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# MTI Practice Notes

# How Old is the Belt and Road Initiative?
## Long Term Patterns of Chinese Exports to BRI Economies

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The Belt and Road Initiative (BRI) has recently turned five. But has it really? We find that China's exports, particularly of infrastructure related goods, had already started flowing to BRI countries for a decade before the official launch of the Initiative. The 2013 announcement of the BRI was not a dramatic shift, but it brought new energy and focus to ongoing trends in China's trade relations.

## Introduction

In this note, we look at trade data to answer a simple question: When did the Belt and Road Initiative (BRI) really start? The BRI was officially announced in 2013 during President Xi Jinping's visits to Kazakhstan and Indonesia, which took place in September and October of that year, respectively. By then, however, the pattern of Chinese exports had already seen significant changes. Trade data indicate that the group of BRI countries had already seen more than a decade of steady rise in importance as a destination for Chinese exports. This growth is evident when we focus on infrastructure-related goods and on the set of countries where BRI infrastructure projects are being built or planned.

The data also show that over 50 percent of Chinese exports of infrastructure-related goods to the BRI group are directed to East Asia and Pacific countries, but that the shares to other BRI economies have been more dynamic at times. Thus, while the share to core BRI

countries in East Asia and Pacific grew by 30 percent during period 2011-2013, the export share to South Asia increased by 40 percent since 2013 (reflecting the doubling in Pakistan's share) and the one to core BRI countries in Europe and Central Asia more than quadrupled from 2001 to 2007 (Kazakhstan's share increased five times during that period). In Sub-Saharan Africa, the share of Kenya more than tripled between 2003 and 2013.

Finally, the data point out that Chinese exports of infrastructure-related goods to several BRI countries such as Vietnam, Pakistan, Lao PDR and Kenya, gained momentum around 2013. In short, we find that the formal announcement of the Belt and Road Initiative gave further strength to a trend already in the making.

## China's Exports of Infrastructure-Related Goods to BRI and Non-BRI Economies

The Belt and Road Initiative aims at improving regional cooperation and connectivity on a trans-continental scale. The Initiative consists primarily of new and improved transport infrastructure on what have been called the Silk Road Economic Belt, with six economic corridors being identified on land, and the New Maritime Silk Road (see Figure 1). While no official list of countries exists, for this note we focus on 71 economies located along the Belt and Road. Based on data on transport infrastructure projects (Reed and Trubetskoy, 2018), we also identify a set of "core" BRI countries - i.e. countries that lie along the land and maritime routes identified by China and

*Figure 1: BRI and "core" BRI economies*
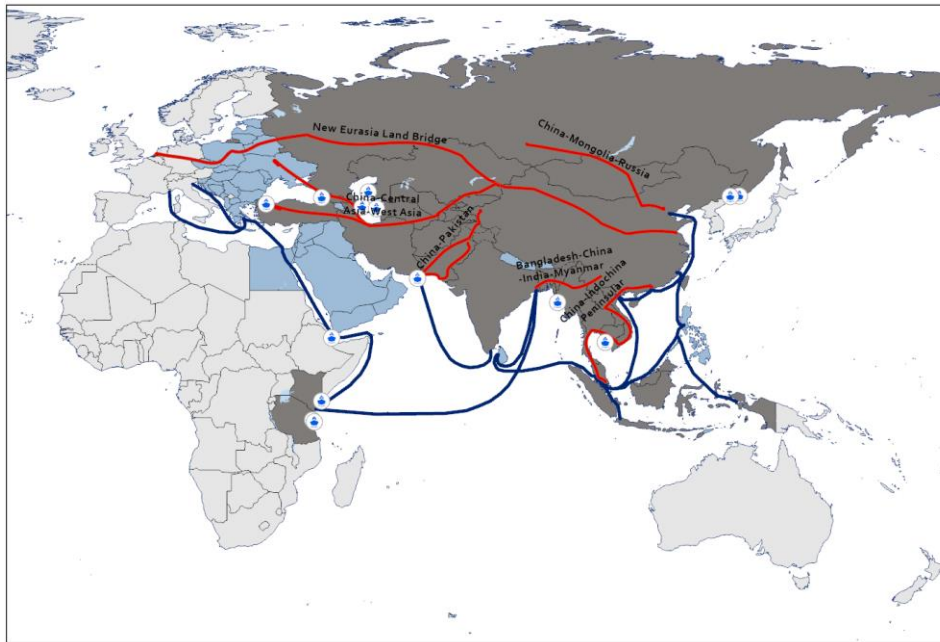


*Notes: The core BRI countries are indicated in dark grey. Other BRI countries are in blue. See Table A1 for lists of countries by region.*

where major transport infrastructures are being built or planned.[1]

We first analyze China' exports to BRI and non-BRI countries by type of exports.[2] Specifically, Figure 2 plots the shares of BRI countries and non-BRI countries in China's exports, during period 2001-2017, for four types of goods, including overall merchandise goods exports, capital goods, infrastructure-related goods, as well as a key component of the latter, namely iron and steel.[3]

We find that the rise in BRI's share is apparent for all four groups analyzed, that it precedes 2013, and that it is steeper for infrastructure-related goods. Based on the first panel of Figure 2, BRI countries accounted collectively for

about 40 percent of China's overall merchandise exports in 2017, having gained almost 9 percentage points since 2001. Zooming in on the three categories of goods of focus within merchandise, as done in the other three panels of Figure 2, shows the importance of China's exports of infrastructure-related goods to BRI economies. Specifically, we find that:

- The gain in the share of BRI countries in China's capital goods exports from 2001 to 2017 amounted to just 4-percentage points, i.e. less than half the gain for merchandise goods. This is likely to reflect the enduring position of OECD markets as destinations for this type of Chinese exports (within which, goods like

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[1] The 71 BRI countries and the 25 "core" BRI countries, classified by region, are listed in Table A1.

[2] Other studies had looked in detail at the trade relationship between China and BRI economies (Bastos, 2018; Boffa, 2018), the scope of this note is

more limited, focusing on exports of infrastructure-related goods.

[3] Infrastructure-related goods - defined here based on the SITC Rev. 3 classification - account for approximately 14 percent of China's exports in 2017 (see table A2). About one-third of these goods are represented by capital goods.

telephones and computers account for a large portion).[4]

- The gains in the share of BRI countries in China's exports of infrastructure-related goods and iron and steel exceeded the ones for merchandise goods, amounting to 11 and 16 percentage points, respectively. As the third and fourth panels of Figure 2 indicate, this trend is clearly associated with core BRI countries, which accounted for 27 and 37 percent of China's exports of infrastructure-related goods and iron and steel

respectively in 2017. Core BRI countries had already gained 15 and 17 percentage points in these respective shares by 2013.

These findings support the notion that Chinese construction activity in BRI countries had started well before the BRI announcement, and they also corroborate evidence in Chen and Lin (2018) that BRI countries were accounting for a larger share of Chinese construction investment than non-BRI countries even before 2013.

*Figure 2. Share of BRI and non BRI countries in China's exports, by type of goods, 2001-2017*
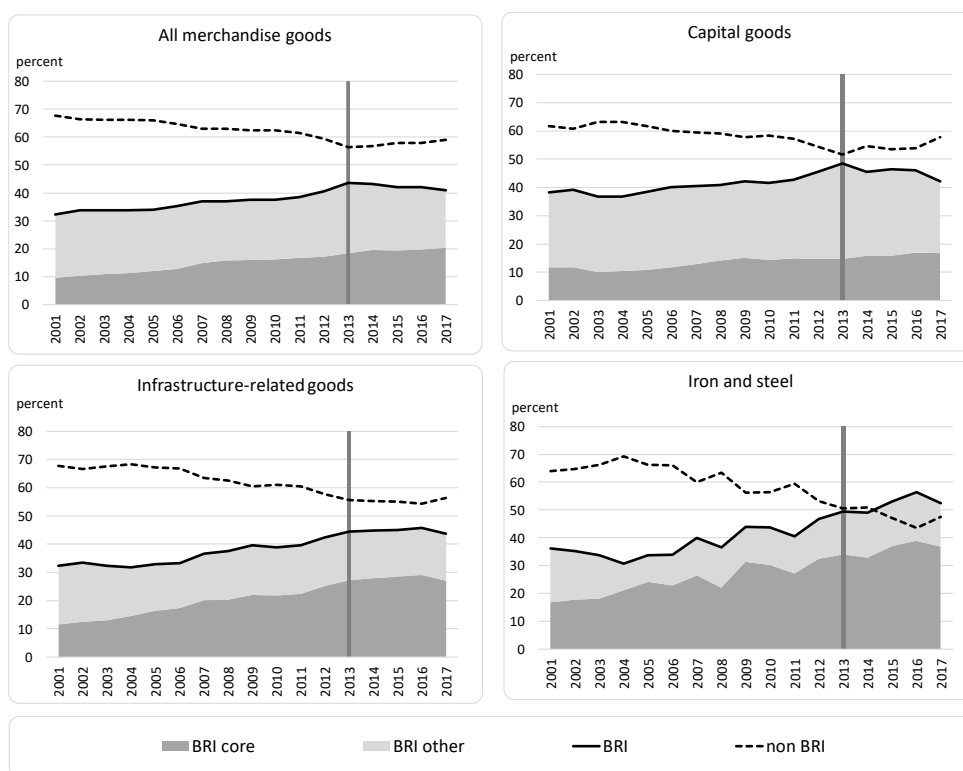


*Sources: UN Comtrade (WITS) and authors' calculations. Notes: The vertical line denotes the year when BRI was announced. Iron and steel refer to SITC Rev. 3 code 67. Products included in the infrastructure-related aggregate are listed in Table A2.*

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[4] For example, in 2017, OECD absorbed 65.6 percent of the exports of three 6-digit products that accounted for almost 30 percent of China's exports of capital goods in that year. Ten years earlier, the share had been 66.9 percent, i.e. less than 1.5

percentage points higher. These three products are: 851712 (telephones for cellular networks), 847130 (portable automatic data processing machines) and 851762 (machines for the reception, conversion & transmission).

Given the trend identified above for infrastructure-related goods, we next look at whether BRI countries' imports from China have become more intensive in such products relative to other merchandise. More specifically, we examine the share of infrastructure-related goods and its component, iron and steel, in China's overall merchandise exports to a destination. We find that core BRI countries tend to be more intensive in infrastructure-related goods in their imports from China. Since the BRI announcement, the gap between the intensiveness for BRI countries and that for non-BRI countries has started to widen.

Moreover, between 2003 and 2008 (i.e. up until the crisis), the share of infrastructure-related goods in Chinese exports to core BRI countries had grown significantly faster than the corresponding shares for overall BRI and non-BRI countries. After declining during the period of the Global Financial Crisis, the share for core BRI countries remained on average about 6 percentage points higher than the share for non-BRI, while the difference between the shares for BRI and non-BRI slightly grew over time. A focus on Chinese shares of exports of iron and steel confirms these insights (Figure 3, right panel). The data support the finding on the early start date of the BRI and the focus of the initiative on core BRI economies.

*Figure 3. Share of infrastructure-related goods in China's exports of merchandise, by destination, 2001-2017*
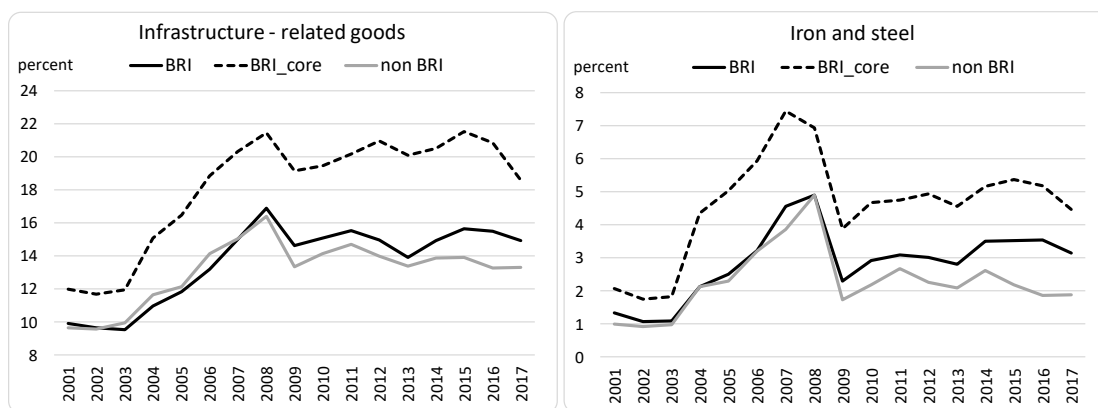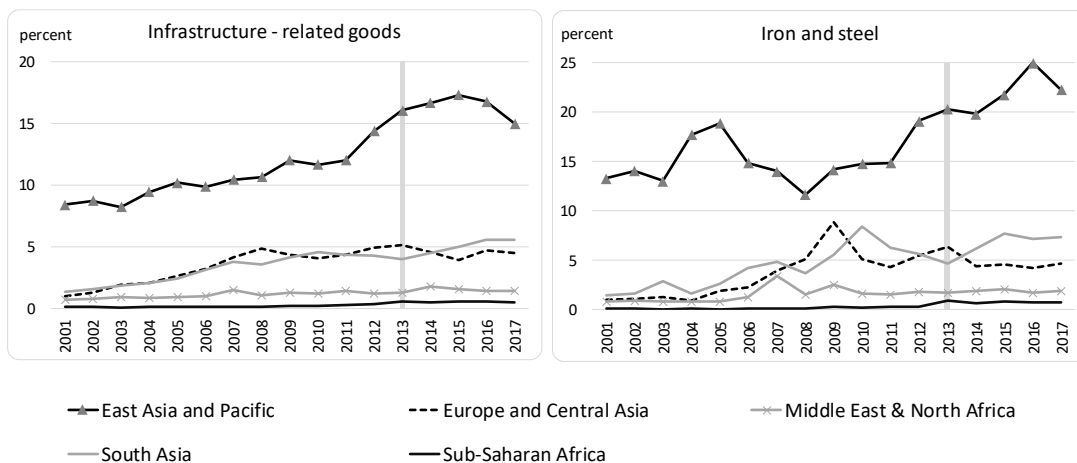


*Sources: UN Comtrade (WITS) and authors' calculations. Notes: Iron and steel refers to SITC Rev. 3 code 67. Products included in the infrastructure-related aggregate are listed in Table A2.*

## A Closer Look at Chinese Infrastructure-Related Exports to Core BRI Countries

We also unpack core BRI countries to see where the Chinese exports of infrastructure-related goods have concentrated over time. Of all core BRI countries, those in East Asia and Pacific account collectively for the largest share in China's exports of infrastructure-related goods to BRI countries, at any point in time during the period of focus (Figure 4). In 2017, core BRI

countries represented 27 percent of China's exports of infrastructure-related goods. Core BRI countries in East Asia and Pacific accounted for 56 percent of this number, as their share in China's exports was 15 percent. All other regions followed at significant distance, the runner up being the group of core countries in South Asia with a 5.7 percent share in China's exports of infrastructure-related goods. Looking at iron and steel exports reveals similar trends.

*Figure 4. Share of core BRI countries in China's exports of infrastructure-related goods, by region, 2001-2017*

In contrast, the rise in the share of core BRI countries in China's exports of infrastructure-related goods has been supported by different regions at different times (Figure 5).

- First, during the pre-crisis period, the largest contributors to the 8.4 percentage points rise in the share for all core BRI countries were core BRI countries in Europe and Central Asia and South Asia with 3.2 and 2.4 percentage points respectively.

- Second, from 2011 to 2013, core BRI countries in East Asia and Pacific experienced a surge in their share of China's exports, which led to this group contributing most of the 4.7 percentages point gain in the share of all core BRI countries during that period.

- Third, between 2013 and 2016, core BRI countries in South Asia have

contributed 1.6 percentage points to the 2 percentage points rise in the share of core BRI, more than the contribution of any other region.

Overall, from 2001-2017, the 15 percentage points gain in the share of all core BRI countries was distributed as follows: 6.5 percentage points due to East Asia and Pacific, 4.2 percentage points to South Asia, 3.5 percentage points to Europe and Central Asia, and the rest to Middle East and North Africa and Sub-Saharan Africa. Despite a minimal contribution due to the small magnitude of its share, Sub-Saharan Africa has also experienced a dynamic trajectory in its share from the crisis until 2013 (see Figure A1 for shares in China's exports indexed to 2001). Compared to the case of infrastructure-related goods, the rise in the share of core BRI countries in China's exports of iron and steel has been more balanced across the three periods. The contributions from different regions were as varied over time, and they followed similar patterns.

*Figure 5. Changes in core BRI countries' share in China's exports of infrastructure-related goods, by region*
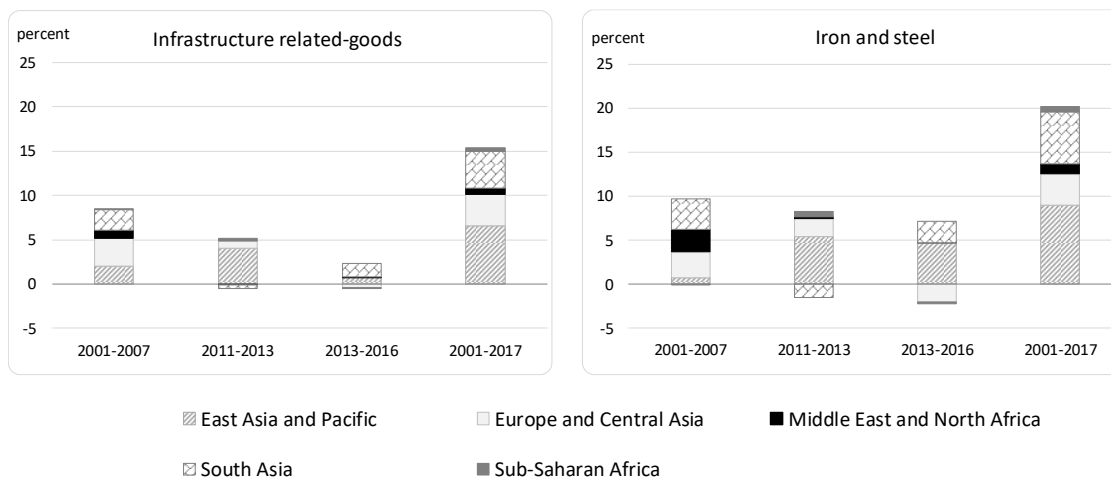
Finally, we analyze the trends in Chinese exports of infrastructure-related goods for selected core BRI countries. In most cases, the surge in shares of infrastructure related exports from China that started well before 2013 continued to proceed, and in some cases gained momentum, in correspondence with the formal announcement of the Initiative. Figure 6 reports these shares and the shares for overall merchandise for comparison.[5]

- Countries in East Asia and Pacific, exhibit increased dynamism in the share of China's exports of infrastructure-related goods in the post-crisis period, with an intensification just before 2013. Cambodia, Lao, Myanmar and Vietnam continued to gain share up until 2016, while Indonesia and Malaysia experienced declines starting in 2014.

- Countries in Europe and Central Asia, such as Kazakhstan experienced large gains before the crisis, but are yet to return to shares attained at that time.

- Countries in South Asia, such as Bangladesh and Pakistan have seen

sharper increases in their shares since 2011 and have continued to gain in the recent years.

- Kenya in Sub-Saharan Africa had more than tripled its share by 2013 reaching a level that it has almost doubled since then.

### Conclusion: 5 or 15? How Old is the BRI?

So how old is the Belt and Road Initiative? It appears that the BRI announcement in 2013 put a stamp on a complex and, by then, already ongoing process. As the trade data show, the share of BRI countries in China's exports started increasing in the early 2000s. In the case of infrastructure-related goods, this long-term trend was driven by core BRI economies. Yet, at least for some countries, namely in developing East Asia but not only, trade data show an increased dynamism of China's exports of infrastructure-related goods around 2013. Hence, the BRI announcement was not a dramatic shift, but it brought new energy and focus to ongoing trends in China's trade relations.

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[5] See also Figure A2, which provides shares and ranks as of 2003 and 2017, for the 50 countries with

the highest shares in China's exports of infrastructure-related products in 2017.

*Figure 6: Share in China's exports of merchandise and infrastructure-related goods, by country, 2001-2017 (percent)*
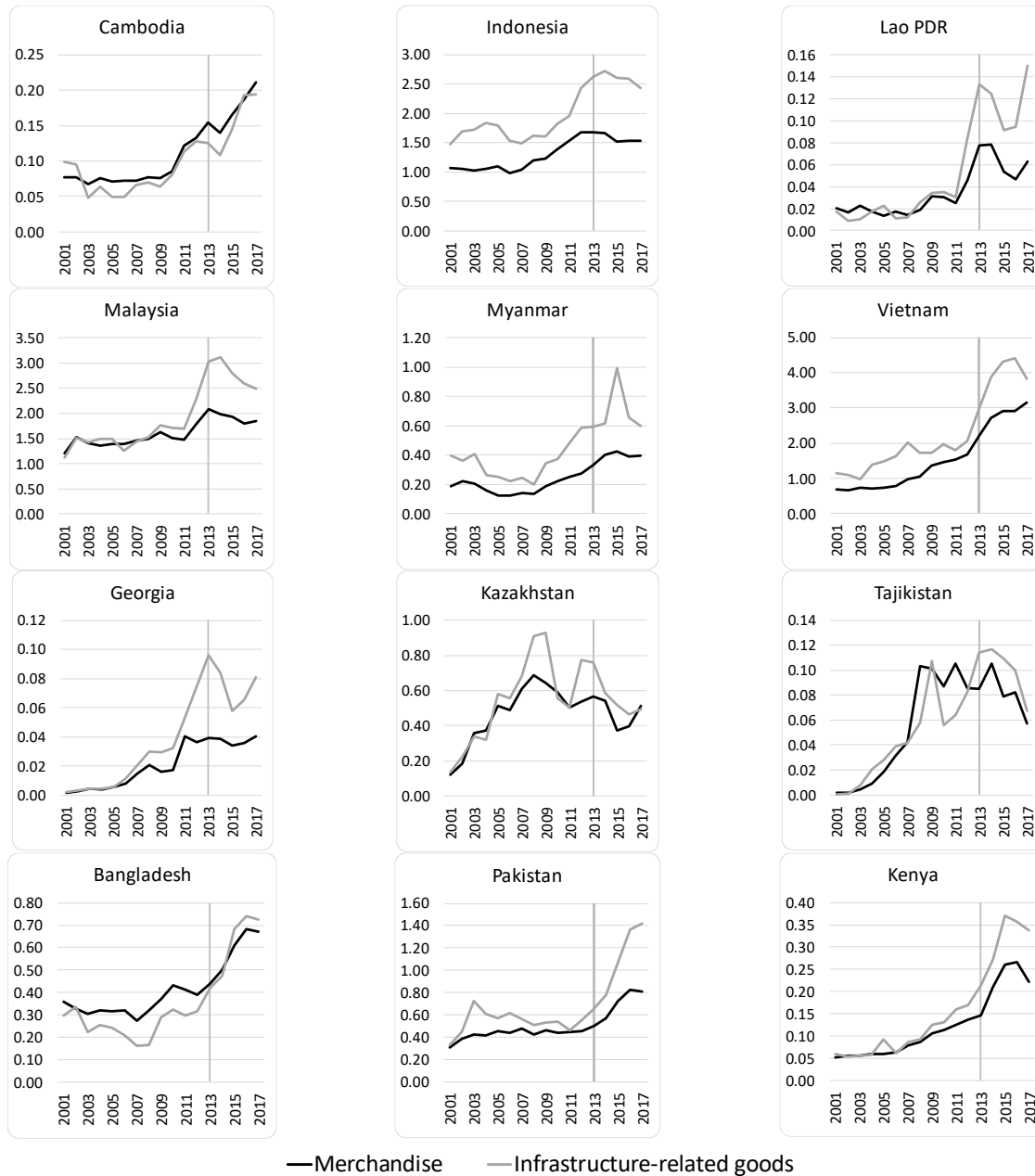


Sources: UN Comtrade (WITS) and authors' calculations. Notes: Countries are listed by region as follows: East Asia and Pacific (6 countries); Europe and Central Asia (3 countries); South Asia (2 countries), Sub-Saharan Africa (1 country). Vertical line for 2013, the year of BRI's announcement. Products included in the infrastructure-related aggregate are listed in Table A2.

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*Table A1. BRI and core BRI countries*

| East Asia and Pacific | Europe and Central Asia | South Asia | Middle East and North Africa | Sub-Saharan Africa |
|---|---|---|---|---|
| **IDN** | **AZE** | **AFG** | **IRN** | **KEN** |
| **KHM** | **GEO** | **BGD** | ARE | **TZA** |
| **LAO** | **KAZ** | **IND** | BHR | |
| **MMR** | **KGZ** | **PAK** | EGY | |
| **MNG** | **RUS** | BTN | IRQ | |
| **MYS** | **TJK** | LKA | ISR | |
| **SGP** | **TKM** | MDV | JOR | |
| **THA** | **TUR** | NPL | KWT | |
| **VNM** | **UZB** | | LBN | |
| BRN | ALB | | OMN | |
| HKG | ARM | | PSE | |
| PHL | BGR | | QAT | |
| TLS | BIH | | SAU | |
| | BLR | | SYR | |
| | CZE | | YEM | |
| | EST | | | |
| | GRC | | | |
| | HRV | | | |
| | HUN | | | |
| | LTU | | | |
| | LVA | | | |
| | MDA | | | |
| | MKD | | | |
| | MNE | | | |
| | POL | | | |
| | ROM | | | |
| | SRB | | | |
| | SVK | | | |
| | SVN | | | |
| | UKR | | | |

*Source: de Soyres et al. (2018), Reed and Trubetskoy (2018).*
*Notes: Includes 68 BRI countries, as China and Taiwan are excluded. The 25 Core BRI countries are in bold font.*

*Table A2. China's exports of infrastructure-related goods, 2017*

| SITC Rev. 3 code / name | | 2017 Exports | | |
| --- | --- | --- | --- | --- |
| | | million USD | % of merchandise exports | % of Infrastructure exports |
| **Infrastructure-related goods:** | | **317,085** | **14.0** | **100.0** |
| **74** | **Industrial equipment nes:** | **107,689** | **4.8** | **34.0** |
| 741 | Indust heat/cool equipmt | 24,381 | 1.1 | 7.7 |
| 743 | Fans/filters/gas pumps | 20,154 | 0.9 | 6.4 |
| 747 | Taps/cocks/valves | 14,644 | 0.6 | 4.6 |
| 744 | Mechanical handling equi | 14,128 | 0.6 | 4.5 |
| 745 | Non-electr machines nes | 8,954 | 0.4 | 2.8 |
| 748 | Mech transmission equmnt | 7,521 | 0.3 | 2.4 |
| 742 | Pumps for liquids | 6,991 | 0.3 | 2.2 |
| 749 | Non-elec parts/acc machn | 5,857 | 0.3 | 1.8 |
| 746 | Ball/roller bearings | 5,059 | 0.2 | 1.6 |
| **69** | **Metal manufactures nes:** | **65,223** | **2.9** | **20.6** |
| 699 | Base metal manufac nes | 29,335 | 1.3 | 9.3 |
| 691 | Iron/stl/alum structures | 14,031 | 0.6 | 4.4 |
| 695 | Hand/machine tools | 10,283 | 0.5 | 3.2 |
| 694 | Nails/screws/nuts/bolts | 6,413 | 0.3 | 2.0 |
| 693 | Wire prod exc ins electr | 3,167 | 0.1 | 1.0 |
| 692 | Metal store/transpt cont | 1,994 | 0.1 | 0.6 |
| **67** | **Iron and steel** | **55,756** | **2.5** | **17.6** |
| **66** | **Non-metal mineral manuf.:** | **27,373** | **1.2** | **8.6** |
| 664 | Glass | 7,871 | 0.3 | 2.5 |
| 663 | Mineral manufactures nes | 6,785 | 0.3 | 2.1 |
| 662 | Clay/refractory material | 6,668 | 0.3 | 2.1 |
| 661 | Lime/cement/constr matl | 6,049 | 0.3 | 1.9 |
| **79** | **Railway/tramway equipmnt:** | **25,495** | **1.1** | **8.0** |
| 793 | Ships/boats/etc | 22,933 | 1.0 | 7.2 |
| 791 | Railway vehicles/equipmt | 2,562 | 0.1 | 0.8 |
| **68** | **Non-ferrous metals** | **23,310** | **1.0** | **7.4** |
| **64** | **Paper/paperboard/article:** | **8,601** | **0.4** | **2.7** |
| 641 | Paper/paperboard | 8,601 | 0.4 | 2.7 |
| **27** | **Crude fertilizer/mineral:** | **2,695** | **0.1** | **0.9** |
| 278 | Other crude minerals | 2,320 | 0.1 | 0.7 |
| 273 | Stone/sand/gravel | 375 | 0.0 | 0.1 |
| **28** | **Metal ores/metal scrap** | **943** | **0.0** | **0.3** |

*Sources: UN Comtrade (WITS) and authors' calculations.*

*Figure A1. Share of core BRI countries in China's exports of infrastructure-related goods, by region, 2001-2017*
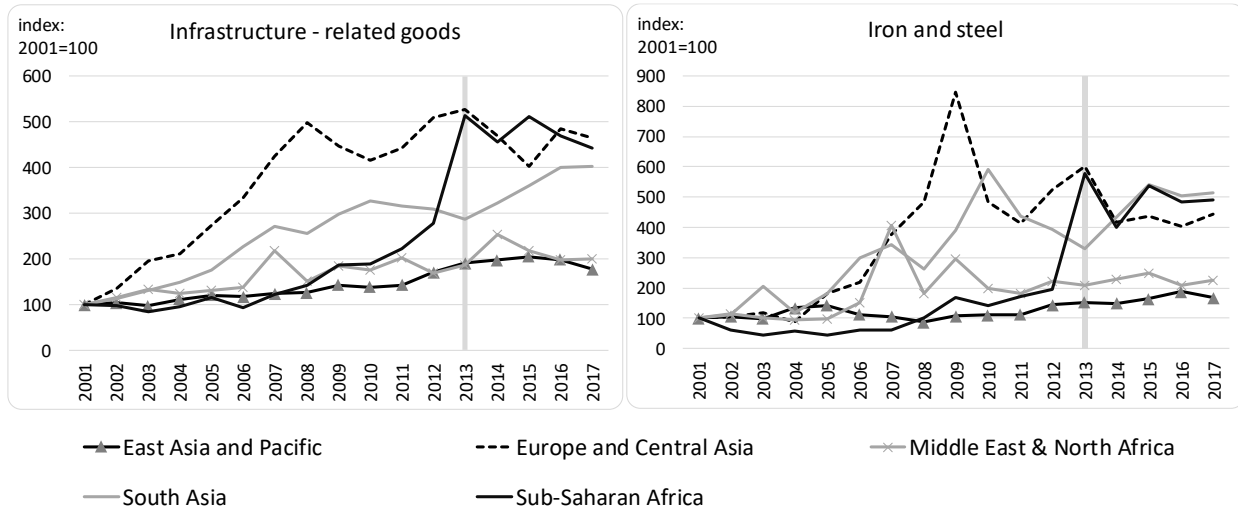


*Sources: UN Comtrade (WITS) and authors' calculations.*

*Notes: The vertical line denotes the year when BRI was announced. Iron and steel goods refer to SITC Rev. 3 code 67. Products included in the infrastructure-related aggregate are listed in Table A2.*

*Figure A2. Top 50 countries, by the share in China's exports of infrastructure-related goods in 2017 and their corresponding shares and ranks in 2003 and 2017*

| 2001 rank / country code (share) | 2017 country code (share) / rank |
|---|---|
| 1 USA(18.04%) | USA(13%) 1 |
| **2 HKG(14.08%)** | KOR(6.01%) 2 |
| 3 JPN(13.42%) | **HKG(5.79%) 3** |
| 4 KOR(5.91%) | JPN(5.21%) 4 |
| 5 DEU(3.81%) | **VNM(3.82%) 5** |
| 6 NLD(3.53%) | **IND(3.42%) 6** |
| **7 SGP(2.91%)** | **SGP(2.65%) 7** |
| 8 ITA(2.55%) | **THA(2.55%) 8** |
| 9 GBR(2.53%) | DEU(2.55%) 9 |
| 10 CAN(1.67%) | **MYS(2.49%) 10** |
| **11 IDN(1.48%)** | **IDN(2.43%) 11** |
| 12 AUS(1.47%) | **RUS(2.29%) 12** |
| **13 THA(1.2%)** | AUS(2.18%) 13 |
| 14 ESP(1.14%) | GBR(1.9%) 14 |
| **15 VNM(1.14%)** | **PHL(1.8%) 15** |
| 16 FRA(1.14%) | ITA(1.66%) 16 |
| **18 MYS(1.13%)** | CAN(1.6%) 17 |
| **19 ARE(1.07%)** | MEX(1.59%) 18 |
| 20 DNK(.82%) | NLD(1.56%) 19 |
| **21 IND(.76%)** | **ARE(1.48%) 20** |
| **22 PHL(.75%)** | **PAK(1.42%) 21** |
| 23 BEL(.73%) | **IRN(1.42%) 22** |
| **24 IRN(.71%)** | BRA(1.4%) 23 |
| **25 IRQ(.68%)** | **SAU(1.33%) 24** |
| **26 SAU(.57%)** | **TUR(1.22%) 25** |
| 27 BRA(.52%) | ESP(.99%) 26 |
| 28 NGA(.5%) | FRA(.99%) 27 |
| **29 ISR(.46%)** | MHL(.88%) 28 |
| **30 RUS(.44%)** | ZAF(.78%) 29 |
| 31 ZAF(.43%) | **POL(.77%) 30** |
| **32 EGY(.43%)** | BEL(.77%) 31 |
| 33 MEX(.42%) | CHL(.74%) 32 |
| **34 MMR(.4%)** | **BGD(.73%) 33** |
| **36 TUR(.37%)** | NGA(.67%) 34 |
| 37 LBR(.36%) | EGY(.64%) 35 |
| 38 ARG(.36%) | IRQ(.6%) 36 |
| **39 PAK(.33%)** | **MMR(.6%) 37** |
| **40 BGD(.3%)** | DZA(.59%) 38 |
| 42 PAN(.26%) | ISR(.53%) 39 |
| **46 POL(.21%)** | ARG(.51%) 40 |
| 47 CHL(.2%) | PAN(.51%) 41 |
| **55 KAZ(.13%)** | **KAZ(.49%) 42** |
| 64 DZA(.1%) | MLT(.48%) 43 |
| **73 UKR(.07%)** | LBR(.46%) 44 |
| 75 GHA(.07%) | PER(.44%) 45 |
| 76 PER(.06%) | COL(.4%) 46 |
| 77 COL(.06%) | GHA(.35%) 47 |
| **78 KEN(.06%)** | **KEN(.34%) 48** |
| 86 MLT(.04%) | DNK(.33%) 49 |
| 142 MHL(0%) | **UKR(.32%) 50** |

*Source: UN Comtrade (WITS) and author's calculations. The shares in China's exports of infrastructure-related goods are provided in parentheses. The black arrows indicate increases in the shares of BRI countries; the grey arrows indicate declines in the shares of BRI countries. Not all increases in the share correspond to increases in the rank. Countries indicated by ISO3 codes. BRI countries are in bold font.*