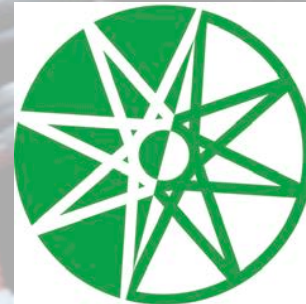


Scaling Up Rapid Transit: The Role of National Policy & Finance

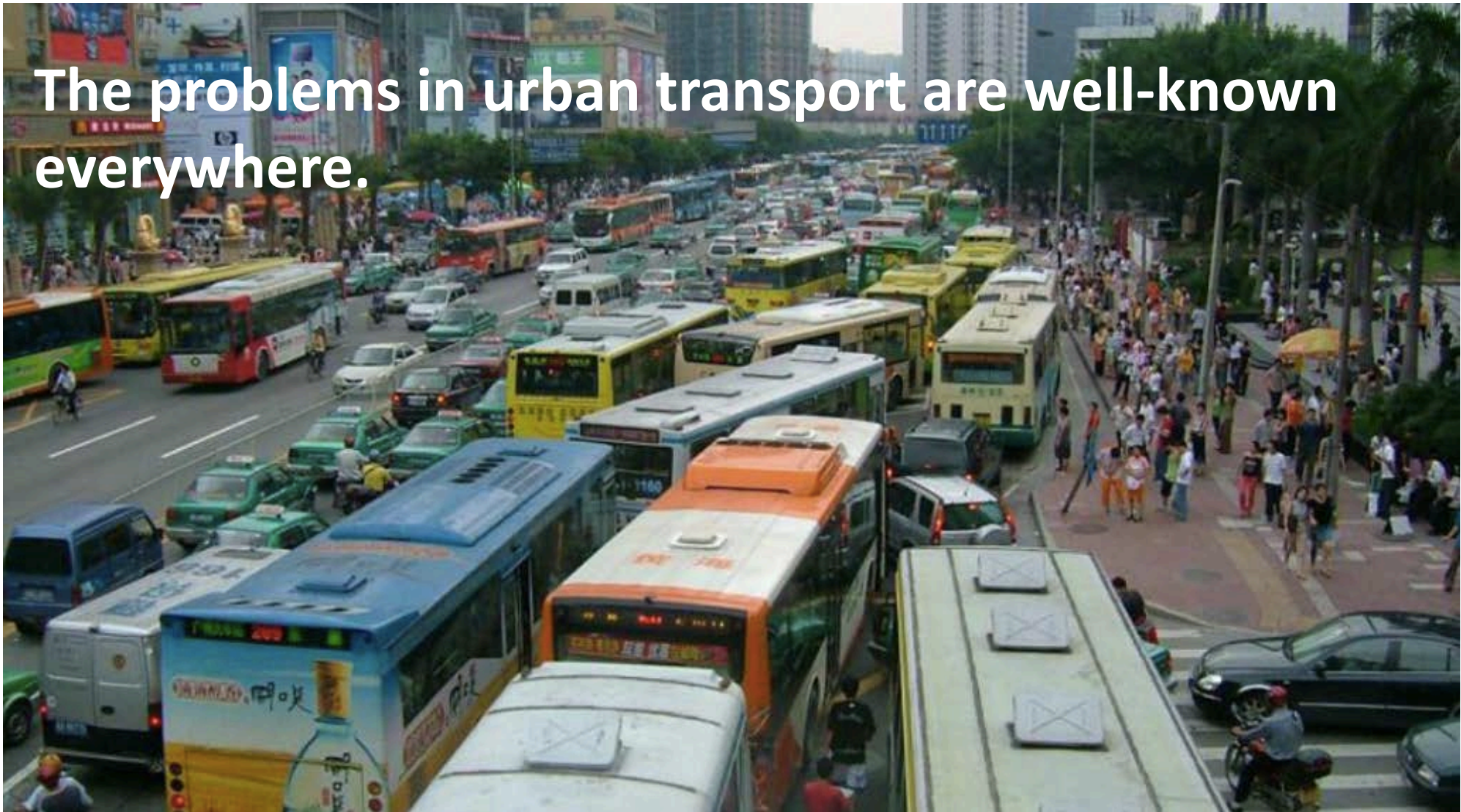
Colin K. Hughes

Director of National Policy & Project Evaluation



ITDP

Institute for Transportation
& Development Policy



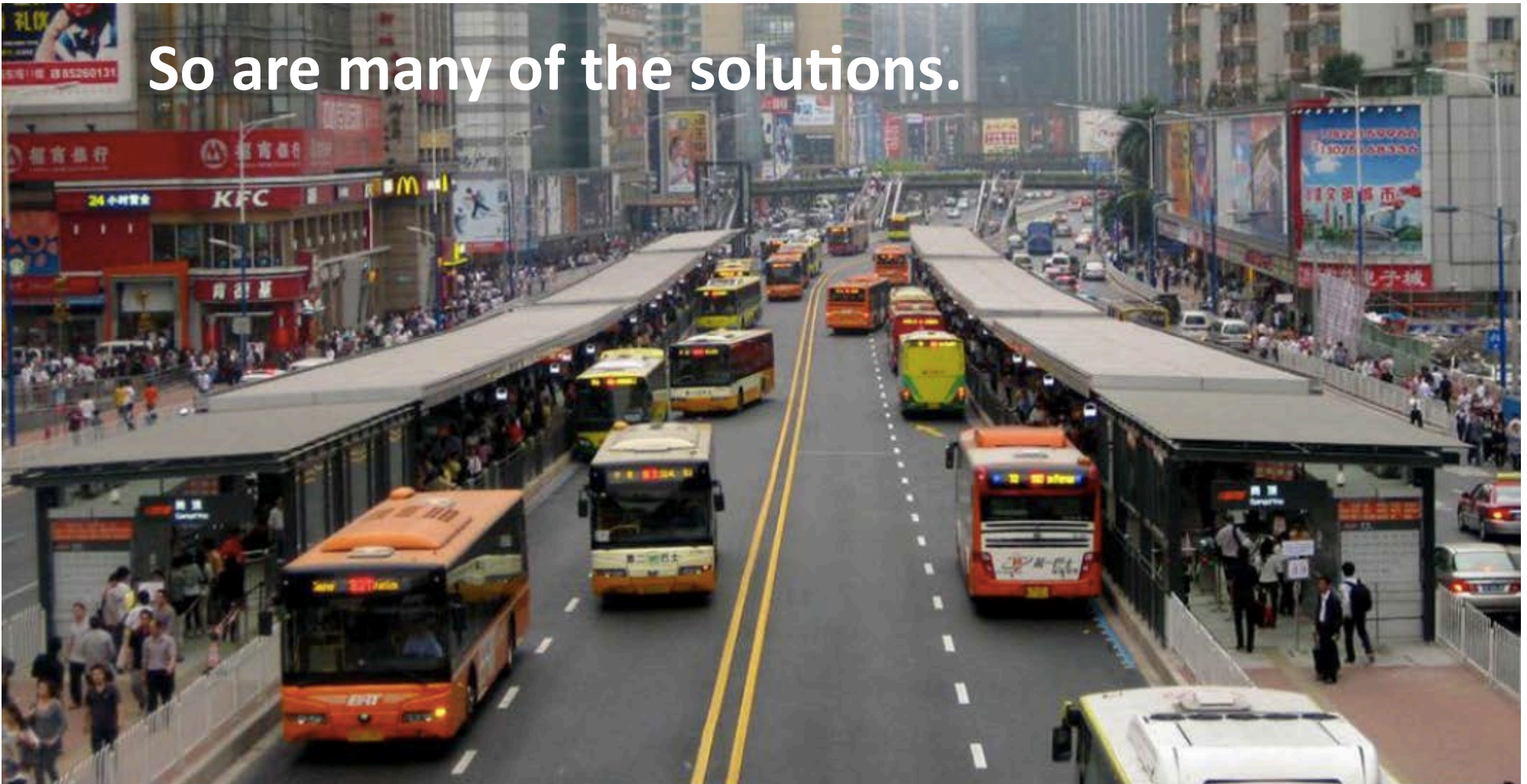
The problems in urban transport are well-known everywhere.



ITDP

Institute for Transportation
& Development Policy

So are many of the solutions.



The question is, *how* to implement given different contexts?



ITDP
Institute for Transportation
& Development Policy


Cities in some countries lack investment.





Cities in other countries make
unsustainable investments.

How to implement
sustainable transport
depends on the country
in question.



1

Where has Rapid Transit Infrastructure Grown the Fastest?

- Global Database of Rapid Transit



2

How is Rapid Transit Infrastructure Financed?

- Financial Details for 130 projects



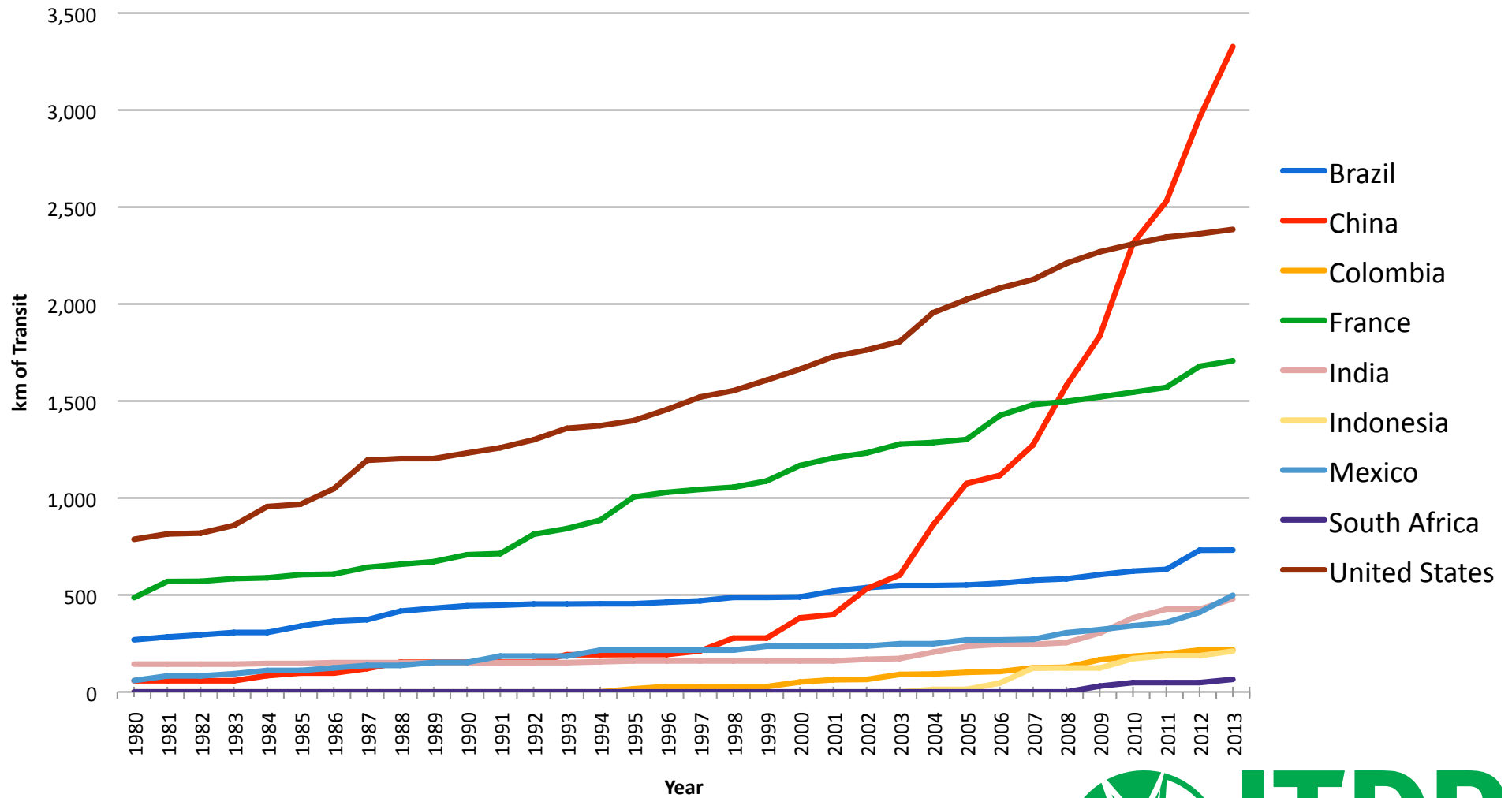
3

Do National Policies Help Grow Rapid Transit?

-Transport Policy Analysis in 9 countries



Growth of Rapid Transit in Kilometers, 1980-2013



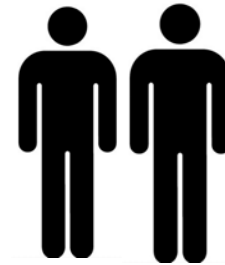
Rapid Transit to Resident Ratio (RTR ratio)



Kilometers of
Mass Rapid
Transit



Urban
Residents



$$\text{RTR} = \frac{\text{Kilometers of Mass Rapid Transit}}{\text{Millions of Urban Residents}}$$

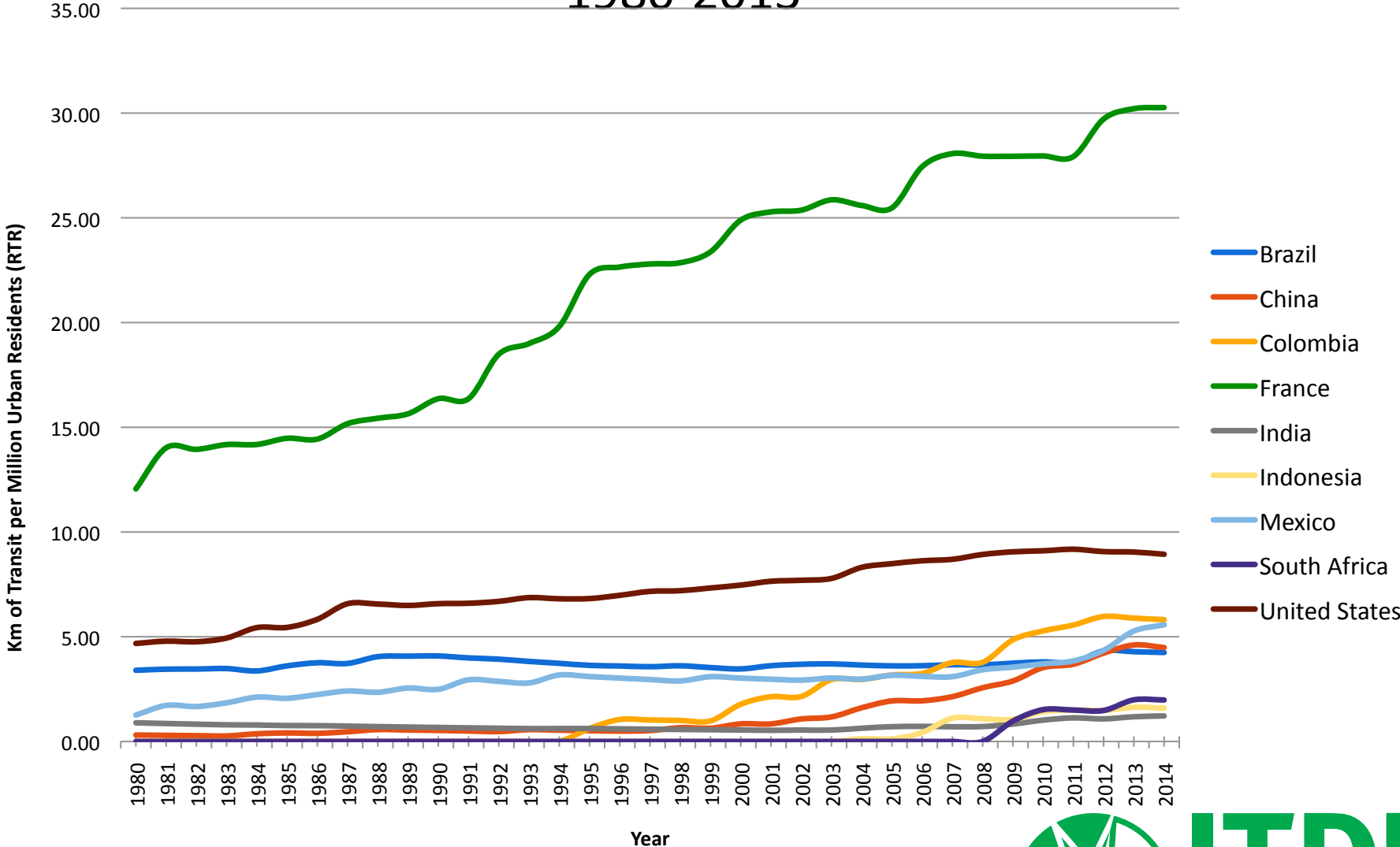
Example:

$$\text{BRAZIL RTR} = \frac{456 \text{ km Metro} + 275 \text{ km BRT}}{171 \text{ Million of Urban Residents}} = \text{RTR } 4.3$$

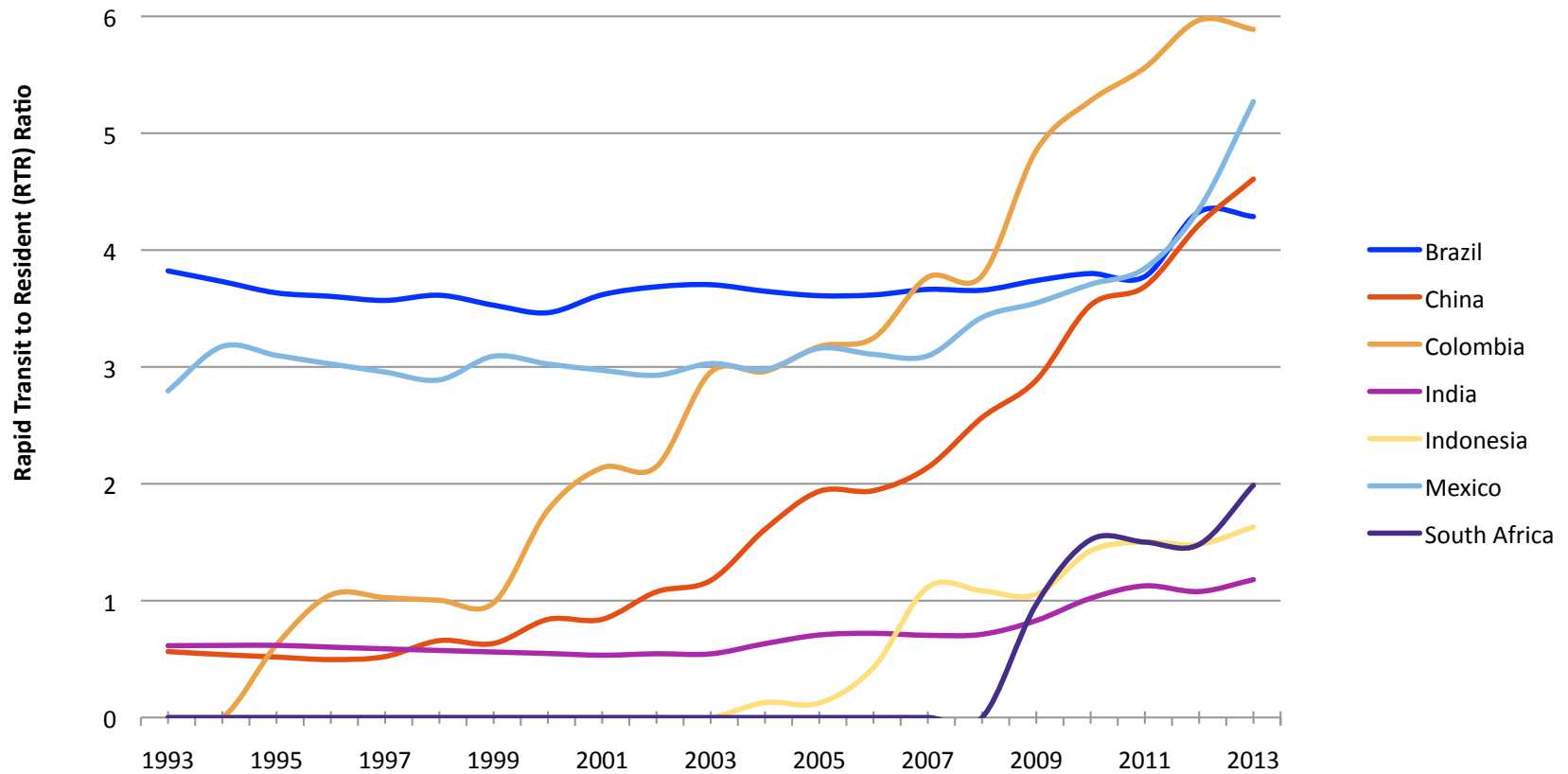
2013

That is to say, Brazil has 4.3 km of MRT for every million urban residents

Growth of Rapid Transit per Urban Resident, 1980-2013



Rapid Transit Growth in 7 Developing Countries by RTR, 1980-2013

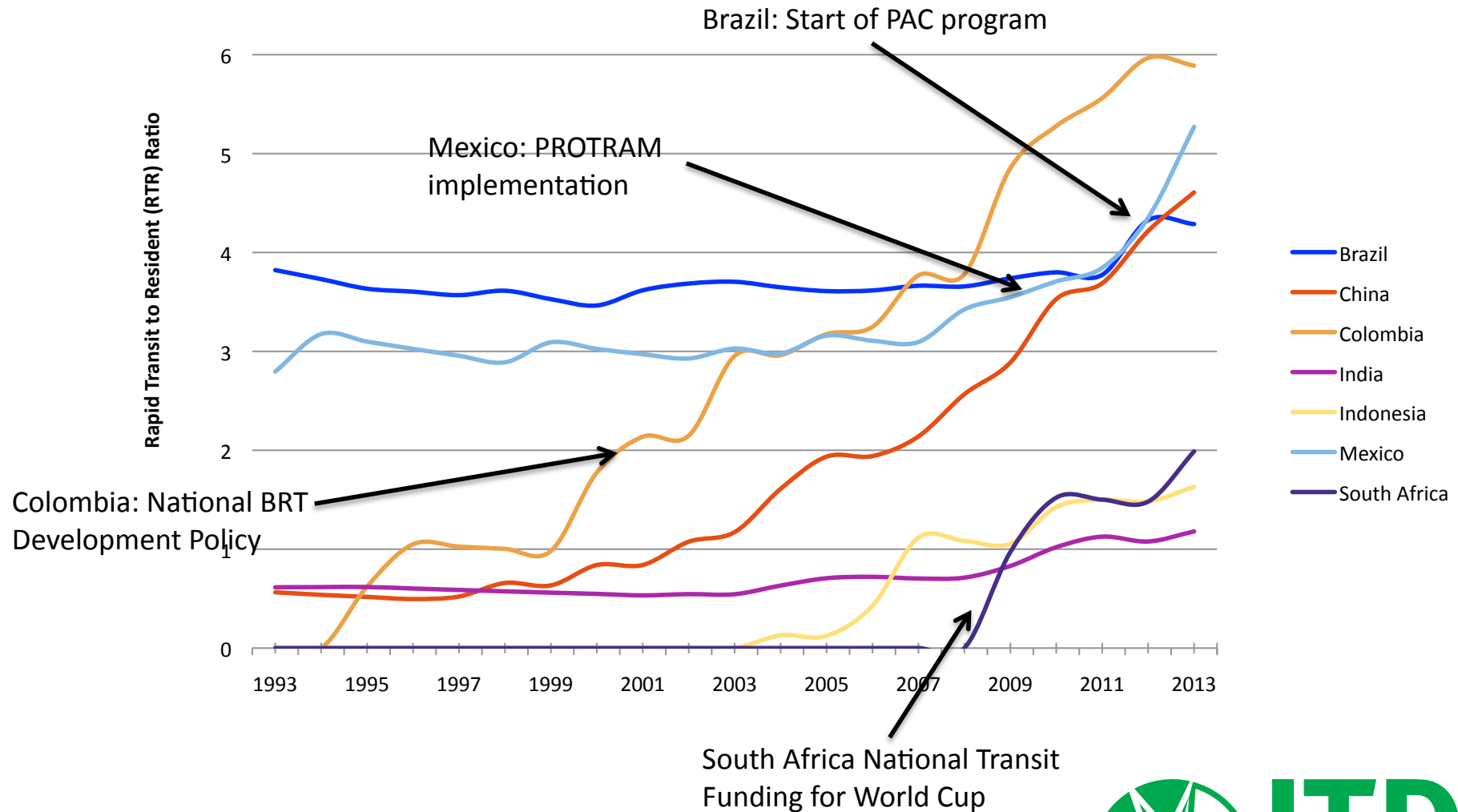


South Africa National Transit
Funding for World Cup



ITDP
Institute for Transportation
& Development Policy

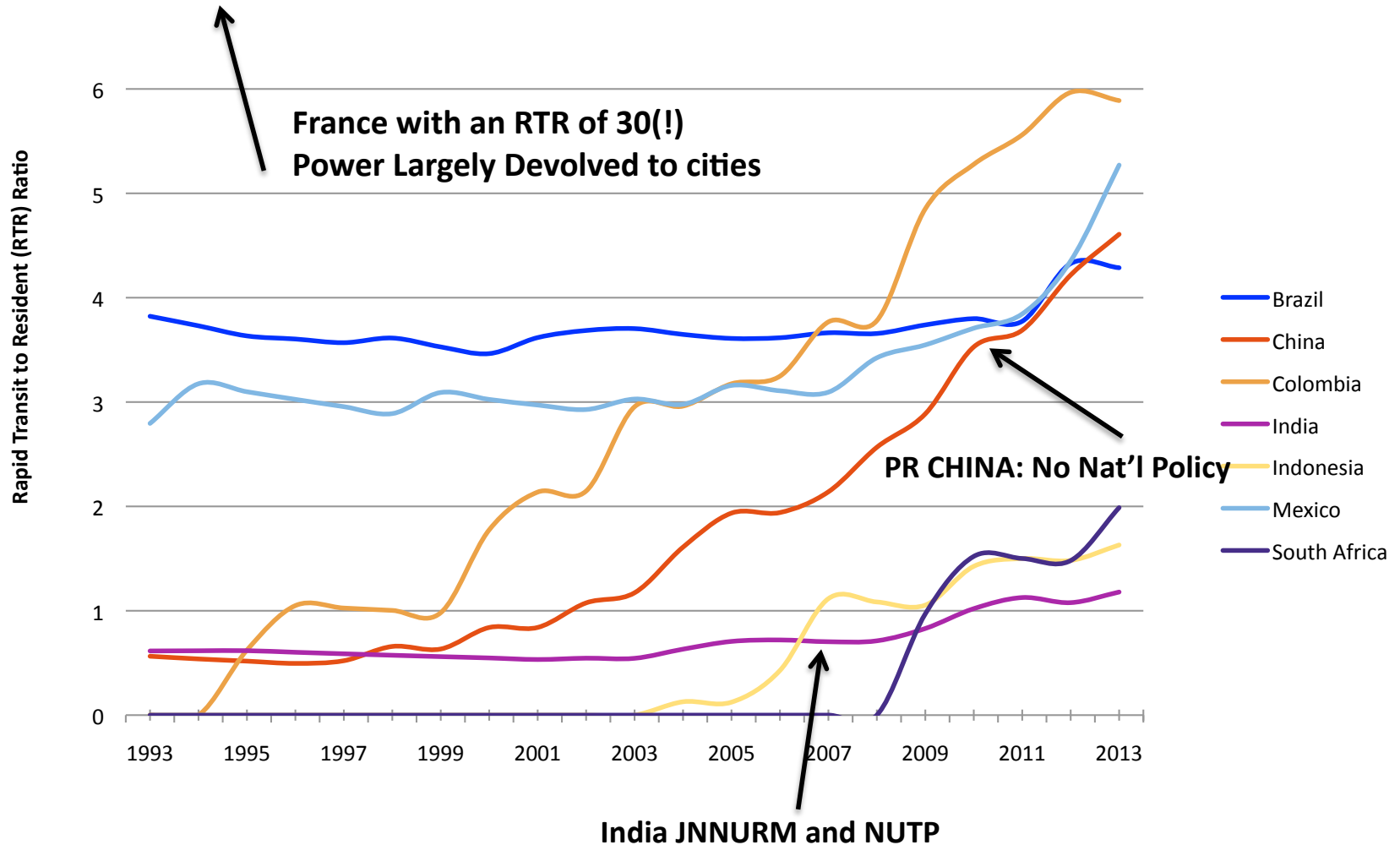
National Policy Can Grow RTR



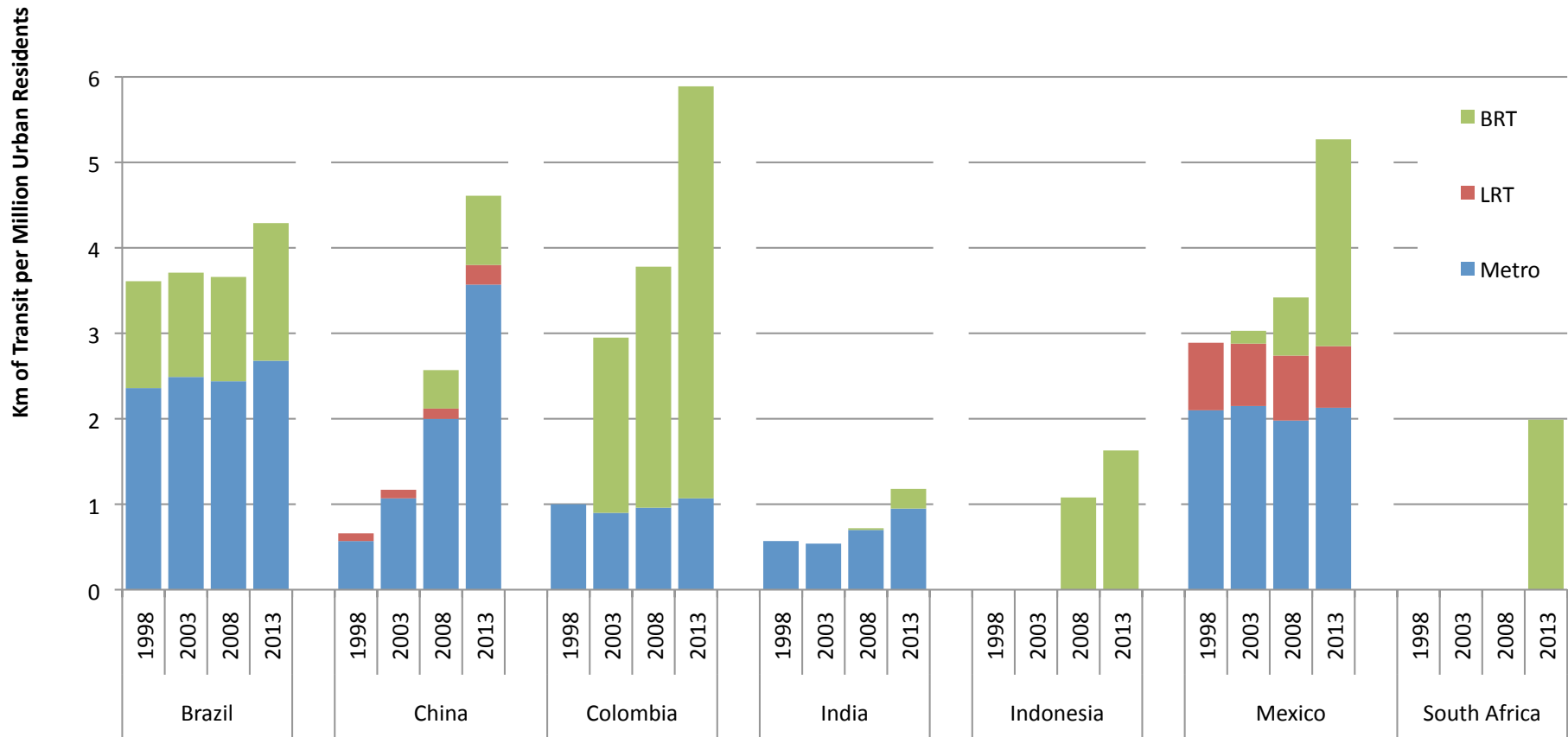
The type of growth we are looking for is possible.



But It Isn't Always Needed and Doesn't Always Work

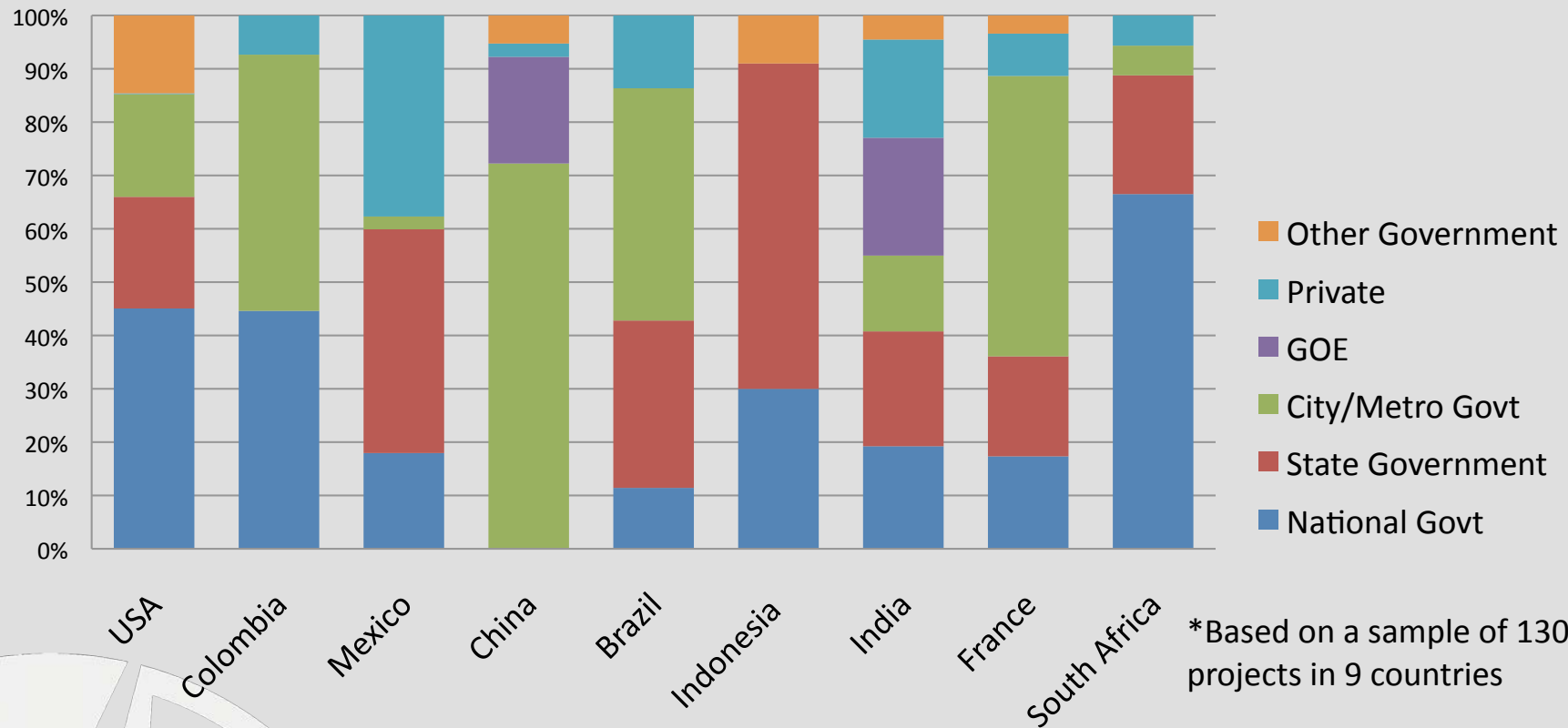


Developing Countries' Growth in RTR by Mode, 1998-2013



How does funding for rapid transit vary?

Sources of Mass Rapid Transit Funding

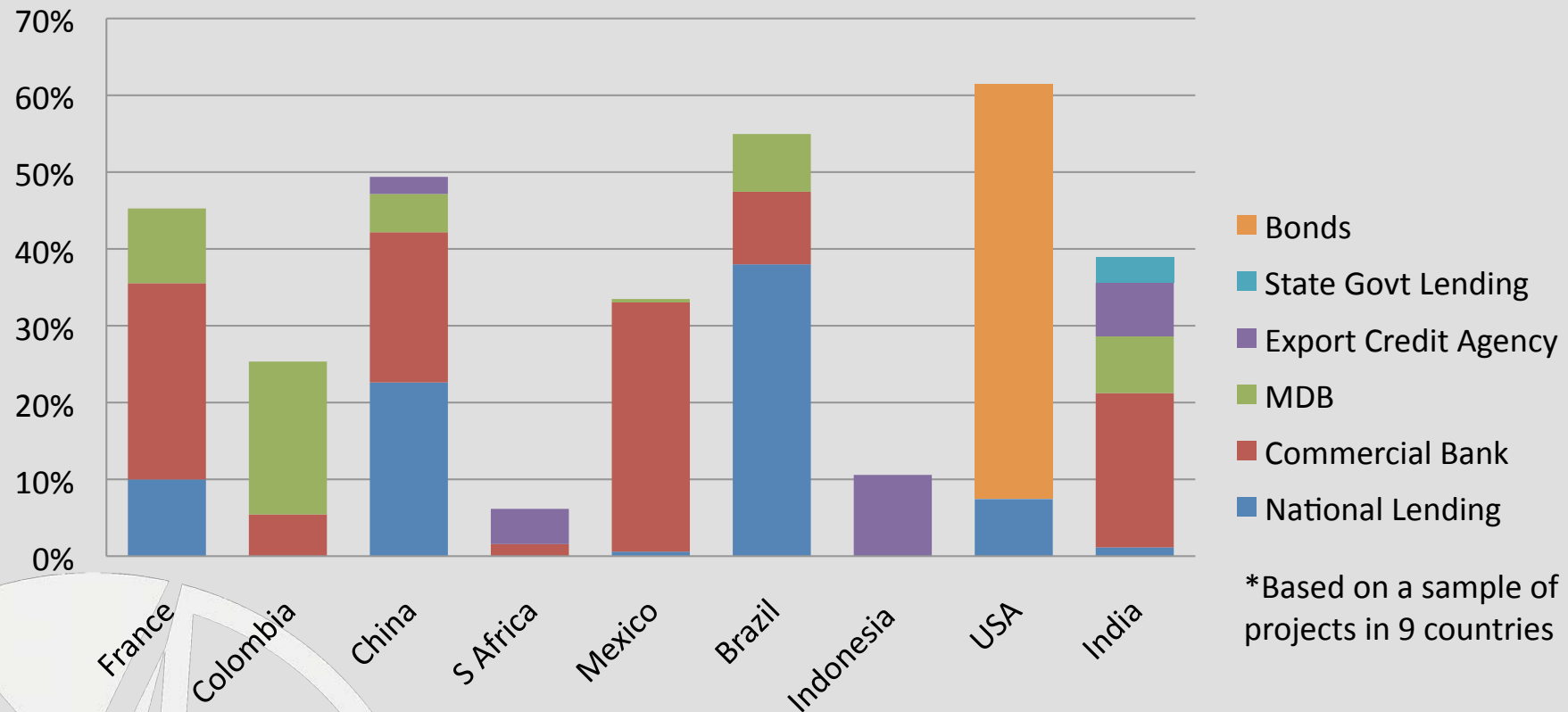


High transit growth in countries where cities fund projects China, Colombia, France.

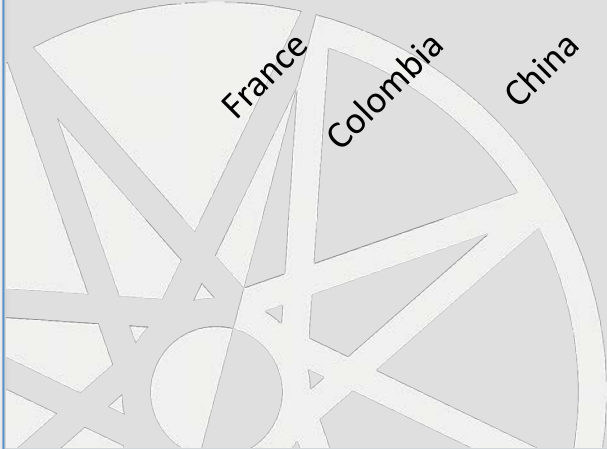
Low transit growth in countries that have little or no city funding like India, South Africa, Mexico (outside DF), Indonesia

How does financing for rapid transit vary?

Portion of Capital Investment Covered by Debt Finance,
by Country and Source*



*Based on a sample of 130 projects in 9 countries



So What Does Drive Rapid Transit Growth?

ITDP's Urban Transport Development Potential Framework*:

Country	RTR Growth: Annual km of Mass Transit added per 1 million residents, 2000 - 2014	1. Funding**: Annual Rapid Transit Spending per Urban Capita	2. Financing: Avg. Debt- Equity Ratio	3. Capacity: Planning, Governance, Implementation	4. Mandate: Legal or Political, for Sustainable Transport
France	0.49	48.09	~70%	High	High
Colombia	0.32	10.61	~50%	Medium	High
China	0.3	22.71	~70%	High	High
Mexico	0.16	3.53	33%	Medium	Medium
Brazil	0.14	11.59	55%	Medium	Medium
S. Africa	0.14	0.96	6%	Low	Medium
USA	0.11	18.77	~50%	Medium	Low
Indonesia	0.11	0.69	10%	Low	Low
India	0.04	2.9	32%	Low	Low

* This framework is preliminary


** Based on a sample of 130 projects in 9 countries

What Does Drive Rapid Transit Growth?

There are **4 critical elements** that cities must be empowered with to grow their RTR:

- 1. Funding** - in the form of dedicated revenue bases for capital planning
- 2. Debt Finance** – to leverage revenue for large up-front investments
- 3. Institutional Capacity** – Governance, Planning, Implementation
- 4. Pro-Transit Mandate** – Political and/or Legal

Ideally, cities would inherently have these elements (like France and China), but when they do not, national policy can intervene as a stop-gap.



1. Funding: Access to Dedicated Revenue Streams

	Funding Indicator: <small>Ann. Capital Investment in Rapid Transit per Cap. (2000-2014)</small>	Funding Source	Revenue Reliability	Polluter Pays?	Notes
France	48.09	City (Nat'l Pass-thru)	High	Yes	Payroll tax for transport, fuel tax
Colombia	10.61	National, City	Mixed	Yes	Fuel Tax for local transport, National policy to fund one-off BRT systems
China	22.71	City	Mixed	No	Municipal land sales
Mexico	3.53	National, State	Low	Yes	Fonadin funded by toll profits
Brazil	11.59	City, State	Mixed?	No	Fuel taxes cut
USA	18.77	City, State, National	High	Yes	Many local sources plus NHTF from fuel tax
S. Africa	0.96	National	Low	Yes	Fuel levies
Indonesia	0.69	State	Low	No	Fuel subsidy
India	2.9	State, National	Low	No	No fuel tax

Potential Role of National Policy:

- Open access to bond markets, especially encouraging revenue bonds (e.g. US)
- Develop national development bank lending for cost-effective transport projects (e.g. Brazil)
- Encourage & strengthen capacity for PPP (e.g. Mexico)

2. Financing: Access to Debt Finance

	Avg. Debt Equity Ratio	Bond Releases	National Bank Lending	PPP/Private Financing	Multi-Lateral Development Bank
France	~70%	Many	City (Nat'l Pas-through)	Yes	Yes
Colombia	~50%	Few	No	Some	Yes
China	~70%	Some	CDB	Yes	Yes
Mexico	33%	Few	BANOBRAS/UTTP	Yes	Some
Brazil	55%	Few	BNDES & Caixa	Some	Yes
USA	~50%	Many	City, State, National	Yes	No
S. Africa	6%	Few	No	Some	No
Indonesia	10%	Few	No	Some	No
India	32%	Few	No	Some	Yes

Potential Role of National Policy:

- Open access to bond markets, especially encouraging revenue bonds (e.g. US)
- Develop national development bank lending for cost-effective transport projects (e.g. Brazil)
- Encourage & strengthen capacity for PPP (e.g. Mexico)

3. Institutional Capacity: To Govern, Plan, Implement

	Planning Institutions	Urban Transport Governance	Technical Capacity
France	Strong planning framework in place (PDU)	United metropolitan planning organizations (Department level)	strong public and private sector technical capacity
Colombia	Weak planning institutions and relatively	capable governance structures	strong project delivery capacity across country
China	Relatively strong tradition of planning	very strong local governance	strong technical capacity
Mexico	Weak planning institutions	weak and sometimes fractured transport governance	weak technical capacity
Brazil	Nascent planning institutions	Cities have strong governance	sufficient technical capacity
S. Africa	?	?	?
USA	Strong local planning	semi-functional metropolitan planning	strong technical capacity
Indonesia	Weak planning institutions	weak urban governance	weak technical capacity - poor project designs and planning
India	Weak planning institutions, governance, and technical capacity	weak urban governance	weak technical capacity - some poor project designs and planning

Potential Role of National Policy:

- Require, review, and strengthen planning institutions (e.g. France, U.S.)
- Develop metropolitan transport authorities (e.g. US)
- Develop capacity strengthening programs (e.g. Colombia)

4. Mandate For Sustainable Transport

	Popular Mandate	National Policy Mandate
France	Yes	Transport Sustainability requirements for financial support
Colombia	Growing support	Financial Support for Sustainable Modes
China	Yes	No
Mexico	Growing support	Financial Support for Sustainable Modes
Brazil	Growing support	Financial support and mobility law calls for improved public transport
S. Africa	Weak	Financial Support for Sustainable Modes
USA	Growing support	National financial support for transit. California has laws that require sustainable transport planning.
Indonesia	Growing support	No
India	Growing support	National Urban Transport Policy (weak) and JNNURM funding in support of sustainable transport.

Potential Role of National Policy:

- Set sustainable transport goals and tie financing to them(e.g. France, U.S.)
- Provide leadership and national communication on importance of sustainable transport

Conclusion: National Policy for Urban Transport

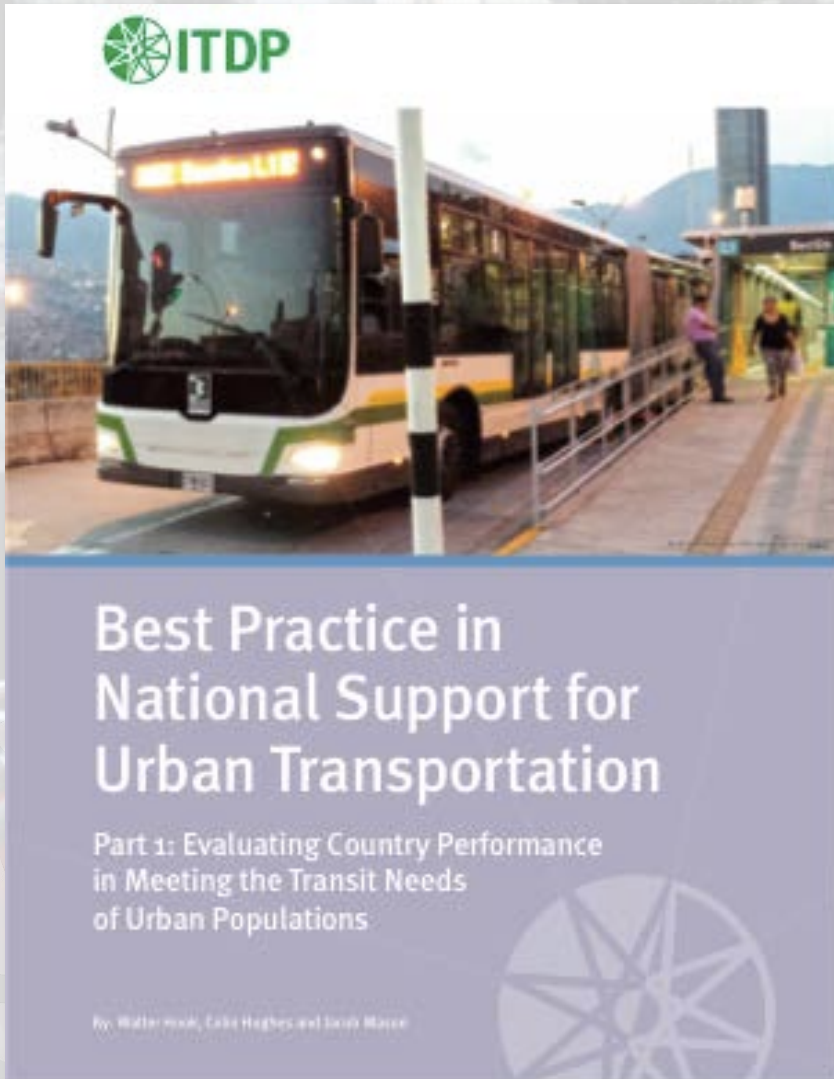
	RTR Growth: Annual km of Mass Transit added per 1 million residents, 2000 - 2014	Mass Rapid Transit Funding: Annual Rapid Transit Spending per Urban Capita	Debt Access: Avg. Debt-Equity Ratio	Planning and Implementation Capacity	Sustainable Transport Mandate
France	0.49	48.09	~70%	High	High
Colombia	0.32	10.61	~50%	Medium	High
China	0.3	22.71	~70%	High	High
Mexico	0.16	3.53	33%	Medium	Medium
Brazil	0.14	11.59	55%	Medium	Medium
S. Africa	0.14	0.96	6%	Low	Medium
USA	0.11	18.77	~50%	Medium	Low
Indonesia	0.11	0.69	10%	Low	Low
India	0.04	2.9	32%	Low	Low

National Policy should be tailored to really move the needle on the following issues:

1. Cities need **dedicated funding** streams and expenditures of at least \$20 per capita annually
2. They need **access to debt-finance** via bonds, development banks for DER of over 50%
3. **Capacity** – unified governance, strong planning institutions, and capable developers
4. They need a **mandate** to deliver good public transport

* They need to invest transport money in **cost-effective** solutions, under

Thank you!



Colin K. Hughes

Director of National Policy &
Project Evaluation

colin.hughes@itdp.org

www.itdp.org

