

Can industrial zones address the binding constraints to Sri Lanka's growth?

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This note collects evidence related to possible constraints to economic growth, and their relation with GoSL's industrial zone development agenda. We find that new zones are especially well-suited to help address Sri Lanka's lack of industrial land and high policy uncertainty, both of which may be holding back growth. Less clear, however, are zones' impact on Sri Lanka's limited transport links beyond the Western Province. Finally, partnering with well-connected zone management companies may also help create opportunities to connect with firms in new, non-traditional sectors.

Introduction

Zones can be powerful tools for solving economic issues. With limited budgets, governments can put some things in many places or many things in one place. In their ideal form, zones are places that have everything that firms need to thrive. Since each industry needs many complementary (public) assets to succeed, zones can play important role in creating the right conditions for industrial success. This might include suitable land plots, hard infrastructure, and site-specific policies or clearances. Moreover, firms in zones can benefit from each other's proximity – they can be each other's suppliers, for example.

Recognizing these potential benefits, the Board of Investment (BOI) of the Government of Sri Lanka (GoSL) has embarked on a new plan to expand its set of industrial zones, for the first time since 2003. GoSL has requested that Harvard CID verify whether the creation of new zones is well-aligned to help solve Sri Lanka's binding constraints to growth.

Overview of growth diagnostic findings

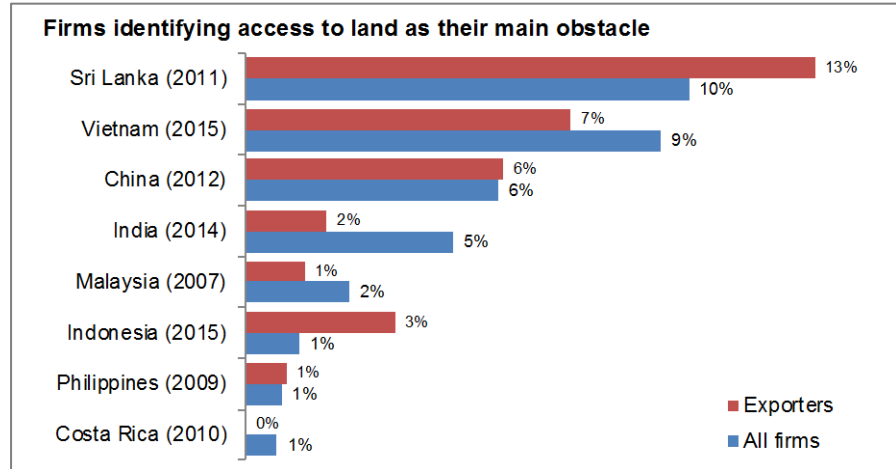
In 2016, Harvard CID worked with the U.S. Millennium Challenge Corporation to conduct a growth diagnostic analysis of the Sri Lankan economy (CID, 2018). First proposed by Hausmann, Rodrik and Velasco (2005), the growth diagnostic framework compares potential constraints to economic growth, searching for evidence that the removal of these constraints will release pent-up investment and growth. For Sri Lanka, the growth diagnostic specifically focuses on a lack of investment and growth in new export-oriented sectors, having found that (1) growth in existing or inward-oriented activities is relatively healthy, and (2) a lack of export orientation ultimately limits Sri Lanka's long-run growth trajectory.

The growth diagnostic identified a short list of constraints to export-oriented investment, falling in three levels. First, Sri Lanka's current **industrial ecosystem** – a concentration mainly in garments and tropical agriculture – yields few "easy" investment opportunities in new sectors; this results in a lower inherent level of investor interest. Second, when investors do come, a lack of **industrial land** near the port and a lack of **transport infrastructure** to more distant areas means that there are few appropriate locations for new export-oriented establishments. Finally, underlying both issues is poor government coordination. In the short term, this leads to high **policy uncertainty for investors**. In the longer term, it hobbles the government's capacity to proactively tackle the other constraints.

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Figure 1: A high rate of firms in Sri Lanka report access to land as their main obstacle

Source: World Bank Enterprise Surveys



Industrial land availability

The growth diagnostic identifies access to industrial land as a binding constraint to growth and economic transformation in Sri Lanka. In the World Bank’s Enterprise Surveys, firms (especially exporters) were much more likely to cite access to land as a top obstacle. The issue of land availability was also cited consistently in interviews with investors. This then raises the question of whether increasing the availability of land would result in higher levels of investment.

One test for the “bindingness” of a constraint is to check its price and scarcity. If a factor is problematic for investors, it will either have a relatively high price, or (in cases where prices are not market determined) will be in short supply. Evidence presented in the growth diagnostic suggests that privately-owned land is expensive and growing in cost in the Western Province. For publicly-held lands, lease rates are set by the government and rarely change, making them a poor indicator of demand. Instead, we can look for scarcity. The majority of Sri Lanka’s non-agricultural exports originate in the Export Processing Zones (EPZs) of the Board of Investment (BOI). However, these zones are largely full (Table 1). New manufacturers coming to Sri Lanka must therefore compete for the few remaining EPZ plots, or locate outside of zones.

A similar story of scarcity exists for land with industrial facilities. In particular, industrial-use water resources are at 96% capacity across the EPZs (Table 1). Thus, there may be especially high unmet demand for land with industrial water (and wastewater treatment) facilities, and thus constraints facing industries requiring those resources (such as pharmaceutical manufacturing). For comparison, we can see that electricity usage varies more widely from zone to zone, yet averages to 47% capacity overall.

Potential impact of zones

Recently, the government has recognized this scarcity by raising lease rates for few remaining lots in the EPZs, and beginning the development of new zones. Building and expanding zones would be the most direct way to address a shortfall in available industrial land. In the longer term, the government could also release more publicly-held land for private development. It should also take special care to make sure that new zones can meet the infrastructure needs of exporters, beginning with industrial water facilities.

Table 1: Land, water, and electricity utilization of export processing zones in 2016

BOI Zone	Industrial Area (acres)	Land Occupancy	Water (m ³ /day)	Water Utilization	Electricity (MVA)	Electricity Utilization
Katunayake (KEPZ)	306	96%	8,500	94%	63	30%
Biyagama (BEPZ)	256	100%	18,000	117%	45	62%
Koggala (KgEPZ)	195	90%	1,950	92%	20	78%
Seethawaka (SEPZ)	183	94%	9,950	85%	95	26%
Horana (HEPZ)	180	95%	3,000	46%	36	67%
Mirigama (MEPZ)	171	97%	2,250	47%	10	55%
Wathupitiwala (WEPZ)	66	100%	950	126%	8	81%
Polgahawela (PgEPZ)	40	71%	450	44%	4	100%
Mawathagama (MwEPZ)	30	67%	200	95%	4	94%
Malwatta (MEPP)	26	98%	320	44%	4	50%
Kandy (KIP)	82	85%	1,000	50%	12	58%
Wagawatta (WAEPZ)*	61	100%	0	n/a	0	n/a
Total	1,597	94%	46,570	94%	301	47%

Source: BOI figures. *Note: no dedicated power or water source available at WAEPZ.

Land policy uncertainty

Land availability issues are compounded by – and ultimately caused by – deep issues in land governance. Approximately 80% of land is state-owned, governed by a disconnected institutional structure and complex legal environment (especially from the perspective of foreign-owned businesses). As a result, it is often highly difficult for investors to locate and gain rights to suitable locations for their operations. Interviews with investors revealed that it was relatively common for FDI projects to be stalled or cancelled due to land disputes with the government; as a result, many investors report using middlemen to obtain approvals. Likewise, smaller firms reported operating without a license due to issues securing formal land approvals; this mirrors a study by de Mel and Woodruff (2011), which suggests that land rights issues serve as a barrier to formalization.

Potential impact of zones

Many of these issues have traditionally been addressed by zones in Sri Lanka. Zone lands can be pre-cleared for specific activities and environmental categories, reducing delays and uncertainties related to approvals for investment, land clearance and environmental impact (Table 2). EPZs also include dedicated customs services, decreasing the impact of uncertainty related to trade administration.

However, it should also be noted that many other aspects of policy uncertainty are unaffected by zones. In particular, the growth diagnostic notes the negative impact of unexpected changes in tax and tariff rates. This uncertainty must be addressed in order for export-oriented firms to thrive.

	Required approvals
Pre-approved in EPZs (5)	Environmental clearance and concurrence; land clearance; electricity registration; water registration; telecommunications registration
Expedited in EPZs (4)	Site approval; building plan approval; certificate of conformity; environmental protection license
Normal procedures apply (8)	Company registration; preliminary investment clearance; work permit and resident visa; tax registration; import and export registration; import and export license; rules of origin certificate; chemical materials approvals

Table 2: Estimated approvals required for select activities, by zone location

Source: BOI estimates.

Note: applies to five high-priority sub-sectors²; estimates differ for other activities

Transport infrastructure

A lack of transportation infrastructure may also be a binding constraint to growth in new export-oriented sectors. Benchmarked against competitor countries, the quality of transport infrastructure in Sri Lanka has clear gaps. While overall road coverage is good, there are relatively few limited-access expressways; this makes travel times by road relatively high, especially during peak hours (when congestion within and between cities is an issue). Rail infrastructure is outdated and virtually unused in the shipment of cargo.

But do these infrastructure deficits result in lower investment? One sign of such would be that exporters would prefer to locate closer to the Colombo port, as this would make them immune to higher travel costs. In fact, zone occupancy rates are the highest in EPZs with the shortest travel times to the Colombo port (Figure 2). We also note that privately-held land is most expensive in the Western province, especially within Colombo proper. This would indicate that regions farther from the Colombo port are held back by a lack of efficient transport links to the Colombo port, or a lack of a functional container port of their own.³

Potential impact of zones

It is not clear if zones alone would help alleviate the transport constraint; much depends on the actual location of the zones. A poorly located zone has the potential to worsen, not improve, local traffic conditions and road quality. A clearer argument would be that roads help zones, not the other way around: one needs to improve road access to more distant zones in order to increase their attractiveness.

For this reason, the development of new zones should involve an assessment of whether the existing transport infrastructure can handle the expected increase in activity, or if corresponding improvements will be necessary. In fact, there may be especially high investment dividends to ensuring that transport improvements (such as dedicated rail links, expressway off-ramps, or bus services) are provided; these can serve to reduce the effective distance from the zone to Colombo (i.e. travel time), increasing the zone's attractiveness.

² The investment activities under consideration are the manufacture of solar panels, medical devices, electrical panel boards, insulated wires, and rubber-based automobile parts.

³ Of course, there are many other reasons why exporters would prefer locations closer to Colombo – these would include proximity to high-skilled workers, supporting services, and general city amenities. However, it is also true that improved transport links to Colombo would make these benefits more accessible to many locations.

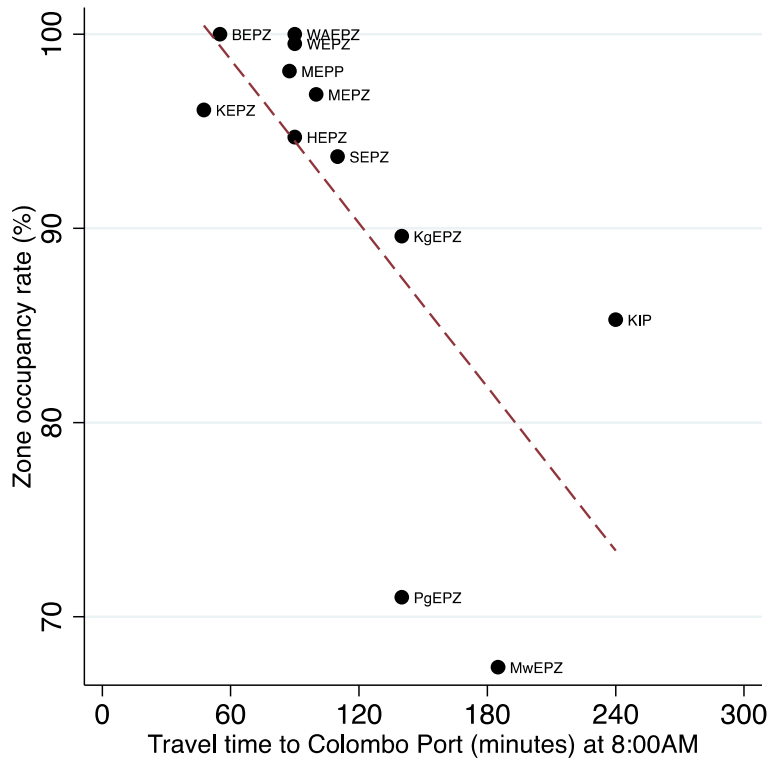


Figure 2: BOI zone occupancy is negatively correlated with travel times to Colombo

Sources: BOI figures and Google Maps

Another option is to decrease the economy’s dependence on the Colombo port. In Hambantota, work has begun on new zones, integrated with improved port infrastructure; similar plans have been made Trincomalee in the past. Linking ports with zones would help address a potential coordination failure (the “chicken and egg” problem): new ports will not succeed if there are no nearby firms using them, but firms will not locate in an area if there is no port for them to use. An integrated zone would offer guaranteed demand for a new port, while offering cheaper land for exporters willing to locate farther from Colombo.

Industrial ecosystem and organization

So far, we have looked at issues related to public inputs: policies related to land development and use, and the provision of transport infrastructure. However, a general mismatch between Sri Lanka’s current industrial ecosystem and the organization of global value chains may also be holding back investment. Product Space analysis reveals that there are few easy investment opportunities for existing Sri Lankan firms to expand into – Sri Lanka already exports most of the products which are highly related to its current comparative advantage. This leaves only completely new sectors, which tend to require new sets of public inputs as well as a range of complementary private sector goods and services to be competitive.

The good news is that Sri Lanka does not need to develop a completely new industrial ecosystem on its own – it can participate in global value chains (GVCs). The bad news is that some GVCs are tightly controlled by other private actors, and connecting with such GVCs requires attracting first movers to Sri Lanka.

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

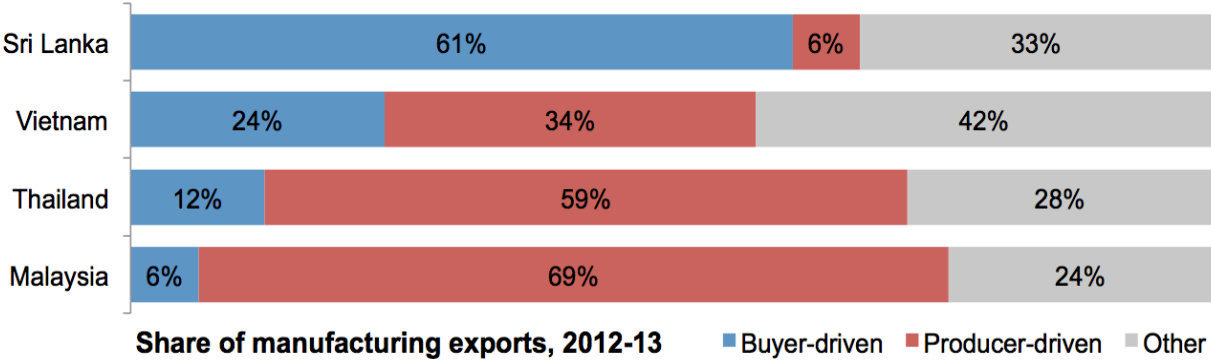
Table 3: Differentiating buyer-driven and producer-driven production networks

Source: Gereffi (1999)

Could tight regulation of GVCs be constraining the flow of investments into Sri Lanka? We can test for this possibility by seeing which types of sectors tend to thrive in the economy. First, we can differentiate between *buyer-driven* and *producer-driven* GVCs (Table 3). Buyer-driven networks are somewhat less tightly regulated: an international company controls the branding and the distribution rights, but production is otherwise left to local firms in developing countries. In producer-driven networks, manufacturing of components and final assembled goods typically takes place in establishments owned or co-owned by the brands themselves. Sri Lanka’s exports are dominated by buyer-driven products (mainly garments, footwear and gems); there is very little export activity from sectors associated with producer-driven networks (such as car, airplane or electronics manufacturing).

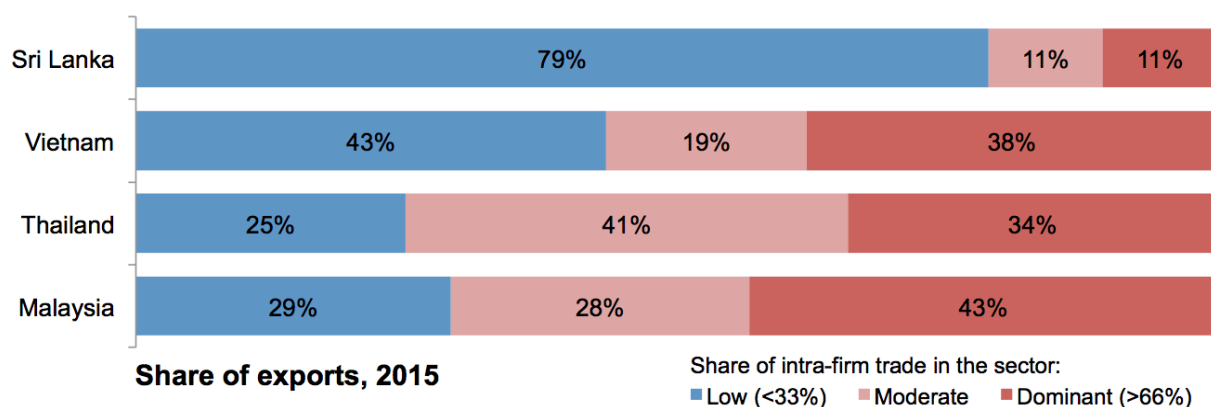
A related concept is intrafirm trade. Research from Bernard, Jensen and Schott (2006) and others reveals that much of world trade is dominated by trade between “related parties”: trade flows that occur across a border, but between two units of the same company (or units particularly owned by the same company). This activity varies significantly by sector: in the US in 2000, 87% of automobile imports, 75% of pharmaceutical imports, and 67% of electrical machinery imports were from related parties, compared to only 15% of apparel imports; this suggests that it would be highly difficult for an auto maker to access the US market without some form of co-ownership, for example.

Figure 4. Sri Lanka’s low share of producer-driven exports suggests a lack of global production sharing



Source: Athukorala (2016)

Figure 5. Sri Lanka has few exports in sectors dominated by intra-firm trade



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

In Sri Lanka, the export basket is largely lacking goods associated with high levels of intrafirm trade (Figure 5), indicating that the economy may in fact have issues attracting investment in those sectors. Thus, it appears that Sri Lanka is especially underperforming in tightly-regulated GVCs.

Potential impact of zones

In theory, zones can foster so-called agglomeration externalities – benefits that accrue to firms when they cluster together into ecosystems. These may spring from mechanisms such as tight buyer-supplier proximity, or shared pools of specialized labor, or easier propagation of new production techniques (i.e. copying your neighbors). In practice, however, fostering agglomeration externalities requires special care in the design and population of the zone. One possible approach is to internalize the externality, through partnerships with zone management companies. These companies would ideally be incentivized to maximize the agglomerative benefits in their zones, and charge lease rates that reflect the higher productivity enjoyed by zone inhabitants.

Well-connected zone management companies might also help Sri Lanka overcome restrictive GVC governance by encouraging their clients from other countries to extend their production networks to Sri Lanka, or to form joint ventures with approved Sri Lankan firms. GoSL should seek to better understand the networks of the management companies they work with: do they have strong pre-existing relationships with relevant foreign manufacturers (i.e. multinational firms active in strategic new sectors)?⁴ Successfully leveraging such relationships will help ensure that GoSL can maximize the benefits of the new PPP zones model, and potentially unlock new GVCs for Sri Lanka.

Conclusion

Zones are well-oriented to address the infrastructure and production network-related issues constraining growth in Sri Lanka. They provide a centralized place with land designated for industrial use, with all the necessary facilities and clearances that firms require. However, the existing zones are at or near full capacity, and the Government of Sri Lanka has not opened a new EPZ in fifteen years. As a result, Sri Lanka is effectively turning away potential investors that can bring in much needed knowhow in more complex

⁴ Likewise, it should be verified that such links are possible to transplant across borders – does working with a zone management company in one country make you more likely to work with them in another country?

activities, connect Sri Lanka to GVCs, and drive export-oriented growth. Investing in new zones, especially those connected with transport infrastructure and international production networks, can relieve some of the critical constraints that prevent investments with the potential to diversify Sri Lanka's economy.

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