

# Bilateral International Investments: The Big Sur?

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# Introduction

- Integration of the “South” into the world economy
  - ▶ trade integration: “The Rise of Middle Kingdoms, ” Hanson (JEP, 2012)
  - ▶ financial integration: much discussion, no systematic evidence
  - ▶ recent focus on China and the Gulf countries
- Explore financial integration of the South during past two decades
  - ▶ emerging markets and developing countries
- Compare with financial integration of the “North”
  - ▶ advanced economies
- Assemble and analyze bilateral international data
  - ▶ bank loans and deposits
  - ▶ portfolio investment in debt and equity
  - ▶ foreign direct investment
  - ▶ international reserves

# Main results

- Rapid growth of international investments involving the South
  - ▶ South-to-South investments grew faster than
  - ▶ North-to-South and South-North investments, which grew faster than
  - ▶ North-to-North investments
- Across investment types
  - ▶ South portfolio investments and international reserves grew faster than
  - ▶ South FDI, which grew faster than
  - ▶ South bank loans and deposits

# Main results

- Across South regions
  - ▶ China is not an outlier
  - ▶ Africa is the region with the fastest growth in portfolio investments and FDI with the South
  - ▶ Eastern Europe is the region with the fastest growth in bank loans and deposits with the South
- Offshore financial centers do not play a major role
- Main results hold even when controlling for uneven economic growth
  - ▶ especially after the global financial crisis
- Extensive margin does not play a major role
  - ▶ but is relevant for South-to-South links, especially for FDI

# Data

- International investments are reported
  - ▶ based on residency, not on nationality of ultimate investors/borrowers
  - ▶ in line with national accounts and balance of payments statistics
- North defined according to BIS Annual Report
  - ▶ United States, Western Europe, Australia, Canada, Japan, New Zealand, plus jurisdictions that have one of these as governing state
- South includes all other countries/jurisdictions
- We exclude OFCs from most of the analysis (except when analyzed separately)
  - ▶ defined according to IMF's Staff Assessments on Offshore Financial Centers

# Data

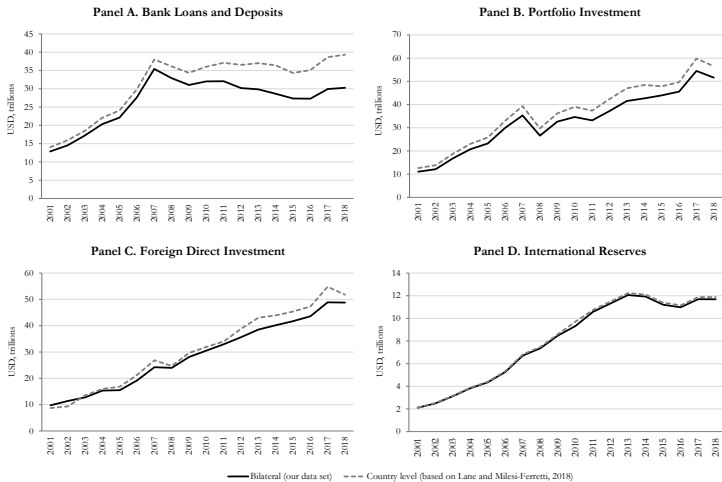
- Types of bilateral international investments
  - ▶ international bank loans and deposits
  - ▶ portfolio investment
  - ▶ foreign direct investment
  - ▶ international reserves
- Four out of five “functional categories in balance of payments”
  - ▶ only missing financial derivatives
- Objective: construct bilateral version of External Wealth of Nations database (Lane and Milesi-Ferretti)
- Year-end nominal stocks, transformed into constant 2011 U.S. dollar values

- International bank loans and deposits, from
  - ▶ Locational Banking Statistics, BIS
  - ▶ countries report bilateral assets and liabilities
    - ★ use mirror data to maximize coverage
  - ▶ 210 source and 210 destination countries
- Portfolio investment, from
  - ▶ Coordinated Portfolio Investment Survey (CPIS), IMF
  - ▶ countries report bilateral assets
  - ▶ 92 source and 238 destination countries

- Foreign direct investment, from
  - ▶ Bilateral FDI Statistics, United Nations Conference on Trade and Development (UNCTAD) until 2008 and
  - ▶ Coordinated Direct Investment Survey (CDIS), IMF since 2009
  - ▶ countries report bilateral assets and liabilities
    - ★ use mirror data to maximize coverage
  - ▶ 123 source and 239 destination countries
- International reserves, combining
  - ▶ International Financial Statistics (IFS), IMF with
  - ▶ Currency Composition of Official Foreign Exchange Reserves (COFER), IMF
  - ▶ we infer destination by assuming all countries' reserves have same composition
  - ▶ 182 source countries and up to 8 destination currencies



Figure 1. International Investment Positions: Bilateral vs. Country-Level Data



**Table 1. International Investment Positions/World GDP**

<b>Panel A. Bank Loans and Deposits</b>					
<b>Source</b>	<b>Destination</b>	<b>2001</b>	<b>2007</b>	<b>2008</b>	<b>2018</b>
North	North	20.4%	36.5%	29.9%	19.6%
North	South	2.7%	3.6%	3.5%	3.4%
South	North	4.1%	5.2%	4.0%	3.4%
South	South	1.6%	2.2%	1.8%	3.6%
Total		28.9%	47.4%	39.3%	30.0%

<b>Panel B. Portfolio Investment</b>					
<b>Source</b>	<b>Destination</b>	<b>2001</b>	<b>2007</b>	<b>2008</b>	<b>2018</b>
North	North	26.7%	45.1%	32.4%	40.2%
North	South	1.9%	5.0%	2.4%	5.4%
South	North	0.9%	2.0%	1.4%	3.0%
South	South	0.2%	1.1%	0.8%	1.6%
Total		29.7%	53.3%	37.0%	50.1%

<b>Panel C. Foreign Direct Investment</b>					
<b>Source</b>	<b>Destination</b>	<b>2001</b>	<b>2007</b>	<b>2008</b>	<b>2018</b>
North	North	19.7%	27.9%	25.4%	31.7%
North	South	4.1%	4.4%	3.9%	6.4%
South	North	2.4%	3.8%	4.0%	6.3%
South	South	1.5%	2.8%	2.0%	5.5%
Total		27.6%	38.9%	35.3%	50.0%

<b>Panel D. International Reserves</b>					
<b>Source</b>	<b>Destination</b>	<b>2001</b>	<b>2007</b>	<b>2008</b>	<b>2018</b>
North	North	2.5%	2.6%	2.5%	3.4%
North	South	0.0%	0.1%	0.1%	0.1%
South	North	3.7%	8.9%	9.0%	10.0%
South	South	0.0%	0.1%	0.1%	0.3%
Total		6.4%	11.7%	11.7%	13.8%

# Bilateral regional investments

- We run regressions of the form

$$\log(\text{Value}_{ijt}) = \beta_{NN} \text{Trend}_{ijt}^{NN} + \beta_{NS} \text{Trend}_{ijt}^{NS} + \beta_{SN} \text{Trend}_{ijt}^{SN} + \beta_{SS} \text{Trend}_{ijt}^{SS} + \theta_{ij} + \varepsilon_{ijt}$$

where  $i$  and  $j$  are regions or countries depending on level of aggregation R-R, C-R and C-C

- Regional trends are defined as

$$\text{Trend}_{ijt}^{R_1 R_2} = \begin{cases} t & \text{if } i \in R_1 \text{ and } j \in R_2 \\ 0 & \text{otherwise} \end{cases}$$

- The coefficients  $\beta_{NN}$ ,  $\beta_{NS}$ ,  $\beta_{SN}$ , and  $\beta_{SS}$  measure the average annual growth rates of regional investments
- We use
  - ▶ OLS for R-R and C-R regressions as there are few zeros
  - ▶ OLS and PPML for C-C regressions as there are many zeros

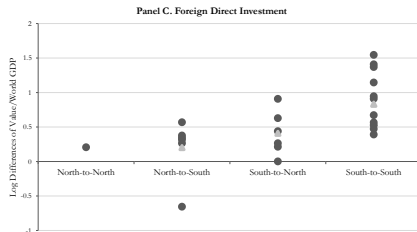
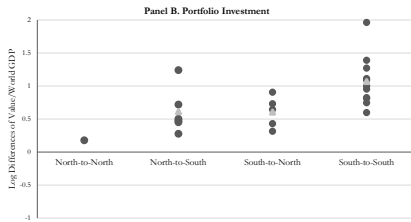
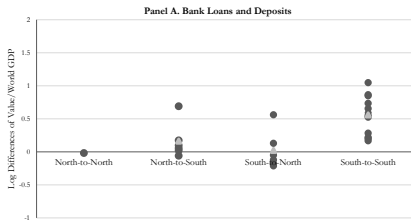
Table 3. Growth in the Value of International Investment Positions

Panel A. Bank Loans and Deposits						
Level of Data Aggregation	Region-to-Region	Country-to-Region	Country-to-Country		Country-to-Country Top 20%	
Estimation Method	OLS	OLS	OLS	PPML	OLS	PPML
Dependent Variable	Log(Value)	Log(Value)	Log(Value)	Value	Log(Value)	Value
North-to-North Trend	0.014 (0.012)	0.031 *** (0.008)	0.007 ** (0.003)	0.010 ** (0.004)	0.009 ** (0.004)	0.011 ** (0.005)
North-to-South Trend	0.054 *** (0.006)	0.043 *** (0.006)	0.030 *** (0.003)	0.048 *** (0.004)	0.038 *** (0.006)	0.059 *** (0.005)
South-to-North Trend	0.017 *** (0.005)	0.028 *** (0.006)	0.002 (0.003)	0.015 *** (0.005)	0.005 (0.006)	0.025 *** (0.007)
South-to-South Trend	0.092 *** (0.004)	0.147 *** (0.008)	0.064 *** (0.004)	0.079 *** (0.014)	0.102 *** (0.011)	0.136 *** (0.015)
<b>Wald Tests on Trend Coefficients:</b>						
1. South-to-South — North-to-North	0.078 ***	0.116 ***	0.056 ***	0.070 ***	0.092 ***	0.124 ***
2. South Destination — North Destination	0.057 ***	0.065 ***	0.042 ***	0.051 ***	0.063 ***	0.079 ***
3. South Source — North Source	0.020 ***	0.050 ***	0.014 ***	0.018 **	0.029 ***	0.045 ***
<b>Fixed Effects</b>	R-R	C-R, R-C	C-C	C-C	C-C	C-C
<b>Number of Observations</b>	72	12,974	106,675	146,380	22,479	24,078

# Regional differences across the South

- We divide the South in six regions
  - ▶ China
  - ▶ Asia (excluding China)
  - ▶ Africa
  - ▶ Eastern Europe and Central Asia
  - ▶ Latin America and the Caribbean
  - ▶ Middle East
- Calculate growth in international investments
  - ▶ North-to-North
  - ▶ North-to-six South regions
  - ▶ six South regions-to-North
  - ▶ six South regions-to-South and South-to-six South regions

**Figure 3. Growth of International Investment Positions, by South Region**



# Uneven economic growth

- Does growth of South investments mirror or exceed economic growth of the region?
- Normalize investments by square root of product of region/country sizes

$$\overline{Value}_{R_1 R_2 t} = \frac{Value_{R_1 R_2 t}}{\sqrt{GDP_{R_1 t} \cdot GDP_{R_2 t}}}$$

# Uneven economic growth

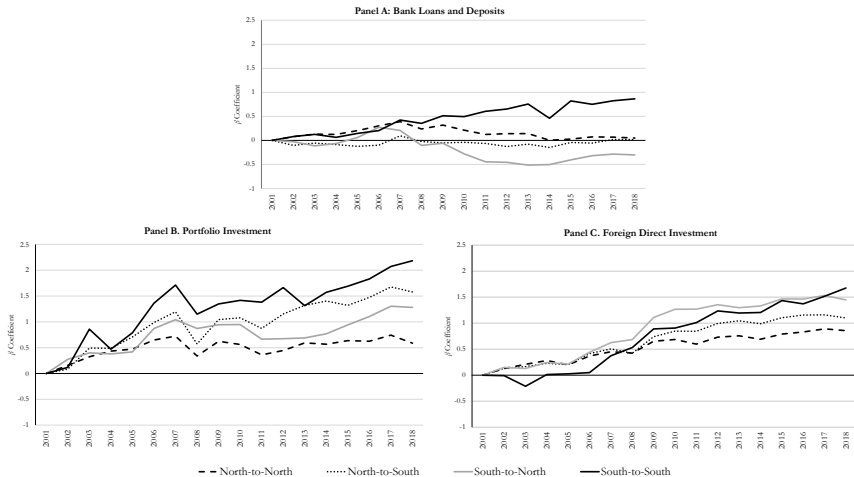
- Main trends are similar in direction, but smaller in magnitude
- Estimations restrict dynamics to linear trends
  - ▶ replace regional trends by regional time dummies

$$\log(\overline{Value}_{ijt}) = \beta_{NNt} + \beta_{NSt} + \beta_{SNt} + \beta_{SSt} + \theta_{ij} + \varepsilon_{ijt}$$

- The evolution of the fixed effects  $\{\beta_{NNt}, \beta_{NSt}, \beta_{SNt}, \beta_{SSt}\}_{t=1}^T$  reflect the annual growth rates of regional investments



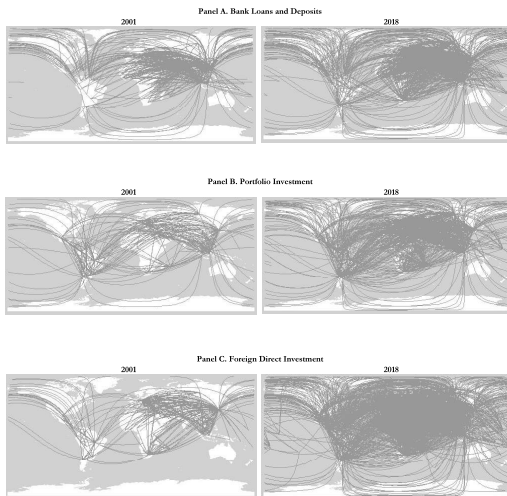
Figure 6. Growth in the Value of International Investment Positions over Regional GDPs



# Extensive margin

- Estimate growth rate of regional links using
  - ▶ Poisson regressions for R-R and C-R levels of aggregation
  - ▶ Logit regressions for C-C level of aggregation
    - ★ divide average marginal effect by baseline probability

Figure 7. Proliferation of South-South Links



The maps show the year-end active links between South countries. Every line in each map represents an active link (i.e. an investment position with positive value) from one South country to another.

Table 9. International Investment Positions/World GDP:  
Old versus New Links

Panel A. Bank Loans and Deposits					
2018					
Source	Destination	2001	Total	Old Links	New Links
North	North	20.4%	19.6%	19.6%	0.0%
North	South	2.7%	3.4%	3.3%	0.1%
South	North	4.1%	3.4%	3.3%	0.1%
South	South	1.6%	3.6%	2.9%	0.6%
Total		28.9%	30.0%	29.2%	0.8%

Panel B. Portfolio Investment					
2018					
Source	Destination	2001	Total	Old Links	New Links
North	North	26.7%	40.2%	40.1%	0.1%
North	South	1.9%	5.4%	5.1%	0.2%
South	North	0.9%	3.0%	2.4%	0.5%
South	South	0.2%	1.6%	1.1%	0.4%
Total		29.7%	50.1%	48.8%	1.3%

Panel C. Foreign Direct Investment					
2018					
Source	Destination	2001	Total	Old Links	New Links
North	North	19.7%	31.7%	30.4%	1.3%
North	South	4.1%	6.4%	5.5%	1.0%
South	North	2.4%	6.3%	4.5%	1.8%
South	South	1.5%	5.5%	4.2%	1.3%
Total		27.6%	50.0%	44.6%	5.4%

# Conclusions

- Rapid growth of international investments involving the South
- Much more growth to come
- Levels for the South are still low
- Extensive margin can generate growth in intensive margin
- South countries growing richer

**Appendix Table 1. List of Countries, North and South by Regions**

North	South						OFCs
	Africa	Asia	Eastern Europe and Central Asia	Latin America and the Caribbean	Middle East	Others	
Australia*	Angola	Afghanistan	Albania	Antigua and Barbuda	Algeria	Christmas Islands	Andorra
Austria*	Benin	American Samoa	Armenia	Argentina*	Bahrain	Cocos Islands	Anguilla
Belgium*	Botswana	Bangladesh	Azerbaijan	Barbados	Egypt, Arab Rep.	French Guiana	Aruba
Bonaire, Sint Eustatius and Saba	Burkina Faso	Bhutan	Belarus	Bolivia	Iran, Islamic Rep.*	French Southern Territories	Bahamas, The
Canada*	Burundi	Brunei Darussalam	Bosnia and Herzegovina	Brazil*	Iraq	Guadeloupe	Belize
Curacao	Cabo Verde	Cambodia	Bulgaria	Chile	Israel*	Guam	Bermuda
Denmark*	Cameroon	China*	Croatia	Colombia*	Jordan	Marshall Islands	British Virgin Islands
Estonia	Central African Republic	Fiji	Czech Republic	Costa Rica	Kuwait	Martinique	Cayman Islands
Faeroe Islands	Chad	Hong Kong SAR, China*	Georgia	Cuba	Lebanon	Mayotte	Cook Islands
Falkland Islands	Comoros	India*	Hungary	Dominica	Libya	Micronesia, Fed. Sts.	Cyprus
Finland*	Congo, Dem. Rep.	Indonesia*	Kazakhstan	Dominican Republic	Morocco	Nauru	Gibraltar
France*	Congo, Rep.	Kiribati	Kosovo, Rep.	Ecuador	Oman	Niue	Guernsey
French Polynesia	Cote d'Ivoire	Korea, Dem. Rep.	Kyrgyz Republic	El Salvador	Qatar	Norfolk Island	Isle of Man
Germany*	Djibouti	Korea, Rep.*	Macedonia, FYR	Grenada	Saudi Arabia*	Pitcairn	Jersey
Greece*	Equatorial Guinea	LAO, PDR	Moldova	Guatemala	Syrian Arab Republic	Reunion	Liechtenstein
Greenland	Eritrea	Malaysia*	Mongolia	Guyana	Tunisia	St. Pierre and Miquelon	Macao SAR, China
Iceland	Ethiopia	Maldives	Montenegro	Haiti	United Arab Emirates*	Tokelau	Monaco
Ireland*	Gabon	Myanmar	Poland*	Honduras	West Bank and Gaza	Western Sahara	Montserrat
Italy*	Gambia, The	Nepal	Romania	Jamaica	Yemen, Rep.		Netherlands Antilles
Japan*	Ghana	Pakistan	Russian Federation*	Mexico*			Palau
Latvia	Guinea	Papua New Guinea	Serbia	Nicaragua			Panama
Lithuania	Guinea-Bissau	Philippines	Tajikistan	Paraguay			Samoa
Luxembourg	Kenya	Singapore*	Turkey*	Peru			Seychelles

(cont.)

Appendix Table 1. List of Countries, North and South by Regions (continued)

North	South						OFCs
	Africa	Asia	Eastern Europe and Central Asia	Latin America and the Caribbean	Middle East	Others	
Malta	Lesotho	Solomon Islands	Turkmenistan	Puerto Rico			Turks and Caicos
Netherlands*	Liberia	Sri Lanka	Ukraine	St. Kitts and Nevis			Vanuatu
New Caledonia	Madagascar	Taiwan, China*	Uzbekistan	St. Lucia			
New Zealand	Malawi	Thailand*		St. Vincent and the Grenadines			
Norway*	Mali	Timor-Leste		Suriname			
Portugal	Mauritania	Tonga		Trinidad and Tobago			
San Marino	Mauritius	Tuvalu		Uruguay			
Sint Maarten	Mozambique	Vietnam		Venezuela. R.B.*			
Slovak Republic	Namibia			Virgin Islands, United States			
Slovenia	Niger						
Spain*	Nigeria*						
St. Helena	Rwanda						
Sweden*	Sao Tome and Principe						
Switzerland*	Senegal						
United Kingdom*	Sierra Leone						
United States*	Somalia						
Wallis and Futuna	South Africa*						
	South Sudan						
	Sudan						
	Swaziland						
	Tanzania						
	Togo						
	Uganda						
	Zambia						
	Zimbabwe						

Figure 5. International Investment Positions in 2018, by South Region

Panel A. Bank Loans and Deposits

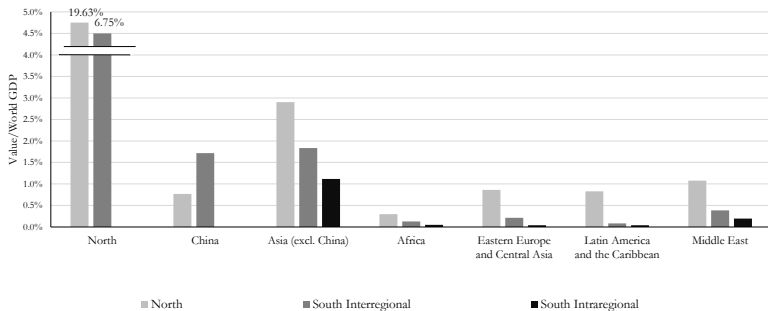




Figure 5. International Investment Positions in 2018, by South Region

Panel B. Portfolio Investment

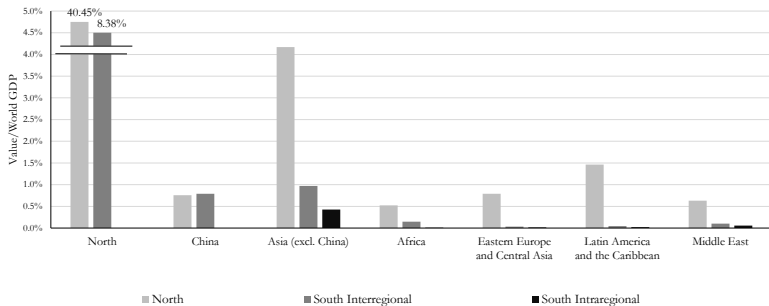


Figure 5. International Investment Positions in 2018, by South Region

