

THE BELT AND ROAD INITIATIVE: MACRO AND SECTORAL IMPACTS

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Abstract:

China's Belt and Road Initiative (BRI) is an ambitious effort to improve connectivity between China and more than 65 countries through infrastructure investment and regional cooperation. The initiative has the potential to significantly accelerate the rate of economic integration and development in the region, as trade costs decline. The goals of our analysis are to i) study the impacts of infrastructure improvements on the BRI countries' trade flows, growth and poverty, ii) estimate the potential impacts on the non-BRI countries, iii) suggest policies that would help maximize gains from the BRI-induced trade cost declines.

We use the updated data on "value of time" from de Soyres et. al. (2018), which is based on Hummels and Schaur (2013) original estimates updated with trade flows from 2011 to match the GTAP version 10. In our simulations, these initial estimates of the value of time in trade are adjusted based on the GIS estimates of the impacts of Belt and Road Initiative projects on the shipment time decrease based on Baniya et. al. (2018).

Summary conclusions include:

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- Global real income increases by 0.6 percent (in 2030 relative to the baseline), which in comparative terms is relatively sizeable as upper estimates of the real income impact of global free trade are around 1 percent. This translates to almost half trillion dollars in 2014 prices and market exchange rates.
- The BRI Area captures 82 percent of the gain, with China garnering 36 percent of the total global gain. In percentage terms, the largest return accrues to the East Asia regional aggregate seeing an increase of 2.2 percent in overall real income.
- The non-BRI area seems some gains with an increase of 0.2 percent, most of which is captured by the European Union and the Rest of high-income region (which is dominated by the high-income economies of East Asia). These latter two regions, though not formally part of the BRI area, are the most integrated economies with the BRI area. There are minor losses for the regions in the Western Hemisphere.

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Introduction

China's Belt and Road Initiative (BRI) is an ambitious effort to improve connectivity between China and more than 65 countries through infrastructure investment and regional cooperation. The initiative has the potential to significantly accelerate the rate of economic integration and development in the region, as trade costs decline. The goals of our analysis are to i) study the impacts of infrastructure improvements on the BRI countries' trade flows, growth and poverty, ii) estimate the potential impacts on the non-BRI countries, iii) suggest policies that would help maximize gains from the BRI-induced trade cost declines.

To our best knowledge, there are only a few CGE-based studies on the impacts of the BRI. Fan Zhai (2017) uses estimates of elasticity of trade costs with respect to quality of infrastructure and per capita income to estimate the future reductions of trade costs due to BRI. He applies those estimates in a dynamic global CGE model and finds that BRI might bring important benefits to its members and beyond. With moderate assumptions on BRI investment, the simulation results indicate a global welfare gain of 1.3% of global GDP by 2030 with a boost to global trade by 5%. The vast majority of gains applies to BRI countries. While Villafuerte, Corong, and Zhuang (2016) assume that BRI leads to a 25% reduction in road transport margins and 5% in sea transport margins, as well as a significant reduction in time to import by BRI countries due to the accompanying trade facilitation measures. The authors estimate that GDP growth could increase by 0.1-0.7 percentage points, while total exports of BRI countries could increase by between \$5-135 billion depending on the assumptions on trade costs reductions.

Our analysis adds value to the existing research in several ways. First, we extend the standard CGE model to include the multi-regional input-output data tracking bilateral trade by purpose: intermediate and final goods. Such imports and exports face very different trade protection and elasticities of demand and supply. By separating trade in intermediate goods we will be able to track the impacts of the BRI on regional value chains. Second, the effects of BRI related infrastructure improvements will be estimated by incorporating the estimates of bilateral trade time reductions from Baniya et. al. (2018). Finally, while the CGE analysis will provide impacts of the BRI several economic variables (e.g. trade, employment, economic growth), we also employ the microsimulation tool Global Income Distribution Dynamics (GIDD) to study the potential impacts of BRI--induced income and price changes on poverty. We also intend to assess a few trade policy scenarios (e.g. implementing free trade agreements, rationalizing non-tariff barriers etc.) to propose trade policy reforms to maximize the gains from BRI-induced infrastructure improvements.

The research is still in progress, but we have created a preliminary set of simulations. We use the updated data on "value of time" from de Soyres et. al. (2018), which is based on Hummels and Schaur (2013) original estimates updated with trade flows from 2011 to match the GTAP version 10. In our simulations, these initial estimates of the value of time in trade are adjusted based on the GIS estimates of the impacts of Belt and Road Initiative projects on the shipment time decrease based on Baniya et. al. (2018).

Methodology

The findings of this paper on the BRI initiative rely on the ENVISAGE Model—a global, recursive dynamic computable general equilibrium model. The ENVISAGE Model was initially developed at the World Bank, which continues to use it, though the core development team is now situated in the Center for Global Trade Analysis (GTAP) at Purdue University.

The description of the ENVISAGE Model follows the circular flow of an economy paradigm. Firms purchase input factors (for example labor and capital) to produce goods and services. Households receive factor income and in turn demand goods and services produced by firms. And, equality of supply and demand determine equilibrium prices for factors, goods and services. The model is solved as a sequence of comparative static equilibria where the factors of production are exogenous for each time period and linked between time periods with accumulation expressions.

Production is implemented as a series of nested constant-elasticity-of-substitution (CES) functions the aim of which is to capture the substitutability across all inputs. Three production archetypes are implemented. The first is for crops that reflects intensification of inputs versus land extensification. The second is for livestock that reflects range-fed versus ranch-fed production. The final, also referred to as the default, revolves largely around capital/labor substitutability. Some production activities highlight specific inputs (for example agricultural chemicals in crops and feed in livestock) and all activities include energy and its components as part of the cost minimization paradigm. Production is also identified by vintage—divided into *Old* and *New*—with typically lower substitution possibilities associated with *Old* capital.

Each production activity is allowed to produce more than one commodity—for example the ethanol sector can produce ethanol and distiller’s dried grains with solubles (DDGS). And commodities can be formed by the output of one or more activities (for example electricity). ENVISAGE therefore uses a different classification of activities and commodities.³ One of the features of the model is that it integrates the new GTAP power data base that disaggregates GTAP’s electricity sector (‘ely’) into 11 different power sources plus electricity transmission and distribution. Though the database has both the supply and demand side for all 11 power sources, the aggregation facility permits the aggregation of electricity demand into a single commodity and the ‘make’ matrix specification combines the output from the different power activities into a single electricity commodity.

Income accrues from payments to factors of production and is allocated to households (after taxes). The government sector accrues all net tax payments and purchases goods and services. The model incorporates multiple utility functions for determining household demand. There is a set of three household demand functions linked to the ubiquitous linear expenditure system (LES): the standard LES, the extended LES (ELES) that incorporates household saving into the utility function, and ‘an implicitly directly additive demand system’ (AIDADS), that allows for non-linear Engel curves in the LES framework.⁴ The fourth option uses the constant differences in elasticity (CDE) utility function that is used in the core GTAP model (Hertel 1997 and Corong et

³ Production activities are indexed with *a* and commodities are indexed with *i*.

⁴ Users can also specify implementing a Cobb-Douglas (CD) utility function, which can be considered part of the LES framework.

al. 2017). The ELES incorporates the decision to save in a top level utility function. The other demand systems assume savings is an exogenous proportion of disposable income in the default closure. The consumer utility function determines consumer demand bundles that are subsequently converted to produced goods using a consumer demand ‘make’ or transition matrix. Investment is savings driven and equal to domestic saving adjusted by net capital flows.

Trade is modeled using the so-called Armington specification that posits that demand for goods are differentiated by region of origin. The model allows for domestic/import sourcing at the aggregate level (after aggregating domestic absorption across all agents), or at the agent-level. In the standard specification, a second Armington nest allocates aggregate import demand across all exporting regions using a representative agent specification. Note that a newer, though minimally tested version, allows for sourcing imports by agent—also known as the MRIO specification. Exports are modeled in an analogous fashion using a nested constant-elasticity-of-transformation (CET) specification. The domestic supply of each commodity is supplied to the domestic market and an aggregate export bundle using a top-level CET function. The latter is allocated across regions of destination using a second-level CET function.⁵ Each bilateral trade node is associated with four prices: 1) the producer price; 2) the export border price, also referred to as the free-on-board (FOB) price; 3) the import border price, also referred to as the cost, insurance and freight (CIF) price; and 4) the end-user price that includes all applicable trade taxes. The wedge between the producer price and the FOB price is represented by the export tax (or subsidy if negative) and the wedge between the CIF and end-user prices represents the import tariff (and perhaps other import related distortions). The wedge between the CIF and FOB prices represents the international trade and transport margin. These margins represent the use of real resources that are supplied by each region. The global international trade and transport sector purchases these services from each region so as to minimize the aggregate cost.

The model has two fundamental markets for goods and services. Domestically produced goods sold on the domestic market, and domestically produced goods sold by region of destination. All other goods and services are composite bundles of these goods. Two market equilibrium conditions are needed to clear these two markets.⁶

The model incorporates five types of production factors: 1) labor (of which there can be up to 5 types); 2) capital; 3) land; 4) a sector specific natural resource (such as fossil fuel energy reserves); and 5) water. The labor market is allowed to be segmented (though not required). The model allows for regime switching between full and partial wage flexibility. Capital is allocated across sectors so as to equalize rates of returns. If all sectors are expanding, *Old* capital is assumed to receive the economy-wide rate of return. In contracting sectors, *Old* capital is sold on secondary markets using an upward sloping supply curve. This implies that capital is only partially mobile across sectors. Aggregate land and water supply are specified using supply curves. Though there are several options, the preferred supply curve is a logistic function that has an upper bound. Water demand also includes exogenous components for environmental uses and groundwater recharge. Land and

⁵ The model allows for perfect transformation, which is the standard specification in the GTAP model.

⁶ If there are N commodities and R regions, there will be $R \times N$ market clearing conditions for domestic goods and $R \times N \times R$ market clearing conditions for bilateral trade.

water are allocated across activities using a nested CET specification.⁷ Natural resources are supplied to each sector using an iso-elastic supply function with the possibility differentiated elasticities depending on market conditions.

ENVISAGE incorporates the main greenhouse gases—carbon, methane, nitrous oxides and fluoridated gases. Emissions are generated by consumption of commodities (such as fuels), factor use (for example land in rice production and herds in livestock production) and there are also processed base emissions such as methane from landfills.⁸ A number of carbon control regimes are available in the model. Carbon taxes can be imposed exogenously—potentially differentiated across regions. The incidence of the carbon tax allows for partial or full exemption by commodity and end-user. For example households can be exempted from the carbon tax on natural gas consumption. The model allows for emission caps in a flexible manner—where regions can be segmented into coalitions on a multi-regional or global basis. In addition to the standard cap system, a cap and trade system can be defined where each region within a coalition is assigned an initial emission quota.

Dynamics involves three elements. Labor supply (by skill level) grows at an exogenously determined rate. The aggregate capital supply evolves according to the standard stock/flow motion equation, i.e. the capital stock at the beginning of each period is equal to the previous period's capital stock, less depreciation, plus the previous period's level of investment. The third element is technological change. The standard version of the model assumes labor augmenting technical change—calibrated to given assumptions about GDP growth and inter-sectoral productivity differences. In policy simulations, technology is typically assumed to be fixed at the calibrated levels.

For this particular study, key model specifications include:

- Agent-based Armington specification for import demand, with an aggregate agent allocation of total import demand by source region
- The value of time in trade is captured by an iceberg parameter—specified for each commodity and bilateral trade node. The iceberg parameter is assumed to be fixed over time in the baseline.
- Diagonal make matrix, i.e. one-to-one correspondence between activities and commodities
- Constant-differences-in-elasticity (CDE) utility function
- Logistic aggregate land supply function
- The capital account is fixed within each time period. Net capital flows decline to zero by 2030.

⁷ Land is only implemented for agricultural activities. Water demand by activity is only present in irrigated crop sectors. Other water demand is based on aggregate demand functions with market clearing, but is not part of the cost structure.

⁸ The current version of the model does not include carbon emissions from deforestation—an important source of global carbon emissions.

Table 1: Regional concordance

Region name (code in parenthesis)	
1	China (CHN)
2	Rest of East Asia (XEA)
3	India (IND)
4	Rest of South Asia (XSA)
5	EU ECA (ECU)
6	Russia (RUS)
7	Poland (POL)
8	Rest of Eastern Europe (EEU)
9	Central Asia (XCS)
10	Turkey (TUR)
11	Middle East & North Africa (XMN)
12	Sub-Saharan Africa (XSS)
13	Latin America and Caribbean (LAC)
14	United States (USA)
15	Rest of High-income (XHY)
16	Rest of Western Europe (E_U)

The model's reference year is 2014 and the model is initialized and calibrated to the GTAP Data Base, Version 10 pre-release 2.⁹ The 141 regions in the database have been aggregated to 16 regions, see Table 1.¹⁰ Similarly, the database's 57 sectors have been aggregated to 28, see Table 2, with an emphasis on the more traded manufacturing sectors, and the trade and transport services.¹¹

The key macro-economic drivers of the baseline are based on a number of existing baselines. Population and labor growth are calibrated to the United Nation's Population Division 2015 projection, the medium variant.¹² The near-term GDP projections, through 2020, use the latest World Bank Global Economic Prospects (GEP) forecast.¹³ Beyond 2020, the baseline is calibrated to so-called Shared Socio Economic Pathway (SSP) 2, or SSP2. The SSPs, of which there are 5, have been developed by the Integrated Assessment Modeling (IAM) Community to provide a macroeconomic framework for quantitative analysis of the economics of climate change.¹⁴ Three economic modeling groups have quantified global GDP projections: the Organisation for Economic Co-operation and Development (OECD), the International Institute for Applied Systems Analysis (IIASA), and the Potsdam Institute for Climate Impact Research (PIK). All three

⁹ Pre-releases are only made available to GTAP Board members. The public version of Version 10 is expected to be available in the summer of 2018.

¹⁰ The GTAP concordance is available in Annex A. This is a preliminary aggregation. We intend to expand the number of countries, particularly those in the defined BRI area in a second phase.

¹¹ The GTAP concordance is available in Annex B.

¹² <http://www.un.org/en/development/desa/publications/world-population-prospects-2015-revision.html>

¹³ *Global Economic Prospects, January 2018: Broad-Based Upturn, but for How Long?* Advance edition. Washington, DC: World Bank. License: Creative Commons Attribution CC BY 3.0 IGO (<https://openknowledge.worldbank.org/bitstream/handle/10986/28932/9781464811630.pdf>).

¹⁴ A Special Issue of *Global Environmental Change* provides significant background material on the SSPs and their development. See in particular Dellink et al. 2017 for a discussion of the OECD-based macroeconomic drivers.

teams harmonized to the same demographic projections provided by IIASA’s demographic unit. For our purposes, we are using the OECD-based SSP2 projection. SSP2, also referred to as ‘middle of the road’ is being treated by many modeling groups as a business as usual scenario.

Table 2: Sector concordance

Sector name (code in parenthesis)	
1	Agriculture (AGR)
2	Coal (COA)
3	Oil (OIL)
4	Gas (GAS)
5	Minerals n.e.s. (OMN)
6	Processed foods (PFD)
7	Wood products (LUM)
8	Paper products, publishing (PPP)
9	Textiles (TEX)
10	Wearing apparel (WAP)
11	Leather goods (LEA)
12	Energy intensive manufacturing (KE5)
13	Petroleum, coal products (P_C)
14	Chemical, rubber, plastic products (CRP)
15	Transport equipment (TRQ)
16	Electronics (ELE)
17	Metal products (FMP)
18	Machinery and equipment (OME)
19	Manufactures, n.e.s. (XMN)
20	Electricity (ELY)
21	Construction (CNS)
22	Trade services (TRD)
23	Air transport (ATP)
24	Water transport (WTP)
25	Other transport (OTP)
26	Hospitality services (ROS)
27	Other business services (XBS)
28	Other services (XSV)

Labor force growth is equated with the growth rate of the population cohort aged from 15-64, sometimes referred to as the working-age population. The GEP forecast is used to project real GDP growth from 2014-2020. The SSP2 projection is used to project real per-capita GDP growth, complemented by the UN population projection.¹⁵ We target real GDP growth by calibrating labor productivity in the baseline. We allow for sector differences in labor productivity growth, with a

¹⁵ In other words, we overlay SSP2’s population projection with the UN’s, but assume the same growth rate of GDP in per capita terms.

(fixed) higher rate in agriculture and manufacturing, relative to services. Other factors that impact calibrated labor productivity include an exogenous improvement in energy efficiency, agricultural yields, and international trade and transport margins.

The baseline also incorporates the following list of exogenous assumptions:

- Bilateral tariff rates are modified over time according to a schedule of tariff rates prepared by the World Bank. This schedule is based on existing trade agreements. More details are available from the authors.
- The income parameter of the CDE is adjusted between periods based on an estimated economic relation between the income parameter and aggregate per capita consumption. The parametrization of the relationship is based on a least-squares estimate using the base year GTAP database. One key purpose is to reduce the share of food expenditures as incomes rise.
- Capital accumulation is based on the standard capital motion equation: $K_t = (1 - \delta)K_{t-1} + I_{t-1}$, thus the capital stock trends depend on investment/savings decisions. In the default baseline, household savings are fixed at base year values.¹⁶ Baseline net capital flows are assumed to decline to zero by 2030.

The focus of the paper is on the BRI initiative, though we will briefly outline the contours of the baseline:

- World population is expected to rise from 7.3 billion in 2014 to 8.5 billion in 2030, an increase of around 1.2 billion, and about 1 percent per annum on average (see Table 1).
- The BRI region accounts for around one-half of the increase, mostly South Asia, with Sub-Saharan Africa accounting for the major contribution in the non-BRI area, with an increase of almost 500 million. There is a small decline in BRI's share of global population, from 64 to 62 percent.
- Global GDP will rise from \$78 \$2004 billion in 2014 to \$133 \$2004 billion in 2030—an average annual increase of 3.4 percent.
- BRI's share of global output climbs relatively sharply from 31 percent to 42 percent (at 2014 prices and market exchange rates). In terms of average annual growth rates, BRI's increases at a rapid clip of 5.4 percent per annum, whereas the non-BRI region would see an increase of 2.3 percent per annum (see Table 2).
- Average global income in per capita terms rises by 45%—over 100 percent for the BRI area and only 16 percent for non-BRI (see Table 3).
- Despite the relatively high growth in per capita incomes in many developing countries, convergence in incomes (at market exchange rates and 2014 prices) is slight, for example the BRI region on average only sees its per capita income rise from 9.5 percent of the U.S. average to 10.5 percent.

Data

[Data: GTAP data base, time to trade and BRI trade cost reductions]

¹⁶ We may eventually modulate savings propensity to influence the trend of capital growth, particularly in view of targeting the rate of return to capital.

Scenario definition

[Definition of scenarios: baseline, BRI impacts]

The BRI scenario lines up with the baseline scenario with the exception of the BRI-specific shocks. We have implemented the following BRI initiative shocks:

- A reduction in the value of the time of trade translated into a change in the iceberg parameter. Table 4 summarizes the full shock for the regions in the BRI area. The shock occurs in two time periods. One-half of the shock is assumed by 2025, and the remainder by 2030.

Results

Some of the key results are summarized in Tables 5-8. Table 5 highlights the key macroeconomic indicators—real income (as measured by equivalent variation¹⁷) and aggregate trade. Summary conclusions include:

- Global real income increases by 0.6 percent (in 2030 relative to the baseline), which in comparative terms is relatively sizeable as upper estimates of the real income impact of global free trade are around 1 percent.¹⁸ This translates to almost half trillion dollars in 2014 prices and market exchange rates.
- The BRI Area captures 82 percent of the gain, with China garnering 36 percent of the total global gain. In percentage terms, the largest return accrues to the East Asia regional aggregate seeing an increase of 2.2 percent in overall real income.
- The non-BRI area seems some gains with an increase of 0.2 percent, most of which is captured by the European Union and the Rest of high-income region (which is dominated by the high-income economies of East Asia). These latter two regions, though not formally part of the BRI area, are the most integrated economies with the BRI area. There are minor losses for the regions in the Western Hemisphere.
- The volume of global exports increases by 1.7 percent (in 2030 relative to the baseline), translating to an increase of some \$640 billion (in \$2014).
- Some 92 percent of the increase in exports occurs in the BRI area (\$590 billion), which witnesses an increase in exports of some 3.5 percent. China sees the largest increase (7.3 percent), with notable increases in India (4.7

¹⁷ This is the expenditure to attain utility in year t in any given simulation using base year prices. It is similar in magnitude to real private consumption.

¹⁸ The global average change in the value of time is 1.6 percentage points.

percent) and South Asia (3.6 percent). Not all BRI regions benefit in terms of trade growth, for example the EU regions of Europe and Central Asia (ECA), i.e. Poland and EU ECA, could see a (minor) declines in export volumes.

- The non-BRI area sees a very modest increase in exports, 0.2 percent, with Rest of High-income (1.7 percent) and Sub-Saharan Africa (0.6 percent) seeing positive export growth. The EU, like its counterparts that are part of the BRI area, would see a (very small) decline. Exports would decline for the regions in the Western Hemisphere.
- Import growth is significantly higher than export growth, as the iceberg parameter in some sense decouples import and export growth. At the global level, import growth is 3.3 percent (in 2030 relative to the baseline), evaluating to over \$1.2 billion (in \$2014 prices).
- China and East and South Asia capture the bulk of the increase in imports—China (11.6 percent), East Asia (5.9 percent), India (8.5 percent) and Rest of South Asia (7 percent). There are modest declines for Poland and EU ECA, but not insignificant increases for Russia, Rest of Eastern Europe, Central Asia, Turkey and the Middle East & North Africa.
- Rest of high-income sees the bulk of the import increase for the non-BRI area, with small gains for Sub-Saharan Africa and the European Union. The latter somewhat contradicts the findings for Poland and EU ECA, and is also a reversal of the export growth, which was small but negative.

Tables 6a and 6b unpack the macroeconomic results by looking at the detailed changes in value added—Table 6a in percentage terms relative to the baseline, and Table 6b in volume terms (at \$2014 prices). A few summary findings:

- The BRI area sees an overall gain of 0.3 percent, or \$100 billion. Virtually all of the gain accrues to the services sectors, with minor losses in agriculture, extraction and manufacturing.¹⁹ The largest increase in value added in level terms are in construction, trade services, and other business and other services.
- The largest percentage gains are in China, East Asia, India, Central Asia and Middle East and North Africa, with a small loss for Rest of South Asia, and minor increases for the other BRI areas.
- The non-BRI area has imperceptible changes to value added in aggregate with notable gains in agriculture (with the exception of Rest of high-income) and

¹⁹ Aggregate definitions are: Agriculture (Agriculture), Services (Electricity, Construction, Trade services, Other, Water and Air transport, Hospitality services, Other business services and other services), Other (Minerals, oil, gas, and coal extraction). Manufacturing includes all other sectors.

notable losses in manufacturing. The United States, in addition to gains in agriculture, would also see increases for the extraction sectors.

Tables 7a and 7b provide the detailed changes in export volumes in both percentage and level terms (relative to the baseline in 2030). The key findings include:

- Agriculture and manufacturing exports by the BRI area increase by 4.1 percent and 4.5 percent respectively, significantly more than services and the extractive industries. The exception is China that sees a large increase in the exports of extractive industries, including refined oil, albeit from a relatively low base. The results for the other regions within the BRI area are variegated—depending on the source of the reduction in value of the time of trade and relative comparative advantage. For example, rest of South Asia and Central Asia have significant export gains of agriculture and India sees a greater gain in manufacturer.
- Export growth for the non-BRI regions is relatively small in aggregate, 0.6 percent, with most of the dollar gains occurring in services and a minor loss in manufacturing in aggregate. Rest of high-income nonetheless sees a significant gain in manufacturing exports that is offset by the losses in the other regions of the non-BRI area.

As highlighted earlier, import changes in 2030 outstrip export changes. Tables 8a and 8b show the corresponding figures for import changes (relative to the baseline in 2030):

- For the BRI area in aggregate, import growth is strong across all activities even if led by manufacturing. Other manufacturing, in particular sees export growth of up to 29 percent, with similar high growth in some regions for textiles, wearing apparel, and leather goods. This rise in manufacturing exports is most pronounced in Asia, with losses or only small gains in ECA, Russia, Turkey and the Middle East & North Africa. Another outlier is the growth in imported processed foods by Central Asia.
- For the non-BRI area, the impacts on import demand are slight—overall growth of 0.9 percent that varies from a low of 0.2 percent for agriculture to a high of 1.1 percent for manufacturing. The Rest of high-income is the dominant outlier in this area with relatively higher import growth demand. The Western Hemisphere sees an overall decline that is reflected across all sectors.

Conclusions and policy recommendations

References

Tables

Table 1: Baseline population profile, million

	2014	2017	2020	2025	2030
World	7,248	7,497	7,739	8,120	8,477
BRI regions	4,635	4,772	4,900	5,087	5,244
China	1,364	1,383	1,398	1,410	1,410
East Asia	664	686	707	739	768
India	1,295	1,343	1,389	1,462	1,528
Rest of South Asia	426	447	468	501	531
Poland	38	38	38	37	37
EU ECA	65	65	64	63	61
Russia	144	144	143	142	139
Rest of Eastern Europe	61	61	60	58	57
Central Asia	84	87	90	94	97
Turkey	78	80	82	85	88
Middle East & North Africa	416	438	461	497	529
Non-BRI regions	2,614	2,725	2,839	3,033	3,233
Sub-Saharan Africa	965	1,044	1,128	1,276	1,436
Latin America & Caribbean	626	646	665	694	720
United States	319	326	333	344	355
Rest of Western Europe	432	435	437	441	443
Rest of High-income	272	274	276	278	278

Table 2: Baseline GDP, \$2014 billion

	2014	2017	2020	2025	2030
World	78,226	87,594	97,938	115,444	133,040
BRI regions	24,044	29,114	34,921	45,139	55,419
China	10,351	13,267	16,639	22,342	27,642
East Asia	2,660	3,141	3,710	4,785	5,982
India	2,042	2,477	3,015	4,064	5,274
Rest of South Asia	541	631	743	967	1,239
Poland	545	596	652	733	805
EU ECA	913	983	1,066	1,199	1,335
Russia	2,031	2,281	2,533	2,965	3,397
Rest of Eastern Europe	229	258	286	339	393
Central Asia	454	539	641	843	1,043
Turkey	799	919	1,031	1,219	1,419
Middle East & North Africa	3,479	4,022	4,605	5,683	6,891
Non-BRI regions	54,182	58,481	63,018	70,305	77,620
Sub-Saharan Africa	1,744	2,077	2,491	3,327	4,407
Latin America & Caribbean	6,405	7,185	8,042	9,518	11,057
United States	17,348	18,927	20,544	22,934	25,084
Rest of Western Europe	18,418	19,310	20,260	21,718	23,203
Rest of High-income	10,268	10,982	11,681	12,808	13,870

Table 3: GDP per capita, \$2014

	2014	2017	2020	2025	2030	Avg. gr.
World	10,792	11,684	12,656	14,217	15,694	2.4
BRI regions	5,188	6,101	7,127	8,873	10,567	4.5
China	7,587	9,593	11,906	15,851	19,601	6.1
East Asia	4,008	4,578	5,246	6,472	7,792	4.2
India	1,577	1,845	2,171	2,781	3,452	5.0
Rest of South Asia	1,271	1,412	1,587	1,930	2,331	3.9
Poland	14,337	15,694	17,246	19,630	21,989	2.7
EU ECA	13,937	15,205	16,680	19,180	21,886	2.9
Russia	14,122	15,863	17,675	20,939	24,436	3.5
Rest of Eastern Europe	3,739	4,247	4,784	5,810	6,953	4.0
Central Asia	5,422	6,192	7,128	8,961	10,719	4.4
Turkey	10,304	11,431	12,536	14,363	16,179	2.9
Middle East & North Africa	8,369	9,173	9,993	11,443	13,017	2.8
Non-BRI regions	20,730	21,461	22,198	23,179	24,010	0.9
Sub-Saharan Africa	1,807	1,989	2,209	2,608	3,068	3.4
Latin America & Caribbean	10,223	11,116	12,088	13,708	15,361	2.6
United States	54,399	58,074	61,696	66,572	70,626	1.6
Rest of Western Europe	42,661	44,436	46,328	49,267	52,340	1.3
Rest of High-income	37,792	40,086	42,366	46,153	49,852	1.7

Table 4: Reductions in the value of the time of trade

		Importing region																	
Exporting region		BRI	CHN	XEA	IND	XSA	POL	ECU	RUS	EEU	XCS	TUR	XMN	XBR	XSS	LAC	USA	E_U	XHY
	BRI	3.5	5.3	3.5	3.7	4.5	1.1	1.1	1.8	1.0	3.0	1.6	3.1	1.5	1.4	0.5	0.7	1.4	2.4
	CHN	5.1		4.6	10.6	8.9	3.2	3.2	2.7	3.3	2.2	3.7	5.2	2.1	1.8	0.5	0.4	3.2	2.9
	XEA	3.6	4.7	2.0	2.4	5.0	3.0	3.6	3.0	2.5	4.5	3.8	4.9	1.0	1.8	0.5	0.4	2.8	0.1
	IND	4.4	10.6	5.2		1.0	0.0	6.6	2.0	5.9	4.5	2.7	0.9	2.5	2.0	0.8	2.6	2.2	4.4
	XSA	4.3	8.2	6.1	3.1	6.5	0.5	0.5	1.4	1.3	3.1	1.1	0.9	1.3	1.0	0.9	1.8	0.5	3.8
	POL	0.4	3.2	2.5	0.0	1.2		0.0	0.7	0.0	0.5	0.0	0.0	0.1	0.0	0.0	0.1	0.0	1.7
	ECU	0.6	3.2	2.7	6.0	1.1	0.0	0.0	0.9	0.0	0.5	0.1	0.0	0.1	0.0	0.0	0.1	0.0	2.0
	RUS	1.4	2.7	2.9	2.0	2.4	0.7	0.8		1.0	0.9	1.0	0.6	0.9	0.2	0.1	0.2	0.7	2.2
	EEU	1.0	3.3	2.2	6.2	0.9	0.0	0.0	1.0	0.0	0.9	0.0	0.0	0.3	0.0	0.0	0.1	0.0	2.3
	XCS	5.4	2.4	0.9	3.9	2.0	0.1	1.0	0.8	0.2	12.5	0.3	14.1	1.8	3.1	5.5	6.7	0.6	5.2
	TUR	1.1	3.7	2.7	2.7	2.2	0.0	0.1	1.0	0.2	0.9		0.6	0.9	0.3	0.2	0.4	0.8	2.5
	XMN	3.0	5.8	3.6	0.7	1.5	0.1	0.0	0.6	0.1	2.7	0.5	0.0	1.5	0.0	0.0	0.3	0.0	3.8
	XBR	1.8	3.0	0.9	2.7	2.1	0.1	0.2	0.7	0.2	2.9	0.8	0.5	0.2	0.1	0.0	0.0	0.1	0.5
	XSS	1.3	2.0	1.4	1.8	1.0	0.0	0.0	0.2	0.0	1.6	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.6
	LAC	0.4	0.5	0.5	0.6	0.4	0.0	0.0	0.1	0.0	3.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	USA	0.6	0.4	0.4	2.6	1.9	0.1	0.1	0.2	0.1	6.0	0.4	0.3	0.0	0.0	0.0		0.1	0.0
	E_U	1.4	3.1	2.4	3.4	0.9	0.0	0.0	0.7	0.0	0.7	0.8	0.0	0.2	0.0	0.0	0.1	0.0	2.1
	XHY	3.3	4.3	0.2	3.9	5.1	2.1	2.8	2.0	1.8	4.8	2.8	3.1	0.5	0.7	0.1	0.0	2.3	0.0

Table 5: Macro effects of BRI (change relative to baseline in 2030)

	Equivalent variation		Exports		Imports	
	% change	\$US2014 billion	% change	\$US2014 billion	% change	\$US2014 billion
World	0.6	483.1	1.7	637.9	3.3	1,233.3
BRI area	1.5	395.2	3.5	587.3	6.7	1,040.9
China	1.8	175.9	7.3	357.1	11.6	588.1
East Asia	2.2	75.2	3.0	107.8	5.9	188.8
India	1.7	54.0	4.7	59.2	8.5	109.9
Rest of South Asia	1.4	14.8	3.6	12.5	7.0	20.3
Poland	0.2	0.8	-0.4	-1.5	-0.2	-0.8
EU ECA	0.3	2.1	-0.5	-4.1	0.0	-0.2
Russia	0.6	9.8	0.8	8.5	2.0	16.3
Rest of Eastern Europe	0.6	1.7	0.1	0.3	0.8	2.1
Central Asia	1.3	6.8	2.9	14.4	5.7	18.9
Turkey	0.6	5.9	0.7	2.7	1.7	6.8
Middle East & North Africa	1.5	48.3	0.9	30.3	3.4	90.7
Non-BRI area	0.2	87.8	0.2	50.6	0.9	192.3
Sub-Saharan Africa	0.2	4.6	0.6	7.7	0.6	6.7
Latin America & Caribbean	-0.1	-4.1	-0.3	-8.0	-0.3	-6.5
United States	-0.1	-13.8	-0.6	-25.1	-0.8	-32.2
Rest of Western Europe	0.2	33.4	0.0	-0.6	0.6	50.9
Rest of High-income	0.9	67.6	1.7	76.7	3.5	173.4

Table 6a: Change in real value added in 2030, percent change from baseline

	World	BRI area	China	East Asia	India	Rest of South Asia	Poland	EU ECA	Russia	Rest of Eastern Europe
Agriculture	0.1	-0.1	-0.5	-0.4	0.2	0.4	0.4	0.4	0.3	0.6
Minerals n.e.s.	-0.4	-0.4	-0.5	-0.4	-0.6	-1.2	0.1	0.3	0.0	0.1
Coal	0.0	-0.3	-1.3	2.9	-2.0	-1.1	0.8	0.6	1.7	0.4
Oil	0.0	0.2	-8.6	-9.5	-4.1	-3.0	-0.1	-0.3	0.3	-2.1
Gas	-1.0	-1.3	1.7	-4.7	-1.3	-0.6	0.3	-0.3	0.1	-0.2
Textiles	-0.7	-0.6	-0.3	-0.2	-0.3	0.0	-1.3	-1.7	-2.0	-2.2
Wearing apparel	-0.3	0.0	0.6	3.1	-1.4	0.7	-1.5	-2.2	-1.6	-1.8
Leather goods	-0.6	-0.5	-0.9	3.5	-1.0	-0.5	-1.8	-3.2	-2.2	-3.9
Processed foods	0.2	0.4	0.3	-0.1	0.9	0.4	0.6	0.4	0.2	0.8
Wood products	-0.1	-0.2	-0.3	1.3	-1.0	-1.5	0.3	0.5	0.3	-0.8
Paper products, publishing	0.0	0.0	0.5	-1.0	-1.2	-1.8	0.4	0.4	0.7	0.2
Petroleum, coal products	0.8	1.0	3.5	1.4	2.5	-0.6	0.5	0.7	0.1	0.7
Chemical, rubber, plastic	-0.6	-1.0	-1.4	-1.3	-0.8	-4.3	-0.3	-0.4	-0.2	-0.6
Energy intensive manu.	-0.3	-0.3	0.2	-1.6	-2.2	-2.3	0.0	-0.2	-0.4	-1.1
Metal products	-0.3	-0.1	1.0	-0.2	0.3	-4.4	-0.9	-1.1	-1.7	-0.9
Electronics	-1.4	-0.2	1.1	1.8	-8.3	-13.8	-7.2	-6.6	-7.8	-6.6
Machinery and equipment	-0.2	0.0	0.7	3.1	0.0	-10.1	-1.2	-1.1	-2.1	-2.3
Transport equipment	0.3	0.3	0.3	3.0	0.9	-3.5	0.2	1.2	-1.1	-0.8
Manufactures, n.e.s.	-0.5	-0.2	-1.6	9.2	1.5	-2.0	-0.8	-0.7	-2.5	-1.5
Electricity	-0.1	-0.1	-0.4	1.2	-0.4	-0.3	0.1	0.1	0.0	0.0
Construction	0.4	0.9	1.2	1.0	0.7	-0.2	0.1	0.2	0.2	-0.1
Trade services	0.3	0.7	0.6	1.1	0.9	0.1	0.0	0.1	0.3	0.2
Other transport	0.2	0.4	0.2	0.6	0.9	-0.1	0.4	0.6	0.3	0.4
Water transport	0.6	0.4	0.1	0.5	1.0	0.5	1.6	1.4	0.4	0.7
Air transport	0.2	0.2	-0.7	0.8	-0.8	1.3	0.6	1.0	0.3	0.3
Hospitality services	0.4	1.0	1.2	1.1	-0.3	1.9	0.3	0.7	0.4	0.2
Other business services	0.2	0.3	0.6	-0.4	0.0	-0.5	0.3	0.4	0.2	0.0
Other services	0.2	0.5	0.8	0.7	0.5	0.4	0.0	0.1	0.0	0.1
Agriculture	0.1	-0.1	-0.5	-0.4	0.2	0.4	0.4	0.4	0.3	0.6
Manufacturing	-0.3	-0.2	0.1	0.8	-0.2	-0.6	-0.5	-0.7	-0.6	-1.0
Services	0.2	0.5	0.7	0.6	0.5	0.1	0.1	0.3	0.2	0.1
Other	-0.1	-0.1	-1.8	-2.8	-1.5	-0.7	0.2	0.1	0.3	0.0
Total	0.1	0.3	0.3	0.3	0.3	-0.1	0.0	0.0	0.1	0.0

Table 6a: Change in real value added in 2030, percent change from baseline, ctd.

	Central Asia	Turkey	Middle East & North Africa	Non- BRI area	Sub- Saharan Africa	Latin America & Car.	United States	Rest of Western Europe	Rest of High- income
Agriculture	0.3	0.8	0.0	0.4	0.4	0.6	0.6	0.4	-0.8
Minerals n.e.s.	-0.1	0.1	0.1	-0.5	0.1	0.0	0.1	0.2	-1.2
Coal	-0.8	-1.0	-0.1	0.7	1.7	1.3	1.2	0.4	-0.6
Oil	-1.8	-0.7	1.6	-0.4	-0.1	-0.2	0.9	-0.1	-5.1
Gas	9.2	0.1	-0.9	-0.4	-0.6	-0.1	0.0	0.0	-2.2
Textiles	-2.2	-1.3	-3.4	-0.7	-1.1	0.1	0.0	-1.8	-1.6
Wearing apparel	-2.3	-0.6	-2.8	-0.8	-0.8	-0.2	0.0	-1.9	-1.6
Leather goods	-0.3	-1.6	-6.6	-0.8	-0.9	-0.4	0.2	-1.7	0.0
Processed foods	2.0	0.5	0.3	0.1	0.1	0.2	0.3	0.3	-0.6
Wood products	-3.8	-0.3	-1.7	0.0	0.0	0.2	0.3	-0.4	-2.0
Paper products, publishing	-0.6	-0.3	-1.4	0.0	0.1	0.2	0.4	0.0	-0.9
Petroleum, coal products	0.3	0.2	-0.3	0.4	-0.9	-0.4	-0.5	-0.2	2.1
Chemical, rubber, plastic	-1.3	-1.0	0.0	-0.1	-1.1	-0.1	-0.2	-0.6	1.0
Energy intensive manu.	0.1	-0.9	-1.2	-0.3	-0.8	-0.3	-0.1	0.6	-1.1
Metal products	-2.6	-1.6	-3.0	-0.5	-1.3	-0.1	-0.1	-1.0	-0.5
Electronics	-7.1	-4.9	-10.5	-2.6	-4.8	-3.0	-4.6	-7.6	0.9
Machinery and equipment	-3.1	-2.7	-5.5	-0.4	-1.6	-0.5	-0.3	-0.9	0.6
Transport equipment	-2.6	0.2	-2.2	0.2	-0.8	0.0	0.1	0.9	-0.2
Manufactures, n.e.s.	-2.3	0.3	-1.9	-1.0	-0.7	-0.1	-0.6	-1.0	-2.6
Electricity	0.1	-0.3	0.6	-0.1	-0.3	0.0	-0.1	0.0	-0.1
Construction	0.5	-0.1	0.9	0.0	0.1	0.0	0.0	0.1	0.1
Trade services	1.7	0.1	0.7	0.0	-0.2	0.0	-0.1	0.1	0.4
Other transport	0.4	0.4	0.7	0.1	0.0	0.0	0.1	0.2	0.0
Water transport	0.2	0.3	1.4	0.8	0.1	0.2	0.2	1.3	0.9
Air transport	0.0	0.9	0.7	0.2	0.1	-0.1	0.2	0.5	0.2
Hospitality services	0.5	0.7	0.7	0.1	0.1	0.0	0.0	0.2	0.2
Other business services	0.1	0.3	0.4	0.1	0.1	0.0	0.1	0.2	-0.1
Other services	0.3	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.2
Agriculture	0.3	0.8	0.0	0.4	0.4	0.6	0.6	0.4	-0.8
Manufacturing	-0.4	-0.8	-1.6	-0.3	-0.6	-0.2	-0.2	-0.7	-0.1
Services	0.4	0.3	0.5	0.1	0.0	0.0	0.0	0.1	0.1
Other	-0.6	-0.2	1.3	-0.2	0.0	-0.1	0.4	0.0	-1.4
Total	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0

Table 6b: Change in real value added in 2030,
difference from baseline in \$2014 billion

	World	BRI area	China	East Asia	India	Rest of South Asia	Poland	EU ECA	Russia	Rest of Eastern Europe
Agriculture	2.2	-2.6	-3.7	-1.0	0.8	0.4	0.1	0.1	0.1	0.1
Minerals n.e.s.	-3.7	-1.7	-1.4	-0.3	-0.1	0.0	0.0	0.0	0.0	0.0
Coal	-0.2	-0.9	-2.3	2.3	-1.0	0.0	0.0	0.0	0.1	0.0
Oil	1.1	4.0	-9.0	-9.4	-1.1	0.0	0.0	0.0	1.0	0.0
Gas	-5.5	-4.7	0.0	-3.8	-0.3	0.0	0.0	0.0	0.1	0.0
Textiles	-3.1	-2.0	-0.6	-0.1	-0.1	0.0	0.0	-0.1	0.0	0.0
Wearing apparel	-0.9	0.0	0.5	0.6	-0.2	0.1	0.0	-0.1	-0.1	0.0
Leather goods	-0.8	-0.3	-0.3	0.5	-0.1	0.0	0.0	-0.1	0.0	0.0
Processed foods	5.6	4.2	1.7	-0.2	0.6	0.4	0.1	0.1	0.2	0.0
Wood products	-0.4	-0.4	-0.2	0.3	-0.1	-0.1	0.0	0.0	0.0	0.0
Paper products, publishing	0.2	-0.1	0.7	-0.4	-0.1	-0.1	0.0	0.0	0.1	0.0
Petroleum, coal products	2.8	2.4	1.5	0.3	0.9	0.0	0.0	0.0	0.0	0.0
Chemical, rubber, plastic	-15.1	-13.4	-9.4	-2.6	-0.6	-0.3	-0.1	-0.1	0.0	0.0
Energy intensive manu.	-6.9	-4.6	2.7	-1.4	-1.6	-0.1	0.0	0.0	-0.3	0.0
Metal products	-2.9	-0.5	1.9	-0.1	0.1	-0.1	-0.1	-0.2	-0.1	0.0
Electronics	-14.9	-1.3	3.5	2.4	-0.7	-0.2	-0.3	-1.3	-0.2	-0.1
Machinery and equipment	-4.6	0.2	5.1	2.9	0.0	-0.5	-0.2	-0.6	-0.8	-0.1
Transport equipment	3.8	1.8	0.9	2.5	0.3	-0.2	0.0	0.4	-0.1	0.0
Manufactures, n.e.s.	-3.7	-0.8	-4.2	3.5	0.7	0.0	-0.1	-0.1	-0.3	0.0
Electricity	-0.7	-0.3	-0.9	0.6	-0.3	0.0	0.0	0.1	0.0	0.0
Construction	25.7	24.5	13.3	2.7	1.2	-0.1	0.1	0.1	0.7	0.0
Trade services	33.3	30.0	8.7	7.9	5.5	0.1	0.0	0.1	2.4	0.1
Other transport	8.0	6.9	1.7	0.8	1.9	-0.1	0.1	0.3	0.3	0.0
Water transport	2.4	0.9	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.0
Air transport	0.7	0.3	-0.2	0.2	0.0	0.1	0.0	0.0	0.1	0.0
Hospitality services	8.5	6.8	4.2	1.1	0.0	0.3	0.0	0.2	0.1	0.0
Other business services	28.2	18.8	16.2	-2.2	-0.1	-0.3	0.3	1.0	0.5	0.0
Other services	39.0	30.7	18.7	5.5	3.1	0.3	0.0	0.2	0.1	0.0
Agriculture	2.2	-2.6	-3.7	-1.0	0.8	0.4	0.1	0.1	0.1	0.1
Manufacturing	-41.0	-14.8	3.6	8.4	-0.9	-1.0	-0.6	-1.8	-1.8	-0.3
Services	145.2	118.5	61.7	16.8	11.3	0.3	0.6	2.1	4.0	0.2
Other	-9.0	-3.7	-13.6	-10.7	-2.8	-0.1	0.1	0.1	1.2	0.0
Total	98.1	97.8	49.0	13.0	8.7	-0.4	0.2	0.5	3.5	0.0

Table 6b: Change in real value added in 2030,
difference from baseline in \$2014 billion, ctd.

	Central Asia	Turkey	Middle East & North Africa	Non- BRI area	Sub- Saharan Africa	Latin America & Car.	United States	Rest of Western Europe	Rest of High- income
Agriculture	0.1	0.3	0.0	4.8	2.1	1.8	1.1	0.9	-1.1
Minerals n.e.s.	0.0	0.0	0.0	-2.0	0.1	0.0	0.0	0.1	-2.2
Coal	0.0	0.0	0.0	0.7	0.3	0.1	0.5	0.0	-0.2
Oil	-2.2	0.0	24.8	-2.9	-0.2	-0.3	1.4	-0.1	-3.7
Gas	1.2	0.0	-1.8	-0.8	-0.1	0.0	0.0	0.0	-0.7
Textiles	0.0	-0.2	-0.8	-1.1	-0.1	0.0	0.0	-0.7	-0.3
Wearing apparel	0.0	-0.1	-0.7	-0.9	-0.1	-0.1	0.0	-0.5	-0.3
Leather goods	0.0	0.0	-0.2	-0.4	0.0	-0.1	0.0	-0.3	0.0
Processed foods	0.6	0.2	0.3	1.4	0.1	0.6	0.8	1.0	-1.2
Wood products	0.0	0.0	-0.4	-0.1	0.0	0.1	0.3	-0.1	-0.3
Paper products, publishing	0.0	0.0	-0.2	0.3	0.0	0.2	0.9	0.0	-0.9
Petroleum, coal products	0.0	0.0	-0.3	0.4	0.0	-0.1	-0.1	0.0	0.7
Chemical, rubber, plastic	-0.1	-0.2	0.0	-1.7	-0.4	-0.2	-0.7	-2.4	2.1
Energy intensive manu.	0.0	-0.2	-3.7	-2.3	-0.5	-0.4	-0.1	0.9	-2.2
Metal products	-0.1	-0.1	-1.7	-2.4	-0.1	0.0	-0.1	-1.6	-0.5
Electronics	-0.6	-0.4	-3.3	-13.7	-0.4	-1.9	-3.4	-10.1	2.1
Machinery and equipment	-0.1	-0.5	-5.0	-4.8	-0.4	-0.4	-1.3	-3.7	1.1
Transport equipment	-0.1	0.0	-2.0	2.0	-0.3	0.0	0.3	2.3	-0.3
Manufactures, n.e.s.	0.0	0.0	-0.4	-2.9	-0.1	0.0	-0.4	-1.2	-1.2
Electricity	0.0	0.0	0.2	-0.4	-0.1	-0.1	-0.1	0.1	-0.2
Construction	0.5	0.0	6.1	1.2	0.1	-0.1	0.1	0.5	0.6
Trade services	1.4	0.1	3.8	3.3	-0.8	-0.4	-2.9	2.3	5.1
Other transport	0.5	0.3	1.1	1.2	0.0	-0.1	0.5	0.9	-0.2
Water transport	0.0	0.1	0.2	1.5	0.0	0.0	0.1	1.0	0.4
Air transport	0.0	0.0	0.1	0.5	0.0	0.0	0.2	0.2	0.1
Hospitality services	0.1	0.3	0.6	1.7	0.1	0.0	0.0	0.9	0.6
Other business services	0.3	0.6	2.5	9.4	0.3	0.3	2.7	7.4	-1.4
Other services	0.3	0.0	2.4	8.3	0.2	-0.1	0.1	2.2	5.9
Agriculture	0.1	0.3	0.0	4.8	2.1	1.8	1.1	0.9	-1.1
Manufacturing	-0.5	-1.5	-18.4	-26.2	-2.4	-2.4	-3.9	-16.4	-1.2
Services	3.1	1.4	17.0	26.7	-0.2	-0.3	0.7	15.6	11.0
Other	-1.1	0.0	23.4	-5.4	0.0	-0.3	1.8	0.2	-7.0
Total	1.7	0.2	21.7	0.3	-0.4	-1.2	-0.2	0.2	1.9

Table 7a: Change in the volume of exports in 2030, percent change from baseline

	World	BRI area	China	East Asia	India	Rest of South Asia	Poland	EU ECA	Russia	Rest of Eastern Europe
Agriculture	2.0	4.1	8.1	4.3	4.3	11.2	1.1	1.2	4.8	1.6
Minerals n.e.s.	-0.1	0.8	1.6	0.7	2.4	2.2	1.4	0.9	0.7	0.8
Coal	3.8	4.8	40.7	3.6	-6.2	55.2	3.3	1.9	14.7	2.5
Oil	0.9	1.2	19.7	-9.6	-15.4	36.6	3.7	2.7	0.6	-0.4
Gas	0.6	1.4	21.3	-4.3	-2.0	7.7	1.2	0.0	0.9	-1.1
Textiles	2.5	4.3	5.5	5.2	1.9	6.6	-1.9	-2.1	0.7	-2.8
Wearing apparel	0.4	1.0	0.9	5.5	-2.2	1.3	-2.2	-2.4	-0.1	-2.6
Leather goods	0.5	1.5	0.0	6.2	1.7	6.7	-2.7	-3.3	-1.9	-4.7
Processed foods	1.2	2.7	4.7	1.1	4.2	11.7	1.3	0.7	1.2	2.6
Wood products	2.1	4.2	9.4	3.6	0.5	17.7	0.8	0.9	4.9	-0.7
Paper products, publishing	1.3	2.5	7.6	-1.9	-1.2	2.9	0.8	0.7	5.8	1.8
Petroleum, coal products	1.3	2.5	19.4	1.7	5.6	16.7	1.0	0.9	0.1	1.2
Chemical, rubber, plastic	1.7	3.6	8.0	0.9	8.9	6.8	-0.3	-0.3	0.6	0.2
Energy intensive manu.	1.1	2.2	6.0	-0.7	3.7	8.4	0.4	-0.1	0.5	-0.7
Metal products	2.4	5.5	7.1	6.9	9.2	12.8	-1.3	-1.1	0.1	-0.6
Electronics	3.2	6.9	9.7	4.1	14.5	-0.9	-8.1	-6.6	-7.9	-11.6
Machinery and equipment	2.7	6.1	7.6	7.1	13.3	-2.1	-1.2	-1.1	-2.4	-2.5
Transport equipment	1.5	4.1	5.8	8.8	3.2	-3.7	0.2	1.4	-0.8	-0.8
Manufactures, n.e.s.	2.7	5.9	3.2	18.9	5.2	7.9	-1.2	-1.3	0.9	-2.6
Electricity	0.1	0.2	-0.2	0.6	-1.4	0.4	0.2	0.3	0.3	0.0
Construction	1.7	1.7	3.2	-0.9	1.9	4.8	1.5	2.0	2.1	1.5
Trade services	2.1	1.7	3.4	-1.2	6.0	4.8	1.6	2.1	1.7	1.0
Other transport	1.5	2.4	3.7	1.5	5.4	4.6	1.5	1.5	1.5	1.1
Water transport	0.8	1.2	5.2	1.7	1.8	0.1	1.2	1.1	1.3	1.4
Air transport	1.2	2.5	5.3	2.4	3.1	5.3	1.2	1.4	1.2	1.1
Hospitality services	1.6	2.4	2.6	0.1	2.9	6.9	1.8	2.3	2.2	0.9
Other business services	0.9	0.4	3.5	-3.9	1.0	1.4	2.0	2.1	1.9	0.8
Other services	0.6	-0.5	-0.9	-1.3	-1.5	-0.4	0.8	0.7	0.4	0.2
Agriculture	2.0	4.1	8.1	4.3	4.3	11.2	1.1	1.2	4.8	1.6
Manufacturing	1.9	4.5	7.3	4.3	5.7	3.7	-0.8	-0.9	0.4	-0.4
Services	1.2	1.2	3.2	-1.1	2.0	1.8	1.7	1.7	1.6	0.9
Other	1.2	1.8	27.0	1.2	1.7	9.4	2.4	0.9	1.0	1.7
Total	1.7	3.5	7.3	3.0	4.7	3.6	-0.4	-0.5	0.8	0.1

Table 7a: Change in the volume of exports in 2030,
percent change from baseline, ctd.

	Central Asia	Turkey	Middle East & North Africa	Non- BRI area	Sub- Saharan Africa	Latin America & Car.	United States	Rest of Western Europe	Rest of High- income
Agriculture	15.6	2.6	-0.2	1.5	2.1	1.7	1.7	1.1	-1.0
Minerals n.e.s.	-0.2	1.5	0.0	-0.4	0.3	0.1	0.4	0.2	-1.4
Coal	-3.2	9.2	17.6	2.4	6.3	1.8	5.7	1.5	-0.6
Oil	-2.3	1.8	2.3	-0.3	-0.2	-0.1	-19.1	-0.2	-1.1
Gas	13.3	3.0	-0.5	-0.9	-0.6	-0.1	-0.6	0.0	-2.7
Textiles	-0.9	-1.5	-4.8	-1.6	-3.2	-0.4	-1.0	-2.7	-0.8
Wearing apparel	-1.9	-1.4	-5.3	-2.0	-2.8	-1.4	-1.4	-2.3	0.0
Leather goods	1.9	-1.9	-8.1	-1.4	-1.8	-1.8	-2.9	-1.6	3.6
Processed foods	66.9	1.9	-0.7	0.5	0.1	0.9	1.8	0.9	-2.8
Wood products	1.9	0.3	-5.0	0.1	0.4	1.2	2.8	-0.2	-5.2
Paper products, publishing	8.0	0.6	-3.5	0.7	2.4	1.7	2.7	0.5	-3.3
Petroleum, coal products	1.2	2.2	-0.9	-0.1	-2.5	-2.7	-1.6	-0.9	4.5
Chemical, rubber, plastic	2.6	0.7	1.4	0.5	-2.2	-0.8	-0.8	-0.5	4.4
Energy intensive manu.	5.9	0.2	-2.4	0.3	-0.8	-0.7	-0.3	1.4	-0.3
Metal products	10.5	-1.6	-6.1	-0.5	-3.1	-0.2	0.3	-1.5	1.3
Electronics	-9.4	-9.7	-8.9	-2.4	-11.7	-6.5	-12.0	-8.2	4.6
Machinery and equipment	19.9	-2.8	-8.5	0.0	-3.9	-1.2	-1.4	-0.5	3.8
Transport equipment	23.3	1.4	-2.3	0.7	-1.5	0.0	-0.3	1.5	0.7
Manufactures, n.e.s.	5.4	2.0	-2.2	-1.8	-2.2	-1.2	-2.2	-1.4	-3.4
Electricity	-0.2	0.4	0.3	0.0	-0.1	0.4	1.0	0.1	-0.9
Construction	12.6	1.4	2.4	1.7	0.8	0.5	2.1	1.4	2.3
Trade services	12.3	2.7	2.0	2.3	1.2	0.8	2.6	2.0	3.2
Other transport	6.2	2.8	0.7	0.7	0.8	0.3	1.5	0.6	0.3
Water transport	6.8	1.8	1.7	0.6	0.1	-0.8	1.2	0.8	1.0
Air transport	6.5	2.6	1.2	0.8	0.9	-0.4	0.5	0.9	1.2
Hospitality services	7.3	3.4	1.4	1.3	1.3	1.2	2.6	1.0	-1.3
Other business services	9.4	2.9	0.6	1.2	1.0	0.9	2.3	1.2	-1.1
Other services	-0.1	0.4	0.0	0.9	0.6	0.9	1.7	0.4	-0.4
Agriculture	15.6	2.6	-0.2	1.5	2.1	1.7	1.7	1.1	-1.0
Manufacturing	8.4	-0.2	-1.0	-0.1	-1.3	-1.0	-1.7	-0.4	2.6
Services	7.9	2.6	0.9	1.2	0.9	0.6	2.0	1.2	0.6
Other	1.6	1.5	1.8	0.2	1.2	0.2	3.3	0.0	-1.3
Total	2.9	0.7	0.9	0.2	0.6	-0.3	-0.6	0.0	1.7

Table 7b: Change in the volume of exports in 2030,
difference from baseline in \$2014 billion

	World	BRI area	China	East Asia	India	Rest of South Asia	Poland	EU ECA	Russia	Rest of Eastern Europe
Agriculture	20.6	7.9	1.3	2.0	0.7	1.7	0.1	0.2	0.3	0.3
Minerals n.e.s.	-0.9	1.1	0.1	0.3	0.3	0.0	0.0	0.0	0.1	0.1
Coal	40.6	29.4	8.7	18.9	-0.1	0.1	0.1	0.1	2.0	0.3
Oil	28.2	30.2	0.2	-5.4	0.0	0.1	0.0	0.0	2.1	0.0
Gas	5.7	9.0	1.0	-4.8	0.0	0.1	0.0	0.0	1.4	0.0
Textiles	12.7	15.3	8.3	2.1	1.1	4.7	-0.1	-0.2	0.0	-0.1
Wearing apparel	3.2	6.1	2.3	4.4	-1.3	1.8	-0.1	-0.2	0.0	-0.1
Leather goods	1.7	3.3	0.0	3.2	0.3	0.2	0.0	-0.2	0.0	-0.1
Processed foods	19.5	13.8	2.9	2.3	2.9	0.7	0.4	0.3	0.3	0.5
Wood products	4.5	4.3	2.6	1.3	0.0	0.1	0.0	0.1	0.2	0.0
Paper products, publishing	6.0	3.6	3.9	-0.7	-0.1	0.0	0.1	0.1	0.5	0.1
Petroleum, coal products	23.7	24.7	17.0	2.4	6.7	0.3	0.1	0.3	0.2	0.4
Chemical, rubber, plastic	65.5	52.9	31.2	3.6	13.1	0.5	-0.1	-0.3	0.6	0.0
Energy intensive manu.	25.7	20.3	19.3	-0.9	3.0	0.4	0.1	0.0	0.4	-0.3
Metal products	15.9	17.6	13.8	2.3	2.5	0.1	-0.2	-0.3	0.0	0.0
Electronics	125.0	162.0	142.9	27.9	3.1	0.0	-2.0	-6.9	-0.3	-0.4
Machinery and equipment	98.2	98.1	72.1	20.5	11.6	0.0	-0.6	-1.4	-0.1	-0.4
Transport equipment	49.1	31.7	12.7	13.0	3.7	0.0	0.1	2.2	-0.1	-0.1
Manufactures, n.e.s.	27.9	35.5	9.5	20.5	5.9	0.4	-0.2	-0.3	0.0	-0.1
Electricity	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Construction	3.6	1.3	0.5	-0.1	0.1	0.0	0.1	0.1	0.2	0.0
Trade services	14.0	3.8	1.9	-1.0	0.9	0.1	0.1	0.3	0.2	0.0
Other transport	9.2	6.7	1.2	1.2	2.5	0.1	0.1	0.4	0.2	0.1
Water transport	1.8	0.9	0.1	0.4	0.1	0.0	0.0	0.0	0.0	0.0
Air transport	6.4	3.2	0.6	1.3	0.2	0.3	0.0	0.2	0.1	0.0
Hospitality services	4.9	2.1	0.3	0.0	0.1	0.7	0.0	0.3	0.0	0.0
Other business services	22.6	2.5	2.6	-6.6	2.1	0.3	0.4	1.1	0.3	0.0
Other services	2.7	-0.4	-0.1	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0
Agriculture	20.6	7.9	1.3	2.0	0.7	1.7	0.1	0.2	0.3	0.3
Manufacturing	478.4	489.4	338.6	102.0	52.5	9.1	-2.4	-6.8	1.5	-0.7
Services	65.3	20.3	7.1	-5.1	5.8	1.4	0.7	2.4	1.0	0.2
Other	73.6	69.8	10.0	8.9	0.2	0.3	0.1	0.1	5.6	0.4
Total	637.9	587.3	357.1	107.8	59.2	12.5	-1.5	-4.1	8.5	0.3

Table 7b: Change in the volume of exports in 2030,
difference from baseline in \$2014 billion, ctd.

	Central Asia	Turkey	Middle East & North Africa	Non- BRI area	Sub- Saharan Africa	Latin America & Car.	United States	Rest of Western Europe	Rest of High- income
Agriculture	0.3	1.0	0.0	12.7	6.6	3.5	1.9	1.5	-0.7
Minerals n.e.s.	0.0	0.1	0.0	-2.0	0.3	0.1	0.1	0.2	-2.6
Coal	-0.6	0.0	0.0	11.1	5.7	1.1	5.5	0.0	-1.2
Oil	-6.0	0.0	39.2	-2.0	-0.5	-0.3	-0.1	-0.2	-0.9
Gas	12.9	0.0	-1.5	-3.3	-0.2	0.0	-0.2	0.0	-2.8
Textiles	0.0	-0.3	-0.3	-2.6	-0.2	0.0	-0.3	-1.7	-0.4
Wearing apparel	0.0	-0.3	-0.4	-2.9	-0.3	-0.5	-0.1	-2.0	0.0
Leather goods	0.0	0.0	-0.1	-1.6	-0.1	-0.4	-0.2	-1.2	0.3
Processed foods	3.2	0.5	-0.2	5.7	0.1	2.3	2.5	4.4	-3.6
Wood products	0.0	0.0	0.0	0.2	0.1	0.2	0.6	-0.1	-0.7
Paper products, publishing	0.0	0.0	-0.2	2.3	0.3	0.6	2.1	0.7	-1.4
Petroleum, coal products	0.3	0.2	-3.1	-1.0	-0.5	-3.2	-3.5	-2.9	9.1
Chemical, rubber, plastic	0.2	0.2	4.0	12.6	-0.9	-0.9	-3.5	-6.6	24.5
Energy intensive manu.	1.3	0.1	-3.0	5.3	-1.1	-1.3	-0.6	9.3	-1.0
Metal products	0.0	-0.2	-0.5	-1.7	-0.2	0.0	0.2	-2.5	0.8
Electronics	-0.2	-0.5	-1.6	-37.0	-0.5	-7.8	-32.1	-31.9	35.4
Machinery and equipment	0.3	-0.9	-3.0	0.0	-1.1	-2.1	-8.2	-4.8	16.3
Transport equipment	0.2	0.5	-0.5	17.3	-0.4	-0.1	-1.7	15.8	3.7
Manufactures, n.e.s.	0.0	0.2	-0.5	-7.6	-0.4	-0.6	-3.0	-2.4	-1.2
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
Construction	0.1	0.1	0.2	2.3	0.0	0.0	0.4	1.1	0.7
Trade services	0.7	0.2	0.4	10.3	0.2	0.2	1.0	4.8	4.0
Other transport	0.1	0.5	0.4	2.4	0.1	0.1	1.1	1.0	0.1
Water transport	0.0	0.0	0.1	0.9	0.0	-0.2	0.0	0.8	0.2
Air transport	0.1	0.3	0.2	3.2	0.1	-0.1	0.3	2.2	0.7
Hospitality services	0.0	0.5	0.1	2.8	0.2	0.2	1.7	0.9	-0.3
Other business services	1.4	0.5	0.6	20.0	0.3	0.9	8.4	12.5	-2.1
Other services	0.0	0.0	0.0	3.2	0.1	0.2	2.5	0.5	-0.2
Agriculture	0.3	1.0	0.0	12.7	6.6	3.5	1.9	1.5	-0.7
Manufacturing	5.4	-0.6	-9.4	-10.9	-5.3	-13.9	-47.8	-25.9	81.9
Services	2.5	2.1	2.0	45.0	1.1	1.5	15.5	23.9	3.0
Other	6.2	0.1	37.7	3.8	5.3	1.0	5.2	0.0	-7.6
Total	14.4	2.7	30.3	50.6	7.7	-8.0	-25.1	-0.6	76.7

Table 8a: Change in the volume of imports in 2030, percent change from baseline

	World	BRI area	China	East Asia	India	Rest of South Asia	Poland	EU ECA	Russia	Rest of Eastern Europe
Agriculture	2.9	4.9	6.0	7.2	11.5	8.5	-0.1	0.0	1.1	0.8
Minerals n.e.s.	1.2	1.7	2.2	1.7	0.4	1.3	-0.3	-0.2	-0.2	-0.1
Coal	5.2	9.6	17.8	2.8	3.4	-0.4	-1.6	-0.2	1.8	2.5
Oil	2.9	6.4	9.5	7.0	3.7	0.9	0.4	0.7	-0.1	0.9
Gas	2.6	6.3	0.0	13.1	2.1	6.6	-1.5	0.5	-0.6	0.1
Textiles	5.2	9.6	22.7	7.2	24.5	12.6	-0.5	-0.1	1.2	-0.1
Wearing apparel	2.1	5.5	23.5	6.7	24.2	15.8	0.1	0.3	1.7	1.1
Leather goods	2.4	6.5	14.5	7.4	23.0	18.6	-0.2	0.3	1.5	0.2
Processed foods	2.2	5.0	8.2	7.3	8.0	5.7	0.0	0.1	1.5	1.4
Wood products	3.2	7.1	11.4	12.0	22.8	23.6	-0.6	0.0	3.4	0.8
Paper products, publishing	2.0	4.1	6.9	3.9	10.4	5.0	-0.1	-0.1	2.5	1.1
Petroleum, coal products	2.5	4.3	8.6	4.2	5.9	3.5	0.2	0.5	3.3	1.0
Chemical, rubber, plastic	3.2	7.0	13.0	4.9	12.2	7.5	-0.2	-0.1	1.5	0.7
Energy intensive manu.	2.6	4.8	9.1	4.6	9.3	3.5	-0.6	-0.3	1.7	-0.4
Metal products	4.1	7.7	16.7	9.0	28.8	16.8	0.7	0.4	2.3	0.2
Electronics	6.0	9.9	14.5	6.1	17.4	15.2	-1.0	-2.4	2.3	3.1
Machinery and equipment	4.4	8.2	16.5	5.7	26.4	11.5	-0.1	0.3	2.9	1.0
Transport equipment	2.5	5.3	9.4	6.0	17.1	1.5	0.0	0.7	1.5	1.4
Manufactures, n.e.s.	4.8	11.6	29.2	11.1	26.6	15.6	1.5	0.6	3.3	2.7
Electricity	0.9	2.2	4.2	5.7	5.7	-0.2	-0.2	0.1	1.1	0.6
Construction	3.2	4.3	10.1	6.6	10.5	7.0	-0.1	0.7	1.8	1.1
Trade services	4.1	8.5	11.5	6.6	12.9	8.5	0.0	0.3	1.7	1.6
Other transport	2.8	5.9	11.1	5.1	10.1	7.4	0.2	0.6	2.1	1.9
Water transport	2.0	4.0	10.4	5.2	3.3	6.6	0.7	0.5	1.7	1.2
Air transport	2.2	4.8	7.3	6.2	6.8	6.0	0.2	0.4	1.9	1.1
Hospitality services	2.6	5.2	9.0	6.5	8.4	7.7	0.1	0.6	1.9	1.4
Other business services	2.0	5.3	11.0	5.8	7.4	5.1	-0.5	0.1	1.4	1.2
Other services	1.3	2.8	5.4	5.1	8.2	3.9	-0.3	0.0	0.8	0.9
Agriculture	2.9	4.9	6.0	7.2	11.5	8.5	-0.1	0.0	1.1	0.8
Manufacturing	3.6	7.1	13.3	5.8	14.3	7.5	-0.2	-0.1	2.2	0.9
Services	2.4	5.4	10.4	5.9	7.9	5.8	-0.2	0.3	1.6	1.3
Other	3.1	6.2	8.9	6.6	3.1	0.6	-0.4	0.4	1.1	0.5
Total	3.3	6.7	11.6	5.9	8.5	7.0	-0.2	0.0	2.0	0.8

Table 8a: Change in the volume of imports in 2030,
percent change from baseline, ctd.

	Central Asia	Turkey	Middle East & North Africa	Non- BRI area	Sub- Saharan Africa	Latin America & Car.	United States	Rest of Western Europe	Rest of High- income
Agriculture	5.5	0.3	1.1	0.2	0.1	-0.2	-0.5	0.1	1.2
Minerals n.e.s.	2.5	-0.3	0.2	-0.2	-0.4	-0.2	-0.6	0.1	-0.4
Coal	5.2	0.9	0.4	0.0	-1.1	-0.1	-2.6	-0.4	0.3
Oil	7.8	-0.1	2.9	0.4	-1.7	-1.1	-1.1	-0.3	3.9
Gas	10.7	-0.4	26.6	0.6	-0.1	0.2	0.8	0.0	1.5
Textiles	2.5	4.5	3.2	0.6	0.9	-0.4	0.0	0.5	2.6
Wearing apparel	1.8	2.8	4.1	1.0	1.1	-0.7	0.3	0.6	3.7
Leather goods	1.8	3.5	3.7	0.5	0.7	-0.7	-1.0	0.8	2.4
Processed foods	19.2	2.1	1.9	0.6	0.7	-0.2	-1.3	0.4	2.5
Wood products	3.9	1.5	3.1	0.2	0.1	-0.6	-3.1	0.3	1.9
Paper products, publishing	4.5	1.9	1.8	0.6	0.3	-0.1	-2.2	0.4	3.5
Petroleum, coal products	5.6	1.9	2.6	1.3	1.1	-0.1	1.0	0.7	4.0
Chemical, rubber, plastic	3.3	1.6	2.8	0.5	0.6	-0.2	-0.6	0.1	3.2
Energy intensive manu.	4.7	-0.1	1.0	0.5	0.1	-0.6	-0.9	0.2	2.8
Metal products	3.4	4.8	5.9	1.5	1.2	-0.5	-2.0	1.8	4.5
Electronics	7.4	6.3	7.6	2.3	3.1	0.0	-0.9	1.1	6.3
Machinery and equipment	3.8	3.3	4.1	1.3	1.2	-0.2	-1.5	1.4	3.9
Transport equipment	3.5	1.8	3.0	0.7	0.9	-0.2	-0.9	0.9	2.9
Manufactures, n.e.s.	4.3	4.6	1.2	1.4	0.5	-1.3	-1.1	1.5	4.8
Electricity	4.5	0.3	1.2	0.3	-0.1	0.5	-0.6	0.2	4.1
Construction	5.8	2.1	2.8	1.8	0.1	-0.6	-0.8	1.0	4.7
Trade services	11.1	2.5	3.2	0.9	0.0	-0.9	-1.1	0.4	4.0
Other transport	9.9	2.5	3.2	1.2	0.3	-0.6	-0.5	1.1	4.0
Water transport	8.6	4.1	1.7	1.2	-0.2	-0.2	0.1	0.7	3.1
Air transport	6.9	2.4	2.7	1.0	0.2	-0.1	-0.1	0.8	3.1
Hospitality services	11.4	2.7	2.5	1.2	0.4	-0.4	-1.1	0.8	3.6
Other business services	8.3	1.9	2.0	0.5	-0.1	-0.9	-0.9	0.2	3.9
Other services	5.7	1.0	1.3	0.3	0.0	-0.3	-1.0	0.2	2.6
Agriculture	5.5	0.3	1.1	0.2	0.1	-0.2	-0.5	0.1	1.2
Manufacturing	5.1	2.2	3.2	1.1	1.0	-0.2	-0.8	0.7	4.0
Services	7.4	2.1	2.2	0.8	0.0	-0.6	-0.8	0.4	3.7
Other	8.5	0.0	10.0	0.4	-1.2	-0.4	-0.9	-0.2	2.1
Total	5.7	1.7	3.4	0.9	0.6	-0.3	-0.8	0.6	3.5

Table 8b: Change in the volume of imports in 2030,
difference from baseline in \$2014 billion

	World	BRI area	China	East Asia	India	Rest of South Asia	Poland	EU ECA	Russia	Rest of Eastern Europe
Agriculture	29.6	28.8	14.7	6.3	4.2	1.4	0.0	0.0	0.3	0.0
Minerals n.e.s.	8.2	8.6	7.9	0.3	0.3	0.0	0.0	0.0	0.0	0.0
Coal	55.7	55.7	48.3	1.7	4.8	0.0	-0.1	0.0	0.5	0.2
Oil	90.6	82.7	54.1	14.4	11.6	0.1	0.1	0.4	0.0	0.3
Gas	26.3	22.2	0.0	4.8	0.7	0.0	-0.2	0.2	-0.1	0.0
Textiles	27.1	25.4	12.4	5.1	2.0	3.8	0.0	0.0	0.1	0.0
Wearing apparel	16.0	10.0	3.5	2.2	0.5	0.7	0.0	0.1	0.5	0.0
Leather goods	8.1	7.0	2.9	1.6	0.7	0.5	0.0	0.0	0.2	0.0
Processed foods	35.0	29.4	8.8	9.5	2.2	1.6	0.0	0.1	0.5	0.2
Wood products	6.9	6.7	3.7	1.3	0.3	0.1	0.0	0.0	0.2	0.0
Paper products, publishing	9.5	7.9	4.0	1.5	0.9	0.3	0.0	0.0	0.2	0.0
Petroleum, coal products	46.6	31.8	11.5	10.0	2.3	1.7	0.0	0.1	0.5	0.2
Chemical, rubber, plastic	124.3	111.9	70.2	15.9	13.7	3.0	-0.1	-0.1	1.0	0.2
Energy intensive manu.	64.7	58.0	29.9	11.2	12.5	0.5	-0.2	-0.2	0.5	0.0
Metal products	26.8	21.1	6.6	5.9	2.6	0.5	0.1	0.1	0.6	0.0
Electronics	231.7	186.2	124.2	30.6	13.7	1.6	-0.3	-2.3	1.5	0.2
Machinery and equipment	164.0	136.9	77.4	22.2	14.8	2.4	-0.1	0.4	4.9	0.2
Transport equipment	82.3	67.3	36.3	13.6	3.6	0.3	0.0	0.7	1.5	0.1
Manufactures, n.e.s.	48.8	39.5	25.6	6.8	3.3	0.7	0.1	0.1	0.9	0.1
Electricity	0.6	0.5	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Construction	6.9	5.3	1.5	0.9	0.2	0.0	0.0	0.0	0.5	0.0
Trade services	27.5	23.9	16.1	3.6	2.3	0.1	0.0	0.0	0.1	0.0
Other transport	17.7	12.8	6.5	2.2	1.1	0.2	0.0	0.1	0.4	0.1
Water transport	4.3	2.5	0.5	1.0	0.4	0.1	0.0	0.0	0.1	0.0
Air transport	11.6	7.8	2.2	2.5	1.3	0.2	0.0	0.0	0.2	0.0
Hospitality services	8.0	5.7	2.3	1.5	0.5	0.0	0.0	0.0	0.2	0.0
Other business services	48.8	40.5	15.4	10.6	8.4	0.4	-0.1	0.1	0.8	0.1
Other services	5.8	5.0	1.5	1.2	0.7	0.1	0.0	0.0	0.1	0.0
Agriculture	29.6	28.8	14.7	6.3	4.2	1.4	0.0	0.0	0.3	0.0
Manufacturing	891.6	739.1	417.0	137.5	73.3	17.6	-0.5	-0.9	13.1	1.2
Services	131.2	103.8	46.0	23.7	15.0	1.2	-0.1	0.3	2.4	0.4
Other	181.5	169.6	110.4	21.4	17.5	0.1	-0.2	0.5	0.5	0.5
Total	1233.3	1040.9	588.1	188.8	109.9	20.3	-0.8	-0.2	16.3	2.1

Table 8b: Change in the volume of imports in 2030,
difference from baseline in \$2014 billion, ctd.

	Central Asia	Turkey	Middle East & North Africa	Non- BRI area	Sub- Saharan Africa	Latin America & Car.	United States	Rest of Western Europe	Rest of High- income
Agriculture	0.5	0.0	1.4	0.8	0.0	-0.1	-0.4	0.2	1.0
Minerals n.e.s.	0.1	0.0	0.1	-0.3	-0.1	0.0	-0.1	0.1	-0.3
Coal	0.1	0.2	0.1	0.0	-0.1	0.0	-0.2	-0.6	0.9
Oil	0.1	0.0	1.4	7.9	-0.9	-0.8	-7.1	-1.9	18.6
Gas	1.6	-0.2	15.3	4.1	0.0	0.1	0.8	0.1	3.1
Textiles	0.2	0.6	1.3	1.7	0.2	-0.2	0.0	0.5	1.1
Wearing apparel	0.3	0.2	2.1	6.0	0.2	-0.2	0.4	1.6	4.0
Leather goods	0.1	0.1	0.7	1.2	0.1	-0.1	-0.6	0.8	0.9
Processed foods	3.4	0.2	3.0	5.6	0.5	-0.2	-1.8	1.7	5.4
Wood products	0.2	0.0	0.8	0.2	0.0	0.0	-0.5	0.2	0.6
Paper products, publishing	0.2	0.1	0.6	1.6	0.1	0.0	-0.7	0.6	1.7
Petroleum, coal products	0.9	0.6	4.0	14.8	1.4	-0.1	1.7	3.3	8.6
Chemical, rubber, plastic	1.0	1.0	6.2	12.3	0.8	-0.6	-2.4	1.5	13.0
Energy intensive manu.	1.3	0.0	2.7	6.7	0.1	-0.6	-1.7	0.9	8.0
Metal products	0.4	0.3	4.0	5.6	0.3	-0.3	-1.0	3.1	3.5
Electronics	1.3	1.4	14.3	45.4	1.5	-0.1	-4.2	6.9	41.4
Machinery and equipment	1.8	1.0	11.8	27.0	1.3	-0.4	-4.7	11.6	19.2
Transport equipment	1.2	0.7	9.3	15.0	1.1	-0.4	-3.9	7.4	10.8
Manufactures, n.e.s.	0.3	0.3	1.3	9.3	0.1	-0.7	-1.8	4.6	7.1
Electricity	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.1
Construction	1.1	0.0	1.1	1.6	0.0	0.0	0.0	0.5	1.1
Trade services	0.2	0.0	1.3	3.6	0.0	-0.2	-0.4	0.8	3.5
Other transport	0.6	0.1	1.5	4.9	0.1	-0.2	-0.4	2.4	3.0
Water transport	0.1	0.0	0.3	1.9	0.0	0.0	0.0	0.7	1.2
Air transport	0.3	0.1	0.9	3.9	0.0	0.0	-0.1	1.3	2.6
Hospitality services	0.2	0.0	0.7	2.3	0.0	-0.1	-0.2	0.8	1.7
Other business services	1.3	0.1	3.3	8.3	-0.1	-0.9	-2.3	1.4	10.1
Other services	0.2	0.0	1.1	0.8	0.0	-0.1	-0.6	0.2	1.3
Agriculture	0.5	0.0	1.4	0.8	0.0	-0.1	-0.4	0.2	1.0
Manufacturing	12.3	6.4	62.2	152.5	7.7	-4.0	-21.2	44.8	125.3
Services	4.2	0.4	10.3	27.4	0.0	-1.5	-4.1	8.2	24.7
Other	2.0	0.0	16.9	11.9	-1.0	-0.8	-6.5	-2.2	22.5
Total	18.9	6.8	90.7	192.3	6.7	-6.5	-32.2	50.9	173.4

Annex A: GTAP concordances

Table A1: GTAP regional concordance

	Region name	GTAP concordance
1	China (CHN)	China (CHN)
2	Rest of East Asia (XEA)	Rest of Oceania (XOC), Mongolia (MNG), Rest of East Asia (XEA), Brunei Darussalam (BRN), Cambodia (KHM), Indonesia (IDN), Laos (LAO), Malaysia (MYS), Philippines (PHL), Singapore (SGP), Thailand (THA), Viet Nam (VNM), Rest of Southeast Asia (XSE)
3	India (IND)	India (IND)
4	Rest of South Asia (XSA)	Bangladesh (BGD), Nepal (NPL), Pakistan (PAK), Sri Lanka (LKA), Rest of South Asia (XSA)
5	EU ECA (ECU)	Czech Republic (CZE), Estonia (EST), Hungary (HUN), Latvia (LVA), Lithuania (LTU), Slovakia (SVK), Slovenia (SVN), Bulgaria (BGR), Croatia (HRV), Romania (ROU)
6	Russia (RUS)	Russian Federation (RUS)
7	Poland (POL)	Poland (POL)
8	Rest of Eastern Europe (EEU)	Albania (ALB), Belarus (BLR), Ukraine (UKR), Rest of Eastern Europe (XEE)
9	Central Asia (XCS)	Kazakhstan (KAZ), Kyrgyzstan (KGZ), Tajikistan (TJK), Rest of Former Soviet Union (XSU), Armenia (ARM), Azerbaijan (AZE), Georgia (GEO)
10	Turkey (TUR)	Turkey (TUR)
11	Middle East & North Africa (XMN)	Bahrain (BHR), Iran (IRN), Israel (ISR), Jordan (JOR), Kuwait (KWT), Oman (OMN), Qatar (QAT), Saudi Arabia (SAU), United Arab Emirates (ARE), Rest of Western Asia (XWS), Egypt (EGY), Morocco (MAR), Tunisia (TUN), Rest of North Africa (XNF)
12	Sub-Saharan Africa (XSS)	Benin (BEN), Burkina Faso (BFA), Cameroon (CMR), Côte d'Ivoire (CIV), Ghana (GHA), Guinea (GIN), Nigeria (NGA), Senegal (SEN), Togo (TGO), Rest of Western Africa (XWF), Central Africa (XCF), South-Central Africa (XAC), Ethiopia (ETH), Kenya (KEN), Madagascar (MDG), Malawi (MWI), Mauritius (MUS), Mozambique (MOZ), Rwanda (RWA), Tanzania (TZA), Uganda (UGA), Zambia (ZMB), Zimbabwe (ZWE), Rest of Eastern Africa (XEC), Botswana (BWA), Namibia (NAM), South Africa (ZAF), Rest of South African Customs Union (XSC)
13	Latin America and Caribbean (LAC)	Mexico (MEX), Rest of North America (XNA), Argentina (ARG), Bolivia (BOL), Brazil (BRA), Chile (CHL), Colombia (COL), Ecuador (ECU), Paraguay (PRY), Peru (PER), Uruguay (URY), Venezuela (VEN), Rest of South America (XSM), Costa Rica (CRI), Guatemala (GTM), Honduras (HND), Nicaragua (NIC), Panama (PAN), El Salvador (SLV), Rest of Central America (XCA), Dominican Republic (DOM), Jamaica (JAM), Puerto Rico (PRI), Trinidad and Tobago (TTO), Rest of Caribbean (XCB)
14	United States (USA)	United States of America (USA)
15	Rest of High-income (XHY)	Australia (AUS), New Zealand (NZL), Hong Kong (HKG), Japan (JPN), Korea (KOR), Taiwan (TWN), Canada (CAN), Rest of the World (XTW)
16	Rest of Western Europe (E_U)	Austria (AUT), Belgium (BEL), Cyprus (CYP), Denmark (DNK), Finland (FIN), France (FRA), Germany (DEU), Greece (GRC), Ireland (IRL), Italy (ITA), Luxembourg (LUX), Malta (MLT), Netherlands (NLD), Portugal (PRT), Spain (ESP), Sweden (SWE), United Kingdom (GBR), Switzerland (CHE), Norway (NOR), Rest of EFTA (XEF), Rest of Europe (XER)

Table A2: GTAP sector concordance

Sector name		GTAP concordance
1	Agriculture (AGR)	Paddy rice (PDR), Wheat (WHT), Cereal grains, n.e.s. (GRO), Vegetables and fruits (V_F), Oil seeds (OSD), Sugar cane and sugar beet (C_B), Plant-based fibers (PFB), Crops, n.e.s. (OCR), Bovine cattle, sheep and goats, horses (CTL), Animal products n.e.s. (OAP), Raw milk (RMK), Wool, silk-worm cocoons (WOL), Forestry (FRS)
2	Coal (COA)	Coal (COA)
3	Oil (OIL)	Oil (OIL)
4	Gas (GAS)	Gas (GAS), Gas manufacture, distribution (GDT)
5	Minerals n.e.s. (OMN)	Minerals n.e.s. (OMN)
6	Processed foods (PFD)	Fishing (FSH), Bovine cattle, sheep and goat, horse meat products (CMT), Meat products n.e.s. (OMT), Vegetable oils and fats (VOL), Dairy products (MIL), Processed rice (PCR), Sugar (SGR), Food products n.e.s. (OFD), Beverages and tobacco products (B_T)
7	Wood products (LUM)	Wood products (LUM)
8	Paper products, publishing (PPP)	Paper products, publishing (PPP)
9	Textiles (TEX)	Textiles (TEX)
10	Wearing apparel (WAP)	Wearing apparel (WAP)
11	Leather goods (LEA)	Leather products (LEA)
12	Energy intensive manufacturing (KE5)	Mineral products n.e.s. (NMM), Ferrous metals (I_S), Metals n.e.s. (NFM)
13	Petroleum, coal products (P_C)	Petroleum, coal products (P_C)
14	Chemical, rubber, plastic products (CRP)	Chemical, rubber, plastic products (CRP)
15	Transport equipment (TRQ)	Motor vehicles and parts (MVH), Transport equipment n.e.s. (OTN)
16	Electronics (ELE)	Electronic equipment (ELE)
17	Metal products (FMP)	Metal products (FMP)
18	Machinery and equipment (OME)	Machinery and equipment n.e.s. (OME)
19	Manufactures, n.e.s. (XMN)	Manufactures n.e.s. (OMF)
20	Electricity (ELY)	Electricity (ELY)
21	Construction (CNS)	Construction (CNS)
22	Trade services (TRD)	Trade (TRD)
23	Air transport (ATP)	Air transport (ATP)
24	Water transport (WTP)	Sea transport (WTP)
25	Other transport (OTP)	Transport n.e.s. (OTP)
26	Hospitality services (ROS)	Recreation and other services (ROS)
27	Other business services (XBS)	Insurance (ISR), Communication (CMN), Financial services n.e.s. (OFI), Business services n.e.s. (OBS)
28	Other services (XSV)	Water (WTR), Public administration and defense, education, health services (OSG), Dwellings (DWE)

Annex B: Lab Notes

A. Tariff schedule:

- Original file (final_gtap.txt) came from World Bank.
- Needed to change all tabs to commas
- Needed to change commodities 'col' and 'for' to 'coa' and 'frs' respectively (coal and forestry). (New labels were introduced many years ago!)
- File contains 'EUR'. This has been read in and discarded.
- File excludes KGZ, now part of GTAP.
- Used file 'ReadTarTxt.gms' to read (slightly modified) text file and save as a GDX file.
- Original file loaded into Excel file (TariffSchedule.xlsx).
- File is very sparse, need to ask WB team what the file contains, e.g. only bilateral nodes subject to a bilateral/multilateral agreement?
- Used file 'AggTar.gms' to aggregate to 'BRI' aggregation. Used 'import' column to weight bilateral tariffs.

B. Value of Time

To convert dta file to CSV using Python (requires Pandas package, standard with Anaconda):

```
import pandas as pd
import os
os.chdir("v:/purdue/projects/wbobor")
data=pd.io.stata.read_stata('value_of_time_gtap_updated.dta')
data.to_csv('ValofTime.csv')
```

This conversion leaves an extra field in the file with the line number. This was deleted before feeding into the GAMS program that converts the data to a GDX format.²⁰

The data contains information for 'MMR', i.e. Myanmar, which was deleted from the GTAP database a number of years ago. It has been retained here but downstream aggregations should map 'MMR' with 'XSE'.

C. BRI_dataset.dta

To convert dta file to CSV using Python (requires Pandas package, standard with Anaconda):

```
import pandas as pd
import os
os.chdir("v:/purdue/projects/wbobor/BRI Inputs")
data=pd.io.stata.read_stata('BRI_dataset.dta')
data.to_csv('BRIDataset.csv')
```

²⁰ In KEDIT, the commands 'set arbchar on', 'c/\$,/**' were used to remove the first field.

This conversion leaves an extra field in the file with the line number. This was deleted before feeding into the GAMS program that converts the data to a GDX format.²¹

Unlike the previous file, this one does not contain ‘MMR’, i.e. Myanmar.

D. Output variables

Bilateral file:

PWE	Export price index (FOB)
PWM	Import price index (CIF)
XWd	Real bilateral imports
XWd_d	Nominal bilateral imports at CIF prices
XWs	Real bilateral exports
XWs_d	Nominal bilateral exports at FOB prices
lambdaw	Iceberg parameter (increase implies a reduction in trade cost)
mtax	Import tariff

Value added file:

pva	Price of value added at base year prices (only makes sense for components, e.g. labor)
pva_n	Price index of value added (assumes all components are priced at 1 in base year)
va	Real value added at base year prices (only makes sense for components)
va_d	Nominal value added
va_n	Value added index (all components re-based with price equal to 1 in base year)

GDP file:

EV	Equivalent variation (cost of currently utility at base year prices)
gdmp	Nominal GDP at market price
P1564	Working age population
pdmp	GDP at market price deflator
Pop	Total population
PopT	Total population
rgdmp	Real GDP at market price
rgdppc	Real GDP per capita
XFD	Real domestic absorption (households only, should be more or less equal to EV)

²¹ In KEDIT, the commands ‘set arbchar on’, ‘c/\$,/**’ were used to remove the first field.