

# Developmental Gains from Export-oriented Industrialization: Does Domestic Value Added Matter?

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- **Research question:** Is the current emphasis on the share of domestic value added of exports (value added ratio) in trade and industry policy making in developing countries consistent with the objective of achieving economic development through export-oriented development strategy?
- **Domestic value added:** Domestically-produced intermediate inputs used in the production process

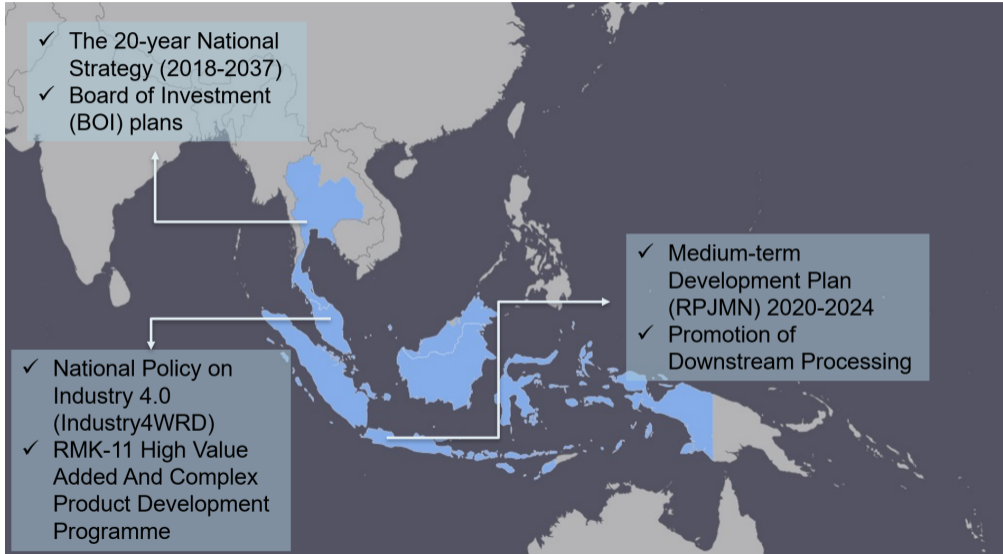
- Examine the appropriateness of using the share of domestic value added of exports in assessing the effectiveness of trade and industrial policy in promoting employment and reducing poverty and income inequality
- Employ a *mixture* of input-output (I-O) analysis (to measure domestic value added) and panel econometrics to model the relationship between domestic value added and employment across 74 manufacturing subsectors for the period 1990 to 2010
- A higher domestic value added is *not* found to be associated with more export-induced employment
- Domestic value added is found to have a *negative* impact on labour shares of income (proxy for poverty) and the ratio of wages to profits (proxy for inequality)

Over the last few decades, international trade has been powered by **global production sharing (GPS)**: Breakup of production processes into vertically separated tasks that are carried out in various countries.

With the rise of GPS,

- Domestic value added (DVA) have declined (e.g., South Korea, Taiwan, and Japan).
- Policymakers are *worrying* about this trend, and *seeking* to increase DVA.
- Policy option: Tariff and NTBs, which hark back to *the import substitution era*.
- Believed that an increase in DVA can boost growth and generate more jobs.

# Example of policies aimed at increasing domestic value added



Using value added ratio as a policy guidance can lead to **misleading** policy inferences.

In the era of GPS, total value added is spread across countries. Despite low per-unit domestic value added, there are two superior employment effects from GPS.

- Activities undertaken within GPS tend to be relatively **labour intensive** (Barrientos et al., 2011; Timmer et al., 2014).
- **Volume Effect**: A larger market compared to traditional products based on horizontal specialisation.

In contrast, an industry with high DVA may *fail to generate employment* as intermediate inputs used in the production process are relatively capital intensive compared to final assembly and other tasks performed within GPS.

## Two steps

- The standard input-output (I-O) framework to calculate domestic value added and export-induced employment (also labour shares of income and the ratio of wages to profits)
- The regression analysis to estimate the relationship between the DVA and export-induced employment (balanced panel data set, 74 manufacturing subsectors, 5 periods)

# Brief review of the I-O framework

- Calculate **output multiplier** from Thailand's I-O tables (1990, 1995, 2000, 2005, 2010)
- Calculate a diagonal matrix of imported input coefficient (the ratio of total import in each sector to total output). Then, *Subtract* gross exports by this imported input coefficient and *divide* by gross exports to get the DVA
- Calculate a diagonal matrix of employment coefficient (the ratio of employment to total output). Then, *multiply* output multiplier with this diagonal matrix and gross exports to get export-induced employment
- Calculate the ratio of wage to total value added (proxy for poverty) and the ratio of wage to profit (proxy for inequality)



$$EXEM_{it} = \alpha + \beta_1 DVA_{it} + \beta_2 GPN_{it} + \beta_3 PROD_{it} + \mu_i + \nu_t + \epsilon_{it} \quad (1)$$

- *EXEM* is export-induced employment
- *DVA* is domestic value added
- Control variables: global production network (*GPN*), productivity (*PROD*)
- $\mu$  is industry fixed effects,  $\nu$  is year fixed effect, and  $\epsilon$  is an error term
- Subscripts  $i$  refers to industry (manufacturing subsector) and  $t$  is time (year)
  
- *GPN* is defined as the percentage of parts and components and final assembly to total manufacturing exports, *PROD* is real value added per worker (labor productivity)

# Domestic value added and employment generation

High value added,  
low employment

- Cement, Concrete and non-metallic products
- Aircraft
- Drug
- Shipbuilding
- Printing and Publishing

Low value added,  
high employment

- Radio, television, & communication equipment
- Office and household machinery and electronics
- Metal furniture and fixtures
- Motor vehicles
- Industrial machinery

	(1)	(2)	(3)
Value added ratio ( <i>DVA</i> )	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Ln productivity ( <i>PROD</i> )	0.17* (0.10)	0.16* (0.09)	0.17* (0.10)
Global production network orientation ( <i>GPN</i> )		0.15*** (0.05)	0.33*** (0.10)
<i>GPN</i> × <i>DVA</i>			0.07 (0.16)
<i>GPN</i> × <i>PROD</i>			-0.02 (0.02)
1995	0.78*** (0.12)	0.78*** (0.12)	0.79*** (0.12)
2000	1.31*** (0.14)	1.29*** (0.14)	1.30*** (0.14)
2005	1.53*** (0.18)	1.52*** (0.18)	1.54*** (0.18)
2010	1.48*** (0.20)	1.48*** (0.19)	1.50*** (0.19)
Constant	6.58*** (1.27)	6.45*** (1.26)	6.34*** (1.28)
Observations	370	370	370
Adjusted R-squared	0.414	0.44	0.44
Industry fixed effects	Yes	Yes	Yes

- No empirical support that an increase in domestic value added is associated with more export-induced employment
- Productivity has a positive and significant impact on employment
- Strong evidence that GPN orientation play a vital role in employment generation

## Conclusion and key policy takeaway

- The results *cast doubt* on the validity of the contemporary approach to policy guidance based on domestic content of export.
- In this era of GPS, industries characterized by low domestic value added have **the potential** to make greater contribution to employment generation.
- It does not mean that value added does not matter.
- What we argue here is that an undue emphasis on industries with high value added through policy intervention (e.g., export ban and tariff) may *run counter* the ongoing path of country's economic development.