Implication of Digital Development on Connectivity and Market

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ABOUT AIIB

Asian Infrastructure Investment Bank

Who we are

Multilateral Development Bank (MDB) established by international treaty and headquartered in Beijing, founded to bring countries together to address **Asia's infrastructure funding gap, estimated at USD26 trillion through 2030.**[1] Our core principles are openness, transparency, independence and accountability.

Our mission

To improve economic and social development in Asia, through a focus on **sustainable infrastructure, cross-border connectivity and private capital mobilization.** Projects are supported via sovereign and nonsovereign loans, equity participations and guarantees.

Credit strength

Strong support from diversified global shareholder base. **USD100 billion capital stock** with 20% assigned to paid-in capital. Conservative risk management and financial policies. Experienced management team. **AAA/Aaa/AAA credit rating** with stable outlook. **0% risk weighting** from the BIS.

The bank's foundation is built on the lessons and experience of existing Multilateral Development Banks (MDB) and the private sector. Its *modus operandi* is to be:

Lean, with a small efficient management team and highly skilled staff.

Clean, an ethical organization with zero tolerance for corruption.

Green, an institution built on respect for the environment.
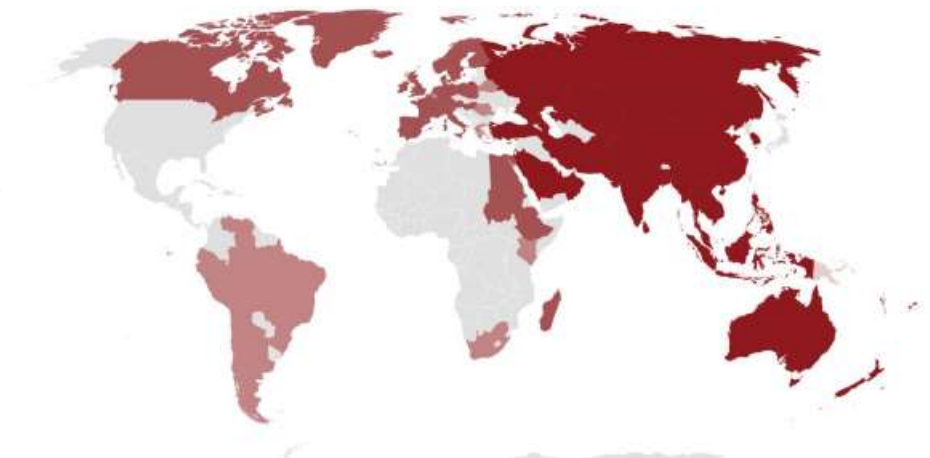
OVERVIEW OF SHAREHOLDING STRUCTURE

87 approved members

"The bank…will help to mobilize much needed additional resources from inside and outside Asia… and will complement the existing multilateral development banks.

Articles of Agreement

* Prospective founding member: These are prospective members who were original signatories to the Articles of Agreement in June 2015. Countries or territories who sought membership after that date are simply called prospective members. All prospective members have been approved by the Board of Governors but have not yet met the full requirements of membership.

Members Regional
Afghanistan	Iran	Qatar
Australia	Israel	Russia
Azerbaijan	Jordan	Samoa
Bahrain	Kazakhstan	Saudi Arabia
Bangladesh	Korea	Singapore
Brunei	Kyrgyz Republic	Sri Lanka
Darussalam	Lao PDR	Tajikistan
Cambodia	Malaysia	Thailand
China	Maldives	Timor-Leste
Cyprus	Mongolia	Turkey
Fiji	Myanmar	UAE
Georgia	Nepal	Uzbekistan
Hong Kong, China	New Zealand	Vanuatu
India	Oman	Vietnam
Indonesia	Pakistan	
	Philippines	

Members Non-Regional
Austria	Madagascar
Canada	Malta
Denmark	Netherlands
Egypt	Norway
Ethiopia	Poland
Finland	Portugal
France	Spain
Germany	Sudan
Hungary	Sweden
Iceland	Switzerland
Ireland	United Kingdom
Italy	
Luxembourg	

Prospective Regional
Armenia
Cook Islands
Kuwait*
Lebanon
Papua New Guinea
Tonga

Prospective Non-Regional
Argentina	Peru
Belarus	Romania
Belgium	South Africa*
Bolivia	Venezuela
Brazil*	
Chile	
Ecuador	
Greece	
Kenya	

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Outline

- Case 1: Autonomy of Monetary Policy:
  - Effectiveness of Capital Control.

- Case 2: International tourists market and air traffic infrastructure
  - Environmental impact mitigation;
  - Regulation improvement.

Case 1:Autonomy of Monetary Policy

- Do Developing Countries Have to Import the US Monetary Policies?

The original framework of the Trilemma:

- Fixed exchange rate, Free Capital Flow, and Sovereign Monetrary Policy cannot be achieved simultaneously.

The alternative framework of the Trilemma:

- Flexible exchange rate regimes produce monetary policy autonomy, such as, Obstfeld (2015).

- Capital controls are ineffective.

Based on the results from Han, Xuehui & Wei, Shang-Jin, 2018. "**International transmissions of monetary shocks: Between a trilemma and a dilemma**," Journal of International Economics, Elsevier, vol. 110(C), pages 205-219.
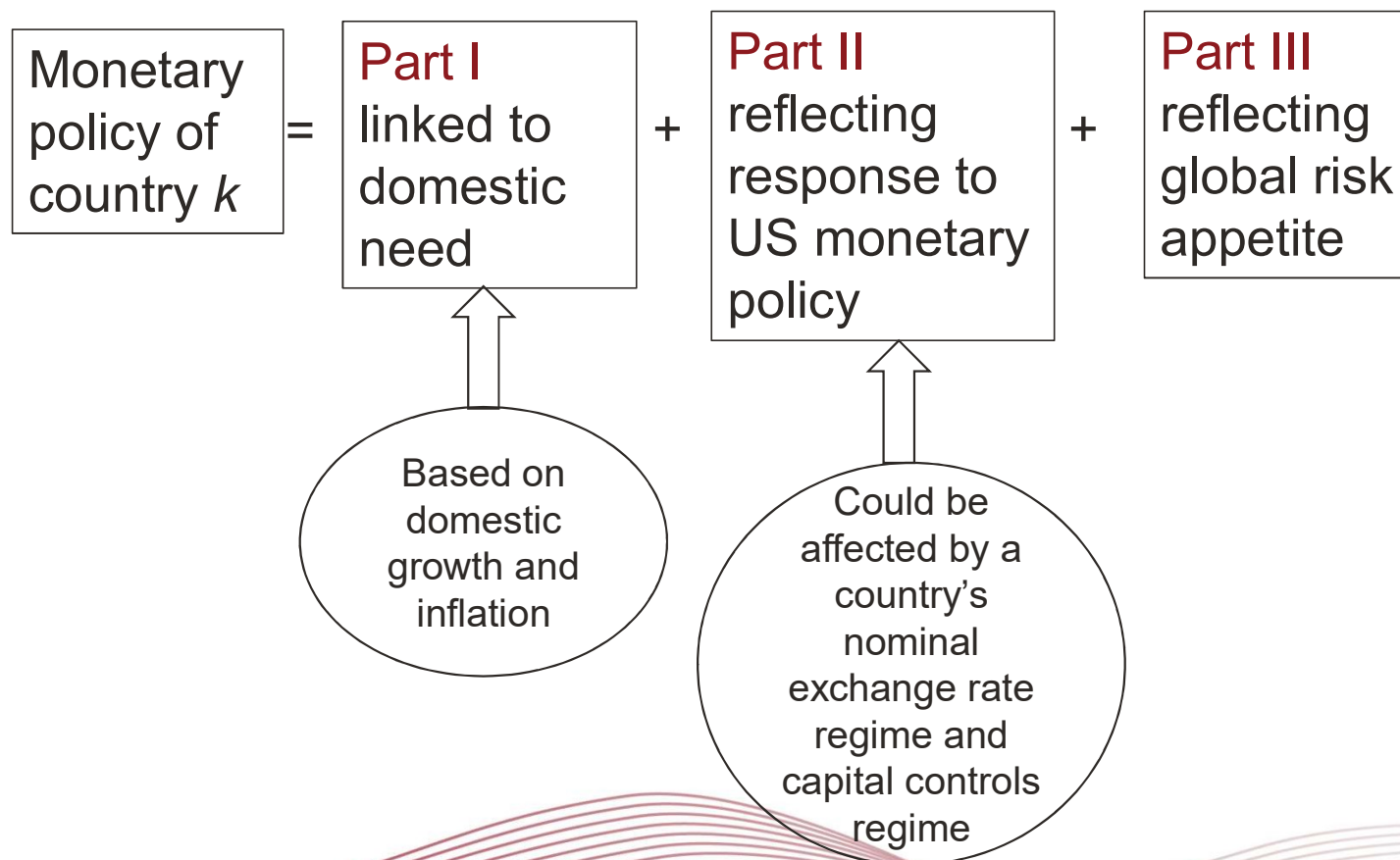
Competing recommendations:

- For emerging markets: prioritize exchange rate flexibility (e.g., IMF's Article IV reports on the People's Republic of China, 2014).

- Only capital controls confer real monetary autonomy Chinn and Wei (2013) and Rey (2013).
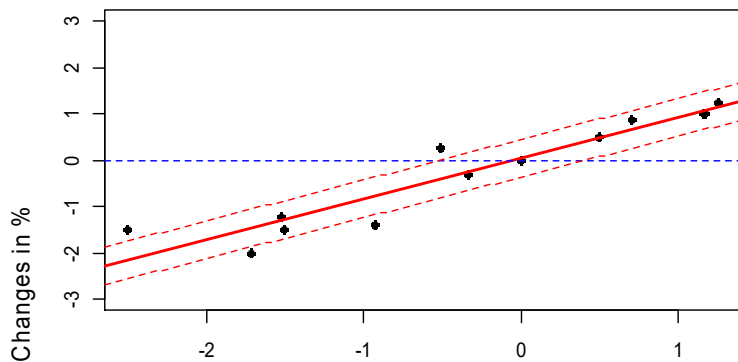
Empirical investigation

- Does a flexible exchange rate regime really confer monetary policy autonomy?

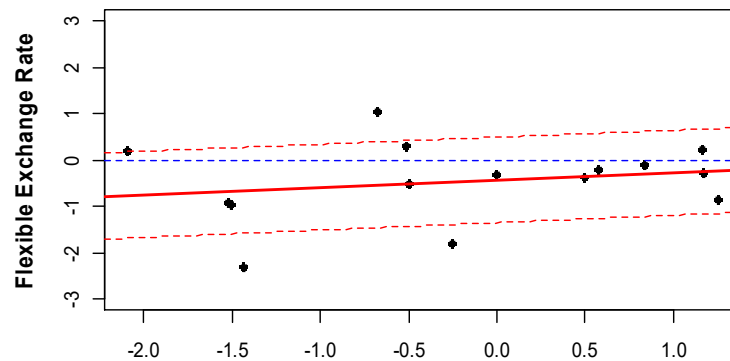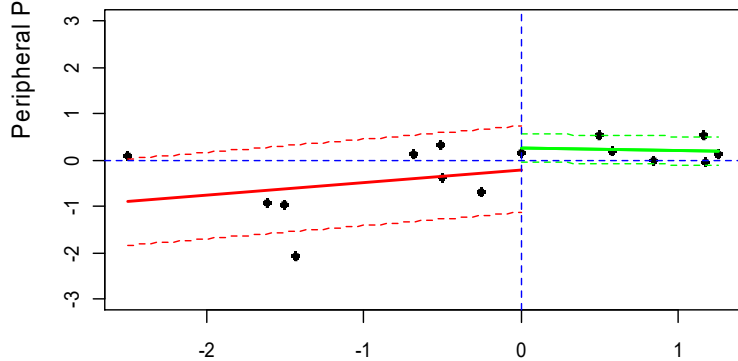- Capital control or flexible exchange rate regime, which one is more effective?

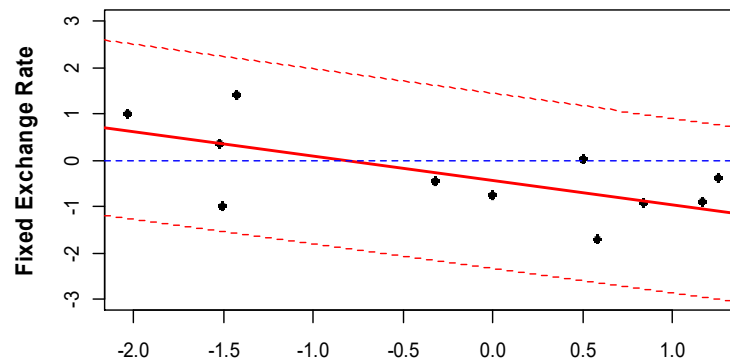# The methodology for the investigation

Monetary policy of country k = Part I linked to domestic need + Part II reflecting response to US monetary policy + Part III reflecting global risk appetite

Based on domestic growth and inflation

Could be affected by a country's nominal exchange rate regime and capital controls regime

Without Capital Control — With Capital Control
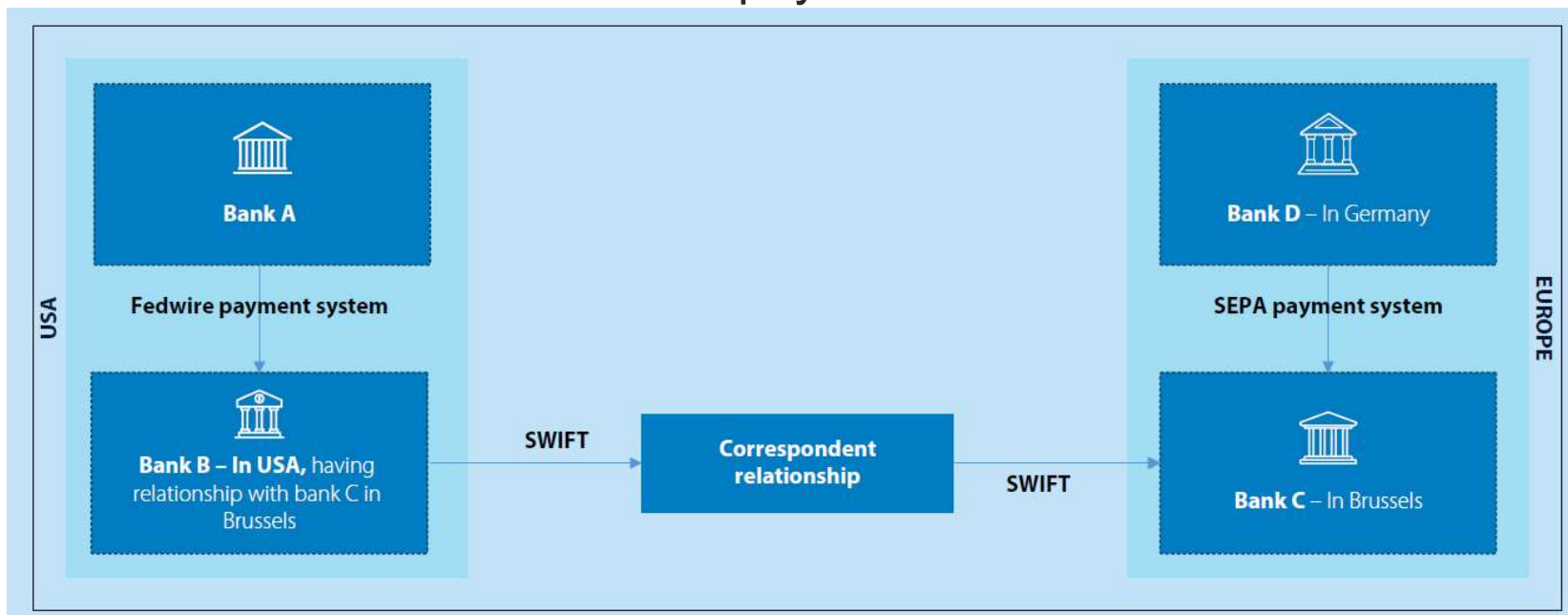
Effectiveness of the policies in the traditional framework
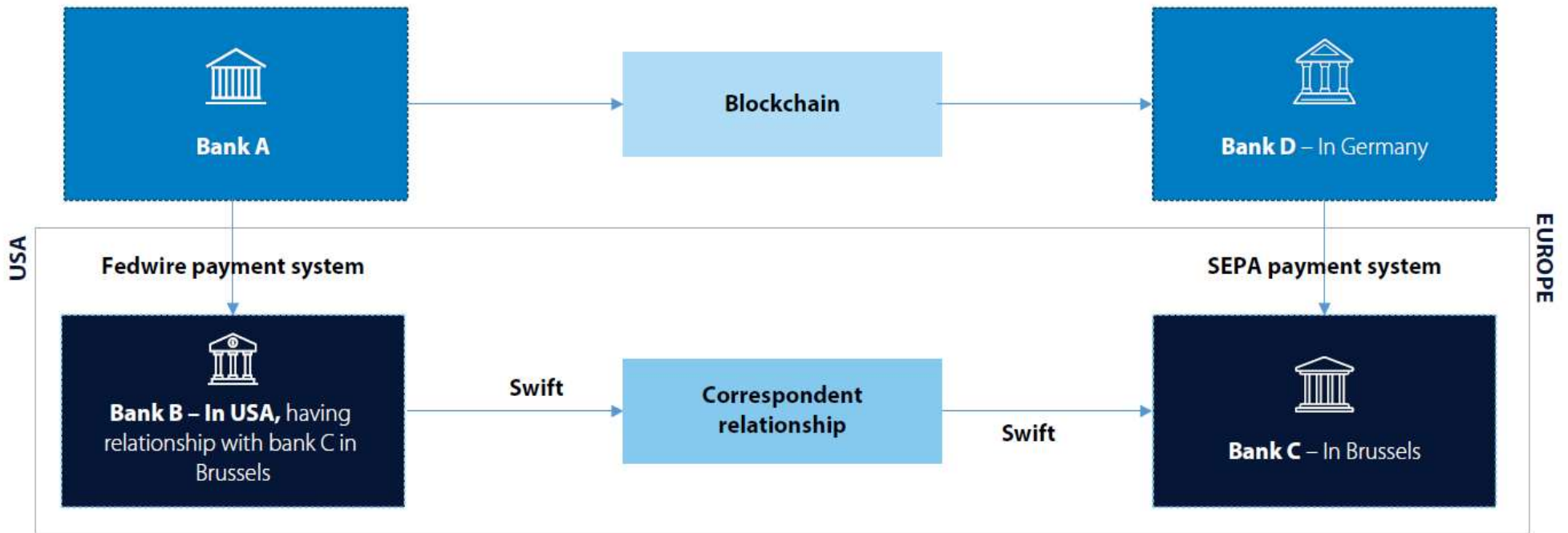
- Capital controls enable the periphery countries to be fully immune to the interest rate changes in the US.

- Without capital controls, peripheral countries with fixed exchange rate regime have to "import" the monetary policy of the US whereas the ones with flexible exchange rate regime only go together with the US for easing episodes rather than the tightening periods.

Using Blockchain and Distributed Ledgers for the Cross-border Payments

- Traditional SWIFT cross-border payment.

Source: Infosys, white paper on Cross-border money transfer using Blockchain – enabled by Big Data.

- Cross-border payment using blockchain.

Source: Infosys, white paper on Cross-border money transfer using Blockchain – enabled by Big Data.

Implications:

- The blockchain or distributed ledger will weaken **the capital controls**, equivalent to non-capital control scenario.
- Leave the monetary policy choice of flexible exchange rate regime as the only tool to be immune to the interest rate hikes of core countries:
  - For a periphery country with a fixed exchange rate:
    - An increase/decrease in the interest rate by 66 basis points with 100-basis-points changes in the US interest rate.
  - For a periphery country with **a flexible exchange rate**:
    - No impact when the US interest rate increases;
    - A 63-basis-points decrease with 100 basis points decrease in the US interest rate.

Case 2: International tourists market and air traffic infrastructure
Methodology:

- A gravity model using **the bilateral cross-border visitors** as the dependent variables.

- Three groups of explaining variables：
  - GDP per capita and population of departure countries;
  - Distance, culture factors, and regulation factors;
  - **Airports, air routes, and visas.**

Booming of international tourism

- The countries in Asia and the pacific have observed a growth rate at 7.2% per annum in international visitors, reaching almost 400 million in 2016. The share of Asia and the Oceania in international tourism also increased from 18% in 1995 to more than 30% in 2016.

- China has the largest number of foreign visitors at 59.3 million, followed by Thailand (32.5 million), Turkey (30.3 million), Malaysia (26.8 million), and Hong Kong SAR (26.6 million). , Bhutan shows the fastest growth: from 2006 to 2016, the international arrivals increased by 11 times.

Figure 1. International Tourism: the World against Asia and the Pacific

- - - No. of the World Arrivals
- - - No. of Arrivals in Asia and the Pacific
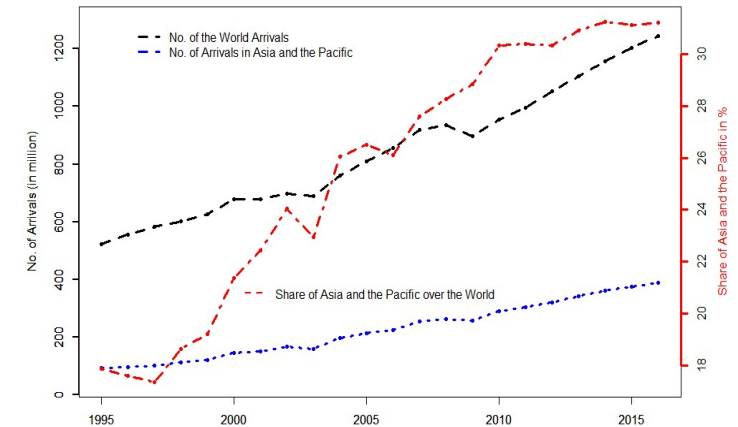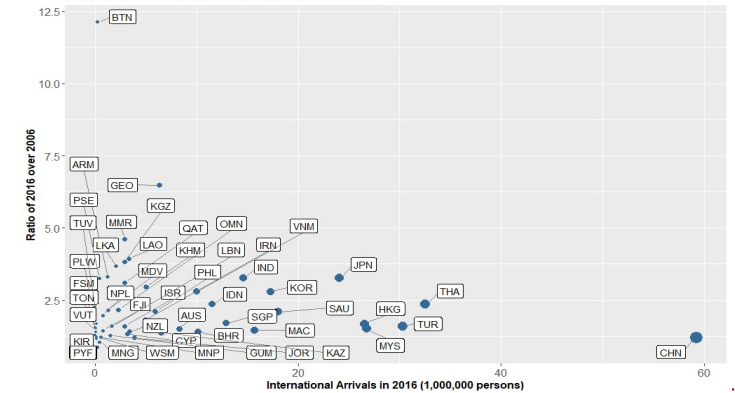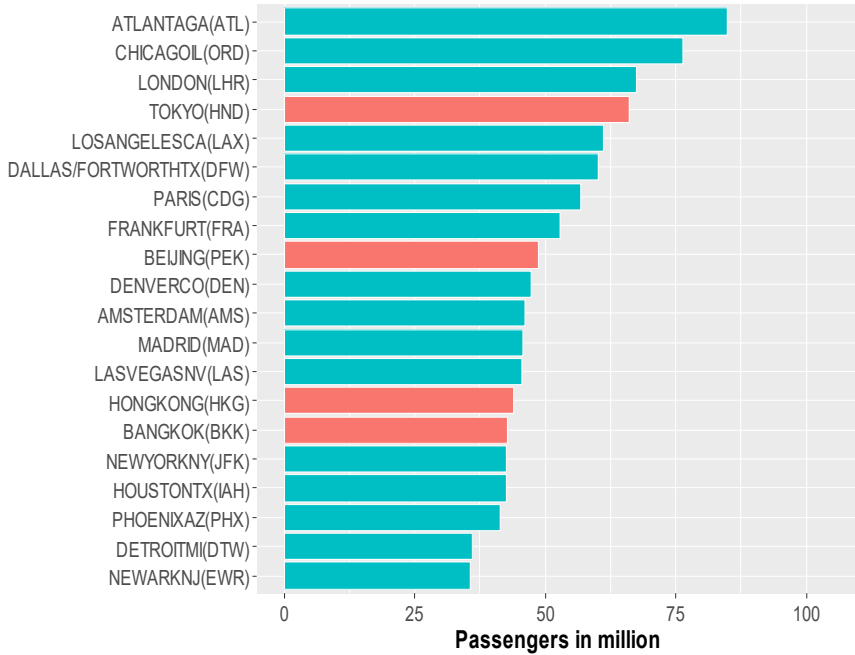- - - Share of Asia and the Pacific over the World

Figure 2. Fast Growing International Arrivals in Asia and Pacific
International Arrivals in 2016 vs. Growth Rate between 2006 and 2016

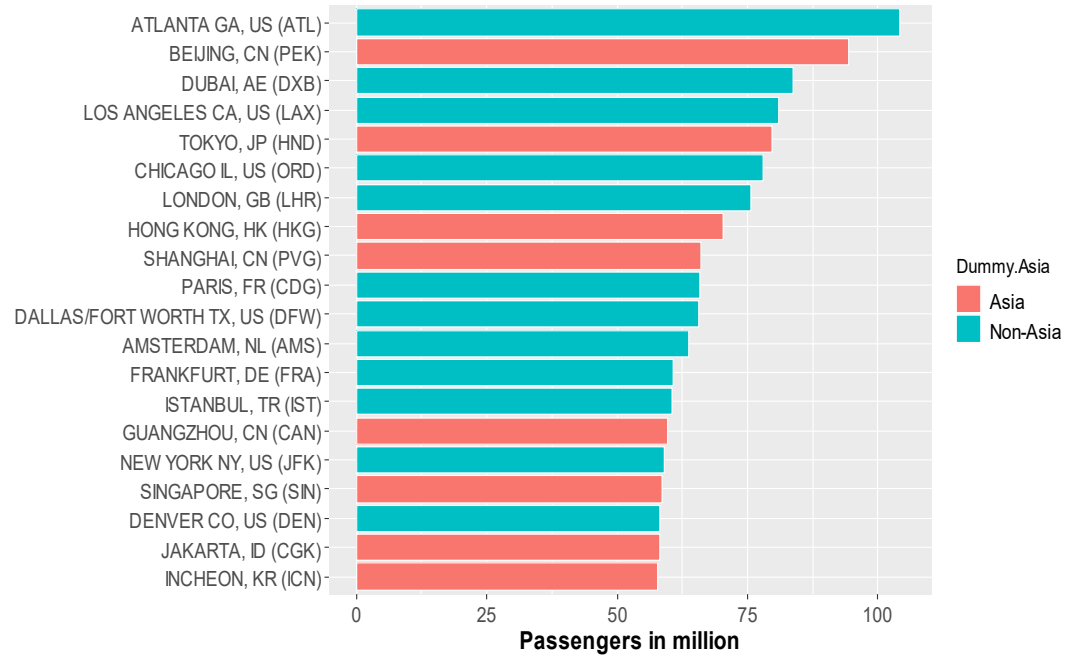Source: author calculation based on WDI data

Top 20 airports in passengers: 2016 vs. 2006

Source: author calculation based on ACI traffic data.

Empirical findings in the traditional framework

- Soft and hard air infrastructures significantly help promoting cross-borders tourism:
  - The number of airports in departure and destination countries;
  - The visa exemptions in departure and destination countries;
  - The availability of bilateral air routes.

Digitalization and Big data can help

- Efficiently planning the flight routes to reduce the fuel consumption and CO2 emission;
- Avoiding flying over the densely habited areas and reducing noise;
- Optimally choosing the locations of new airports;
- Efficiently employing the surrounding transportation network;
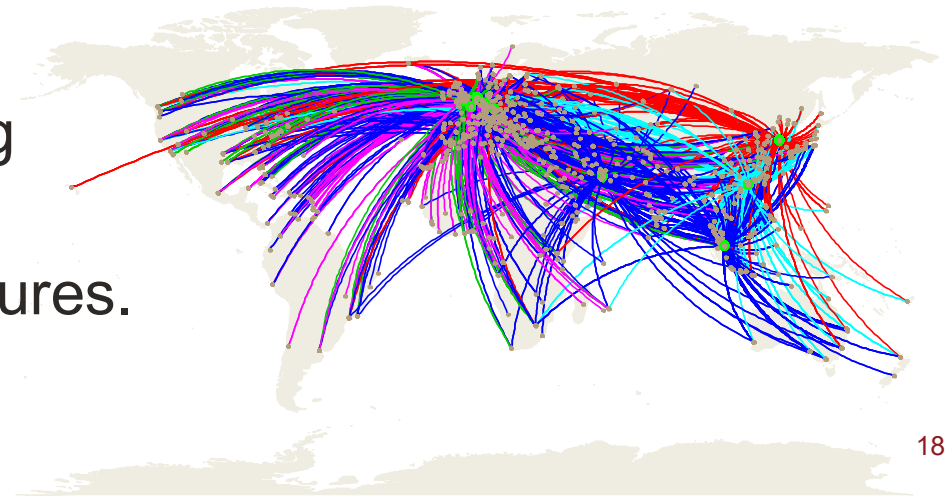- Simplifying the visa approval procedures.

Figure 1. International Air Routes from the Top 10 Airports

Implications:

- A country with visa application procedure digitized, which improves the ranking of the country with regards to visa exemptions from sample mean of 58 to 48, A 0.6% increase in international tourists will be induced;

- With digitalized planning, a 10% increase in provision of routes in either the departure or the destination country will induce an increase of the international visitors by 7.4%;

- Translating the routes to distance shortened, a 10% increase in the routes is equivalent to an average of 4,816 kilometers distance shortened between each pair of two countries, which is around the distance between Singapore and Beijing.

THANK YOU.
LET'S CREATE TOMORROW.

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