The Impact of **Aid for Trade** on **Cost and Time to Trade**: The Case of Latin America and the Caribbean

Jungeun SOHN

Index

- Introduction

- Literature Review

- Methodology

- Data

- Empirical Results

- Policy Recommendations

Introduction (1)
Trade Transaction Costs

- Reducing trade transaction costs:

  1) Tariffs (under WTO agreements) →

  2) Non-tariff barriers (anti-dumping measures and anti-subsidy duties) →

  3) Other trade costs (trade regulations, trade infrastructure, distribution, communications, etc)

  > Traditional trade barriers

  < Higher in developing countries

- Trade facilitation measures:
  – Necessary to increase in trade competitiveness or flows,
  – but expensive and complex.

Introduction (2)
## Launch of Aid for Trade (AfT)

- Launched by WTO member countries (2005)
- To support the **"right domestic policy framework, institutional capacity and economic infrastructure"** of developing countries, and particularly least developed countries.
- Objectives
  1) Trade and regulations
  2) Trade development activities
  3) Support to address supply-side constraints
  4) Support for micro, macro-economic adjustment
  5) Commodity price stabilization

Introduction (3)
Increase in AfT Disbursement

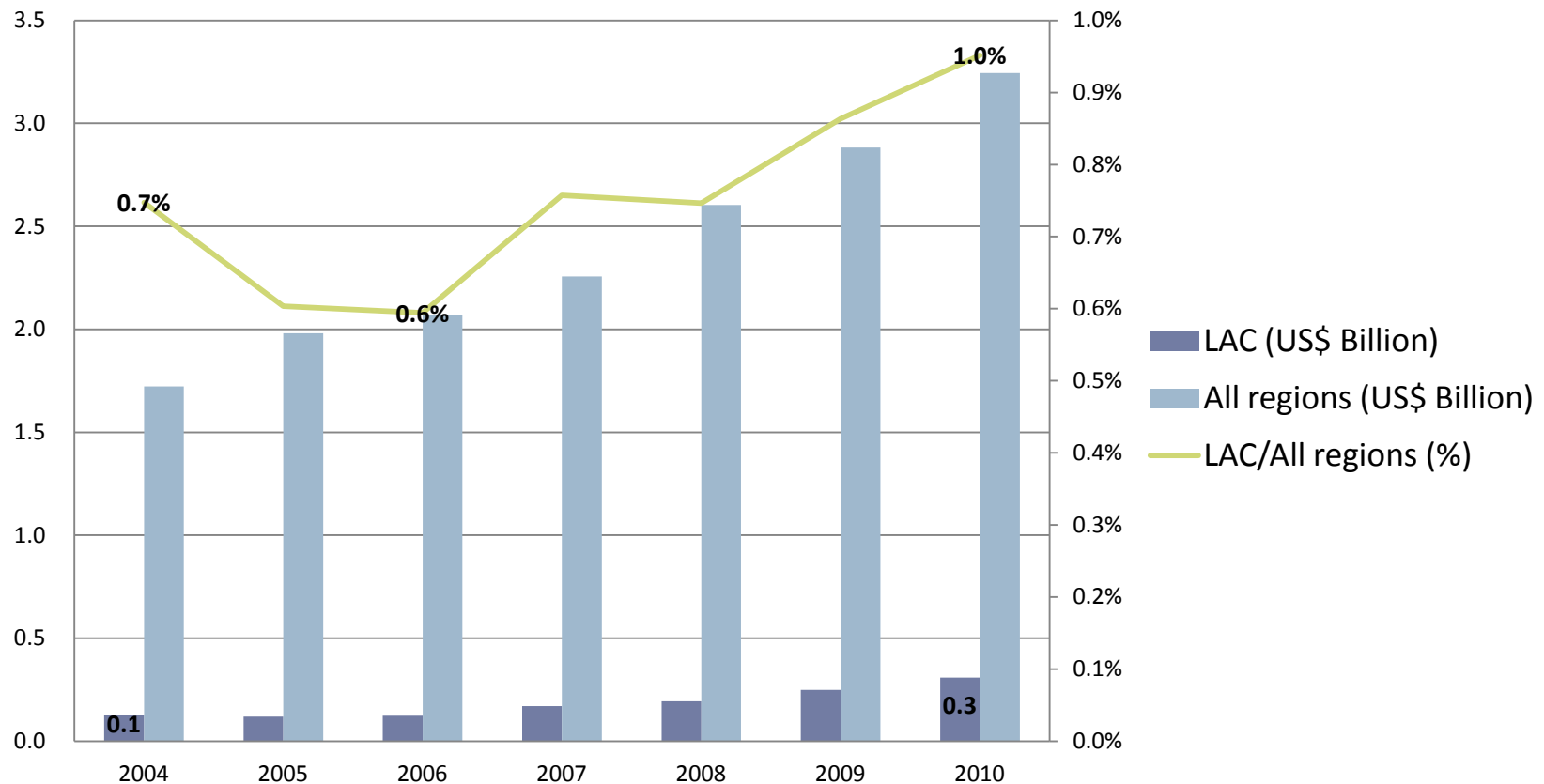AfT and Total Sector Allocable Aid Flows, 2004-2010
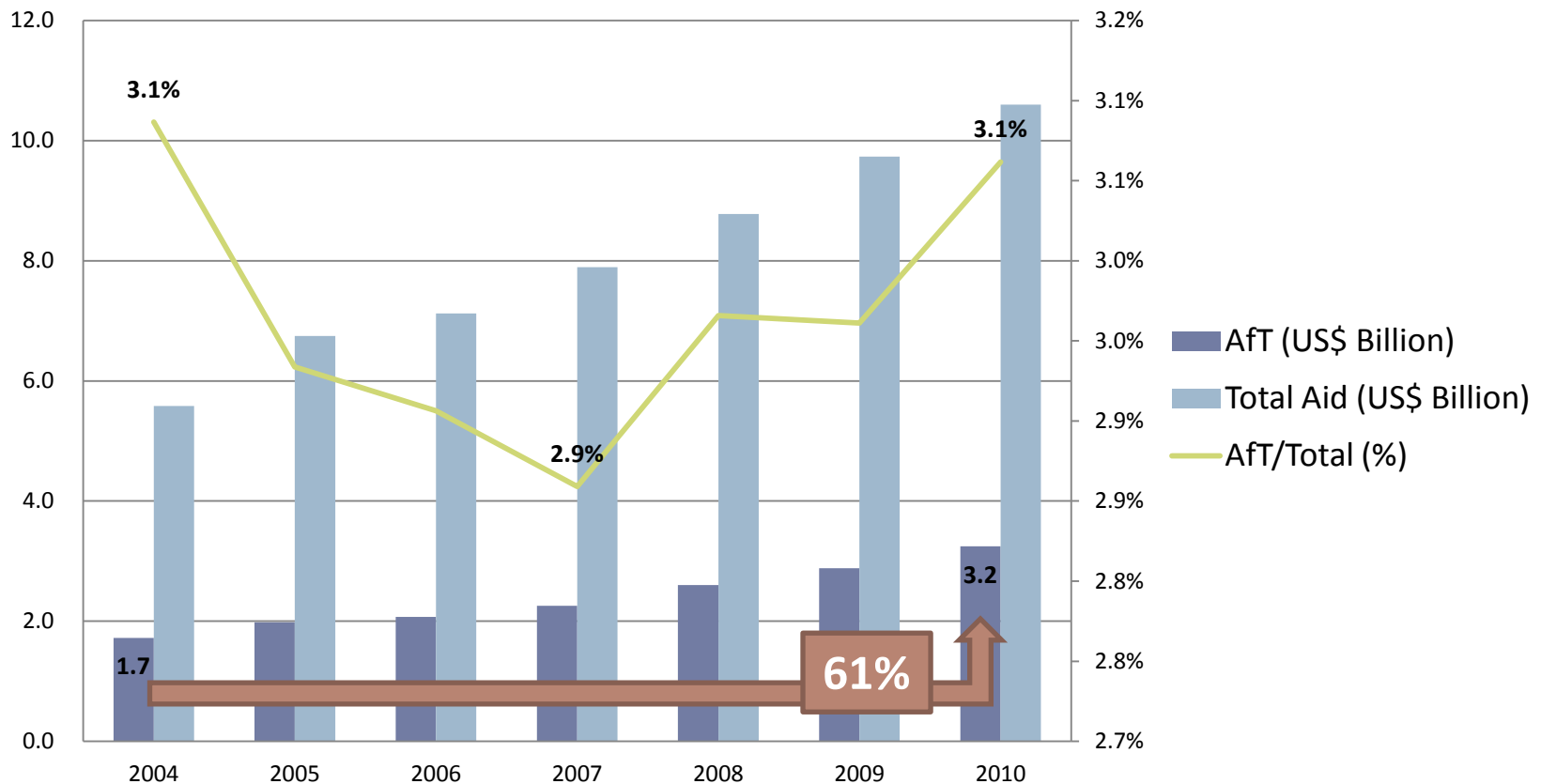
Source: Own tabulation based on OECD CRS (2013)

Introduction (4)
Aid for Trade in LAC

AfT Flows to LAC and All Developing Countries, 2004-2010

Legend:
- LAC (US$ Billion)
- All regions (US$ Billion)
- LAC/All regions (%)

Source: Own tabulation based on OECD CRS (2013)

Introduction (5)
Aid for Trade in LAC

- Expectation on High effectiveness of AfT in LAC

  1) Aid effectiveness is lower in the Least Developed Countries (LDCs) due to absorption capacity constraints.

  > There is only one LDC in LAC: Haiti.

  2) Trade facilitation (TF) benefits agriculture more than other manufacturing industries.

  > LAC countries exports more agricultural goods than manufacturing ones.

  3) Improvement in TF leads to greater reduction in cost of import than in that of export.

  > Cost of import is greater than that of export in the region.

Literature Review (1)

- Constant growth and high share in total ODA
  → Attention on AfT Effectiveness ⬆

- Studies on impact of trade facilitation / AfT on trade flows, economic development, etc. ⬆

- Specific and direct trade-related issue:
  Cost and time to trade

Literature Review(2)
Impact of AfT in 99 developing countries

- Busse, Hoekstra, and Königer (2011)
  - Impact of AfT, Aid for Trade Policy and Regulations (ATPR), Aid for Trade Facilitation (AfTF) in 99 developing countries, 4 years (2006-2009)

- Findings

Cost to trade	Time to trade
✓Significant impact on reducing **cost to trade** ✓ The **narrower** the category of aid, the **greater** the impact → Emphasis on targeting AfT for greater effectiveness	✓ Only ATPR has a significant impact on lowering time to export. ✓ **Regulatory quality** is significant in lowering the time to trade, especially to **export**.

  - Higher significance in **non LDCs** and **top 20** recipient countries

Methodology (1)
Introduction of the model

- **Fixed effects panel data model**
  - Is effective to figure out the causes of changes within a sample; and
  - Controls for all time-invariant differences between the individuals, so the estimated coefficients of the fixed-effects models cannot be biased because of omitted time-invariant characteristics such as culture, religion, gender, or race, etc.

Methodology (2)
Specification of the model

$$\text{Cost (Time)}_{it} = \beta_i + \beta_1 \text{AID}_{it-3} + \lambda X_{it-3} + \text{YEAR}_t + \varepsilon_{it}$$

- Dependent variable: $Cost\,(Time)_{it}$
  - Cost (or time) of trading of country *i* in period *t*
- Main variable of interest: AID_{it-3}
  - AfT, ATPR, and AfTF in country *i* in period *t-3*
  - Country fixed-effect: β_i
- Other control variables: X_{it-3}
  - GDP per capita (*gdppc*),
  - Value of merchandise trade (*trade*),
  - Regulatory quality (*regqual*)
- A full set of time dummies: $YEAR_t$
- Error term: ε_{it}

Methodology (3)
Details

- Some differences with the study of BHK
  - Inclusion of the nine countries with less than one million of population
    - ✓ Asymmetric effects?
    - ✓ In fact, no changes in the significance of the coefficients
  - Exclusion of fuel price in other control variables
    - ✓ Often subject to administrative regulations
    - ✓ ≠ Volatile oil price on the world market
    - ✓ "No or too little variation in fuel prices to explain changing trade costs."
  - One least developed country (Haiti) ↔ 33LDCs

Data (1)
Dependent variables

- Cost and Time to trade
  - *Trading Across Borders*, Doing Business Report
    - ✓ Period of 2007 – 2013 (June 2005 – May 2012)
    - ✓ LAC 33-3 (Bahamas, Barbados, and Cuba) = LAC 30
  - Cost and time associated with **completion of official procedures** for moving a standardized cargo between the largest business city and its nearest container port for exporting and importing by sea transport.
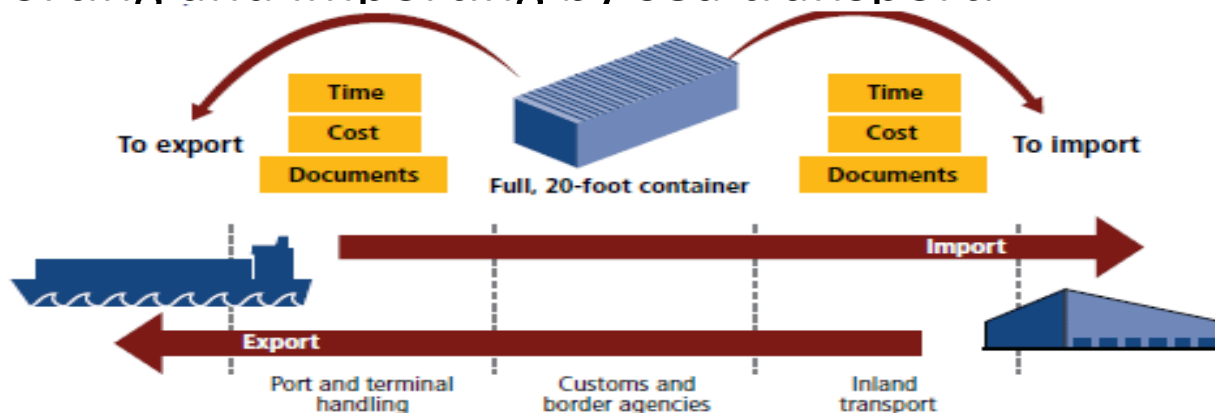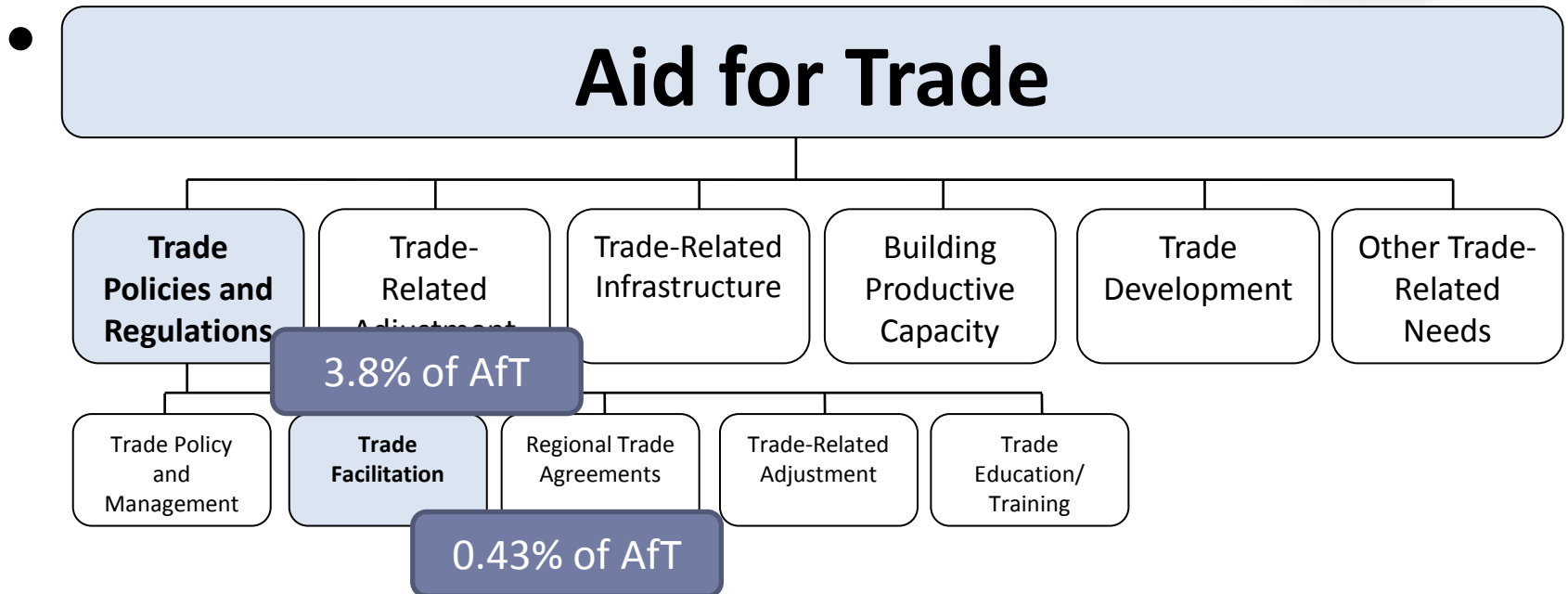
Data (2)
Dependent variables

- Assumptions about Cost and Time to trade data
  - The business:
    - ✓ should be 100% domestically owned.
    - ✓ is located in the economy's largest business city.
    - ✓ does not operate in an export processing zone or have special export or import privileges.
  - The traded goods:
    - ✓ travel in a dry-cargo, 20-foot, full container load.
    - ✓ are non-perishable so they do not require refrigeration or any other special environment.
    - ✓ are one of the economy's leading export or import products.

Data (3)
Independent variables

- **Aid for Trade**

| Trade Policies and Regulations | Trade-Related Adjustment | Trade-Related Infrastructure | Building Productive Capacity | Trade Development | Other Trade-Related Needs |

3.8% of AfT

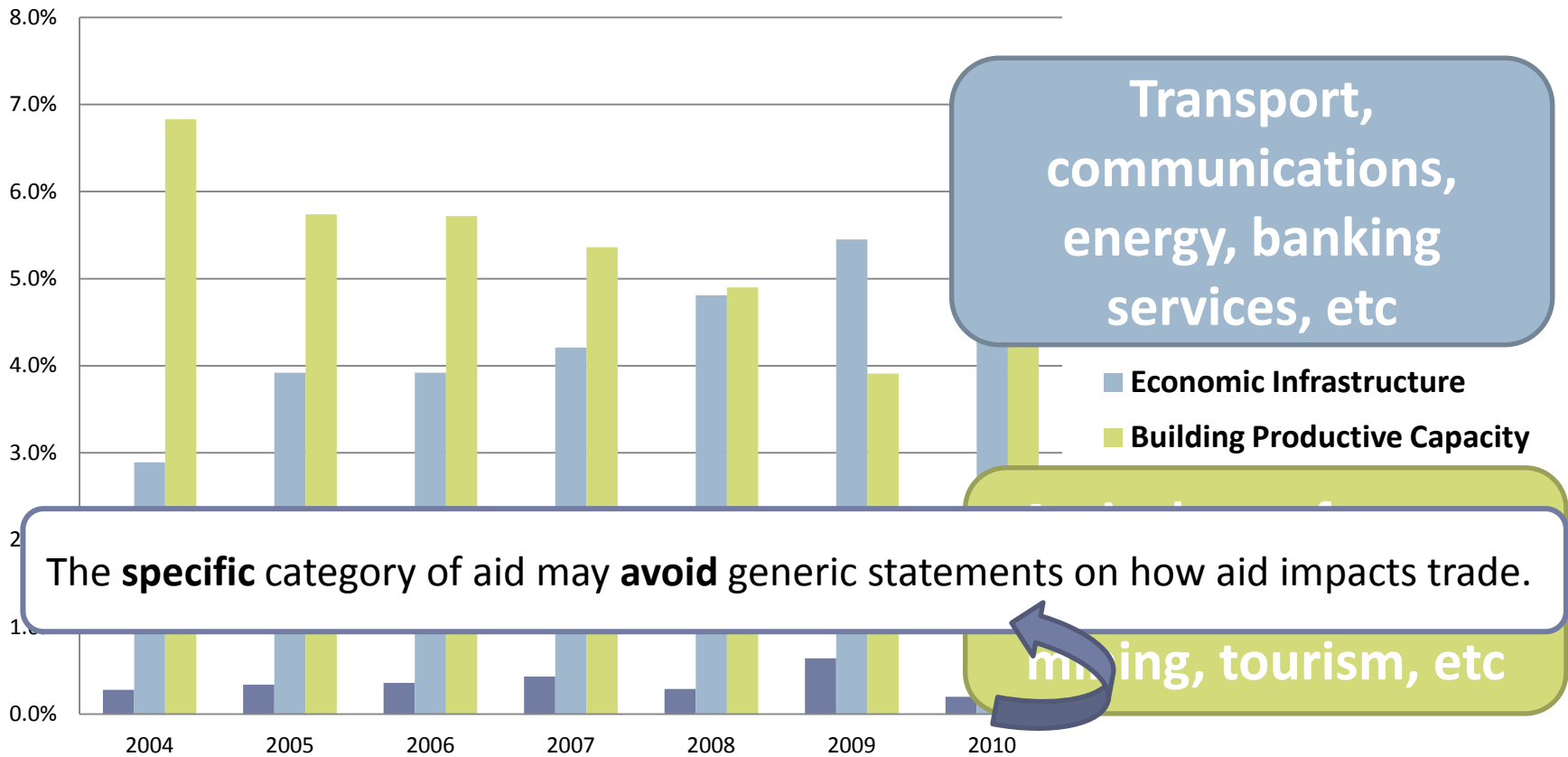| Trade Policy and Management | **Trade Facilitation** | Regional Trade Agreements | Trade-Related Adjustment | Trade Education/ Training |

0.43% of AfT

Very specific sub categories of aid:
are not only **directly related** to improving the cost and time efficiency,
but also not necessarily plagued by **general aid effectiveness concerns**.

Data (4)
Composition of AfT in LAC

Composition of AfT Disbursement in LAC, 2004-2010

Transport, communications, energy, banking services, etc

- Economic Infrastructure
- Building Productive Capacity

The **specific** category of aid may **avoid** generic statements on how aid impacts trade.

mining, tourism, etc

Source: Own tabulation, based on OECD CRS (2013)

Data (5)
Other control variables

- ## Income
  - The higher, the better trade related facilities and greater efficiency in trade procedures. ($\rightarrow$ **Shorter time** to trade)
  - The higher, the higher costs of non-tradable goods, and thus, the **higher exporting costs**.

- ## Trade
  - The more, the **lower costs** and higher efficiency in transport and customs procedures (**Economies of scale**).
  - However, **congestions effects** at ports and/or borders $\rightarrow$ prolong the trading time?

Data (6)
Other control variables

- Regulatory Quality
  - *Good governance indicator* of World Bank:

  > captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote **private sector development**.

  - The higher (the better governance outcomes), the **less costs** and the **shorter time** to trade.

Data (7)
Comparison with 99 Developing countries

	LAC 30	Developing 99
Independent Variables		
AfT (US$ million)	172.4	373.4
ATPR (US$ million)	4.9	8.9
AfTF (US$ million)	1.3	1.2
Trade Value (US$ billion)	44.3	62.9
GDP per capita ($)	4787.5	1676.5
Regulatory Quality (-2.5~2.5)	-0.2	-0.42
Dependent Variables		
Cost to Export ($)	1147.9	1443.4
Cost to Import ($)	1463.5	1723.1
Time to Export (days)	19	31.7
Time to Import (days)	21.7	37

Data (8)
Comparison with 99 Developing countries

- Smaller amount of AfT (by 46%↓ than 99 dev.)
  - Only Bolivia (2002-2005) and El Salvador (2007) in Top 25 AfT recipients

- Especially in AfT *Policy and Regulations* (by 55% ↓)
  - Due to well-established trade-related policies or ignorance of the condition of the region?

Poorer condition of trade policies and regulations shown in ***Prevalence of Trade Barriers*** *and* ***Burden of Customs Procedures*** than ASEAN countries, according to Global Competitiveness Index 2012-2013 of World Economic Forum.

Data (9)

Comparison with 99 Developing countries

✓ **These differences** allow us expect to find some different **results** from those of the study of BHK.

→ As the goal of this assessment lies in finding **policy implication** on aid for trade towards Latin America and the Caribbean, the different results will permit us to set **proper regional strategies**.

Empirical Results (1)
Cost to trade

Independent variables	Dependent variables					
	CostExp	CostImp	CostExp	CostImp	CostExp	CostImp
GDPpc (t-3)	0.0646 (0.0402)	0.0473 (0.044)	0.0477 (0.0406)	0.0282 (0.0444)	0.0485 (0.0405)	0.0342 (0.0441)
Trade (t-3)	2.9072*** (0.5455)	2.3045*** (0.597)	3.1888*** (0.545)	2.6074*** (0.5955)	3.188*** (0.5442)	2.5849*** (0.5919)
Regulatory Quality (t-3)	-159.634** (81.3429)	-114.5519 (89.0244)	-121.624 (82.4971)	-70.693 (90.1348)	-116.3337 (81.9152)	-59.5191 (89.0985)
Aid for Trade (t-3)	0.3038*** (0.1184)	0.3173** (0.1296)				
AfT Policies and Regulations (t-3)			0.4165 (3.1934)	-0.5483 (3.489)		
Aid for Trade Facilitation (t-3)					-2.0487 (5.5682)	-7.841 (6.0565)
Observations	210	210	210	210	210	210
Countries	30	30	30	30	30	30
R^2(within)	0.50	0.48	0.49	0.47	0.49	0.47

Note: ** significant at 5% level; *** significant at 1% level; standard errors are reported in parenthesis; constant term and time dummies are not shown; and the time lag is written as 3 years but in real term (taking into consider the difference of data collection), is one year and half.

Empirical Results (2)
Cost to trade

- **GDP per capita**
  - Insignificant in all regressions

- **Regulatory quality**
  - Negative (greater in cost to export than to import)
  - Significant to cost to **export** when AfT is highly significant.

- **Trade value**
 - Positive and highly significant in all regressions

→The more the trade, the higher the cost to trade.
↔ Economies of Scale ?

Empirical Results (3)
Cost to trade

- ## Aid for Trade Policy and Regulations
  - Positive to cost to export, negative to cost to import
- ## Aid for Trade Facilitation
  - Negative but insignificant
  - Greatest impact on reducing cost to trade in BHK study
    - →Grounds of argument: **"Highly target AfT"** to enjoy its high impact
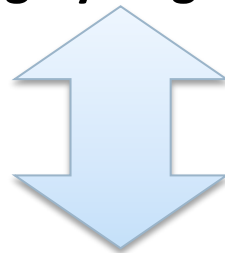
- In LAC30, the narrower AfT do not show the impact on lowering cost to trade.

Empirical Results (4)
Cost to trade

- ## Aid for Trade
  - Positive and significant coefficients

Does AfT increase cost to trade? Why?

1) Positive correlation between AfT and Trade

Correlations among variables

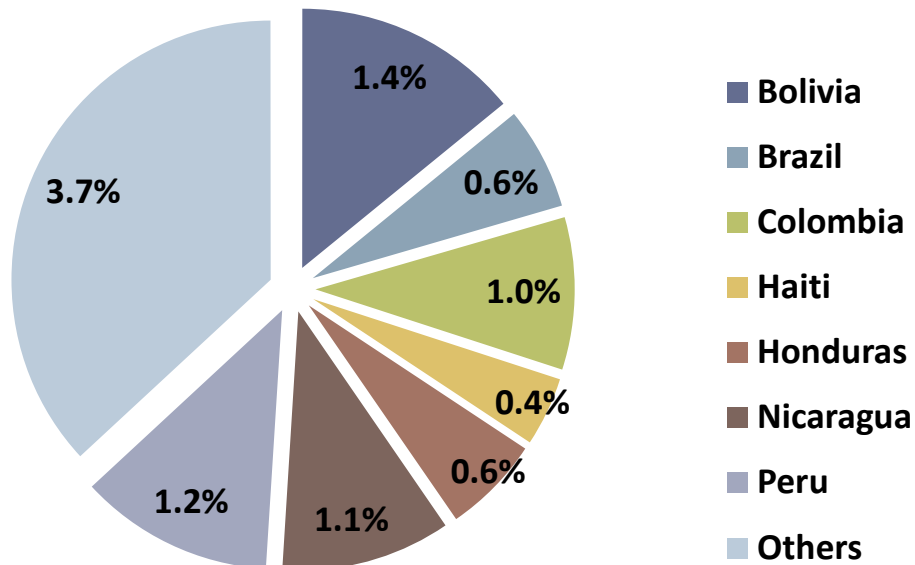|	**AfT**	**Trade**	**GDPpc**	**Reg.Qual.**
AfT	1.000			
Trade	0.092	1.000		
GDPpc	-0.378	0.226	1.000	
Reg.Qual.	-0.142	0.069	0.585	1.000

Empirical Results (5)
Cost to trade

2) Concentration of AfT disbursement in few countries

– Among 210 observations of the sample, 10% of the highest values account for 45% of total AfT and are distributed to seven countries (Bolivia, Peru, Nicaragua, Brazil, Colombia, Honduras, and Haiti).

AfT Disbursement in LAC 30, 2004-2010

- Bolivia
- Brazil
- Colombia
- Haiti
- Honduras
- Nicaragua
- Peru
- Others

1.4%
0.6%
1.0%
0.4%
0.6%
1.1%
1.2%
3.7%

Trade value of top 6 AfT recipient countries (excluding Haiti): **29.4%** of total trade value of LAC 30

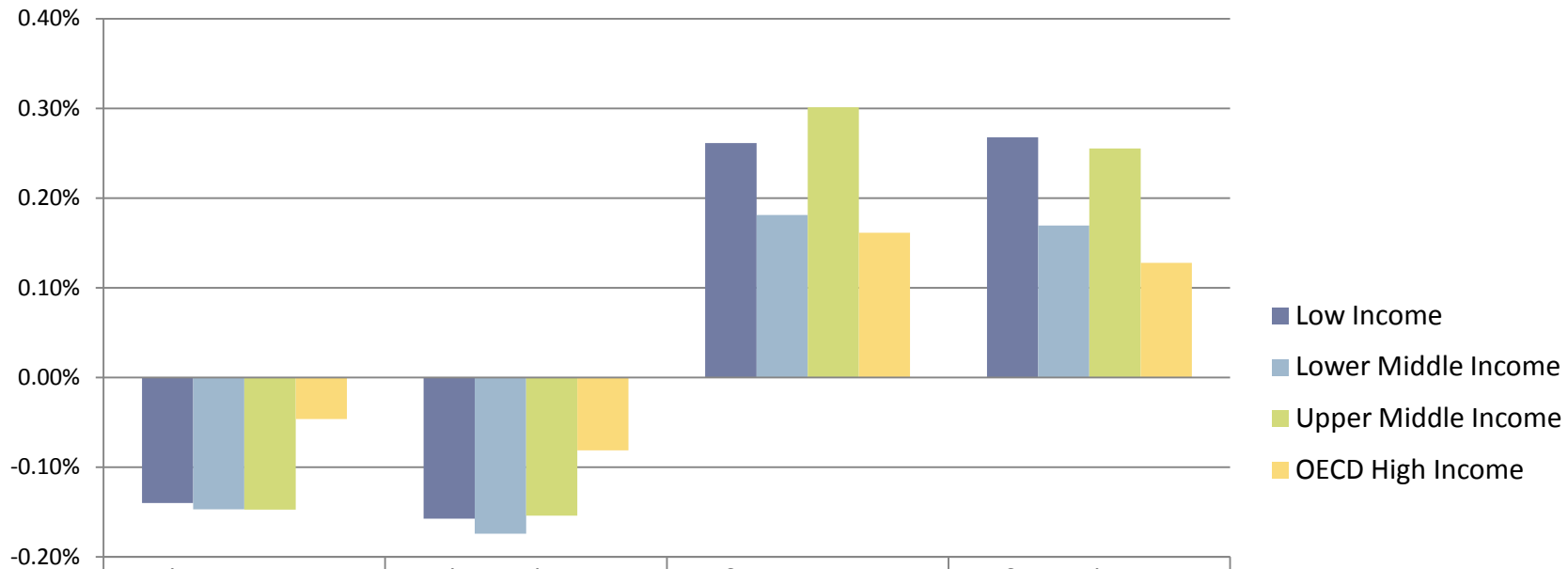Source: Own formation, based on OECD CRS (2013)

Empirical Results (6)
Cost to trade

3) Increase in cost to trade

Global trend of cost and time to trade, 2007-2013

	Time to export	Time to import	Cost to Export	Cost to import
Low Income	-0.14%	-0.16%	0.26%	0.27%
Lower Middle Income	-0.15%	-0.17%	0.18%	0.17%
Upper Middle Income	-0.15%	-0.15%	0.30%	0.26%
OECD High Income	-0.05%	-0.08%	0.16%	0.13%

Legend:
- Low Income
- Lower Middle Income
- Upper Middle Income
- OECD High Income

Source: Doing Business, World bank

Empirical Results (7)
Cost to trade

4) Greater weight of time to trade in composition of trade transaction costs

In Trade Facilitation Action Plans (APEC), the costs are measured by:
- Value of time, weighting time to trade data in Trading across Borders by ad valorem tax equivalents of time taken by each member; and
- Monetary costs by multiplying unit cost for trade by the number of standard container, which is also called twenty-foot equivalent units (TEU) of both out- and in-bound.

: Time to trade (88.3%) > Cost to trade (11.7%)

Empirical Results (9)
Time to trade

Independent variables	Dependent variables					
	TimeExp	TimeImp	TimeExp	TimeImp	TimeExp	TimeImp
GDPpc (t-3)	0.0007 (0.0006)	0.0012 (0.0008)	0.0011 (0.0006)	0.0018** (0.0008)	0.0013** (0.0006)	0.002** (0.0008)
Trade (t-3)	0.0184** (0.0082)	0.0187** (0.0103)	0.0103 (0.0086)	0.0089 (0.0107)	0.0094 (0.0086)	0.0075 (0.0108)
Regulatory Quality (t-3)	-2.236 (1.2186)	1.142 (1.53)	-3.15** (1.3003)	0.1642 (1.6211)	-3.2508** (1.2923)	-0.2327 (1.6274)
Aid for Trade (t-3)	-0.0094*** (0.0018)	-0.012*** (0.0022)				
AfT Policies and Regulations (t-3)			-0.0739 (0.0503)	-0.131** (0.0628)		
Aid for Trade Facilitation (t-3)					-0.1232 (0.088)	-0.0917 (0.1106)
Observations	210	210	210	210	210	210
Countries	30	30	30	30	30	30
R^2 (within)	0.42	0.48	0.34	0.41	0.33	0.40

Note: ** significant at 5% level; *** significant at 1% level; standard errors are reported in parenthesis; constant term and time dummies are not shown; and the time lag is written as 3 years but in real term (taking into consider the difference of data collection), is one year and half.

Empirical Results (10)
Time to trade

- ## GDP per capita and Trade
  - Positive in all regressions, some are significant
  - Increase in income → Increase in imports → congestion?

- ## Regulatory quality
  - Greater impact in reducing time to **export** than to import
  - → The export sector will be benefited from a country's **own efforts** to improve trade regulations.

"It is not only enhanced market access what a country needs to render **economic openness viable and growth**, but it is also **institutional reforms at home**." (Dani Rodrik, 2001)

Empirical Results (11)
Time to trade

- ## Aid for Trade
    - Negative and significant on time to trade

    →Significant effect on reducing time to trade

    Why the narrower categories of AfT, *Trade Policy and Regulations* and *Trade Facilitation*, do **not** show significant impact?

    - "Aid flows only become effective when they reach a certain (threshold) level." (BHK, 2011)
    - Lower aid flows to LAC30 are not sufficient to be a trigger of reducing cost and time to trade?

Policy recommendations (1)

1. Impact of *Regulatory Quality* is higher in cost and time to export than those to import.

→ LAC 30 should eliminate burdensome regulations in order to facilitate export and try to create a favorable environment for export.

Policy recommendations (2)

2. High trade values have positive impact on increasing both cost and time to trade.

→ Better trade-related infrastructure will let LAC 30 benefit from economies of scale.

Policy recommendations (3)

3. AfT disbursements are concentrated to some countries that have high trade values. Those countries might already equip with good trade-related facilities and policies.

→ Donor countries should seek for **effectiveness** of aid + **needs** of AfT recipients.

Thank you for your attention!