Two Elephants at War: Will We Be Trampled? Potential Effects of the US-China Trade War on the Philippines

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Rising protectionism

- The trade war
  - "Unprecedented", "most comprehensive protectionist trade policies implemented by the US since the 1930 Smoot-Hawley Act"

- Reversal of more than half a century's efforts to lower trade barriers
  - Raised tariffs from 2.6% to 17% on 67% of total US imports
  - Affected 12,007 product lines equivalent to $303 billion or 12.6% of annual US imports in 2017
    (Fajgelbaum, Goldberg, Kennedy, and Khandelwal 2019)

Trade War Timeline

Effective Date	Action	Tariff Details
January 2018	US imposes tariffs on solar panels (30%) and washers	Global safeguard tariffs
March 2018	US impose tariffs on steel (25%) and aluminum (10%)	Global safeguard tariffs
July 2018	US imposes 25% tariff on $34 billion in Chinese imports	Includes products as containing 'industrially significant technology'
	China imposes 25% tariff on $34 billion in US imports	Includes agri goods, autos and autos parts
August 2018	US imposes 25% tariff on $16 billion in Chinese imports	Includes products benefiting from 'Made in China 2025'
	China imposes 25% tariffs on $16 billion in US imports	Includes chemical products, medical equipment, energy
Sept 2018	US imposes 10% tariff on $200 billion in Chinese imports	Wide range inc. tobacco, chemicals, small manufactures
	China imposes 5-10% tariff on $60 billion in US imports	Includes agricultural, food, chemical, textile, metal, etc.

Source: US Trade Representative's Office, Ministry of Commerce

Key Issues

- What is the impact of a trade war involving large economies on a developing country, a small, open economy?
- How much can specialization and fragmentation of global production magnify and diffuse the impact of tariff increases?
- Will the current impasse in the trade war compel a developing country to trade more with any of the protagonists (US, China) or seek new trade partners?

Basis in theory: Gains from Trade

- Samuelson (1938 AER)
  - ”Free trade leads to an equilibrium in which each country is better off than in the absence of trade”
- Samuelson (1939 CJE&PS): The Gains from International Trade
  - “Some trade is to be preferred to no trade at all”

Basis in theory for US actions: Theory of the optimal tariff

- From a position of near free trade, the application of a (small) tariff by a country benefits it and harms its trading partners.

- But this only holds if the country imposing the tariff is a major buyer of a good from many competing suppliers.

Basis in theory for US actions: Theory of the optimal tariff

- If the importing country has some degree of monopsony power,
  - an imposition of a tariff will force foreign suppliers of imports to lower their prices to pre-tariff levels to maintain the pre-tariff level of goods they were selling.
- Part of the loss in export revenue is captured by the tariff-imposing country in the form of additional tariff revenues and a shift in production to domestic producers.

Potential effects on developing countries and small, open economies like the PH

- Public statements from policy makers:
  - PH is exempt from negative effects because it is not a direct target and targeted products are not among its major exports
  - PH may benefit from trade redirection (to the PH) as suppliers seek new production bases to evade higher tariff rates
  - PH is becoming an attractive investment site for Chinese companies in various products

Potential effects on developing countries and small, open economies like the PH

- "Pivot to China"
  - ASEAN-China FTA already exempts 90% of PH goods
  - Push for Philippines-China FTA
  - Increasing preference to borrow from China

Empirical studies

Author	Model	Key Result
AMRO (2018)	GVAR model	For ASEAN and PH, total impact on GDP growth is from 0.20% to -0.5% Both China and the US would lose around 0.2 percentage points of growth in 12-36 months
AMRO 2019	Oxford economics model; GTAP	Short-run effect on PH: -0.09 ppt fall in real GDP in the baseline and a -0.36 ppt fall in real GDP under worse-case scenario Long-run effect on PH shows neutral or no impact overall and in all sectors (-0.1 to 0.1% of GDP), except for a slight positive impact in the apparel sector (low end of 0.1 to 0.6% of GDP)

Empirical studies

Author	Model	Key Result
Cali (2018)	multi-country, multi-sector, partial equilibrium model	"Potential diversion of US imports towards non-Chinese suppliers…**where export structures present some similarities with China**" e.g. electrical equipment and machinery

Empirical studies

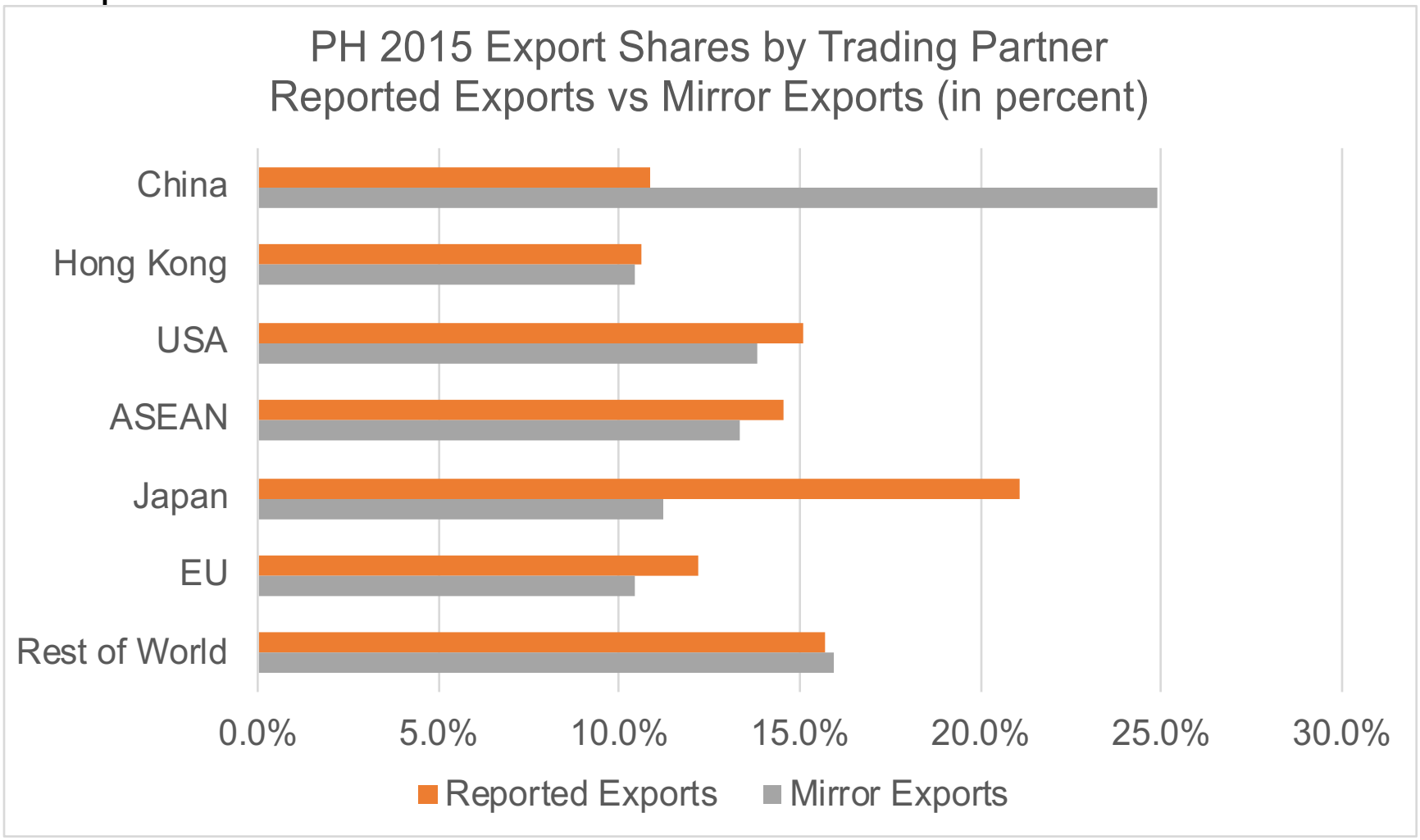
Author	Model	Key Result
Abiad et al. (2018)	multi-country, multi sector, partial equilibrium model and the regional IO table of ADB	Developing Asia may benefit through trade redirection with a potential 0.33% increase in GDP under the worse-case scenario In the worse-case scenario: • PH GDP increases by 0.1%; • Employment increases by 36,000; • Exports increase by 1.2%

Why the disconnect?

- Between theory, on the one hand, and policy pronouncements and existing empirical results on the other
  - Should we expect tariffs to yield innocuous or potentially beneficial effects?
- In any case, should we worry about the effects of a trade war?

Features of PH Trade

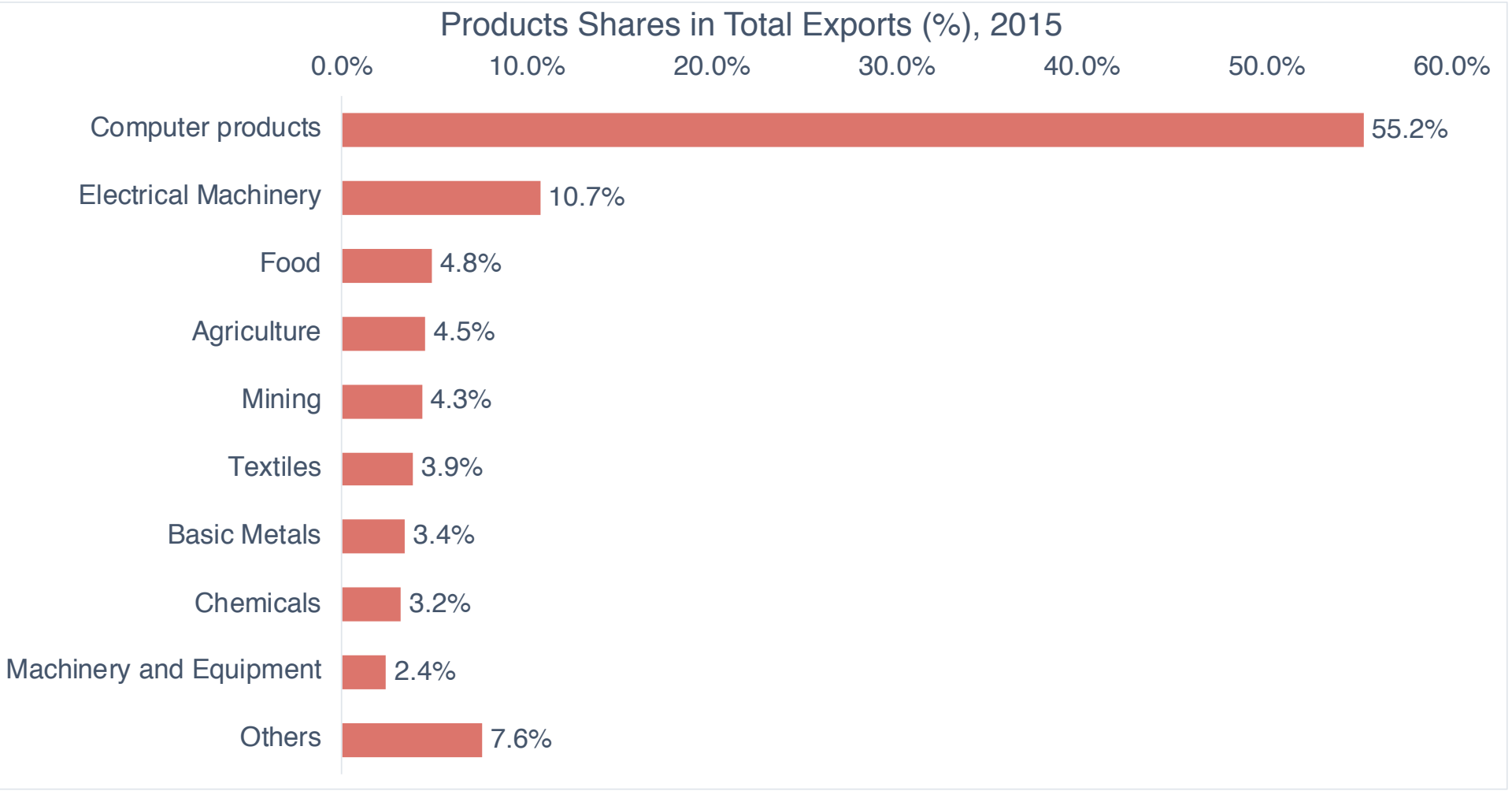
- As of 2018, PH trade surplus with US is at $2 billion; trade deficit with China at $13 billion
- Exports are concentrated in a few markets



Source: UN-COMTRADE, WITS

Features of PH Trade

- Reported PH exports are undiversified



Source: UN-COMTRADE, WITS 2015

Features of 21st century international trade

- Fragmentation of production processes globally
- Importance of trade in intermediate goods
  - Structure of protection has been aimed primarily at intermediate goods
- In a second-best world (rising protectionism, unfair trade practices)
  - Not a question of free trade versus autarky a la Samuelson
  - Should countries still move towards freer trade? Or become more protectionist?

Caliendo-Parro (2015) Model

- a New Quantitative Trade Theory (NQTT) Model
  - trade patterns depends on trade costs; gravity-based
  - multi-country, multi-sector, general equilibrium Ricardian trade model
  - with national and international IO linkages and sectoral linkages between tradeable and non-tradeable sectors
- Multi-sector extension of Eaton-Kortum (2002)

Caliendo-Parro (2015) Model

- Ricardian comparative advantage drives international trade
  - Producers seek lowest cost supplier.
  - Tariff changes affect volume and direction of trade.
  - Key parameter: Dispersion of productivity

Caliendo-Parro (2015) Model

- Dispersion of productivity
  - determines the elasticity of trade with respect to trade costs
  - If productivity is less dispersed, a tariff increase will not cause substantial changes in direction of trade.

How do tariffs affect volume and direction of trade?

- When the US imposes a tariff on a good, it affects:
  - (1) the US domestic price and world price of that good
  - (2) Prices in sectors that use that good as an input in tradeable and non-tradeable sectors
- Also affects sectoral and national output, incomes, employment and real wages

Data and Sources

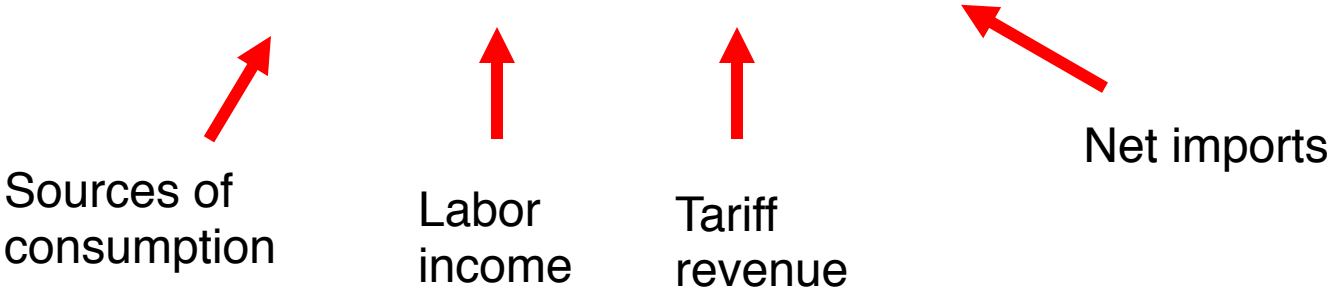
- 2015 as base year
- Sample: 33 countries and constructed rest of the world
- 31 sectors (16 tradable, 15 non-tradable)

Data	Source
2015 Bilateral trade flows (imports)	UN COMTRADE
2015 Bilateral tariff data (Effectively applied tariffs)	UNCTAD-TRAINS (Trade Analysis Information System)
2015 Input Output Technical coefficients; Gross output; Value added	OECD ICIO 2015

How is welfare measured?

- Welfare is measured in terms of consumption, which in turn depends on three sources:
  - labor income
  - tariff revenue or transfer payments
  - net imports

$$I_n = w_n L_n + R_n + D_n$$



Sources of welfare effects

- Changes in tariffs affect sources of consumption which are reflected in:

(1) Volume of trade effects
  - captures effect on the tariff revenue due to changes in trade flow

(2) Terms of trade effects
  - captures changes in export prices and import prices

$$d\ln W_n = \frac{1}{I_n}\sum_{j=1}^{J}\sum_{i=1}^{N}\underbrace{\left(E_{ni}^{j} d\ln c_n^j - M_{ni}^{j} d\ln c_i^j\right)}_{\text{Terms of trade}} + \frac{1}{I_n}\sum_{j=1}^{J}\sum_{i=1}^{N}\underbrace{\tau_{ni}^{j} M_{ni}^{j}\left(d\ln M_{ni}^{j} - d\ln c_i^j\right)}_{\text{Volume of trade}},$$

Sources of consumption

change in export and import prices, weighted by bilateral exports and imports

Sources of consumption

Tariffs

Change in import volume

Scenarios modeled

Scenario	Description
1 Unilateral US Actions	US imposes tariffs on imports of steel, aluminum, solar products and washers US imposes tariffs on Chinese imports worth $250 billion (List 1 and 2 at 25%, List 3 at 10%)
2 Retaliatory actions (Current impasse)	Canada, China, EU, Mexico, Russia and Turkey retaliate for US-imposed tariffs on imports of steel and aluminum China retaliates for US-imposed tariffs on CHN imports
3 Future Scenario	US raises tariffs of List 3 from 10% to 25% Other countries that intend to retaliate for US-imposed tariffs on imports of steel and aluminum

Closing the model

- With country-level trade deficit maintained at base level
- Without country-level trade deficit

Changes in US (%) tariffs on imports from CHN, PHL and DEU

	China		Philippines		Germany	
	Before	After	Before	After	Before	After
Agriculture	5.31	15.31	2.16	2.16	8.07	8.07
Mining	0.33	10.33	0	0	0.36	0.36
Food	9.07	19.06	2.82	2.82	9.29	9.29
Textiles	10.39	17.95	9.89	9.89	7.04	7.04
Wood	2.86	12.86	1.06	1.06	2.21	2.21
Paper	0.15	7.5	0	0	0.03	0.03
Nonmetal	5.31	15.31	1.11	1.11	3.97	3.97
Chemicals	3.34	13.34	0.66	0.66	2.78	2.78
Plastic	3.95	25.35	0.33	0.33	3.66	3.66
Basic metal	1.41	20.05	.0001	24.9	1.45	19.77
Fab metal	2.37	13.55	0.18	5.75	2.44	7.82
Computer	0.77	20.35	0.1	7.79	1.01	3.44
Electrical	2.74	25.51	0.05	7.65	2.34	10.08
Oth. mach	1.56	23.66	0.13	0.13	1.35	2.5
Transport	1.6	13.32	0.02	0.02	2.59	2.59
Oth. mfg	1.28	11.18	0.22	0.22	1.6	1.6

Changes in CHN and DEU tariffs on imports from USA (in percent)

	China-United States		Germany-United States	
	Before	After	Before	After
Agriculture	9.72	27.14	4.92	11.66
Mining	0.37	21.4	0	0
Food	13.1	35.16	9.54	16.71
Textiles	9.69	30.99	7.38	17.55
Wood	0.98	20.65	2.16	2.16
Paper	4.47	19.56	0.15	0.15
Nonmetal	7.08	13.91	1.54	1.54
Chemicals	6.9	22.86	4.44	5.62
Plastic	8.85	25.55	5.31	5.31
Basic met	4.94	22.7	3.68	28.68
Fab metal	10.41	28.76	2.79	20.74
Computer	3.87	20.71	1.08	1.08
Electrical	6.4	23.47	2.36	2.36
Oth. mach	6.87	24.96	1.7	3.59
Transport	9.37	16.82	2.63	3.05
Oth. mfg	9.72	27.14	4.92	11.66

S2 Total Welfare Effects (in percent)
Protagonists and ASEAN

Country	With deficit	No deficit
USA	0.266	-0.174
China	-1.27	-0.284
Philippines	-0.339	-0.254
Indonesia	-0.425	-0.192
Malaysia	-4.944	-0.087
Singapore	2.296	0.740
Thailand	-1.059	-0.497
Viet Nam	-0.973	-0.155
Brunei	-2.446	-0.160
Cambodia	-3.940	-1.078

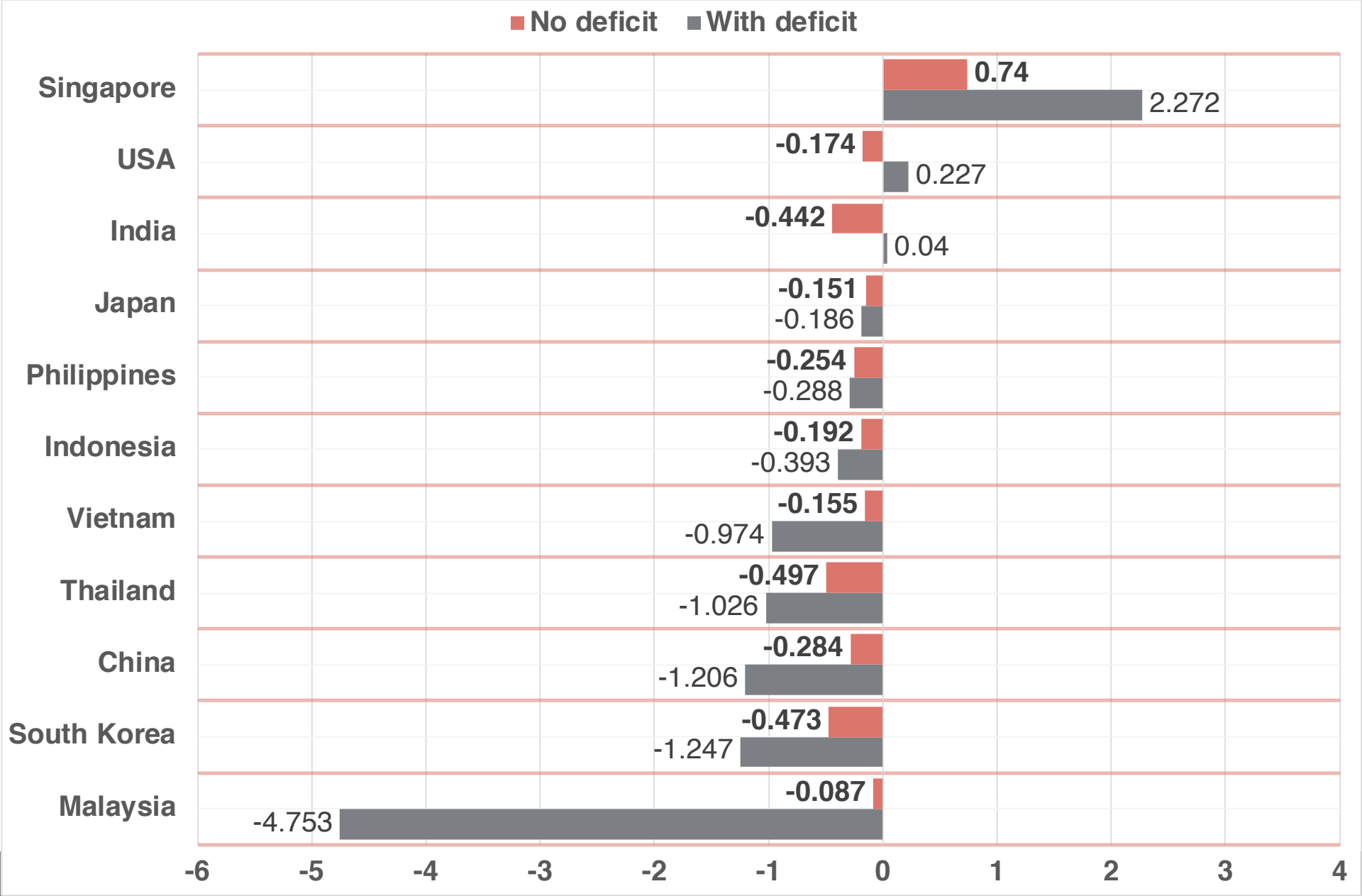
S2 Total Welfare Effects (in percent)
East Asia, South Asia, Oceania, NAFTA, Middle East

Country	With deficit	No deficit
Japan	-0.220	-0.151
Taiwan	-6.758	-0.489
South Korea	-1.273	-0.473
Hong Kong	1.792	0.017
India	0.064	-0.442
Australia	-0.228	-0.08
New Zealand	0.006	-0.078
Canada	0.085	-0.044
Mexico	-0.384	-0.548
Saudi Arabia	-0.723	-0.572

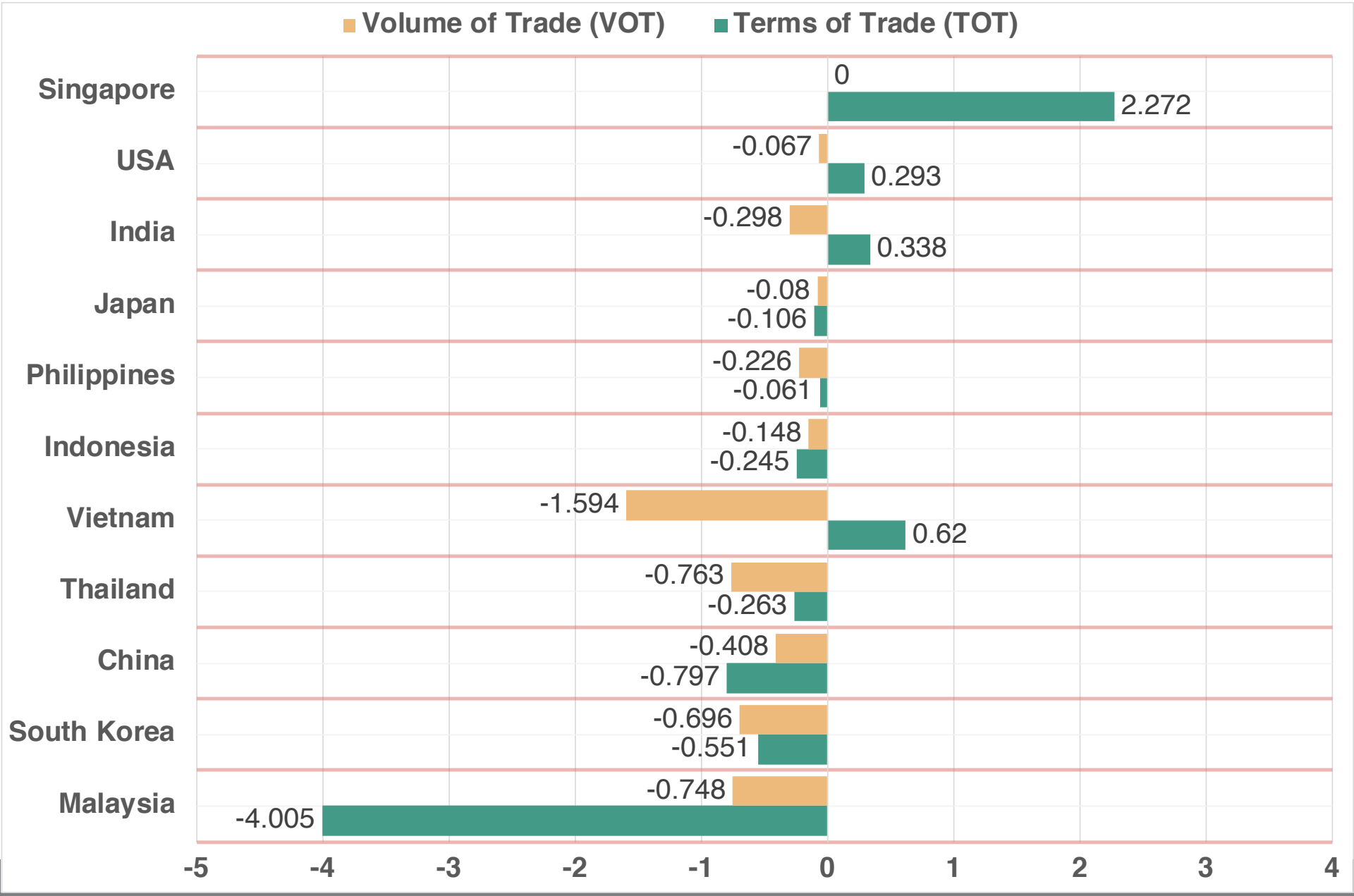
S2 Total Welfare Effects (in percent)
Europe

Country	With deficit	No deficit
Austria	0.179	-0.106
Belgium	0.837	0.092
Germany	-0.683	-0.171
Denmark	0.074	-0.144
Spain	0.235	-0.112
Finland	-0.369	-0.062
France	0.152	-0.132
United Kingdom	0.369	-0.116
Switzerland	-0.348	0.044
Ireland	-2.243	-0.074
Italy	-0.218	-0.113
Netherlands	-0.129	-0.16
Sweden	-0.084	-0.098

S2 Total Welfare Effects, Selected Countries with deficit vs. no deficit (in percent)

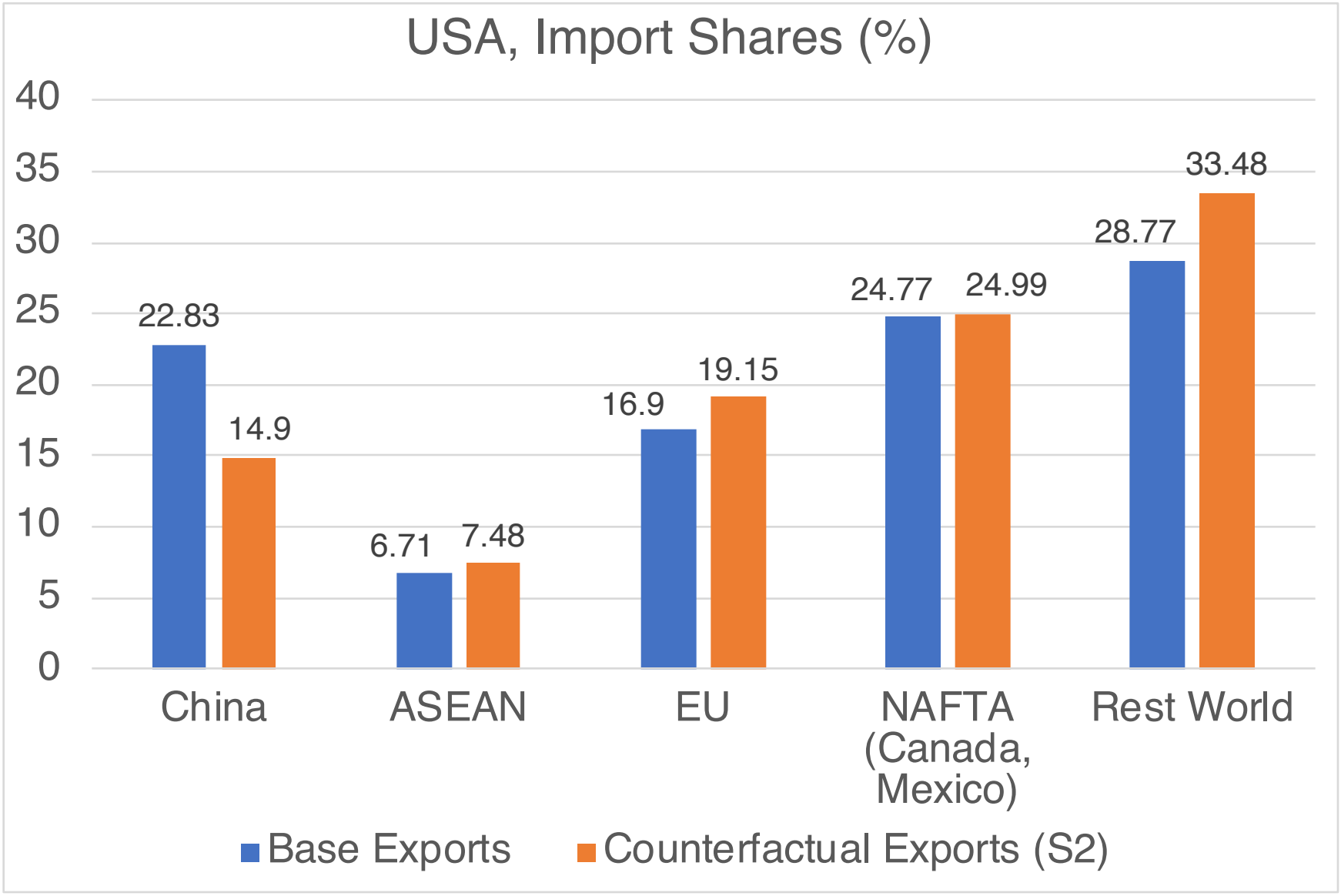


S2 with deficit, TOT vs VOT effects (in percent)



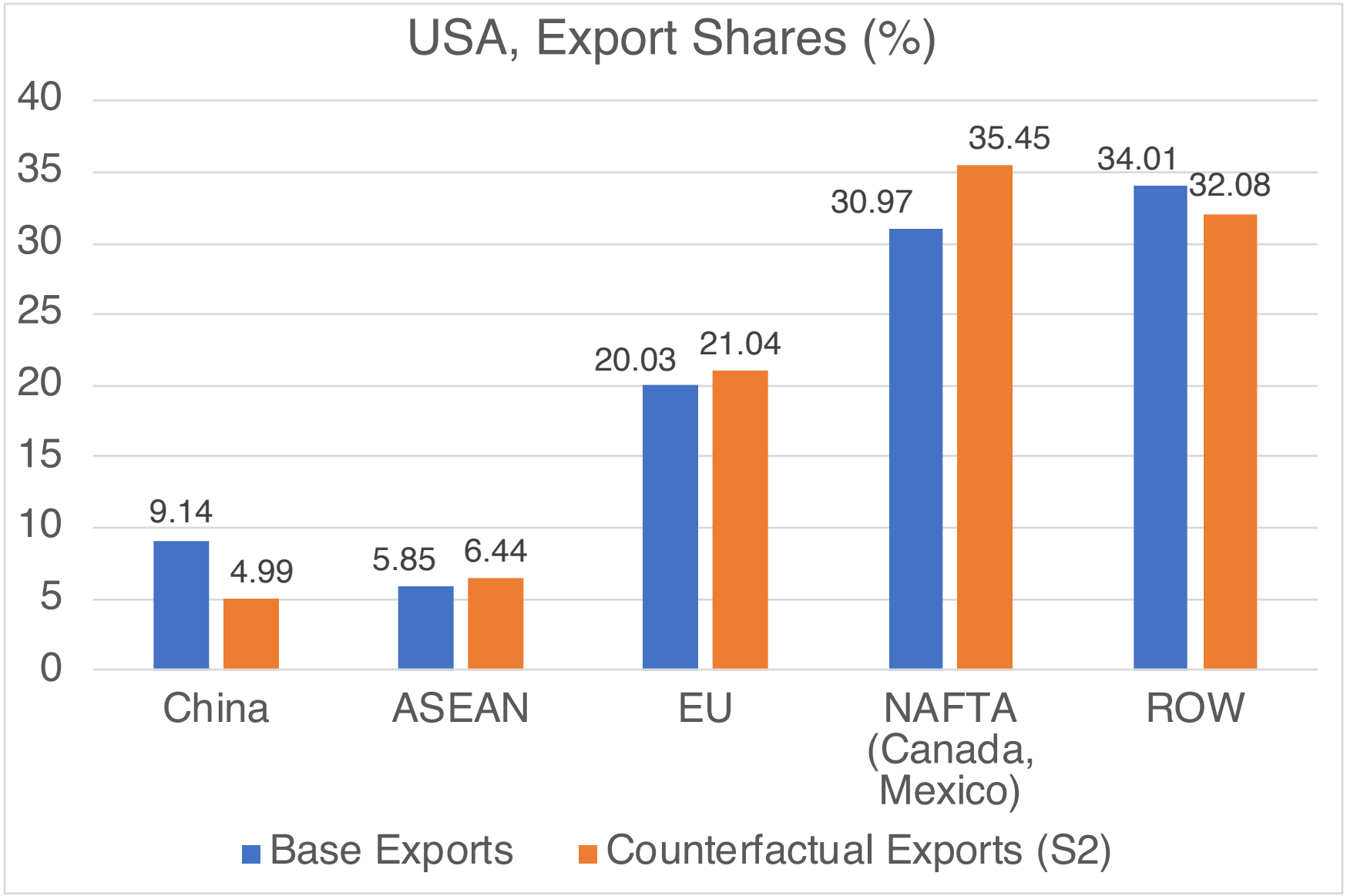
USA

Import shares, by trading partner



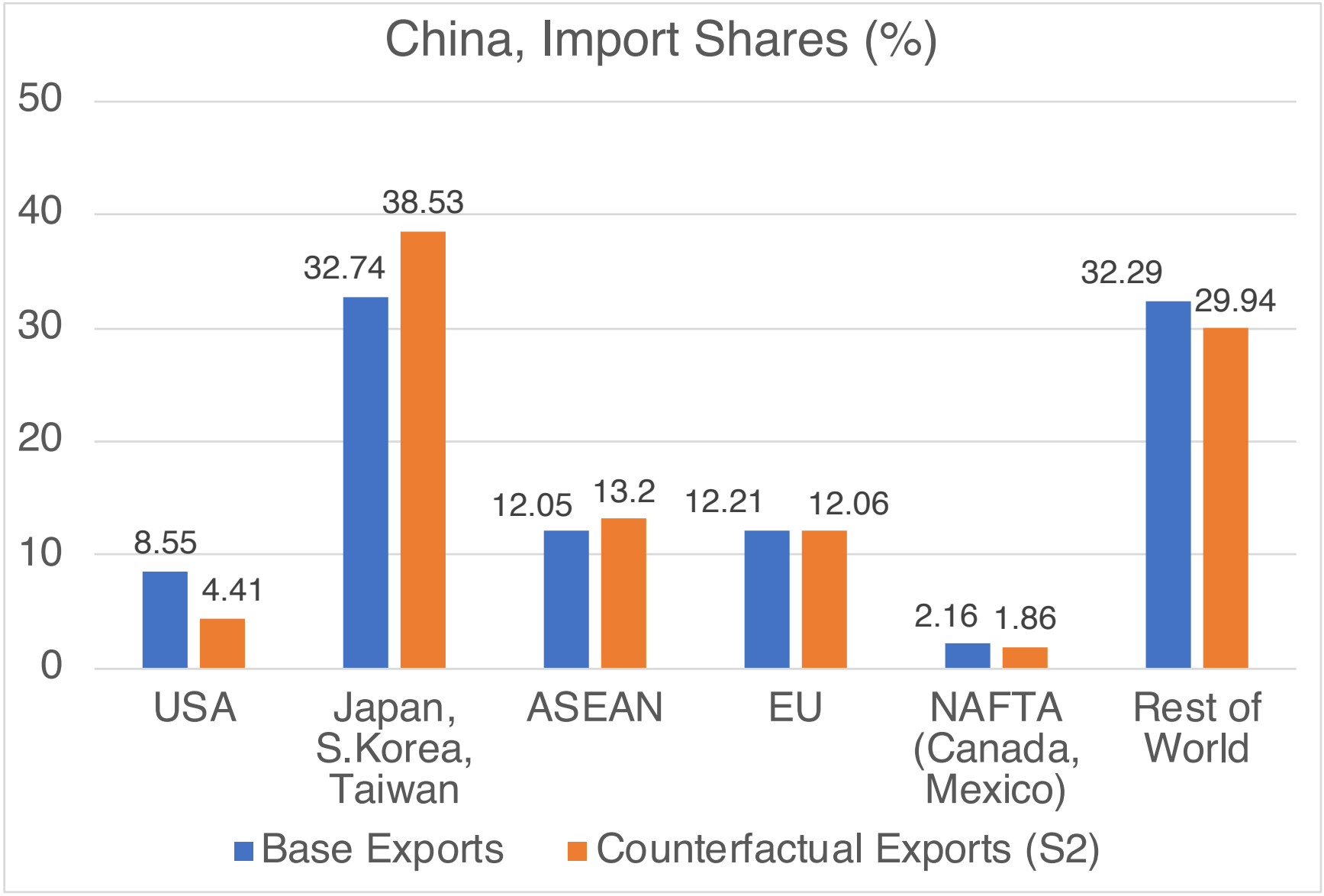
USA

Export shares, by trading partner



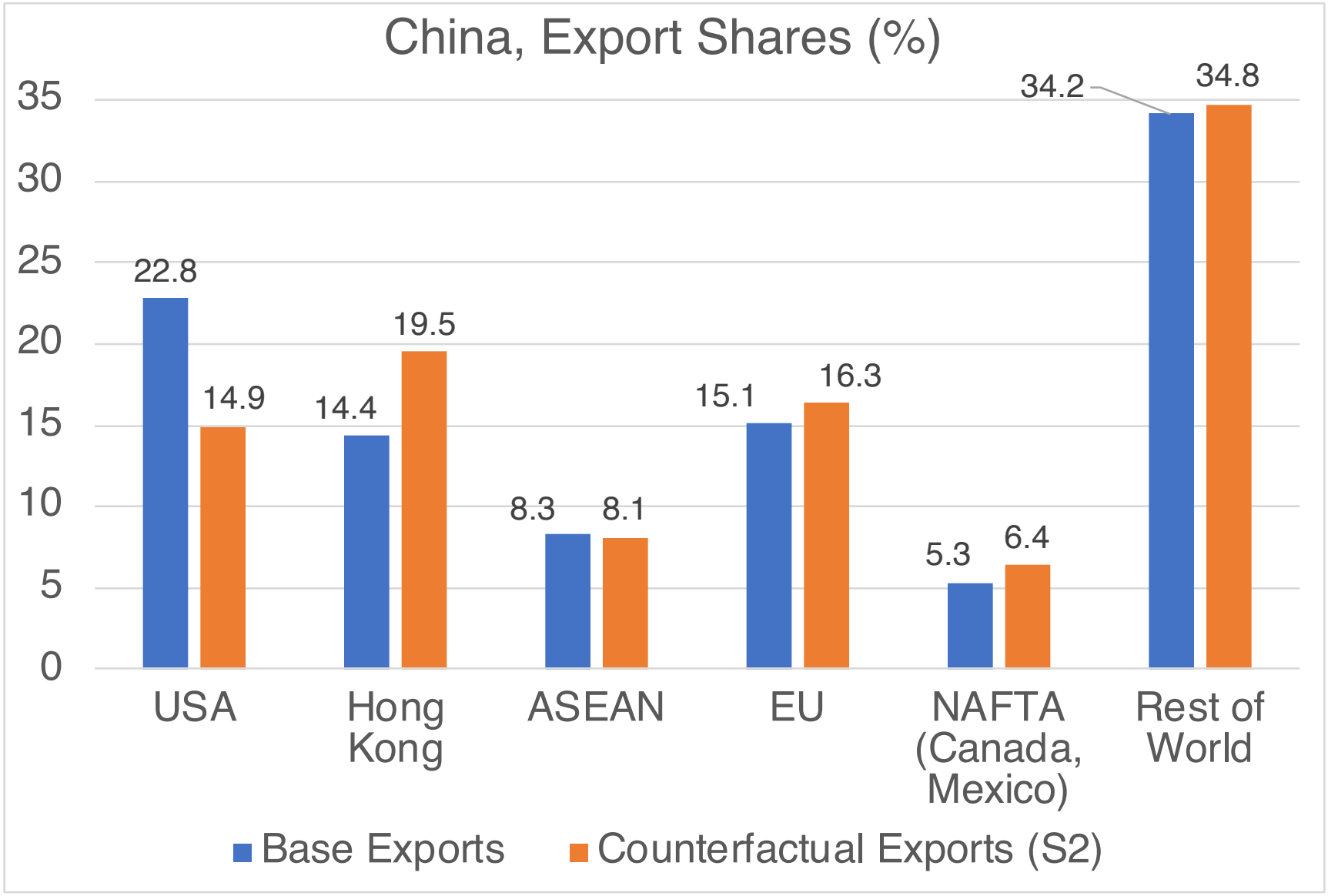
CHINA

Import shares, by trading partner



CHINA

Export shares, by trading partner



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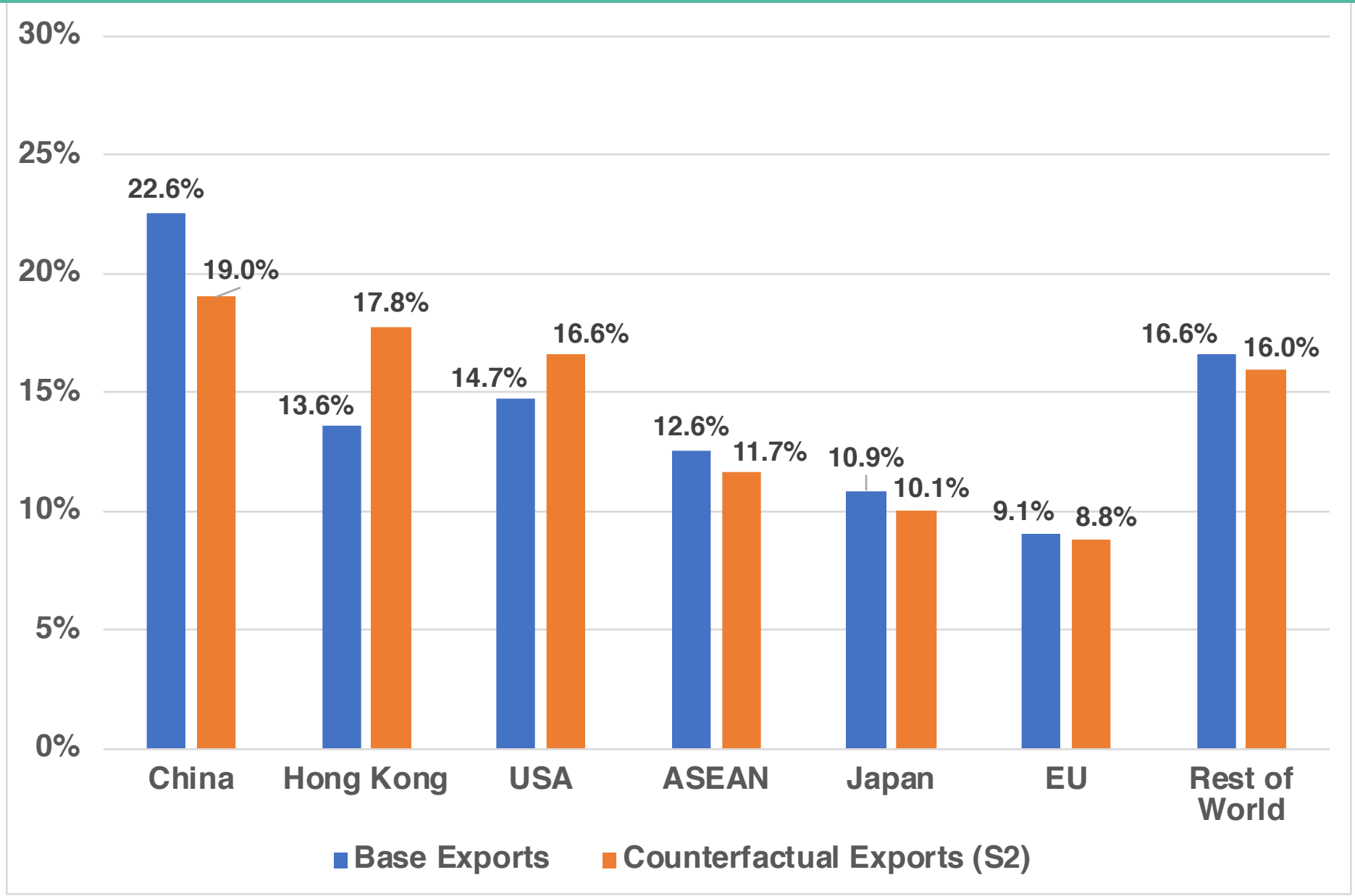
Export shares, by trading partner



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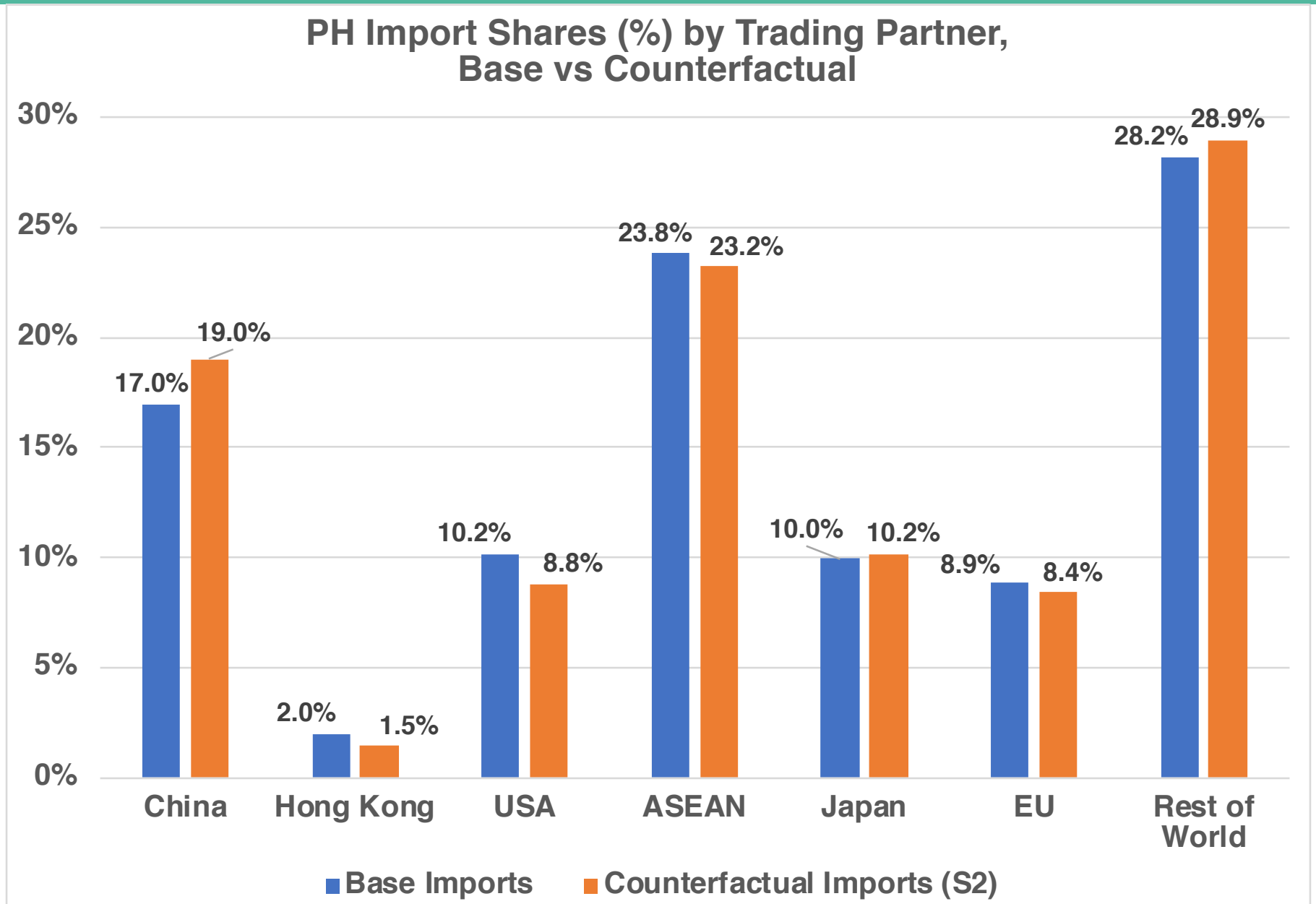

Contribution to PH VOT decline, by destination country

Destination Country	%
China	6.73
China, including Hong Kong	14.13
USA	31.15
ASEAN	2.09
Japan	4.86
EU	19.95
Rest of World	27.83

TOT PH change in export and import prices, by trading partner (in percent)

	Changes in prices of:		
Trading Partner	Exports	Imports	Net Effect
China	(0.33)	(0.56)	0.24
Hong Kong	(0.20)	0.20	(0.39)
USA	(0.21)	0.30	(0.52)
ASEAN	(0.18)	(0.22)	0.03
Japan	(0.16)	(0.20)	0.04
EU	(0.13)	(0.05)	(0.08)
Rest of World	(0.24)	(0.62)	0.38
Total	(1.46)	(1.15)	(0.30)

TOT PH change in export and import prices (%), by sector

	Changes in prices of:		
Sector	Exports	Imports	Net Effect
Electrical equipment	-0.79	-0.14	-0.65
Machinery & equipment, nec	-0.16	-0.05	-0.11
Agriculture, forestry and fishing	-0.07	0	-0.07
Food products	-0.07	-0.02	-0.04
Textiles	-0.06	-0.03	-0.02
Wood	-0.02	-0.01	0
Other manufacturing	-0.02	-0.02	0
Paper	0	-0.02	0.02
Rubber	-0.02	-0.03	0.02
Fabricated metal	-0.01	-0.05	0.04
Motor vehicles	-0.02	-0.09	0.07
Basic metals	-0.05	-0.13	0.08
Mining	-0.06	-0.15	0.09
Chemicals	-0.05	-0.13	0.09
Computer, electronic & optical products	-0.04	-0.12	0.09
Coke and refined petroleum products	-0.02	-0.14	0.12
Total	-1.46	-1.16	-0.3

Contribution to PH VOT decline, by sector (in percent)

Sector	%
Electrical equipment	31.36
Food products	24.01
Motor vehicles	17.55
Chemicals	4.95
Agriculture, forestry and fishing	4.18
Textiles	3.59
Rubber	3.19
Mining	2.62
Fabricated Metal	1.74
Machinery and equipment, nec	1.19
Computer, electronic and optical products	1.13
Paper	1.11
Other manufacturing	1.06
Basic metals	0.99
Petroleum	0.87
Wood	0.46

Dispersion of Productivity

Industry	Theta Estimate	SE
Agriculture, forestry and fishing	1.515	0.352
Mining	12.943	2.722
Food products	1.526	0.253
Textiles products	2.539	0.660
Wood and products of wood and cork	11.421	1.333
Paper products and printing	8.538	1.182
Coke and refined petroleum products		
Other non-metallic mineral products	7.758	1.263
Chemicals and pharmaceutical products	11.015	1.075
Rubber and plastic products	6.099	0.828
Basic metals	11.875	1.699
Fabricated metal products	12.256	0.855
Computer, electronic and optical products	11.196	1.634
Electrical equipment	2.584	1.052
Machinery and equipment, nec	2.868	1.211
Motor vehicles, trailers and semi-trailers	1.574	0.539
Other manufacturing	7.057	0.694

Conclusions

- The Philippines and other developing countries are not exempted from the negative effects of the US-China trade war.
  - The adverse effects on some developing countries like the Philippines and Malaysia are **larger** than those experienced by the protagonists.
  - PH welfare losses are larger relative to US but not to China;
- Even the US loses in a trade war. e.g, tariffs on washing machine

Conclusions

- A policy response of negotiating continued or improved tariff concessions for access to markets will evidently not be sufficient to shield PH from adverse welfare effects of even a limited trade war as the study shows

Conclusions

- The Philippines will not likely be drawn to trade more with its ASEAN neighbors, even with AFTA and AEC.
  - Share of exports to and imports from ASEAN will fall as a result of the trade war.

Conclusions

- Aside from finding ways to improve productive efficiency and sectoral productivity, what can small countries do?
  - Centrality of ASEAN
- Implication on financial flows
  - USD remains the global reserve currency and as such can persistently run CA deficits “without tears”.
  - China’s RMB internationalization

Thank you.

Appendix

S2 vs. S3 Total Welfare Effects (in percent) Protagonists and ASEAN

Country	S2 With deficit	S3 With deficit
USA	0.266	0.228
China	-1.270	-1.357
Philippines	-0.339	-0.276
Indonesia	-0.425	-0.376
Malaysia	-4.944	-4.660
Singapore	2.296	2.291
Thailand	-1.059	-0.982
Viet Nam	-0.973	-0.608
Brunei	-2.446	-2.260
Cambodia	-3.940	-3.429

S2 vs. S3 Total Welfare Effects (in percent)
East Asia, South Asia, Oceania, NAFTA, Middle East

Country	S2 With deficit	S3 With deficit
Japan	-0.220	-0.178
Taiwan	-6.758	-6.645
South Korea	-1.273	-1.233
Hong Kong	1.792	1.768
India	0.064	0.051
Australia	-0.228	-0.186
New Zealand	0.006	0.051
Canada	0.085	0.077
Mexico	-0.384	-0.362
Saudi Arabia	-0.723	-0.717

S2 vs. S3 Total Welfare Effects (in percent) Europe

Country	S2 With deficit	S3 With deficit
Austria	0.179	0.190
Belgium	0.837	0.835
Germany	-0.683	-0.629
Denmark	0.074	0.080
Spain	0.235	0.233
Finland	-0.369	-0.335
France	0.152	0.158
United Kingdom	0.369	0.324
Switzerland	-0.348	-0.317
Ireland	-2.243	-2.080
Italy	-0.218	-0.188
Netherlands	-0.129	-0.051
Sweden	-0.084	-0.067