Increasing your chances of success while leaving your comfort zone: Adapting Sri Lanka’s growth model

January 9th 2017
Professor Ricardo Hausmann
Director of the Center for International Development
Harvard University
SRI LANKA’S ACHIEVEMENTS AND CHALLENGES
Sri Lanka’s path to middle income status has been strong and its efforts over the long-term in health and education delivery have been commendable.

Note: Sri Lanka’s level of development is the highest in South Asia. Thus, the remainder of this analysis uses a different group of comparator countries.

Strong growth and the end of the conflict have been translated into poverty reduction throughout Sri Lanka.

…but several parts of the country still remain left behind, and many people remain disconnected from the opportunities created by past growth.

Poverty headcount index in 2002 vs. 2012/13

Source: Department of Census and Statistics
However: per capita growth has slowed during the last four years.
HOWEVER: per capita growth has slowed during the last four years

Note: GDP per capita as measured in constant 2010 US$
Data sources: World Development Indicators through 2015 & predicted value for 2016 based on CBSL projections
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Data sources: World Development Indicators through 2015 & predicted value for 2016 based on CBSL projections
Why did growth slow down? Because a widening of the current account acted as a speed limit.
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Sri Lanka’s growth conundrum

- GDP growth is strong by regional standards.

Source: WDI
Sri Lanka’s growth conundrum

- GDP growth is strong by regional standards.
- Exports are not keeping pace…

Source: WDI
Sri Lanka’s growth conundrum

- GDP growth is strong by regional standards.
- Exports are not keeping pace…
- …but imports are.

Source: WDI
Export growth is consistently lagging behind peers

Off the charts:
Vietnam: 12,000!
China: 2,700

Data source: UN COMTRADE, via CID. Not adjusted for inflation.
And the economy is now considerably less export-oriented

Exports of goods and services (% GDP), 2000

Exports of goods and services (% GDP), 2014

Source: WDI
One reason why Sri Lanka’s exports are not growing fast enough: Sri Lanka’s exports are not diversifying.

Source: UN COMTRADE, via CID
In other countries, diversification results in a direct boost to incomes

New export products, 2000-2015

<table>
<thead>
<tr>
<th>Country</th>
<th>New products</th>
<th>USD per capita</th>
<th>USD (billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>76</td>
<td>245</td>
<td>331.6</td>
</tr>
<tr>
<td>Thailand</td>
<td>70</td>
<td>326</td>
<td>21.8</td>
</tr>
<tr>
<td>Vietnam</td>
<td>48</td>
<td>545</td>
<td>50.4</td>
</tr>
<tr>
<td>Philippines</td>
<td>11</td>
<td>12</td>
<td>1.2</td>
</tr>
<tr>
<td>Malaysia</td>
<td>10</td>
<td>149</td>
<td>4.7</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>7</td>
<td>5</td>
<td>0.1</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>6</td>
<td>139</td>
<td>0.7</td>
</tr>
<tr>
<td>Indonesia</td>
<td>4</td>
<td>3</td>
<td>0.8</td>
</tr>
<tr>
<td>India</td>
<td>0</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Note: uses both standard RCA and population-based version; excludes natural resources.
Source: CID calculations using COMTRADE data
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<tr>
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</table>

Product

- Rags, textile scraps
- Woven fabrics of bast fibers
- Wheat or meslin flour
- Cigarettes
- Tulles and other net fabrics
- Lead oxides
- Textile for conveyor belts

Note: uses both standard RCA and population-based version; excludes natural resources.
Source: CID calculations using COMTRADE data
Sri Lanka’s export composition has been stagnant since the mid-1990s.

Source: Atlas of Economic Complexity
Compare to Vietnam

Vietnam’s Goods Exports
Or India

India’s Goods Exports

Source: Atlas of Economic Complexity
Countries often first diversify into garments, followed by electronics and then machinery.
Over time, garments tend to peak as a share of exports as growth in other industries picks up.
...but sometimes countries get stuck in the garments phase
...this is what has happened in Sri Lanka
In service exports, Sri Lanka performs relatively well in transport and insurance/finance, but has much room to grow in tourism and ICT.

<table>
<thead>
<tr>
<th>Service exports per capita, 2014 (BoP, current USD)</th>
<th>Service exports total</th>
<th>Transport services (logistics)</th>
<th>Travel services (tourism)</th>
<th>Insurance and financial services</th>
<th>Communications, computer, other services (ICT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDN</td>
<td>92</td>
<td>15</td>
<td>40</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>IND</td>
<td>121</td>
<td>14</td>
<td>15</td>
<td>6</td>
<td>85</td>
</tr>
<tr>
<td>VNM</td>
<td>121</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHN</td>
<td>206</td>
<td>28</td>
<td>77</td>
<td>7</td>
<td>94</td>
</tr>
<tr>
<td>PHL</td>
<td>257</td>
<td>19</td>
<td>51</td>
<td>3</td>
<td>184</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>270</td>
<td>93</td>
<td>117</td>
<td>18</td>
<td>42</td>
</tr>
<tr>
<td>THA</td>
<td>817</td>
<td>85</td>
<td>567</td>
<td>4</td>
<td>161</td>
</tr>
<tr>
<td>MYS</td>
<td>1,406</td>
<td>160</td>
<td>756</td>
<td>27</td>
<td>464</td>
</tr>
<tr>
<td>CRI</td>
<td>1,497</td>
<td>81</td>
<td>643</td>
<td>18</td>
<td>755</td>
</tr>
<tr>
<td>SGP</td>
<td>27,561</td>
<td>9,401</td>
<td>3,498</td>
<td>4,582</td>
<td>10,080</td>
</tr>
</tbody>
</table>

Notes: Transport service exports are services related to the movement of non-resident goods & passengers. Travel service exports are services consumed by visitors (inc. tourists). Disaggregated data not available for Vietnam. Source: WDI
In service exports, Sri Lanka performs relatively well in transport and insurance/finance, but has much room to grow in tourism and ICT.

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Sri Lanka’s main exports tend to face competition from low income countries.

Sri Lanka’s Goods Exports, 2014

Global Share of Women’s Undergarments Exports (Net) in 2014

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Sri Lanka’s Goods Exports, 2014

Global Share of Women’s Undergarments Exports (Net) in 2014

Sources: Atlas of Economic Complexity; WDI
Wages in Sri Lanka’s main export industry are now lower than for most other jobs. Without diversification beyond garments, export growth cannot keep pace.

Note: Red reference line indicates the national median wage.
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Summing up:
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- In many ways, Sri Lanka is doing well
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• This is because Sri Lanka had a post-war growth acceleration that was unsustainable, caused by a construction boom financed by capital inflows and a widening current account
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• But growth has slowed over the last four years
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• To sustain higher growth, expand exports needs to expand faster to cover for the growth in imports
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- To sustain higher growth, expand exports needs to expand faster to cover for the growth in imports
- Exports are not growing fast enough because they have not diversified beyond a set of traditional goods: tea, rubber and garments
Summing up:

- In many ways, Sri Lanka is doing well.
- But growth has slowed over the last four years.
- This is because Sri Lanka had a post-war growth acceleration that was unsustainable, caused by a construction boom financed by capital inflows and a widening current account.
- To sustain higher growth, expand exports needs to expand faster to cover for the growth in imports.
- Exports are not growing fast enough because they have not diversified beyond a set of traditional goods: tea, rubber and garments.
- The problem is that Sri Lanka’s export industries pay low wages and compete with low wage countries.
Summing up:

- In many ways, Sri Lanka is doing well
- But growth has slowed over the last four years
- This is because Sri Lanka had a post-war growth acceleration that was unsustainable, caused by a construction boom financed by capital inflows and a widening current account
- To sustain higher growth, expand exports needs to expand faster to cover for the growth in imports
- Exports are not growing fast enough because they have not diversified beyond a set of traditional goods: tea, rubber and garments
- The problem is that Sri Lanka’s export industries pay low wages and compete with low-wage countries
- How can Sri Lanka increase its exports by diversifying into higher-productivity industries that can afford higher wages?
HOW DO COUNTRIES AND REGIONS DEVELOP HIGHER PRODUCTIVITY INDUSTRIES?
INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS.

By ADAM SMITH, L.L.D. F.R.S.

WITH A LIFE OF THE AUTHOR.

ALSO,

A VIEW OF THE DOCTRINE OF SMITH, COMPARED WITH THAT OF THE FRENCH ECONOMISTS; WITH A METHOD OF FACILITATING THE STUDY OF HIS WORKS; FROM THE FRENCH OF M. GARNIER.

IN THREE VOLUMES.

VOL. I.

LONDON:
PRINTED FOR J. MAYNARD, PANTON STREET, HAYMARKET; AND F. ZINKE, 448, STRAND.
1811.
Malawi $226 per capita
Haiti

$819 per capita
Morocco $3,108 per capita
Poland $13,431 per capita
Singapore $55,182 per capita
The Great Acceleration
The Great Divergence

GROSS DOMESTIC PRODUCT
Per capita constant in $USD

YEAR

1800

2000

United States
Japan
Western Europe
Eastern Europe and USSR
Latin America
Asia (without Japan)
Africa
The two Nogales
Guerrero $5,281 per capita
Sinaloa $10,945 per capita
Guanajuato $20,827 per capita
Nuevo Leon $42,281 per capita
Lift (force)

From Wikipedia, the free encyclopedia

For other uses, see Lift (disambiguation).

A fluid flowing past the surface of a body exerts a force on it. Lift is the component of this force that is perpendicular to the oncoming flow direction. It contrasts with the drag force, which is the component of the surface force parallel to the flow direction. If the fluid is air, the force is called an aerodynamic force. In water, it is called a hydrodynamic force.

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1 Overview
2 Simplified physical explanations of lift on an airfoil
   2.1 Flow deflection and Newton's laws
      2.1.1 Limitations of deflection/turning
   2.2 Increased flow speed and Bernoulli's principle
      2.2.1 Conservation of mass
      2.2.2 Limitations of explanations based on Bernoulli's principle
3 Basic attributes of lift
   3.1 Pressure differences
   3.2 Angle of attack
   3.3 Airfoil shape
   3.4 Air speed and density
   3.5 Lift coefficient
   3.6 Pressure integration
4 A more comprehensive physical explanation
   4.1 Lift involves action and reaction at the airfoil surface and is felt as a pressure difference
   4.2 The airfoil affects the flow over a wide area around it
   4.3 The pressure differences and the changes in flow speed and direction support each other in a mutual interaction
5 The understanding of lift as a physical phenomenon
6 Mathematical theories of lift
   6.1 Navier-Stokes (NS) equations
   6.2 Reynolds-Averaged Navier-Stokes (RANS) equations
   6.3 Inviscid-flow equations (Euler or potential)
   6.4 Linearized potential flow
   6.5 Circulation and the Kutta-Joukowskii theorem
   6.6 Momentum balance in lifting flows
7 Lift of three-dimensional wings
8 Viscous effects: Profile drag and stalling
What do you do when your tooth hurts?
What do you do when your tooth hurts?

Search the web and fix it yourself?
What do you do when your tooth hurts?

Search the web and fix it yourself?  ...or look for a dentist
Knowhow needs to be in brains
Who has more knowhow?
THE COMPANIES

U.S.
- Boeing
- Spirit
- Vought
- GE
- Goodrich

CANADA
- Boeing
- Messier-Dowty

AUSTRALIA
- Boeing

JAPAN
- Kawasaki
- Mitsubishi
- Fuji

KOREA
- KAL-ASD

EUROPE
- Messier-Dowty
- Rolls-Royce
- Latecoere
- Alenia
- Saab

WING TIPS
- Korea

MOVABLE TRAILING EDGE
- Australia

TAIL FIN
- Fredrickson, Washington

HORIZONTAL STABILIZER
- Foggia, Italy

AFT FUSELAGE
- Charleston, S.C.

FIXED TRAILING EDGE
- Nagoya, Japan

WING
- Nagoya, Japan

ENGINE NACELLES
- Chula Vista, CA

CENTER FUSELAGE
- Grottaglie, Italy

FORWARD FUSELAGE
- Nagoya, Japan

FORWARD FUSELAGE
- Wichita, Kansas

CARGO/ACCESS DOORS
- Sweden

WING/BODY FAIRING
- Landing Gear Doors
- Winnipeg, Canada

MAIN LANDING GEAR
- Wheel Well
- Nagoya, Japan

CENTER WING BOX
- Nagoya, Japan

LANDING GEAR
- Gloucester, UK

FIXED AND MOVABLE LEADING EDGE
- Tulsa, Oklahoma

ENGINES
- GE-Evendale, Ohio
- Rolls-Royce-Derby, UK
a
R₁, A₁, C₃, T₁

a  art  act
at  rat  tar
cat  car  cart
Diversification and ubiquity - 2009
Diversification and ubiquity - 2009
It also works within countries: Chile
...Turkey

Diversity and average ubiquity of Turkey's cities
Mexican cities
Colombian departments

Average Ubiquity vs. Diversity
2012 - Total Wages

Country Diversity

av_ubq  Fitted values
And it works for Sri Lanka
Economic Complexity Index
ECI correlates with GDP per capita

Countries with Natural Resource Exports > 10% of GDP

Countries with Natural Resource Exports < 10% of GDP

R² = 0.75
ECI correlates with GDP per capita

Countries with Natural Resource Exports > 10% of GDP

Countries with Natural Resource Exports < 10% of GDP

$R^2 = 0.75$
Income per capita controlling for initial income and proportion of natural resource exports per capita in logs [2008]

Economic Complexity Index controlling for initial income and proportion of natural resource exports per capita in logs [2008]

$R^2 = 0.73$
Economic Complexity Index controlling for initial income and proportion of natural resource exports per capita in logs [2008]
Economic Complexity controlling for initial income and proportion of natural resource exports per capita in logs [2008].

- Scatter plot with points representing countries.
- Blue circles around two countries: GRC and IND.
- Red line indicating a trend with $R^2 = 0.73$.
Sri Lanka’s economic complexity is low and it is evolving at a slow pace.
How do economies learn?
Mapping out the Forest
Some products tend to be exported together…
…others not so much
Some products tend to be exported together…
…others not so much
Community characteristics: Complexity, Connectedness and Market Size

![Diagram showing community characteristics based on complexity and connectedness](chart)

- Complexity: Measures the intricacy or difficulty in understanding or dealing with a situation.
- Connectedness: Refers to the degree of interconnectedness or interdependence within a system.
- Market Size: Indicates the size of the market relative to the global economy.

The diagram visualizes the distribution of different economic sectors based on their complexity and connectedness, highlighting sectors with high complexity and connectedness, and the percentage of world trade they contribute.
Where are the monkeys?
Venezuela 2013
Mexico 2013
Venezuela 2014

Petroleum oils, crude

77%
## Mexico 2014

<table>
<thead>
<tr>
<th>Category</th>
<th>Value (as % of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitors and projectors; reception apparatus for television</td>
<td>4%</td>
</tr>
<tr>
<td>Telephones</td>
<td>3%</td>
</tr>
<tr>
<td>Insulated wire; optical fiber cables</td>
<td>3%</td>
</tr>
<tr>
<td>Automatic data processing machines</td>
<td>5%</td>
</tr>
<tr>
<td>Petroleum oils, crude</td>
<td>10%</td>
</tr>
<tr>
<td>Seats</td>
<td>1%</td>
</tr>
<tr>
<td>Medical, surgical or veterinary instruments</td>
<td>2%</td>
</tr>
<tr>
<td>Lamps and...</td>
<td>2%</td>
</tr>
<tr>
<td>Beer</td>
<td>1%</td>
</tr>
<tr>
<td>Gold</td>
<td>1%</td>
</tr>
<tr>
<td>Cars</td>
<td>8%</td>
</tr>
<tr>
<td>Motor vehicles for transporting goods</td>
<td>6%</td>
</tr>
<tr>
<td>Parts and accessories of the motor vehicles</td>
<td>6%</td>
</tr>
</tbody>
</table>

Note: The values are approximate and represent the percentage of the total export value of Mexico in 2014 for each category.
How do monkeys jump?
A tale of two countries

GHANA

THAILAND
1962: Roughly equal income

GHANA

$295

THAILAND

$363

GDP per capita (constant 2000 US$)
Human capital story:

Years of schooling of Thailand and Ghana as a function of time.
GHANA
Ghana’s exports in 1962

Raw & roasted cocoa beans: 65%

Manganese: 8%

Sawlogs & veneer logs of non-coniferous: 8%

Worked wood of non-coniferous: 7%
Thailand’s exports in 1962
Thailand vs. Ghana in the Product Space
1965

Total Value: $615,728,000

Total Value: $294,604,000

Thailand

Ghana
1975

Thailand

Ghana

Total Value: $2,238,988,000

Total Value: $818,756,000
1980

Total Value: $5,080,038,000

Total Value: $1,017,767,000

Thailand

Ghana
1985

Total Value: $7,354,613,137

Thailand

Total Value: $462,524,204

Ghana
1995

Total Value: $50,644,730,628

Total Value: $1,294,057,269

Thailand

Ghana
2000

Total Value: $67,126,271,442

Total Value: $1,206,161,594

Thailand

Ghana
2010

Total Value: $186,564,165,927

Thailand

Total Value: $4,052,850,523

Ghana
Ghana’s exports in 1962

- Raw & roasted cocoa beans: 65%
- Manganese: 8%
- Sawlogs & veneer logs of non-coniferous: 8%
- Worked wood of non-coniferous: 7%
Ghana’s exports in 2010

Raw & roasted cocoa beans

Cocoa butter & paste

43%

12%

Manganese

Gold, non-monetary
Ghana’s exports per capita at constant 2005 prices
Thailand’s exports in 1962
Thailand’s exports in 2010
Thailand’s exports per capita at constant 2005 prices
Divergence, big time

Evolution of the GDP per capita of Thailand and Ghana as a function of time.
Sri Lanka 2014

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Women's undergarments</td>
<td>5%</td>
</tr>
<tr>
<td>Women's suits</td>
<td>4%</td>
</tr>
<tr>
<td>Women's suits, not knit</td>
<td>5%</td>
</tr>
<tr>
<td>Brassieres and parts thereof, not knit</td>
<td>4%</td>
</tr>
<tr>
<td>T-shirts</td>
<td>4%</td>
</tr>
<tr>
<td>Gloves, mittens and mitts</td>
<td>2%</td>
</tr>
<tr>
<td>Active wear</td>
<td>1%</td>
</tr>
<tr>
<td>Men's shirts</td>
<td>0.71%</td>
</tr>
<tr>
<td>Women's shirts, not knit</td>
<td>0.41%</td>
</tr>
<tr>
<td>Men's suits, not knit</td>
<td>0.26%</td>
</tr>
<tr>
<td>Precious stones</td>
<td>3%</td>
</tr>
<tr>
<td>Retreaded or used pneumatic tires of rubber</td>
<td>0.9%</td>
</tr>
<tr>
<td>New pneumatic tires of rubber</td>
<td>0.5%</td>
</tr>
<tr>
<td>Diamonds</td>
<td>0.28%</td>
</tr>
<tr>
<td>Precious stones</td>
<td>0.21%</td>
</tr>
<tr>
<td>Tea</td>
<td>12%</td>
</tr>
<tr>
<td>Coconuts, Brazil nuts and cashew nuts</td>
<td>0.56%</td>
</tr>
<tr>
<td>Pepper, whole</td>
<td>0.64%</td>
</tr>
<tr>
<td>Coconut...</td>
<td>0.44%</td>
</tr>
<tr>
<td>Cruise ships and similar vessels...</td>
<td>0.85%</td>
</tr>
<tr>
<td>Activated carbon</td>
<td>0.73%</td>
</tr>
</tbody>
</table>
Sri Lanka in the Product Space: Current clusters are saturated. Most new export opportunities are in empty clusters, with few related industries.
Sri Lanka is not on the path of Vietnam

Sri Lanka’s Exports, 1995
$3.25B  
ECI = -0.96  
Rank: 98/121

Sri Lanka’s Exports, 2014
$11.1B  
ECI = -0.38  
Rank: 71/124

Vietnam’s Exports, 1995
$5.14B  
ECI = -1.22  
Rank: 107/121

Vietnam’s Exports, 2014
$146B  
ECI = -0.09  
Rank: 58/124

Source: Atlas of Economic Complexity
...or the path from Vietnam to Thailand

Vietnam’s Exports, 1995
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Vietnam’s Exports, 2014
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- ECI = -0.09
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Thailand’s Exports, 1995
- $53.4B
- ECI = 0.13
- Rank: 51/121

Thailand’s Exports, 2014
- $237B
- ECI = 0.94
- Rank: 26/124

Source: Atlas of Economic Complexity
...or the path from Thailand to China

Thailand’s Exports, 1995

$53.4B
ECI = 0.13
Rank: 51/121

Thailand’s Exports, 2014

$237B
ECI = 0.94
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Source: Atlas of Economic Complexity
New research: the Industry Space

Maps the relationships between all domestic activities, including services

- Agriculture, Forestry, Fishing
- Construction
- Finance, Insurance, Real Estate
- Manufacturing
- Mining
- Public Administration
- Retail Trade
- Services
- Transport & Public Utilities
- Wholesale Trade
How do we explain growth?
Economic Complexity Index controlling for initial income and proportion of natural resource exports per capita in logs [2008]

$R^2 = 0.73$
How close are you to other good products?

- More personbytes
  Easy to add more

- Few personbytes
  Hard to add more

How many personbytes do you have?
Yet nearly all new products are highly “distant” from Sri Lanka’s current comparative advantage.
Yet nearly all new products are highly “distant” from Sri Lanka’s current comparative advantage.
Therefore, the path to diversification may lie in helping investors take “strategic bets” on new sectors.
How do you identify potential new sectors?

• Distance
  – How far is the industry from the current capabilities of the country or region?

• Complexity
  – How productive is the industry?

• Strategic value
  – How much does the development of the industry facilitate further diversification?
Applying these ideas to Sri Lanka: An efficient frontier between three goals

Complexity and Distance

Opportunity Gain and Distance
Applying these ideas to Sri Lanka: An efficient frontier between three goals

Complexity and Distance

Opportunity Gain and Distance
Applying these ideas to Sri Lanka: An efficient frontier between three goals

A BOI/EDB team is now taking a comprehensive approach...
How does knowing move?
DIFFUSION OF INDUSTRIES

Moving knowledge into brains is hard work...
IT IS MUCH EASIER TO MOVE BRAINS: DIFFUSION THROUGH MOBILITY
Different mechanisms of diffusion

- Labor mobility between firms
- Immigration
- Diasporas
- Business travel
- FDI
Example 1: DETROIT

All successful car firms in Detroit came out of Olds Motor Works
Silicon Valley consists almost exclusively of Fairchild Semiconductor renegades.
DIFFUSION OF INDUSTRIES

...it is easier to move the brains!

- Neffke/Hartog/Boschma/Henning (2014): Industries diffuse when firms and entrepreneurs move to a region

Share of new establishments that pioneer a local industry
(by founder type)
DIFFUSION OF INDUSTRIES
...it is easier to move the brains!

Germany
Hausmann/Neffke/Otto (2013): Industry pioneers in East Germany strongly hire many of their core workers from West Germany

Colombia
Matté Hartog: First analyses show that also in Colombia pioneering requires mobility of experts
DIFFUSION OF KNOWLEDGE ACROSS COUNTRIES

- Products diffuse through migrants
  - Bahar and Rapoport (2013)

Franschhoek Valley, South Africa
What scope is there for Sri Lanka to learn from immigrants?

Few residents of Sri Lanka are foreign born. Almost all (99%) come from India.

The BOI has issued less than 5,000 work visas to foreigners in each of the last 10 years.

Elsewhere, Thailand, Malaysia and the Philippines have benefited from large overseas Chinese communities. And China benefited from investment from Hong Kong and Taiwan.

Sources: WDI; Board of Investment of Sri Lanka Visa Recommendation System
What scope is there for Sri Lanka to learn from its diaspora?

Non-resident Indians were key to India’s diversification into ICT and BPO

Source: World Bank bilateral migration stocks matrix 2010
How does Sri Lanka do in business travel? It is fairly disconnected from business travel networks, but close to a dynamic cluster.

The country space for business travel (using 2011 data) shows that Sri Lanka is on the periphery of the Far East cluster.

Source: CID using data from MasterCard
Incoming Business Travel Intensity

Business travel is limited versus comparator countries

Source: CID using data from MasterCard; data from 2014
Gaining knowhow through FDI?

Sri Lanka has seen little FDI over last 20 years.

And no sustained increase in FDI after the conflict.
New FDI inflows are high in existing sectors…

Source: fDi Markets, April 2016. Note: dataset is based on estimates of large, high-profile FDI project announcements.

* Estimated capital expenditure per capita, January 2009 – March 2016 (annualized)
…but peer countries receive the bulk of their FDI from sectors that are mostly absent in Sri Lanka.

Source: fDi Markets, April 2016. Note: dataset is based on estimates of large, high-profile FDI project announcements.
* Estimated capital expenditure per capita, January 2009 – March 2016 (annualized)
Who is Sri Lanka learning from through FDI in manufacturing and in what industries?

FDI to Sri Lanka in Manufacturing, by Source Country

Source: fDi Markets, 2003-2015 cumulative FDI announced in media
Note: Data source is biased toward large, high-visibility projects
Who is Sri Lanka learning from through FDI in manufacturing and in what industries?

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Is Sri Lanka missing opportunities to learn from neighbors and beyond?

Listed are a selection of manufacturing projects (and application years) since 2010 where applications were rejected, have not yet been approved, or have been approved but the company is awaiting BOI agreement. Source: BOI Project List (Section 17)
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- India:
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  - PVC products (2013)
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**South Korea:**
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Australia:
- Special-purpose machinery (2015)
- Fertilizers (2012)

Singapore:
- Fertilizers (2012)

Hong Kong:
Is Sri Lanka missing opportunities to learn from neighbors and beyond?

Noteworthy rejected or current applications to the BOI in new manufacturing projects since 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Projects/Products</th>
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</tr>
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<tbody>
<tr>
<td>South Korea</td>
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<tr>
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</tr>
<tr>
<td>France</td>
<td>- Pleasure &amp; sporting boats</td>
<td>2016</td>
</tr>
<tr>
<td>Singapore</td>
<td>- Fertilizers</td>
<td>2012</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>- Machine tools</td>
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<tr>
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<td>- Electrical equipment</td>
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</tr>
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</tr>
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POLICY IMPLICATIONS
Policy implications
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- Immigration policy
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• Diaspora strategy
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- Immigration policy
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- Productive development policies for economic complexity
PRODUCTIVE DEVELOPMENT POLICIES FOR ECONOMIC COMPLEXITY
Traditional Industrial Policy

- Investors lack either money or adequate incentives
Traditional Industrial Policy

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- Solution: give them credit, subsidies or tax brakes
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  - Line item in the budget of the Ministry of Industry + selection mechanism on who to give the money to
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- INDUSTRIAL POLICY IS SEEN AS AN INSTRUMENT, NOT AS A PROBLEM SOLVING MACHINE
New productive development policies

• Markets for key inputs are missing (missing letters)
New productive development policies

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- Giving money or incentives to firms does not address the problem
- You need to assure the supply of what is missing
- But you don’t know what it is
- Or how to prompt its supply
The problem

- I know that I don’t know
The problem

- I know that I don’t know
- But I still need to improve on what I am doing
The problem

• I know that I don’t know
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• I can talk to those that exist
The problem

- I know that I don’t know
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- I can talk to those that exist
- But I cannot talk to those that do not exist because of things I am doing or not doing
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- So, I have an information revelation problem
The problem

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- I can talk to those that exist
- But I cannot talk to those that do not exist because of things I am doing or not doing
- So, I have an information revelation problem
- Talking to me is not cheap
  - Participation constraint of others
Two Different Questions

• How can the government organize itself to provide better public inputs \textbf{to the monkeys that exist}?
Two Different Questions

• How can the government organize itself to provide better public inputs to the monkeys that exist?

• How to improve the environment for the monkeys that don’t exist?
Talking to existing monkeys: some principles

- Self-organization around common problems / possibilities
Talking to existing monkeys: some principles

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- About public inputs or coordination failures
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- In Japan there are over 200 deliberation councils
Talking to the monkeys that don’t yet exist

• Need institutions to search the space of possibilities and the related obstacles
Talking to the monkeys that don’t yet exist

- Need institutions to search the space of possibilities and the related obstacles
- Beyond the existing firms
Investment promotion agencies 2.0

• Version 1.0 was typically passive
  • Regulating foreign investment
  • Some adds
  • Handholding
  • One stop shop
Investment promotion agencies 2.0

- Version 1.0 was typically passive
  - Regulating foreign investment
  - Some adds
  - Handholding
  - One stop shop
- Version 2.0 involves
  - Conversations that reveal the space of possibilities
  - Direct marketing
  - Problem solving of missing public inputs
  - Creation of solutions
  - Irish IDA
    - Industrial and business space
    - Missing skills
An emerging system of coordinated public sector capabilities needed in Sri Lanka

Key Capabilities

- Incentives
- Land access
- Investor climate/response
- Promotions
- External attaches
- Trade policy
- Infrastructure
- Targeting
- Export readiness

Areas:
- Yellow = Area being worked on by a current team, supported by Harvard CID
- Red = Potential area for next cohort of teams, supported by Harvard CID

Backward reach
Forward reach

Other govt.
Other govt.
Other govt.
Other govt.
Domestic exporters
Domestic exporters
Domestic exporters
Target firms
Target firms
Target firms
Target firms
Target firms