on Sectoral Employment

Employment effects mirror the value added effects, but not exactly. Tables 10, 11, and 12 look at the changes induced by the agreement in India, the EU and Germany, respectively. Note that the Ifo Trade Model holds aggregate employment constant. This is a feature of almost all models used for trade policy analysis; see Felbermayr (2016) for a discussion of other possible modeling frameworks. As a consequence, there are no changes in unemployment, and the agreement, by construction, does not create or destroy any additional jobs. However, the analysis is still useful, because it allows to identify those sectors which add jobs and those which lose jobs. For India, additional jobs can be expected in the business services industry, where almost two million new jobs could emerge. Smaller but very substantial employment gains could occur in the wearing apparel, textiles, and leather industries, which are all very labor intensive.

The sector which could free up most workers to staff the expansion of more competitive sectors is the public sector. Its value added is expected to increase by a smaller rate than the Indian-wide average; this means that labor costs increase faster than demand. Under competitive circumstances, this would require a reduction of employment in this sector. Clearly, the Indian public sector is structured very differently from what the simple model assumes. However, one message transpires nonetheless: if India is to focus more on its comparative advantage sectors, the required manpower could come from the public sector. If this is not feasible, then other – more competitive – sectors will have to bear the adjustment costs; this could endanger part of the economic welfare gains that the EU-FTA agreement could generate.

Table 10 also reports a displacement index for India. This number measures the fraction of workers who have to change sector due to the proposed agreement, e.g., from the public sector into business services. The index stands at 0.89, which is more than one magnitude lower than the "normal" rate of labor churning in modern economies. Compared to the EU as a whole or to Germany more specifically, the displacement index in India is relatively large. This is because the extent of sectoral reallocation of labor is directly proportional to the welfare gains brought about by the agreement. Without the restructuring of the economy, gains would be substantially smaller (they would be restricted to the

resource saving effects of lower NTMs).

6.6 Trade Effects of an EU-India FTA

Finally, we present some information on the trade effects of an EU-India FTA. Tables 13 and 14 provide some rough guidance on how exports and imports of India would evolve as a consequence of the agreement. More detail, in particular on the sectoral breakdown, is provided in Table A3 in the Appendix. Today, the EU is India's most important export destination; the FTA would cement this situation. According to the model simulation, **exports could go up by about 91%**. Today, about 24% of India's exports go to the EU; the FTA could increase this share by about 13 percentage points. This is a dramatic change. However, one has to bear in mind the *ceteris paribus* nature of our simulation exercise. The table reports only the effects of one specific agreement; it does not forecast to a world, where India might be member of RCEP, the big South-Asian FTA orchestrated by China, or where the EU has a trade agreement with the US.

The table shows also that **trade diversion effects can be expected to be rather minor**, at least on the aggregate level.[26] Exports to the other BRICS countries would fall by about USD 300 mn., but exports to other world regions would not change much; the only exception is the rest of Europe and Turkey: this region is strongly integrated into the European value chains, so that higher demand for European exports from India boosts demand from Eastern Europe for Indian inputs. The point is that, in the modern world of strongly integrated production processes and where trade in inputs dominates, the scope for trade diversion is smaller than in a more traditional setup, where countries trade only in final goods. Also, the fact that EU tariffs are already low limits trade diversion effects.

Overall, **the agreement could boost India's overall exports by some USD 84 bn.**; reflecting the absence of any major trade diversion, this is very close to the expected increase in exports to the EU (USD 83 bn.). On the import side (Table 14), trade diversion may be somewhat more important. Total imports from the EU are expected to approximately double. Since Indian exports to Europe grow by a smaller rate, India's bilateral trade position worsens slightly. The model predicts that India would import substantially less from the other BRICS countries, from the rest of Asia, from the rest of Europe, and from the USA. Trade with the rest of the world could increase slightly.

Looking at the EU, exports to India are expected to more than double, while imports would go up by almost 90%. Both, on the export and the import side, the model suggests some trade diversion. Most importantly, the EU-India FTA would reduce domestic EU trade by about USD 6 bn.; the rate of change

[26] Tables A4 to A7 in the Appendix provide evidence on trade diversion effects in the most strongly affected sectors. They show, for example, that higher textiles exports of India to Europe go to the expense of textiles exports of Bangladesh; however, this more detailed analysis confirms that trade diversion effects are relatively unimportant quantitatively.

however is very minor (-0.2% for both exports and imports). Total EU exports and imports would go up by about 1% each. The reason for this modest aggregate change lies in the fact that the Indian economy is still much smaller (measured in GDP) than the European one, and that trade with India accounts only for about 1.2% of total trade.

Finally, Tables 17 and 18 look at Germany. The emerging picture is very similar to the one for the whole of Europe with one exception. On the import side, the FTA could boost trade with all major trading partners. Germany relies a lot on imports of raw materials and intermediate inputs. To produce the additional exports destined for the Indian market, it must import more. Overall, however, the predicted doubling of trade with India leads only to an increase in overall trade of about 1% (again, both, for imports and exports).

Table 2: Macro Effects of a Deep EU-India FTA

	GDP in 2015		Annual real income change			Real wage change
	total, in bn. $	per capita, in $	in %	in bn. $	per capita, in $	in %
India	2183	1688	1.30	28.44	22.00	1.55
EU28	16 266	32 064	0.14	22.50	44.35	
Belgium	459	40 456	0.45	2.06	181.56	0.57
Ireland	227	48 940	0.39	0.89	190.98	0.26
Slovakia	86	15 893	0.23	0.20	36.40	0.24
Malta	9	21 540	0.21	0.02	45.81	0.30
United Kingdom	2865	44 118	0.18	5.22	80.37	0.21
Estonia	23	17 425	0.17	0.04	29.52	0.21
Slovenia	43	20 712	0.17	0.07	34.63	0.19
Latvia	28	13 729	0.16	0.04	21.96	0.24
Greece	193	17 657	0.16	0.30	27.82	0.18
Sweden	484	48 966	0.15	0.75	75.52	0.15
Finland	231	42 159	0.15	0.35	64.52	0.16
Germany	3371	41 267	0.15	4.98	61.02	0.16
Denmark	291	51 424	0.14	0.42	73.70	0.17
Cyprus	19	21 531	0.13	0.03	29.01	0.17
Czech Republic	182	17 330	0.13	0.23	22.20	0.13
Netherlands	751	44 333	0.11	0.85	49.91	0.11
Spain	1221	26 327	0.11	1.33	28.63	0.12
Hungary	118	12 021	0.09	0.11	11.32	0.09
Romania	175	8807	0.09	0.16	8.11	0.09
Italy	1819	29 847	0.09	1.67	27.39	0.10
Luxembourg	58	103 187	0.08	0.05	86.49	0.10
Lithuania	42	14 318	0.08	0.03	11.65	0.11
France	2423	37 728	0.08	1.95	30.36	0.10
Poland	481	12 662	0.07	0.33	8.58	0.08
Austria	373	43 547	0.07	0.25	29.23	0.07
Bulgaria	47	6582	0.07	0.03	4.39	0.07
Portugal	198	18 984	0.06	0.11	10.99	0.06
Croatia	49	11 551	0.05	0.02	5.75	0.06
USA	17 968	55 904	0.00	0.20	0.63	
Rest of Asia	8489	7340	−0.01	−0.87	−0.75	
BRICS w/o India	15 045	8415	−0.02	−3.18	−1.78	
Rest of Europe & Turkey	1808	19 249	−0.02	−0.48	−5.08	
World	72 318	10 849	0.06	46.29	6.94	

Source: GDP data for the year 2015 stem from the World Economic Outlook. **Note:** The table shows simulation results of the deep EU-India scenario, i.e. all sectors receive the deep NTM treatment. The real income change of regions is a GDP-weighted average of the country-specific real income changes in that region.

Table 3: Change in Openness with a Deep EU-India FTA

	Openness* in %	Change in openness in %points
India	53	7.98
EU28	86	0.82
Slovakia	179	2.11
Belgium	193	1.84
United Kingdom	69	1.61
Luxembourg	315	1.57
Latvia	129	1.46
Greece	79	1.30
Estonia	193	1.28
Finland	85	1.26
Ireland	187	0.85
Sweden	92	0.84
Germany	90	0.81
Spain	65	0.64
Denmark	108	0.63
Czech Republic	157	0.62
Malta	271	0.57
Cyprus	145	0.57
Italy	63	0.52
Hungary	183	0.51
Lithuania	157	0.50
Netherlands	100	0.47
Romania	89	0.43
Slovenia	153	0.40
France	62	0.40
Portugal	83	0.32
Austria	113	0.30
Poland	93	0.27
Bulgaria	153	0.13
Croatia	107	0.10

Source: GTAP 9 data for the year 2011 and own calculations. **Note:** The table shows simulation results of the deep EU-India scenario, i.e. all sectors receive the deep NTM treatment. * Openness is defined as (exports+imports)/GDP.

Table 4: Decomposition of the Income Effects of an EU-India FTA

Scenario:	Simulated annual per-capita income increase (in US-$)									
	Only tariff elimination		Tariff elimination and shallow reduction of NTMs				Tariff elimination and deep reduction of NTMs			
Treated sectors:	manu	all	manu	manu & agri	manu & serv	all	manu	manu & agri	manu & serv	all
India	0.0	0.3	9.5	10.3	10.6	11.4	18.1	19.2	20.9	22.0
EU28	5.1	5.9	17.2	19.2	19.3	21.4	35.5	38.5	41.4	44.3
Belgium	36.8	36.5	106.0	113.6	108.7	114.7	170.6	176.2	175.5	181.6
Ireland	12.3	17.4	31.8	37.9	75.7	85.2	56.6	66.0	180.4	191.0
Slovakia	15.8	16.5	20.7	21.0	21.1	21.0	34.8	35.2	35.9	36.4
Malta	0.9	1.3	17.9	19.2	22.5	23.8	35.1	36.6	44.4	45.8
United Kingdom	6.7	9.0	25.0	29.1	28.6	34.7	61.0	66.4	73.9	80.4
Estonia	2.4	2.2	13.6	15.8	14.3	16.4	25.2	26.6	27.6	29.5
Slovenia	3.1	3.2	23.1	26.2	23.6	26.2	31.7	33.5	33.0	34.6
Latvia	3.4	3.4	9.4	11.3	11.1	12.7	17.0	18.7	20.0	22.0
Greece	−0.2	0.3	22.8	24.7	23.7	25.5	23.1	25.0	26.1	27.8
Sweden	9.9	11.9	27.7	30.2	33.4	35.3	56.3	59.7	71.8	75.5
Finland	4.5	5.1	24.5	25.2	34.2	35.1	38.1	38.7	63.9	64.5
Germany	12.8	13.9	29.6	30.9	30.7	31.9	54.4	58.0	58.8	61.0
Denmark	−0.1	1.1	11.1	13.9	15.7	18.5	57.3	61.1	67.6	73.7
Cyprus	0.9	1.1	11.9	16.1	13.3	17.5	18.5	23.3	23.6	29.0
Czech Republic	5.9	5.7	11.3	11.8	12.0	12.2	20.6	21.7	21.2	22.2
Netherlands	5.0	5.2	17.7	21.1	21.3	24.3	36.2	42.9	45.0	49.9
Spain	1.2	1.3	7.4	8.1	10.2	10.7	19.7	22.8	25.5	28.6
Hungary	1.1	1.8	6.3	6.3	7.2	7.0	8.9	9.4	10.8	11.3
Romania	0.9	0.8	4.7	5.2	5.2	5.2	6.8	7.3	7.3	8.1
Italy	1.4	1.7	8.4	10.5	9.5	11.4	23.7	25.8	25.0	27.4
Luxembourg	−3.4	−4.7	5.0	9.9	36.8	39.3	16.2	18.2	84.5	86.5
Lithuania	0.9	0.7	4.6	5.7	5.3	6.2	8.9	11.1	9.6	11.7
France	0.6	1.4	10.7	12.9	10.7	12.8	25.8	29.0	27.2	30.4
Poland	0.7	0.6	3.2	3.8	3.4	3.8	7.7	8.1	8.1	8.6
Austria	3.7	4.0	12.8	15.7	14.8	14.8	25.9	26.5	29.3	29.2
Bulgaria	0.3	0.6	1.7	2.6	2.0	2.8	3.2	3.9	3.7	4.4
Portugal	−0.5	0.3	2.1	3.7	3.4	4.6	7.3	9.2	9.1	11.0
Croatia	−0.1	0.0	1.5	2.5	1.7	2.9	4.2	5.2	4.9	5.8
USA	0.1	0.3	1.5	1.9	0.4	0.8	1.3	1.7	3.6	0.6
Rest of Asia	−0.2	−0.2	−0.3	−0.4	−0.4	−0.3	−0.7	−0.7	−0.8	−0.8
BRICS w/o India	−0.5	−0.6	−1.0	−0.9	−0.9	−0.9	−1.8	−1.7	−1.7	−1.8
R. Europe & Turkey	−1.6	−1.9	−4.1	−4.0	−4.2	−4.0	−5.1	−4.9	−5.0	−5.1
World	0.1	0.2	2.8	3.1	3.1	3.5	5.5	6.0	6.7	6.9

Note: The table shows simulation results of various EU-India FTA scenario. The expected annual per-capita real income increase of a region is a population-weighted average of the country-specific real income changes in the region.

Table 5: Loss of Tariff Income Due to an EU-India FTA, Different Scenarios

	Tariff income		Change of tariff income with EU-India FTA scenarios					
			Tariffs, 1b)		Shallow, 2d)		Deep, 3d)	
	total, in mn. $	as share of GDP in %	in mn. $	in % points	in mn. $	in % points	in mn. $	in % points
India	31 637	1.78	−6285	−0.36	−6818	−0.40	−6982	−0.42
EU28	41 196	0.25	−1409	−0.01	−1478	−0.01	−1867	−0.01
Malta	116	1.43	−1	−0.01	−1	−0.02	−2	−0.03
Croatia	436	0.73	−3	−0.01	−3	−0.01	−5	−0.01
Belgium	2868	0.63	−95	−0.02	−101	−0.02	−126	−0.03
Cyprus	127	0.59	−3	−0.01	−3	−0.01	−3	−0.01
Estonia	115	0.58	−2	−0.01	−2	−0.01	−2	−0.01
Lithuania	176	0.46	−2	0.00	−2	0.00	−2	−0.01
Latvia	98	0.38	−1	0.00	−1	0.00	−1	0.00
Slovenia	166	0.36	−3	−0.01	−4	−0.01	−4	−0.01
United Kingdom	6654	0.30	−315	−0.01	−319	−0.01	−414	−0.02
Netherlands	2206	0.29	−40	−0.01	−43	−0.01	−54	−0.01
Denmark	813	0.28	−48	−0.02	−50	−0.02	−69	−0.02
Germany	9185	0.28	−267	−0.01	−278	−0.01	−364	−0.01
Slovakia	236	0.26	−2	0.00	−2	0.00	−2	0.00
Czech Republic	512	0.26	−8	0.00	−9	0.00	−10	−0.01
Hungary	317	0.26	−2	0.00	−1	0.00	−2	0.00
Bulgaria	123	0.25	−4	−0.01	−5	−0.01	−5	−0.01
Spain	3065	0.22	−117	−0.01	−124	−0.01	−155	−0.01
Ireland	481	0.22	−14	−0.01	−15	−0.01	−18	−0.01
Poland	1036	0.22	−31	−0.01	−32	−0.01	−38	−0.01
France	5533	0.22	−212	−0.01	−227	−0.01	−293	−0.01
Portugal	425	0.20	−19	−0.01	−20	−0.01	−22	−0.01
Italy	3829	0.19	−148	−0.01	−153	−0.01	−178	−0.01
Greece	472	0.19	−10	0.00	−22	−0.01	−21	−0.01
Finland	435	0.18	−8	0.00	−8	0.00	−9	0.00
Sweden	849	0.18	−32	−0.01	−33	−0.01	−42	−0.01
Romania	279	0.16	−8	0.00	−9	−0.01	−9	−0.01
Austria	591	0.16	−13	0.00	−14	0.00	−17	0.00
Luxembourg	57	0.11	0	0.00	0	0.00	0	0.00

Source: GTAP 9.0 data for the year 2011 and own calculations. **Note:** The table shows simulated changes in tariff revenues for a tariff only, shallow and deep EU-India FTA where all sectors are treated, respectively (i.e. scenarios 1b, 2d and 3d). The countries are sorted by initial tariff revenue as a share of GDP. All prices are given in constant 2011 USD.

Table 6: Welfare Effects of an EU-India FTA under Brexit

Scenario:	Simulated annual per-capita income increase (in US-$)					
	Benchmark w. Brexit	EU-India FTA under Brexit			UK-India FTA under Brexit	EU-India FTA w/o Brexit
Depth:	Deep	Tariff only	Shallow	Deep	Deep	Deep
India	−0.1	0.1	8.9	17.3	4.7	22.0
United Kingdom	−857.7	1.2	−0.4	1.0	88.2	80.4
EU27	−68.4	5.5	19.9	40.2	−0.7	39.1
Belgium	−200.9	38.6	121.1	190.8	−4.6	181.6
Ireland	−1138.6	18.7	89.0	206.1	−11.0	191.0
Slovak Republic	−23.8	17.2	22.3	39.6	−0.4	36.4
Malta	−189.9	1.6	24.5	46.4	1.5	45.8
Estonia	−54.8	2.2	16.2	28.3	0.5	29.5
Slovenia	58.0	3.8	26.9	34.6	0.0	34.6
Latvia	−28.6	3.3	12.6	21.6	0.5	22.0
Greece	−23.7	0.8	25.1	28.4	0.1	27.8
Sweden	−141.1	12.6	35.2	76.4	−0.6	75.5
Finland	−74.9	5.1	34.8	64.8	−0.1	64.5
Germany	−80.4	13.0	32.5	63.5	−1.3	61.0
Denmark	−150.3	2.8	19.7	72.5	−0.1	73.7
Cyprus	−151.6	−0.4	16.6	28.4	0.5	29.0
Czech Republic	−36.2	6.0	12.4	22.9	−0.7	22.2
Netherlands	−135.7	6.0	25.0	52.5	0.0	49.9
Spain	−62.1	1.7	10.0	27.8	−1.6	28.6
Hungary	−21.7	1.7	7.8	11.6	−1.0	11.3
Romania	−12.1	0.6	5.3	7.6	−0.1	8.1
Italy	−34.2	3.1	12.3	28.3	−0.1	27.4
Luxembourg	−652.3	−2.9	36.0	83.3	2.4	86.5
Lithuania	−25.4	0.6	6.0	11.4	0.3	11.7
France	−59.2	0.8	12.9	30.7	−0.1	30.4
Poland	−22.0	0.6	4.0	8.6	0.0	8.6
Austria	−36.9	4.8	15.9	30.3	−0.5	29.2
Bulgaria	−11.9	0.4	2.6	4.1	0.1	4.4
Portugal	−43.4	−0.6	3.9	10.5	0.0	11.0
USA	0.4	0.7	0.5	−1.4	−1.7	0.6
BRICS w/o India	0.8	−0.4	−0.9	−1.5	−0.3	−1.8
Rest of Asia	0.7	−0.2	−0.2	−0.6	−0.2	−0.8
Rest of Europe & Turkey	−2.7	−1.3	−2.2	−2.8	−2.1	−5.1
World	−12.5	0.2	2.7	5.3	1.5	6.9

Note: The table shows simulation results of various EU-India FTA scenarios. The simulation starting point (benchmark) is a situation where, starting from the situation in 2011, the UK exits the EU (Brexit) and Croatia enter the EU (not shown for expositional reasons). Brexit is assumed to eliminate all NTM reductions between the EU and the UK and the tariff the EU imposes on UK products is as w.r.t. the US (i.e. MFN tariffs). In the respective scenarios, all sectors receive treatment. The expected annual per capita real income increase of a region is a population-weighted average of the country-specific real income changes in the region.

Table 7: India: Sectoral Changes in Value Added

		Sectoral value added		Change in sectoral VA	
		in mn. $	as share of national VA, in %	in mn. $	in %
1	Business services nec	93 698	5.3	6473	6.9
2	Textiles	25 720	1.5	3588	13.9
3	Trade Services	247 968	14.1	3413	1.4
4	Wearing apparel	7123	0.4	3051	42.8
5	PubAdmin/Defence/Health/Education	218 751	12.4	2557	1.2
6	Construction	143 472	8.2	1982	1.4
7	Transport nec	108 553	6.2	1866	1.7
8	Leather products	3641	0.2	1538	42.2
9	Vegetables, fruit, nuts	78 769	4.5	1249	1.6
10	Dwellings	83 284	4.7	1084	1.3
11	Crops nec	41 764	2.4	989	2.4
12	Plant-based fibers	10 416	0.6	833	8.0
13	Petroleum, coal products	13 608	0.8	749	5.5
14	Manufactures nec	32 265	1.8	668	2.1
15	Raw milk	58 495	3.3	577	1.0
16	Paddy rice	21 026	1.2	445	2.1
17	Communication	29 983	1.7	430	1.4
18	Animal products nec	13 950	0.8	418	3.0
19	Processed rice	15 518	0.9	306	2.0
20	Food products nec	15 826	0.9	267	1.7
21	Chemical, rubber, plastic prods	46 036	2.6	258	0.6
22	Cattle, sheep, goats, horses	7174	0.4	214	3.0
23	Metal products	16 870	1.0	195	1.2
24	Mineral products nec	15 782	0.9	173	1.1
25	Electricity	34 158	1.9	172	0.5
26	Fishing	14 219	0.8	146	1.0
27	Sugar cane, sugar beet	9653	0.5	118	1.2
28	Cereal grains nec	8235	0.5	109	1.3
29	Oil seeds	20 142	1.1	106	0.5
30	Wheat	5948	0.3	101	1.7

continued

Table 7: India: Sectoral Changes in Value Added, continued

		Sectoral value added		Change in sectoral VA	
		in mn. $	as share of national VA, in %	in mn. $	in %
31	Electronic equipment	5225	0.3	81	1.5
32	Financial services nec	91 567	5.2	73	0.1
33	Sugar	4855	0.3	67	1.4
34	Water	3468	0.2	39	1.1
35	Wool, silk-worm cocoons	1380	0.1	32	2.3
36	Gas manufacture, distribution	6162	0.4	26	0.4
37	Meat: cattle, sheep, goats, horses	1325	0.1	6	0.5
38	Recreation and other services	6088	0.3	5	0.1
39	Forestry	15 545	0.9	4	0.0
40	Meat products nec	198	0.0	1	0.3
41	Wood products	4805	0.3	−47	−1.0
42	Air transport	4018	0.2	−57	−1.4
43	Vegetable oils and fats	5020	0.3	−60	−1.2
44	Transport equipment nec	8554	0.5	−80	−0.9
45	Dairy products	7199	0.4	−124	−1.7
46	Insurance	20 189	1.1	−125	−0.6
47	Sea transport	5378	0.3	−150	−2.8
48	Metals nec	3943	0.2	−162	−4.1
49	Coal	8034	0.5	−262	−3.3
50	Gas	2306	0.1	−287	−12.4
51	Beverages and tobacco products	8358	0.5	−372	−4.4
52	Ferrous metals	21 369	1.2	−485	−2.3
53	Machinery and equipment nec	31 846	1.8	−499	−1.6
54	Paper products, publishing	7183	0.4	−583	−8.1
55	Oil	16 616	0.9	−954	−5.7
56	Minerals nec	14 956	0.9	−1189	−8.0
57	Motor vehicles and parts	11 841	0.7	−1618	−13.7
	Total	1 759 474	100.0	27 353	1.6

Source: GTAP 9 for the year 2011 and own calculations. **Note:** The table shows sectoral value added effects for the deep EU-India FTA scenario. All prices are given in constant 2011 USD.

Table 8: EU28: Sectoral Changes in Value Added, Top and Bottom Sectors

		Sectoral value added	as share of national VA,	Change in sectoral VA	
		in mn. $	in %	in mn. $	in %
1	PubAdmin/Defence/Health/Education	3 359 204	20.8	4151	0.1
2	Machinery and equipment nec	701 260	4.3	4082	0.6
3	Minerals nec	44 930	0.3	3446	7.7
4	Motor vehicles and parts	289 038	1.8	3109	1.1
5	Metals nec	68 330	0.4	2315	3.4
53	Oil	54 483	0.3	−1304	−2.4
54	Business services nec	2 420 948	15.0	−1490	−0.1
55	Petroleum, coal products	257 815	1.6	−1888	−0.7
56	Textiles	92 535	0.6	−2540	−2.7
57	Wearing apparel	92 808	0.6	−2580	−2.8
	Total	16 185 794	100.0	23 867	0.1

Source: GTAP 9 for the year 2011 and own calculations. **Note:** The table shows sectoral value added effects for the deep EU-India FTA scenario. All prices are given in constant 2011 USD.

Table 9: Germany: Sectoral Changes in Value Added, Top and Bottom Sectors

		Sectoral value added	as share of national VA,	Change in sectoral VA	
		in mn. $	in %	in mn. $	in %
1	Motor vehicles and parts	100 713	3.0	1576	1.6
2	Machinery and equipment nec	239 770	7.2	1523	0.6
3	PubAdmin/Defence/Health/Education	629 968	18.9	755	0.1
4	Chemical, rubber, plastic prods	139 039	4.2	627	0.5
5	Dwellings	247 258	7.4	365	0.1
53	Petroleum, coal products	59 162	1.8	−93	−0.2
54	Leather products	5579	0.2	−189	−3.4
55	Textiles	14 443	0.4	−373	−2.6
56	Wearing apparel	13 754	0.4	−425	−3.1
57	Business services nec	509 976	15.3	−559	−0.1
	Total	3 334 085	100.0	5089	0.2

Source: GTAP 9 for the year 2011 and own calculations. **Note:** The table shows sectoral value added effects for the deep EU-India FTA scenario. All prices are given in constant 2011 USD.

Table 10: India: Sectoral Employment Changes, Top and Bottom Sectors

	Sector description	Changes in sectoral employment, in thousand employees
1	Business services nec	1705
2	Wearing apparel	948
3	Textiles	762
4	Leather products	507
5	Plant-based fibers	156
53	Machinery and equipment nec	−248
54	Construction	−250
55	Financial services nec	−257
56	Motor vehicles and parts	−518
57	PubAdmin/Defence/Health/Education	−601
	Displacement index, in %	0.89

Source: Own calculations. **Note:** Table shows employment effects for the deep EU-India FTA scenario. Displacement index measures the fraction of all employed people that have to switch sectors due to the EU-India FTA.

Table 11: EU28: Sectoral Employment Changes, Top and Bottom Sectors

	Sector description	Changes in sectoral employment, in thousand employees
1	Motor vehicles and parts	58
2	Machinery and equipment nec	57
3	Metals nec	46
4	Minerals nec	27
5	Chemical, rubber, plastic prods	20
53	Trade services	−25
54	PubAdmin/Defence/Health/Education	−29
55	Wearing apparel	−39
56	Textiles	−47
57	Business services nec	−82
	Displacement index, in %	0.12

Source: Own calculations. **Note:** Table shows employment effects for the deep EU-India FTA scenario. Displacement index measures the fraction of all employed people that have to switch sectors due to the EU-India FTA.

Table 12: Germany: Sectoral Employment Changes, Top and Bottom Sectors

	Sector description	Changes in sectoral employment, in thousand employees
1	Motor vehicles and parts	26
2	Machinery and equipment nec	17
3	Metals nec	5
4	Chemical, rubber, plastic prods	4
5	Ferrous metals	3
53	Wearing apparel	−4
54	Textiles	−5
55	Trade services	−7
56	PubAdmin/Defence/Health/Education	−10
57	Business services nec	−15
	Displacement index, in %	0.15

Source: Own calculations. **Note:** Table shows employment effects for the deep EU-India FTA scenario. Displacement index measures the fraction of all employed people that have to switch sectors due to the EU-India FTA.

Table 13: India: Trade Effects of a Deep EU-India FTA, Export Side

	Exports		Changes in exports with EU-India FTA		
Export destination	in mn. $	As share of total, in %	in mn. $	Growth rate in %	Change in regional share in %points
EU28	90 989	24.2	82 708	90.9	13.4
USA	64 208	17.1	84	0.1	−3.2
Rest of Asia	57 859	15.4	42	0.1	−2.9
BRICS w/o India	49 230	13.1	−290	−0.6	−2.5
Rest of Europe & Turkey	11 764	3.1	333	2.8	−0.5
Rest of World	101 194	27.0	808	0.8	−4.9
Total	375 244	100.0	83 685	22.3	0.0

Source: GTAP 9 data for the year 2011 and own calculations. **Note:** Export values are f.o.b. values and prices are given in constant 2011 USD.

Table 14: India: Trade Effects of a Deep EU-India FTA, Import Side

	Imports		Changes in imports with EU-India FTA		
Source region	in mn. $	As share of total, in %	in mn. $	Growth rate in %	Change in regional share in %points
BRICS w/o India	89 769	16.0	−5252	−5.9	−2.8
EU28	88 103	15.7	89 628	101.7	12.1
Rest of Asia	87 943	15.7	−4127	−4.7	−2.6
Rest of Europe & Turkey	39 705	7.1	−5412	−13.6	−1.7
USA	34 086	6.1	−1258	−3.7	−0.9
Rest of World	220 663	39.4	3880	1.8	−4.2
Total	560 269	100.0	77 459	13.8	0.0

Source: GTAP 9 data for the year 2011 and own calculations. **Note:** Import values are c.i.f. values and prices are given in constant 2011 USD.

Table 15: EU28: Trade Effects of a Deep EU-India FTA, Export Side

	Exports		Changes in exports with EU-India FTA		
Export destination	in mn. $	As share of total, in %	in mn. $	Growth rate in %	Change in regional share in %points
EU28	4 065 694	60.0	−6246	−0.2	−0.8
BRICS w/o India	552 387	8.2	−2705	−0.5	−0.1
USA	522 431	7.7	−1687	−0.3	−0.1
Rest of Europe & Turkey	415 949	6.1	−2414	−0.6	−0.1
Rest of Asia	341 336	5.0	−1779	−0.5	−0.1
India	82 690	1.2	94 165	113.9	1.4
Rest of World	794 500	11.7	−2685	−0.3	−0.2
Total	6 774 987	100.0	76 650.0	1.1	0

Source: GTAP 9 data for the year 2011 and own calculations. **Note:** EU28 exports to the EU28 refers to intra-EU trade but excludes domestic trade flows. Export values are f.o.b. values and prices are given in constant 2011 USD.

Table 16: EU28: Trade Effects of a Deep EU-India FTA, Import Side

	Imports		Changes in Imports with EU-India FTA		
Source region	in mn. $	As share of total, in %	in mn. $	Growth rate in %	Change in regional share in %points
EU28	4 065 694	56.8	−6146	−0.2	−0.7
BRICS w/o India	887 790	12.4	−2044	−0.2	−0.2
USA	496 719	6.9	1768	0.4	0.0
Rest of Asia	431 243	6.0	−404	−0.1	−0.1
Rest of Europe & Turkey	399 561	5.6	827	0.2	0.0
India	92 384	1.3	80 509	87.1	1.1
Rest of World	788 942	11.0	561	0.1	−0.1
Total	7 162 332	100.0	75 072	1.0	0.0

Source: GTAP 9 data for the year 2011 and own calculations. **Note:** EU28 imports to the EU28 refers to intra-EU trade but excludes domestic trade flows. Import values are c.i.f. values and prices are given in constant 2011 USD.

Table 17: Germany: Trade Effects of a Deep EU-India FTA, Export Side

	Exports		Changes in exports with EU-India FTA		
Export destination	in mn. $	As share of total, in %	in mn. $	Growth rate in %	Change in regional share in %points
EU28	858 059	55.0	−3106	−0.4	−0.8
BRICS w/o India	188 512	12.1	−1203	−0.6	−0.2
USA	125 534	8.0	−635	−0.5	−0.1
Rest of Europe & Turkey	118 999	7.6	−1041	−0.9	−0.1
Rest of Asia	83 743	5.4	−649	−0.8	−0.1
India	19 770	1.3	23 685	119.8	1.5
Rest of World	164 897	10.6	−974	−0.6	−0.2
Total	1 559 514	100.0	16 076	1.0	0.0

Source: GTAP 9 data for the year 2011 and own calculations. **Note:** Export values are f.o.b. values and prices are given in constant 2011 USD.

Table 18: Germany: Trade Effects of a Deep EU-India FTA, Import Side

	Imports		Changes in imports with EU-India FTA		
Source region	in mn. $	As share of total, in %	in mn. $	Growth rate in %	Change in regional share in %points
EU28	796 035	54.9	1180	0.1	−0.5
BRICS w/o India	193 406	13.3	213	0.1	−0.1
Rest of Europe & Turkey	116 436	8.0	378	0.3	−0.1
USA	107 607	7.4	566	0.5	0.0
Rest of Asia	103 684	7.2	34	0.0	−0.1
India	14 446	1.0	13 013	90.1	0.9
Rest of World	117 653	8.1	347	0.3	−0.1
Total	1 449 267	100.0	15 732	1.1	0.0

Source: GTAP 9 data for the year 2011 and own calculations. **Note:** Import values are c.i.f. values and prices are given in constant 2011 USD.

7 The Political Economy of Trade Policy in India

India became independent in 1947. As a newly independent country, India wanted to modernize and be self-reliant. It was believed then that achieving both these objectives required growing the industrial sector as a share of the overall economy. At the time of independence, India was primarily an agricultural country both in terms of value added and employment. Given that its comparative advantage was not in manufacturing, being open to trade would certainly make it specialize away from the sector, which would be inconsistent with its important goals of self-reliance and modernization. However, India's first prime minister, Jawaharlal Nehru realized that totally closing down the economy from the rest of the world would not achieve these objectives. Since setting up modern industries would require cheap capital inputs and other intermediate goods, high import barriers on such goods did not make a lot of sense. As a result, trade policy was not too protectionist to begin with (see Panagariya, 2008).

Protectionism peaked in the 1960s and 1970s under Prime Minister Indira Gandhi, with tariff rates of over a 100% being quite common and in some sectors going even over 300%. There was also an expansion of import licenses. In short, India followed a highly autarkic policy of import substitution, though around 1976 there was some reorganization of import controls and some minor piecemeal reforms. The average growth rate of the Indian economy during this period was around 3%.

Some trade and other market reforms started in the 1980s under the leadership of Rajiv Gandhi, who grew up mainly in independent India (he was three years old when India became independent). However, the pace of trade reforms in the 1980s was slow, especially since support for such reforms both within and outside the government was somewhat limited. Nevertheless, these reforms were important as they led to a regime shift in India's growth performance. Growth during the period 1981-1988 often crossed an annual rate of 4% and sometimes even 6% (see Panagariya, 2008). Clearly this performance demonstrated that starting to move away from the old import substitution regime had made a difference. The benefits of openness in trade were also evident from the stellar performances of the East Asian economies that had followed a strategy of export promotion in contrast to the performances of Latin American countries, India and China that had followed a strategy of import-substituting industrialization. In fact, China, that later started major reforms under Deng Xiaoping in 1978, not only grew extremely rapidly during the 1980s, by the late 1980s it had lifted a large number of people out of poverty. The success of openness in trade and the failure of protectionist policies was changing the minds of both technocrats and politicians in India on this issue.

During the fiscal years of the period 1988-91, the growth rates of India's GDP at factor costs were 10.5%, 6.7%, and 5.6% respectively (Panagariya, 2008). While these growth rates were pretty high, India's internal and external debt were also growing very rapidly, assuming crisis-like proportions by the

middle of 1991, with the foreign exchange reserves down to a few days' worth of imports. The newly elected government of India had to approach the International Monetary Fund for assistance, which was granted but with the strong conditionality of deep economic reforms.

The major trade reform objectives announced by the Indian government (under the leadership of Prime Minister P.V. Narasimha Rao with Manmohan Singh as the Finance Minister) in July 1991 included the elimination of a majority of licensing and other non-tariff barriers on all intermediate and capital good imports, the removal of export restrictions, the elimination of the monopolistic state trading agencies, the simplification of the trade regime, big tariff reductions along with a movement towards a more uniform tariff structure and the full convertibility of the rupee for foreign exchange transactions. Subsequently, the maximum tariff was reduced from 400% to 150% in July 1991, to 110%t in February 1992, to 85% in February 1993, 64% in February 1994 and to roughly 45% by 1997-1998. The mean tariff went from 128% before July 1991 to 94% in February 1992, 71% by February 1993, 55% in February 1994 and to roughly 35% by 1997-1998. The standard deviation of tariffs during this period went down from 41 percentage points to roughly 15. By 2003, the average tariff had fallen to roughly 20%. According to the WTO website the 2014 simple average applied tariff is about 13.5% while the 2013 weighted average is 6.2%.

Prior to 1991, there were quantitative restrictions on 90% of the value added in the manufacturing sector. In April 1992, all the 26 import licensing lists were eliminated. However, a "negative list" (from which most intermediate and capital goods were excluded) of items, whose imports were prohibited, was introduced, thereby eliminating many of the licensing procedures and discretionary decisions of the previous import regime.

The Indian Rupee was devalued 20% against the US dollar in July 1991 and further devalued in February 1992. The percentage reduction in tariffs and non-tariff barriers were much greater than the percentage nominal and real devaluation.

Either these reforms were brought about only by IMF pressure on the Indian government or they just made it much easier for a government with a transformed mindset to carry out these reforms. Either way there seems to be a suggestion that initially there was not popular support for reforms. However, the data suggests that even after India came out of the debt crisis the reforms were not reversed. This is easily explained by the Fernandez and Rodrik (1991) model. They show that even when the majority of the people benefit from reforms, uncertainty about "individual-specific identity" post-reform might create opposition to reforms. Let's say 40% of the population initially employed in the export sector will benefit for sure from reforms. Out of the remaining 60% initially in the import competing sector, 30% will end up remaining in this sector and suffer huge losses while the remaining 30% will move to the export sector and will experience some modest gains net of adjustment costs. Ex ante, while everyone

knows what proportion will stay in the import-competing sector and what proportion will move out of it, nobody knows who exactly will move and benefit and who will stay and lose. As a result, the expectation for each person initially in this sector is a net loss (there is a net expected loss). However, in the Fernandez-Rodrik model reforms forced by a dictator or the IMF will resolve this uncertainty. After the reforms, when the majority of the people see they have benefited they will support the continuation of reforms. Thus there is status quo bias in reforms which is resolved through things like conditionalities associated with IMF assistance.

Here, even though most of the reforms India brought about fall in the category of unilateral reforms, its commitment to tariff bindings in the Uruguay round of the GATT also played a role. While the actual applied tariff rates after the reforms were often below its tariff bindings, it is quite possible that the bindings weakened the protectionist interest groups, which enabled further reforms (see Mitra (2002)). Probably the leading framework in trade literature to analyze the endogeneity of trade protection through political-economy forces is "Protection for Sale" (PFS) by Grossman and Helpman (1994). In this model, incumbent politicians maximize a weighted sum of political contributions and aggregate welfare. Some sectors are able to successfully organize themselves politically. Those are the sectors that have lobbies to offer political contributions in return for protection. While this model has worked very well for a wide range of countries, the problem in the Indian case is the identification of sectors that are politically organized. Cadot et al. (2009) use an innovative iterative technique for India to identify which sectors are organized within a PFS framework. Within such a framework, starting off assuming that every sector is organized, they generate residuals in the model and use them as thresholds to classify these sectors using all possible cutoffs and then choose the cutoff residual size where the model best fits the data. The final output of the model is a list of politically organized sectors as well as an estimate of the weight the government places on aggregate welfare relative to political contributions and the estimated proportion of the population that is politically organized.

Cadot et al. (2009) find 13 out of the 80 four-digit ISIC manufacturing industries in India to be politically organized. According to them, "Sectors derived as unorganized in India include those which are typically organized for protectionist lobbying in industrial countries: practically all the textile and clothing industry, footwear, furniture and steel. Thus, broadly speaking, the predicted pattern of political organization appears consistent with the notion that 'losers' (sectors in which a country has a comparative disadvantage) are more likely to organize themselves for political action than 'winners'." The industries that turn out to be politically organized in India are imitation jewelry, jewelry, chemicals, leather sports footwear, petroleum refineries, non-ferrous metals, metal and wood machinery, special industrial machinery, office and computational equipment, non-electrical equipment, radio and TV, scientific equipment, and optical goods.

Of course, the focus of Cadot et al. (2009) was just the manufacturing sector. We would expect large parts of the agricultural sector, where big farmers are powerful, also to be politically organized. In addition, several parts of the services sector, especially retail, are politically powerful, as can be gauged from the blocking of entry of foreign direct investment in multi-brand retail in India. This is so because owners of small neighborhood shops are politically quite powerful.

In addition, Cadot et al. (2009) find that the government places a weight on aggregate welfare that is three times that on political contributions and that about 12% of the population is politically organized. To put this in perspective, in the case of the US it has been estimated that the weight on welfare relative to contributions is over 50 and sometimes can be in the thousands, with the proportion of the population organized being in the 84-95% range (Goldberg and Maggi, 1999; Gawande and Bandyopadhyay, 2000). Estimates for Turkey are much closer to those of the US than to India's (Mitra et al., 2002).

All of the above figures have important implications for an FTA between Europe and India. Grossman and Helpman (1994) look at the politics of FTAs and theoretically find that large politically organized import-competing sectors can derail an FTA unless the FTA allows for exclusions of those sectors. The rents generated to be shared by such large organized sectors and the government from not signing an FTA or excluding these sectors from the FTA can be large enough to generate such possibilities. Gawande and Bandyopadhyay (2000) have performed a test of the key hypotheses from this theory and find that in the case of MERCOSUR the probability of excluding a sector from this customs union was higher for politically organized import competing sectors in Argentina and it increased with the size of each such sector. An organized export sector, however, had a higher probability of inclusion, with the size of the sector having a positive impact.

One could argue that the approach of allowing for only two options, namely including all sectors in an FTA or not having the FTA at all has a higher probability of failure than the approach that also allows for exclusions of certain sectors from the FTA. This also has some implications for what approach needs to be taken in the case of the EU-India FTA. Governments on both sides have to realize the need for compromises in the form of exclusions. Agriculture and food production are highly protected with tariffs still over 30%, as of 2015, even though for a large number of products within the manufacturing sector tariffs have been reduced to below 10%. This clearly goes to show the political clout agriculture enjoys. Another indication of the agricultural sector's political power is the recent sequence of events that took place before India signed on to the Trade Facilitation Agreement (TFA). India linked the issue of the minimum support price (MSP) for food grains to the TFA. As a result of the MSP the producer price of food grains in India was more than 10% higher than a somewhat outdated market price, which was not consistent with India's WTO obligations. India's current policy on MSP and public stockpiling were a precondition to agreeing to the FTA. As a result, it first vetoed the TFA at the WTO before eventually

signing it on the condition that it would be allowed to continue its MSP and public stockpiling policy. Thus the Indian agricultural sector's protection was maintained. While large farmers are politically organized, India's rural population as a whole, whose livelihood is based on agriculture, is two-thirds of the total population, which naturally makes it powerful in a democracy. Agricultural tariff elimination within the FTA will be an uphill, if not an, impossible battle. Of course, the Indian government will demand an end to the agricultural subsidies in the EU within the Common Agricultural policy (CAP). As we know, the CAP has been one of the stumbling blocks in the Doha round negotiations.

The Service Trade Restriction Index for India is among the highest in the world, with the highest barriers being in railway freight, legal services and accounting. It is important to note that barriers to service trade are related to barriers to FDI. Rail transport (both passenger and freight) in India is completely government run and breaking barriers there would be next to impossible. Given that the aim of a political organization is to get close to the government, a government-run sector should be politically organized as well. In addition, the enormous size of the railway sector makes it a prime candidate for exclusion. As argued earlier, multi-brand retail would be another candidate for exclusion.

Finally, there is reason to believe that the negotiations are taking place in a somewhat asymmetric setting. India's GDP is about an eighth of the EU's. And while EU-India trade accounts for 20% of India's overall trade, it is just 2% of the EU's trade. As a result, non-trade concessions can be brought into the negotiations by the EU. These include more stringent protection (beyond WTO's TRIPS) of intellectual property rights as well as the harmonization of labor and environmental standards. These are nonstarters for India as they were in the Doha round for India and its coalition partners at the WTO. The EU's insistence on these non-trade concessions could derail the agreement. Especially objectionable to India would be a TRIPS plus in its pharmaceutical sector which has been able to take advantage of WTO exemptions to produce, without permission from the patent holder, generic versions of certain costly medicines to treat diseases with relatively high incidence in developing countries. Furthermore, India would demand reciprocity in the exchange of market access. This would be difficult to achieve completely within the manufacturing sector as the current tariffs in the EU are considerably lower than India's. However, the asymmetry in the market sizes of the EU and India would temper this effect. In exchange for the EU's greater market access in India for services like banking, retail trade, telecommunications etc., India might want market access in the EU for its IT sector and IT-enabled services (ITES). This would require lifting restrictions on the free mobility of India's IT and ITES workers within Europe. There is reason to be pessimistic on these fronts due to the high youth unemployment in Europe. Also, as mentioned above, agricultural trade liberalization in India will be difficult to achieve and, in return, India will certainly demand a significant downsizing of the CAP in Europe.

Our simulations of the India-EU FTA clearly illustrate the classic political economy issue in international

trade. While trade leads to aggregate benefits in a way that winners' gains exceed losers' losses, it does create winners and losers. As expected, some of the losers in India are sectors in which India has a comparative disadvantage. These are exactly the sectors in which Europe has a comparative advantage and in many cases these are the top winners in the EU. The sectors on this list of Indian losers that have an overlap with EU top winners are motor vehicles and parts, minerals, machinery and equipment and metals. However, the loss as a percentage of value added in these Indian sectors is much larger than the gain for the corresponding EU sectors as a percentage of their value added. This makes resistance to the agreement by these sectors in India a real possibility, especially if these sectors are political organized. We see that this list has some overlap with the list of organized industries in India provided by the work of Cadot et al. (2009), with the overlap being in metals, machinery, and equipment. Finally, the Indian sectors that gain a significant amount are business services, textiles, and apparel, whose counterparts in the EU lose a bit. Given that gains in India for these sectors are so much larger as a share of value added as compared to the losses in the EU (7-43% as opposed to 0.1-3%), we do not expect the sectors in the EU to be major roadblocks in the agreement or to demand exclusions. In these sectors, the employment gains in India are several orders of magnitude larger than the employment losses in their EU counterparts. While these sectors do not fall in Cadot et al. (2009)'s list of organized sectors in India, these sectors are fairly large in terms of employment, by virtue of which they are expected to wield political power in a democracy.

8 Policy Recommendations

Since 2010, trade in goods and services between the EU and India has barely grown, despite economic growth averaging more than 7% in the latter. One reason for this disappointing performance is that trade barriers are still substantial in this bilateral relationship. A broad-based trade and investment agreement between the EU and India could add up to 1.30% to Indian income yearly, taking trade creation and diversion effects into account. This is equivalent to an increase in GDP by USD 28 bn.. The EU would see an increase in its GDP by about USD 23 bn., or 0.14%. So, at a first glance, both parties should have an interest in reviving the negotiations, which were started in 2007 and suspended in 2013.

The economic relations between India and the EU are asymmetric: India is more than twice as populous as Europe, but its GDP is only about one eighth. This limits India's bargaining power; however, India is expected to be the major growth engine in Asia for the next decades. This makes the country an important strategic partner for Europe. While per capita gains for Europe look modest as of today, the benefits of having an FTA with India would grow as the subcontinent's economy expands. An FTA would better position European firms to benefit from this dynamism.

Apart from this, the huge income gap between the EU and India implies that the FTA has to be seen as complementary to the EU's development policy strategy. The WTO's principle of special and differential treatment should also be applied in bilateral trade talks, allowing for asymmetries in the phase-in of concessions, carve-outs of certain sectors, and special safeguard measures in certain contingencies.

India's strengths lie in industries such as textiles and wearing apparel, leather products, business services, and in some agricultural sectors such as plant fibers or vegetables. According to our simulation results, these areas would substantially benefit from an FTA. However, its manufacturing sector is still rather uncompetitive, with a few exceptions such as electronic equipment and certain chemicals. Industries such as machinery or motor vehicles could lose from the agreement.

In Europe, the situation is almost exactly opposite, reflecting a very different structure of comparative advantage: textiles, wearing apparel, and business services could see reductions in their value added; manufacturing sectors such as machinery, motor vehicles and metals would benefit. In all those sectors, the gains in one country outweigh the losses in the other by wide margins.

In order to make FTA negotiations a success, both India and Europe will have to make compromises. Our report signals a number of areas, where careful treading will be important.

First, the services sector is crucial for India. The contribution of the business services sector to the gains from a potential agreement is about as big as the one of textiles and wearing apparel together.

More than traditional areas of activity, business services play a promising role in India's development strategy. The EU needs to understand the vital role of this sector for India and lay out fair conditions under which the country would be accepted as a data-safe country. Moreover, in particular for the IT sector, travel restrictions for Indian professionals should be relaxed.

Second, while the consequences for the Indian agri-food sector are likely to be mixed, about half of the workforce is still employed in agriculture. India is, therefore, rightfully concerned about possible side effects of the EU's **Common Agricultural Policy**. Moreover, the only area where the EU still has significant tariff protection is agriculture. To make an FTA a success, the EU has to substantially lower entry barriers for Indian producers (e.g. in rice) while granting the country some flexibility to protect its farmers in sensitive situations.

Third, there is substantial pressure in the EU to include provisions on labor, environmental, or social standards into its FTAs with developing countries. In India, the inclusion of such **non-trade issues** is seen as an infringement of the country's right to regulate and as a ploy to increase costs and lower competitiveness of Indian competitors. As the EU is reserving a right to regulate for itself in trade agreements with developed countries such as the US, it should grant this right also to developing countries, and in particular to India. Moreover, the EU should be careful about the development consequences of demanding very stringent **protection of intellectual property rights** going beyond the TRIPS agreement of the WTO. Access to affordable generic medicines, for example, is crucial for public health in India; tougher intellectual property protection would endanger this. Including an **investment chapter** into the agreement makes a lot of sense given the numerous complementarities between investment and trade in goods and services. Such a chapter would overwrite the existing bilateral investment treaties that India has with EU countries. However, the EU should offer to implement the investment court system rather than insisting on the conventional investor state dispute settlement mechanisms.

Fourth, due to an FTA with the EU, India could lose up to USD 7 bn. of **tariff revenue** a year. This is equivalent to 0.4% of GDP or, according to World Bank statistics, about 3 to 4% of central government revenue. In contrast, loss in tariff revenue would amount to only 0.01% of EU GDP. Any plausible reduction of Indian tariffs must therefore be phased-in over a considerable time period. Moreover, the EU should provide technical assistance to India to help it reform its tax system.

Fifth, in Europe, a deep FTA with India would be greeted with suspicion by many. Maybe most importantly, there would be concerns that the agreement could lead to lower wages for low-skilled European workers. This is a concern to be taken seriously. Europe needs to further develop the **European Globalization Adjustment Fund** to help workers cope with negative consequences. This may be particularly relevant in the textiles and wearing apparel sectors in countries such as Italy, Spain, Portugal, Poland and Romania. Moreover, in times of deepening international integration, EU member

states should review policies that top up low gross wages to allow as many workers as possible to tap into the benefits of economic integration.

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A Appendix

Table A1: Definition of Indian Regions

RBI regional office	States and union territories covered
Ahmedabad	Gujarat
Bangalore	Karnataka
Bhopal	Madhya Pradesh, Chattisgarh
Bhubaneshwar	Odisha
Chandigarh	Chandigarh, Punjab, Haryana, Himachal Pradesh
Chennai	Tamil Nadu, Puducherry
Guwahati	Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura
Hyderabad	Andhra Pradesh, Telangana
Jaipur	Rajasthan
Jammu	Jammu, Kashmir
Kanpur	Uttar Pradesh, Uttarakhand
Kochi	Kerala, Lakshadweep
Kolkata	West Bengal, Sikkim, Andaman, Nicobar Islands
Mumbai	Maharashtra, Dadra, Nagar Haveli, Daman, Diu
New Delhi	Delhi
Panaji	Goa
Patna	Bihar, Jharkhand

Note: The states of Odisha, Puducherry, and Uttarakhand were formerly called Orissa, Pondicherry and Uttaranchal respectively. Some statistical sources used to refer to these old names. In this report, we refer to the current official names of the Indian states. The RBI regional office of New Delhi also covers parts of the states of Uttar Pradesh and Haryana. We count Uttar Pradesh and Haryana as part of the regions of Kanpur and Chandigarh, respectively. The state of Telangana was part of Andhra Pradesh before 2014. Therefore, the region of Hyderabad refers to the old territory of Andhra Pradesh for statistics with a reference year before 2014 and to the joint territory of the states Andhra Pradesh and Telangana for statistics with reference 2014 or later.

Table A2: Tariff and NTM Reductions from an EU-India FTA

		Tariff reductions		NTM reductions	
		Indian exp. in EU	EU exp. in India	Shallow	Deep
		in %	in %	in %	in %
1	Paddy rice	−3.04	−44.44	−1.26	−10.22
2	Wheat	−9.42	0.00	−31.33	−39.14
3	Cereal grains nec	−10.43	−0.89	0.00	−43.82
4	Vegetables, fruit, nuts	−1.85	−28.10	−44.47	−53.23
5	Oil seeds	0.00	−18.75	−31.33	−39.14
6	Sugar cane, sugar beet	−4.95	0.00	−31.33	−39.14
7	Plant-based fibers	0.00	−0.77	−4.38	−0.40
8	Crops nec	−1.25	−21.71	−27.28	−18.03
9	Cattle, sheep, goats, horses	−0.27	−23.02	−10.17	−5.14
10	Animal products nec	−3.58	−5.10	0.00	−3.94
11	Raw milk	0.00	0.00	0.00	0.00
12	Wool, silk-worm cocoons	0.00	−4.76	0.00	0.00
13	Forestry	−1.54	−7.41	−6.35	−4.61
14	Fishing	−3.95	−20.79	−11.58	−5.15
15	Coal	0.00	−3.05	0.00	−1.52
16	Oil	0.00	0.00	0.00	0.00
17	Gas	0.00	−4.76	0.00	0.00
18	Minerals nec	−0.02	−9.03	−10.21	−12.45
19	Meat: cattle, sheep, goats, horses	−8.06	−9.18	0.00	0.00
20	Meat products nec	−16.22	−19.92	0.00	0.00
21	Vegetable oils and fats	−0.90	−30.91	0.00	−5.26
22	Dairy products	−14.98	−29.62	−5.48	−30.91
23	Processed rice	−17.30	0.00	0.00	−0.33
24	Sugar	−18.60	−29.69	−10.64	−7.31
25	Food products nec	−5.66	−29.45	−11.69	−14.75
26	Beverages and tobacco products	−12.11	−58.38	−29.38	−28.02
27	Textiles	−6.79	−10.99	−1.91	−10.29
28	Wearing apparel	−7.75	−12.85	−1.26	−30.23
29	Leather products	−2.60	−9.09	−9.31	−19.83
30	Wood products	−0.05	−9.09	−2.71	−17.25

continued

Table A2: Tariff and NTM Reductions from an EU-India FTA

		Tariff reductions		NTM reductions	
		Indian exporters in EU	EU28 exporters in India	Shallow	Deep
		in %	in %	in %	in %
31	Paper products, publishing	0.00	−8.43	−5.58	−13.64
32	Petroleum, coal products	0.00	−5.04	−8.45	−7.52
33	Chemical, rubber, plastic prods	−0.59	−7.55	−5.34	−9.38
34	Mineral products nec	−0.64	−8.00	−4.62	−8.35
35	Ferrous metals	−0.04	−5.35	−17.50	−42.77
36	Metals nec	−1.67	−7.64	−13.10	−16.38
37	Metal products	−0.17	−8.94	−11.07	−17.26
38	Motor vehicles and parts	−3.64	−23.29	−4.52	−21.09
39	Transport equipment nec	−0.39	−6.10	−4.22	−11.86
40	Electronic equipment	−0.08	−1.62	−24.91	−21.36
41	Machinery and equipment nec	−0.01	−6.93	−5.54	−7.05
42	Manufactures nec	−0.01	−9.04	−7.12	−13.46
43	Electricity	0.00	0.00	−4.88	−7.09
44	Gas manufacture, distribution	0.00	0.00	−2.34	−6.32
45	Water	0.00	0.00	−3.77	−6.12
46	Construction	0.00	0.00	−2.79	−4.94
47	Trade	0.00	0.00	−2.13	−9.28
48	Transport nec	0.00	0.00	−3.01	−6.47
49	Sea transport	0.00	0.00	−0.40	−6.70
50	Air transport	0.00	0.00	−2.89	−2.05
51	Communication	0.00	0.00	−3.65	−4.81
52	Financial services nec	0.00	0.00	−2.65	−7.90
53	Insurance	0.00	0.00	−2.51	−5.51
54	Business services nec	0.00	0.00	−4.38	−8.95
55	Recreation and other services	0.00	0.00	−2.35	−3.91
56	PubAdmin/Defence/Health/Education	0.00	0.00	−2.94	−5.97
57	Dwellings	0.00	0.00	0.00	0.00

Source: GTAP 9 for the year 2011 and own calculations. **Note:** The table shows import-weighted average sectoral tariff reductions (in %) Indian exporters receive in the EU28 market in column (1), and EU exporters receive in the Indian market in column (2) when going from the 2011 tariff level to zero tariffs. Also note that there are no initial tariffs in the service sectors (43-57). The table also shows the estimated NTM reduction a shallow, respectively deep EU-India trade agreement entails. Note that these NTM reductions are symmetric in a country pair.

Table A3: India-EU28 Trade: Sectoral Trade Changes with a Deep EU-India FTA

		Exports		Imports	
		Initial	Change w. EU-India FTA	Initial	Change w. EU-India FTA
		in mn. $	in %	in mn. $	in %
1	Business services nec	21 536	70.9	11 278	69.1
2	Petroleum, coal products	12 869	88.6	233	216.8
3	Wearing apparel	6568	160.7	148	190.2
4	Textiles	5574	159.8	499	251.0
5	Motor vehicles and parts	2971	244.7	3722	421.1
6	Chemical, rubber, plastic prods	7803	63.5	8256	111.9
7	Leather products	3124	145.0	277	243.6
8	Ferrous metals	2020	143.6	3365	140.7
9	Food products nec	1467	114.6	247	454.0
10	Metal products	2292	71.1	1297	94.7
11	Machinery and equipment nec	4475	36.4	18 684	49.0
12	Manufactures nec	3835	38.7	1406	81.1
13	Transport nec	2352	49.7	1475	51.0
14	Minerals nec	1183	76.4	9934	80.9
15	Vegetables, fruit, nuts	391	219.3	121	422.0
16	Trade	1171	72.1	1873	88.3
17	Financial services nec	1439	56.6	2617	70.3
18	Electronic equipment	1121	67.5	2815	60.9
19	Transport equipment nec	845	78.6	2073	94.2
20	Crops nec	1186	47.5	58	135.5
21	Processed rice	97	525.2	0	23.8
22	Metals nec	215	189.8	5399	194.2
23	Mineral products nec	948	41.6	656	73.9
24	Communication	1006	31.9	526	38.1
25	Wood products	356	87.9	365	154.4
26	Sea transport	637	48.5	1744	43.6
27	Construction	493	41.9	528	31.5
28	Paper products, publishing	186	103.6	1568	163.2
29	Sugar	119	149.3	2	218.0
30	PubAdmin/Defence/Health/Education	451	38.3	628	53.0

continued

Table A3: India-EU28 Trade: Sectoral Trade Changes with a Deep EU-India FTA, continued

		Exports		Imports	
		Initial	Change w. EU-India FTA	Initial	Change w. EU-India FTA
		in mn. $	in %	in mn. $	in %
31	Paddy rice	209	75.6	1	6022.7
32	Oil seeds	163	92.4	1	156.4
33	Dairy products	29	475.6	159	708.4
34	Insurance	358	36.6	1430	43.0
35	Vegetable oils and fats	441	25.1	164	466.2
36	Recreation and other services	360	24.5	645	28.7
37	Air transport	468	11.9	3154	12.2
38	Beverages and tobacco products	21	105.7	358	367.4
39	Forestry	85	25.6	41	65.5
40	Cereal grains nec	9	169.6	0	117.5
41	Animal products nec	39	33.2	40	47.7
42	Fishing	23	43.4	4	200.9
43	Electricity	4	54.5	181	57.3
44	Meat products nec	2	89.8	18	83.7
45	Water	2	42.0	10	52.3
46	Sugar cane, sugar beet	1	113.2	0	96.9
47	Wheat	1	142.8	1	96.4
48	Meat: cattle, sheep, goats, horses	2	42.3	4	31.9
49	Gas manufacture, distribution	0	41.2	5	55.7
50	Cattle, sheep, goats, horses	0	13.9	4	130.4
51	Coal	0	12.4	6	63.4
52	Dwellings	0	0.0	0	0.0
53	Oil	0	−12.5	36	6.3
54	Gas	0	−15.6	24	274.1
55	Wool, silk-worm cocoons	10	−2.5	17	17.7
56	Plant-based fibers	6	−4.7	5	47.2
57	Raw milk	25	−1.5	0	3.4
	Total	90 989	90.9	88 103	101.7

Source: GTAP 9 for the year 2011 and own calculations. **Note:** The table shows India's exports to and imports from the EU28 countries in the benchmark as well as the corresponding sectoral trade changes for the deep EU-India FTA scenario. The sectors are sorted, in descending order, by the implied absolute change in export value (not shown). Export values are f.o.b. and import values c.i.f. All prices are given in constant 2011 USD.

Table A4: EU28 Import Structure Changes in Textiles with a Deep EU-India FTA

Rank	Trade Partner	Initial imports		New Rank	Imports with EU-India FTA			Change in	
		Absolute	Share		Absolut	Change in share	Growth	Value added	Real GDP p.c.
		in mn. $	in %		in mn. $	in %	in % points	in %	in %
1	China	25 661	18.19	1	24 507	−1.17	−4.50	−0.46	−0.03
2	Germany	14 030	9.95	3	13 498	−0.57	−3.79	−2.58	0.15
3	Italy	12 490	8.86	4	12 038	−0.49	−3.62	−1.93	0.09
4	Turkey	10 818	7.67	5	10 366	−0.47	−4.17	−1.45	−0.01
5	Bangladesh	7067	5.01	6	6794	−0.29	−3.87	−1.25	−0.08
6	India	5979	4.24	2	14 415	5.78	141.09	13.95	1.30
7	Belgium	5869	4.16	7	5666	−0.23	−3.47	−2.87	0.45
8	France	4737	3.36	8	4573	−0.18	−3.47	−2.94	0.08
9	Spain	3726	2.64	9	3582	−0.15	−3.86	−3.23	0.11
10	Pakistan	3693	2.62	10	3525	−0.17	−4.55	−0.92	−0.01
11	United Kingdom	3502	2.48	11	3364	−0.15	−3.92	−4.09	0.18
12	Portugal	2846	2.02	12	2756	−0.10	−3.17	−3.56	0.06
13	Poland	2453	1.74	13	2356	−0.10	−3.97	−3.48	0.07
14	Netherlands	2258	1.60	15	2150	−0.11	−4.80	−3.57	0.11
15	Czech Republic	2248	1.59	14	2156	−0.10	−4.12	−2.83	0.13
16	Austria	2106	1.49	16	2016	−0.09	−4.29	−1.23	0.07
17	USA	1937	1.37	17	1840	−0.10	−5.02	−0.18	0.00
18	Romania	1678	1.19	18	1610	−0.07	−4.00	−2.58	0.09
19	Denmark	1444	1.02	19	1396	−0.05	−3.31	−3.29	0.14
20	South Korea	1426	1.01	20	1365	−0.06	−4.30	−0.52	−0.01
	EU28	67 237	47.67		64 688	−2.73	−3.79		
	Non-EU w/o India	67 816	48.09		64 834	−3.04	−4.40		
	Total	141 033	100.00		143 938	0.00	2.06		

Source: GTAP 9 for the year 2011 and own calculations. **Note:** The table shows the EU28 countries' import structure in sector 27 "Textiles" and the corresponding change from a deep EU-India FTA. Import values are c.i.f. All prices are given in constant 2011 USD.

Table A5: EU28 Import Structure Changes in Wearing Apparel with a Deep EU-India FTA

Rank	Trade Partner	Initial imports Absolute in mn. $	Share in %	New Rank	Imports with EU-India FTA Absolut in mn. $	Change in share in % points	Growth in %	Change in Value added in %	Real GDP p.c. in %
1	China	42 595	30.15	1	40 710	−2.25	−4.42	−0.52	−0.03
2	Italy	8567	6.06	3	8251	−0.41	−3.69	−1.56	0.09
3	Germany	8096	5.73	4	7873	−0.34	−2.76	−3.09	0.15
4	Turkey	7758	5.49	5	7423	−0.40	−4.31	−1.04	−0.01
5	Bangladesh	7361	5.21	6	7067	−0.37	−4.00	−1.53	−0.08
6	India	7119	5.04	2	17 047	6.64	139.44	42.83	1.30
7	France	4521	3.20	7	4381	−0.20	−3.10	−3.71	0.08
8	Spain	4139	2.93	8	4020	−0.17	−2.87	−2.42	0.11
9	Morocco	3111	2.20	9	2985	−0.16	−4.05	−2.01	−0.03
10	Romania	3061	2.17	10	2948	−0.15	−3.69	−2.52	0.09
11	Belgium	3026	2.14	11	2930	−0.13	−3.19	−3.49	0.45
12	Tunisia	2838	2.01	12	2727	−0.14	−3.95	−3.00	−0.03
13	United Kingdom	2813	1.99	13	2714	−0.13	−3.52	−5.32	0.18
14	Vietnam	2524	1.79	14	2410	−0.13	−4.51	−0.82	−0.02
15	Pakistan	2163	1.53	15	2064	−0.12	−4.55	−0.42	−0.01
16	Poland	2118	1.50	16	2044	−0.10	−3.49	−1.77	0.07
17	Portugal	2102	1.49	17	2033	−0.10	−3.33	−1.39	0.06
18	Sri Lanka	1912	1.35	18	1825	−0.10	−4.54	−1.28	0.00
19	Indonesia	1785	1.26	19	1704	−0.10	−4.53	−0.71	−0.01
20	Denmark	1693	1.20	20	1652	−0.07	−2.42	−3.10	0.14
	EU28	50 491	35.74		48 839	−2.27	−3.27		
	Non-EU w/o India	83 673	59.22		80 042	−4.37	−4.34		
	Total	141 283	100.00		145 928	0.00	3.29		

Source: GTAP 9 for the year 2011 and own calculations. **Note:** The table shows the EU28 countries' import structure in sector 28 "Wearing apparel" and the corresponding change from a deep EU-India FTA. Import values are c.i.f. All prices are given in constant 2011 USD.

Table A6: Indian Import Structure Changes in Motor Vehicles with a Deep EU-India FTA

Rank	Trade Partner	Initial imports		Imports with EU-India FTA				Change in	
		Absolute	Share	New Rank	Absolut	Change in share	Growth	Value added	Real GDP p.c.
		in mn. $	in %		in mn. $	in % points	in %	in %	in %
1	Germany	1764	20.37	1	9388	21.46	432.20	1.56	0.15
2	Japan	1320	15.24	6	816	−11.61	−38.20	−0.17	0.00
3	South Korea	1171	13.52	8	724	−10.30	−38.18	−0.32	−0.01
4	China	826	9.54	10	511	−7.27	−38.15	−0.04	−0.03
5	Thailand	614	7.10	11	380	−5.40	−38.12	−0.61	−0.03
6	USA	479	5.53	12	295	−4.21	−38.30	−0.07	0.00
7	United Kingdom	409	4.72	2	3562	11.15	770.94	3.30	0.18
8	Italy	362	4.18	5	1042	0.46	187.53	0.45	0.09
9	Spain	304	3.51	4	1156	1.64	280.57	1.07	0.11
10	Czech Republic	296	3.41	9	691	−0.33	133.81	1.17	0.13
11	Sweden	201	2.32	7	779	1.14	286.73	0.91	0.15
12	France	96	1.11	13	243	−0.03	153.17	−0.18	0.08
13	Slovakia	80	0.92	3	1922	7.64	2300.39	7.86	0.23
14	Turkey	68	0.78	21	42	−0.60	−38.10	−0.02	−0.01
15	Brazil	58	0.67	22	36	−0.51	−38.25	−0.05	0.00
16	Philippines	54	0.63	23	34	−0.48	−38.20	−0.39	0.01
17	Singapore	42	0.48	25	26	−0.37	−38.21	−1.14	−0.02
18	Malaysia	40	0.46	26	25	−0.35	−38.21	−0.13	−0.01
19	Austria	39	0.45	14	171	0.31	335.90	0.63	0.07
20	Indonesia	39	0.45	27	24	−0.34	−38.14	−0.12	−0.01
	EU28	3722	42.97		19 392	43.42	421.07		
	Non-EU	4938	57.03		3053	−43.42	−38.18		
	Total	8660	100.00		22 445	0.00	159.18		

Source: GTAP 9 for the year 2011 and own calculations. **Note:** The table shows India's import structure in sector 38 "Motor vehicles and parts" and the corresponding change from a deep EU-India FTA. Import values are c.i.f. All prices are given in constant 2011 USD.

Table A7: Indian Import Structure Changes in Machinery and Equipment with a Deep EU-India FTA

Rank	Trade Partner	Initial imports		Imports with EU-India FTA				Change in	
		Absolute	Share	New Rank	Absolut	Change in share	Growth	Value added	Real GDP p.c.
		in mn. $	in %		in mn. $	in % points	in %	in %	in %
1	China	14 845	26.59	1	13 596	−4.61	−8.42	0.00	−0.03
2	Germany	8486	15.20	2	12 618	5.20	48.70	0.64	0.15
3	Japan	5514	9.88	3	5046	−1.72	−8.48	−0.05	0.00
4	USA	4683	8.39	4	4280	−1.47	−8.61	−0.07	0.00
5	South Korea	2861	5.12	6	2619	−0.89	−8.46	−0.04	−0.01
6	Italy	2794	5.00	5	4184	1.76	49.74	0.78	0.09
7	Singapore	2689	4.82	7	2460	−0.84	−8.50	−0.44	−0.02
8	United Kingdom	1505	2.70	8	2244	0.93	49.06	0.70	0.18
9	France	1298	2.32	9	1940	0.81	49.43	0.41	0.08
10	Thailand	1132	2.03	12	1037	−0.35	−8.42	−0.12	−0.03
11	Switzerland	1129	2.02	13	1034	−0.35	−8.38	0.29	−0.06
12	Sweden	759	1.36	10	1123	0.46	47.98	0.44	0.15
13	Belgium	711	1.27	11	1062	0.44	49.37	0.49	0.45
14	Malaysia	658	1.18	16	602	−0.20	−8.51	−0.13	−0.01
15	Taiwan	610	1.09	18	558	−0.19	−8.47	0.02	−0.03
16	Spain	551	0.99	14	827	0.35	49.95	0.61	0.11
17	Russia	482	0.86	21	440	−0.15	−8.55	0.00	−0.01
18	Austria	463	0.83	15	685	0.28	47.89	0.42	0.07
19	Finland	390	0.70	17	583	0.24	49.30	0.53	0.15
20	Czech Republic	329	0.59	19	494	0.21	49.94	0.50	0.13
	EU28	18 684	33.46		27 842	11.55	49.01		
	Non-EU	37 150	66.54		34 004	−11.55	−8.47		
	Total	55 835	100.00		61 846	0.00	10.77		

Source: GTAP 9 for the year 2011 and own calculations. **Note:** The table shows India's import structure in sector 41 "Machinery and equipment nec" and the corresponding change from a deep EU-India FTA. Import values are c.i.f. All prices are given in constant 2011 USD.

India

Presence in International Trade Agreements

WTO Membership			
since 1995			
Trade Agreements in force			
15			
Most Important Trade Agreements	**Since**	**Exp./Imp. in %**	
APTA	1976	12.7	16.1
ASEAN-India	2010	10.1	9.7
SAPTA-or-SAFTA	1995	5.7	0.5
China-India	1984	5.5	11.5
India-Singapore	2005	3.7	1.7

Mean Depth of Treaties

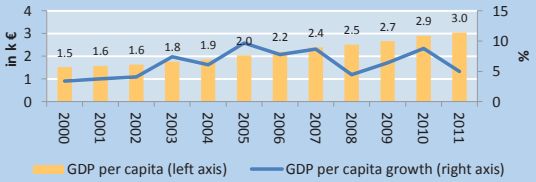
very shallow 0 — 0.4 — 7 very deep

Assumed Participation in Future Treaties

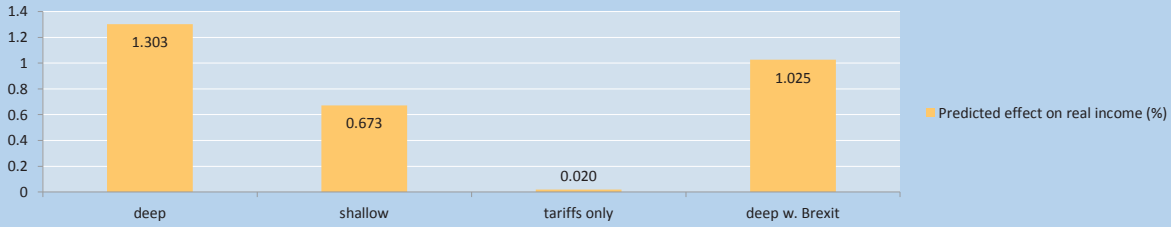
RCEP

Development

	Real GDP, total	Real GDP, per capita	Relative to DEU
2011	in bn. €	in €	per capita
	3,767.2	3,034	10.9%
	Population	Poverty	
2013	in mio.	Share less than 2$/day	
	1,252.0	21.3%	



Welfare Effects of an EU-India FTA, different depths



Note: The figure shows the predicted effect on real income (in %) for selected hypothetical preferential trade agreements (PTAs) varying in their depth between the EU and India.

The thought experiment in a scenario is as follows: In the world as we observe it in the base year 2011 (data source: Global Trade Analysis Project 9.0), what would sectoral trade flows, value added embodied in those trade flows, industry-level outcomes, and aggregate welfare look like if the respective negotiating parties had – counterfactually – a PTA of the type (deep, shallow, tariffs only) observed in the data.

Overview Trade & Openness

		2011	with EU-India FTA: deep	shallow	tariffs only	deep w. Brexit
Export	in mio.€	269,687	329,831	305,190	281,335	279,652
	relative to GDP	21.1%	25.3%	23.6%	21.9%	21.5%
Import	in mio.€	379,926	438,673	413,737	389,977	388,516
	relative to GDP	29.7%	33.7%	32.0%	30.4%	29.9%
Trade Bal.	in mio.€	-110,239	-108,842	-108,546	-108,642	-108,864
	relative to GDP	-8.6%	-8.4%	-8.4%	-8.5%	-8.4%
Openness	(Imp.+Exp.)/GDP	52.6%	60.5%	57.2%	53.9%	59.2%

Exports to Top 2 Export Partners 2013 (Goods)

Top 5 export products to USA & ARE

	Rank	Product	Value	Share in %		Tariffs: Applied	Tariffs: MFN
			in mio. €	abs.	cum.	%	
USA	1	Medicaments	3,394	13	13	0.0	0.0
	2	Petroleum oils (other than crude)	2,798	11	24	6.6	6.6
	3	Vegetable extracts	1,397	5	30	0.0	0.0
	4	Articles of jewellery	1,163	5	34	6.3	6.3
	5	Crustaceans	778	3	37	0.0	0.0
	Total		25,490	100	100		
			in mio. €	abs.	cum.	%	
ARE	1	Articles of jewellery	4,515	21	21	5.0	5.0
	2	Petroleum oils (other than crude)	3,292	16	37	5.0	5.0
	3	Gold	1,848	9	46	0.0	0.0
	4	Oils (coal tar)	849	4	50	5.0	5.0
	5	Diamonds	590	3	53	0.0	0.0
	Total		21,021	100	100		

Top Trading Partners

Export

	Nation	2011	absolut	Change with EU-India FTA, different depths			
		in mio.€	%	deep	shallow	tariffs only	deep w. Brexit
1	USA	46,146	17.1	0.1%	1.5%	2.3%	2.1%
2	UAE	23,397	8.7	0.8%	1.3%	1.3%	1.2%
3	China	20,635	7.7	-1.3%	1.1%	2.4%	2.2%
4	United Kingdom	14,302	5.3	87.9%	42.4%	10.7%	9.1%
5	Germany	10,188	3.8	94.7%	43.2%	13.5%	11.8%
6	France	6,968	2.6	100.5%	61.7%	13.8%	11.5%
7	Brazil	6,011	2.2	0.0%	1.1%	1.9%	1.8%
8	Japan	5,933	2.2	-0.4%	1.0%	1.9%	1.7%
9	Italy	5,813	2.2	103.3%	44.4%	13.3%	11.7%
10	SouthKorea	5,797	2.1	-0.4%	1.2%	2.2%	2.0%
	Rest	124,497	46.2	20.1%	13.4%	3.8%	3.2%
	Total	269,687	100	22.3%	13.2%	4.3%	3.7%

Import

	Nation	2011	absolut	Change with EU-India FTA, different depths			
		in mio.€	%	deep	shallow	tariffs only	deep w. Brexit
1	China	44,745	11.8	-5.2%	-5.2%	-5.2%	-3.1%
2	Switzerland	23,741	6.2	-14.5%	-12.2%	-12.2%	-4.8%
3	USA	23,225	6.1	-3.9%	-4.1%	-4.1%	-3.1%
4	Saudi Arabia	22,622	6.0	5.9%	4.6%	4.6%	-1.7%
5	Germany	14,209	3.7	119.8%	75.4%	75.4%	41.0%
6	Australia	13,954	3.7	-6.4%	-6.6%	-6.6%	-4.0%
7	Kuwait	13,508	3.6	5.5%	4.3%	4.3%	-1.4%
8	Iran	13,394	3.5	4.9%	3.7%	3.7%	-1.8%
9	Indonesia	11,083	2.9	-4.2%	-4.8%	-4.8%	-3.1%
10	United Kingdom	10,472	2.8	146.5%	98.2%	98.2%	35.5%
	Rest	188,974	49.7	16.8%	9.7%	9.7%	2.1%
	Total	379,926	100	15.5%	8.9%	2.6%	2.3%

Sectoral Value Added and its Growth with Different Trade Policy Scenarios

	Value Added (2011)		Change with EU-India FTA, different depths			
	Value	Share	deep	shallow	tariffs only	deep w. Brexit
GTAP Sectors	in mio. €	%	%	%	%	%
Trade	178,214	14.09	1.38	0.70	0.19	1.18
Public services	157,216	12.43	1.17	0.65	0.08	1.02
Construction	103,113	8.15	1.38	0.75	0.11	1.19
Transport nec	78,017	6.17	1.72	0.89	0.31	1.37
Business services nec	67,340	5.33	6.91	3.74	1.38	4.12
Financial services nec	65,809	5.20	0.08	0.28	0.12	0.61
Dwellings	59,856	4.73	1.30	0.68	0.02	1.13
Vegetables, fruit, nuts	56,611	4.48	1.59	0.95	0.00	1.29
Raw milk	42,040	3.32	0.99	0.57	-0.05	0.81
Chemical, rubber, plastic prods	33,086	2.62	0.56	0.25	0.08	0.68
Crops nec	30,016	2.37	2.37	2.24	0.20	2.12
Electricity	24,550	1.94	0.50	0.20	-0.04	0.62
Manufactures nec	23,188	1.83	2.07	1.40	0.47	1.75
Machinery and equipment nec	22,887	1.81	-1.57	-2.08	-1.69	-2.13
Communication	21,549	1.70	1.44	1.08	0.39	1.03
Textiles	18,485	1.46	13.95	6.03	5.09	11.67
Ferrous metals	15,358	1.21	-2.27	-1.17	-1.05	-1.56
Paddy rice	15,111	1.19	2.12	1.48	0.96	1.57
Insurance	14,510	1.15	-0.62	-0.20	0.29	-0.48
Oil seeds	14,476	1.14	0.53	0.39	-0.11	0.68
Metal products	12,125	0.96	1.16	0.43	-0.64	0.46
Oil	11,942	0.94	-5.74	7.21	8.74	-2.00
Food products nec	11,374	0.90	1.69	1.11	-0.01	1.47
Mineral products nec	11,343	0.90	1.10	0.73	0.05	0.90
Forestry	11,172	0.88	0.02	0.11	-0.09	0.06
Processed rice	11,153	0.88	1.97	1.73	1.30	1.81
Minerals nec	10,748	0.85	-7.95	-5.75	-2.36	-6.45
Fishing	10,219	0.81	1.03	0.65	-0.01	0.87
Animal products nec	10,026	0.79	3.00	1.41	0.30	2.57
Petroleum, coal products	9,780	0.77	5.50	6.38	0.45	5.12
Motor vehicles and parts	8,510	0.67	-13.67	-10.22	-9.69	-11.98
Plant-based fibers	7,486	0.59	8.00	4.04	4.92	7.37
Total	1,264,528	100.00	1.55	0.89	0.30	1.31