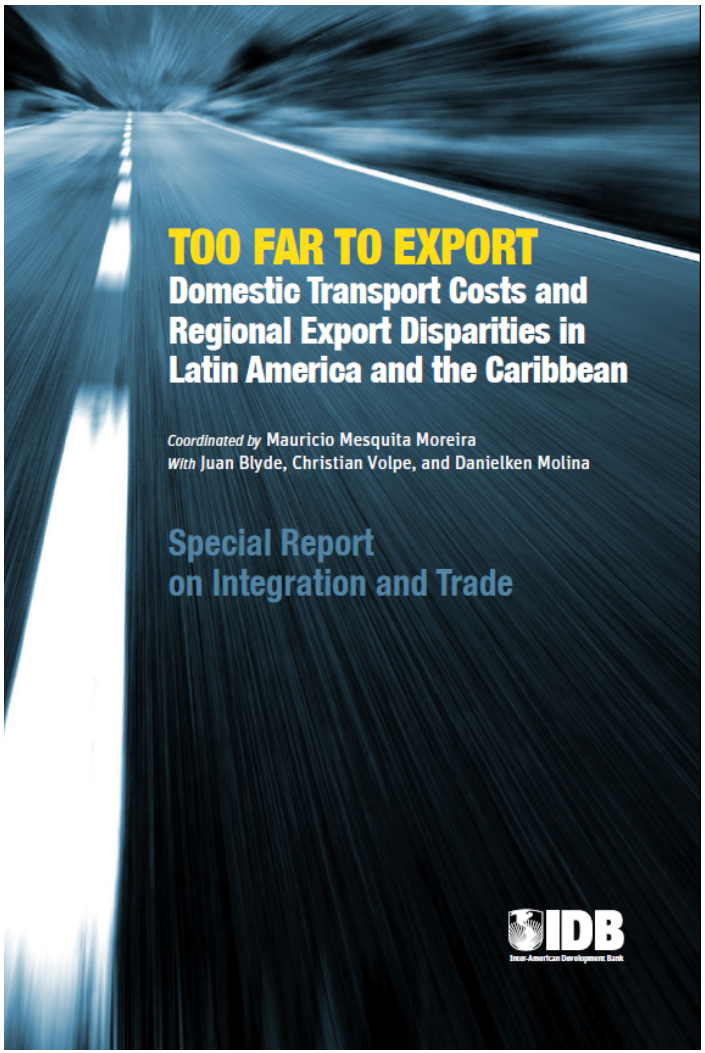

Too Far to Export

Domestic Transport Costs and Regional Export Disparities in LAC

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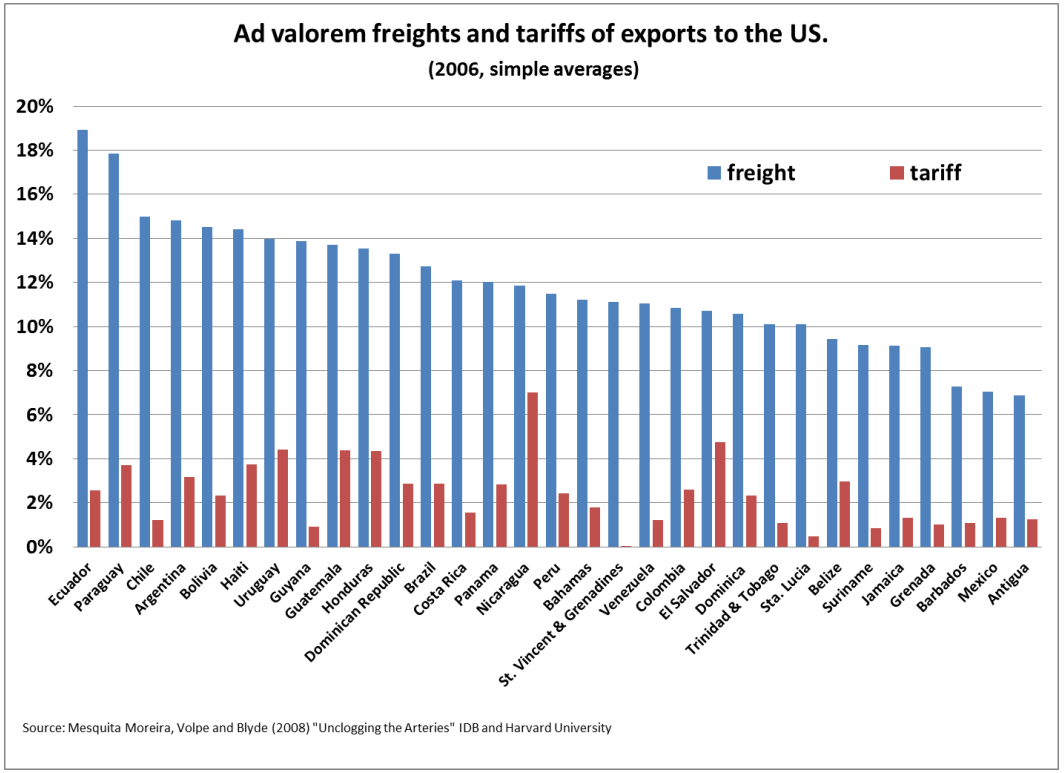
October 16, 2013
New York

Our Motivation

1) Shifting relative importance of trade costs.

Tariffs ↓

Transport Costs ↑



– Underinvestment
– Fragmentation (GVCs)
– Asia's emergence= LAC's growing specialization in "transport intensive" goods ("heavy" and time-sensitive goods/tasks)

Our Motivation

2) Uneven trade gains behind the border

- Within-country variation in transport costs is likely to have an important role in explaining the level and persistence of heavy spatial concentration of exports.

- This calls for an approach the goes beyond the one-size-fits-all that mark the country-wide analyses.

Our Objectives

- To provide a more detailed (municipal level) and reliable description of the spatial distribution of exports within a selected number of LAC Countries (Brazil, Chile, Colombia, Peru and Mexico), where the basic information is available;
- To estimate the factory-to-port transport costs of these exports;
- To asses the impact of these costs on the level and diversification of subnational exports.

Empirical Strategy

1. Data building

   – Origin (municipality)-destination (customs) of exports:
   - For most countries the primary, custom data on the origin was biased towards the big-cities (firm headquarter bias)
   - Different strategies used for each country based on complementary data availability (e.g. census, industrial survey, firms directories and interviews)

   – Transport costs along the export routes

a) Following Combes and Lafourcade 2005, we use real distance and time-related operational costs of land cargo services taken from transport firms surveys or national logistic plans.

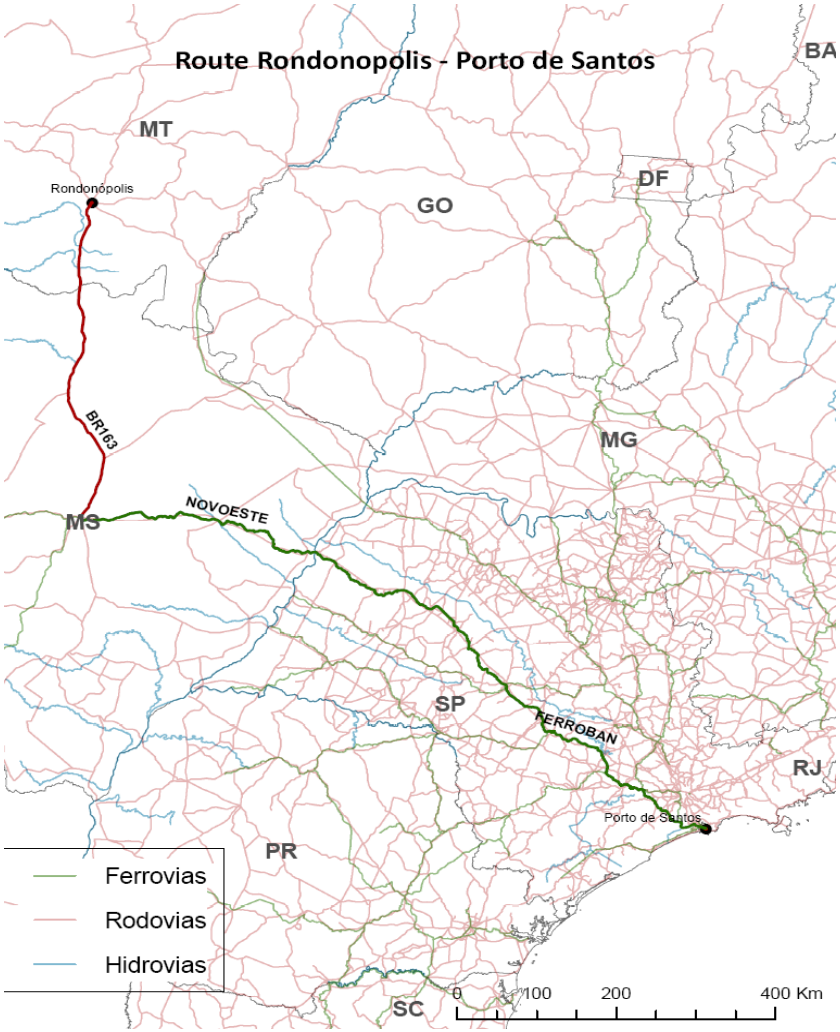
- Transport costs = Distance costs + Time costs
- $Distance\ costs = (fuel + lubricant + tires + spare\ parts) * length\ of\ link / truck\ capacity\ in\ tons$
- $Time\ costs = (maintenance + capital + crew) * length\ of\ link / truck\ capacity\ in\ tons$

Empirical Strategy

b) To identify the export routes, we combined the (i) origin-destination data, (ii) the *georeferenced* cost data and (iii) the digital map of the transport networks to find the least costly route for each product-municipality-custom (GIS software.

c) we then calculate the ad valorem transport costs for each product as follows:

$$TC_{ad} = transport\ costs_{i,j} \cdot weight_{i,j,p,t} / exports_{i,j,p,t}$$

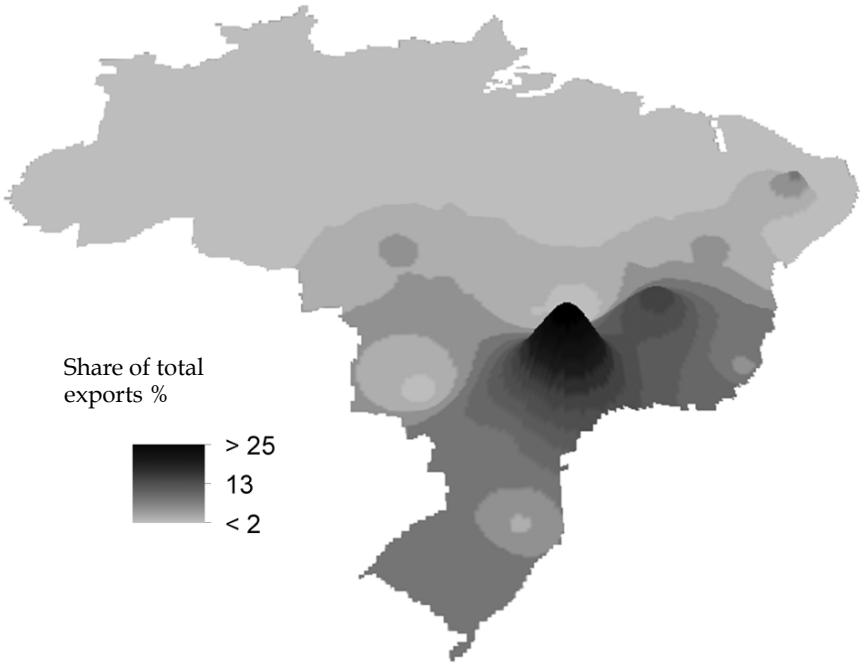


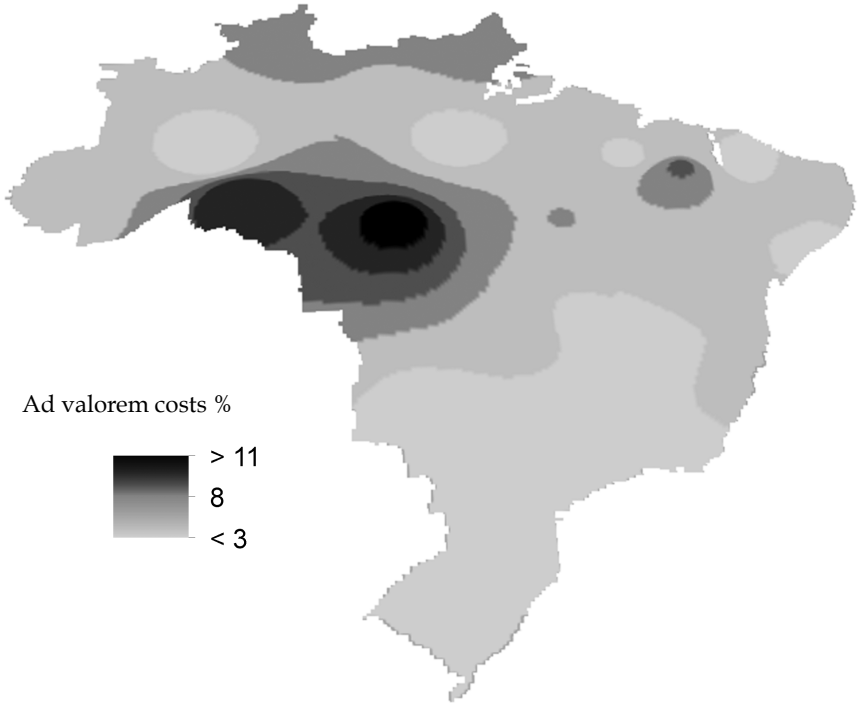
b) Overall database:

- Chile: 2006-2008,
- Colombia : 2004-2006
- Peru: 2000-2009
- Brazil: 2007-2010,

Descriptives: Brazil

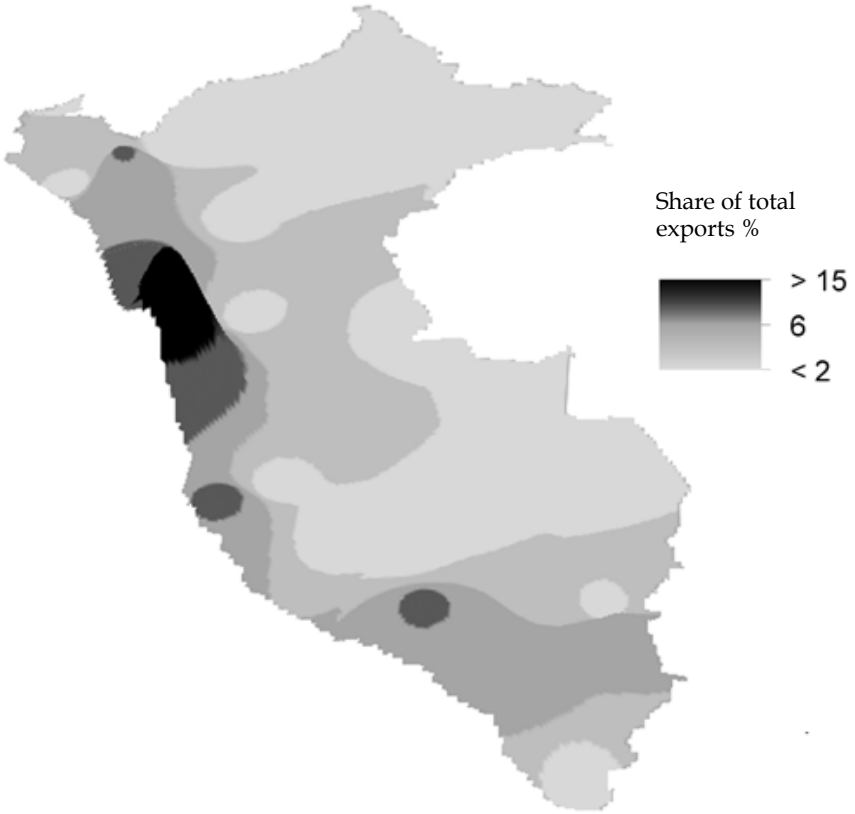
Only 19% of the municipalities exports, accounting for 27% of the territory. The top 10 exporters account for 55% of all exports.

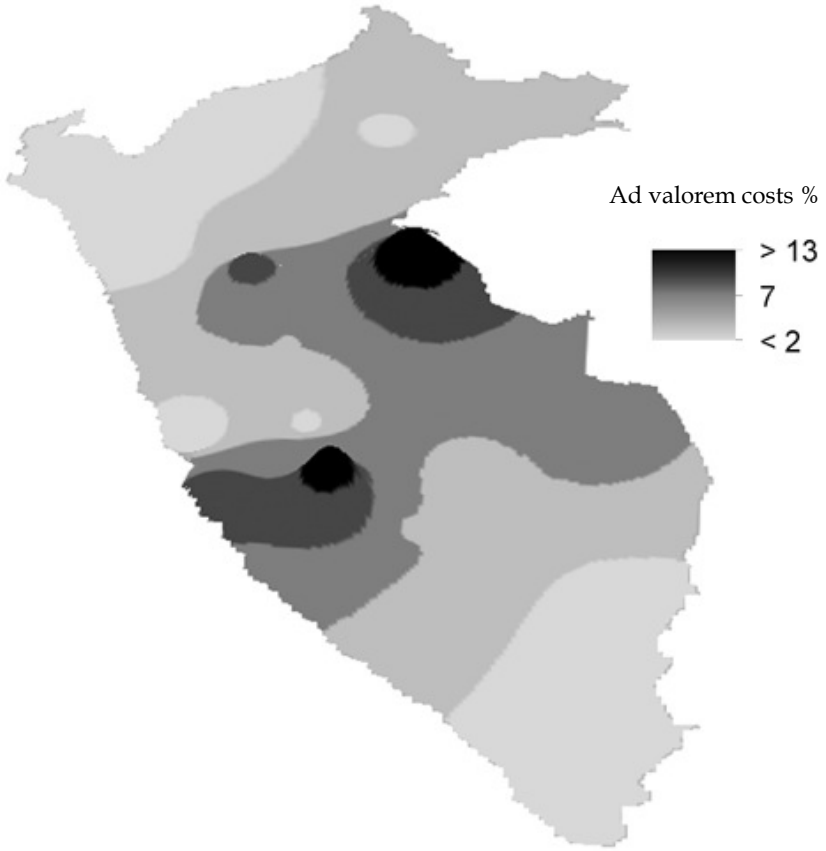




Descriptives:Peru

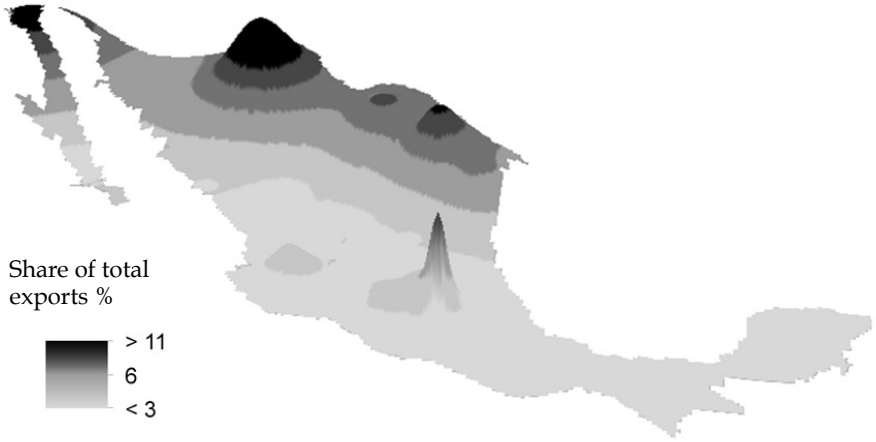
Only 24.5% of the districts exports, which account for 36% of the territory occupied. The top 10 make up for 45% of all exports.





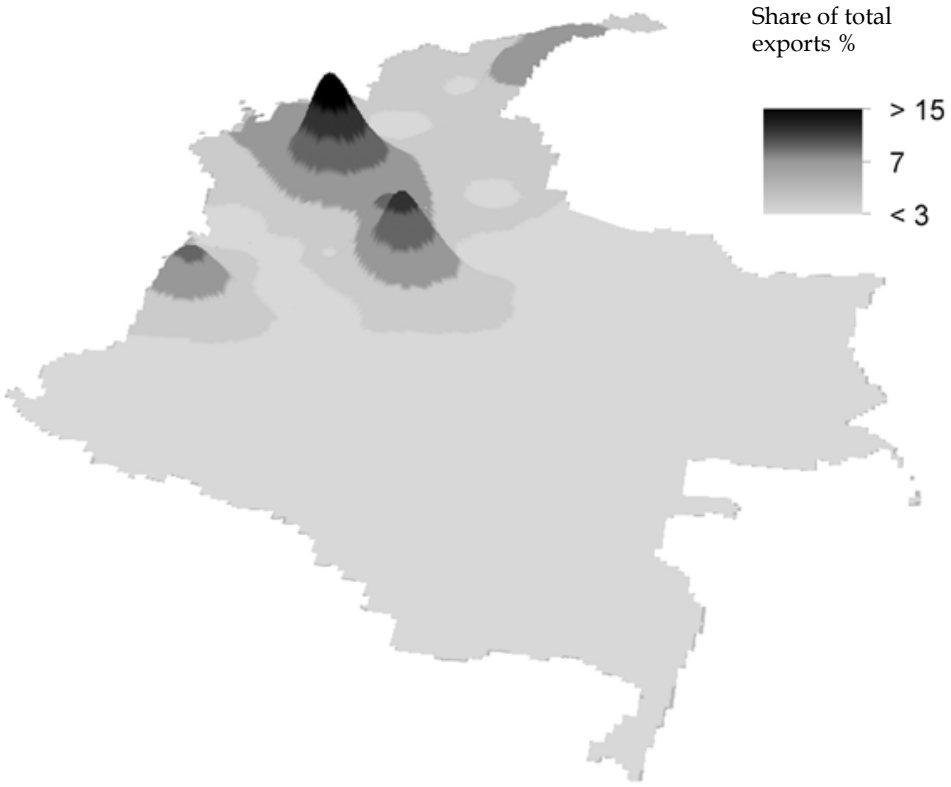
Descriptives: Mexico

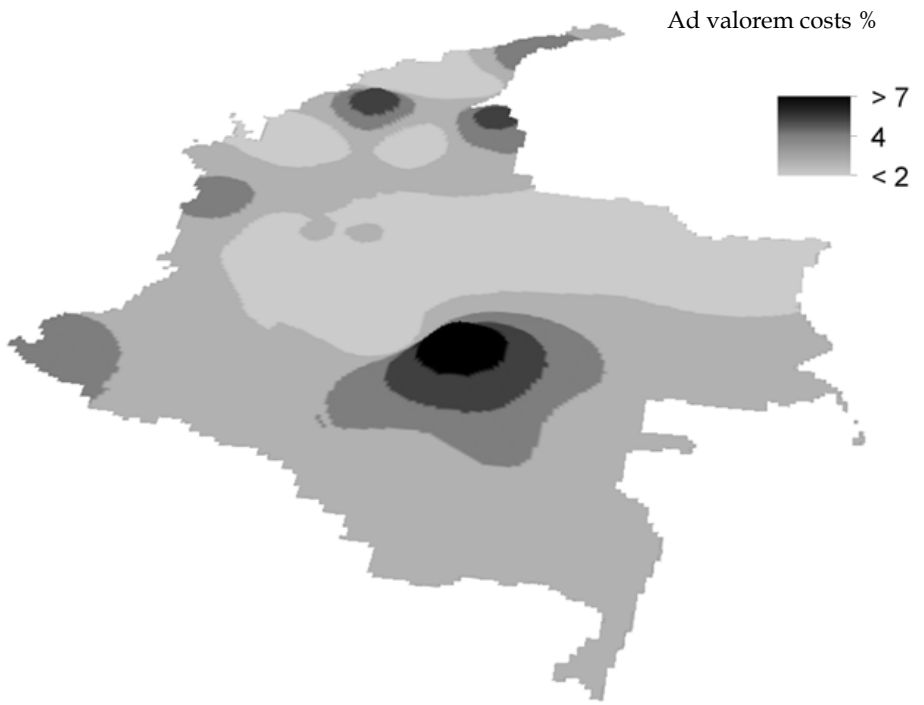
39% of the districts exports, with 69% of the territory. The top 10 account for 68% of all exports.



Descriptives: Colombia

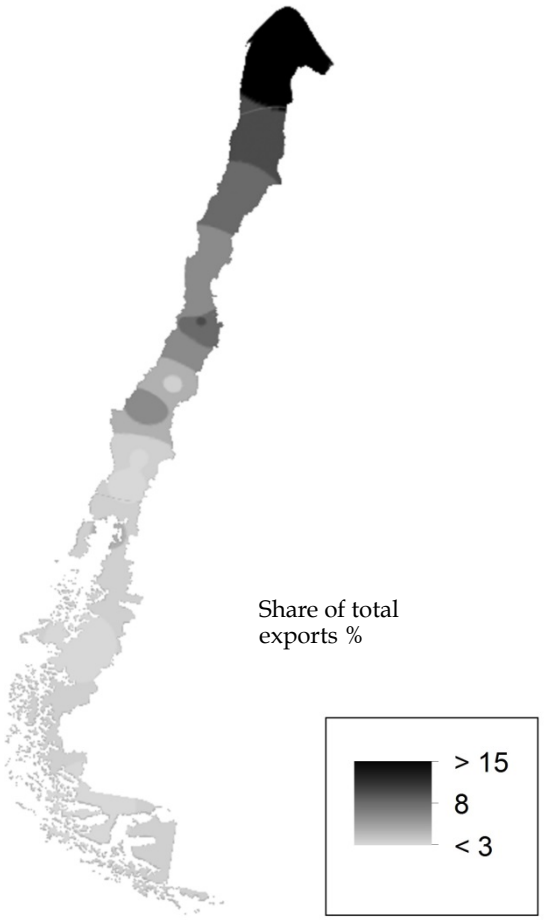
24% of the districts exports, with 11% of the territory. The top 10 account for 73% of all exports.

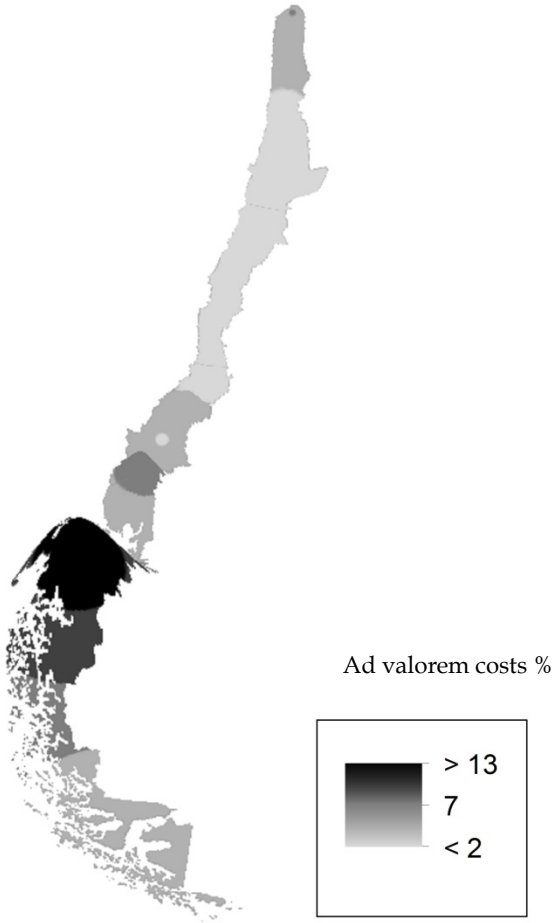




Descriptives: Chile

69% of the districts exports, with 57% of the territory. The top 10 account for 74% of all exports.





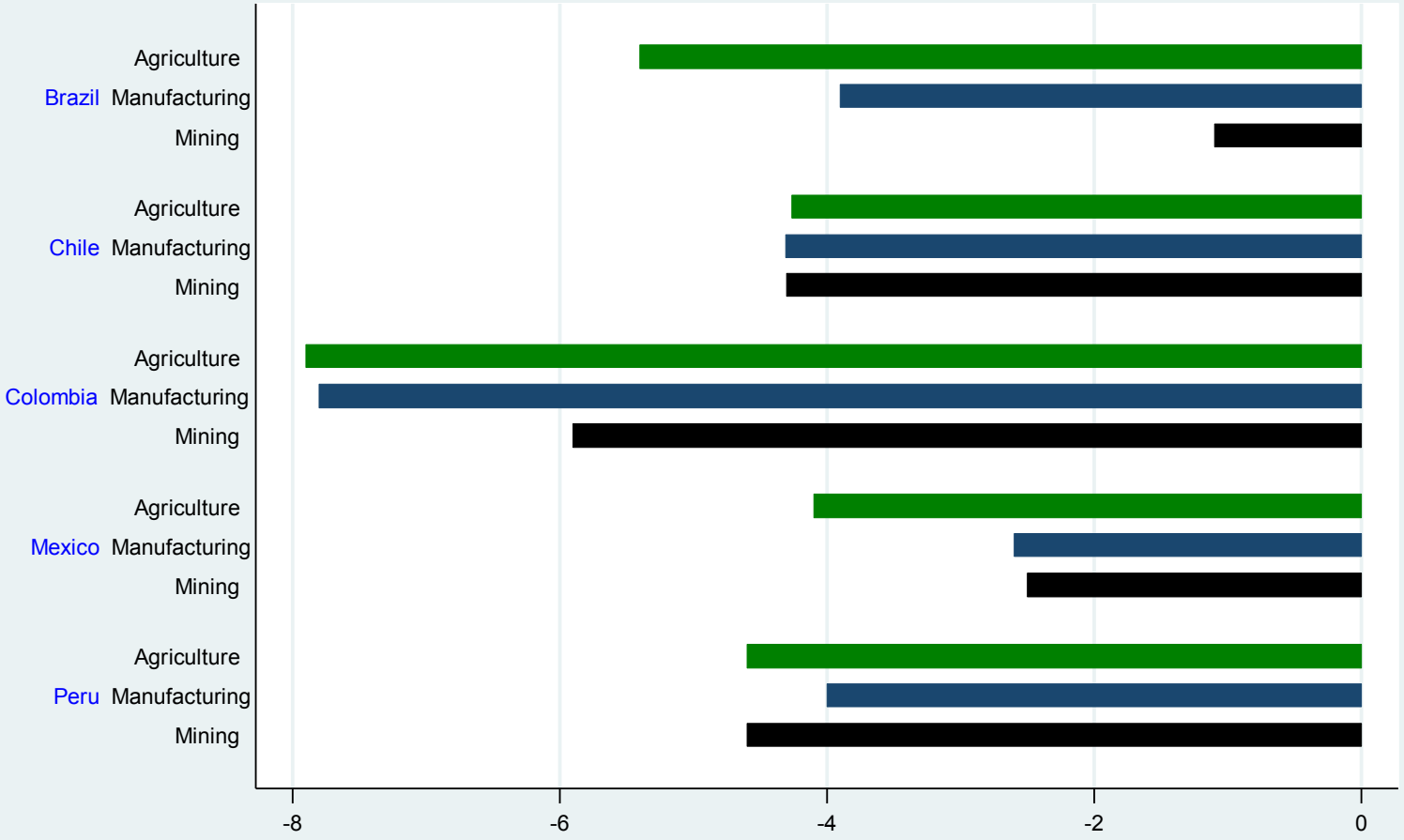
Empirical strategy

- Estimation

$$\ln(exports_{i,j,p,t}) = \beta_0 + \beta_1 \ln(1 + TC_{i,j,pt}) + d_{i,j,p} + d_t + \varepsilon_{i,j,p,t}$$

Results

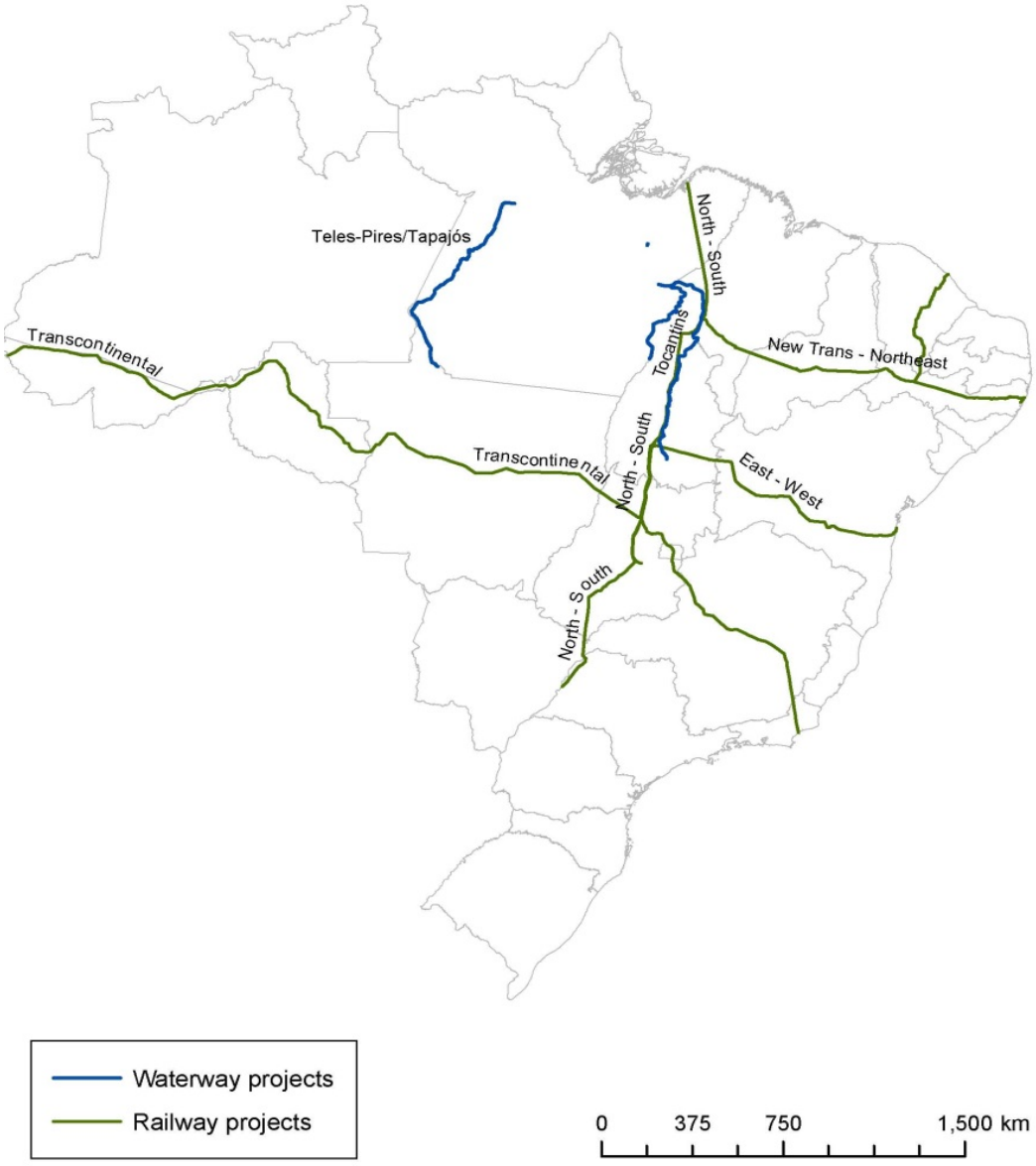
Figure 4 - The Impact of Transport Costs on Exports by Sector and Country.



Source: Own calculations

Note: Results are statistically significant at 1%.For Chile and Peru, agriculture and mining share the same coefficient as they were jointly estimated. See the technical appendices of the countries' respective chapters for details.

Figure 11- Main Projects of the National Logistics Plan.

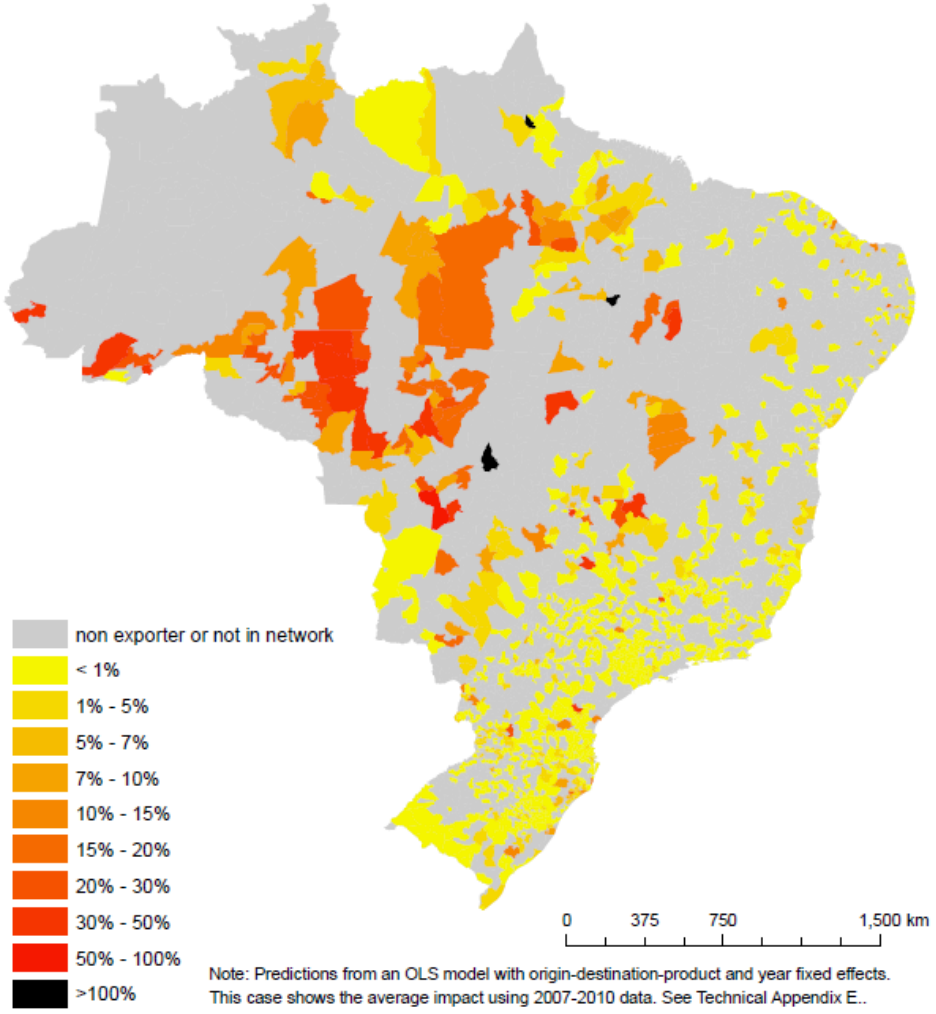


Simulations

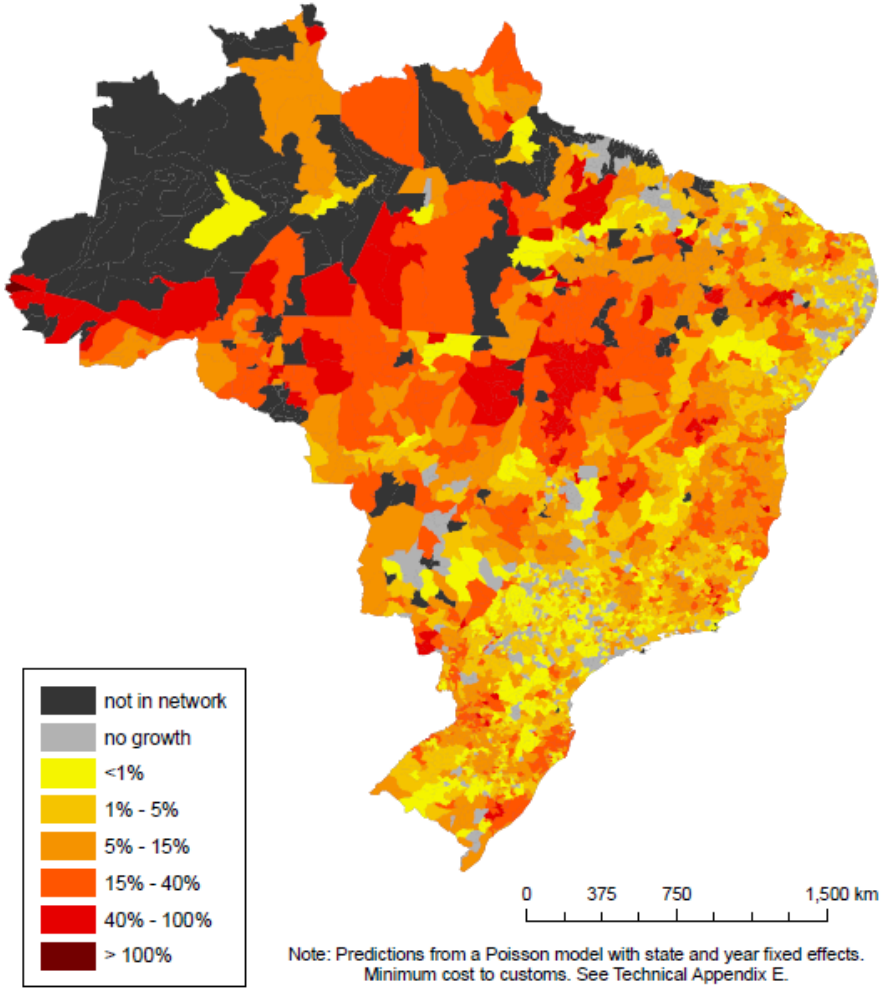
Brazil

- ✓ Upgrading all roads with top quality pavement. In our 2007 benchmark year, only 26 % of roads had pavement rated good.
- ✓ Waterways and railways projected by PNLT: (Nova Transnordestina, Leste-Oeste, Norte Sul e Transoceânica, Tocantins e Teles-Pires Tapajós).

FIGURE 12 ■ The Impact on Exports of Selected Improvements in Brazil's Multimodal Network



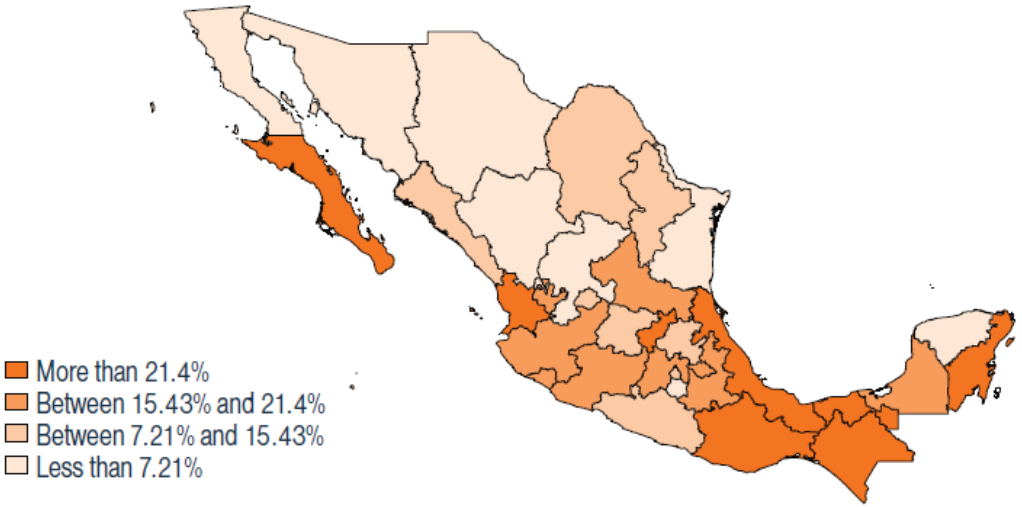
Note: Predictions from an OLS model with origin-destination-product and year fixed effects. This case shows the average impact using 2007-2010 data. See Technical Appendix E..



Note: Predictions from a Poisson model with state and year fixed effects. Minimum cost to customs. See Technical Appendix E.

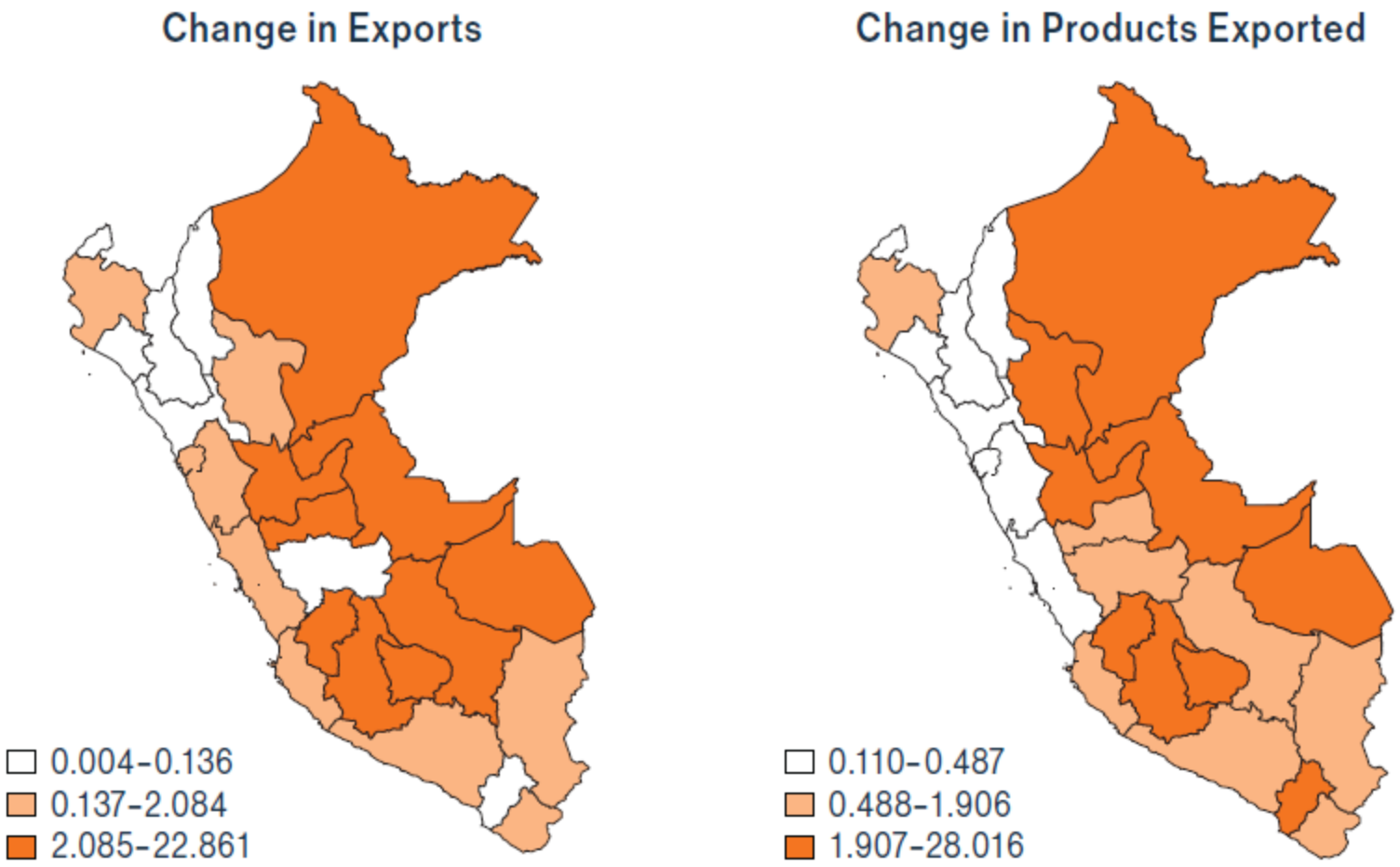
FIGURE 14 ■ Impact of the 2007–2012 Road Program on Transport Costs, Volume, and Diversification of Exports (*continued*)

(c) Total Exports



(d) Number of Exported Products

FIGURE 20 ■ Response of Regional Exports to Reduced Transport Costs



Conclusions

- ✓ The results suggest that trade policy seems to have much to gain by incorporating among its objectives lower to transport costs to the ports , particularly in regions whose development is lagging behind.

- ✓ What is at stake is not only the maximization of export gains for the countries as a whole, but also a better subnational distribution of these benefits.

- ✓ This agenda can only be advanced by addressing the chronic underinvestment and the unbalanced regional a and modal development of transport infrastructure.

- ✓ Underinvestment seems to arise not so much from budget constraints--especially in light of the improvements in the fiscal situation in the last decade--but from a combination of misguided public expenditure priorities and institutional weaknesses that seriously hinder the execution of investments by both the public and private sectors.

- ✓ There seems to be plenty of good plans and diagnostics. Yet, they are usually compromised by : (a) the regulatory agencies' lack of political independence, technical expertise and coordination; (b) badly drawn up contracts; and (c) misguided nationalist policies.