East Asian trade integration in the era of global value chains: Prospects and challenges
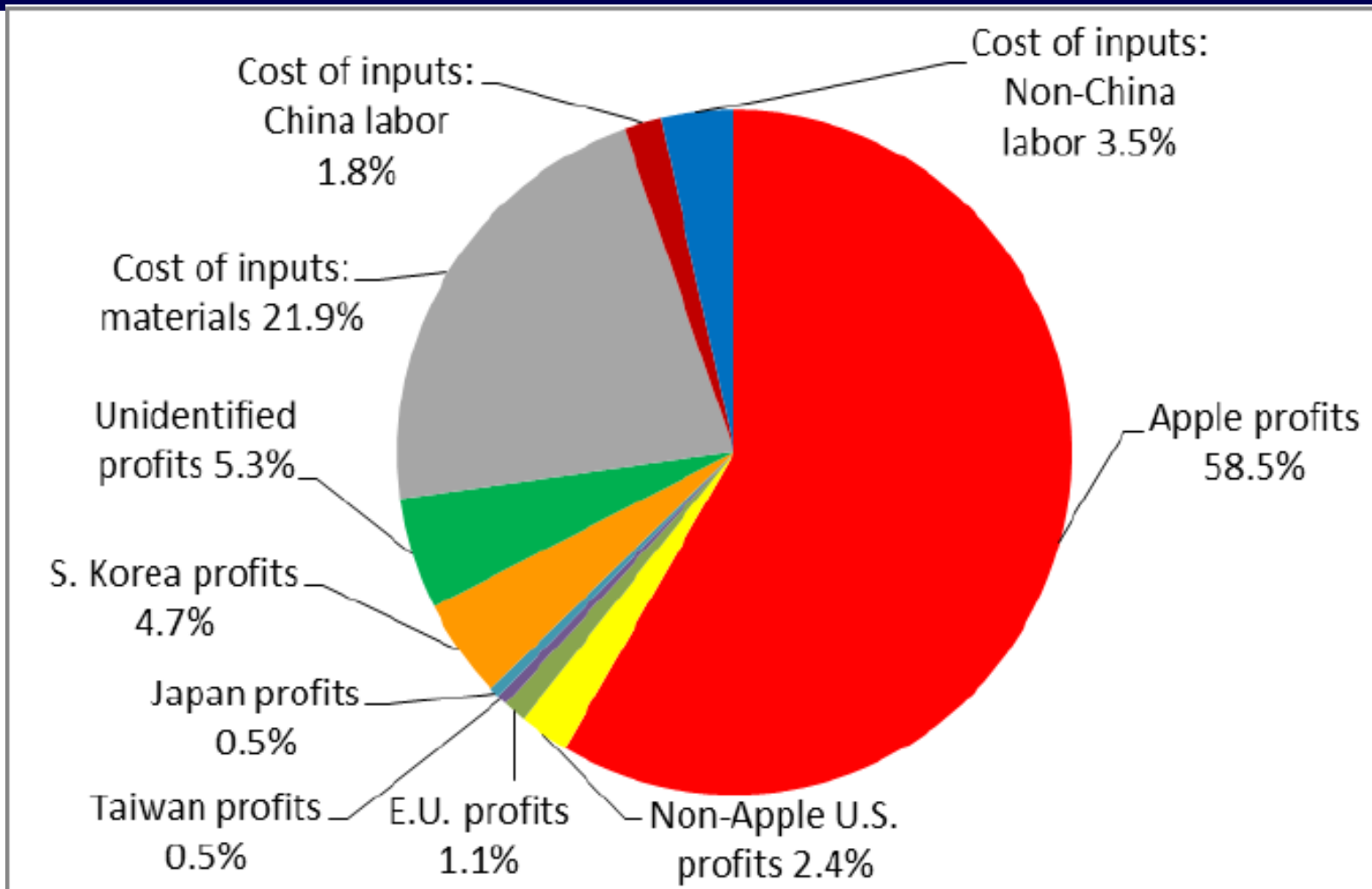
ESCAP-ECLAC project

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What are the main Issues today? Distribution of value added in iphone in 2010

Cost of inputs: China labor 1.8%

Cost of inputs: materials 21.9%

Unidentified profits 5.3%

S. Korea profits 4.7%

Japan profits 0.5%

Taiwan profits 0.5%

E.U. profits 1.1%

Non-Apple U.S. profits 2.4%

Cost of inputs: Non-China labor 3.5%

Apple profits 58.5%

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What does this paper do?

<u>Purpose</u>

Examine the current state of trade integration of East Asia in global value chains (GVCs) using value-added export data
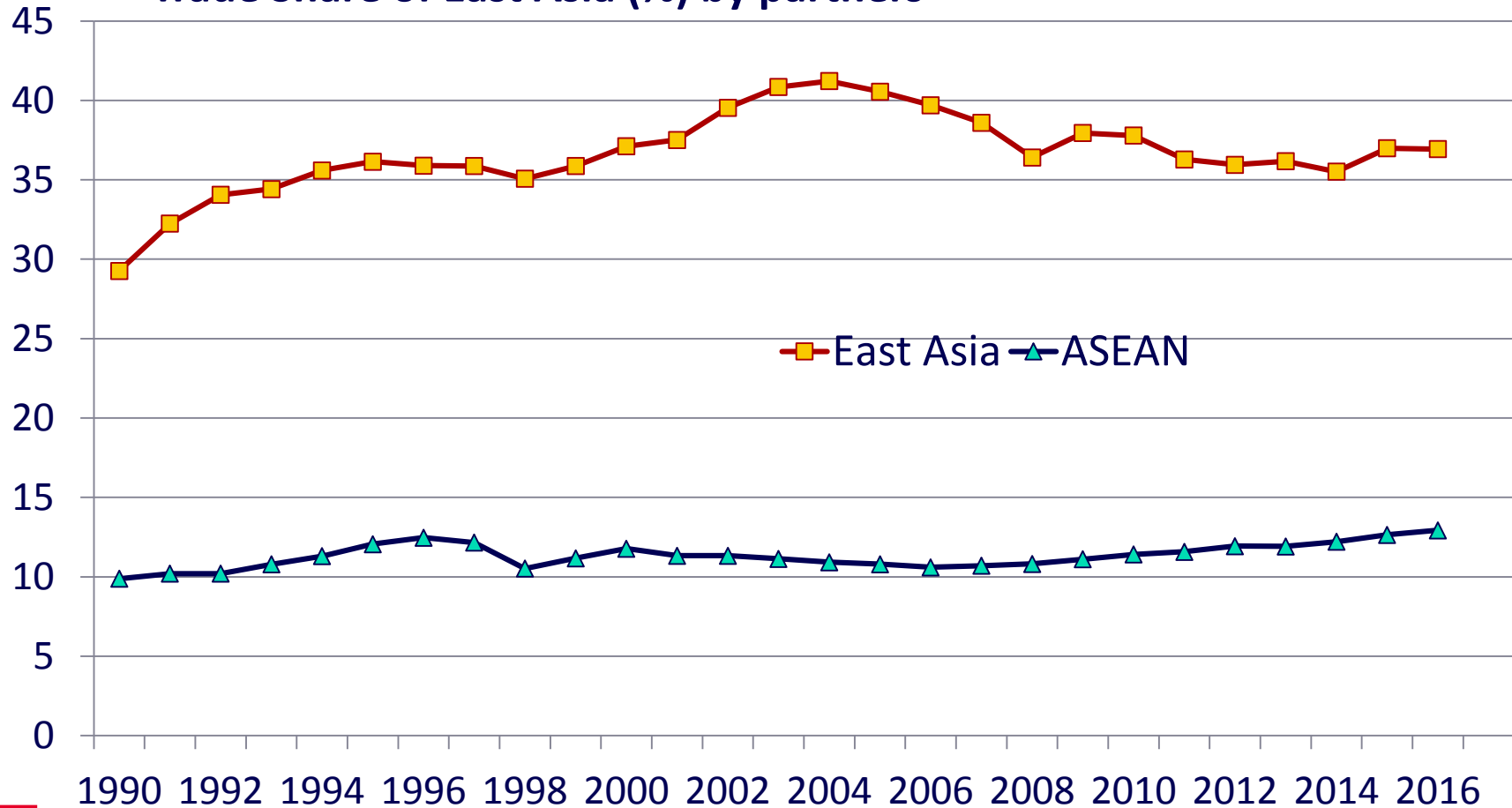
Identify the policy pathways in which can enhance GVCs
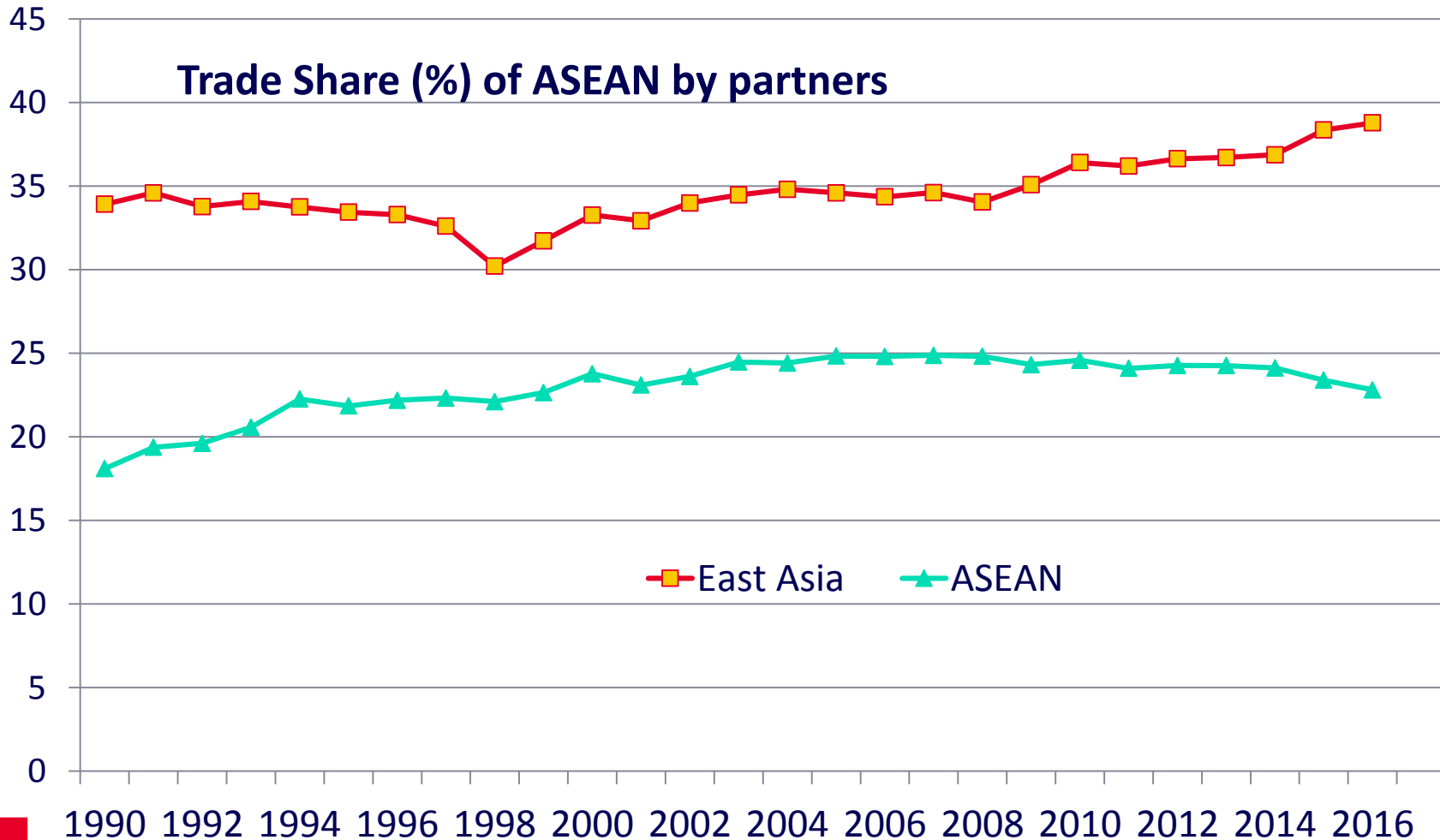
Two main parts;
1. Overview (the current state)
2. Policy channels
   – Role of FTAs
   – Non-tariff measures (NTMs)

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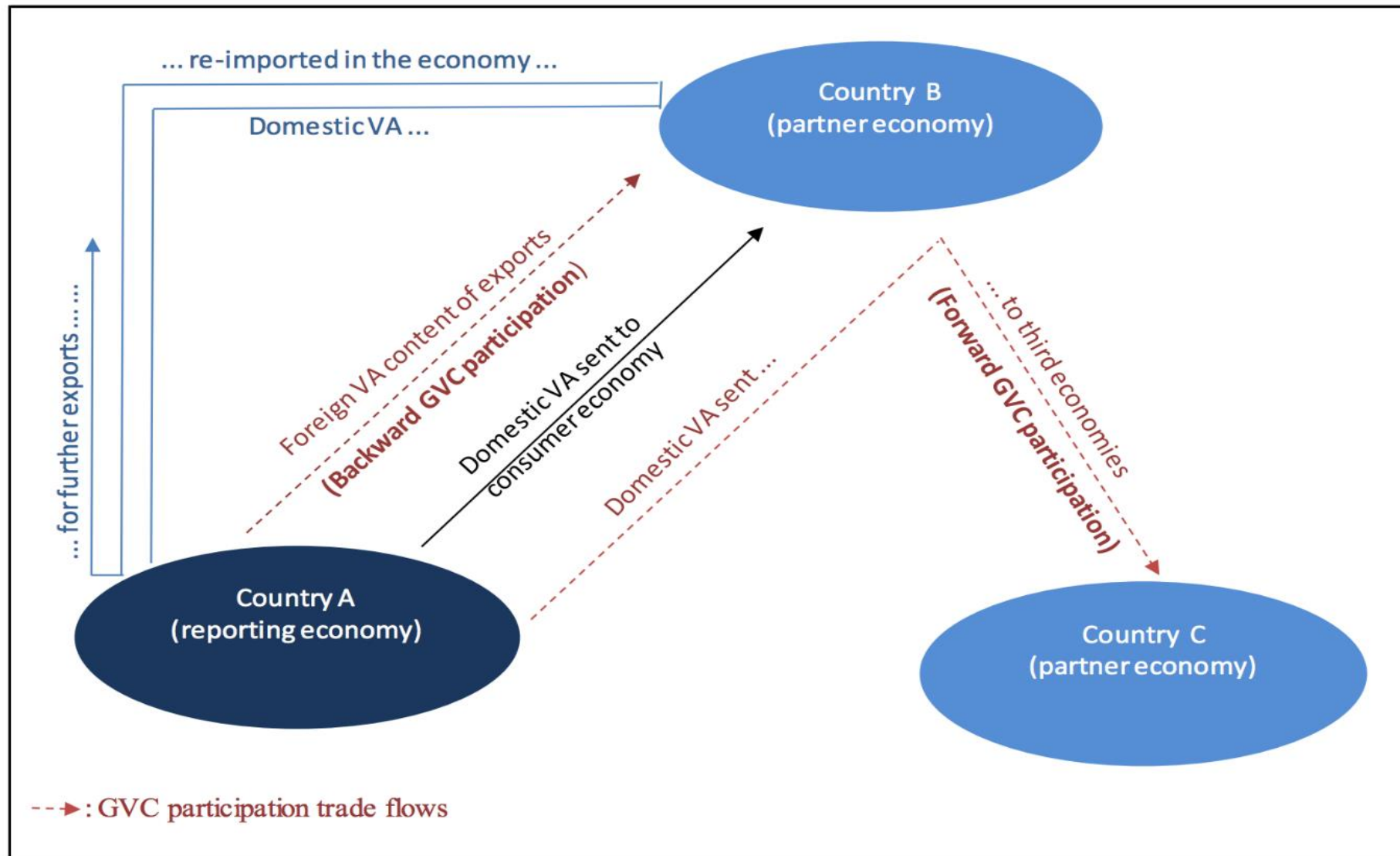# (Gross) trade share of East Asia

Trade Share of East Asia (%) by partners

4

(Gross) trade share of ASEAN

Trade Share (%) of ASEAN by partners

Legend: East Asia, ASEAN

Figure 1: Global Value Chains (GVCs) participation

Data coverage

16 East Asian countries (defined in FEALAC, Forum of East Asia–Latin America Cooperation)

Australia, China, Indonesia, Japan, South Korea, Taiwan, Malaysia, Philippines, Thailand, Vietnam, Mongolia, Lao, Brunei, Cambodia, Singapore, Hong Kong, China

Compare the progress of trade integration East Asia (comparison to ASEAN)

Source: 63 countries for industries, 35 industries Asian Development Bank Multi-Region Input-Output (ADB MRIO)

Time coverage: 2000, 2010-2017

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Data issues

- Mixing of **'conventional intermediate goods'** (eg natural resources) and **'parts and components'**

- international I-O tables, by their very nature, lump together these *two types* of intermediate inputs.

- Exported and domestically absorbed output of a given industry are assumed to have the same import content (*the constant proportional assumption* - **a big assumption to make)**
  - Unsure how the current version of TiVA address this….
  - This source of distortion is particularly important because in most I-O tables industries are identified at a fairly aggregate level, mostly at the two-digit ISIC level
  - Especially for developing resource rich countries

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Figure 4: Share of GVC participation in gross exports in 2000

Year 2000

Source: Author's calculation

Figure 4 Share of GVC participation in gross exports in 2017

Year 2017

Source: Author's calculation
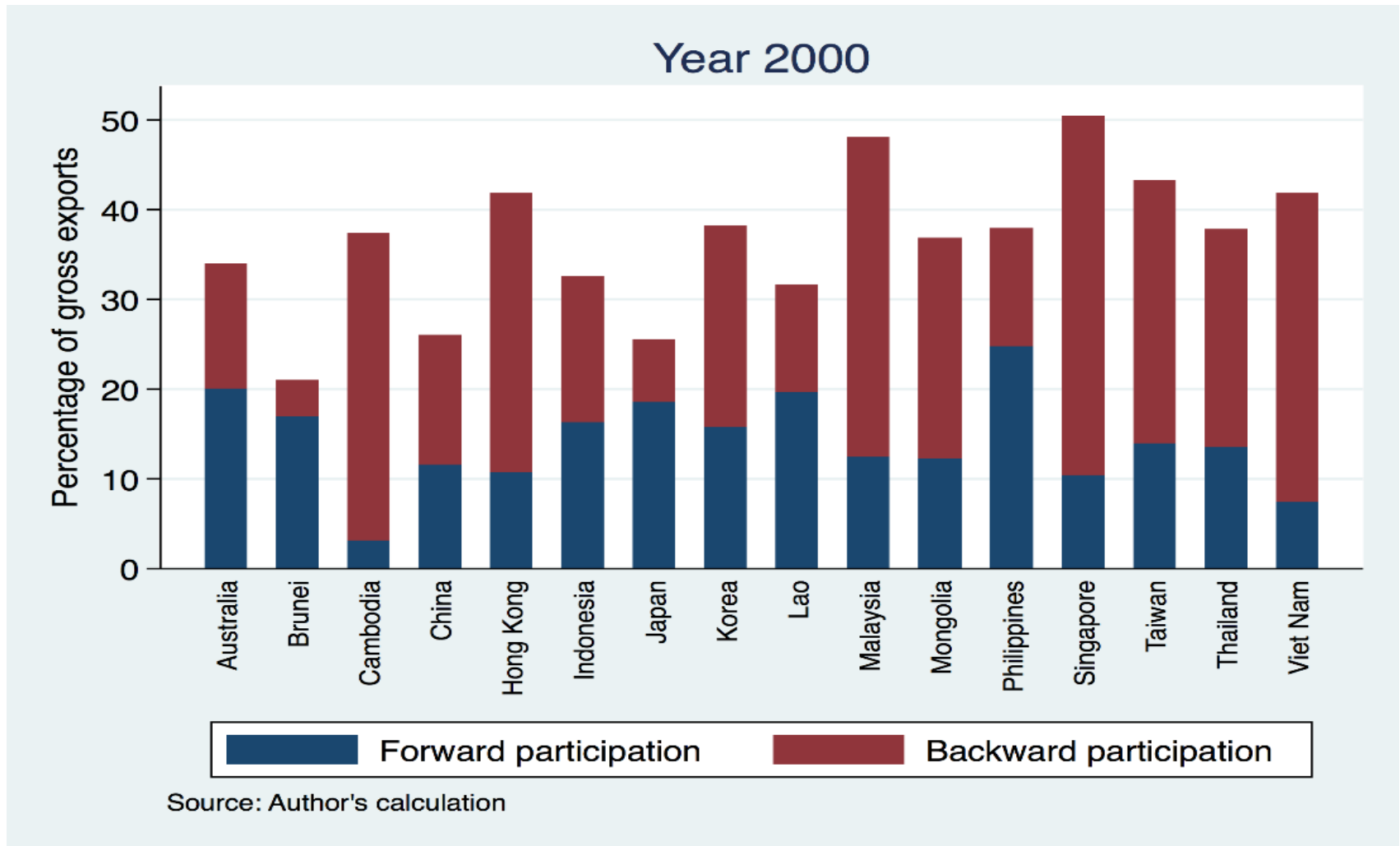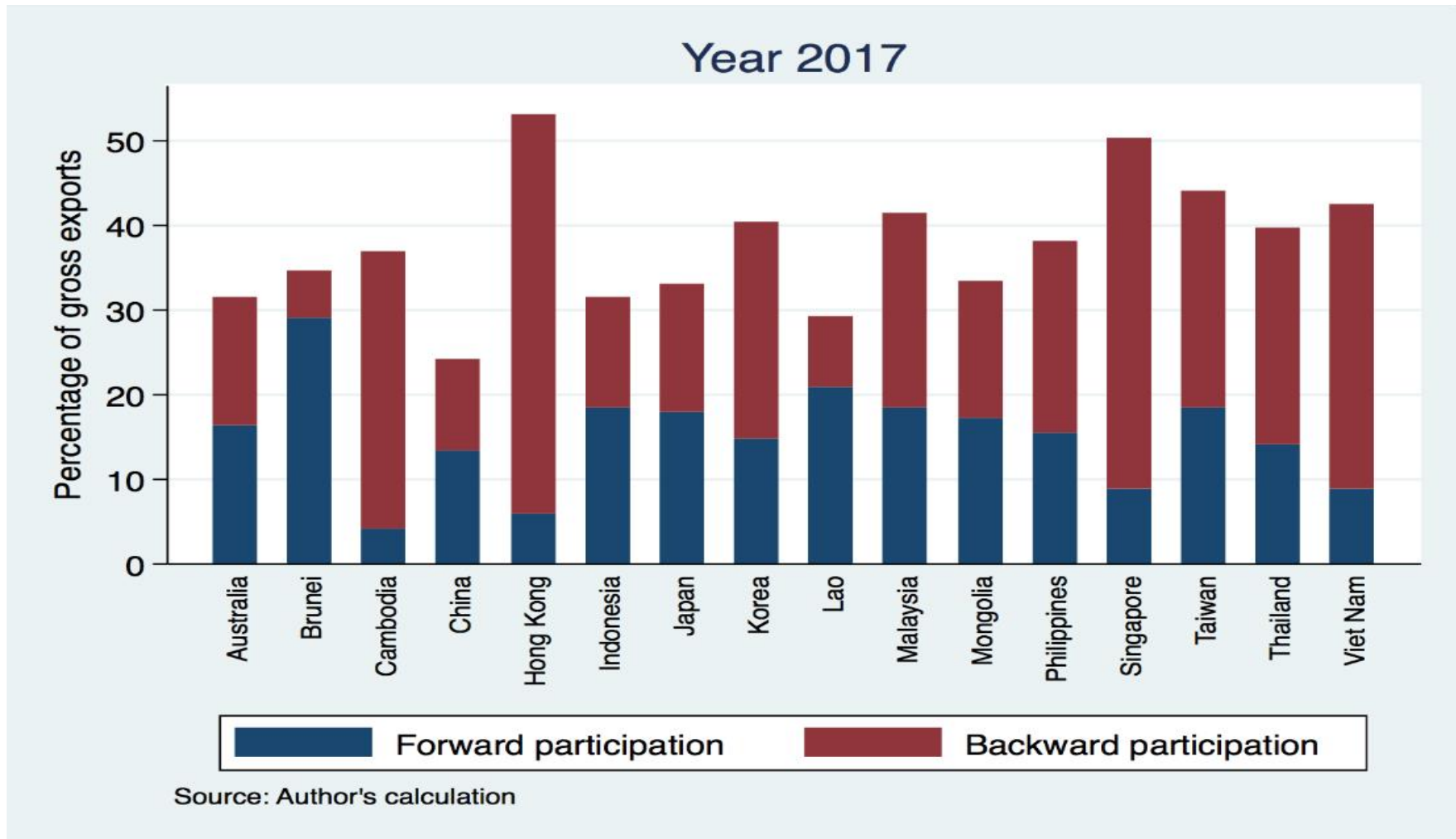
Table 1 GVC and RVC in East Asia and ASEAN (total)

	Foreign value added (FVA) % in gross exports			Domestic value added (DVA) % in gross exports		
	Total	Created outside-region	**Created intra-region**	Total	Incorporated outside-region	Incorporated intra-region
	A=B+C	B	**C**	D=E+F	E	F
East Asia						
2000	19.7	15.0	**4.7**	13.6	9.7	3.9
2017	21.6	15.7	**5.9**	14.3	9.3	4.9
ASEAN						
2000	19.7	18.0	**1.7**	13.6	**12.8**	**0.8**
2017	21.6	20.0	**1.6**	14.3	**13.4**	**0.8**

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Table 2 Textiles and Footwear

	Foreign value added (FVA) % in gross exports			Domestic value added (DVA) % in gross exports		
	Total	Created outside-region	Created intra-region	Total	Incorporated outside-region	Incorporated intra-region
	A=B+C	B	**C**	D=E+F	E	**F**
East Asia						
2000	16.4	4.3	**12.2**	14.2	4.5	**9.6**
2017	11.3	2.8	**8.5**	10.7	3.7	**7.0**
ASEAN						
2000	24.5	1.4	**23.1**	8.5	1.4	**7.1**
2017	29.0	1.8	**27.2**	8.6	1.9	**6.7**

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Table 3 Electrical and Optical Equipment

	Foreign value added (FVA) % in gross exports			Domestic value added (DVA) % in gross exports		
	Total	Created outside-region	Created intra-region	Total	Incorporated outside-region	Incorporated intra-region
	A=B+C	B	C	D=E+F	E	F
East Asia						
2000	16.5	9.4	7.2	24.2	14.4	9.8
2017	17.0	9.1	8.0	22.6	11.9	10.7
ASEAN						
2000	28.0	7.3	20.8	19.1	6.2	12.8
2017	21.6	4.5	17.1	20.9	5.2	15.8

Table 4 Transport equipment

	Foreign value added (FVA) % in gross exports			Domestic value added (DVA) % in gross exports		
	Total	Created outside-region	Created intra-region	Total	Incorporated outside-region	Incorporated intra-region
	A=B+C	B	C	D=E+F	E	F
East Asia						
2000	15.3	**6.1**	9.2	22.3	**8.4**	13.9
2017	13.5	**5.3**	8.2	22.6	**8.6**	14.0
ASEAN						
2000	21.6	**3.6**	18.0	22.2	**4.5**	17.8
2017	16.9	**1.5**	15.4	24.6	**2.3**	22.3

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Summary

- Dissimilarity on the regional focus depending on the industry
  - **Textile and Transport Equipment**, more regional focused (perhaps driven by the supply chain management and the nature of industry)
  - **Electrical and optical equipment** for East Asia is more diverse (globally engaged) in terms of sourcing and distribution of value added

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Two parts in the policy-oriented analysis

1. Role of FTAs in facilitating GVCs for East Asia
   – Based on my prior work, Athukorala and Yamashita (2006)
2. NTMs on GVCs for East Asia
   – The gravity model to incorporate NTMs
   – Not perfect but give overall indication of the importance (statistical association)

FTA issues

- The benefits of tariff reduction (Yi, 2003) is not so much in East Asia?

- **Cascading tariff structure** (almost duty free on intermediate inputs) – although an exception still exists eg in *Thai automobile industry*

- **Rules of Origins**

  – More *sliced*, harder to define the Rules of Origins

- **FTA usage** (only larger exporters use the preferential access)

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Effects of NTMs on value added exports

$$\ln M_{ijt}^{k} = \alpha + \beta_1 NTM_{it}^{k} + \beta_2 \ln D_{ij} + G_{ijt}\beta_3 + \varepsilon_{ijt}^{k}$$

- *M* for imports (gross and value added), *i* for importer, *j* for exporter, *k* for industry
- Running the gravity model (bilateral trade flows) with value added imports for 34 industries by bilateral basis on 2000, 2010-2017
- To see what influences value added trade flows?
  – Including NTM (dummy) as the policy variable

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Construction of NTM variables

- NTM data originally available at HS 6-digit level
- ADB-MRIO data only at 34 broad industries (HS 1-digit)
- Created NTM dummy at HS 1-digit coded one if any of NTM reported under HS 6-digit level, zero otherwise
- Admit that a coarse measure of NTM

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Table 5: NTM on imports (all importers)

Importers=All	(1)	(2)	(3)	(4)	(5)	(6)
	log of total imports			**log of domestic value added in intermediate exports used by importers**		
	Food	Electronics	Transport	Food	Electronics	Transport
ln distance	-0.847***	-0.903***	-0.721***	-0.419***	-0.665***	-0.436***
	(0.034)	(0.033)	(0.027)	(0.031)	(0.034)	(0.022)
NTMs_dummy	0.199	0.007	-0.283**	**0.203****	**-0.248***	**-0.395****
	(0.126)	(0.152)	(0.124)	**(0.094)**	**(0.132)**	**(0.099)**
R-sq	0.808	0.862	0.799	0.678	0.797	0.712
N. of country pairs	1755	1755	1755	1755	1755	1755
Obs.	29280	29280	29280	29280	29280	29280

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Table 6: NTM on imports (East Asian importers)

	(1)	(2)	(3)	(4)	(5)	(6)
	log of total imports			**log of domestic value added in intermediate used by importers**		
Importers=East Asia	Food	Electronics	Transport	Food	Electronics	Transport
In distance	-0.675***	-0.935***	-0.830***	-0.163	-0.604***	-0.376***
	(0.155)	(0.174)	(0.129)	(0.112)	(0.196)	(0.135)
NTMs_dummy	**0.141**	**-0.677***	**-0.804**	**0.148**	**-0.682***	**-0.631**
	(0.237)	**(0.237)**	**(0.326)**	**(0.190)**	**(0.230)**	**(0.321)**
R-sq	0.824	0.863	0.773	0.746	0.787	0.647
N. of country pairs	736	736	736	736	736	736
Obs.	7200	7200	7200	7200	7200	7200

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Conclusion

- Still, there is a room for the policy to play a key role facilitating value added trade flows

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