

**“Assessing Socioeconomic Impacts of
Transport Infrastructure Projects in the
Greater Mekong Subregion”**

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Main Contributions

- The first effort to undertake a general equilibrium assessment of the impact of infrastructure development across the whole GMS region
- Supporting databases developed for this study facilitated much improved modeling capacity for assessing outcomes, including effects on poverty, across the whole GMS region
- Multi-region Computable General Equilibrium Model for GMS region supplemented with household survey data

Main Contributions

- Examines both :
 1. the effects of improvements in road infrastructure
 2. the Cross Border Transport Infrastructure Agreement (CBTA)
- Quantifying the Effects of Transport Infrastructure Projects: Cost-Benefit for the Future Projects
- The effects on growth, trade facilitation, household income and poverty
- Nice treatment of the background behind the transport infrastructure in GMS countries
- The characteristics of GMS countries are well exposed
- The need for transport infrastructure is well documented

Methodology

- A multi-region general equilibrium model, supplemented with household survey data for the GMS
- Economic modeling of transportation infrastructure improvements is undertaken using the Global Trade Analysis Project (GTAP) model
- The multi-regional CGE model and database used in this study are widely used internationally, fully documented and publicly available
- Augment this model and database to facilitate improved modeling of the GMS, including impacts on poverty

Comments and Limitations on the Methodology

- The model is comparative, static
- Armington elasticities allow differentiation between imports from different countries in the GMS and elsewhere
- Substitution is possible between imports from various sources, as well as substitution between imports and domestic production
- Retaining the simple yet empirically robust assumptions of constant returns to scale and perfect competition
- Transport infrastructure improvements will not have uniform impacts on poverty across the GMS
- Use household survey data to augment the GTAP database so that the implications of infrastructure development for poverty may also be considered

Comments and Limitations on the Methodology

- Computable General Equilibrium Model used in the paper is not explained in detail by giving reference to the Global Trade Analysis Project (GTAP)
- Analysis of the poverty impact and how it is incorporated to the CGE model is well explained
- However, market segmentation is introduced. This assumption needs to be substantiated with the actual data
- ✓ Farm/non-farm mobility is restricted by specifying a constant elasticity of transformation (CET) function which limits the mobility of labor and capital between the farm and non-farm sectors
- ✓ There is a strong assumption of a constant aggregate level of land, labor, and capital employment.
- ✓ Reflecting the belief that the aggregate supply of factors is not overly affected by these transport projects

Comments and Limitations on the Methodology

- This approach to poverty analysis is actually quite data intensive. But received from earlier research
- There is not much discussion on how the various endowments are disaggregated into ten categories, including:
 1. agricultural land,
 2. self-employed agricultural labour (both unskilled and skilled),
 3. self-employed non-agricultural labour (both unskilled and skilled),
 4. wage labour (both unskilled and skilled),
 5. agricultural capital,
 6. non-agricultural capital,
 7. transfer payments
- Poverty elasticity, by stratum and region, Share of national poverty by stratum Average budget share at the poverty line are well explained

Comments and Limitations on the Simulation

- To model the gains from physical investment in transport infrastructure, land transport margin costs are reduced
- This approach captures reductions in real freight expenditures
- However, this approach is not without shortcomings
- ✓ These transport margins apply to traded goods only
- ✓ Transport cost is measured with cif/fob ratio rather than the actual cost of transport
- ✓ cif/fob ratio may not be the best measure as stated by the authors
- ✓ Using cif/fob ratios means these measures only account for inter-country trade only and do not allow for intra-country trade
- ✓ It does not allow for the specification of any particular route or region within a country
- ✓ Finally, the land transport value reported in the GTAP database includes road, rail and pipeline. Singling out roads, let alone a particular road, is all but impossible.

Comments and Limitations on the Simulation Values

- In the scenario, transportation cost is simulated to decline by 45% (25% for PRC). This appears to be so high considering the earlier papers
- “For example, costs measured by the cif/fob ratio can rise to as much as 40% in landlocked countries” (*Henderson, Shalizi and Venables, 2001*)
- On page 21: “*Full implementation of the route is expected to reduce transport costs between 25% and 30% (ADB, 2005)*”

Comments and Limitations on the Simulation Values

- The second component of this scenario encompasses the benefits of implementation of the CBTA
- To include the effects of an improvement in trade facilitation measures, we implement an approach introduced in Hertel, Walmsley and Itakura (2001) and further refined in Minor and Tsigas (2008)
- Based on the studies of expected time savings if the CBTA were to achieve improved facilitation to world standards we assume a reduction in effective import prices of 25% (5% for PRC)
- There is a joint test of the effects of decline in transportation cost through improving transportation infrastructure and savings associated with CBTA
- **These two shocks can be better analyzed separately to see their distinct effects**
- **Lower and upper bounds of these shocks can be given rather than just sticking to one scenario**

Comments and Limitations on the Results

- The results of the simulations are given for contribution to GDP growth, export growth, welfare, allocative efficiency, improved transport and trade facilitation

“The projected changes in real GDP for the region total over \$5.5 billion”

“All of the GMS economies experience increases in GDP of between 1.1% and 8.3%”

- Isn't it too big? 55 billion in 10 years

Comments and Limitations on the Results

- The Impact of the simulations on poverty is also quite strong
- The national poverty headcount falls by between 4% and 5%
- However, the impact on various segments of these populations is rather different depending on factor returns in agriculture
- Across the board, skilled wages rise by more than unskilled wages in the region and this tends to benefit the urban households more than rural ones
- It would be good to compare these simulation results with the existing studies on other regions and as well as with the papers dealing with the effects of other policies

Finally

- Are some mitigating factors really mitigating?
- No need to mitigate the paper 😊
- For example: the accidents are also likely to decline after the improvement in transportation infrastructure
- Overall paper is quite well written 😊

The following definitions are taken from the **Globe Express Services Dictionary of International Trade (Incoterms 2000)**:

- **Cost, Insurance and Freight (CIF)** – An international trade term of sale in which, for the quoted price, the seller/exporter/manufacturer clears the goods past the ship's rail at the port of shipment (not destination). The seller is also responsible for paying for the costs associated with transport of the goods to the named port at destination. However, once the goods pass the ship's rail at the port of shipment, the buyer assumes responsibility for risk of loss or damage as well as any additional transport costs. The seller is also responsible for procuring and paying for marine insurance in the buyer's name for the shipment. The Cost and Freight term is used only for ocean or inland waterway transport.
- **Free On Board (FOB)** – An international trade term of sale in which, for the quoted price, the seller/exporter/manufacturer clears the goods for export and is responsible for the costs and risks of delivering the goods past the ship's rail at the named port of shipment. The Free On Board term is used only for ocean or inland waterway transport.