



# **SRI LANKA GROWTH DIAGNOSTIC ANALYSIS**

Research conducted in collaboration with the Government of Sri Lanka and the Millennium Challenge Corporation. Financial support for CID's participation in this research comes from the Open Society Foundations (under grant #OR2016-27991 for Sustained and Inclusive Economic Growth and Governance in Sri Lanka).

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# What is this diagnostic analysis?

- This report aggregates collaborative quantitative and qualitative analysis undertaken throughout 2016 by the Center for International Development (CID) and the Millennium Challenge Corporation (MCC), together with the Prime Minister's Policy Development Office (PDO). The interpretations of the evidence provided throughout this report reflect those of CID and may differ in some respects from the interpretations of MCC and of the PDO.
- The purpose of this report is to make available a record of the detailed technical work conducted and CID's interpretations of the evidence. This analysis was provided to the Government of Sri Lanka in its current form in April 2017. A written report by the Millennium Challenge Corporation based on this collaborative analysis is forthcoming.
- This report is structured as follows: First, it details how overall growth is constrained by the growth of exports and a lack of new export-oriented investment, particularly FDI. It then presents evidence from diagnostic tests to identify what constraints are most responsible for this problem. Finally, it provides a summary of what constraints CID interprets as most binding and suggests a "growth syndrome" that underlies the set of binding constraints.

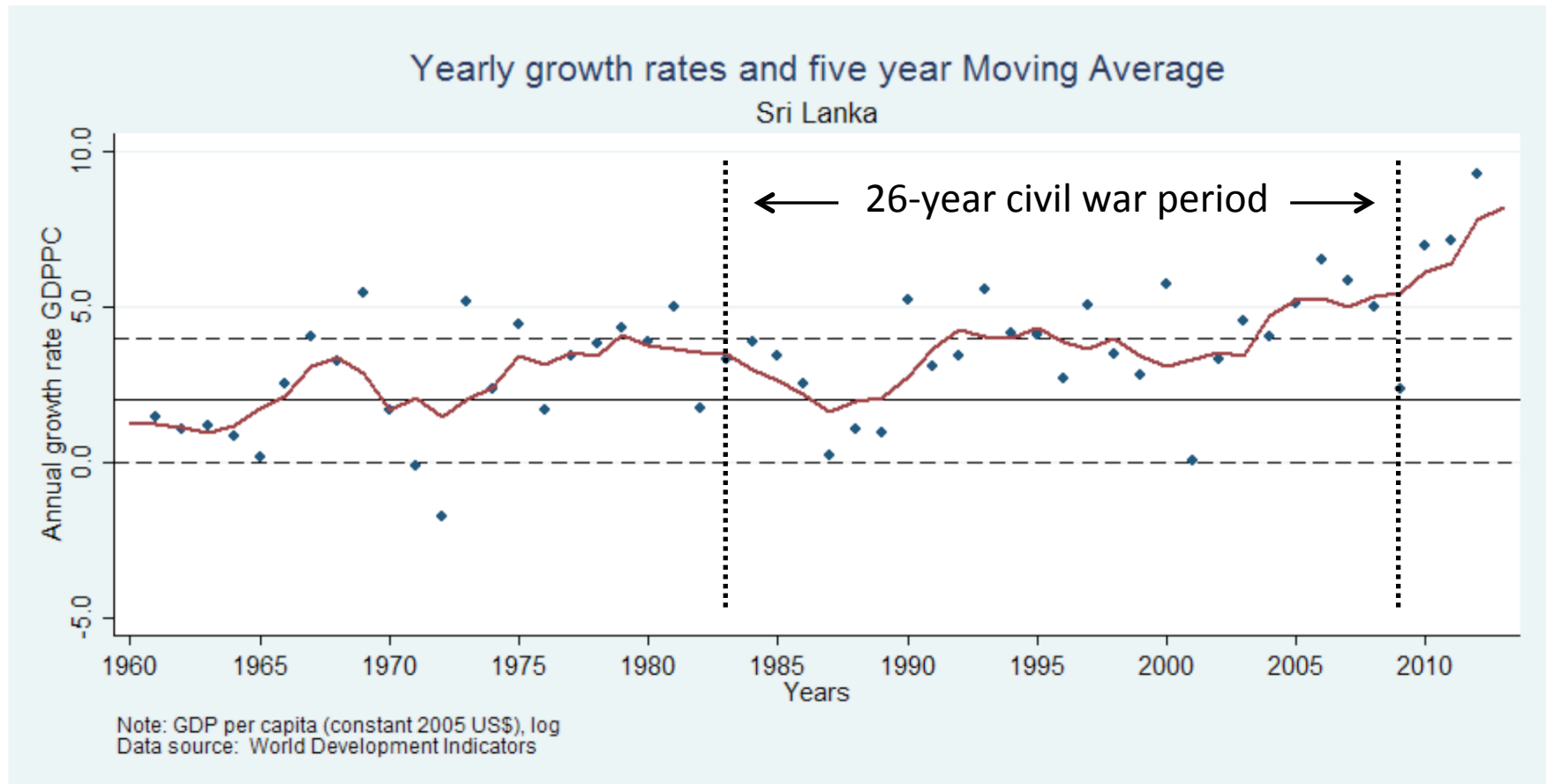
# Takeaways

- In many ways Sri Lanka is doing well, but growth has slowed during the last four years. This is because Sri Lanka had an post-war growth acceleration that widened the current account deficit in an unsustainable way. To sustain higher growth, exports need to expand faster to cover the growth of imports. but exports are not growing fast enough because they have not diversified beyond a set of traditional goods (tea, rubber products and garments). Sri Lanka's growth problem reflects a failure to discover and enter new, higher-productivity industries where Sri Lanka can compete internationally and afford higher wages. This is a self-perpetuating problem, but one that could be overcome (and has been overcome in many other countries) through a mix of foreign investment that delivers new knowhow and active public sector-private sector coordination.
- Critically, government coordination in Sri Lanka is inadequate to address private sector coordination failures. Instead, government coordination is responsible for several key institutional and infrastructural constraints that are binding the appearance of investment in new export industries. There exists a vicious cycle in Sri Lanka where overlapping government bodies rely on disordered rules and deals when interacting with the private sector, exacerbating deep revenue gaps. These gaps are then only partially addressed by *ad hoc* policies and decisions, which in turn lead to further institutional complexity and intensify the original problem. This is what we consider the “growth syndrome,” and it underlies a number of constraints that bind in particular ways: access to land, water and wastewater infrastructure, transportation infrastructure, and deep policy uncertainty.

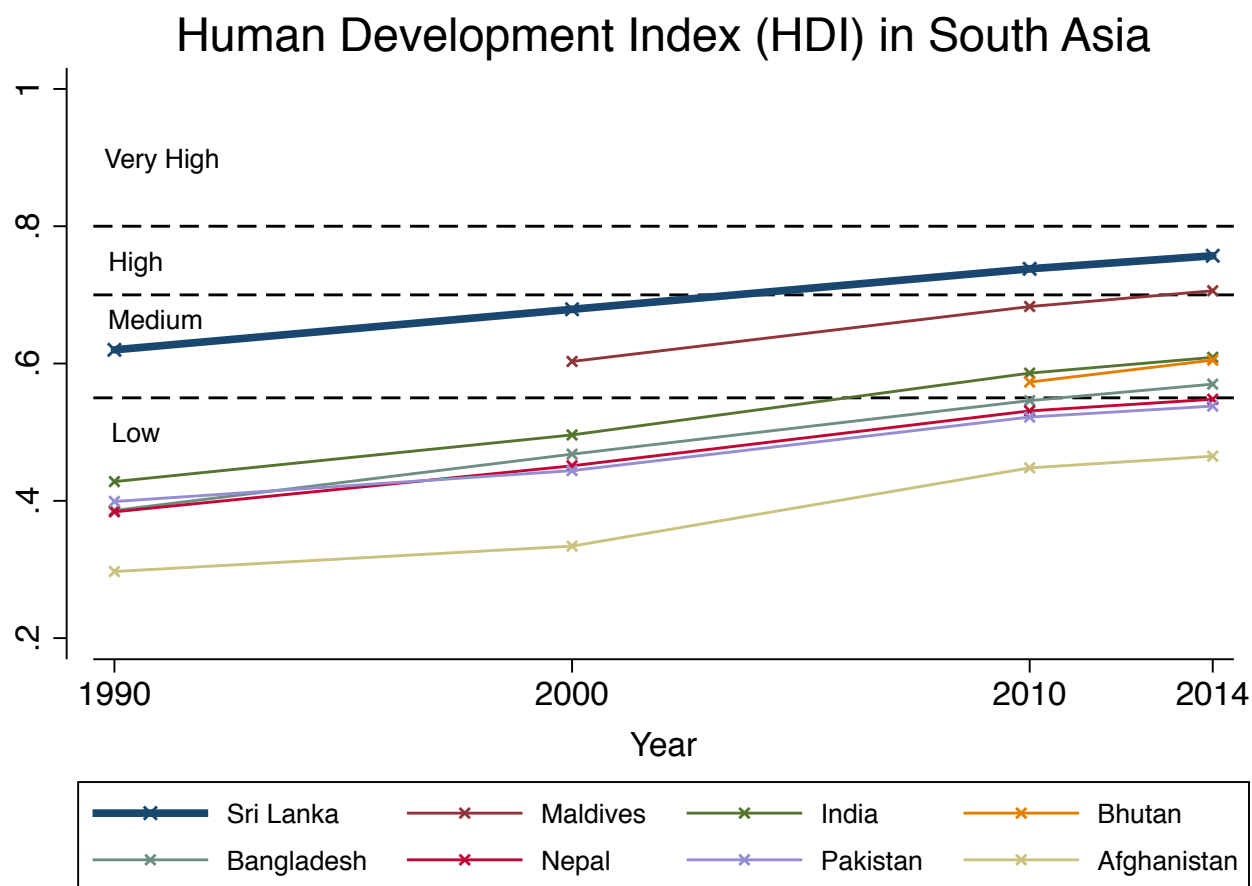
Background and Country Context

# **WHAT PART OF GROWTH IS CONSTRAINED?**

Sri Lanka's growth has been strong in the long-term despite its 26-year civil war. Growth reached historically high levels after the end of the war as Sri Lanka enjoyed a “peace dividend”.



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.



GDP per capita:  
3,926 US\$ (2015)

Life expectancy:  
74.8 (2014)

Adult literacy rate:  
92.6 (2015)

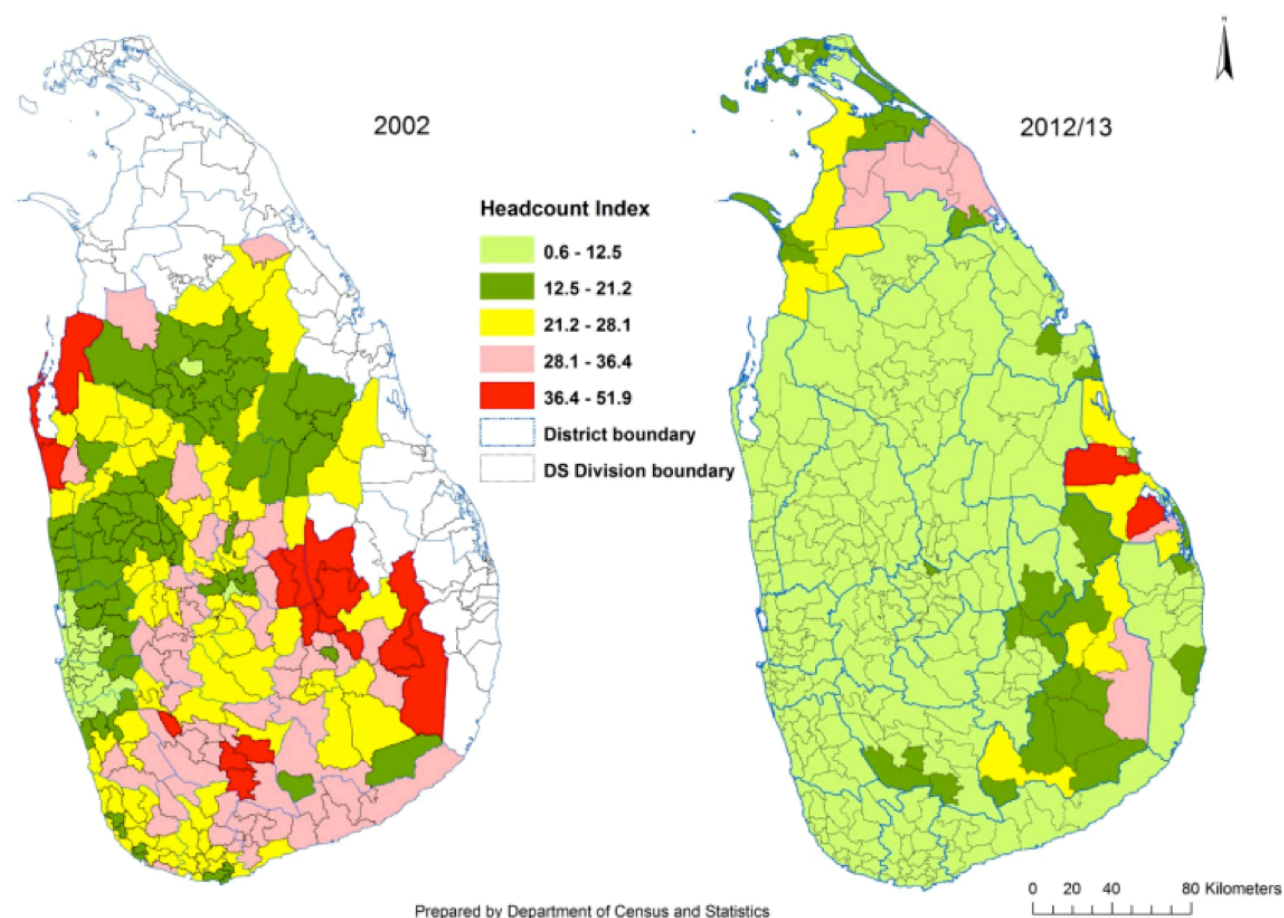
Note: Sri Lanka's level of development is the highest in South Asia. Thus, the remainder of this analysis uses a different group of comparator countries.

Data source: UNDP Human Development Report, 2015

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

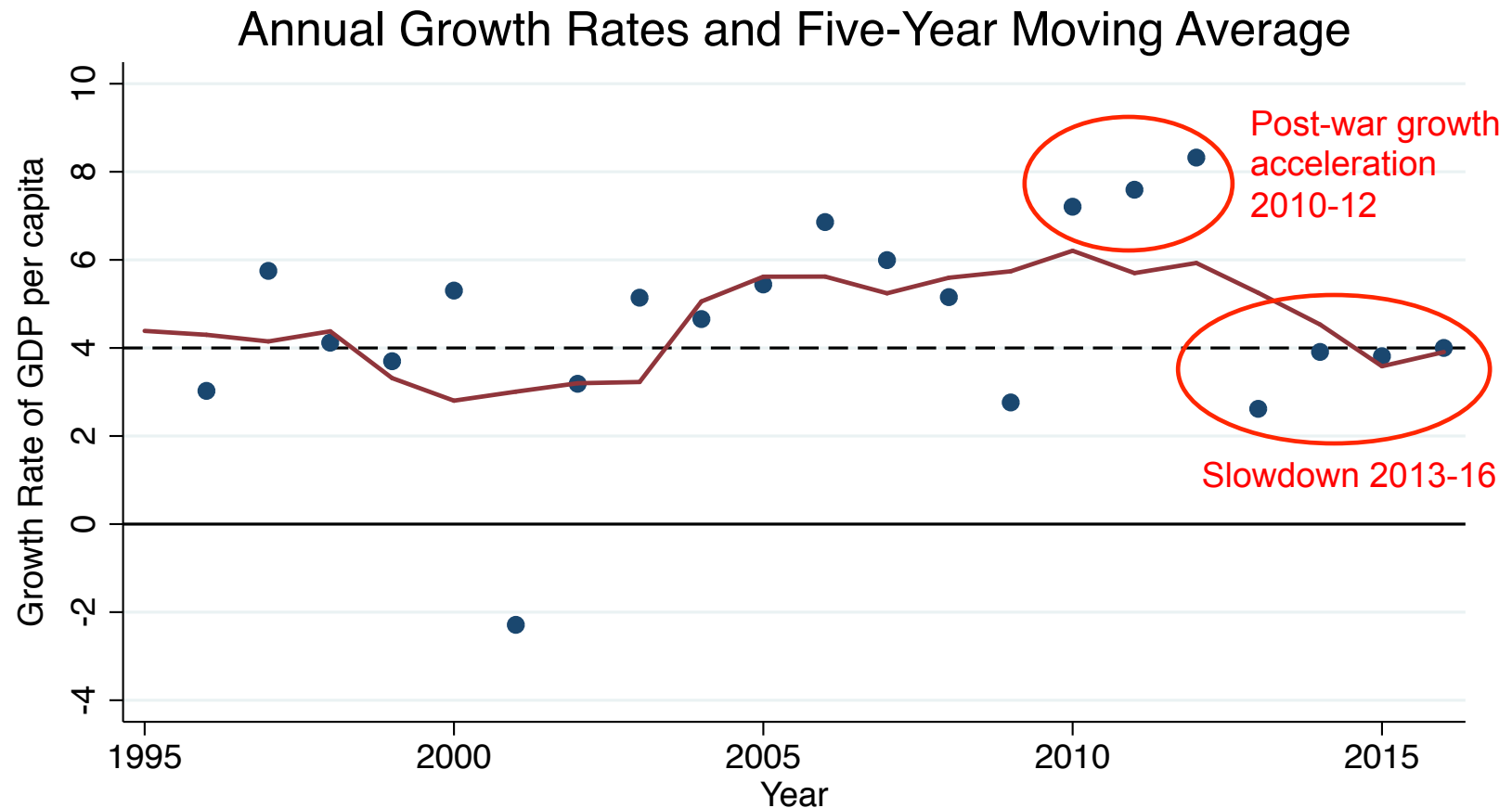
...but several parts of the country still remain left behind, and many people remain disconnected from the opportunities created by past growth.

Poverty headcount index in 2002 vs. 2012/13



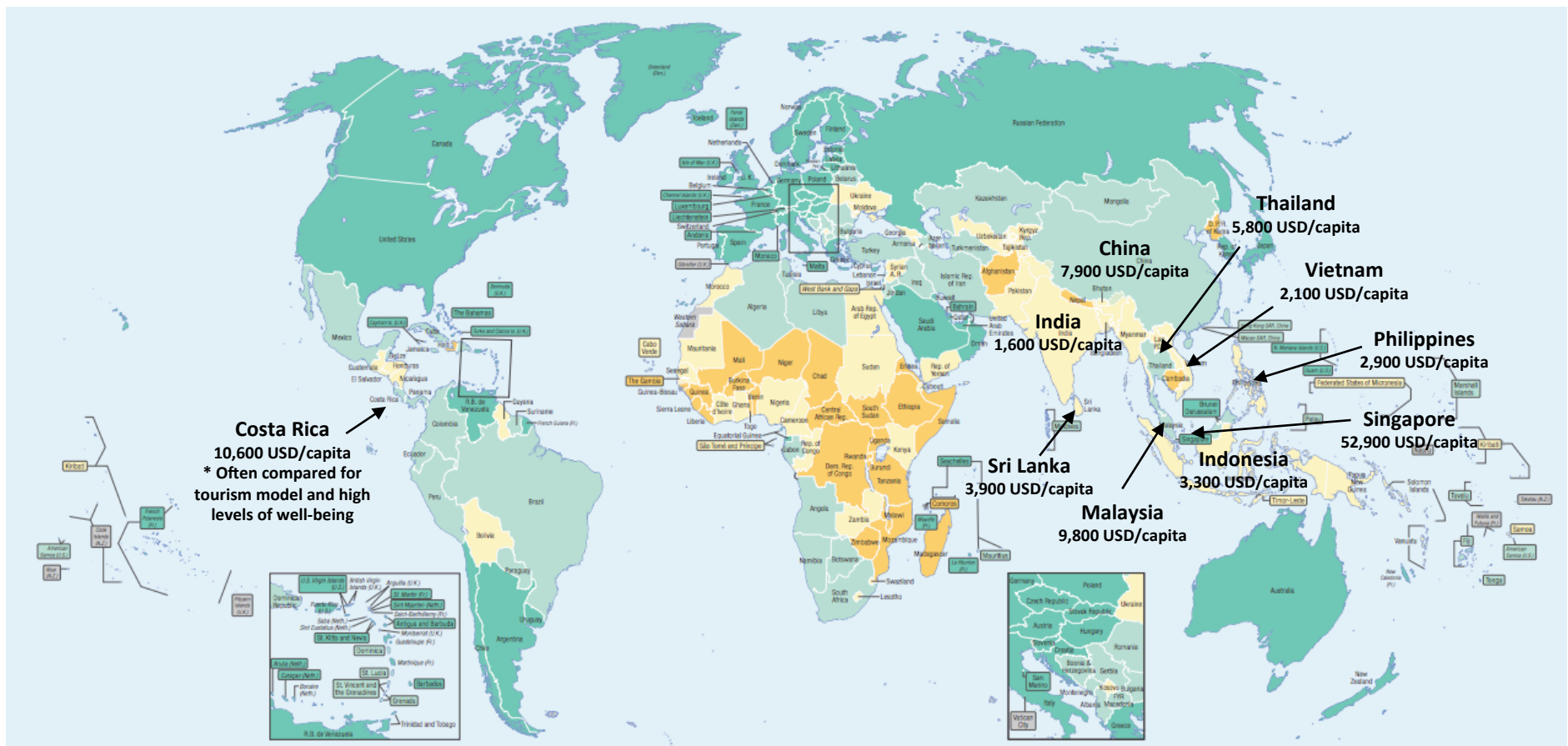
Source: Department of Census and Statistics

The problem: per capita growth has slowed during the last four years, remaining at or below 4 percent.



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

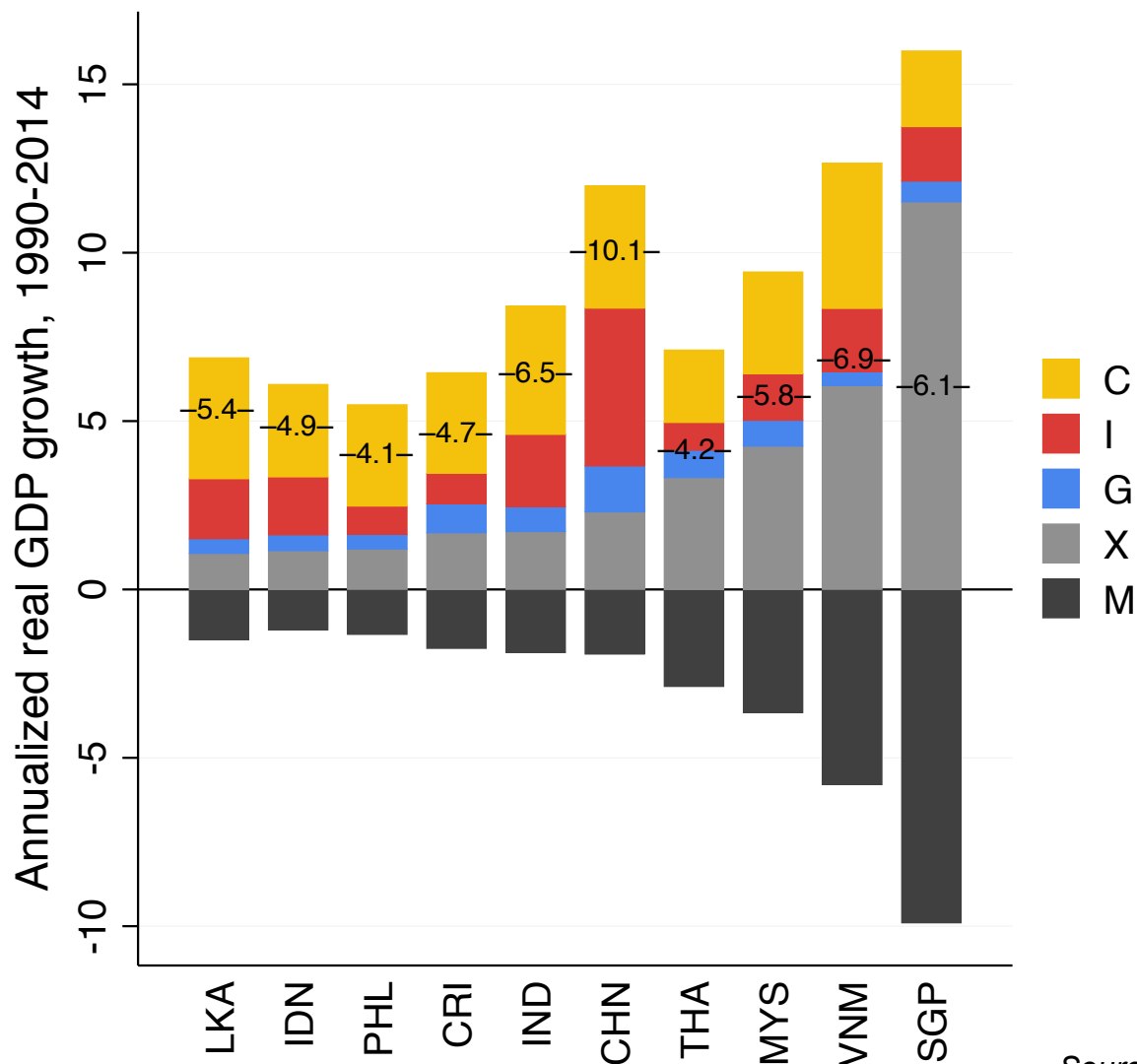
A group of mostly Asian comparator countries was selected to help benchmark growth and constraints.



Map and data source: World Bank



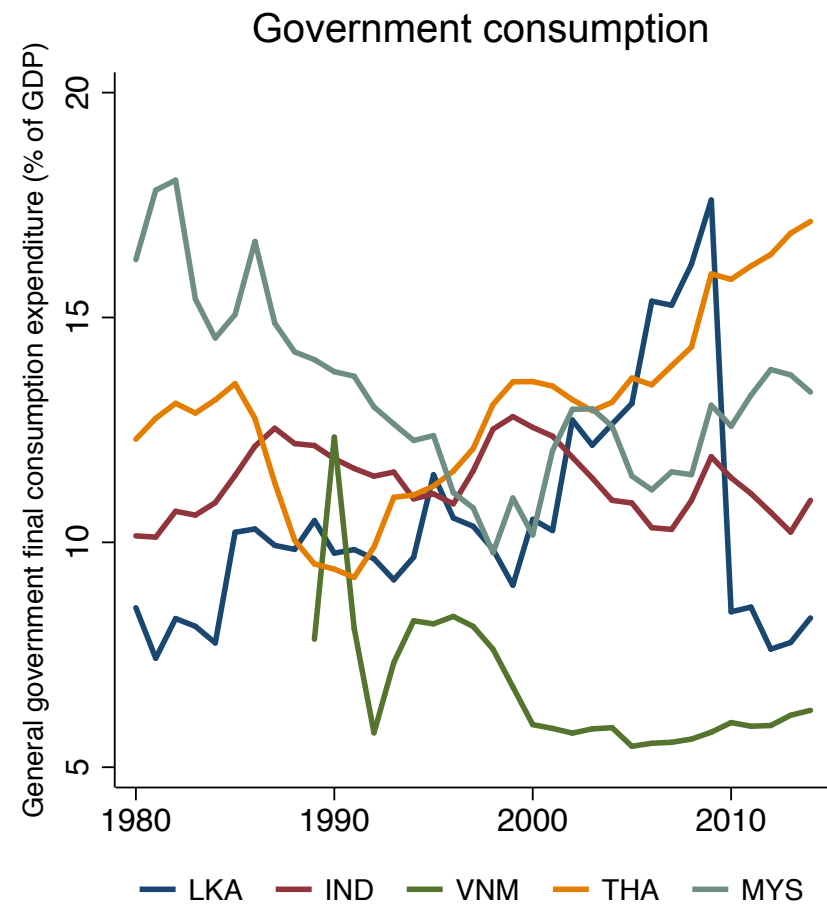
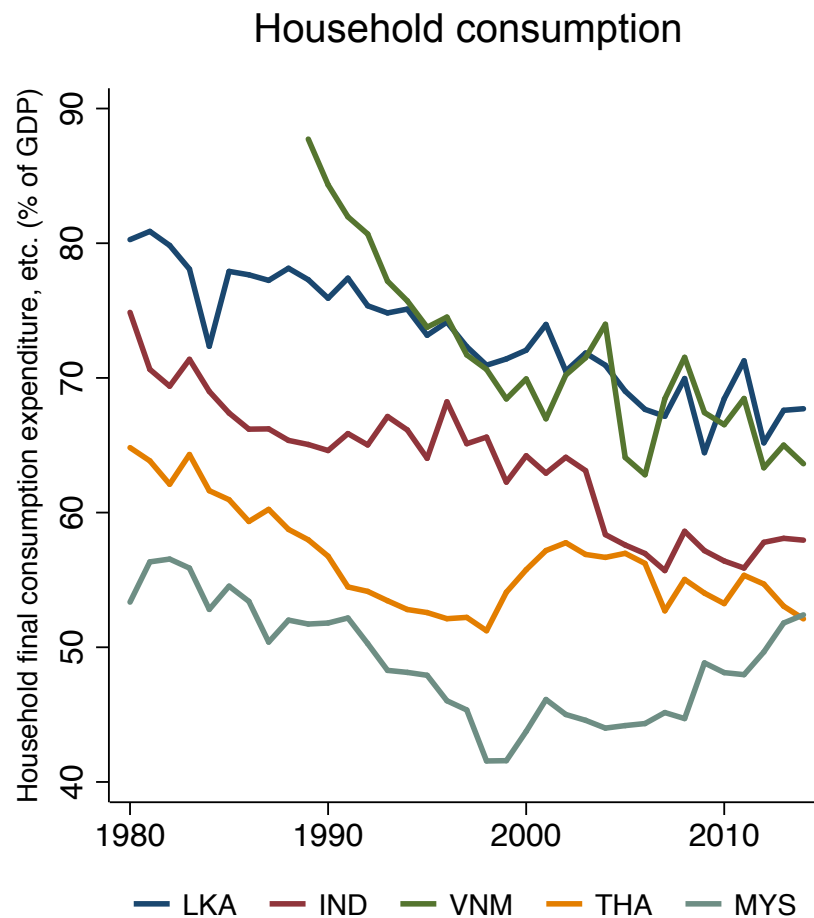
# Sri Lanka's strong growth is noteworthy for its high level of internal-orientation



Sri Lanka's long-run growth pattern has a low contribution from exports: 1.07 percentage points of growth came from exports (lowest among the comparators).

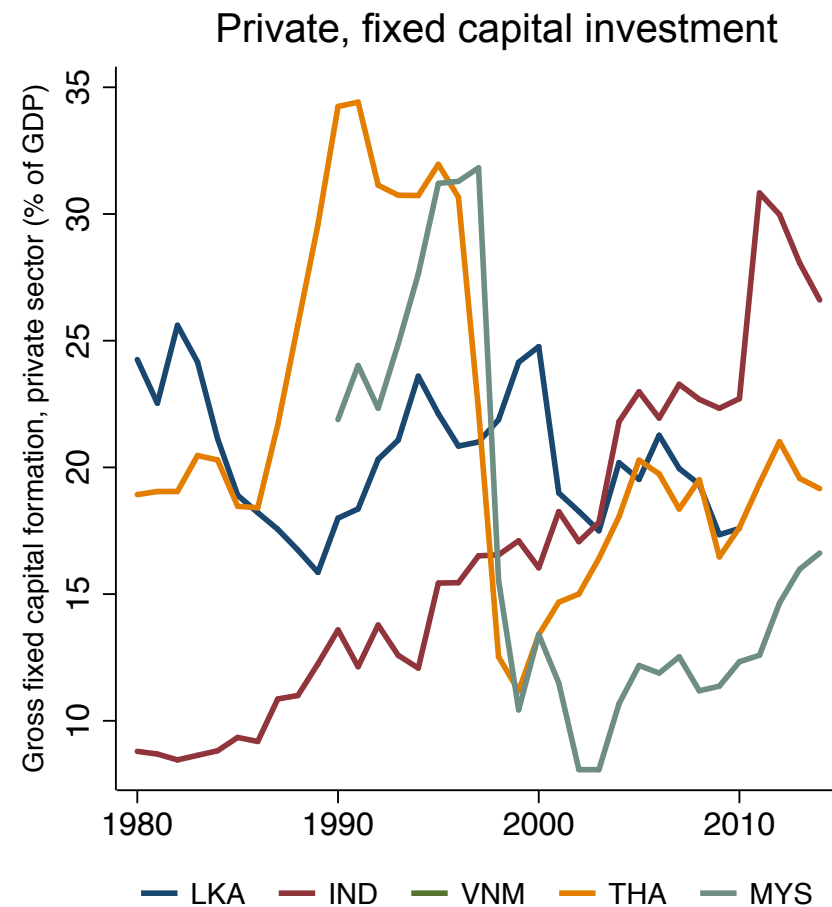
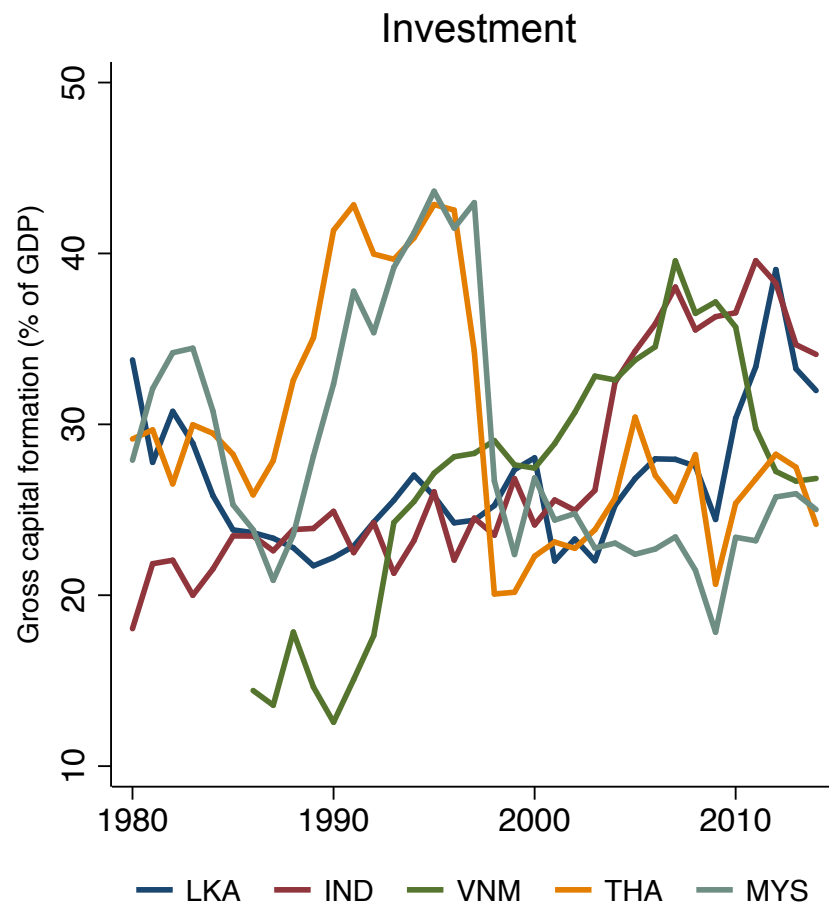
Contributions from investment and consumption growth match comparators.

GDP shares over time: household consumption's share is high and decreasing, while government spending drastically dropped since the end of conflict.



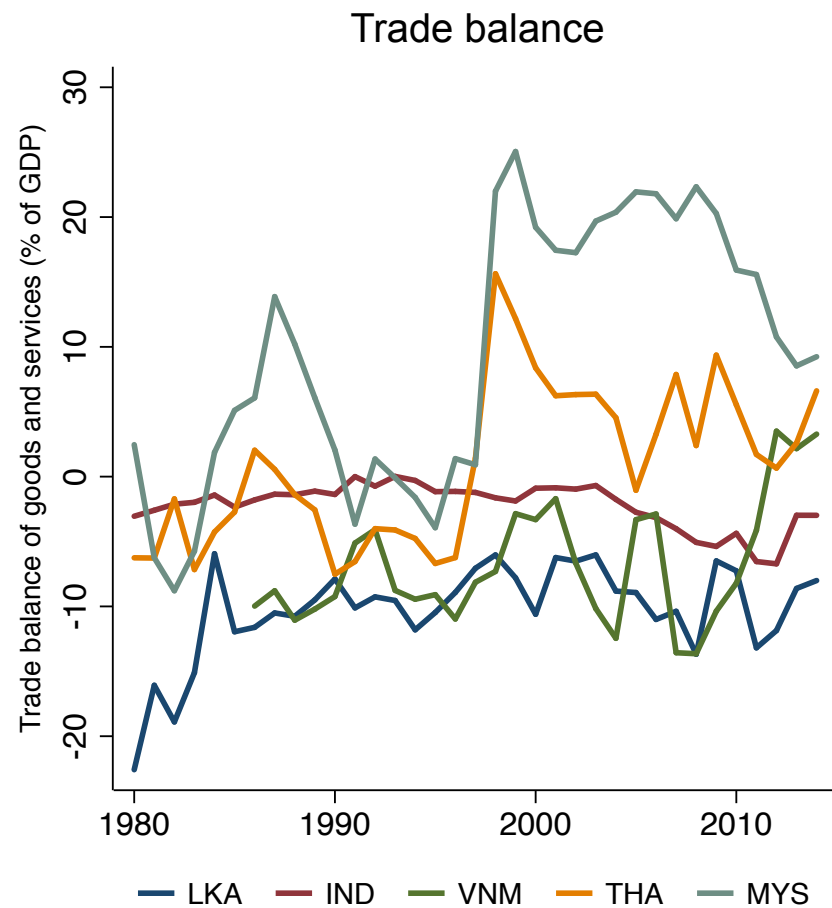
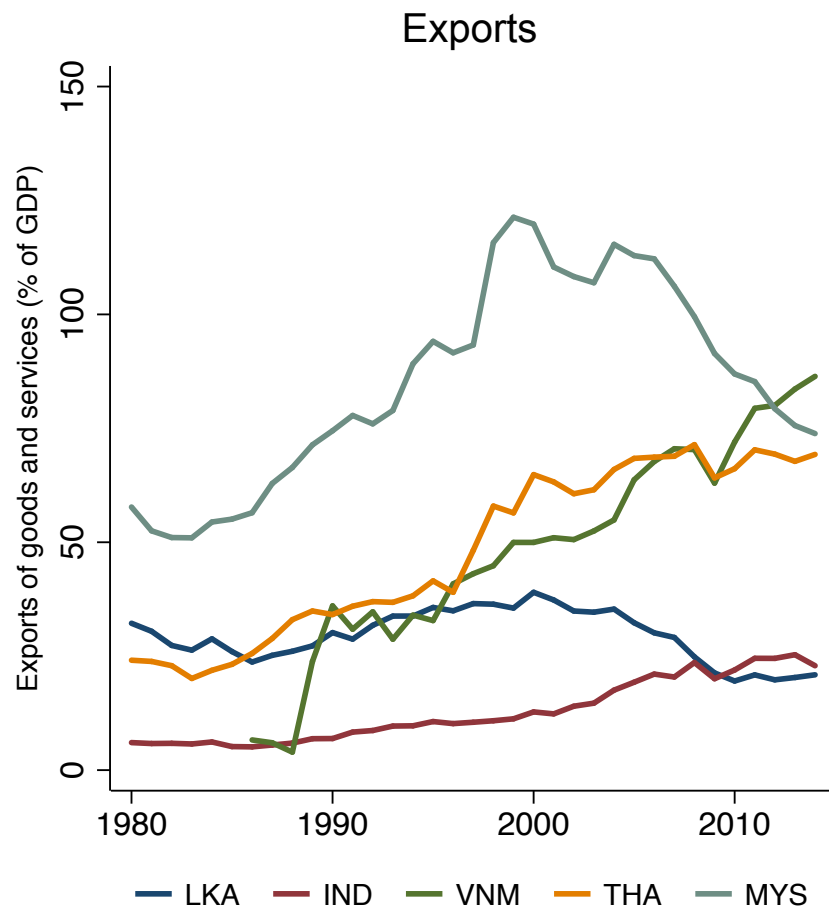
Source: WDI

GDP shares over time: investment's share is relatively high and increasing, although it is not clear if recent increases were driven by private investment.



Note: private fixed investment data not available after 2010. Source: WDI

GDP shares over time: export's share of GDP is low, especially recently, and Sri Lanka has a consistently large trade deficit.



# A closer look at export performance:

## Annualized real GDP growth, export component

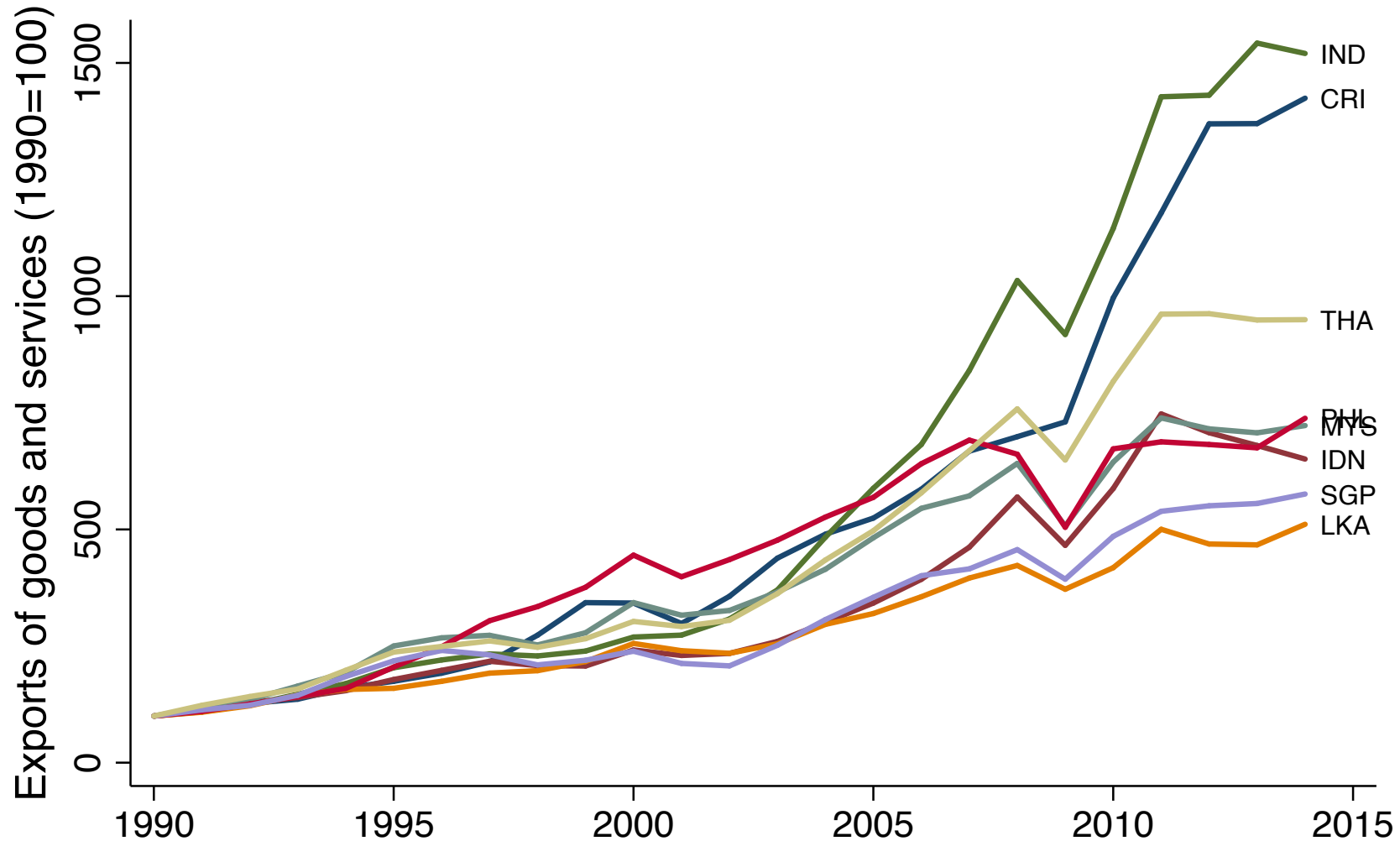
|     | 1990-1994 | 1994-1998 | 1998-2002 | 2002-2006 | 2006-2010 | 2010-2014 | Whole period |
|-----|-----------|-----------|-----------|-----------|-----------|-----------|--------------|
| SGP | 14.03     | 8.99      | 19.74     | 22.90     | 9.17      | 6.32      | 11.51        |
| VNM | 2.57      | 5.00      | 3.92      | 6.56      | 4.78      | 6.30      | 6.05         |
| MYS | 10.36     | 11.11     | 4.64      | 6.96      | 1.78      | 1.81      | 4.26         |
| THA | 3.61      | 0.19      | 3.51      | 4.58      | 2.11      | 2.50      | 3.32         |
| CHN | 3.96      | 1.29      | 2.71      | 5.63      | 2.00      | 1.42      | 2.30         |
| IND | 6.78      | 0.93      | 1.51      | 2.55      | 1.87      | 1.90      | 1.72         |
| CRI | 2.86      | 3.86      | 0.57      | 4.37      | 0.73      | 1.10      | 1.68         |
| PHL | 0.74      | 4.92      | 2.19      | 2.51      | 0.79      | 0.84      | 1.20         |
| IDN | 2.22      | 0.07      | 0.46      | 1.53      | 1.04      | 1.17      | 1.15         |
| LKA | 2.24      | 2.20      | 0.59      | 1.44      | 0.55      | 1.53      | 1.07         |

Each cell contains the component of GDP growth coming from exports alone.

Sri Lanka's export performance was particularly weak after the 1990s and especially low relative to peers in the early-2000s.

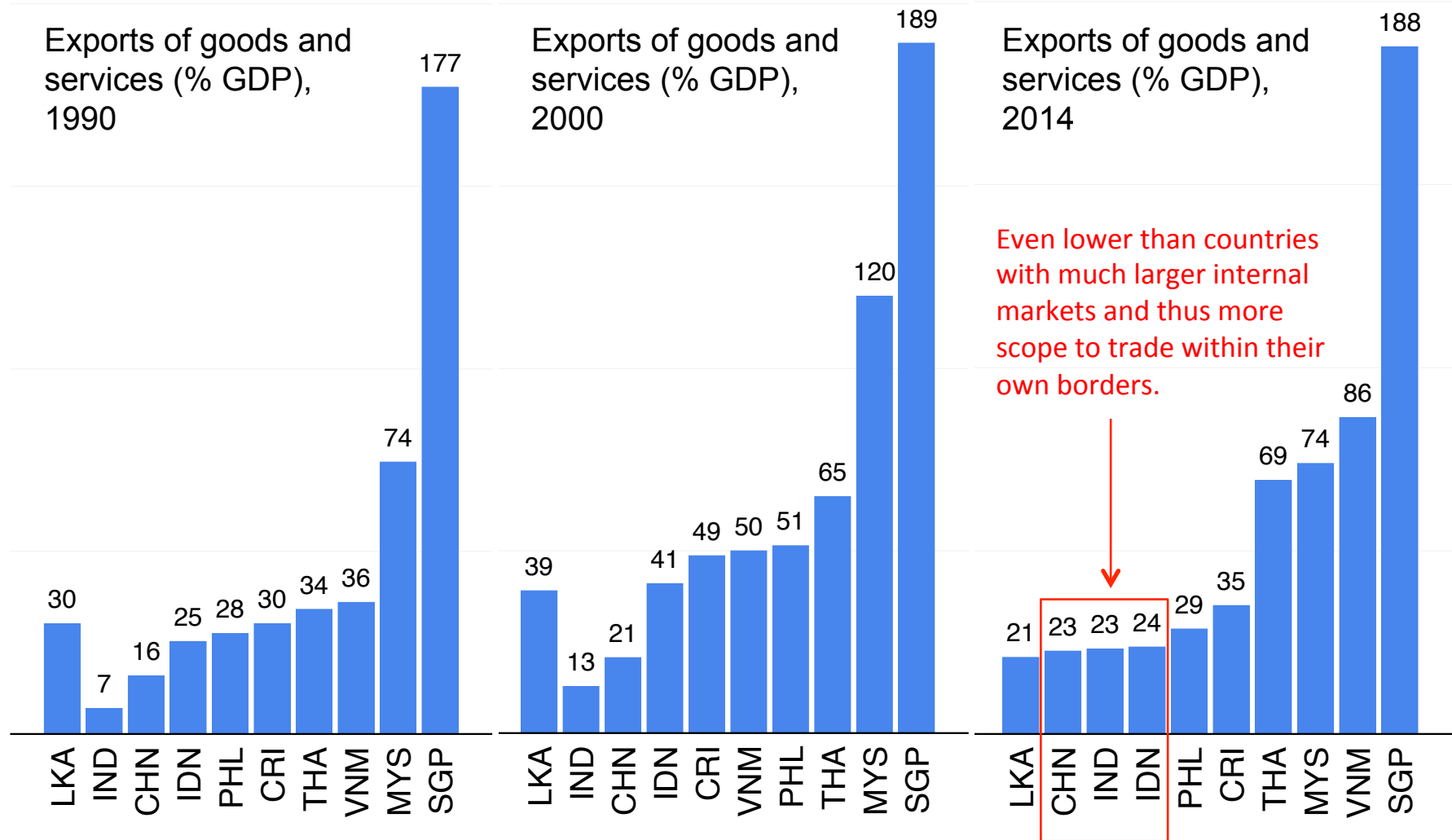
# Export growth is consistently lagging behind peers

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

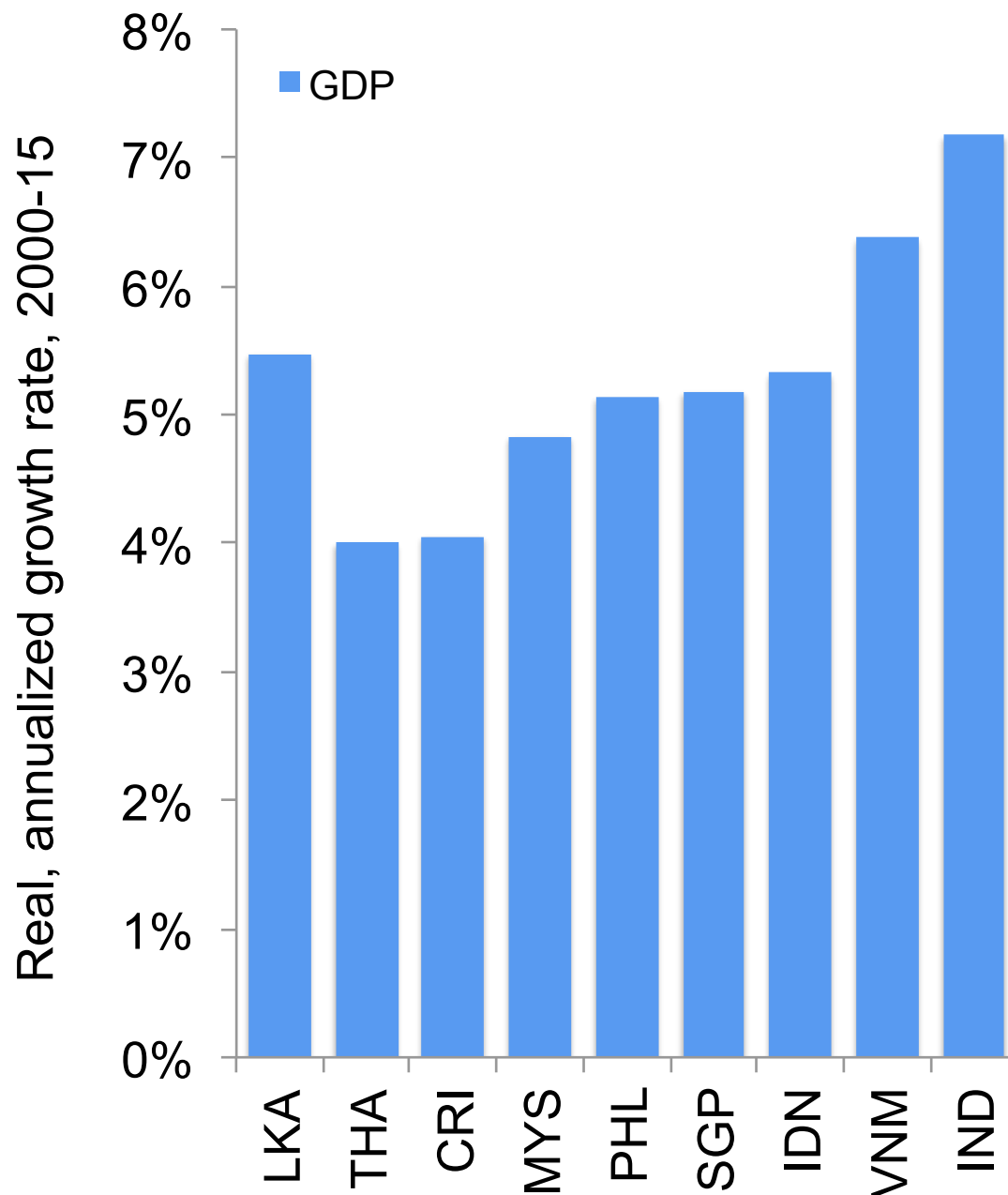


Data source: UN COMTRADE, via CID. Not adjusted for inflation.

...and the share of exports in GDP has also decreased to lowest among comparators



Data source: WDI



## Sri Lanka's growth conundrum

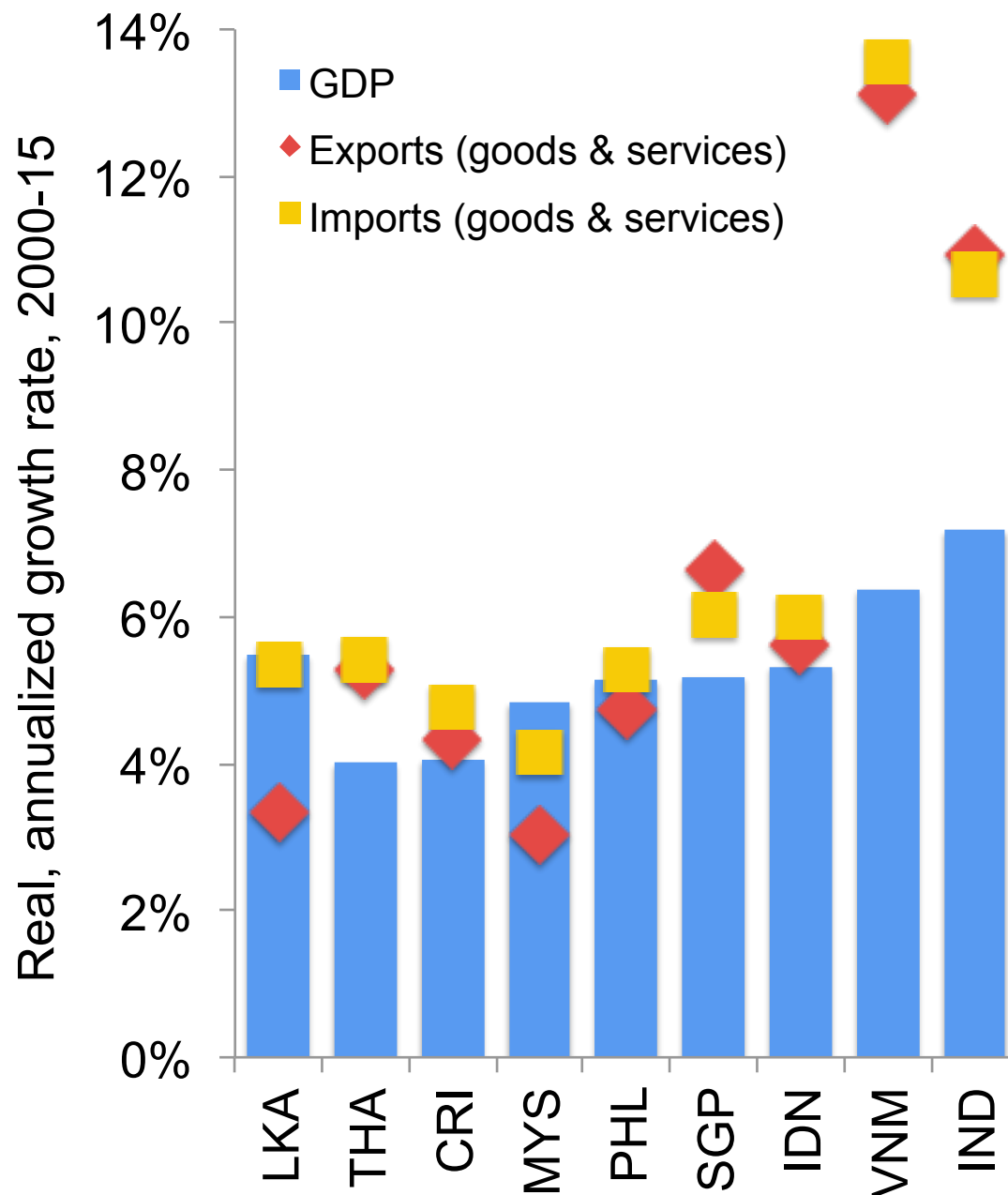
- GDP growth is strong by regional standards.





## Sri Lanka's growth conundrum

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

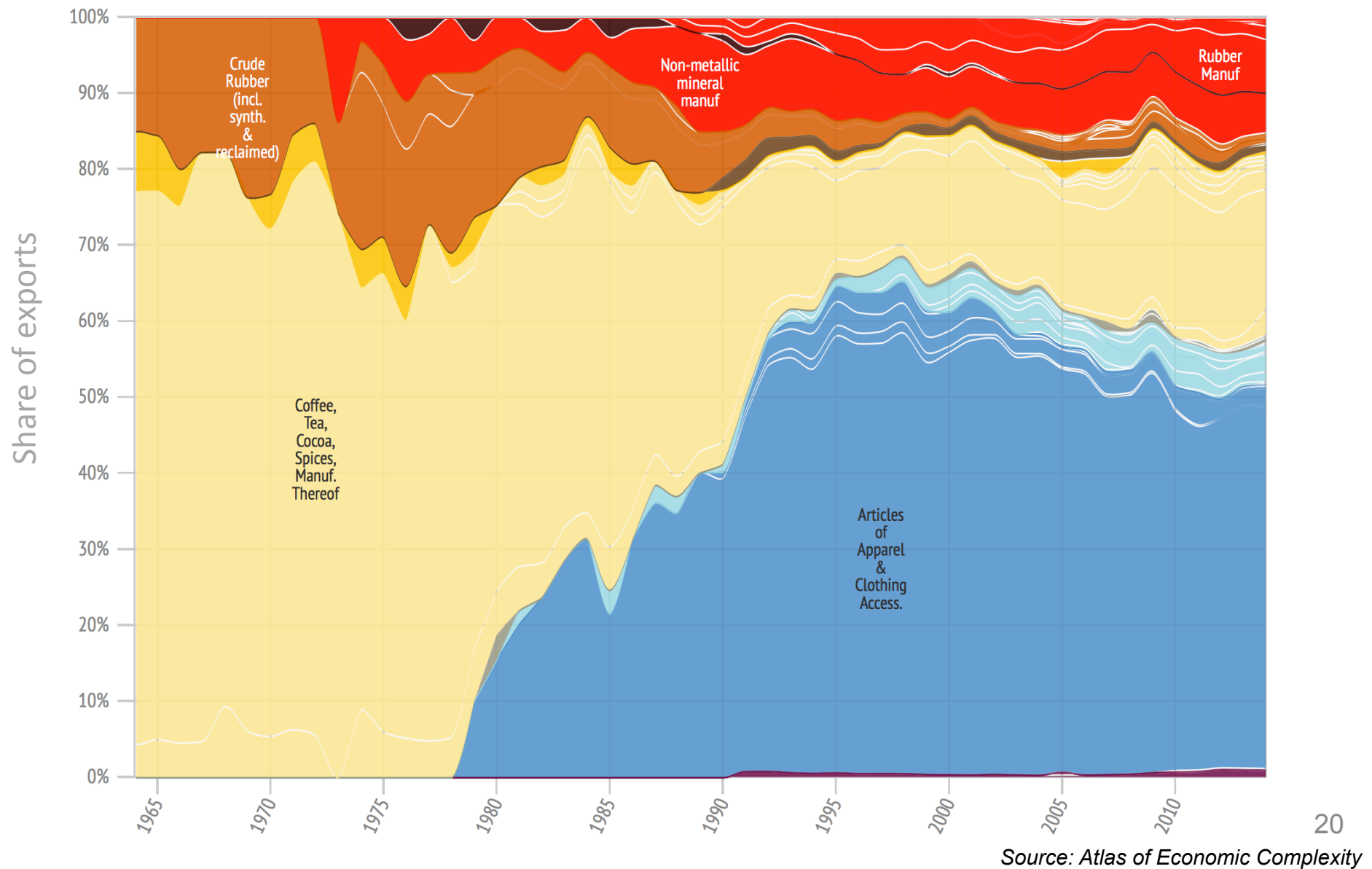


## Sri Lanka's growth conundrum

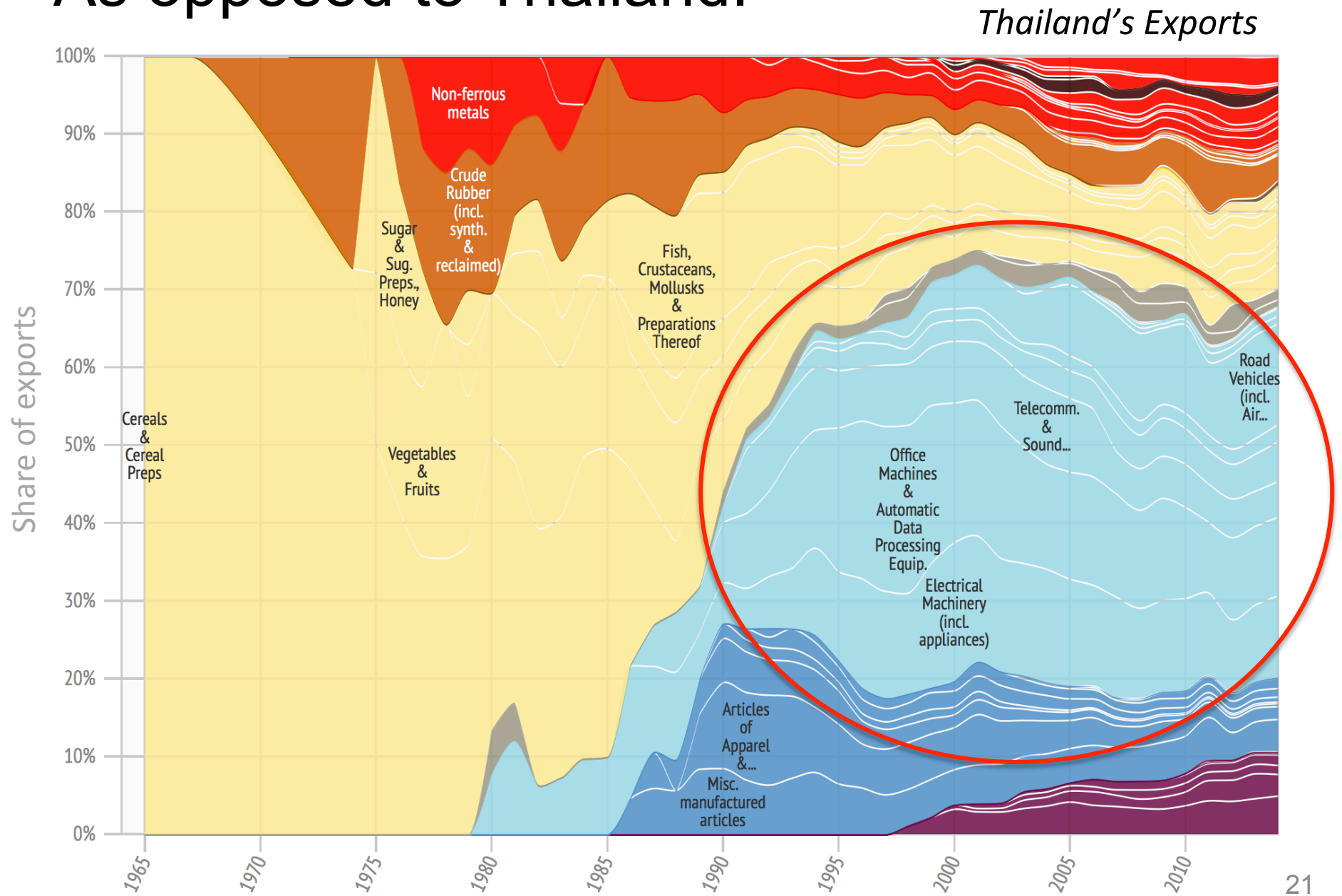
- GDP growth is strong by regional standards.
- Exports are not keeping pace...
- ...but imports are.

Sri Lanka's export composition also has been highly stable since the mid-1990s:

*Sri Lanka's Exports*

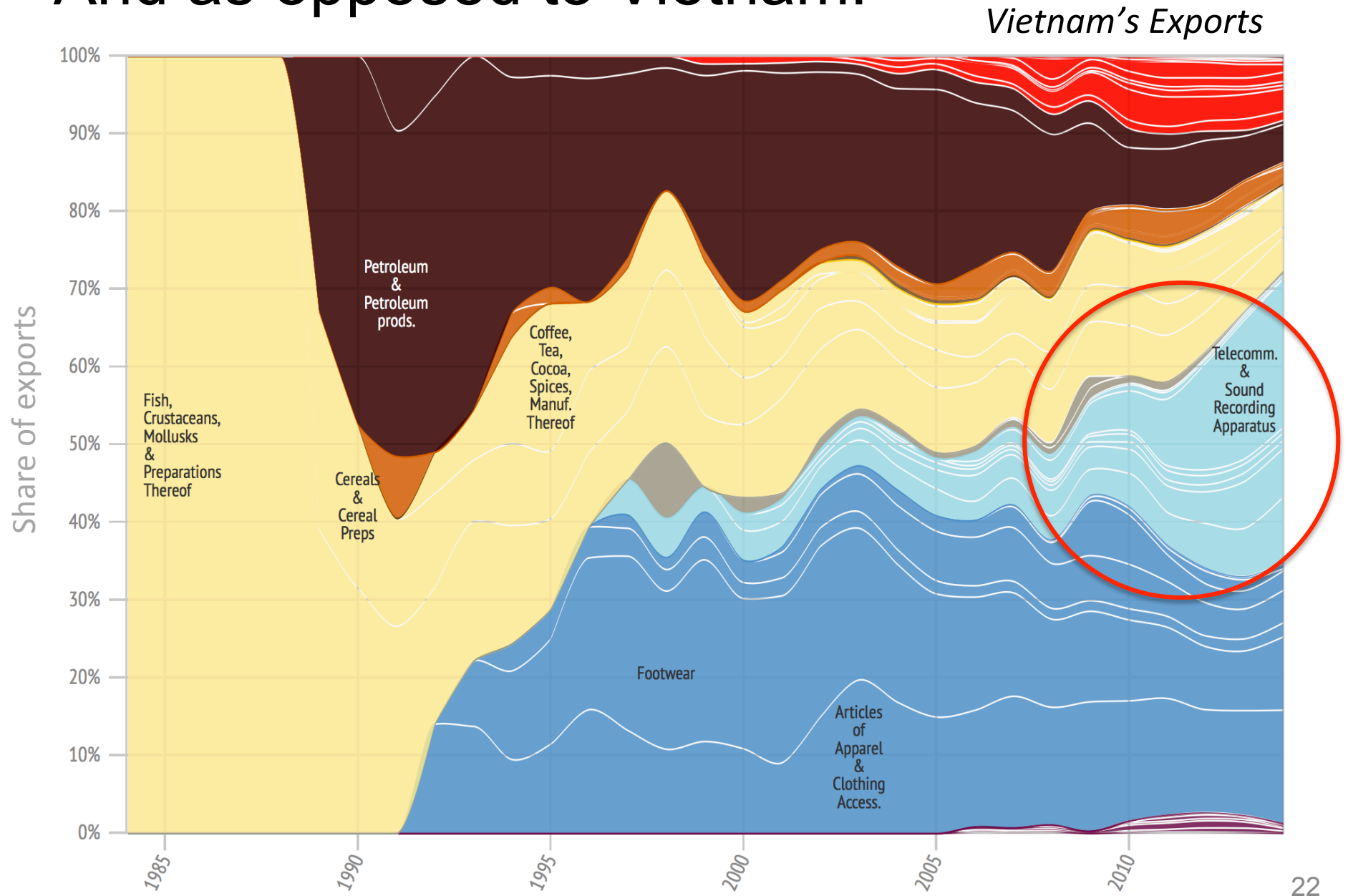


# As opposed to Thailand:



Source: Atlas of Economic Complexity

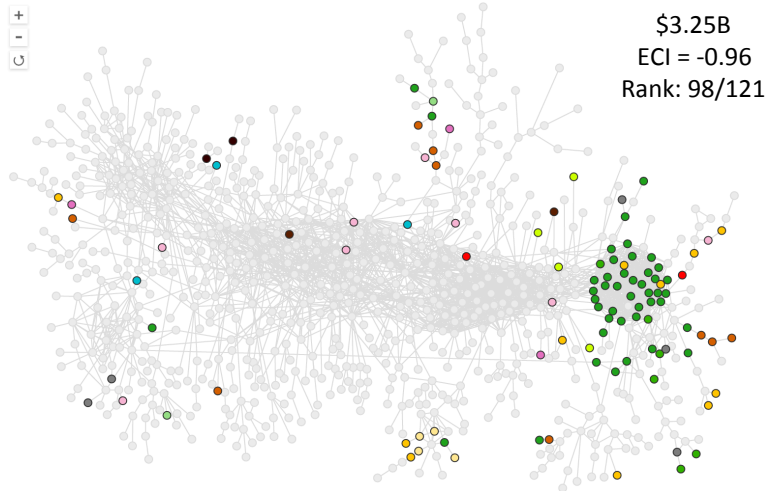
# And as opposed to Vietnam:



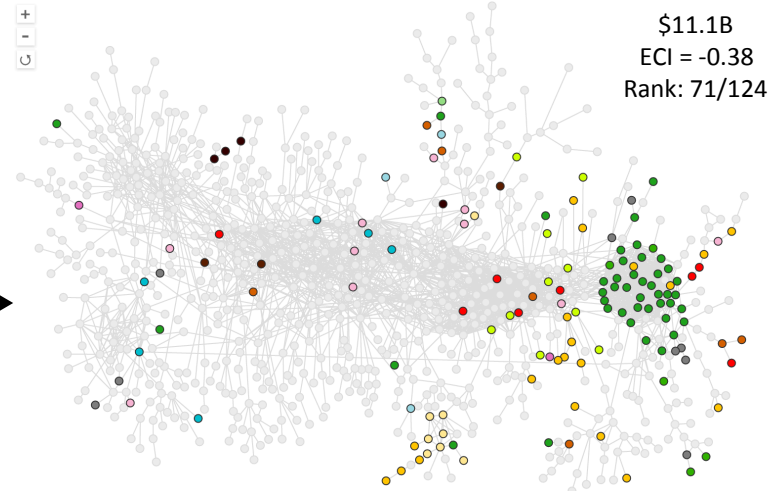
Source: Atlas of Economic Complexity

# Comparing the appearance of new products:

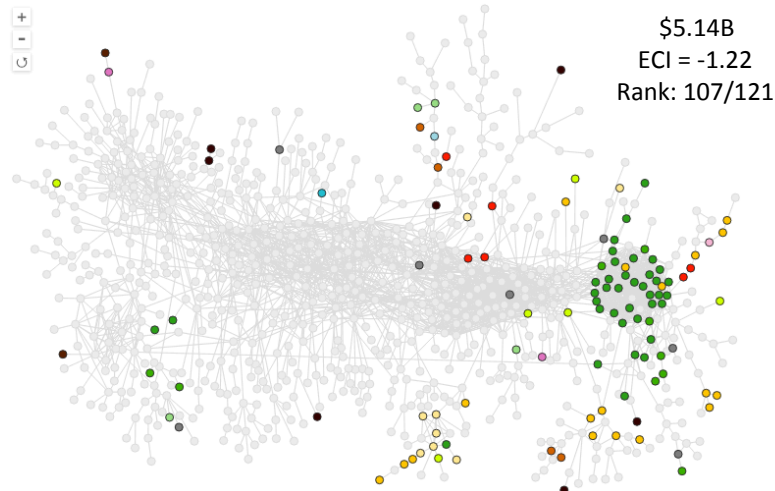
Sri Lanka's Exports, 1995



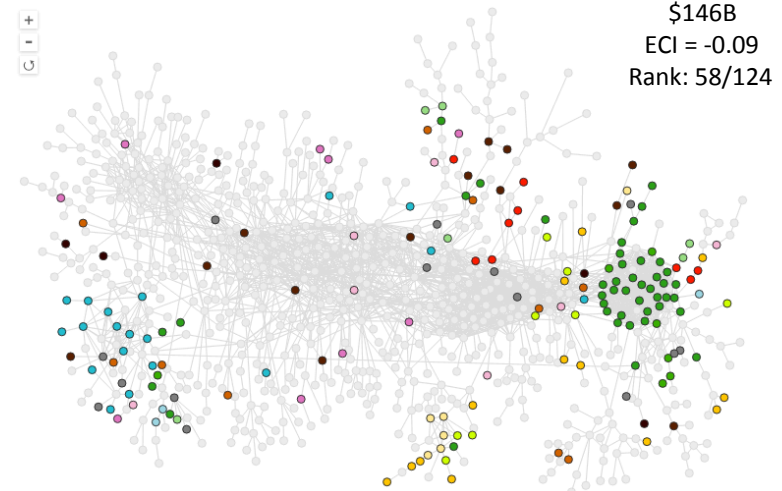
Sri Lanka's Exports, 2014



Vietnam's Exports, 1995



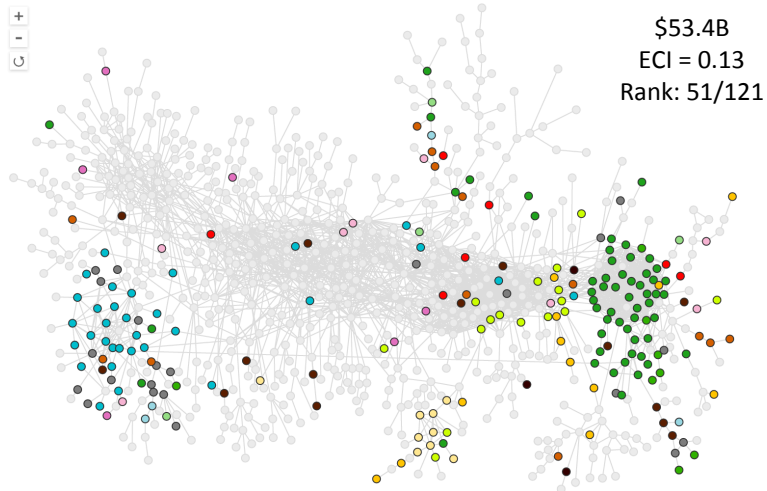
Vietnam's Exports, 2014



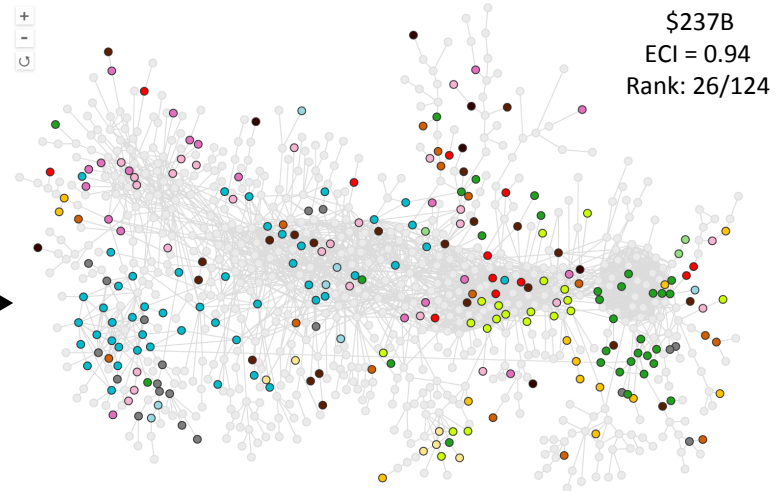


# Comparing the appearance of new products:

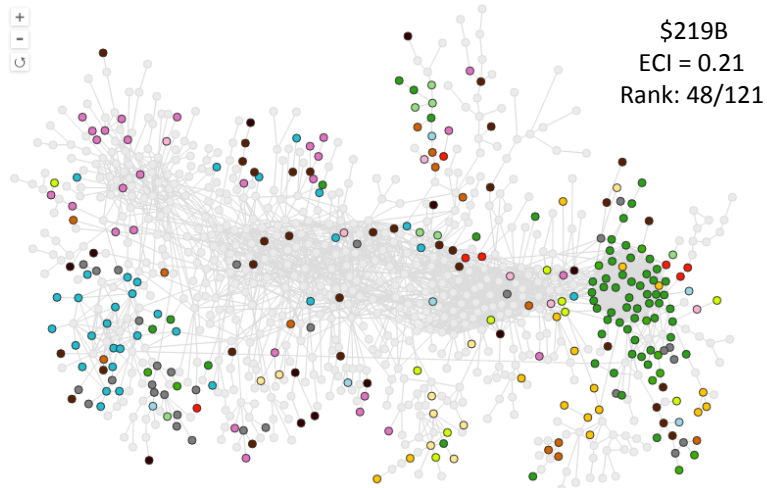
Thailand's Exports, 1995



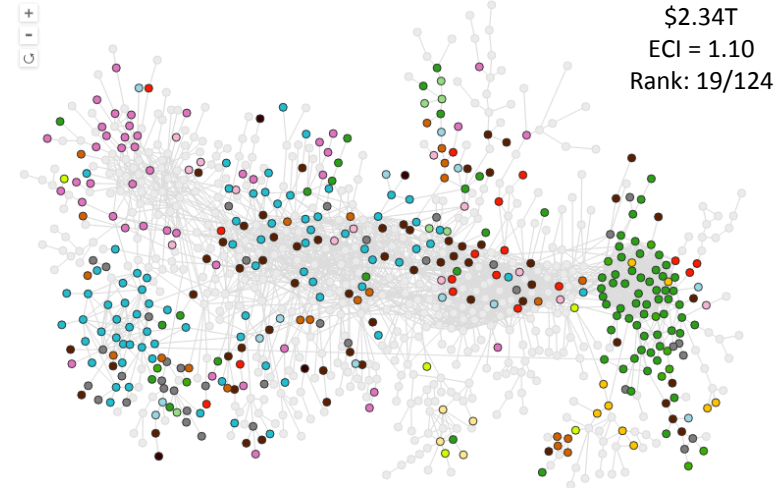
Thailand's Exports, 2014



China's Exports, 1995



China's Exports, 2014

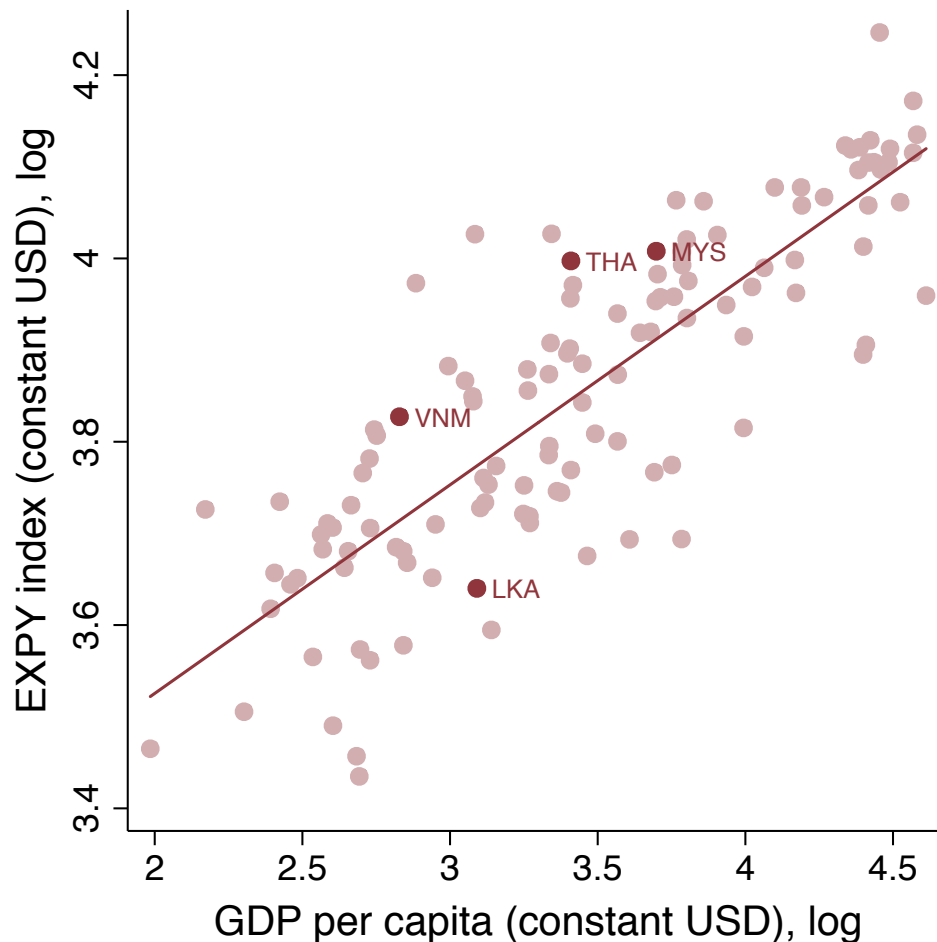


By sector, Sri Lanka is concentrated in apparel and vegetable products and lacks machinery and electrical manufactured exports versus comparators.

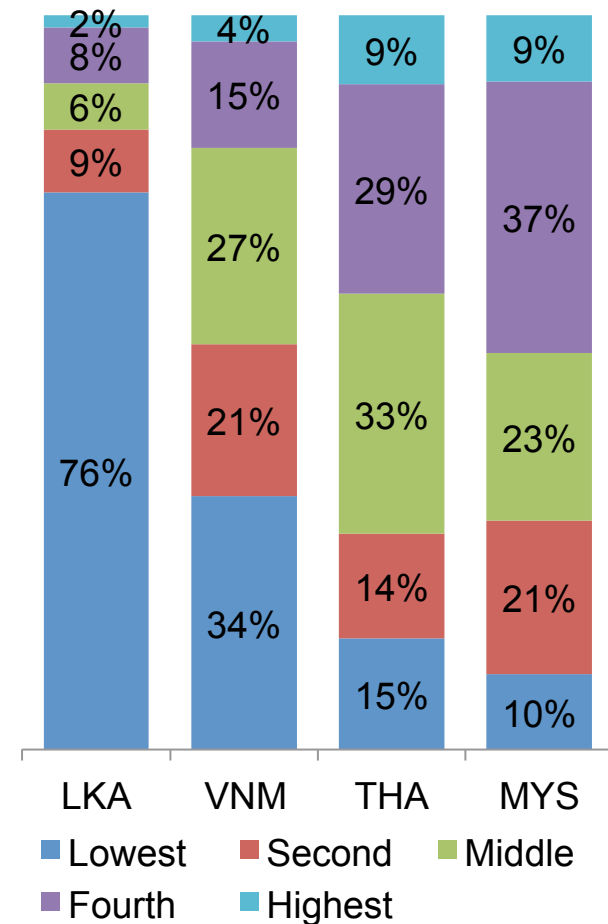
| HS Chapter             | LKA  | IND  | IDN  | PHL  | VNM   | CHN   | THA   | CRI   | MYS   | SGP    |
|------------------------|------|------|------|------|-------|-------|-------|-------|-------|--------|
| Textiles & Apparel     | 46%  | 12%  | 8%   | 3%   | 17%   | 11%   | 3%    | 0%    | 1%    | 0%     |
| Vegetable Products     | 19%  | 7%   | 14%  | 6%   | 6%    | 1%    | 5%    | 13%   | 7%    | 1%     |
| Plastics & Rubbers     | 9%   | 3%   | 5%   | 2%   | 3%    | 4%    | 12%   | 2%    | 5%    | 5%     |
| Stone & Glass          | 6%   | 14%  | 2%   | 2%   | 1%    | 3%    | 5%    | 1%    | 2%    | 3%     |
| Machinery & Electrical | 4%   | 8%   | 10%  | 60%  | 36%   | 46%   | 34%   | 68%   | 46%   | 33%    |
| Food Products          | 3%   | 2%   | 4%   | 3%   | 2%    | 1%    | 7%    | 3%    | 2%    | 2%     |
| Animal Products        | 3%   | 5%   | 2%   | 1%   | 5%    | 2%    | 2%    | 1%    | 1%    | 0%     |
| Other Manufactured     | 2%   | 2%   | 3%   | 5%   | 6%    | 10%   | 4%    | 7%    | 4%    | 5%     |
| Transport Equipment    | 2%   | 8%   | 3%   | 4%   | 1%    | 3%    | 11%   | 0%    | 1%    | 2%     |
| Chemical Products      | 2%   | 12%  | 4%   | 2%   | 1%    | 4%    | 5%    | 1%    | 3%    | 13%    |
| Wood Products          | 2%   | 1%   | 6%   | 2%   | 2%    | 2%    | 2%    | 1%    | 2%    | 2%     |
| Footwear & Headgear    | 1%   | 1%   | 3%   | 0%   | 9%    | 3%    | 0%    | 0%    | 0%    | 0%     |
| Extractives            | 1%   | 19%  | 30%  | 8%   | 6%    | 1%    | 5%    | 0%    | 21%   | 23%    |
| Metals                 | 1%   | 8%   | 5%   | 4%   | 3%    | 8%    | 4%    | 1%    | 4%    | 3%     |
| Total                  | 100% | 100% | 100% | 100% | 100%  | 100%  | 100%  | 100%  | 100%  | 100%   |
| Exports per capita     | 543  | 242  | 745  | 774  | 1,619 | 1,725 | 3,530 | 6,472 | 9,591 | 50,299 |



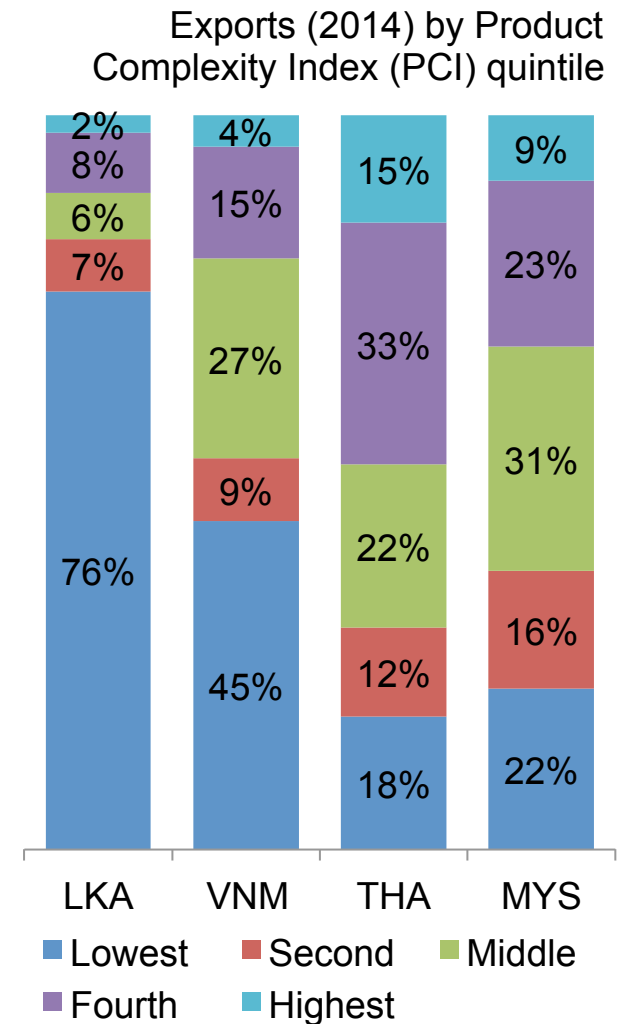
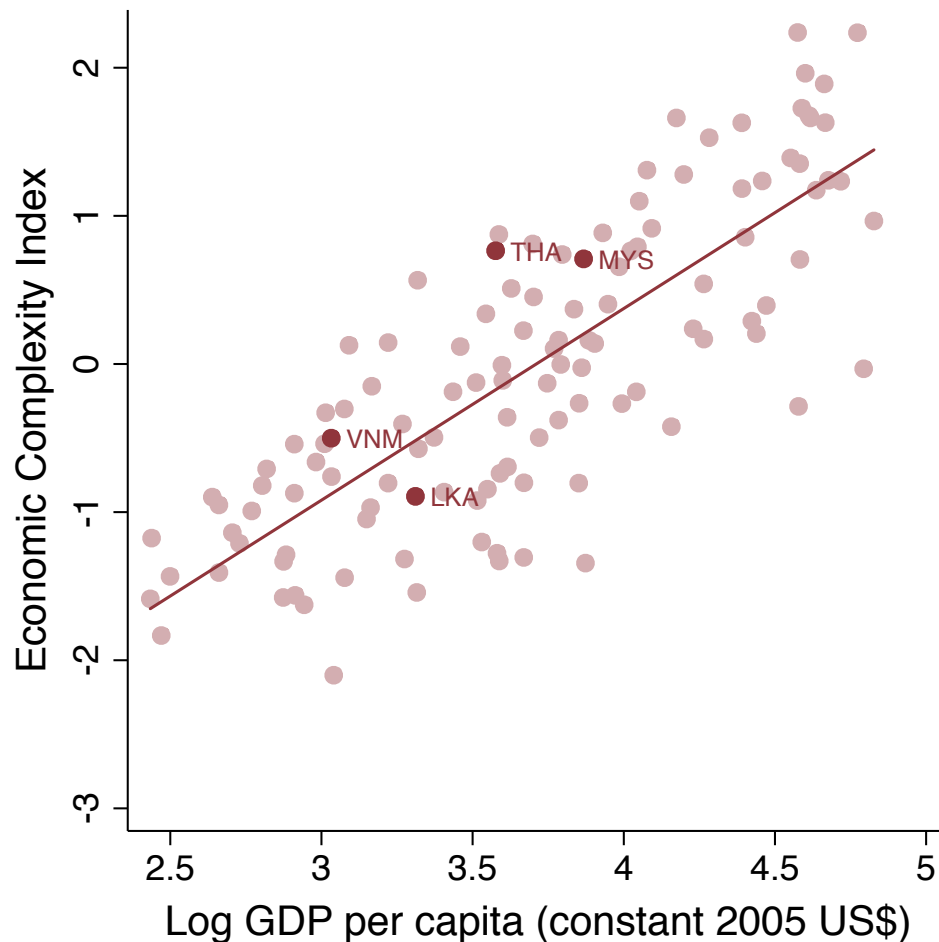
Unlike comparators, exports are almost entirely composed of products associated with low GDP.



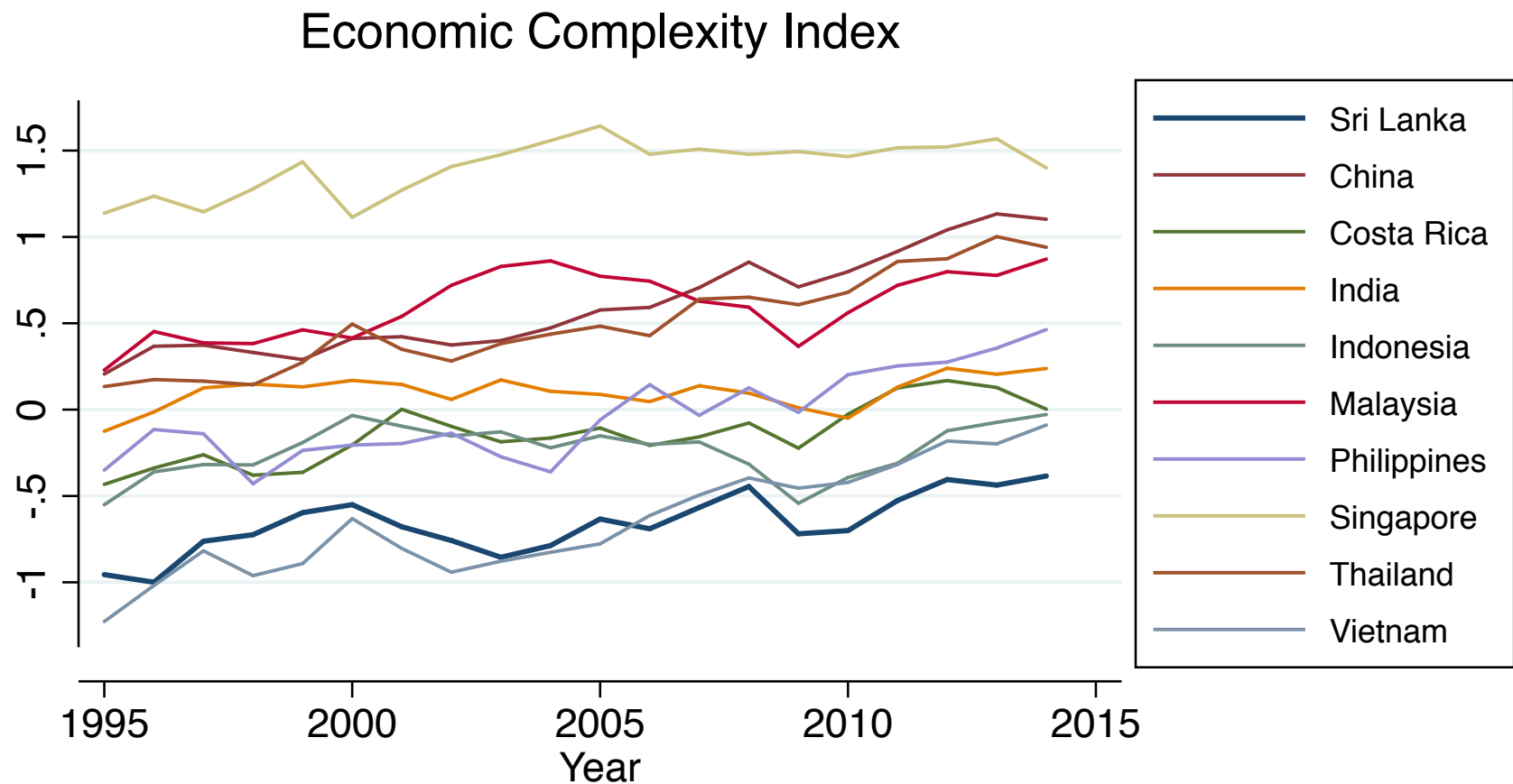
Exports (2014) by PRODY quintile



Likewise, Sri Lanka's exports are biased towards low-complexity products, implying low know-how.

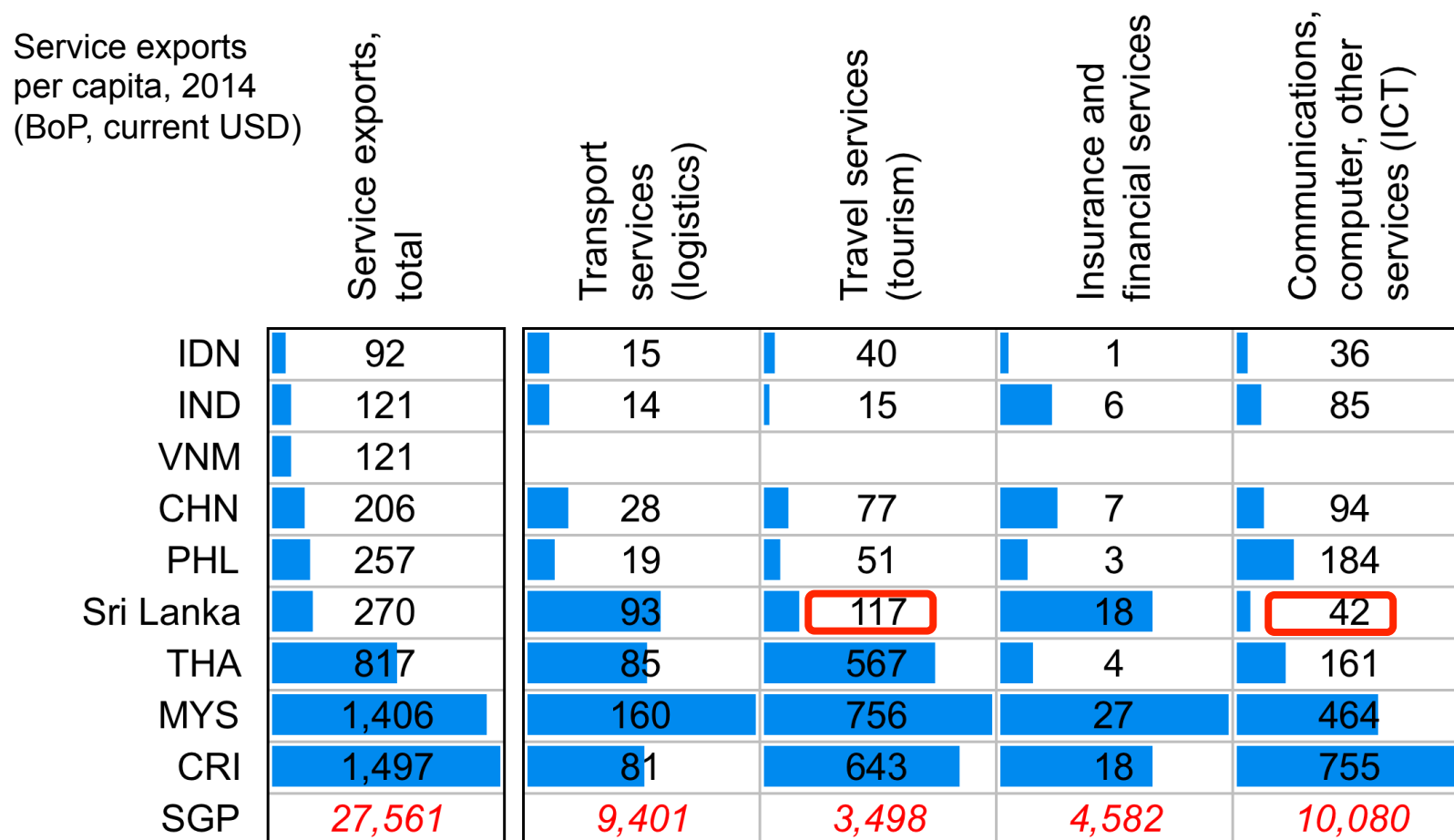


Sri Lanka's economic complexity is the lowest among the comparator countries and it is evolving at a slow pace.



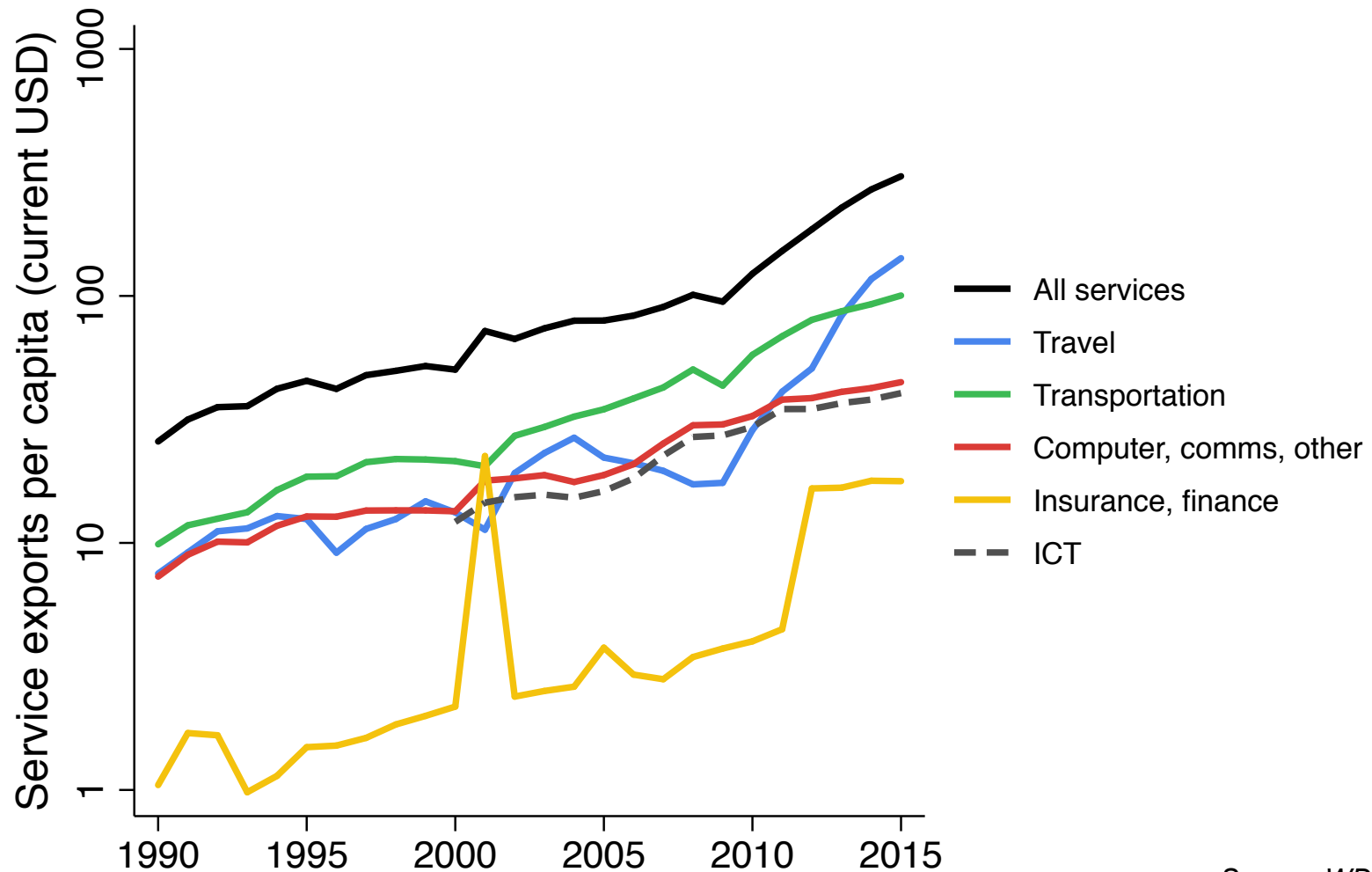
Data source: Atlas of Economic Complexity

Sri Lanka performs relatively well in service exports related to transport and insurance/finance, but there is much room to grow in travel services and ICT.

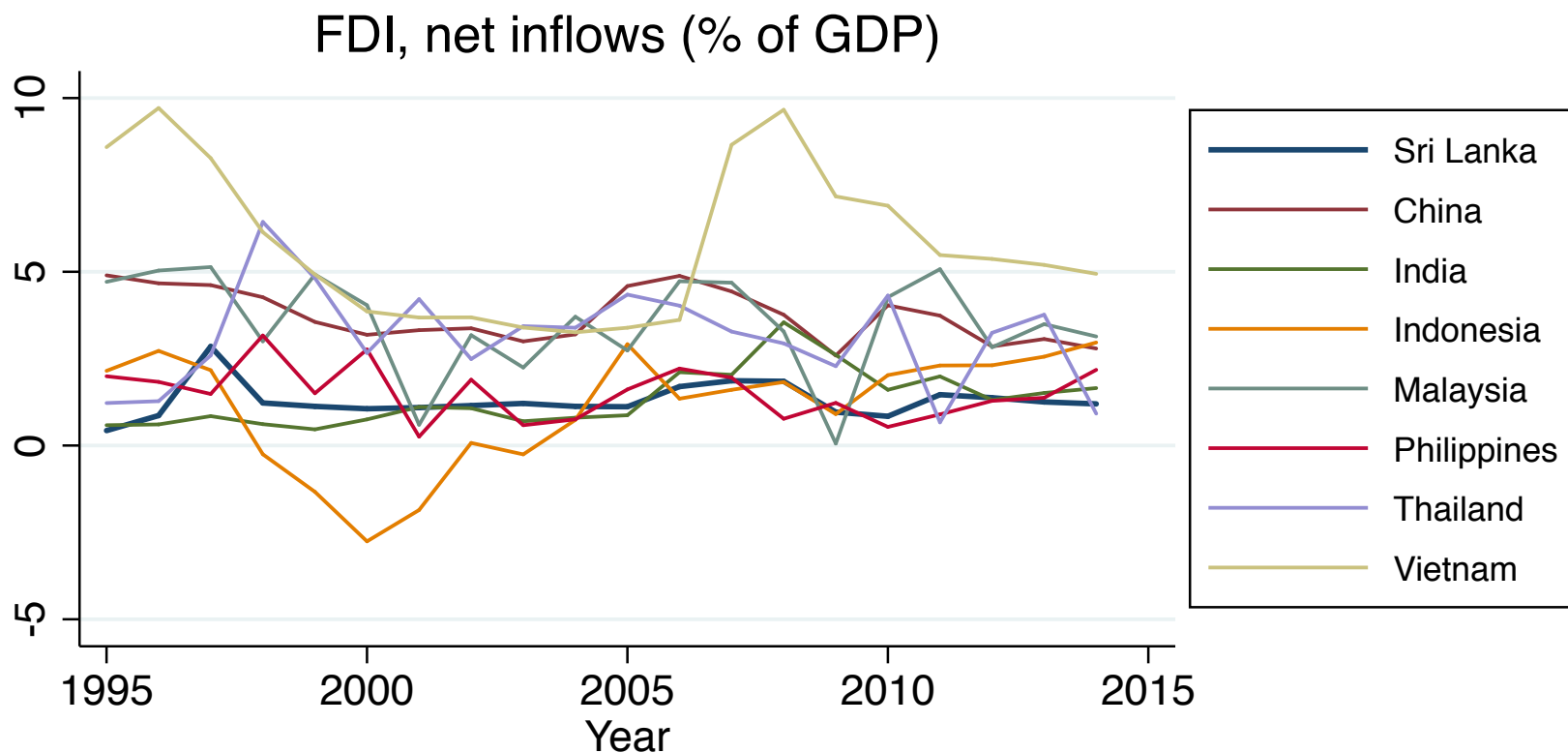


Notes: Transport service exports are services related to the movement of non-resident goods & passengers. Travel service exports are services consumed by visitors (inc. tourists). Disaggregated data not available for Vietnam. Source: WDI

Growth has taken place across all service exports, fastest growth from travel (in the post-conflict period) and lumpy growth in insurance and finance.



Sri Lanka has seen little FDI over last 20 years and no acceleration in FDI after the war.



Data source: WDI

FDI is especially low in comparison to Vietnam, which had nearly the exact same position as Sri Lanka in the Product Space in 1995 but has since diversified much more quickly.

Large-scale FDI since 2009 matches the patterns of exports: low in manufacturing (electronics, vehicles, materials) and energy and high in tourism, logistics/transport and finance.

Estimated capital expenditure per capita, 2009 – March 2016 (annualized)

| Activity                  | LKA | THA | VNM | MYS |
|---------------------------|-----|-----|-----|-----|
| Construction              | 18  | 12  | 30  | 77  |
| Manufacturing             | 16  | 60  | 106 | 212 |
| Sales, Marketing          | 16  | 7   | 14  | 25  |
| Logistics, Distribution   | 15  | 5   | 4   | 16  |
| Business Services         | 8   | 3   | 7   | 6   |
| Electricity               | 7   | 2   | 36  | 32  |
| ICT Infrastructure        | 4   | 2   | 1   | 6   |
| Headquarters              | 2   | 1   | 1   | 5   |
| Retail                    | 2   | 4   | 3   | 12  |
| Customer Contact Centers  | 1   | 0   | 0   | 0   |
| Design & Testing          | 1   | 1   | 1   | 7   |
| Education & Training      | 0   | 0   | 0   | 3   |
| Research & Development    | 0   | 0   | 1   | 1   |
| Maintenance & Servicing   | 0   | 0   | 0   | 2   |
| Shared Services Centres   | 0   | 0   | 0   | 2   |
| Extraction                | 0   | 5   | 8   | 16  |
| Recycling                 | 0   | 0   | 1   | 0   |
| Technical Support Centres | 0   | 0   | 0   | 0   |
| Total                     | 89  | 102 | 212 | 424 |

| Cluster                    | LKA | THA | VNM | MYS |
|----------------------------|-----|-----|-----|-----|
| Logistics, Transport       | 19  | 5   | 9   | 15  |
| Financial Services         | 16  | 3   | 11  | 10  |
| Tourism                    | 13  | 3   | 4   | 9   |
| Materials, Construction    | 8   | 9   | 27  | 61  |
| Energy                     | 6   | 6   | 67  | 80  |
| Electronics, ICT           | 5   | 12  | 24  | 54  |
| Vehicles, Transport Equip. | 4   | 36  | 11  | 38  |
| Food, Beverages, Tobacco   | 3   | 4   | 10  | 14  |
| Physical Sciences          | 3   | 4   | 13  | 44  |
| Environmental Tech         | 3   | 5   | 6   | 36  |
| Apparel & Wood             | 2   | 1   | 11  | 3   |
| Retail Trade               | 2   | 3   | 3   | 12  |
| Industrial                 | 2   | 6   | 6   | 16  |
| Life sciences              | 1   | 1   | 2   | 16  |
| Professional Services      | 1   | 0   | 1   | 3   |
| Consumer Goods             | 1   | 1   | 1   | 6   |
| Creative Industries        | 1   | 4   | 7   | 6   |
| Total                      | 89  | 102 | 212 | 424 |

Source: fDi Markets, April 2016. Note: dataset is based on estimates of large, high-profile FDI projects 32

# Value added & jobs:

- Agriculture and manufacturing activities are fairly stagnant; very low productivity in agriculture and relatively low productivity in manufacturing
- Domestically-oriented services are thriving:
  - Construction and real estate comprise almost 20% of growth
  - Another 40+% of growth is related to household consumption: including retail, hospitality, entertainment, domestic work
  - Finance, insurance, and professional activities growing fast but provide few jobs
  - ICT / BPO is growing but still extremely small (and relatively unproductive)

| Economic Activity (ISIC Header)                              | 2014            |               | 2010-14     |                   | 2014        |              |
|--|-----------------|---------------|-------------|-------------------|-------------|--------------|
|  | Value Added (B) | % GDP         | CAGR        | Contrib to growth | Emp         | VA / Emp     |
| Agriculture, forestry, fishing (A)                           | 5.3             | 7.3%          | 2.4%        | 3.0%              | 28.5%       | 2,200        |
| Manufacturing activities (C)                                 | 11.5            | 15.9%         | 2.9%        | 8.0%              | 18.2%       | 7,500        |
| Mining, quarrying, other industries (B,D,E)                  | 2.7             | 3.8%          | 9.7%        | 5.4%              | 8.2%        | 10,800       |
| Construction (F)   | 4.7             | 6.5%          | 12.3%       | 11.1%             |             |              |
| Retail, wholesale; distribution; hotels, restaurants (G,H,I) | 16.9            | 23.4%         | 7.0%        | 25.6%             | 21.8%       | 9,200        |
| Information, communication (J)                               | 0.3             | 0.5%          | 8.6%        | 0.7%              | 0.8%        | 5,500        |
| Financial, insurance activities (K)                          | 4.6             | 6.4%          | 11.2%       | 10.1%             | 1.9%        | 28,800       |
| Professional, technical; admin, support services (M,N)       | 1.5             | 2.0%          | 10.4%       | 3.0%              | 2.0%        | 8,900        |
| Public admin, defense; edu; health, social work (O,P,Q)      | 6.4             | 8.8%          | 2.4%        | 3.6%              | 13.5%       | 5,600        |
| Real estate activities (inc. ownership of dwelling) (L)      | 3.9             | 5.4%          | 9.6%        | 7.7%              | 5.1%        | 27,400       |
| Culture, recreation; oth. service; domestic work (R,S,T,U)   | 7.7             | 10.6%         | 10.2%       | 15.7%             |             |              |
| <b>Gross Value Added</b>                                     | <b>65.7</b>     | <b>90.7%</b>  | <b>6.6%</b> | <b>94.0%</b>      | <b>100%</b> | <b>7,800</b> |
| Taxes on products  | 7.0             | 9.7%          | 3.6%        | 5.8%              |             |              |
| (-1)*Subsidies on products                                   | -0.3            | -0.4%         | -2.8%       | 0.2%              |             |              |
| <b>Gross Domestic Product</b>                                | <b>72.5</b>     | <b>100.0%</b> | <b>6.3%</b> | <b>100.0%</b>     |             |              |



# Collecting the evidence – what is constrained?

|                                | What appears healthy?   | What appears constrained?   |
|--------------------------------|---|---|
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| GDP growth by sector           | <ul style="list-style-type: none"> <li>• Construction &amp; real estate</li> <li>• Retail, logistics, hospitality, recreation (possibly including tourism)</li> <li>• Finance, insurance, technical / support</li> <li>• ICT (growing, though still small)</li> </ul> | <ul style="list-style-type: none"> <li>• Agriculture &amp; fisheries</li> <li>• Manufacturing</li> </ul>  |
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**QUESTION OF THE GROWTH DIAGNOSTIC:** What are the constraints that bind **investment in new and non-traditional export-oriented activities**?

# **WHY DOES ANSWERING THE GROWTH DIAGNOSTIC QUESTION MATTER?**

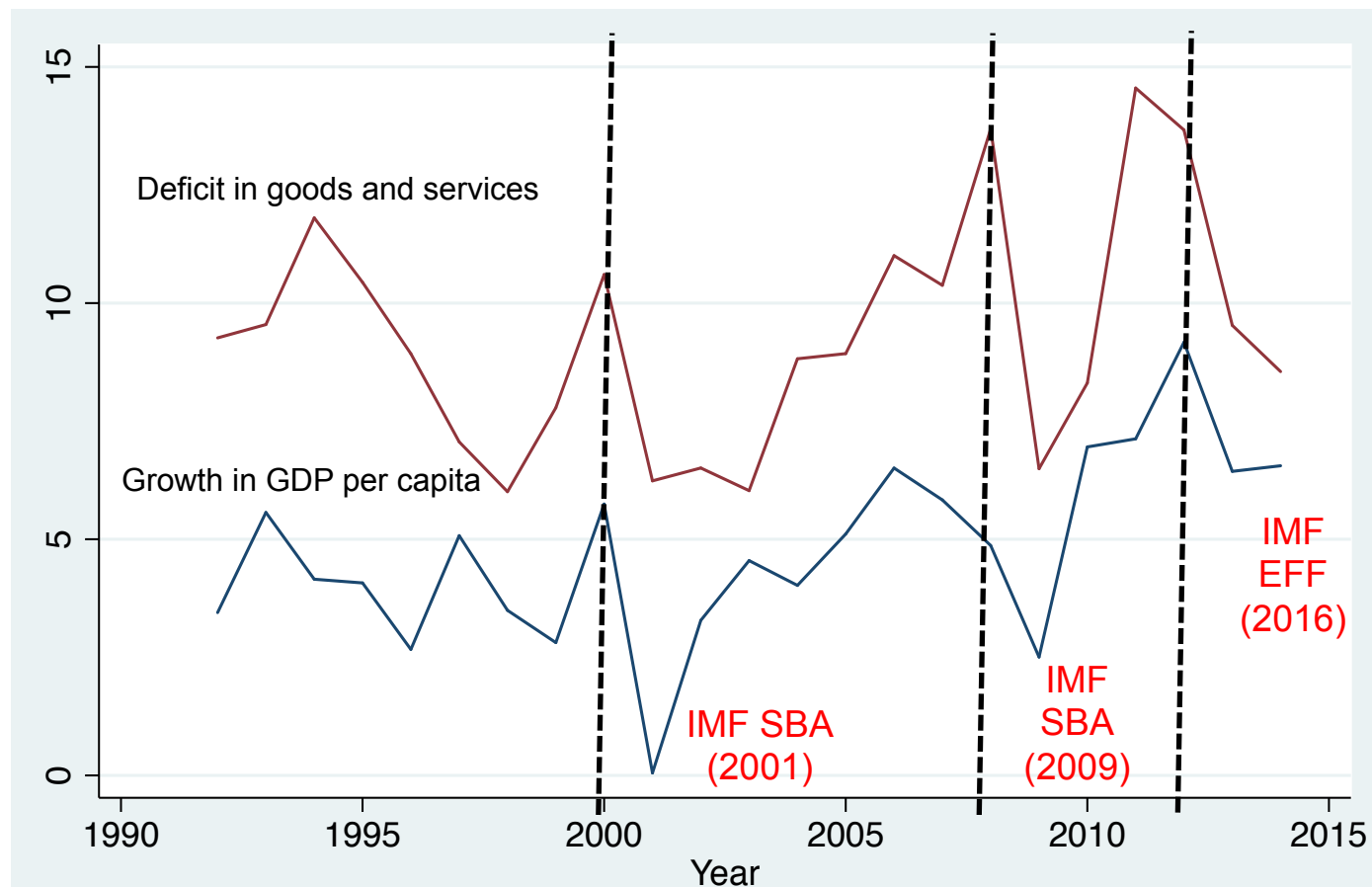
Sustaining growth and providing better jobs

# Balance of payments: historically, growth is and has been constrained by balance of payments weaknesses, resulting in a recurring pattern.

Each time the trade deficit has expanded too sharply:

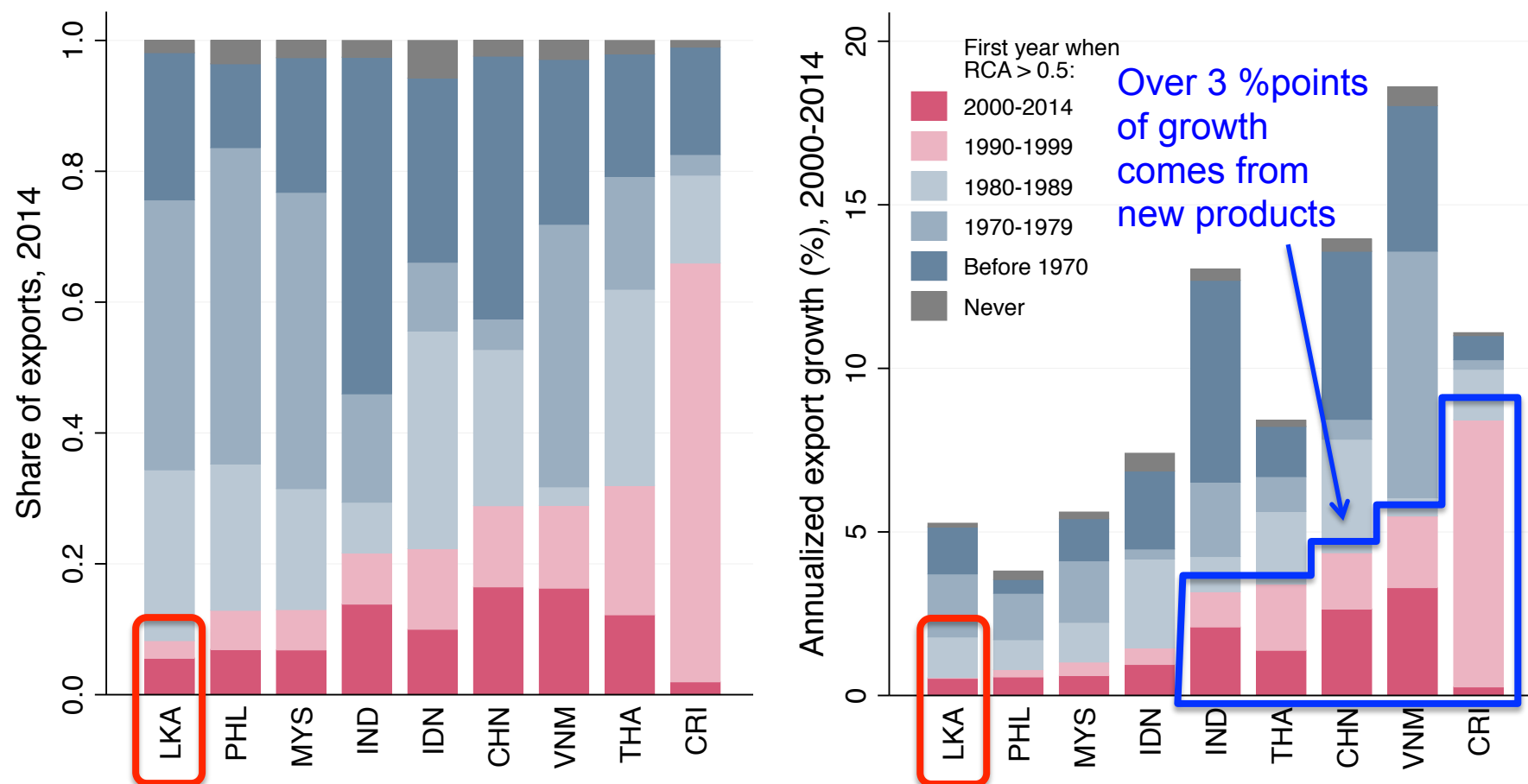
- Current account deficits were not matched by capital account surpluses,
- Foreign reserves dropped sharply,
- Growth slowed,
- And an IMF program was needed to address the balance of payments.

Recent growth in service exports has not been able to break the pattern.



Sources: WDI; IMF Press Releases

**Diversification dividend (1):** unlike fastest-growing exporters, relatively little of exports or export growth comes from new products – a missing component of growth for Sri Lanka



Source: UN COMTRADE, via CID

## Diversification dividend (2): In other countries, diversification results in a direct boost to incomes

New export products, 2000-2015

Products without RCA in 1998-2000 and with RCA in 2013-2015

| Country     | New products | USD per capita | USD (billions) | Product                      |
|-------------|--------------|----------------|----------------|------------------------------|
| China       | 76           | 245            | 331.6          | Rags, textile scraps         |
| Thailand    | 70           | 326            | 21.8           | Woven fabrics of bast fibers |
| Vietnam     | 48           | 545            | 50.4           | Wheat or meslin flour        |
| Philippines | 11           | 12             | 1.2            | Cigarettes                   |
| Malaysia    | 10           | 149            | 4.7            | Tulles and other net fabrics |
| Sri Lanka   | 7            | 5              | 0.1            | Lead oxides                  |
| Costa Rica  | 6            | 139            | 0.7            | Textile for conveyor belts   |
| Indonesia   | 4            | 3              | 0.8            |                              |
| India       | 0            | n/a            | n/a            |                              |

*Note: uses both standard RCA and population-based version; excludes natural resources.*

*Source: CID calculations using COMTRADE data*

## **Vulnerable existing exports:** current major export industries are being squeezed, with wage growth outpacing productivity gains

- *Wage ceiling:* Many of Sri Lanka's biggest export industries face low wage ceilings because they are labor-intensive and face international competition from poorer countries.
- *Wage floor:* The wage floor in Sri Lanka is rising because overall growth has translated into higher wages for workers in non-tradable activities, including public sector employment.
- These big export industries respond by a mix of product and process innovation within Sri Lanka (leading to very high quality of garment exports) and investment in new opportunities outside Sri Lanka.
- A limited number of new export industries are able to provide higher wages and thus avoid being squeezed.
- Accelerating export diversification would result in more good jobs and provide more sustained growth by helping to address the balance of payments problem.
- ***See Appendix on Labor Scarcity for expanded analysis.***

# **APPLYING THE GROWTH DIAGNOSTIC METHODOLOGY**

# Collecting the evidence – what is constrained?

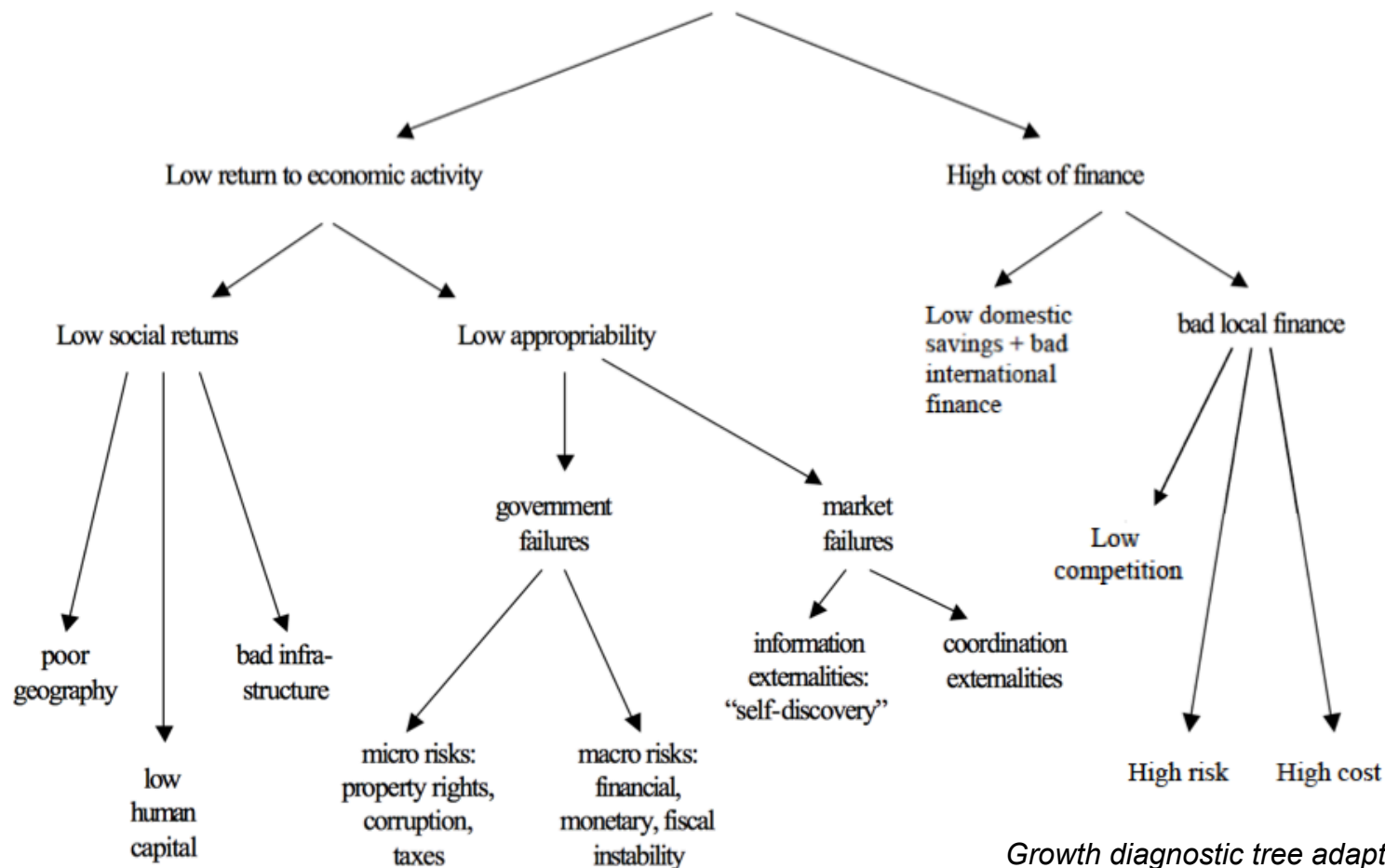
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**QUESTION OF THE GROWTH DIAGNOSTIC:** What are the constraints that bind **investment in new and non-traditional export-oriented activities**?



We employ the Growth Diagnostic Framework to identify what constraints do and do not bind investment in new and non-traditional export-oriented activities.

**Problem: Low growth of exports, low export dynamism, and lack of export-oriented investment, particularly FDI**



*Growth diagnostic tree adapted from Hausman, Rodrick, Velasco (2005)*

# We rely on several diagnostic tests as we move through the diagnostic tree.

## **Test 1: Prices / Shadow Prices**

Do we see a high price or “return” for the factor?

## **Test 2: Changes vs. changes**

Are movements in the constraint associated with movements in diversification, FDI and growth?

## **Test 3: Bypassing the constraint**

Do we see firms taking suboptimal routes to avoid the constraint?

## **Test 4: Camels and hippos**

Do industries with less need for the constrained factor perform better?

## **Test 5: (Sophisticated) benchmarking**

Can we learn important things about the nature of the constraint through international benchmarking exercises and other qualitative information.

# Summary of Findings (preview):

<sup>1</sup> Further research needed to confirm scope

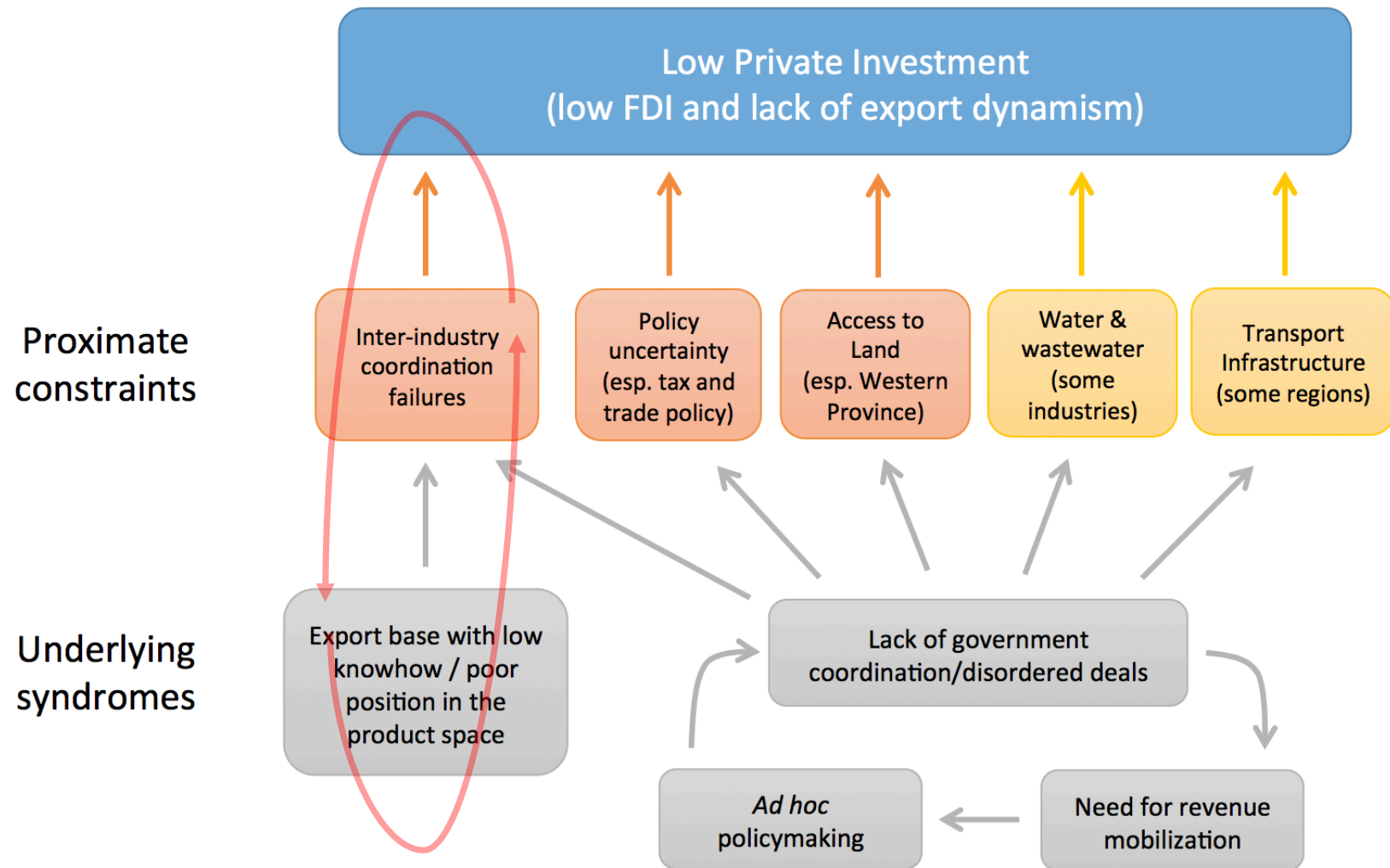
<sup>2</sup> Acute risk of becoming binding in the future

<sup>3</sup> Partially underlies binding constraint(s)

| Most Binding Constraints                     | Non-Binding Constraints             |
|--|-------------------------------------|
| Coordination Failures                        | Access to Finance                   |
| Access to Land                               | Education                           |
| Policy Uncertainty (esp. tax & trade policy) | Health                              |
| Water and Wastewater (some industries)       | Geography                           |
| Transportation (some regions) <sup>1</sup>   | Electricity <sup>2</sup>            |
|  | Labor Regulations                   |
|  | Macro-Fiscal Stability <sup>3</sup> |
|  | Corruption, Courts & Crime          |

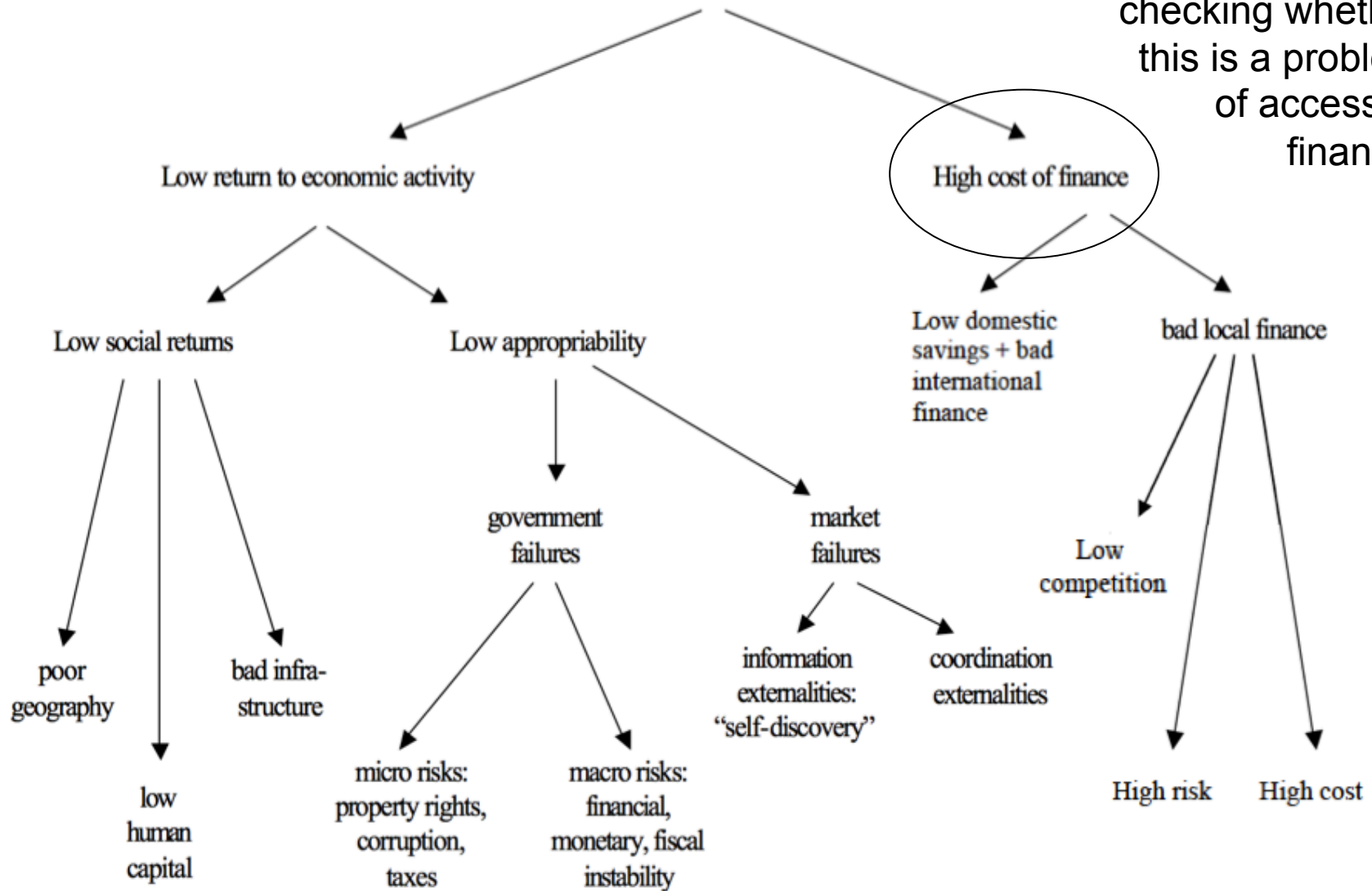
**QUESTION OF THE GROWTH DIAGNOSTIC:** What are the constraints that bind **investment in new and non-traditional export-oriented activities**?

# A Growth Syndrome (preview):



**Problem: Low growth of exports, low export dynamism, and lack of export-oriented investment, particularly FDI**

We start by checking whether this is a problem of access to finance.



*Growth diagnostic tree adapted from Hausman, Rodrick, Velasco (2005)*

# **ACCESS TO FINANCE**

Research on this constraint was led by the Millennium Challenge Corporation (MCC)

# Access to Finance: Summary

**Main Conclusion:** Finance is not a binding constraint. The financial system is operating at a level that can support economic growth. While the quantity of credit is somewhat low, this appears to be driven by a limited demand for investment finance rather than by major constraints in the supply of finance.

## **Evidence:**

***Benchmarking quantity:*** Quantity of credit to the private sector is somewhat low. The numbers of banks and bank branches in the country are high. NPLs are relatively low, and this might be reflective of an overly conservative financial system. There are also possible distortions from the two state-owned banks.

***Price:*** Real interest rates, at around 5%, are in line or lower than those of comparators.

***Changes vs. changes:*** Reductions in the interest rate do not correlate with higher investment.

***Bypassing the constraint:*** Firms often use banks to finance investment and rarely go to other sources such as supplier credit.

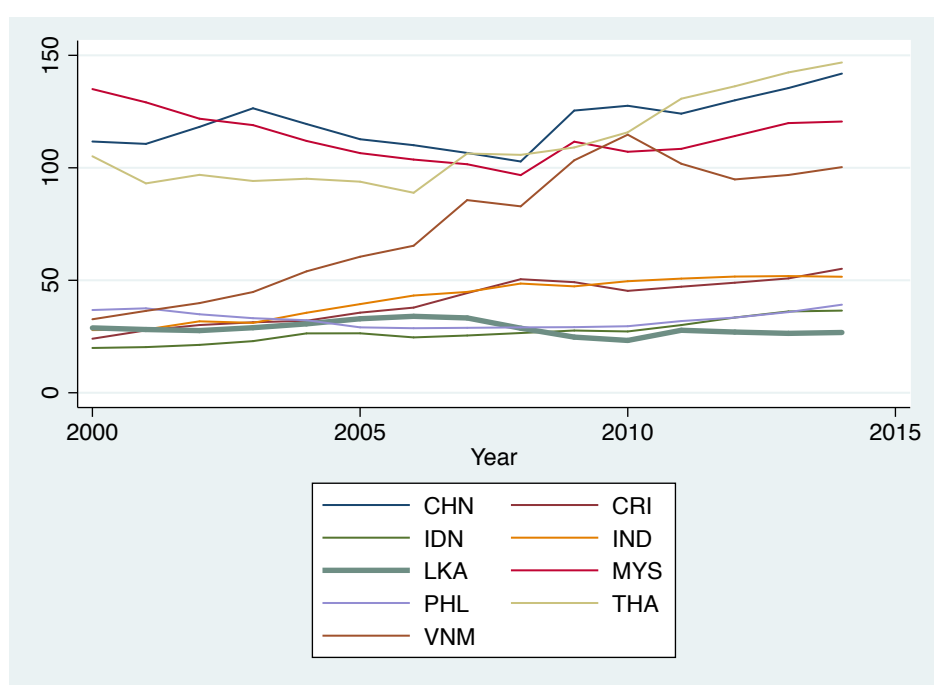
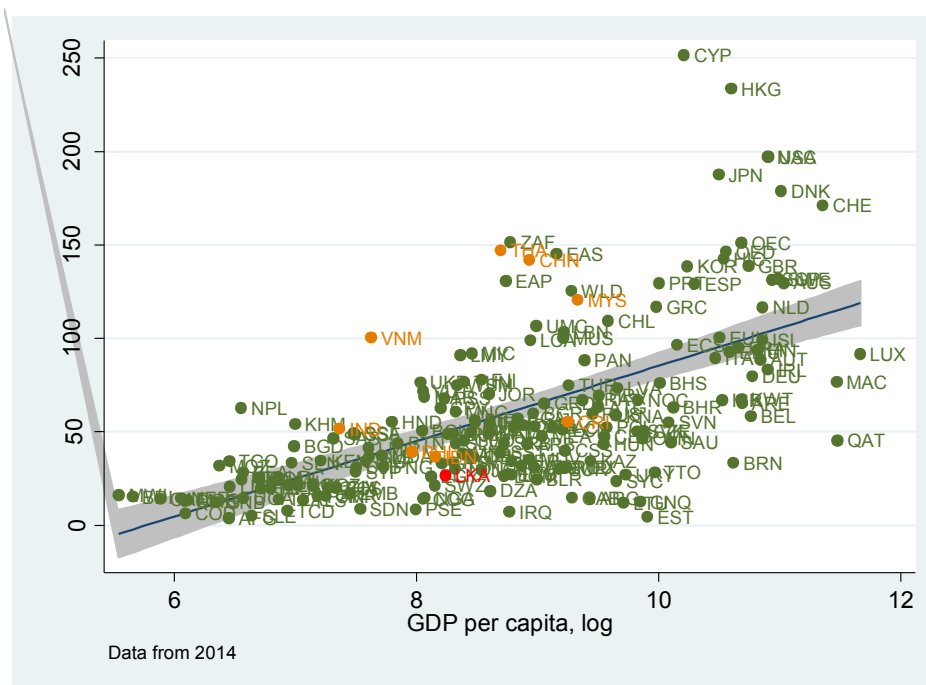
***Camels and hippos:*** FDI should not be as sensitive to availability of domestic investment financing. The fact that FDI is very low points to other constraints.

**Other Issues:** There are concerns about risk taking and credit rationing for some actors such as SMEs, firms in need of start-up capital, and female entrepreneurs in particular. These problems are not a binding constraint overall, but addressing such weaknesses would improve conditions for self-discovery. The possibility of government borrowing crowding out the private sector is a concern. However, at this stage it does not appear to be constraining firms' access to finance.

Domestic credit to the private sector is somewhat low. It is the lowest amongst the comparator countries and has been fairly stable over time.

Domestic Credit to Private Sector (% of GDP)

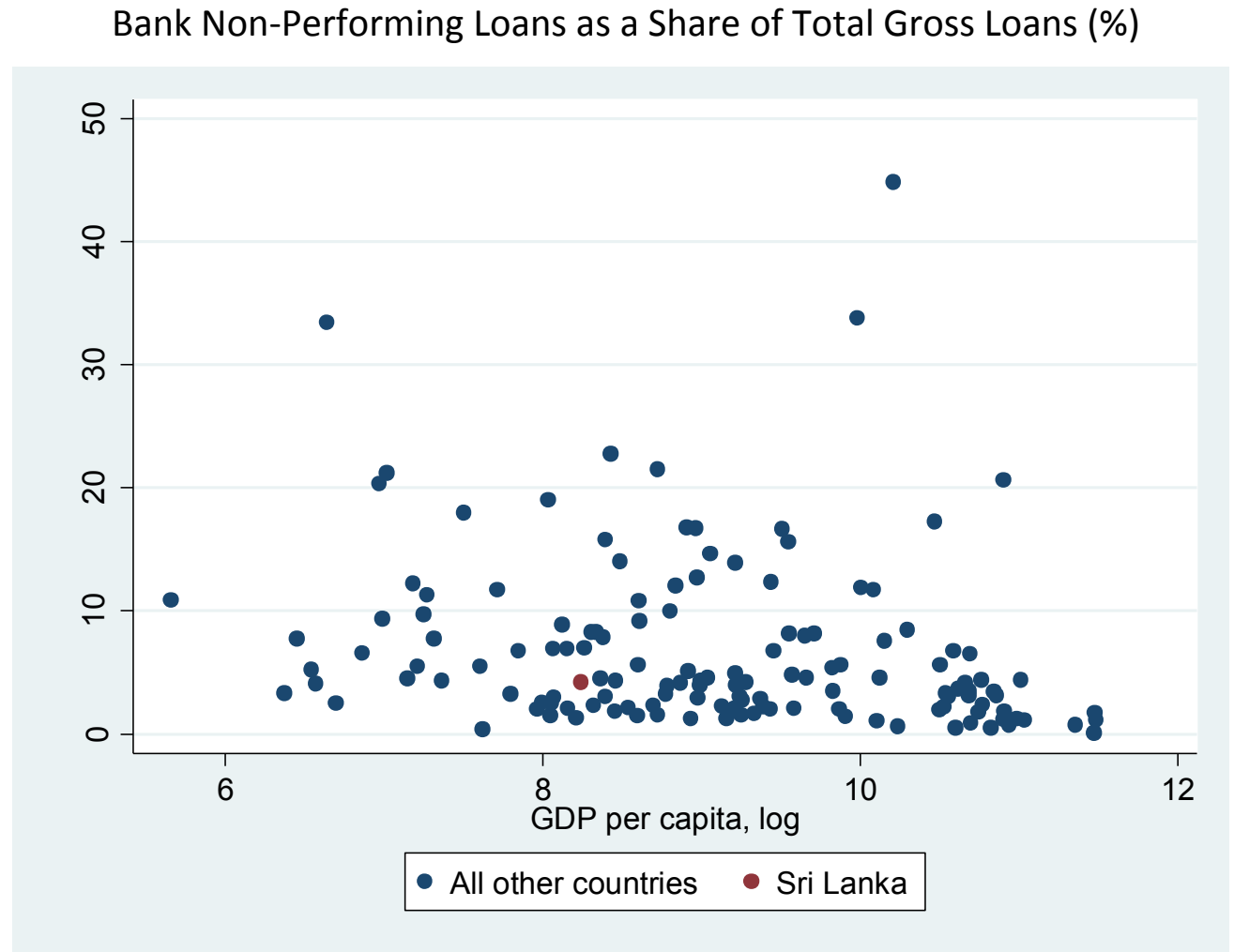
Domestic Credit to Private Sector (% of GDP)





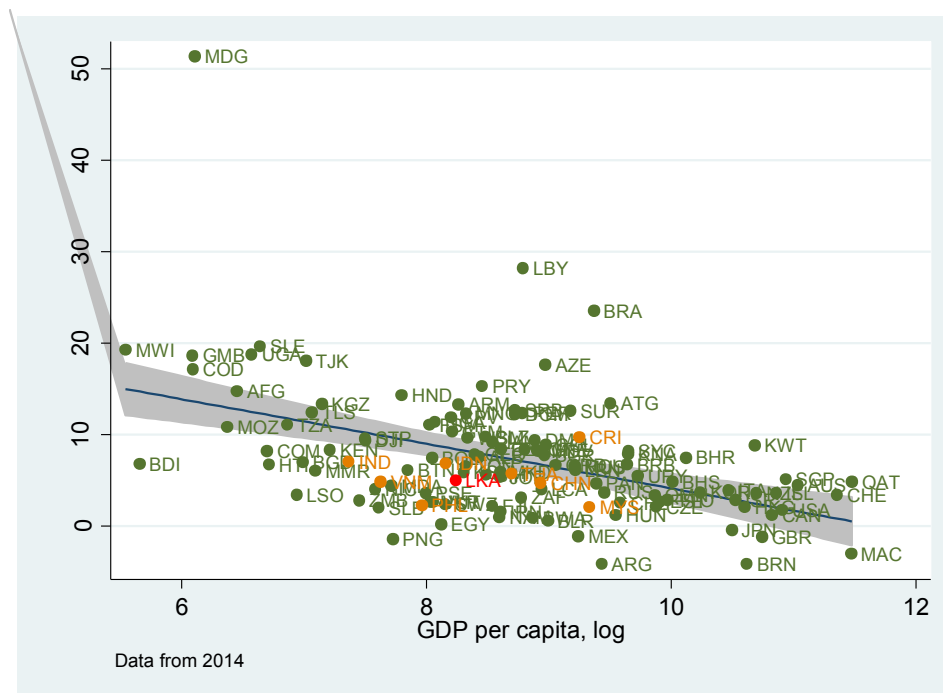
# Non-performing loans (NPLs) are at a relatively low level in Sri Lanka.

NPLs are low, suggesting banks are conservative in their lending practices, potentially overly conservative.

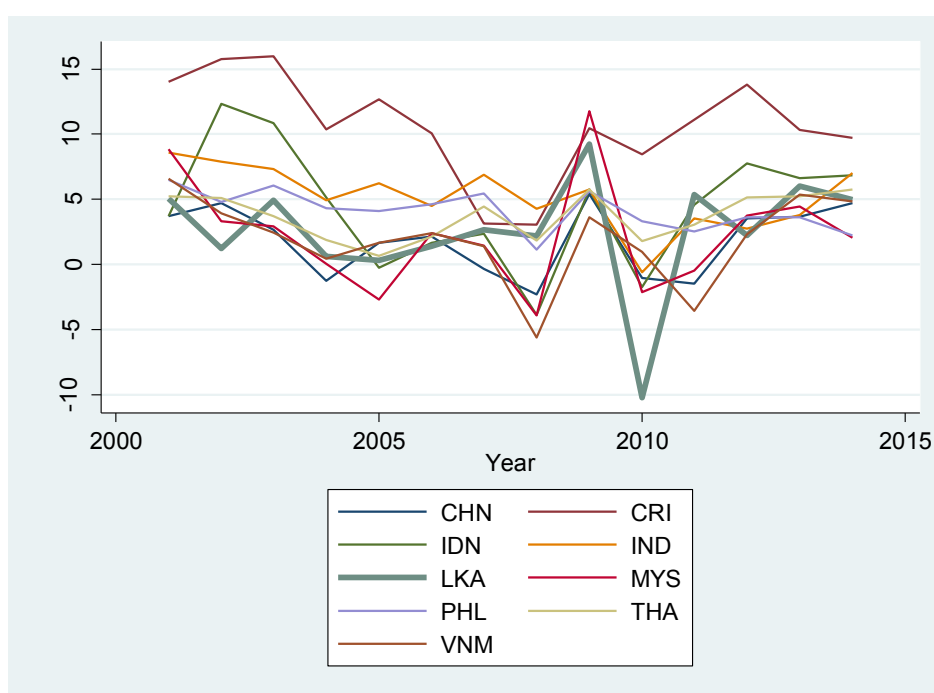


But real interest rates are also relatively low in Sri Lanka, and they have been since 2000 – a strong indication that firms are not finance-constrained.

Real Interest Rate (%)

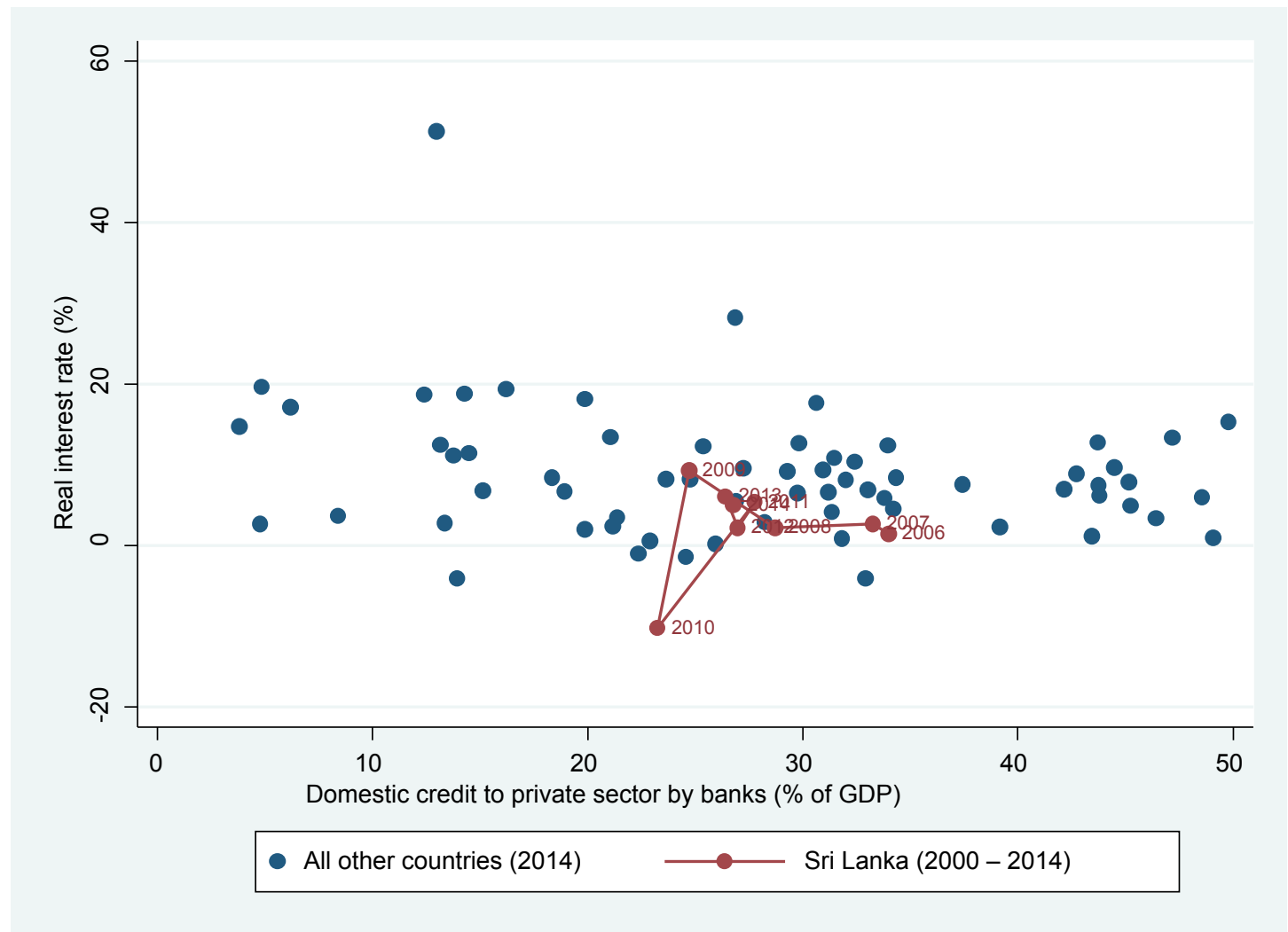


Real Interest Rate (%)



# Changes in the real interest rate do not correlate with changes in credit from banks.

\* The movement of the finance equilibrium indicates finance is not a constraint.



Firm survey evidence also does not suggest a finance constraint. A large proportion of investment is financed by banks and very little by other mechanisms like supplier credit. Collateral requirements appear to be modest.

| Indicator  | Vietnam | Thailand | Sri Lanka | South Asia | All Countries <sup>2</sup> |
|--|---------|----------|-----------|------------|----------------------------|
| Percent of firms with a checking or savings account          | 89.4    | 99.6     | 89.4      | 77.6       | 87.1                       |
| Percent of firms with a bank loan/line of credit             | 49.9    | 72.5     | 40.4      | 27.0       | 35.2                       |
| Proportion of loans requiring collateral (%)                 | 90.8    | 89.4     | 79.2      | 81.1       | 78.9                       |
| Value of collateral needed for a loan (% of the loan amount) | 217.7   | 131.1    | 193.6     | 236.0      | 203.3                      |
| Percent of firms not needing a loan                          | 25.1    | ...      | 25.1      | 44.7       | 46.1                       |
| Percent of firms whose recent loan application was rejected  | ...     | ...      | 8.5       | 14.4       | 12.1                       |
| Percent of firms using banks to finance investments          | 21.5    | 74.4     | 43.6      | 21.8       | 25.3                       |
| Proportion of investments financed internally (%)            | 74.7    | 28.2     | 53.5      | 73.9       | 71.3                       |
| Proportion of investments financed by banks (%)              | 12.0    | 53.0     | 35.4      | 14.4       | 14.5                       |
| Proportion of investments financed by supplier credit (%)    | 0.8     | 2.6      | 0.6       | 1.0        | 4.8                        |

Source: World Bank Enterprise Surveys. Sri Lanka's latest survey was in 2011.

# Access to Finance: Summary

**Main Conclusion:** Finance is not a binding constraint. The financial system is operating at a level that can support economic growth. While the quantity of credit is somewhat low, this appears to be driven by a limited demand for investment finance rather than by major constraints in the supply of finance.

## **Evidence:**

***Benchmarking quantity:*** Quantity of credit to the private sector is somewhat low. The numbers of banks and bank branches in the country are high. NPLs are relatively low, and this might be reflective of an overly conservative financial system. There are also possible distortions from the two state-owned banks.

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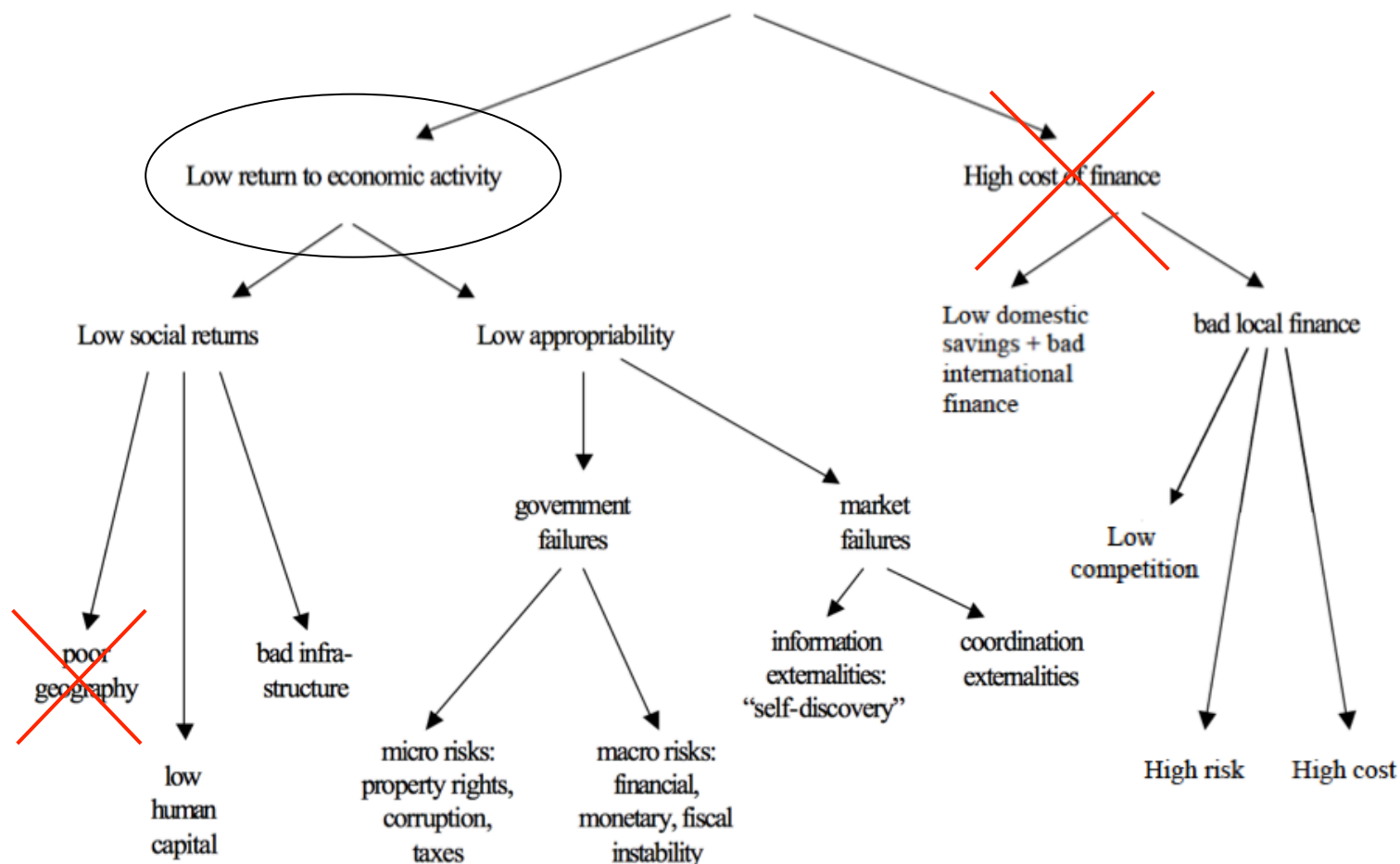
***Camels and hippos:*** FDI should not be as sensitive to availability of domestic investment financing. The fact that FDI is very low points to other constraints.

**Other Issues:** There are concerns about risk taking and credit rationing for some actors such as SMEs, firms in need of start-up capital, and female entrepreneurs in particular. These problems are not a binding constraint overall, but addressing such weaknesses would improve conditions for self-discovery. The possibility of government borrowing crowding out the private sector is a concern. However, at this stage it does not appear to be constraining firms' access to finance.

Sri Lanka is not on the finance-constrained side of the tree, so we move to exploring the investment-constrained side of the tree.

Problem: Low growth of exports, low export dynamism  
and lack of export-oriented FDI

\* Sri Lanka's geography should be an asset for strong exports. It is a small island located along a major shipping route. It is close to Asian supply chains and a huge market in India, with which it has a free trade agreement.



Growth diagnostic tree adapted from  
Hausman, Rodrick, Velasco (2005)

# **HUMAN CAPITAL**

Education & Health

# EDUCATION



# Education: Summary

**Main Conclusion:** Education is not a binding constraint. Sri Lanka has a low level of tertiary education and there is evidence of a significant mismatch between the skills provided by the formal education system and the skills likely to be demanded in the future by the private sector (in particular educational fields such as engineering). Thus, a targeted expansion of tertiary education is needed in the medium term. However, given the currently low level of demand for college graduates, expansion of tertiary education alone would not be likely to unlock new growth potential. Meanwhile, widespread vocational and professional training services exist in Sri Lanka that appear to be filling skill gaps as the economy evolves.

## **Evidence:**

***Benchmarking quantity:*** The number of tertiary-educated Sri Lankans is low. The latest figures available show that 18% of Sri Lanka's labor force has tertiary education, which is below expectation for Sri Lanka's level of income. Sri Lanka's rate of enrollment in tertiary education (21%) is also lowest among the comparator countries. Meanwhile, a very high proportion of unemployed Sri Lankans appear to have tertiary education, and firms did not report education as a major constraint in the latest Enterprise Survey (2011). World Bank STEP Survey (2012) data show what skills firms report are lacking in Sri Lanka; these are English, soft skills and specific technical skills.

***Shadow Price:*** Low and declining returns to college education are a strong indication that tertiary education is currently not the binding constraint. Returns to vocational training programs are high.

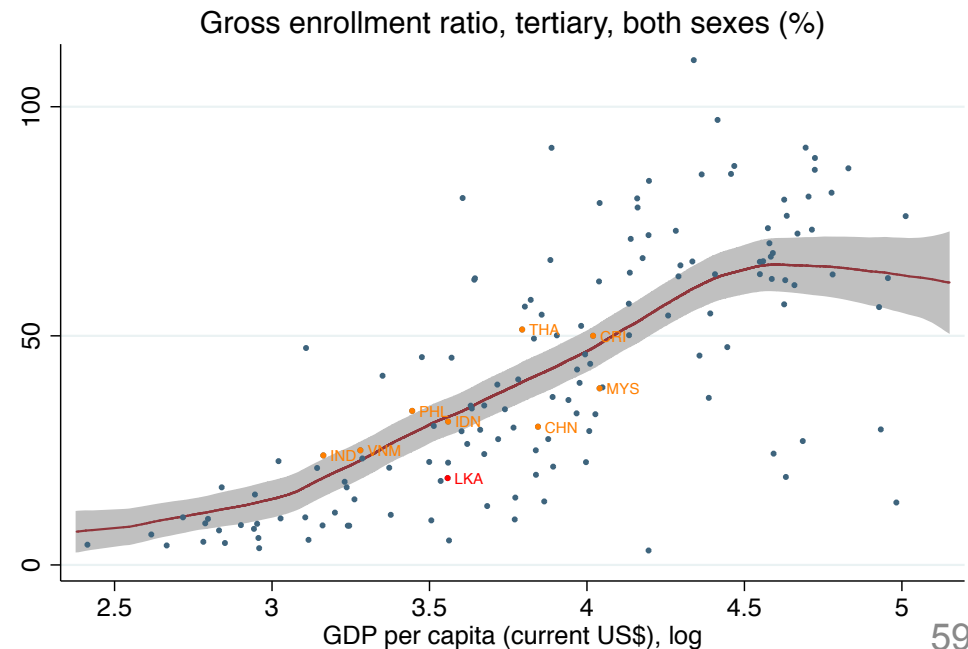
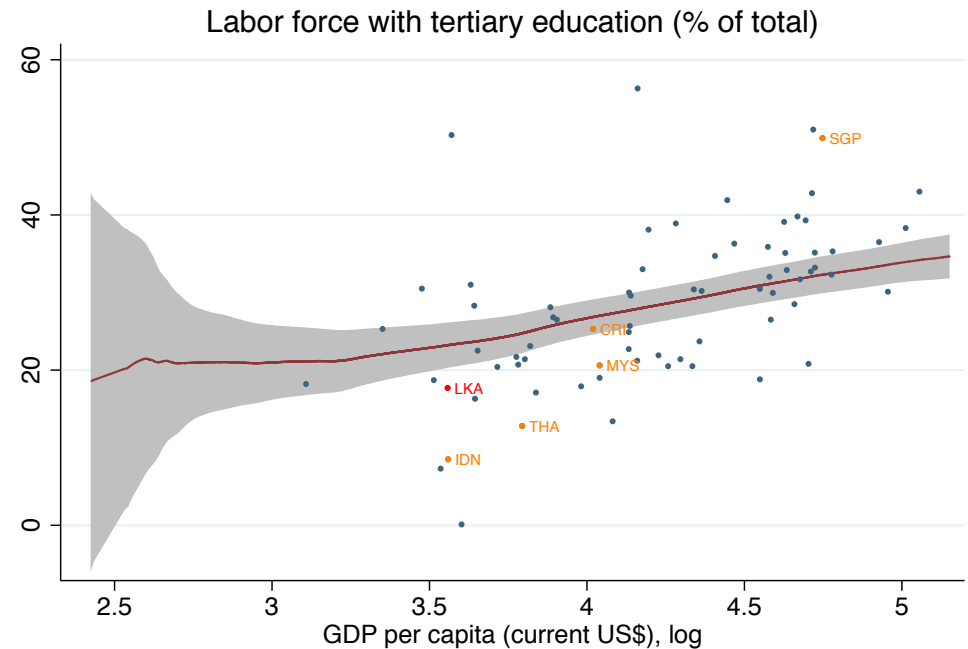
***Changes vs. changes:*** A recent expansion in the supply of tertiary graduates was met on aggregate with an expansion of government employment rather than private sector growth.

***Bypassing the constraint:*** Sri Lankan firms are not employing large numbers of foreign workers to bypass the education constraint. However, there are widespread types of training provided by both government vocational institutes and private sector training institutes. The data show that these training programs—both public and private—have high returns and that those workers with training are better employed. This is true in a wide range of professions, meaning that TVET provides valuable skills that formal education does not.

***Camels and hippos:*** No strong evidence on the education constraint.

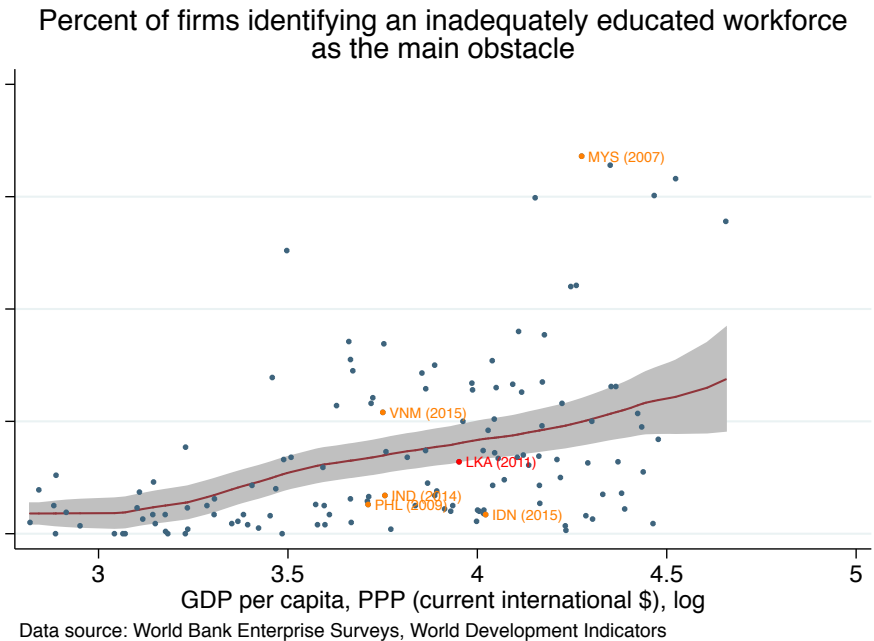
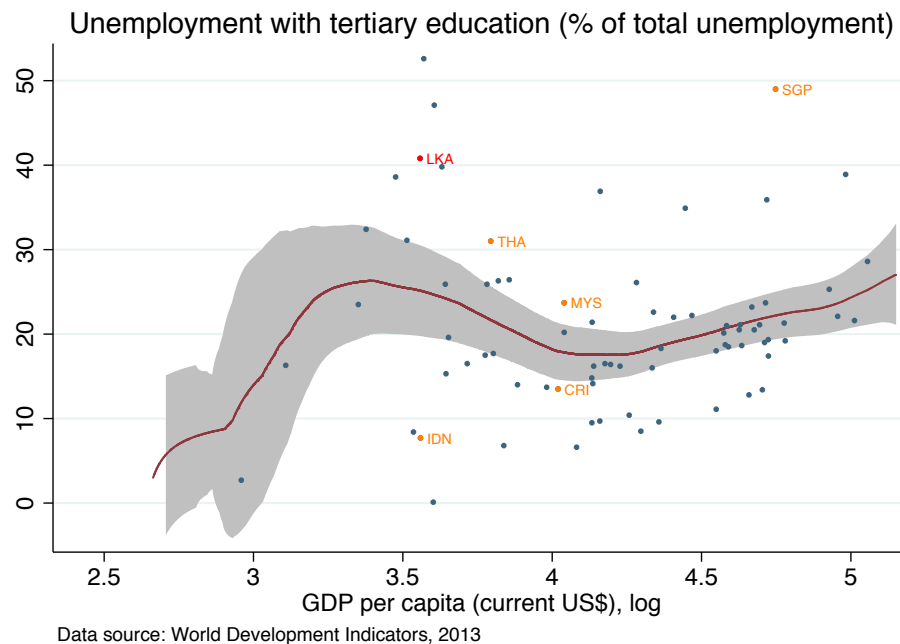
Primary and secondary education are nearly universal in Sri Lanka, but the number of tertiary-educated Sri Lankans in the labor force and the current enrollment ratio are low.

- 18% of LKA's labor force has a tertiary education. Some comparator countries (Philippines, Malaysia) have higher tertiary education levels but others are lower (Thailand, Indonesia).
- Sri Lanka's current enrollment ratio is 21%, the lowest among the comparator countries. Women make up the majority of university students (62%) in Sri Lanka but tend to enter different fields than males.



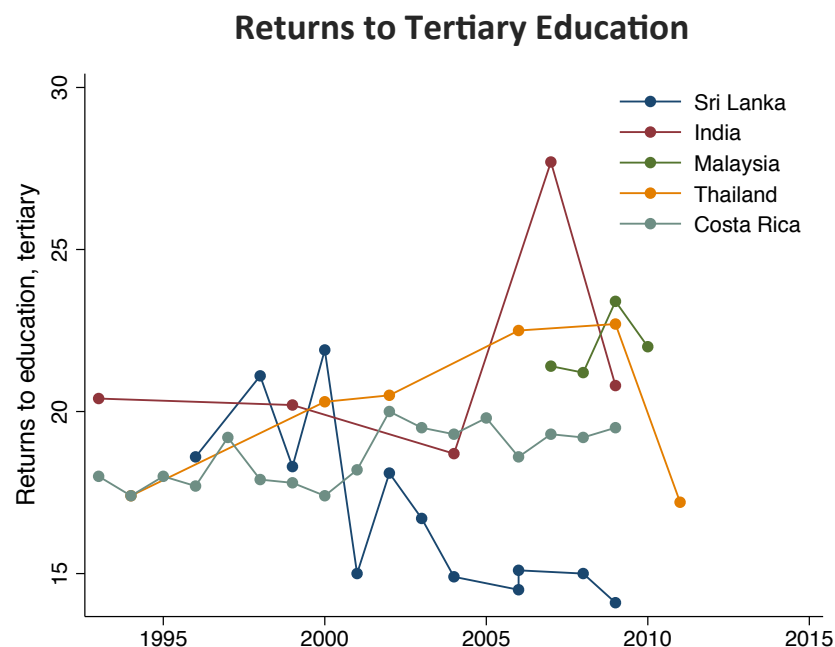
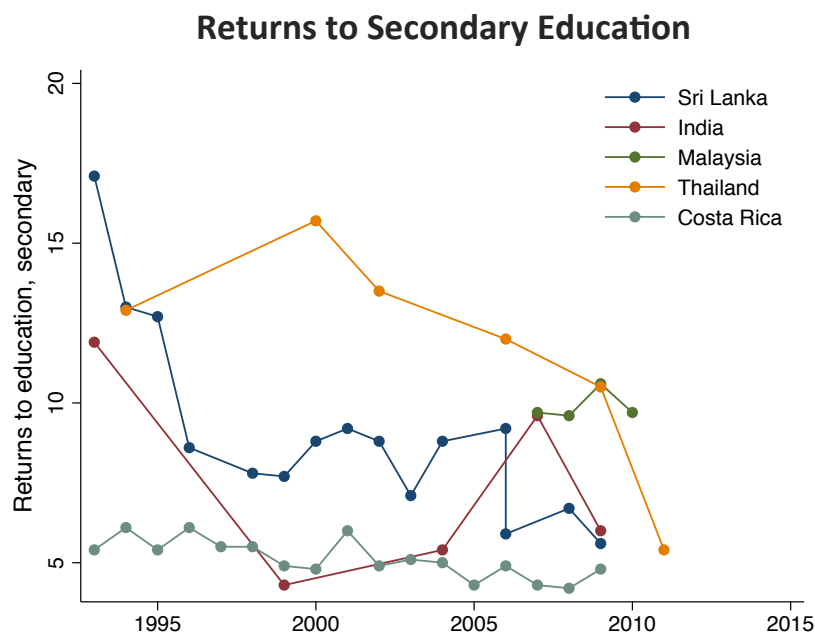
Data source: World Development Indicators, 2013

There is a high level of unemployment among those with tertiary education in Sri Lanka (partially the result of a high labor force participation rate among graduates). As of 2011, firms in Sri Lanka did not report that “an inadequately educated workforce” represented their main obstacle at a high rate.



In an international comparison, Sri Lanka's returns to tertiary education are low, while the returns to secondary education are more in line with peers.

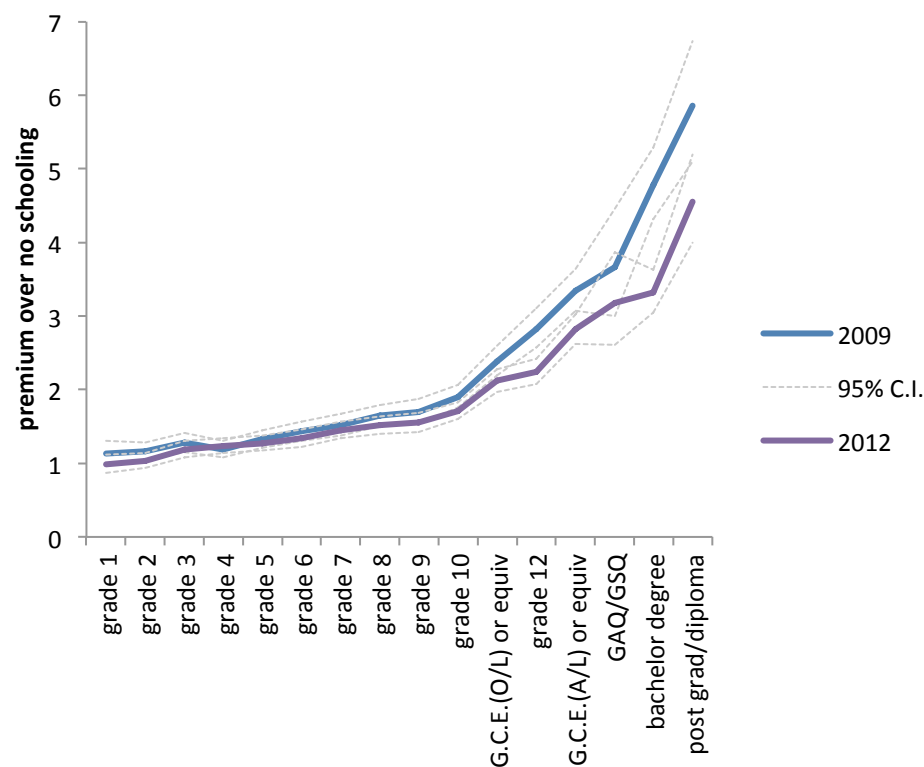
\* Using Household Income and Expenditure Survey (HIES) data, we also find that the average returns for a year of college education further declined from 16.4% in 2009/10 to 12.6% in 2012/13.



Source: Montengro & Patrinos 2014, using 2014 WBG International Income Distribution Database. Returns are  $\Delta \ln(\text{wage})$  per year of secondary (tertiary) school.

# Analyses using two different data sources show agreement that returns to education declined between 2009 and 2012.

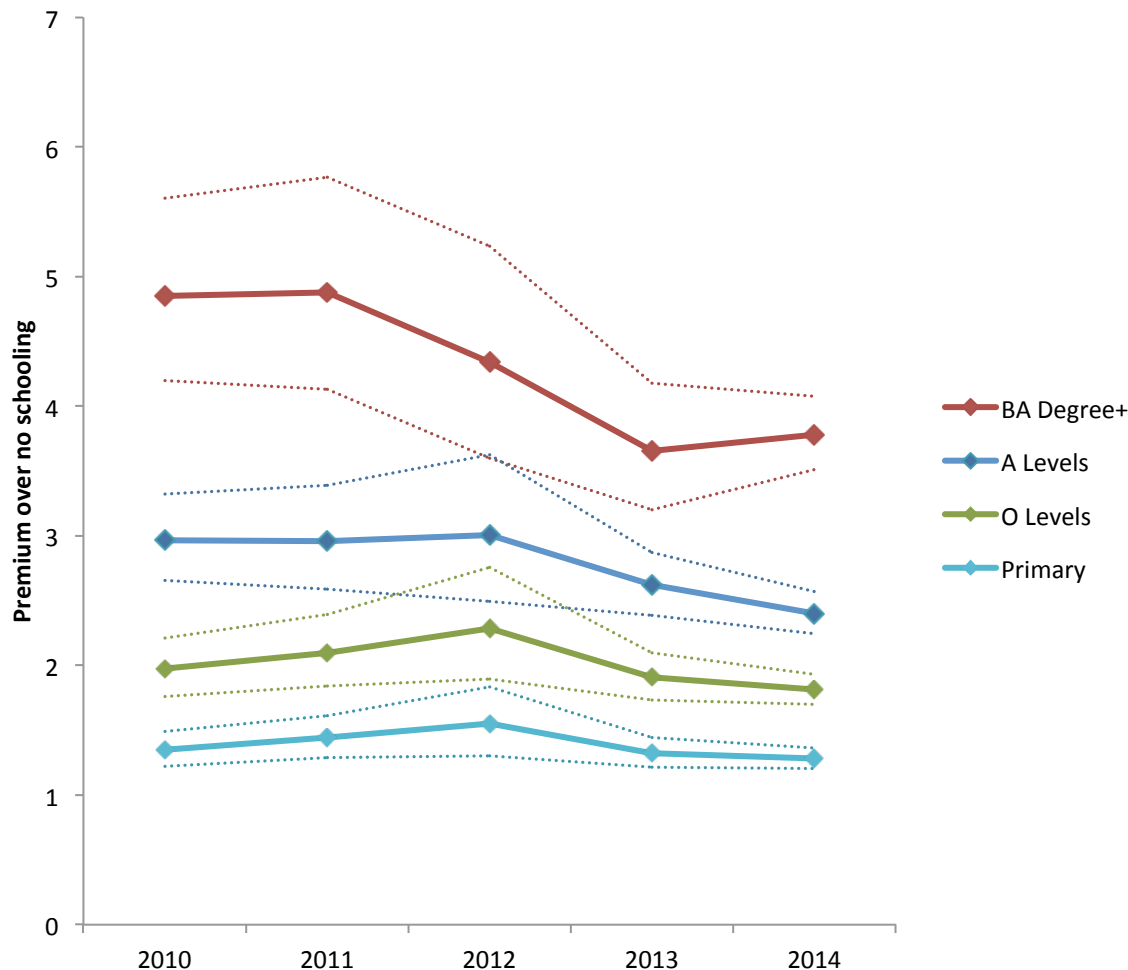
- On average, a person with a Bachelor's degree earned 4.8 times more than a person without any education in 2009.
- In 2012, a person with a Bachelor's degree earned 3.3 times more.
- These results from the HIES confirm Arunatilake et al. (forthcoming) findings using the Labor Force Survey (LFS) as reported in the World Bank Systematic Country Diagnostic for Sri Lanka (2015).



Source: Data from HIES 2009 and 2012, own calculations

Note: The regression only includes income from non-agricultural activities.  
The estimates are insensitive to the inclusion of agricultural income

# Returns to tertiary education continued to decline in subsequent years as well.



Source: Data from LFS 2010-2014. Own calculations.

Note: 95% confidence intervals. Educational categories are defined as in Arunatilake et al (2015) for comparability

- The LFS data show that the returns to a BA degree declined further between 2012 and 2013/2014.
- BA graduates used to earn 4.9 times more than unschooled workers in 2010. This ratio declined to 3.7 (2013) and 3.8 (2014).
- A Level graduates also experienced a slight decline in their returns to education, although not as much as the BA graduates.

# Further analysis shows that returns to education declined because the supply exceeded demand.

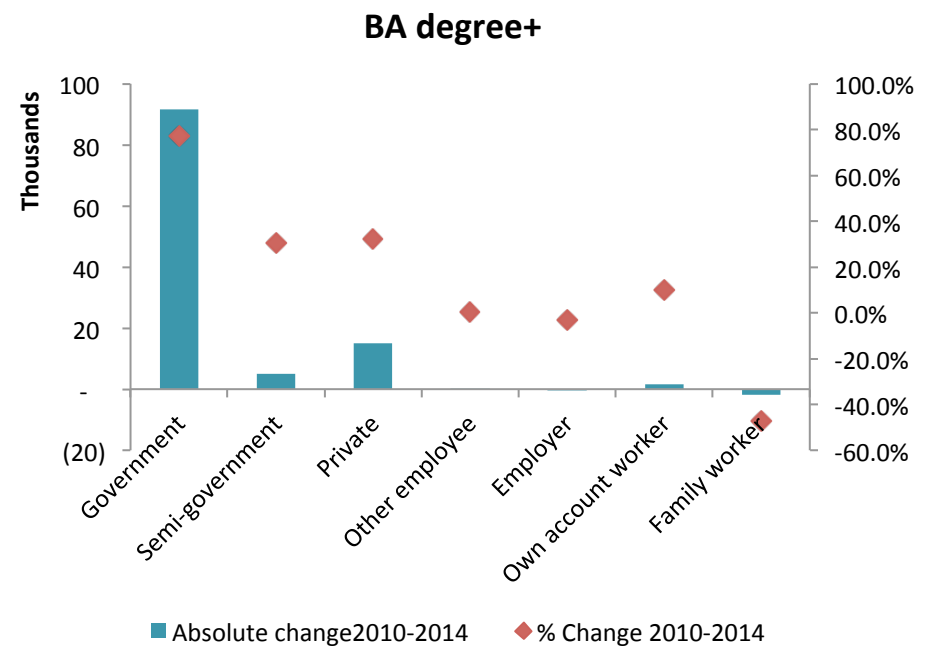
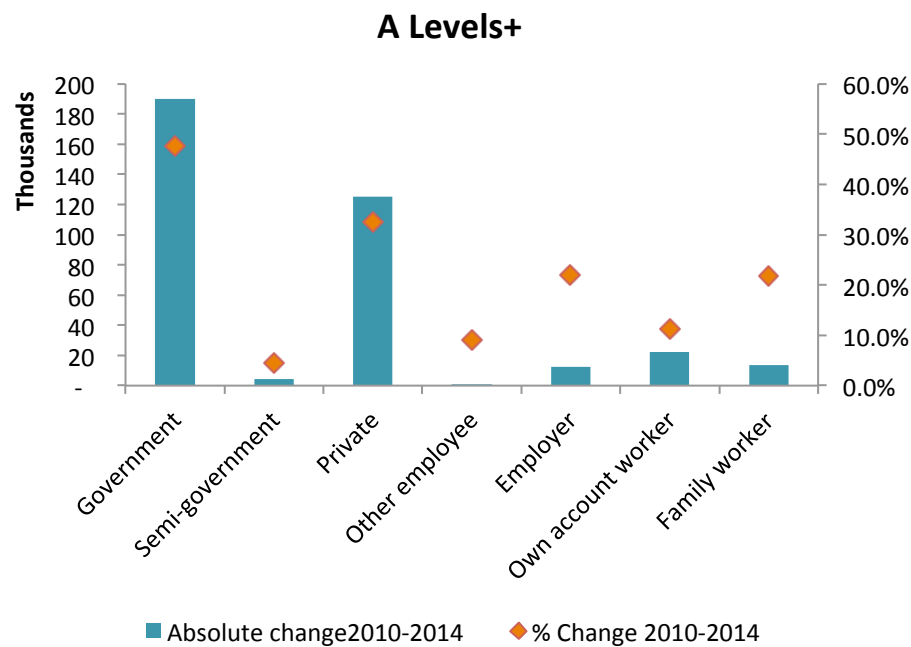
- About 916,000 net new graduates were added to the labor market between 2010 and 2014.
- About 725,000 new jobs were added in the same period, resulting in:
  - 190,000 (21%) total labor surplus
  - 124,000 (25%) of A Levels+ labor surplus
  - 20,000 (15%) of BA+ labor surplus

|               | Net new jobs     |                   | Net new graduates |                   | Supply surplus |                        |
|---------------|------------------|-------------------|-------------------|-------------------|----------------|------------------------|
|               | Change 2010-2014 | Annualized growth | Change 2010-2014  | Annualized growth | Total          | % of net new graduates |
| All           | 725,420          | 2.3%              | 915,620           | 1.6%              | 190,200        | 20.8%                  |
| A Levels      | 369,250          | 6.9%              | 493,360           | 5.4%              | 124,110        | 25.2%                  |
| BA and higher | 111,600          | 11.2%             | 131,470           | 8.8%              | 19,870         | 15.1%                  |

Source: Data from LFS 2010-2014. Own calculations.

# College graduates who were able to find jobs tended to be employed by the government.

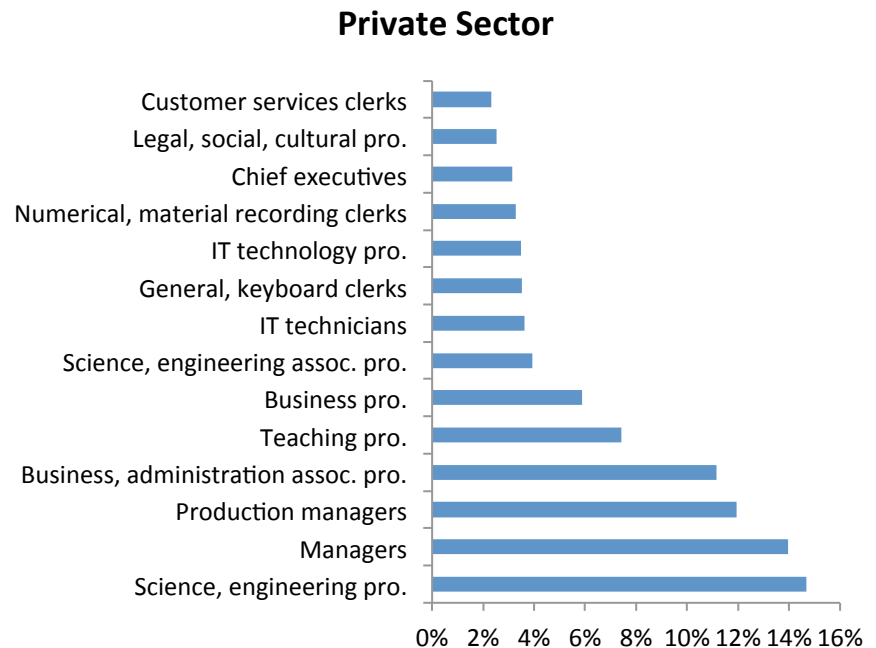
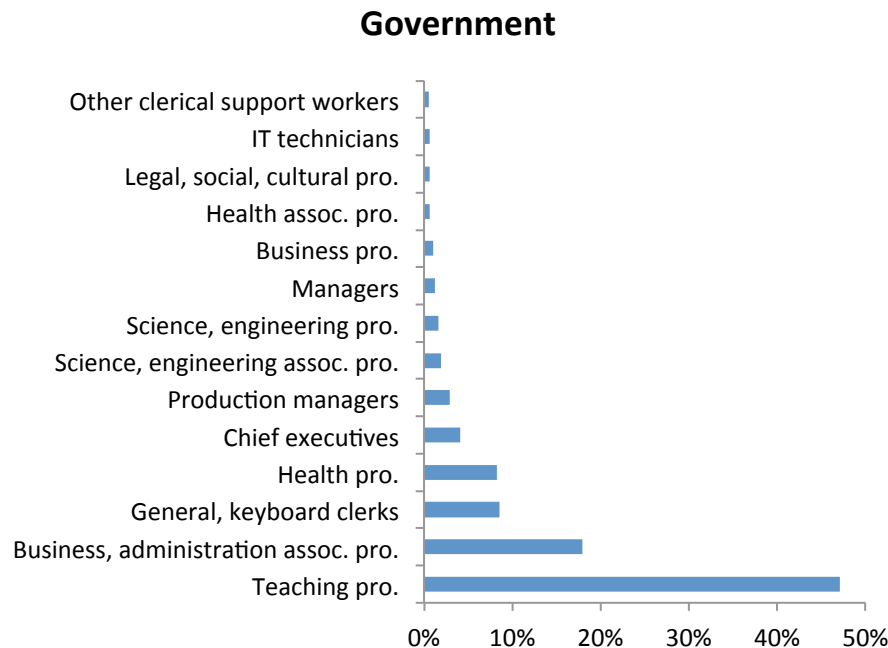
- BA+ graduates were mainly absorbed by the government sector (82% of all net new hires).
- A Levels+ were in general absorbed by government employment (52% of all net new hires 2010-2014) and the private sector (32% of all net new hires).





# The occupational structures of the public and private sectors differ substantially.

- Government: more than half are in teaching and health, followed by administration professionals and clerks.
- Private Sector: 15% in science and engineering,\* another 30% are managers, including production managers.
- This suggests that the private sector needs BA graduates with specific skills.



\* Closer inspection of the data shows that among the science and engineering professionals/technicians, about 90% are engineering and construction related and only 10% belong to other sciences.

We explored if a mismatch between the skills of the Sri Lankan workforce and the skills demanded by the private sector could be constraining new exports and export-oriented FDI.

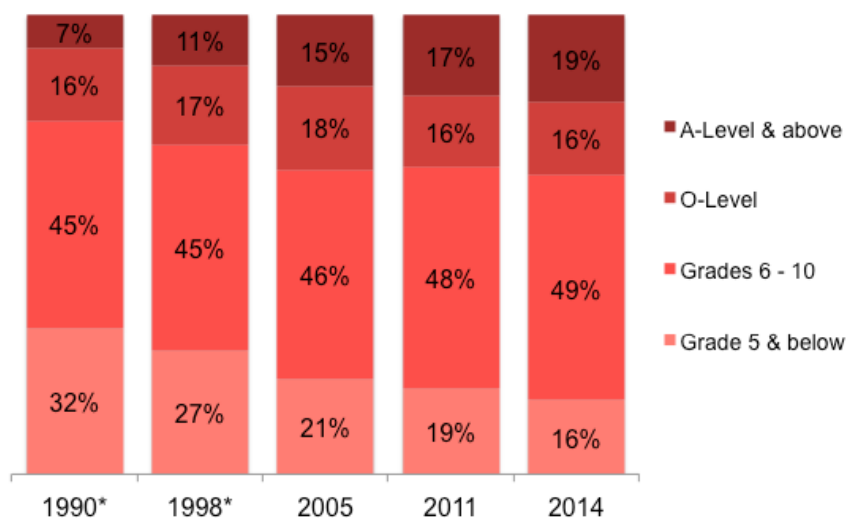
- Key Findings (detailed results are provided in the appendix):
  - **University graduates from engineering, IT and medicine have close to full employment.** Employment rates across all disciplines declined from 2012-2014, but employment rates in these three disciplines remain very high. Ceteris paribus, workers in these disciplines, as well as managers/executives/business professionals, doctors and teachers, earn the highest wages.
  - BOI data on foreign worker visas shows that “skilled workers” and “technicians” together make up around half of foreigners employed in Sri Lanka, with manager-type roles and engineers also comprising noteworthy shares. **However, foreign workers make up a very small share of workers in Sri Lanka such that the number of Sri Lankans working abroad in each high skill occupation, including engineers and engineering technicians, is several orders of magnitude higher than foreigners working in Sri Lanka in those occupations.** Meanwhile, the vast majority of Sri Lankans working abroad work in low-skill occupations.
  - Results of the World Bank STEP Survey (2012) highlight that employers perceive skills constraints as having more impact on firm operations and growth than labor regulations and labor costs. ‘Finding workers with previous experience’ and ‘TVET of workers’ were two top constraints (along with ‘high employee turnover’ and ‘labor availability’). ‘General education of workers’ was one of the least highlighted constraints. **English, specific technical skills and soft skills were identified as those most lacking for employers, while cognitive skills were generally strong.**

We explored if a mismatch between the skills of the Sri Lankan workforce and the skills demanded by the private sector could be constraining new exports and export-oriented FDI.

- Key Findings (detailed results are provided in the appendix):
  - In 2014, almost 11% of Sri Lankans age 15-65 had completed some kind of formal professional technical training (TVET) on top of formal education. **Returns from TVET training are high across almost all fields of training and for both public vocational institutes and colleges and private sector schools.**
- Taken together, this disaggregated look at skills suggests that important skill mismatches exist in Sri Lanka but that they do not constrain growth. Some fields like engineering are in high demand but not high enough to require large numbers of foreign workers. Although there is scope for improving certain qualities of the TVET system (e.g., offering more English training, providing more/better technical and soft skills), TVET is providing important skills to meet private sector needs.

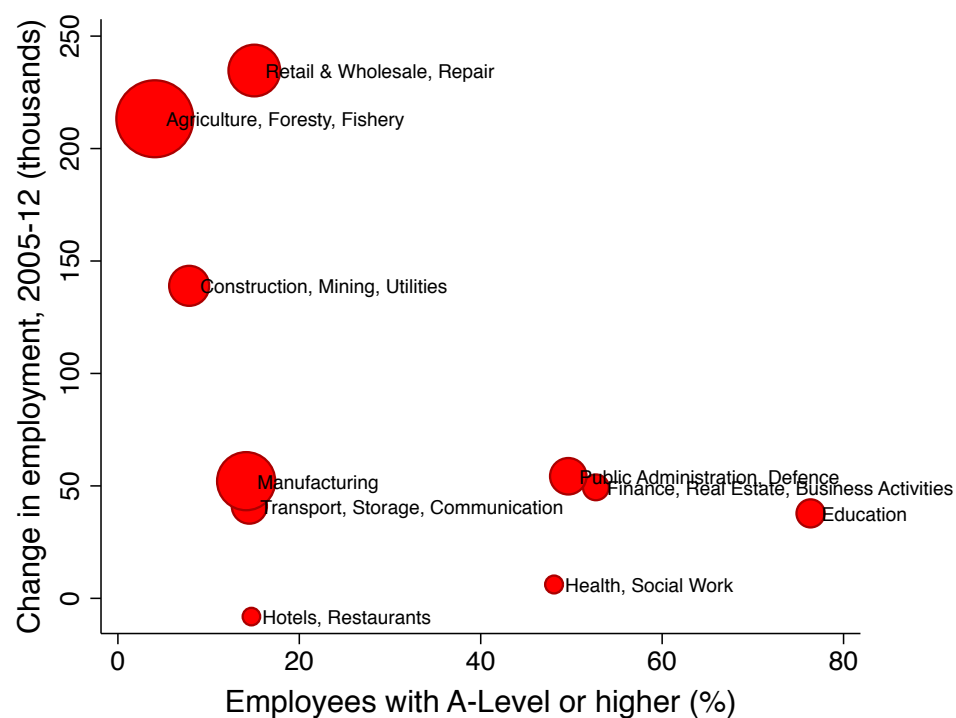
On the whole, growth in Sri Lanka has come from sectors that do not require large proportions of high skill workers.

Long-run shift towards high and middle levels of education



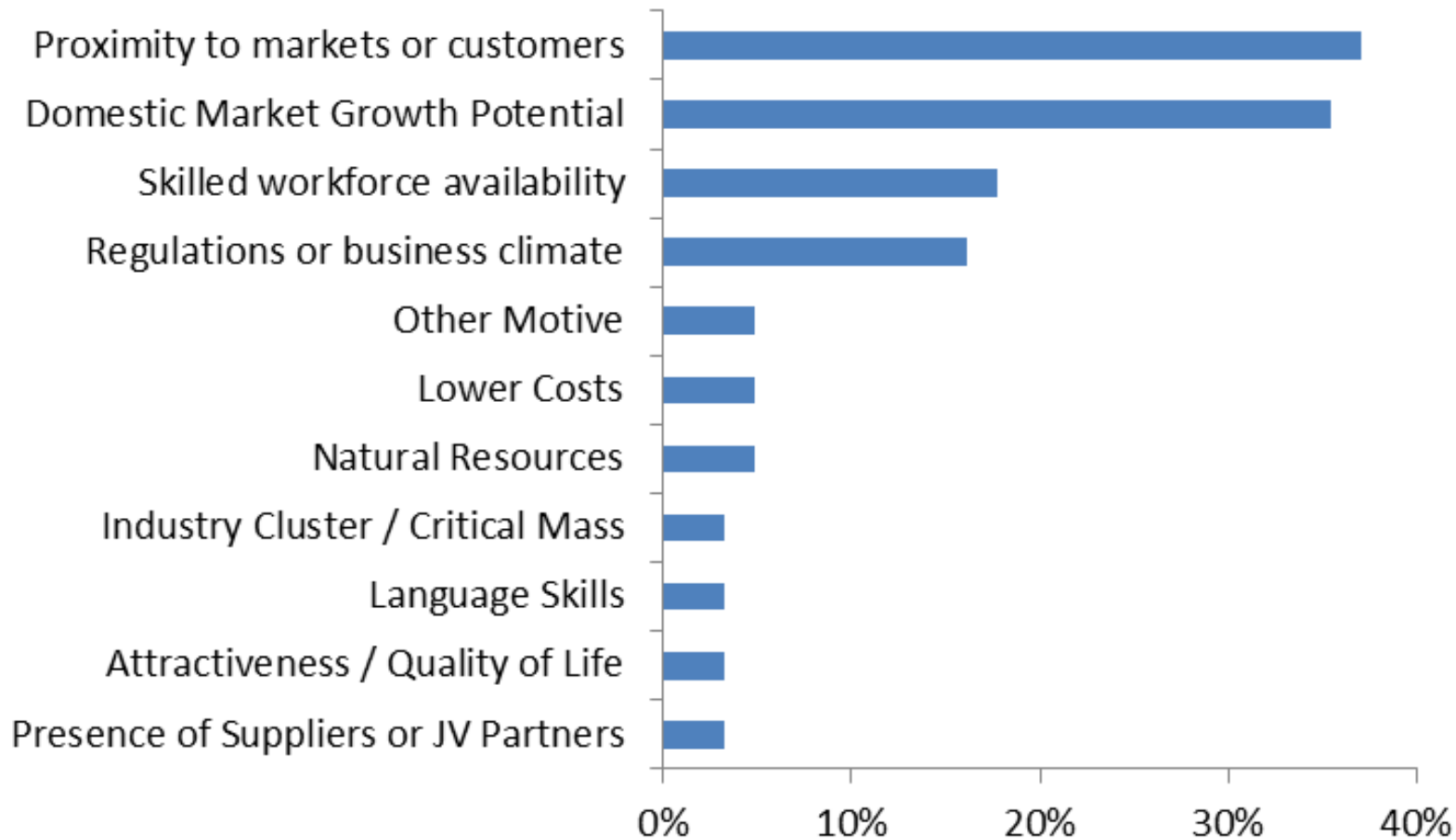
Source: Labor Force Survey Annual Reports, 2012 and 2014.  
 \*Note: 1990 and 1998 exclude Northern and Eastern provinces

But relatively little job creation in high-skill sectors



Sources: Labor Force Survey Annual Report, 2012, and Household Income and Expenditure Survey, 2012-13  
 Note: Circle size proportional to 2012 employment share.

At the same time, Sri Lanka's skilled workforce is high on the list of reasons that foreign firms express interest in investing in Sri Lanka.



Source: Dun and Bradstreet, courtesy of Frank Neffke (2016)

# Education: Summary

**Main Conclusion:** Education is not a binding constraint. Sri Lanka has a low level of tertiary education and there is evidence of a significant mismatch between the skills provided by the formal education system and the skills likely to be demanded in the future by the private sector (in particular educational fields such as engineering). Thus, a targeted expansion of tertiary education is needed in the medium term. However, given the currently low level of demand for college graduates, expansion of tertiary education alone would not be likely to unlock new growth potential. Meanwhile, widespread vocational and professional training services exist in Sri Lanka that appear to be filling skill gaps as the economy evolves.

## **Evidence:**

***Benchmarking quantity:*** The number of tertiary-educated Sri Lankans is low. The latest figures available show that 18% of Sri Lanka's labor force has tertiary education, which is below expectation for Sri Lanka's level of income. Sri Lanka's rate of enrollment in tertiary education (21%) is also lowest among the comparator countries. Meanwhile, a very high proportion of unemployed Sri Lankans appear to have tertiary education, and firms did not report education as a major constraint in the latest Enterprise Survey (2011). World Bank STEP Survey (2012) data show what skills firms report are lacking in Sri Lanka; these are English, soft skills and specific technical skills.

***Shadow Price:*** Low and declining returns to college education are a strong indication that tertiary education is currently not the binding constraint. Returns to vocational training programs are high.

***Changes vs. changes:*** A recent expansion in the supply of tertiary graduates was met on aggregate with an expansion of government employment rather than private sector growth.

***Bypassing the constraint:*** Sri Lankan firms are not employing large numbers of foreign workers to bypass the education constraint. However, there are widespread types of training provided by both government vocational institutes and private sector training institutes. The data show that these training programs—both public and private—have high returns and that those workers with training are better employed. This is true in a wide range of professions, meaning that TVET provides valuable skills that formal education does not.

***Camels and hippos:*** No strong evidence on the education constraint.

**HEALTH**

# Health: Summary

**Main Conclusion:** Health is not a binding constraint. Firms are not constrained by the health of the workforce. Health outcomes in Sri Lanka are good and have shown steady improvement.

**Evidence:**

***Benchmarking quantity:*** Health indicators show that the health system in Sri Lanka is an asset rather than a constraint. Sri Lankans are healthier than most other countries at a similar level of income.

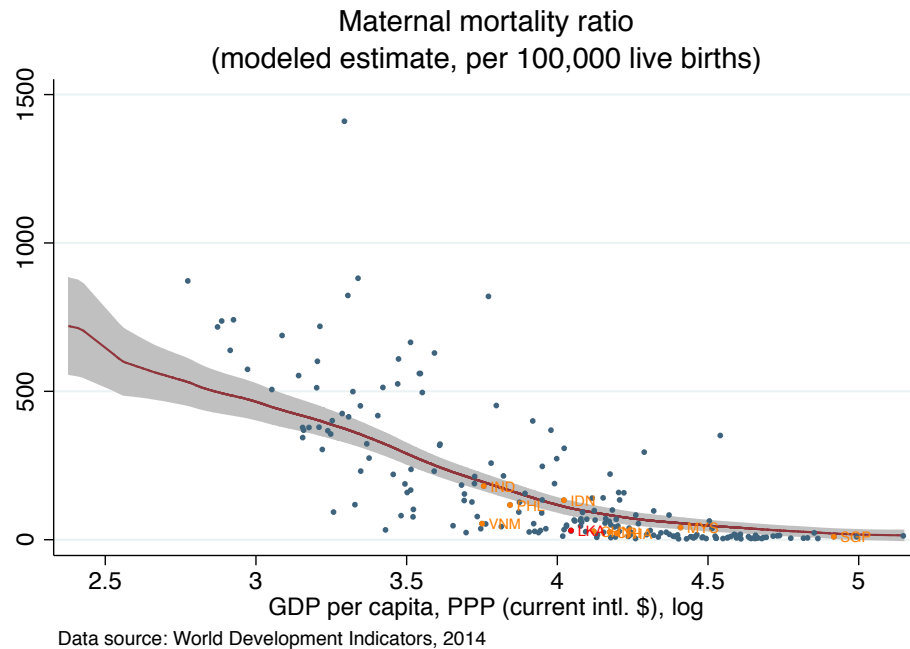
***Changes vs. changes:*** Health outcomes have shown gradual improvement over the decades that does not correlate with changes in investment, diversification or other dimensions of growth.

***Camels and hippos:*** Several sectors of the economy that have supported growth are labor-intensive, which also makes them also health-intensive (apparel, plantation crops, construction).

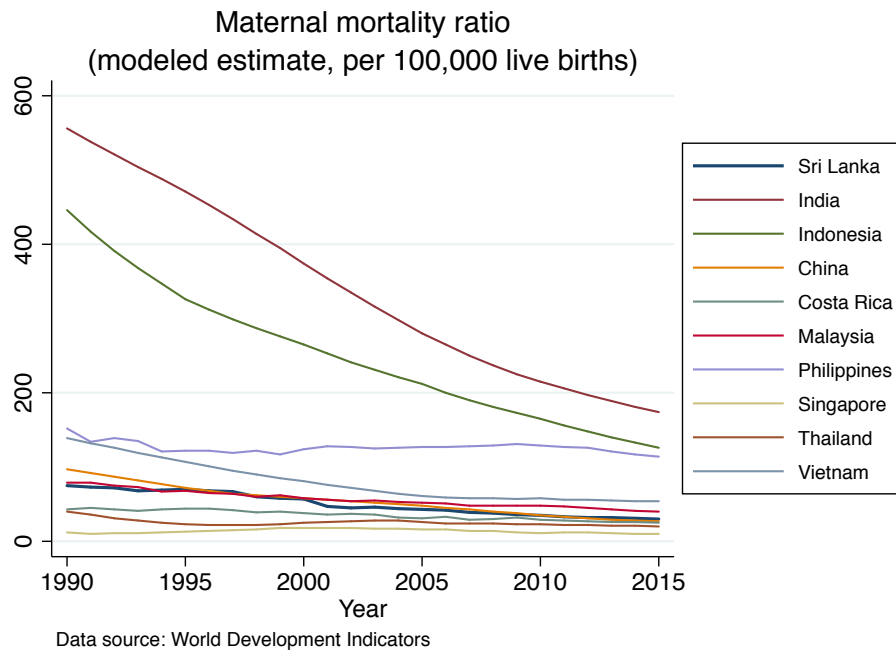
\* Further tests were not needed.

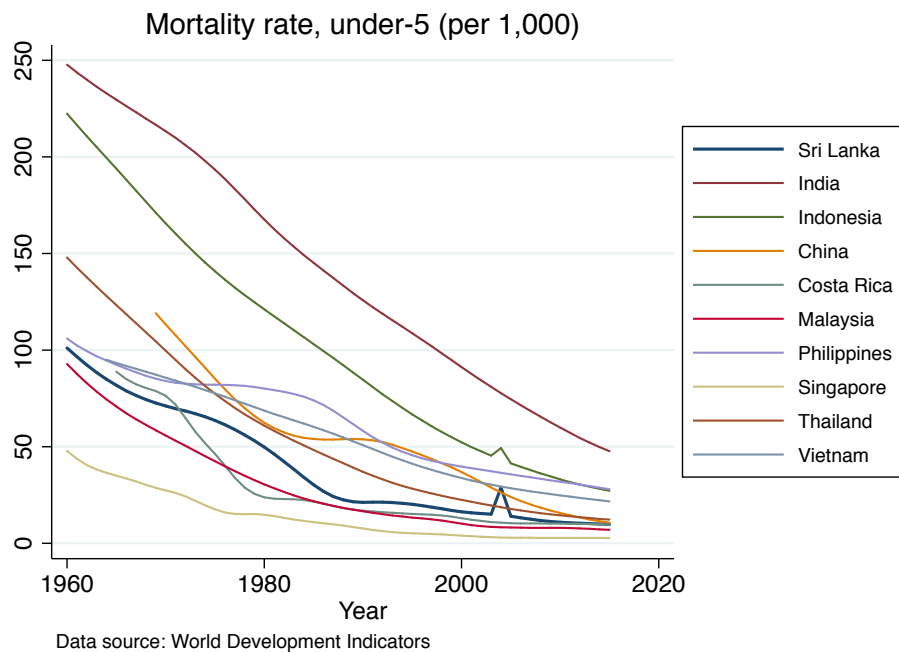
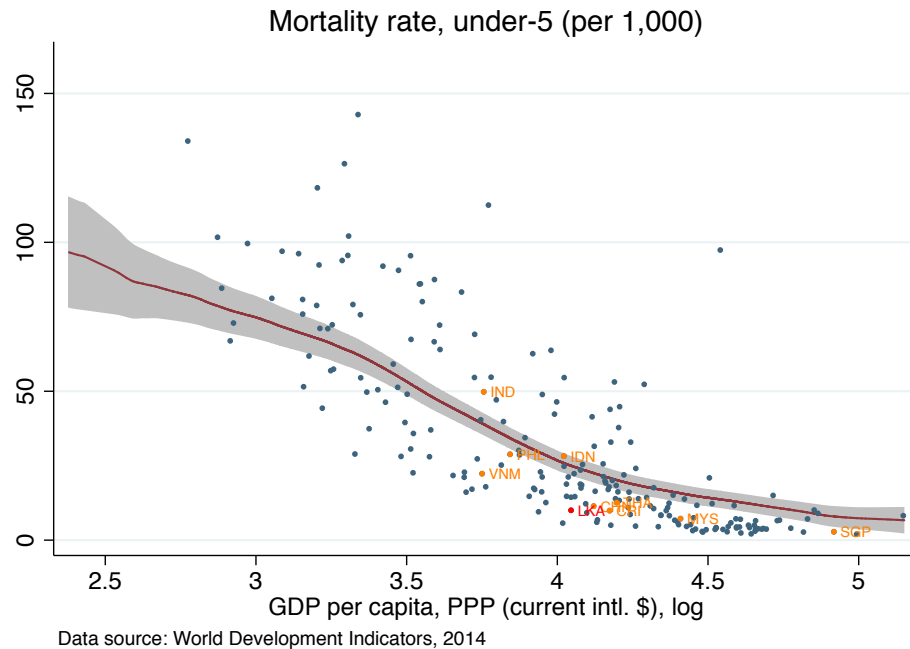
**Other Issues:** As Sri Lanka develops, communicable diseases are becoming less of a burden and non-communicable diseases are becoming more of a health challenge. This is normal evolution, but the relatively rapid transformation of health risks and the aging population of Sri Lanka requires that the health system rapidly develop new capabilities.



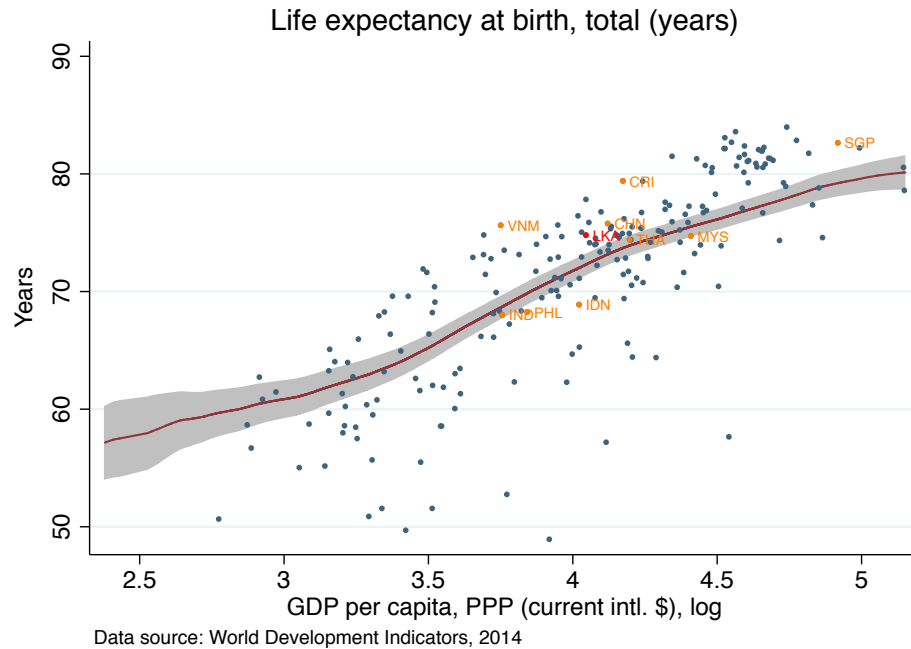


The maternal mortality rate is very low, on par with much wealthier countries, indicating strong provision of basic health services.

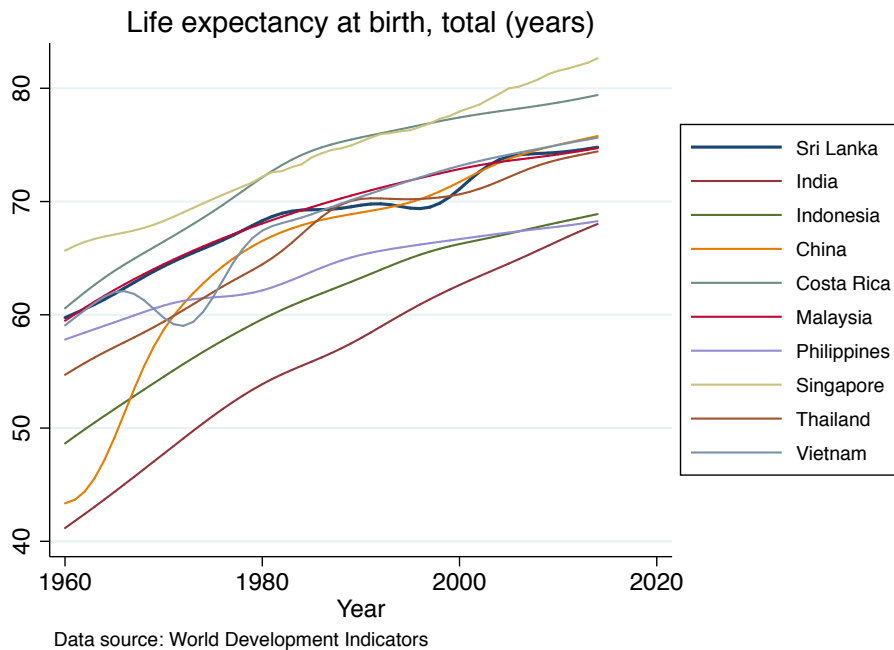


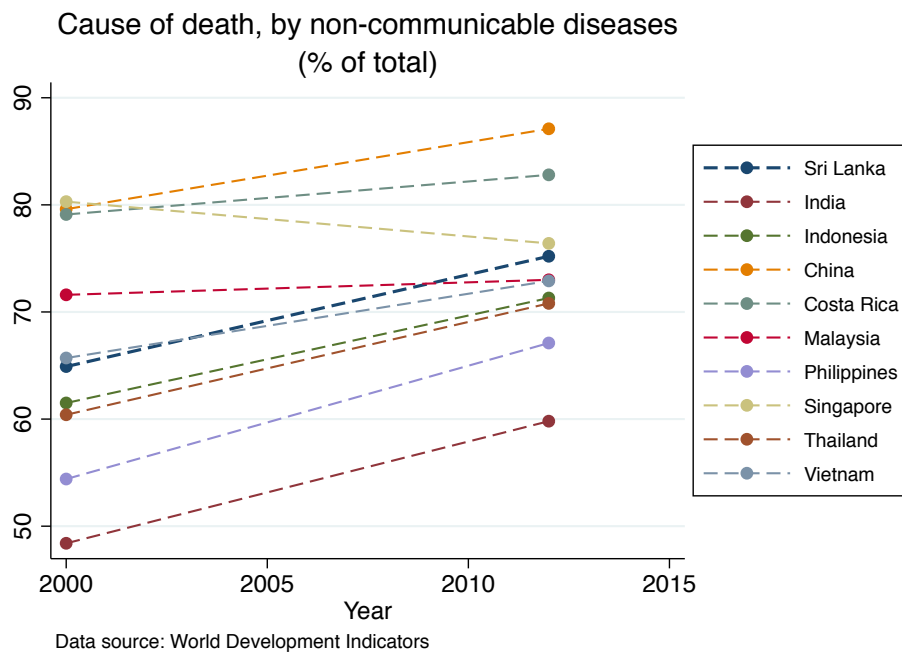
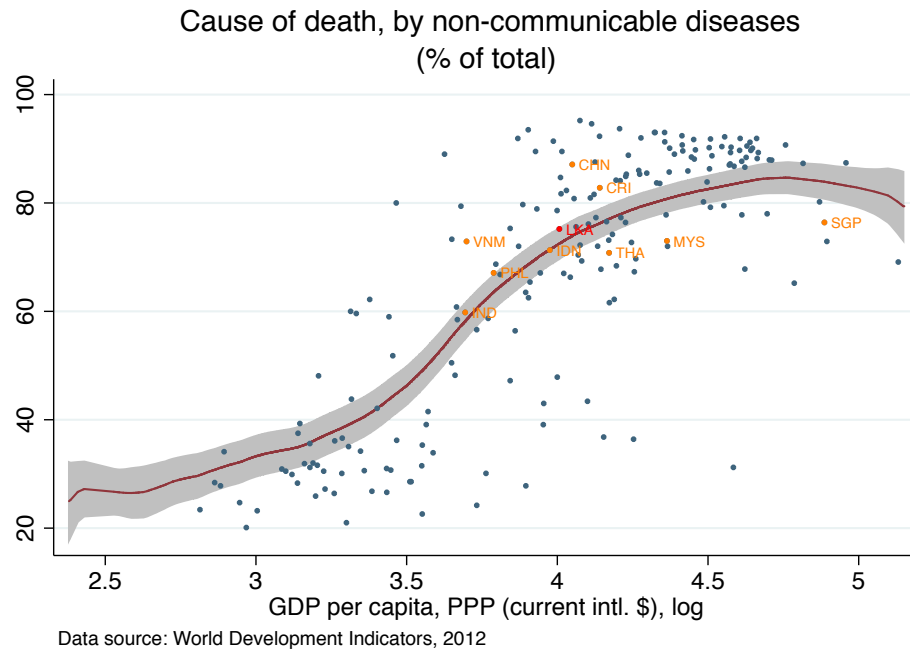


The child mortality rate is likewise very low but with room for more improvement. The uptick of child mortality in 2004 coincides with a massive tsunami, showing that Sri Lanka remains vulnerable to natural disasters and climate shocks.



Life expectancy is high, but it is improving less steadily than other basic health indicators.





Deaths from non-communicable diseases are on the rise in Sri Lanka, which is to be expected as the country develops. The rate of evolution presents a challenge for the health system.

# **INFRASTRUCTURE**

Water & Sanitation, Electricity, Transport

# **WATER AND SANITATION**

# Water and Sanitation: Summary

**Main Conclusion:** **Water and wastewater/sanitation infrastructure is a binding constraint for some industries.** It is unclear how much export diversification is constrained by the scarcity of water and wastewater infrastructure, but at least some new projects in new industries are constrained by this.

## **Evidence:**

***Benchmarking quantity:*** Household access to improved water and sanitation is high in Sri Lanka, but access to sanitation infrastructure of the kind needed by industry is low.

***Price:*** Tariffs for water and sanitation services are at developed country levels. The regulated sewerage tariffs fail to reflect an underlying scarcity of sanitation infrastructure. Overall, water may not be scarce but it may not be widely available where needed for industrial use. This is true in several export processing zones where water demand exceeds water supply.

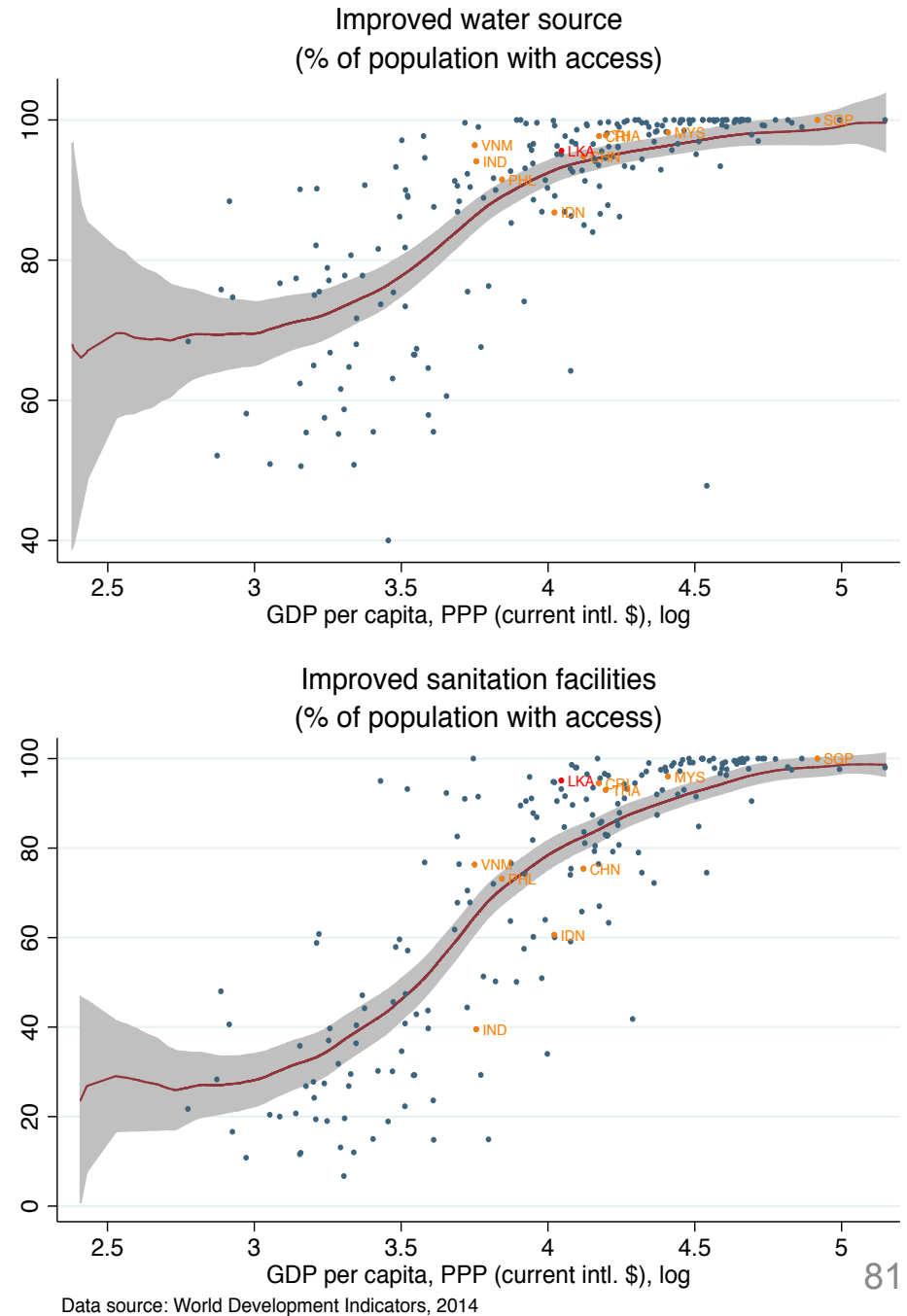
***Bypassing the constraint:*** Some wastewater-intensive firms reportedly have few options to bypass the wastewater constraint other than to locate in a limited number of industrial zones that have the capacity to handle high volumes of effluent. Data from the Board of Investment confirm that a significant number of applications to manufacture industrial and chemical products in Sri Lanka have been rejected over the last 15 years.

***Camels and hippos:*** Sri Lanka lacks exports in pharmaceuticals, chemicals, paper, metals and other heavy industry, though it does have an export presence in textiles and rubber products.

**Other Issues:** Water resources are an area of widespread vulnerability to climate change in Sri Lanka. Both droughts and floods have had significant negative impacts on the economy, including on agricultural output and infrastructure damage, and their prevalence is expected to increase into the future.

# Household access to improved water and sanitation is high in Sri Lanka.

- This is consistent with Sri Lanka's strong basic health outcomes. However, these indicators are not very informative for evaluating if water and sanitation infrastructure meets the needs of the private sector.





# More strict measures of household connections to water and wastewater networks show gaps.

- This measure of sanitation coverage suggests that sanitation infrastructure is limited for the private sector. Only 3% of households were connected to a wastewater network in 2009, the most recent data available.
- Water service coverage and the operational efficiency of water delivery are fair but leave room for improvement:
  - Water coverage was 80%
  - Sri Lanka does not have 24-hour coverage
  - Rate of non-revenue water is somewhat high
- Each of these water and sanitation indicators are comparable to the performance of Indonesia, the Philippines and Vietnam, but worse than higher income countries, including China.

**IBNET Indicator/Country: Sri Lanka**

| Latest year available  | 2007   | 2008   | 2009   |
|--|--------|--------|--------|
| Surface area (km <sup>2</sup> )  | 65,610 | 65,610 | 65,610 |
| GNI per capita, Atlas method (current US\$)  | 1,540  | 1,770  | 1,970  |
| Total population (thousands)   | 20,039 | 20,217 | 20,450 |
| Urban population (%)   | 15     | 15     | 15     |
| Total urban population (thousands)   | 3,026  | 3,053  | 3,088  |
| <b>MDGs</b>  |        |        |        |
| Access to improved water sources 2010 (%) <sup>a</sup>   | 91     | 91     | 91     |
| Access to improved sanitation 2010 (%) <sup>a</sup>  | 92     | 92     | 92     |
| <b>IBNET sourced data</b>  |        |        |        |
| Number of utilities reporting in IBNET sample  | 1      | 1      | 1      |
| Population served (water), (thousands)   | 3,300  | 3,510  | 3,680  |
| Size of the sample: Total population living in service area (water supply), (thousands)                  | 4,400  | 4,500  | 4,600  |
| <b>Services coverage</b>   |        |        |        |
| 1.1 Water coverage (%)   | 75     | 78     | 80     |
| 2.1 Sewerage coverage (%)  | 2      | 3      | 3      |
| <b>Operational efficiency</b>  |        |        |        |
| 13.2 Electrical energy costs vs. operating costs (%) (share of energy cost as % of operational expenses) | 21     | —      | —      |
| 6.1 Nonrevenue water (%)   | 33.00  | 32.00  | 31.00  |
| 6.2 Nonrevenue water (m <sup>3</sup> /km/day)  | 38     | 37     | 37     |
| 12.3 Staff W/1,000 W population served (W/1,000 W population served)                                     | 2.60   | 2.50   | 2.40   |
| 15.1 Continuity of service (hrs/day) (duration of water supply, hours)                                   | 20.00  | 21.00  | 22.00  |
| <b>Financial efficiency</b>  |        |        |        |
| 8.1 Water sold that is metered (%)   | —      | —      | —      |
| 23.1 Collection period (days)  | —      | —      | —      |
| 23.2 Collection ratio (%)  | 100    | 99     | 94     |
| 18.1 Average revenue W & WW (US\$/m <sup>3</sup> water sold)   | 0.24   | 0.25   | 0.32   |
| 11.1 Operational cost W & WW (US\$/m <sup>3</sup> water sold)  | 0.23   | 0.28   | 0.35   |
| 24.1 Operating cost coverage (ratio)   | 1.03   | 0.89   | 0.90   |
| <b>Production and consumption</b>  |        |        |        |
| 3.1 Water production (l/person/day)  | 352.00 | 343.00 | 334.00 |
| 4.1 Total water consumption (l/person/day)   | 236.00 | 235.00 | 231.00 |
| 4.7 Residential consumption (l/person/day)   | —      | 132    | 131    |
| <b>Poverty and affordability</b>   |        |        |        |
| 19.1 Total revenues/service population/GNI (% GNI per capita) (average revenues)                         | 1.34   | 1.21   | 1.37   |
| 19.2 Annual bill for households consuming 6 m <sup>3</sup> of water/month (US\$/yr)                      | —      | —      | —      |
| 21.1 Ratio of industrial to residential tariff (level of cross-subsidy)                                  | 15.38  | 12.93  | —      |

a. UNICEF and WHO 2012.

Source: The IBNET Water Supply and Sanitation Blue Book 2014, World Bank/WSP

# Sri Lanka's water tariffs (especially wastewater) are somewhat high (at upper-middle income levels) and much higher than India

| Average tariffs (\$/m <sup>3</sup> ) and water usage in selected major countries |                 |              |                   |          |                         |               |
|--|-----------------|--------------|-------------------|----------|-------------------------|---------------|
| Country  | Combined tariff | Water tariff | Wastewater tariff | Change % | Domestic use l/head/day | No. of cities |
| Denmark  | \$7.15          | \$3.48       | \$3.67            | 2.5%     | 131                     | 2             |
| Australia  | \$5.64          | \$2.82       | \$2.82            | 1.7%     | 340                     | 5             |
| Germany  | \$5.56          | \$2.63       | \$2.93            | 1.2%     | 127                     | 10            |
| United Kingdom   | \$4.37          | \$2.12       | \$2.25            | -2.1%    | 150                     | 8             |
| France   | \$3.73          | \$1.92       | \$1.81            | 0.9%     | 150                     | 7             |
| Canada   | \$3.32          | \$1.92       | \$1.40            | 5.9%     | 274                     | 5             |
| United States  | \$3.70          | \$1.53       | \$2.17            | 4.7%     | 340                     | 51            |
| Poland   | \$3.11          | \$1.29       | \$1.82            | 1.8%     | 125                     | 6             |
| Spain  | \$2.11          | \$1.49       | \$0.62            | 1.2%     | 265                     | 6             |
| Brazil   | \$2.01          | \$1.05       | \$0.96            | 13.9%    | 174                     | 7             |
| Portugal   | \$1.88          | \$1.19       | \$0.69            | -6.8%    | 161                     | 3             |
| Japan  | \$1.79          | \$1.01       | \$0.77            | 0.0%     | 373                     | 13            |
| Italy  | \$1.71          | \$0.85       | \$0.86            | 7.8%     | 190                     | 6             |
| Turkey   | \$1.49          | \$1.08       | \$0.41            | 8.4%     | 217                     | 8             |
| Russia   | \$0.72          | \$0.44       | \$0.29            | 8.3%     | 248                     | 13            |
| South Korea  | \$0.92          | \$0.63       | \$0.28            | 3.3%     | 183                     | 7             |
| Mexico   | \$0.85          | \$0.72       | \$0.13            | 7.5%     | 183                     | 10            |
| China  | \$0.56          | \$0.41       | \$0.15            | 6.1%     | 95                      | 25            |
| India  | \$0.14          | \$0.12       | \$0.02            | 5.4%     | 139                     | 17            |

Table source: 2015 World Tariff Survey, Global Water Intelligence

Sri Lanka's regulated tariffs on water and sewerage are as follows (calculated using an exchange rate of LKR 145 = \$1):

- Water tariff (\$/m<sup>3</sup>):
  - Commercial: \$0.50
  - Industrial: \$0.39
  - BOI Zones: \$0.50
- Sewerage tariff (\$/m<sup>3</sup>):
  - Commercial: \$0.27
  - Industrial: \$0.44
  - BOI Zones: \$0.08

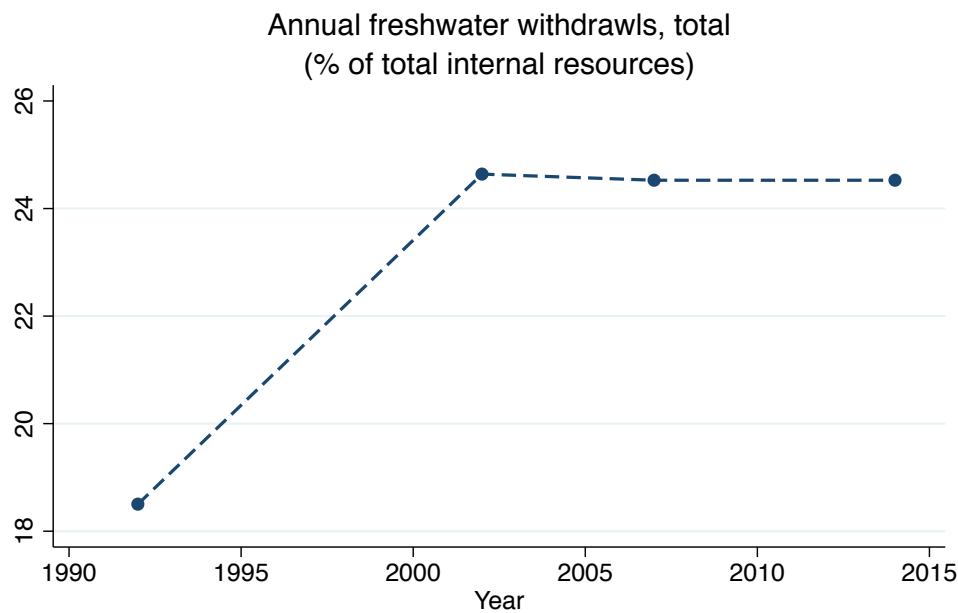
← General range of Sri Lanka's water & wastewater tariffs

Sources: National Water Supply & Drainage Board & Board of Investment

# Water withdrawals hit a ceiling in the mid-2000s at a relatively high share of freshwater resources

\* Not clear if this was a response to the leveling off of demand or constrained supply.

\* Freshwater withdrawals are at a level that appears sustainable but may reflect elevated water stress.



Data source: World Development Indicators

TABLE 11

Millennium Development Goals (MDG) Water Indicator by country

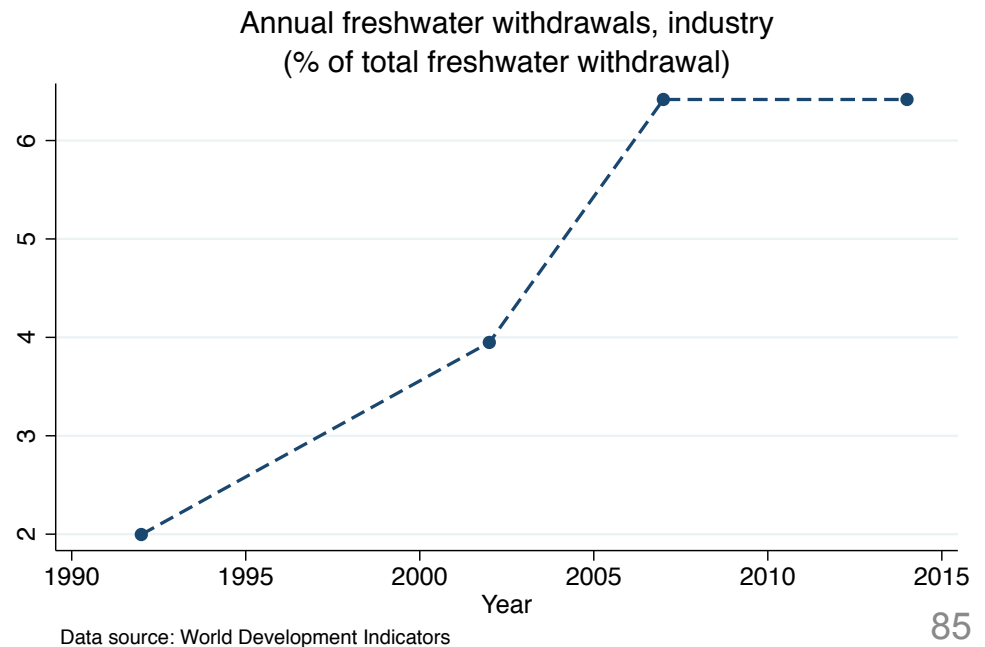
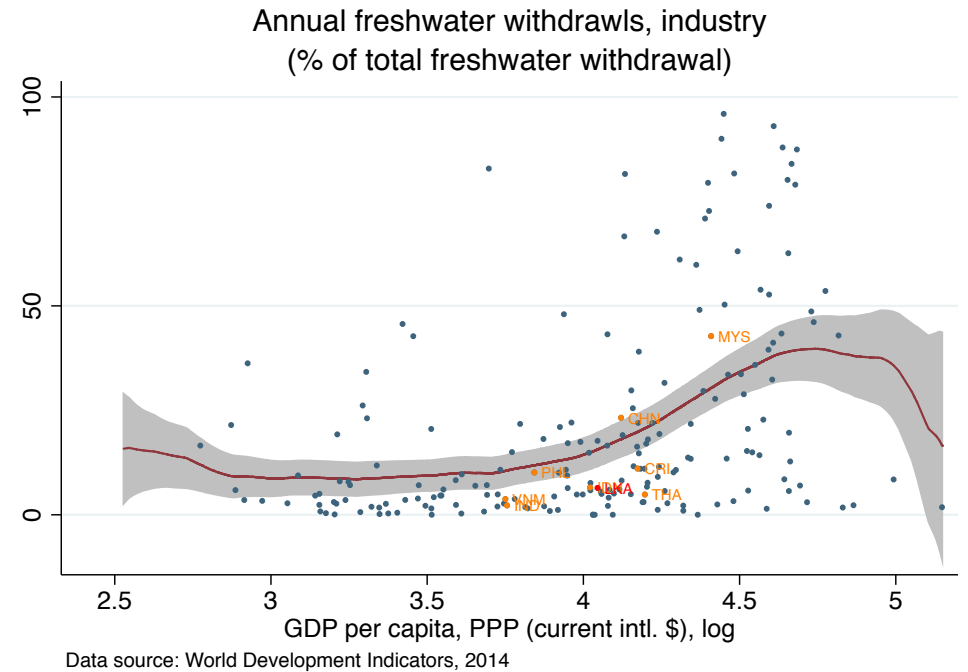
| Country           | Freshwater withdrawal  | Total actual renewable freshwater resources | MDG Water Indicator                                |
|-------------------|------------------------|---|--|
|                   | Total                  | TARWR*                                      | Total freshwater withdrawal as percentage of TARWR |
|                   | million m <sup>3</sup> | million m <sup>3</sup>                      | %  |
| Bangladesh        | 35 870                 | 1 226 652                                   | 2.9  |
| Bhutan            | 338                    | 78 000                                      | 0.4  |
| Brunei Darussalam | 92                     | 8 500                                       | 1.1  |
| Cambodia          | 2 184                  | 476 110                                     | 0.5  |
| China             | 554 089                | 2 839 719                                   | 19.5   |
| DPR Korea**       | 8 658                  | 77 150                                      | 11.2   |
| India             | 760 999                | 1 911 370                                   | 39.8   |
| Indonesia         | 113 271                | 2 018 342                                   | 5.6  |
| Lao PDR**         | 4 260                  | 333 550                                     | 1.3  |
| Malaysia          | 13 206                 | 580 000                                     | 2.3  |
| Maldives          | 5                      | 30  | 15.6   |
| Mongolia          | 511                    | 34 800                                      | 1.5  |
| Myanmar           | 33 230                 | 1 167 801                                   | 2.8  |
| Nepal             | 9 787                  | 210 200                                     | 4.7  |
| Pakistan          | 183 421                | 230 770                                     | 79.5   |
| Papua New Guinea  | 392                    | 801 000                                     | 0.0  |
| Philippines       | 81 555                 | 479 000                                     | 17.0   |
| Republic of Korea | 25 470                 | 69 700                                      | 36.5   |
| Sri Lanka         | 12 950                 | 52 800                                      | 24.5   |
| Thailand          | 57 302                 | 438 609                                     | 13.1   |
| Timor-Leste       | 1 172                  | 8 215                                       | 14.3   |
| Viet Nam          | 82 031                 | 884 128                                     | 9.3  |

\* TARWR = Total Actual Renewable Water Resources

\*\* DPR Korea = Democratic People's Republic of Korea; Lao PDR = Lao People's Democratic Republic

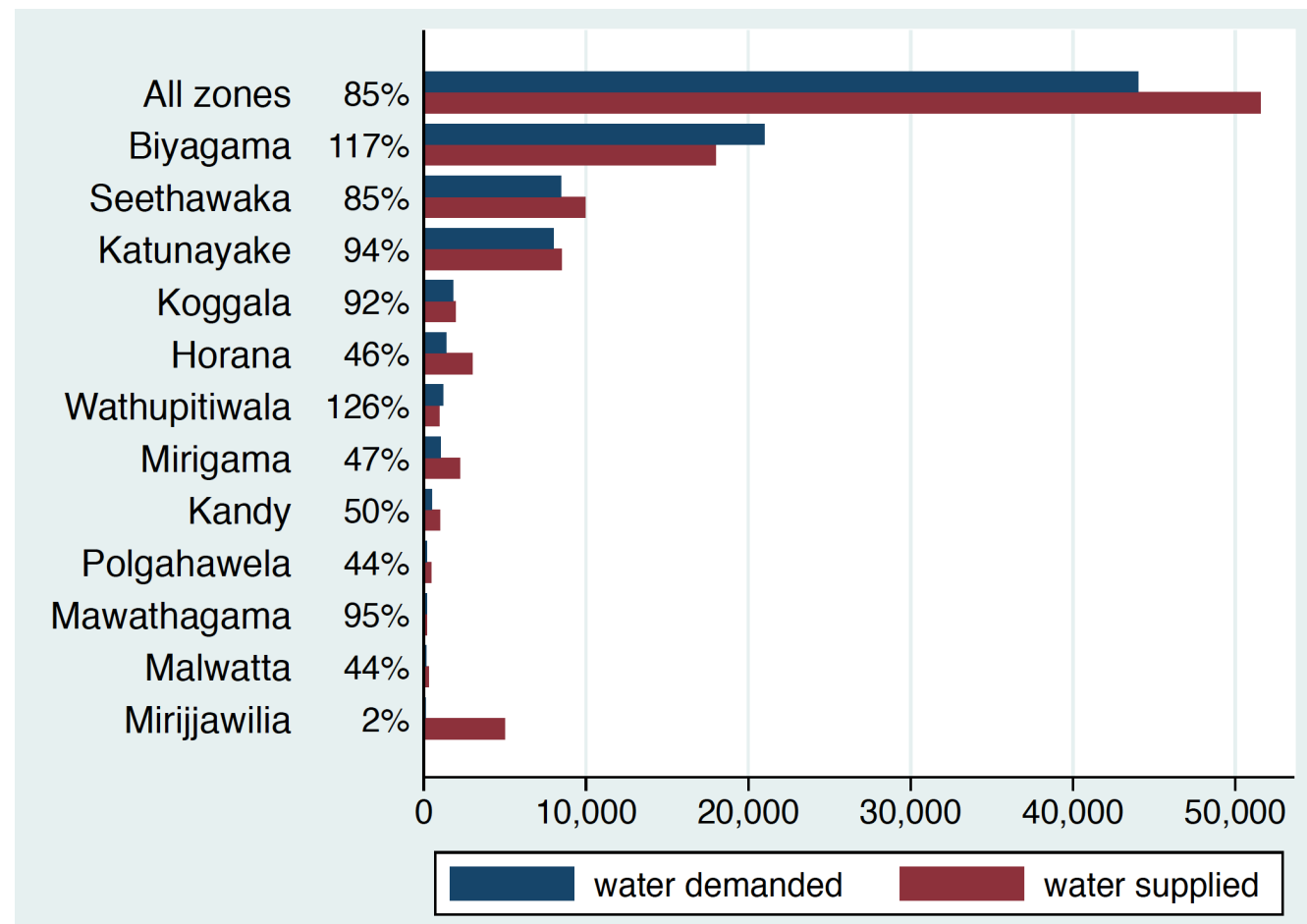
Source: Report on AQUASTAT Survey 2011, FAO

Industrial water withdrawals also appear to have leveled off but at a lower level than expected based on Sri Lanka's GDP per capita.



Water supply vs. demand at Sri Lanka's industrial zones provides an indication that this may be the result of a water supply availability constraint.

\* Two zones, one of which being the large Biyagama EPZ, are not able to meet water demanded by firms. Several other zones are operating near their water supply capacity.



Note: Units are m³/day; daily averages reported in 2016. Source: Board of Investment 86

# There is also evidence of unmet investor demand for wastewater treatment services

Investor-side demand exists in high-polluting industries:

- BOI project-level data contains at least 15 different Section 17 applications under the category “Other industrial & chemical products”, including detergents, soaps, bio-fertilizers and cosmetic products, which were rejected over the past 15 years. In total, estimated employment for these projects at the time of application was over 1,400 new jobs

Entry and growth in these industries may be constrained by lack of water treatment infrastructure:

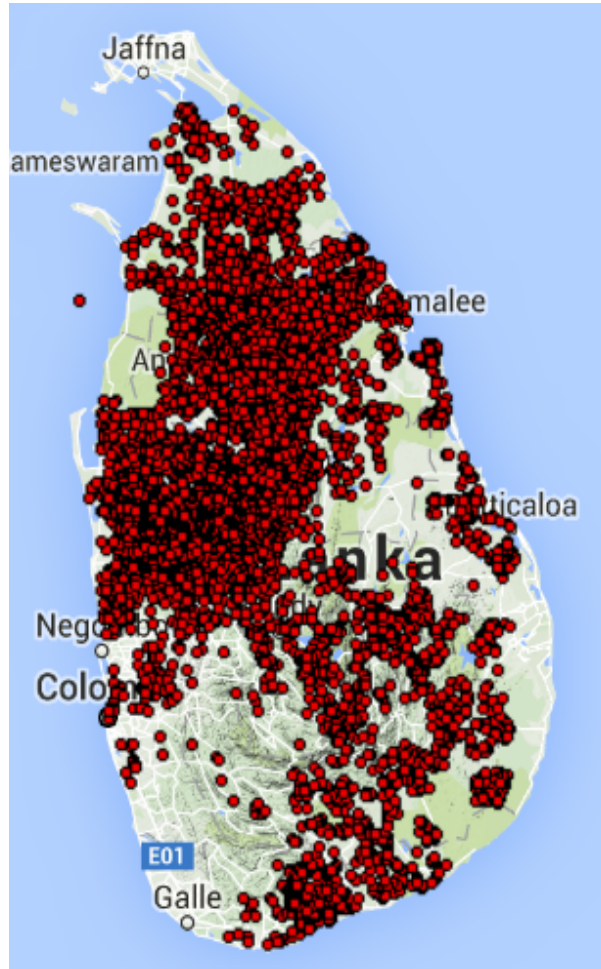
- The Director of Zones at BOI noted that high polluting industries must locate in specialized zones to manage the waste but that most zones are not equipped to handle major wastewater treatment. He reported that there is currently investment demand from chemical industries and rubber product manufactures that cannot be met. He noted that the problem is not merely a shortage of wastewater facilities but limitations of the natural capacity of many parts of the country to handle effluent (ex: effluent from Biyagama EPZ enters the water supply for Colombo). A firm in Biyagama EPZ independently noted the same shortage of capacity in the majority of zones.

Natural sources of water and water infrastructure for agriculture have historically been adequate.

# River Basins



## Locations of Small Tanks



- Sri Lanka has enviable water resources. Around 100 different river basins cover around 90% of the island. The Mahaweli River river basin is the largest.
- There are 12,000 to 16,000 small tanks scattered widely across the country. Small tanks are concentrated in the Dry Zone and play a vital role in agricultural production in Sri Lanka.



# But water is recognized as an area of significant risk into the future:

\* Water resources are an area of widespread vulnerability to climate change in Sri Lanka. This may impact growth potential into the future (see appendix for additional vulnerability maps):

- Sri Lanka is highly vulnerable to changes in temperature and rainfall variation induced by climate change. “Low end estimates show Sri Lanka suffering a 1.2 percent loss of annual GDP by 2050 due to climate change, even if measures are taken to address it” (World Bank SCD, p. 121).
- Agricultural production, particularly rice, will tend to be negatively impacted.
- Drinking water and irrigation systems, especially in dry areas, are vulnerable to droughts and floods.
- Sri Lanka’s supply of hydropower is vulnerable to rainfall changes.
- Floods and flood-induced landslides present serious risks to human health and infrastructure.
- Coastal regions, including many urban centers, tourism resources and industrial areas are and will continue to be affected by sea level rise.



# Water and Sanitation: Summary

**Main Conclusion:** **Water and wastewater/sanitation infrastructure is a binding constraint for some industries.** It is unclear how much export diversification is constrained by the scarcity of water and wastewater infrastructure, but at least some new projects in new industries are constrained by this.

## **Evidence:**

***Benchmarking quantity:*** Household access to improved water and sanitation is high in Sri Lanka, but access to sanitation infrastructure of the kind needed by industry is low.

***Price:*** Tariffs for water and sanitation services are at developed country levels. The regulated sewerage tariffs fail to reflect an underlying scarcity of sanitation infrastructure. Overall, water may not be scarce but it may not be widely available where needed for industrial use. This is true in several export processing zones where water demand exceeds water supply.

***Bypassing the constraint:*** Some wastewater-intensive firms reportedly have few options to bypass the wastewater constraint other than to locate in a limited number of industrial zones that have the capacity to handle high volumes of effluent. Data from the Board of Investment confirm that a significant number of applications to manufacture industrial and chemical products in Sri Lanka have been rejected over the last 15 years.

***Camels and hippos:*** Sri Lanka lacks exports in pharmaceuticals, chemicals, paper, metals and other heavy industry, though it does have an export presence in textiles and rubber products.

**Other Issues:** Water resources are an area of widespread vulnerability to climate change in Sri Lanka. Both droughts and floods have had significant negative impacts on the economy, including on agricultural output and infrastructure damage, and their prevalence is expected to increase into the future.

# **ELECTRICITY**

Research on this constraint was led by the  
Millennium Challenge Corporation (MCC)

# Electricity: Summary

**Main Conclusion:** Electricity is not a binding constraint for firms at this time but could become binding in the future if supply is not increased fast enough to keep pace with growing electricity demand. Some industries may be constrained by access to electricity in the quantity or of the quality required, but the evidence is mixed on the scale of this constraint.

## **Evidence:**

***Benchmarking quantity:*** Power consumption per capita is very low, but system losses are not particularly high. Firms cited electricity as a constraint a bit above expectation given Sri Lanka's level of income as of 2011, but the occurrence of outages and use of generators were relatively low. The losses from power outages were reported as somewhat high in 2011 but outages had reached very low levels as of 2015. Recent outages have revealed that weaknesses in the grid remain. Firms interviewed had some complaints about voltage fluctuations.

***Price:*** Electricity prices paid by industrial firms are comparable to comparator countries but prices are high for commercial customers. Unlike for water, underlying scarcity of supply does not appear to be a major problem in Export Processing Zones.

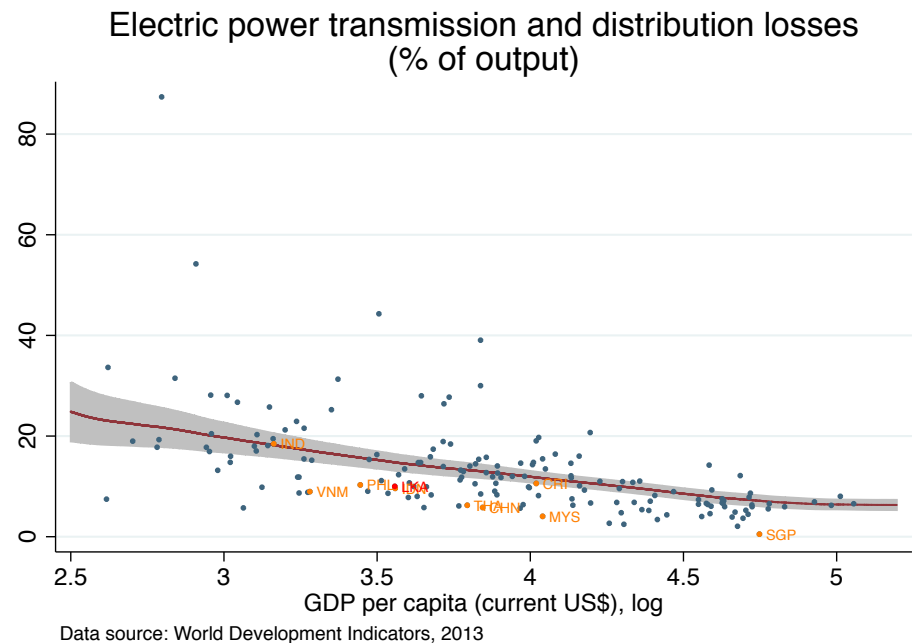
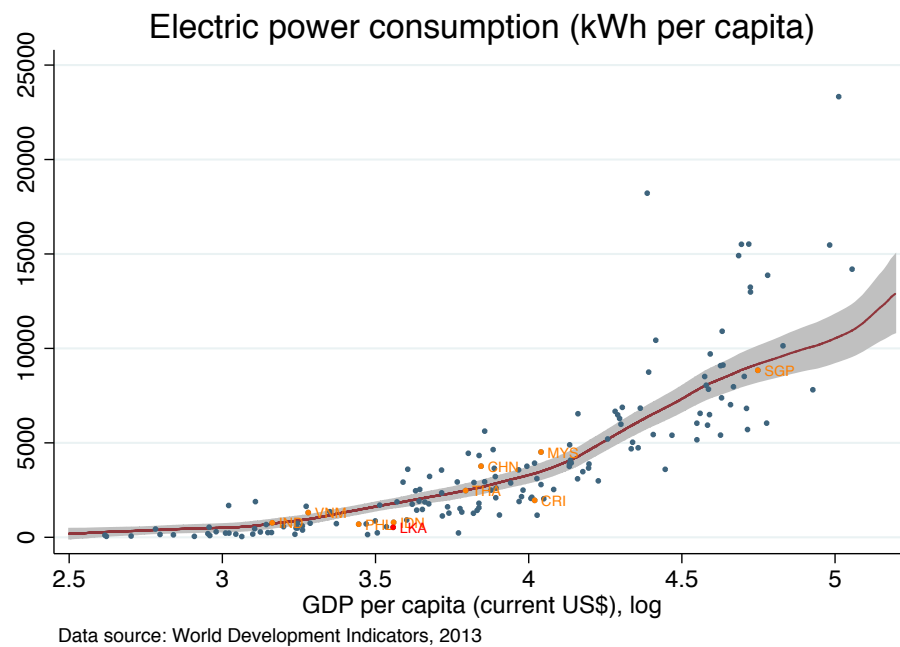
***Changes vs. changes:*** Past occurrences of heavy load shedding correlate with sharp slowdowns in growth, but load shedding has not been common in recent years (until October 2016).

***Bypassing the constraint:*** Generator access is high but usage is not.

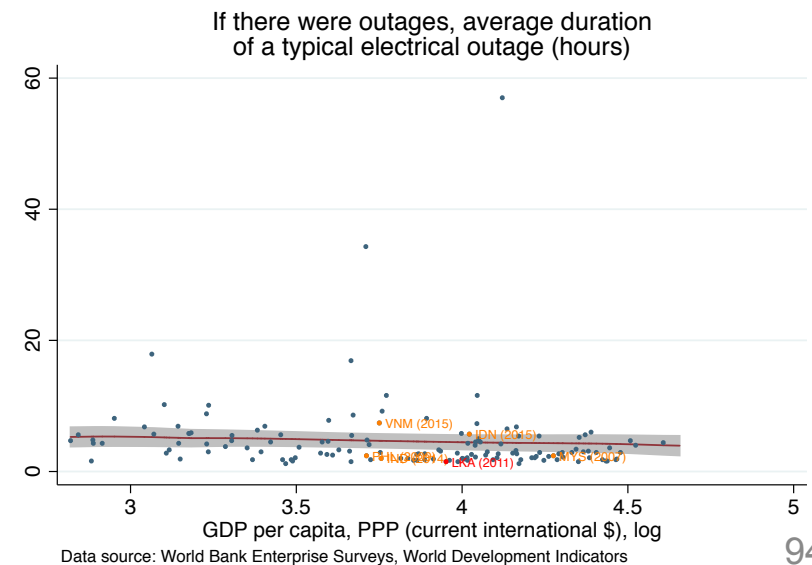
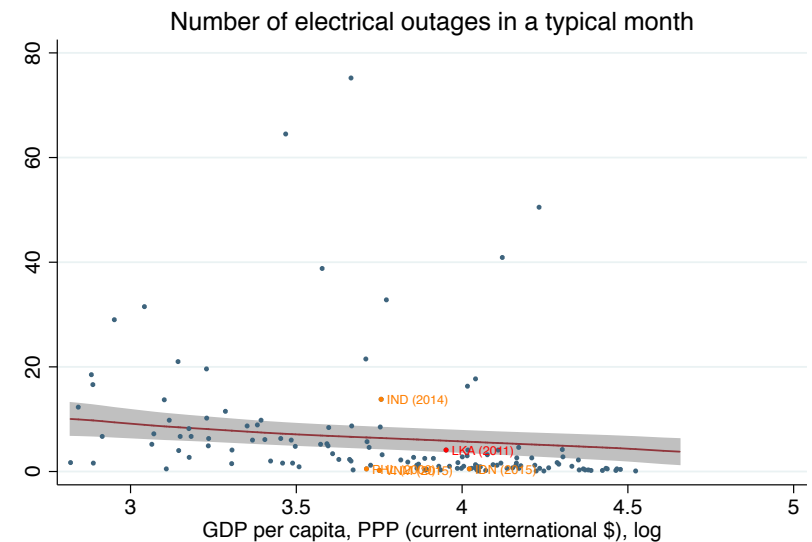
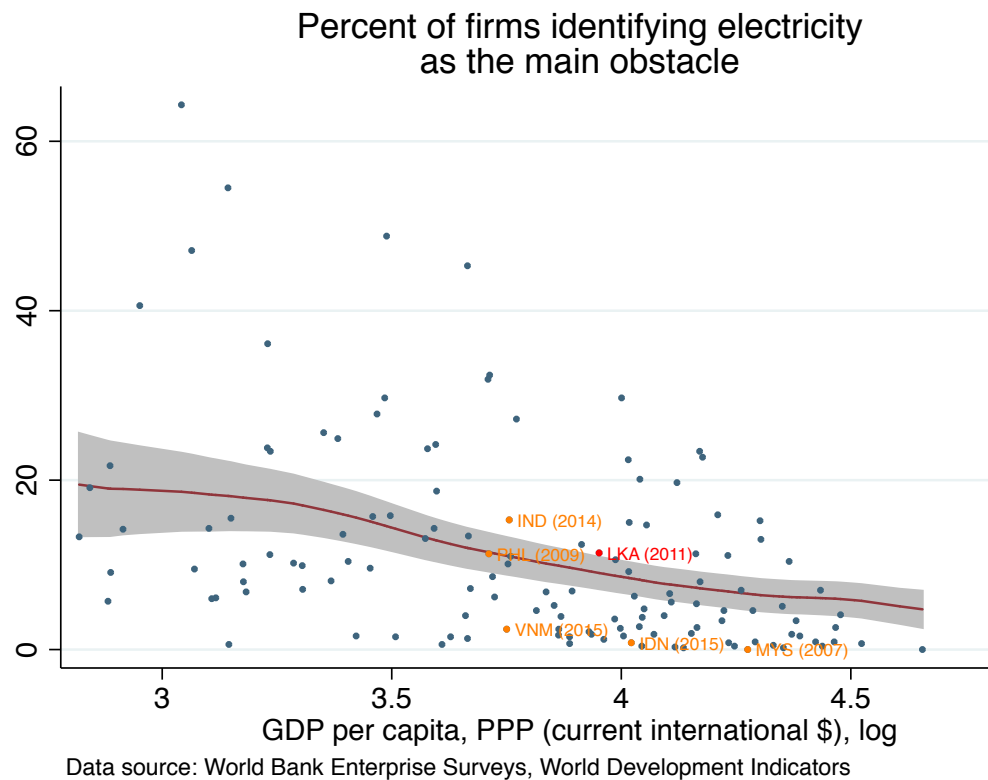
***Camels and hippos:*** Within Sri Lanka, more electricity-intensive industries do not appear to be at a disadvantage versus less electricity-intensive industries. However, international comparisons show that Sri Lankan manufacturing is very concentrated in moderate energy-intensity industries.

**Other Issues:** Concerns have been voiced by planners and members of government that the recent cancellation of the Sampur coal power plant project poses a serious threat to adequate supply moving forward. Some projections show a major reliance on new coal power for the future. The Ministry of Power and Energy's own energy sector development plan included coal as a less dominant but still critical part of the plan for the future. Regionally, electricity access is much lower in the Northern Province.

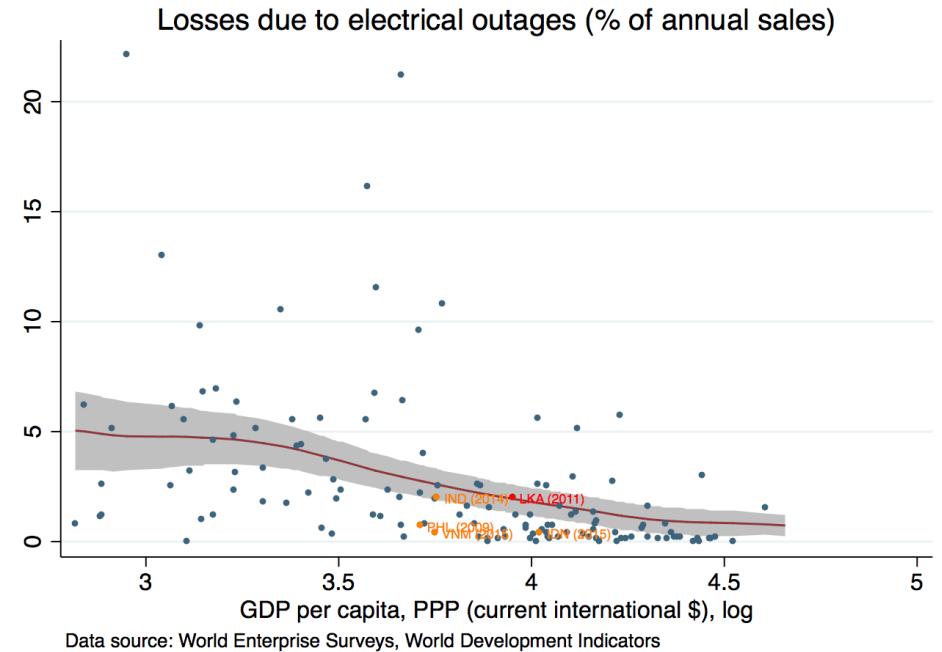
Power consumption remains low in Sri Lanka given its level of income. System losses are not high according to World Bank data, which suggests that electricity infrastructure is fairly good.



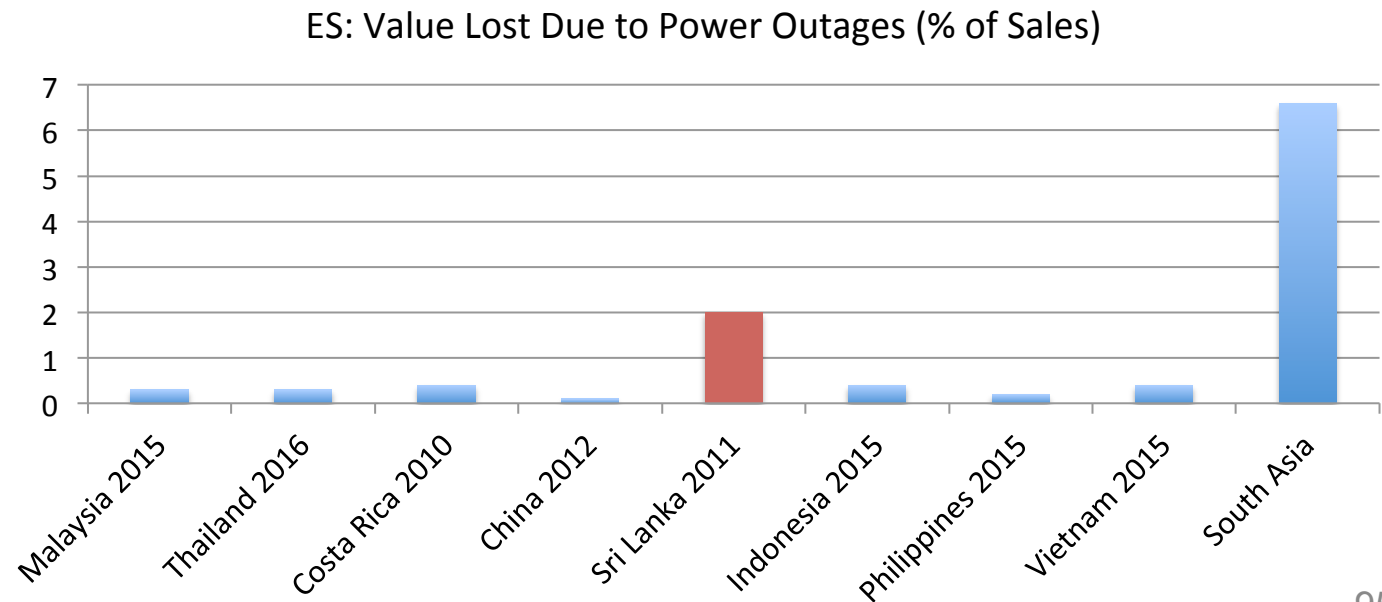
As of 2011, firms identified electricity as their main obstacle a bit above expectation but the occurrence of outages was relatively low.



As of 2011, firms reported facing somewhat high losses from outages, but not at a level that would necessarily suggest a binding constraint.



\* Losses elsewhere in South Asia tend to be particularly acute compared to Sri Lanka.



# The quality of electricity provision is imperfect but not bad in Sri Lanka. Access is lagging in the Northern Province.

Electrical Engineering Society panel discussion on quality of energy supply (2015):

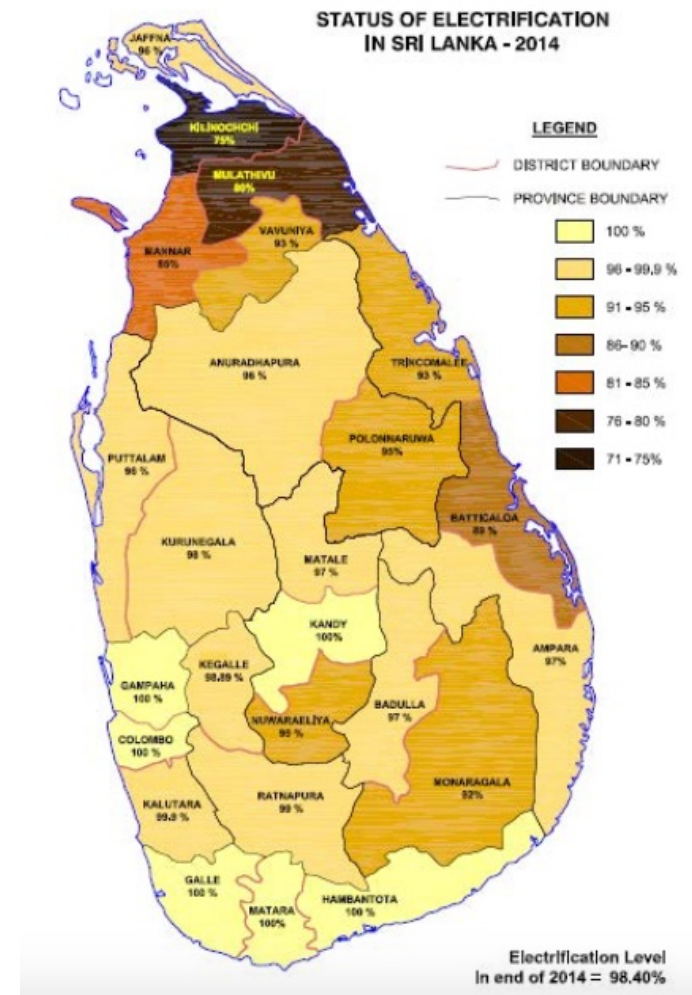
- CEB (2012): SAIDI of 66 hours/year and SAIFI of 124 times/year in North Western Province.
- LECO (2014): SAIDI of 59.5 hours/year and SAIFI of 101 times/year along the Western coast.
- 10-35% of rural and 5-20% of urban consumers report 'often' experiencing 'dimming or flickering of lights', 'computer failures and data network problems', 'repeated equipment failure', and 'nuisance tripping of circuit breakers or nuisance blowing of fuses inside their premises.'

World Bank Doing Business indicators:

- Data for Colombo in 2015: SAIDI of only 2.8 hours/year and SAIFI of 2.7 times/year.

Qualitative firm interviews:

- Firm interviews in 2016 have revealed that some companies (paper and printing materials, solar panel components) view the quality of electricity as too poor to begin operations in Sri Lanka.



Map source: Ceylon Electricity, Long Term Generation Expansion Plan 2015-2034

# Electricity prices are relatively high for commercial customers but comparable to comparators for industrial customers.

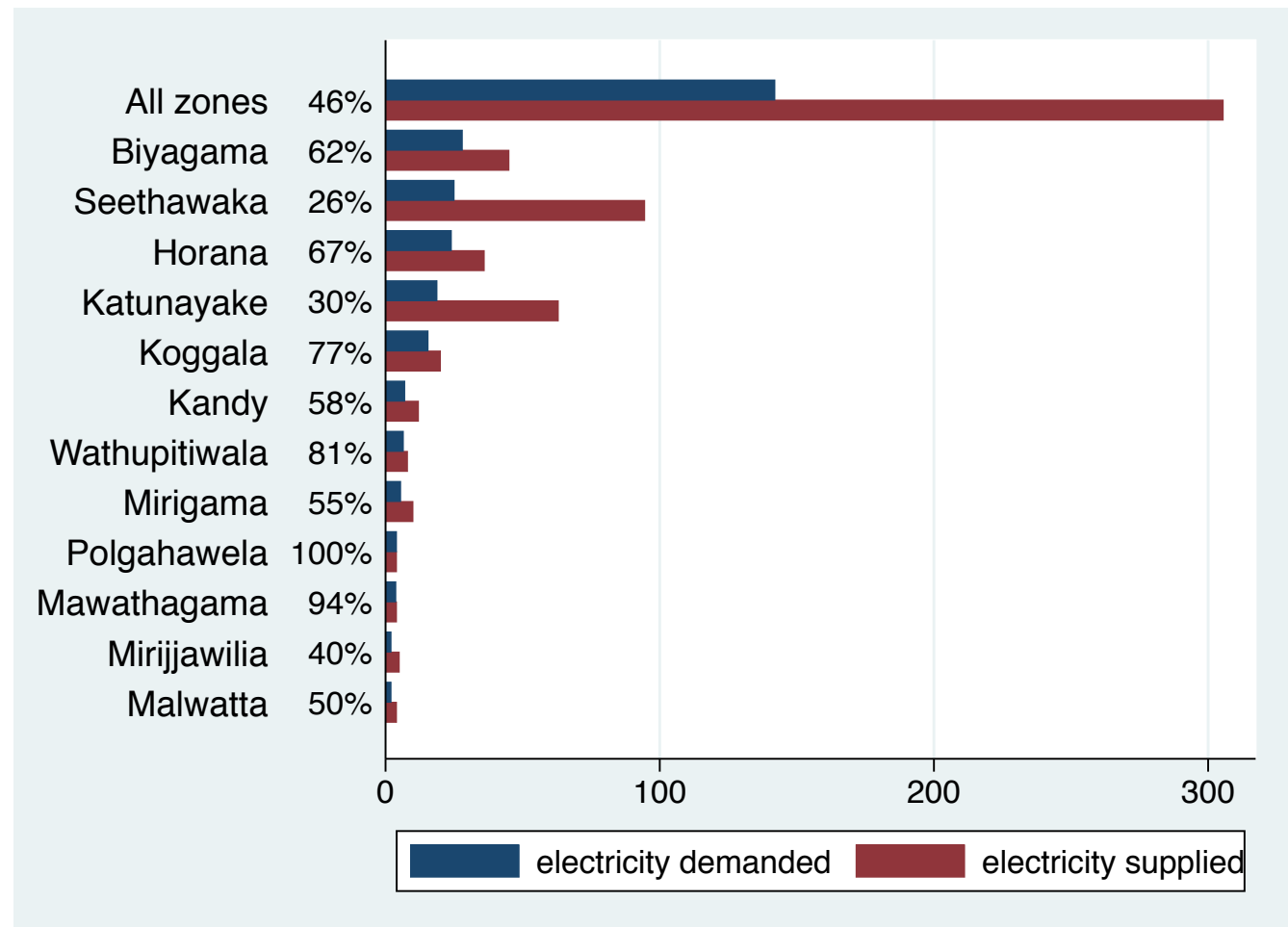
- World Bank Doing Business identifies the current price of electricity in Colombo as 20.1 US cents per kWh, which is high.
- But the tariff structure includes a large degree of cross-subsidization. Low-use households pay very low tariffs while high-use households and commercial users pay higher tariffs. The tariff for industrial use is neither low nor high:

| Customer   | Class      | Electricity Usage (kWh/mth) | Maximum Demand (kW) | Avg. unit price in USD, Oct. 7, 2015 |          |             |           |          |         |
|------------|------------|-----------------------------|---------------------|--------------------------------------|----------|-------------|-----------|----------|---------|
|            |            |                             |                     | China                                | Malaysia | Philippines | Sri Lanka | Thailand | Vietnam |
| Household  | Small      | 30                          | -                   | 0.08                                 | 0.05     | 0.11        | 0.02      | 0.01     | 0.07    |
|            | Medium     | 90                          | -                   | 0.08                                 | 0.05     | 0.16        | 0.07      | 0.09     | 0.07    |
|            | Large      | 180                         | -                   | 0.08                                 | 0.05     | 0.20        | 0.16      | 0.10     | 0.07    |
|            | Very Large | 600                         | -                   | 0.09                                 | 0.09     | 0.23        | 0.27      | 0.11     | 0.10    |
| Commercial | Small      | 1,000                       | -                   | 0.12                                 | 0.12     | 0.20        | 0.15      | 0.12     | 0.11    |
|            | Medium     | 58,000                      | 180                 | 0.12                                 | 0.12     | 0.19        | 0.18      | 0.11     | 0.10    |
|            | Large      | 600,000                     | 1500                | 0.12                                 | 0.12     | 0.19        | 0.17      | 0.11     | 0.10    |
| Industrial | Small      | 5,000                       | -                   | 0.11                                 | 0.10     | 0.18        | 0.09      | 0.12     | 0.07    |
|            | Medium     | 65,000                      | 180                 | 0.11                                 | 0.11     | 0.18        | 0.11      | 0.11     | 0.07    |
|            | Large      | 270,000                     | 600                 | 0.11                                 | 0.09     | 0.18        | 0.11      | 0.11     | 0.07    |
|            | Very Large | 1,050,000                   | 2250                | 0.11                                 | 0.09     | 0.15        | 0.11      | 0.11     | 0.06    |



# Most zones have comfortable electricity supply; one zone (Polgahawela) is at capacity.

\* Based on data provided by the BOI, electricity supply in zones does not appear to be as much of a constraint as the supply in water in zones. However, the two zones in Kurunegala appear to have electricity supply concerns.



Note: Units are MVA as reported in 2016. Source: Board of Investment

Past load shedding corresponded to slowdowns in growth, but load shedding on this scale hasn't happened in recent years.

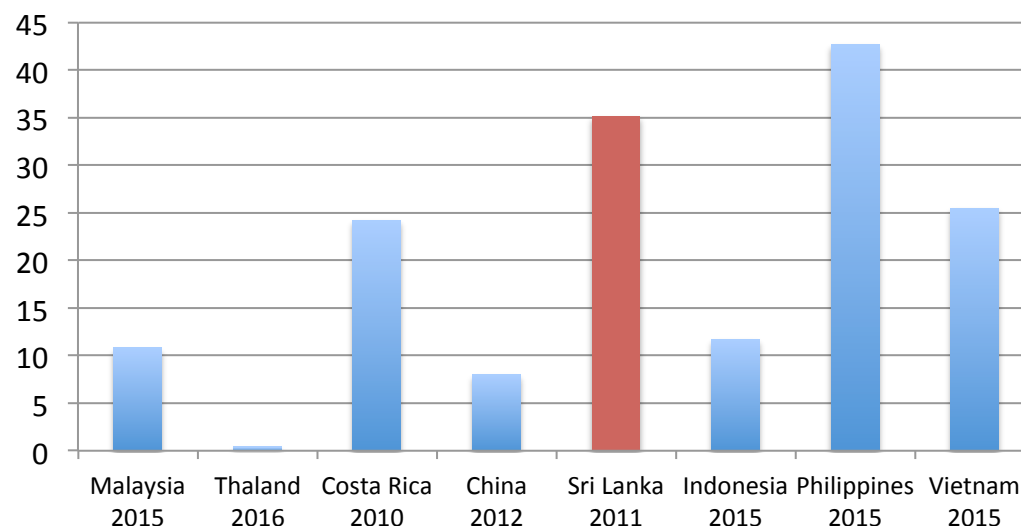
Annual GDP per capita growth (%), with vertical lines denoting years with high load shedding



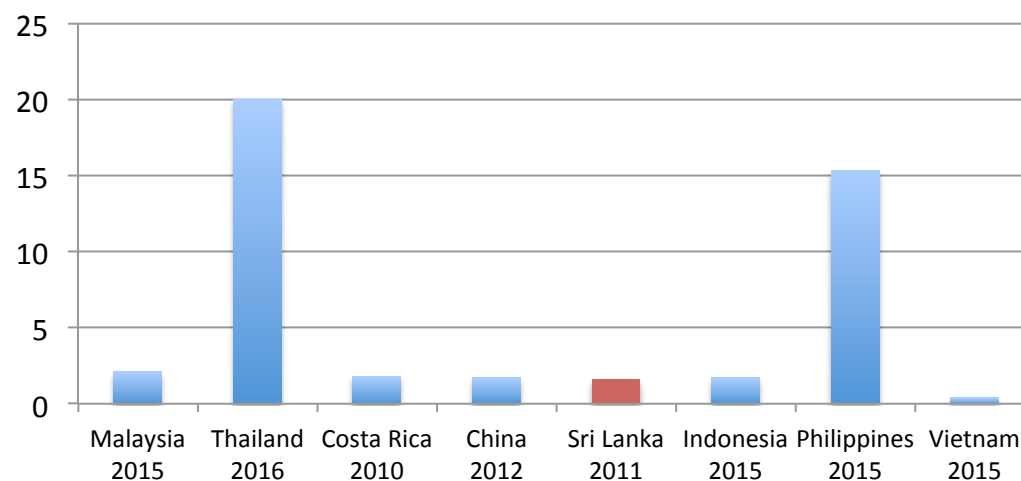
Note: This correlation in load shedding and slow growth does not imply that that load shedding caused the slow growth in 1996 or 2001. Further tests would be needed to test for that. Source: WDI

As of 2011, generator ownership was common among firms in Sri Lanka but use of generators is low—consistent with history of costly load shedding.

Percentage of manufacturing firms owning or sharing a generator



Percentage of electricity manufacturing firms obtain from a generator



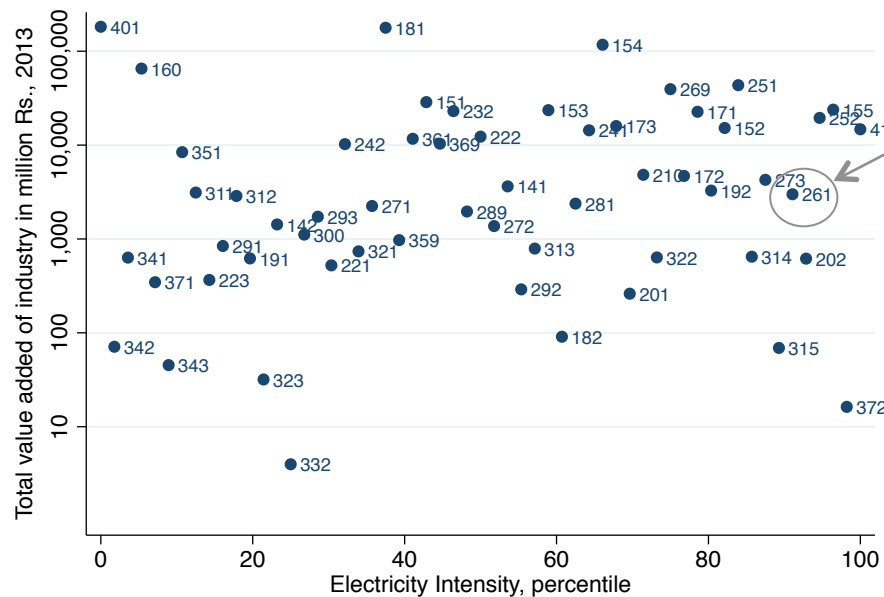
Source: World Bank Enterprise Surveys

# More electricity-intensive industries are not smaller and do not grow more slowly than less electricity-intensive industries in Sri Lanka.

If electricity was a binding constraint, we would expect to see the less electricity-intensive industries thrive and the more electricity-intensive industries struggle. But we do not see this. Here we used Annual Survey of Industries data to calculate electricity intensity by industry as:

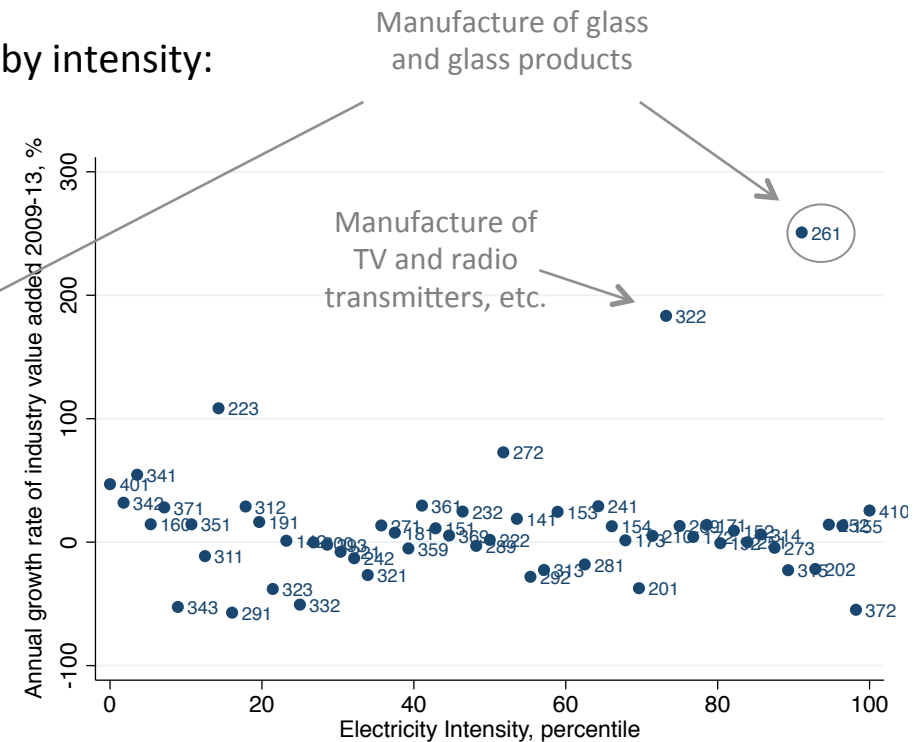
$$\text{Electricity Intensity} = \text{Electricity expenditures} / \text{Total value added}$$

We then average by 3-digit ISIC industry and rank by intensity:



Own calculations based on DCS Annual Survey of Industries. Industry codes are ISIC Rev.3

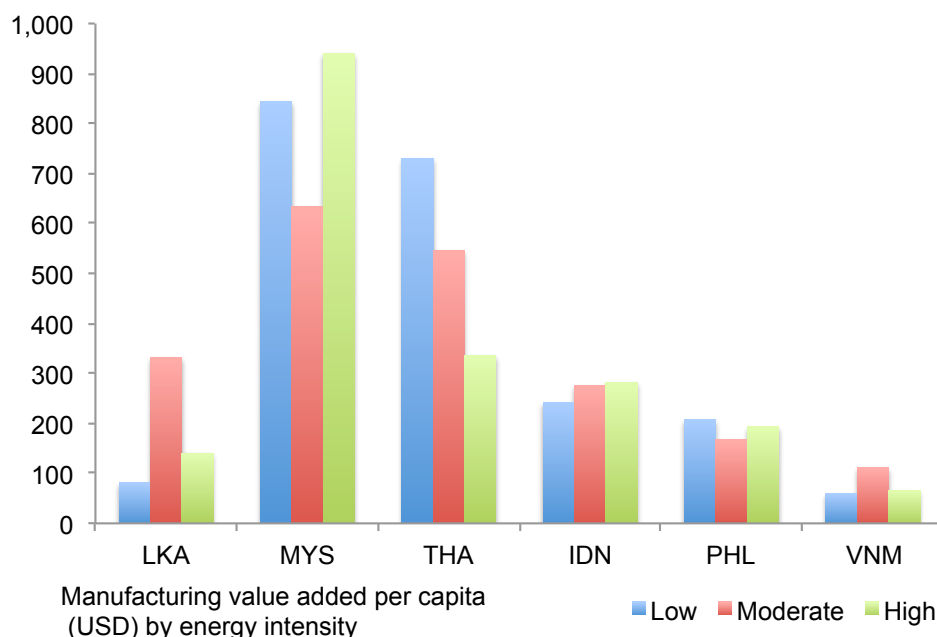
\* Note that y-axis is a log scale



Own calculations based on DCS Annual Survey of Industries. Industry codes are ISIC Rev.3

However, based on international data, high energy-intensity industries may be under-represented.

\*Sri Lankan manufacturing is noteworthy for its focus in moderate energy-intensity industries. High, as well as low, energy-intensity industry are missing. Note that this measure based on consumption does not capture the quality of electricity needed by industries.



Appendix 2  
Industry classification based on energy consumption intensity

| Intensity of energy consumption | ISIC | Description of activities                  |
|---------------------------------|------|--|
| High energy-intensive           | 17   | Manufacture of textiles                    |
|                                 | 21   | Paper and paper products                   |
|                                 | 23   | Coke and refined petroleum products        |
|                                 | 24   | Chemical products                          |
|                                 | 26   | Non-metallic mineral products              |
|                                 | 27   | Manufacture of basic metals                |
| Moderate energy-intensive       | 15   | Food products and beverages                |
|                                 | 18   | Wearing apparel; dressing and dyeing       |
|                                 | 19   | Manufacture of leather products            |
|                                 | 20   | Wood and wood products                     |
|                                 | 22   | Printing and publishing                    |
|                                 | 24   | Rubber and plastic products                |
|                                 | 28   | Fabricated metal products                  |
| Low energy-intensive            | 16   | Tobacco products                           |
|                                 | 29   | Machinery and equipment n.e.c.             |
|                                 | 30   | Office, accounting and computing machinery |
|                                 | 31   | Electrical machinery and apparatus n.e.c.  |
|                                 | 32   | Radio, TV and communication equipment      |
|                                 | 33   | Medical, precision and optical instruments |
|                                 | 34   | Motor vehicles, trailers and semi-trailers |
|                                 | 35   | Other transport equipment                  |
|                                 | 36   | Furniture and other manufacturing n.e.c.   |
|                                 | 37   | Recycling                                  |

Graph: Own calculations based on UNIDO statistics (2010) and WDI (2014)  
Table from UNIDO's Compilation of Energy Statistics for Economic Analysis (2010)

If electricity generation is not expanded at a rate that will meet peak demand, electricity could easily become the binding constraint to growth in the future.

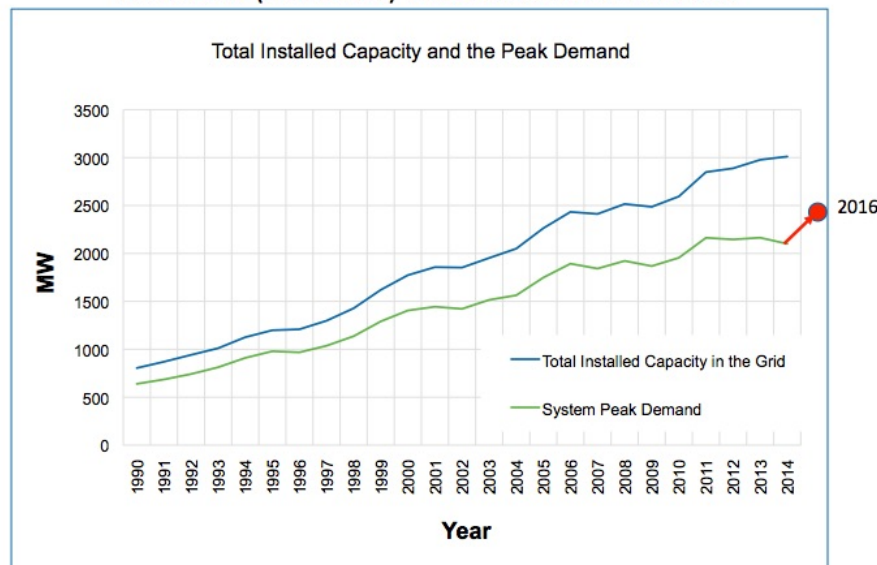
- As of April 2016, none of the new major power plants scheduled to be in operation between 2016 and 2020 according to the CEB Long Term Generation Expansion Plan were under construction.
- In September 2016, the Government of Sri Lanka made a decision to cancel the planned 500 MW Sampur coal-fired power station in Trincomalee, which was long envisioned to provide low-cost base load power. The environmental impact assessment for the project was being challenged in the Supreme Court.
- Electricity demand will continue to increase over the several next decades, with the rate of increase contingent on the rate of GDP growth and the energy-intensity of GDP growth.
- New renewable energy supply is envisioned to meet a large share of new energy demand in the coming decades and LNG has been proposed to replace new coal in the short-to-medium-term.

GDP growth will continue to drive growth in demand for electricity, but the rate at which that growth will continue is not entirely clear.

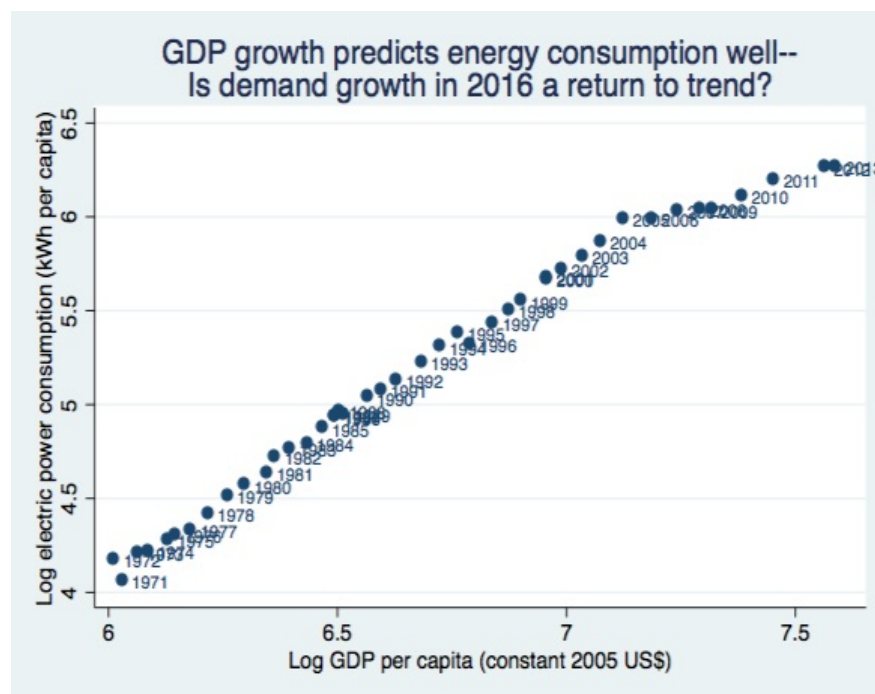
RMA Energy Consultants: Demand growth in 2016 was high in part due to unusually high temperatures, but the economy is generally less energy-intensive recently thanks to services growth.

Growth in Peak Demand had Slowed Down,  
but picked-up in 2016:

Embedded (renewable) Generation Serves a Portion

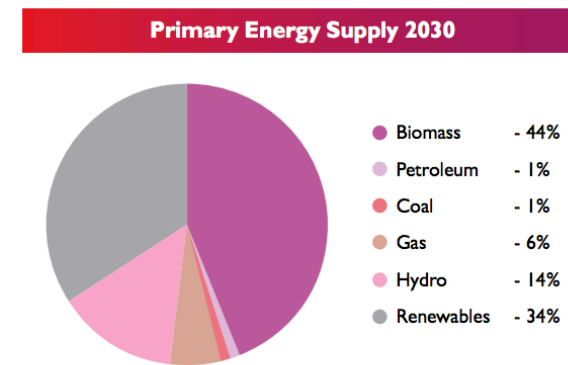
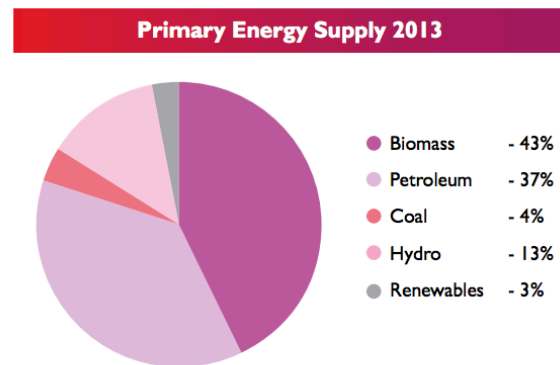
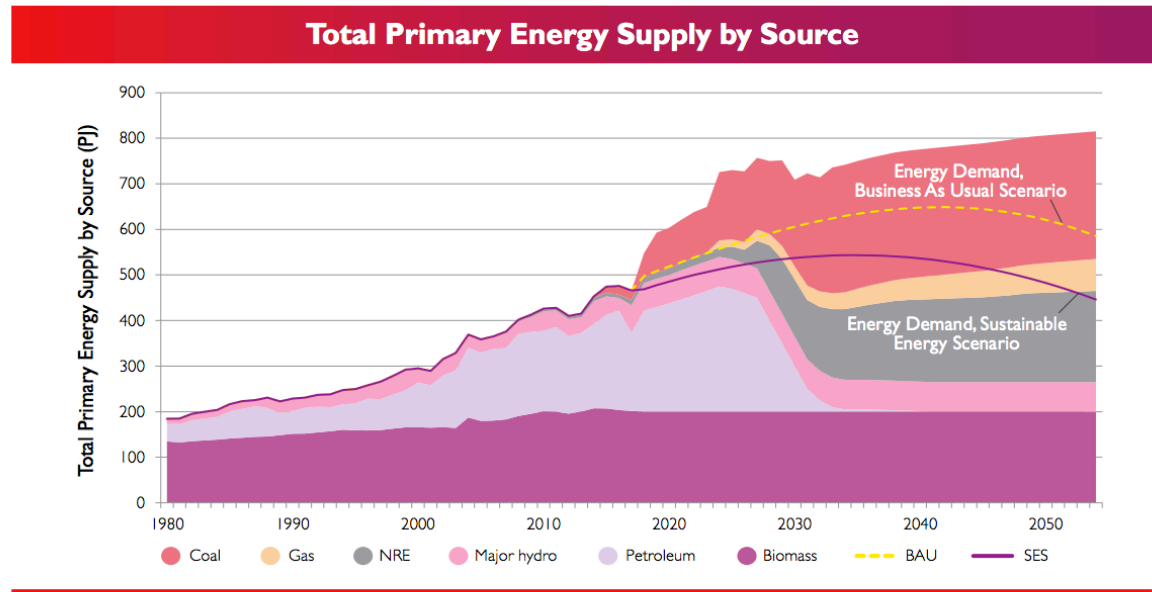


Source: RMA Energy Consultants



Source: WDI

The Ministry of Power and Energy's plan published prior to the recent cancelation of the Sampur Power Station envisioned new coal power to meet peak demand.



Source: Ministry of Power and Energy, "Sri Lanka Energy Sector Development Plan for a Knowledge-based Economy, 2015-2025" 105



# Electricity: Summary

**Main Conclusion:** Electricity is not a binding constraint for firms at this time but could become binding in the future if supply is not increased fast enough to keep pace with growing electricity demand. Some industries may be constrained by access to electricity in the quantity or of the quality required, but the evidence is mixed on the scale of this constraint.

## **Evidence:**

***Benchmarking quantity:*** Power consumption per capita is very low, but system losses are not particularly high. Firms cited electricity as a constraint a bit above expectation given Sri Lanka's level of income as of 2011, but the occurrence of outages and use of generators were relatively low. The losses from power outages were reported as somewhat high in 2011 but outages had reached very low levels as of 2015. Recent outages have revealed that weaknesses in the grid remain. Firms interviewed had some complaints about voltage fluctuations.

***Price:*** Electricity prices paid by industrial firms are comparable to comparator countries but prices are high for commercial customers. Unlike for water, underlying scarcity of supply does not appear to be a major problem in Export Processing Zones.

***Changes vs. changes:*** Past occurrences of heavy load shedding correlate with sharp slowdowns in growth, but load shedding has not been common in recent years (until October 2016).

***Bypassing the constraint:*** Generator access is high but usage is not.

***Camels and hippos:*** Within Sri Lanka, more electricity-intensive industries do not appear to be at a disadvantage versus less electricity-intensive industries. However, international comparisons show that Sri Lankan manufacturing is very concentrated in moderate energy-intensity industries.

**Other Issues:** Concerns have been voiced by planners and members of government that the recent cancellation of the Sampur coal power plant project poses a serious threat to adequate supply moving forward. Some projections show a major reliance on new coal power for the future. The Ministry of Power and Energy's own energy sector development plan included coal as a less dominant but still critical part of the plan for the future. Regionally, electricity access is much lower in the Northern Province.

# TRANSPORTATION

Research on this constraint was led by the  
Millennium Challenge Corporation (MCC)

# Transportation: Summary

**Main Conclusion:** There are significant weaknesses in transportation infrastructure and planning that keep some people and regions disconnected from the growth process. Transportation is at minimum a major constraint to more inclusive growth across regions and may be a binding constraint to export diversification and export-oriented investment overall since land availability is limited in areas that are well-connected to Colombo. Sri Lanka faces an acute problem with increasing congestion in and between cities. The evidence suggests that these weaknesses are increasingly affecting economic activity in the Western region and prospects for economic expansion in other regions of the country. There are indications that specific transportation infrastructure might be binding for specific regions of the country. Further research is required to test for these region-specific constraints.

## **Evidence:**

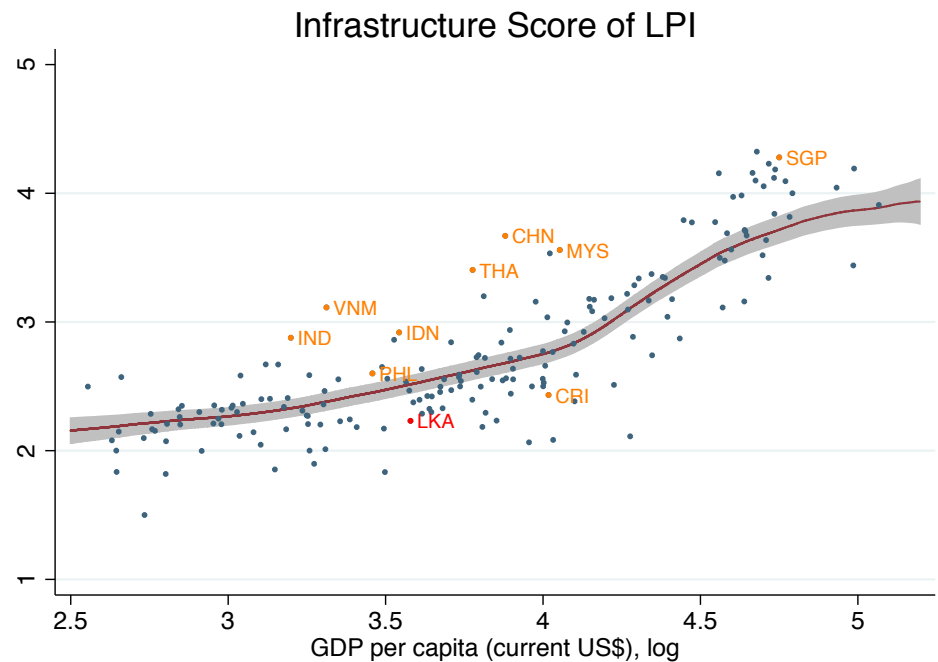
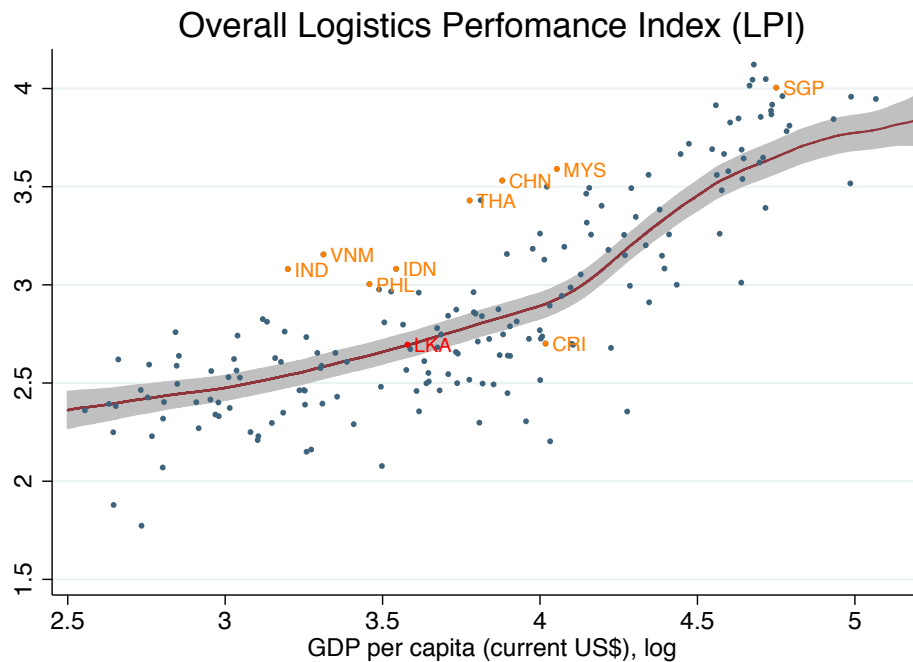
***Benchmarking quantity:*** Overall logistics performance appears to be adequate but the quality of infrastructure is below average. The national road network is extensive but the provision of expressways is relatively low. Congestion is a major problem in the largest urban areas, and most firms are dependent upon logistics centers in and around Colombo. Rail infrastructure is outdated and limited, especially for the transport of goods. Firms did not report transportation as their biggest obstacle at a high rate in 2011.

***Price:*** The costs to import/export from Sri Lanka appear to be low, driven in part by the short distances between points in the country. However, travel speeds are slow to major economic hubs and logistics centers.

***Changes vs. changes:*** The opening of the Southern Expressway coincides with a drop in outward migration for foreign employment from the impacted area. However, there are no signals that the expressway has lifted a constraint to new exports or export-oriented FDI in that area.

***Bypassing the constraint:*** Industrial zone occupancy has a tight relationship with connectivity to Colombo. This is likely the result of closer locations providing easier access to port services and/or agglomeration externalities in the Western Province.

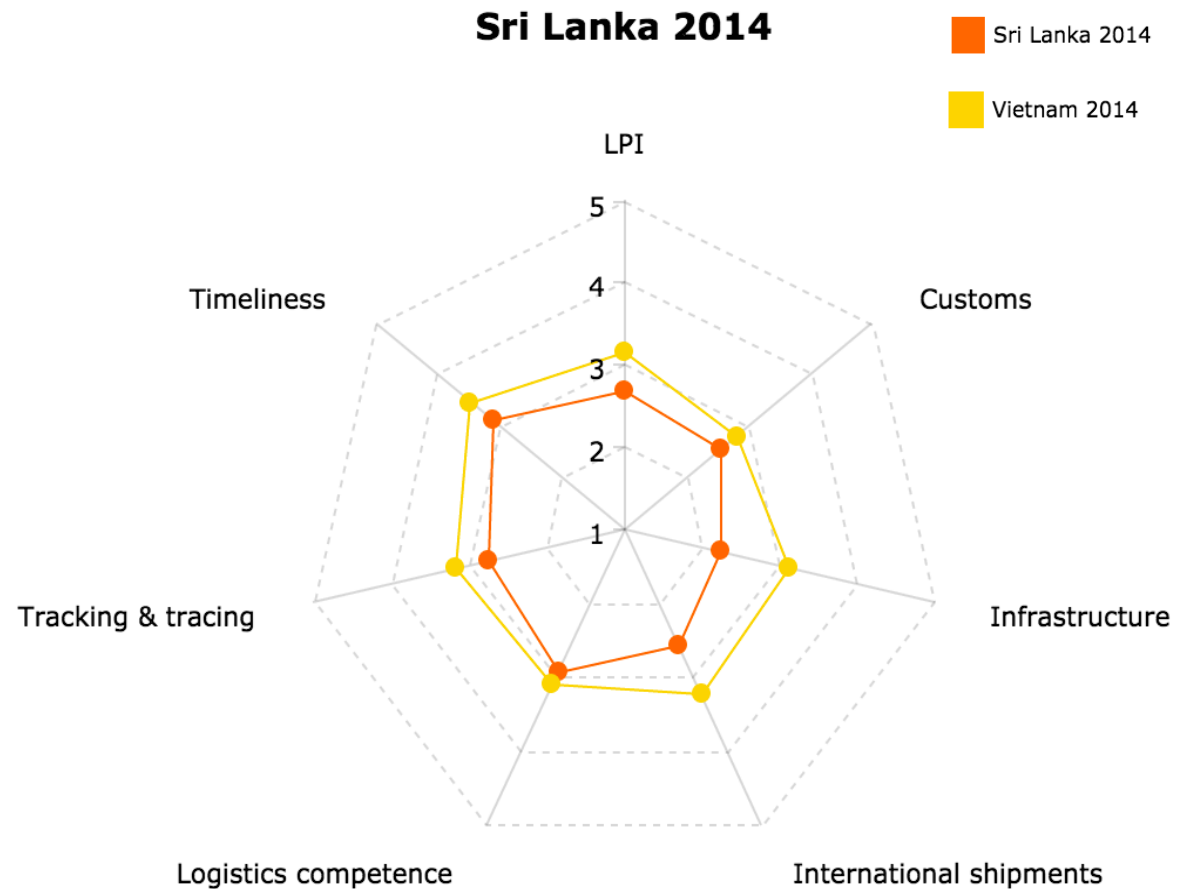
Overall LPI is viewed as fair but Sri Lanka's score for infrastructure is low. The comparator countries tend to excel on these measures.



Data source: World Bank Logistics Performance Index (2014); WDI

Note: Scores are based on survey responses by logistics operators and range from 1=low to 5=high. The infrastructure score refers to the quality of trade and transport-related infrastructure (e.g. ports, railroads, roads, information technology).

In 2014, Vietnam was the top LPI performer in Sri Lanka's income group. The biggest gap between the two countries was in the quality of infrastructure.



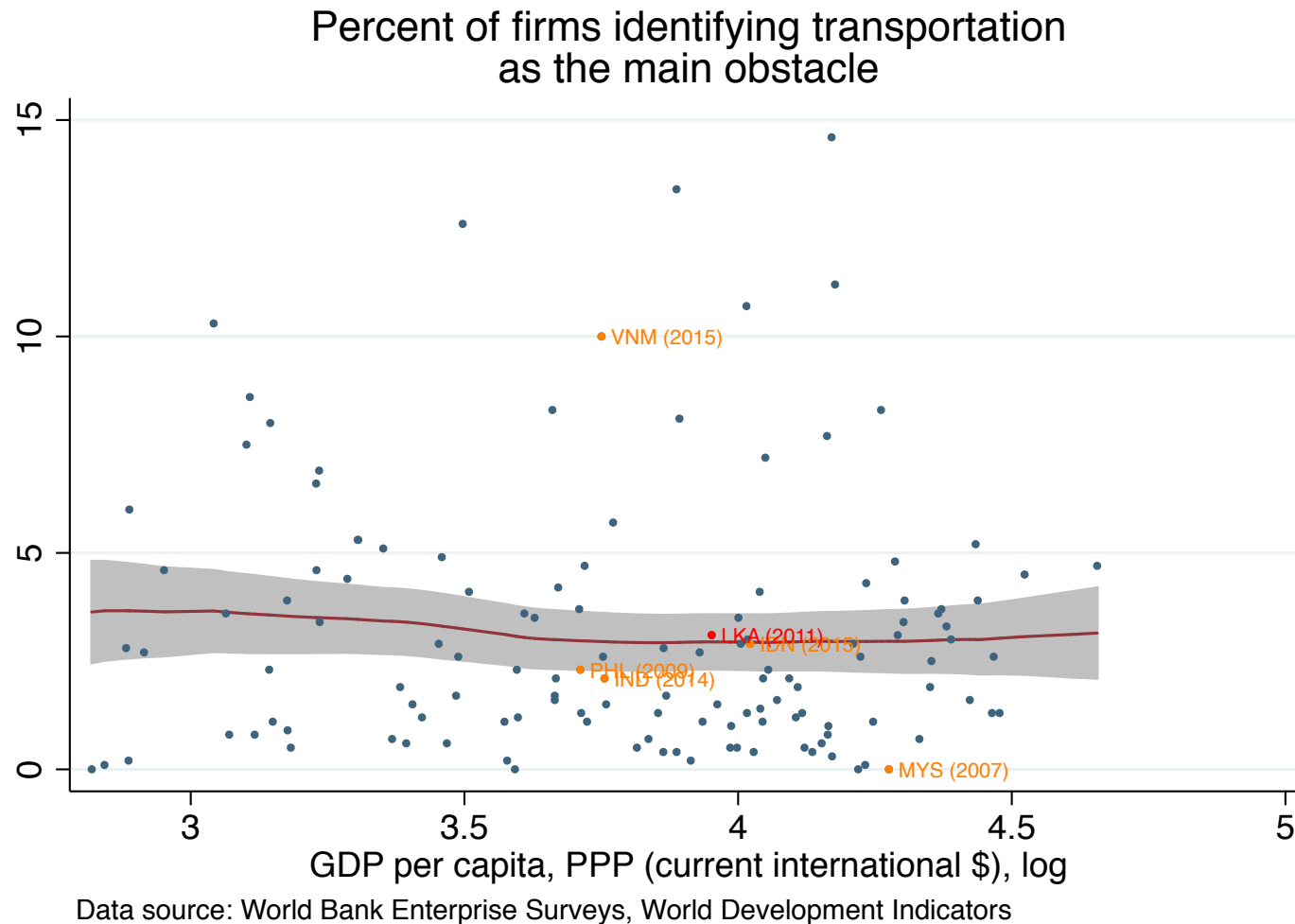
However, Sri Lanka performs much better than other lower middle income countries on measures of cost to import and export.

\* Sri Lanka's geography gives it an advantage due to generally short distances to port or airport. But these advantages might also reflect very concentrated production in the Western Province.

|  | Sri Lanka      | Income: Lower middle income |
|--|----------------|-----------------------------|
| <b>Export time and cost / Port or airport supply chain</b> |                |                             |
| Distance (kilometers)                                      | 53km           | 753km                       |
| Lead time (days)   | 2 days         | 3.4 days                    |
| <b>Cost (US\$)</b>   | <b>579US\$</b> | <b>1626US\$</b>             |
| <b>Export time and cost / Land supply chain</b>            |                |                             |
| Distance (kilometers)                                      | 61km           | 708km                       |
| Lead time (days)   | 1 days         | 4.4 days                    |
| <b>Cost (US\$)</b>   | <b>391US\$</b> | <b>1780US\$</b>             |
| <b>Import time and cost / Port or airport supply chain</b> |                |                             |
| Distance (kilometers)                                      | 64km           | 881km                       |
| Lead time (days)   | 2 days         | 4 days                      |
| <b>Cost (US\$)</b>   | <b>662US\$</b> | <b>1838US\$</b>             |
| <b>Import time and cost / Land supply chain</b>            |                |                             |
| Distance (kilometers)                                      | 33km           | 701km                       |
| Lead time (days)   | 1 days         | 4.6 days                    |
| <b>Cost (US\$)</b>   | <b>433US\$</b> | <b>2003US\$</b>             |
| Shipments meeting quality criteria (%)                     | 76.16%         | 71.35%                      |
| Number of agencies - exports                               | 4              | 4                           |
| Number of agencies - imports                               | 4              | 4.2                         |
| Number of documents - exports                              | 3              | 3.8                         |
| Number of documents - imports                              | 4              | 4.5                         |
| Clearance time without physical inspection (days)          | 1 days         | 2 days                      |
| Clearance time with physical inspection (days)             | 3 days         | 3.4 days                    |
| Physical inspection (%)                                    | 48.67%         | 33.34%                      |
| Multiple inspection (%)                                    | 4.51%          | 7.11%                       |

Source: World Bank LPI, 2014

As of 2011, firms did not report transportation as their main obstacle at high rates. Surprisingly, firms say that Vietnam still needs improvement in this area.



But experts in Sri Lanka have concluded that expansion of transport infrastructure and improved planning are needed to sustain growth. In particular, a scarcity of alternatives to private vehicles puts pressure on the road network and adds to congestion.

Kumarage (2012): Projections and an opinion survey of stakeholders and sector experts agree that “current and planned transport sector infrastructure capacity is not adequate to sustain an 8% growth rate.” The report details widespread issues (including outdated rail infrastructure, need of rehabilitation of the road network, inefficient public transport, limited domestic air transport, and concentrated logistics centers).

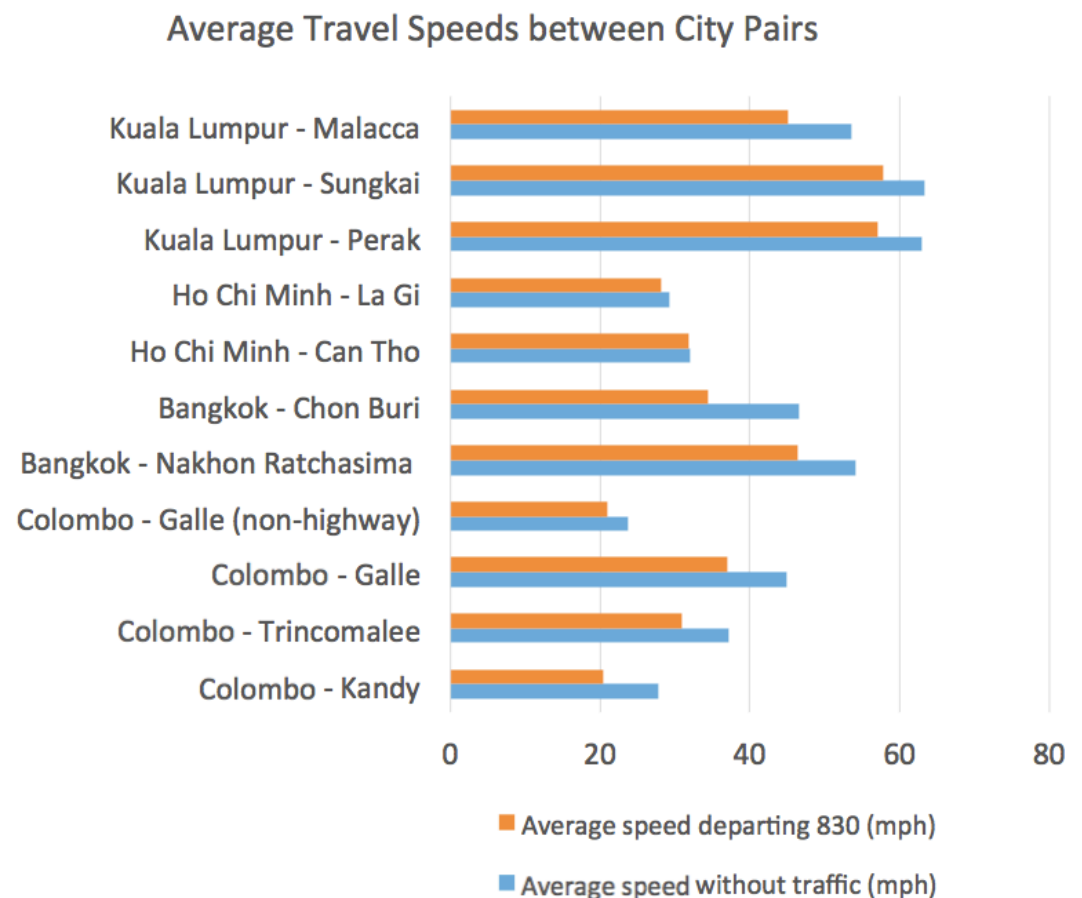
The report highlights weaknesses in both **infrastructure** and **institutions** responsible for planning: “The large number of institutions and the lack of a mechanism for coordination of planning activities for transport has created an environment in which each agency plans and manages its own network. Budget allocations are also made without an overall policy or investment strategy.”

Source: Kumarage, A.S.. Sri Lanka Transport Sector Policy Note. World Bank, Sri Lanka, 5 May 2012. <<https://kumarage.wordpress.com/2012/03/18/2012-r-01-tp-kumarage-a-s-sri-lanka-transport-sector-policy-note-world-bank-111pp/>>



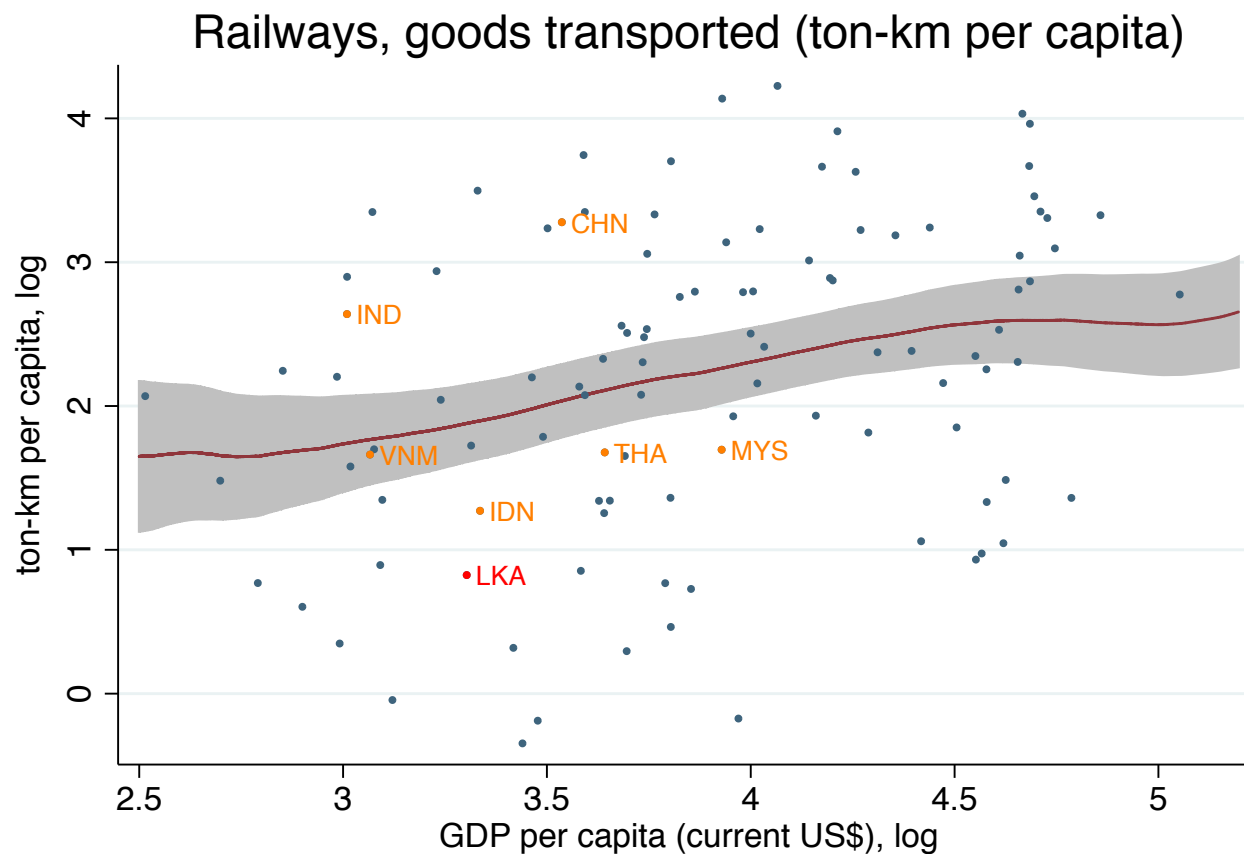
Sri Lanka has a high density of roads, but few of these roads are “national roads” or expressways. Travel times on major routes exceed higher-end comparators.

Long travel times and slow travel speeds reflect the problem of congestion of roads in Sri Lanka, which is acute in the Western Province. The problem extends for firms in other parts of the country because logistics centers, including Sri Lanka’s primary port, are focused in and around Colombo.



Source: Travel speeds calculated based on Google Maps travel times in 2016. 114

# The use of rail infrastructure for freight transport is less than expected and below that of comparator countries.

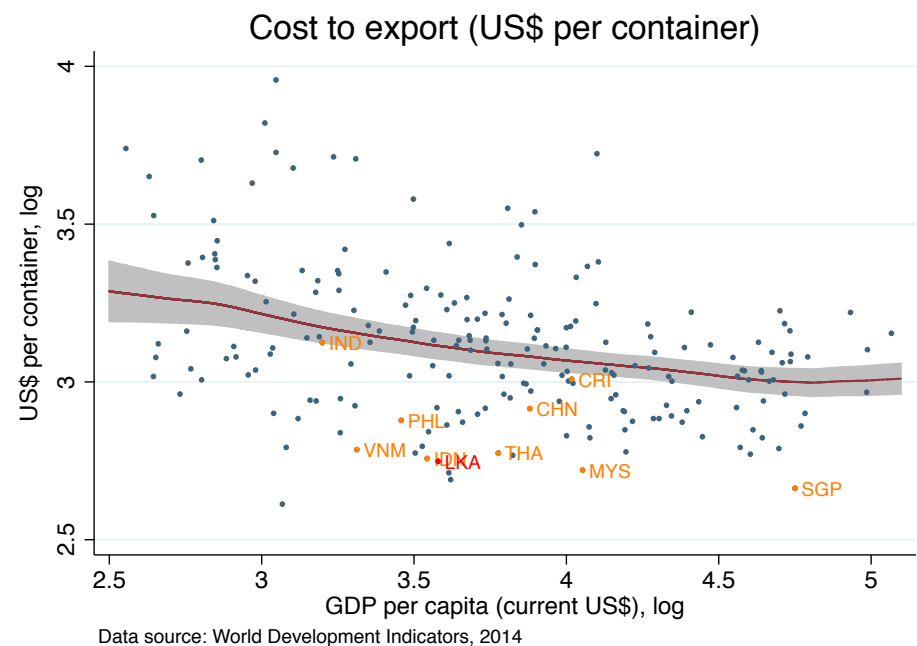
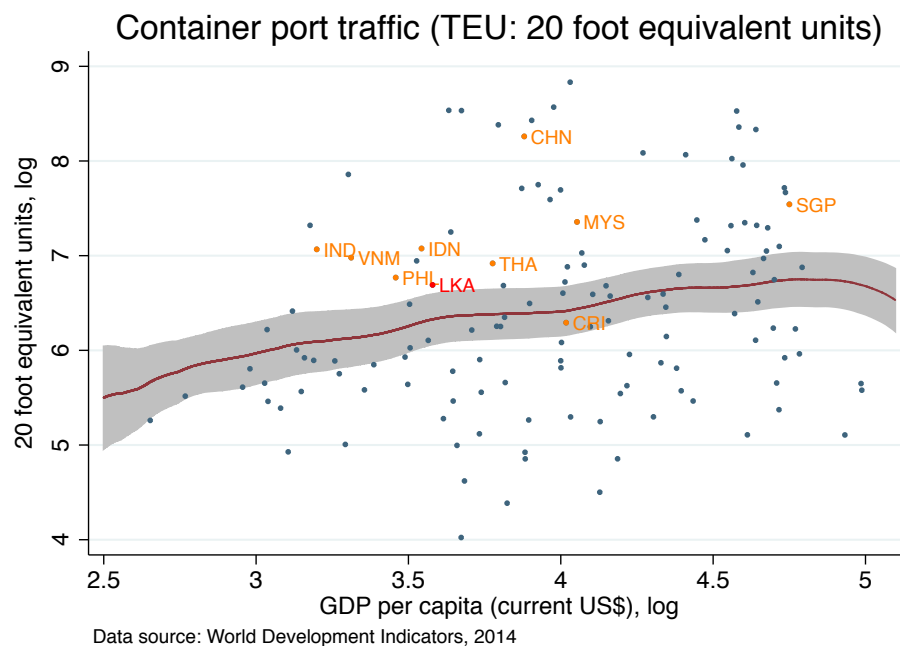


Data source: World Development Indicators, 2008

Kumarage (2012):  
The modal share of railways in Sri Lanka was 4% of passenger transport (10% in the Colombo Metropolitan Region) and only 2% of freight transport in 2011.

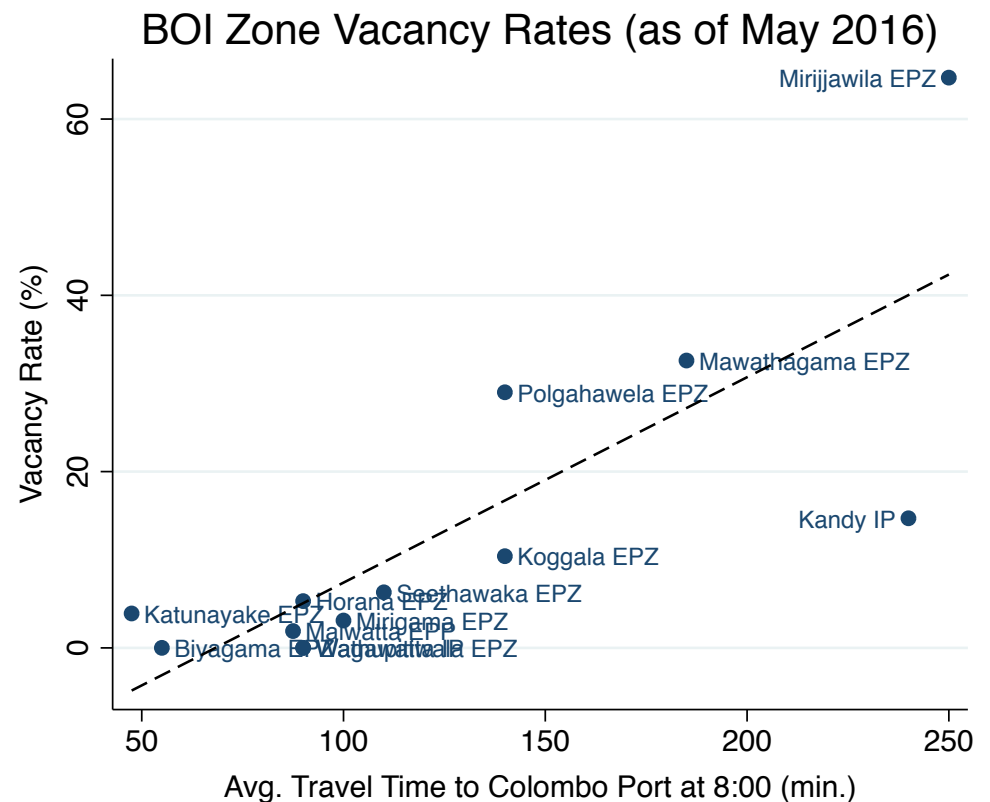
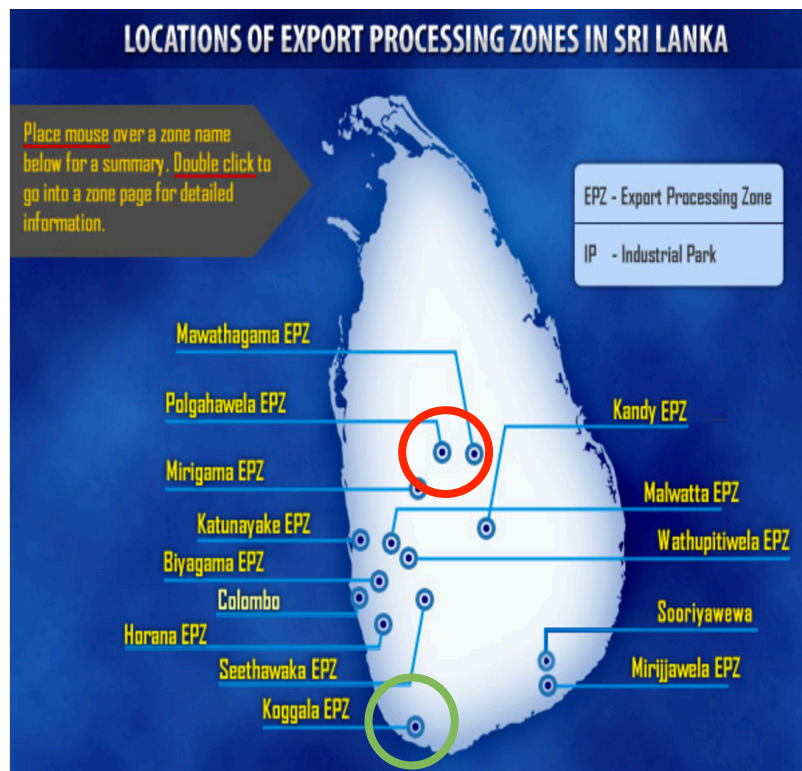
# Indicators of container port traffic and cost per container show strong performance.

The Colombo Port houses several different container terminals and expansions are planned. Meanwhile, the new port in Hambantota reportedly receives little traffic.<sup>1</sup>



<sup>1</sup> See Forbes "Sri Lanka's Hambantota Port And The World's Emptiest Airport Go To The Chinese," 28 Oct. 2016

BOI zone occupancy is correlated with travel times to Colombo. Polgahawela and Mawathagama EPZs are actually closer than Koggala EPZ, but Koggala has much faster easier access via the new Southern Expressway.



*Vacancy rates calculated as vacant land area / industrial land area for each zone.  
Source: Zone data provided by BOI and travel times based on Google Maps*

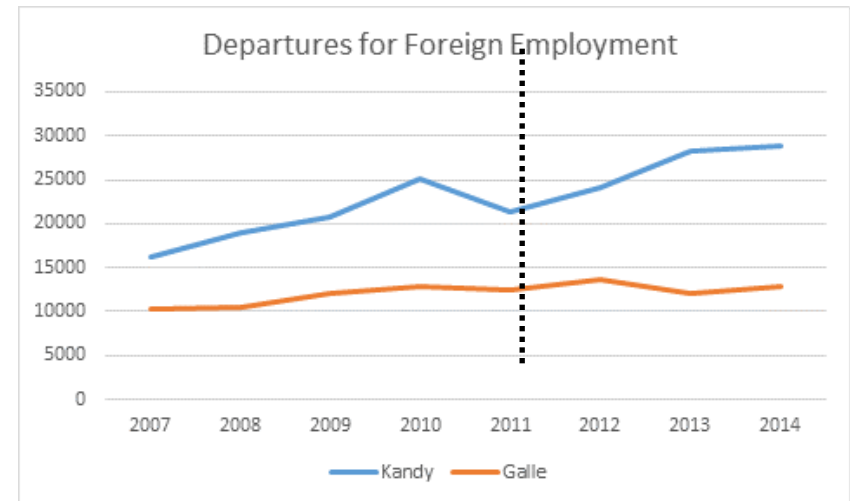
The Southern Expressway provides a useful natural experiment to see if a change in road infrastructure produced a change in exports and export-oriented FDI.

- Construction of the first section from Colombo to Galle was completed in 2011.
- The next section from Galle to Matara was completed in 2014.
- Construction of the final planned section connecting Matara to Hambantota was initiated in 2015.
- *Has the expressway lifted a binding constraint to export diversification in the Southern Province?*



The evidence suggests that the Southern Expressway may have brought important benefits but that it did not lift a binding constraint to exports & FDI.

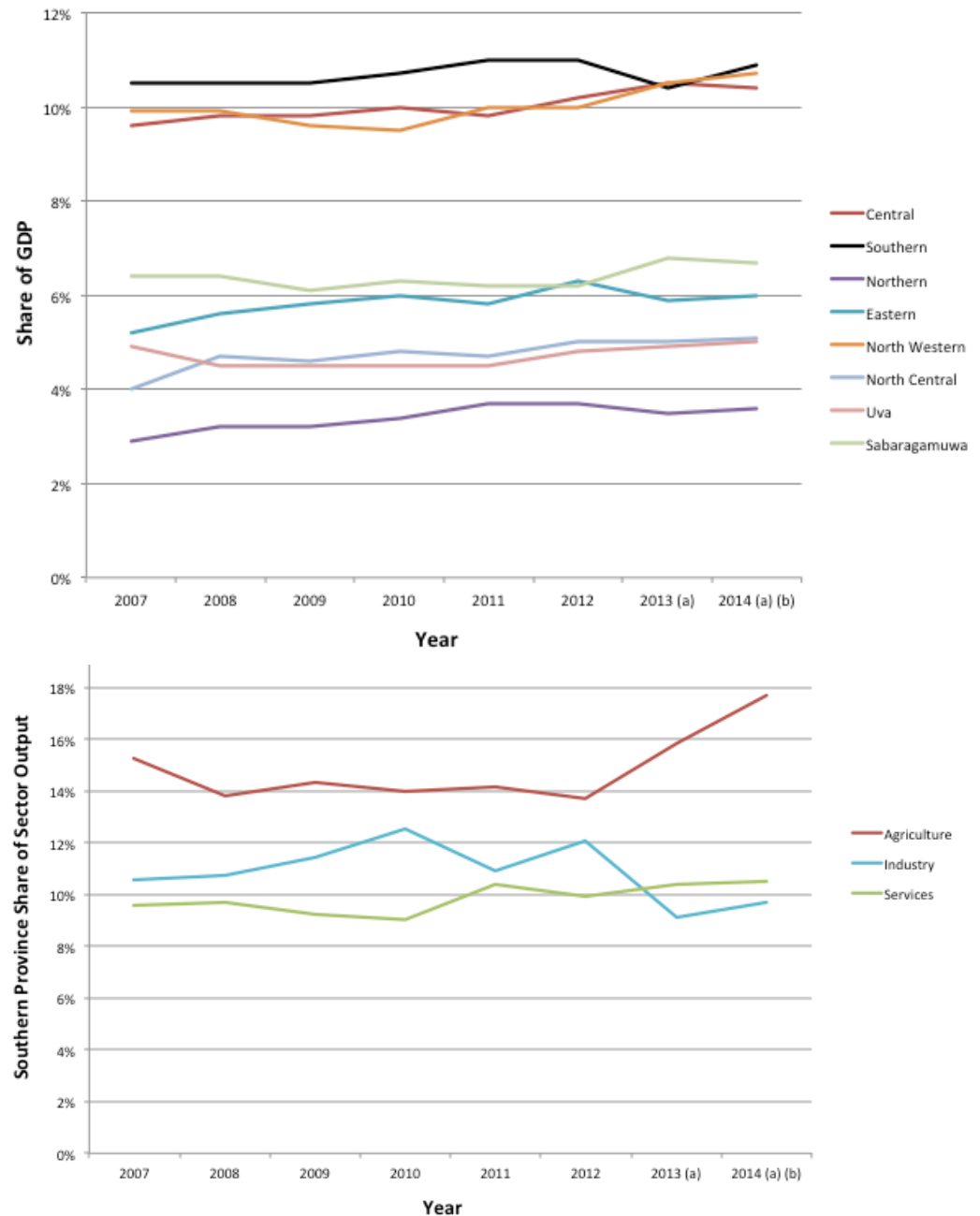
- There are indications that the expressway coincided with reduced outward migration for foreign employment in Galle and the Southern Province as a whole versus other parts of the country.
- The graphs shown isolate a comparison against Kandy and the Central Province. The Central and Southern Provinces have similar populations, population densities and shares of national GDP.



Source: Sri Lanka Bureau of Foreign Employment

However, there are no signals of stronger growth and diversification.

- Growth in the Southern Province has not outpaced national GDP growth.
- The Southern Province has seen comparatively strong growth in agriculture/fisheries but comparatively weak growth in industry.
- Industrial diversification in Galle has been limited (see appendix for details).



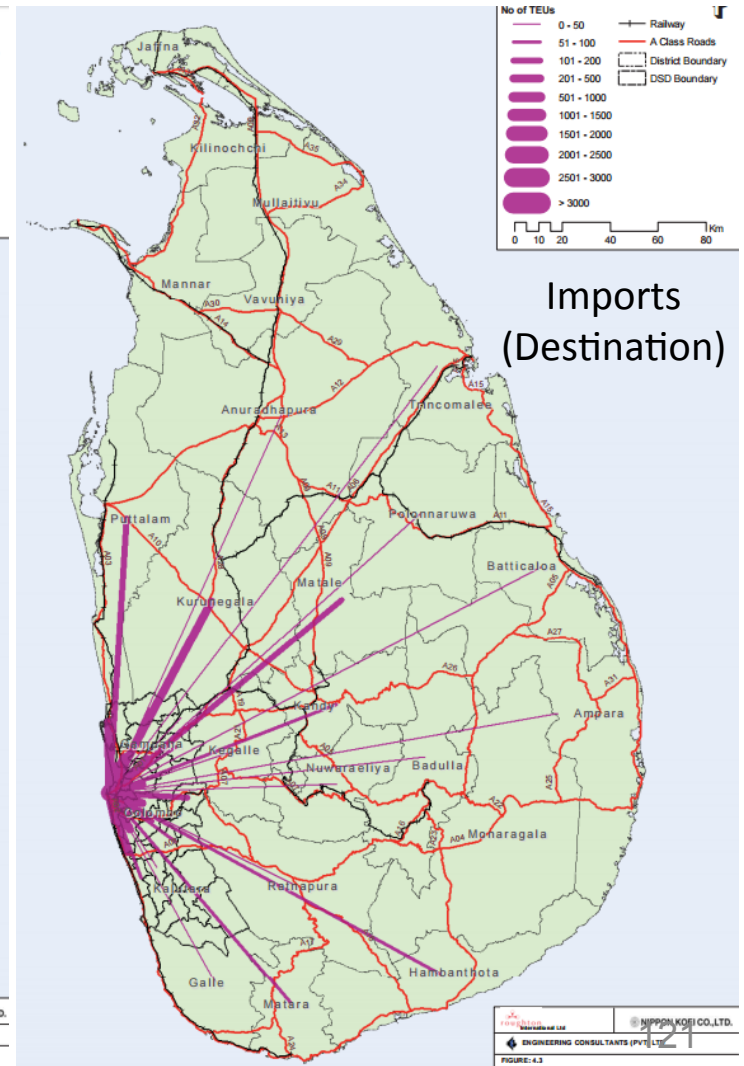
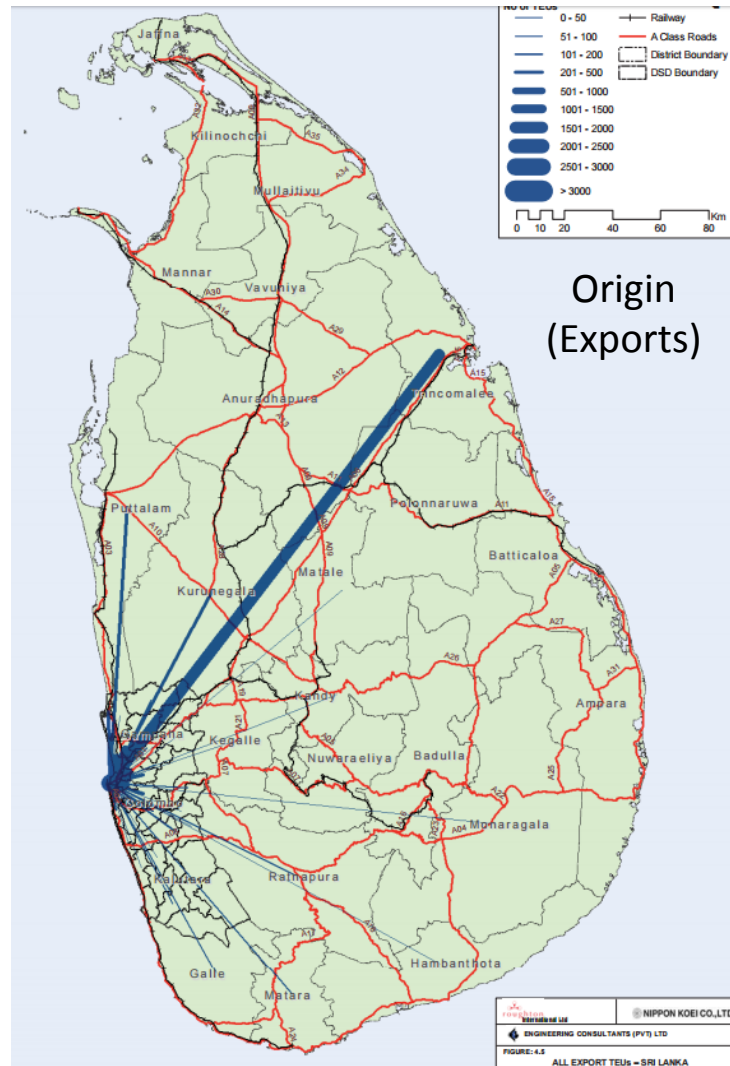
Notes: (a) GDP measures for 2013 & 2014 are calculated based on new GDP (base year 2010, updated from 2002); (b) Provisional estimates. Source: Central Bank of Sri Lanka



# Regional Considerations: Ports

## Origin/Destination of Trucks Entering/Leaving the Colombo Port (June 2011)

Data on goods travel to and from the Colombo Port suggest that the nation may have a critical need for new port infrastructure in Trincomalee.



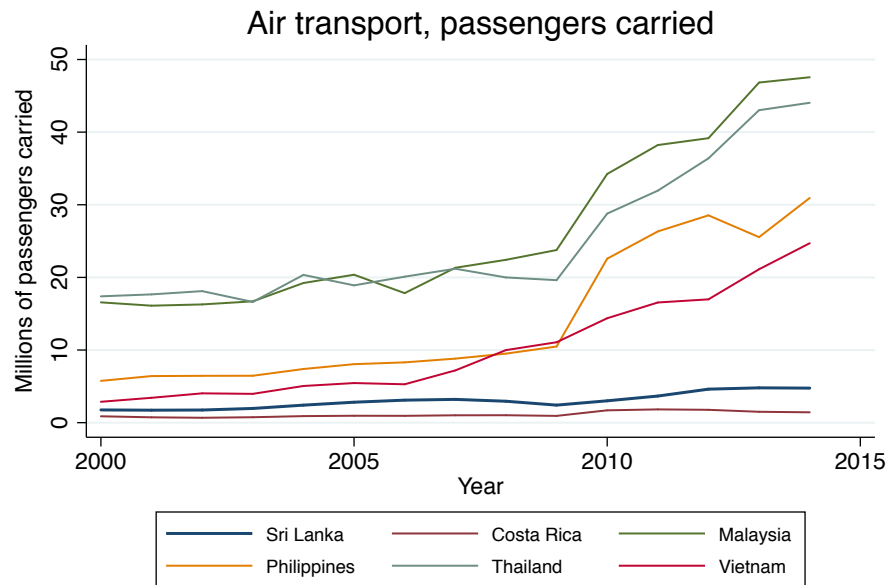
Source: ADB Multimodal Transport Project Report, June 2012



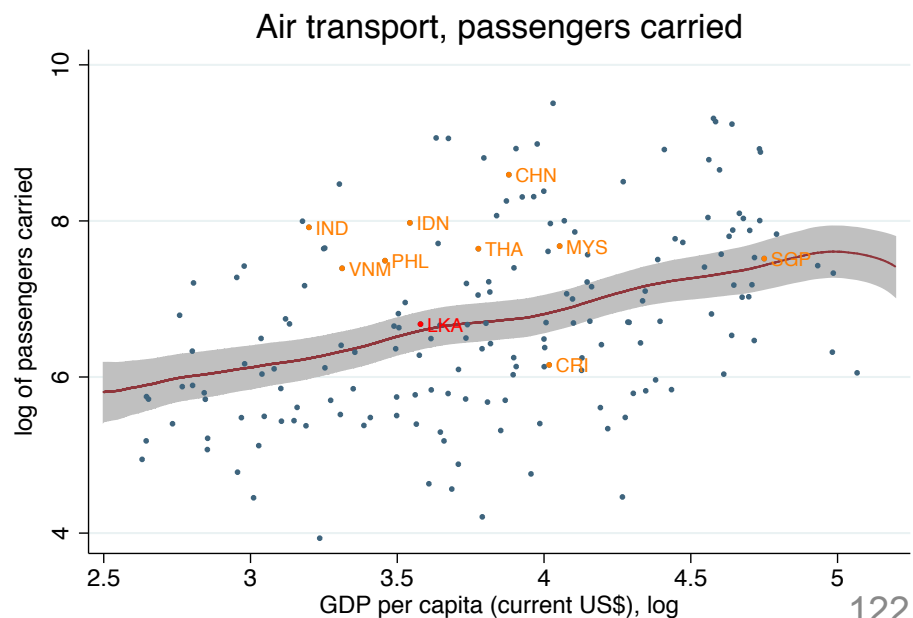
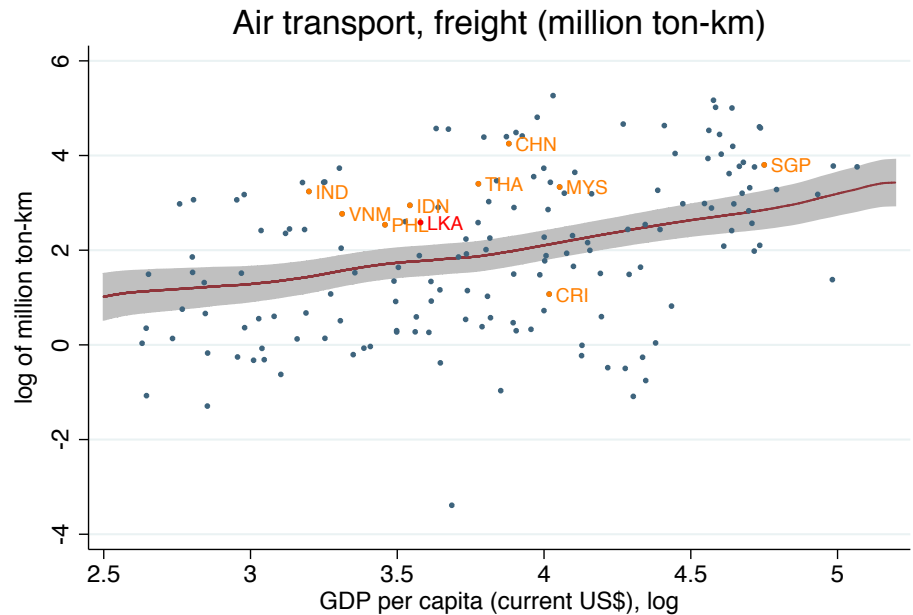
# Airports

Overall air travel quantity is high but infrastructure and services will likely need to increase to support tourism growth.

Air service is currently limited to/from secondary cities in Sri Lanka, while it is not clear if the constraint is infrastructure or policy decisions on airline competition. This is an important, though not necessarily binding constraint to stronger tourism growth in East and North of the country.



Data source: World Development Indicators



Data source: World Development Indicators, 2014

# Transportation: Summary

**Main Conclusion:** There are significant weaknesses in transportation infrastructure and planning that keep some people and regions disconnected from the growth process. Transportation is at minimum a major constraint to more inclusive growth across regions and may be a binding constraint to export diversification and export-oriented investment overall since land availability is limited in areas that are well-connected to Colombo. Sri Lanka faces an acute problem with increasing congestion in and between cities. The evidence suggests that these weaknesses are increasingly affecting economic activity in the Western region and prospects for economic expansion in other regions of the country. There are indications that specific transportation infrastructure might be binding for specific regions of the country. Further research is required to test for these region-specific constraints.

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# **GOVERNMENT FAILURES**

Access to Land, Labor Regulations, Policy Uncertainty  
(esp. Tax and Trade Policy), Macro-fiscal Stability

# **ACCESS TO LAND**

# Access to Land: Summary

**Main Conclusion:** Access to land is a binding constraint to growth and economic transformation. State coordination is insufficient to meet demand for land for new private sector investment, including for new, export-oriented investment. This constraint is likely most problematic in the Western Province, although there are some mixed signals on this. Small land parcels, the absence of land titles and longstanding laws affecting rural land use all reduce agricultural productivity and rural well-being, but these constraints are not binding the growth of exports and export-oriented investment.

## **Evidence:**

***Benchmarking quantity:*** Enterprise Survey data suggest that land access is a constraint, particularly for small and medium-sized firms. Land is primarily state-owned (~80% of land) and governed by a disconnected institutional structure and a complex legal environment. In 2016 alone, there have been a number of reports of lost or stalled high-profile FDI projects due to land disputes with the government. Doing Business Indicators are consistent with a very low quality of land administration in Sri Lanka.

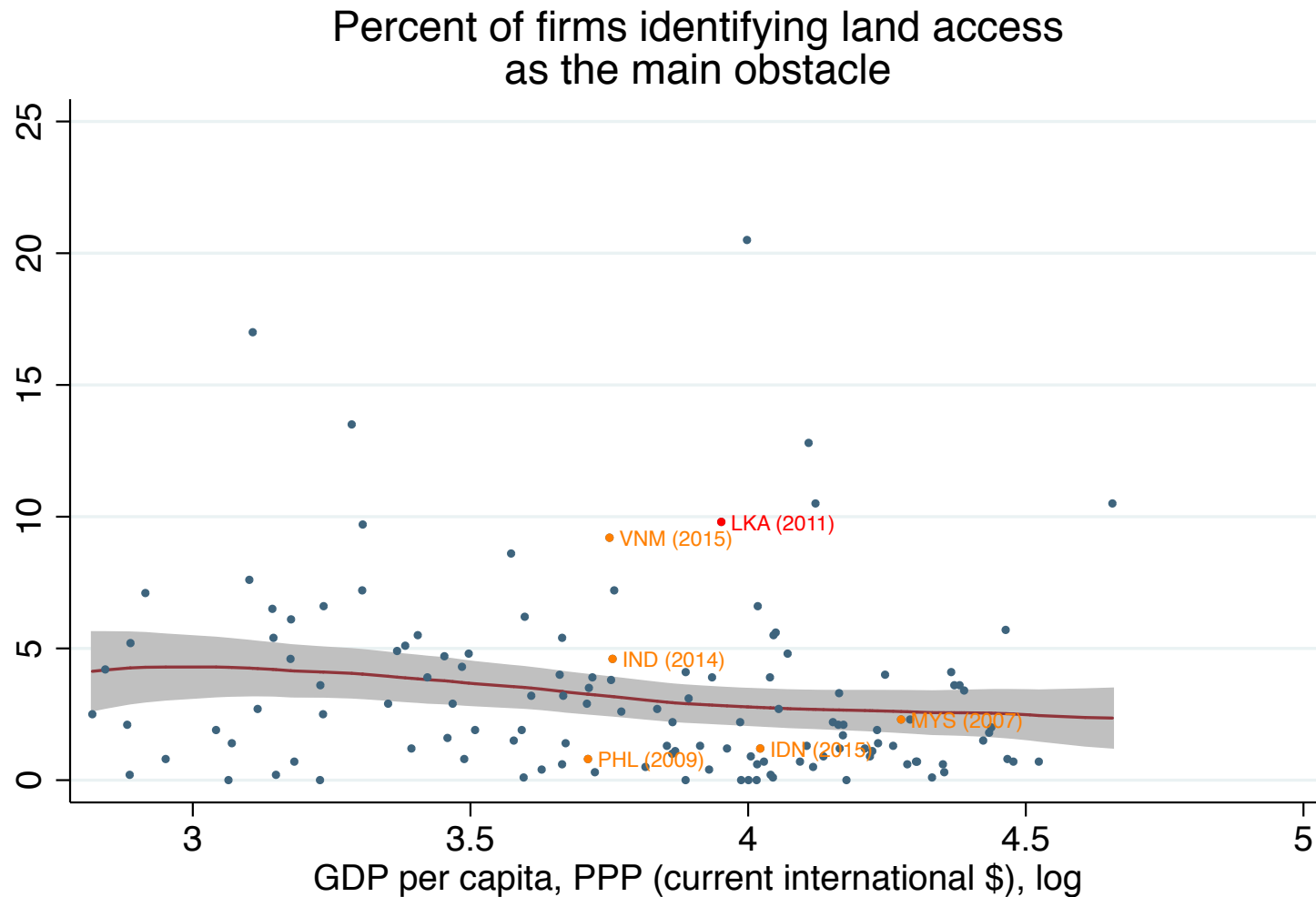
***Price:*** Available land price information is limited but suggests that the price of land in Sri Lanka is high overall with rapidly increasing prices in the Western Province. However, high land prices are not passed on as high rents for commercial space or industrial space (at least within BOI zones).

***Changes vs. changes:*** One recent legal change limiting foreign land ownership and another allowing for a series of government expropriations preceded a drop in FDI.

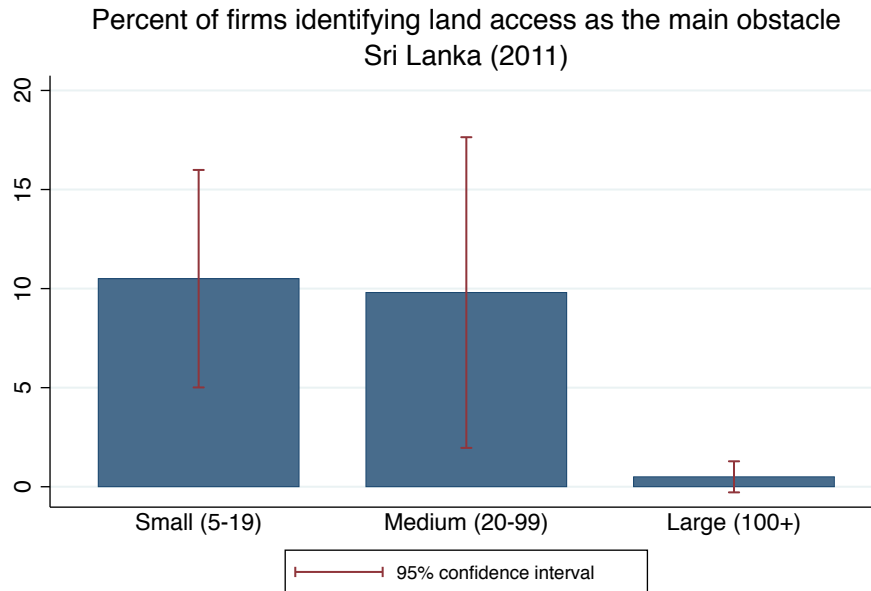
***Bypassing the constraint:*** A large share of exports and most export innovation has occurred in a few Export Processing Zones, primarily in the Western Province, that are generally at capacity. Both firms and BOI reported that clarity of land access in these zones continues to be a draw for investment. Analysis of BOI data supports this view. Outside of the zones, middlemen are commonly used in land deals due to a lack of information on go and no-go lands. Some firms reported that they remain informal because of an inability to secure formal land approvals. Legal restrictions on plot size are long-standing, and the agricultural sector has evolved under this constraint, including through the use of community planning and aggregating companies.

***Camels and hippos:*** Past drivers of export growth have had mixed land-intensity: plantation crops (high) vs. garments (fairly low). Emerging growth drivers also appear mixed: tourism (fairly high) vs. financial services (low).

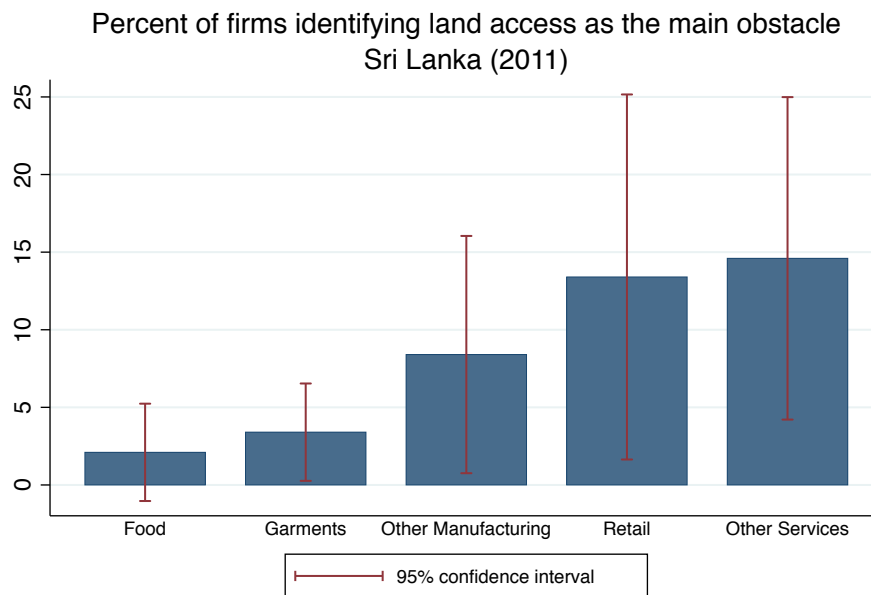
As of 2011, Enterprise Survey data show that a high rate of firms in Sri Lanka report access to land as their main obstacle compared to regional comparators and countries overall.



Data source: World Bank Enterprise Surveys, World Development Indicators



Data source: World Bank Enterprise Surveys

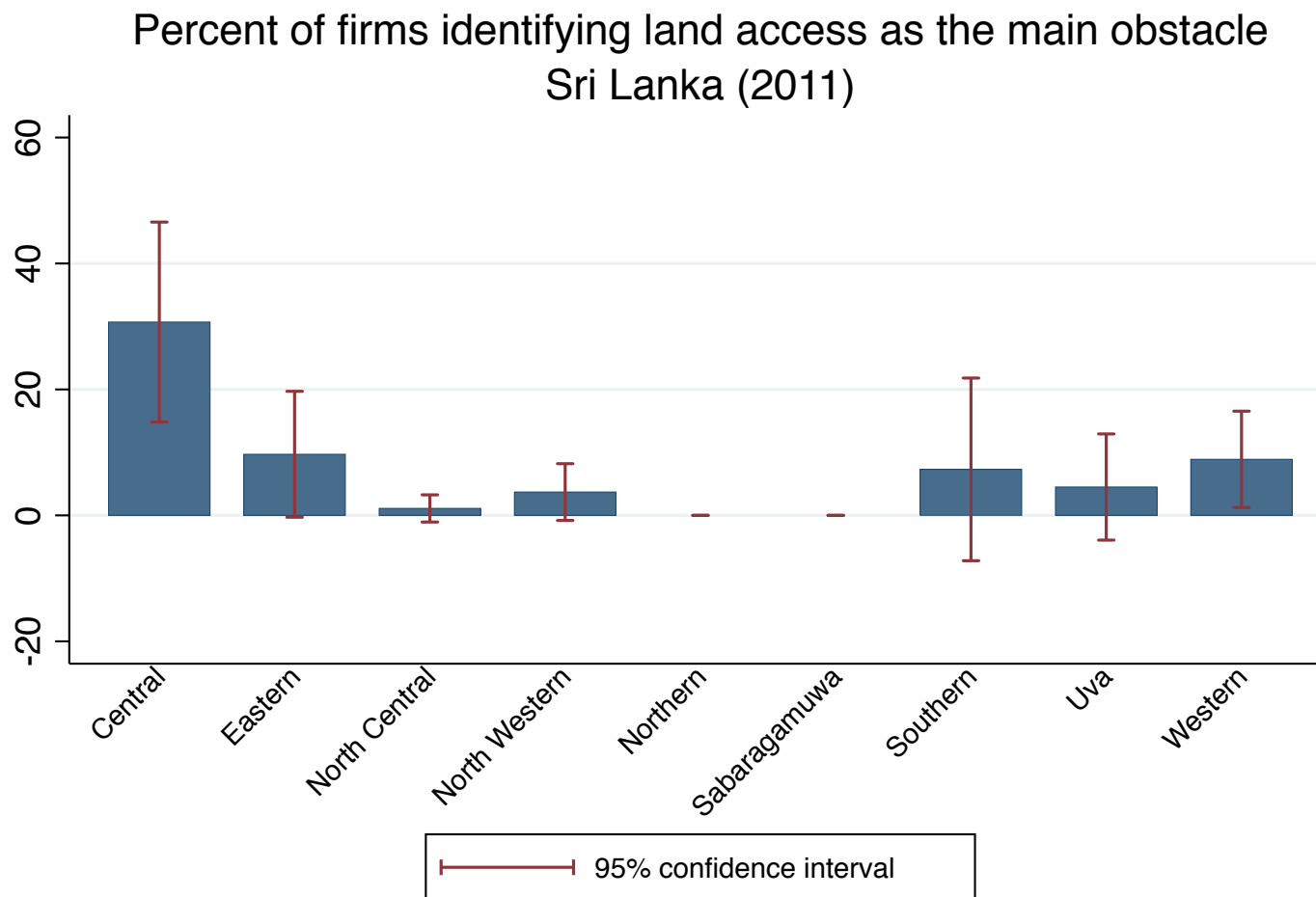


Data source: World Bank Enterprise Surveys

This trend appears to be driven by “small” and “medium”-sized enterprises, which include those up to 100 employees.

It is less of a problem for more established manufacturing sectors (food and garments) but the sample size does not allow for precise estimates for other sectors.

The Central Province stands out as the region where the constraint was most often reported by firms, followed by the Eastern, Western and Southern Provinces, although confidence intervals are wide.



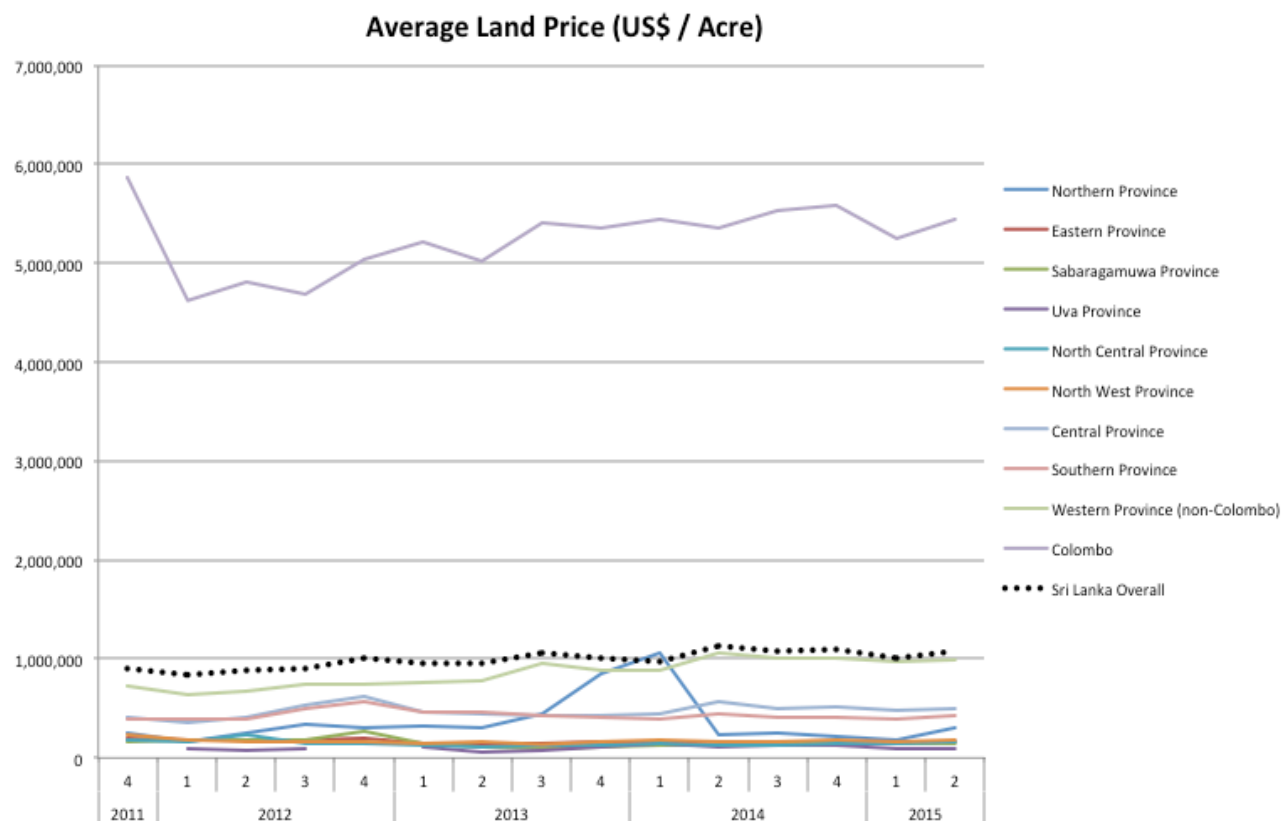
Data source: World Bank Enterprise Surveys



Official government data was only provided for a subset of DS divisions within Colombo District, whereas publicly available price data is available from real estate company websites.

Colombo has by far the highest average land price, which is to be expected.

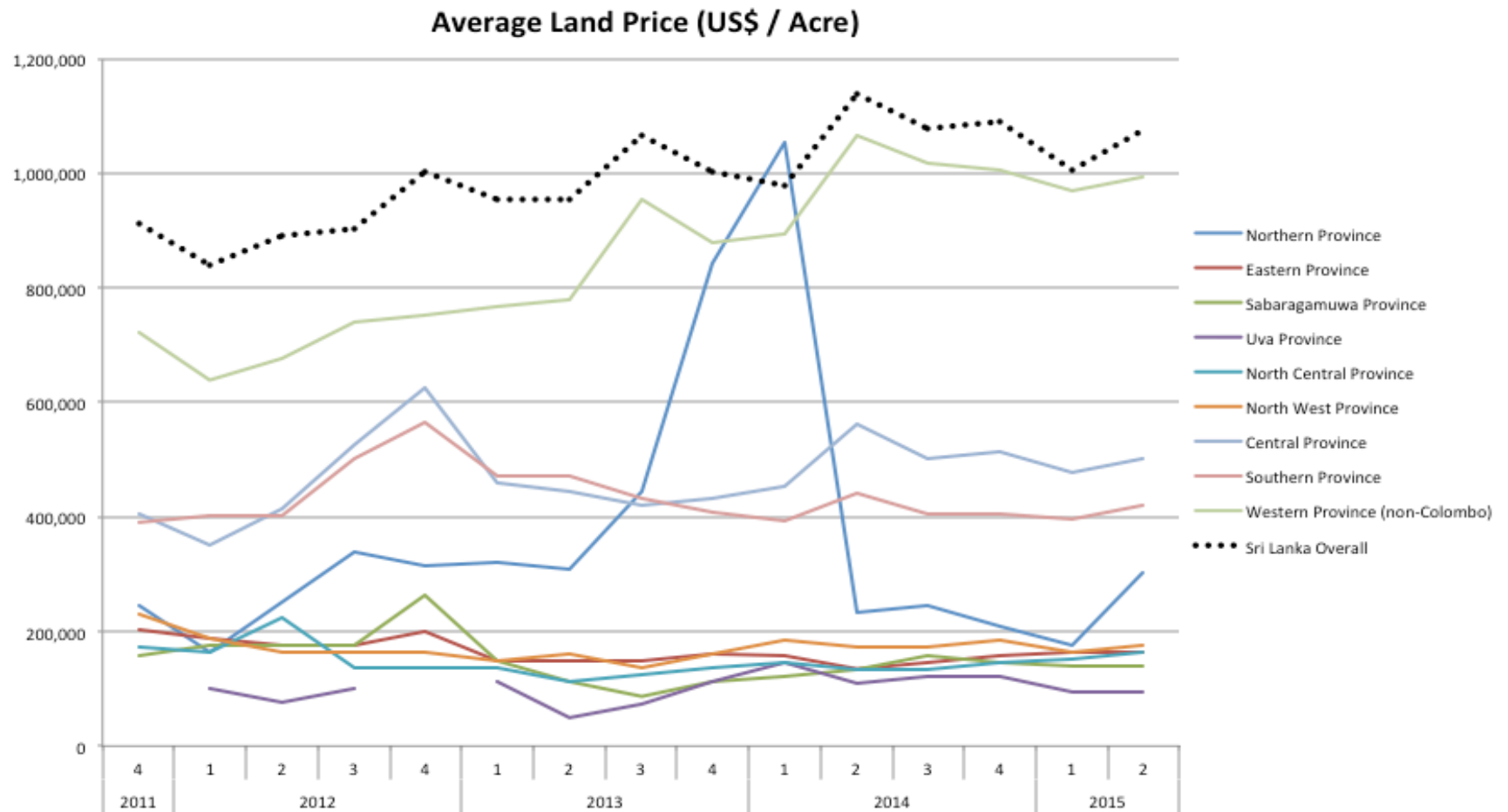
The prices suggested by the data are very high. Compare with recent estimates of US land values<sup>1</sup> – where the most expensive state (New Jersey) has an estimated value of about \$200,000 per acre, and Washington, D.C. has a value of \$1,050,000 per acre.



*Data source: Average price by quarter from [lankapropertyweb.com](http://lankapropertyweb.com), in current USD. Note: The real estate data appears to be reliable for two reasons: The real estate data for Colombo yields prices that fall within the range of government estimates (provided by the Valuation Department for commercial land); and quarterly averages are consistent (or show consistent trends) in data (except for the Northern Province)*

<sup>1</sup> William Larson. "New Estimates of Value of Land of the United States," U.S. Dept. of Commerce, Bureau of Economic Analysis. April 3, 2015 130

Outside of Colombo, land prices in Sri Lanka appear to be very high, led by the Western Province and followed by the Central and Southern Provinces. Prices have been increasing rapidly in the Western Province.

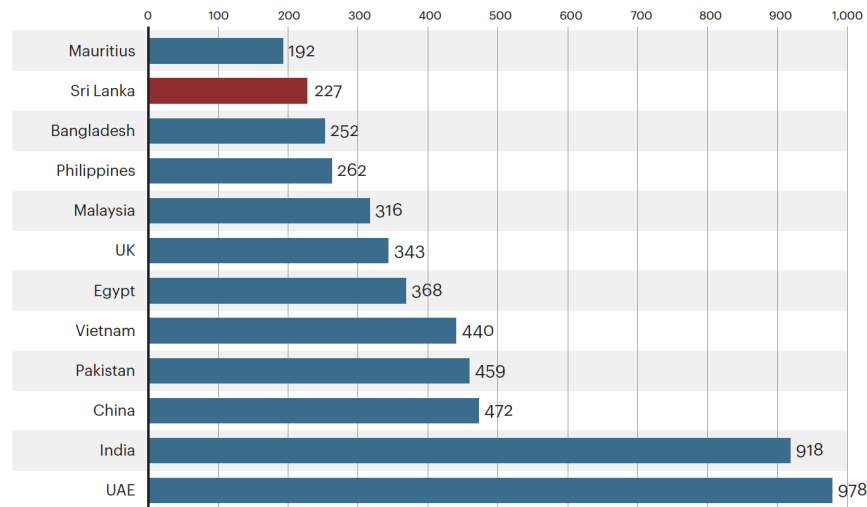


Data source: Average price by quarter from [lankapropertyweb.com](http://lankapropertyweb.com), in current USD

However, any high land prices in Colombo are not passed on in the form of high rents for commercial space.

Multiple international comparisons show that Colombo's commercial space remains inexpensive versus the majority of comparator cities.

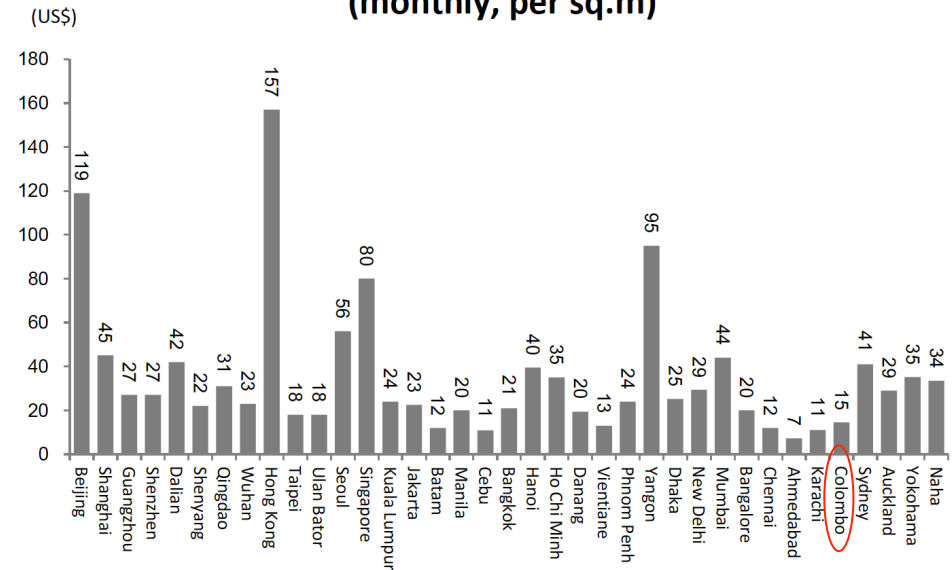
**Cost of class A real estate in major commercial city's main business district**  
(\$ per square meter)



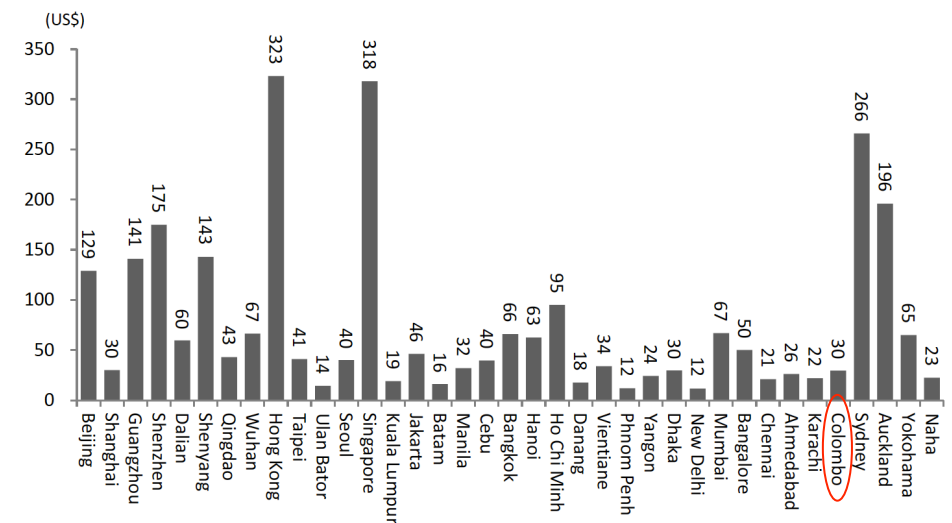
Sources: CB Richard Ellis 2011; A.T. Kearney analysis

Source: A.T. Kearney: Competitive Benchmarking: Sri Lanka Knowledge Services, 2012

**Office rent**  
(monthly, per sq.m)



**Store/showroom rent in the city center**  
(monthly, per sq.m)



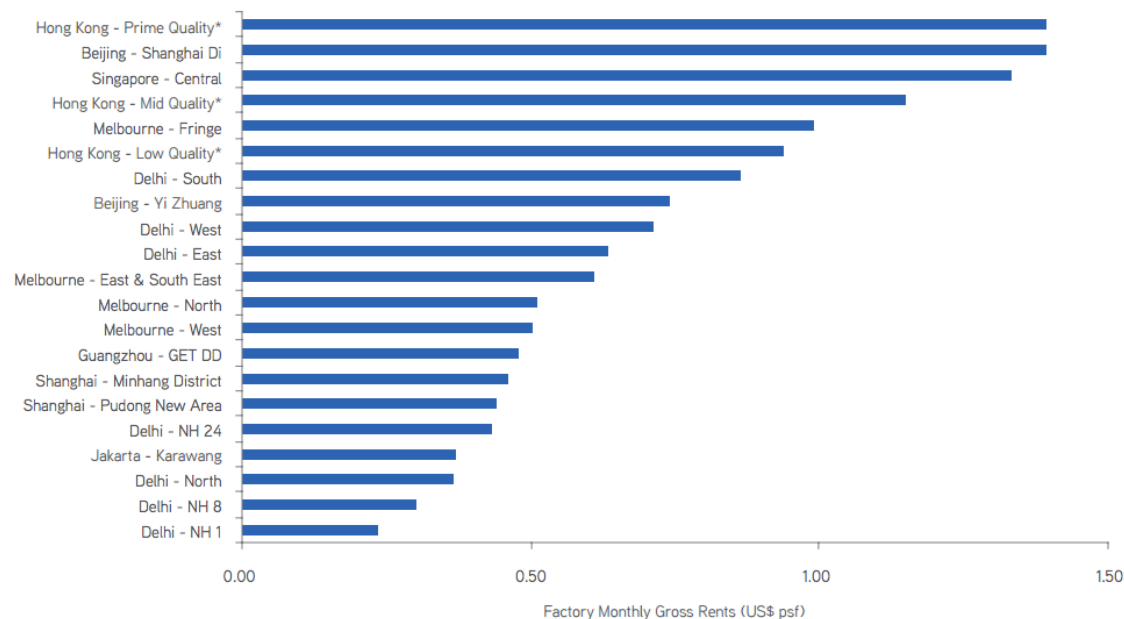
Source: JETRO Overseas Research Department, 2012 Survey Data

# Rent for industrial land (at least within BOI zones) is also fairly inexpensive, but international comparisons are limited.

According to rent charges listed on the BOI website, combined monthly rent for land and factory space in BOI zones ranges between \$0.05 and \$0.62 per square foot, with the large zones of Katunayake and Biyagama around \$0.35 per square foot.<sup>1</sup>

## INTERNATIONAL COMPARISON

INTERNATIONAL COMPARISON OF FACTORY MONTHLY GROSS RENTS  
(MARCH 2012)

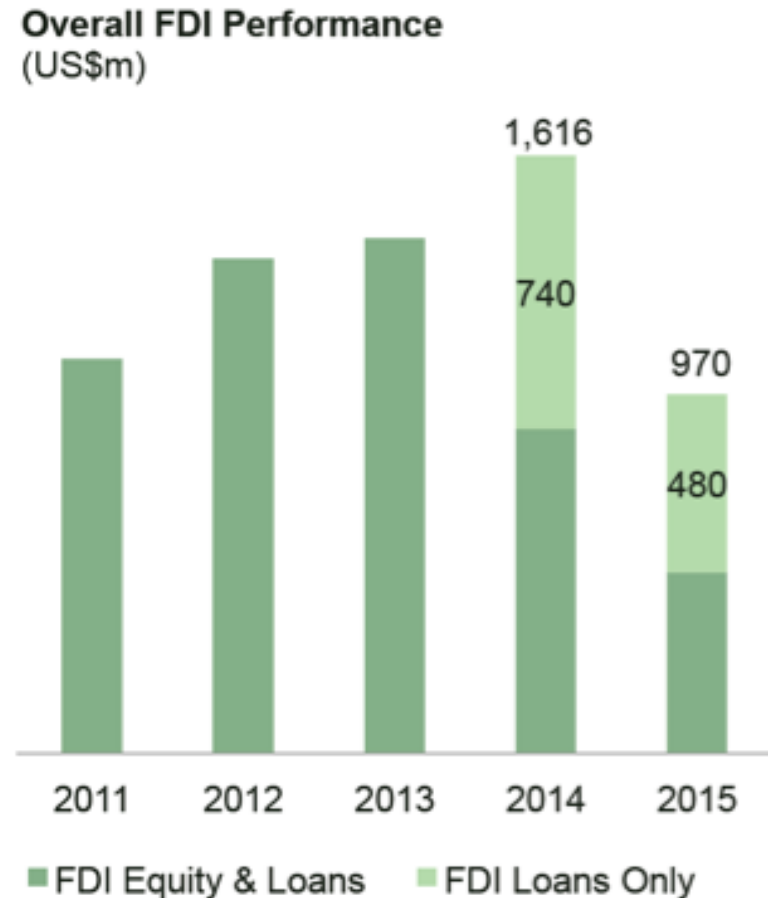


\* Values provided are for multi-user factory buildings

<sup>1</sup> Calculation based on combined ground rent and building and factory rent, including VAT. Calculation does not include upfront land premiums, which range from \$0.28 to \$1.68 per square foot, including the reservation fee and VAT – or less than a year's rent for most zones. Land in zones is leased for up to 50 years.

# A recent set of legal changes affecting foreign land ownership coincided with a drop in FDI.

- The Land (Restrictions on Alienation) Act, No. 38 of 2014 was applied retroactively back to January 2013. The act prohibited the transfer of land to a foreigner, foreign company, or local company with more than 50 percent foreign ownership, with some exceptions (KPMG, August 2015). The act also stipulates that leases must be paid upfront by foreigners.
- This followed a series of government expropriations between 2011-2013 following the Underperforming Enterprises and Underutilized Assets Act of 2011.
- Interviews with firms and government representatives noted these legal changes as concerns for investors.



Source: BOI using Sri Lanka Customs and Central Bank data

Board of Investment economic zones are at or near capacity in the Western Province and clarity of land acquisition and land rights play a role in the high demand for zone space.

- Firm interviews suggest that one important reason why BOI Export Processing Zones (EPZs) are in high demand is the relative clarity of land approvals in the zones compared to outside of the zones. Investments in EPZs do not receive incentives above and beyond BOI-supported investments outside EPZs.
- Data on BOI zones show that vacancy rates are low in zones located in the Western Province (**bold** in the table) but are somewhat high in zones that are far from Colombo. This is consistent with the price data in suggesting that land is more of a constraint closer to Colombo.
- Using BOI administrative data, we find that businesses located in either EPZs or industrial parks take 100-131 days less than those outside of zones/parks to reach operations from the application date. Their survival rate is also much higher (789 days more on average). The results hold when controlling for a number of variables and fixed effects.

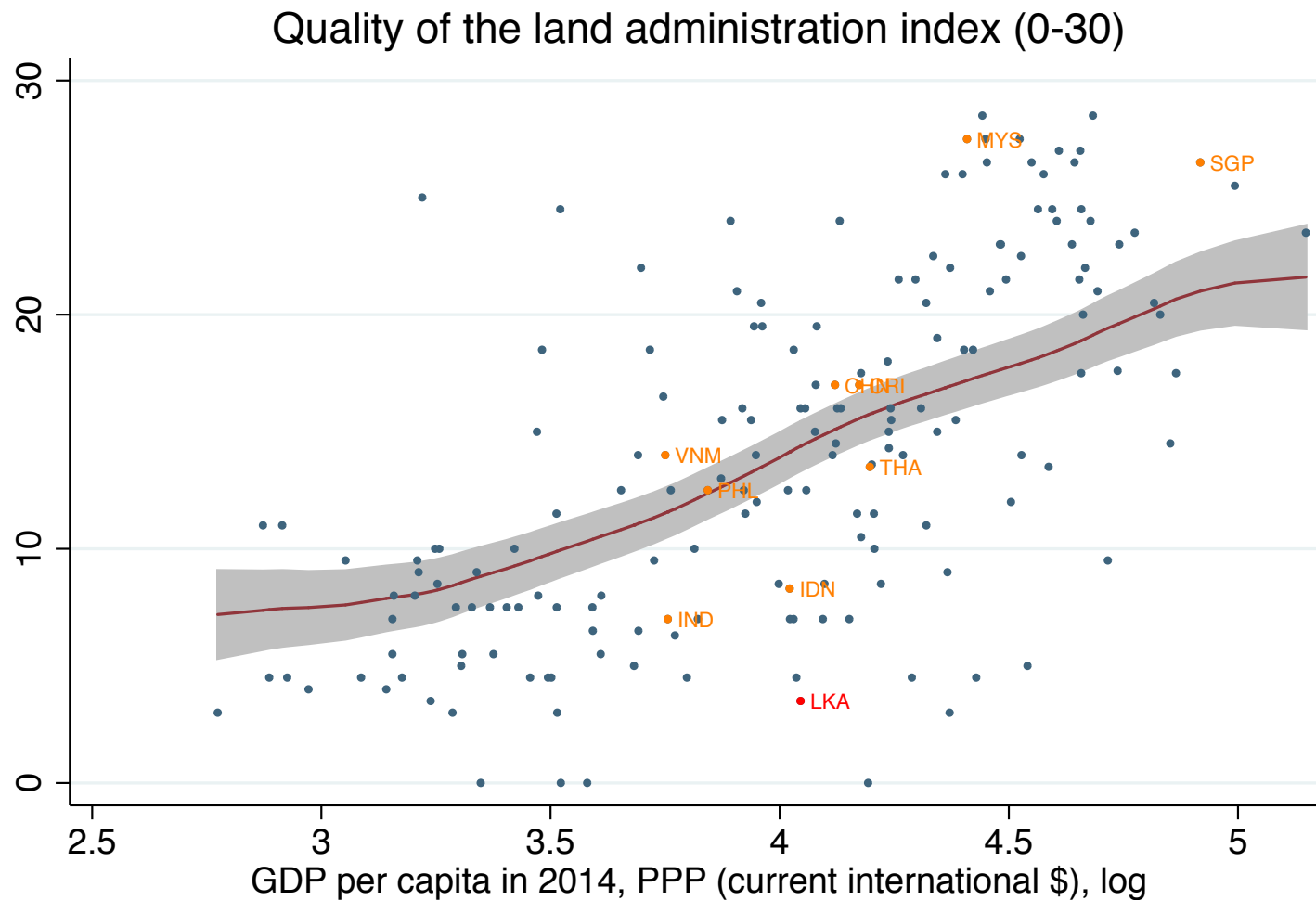
| EPZ/ IP           | Year of inauguration | Industrial Area (Acres) | No. of Industries in Commercial Operation | Distance from Colombo (Km) | Land Vacancy |
|-------------------|----------------------|-------------------------|---|----------------------------|--------------|
| Katunayake EPZ    | 1978                 | 306                     | 84  | 27-32                      | 3.9%         |
| Biyagama EPZ      | 1986                 | 256.19                  | 57  | 24                         | 0.0%         |
| Koggala EPZ       | 1991                 | 195                     | 22  | 132                        | 10.4%        |
| Kandy IP          | 1994                 | 81.5                    | 23  | 133                        | 14.7%        |
| Seethawaka EPZ    | 1999                 | 183.3                   | 27  | 47-57                      | 6.3%         |
| Mirigama EPZ      | 1998                 | 171.49                  | 9   | 65                         | 3.1%         |
| Malwatta EPP      | 1998                 | 26.41                   | 6   | 38                         | 1.9%         |
| Wathupitiwala EPZ | 1999                 | 66.34                   | 18  | 44                         | 0.0%         |
| Horana EPZ        | 1999                 | 180.22                  | 19  | 50                         | 5.3%         |
| Wagawatta IP      | 2004                 | 60.51                   | 6   | 50                         | 0.0%         |
| Polgahawela EPZ   | 2000                 | 39.65                   | 5   | 77                         | 29.0%        |
| Mawathagama EPZ   | 2000                 | 30.27                   | 7   | 108                        | 32.6%        |
| Mirijjawila EPZ   | 1999                 | 323                     | 5   | 235                        | 64.7%        |

Source: Table adapted using data provided by BOI.

## Other (suboptimal) methods that firms use to bypass the land constraint:

- Firm interviews and news reports show that middlemen are used in land deals due to a lack of information on land availability and processes for acquisition.
- There does not appear to be a widespread problem with informal construction on land due to poorly defined property rights. However, during interviews in the Northern Province, it was reported that some firms remain informal (operating without a license) because of an inability to secure formal land approvals.
- Agricultural production is affected by limited land size. Farmers make decisions within this constraint such as pooling resources and community decisions on planting and irrigation use on paddy lands (per discussions with faculty at the University of Peradeniya).

World Bank Doing Business Indicators for 2016 say that Sri Lanka's institutional quality in land administration is very low.



Data source: World Bank Doing Business Indicators (2016), World Development Indicators



# A closer look at the component parts of the “Quality of the land administration index”

Table 2 - What do the indicators on the quality of land administration measure?

|  |
|--|
| <b>Reliability of Infrastructure Index (0–8)</b>   |
| Type of system for archiving information on land ownership   |
| Availability of electronic database to check for encumbrances  |
| Type of system for archiving maps  |
| Availability of geographic information system  |
| Link between property ownership registry and mapping system  |
| <b>Transparency of information index (0–6)</b>   |
| Accessibility of information on land ownership   |
| Accessibility of maps of land plots  |
| Publication of fee schedules, lists of registration documents, service standards   |
| Availability of a specific and separate mechanism for complaints   |
| Publication of statistics about the number of property transactions  |
| <b>Geographic coverage index (0–8)</b>   |
| Coverage of land registry at the level of the largest business city and the economy <sup>a</sup>                               |
| Coverage of mapping agency at the level of the largest business city and the economy <sup>a</sup>                              |
| <b>Land dispute resolution index (0–8)</b>   |
| Legal framework for immovable property registration  |
| Mechanisms to prevent and resolve land disputes  |
| <b>Quality of land administration index (0–30)</b>   |
| Sum of the reliability of infrastructure, transparency of information, geographic coverage and land dispute resolution indices |
| a. For 11 economies the data are also collected for the second largest business city.  |

Breaking down this index for Sri Lanka shows **weakness across all components:**

- Reliability of Infrastructure: 0 out of 8
- Transparency of Information: 2.5 out of 6
- Geographic Coverage: 0 out of 8
- Land Dispute Resolution: 1 out of 8
- Total: 3.5 out of 30

Note: The Doing Business Indicators only look at the largest business city; in this case, Colombo.

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# **LABOR REGULATIONS**

# Labor Regulations: Summary

**Main Conclusion:** Labor regulations are strict but they are not a binding constraint. Many existing exporting industries find it difficult to attract labor based on wages, despite strong protections. The problem for many exporting industries tends to be less one of releasing workers and more one of attracting and retaining workers who are drawn to higher wages in non-tradable industries. There is no strong evidence suggesting that labor regulations are binding for new export industries either. Sri Lanka's strong labor standards are an often mentioned draw for investors and brands whose customers value ethically sourced products.

## **Evidence:**

***Benchmarking quantity:*** The rate at which firms report labor regulations as a constraint is very high. Regulations look stricter than comparator countries in terms of third party approval for dismissals and severance pay (similar to Indonesia), but less strict in terms of probationary periods and compulsory retraining or reassignment. The minimum wage does not matter for even low-wage exporters.

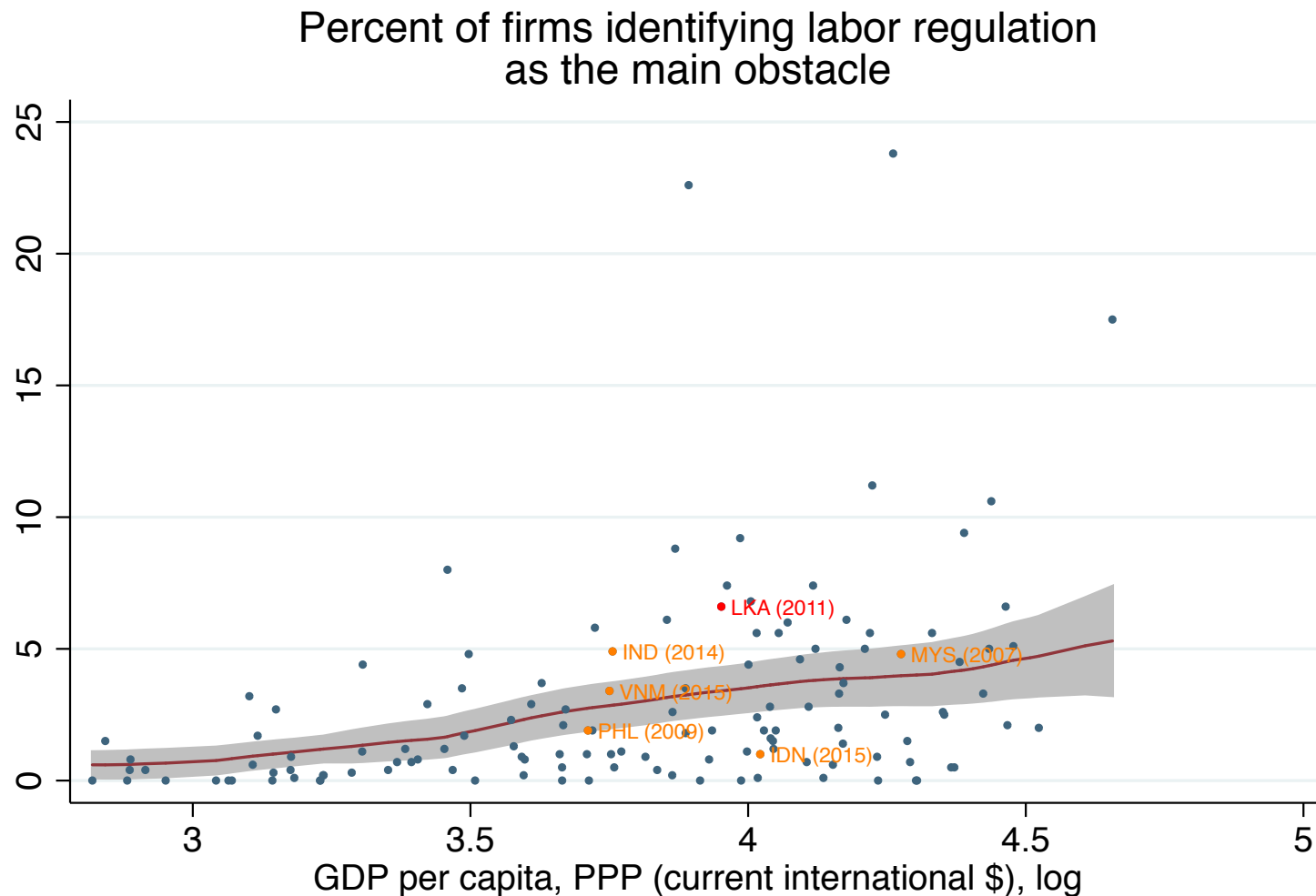
***Price:*** International comparisons compiled by the U.S. Bureau of Labor Statistics suggest that Sri Lanka's total compensation costs remain low—roughly half of those of the Philippines.

***Changes vs. changes:*** There have been no major changes in the constraint in recent years. The most commonly cited regulation is the Termination of Employment of Workmen Act (TEWA), which dates back to 1971, prior to Sri Lanka's last wave of structural transformation.

***Bypassing the constraint:*** Firms often utilize temporary workers, contractors, trainees, etc., which are not entitled to the same benefits and protections as permanent workers. This is evidence that releasing permanent workers may be a constraint but also that firms have an easy means of bypassing it.

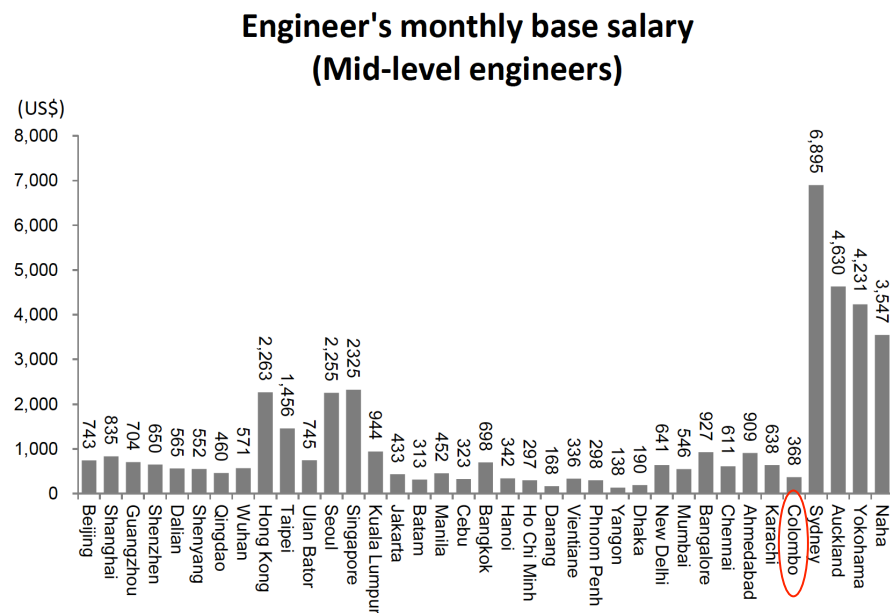
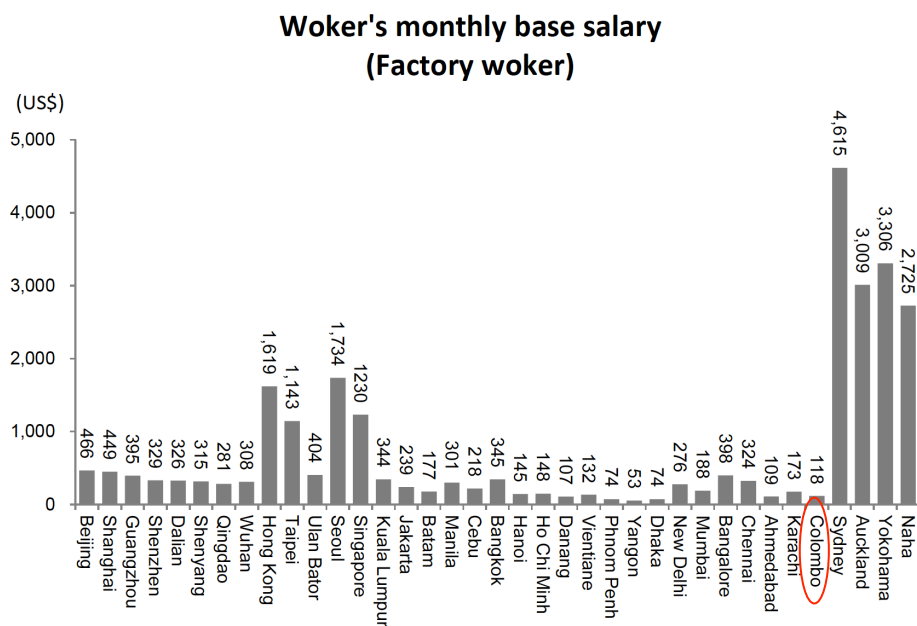
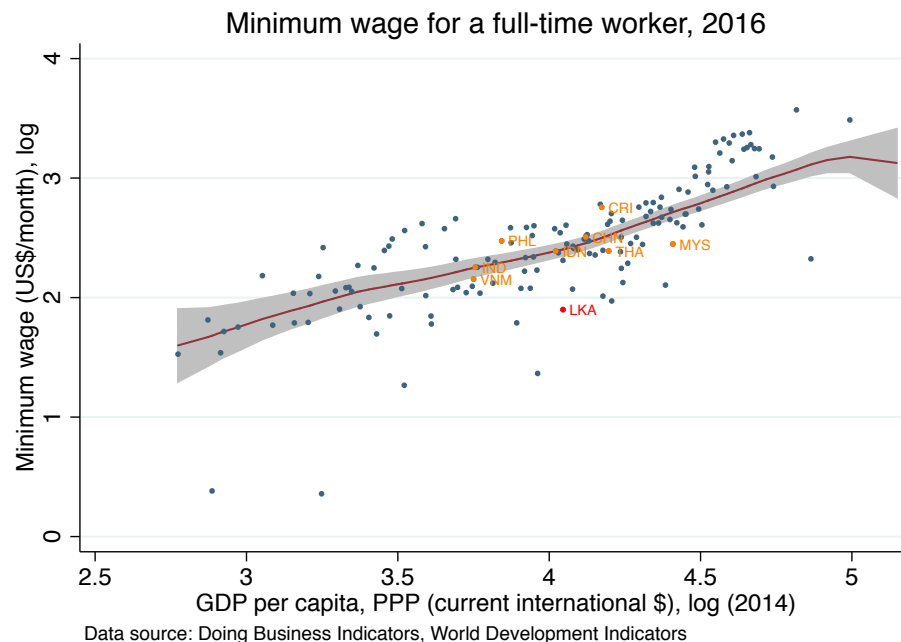
***Camels and hippos:*** Labor-intensive industries, which should be more affected by labor regulations, fare no worse than industries that are not labor-intensive. The apparel sector, which dominates Sri Lanka's exports and continues to innovate, is highly labor-intensive.

As of 2011, Enterprise Survey data show that the rate of firms reporting the constraint is very high. This is the third most often reported constraint for large firms.



Data source: World Bank Enterprise Surveys, World Development Indicators

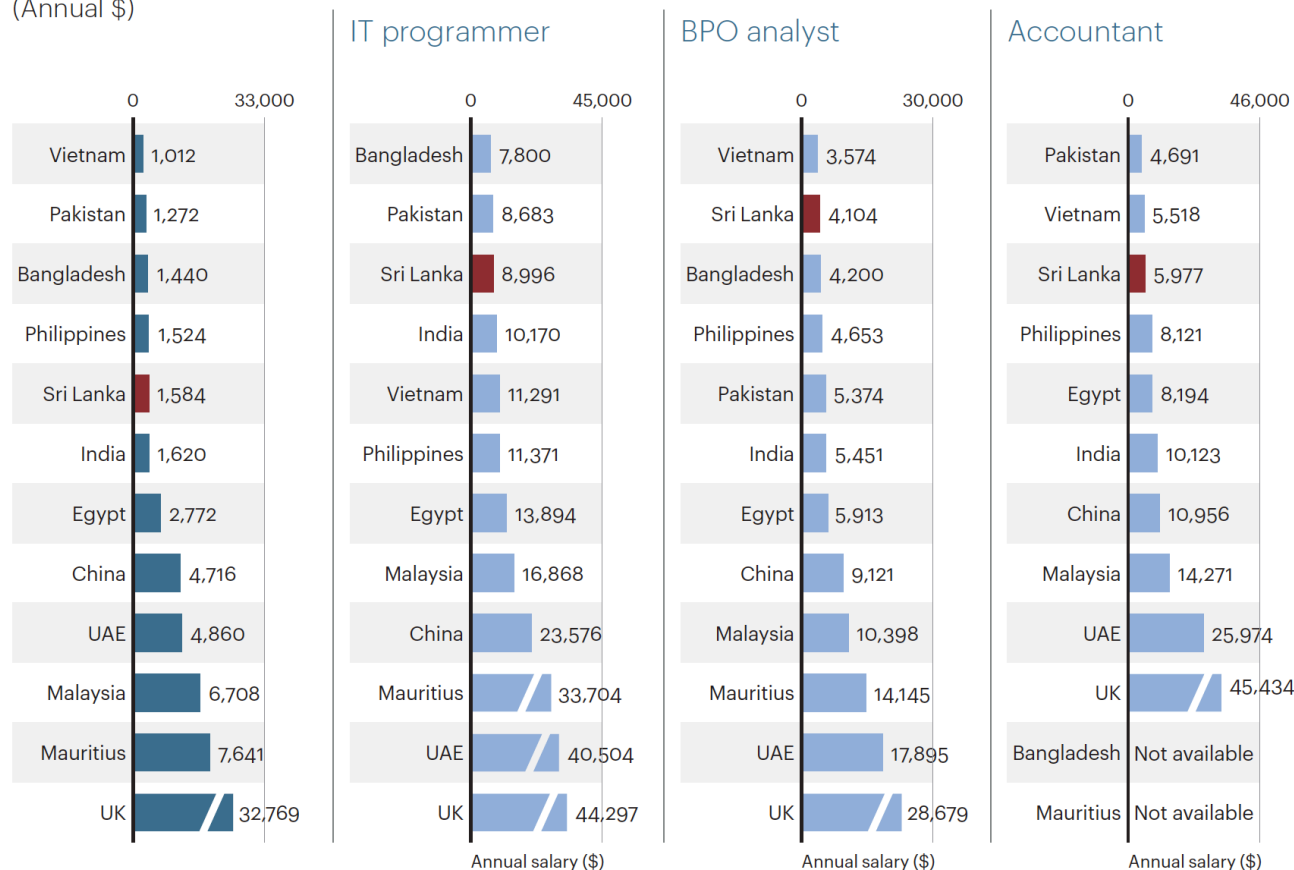
The minimum wage itself is very low and thus not a problem for firms. Base salaries in Sri Lanka also remain competitive overall.



Available benchmarking of total compensation costs also shows that Sri Lankan wages, inclusive of benefits and labor-related taxes, are also competitive.

### National average wages

(Annual \$)



This benchmarking exercise is specific to knowledge services. Data from another measure of compensation costs compiled by the U.S. Bureau of Labor Statistic, which was discontinued in 2008, is provided in the appendix.

<sup>1</sup> Compensation includes base salary plus benefits, tax, and bonus; estimates are used when data is not available; salaries do not reflect fully loaded seat costs; accountant salaries not available for Bangladesh and Mauritius.

Note: BPO is business process outsourcing.

Sources: Economist Intelligence Unit 2011, Mercer HR Consulting 2011, Watson Towers 2011; A.T. Kearney analysis

Source: A.T. Kearney: Competitive Benchmarking: Sri Lanka Knowledge Services, 2012

Redundancy Rules: Sri Lanka's requirement of third party approval for dismissals is strict (like Indonesia) but regulations are not strict on probationary periods and retraining.

|                         | Redundancy rules  |   |  |  |   |   |  |                                  |                                  |
|-------------------------|---|---|--|--|---|---|--|----------------------------------|----------------------------------|
|                         | Maximum length of probationary period (months) <sup>d</sup> | Dismissal due to redundancy allowed by law? | Third-party notification if one worker is dismissed? | Third-party approval if one worker is dismissed? | Third-party notification if nine workers are dismissed? | Third-party approval if nine workers are dismissed? | Retraining or reassignment? <sup>e</sup> | Priority rules for redundancies? | Priority rules for reemployment? |
| <i>Sri Lanka</i>        | <i>n.a.</i>   | Yes   | Yes  | Yes  | Yes   | Yes   | No                                       | Yes                              | No                               |
| Bangladesh (Dhaka)      | 3.0   | Yes   | Yes  | No   | Yes   | No  | No                                       | Yes                              | Yes                              |
| Bangladesh (Chittagong) | 3.0   | Yes   | Yes  | No   | Yes   | No  | No                                       | Yes                              | Yes                              |
| China (Shanghai)        | 6.0   | Yes   | Yes  | No   | Yes   | No  | Yes                                      | Yes                              | Yes                              |
| China (Beijing)         | 6.0   | Yes   | Yes  | No   | Yes   | No  | Yes                                      | Yes                              | Yes                              |
| Costa Rica              | 3.0   | Yes   | No   | No   | No  | No  | No                                       | No                               | No                               |
| India (Mumbai)          | 3.0   | Yes   | Yes  | No   | Yes   | No  | No                                       | Yes                              | Yes                              |
| India (Delhi)           | 3.0   | Yes   | Yes  | No   | Yes   | No  | No                                       | Yes                              | Yes                              |
| Indonesia (Jakarta)     | 3.0   | Yes   | Yes  | Yes  | Yes   | Yes   | Yes                                      | No                               | No                               |
| Indonesia (Surabaya)    | 3.0   | Yes   | Yes  | Yes  | Yes   | Yes   | Yes                                      | No                               | No                               |
| Malaysia                | <i>n.a.</i>   | Yes   | No   | No   | Yes   | No  | No                                       | No                               | No                               |
| Philippines             | 6.0   | Yes   | Yes  | No   | Yes   | No  | No                                       | Yes                              | No                               |
| Singapore               | 6.0   | Yes   | No   | No   | No  | No  | No                                       | No                               | No                               |
| Thailand                | 4.0   | Yes   | No   | No   | No  | No  | No                                       | No                               | No                               |
| Vietnam                 | 1.0   | Yes   | No   | No   | Yes   | Yes   | Yes                                      | No                               | No                               |

Source: Doing Business database.

\* Data were collected jointly with the World Bank Group's Women, Business and the Law team.

d. Not applicable (n.a.) for economies with no statutory provision for a probationary period.

e. Whether compulsory before redundancy.



Redundancy Costs: Notification period is standard among comparators but severance pay is high (again, along with Indonesia).

|                         | Redundancy cost  |   |  |   |  |   |  |   |
|-------------------------|--|---|--|---|--|---|--|---|
|                         | Notice period for redundancy dismissal (for a worker with 1 year of tenure, in salary weeks) | Notice period for redundancy dismissal (for a worker with 5 years of tenure, in salary weeks) | Notice period for redundancy dismissal (for a worker with 10 years of tenure, in salary weeks) | Notice period for redundancy dismissal (weeks of salary) <sup>c</sup> | Severance pay for redundancy dismissal (for a worker with 1 year of tenure, in salary weeks) | Severance pay for redundancy dismissal (for a worker with 5 years of tenure, in salary weeks) | Severance pay for redundancy dismissal (for a worker with 10 years of tenure, in salary weeks) | Severance pay for redundancy dismissal (weeks of salary) <sup>c</sup> |
| <i>Sri Lanka</i>        | 4.3  | 4.3   | 4.3  | 4.3   | 10.8   | 54.2  | 97.5   | 54.2  |
| Bangladesh (Dhaka)      | 4.3  | 4.3   | 4.3  | 4.3   | 5.0  | 25.0  | 50.0   | 26.7  |
| Bangladesh (Chittagong) | 4.3  | 4.3   | 4.3  | 4.3   | 5.0  | 25.0  | 50.0   | 26.7  |
| China (Shanghai)        | 4.3  | 4.3   | 4.3  | 4.3   | 4.3  | 21.7  | 43.3   | 23.1  |
| China (Beijing)         | 4.3  | 4.3   | 4.3  | 4.3   | 4.3  | 21.7  | 43.3   | 23.1  |
| Costa Rica              | 4.3  | 4.3   | 4.3  | 4.3   | 2.8  | 15.2  | 25.1   | 14.4  |
| India (Mumbai)          | 4.3  | 4.3   | 4.3  | 4.3   | 2.1  | 10.7  | 21.4   | 11.4  |
| India (Delhi)           | 4.3  | 4.3   | 4.3  | 4.3   | 2.1  | 10.7  | 21.4   | 11.4  |
| Indonesia (Jakarta)     | 0.0  | 0.0   | 0.0  | 0.0   | 17.3   | 60.7  | 95.3   | 57.8  |
| Indonesia (Surabaya)    | 0.0  | 0.0   | 0.0  | 0.0   | 17.3   | 60.7  | 95.3   | 57.8  |
| Malaysia                | 4.0  | 8.0   | 8.0  | 6.7   | 1.7  | 33.3  | 33.3   | 22.8  |
| Philippines             | 4.3  | 4.3   | 4.3  | 4.3   | 4.3  | 21.7  | 43.3   | 23.1  |
| Singapore               | 1.0  | 4.0   | 4.0  | 3.0   | 0.0  | 0.0   | 0.0  | 0.0   |
| Thailand                | 4.3  | 4.3   | 4.3  | 4.3   | 15.0   | 30.0  | 50.0   | 31.7  |
| Vietnam                 | 0.0  | 0.0   | 0.0  | 0.0   | 8.7  | 21.7  | 43.3   | 24.6  |

Source: Doing Business database.

\* Data were collected jointly with the World Bank Group's Women, Business and the Law team.

c. Average for workers with 1, 5 and 10 years of tenure.

Firms often utilize temporary workers, contractors, trainees, etc., who are not entitled to the same benefits as permanent workers, to bypass the constraint.

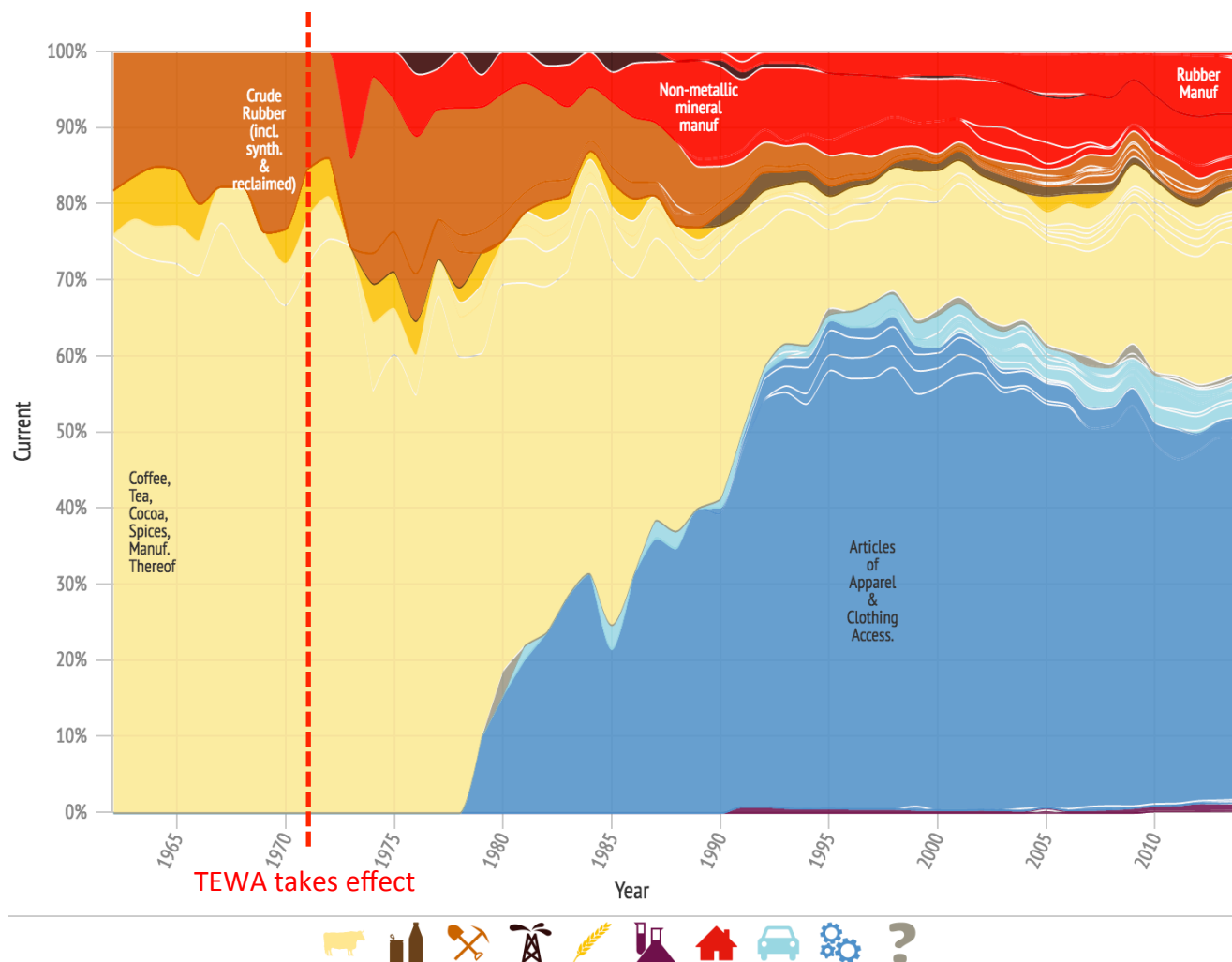
**Change in Employment Status of Public and Private Employees (2006 to 2012)**

|               | 2006      | 2012      | Change 2006 to 2012 |
|---------------|-----------|-----------|---------------------|
| Permanent     | 1,825,284 | 2,096,870 | 14.9                |
| Temporary     | 931,031   | 1,345,081 | 44.5                |
| Casual        | 492,611   | 410,629   | -16.6               |
| Not Permanent | 698,844   | 731,532   | 4.7                 |
| Total         | 3,947,770 | 4,584,112 | 16.1                |

Source: IPS: *Sri Lanka State of the Economy 2015*  
(Background Paper by Jayawardena, P. (2014))

- Although these categories are not captured by some international surveys, firms use a variety of arrangements to utilize temporary workers.
- According to figures from IPS, permanent workers make up less than half of all public and private employees.
- For one manufacturing firm visited, over one third of workers were classified as “trainees”.

There have been no major changes in labor regulations in recent years, and older changes poorly explain Sri Lanka's export history.



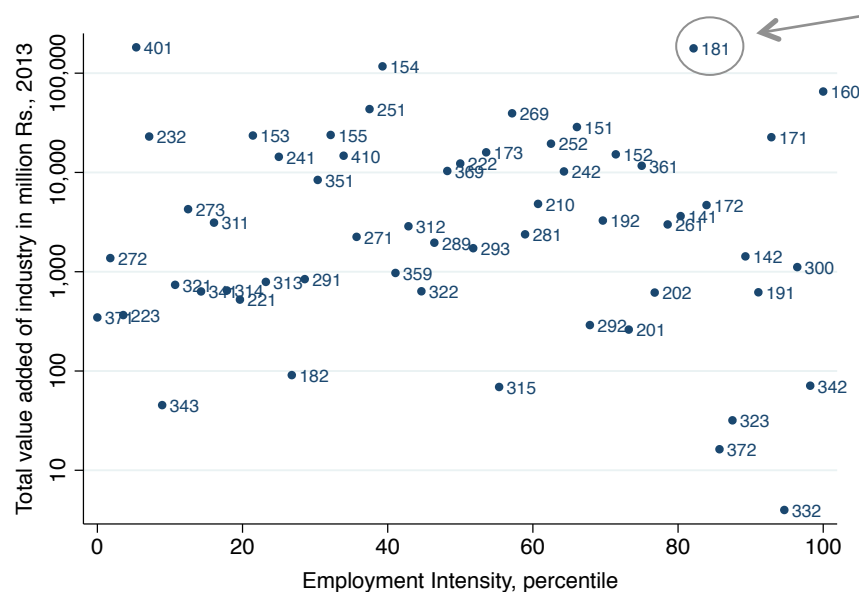
The regulation most cited as a constraint is the Termination of Employment of Workmen Act (TEWA), which dates back to 1971, prior to Sri Lanka's last wave of structural transformation (1978-1995)

# More labor-intensive industries are not smaller and do not grow more slowly than less labor-intensive industries in Sri Lanka.

If labor regulations were a constraint, we would expect to see the less labor-intensive industries thrive and the more labor-intensive industries struggle. But we do not see this. Here we used Annual Survey of Industries data to calculate employment intensity by firm as:

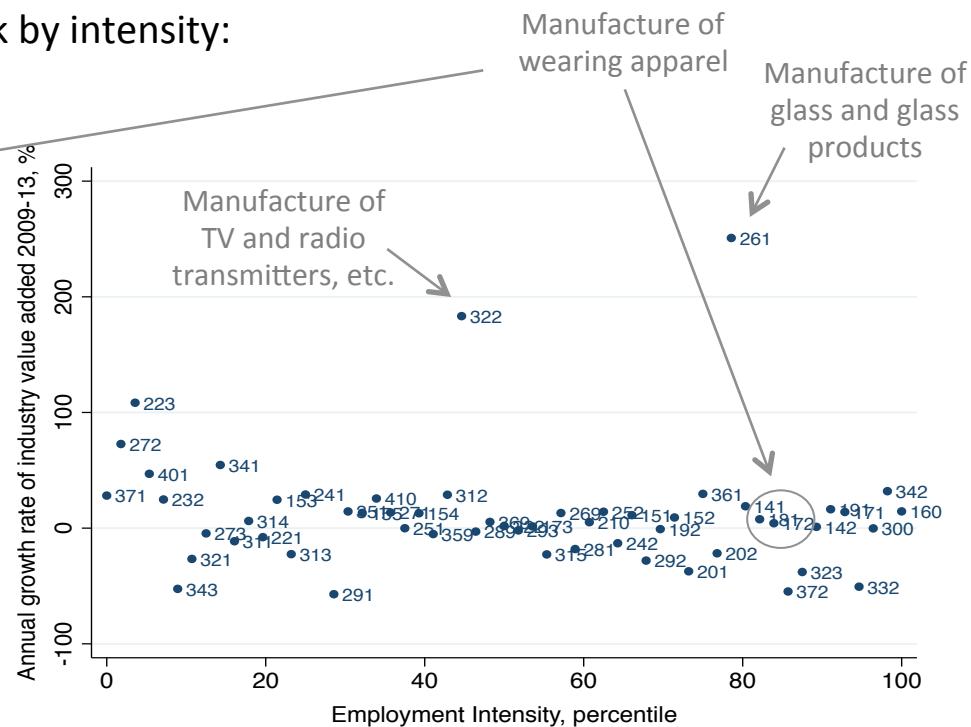
$$\text{Employment Intensity} = \text{Number of employees} / \text{Total value added}$$

We then average by 3-digit ISIC industry and rank by intensity:



Own calculations based on DCS Annual Survey of Industries. Industry codes are ISIC Rev.3

\* Note that y-axis is a log scale



Own calculations based on DCS Annual Survey of Industries. Industry codes are ISIC Rev.3

# Labor Regulations: Summary

**Main Conclusion:** Labor regulations are strict but they are not a binding constraint. Many existing exporting industries find it difficult to attract labor based on wages, despite strong protections. The problem for many exporting industries tends to be less one of releasing workers and more one of attracting and retaining workers who are drawn to higher wages in non-tradable industries. There is no strong evidence suggesting that labor regulations are binding for new export industries either. Sri Lanka's strong labor standards are an often mentioned draw for investors and brands whose customers value ethically sourced products.

## **Evidence:**

***Benchmarking quantity:*** The rate at which firms report labor regulations as a constraint is very high. Regulations look stricter than comparator countries in terms of third party approval for dismissals and severance pay (similar to Indonesia), but less strict in terms of probationary periods and compulsory retraining or reassignment. The minimum wage does not matter for even low-wage exporters.

***Price:*** International comparisons compiled by the U.S. Bureau of Labor Statistics suggest that Sri Lanka's total compensation costs remain low—roughly half of those of the Philippines.

***Changes vs. changes:*** There have been no major changes in the constraint in recent years. The most commonly cited regulation is the Termination of Employment of Workmen Act (TEWA), which dates back to 1971, prior to Sri Lanka's last wave of structural transformation.

***Bypassing the constraint:*** Firms often utilize temporary workers, contractors, trainees, etc., which are not entitled to the same benefits and protections as permanent workers. This is evidence that releasing permanent workers may be a constraint but also that firms have an easy means of bypassing it.

***Camels and hippos:*** Labor-intensive industries, which should be more affected by labor regulations, fare no worse than industries that are not labor-intensive. The apparel sector, which dominates Sri Lanka's exports and continues to innovate, is highly labor-intensive.

# **POLICY UNCERTAINTY (TAX AND TRADE POLICY)**

Research on this constraint was led by the Millennium Challenge Corporation (MCC)

# Policy Uncertainty: Summary

**Main Conclusion:** Policy uncertainty is a binding constraint for new investment. The private sector faces serious constraints from frequent and unpredictable changes in tax policy, extending to trade policy and to a lesser extent land policy. Important changes in tax policy are seen as *ad hoc* and policy reversals and unclear implementation of policy changes are the norm. The Board of Investment has historically had a large degree of discretionary power to provide incentives through various exemptions that have added to the complexity and difficulty of implementation. Policy instability in taxes (VAT/capital gains) may be resolved in the near term, but the private sector has not seen fundamental shifts in this constraint since the start of this year's IMF support program. The structure, complexity and uncertainty of import duties and para-tariffs also creates a bias against new exports that is highly problematic.

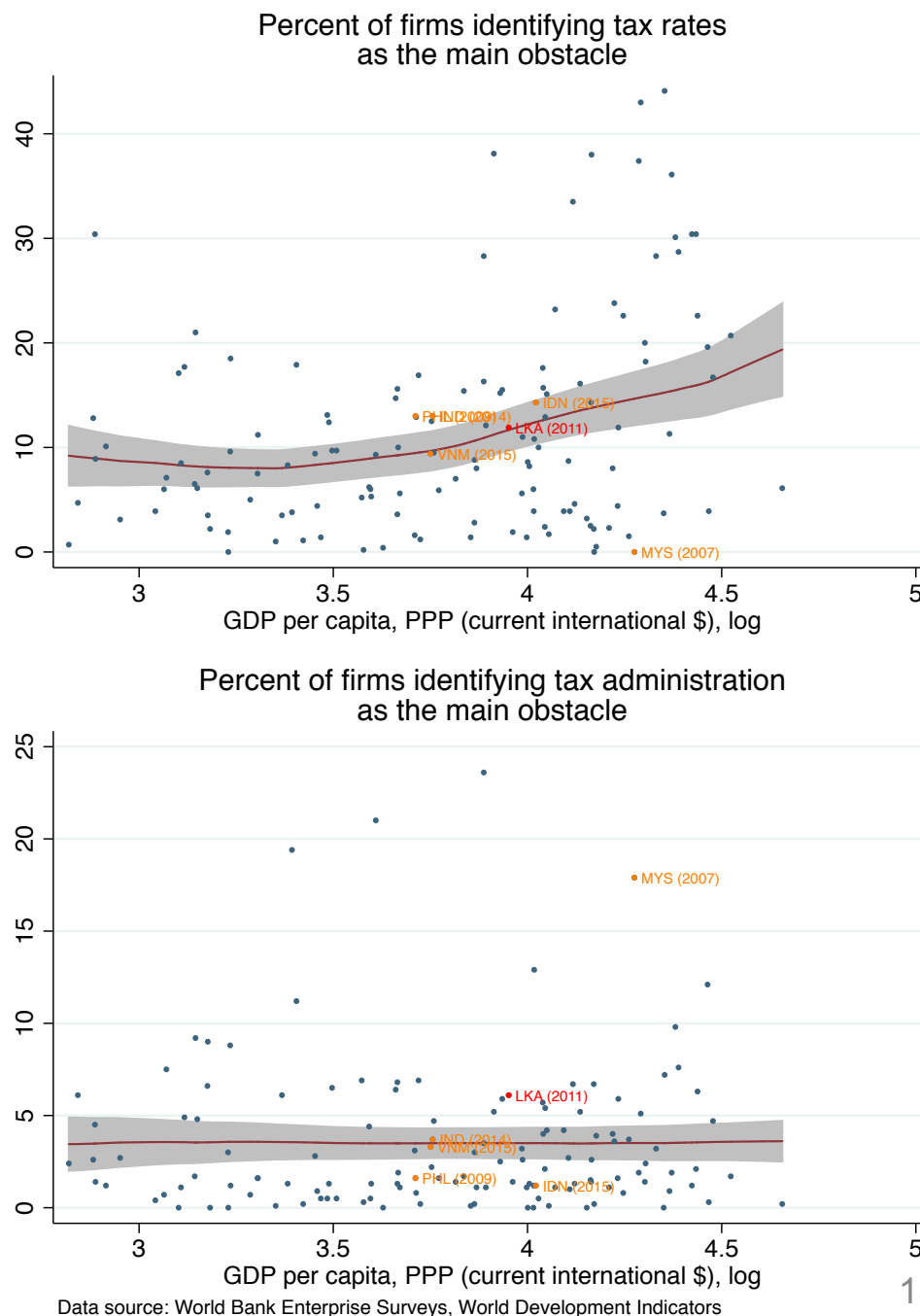
## **Evidence:**

***Benchmarking quantity:*** Sri Lanka's tax policy uncertainty is high relative to comparators. While tax rates in Sri Lanka are not high by international standards and firms don't tend to report tax rates as a major obstacle, tax administration is a major constraint reported by firms. Policy uncertainty was the most ubiquitous constraint encountered when interviewing firms. This was true both when approaching firms directly and in a recent survey of firms. The problem extends to trade policy, where import charges have increased over time to fill a gap in government revenues. There are high effective rates of protection with high variance across products. Import duties (tariffs and para-tariffs) are complex, uncertain and their application is non-transparent, which creates a bias against industries that must import inputs in high quantities.

***Changes vs. changes:*** Investor sentiment appears to have been affected by a recent intensification of tax policy uncertainty. The longer-term trend of lower than expected FDI is consistent with this being a long-term and growing problem.

***Bypassing the constraint:*** Firms are able to bypass many levels of uncertainty (as well as reduce their tax burden) by utilizing the Board of Investment. Therefore, it is not surprising that the BOI handles a large number of investments, both local and foreign. Analysis of investment data and qualitative interviews agree that this has become a less effective means of bypassing the constraint over time. Evidence suggests that domestic firms remain informal partly to avoid policy uncertainty.

According the most recent Enterprise Survey (2011), tax rates do not seem to be a problem in Sri Lanka given its level of income. However, firms do report that tax administration is major obstacle.

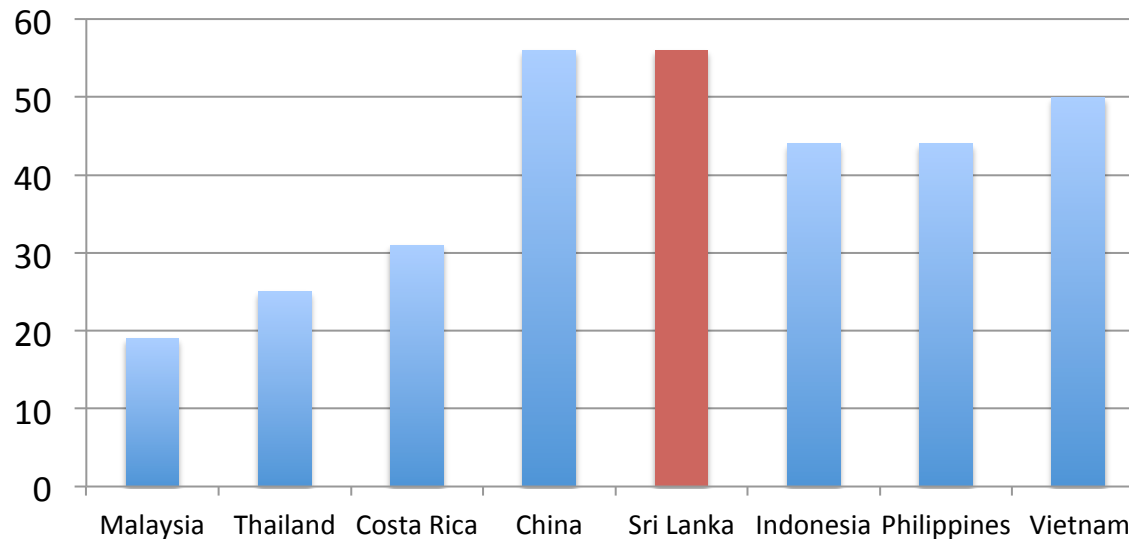




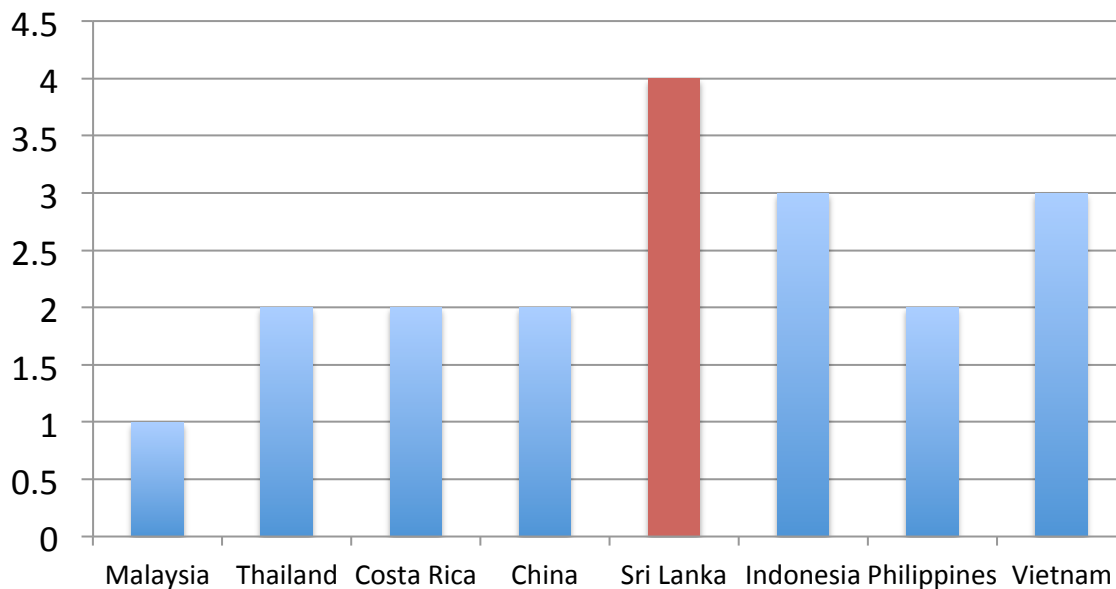
# More recent evidence continues to show that tax administration, particularly tax policy uncertainty, is problematic.

- Sri Lanka ranks 158/189 countries on ease of paying taxes, slightly behind India (WB Doing Business, 2012). This is where Sri Lanka performs worst in the Doing Business rankings. Businesses in Sri Lanka need to make 47 different tax payments, compared to an average of 31.3 in South Asia and 25.3 in East Asia & Pacific.
- Firms surveys continue to show that tax rates are not a major problem but that tax rate *uncertainty* is a major problem:
  - IPS (2014): 'As it currently stands the majority of the respondents were of the view that established tax rates are at some of their lowest level in the country's history and is consistent with creating an environment conducive for enterprises to operate and flourish in.'
  - CCC (2016): In a survey done by the CCC with Lanka Business Online earlier this year... some of the most cited issues that corporate leaders were 'somewhat concerned' or 'extremely concerned' about were uncertainty in overall economic policy (90%); tax policy changes (88%); and domestic political stability (84%). The survey captured sentiments of 164 of the country's key corporate leaders.
- Policy uncertainty, most often regarding tax policy, was also a common constraint raised by firms during MCC and Harvard CID interviews. A wide variety of groups cited the issue: large and small private sector firms, private equity investors, and research institutes. It was often described as the primary factor limiting FDI and domestic investment. It was also described as a long-term problem that has become more acute in 2015-16.

Tax Policy Risk Index, June 2016



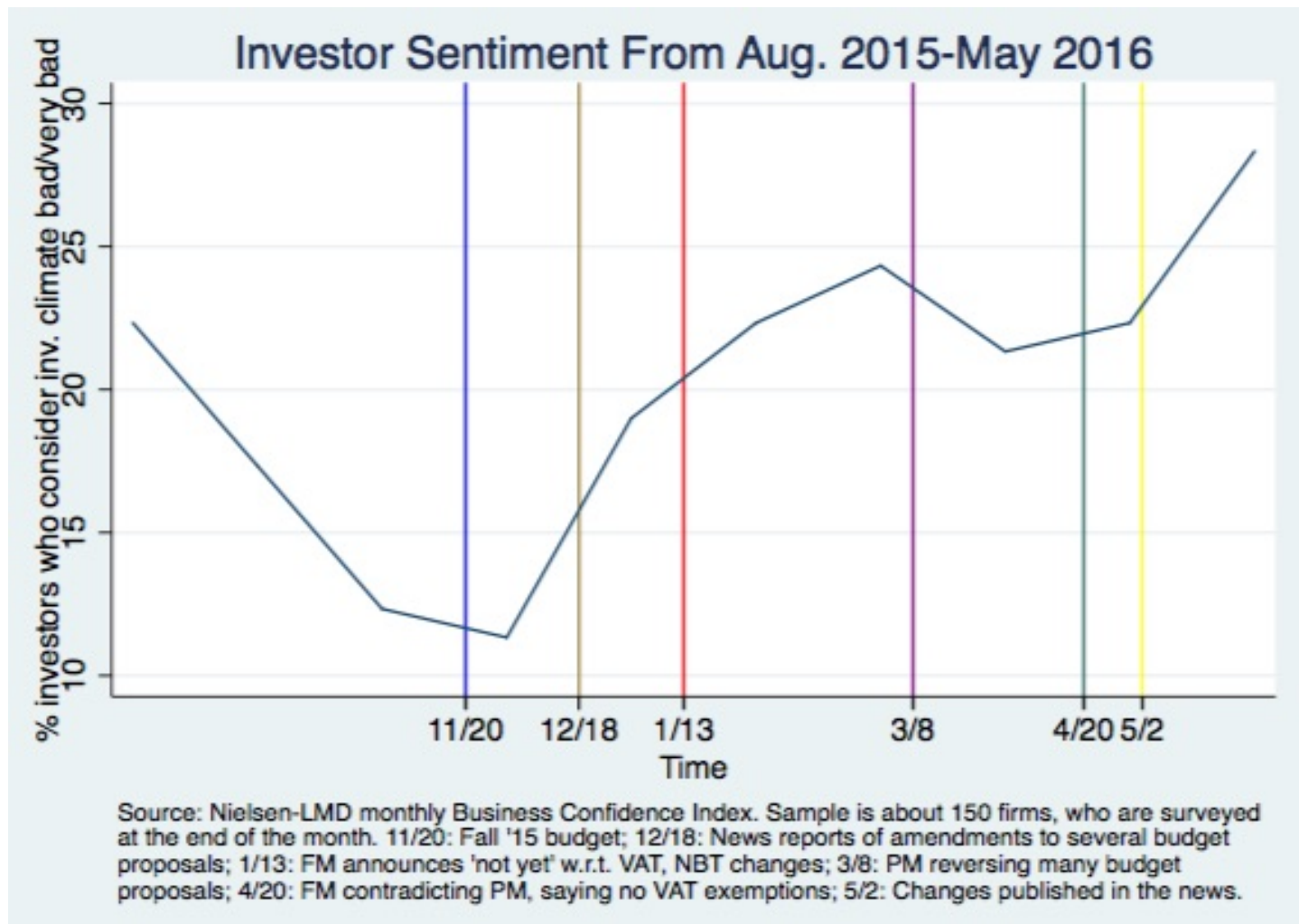
“Stable Regime” component of index, June 2016



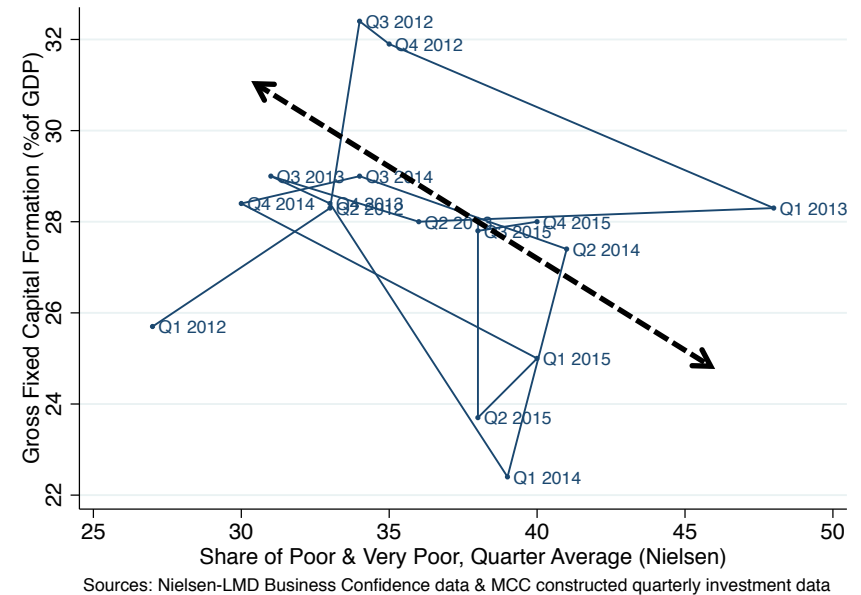
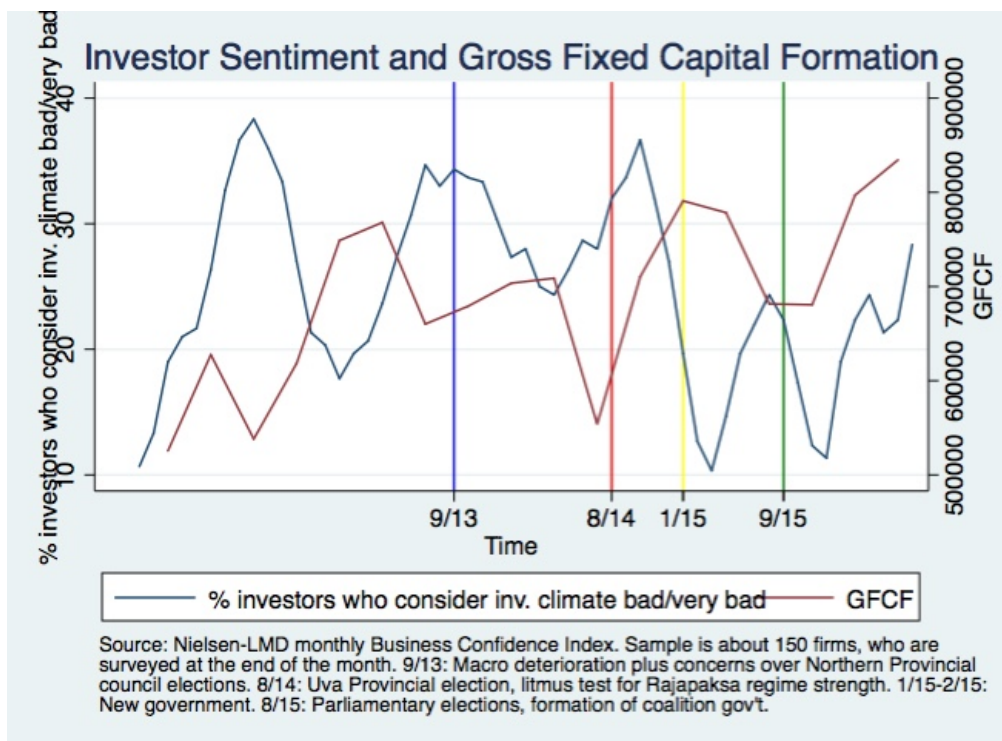
Tax policy risk is seen as high relative to comparators

The (in)stability of the tax regime is the driving factor. A score of 4 is the worst a country can attain. Sri Lanka does fine on other components of the Tax Policy Risk Index: “discriminatory taxes,” “level of corporate taxation,” and “retroactive taxation”

Recent tax policy reversals correspond with inflection points within an overall trend of worsening investor sentiment.



In earlier periods with available data, changes in investor sentiment corresponded with changes in actual investment. These shifts appear to have been driven most by big political changes.



...so policy uncertainty correlates to investor confidence and investor confidence (generally) correlates to private sector investment decisions.

Trade Policy: Over the last decade, Sri Lanka has used “para-tariffs” as a means to raise revenue & protect some industries.

These make for a system of import duties that is complex, uncertain and non-transparent.

- *Complex*: Numerous para-tariffs that vary at the product-level
- *Uncertain*: Frequent changes in para-tariff schedule are the norm
- *Non-transparent*: Changes in schedule and firm level exemptions lack transparency

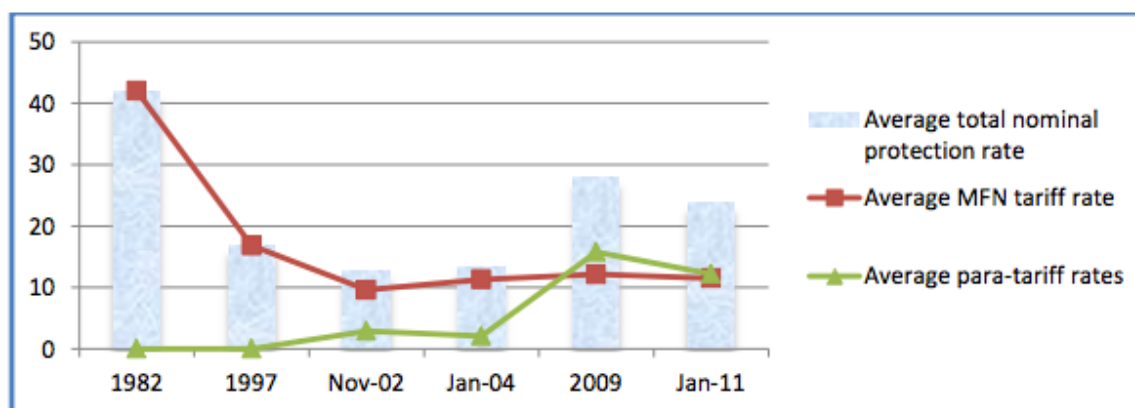
Note: More recent data reviewed by CID suggests that MFN rates have decreased while para-tariff rates have increased since 2011.

List of Import Taxes in Force (2010 and 2015)

|  | 2010                | 2015           |
|--|---------------------|----------------|
| <b>Protective Taxes</b>                  |                     |                |
| Customs Duty                             | 0, 2.5, 6, 15 or 28 | 0, 7.5, 15, 25 |
| Ports and Airports Development Levy      | 2 or 5              | 5              |
| Surcharge                                | 15                  | -              |
| Commodity Export Subsidy Scheme          | Varies              | Varies         |
| Regional Infrastructure Development Levy | 5, 7.5 or 10        | -              |
| <b>Non-Protective Taxes</b>              |                     |                |
| Value Added Tax                          | 12 or 20            | 11             |
| Social Responsibility Levy               | 2                   | -              |
| Nation Building Tax                      | 3                   | 2              |
| Excise Duty                              | Varies              | Varies         |
| Special Commodity Levy                   | Varies              | Varies         |

Source: Pursell and Ahsan (2011); SLC (2015), "Tariff Guide", Sri Lanka Customs, Colombo

Figure 4: Nominal protection in 1982, 1997, 2002, 2009, and 2011 (in percent)



Source: derived from data in Pursell and Ahsan (2011)

# The system creates a bias against new exports that is not fully solved by firm-level exemptions.

- World Bank (Kaminski & Ng, 2013): “Para-tariff regime not only exacerbates the worst features of Sri Lanka’s MFN tariff schedule, i.e., high and dispersed rates, but also raises the levels of nominal protection to levels no longer encountered amongst WTO members.”
- IPS (2015): “Despite the simplification after 2010, Sri Lanka’s import tax regime is beset with non-transparency and complexity, with little predictability in view of constant ad hoc changes. The system appears to be highly discretionary, with research and anecdotal evidence suggesting that it favours individuals and groups with lobbying skills and access to bureaucrats and politicians.”
- Firm interviews confirm the presence of a duality where existing exporting industries benefit from trade protections while potential new export industries are disadvantaged. Firms in established export industries did not raise the issue of import charges as a constraint and cited various exemptions they that they receive. Firms in other industries did report constraints (ex: packaging industry, household appliances).
- Firm-level exemptions do not fully address the problem due to their own uncertainty and high transaction costs. They also create a bias against backward linkages between exporters and the rest of the economy.

Overall, effective rates of protection are very high in Sri Lanka, and the variance across these is large, resulting in at minimum major distortions.

- A recently released analysis of effective rates of protection by the Department of Census and Statistics shows that already high and varied rates as of 2010 increased further at the top end in 2015. Further analysis may be conducted to assess the extent to which such high taxes on imports may act as a tax on exports.
- According to the DCS analysis of 105 industries under the SIOT classification, in 2010 the top 10 most protected industries had an average ERP of 159.3% and the lowest 10 had an average ERP of -8.4%. In 2015, the 10 most protected industries had an average ERP of 309.5% (table shown here) and the low end was not provided.

#### Sri Lanka: Effective Rate of protection, 2015 (%)

| Nominal and Effective Rate of Protection, 2015 with all import related barriers |   |  |           |              |           |
|---|---|--|-----------|--------------|-----------|
| SIOT Industry code  | Economic activity   | ERP on Total Import related duties/tax (all import related duties) |           |              |           |
|   |   | Total Import tax rate  | Rank, NRP | ERP rate (%) | Rank, ERP |
| 30  | Processing and preserving of fruit and vegetables               | 92.9   | 9         | 523.8        | 1         |
| 35  | Manufacture of bakery products                                  | 170.4  | 2         | 511.9        | 2         |
| 38  | Manufacture of macaroni, noodles, couscous and similar          | 136.8  | 3         | 398.7        | 3         |
| 55  | Manufacture of refined petroleum products                       | 70.4   | 14        | 320.7        | 4         |
| 68  | Manufacture of refractory products                              | 120.9  | 4         | 297.0        | 5         |
| 40  | Distilling, rectifying and blending of spirits & Manufacture of | 206.7  | 1         | 276.7        | 6         |
| 67  | Manufacture of other porcelain and ceramic products             | 87.5   | 11        | 213.9        | 7         |
| 70  | Manufacture of articles of concrete, cement and plaster         | 94.9   | 8         | 203.3        | 8         |
| 41  | Manufacture of soft drinks; production of mineral water         | 112.6  | 5         | 179.3        | 9         |
| 32  | Manufacture of dairy products                                   | 97.6   | 7         | 169.9        | 10        |

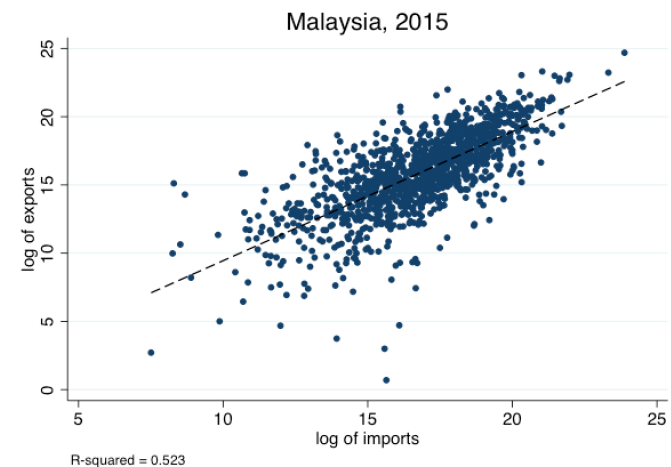
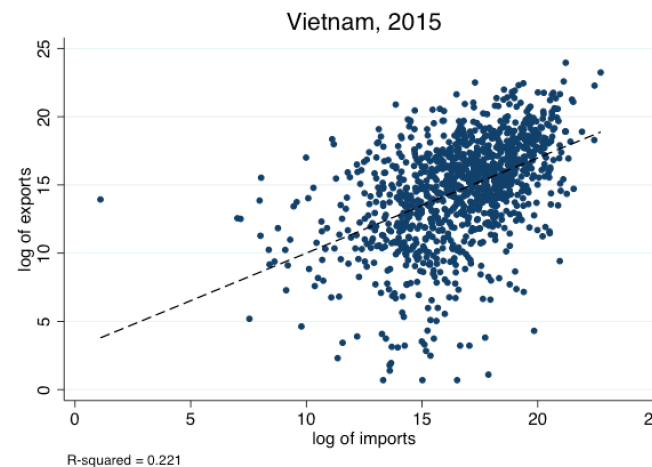
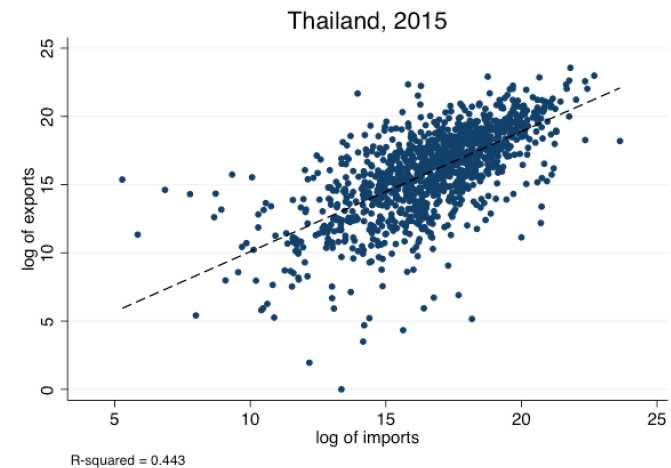
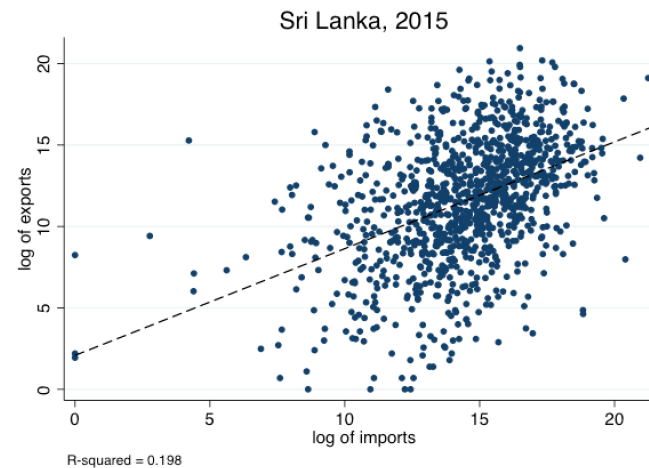
Source: Department of Census and Statistics (December 21, 2016 workshop presentation)

# Sri Lanka's trade policy contributes to an environment where import and export volumes are less correlated than in comparator countries.

The correlation is the lowest in Sri Lanka versus all of the comparator countries.

To enter global supply chains, firms must import materials, often under the same product codes as what they export.

Materials costs make up a large share of costs for manufacturing in general and transport equipment and chemicals in particular. More materials-intensive industries are more vulnerable to high and uncertain import charges.

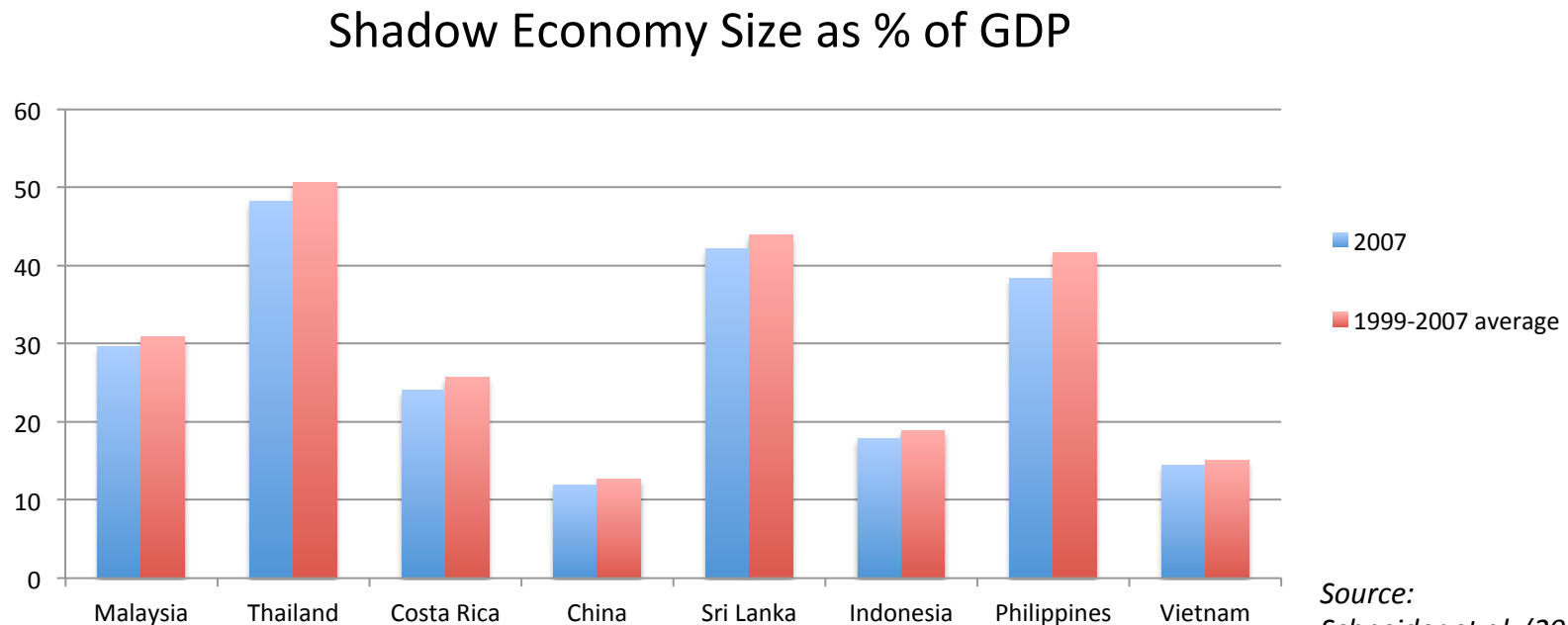


Each marker represents exports of a product at the HS4 level. Data source: UN COMTRADE, via CID 161



# Policy uncertainty, in particular in regards to tax policy, appears to play a role in informality in Sri Lanka.

- IPS (2014): “The lack of policy consistency instills fear in SMEs that once they formalize, they may be subject to unfavorable policy conditions which they may never be able to get out of once caught in the tax net.”
- De Mel et al. (2012): 46% of informal firms (in their small sample) cite taxes and visits by tax officials as the main reasons they don’t formalize. They also find that remaining informal is not costly for the great majority of informal firms.

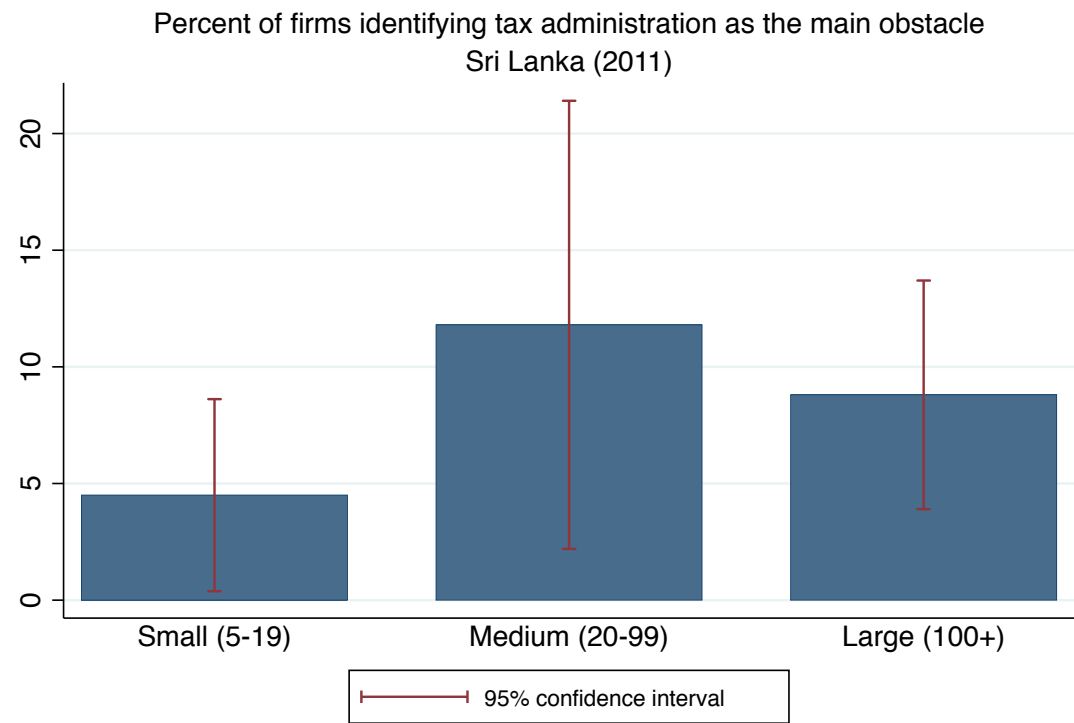


# But it is also clear that policy uncertainty is not only a problem for small and informal firms.

Medium and large firms are just as likely, if not more likely, than small firms to note tax administration as their main obstacle.

Larger firms, and especially foreign firms, do not have the option to operate informally.

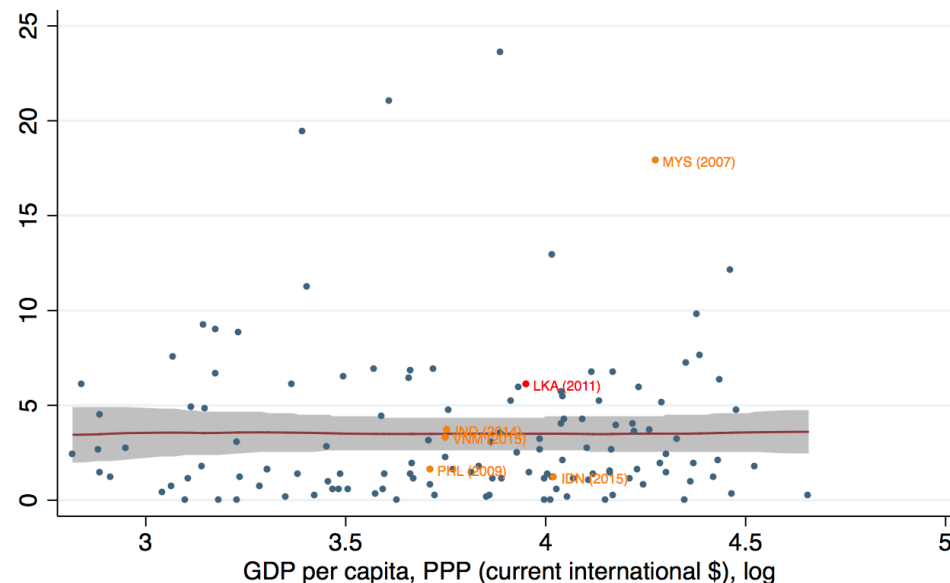
One option available to firms is to apply for BOI support through the BOI Law (Section 16 & 17) and the Strategic Development Projects Act. Through various exemptions, including tax holidays and exemptions of import duties, firms may avoid various aspects of policy uncertainty.



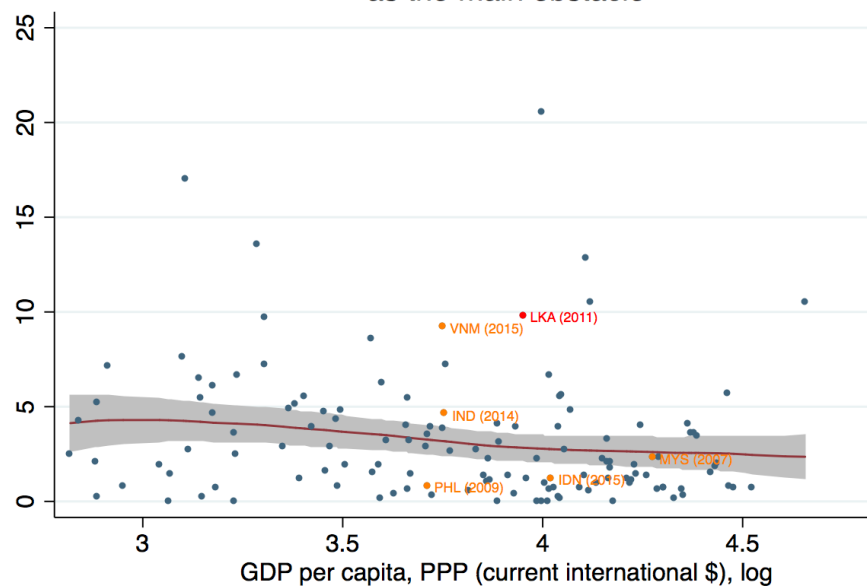
Data source: World Bank Enterprise Surveys

The BOI plays a critical role in Sri Lanka since it is firms' first stop for help in navigating some of their biggest reported constraints.

Percent of firms identifying tax administration as the main obstacle

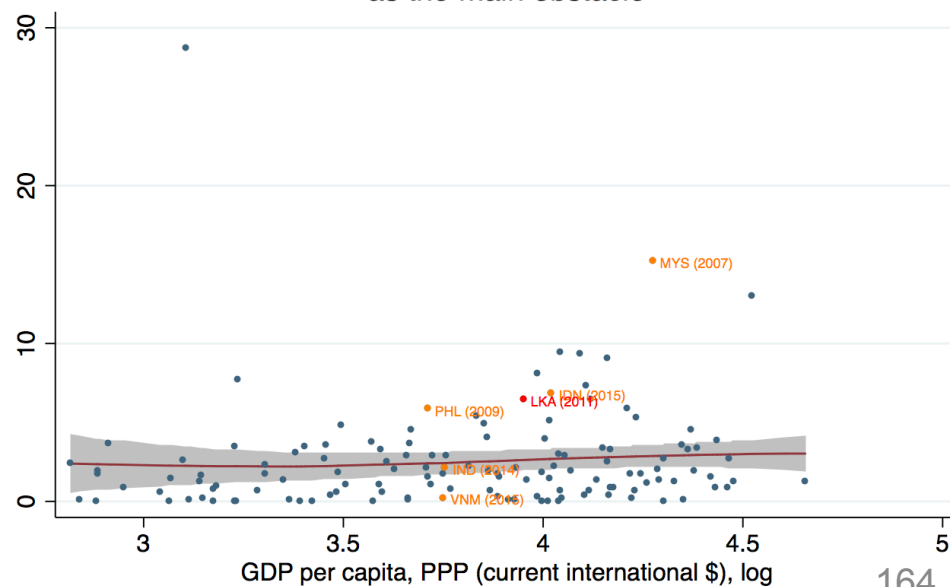


Percent of firms identifying access to land as the main obstacle



Data source: World Enterprise Surveys, World Development Indicators

Percent of firms identifying business licensing and permits as the main obstacle



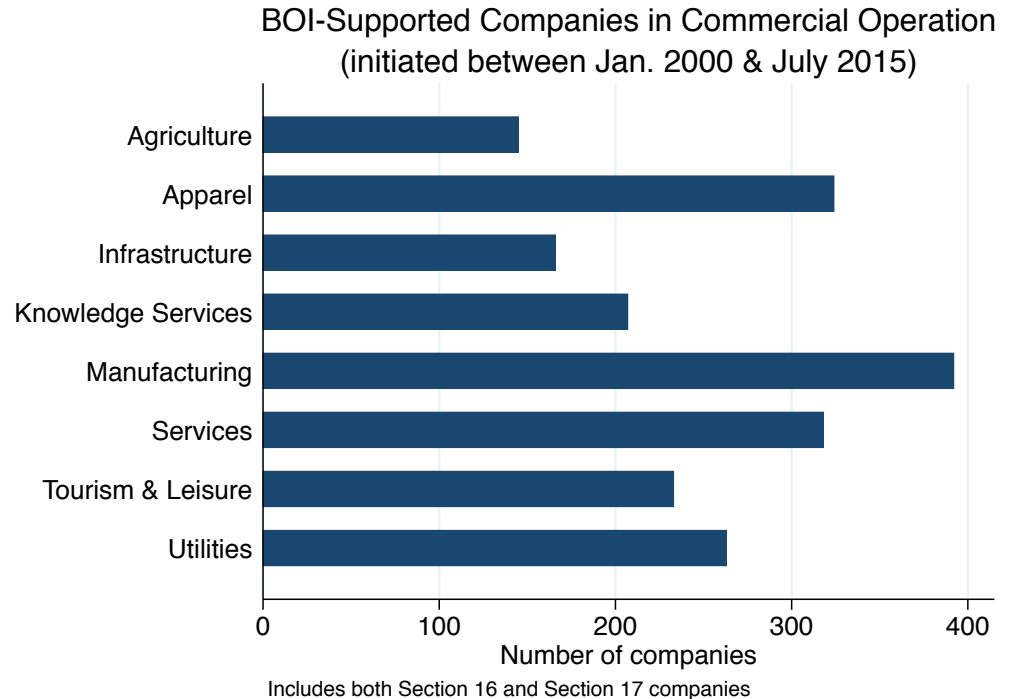
Data source: World Enterprise Surveys, World Development Indicators

However, BOI tools and staff resources are not targeted toward new and transformative investment. Moreover, BOI plays an outsized role in managing incentives and a limited role in one-stop-shop support to investors.

BOI deals with a high volume of projects covering a wide range of project areas, including infrastructure and utilities.

Firms report that BOI used to provide more one-stop-shop services but that those abilities have been eroded over time. They point to a labyrinth of line agencies such that navigation is relatively easier for locally connected companies.

Reportedly, less than 1% of a BOI staff that numbers over 1,000 handles investment promotion duties, with the rest managing regulatory functions. Given that BOI (historically) holds a high degree of discretionary power over incentives, it is not surprising that BOI has focused more resources on managing these responsibilities over attracting/facilitating new investment.



# Policy Uncertainty: Summary

**Main Conclusion:** Policy uncertainty is a binding constraint for new investment. The private sector faces serious constraints from frequent and unpredictable changes in tax policy, extending to trade policy and to a lesser extent land policy. Important changes in tax policy are seen as *ad hoc* and policy reversals and unclear implementation of policy changes are the norm. The Board of Investment has historically had a large degree of discretionary power to provide incentives through various exemptions that have added to the complexity and difficulty of implementation. Policy instability in taxes (VAT/capital gains) may be resolved in the near term, but the private sector has not seen fundamental shifts in this constraint since the start of this year's IMF support program. The structure, complexity and uncertainty of import duties and para-tariffs also creates a bias against new exports that is highly problematic.

## **Evidence:**

***Benchmarking quantity:*** Sri Lanka's tax policy uncertainty is high relative to comparators. While tax rates in Sri Lanka are not high by international standards and firms don't tend to report tax rates as a major obstacle, tax administration is a major constraint reported by firms. Policy uncertainty was the most ubiquitous constraint encountered when interviewing firms. This was true both when approaching firms directly and in a recent survey of firms. The problem extends to trade policy, where import charges have increased over time to fill a gap in government revenues. There are high effective rates of protection with high variance across products. Import duties (tariffs and para-tariffs) are complex, uncertain and their application is non-transparent, which creates a bias against industries that must import inputs in high quantities.

***Changes vs. changes:*** Investor sentiment appears to have been affected by a recent intensification of tax policy uncertainty. The longer-term trend of lower than expected FDI is consistent with this being a long-term and growing problem.

***Bypassing the constraint:*** Firms are able to bypass many levels of uncertainty (as well as reduce their tax burden) by utilizing the Board of Investment. Therefore, it is not surprising that the BOI handles a large number of investments, both local and foreign. Analysis of investment data and qualitative interviews agree that this has become a less effective means of bypassing the constraint over time. Evidence suggests that domestic firms remain informal partly to avoid policy uncertainty.

# **MACROECONOMIC & FISCAL STABILITY**

Research on this constraint was led by the  
Millennium Challenge Corporation (MCC)

# Macro-Fiscal Stability: Summary

**Main Conclusion:** Macro-fiscal instability is not directly binding private sector decisions in Sri Lanka, but macro-fiscal weaknesses do exacerbate more binding constraints by entrenching policy instability and uncertainty, which are binding private sector decisions (see section on policy uncertainty). Tax revenue is too low to support the needs of the government, leading to policy adjustments to generate new revenue. Government borrowing is likely producing some degree of crowding out of private finance, but this does not rise to the level of a binding constraint.

## **Evidence:**

***Benchmarking quantity:*** The deficit was 6.9% in 2015 with problems existing on both the expenditure and revenue sides. Tax revenue, at 13.1% of GDP in 2015, remains extremely low despite a slight improvement over what it was during the previous few years. After a sharp devaluation of the exchange rate in late 2015, the more free floating rupee has gradually continued to depreciate in 2016. Inflation is well below levels that would hinder growth and the financial system is well-capitalized. Foreign reserves contracted sharply in 2015 but have been stabilized since with international assistance.

***Changes vs. changes:*** Indicators of macroeconomic risk (sovereign, currency and banking risk) for Sri Lanka were all trending downward between 2013 and early 2015 without any noticeable uptick in new export growth and diversification. Indicators of sovereign risk grew through 2015 and early 2016 but have since stabilized. Firms interviewed did not see distinctions between these periods, but rather highlighted policy inconsistency throughout this time frame as a major constraint.

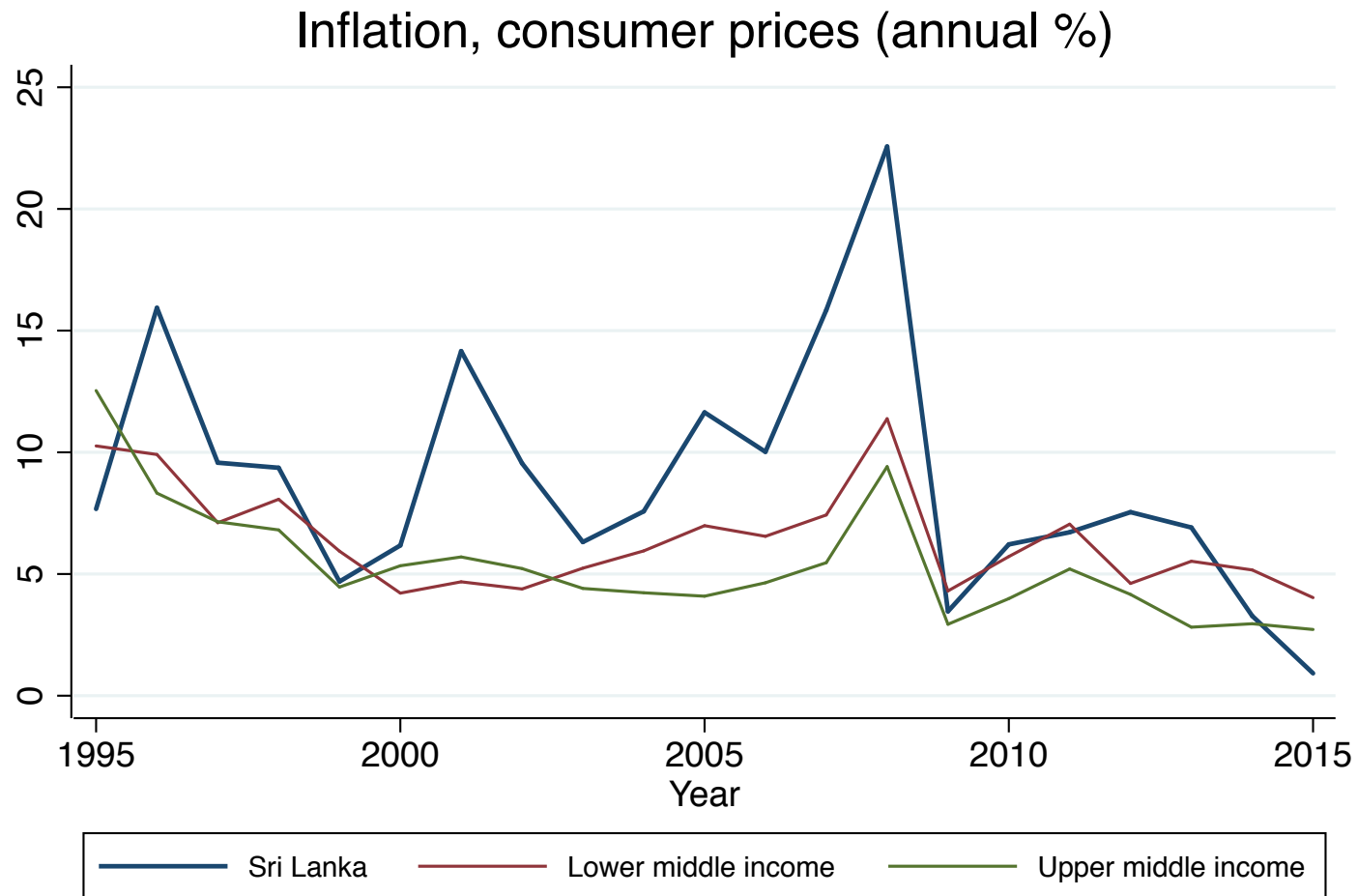
**Other Issues:** The current IMF Extended Fund Facility (EFF) has backstopped reserves and appears to have been sufficient to curb growing sovereign risk (bond yields plateaued in April), but there are no indications that the EFF has served as a signal that tax, trade or land policy will be more stable moving forward.

# IMF comments on macro-fiscal management (June 2016)

- The fiscal deficit has increased sharply:
  - “An increase in recurrent expenditure led to a widening of the fiscal deficit in 2015 (estimated at 6.9 percent of GDP), and an increase in public debt to 76 percent of GDP. As of end-2015 there was also an estimated Rs 1.36 trillion (11 percent of GDP) in additional government and state enterprise liabilities.”
- Balance of Payments pressure increased in 2015:
  - “Despite an improvement in the terms of trade from low world oil prices, the overall balance of payments deteriorated in 2015. Negative export growth, flat inward remittance flows, and a sharp decline in net capital inflows more than offset robust growth in tourism and the windfall from lower oil and other commodity prices. As a result, gross international reserves declined from 4.3 months of imports in 2014 to 3.8 months in 2015. ”
  - “Directors underscored that greater exchange rate flexibility and an exit from central bank intervention in the foreign exchange market would help protect and rebuild foreign exchange reserves.”
- Monetary policy and financial system stability appear on sound footing:
  - “Directors noted that the financial system is well capitalized and liquid.”
  - “Directors welcomed the current monetary policy stance...”

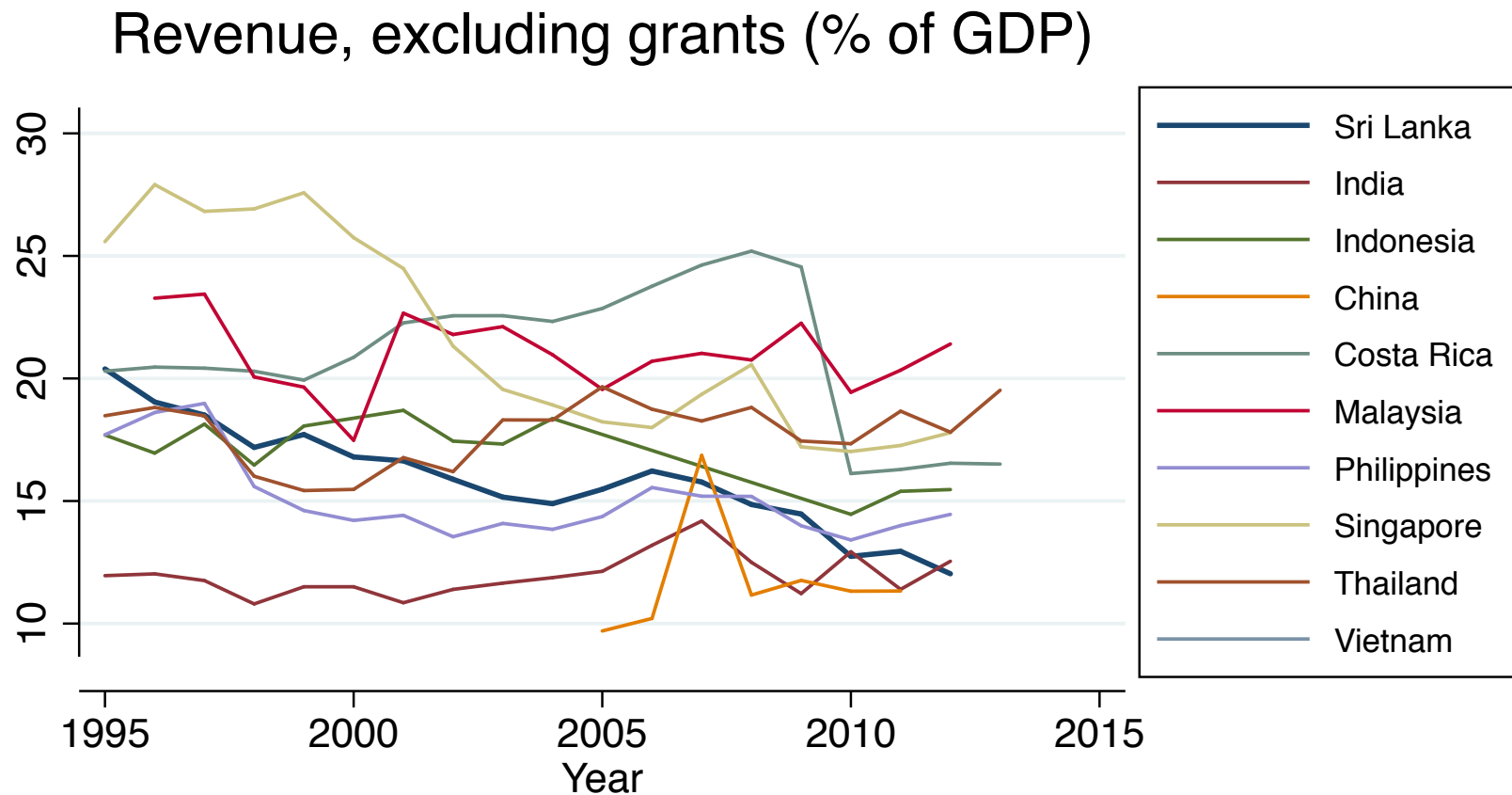


Sri Lanka has struggled with high inflation in the past but not in recent years.



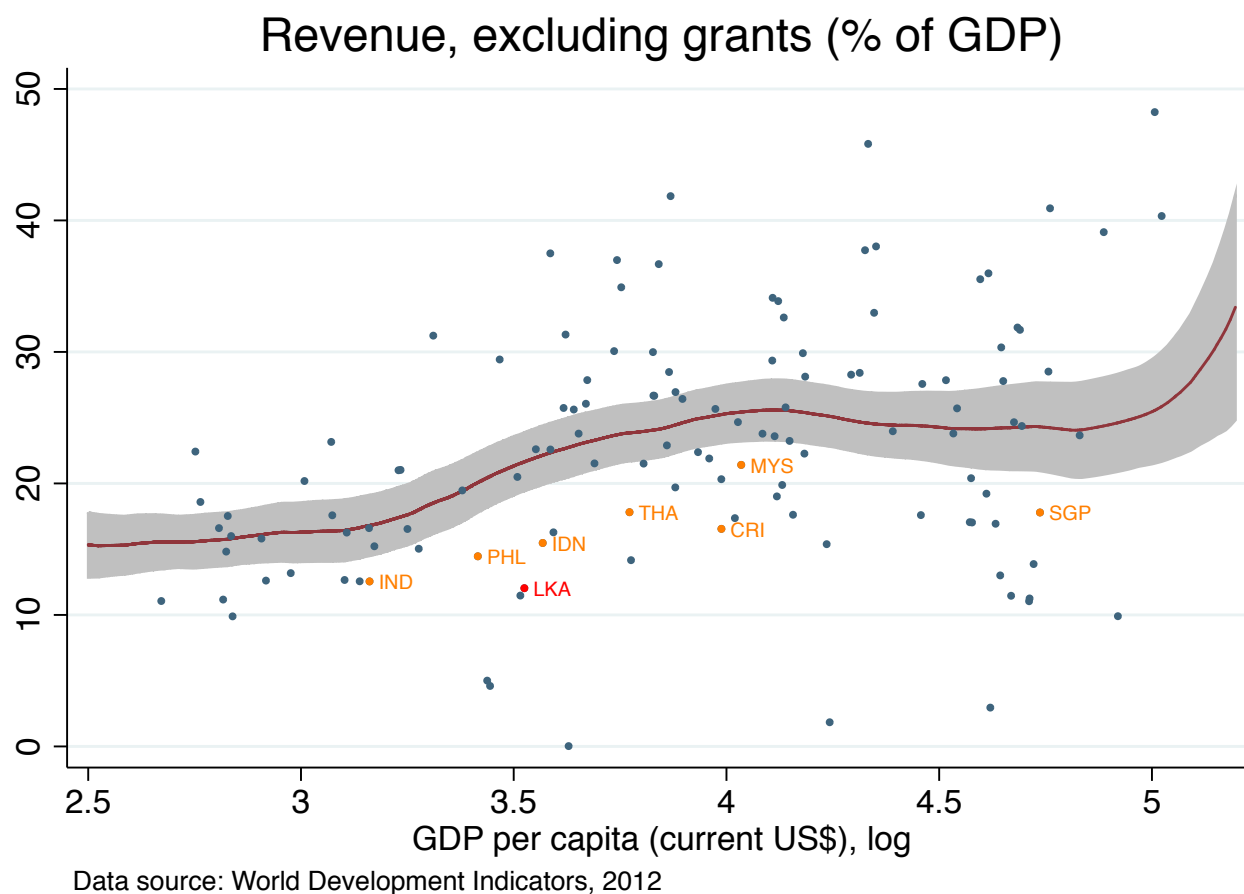
Data source: World Development Indicators

# Tax revenue has fallen consistently and reached historic lows in the last few years.



Data source: World Development Indicators

# Sri Lanka's tax revenue as a share of GDP is among the lowest in the world.



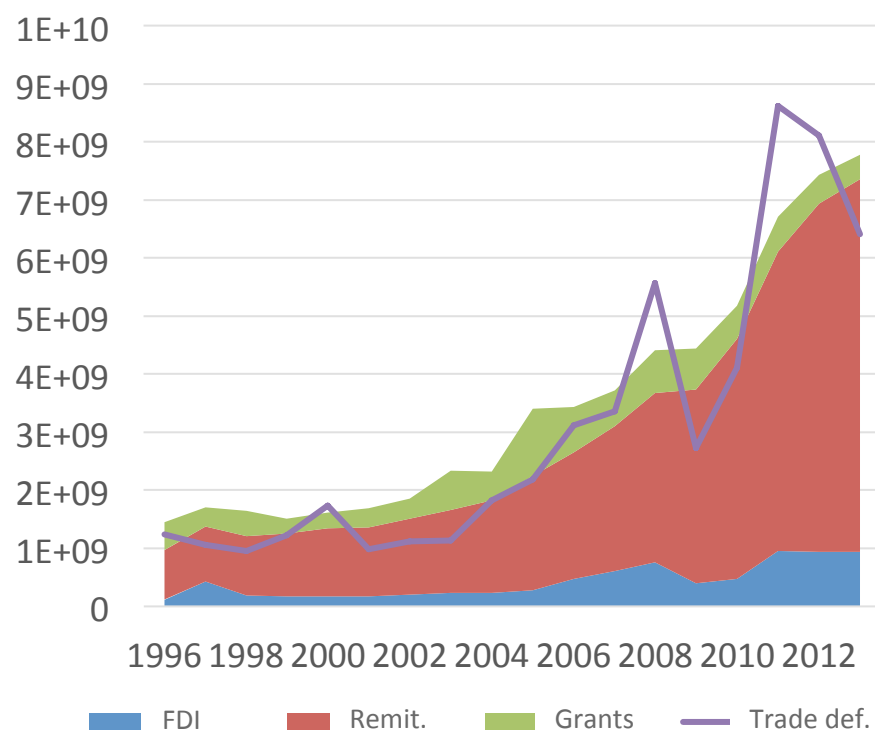
Most of the countries with tax revenue (as a % of GDP) lower than Sri Lanka are natural resource rich and do not rely on taxation to fund the government.

Tax revenue increased only slightly to 13.1% of GDP in 2015.

# Sri Lanka also has a large trade deficit has been primarily offset by remittances.

- Like many developing countries, Sri Lanka experienced increased pressure from the capital account side in 2015. During Sept.-Oct. 2015 alone, the Central Bank sold a net \$800 million of foreign reserves to defend the currency, but eventually had to abandon a *de facto* peg against the U.S. dollar.
- Given global conditions and slowing remittance growth, exports will need to grow in order to fund further growth in imports. Increasing Sri Lanka's low FDI would also help to offset balance of payments pressures.

Financing the Trade Deficit



Exchange Rate, LKR per USD: 2010-2016

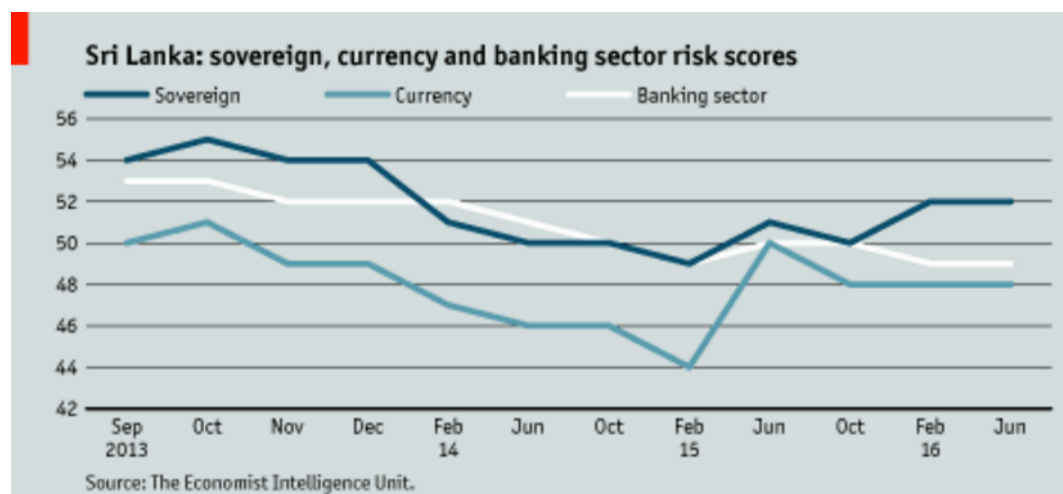


# The balance of payments trouble led to increased macroeconomic risk but changes in risk indicators do not correlate with exports and FDI.

Sovereign risk trended downward from 2013 to early 2015 then upward through early 2016. The recent increase in sovereign risk as measured by the EIU was mirrored by the market with increases in bond yields. However, this subsided when the IMF agreement was signaled in April 2016.

But exports and export-oriented FDI have remained flat to declining over swings in both directions.

Thus, tax and balance of payments weaknesses are not binding the private sector directly, but these pressures do bind government decisions, which in turn affect the private sector.



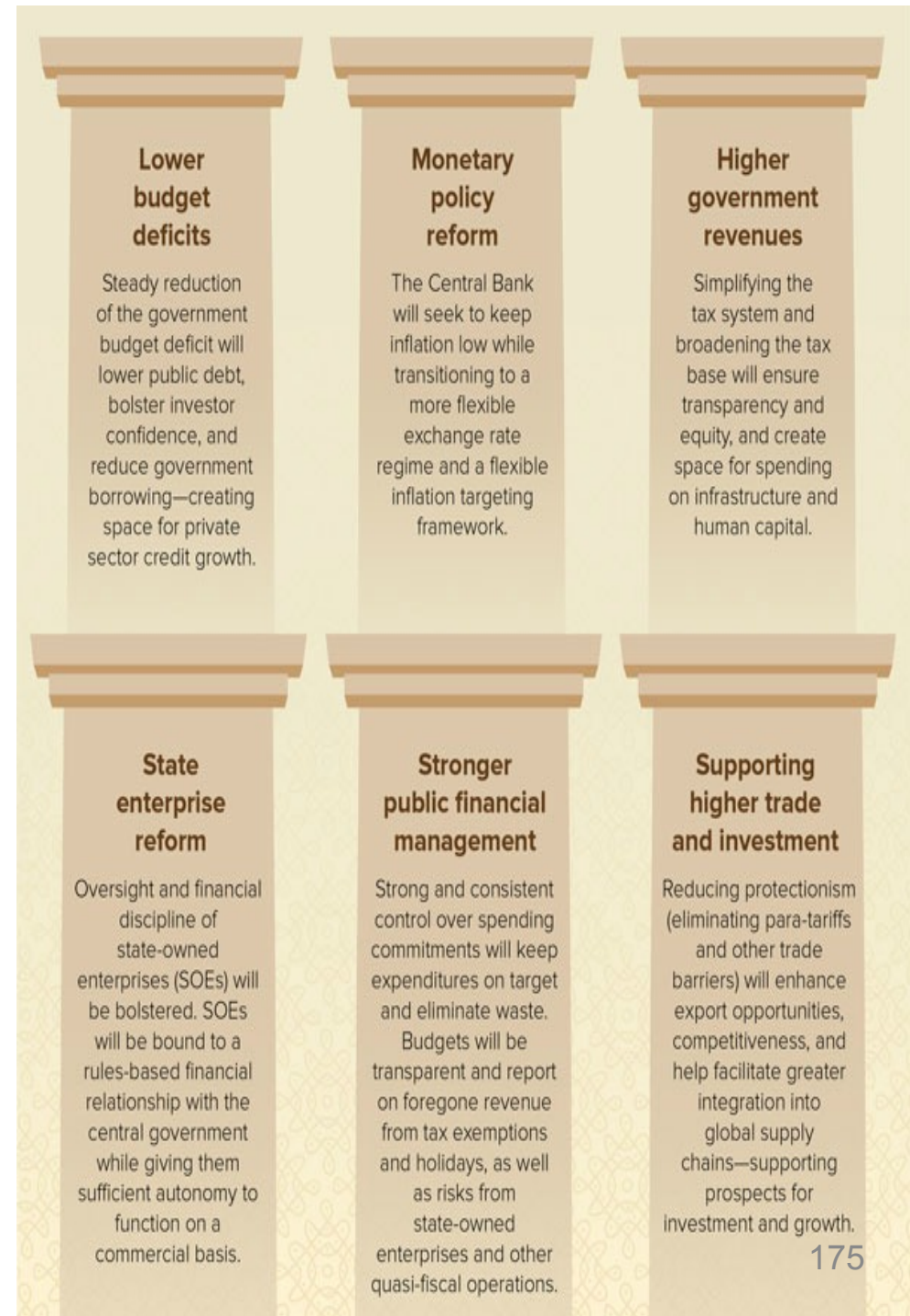
Sri Lanka 5-Year ▲ 11.600 +0.133 (+1.16%)



# The IMF and Sri Lanka agreed to 3-year \$1.5 billion EFF

- Six pillars of the program (right)
- Emphasis on growing tax revenue:
  - “A return to fiscal consolidation, targeting a reduction in the overall fiscal deficit to 3.5 percent of GDP by 2020, is the linchpin of the reform program...”
- And outward-oriented growth:
  - “Medium-term growth prospects also need to be supported through a greater role for market forces and a decisive shift toward an outward orientation ...Steadfast implementation of these reforms should strengthen Sri Lanka’s ability to attract investment, improve prospects for sustained medium-term growth, and reduce fiscal risks.”

Sources: IMF Press Release No. 16/262, June 3, 2016 & IMF Survey, June 14, 2016



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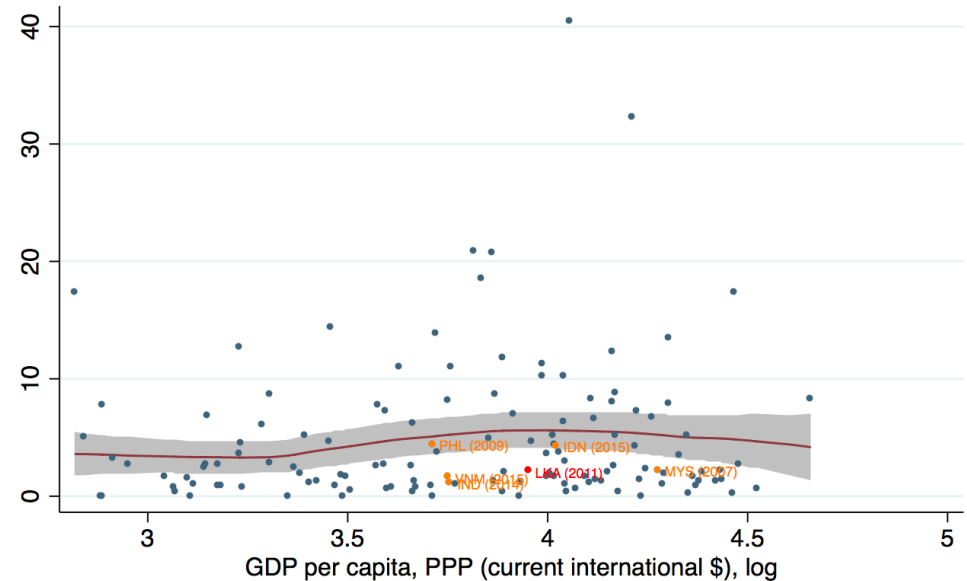
# **OTHER GOVERNMENT FAILURES / RULE OF LAW**

Corruption, judicial system, crime, etc.

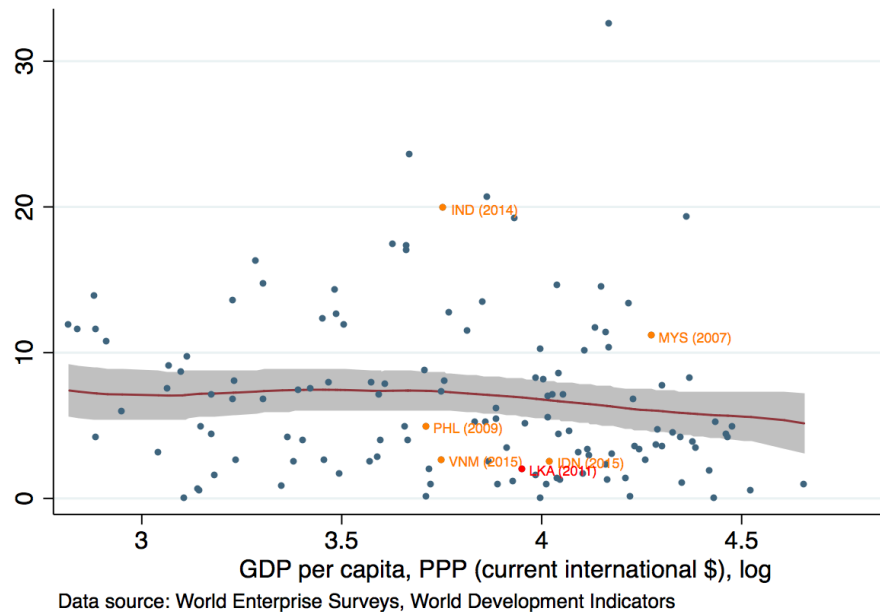


Government functions appear adequate to keep other microeconomic risks at a level below that of comparator countries and middle-income countries in general.

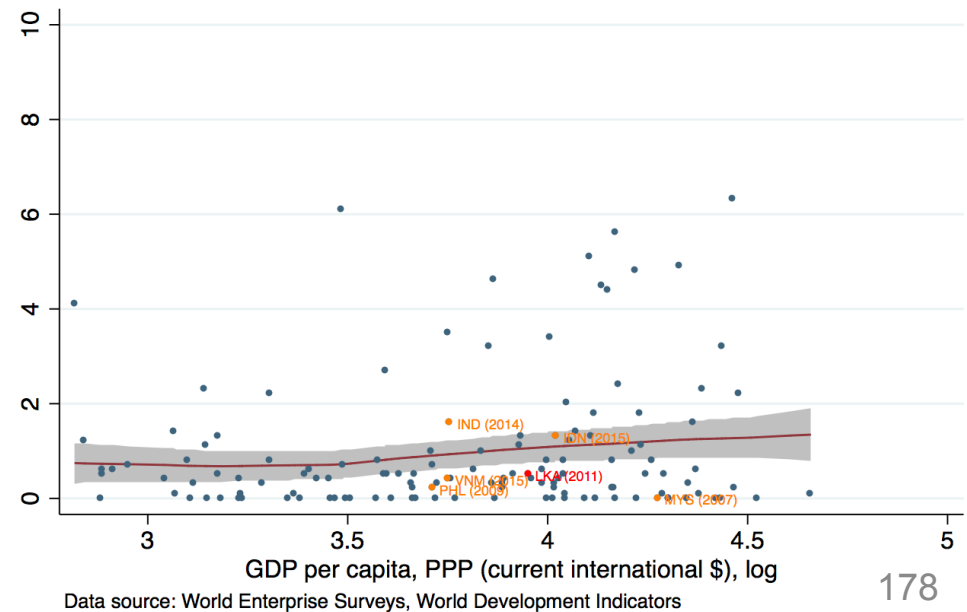
Percent of firms identifying crime, theft and disorder as the main obstacle



Percent of firms identifying corruption as the main obstacle



Percent of firms identifying courts as the main obstacle



# **MARKET FAILURES**

Self-Discovery and (Inter-Firm)  
Coordination Failures

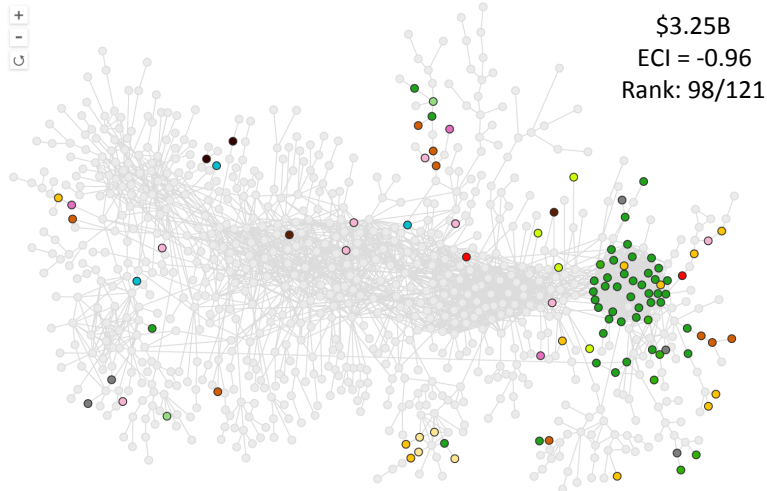
# Self-Discovery/Coordination Failures: Summary

**Main Conclusion:** (Inter-firm) coordination failures are a binding constraint to export diversification and sustained growth in Sri Lanka. This is both a binding constraint and an outcome in itself. This constraint is not mutually exclusive with infrastructure and policy-related constraints acutely affecting many industries as discussed earlier. Domestic innovation is limited by Sri Lanka's position in the product space. Export-oriented private sector activities are focused in just a few activities where Sri Lanka has discovered a comparative advantage, and the capabilities required for these activities have limited connections to new activities. Major exporting industries in Sri Lanka tend to compete with poorer countries and struggle to pay competitive wages. Innovation has occurred within the apparel sector and a few other industries at a smaller scale, but Sri Lanka has seen little transformation in what it exports over the last 20 years. This underlies the need for leveraging stronger knowhow inflows through FDI (including FDI that would create entry points into global value chains) and more effective public sector-private sector coordination to discover new areas of comparative advantage. These are direct mechanisms that can help Sri Lanka make jumps into new industries. More open immigration policies and more active connections between Sri Lanka's diaspora with firms in Sri Lanka would also be promising areas for exploration to help relieve this constraint.

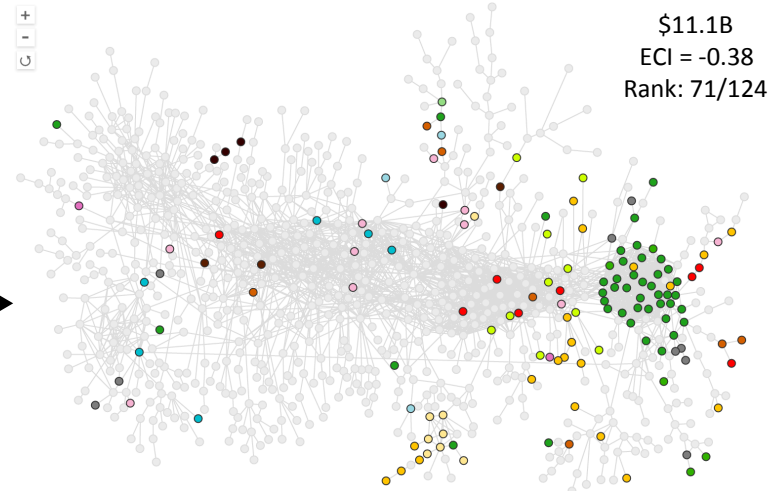
**Evidence:** Exports are concentrated in a few parts of the periphery of the Product Space. Limited diversification of exports over the last two decades has occurred into "nearby" areas of the Product Space at a rate slower than most comparator countries. Firms don't exhibit difficulties in self-discovery within existing product clusters in Sri Lanka but face significant inter-industry coordination problems when attempting to move to new industries or enter global production networks. There is a "chicken and egg" problem where industries that have been successful in comparator countries require integration in global production networks, but firms in Sri Lanka are not connected, so Sri Lanka remains unattractive for firms that depend on a connected environment.

# Sri Lanka has discovered some, not many, new exports.

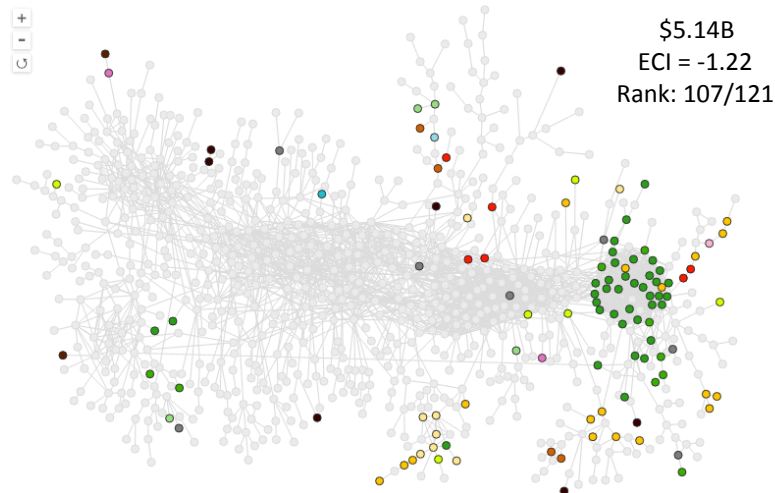
Sri Lanka's Exports, 1995



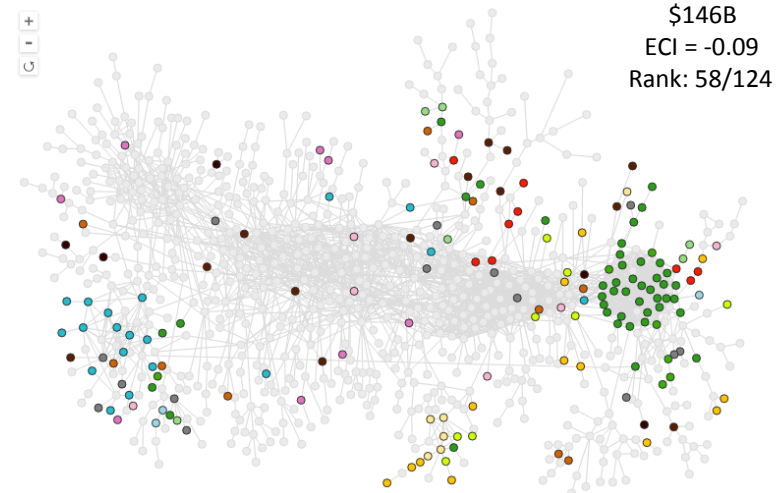
Sri Lanka's Exports, 2014



Vietnam's Exports, 1995



Vietnam's Exports, 2014



Source: Atlas of Economic Complexity

# Of the few new export products that appeared in Sri Lanka, most were highly related to current industries in 2000 (high Product Space density)

## New export products, 2000-2015

Products without RCA in 1998-2000 and with RCA in 2013-2015

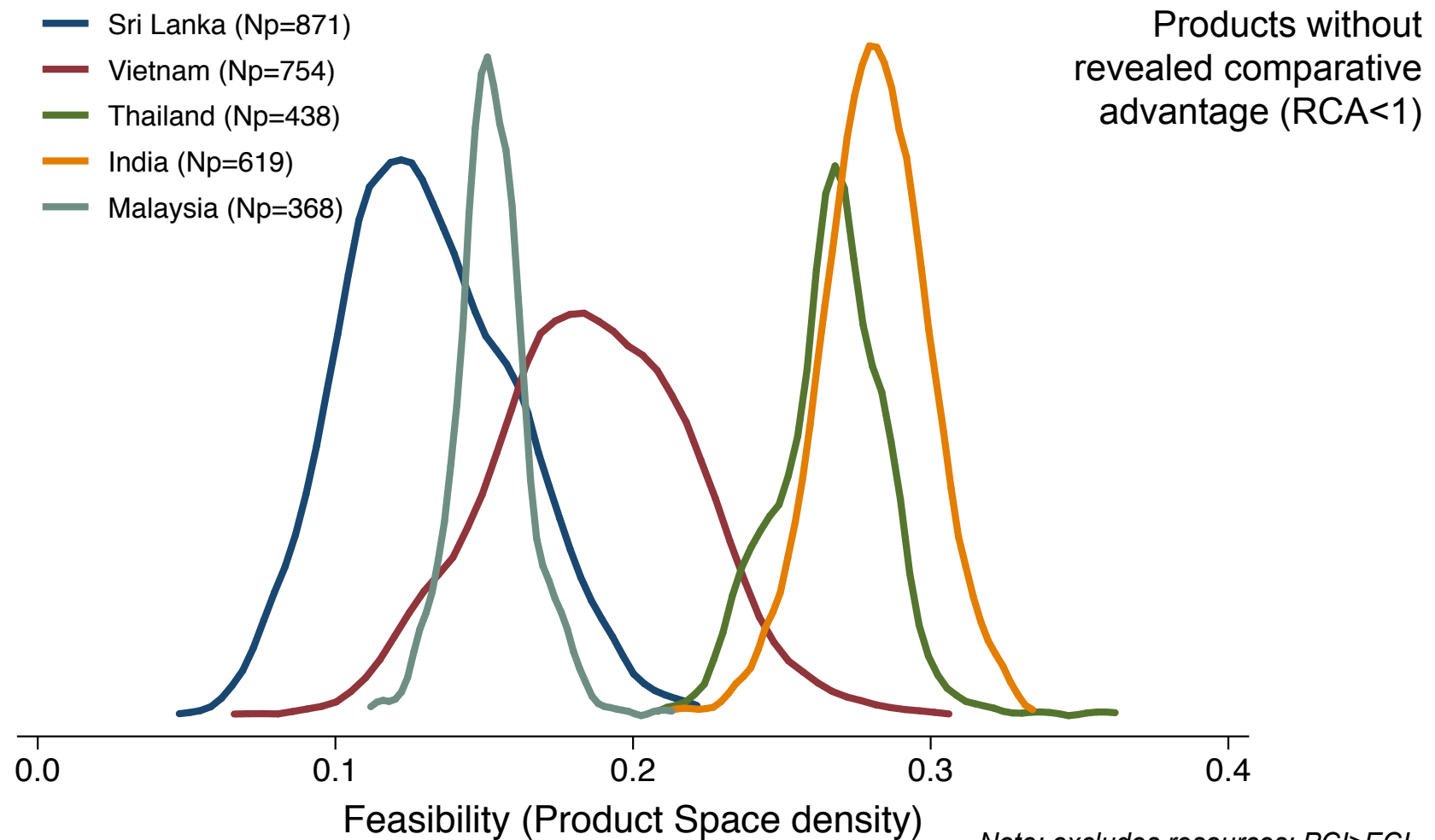
| Country     | New products | USD per capita | USD (billions) |
|-------------|--------------|----------------|----------------|
| China       | 76           | 245            | 331.6          |
| Thailand    | 70           | 326            | 21.8           |
| Vietnam     | 48           | 545      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

| Product                      | Density (percentile) |
|------------------------------|----------------------|
| Rags, textile scraps         | 0.20 (96)            |
| Woven fabrics of bast fibers | 0.18 (91)            |
| Wheat or meslin flour        | 0.16 (87)            |
| Cigarettes                   | 0.15 (81)            |
| Tulles and other net fabrics | 0.15 (79)            |
| Lead oxides                  | 0.12 (61)            |
| Textile for conveyor belts   | 0.10 (31)            |

*Note: uses both standard RCA and population-based version; excludes natural resources.*

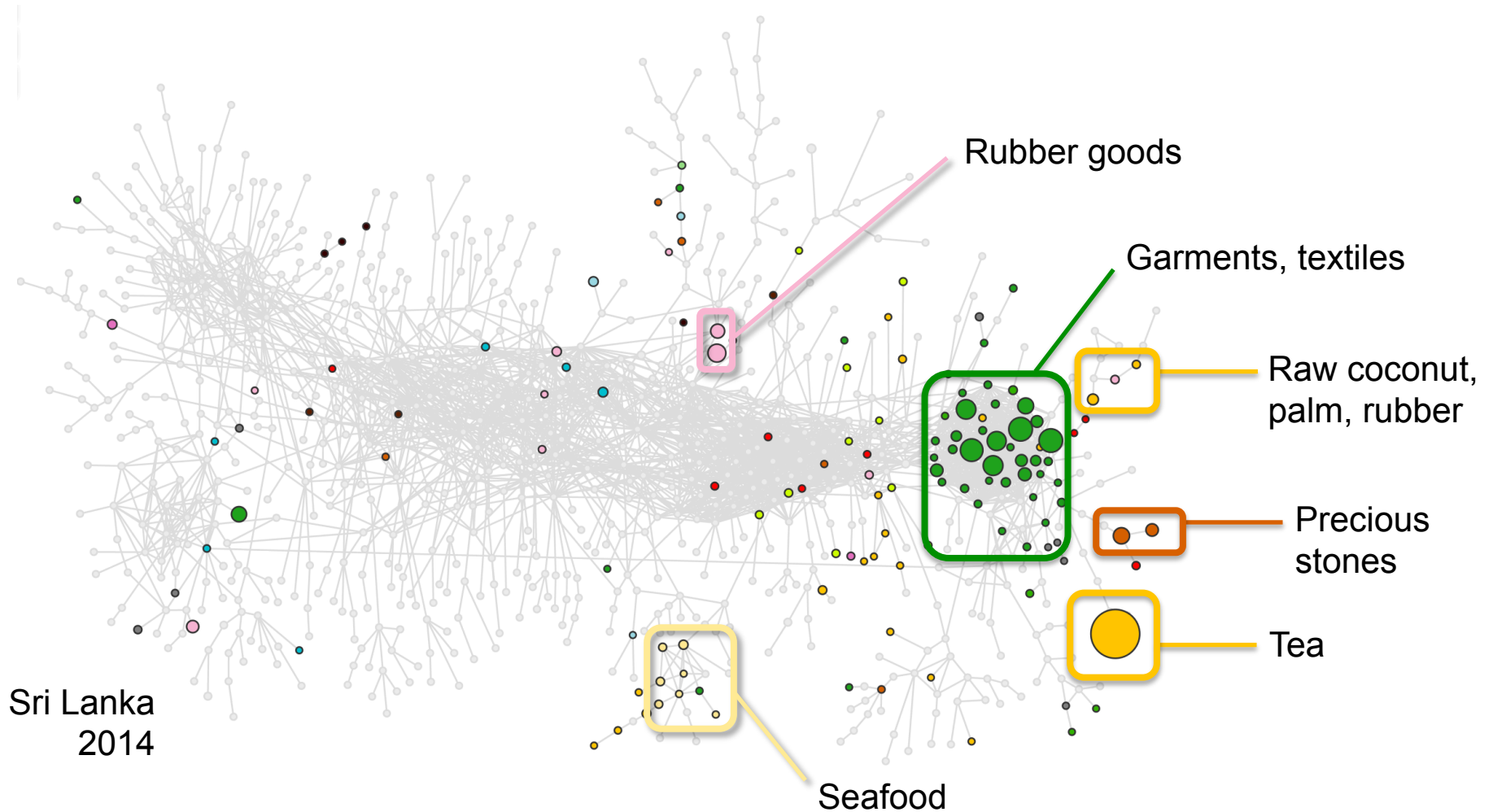
*Source: CID calculations using COMTRADE data*

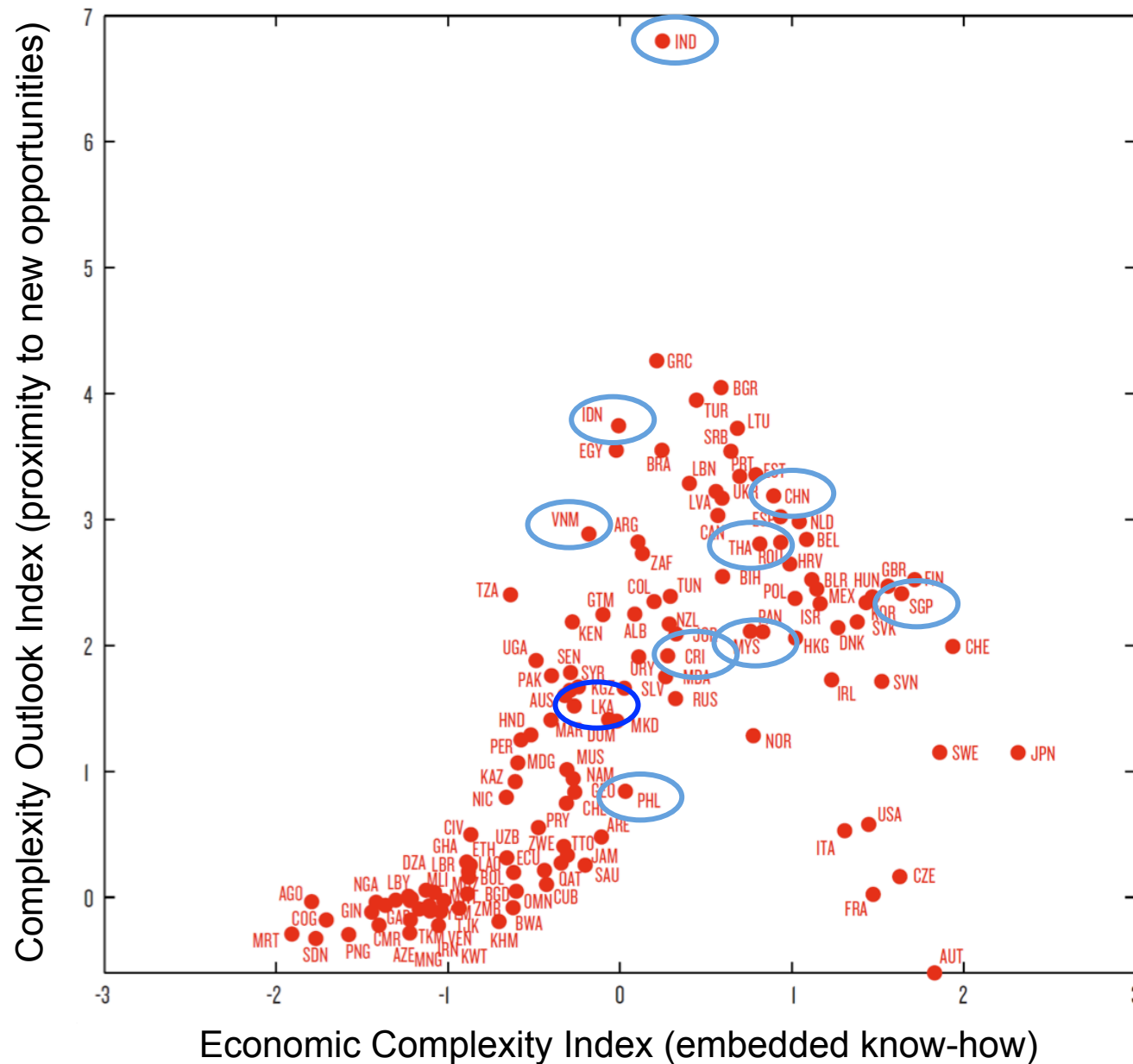
Yet few similar opportunities exist. Most products currently missing from Sri Lanka are much less closely related to current exports (low Product Space density)



Note: excludes resources;  $PCI > ECI$   
Source: calculations based on Comtrade

Product Space: current clusters are saturated. Most new export opportunities are in empty clusters, with few related industries already in Sri Lanka





Complexity Outlook Index: Sri Lanka's position in the Product Space is poor compared to its more dynamic comparators, but it could be worse.

Source: COMTRADE, via Atlas of Economic Complexity (2014)



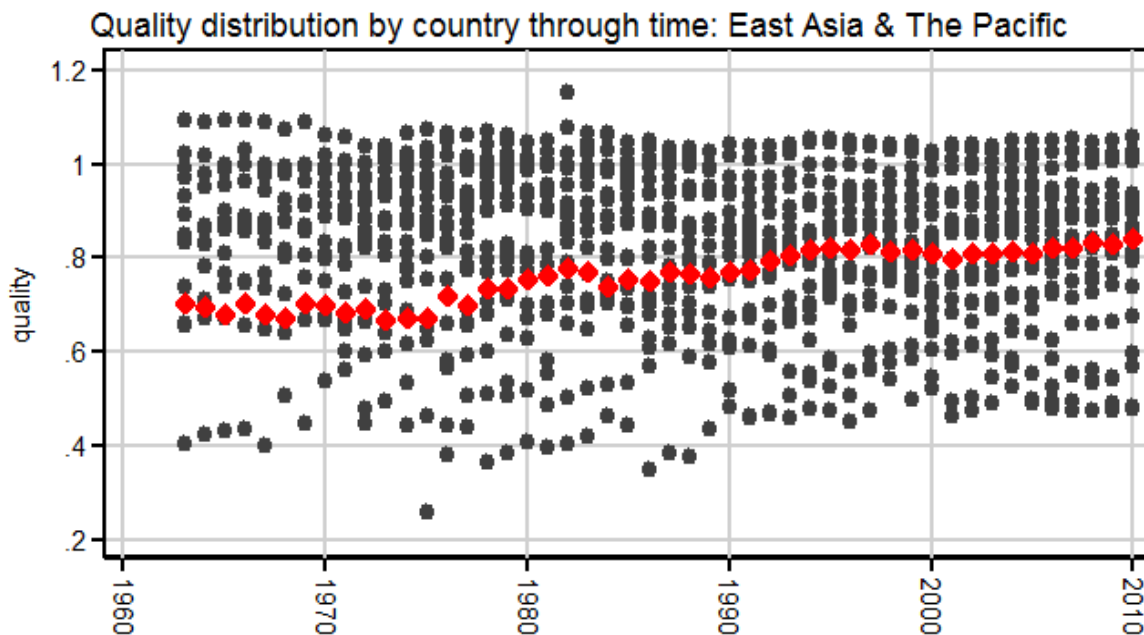
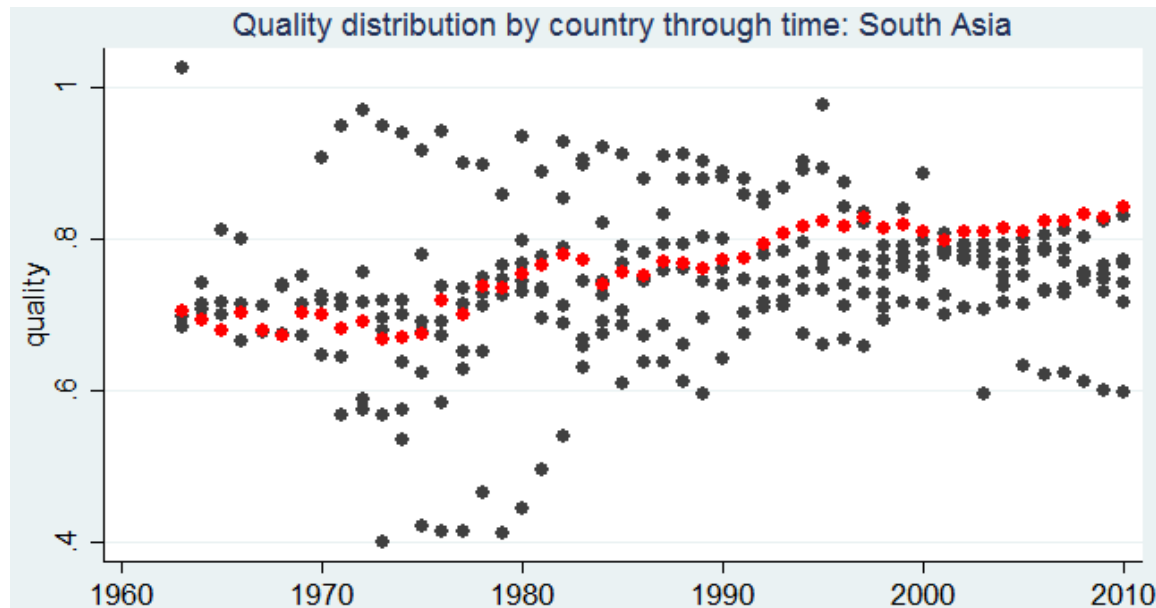
# Interpreting the Product Space analysis

- The Product Space captures the implicit gap between an industry's required conditions and the conditions available in an economy. It offers no explicit information on what the missing conditions may be...
- Self-discovery does not appear to be the problem in itself:
  - Firms are highly adept in acquiring new know-how within their own cluster. Agribusiness companies are consistently finding new markets and niche products, and garment companies are world leaders in quality, processes, supply chain development and design innovation.
  - Firms also report high level of intellectual property protection (especially compared to China)

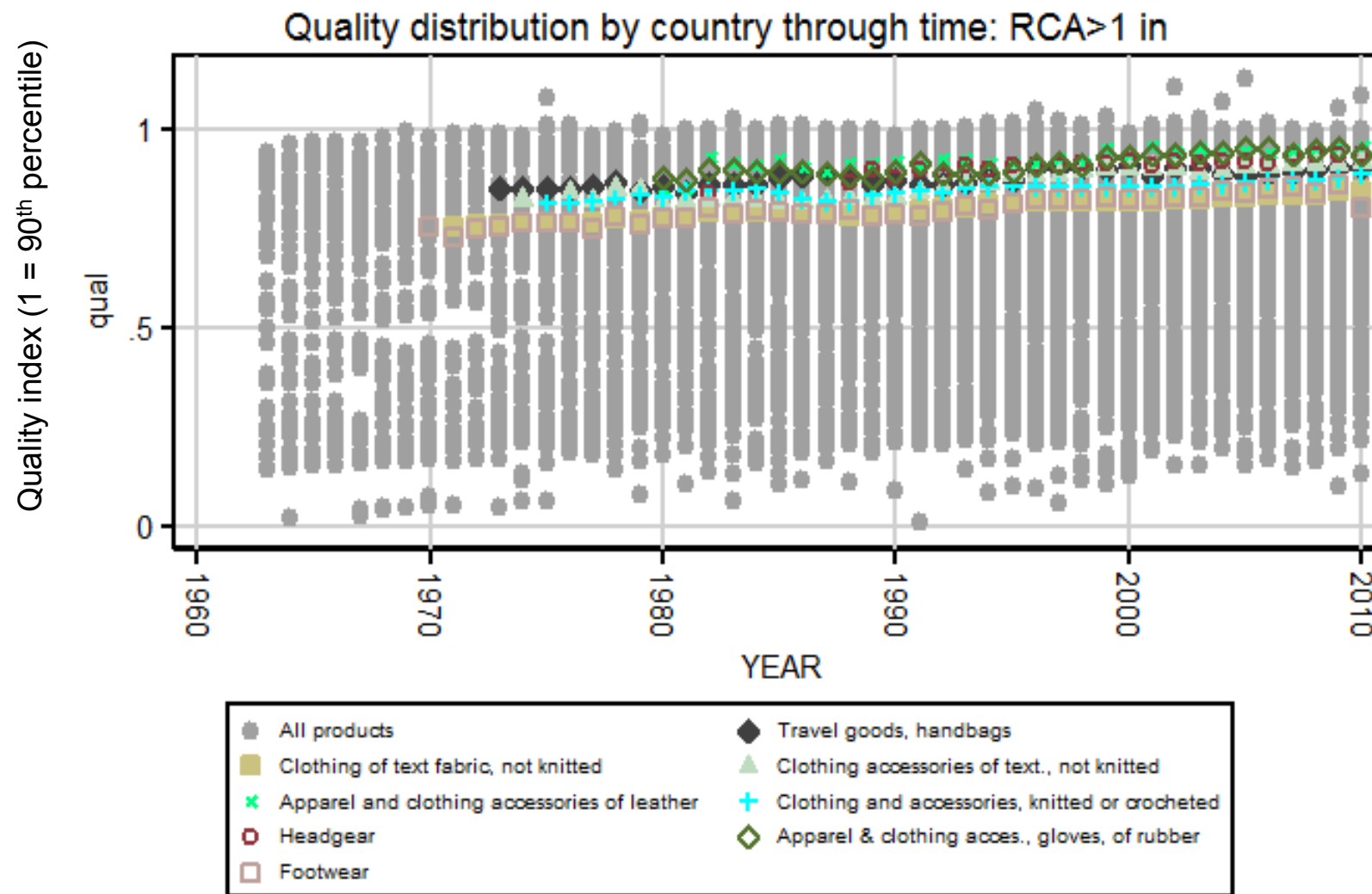
## Evidence of innovation: Steady increase in export quality over time

- Quality (as measured by unit prices controlling for many variables) is a useful measurement for comparisons *within* product categories (not between them).
- By the 2000s, Sri Lanka's quality (averaged across products) has led the South Asia region, still with room to grow quality compared to East / Southeast Asia and the Pacific.

*Technical note: Index of implied export quality is scaled to 90th percentile = 1. Source: CID calculations, based on methodology from Henn, Papageorgiou and Spatafora (2013)*



# Growth in quality driven by shift towards high quality in garments and related goods



Source: Own calculations based on Henn, Papageorgiou and Spatafora (2013), WDI

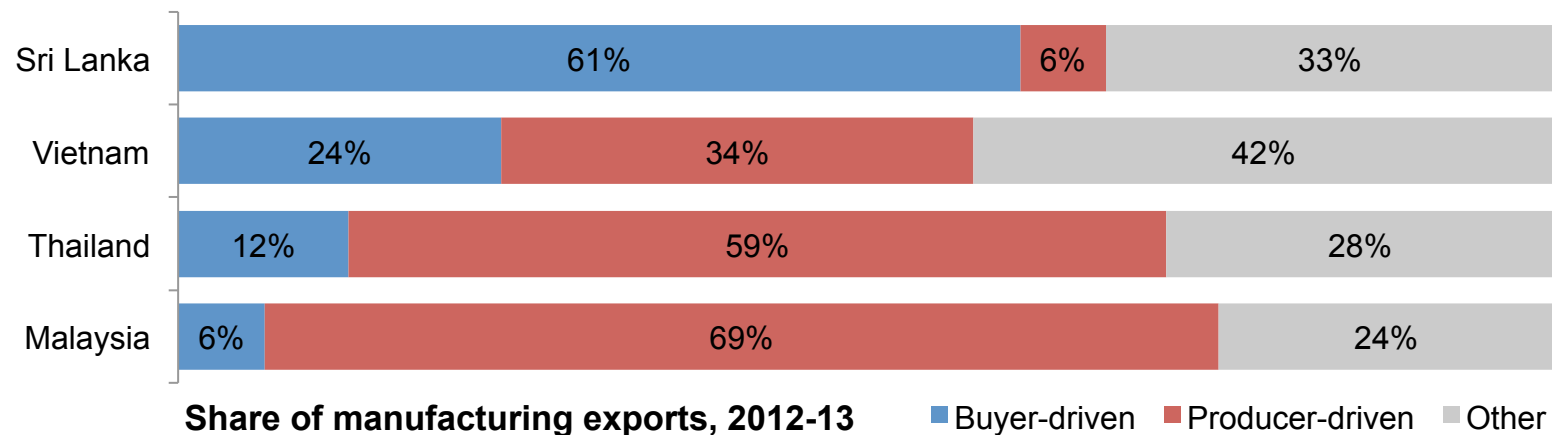
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  - Firms also report high level of intellectual property protection (especially compared to China)
- *Inter-firm, private sector coordination issues:*
  - *Inter-industry coordination requires inter-industry co-location*
  - *Or the opportunity to plug into global value chains*
  - *Both have so far been missing in Sri Lanka*

# Qualitative evidence: of ways that firms that try to diversify outside of Sri Lanka's comparative advantage often face coordination issues

- The most innovative firms are still hesitant to diversify outside of their clusters
  - Firms signal that they would not expand into new product without having a strong relationship with a buyer (generally one they are already working with in their cluster, e.g. agri processors)
  - When firms do move outside their cluster, it is generally through acquisitions and joint ventures, located in other countries (where the cluster already exists); e.g. wearable technology products have electrical components made in China and software developed in the US
- Firms starting in new clusters have trouble finding their place in a supply chain
  - Investors often complain that Sri Lanka's market is too small (although population is close to Malaysia's).
  - Missing ingredient is investment oriented towards from global production networks (GPNs), as opposed to market-seeking investment. Demand would come from downstream affiliates.
  - However, integrating into GPNs has proven difficult. e.g. auto harness start-up took years to convince Toyota to buy its product. Currently, it is trying to use local suppliers, which would save money on inputs, but its buyers are forcing it to continue buying inputs from Japan.
- Private sector distribution barriers can also constrain diversification
  - Firms complain that access to large regional markets is blocked because distributors there are not interested in selling Sri Lankan goods.
  - However, some firms manage to get around the barrier. A garment company started its own brand for regional markets, ensuring full control over sales; a furniture company has been setting up its own branches across India.

# Evidence of coordination gaps in (lack of) global production sharing: missing exports are “producer-driven”, which tend to be structured through MNEs



| Production Network type      | Buyer-driven  | Producer-driven   |
|------------------------------|---|---|
| <b>Economic Sectors</b>      | Consumer non-durables                               | Consumer durables, intermediate goods and capital goods |
| <b>Typical Industries</b>    | Apparel, footwear, furniture, toys and diamonds     | Automobiles, computers, aircraft and semiconductors     |
| <b>Drivers</b>               | Commercial capital                                  | Industrial capital                                      |
| <b>Core Competencies</b>     | Design, brand, marketing                            | R&D, production   |
| <b>Barriers to Entry</b>     | Economies of scope                                  | Economies of scale                                      |
| <b>Ownership of Firms</b>    | Local firms (predominantly in developing economies) | Multinational corporations                              |
| <b>Main Network Lines</b>    | Trade-based   | Investment-based  |
| <b>Predominant Structure</b> | Horizontal  | Vertical  |

Table source: Gereffi (1999), via Devadason (2008). Graph source: Athukorala 2016

# Interpreting the Product Space analysis (*cont.*)

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- Inter-firm, private sector coordination issues:
  - Inter-industry coordination requires inter-industry co-location
  - Or the opportunity to plug into global value chains
  - Both have so far been missing in Sri Lanka
- *For many industries, the problem may still be tied to public goods or policy:*
  - *e.g. products requiring hazmat facilities will co-locate in countries with them; trade policy biased against certain industries will prevent their discovery*

# Self-Discovery/Coordination Failures: Summary

**Main Conclusion:** (Inter-firm) coordination failures are a binding constraint to export diversification and sustained growth in Sri Lanka. This is both a binding constraint and an outcome in itself. This constraint is not mutually exclusive with infrastructure and policy-related constraints acutely affecting many industries as discussed earlier. Domestic innovation is limited by Sri Lanka's position in the product space. Export-oriented private sector activities are focused in just a few activities where Sri Lanka has discovered a comparative advantage, and the capabilities required for these activities have limited connections to new activities. Major exporting industries in Sri Lanka tend to compete with poorer countries and struggle to pay competitive wages. Innovation has occurred within the apparel sector and a few other industries at a smaller scale, but Sri Lanka has seen little transformation in what it exports over the last 20 years. This underlies the need for leveraging stronger knowhow inflows through FDI (including FDI that would create entry points into global value chains) and more effective public sector-private sector coordination to discover new areas of comparative advantage. These are direct mechanisms that can help Sri Lanka make jumps into new industries. More open immigration policies and more active connections between Sri Lanka's diaspora with firms in Sri Lanka would also be promising areas for exploration to help relieve this constraint.

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# **SRI LANKA'S GROWTH SYNDROME**

# Reminder of what is constrained:

|                                | What appears healthy?   | What appears constrained?   |
|--------------------------------|---|---|
| GDP growth by expenditure type | <ul style="list-style-type: none"> <li>• Overall GDP growth</li> <li>• Growth contribution from investment, government &amp; household consumption</li> </ul>   | <ul style="list-style-type: none"> <li>• Trade component of growth (low, stagnant exports; persistent trade deficit)</li> </ul>                     |
| GDP growth by sector           | <ul style="list-style-type: none"> <li>• Construction &amp; real estate</li> <li>• Retail, logistics, hospitality, recreation (possibly including tourism)</li> <li>• Finance, insurance, technical / support</li> <li>• ICT (growing, though still small)</li> </ul> | <ul style="list-style-type: none"> <li>• Agriculture &amp; fisheries</li> <li>• Manufacturing</li> </ul>  |
| Exports by product category    | <ul style="list-style-type: none"> <li>• Goods first exported in 1980s or earlier</li> <li>• Garments, agriculture</li> </ul>   | <ul style="list-style-type: none"> <li>• New export products</li> <li>• Manufactures (machinery &amp; electrical)</li> </ul>                        |
| Exports of services            | <ul style="list-style-type: none"> <li>• Finance/insurance, logistics, tourism</li> </ul>   | <ul style="list-style-type: none"> <li>• ICT/BPO (small, relatively slow growth)</li> </ul>   |
| Exports by complexity          | <ul style="list-style-type: none"> <li>• Export products associated with lowest income &amp; “know-how”</li> </ul>  | <ul style="list-style-type: none"> <li>• Export products associated with mid-to-high income &amp; “know-how”</li> </ul>                             |
| FDI                            | <ul style="list-style-type: none"> <li>• Tourism, logistics, finance, &amp; construction investment</li> </ul>  | <ul style="list-style-type: none"> <li>• Overall FDI</li> <li>• Manufacturing (electronics, vehicles, materials) &amp; energy investment</li> </ul> |

**QUESTION OF THE GROWTH DIAGNOSTIC:** What are the constraints that bind **investment in new and non-traditional export-oriented activities**?

# Summary of Findings:

<sup>1</sup> Further research needed to confirm scope

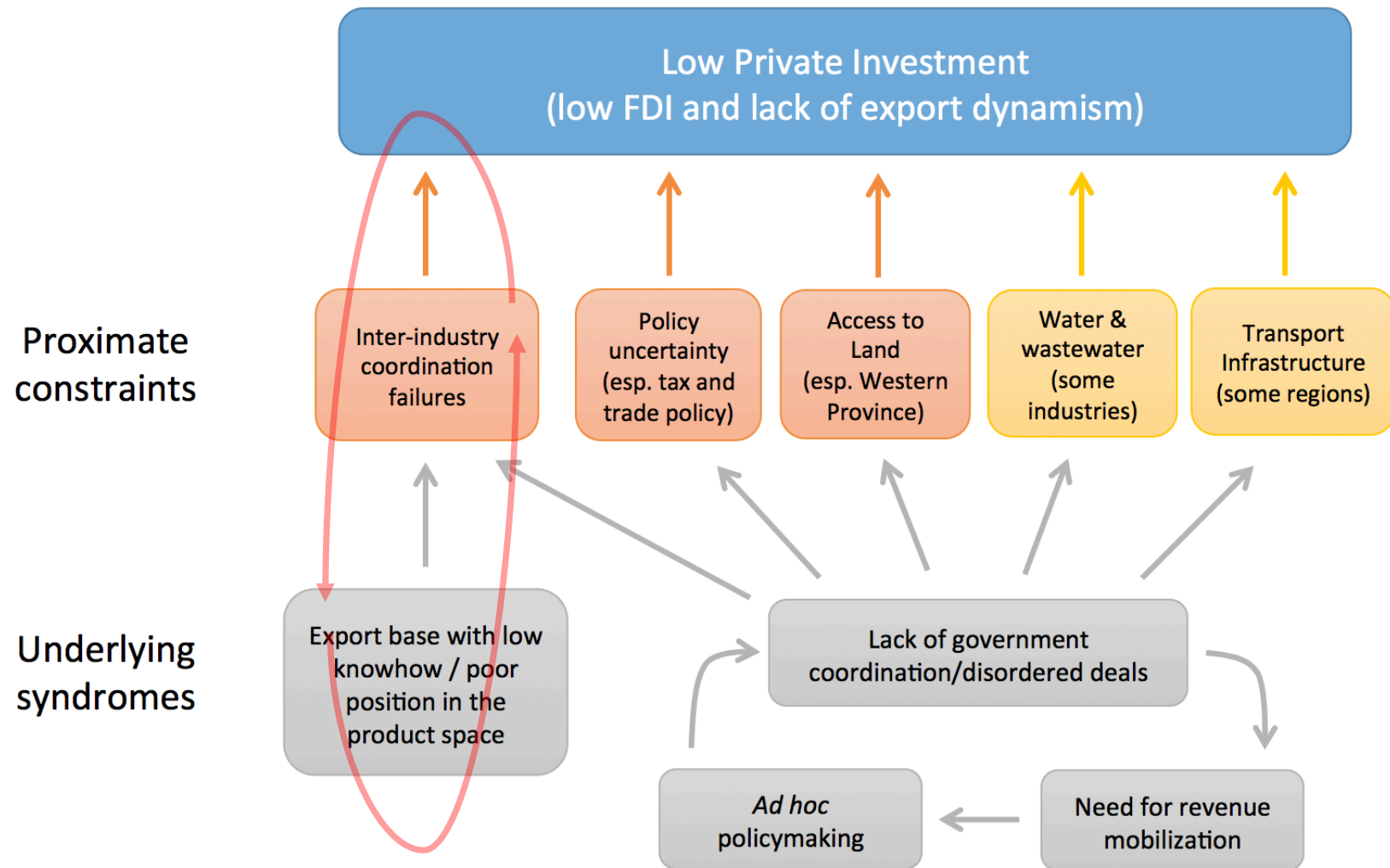
<sup>2</sup> Acute risk of becoming binding in the future

<sup>3</sup> Partially underlies binding constraint(s)

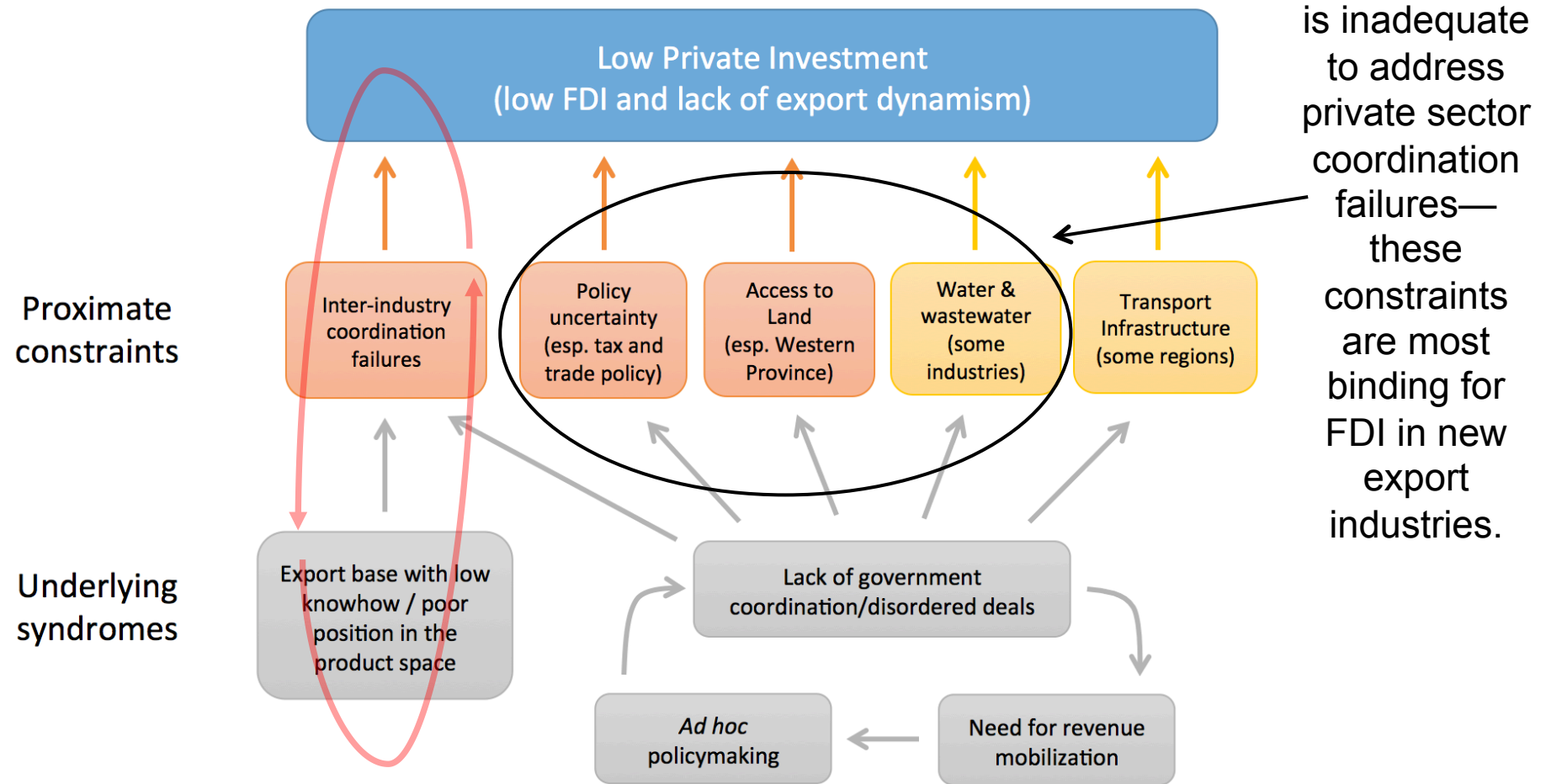
| Most Binding Constraints                     | Non-Binding Constraints             |
|--|-------------------------------------|
| Coordination Failures                        | Access to Finance                   |
| Access to Land                               | Education                           |
| Policy Uncertainty (esp. tax & trade policy) | Health                              |
| Water and Wastewater (some industries)       | Geography                           |
| Transportation (some regions) <sup>1</sup>   | Electricity <sup>2</sup>            |
|  | Labor Regulations                   |
|  | Macro-Fiscal Stability <sup>3</sup> |
|  | Corruption, Courts & Crime          |

**QUESTION OF THE GROWTH DIAGNOSTIC:** What are the constraints that bind **investment in new and non-traditional export-oriented activities**?

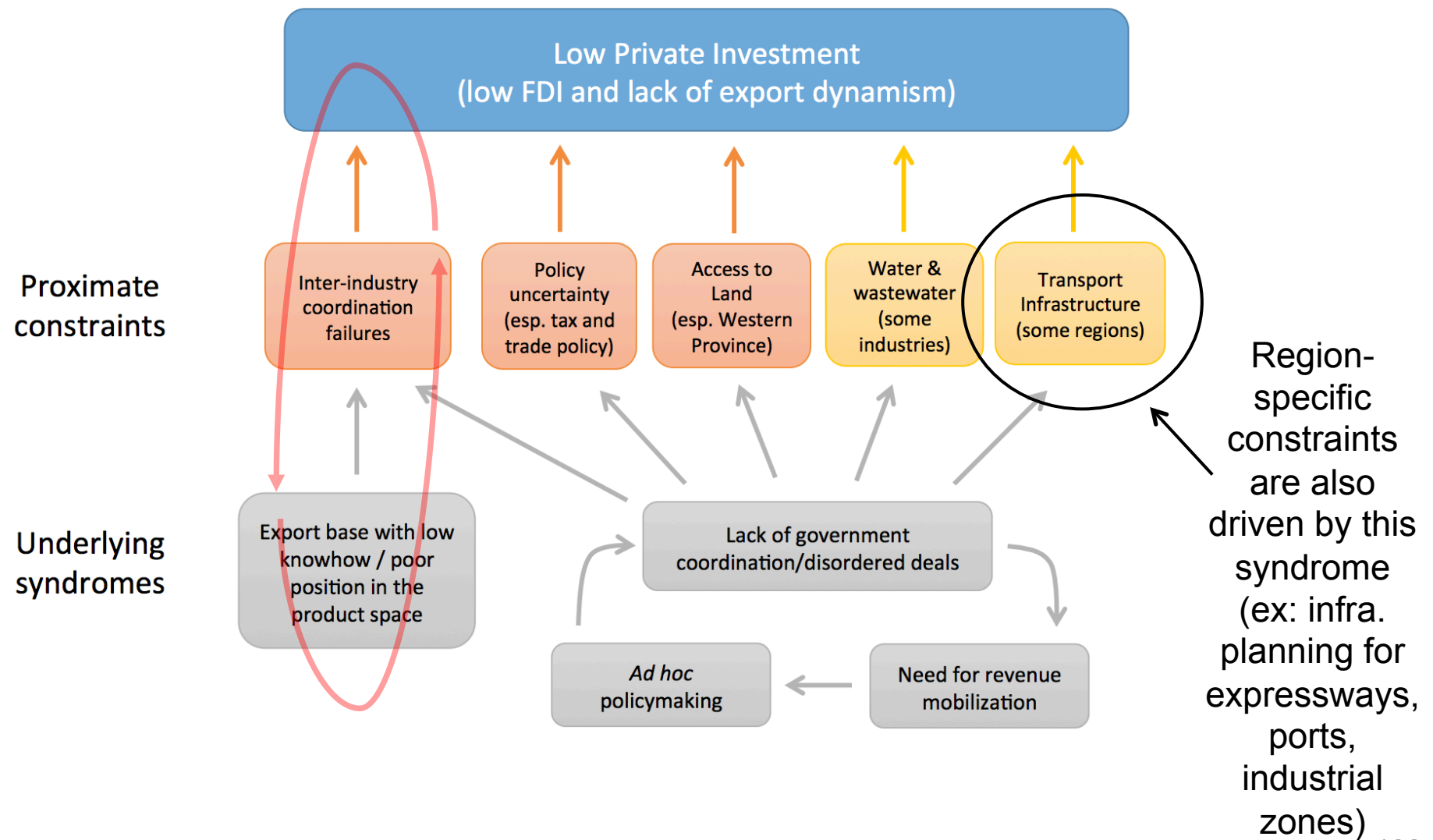
# A Growth Syndrome:



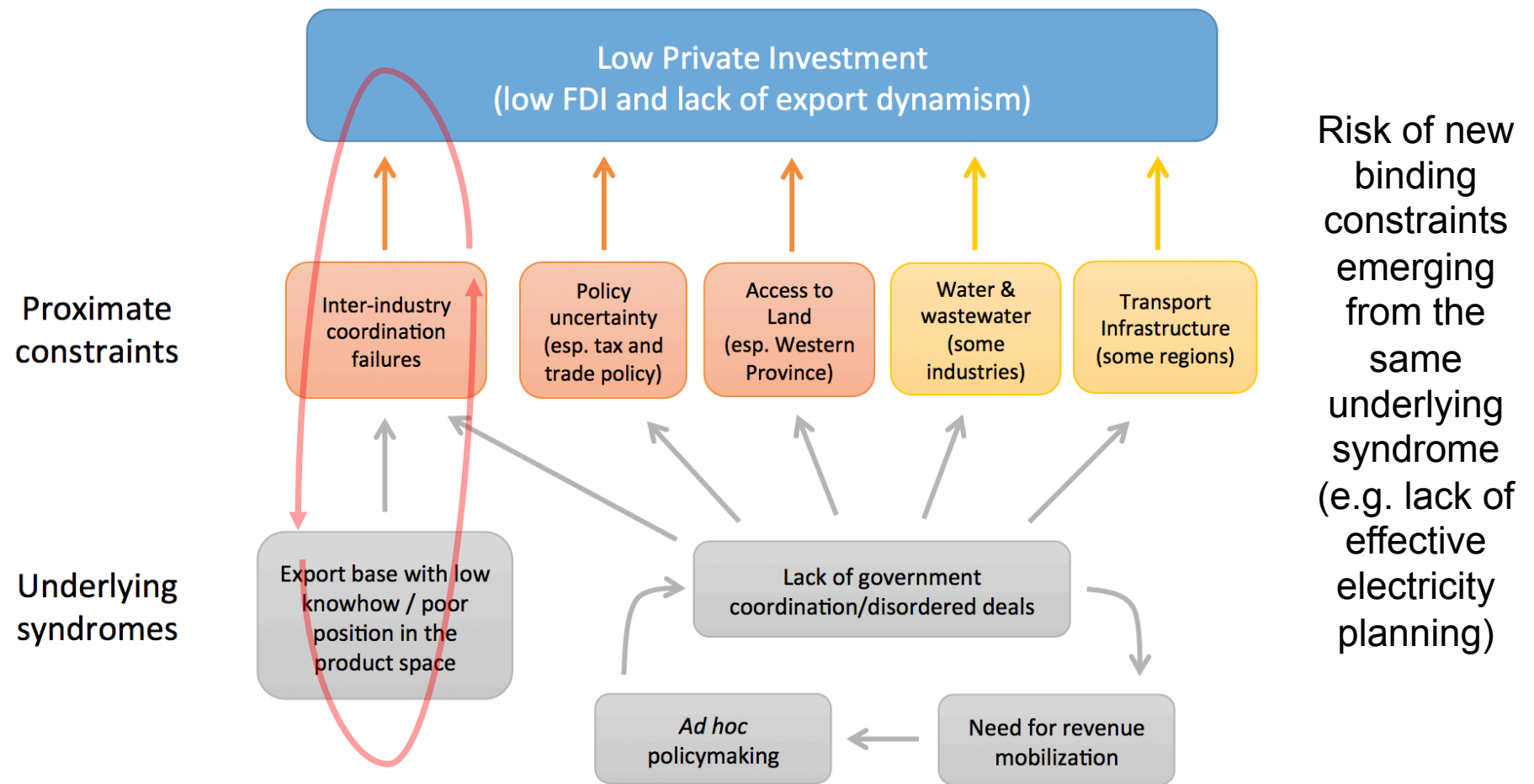
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# **APPENDIX**

## LABOR SCARCITY

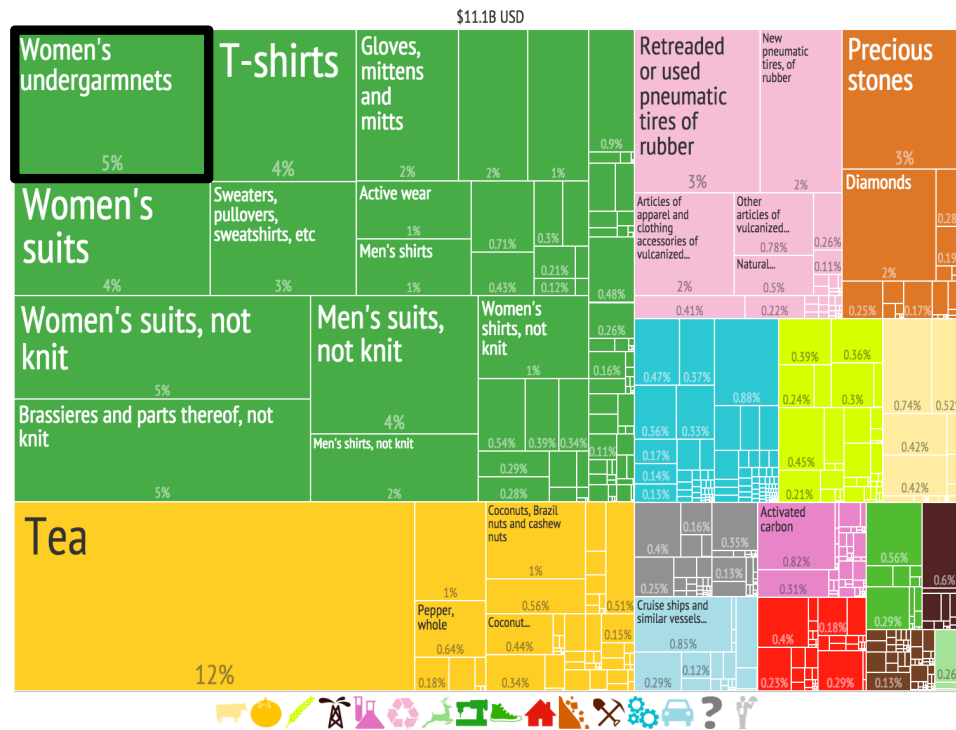


## **Vulnerable existing exports:** current major export industries are being squeezed, with wage growth outpacing productivity gains

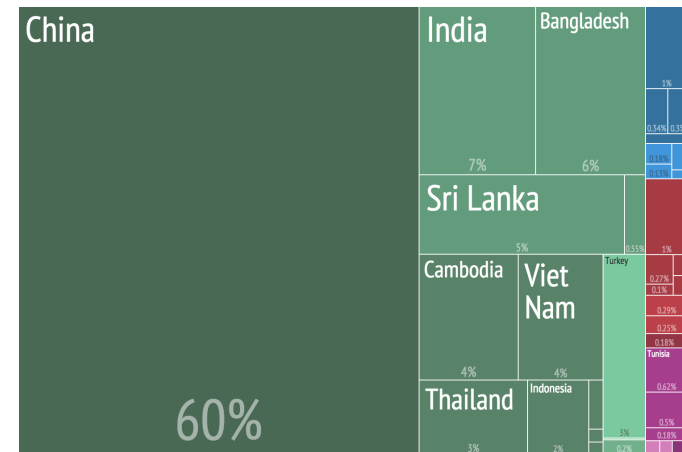
- *Wage ceiling:* Many of Sri Lanka's biggest export industries face low wage ceilings because they are labor-intensive and face international competition from poorer countries.
- *Wage floor:* The wage floor in Sri Lanka is rising because overall growth has translated into higher wages for workers in non-tradable activities, including public sector employment.
- These big export industries respond by a mix of product and process innovation within Sri Lanka (leading to very high quality of garment exports) and investment in new opportunities outside Sri Lanka.
- A limited number of new export industries are able to provide higher wages and thus avoid being squeezed.
- Accelerating export diversification would result in more good jobs and provide more sustained growth by helping to address the balance of payments problem.

# Wage ceiling (1): The apparel sector tends to face competition from low income countries

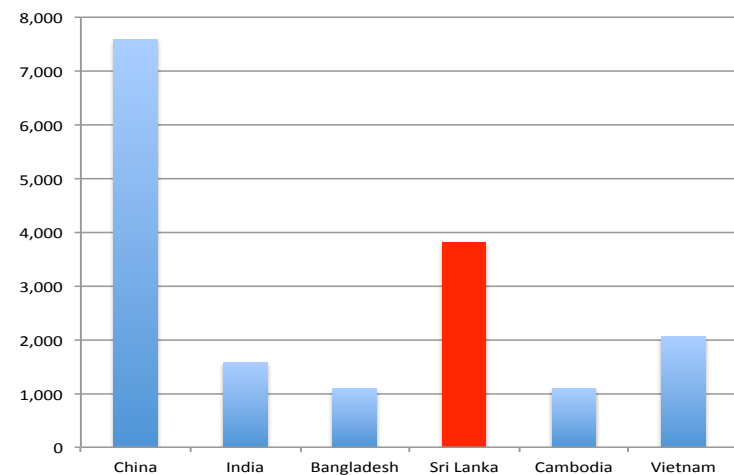
Sri Lanka's Exports, 2014



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



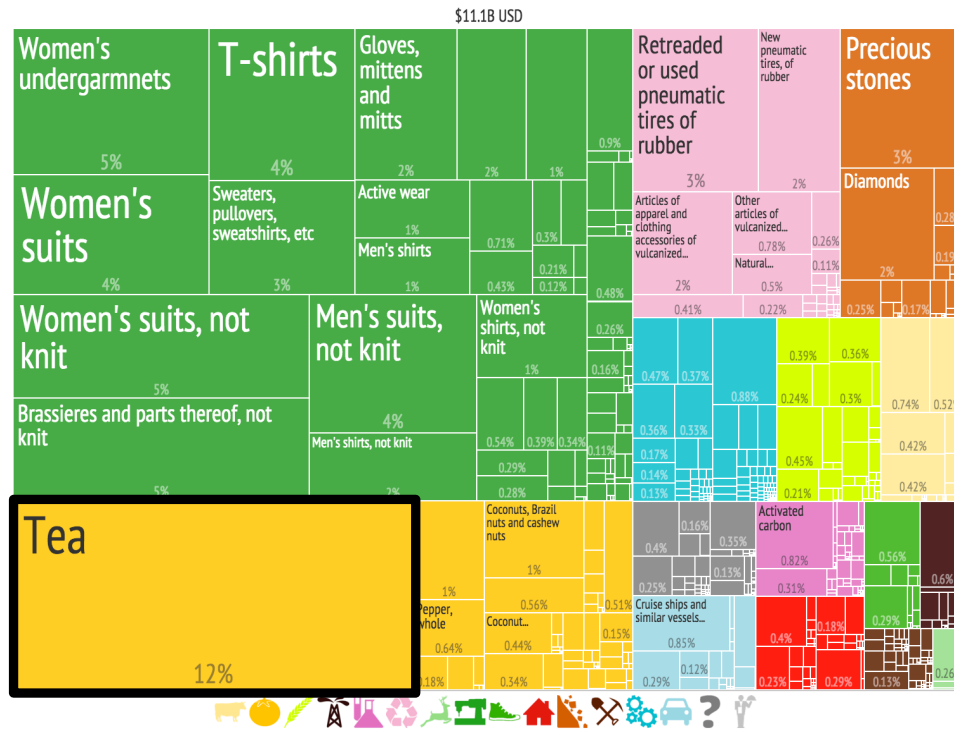
GDP per capita (USD) in 2014



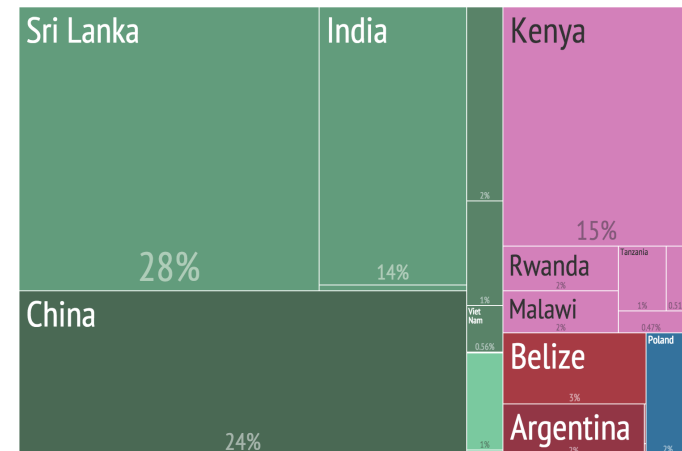
Sources: Atlas of Economic Complexity; WDI

# Wage ceiling (2): Tea and other plantation agriculture tend to face competition from low income countries

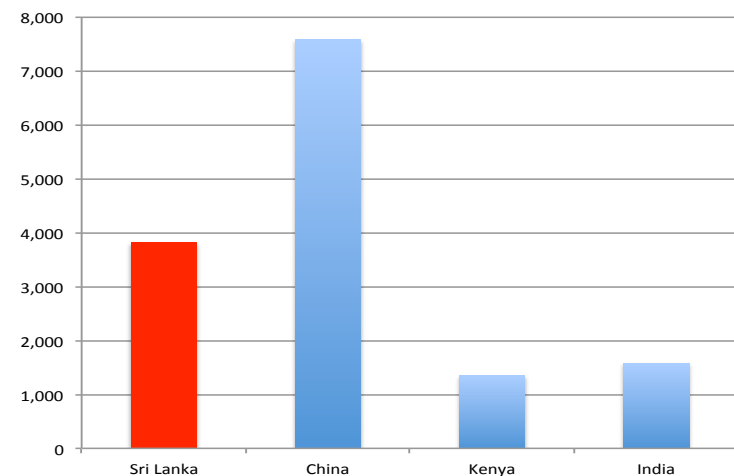
Sri Lanka's Exports, 2014



Global Share of Tea Exports (Net) in 2014



GDP per capita (USD) in 2014



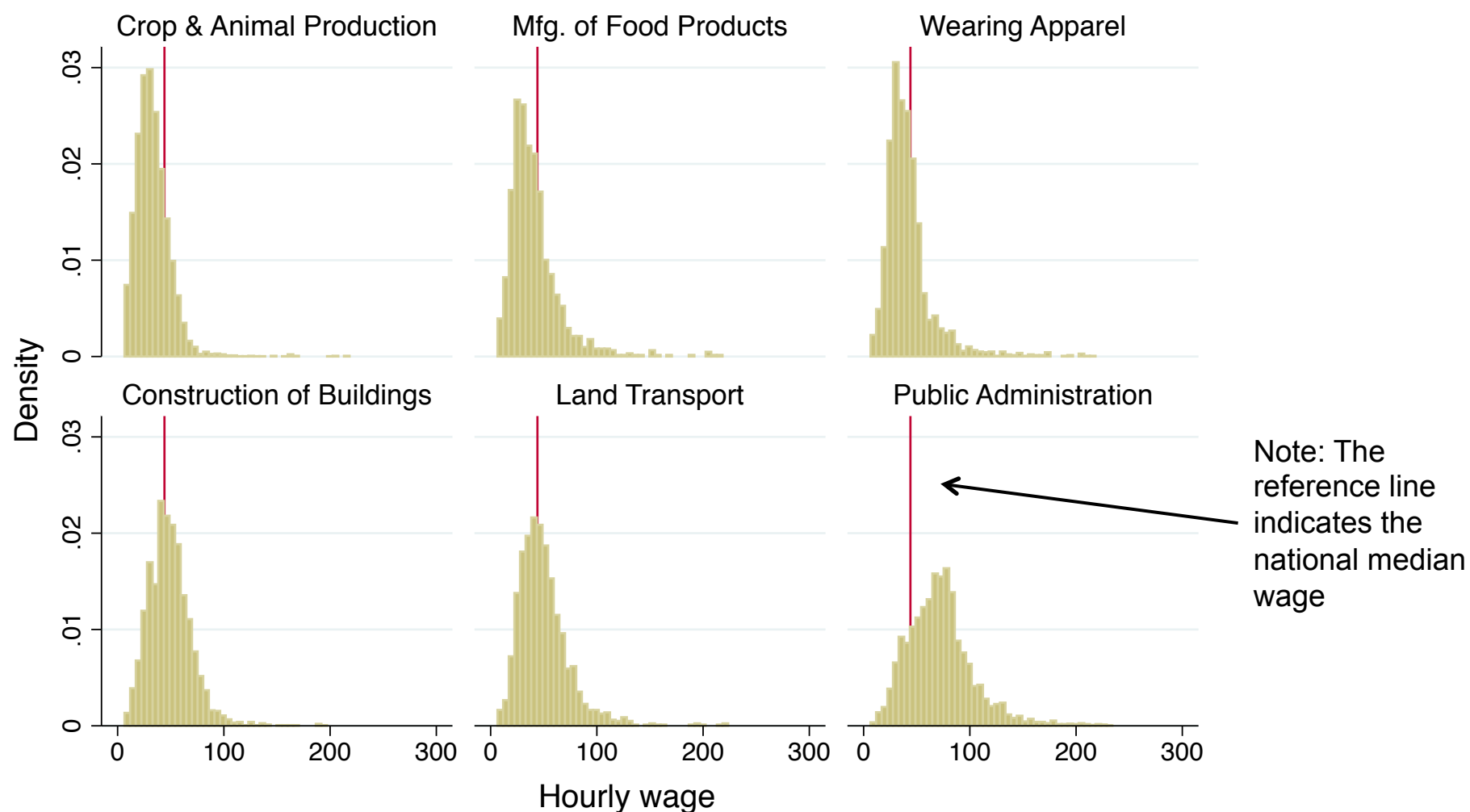
Sources: Atlas of Economic Complexity; WDI

As a result, the wage distributions for such industries in Sri Lanka tend to clump at lower level (below national median wage).



Note: The (red) reference line indicates the national median wage for all industries.

Wage floor: Low skill workers can often find higher wages in non-tradable activities (such as construction, transportation including tuk tuks, government jobs)

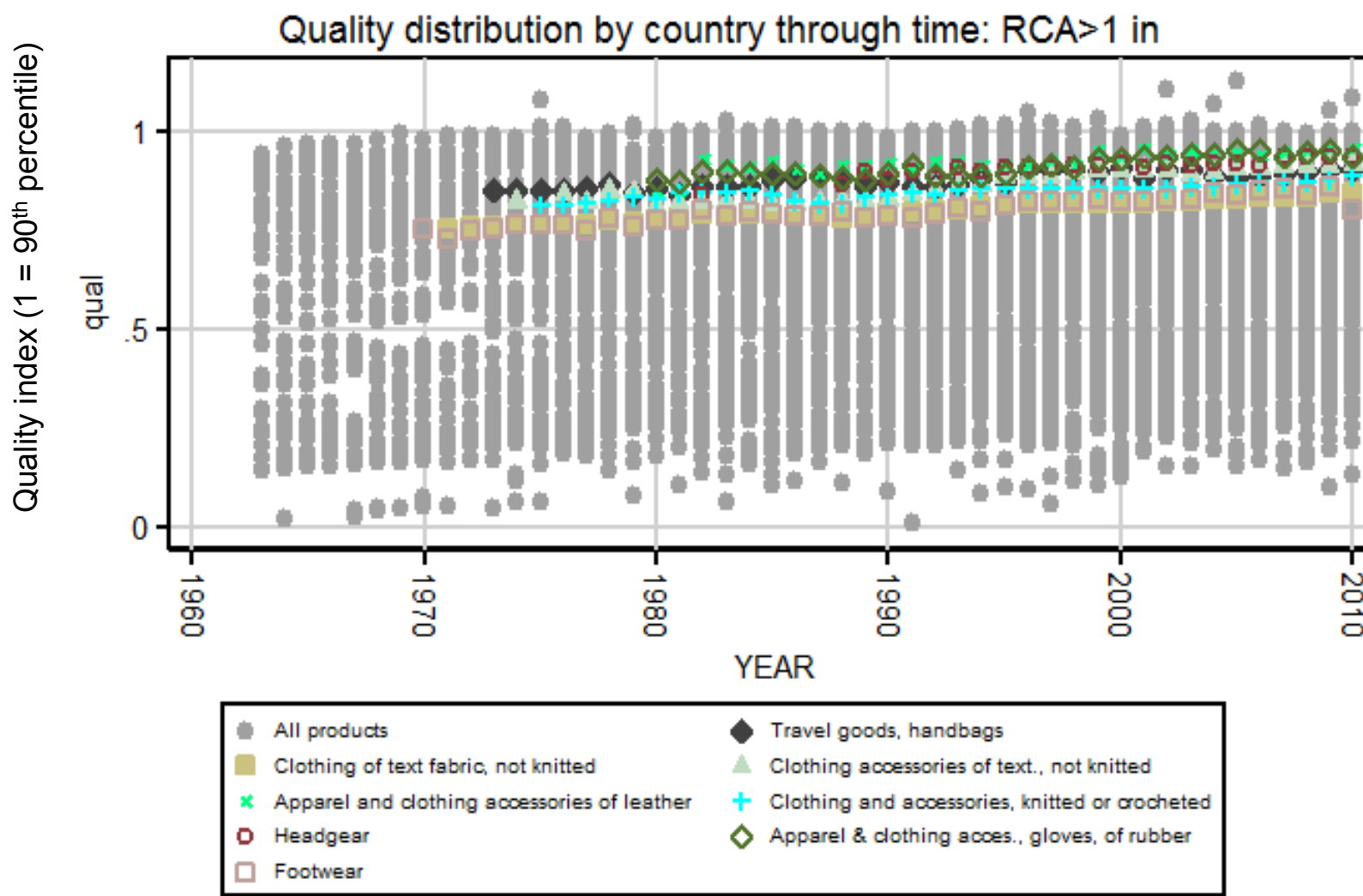


Note: Wages in in 2007 Rs not adjusted for inflation. Source: Calculations using Labor Force Survey 2013-14

Firms in the garment sector report a problem of “labor scarcity” and respond to the constraint by a mix of innovating in Sri Lanka and expanding overseas.

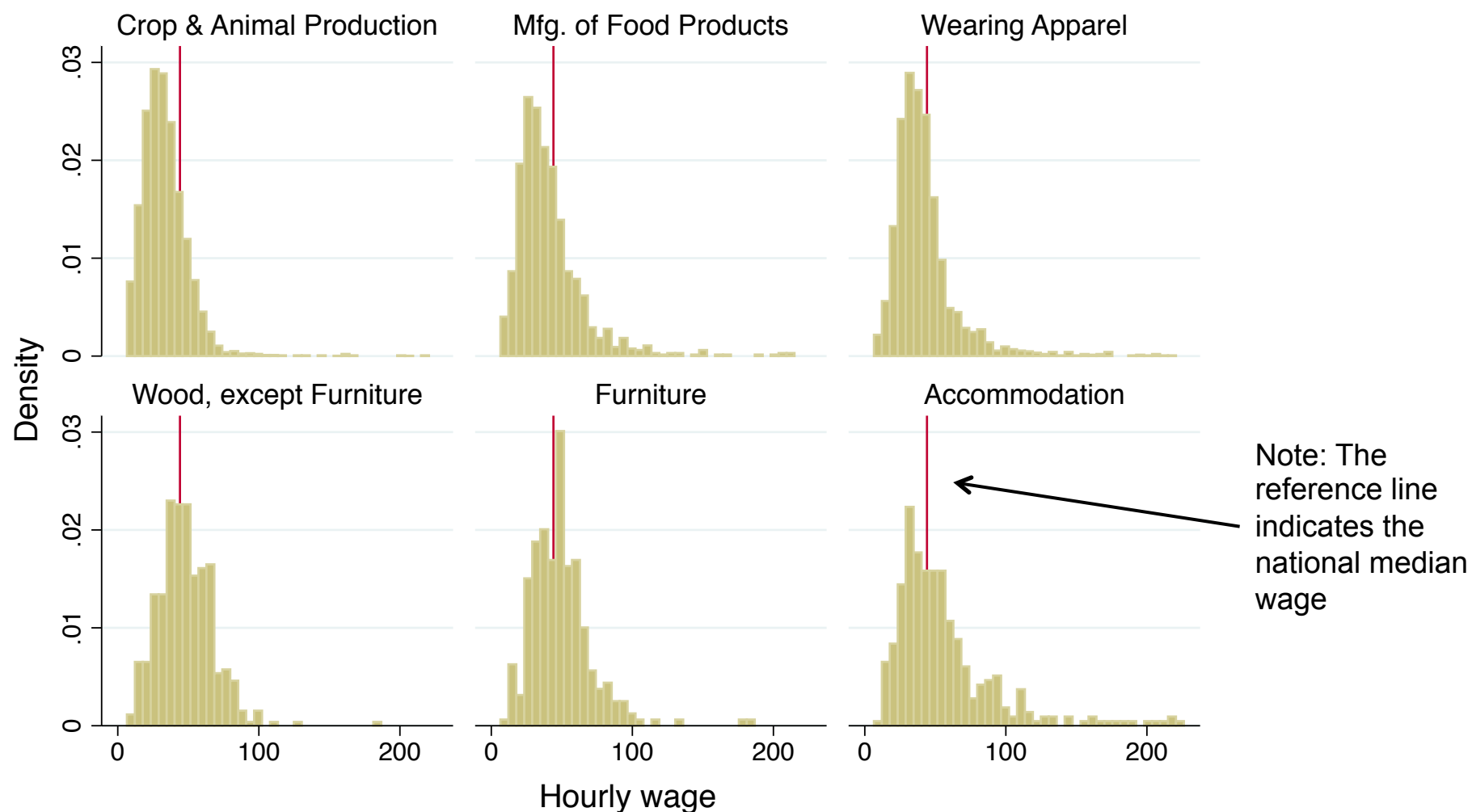
- During interviews, several firms in the garment sector point to hiring and retaining workers as a key constraint. These firms provide non-wage benefits as they work to improve the attractiveness of the workplace.
- They continue to succeed in Sri Lanka through a mix of product innovation through joint ventures, lean manufacturing, increasing capital intensity, supplying niche products, and maintaining footholds in buyer-driven global value chains.
- At the same time, garment sector firms put an emphasis on wage costs when making new investment decisions. According to interviews and global investment data, Sri Lankan garment companies now invest in production in countries across the world, including India, Bangladesh, Vietnam, Honduras, Ghana and Jordan.

There is evidence of shift towards very high quality in Sri Lankan produced garments and related goods.



Source: Own calculations based on Henn, Papageorgiou and Spatafora (2013), WDI

A limited number of newer, growing export industries, including tourism, aren't as vulnerable to labor scarcity as they have shown the ability to pay higher wages.



Note: Wages in in 2007 Rs not adjusted for inflation. Source: Calculations using Labor Force Survey 2013-14 209

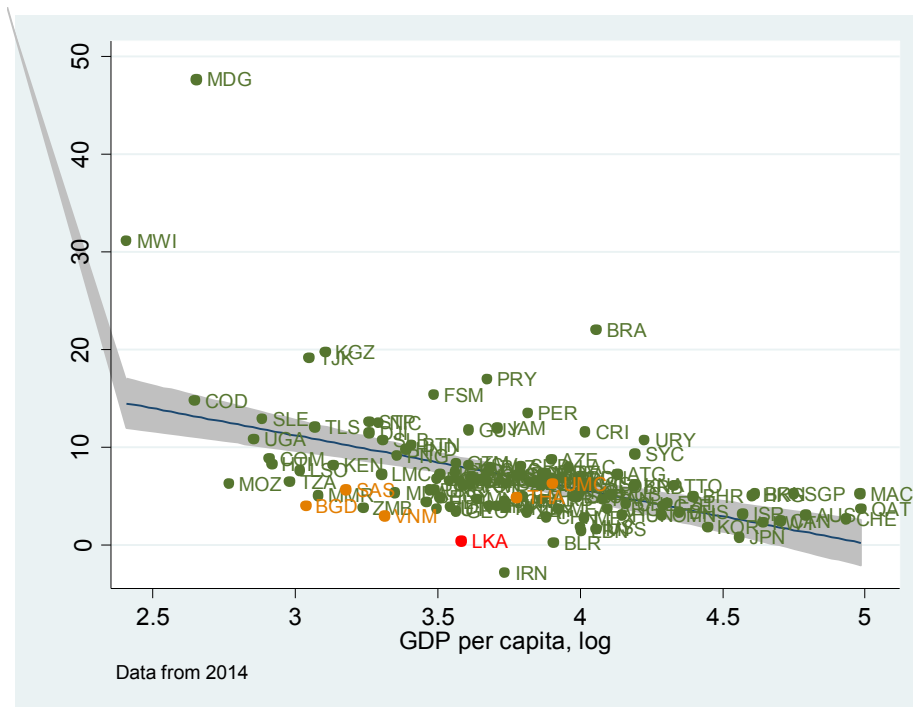


# **APPENDIX**

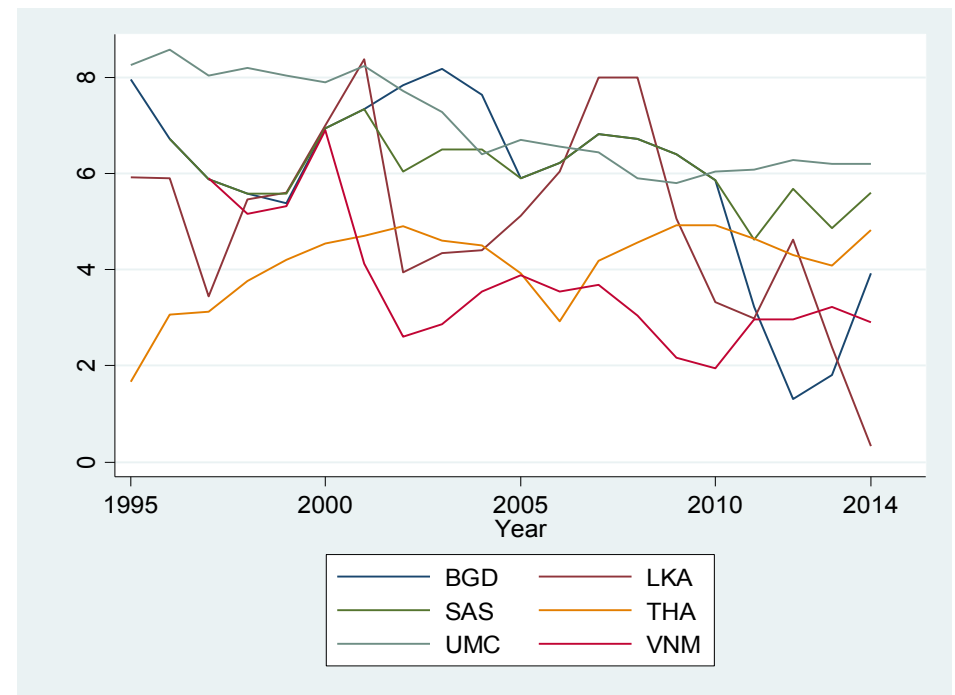
## ACCESS TO FINANCE

Indicators of financial intermediation: The spread between deposit and lending rates is better than most comparators and declined over the last five years (peace dividend?)

Interest Rate Spread (%)



Interest Rate Spread (%)



# Doing Business Indicators (1): Sri Lanka appears to have adequate supporting institutions for the financial system.

## Resolving Insolvency ①

[View details »](#) [View methodology »](#) [Compare all economies »](#)

|                          |              |                          |              |                            |              |
|--------------------------|--------------|--------------------------|--------------|----------------------------|--------------|
| DB 2016 RANK             | <b>78</b>    | DB 2015 RANK ①           | <b>84</b>    | CHANGE IN RANK             | <b>+6</b>    |
| DB 2016 DTF (% POINTS) ① | <b>46.40</b> | DB 2015 DTF (% POINTS) ① | <b>44.69</b> | CHANGE IN DTF (% POINTS) ① | <b>+1.71</b> |

| Indicator  | Sri Lanka | South Asia | OECD high income |
|--|-----------|------------|------------------|
| Recovery rate (cents on the dollar) ①                  | 45.6      | 31.8       | 72.3             |
| Time (years) ①   | 1.7       | 2.6        | 1.7              |
| Cost (% of estate) ①                                   | 10.0      | 10.1       | 9.0              |
| Outcome (0 as piecemeal sale and 1 as going concern) ① | 0         | 0          | 1                |
| Strength of insolvency framework index (0-16) ①        | 7.0       | 4.5        | 12.1             |
| Commencement of proceedings index (0-3) ①              | 2.5       | 2.1        | 2.8              |
| Management of debtor's assets index (0-6) ①            | 3.0       | 1.3        | 5.3              |
| Reorganization proceedings index (0-3) ①               | 0.5       | 0.3        | 1.7              |
| Creditor participation index (0-4) ①                   | 1.0       | 0.7        | 2.2              |

# Doing Business Indicators (2): Sri Lanka has decent credit bureau coverage, but enforcing contracts takes a long time.

## Getting Credit <sup>①</sup>

[View details »](#) [View methodology »](#) [Compare all economies »](#)

|                                     |              |                                     |              |                                       |             |
|-------------------------------------|--------------|-------------------------------------|--------------|---------------------------------------|-------------|
| DB 2016 RANK                        | <b>97</b>    | DB 2015 RANK <sup>①</sup>           | <b>90</b>    | CHANGE IN RANK                        | <b>+7</b>   |
| DB 2016 DTF (% POINTS) <sup>①</sup> | <b>45.00</b> | DB 2015 DTF (% POINTS) <sup>①</sup> | <b>45.00</b> | CHANGE IN DTF (% POINTS) <sup>①</sup> | <b>0.00</b> |

| Indicator  | Sri Lanka | South Asia | OECD high income |
|--|-----------|------------|------------------|
| Strength of legal rights index (0-12) <sup>①</sup>   | 3.0       | 4.9        | 6.0              |
| Depth of credit information index (0-8) <sup>①</sup> | 6.0       | 3.4        | 6.5              |
| Credit registry coverage (% of adults) <sup>①</sup>  | 0.0       | 3.0        | 11.9             |
| Credit bureau coverage (% of adults) <sup>①</sup>    | 50.3      | 12.7       | 66.7             |

## Enforcing Contracts <sup>①</sup>

[View details »](#) [View methodology »](#) [Compare all economies »](#)

|                                     |              |                                     |              |                                       |             |
|-------------------------------------|--------------|-------------------------------------|--------------|---------------------------------------|-------------|
| DB 2016 RANK                        | <b>161</b>   | DB 2015 RANK <sup>①</sup>           | <b>161</b>   | CHANGE IN RANK                        | <b>0</b>    |
| DB 2016 DTF (% POINTS) <sup>①</sup> | <b>39.31</b> | DB 2015 DTF (% POINTS) <sup>①</sup> | <b>39.31</b> | CHANGE IN DTF (% POINTS) <sup>①</sup> | <b>0.00</b> |

| Indicator   | Sri Lanka | South Asia | OECD high income |
|---|-----------|------------|------------------|
| Time (days) <sup>①</sup>                                | 1,318.0   | 1,076.9    | 538.3            |
| Cost (% of claim) <sup>①</sup>                          | 22.8      | 30.5       | 21.1             |
| Quality of judicial processes index (0-18) <sup>①</sup> | 7.5       | 6.5        | 11.0             |

Source: Doing Business Indicators 213

# **APPENDIX**

## EDUCATION

# Returns to Education - Estimation

We estimate:

- Where  $y_i$  is the level of income for those without schooling, without experience and who were born in 1940 or earlier
- HIES:  $y_i$  is the monthly income; LFS:  $y_i$  is the hourly wage
- $\beta_0$  is a set of dummies for highest educational attainment,  $\beta_1$  is the return to each of these attainments
- $\beta_2$  and  $\beta_3$  stand for potential labor market experience and its square term
- $\beta_4$  is a set of cohort dummies, one for each decade of birth
- $\epsilon_i$  is the error term

## Skill mismatch/Bypassing the constraint

- This typically happens when there is mismatch between the skills required by the sector and the skills provided by the graduating students
- How to detect skill mismatch at the level of field of education or at the occupational level:
  - Test 1: Field/occupation-specific unemployment rates are unusually low
  - Test 2: Hourly wages of these fields/occupations are unusually high
  - Test 3: Companies recruit foreign labor in these fields/occupations
  - Test 4: Companies provide training in these fields
- Tests 3 and 4 are also tests for “Bypassing the Constraint” in the growth diagnostic framework

# Test 1: Field-specific employment

| Faculty            | Employment rate |        |        | Unemployment rate |        |        |
|--------------------|-----------------|--------|--------|-------------------|--------|--------|
|                    | 2012            | 2013   | 2014   | 2012              | 2013   | 2014   |
| <b>Agriculture</b> | 76.40%          | 75.40% | 67.70% | 23.60%            | 18.90% | 27.30% |
| <b>Arts</b>        | 52.20%          | 34.90% | 30.50% | 46.20%            | 45.60% | 51.40% |
| <b>Engineering</b> | 96.10%          | 91.10% | 92.00% | 3.00%             | 6.30%  | 5.90%  |
| <b>IT</b>          | 94.50%          | 97.20% | 88.00% | 4.50%             | 1.70%  | 8.60%  |
| <b>Management</b>  | 80.80%          | 66.20% | 66.80% | 18.80%            | 19.90% | 19.10% |
| <b>Medicine</b>    | 93.80%          | 91.90% | 83.80% | 4.80%             | 3.30%  | 7.10%  |
| <b>Science</b>     | 77.30%          | 72.70% | 68.50% | 22.10%            | 19.50% | 23.30% |
| <b>Other</b>       | 74.80%          | 56.40% | 56.20% | 24.20%            | 29.90% | 33.50% |

Source: World Bank 2014, Employability Study

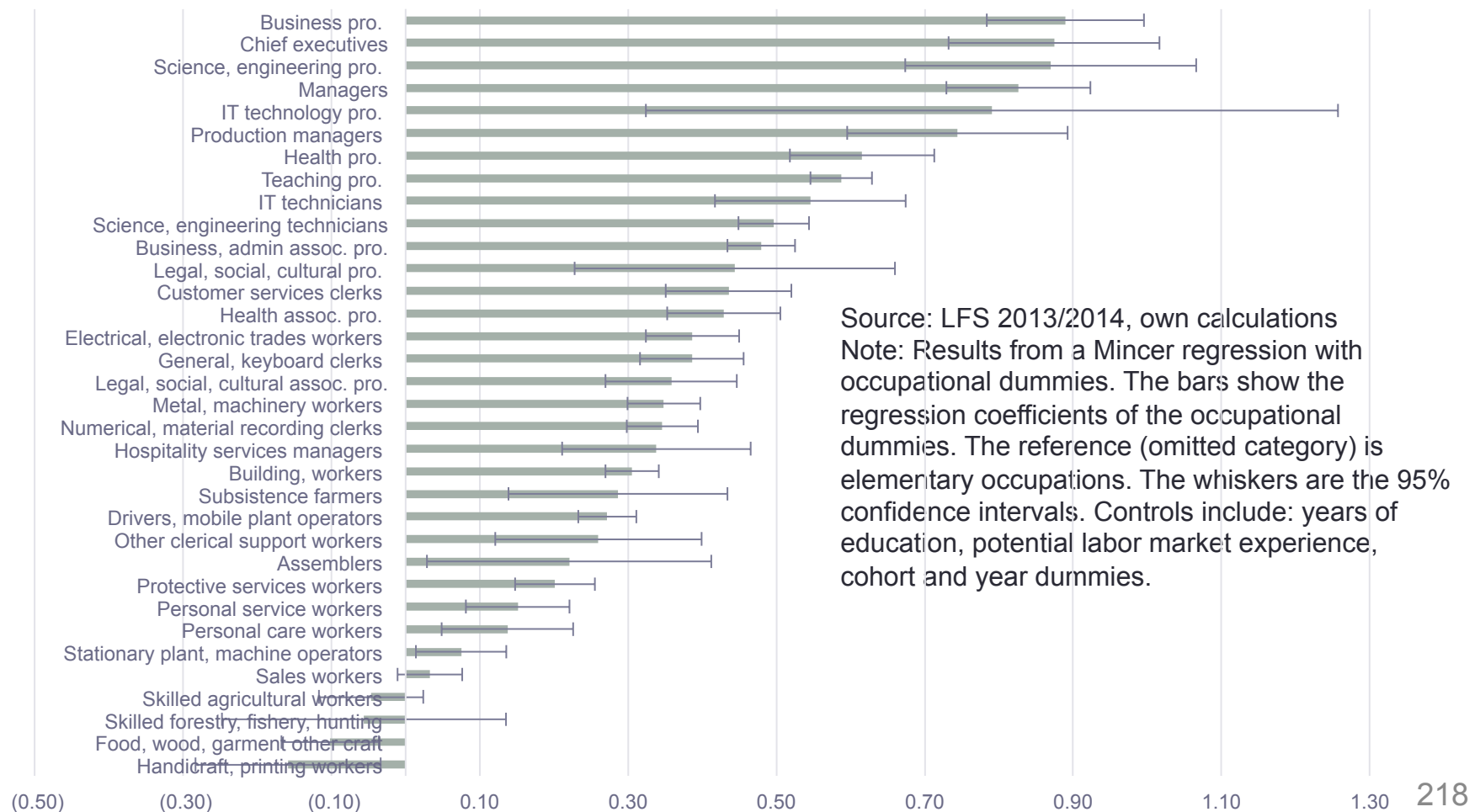
- University graduates from engineering, IT and medicine used to have close to full employment in 2012/2013.
- Science graduates do not have extraordinarily high employment rates\*
- However, the employment rates have been declining in all three disciplines.
- In all other disciplines, the employment rates are far below full employment and these have been declining too.

\* This also holds when inspecting the placement rates of various universities. The two universities with highest placement of science graduates are WUSL and UWU with 89% and 84% employed students respectively.



## Test 2: Occupation-specific premia

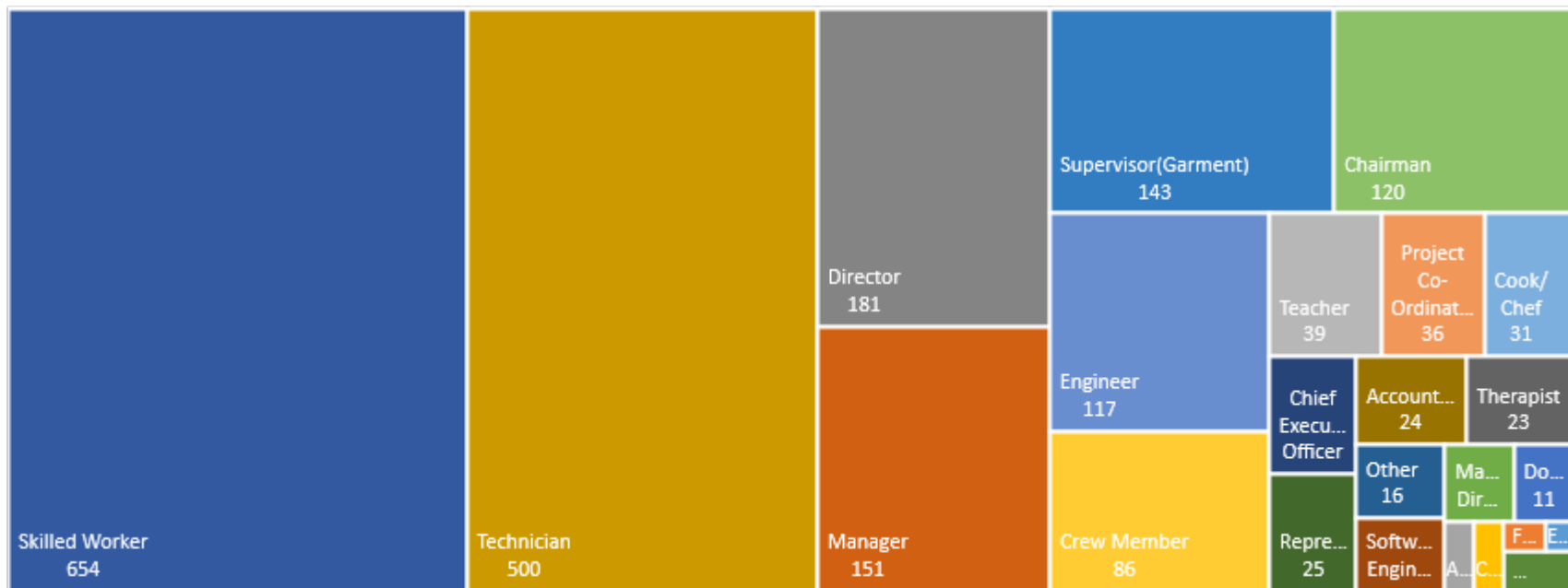
*Ceteris paribus*, managers/executives/business professionals, IT professionals and technicians, health and teaching professionals and science and engineering ones, earn the highest wages.



## Test 3: Does employment of foreign workers indicate shortage of certain occupations in Sri Lanka?

- The BOI reports the numbers of those who obtain work permit through the BOI, by occupation. Their numbers are biased towards the needs of FDI companies. With this in mind:
- Aside from managers and executives, foreign firms additionally “import” *technicians, skilled workers and engineers* in noticeable numbers.

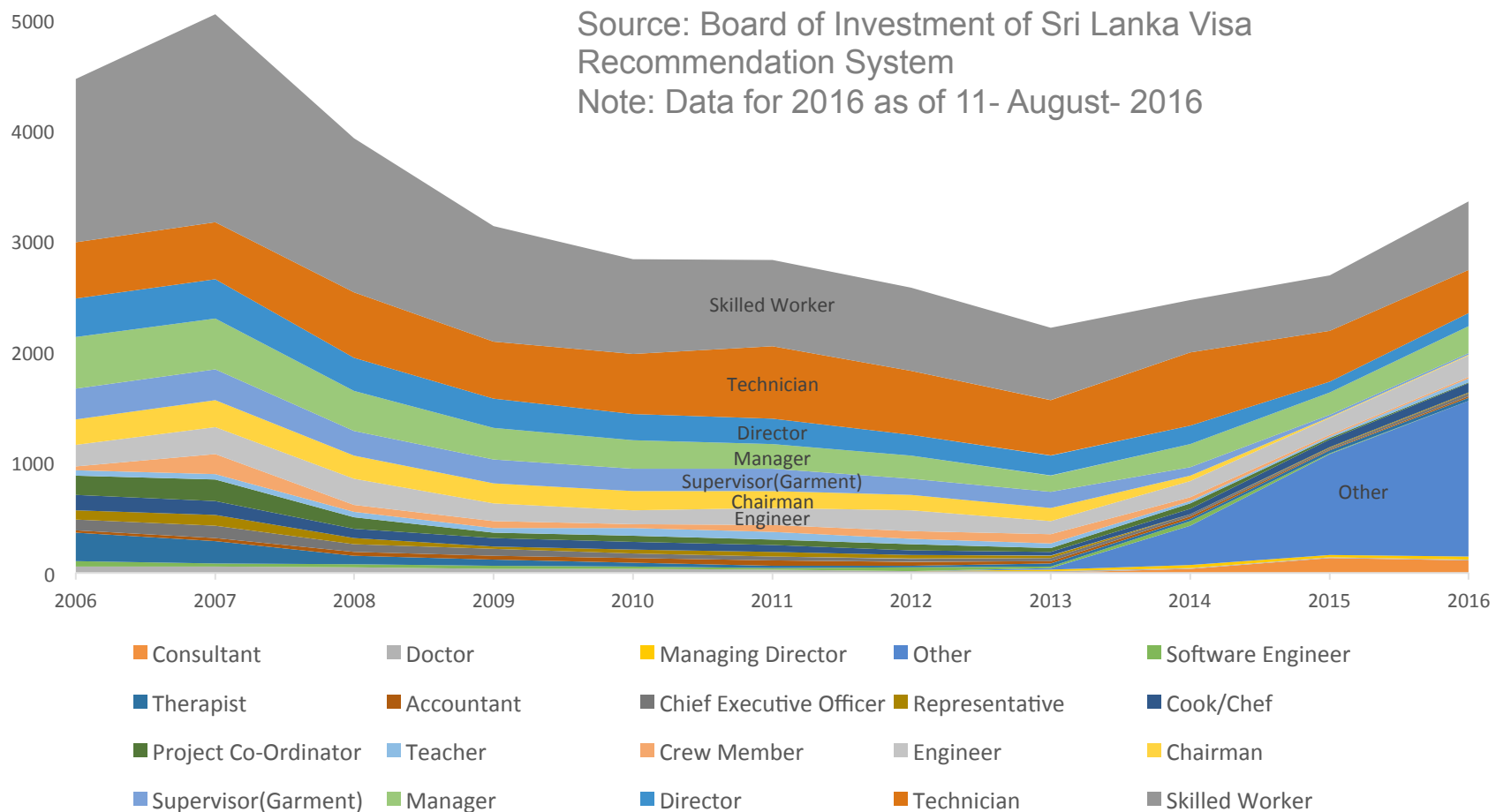
Composition of foreign workers in 2013



Source: Board of Investment of Sri Lanka Visa Recommendation System, 2013.

## Test 3: Does employment of foreign workers indicate shortage of certain occupations in Sri Lanka?

- The overall numbers are low (never reaching more than 5,000 annually in total).



## Test 3: Which occupations are over-represented among the Sri Lankans working abroad and the foreigners working in Sri Lanka?

- We compare three occupational distributions: Sri Lankans working in Sri Lanka (col. 1), foreigners working in Sri Lanka (col. 2) and Sri Lankans working abroad (col. 3)
- Col. 1 is the reference distribution (showing more or less the general demand by occupation in LKA)
- We find *that foreign workers are overrepresented in managerial, engineering, technical and skilled/crafts jobs*

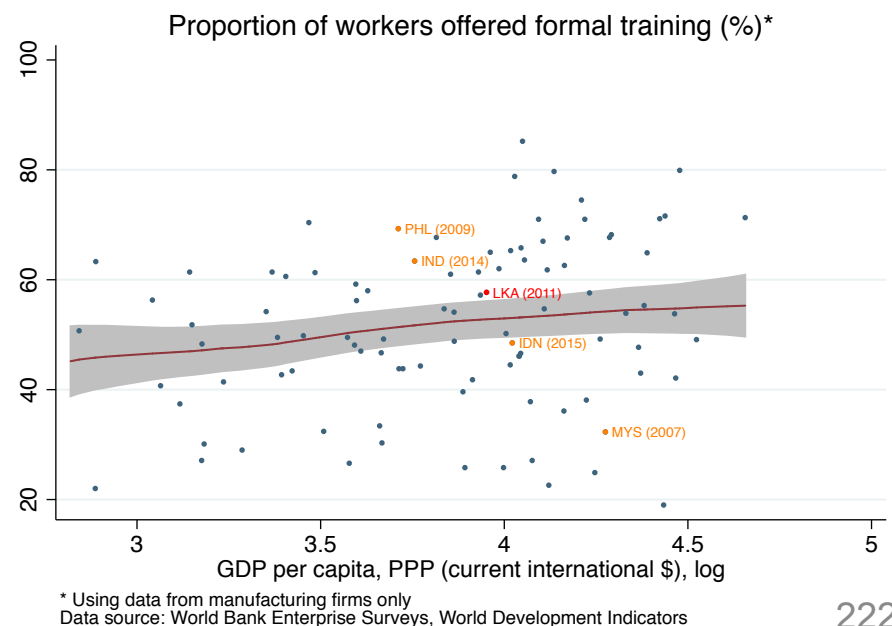
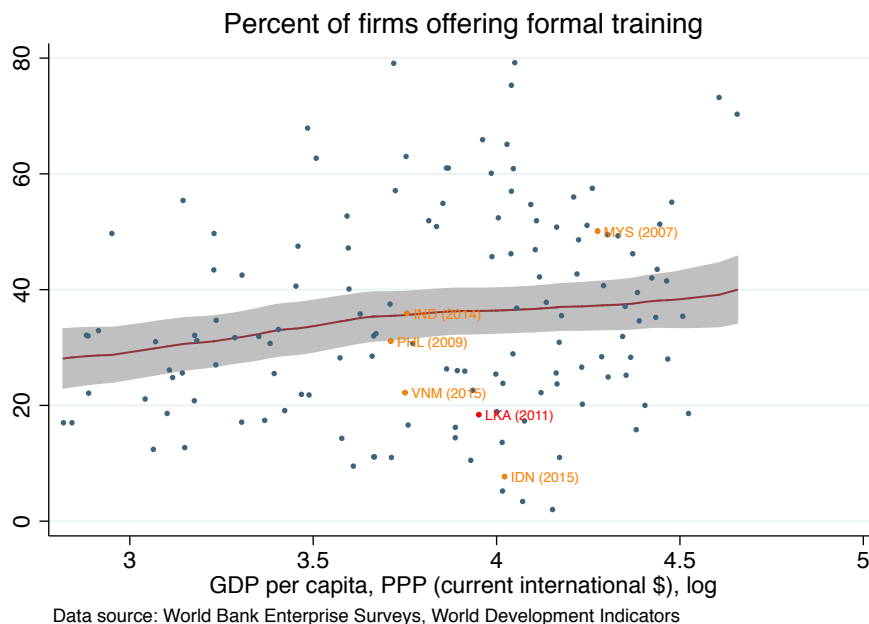
|  | LKA Employee in LKA | Foreign in LKA | LKA abroad |
|--|---------------------|----------------|------------|
| Chief executives                           | 0.3%                | 12.4%          | 0.0%       |
| Managers                                   | 1.1%                | 14.1%          | 0.6%       |
| Production managers                        | 1.2%                | 0.2%           | 0.0%       |
| Hospitality services managers              | 2.0%                | 0.1%           | 0.0%       |
| Science, engineering professionals         | 0.5%                | 5.5%           | 0.5%       |
| Health professionals                       | 1.0%                | 0.9%           | 0.0%       |
| Teaching professionals                     | 4.0%                | 1.1%           | 0.1%       |
| Business professionals                     | 0.3%                | 5.6%           | 1.4%       |
| IT professionals                           | 0.1%                | 0.8%           | 0.1%       |
| Legal/social/cultural professionals        | 0.5%                | 0.1%           | 0.0%       |
| Science, engineering technicians           | 1.6%                | 16.2%          | 3.5%       |
| Health assoc. professionals                | 0.3%                | 2.1%           | 0.1%       |
| Business/admin assoc. professionals        | 3.2%                | 2.4%           | 1.2%       |
| Legal/social/cultural assoc. professionals | 0.4%                | 0.0%           | 0.2%       |
| IT technicians                             | 0.4%                | 0.0%           | 0.1%       |
| Clerical support workers                   | 4.0%                | 0.0%           | 0.8%       |
| Services and sales workers                 | 11.4%               | 0.4%           | 4.1%       |
| Skilled agricultural/fishery workers       | 19.8%               | 0.0%           | 0.2%       |
| Craft workers                              | 17.1%               | 29.0%          | 8.4%       |
| Plant/machine operators/assemblers         | 8.4%                | 1.9%           | 12.4%      |
| Elementary occupations                     | 21.9%               | 0.0%           | 64.0%      |

- *When abroad, Sri Lankans are over-represented in low-skilled occupations.*
- One thing stands out: the share of science/engineering technicians among the Sri Lankans abroad is higher than the share of technicians of Sri Lankans in Sri Lanka.

Source: LFS 2013-2014; BOI Visa Recommendation System 2006-2016; Sri Lanka Bureau of Foreign Employment 2005-2015.

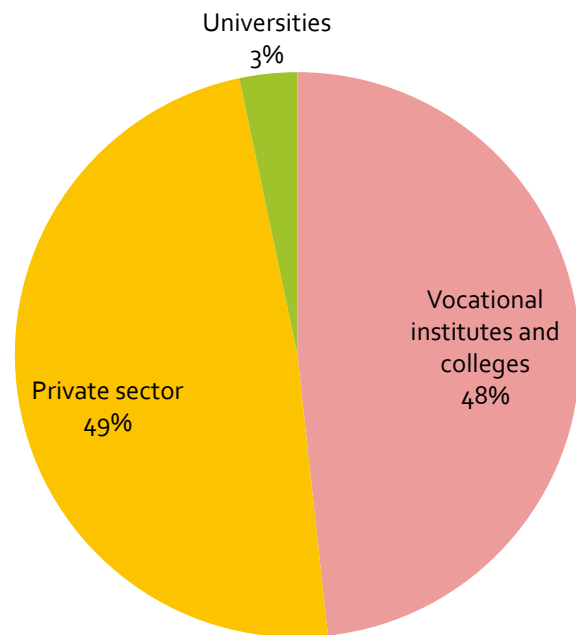
## Test 4: Do companies provide training in specific occupations?

- This information is either not available, or difficult to find.
- At an aggregate level, and somewhat dated, the WB 2011 Enterprise Survey shows that the % of firms offering formal training in Sri Lanka is not particularly high in comparison with peer countries (left figure).
- The share of employees trained (in manufacturing firms) is also not higher than expected (right figure).



## Test 4: Are other institutions providing other than formal education? TVET

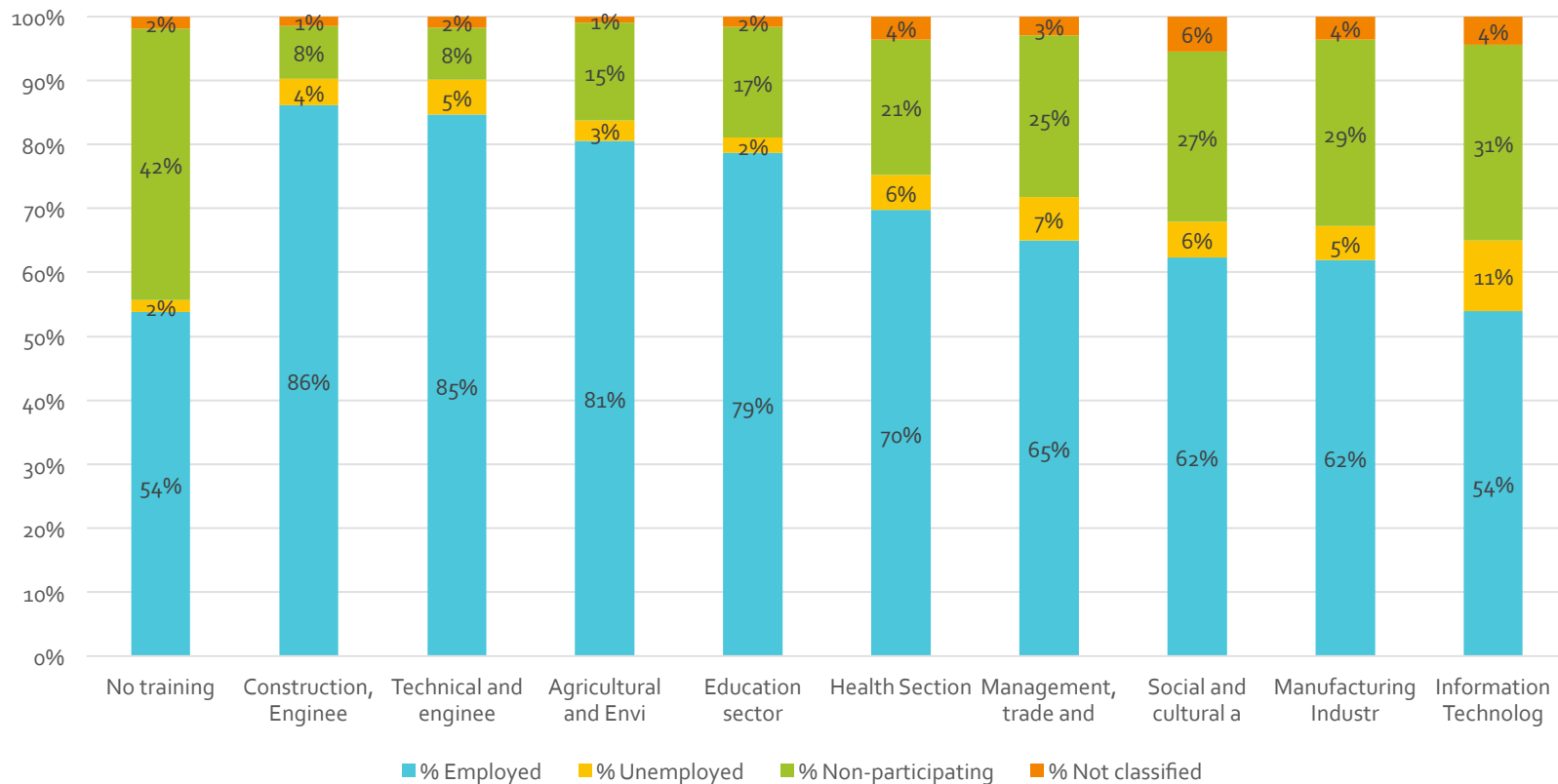
- In 2014, almost 11% of Sri Lankans age 15-65 had completed some kind of formal professional technical training (TVET) on top of formal education
- TVET graduates numbers are divided about equally between the private and the public sector training institutions (left figure)
- About a third of all TVET graduates are computer technicians (right figure)



## Test 4: Employability of TVET graduates

- People graduating from the TVET are better employed than those without it

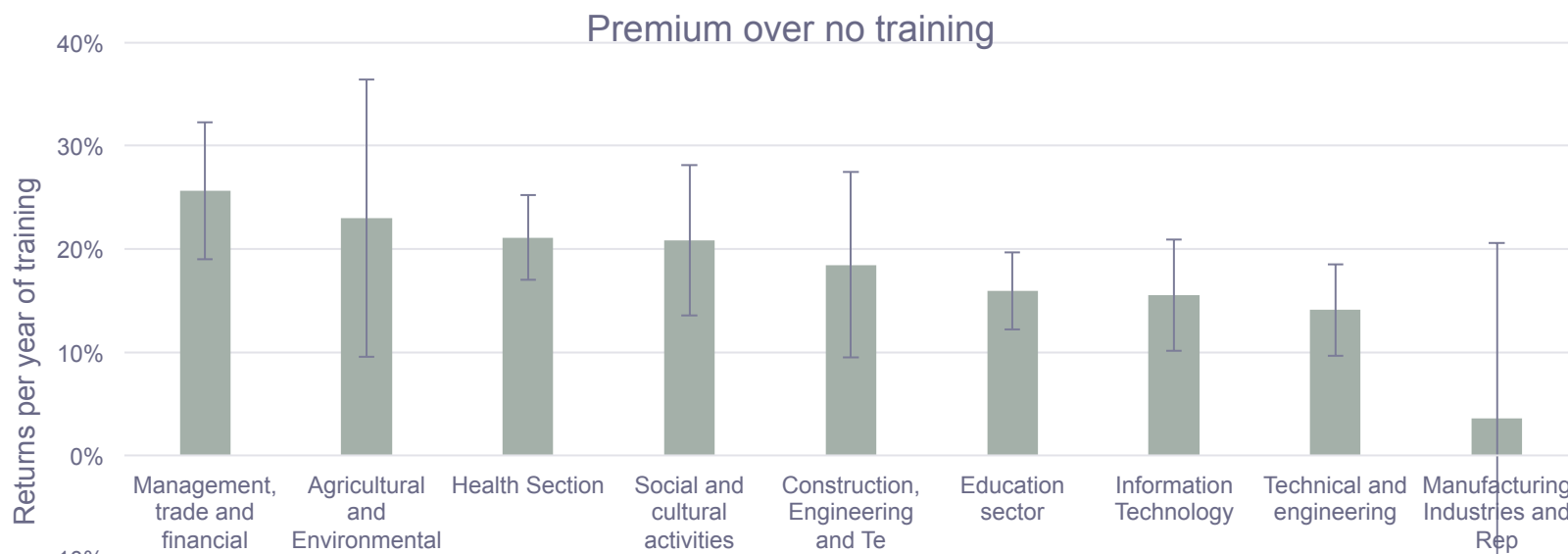
Labor market status by training group



Source: LFS 2013 and 2014.

## Test 4: Returns to TVET

- There are significant returns per year spent in TVET in almost all types of training except for manufacturing/industry training
- This is after controlling for formal education, meaning that TVET provides valuable skills that formal education does not
- Management, agriculture, health, social/cultural training tend to have the highest returns per TVET year, although we cannot say that the observed differences in the premia per TVET are statistically different from one another.



Source: LFS 2013 and 2014.

Note: Results from a Mincer regression. The bars show the coefficients of the training dummies per year of training. The whiskers are the 95% confidence intervals. Y variable is the natural log of real hourly wages.

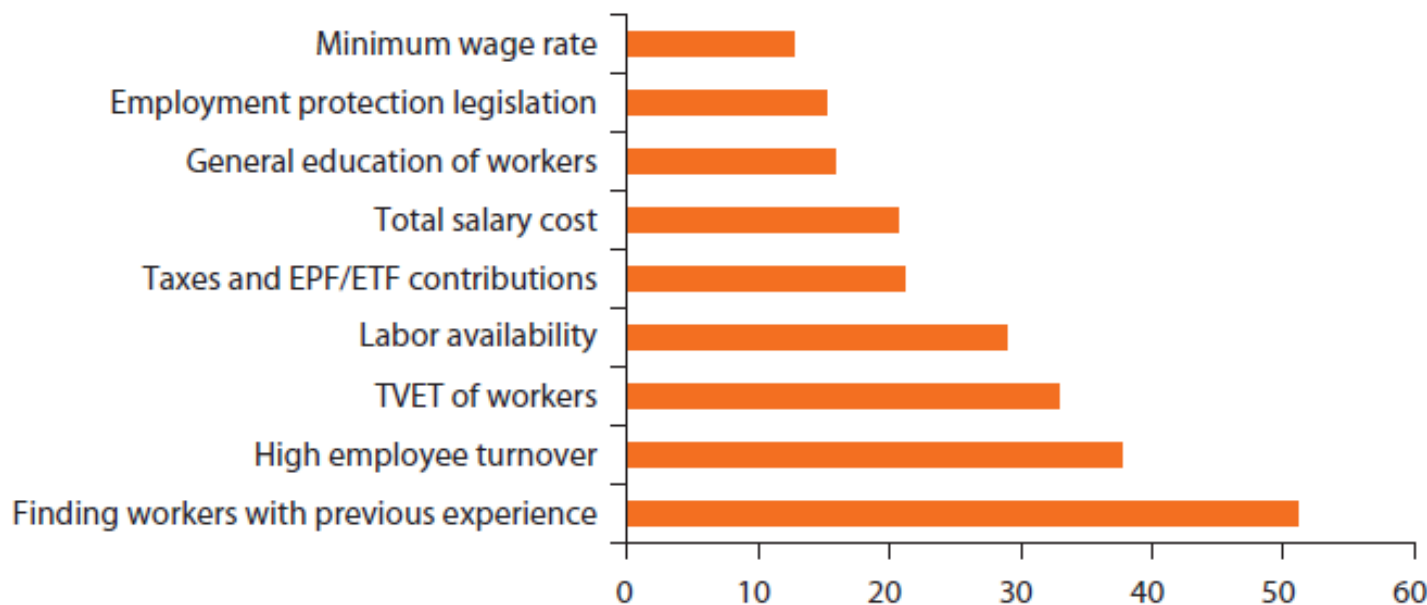
Controls: years of education (and sq term), potential experience (and sq term), cohort, gender, year



## Additional Benchmarking (World Bank STEP Survey)

- Employers perceive skills constraints as having more impact on firm operations and growth than employment legislation, taxes, and labor costs.
- Labor availability (general measure of raw labor supply, adjusted for education and skills) ranks fourth, after finding experienced workers and high employee turnover.
- **Worker technical training ranks third, at about 33%—more than double the general education of workers at about 16%.** This suggests both that the government's recent focus on TVET is well-founded, and that the push for TVET has not yet been successful.

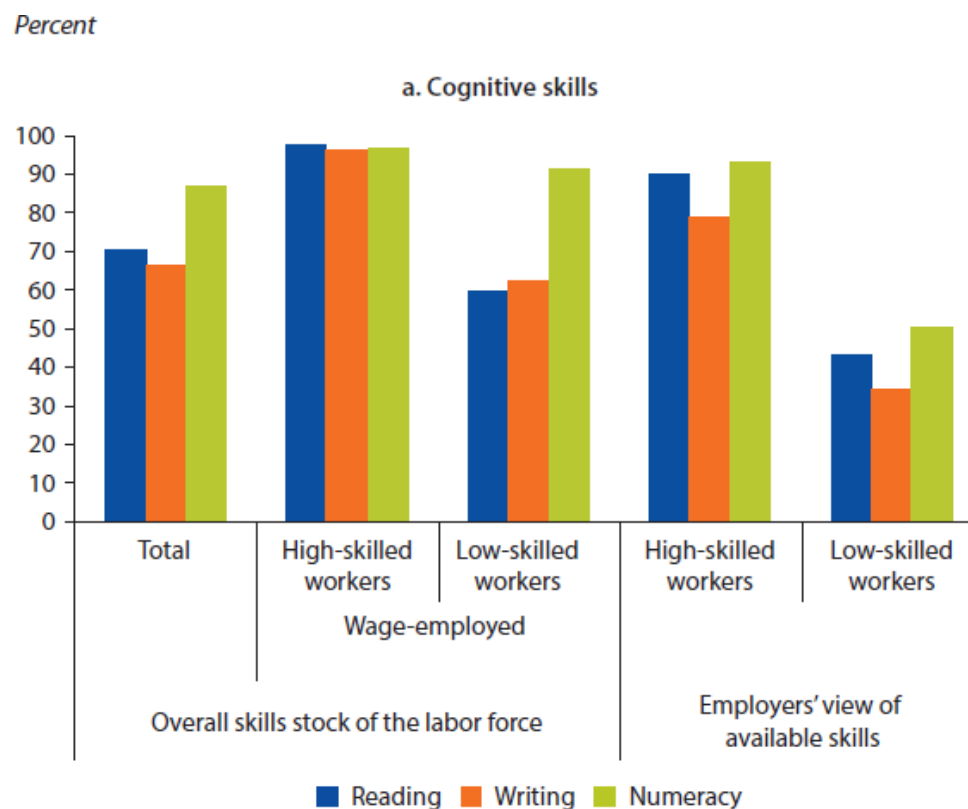
*Percent*



# Additional Benchmarking (World Bank STEP Survey)

## Cognitive skills - No substantial mismatches

- There are no substantial mismatches in low-skilled jobs between supply of and demand for cognitive skills, thanks to the compulsory general education system.
- The supply of reading, writing (in local languages) and numeracy skills meet the demand from employers.
- But since foundational cognitive skills are essential for acquiring more advanced job-specific skills, building cognitive skills must be a policy priority if the country is to become efficiency-driven.



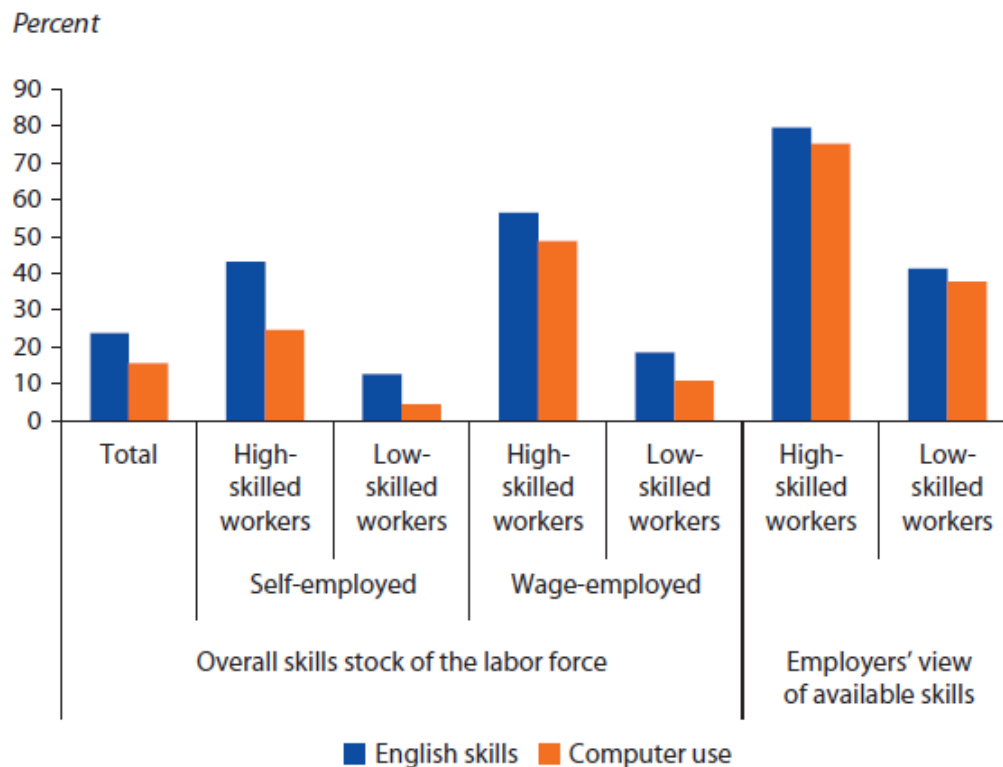
Source: Sri Lanka STEP Household Skills Measurement and Employer Surveys.

Note: Overall skills stock is measured from the STEP household survey of the population aged 15–64. Employers' view of available skills is measured from the STEP employer survey and serves as a proxy for skills demand.

# Additional Benchmarking (World Bank STEP Survey)

## Technical skills - Not enough of the job-specific skills that employers value

- 80% of employers expect a higher-skilled worker to know English and 40% expect that of less-skilled workers. (75 and 38% for lower-skilled workers respectively)
- However, **only 24% of Sri Lankans are fluent in English and only 15% can use computers.**
- Mismatches more pronounced for tourism, innovative firms, and firms with international business—the very sectors that drives economic growth.



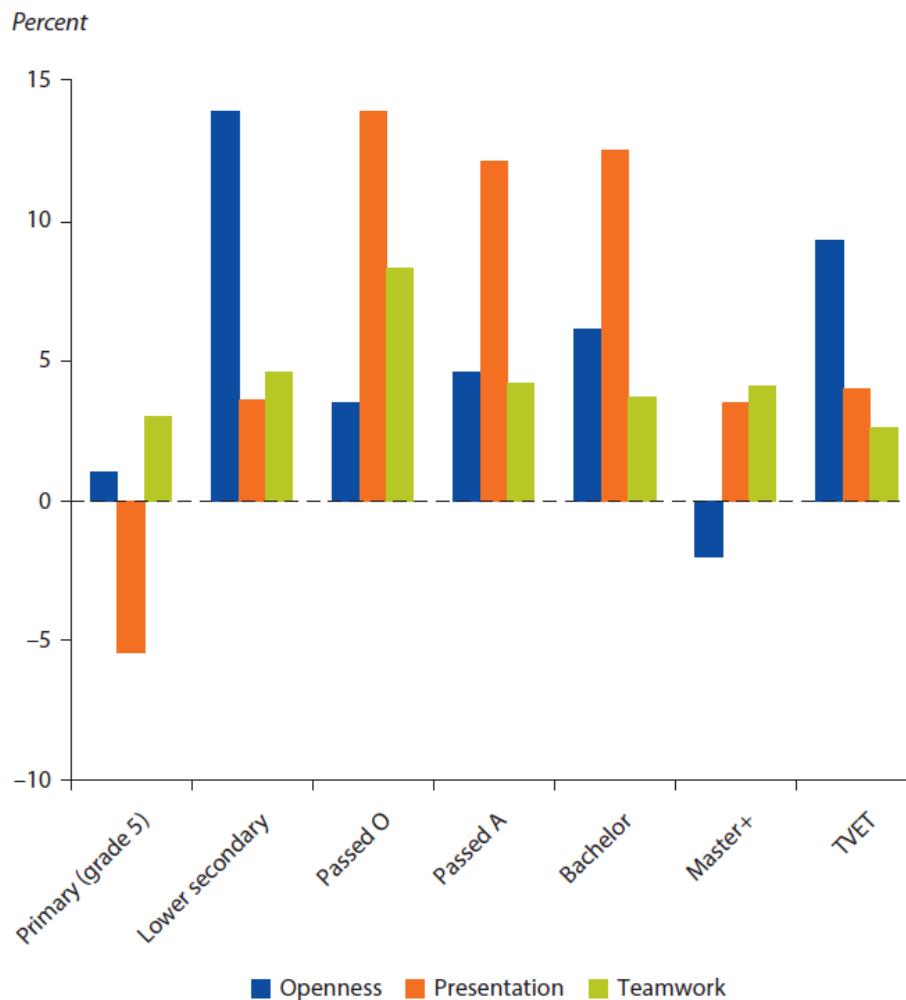
Source: Sri Lanka STEP Household Skills Measurement and Employer Surveys.

Note: Overall skills stock is measured from the STEP household survey of the population aged 15–64. Employers' view of available skills is measured from the STEP employer survey and serves as a proxy for skills demand.

# Additional Benchmarking (World Bank STEP Survey)

## Soft skills – Absent in current system

- Employers are increasingly demanding soft skills like teamwork and presentation skills, as well as personality traits like extraversion, conscientiousness, openness, emotional stability and agreeableness.
- About 77% of workers actively use teamwork skills and 50% presentation skills.
- However, Sri Lanka's education and training system does not do much to shape soft skills. This implies an urgent need for curriculum revision.



Source: STEP household survey.

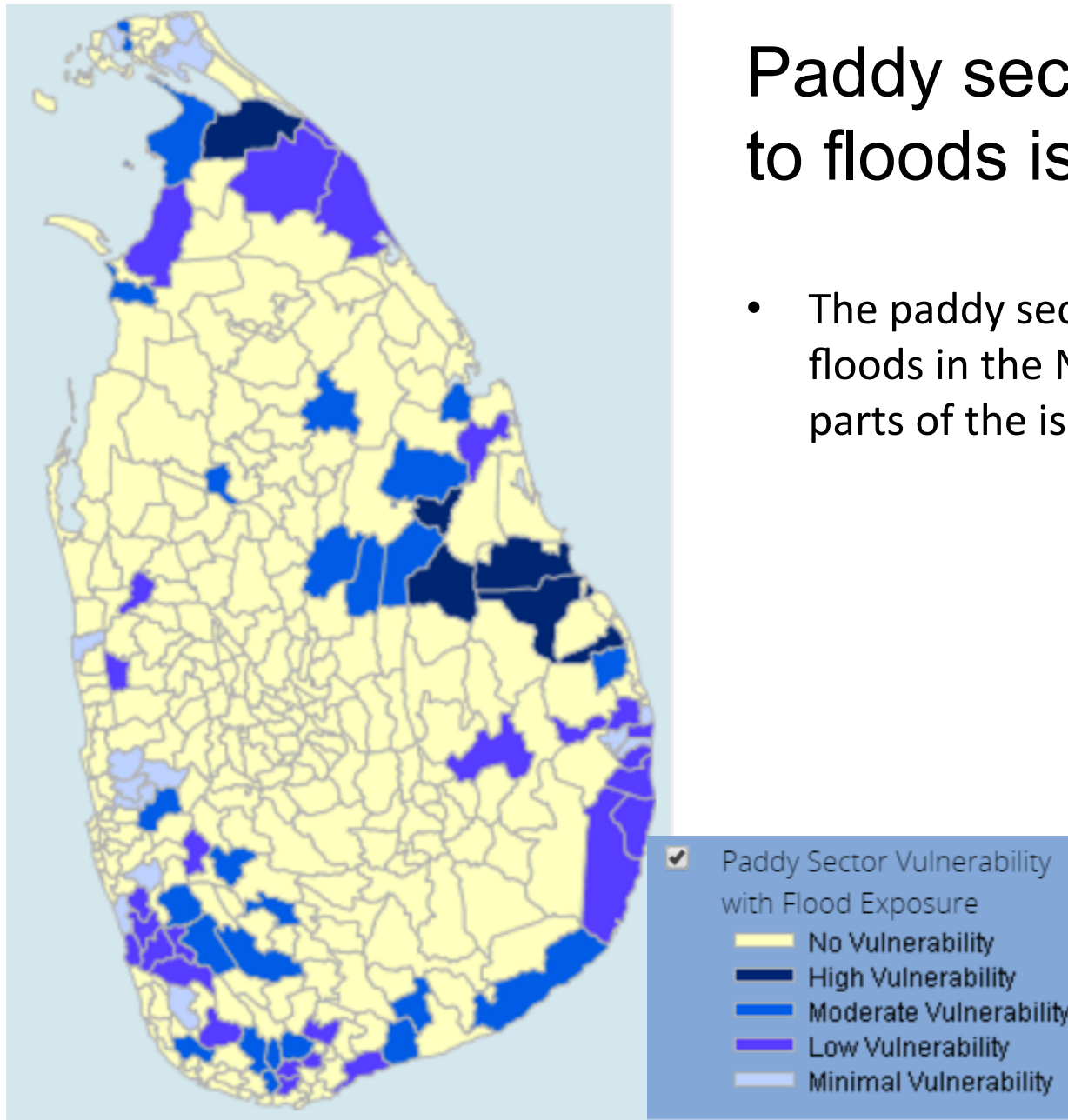
Note: Change in skills in primary education is compared to the below-primary level; from secondary on, the change represents the increase in skills compared to previous education. Other controls are gender, province, rural/urban area, parental education, age, household wealth, and marital status.

# **APPENDIX**

## WATER AND SANITATION

# Paddy sector vulnerability to floods is high

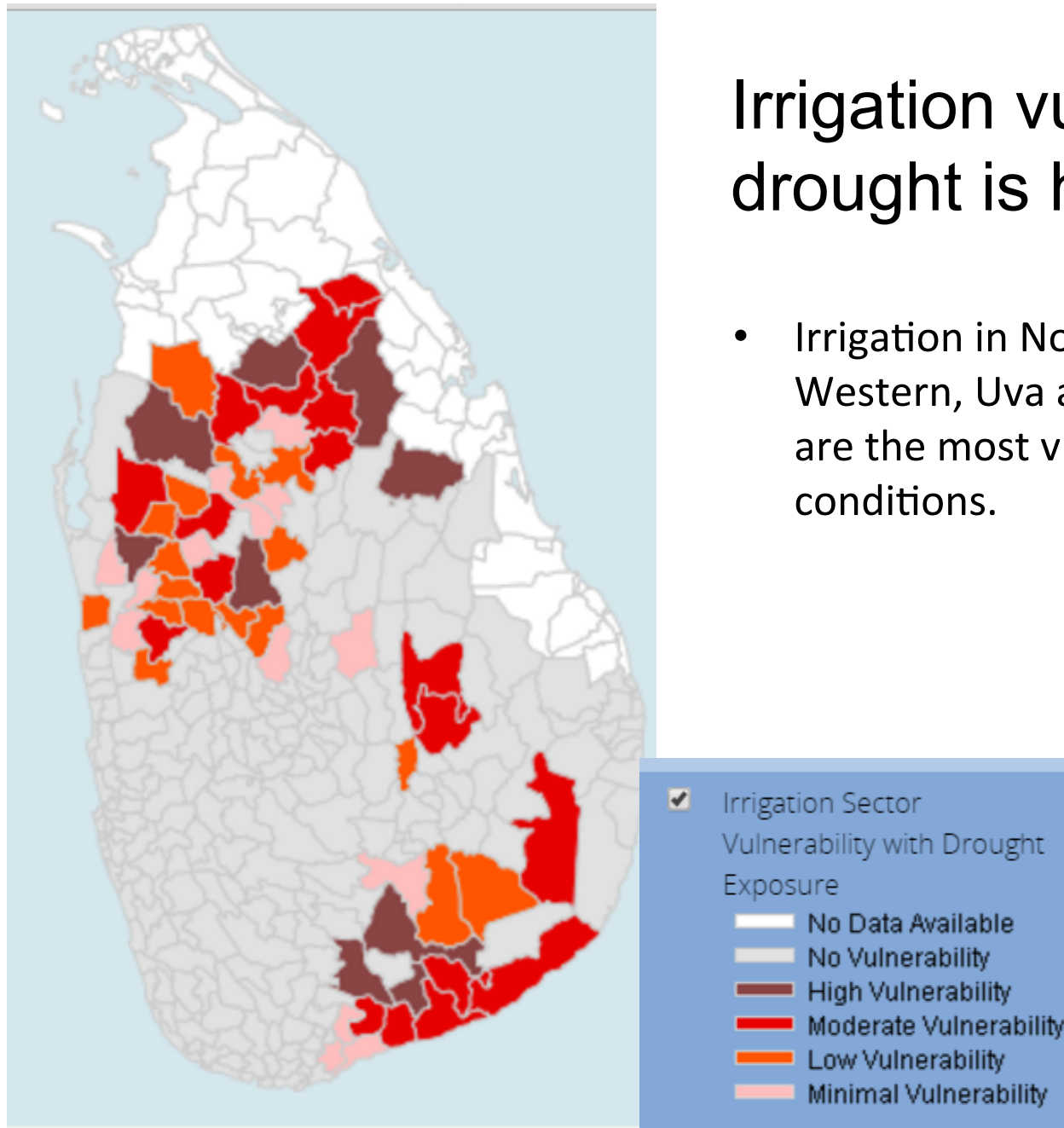
- The paddy sector is highly vulnerable to floods in the Northern and Eastern parts of the island.



Source: IWMI, CGIAR

## Irrigation vulnerability to drought is high

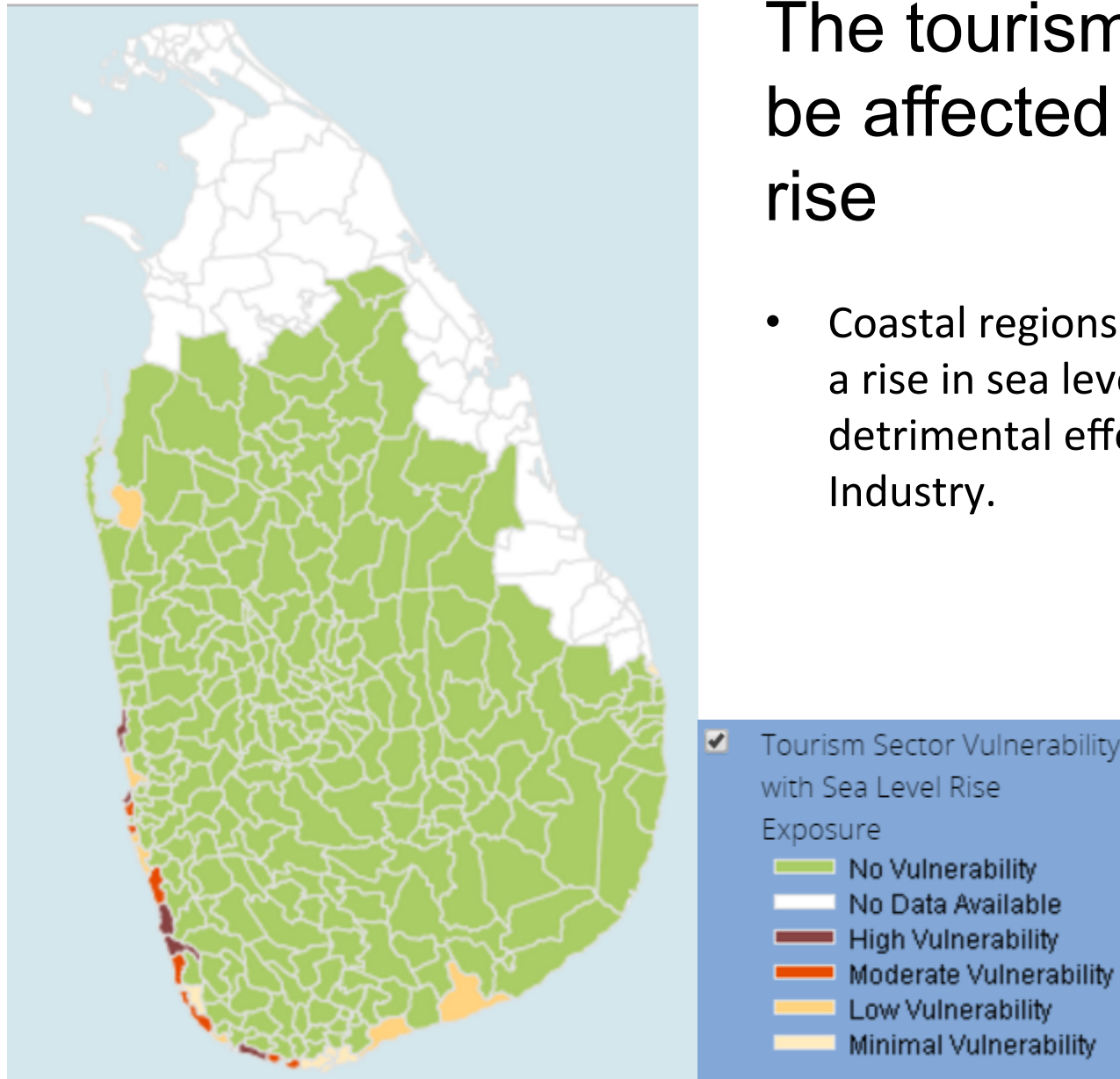
- Irrigation in North Central, North Western, Uva and Southern provinces are the most vulnerable to drought conditions.



Source: IWMI, CGIAR

## The tourism sector will be affected by sea level rise

- Coastal regions are most vulnerable to a rise in sea levels, this could have a detrimental effect on the Tourism Industry.

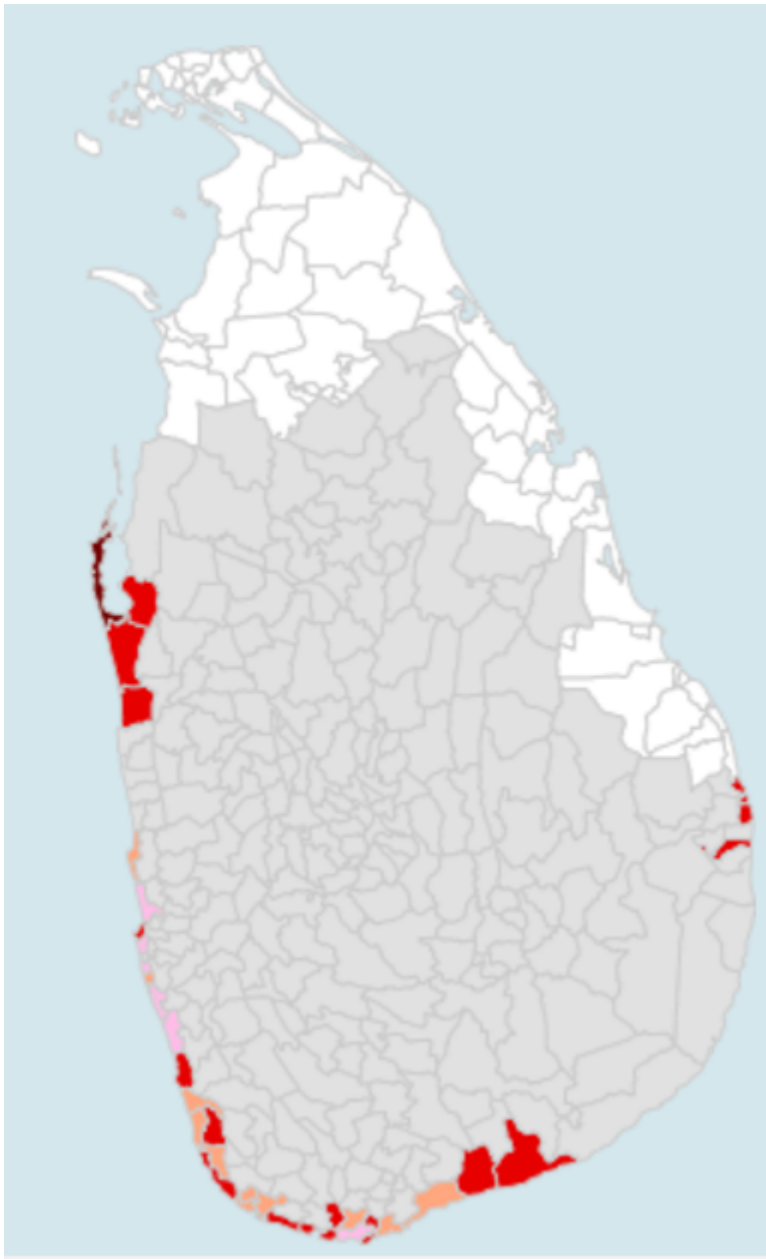


Source: IWMI, CGIAR

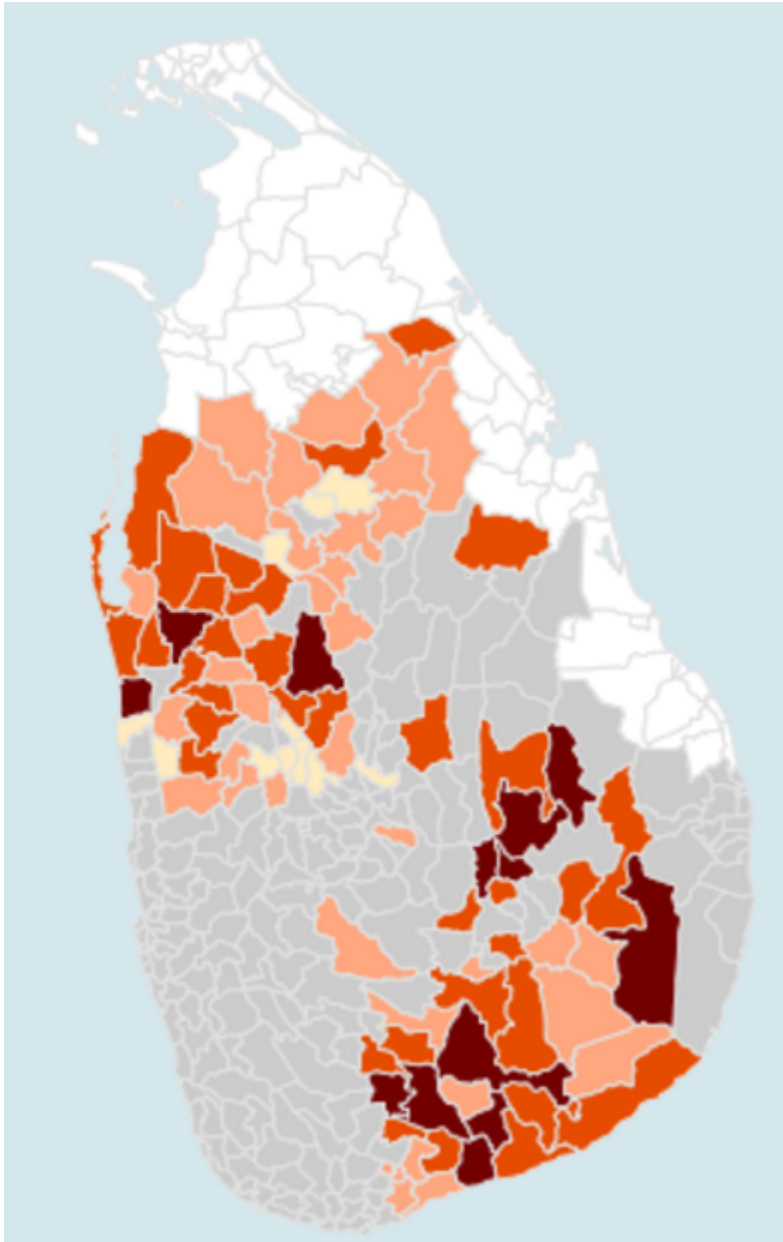


## Drinking water is vulnerable to sea level rise

- Coastal areas, such as Puttalam and southwest parts are likely to be effected by sea level rise.



Source: IWMI, CGIAR



## Drinking water is also vulnerable to drought exposure

- Drinking water supply in North Central, North Western, Uva and Southern provinces are mostly vulnerable to drought (data not available for the Northern and Eastern regions).

# **APPENDIX**

## TRANSPORTATION

# Natural experiment with Southern Expressway:

Diversification into new industries is not evident from ASI. For Galle, growth in most industries appears to be higher prior to the Southern Expressway.

Some notes:

17 = Manufacture of textiles  
28 = Manufacture of fabricated metal products, except machinery and equipment  
29 = Manufacture of electrical machinery and apparatus n.e.c.  
36 = Manufacture of furniture; manufacturing n.e.c.



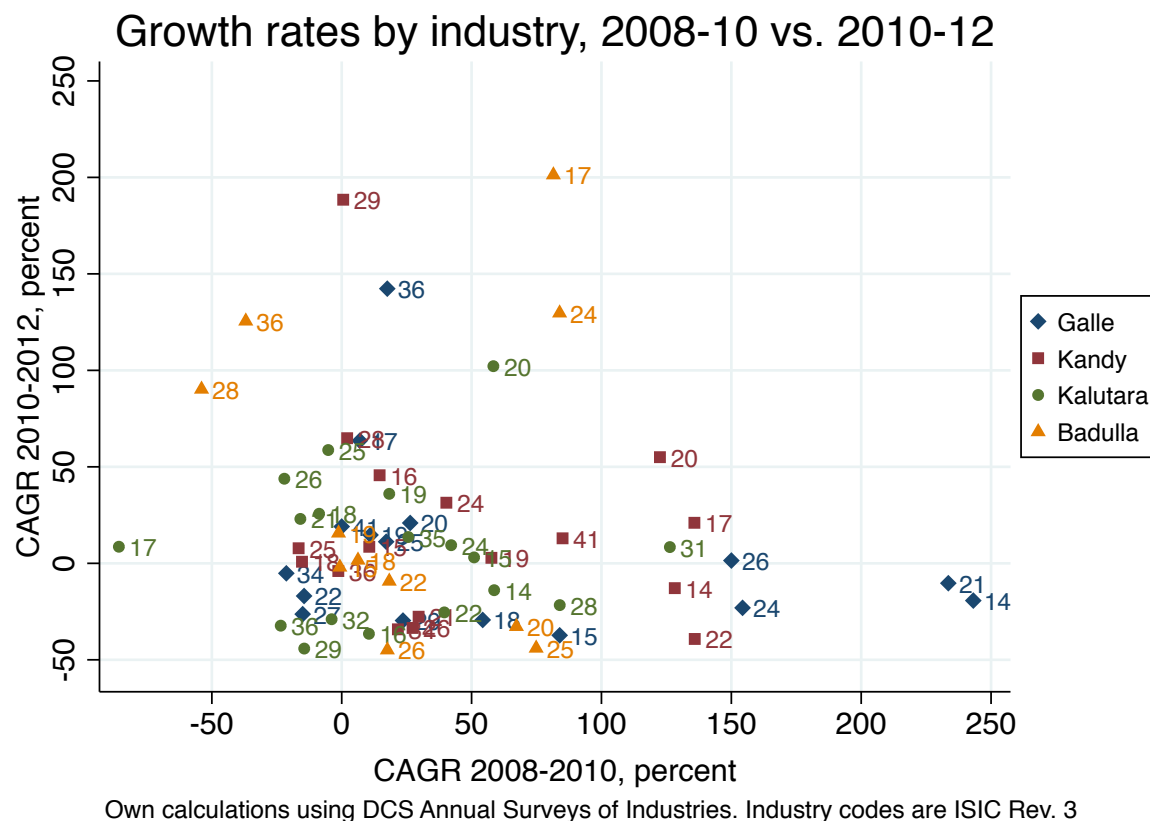
# Natural experiment with Southern Expressway:

More districts for comparison: Galle and Kalutara stood to benefit most from the Southern Expressway, vs. Kandy and Badulla. No evidence of stronger diversification from ASI.

More notes:

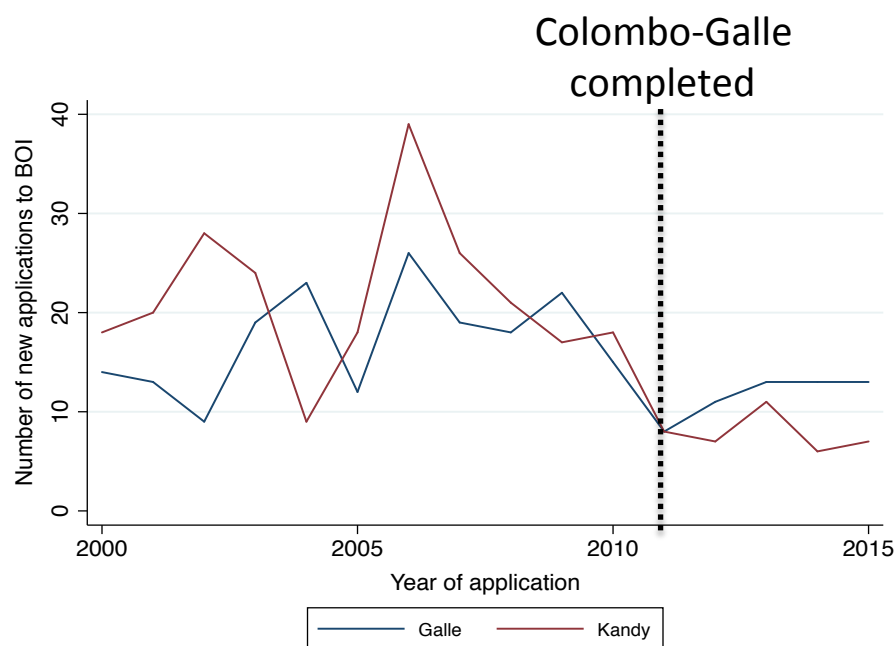
20 = Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials

24 = Manufacture of chemicals and chemical products

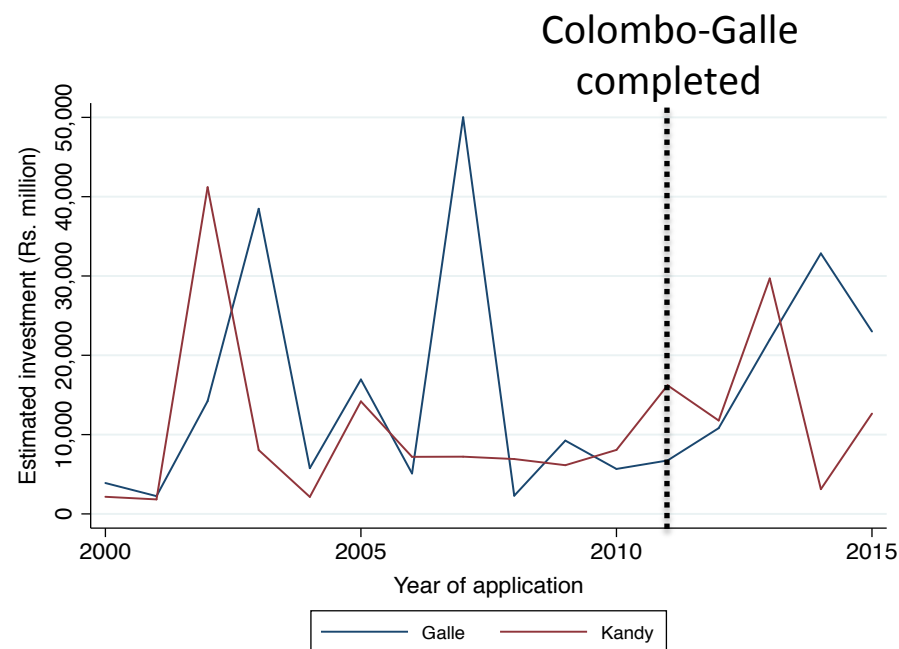


# Natural experiment with Southern Expressway:

But there are possible indications in the BOI database (Section 17) of appeals for new investment after first stage of Southern Expressway was completed.



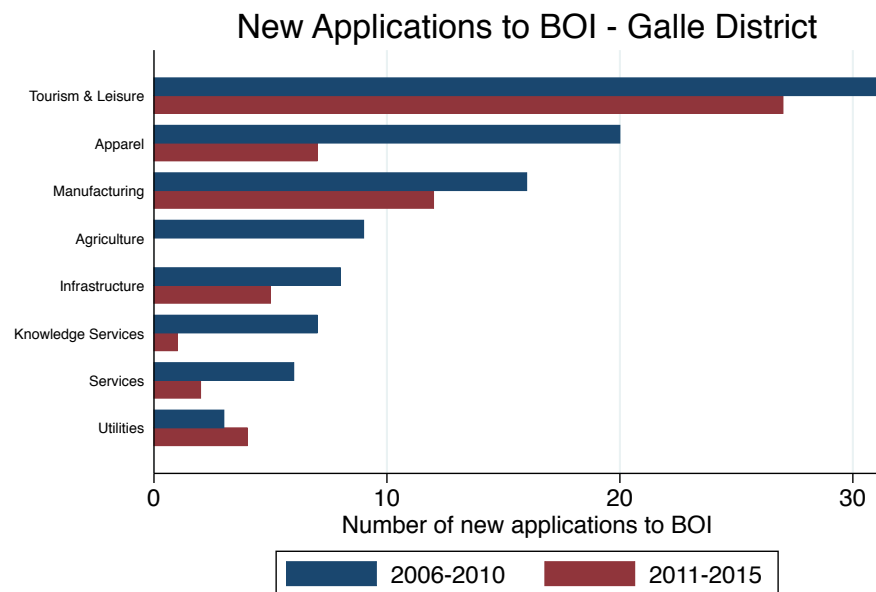
Source: BOI project list provided on July 15, 2016  
Note: Not all new applications were accepted, fewer still were completed.



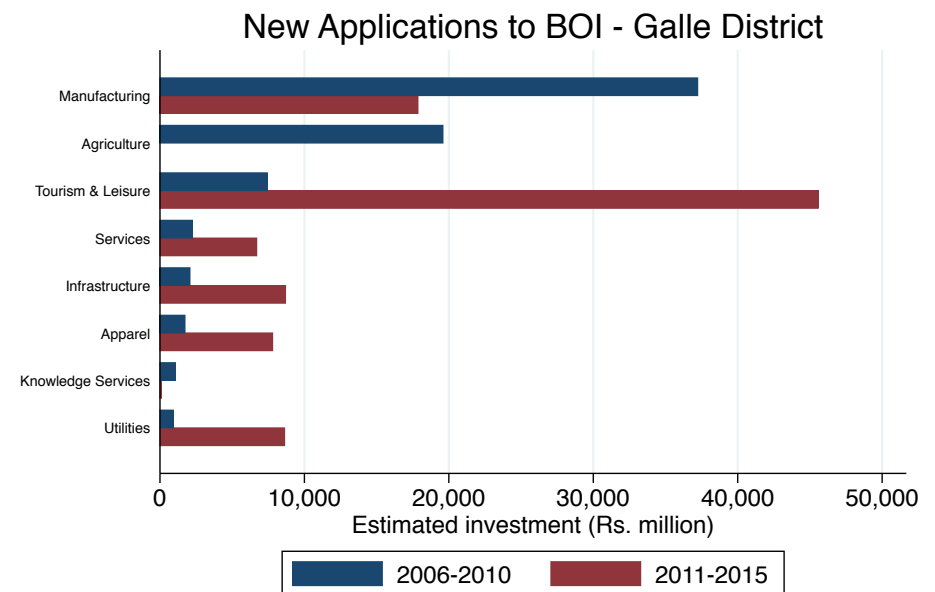
Source: BOI project list provided on July 15, 2016  
Note: Not all new applications were accepted, fewer still were completed.

# Natural experiment with Southern Expressway:

The number of applications to BOI for section 17 activities in Galle was down but investment potential was up, especially for tourism & leisure projects. Manufacturing in detail: some new investor interest in medical & pharmaceutical products, travel bags



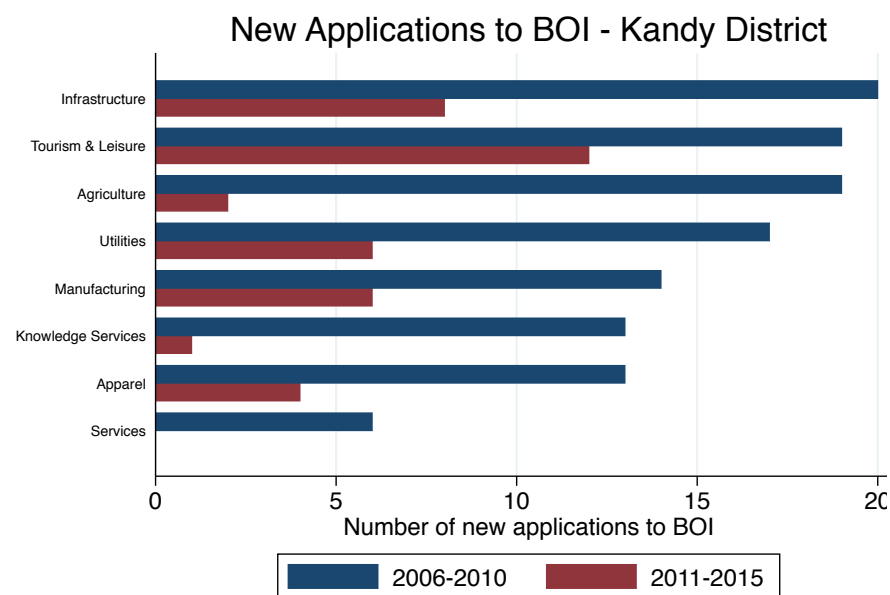
Source: BOI project list provided on July 15, 2016  
Note: Not all new applications were accepted, fewer still were completed.



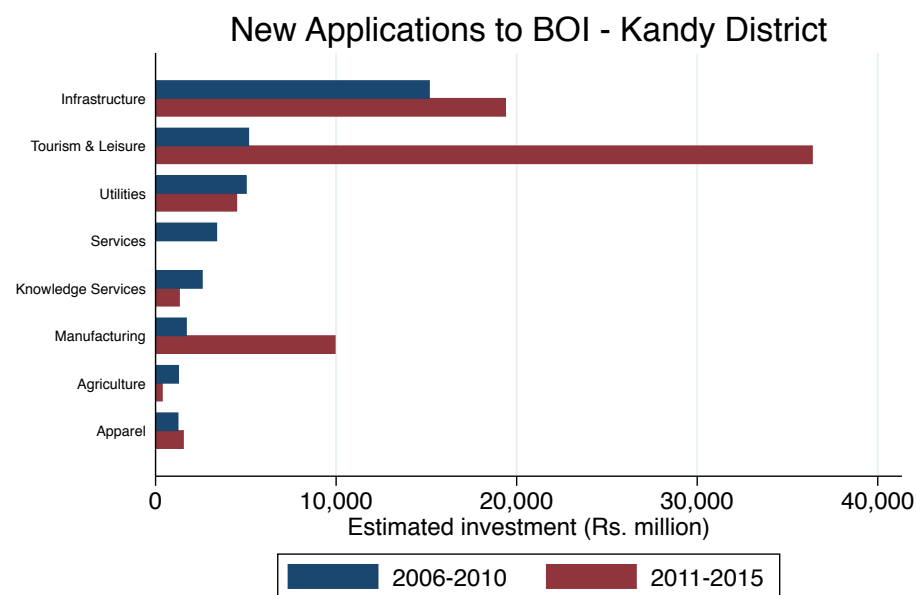
Source: BOI project list provided on July 15, 2016  
Note: Not all new applications were accepted, fewer still were completed.

# Natural experiment with Southern Expressway:

Compare to Kandy: The number of applications also down while investment potential was up, for manufacturing in addition to tourism. Manufacturing in detail: similar to Galle; some new interest in pharmaceuticals, also footwear



Source: BOI project list provided on July 15, 2016  
Note: Not all new applications were accepted, fewer still were completed.



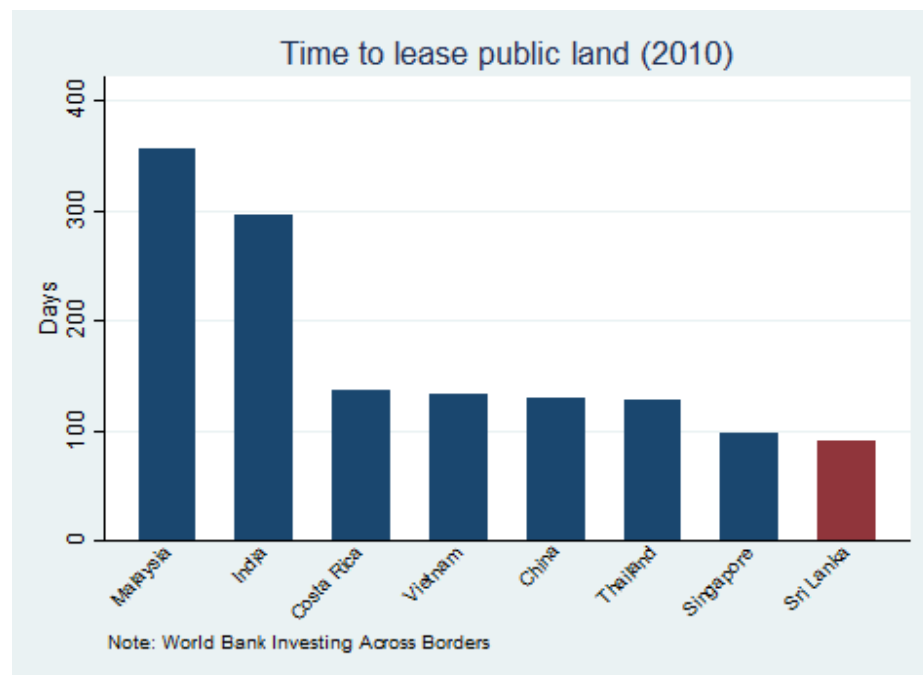
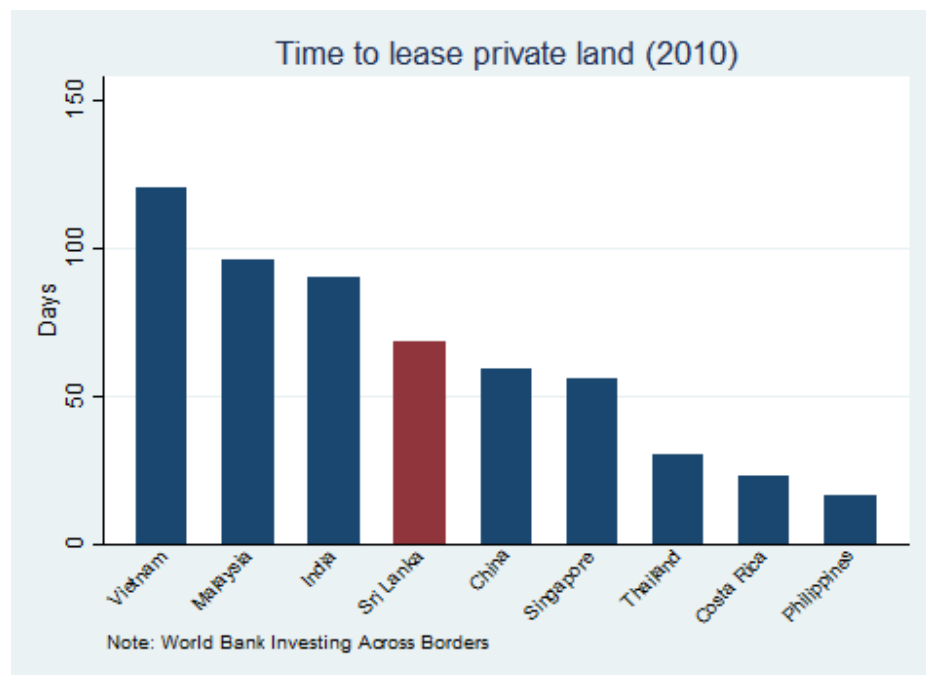
Source: BOI project list provided on July 15, 2016  
Note: Not all new applications were accepted, fewer still were completed.



# **APPENDIX**

## ACCESS TO LAND

Price (more broadly): As of 2010, leasing land in Sri Lanka looked to be facilitated no more slowly than in comparison countries, particularly for public land (i.e. 85% of land in the country).

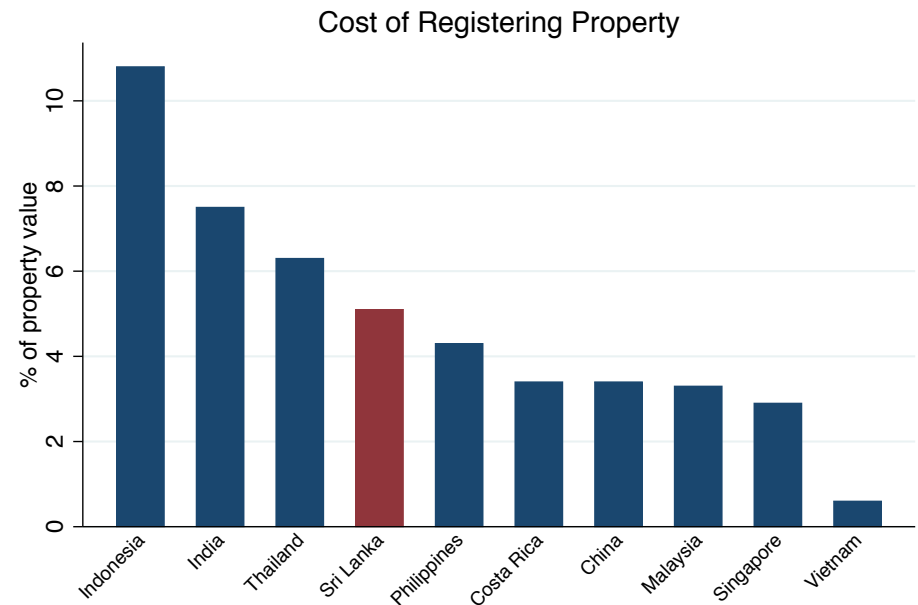


Methodological Note: The ease of leasing land indicators are 2 separate quantitative measures that compare economies on the time (number of calendar days) it takes to lease land from both a private holder and the government. To ensure consistency and comparability of data across all 87 economies, the Ease of leasing land indicators are based on a hypothetical case study of a manufacturing company seeking to acquire industrial land. Survey respondents are asked to use the case study to indicate the step-by-step procedures that a foreign-owned company and/or its legal representatives would go through in order to formally lease land both from a private individual and from the government. This allows the focus of the indicators to be on objective and verifiable data, rather than opinion- and perception-based information.

Price (more broadly): According to the Doing Business measures, the time required to register property in Sri Lanka in 2016 was on the higher end while the cost to register property was around average against comparator countries.



Data source: World Bank Doing Business Indicators, 2016



Data source: World Bank Doing Business Indicators, 2016

#### Methodological Notes:

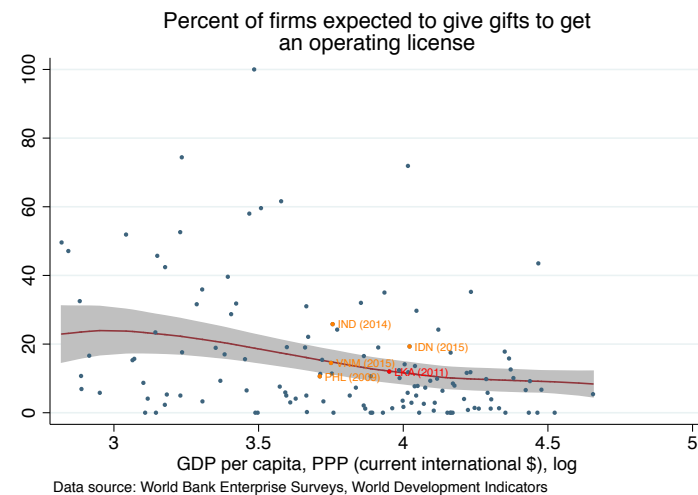
- Time is recorded in calendar days. The measure captures the median duration that property lawyers, notaries or registry officials indicate is necessary to complete a procedure.
- Cost is recorded as a percentage of the property value, assumed to be equivalent to 50 times income per capita. Only official costs required by law are recorded, including fees, transfer taxes, stamp duties and any other payment to the property registry, notaries, public agencies or lawyers. Other taxes, such as capital gains tax or value added tax, are excluded from the cost measure. Both costs borne by the buyer and those borne by the seller are included. If cost estimates differ among sources, the median reported value is used.

Changes vs. Changes: Variations across space in land ownership laws and land titling have implications for the rural economy but these constraints are less relevant for non-agricultural investment.

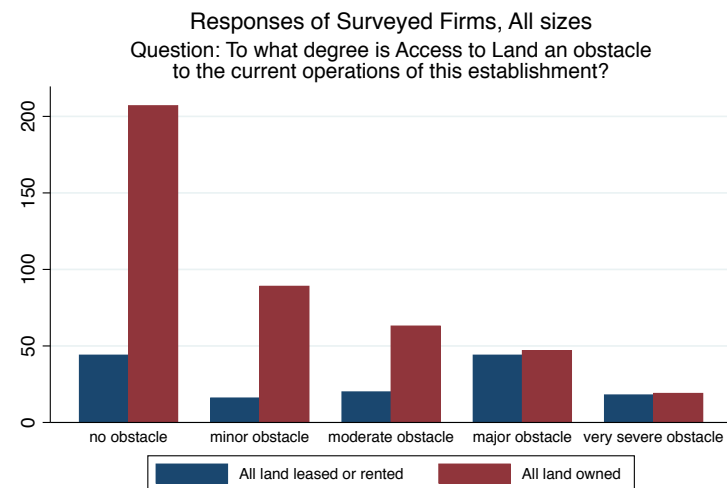
- The World Bank paper “Do Land Market Restrictions Hinder Structural Change in a Rural Economy”, which uses the instrument of historical malaria prevalence, provides convincing evidence that land restrictions (under the Land Development Ordinance of 1935) decrease the probability of being engaged in wage employment in services and manufacturing, but especially services, in 2002 HIES data. The authors argue that this is evidence that the land restrictions in question inhibit structural change through the channel of “migration costs” rather than through collateral or property rights mechanisms.

## Bypassing the constraint: Other evidence is mixed and incomplete.

- The Enterprise Survey does not have a question on paying a bribe to secure land, but (as of 2011) Sri Lanka did not look too bad on other bribes that are likely related.



- Firm interviews and secondhand reports suggested that firms prefer owning private land over leasing state land. Microdata from the World Bank Enterprise Survey (2011) corroborate this. The survey is representative and shows that most firms own land. Firms owning land are also far less likely to see land access as a constraint than firms leasing or renting land.



Data source: World Bank Enterprise Survey, 2011

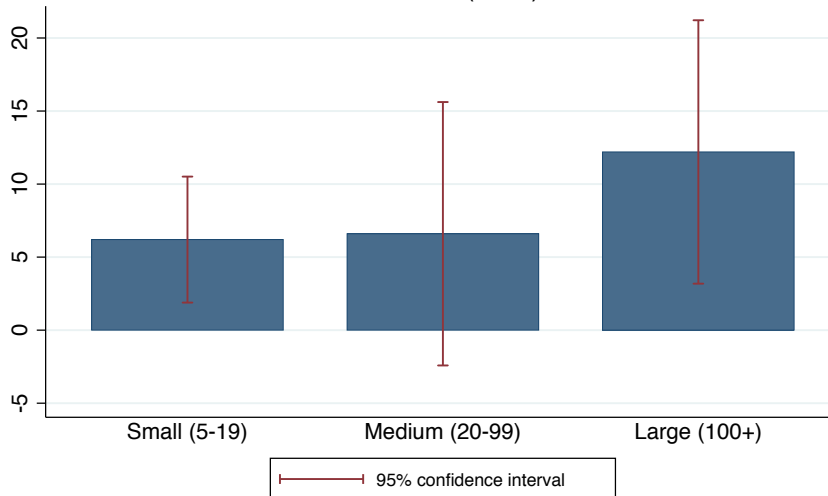
# **APPENDIX**

## LABOR REGULATIONS

# Additional benchmarking on firms reporting labor regulations as a constraint:

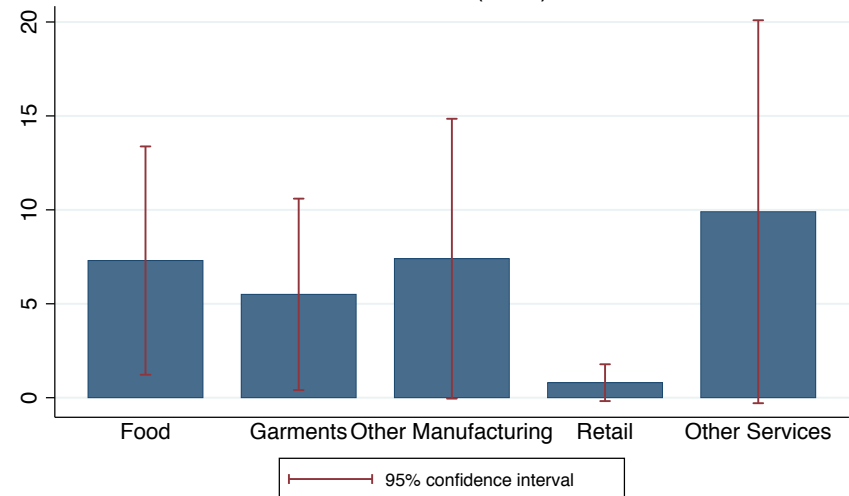
- The point estimate is higher for large firms but the difference is not statistically significant.
- Retail is the sector least affected by the constraint according to the Enterprise Survey from 2011.

Percent of firms identifying labor regulations as the main obstacle  
Sri Lanka (2011)



Data source: World Bank Enterprise Surveys

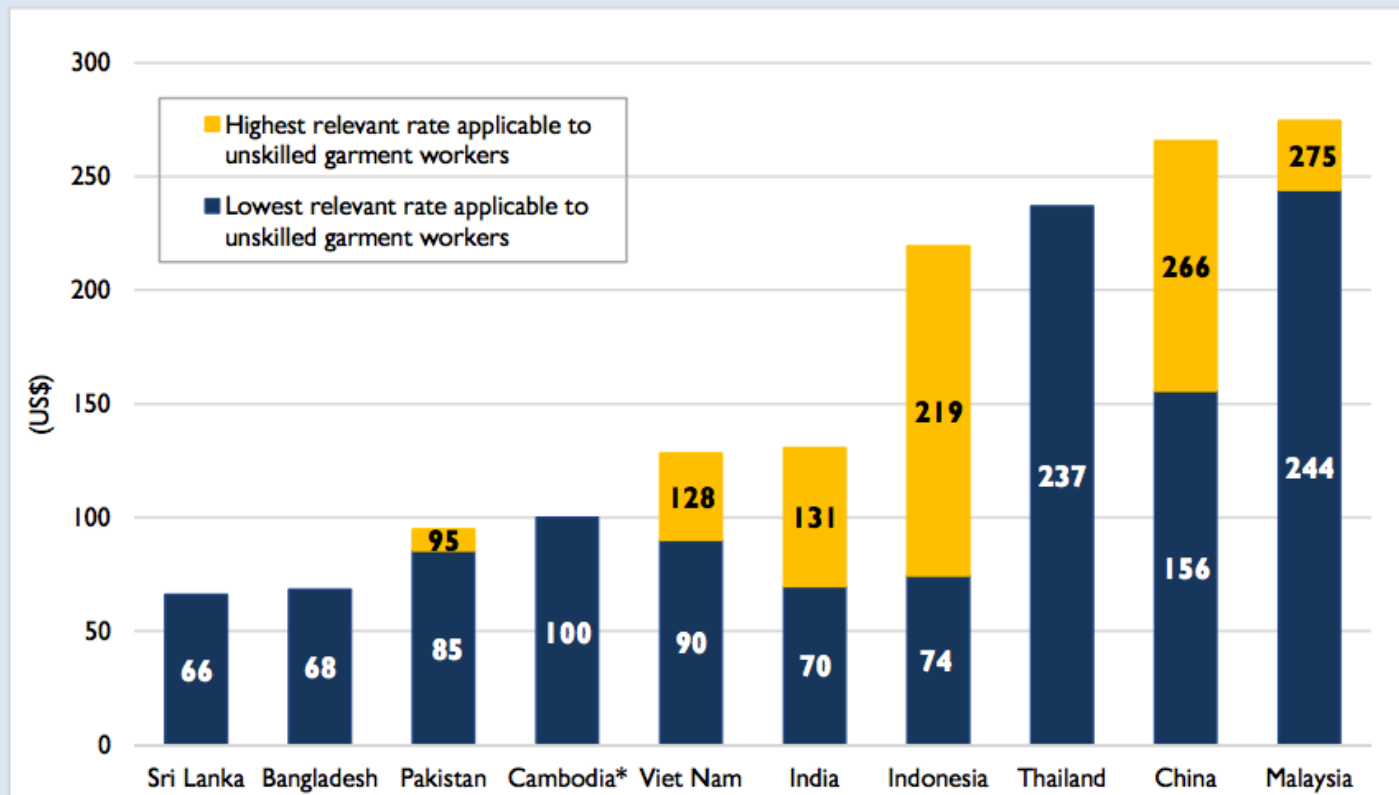
Percent of firms identifying labor regulations as the main obstacle  
Sri Lanka (2011)



Data source: World Bank Enterprise Surveys

An international comparison of minimum wages in the garment sector. Firm interviews showed that the apparel industry in Sri Lanka pays roughly twice the minimum wage to new hires.

Figure BI-1. Monthly minimum wages applicable to the garment sector in Asia's ten biggest garment exporters, as of 1 Jan. 2014 (US\$)



\* Cambodia figure became effective as of 1 February 2014.

Note: Rates refer to the highest and lowest rate applicable to unskilled garment workers. In countries with geographical variation of minimum wages, rates for the major garment manufacturing.



Outside of the cost of releasing workers, overall compensation costs for workers also appear to be low.

- Compensation costs compiled by the U.S. Bureau of Labor Statistics include pay for time worked, directly-paid benefits, and employer social insurance expenditures and labor-related taxes.
- Through 2008, Sri Lanka's compensation cost for manufacturing workers was about half that of the Philippines, which had roughly the same level of income (dating back through 1995), and much lower than those of middle and high income countries.
- This data source was discontinued after 2008.

Source: BLS: *International Comparisons of Hourly Compensation Costs in Manufacturing, 2008*

Table B. Hourly Compensation Costs of All Employees and Production Workers in Manufacturing, 2008

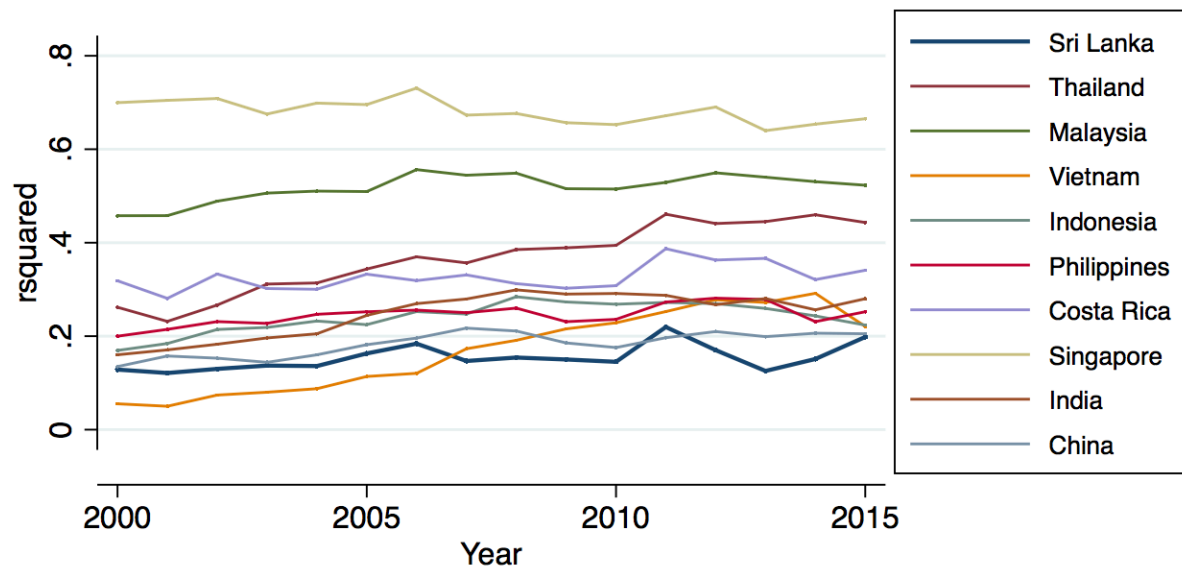
| Country or area         | All Employees (US=100) | Production Workers (US=100) | All Employees (US\$) | Production Workers (US\$) | Production Workers (All Employees=100) |
|-------------------------|------------------------|-----------------------------|----------------------|---------------------------|--|
| <b>Americas</b>         |                        |                             |                      |                           |  |
| United States           | 100                    | 100                         | 32.26                | 25.65                     | 80                                     |
| Argentina               | 31                     | -                           | 9.89                 | -                         | -                                      |
| Brazil                  | 26                     | 27                          | 8.28                 | 6.93                      | 84                                     |
| Canada                  | 101                    | 116                         | 32.69                | 29.78                     | 91                                     |
| Mexico                  | 13                     | 12                          | 4.04                 | 3.12                      | 77                                     |
| <b>Asia and Oceania</b> |                        |                             |                      |                           |  |
| Australia               | 114                    | 127                         | 36.88                | 32.49                     | 88                                     |
| Hong Kong SAR (1)       | -                      | 23                          | -                    | 5.91                      | -                                      |
| Israel                  | 61                     | 67                          | 19.61                | 17.13                     | 87                                     |
| Japan                   | 86                     | 90                          | 27.80                | 23.15                     | 83                                     |
| Korea, Republic of      | 50                     | 55                          | 16.27                | 14.20                     | 87                                     |
| New Zealand             | 60                     | 68                          | 19.43                | 17.48                     | 90                                     |
| Philippines             | 5                      | 5                           | 1.68                 | 1.31                      | 78                                     |
| Singapore               | 58                     | 38                          | 18.77                | 9.83                      | 52                                     |
| Sri Lanka               | -                      | 3                           | -                    | .68                       | -                                      |
| Taiwan                  | 27                     | 27                          | 8.68                 | 6.95                      | 80                                     |
| <b>Europe</b>           |                        |                             |                      |                           |  |
| Austria                 | 148                    | 152                         | 47.72                | 38.88                     | 81                                     |
| Belgium                 | 146                    | 154                         | 47.14                | 39.42                     | 84                                     |
| Czech Republic          | 38                     | 40                          | 12.20                | 10.35                     | 85                                     |
| Denmark                 | 159                    | 178                         | 51.28                | 45.74                     | 89                                     |
| Finland                 | 138                    | 147                         | 44.68                | 37.64                     | 84                                     |
| France                  | 130                    | 123                         | 41.94                | 31.61                     | 75                                     |
| Germany                 | 149                    | 141                         | 48.22                | 36.07                     | 75                                     |
| Greece                  | 61                     | -                           | 19.58                | -                         | -                                      |
| Hungary                 | 30                     | 29                          | 9.56                 | 7.52                      | 79                                     |
| Ireland                 | 139                    | 140                         | 44.80                | 35.79                     | 80                                     |
| Italy                   | 111                    | 122                         | 35.77                | 31.37                     | 88                                     |
| Luxembourg              | -                      | 130                         | -                    | 33.37                     | -                                      |
| Netherlands             | 137                    | 145                         | 44.32                | 37.15                     | 84                                     |
| Norway                  | 177                    | 193                         | 57.18                | 49.54                     | 87                                     |
| Poland                  | 31                     | 32                          | 10.07                | 8.26                      | 82                                     |
| Portugal                | 38                     | 38                          | 12.23                | 9.83                      | 80                                     |
| Slovakia                | 34                     | -                           | 10.91                | -                         | -                                      |
| Spain                   | 86                     | 92                          | 27.71                | 23.67                     | 85                                     |
| Sweden                  | 134                    | 150                         | 43.33                | 38.39                     | 89                                     |
| Switzerland             | 134                    | 145                         | 43.28                | 37.12                     | 86                                     |
| United Kingdom          | 111                    | 109                         | 35.81                | 27.86                     | 78                                     |

(1) Hong Kong Special Administrative Region of China.

# **APPENDIX**

## POLICY UNCERTAINTY

Sri Lanka's trade policy contributes to an environment where import and export volumes are less correlated than in comparator countries. (All comparators)



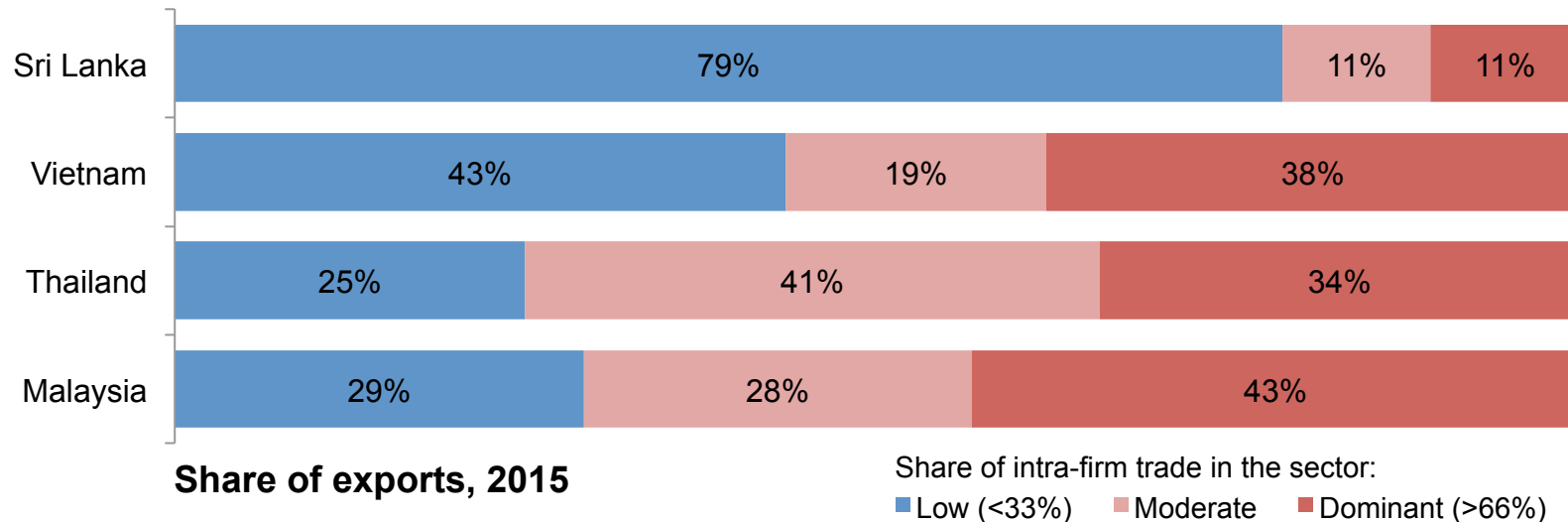
Each marker represents exports of a product at the HS4 level. Own calculations using UN COMTRADE. 252

# **APPENDIX**

## **(INTER-FIRM) COORDINATION FAILURES**

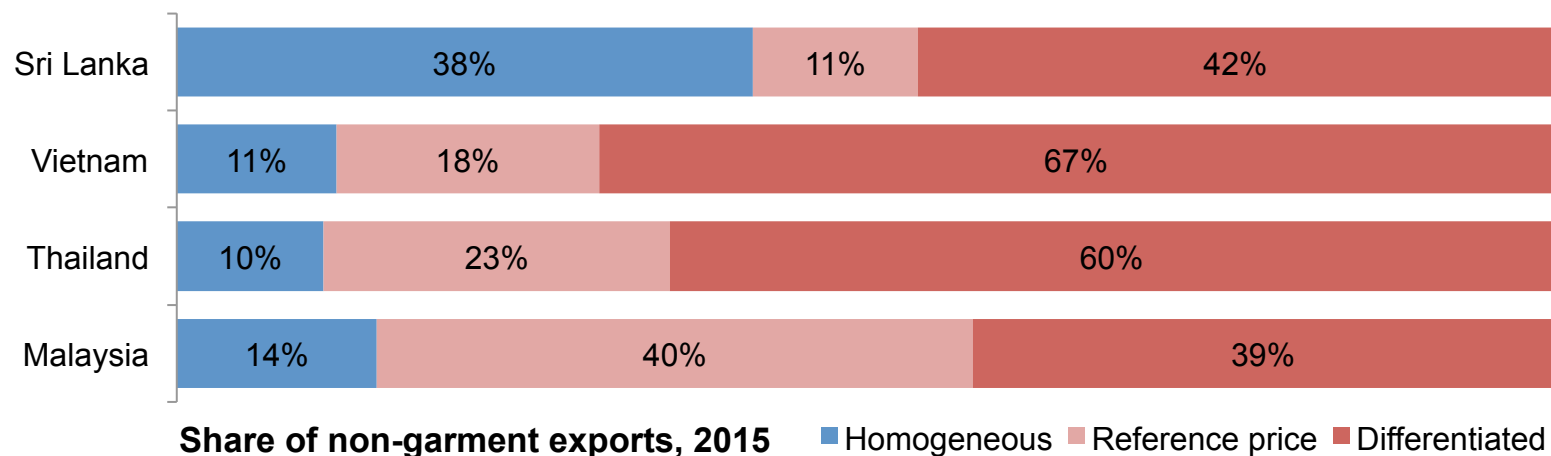
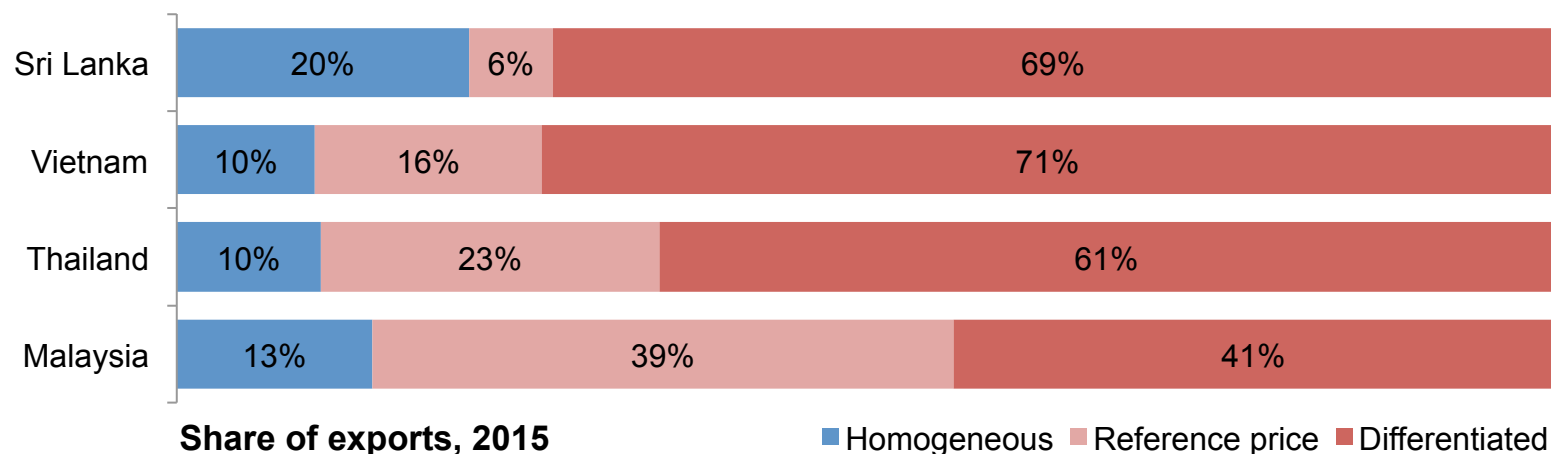
## More on Global Production: Sri Lanka has relatively low share of exports whose trade occurs between affiliated firms

- World trade often occurs between the branches of a multinational company, or between “related parties” (in which one owns at least 10% of the other)
- For the US, 38% of imports came from intra-firm trade in 2010
- This varies greatly by sector. For US motor vehicle imports, 87% was intra-firm, suggesting it is rare for unaffiliated firms to access US auto market



Source: own calculations, using classifications from Bernard, Jensen & Schott (2006) and COMTRADE data

More on Global Production: Sri Lanka has a low share of (non- garment) non-homogeneous products, which are sold in firm networks rather than open markets



Source: COMTRADE, using classifications from Rauch, 1996 (2007 revision, "liberal" version)