

# The Impact of Trade War on APAC Sovereign Risk Premium

Does trade in AI-related services soften the blow?

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## 01– Key Insights

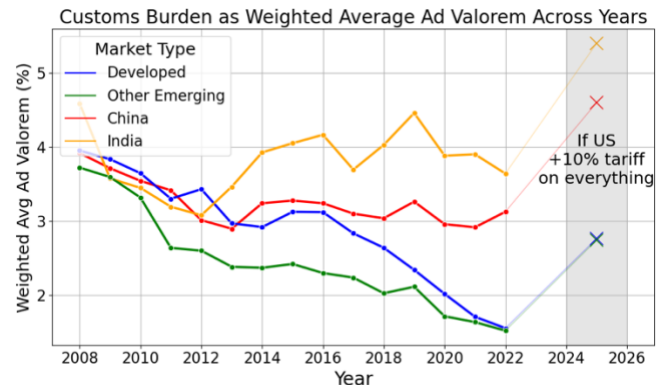
- Suppose the US imposes an additional 10% tariff on all imports. APAC exporters' average duty burden will rise by roughly 1.4 percentage points, the country risk premium by 0.8 percentage points, and the impact on credit rating will be negligible.
- 1 percentage point increase in the ratio of AI-related services to trade halves the impact of tariffs for developed economies and has no mitigating effect on emerging markets.

## 02 – Looms of Trade War

US President Donald Trump's second term will lean even more on his "America First" approach, signalling his intention to raise tariffs on all imports. With the US trade deficit with China often exceeding 300 billion USD, and other APAC economies, including India, Japan, Korea, and Taiwan, contributing to the overall trade imbalances, he will likely target the Asia-Pacific region.

Since 1<sup>st</sup> Feb, the US has imposed an additional 10% tariff on all Chinese goods. Thus, a hypothetical scenario for custom burden with an additional 10% tariff on all APAC goods is devised by:

- First.* estimating the elasticity of tariff rate on trade value by HS2 using OLS
- Second.* constructing hypothetical trade values with a 10% US tariff on all imports
- Third.* calculating the average ad valorem weighted by trade volume with the US and other trading partners



According to the hypothetical analysis, developed and emerging APAC markets will face a 1.2 percentage point higher average tariff rate—a significant increase from the weighted average custom burden of 1.5 percent in 2022. China and India will experience a higher increase in the customs burden by 1.5 and 1.8 percentage points, respectively.

Reviewing the historical trend, while the effective tariff rate across APAC had fallen gradually, the tariff paid by Chinese and Indian exporters has stayed leveled since 2014, with India experiencing a sizable hike between 2012 and 2014.

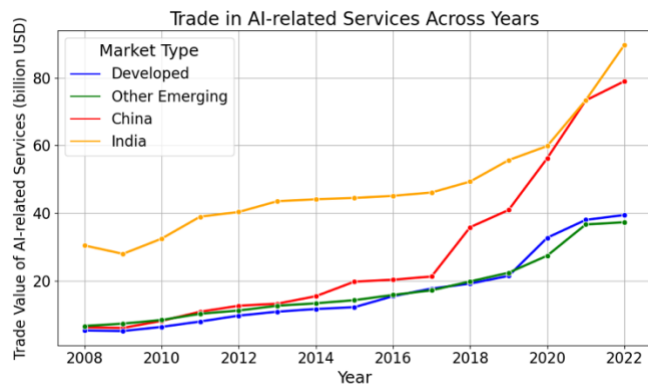
## 03 – Sovereign Default Risks & Trade in AI-related Digitally Delivered Services

Traditional protectionism focuses on the trade of goods. The Trump administration, for example, focuses primarily on tariffs and renegotiated trade agreements to protect manufacturing and improve trade deficits.

However, the global trade landscape is rapidly evolving, with digitally delivered services gaining importance, particularly in cross-border AI service trade. A MarketsandMarkets report predicts that the

AI as a service market will grow from 14 billion USD in 2024 to 72 billion USD by 2029, a 39% annualised growth rate. McKinsey and PwC also reported similar findings.

Export figures on digitally delivered services by year, reporter, and service type were gathered to investigate the trend of AI related service trade. This report classifies 'Telecommunications services', 'Computer services', and 'Information services' as AI-related.



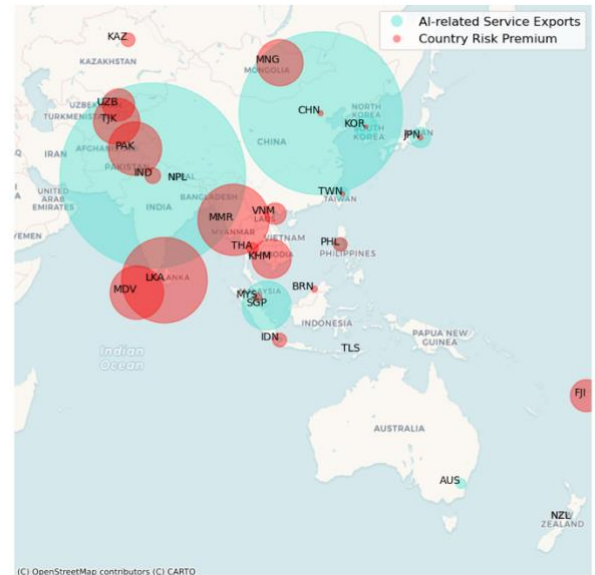
Trade in AI-related services has grown rapidly. Between 2008 and 2022, exports from developed economies multiplied sevenfold, while emerging markets in APAC saw a 5.5-fold increase.

However, this growth pales compared to China and India. Before 2017, China's AI services growth mirrored other regional economies. In 2016, the Chinese state council released the “Next Generation Artificial Intelligence Development Plan,” outlining its roadmap to global AI leadership by 2030. Since then, the export value of Chinese AI services has soared, surpassing the combined AI exports of developed economies by over twice as much

India has long been a center for IT outsourcing, resulting in a talent pool and digital infrastructure ideally suited to the surge in AI development in the past decade.

A country's risks are a primary consideration for investment. Investors should assess default, currency, political, transfer, and other risks. The country's risk premium on government bonds reflects these combined risks.

AI-related Service Exports and Country Risk Premium in 2022



The map above juxtaposes country risk premiums with AI-related service exports in 2022. China and India stand out as the top exporters of AI services, followed by Singapore and Japan. Areas with high country risk premiums are strongly associated with a low level of AI-related service export, hinting at an inverse relationship between AI-related service trade and country risk premium.

## 04 – Buffering Effect Varies Between Emerging Markets and Developed Economies

To under the effect of custom burden and Trade of AI-related services on country risk premium, the following equation is estimated:

$$\begin{aligned} \text{CountryRiskPremium}_{e,t} &= W.AvgAdValorem_{e,t} \\ &\quad * \text{RatioAIRelatedServicesToTrade}_{e,t} \\ &\quad + \text{YearFE}_t + \text{Control}_e + \epsilon_{e,t} \end{aligned}$$

- $\text{CountryRiskPremium}_{e,t}$  : main outcome. It encapsulates default, currency, and other investment risks in a country.
- $W.AvgAdValorem_{e,t} * \text{RatioAIRelatedServicesToTrade}_{e,t}$  : primary variable of interest; it represents the interaction between the tariff rate and the importance of AI-related services within an economy.
- $W.AvgAdValorem_{e,t}$  : trade value-weighted tariff percentage
- $\text{RatioAIRelatedServicesToTrade}_{e,t}$  : ratio between the total value of AI-related services export and the total trade value

The Country Fixed Effects, Autoregressive (AR), and Moving Averages (MA) components are omitted because of the high degree of multicollinearity with the primary variable of interest – as suggested by the Variance inflation factor (VIF) test.

	Dependent variable: Country Risk Premium (%)			
	All APAC (1)	Developed (2)	China and India (3)	Other Emerging (4)
Weighted average Ad Valorem (%)	0.57*** (0.11)	0.28*** (0.05)	1.38* (0.76)	0.89*** (0.15)
Ratio of AI-related service to trade (%)	0.08 (0.08)	0.00 (0.05)	0.26* (0.14)	0.12 (0.10)
Ratio of AI service * W.Avg Ad Valorem	0.00 (0.02)	-0.16*** (0.02)	-0.05 (0.04)	-0.02 (0.02)
MarketType: Developed Economy	-0.74 (0.85)			
MarketType: China and India	0.16 (0.94)			
MarketType: Other Emerging Market	3.96*** (0.76)			
Intercept		-0.00 (0.23)	-3.54 (2.48)	2.84*** (1.07)
Year Fixed Effect	Yes	Yes	No	Yes
Observations	309	59	30	220
R <sup>2</sup>	0.47	0.66	0.67	0.33
Adjusted R <sup>2</sup>	0.44	0.52	0.63	0.27
Residual Std. Error	2.54	0.31	0.82	2.87
F Statistic	13.63***	4.72***	17.52***	5.87***

Note:  
 1. All APAC is estimated with a regression through the origin to obtain the mean of each market type  
 2. Year fixed effects are omitted for the China and India regression  
 due of high degree of multicollinearity with Weighted average Ad Valorem and Ratio of AI-related service to trade

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

The regression table reveals several key insights. Firstly, custom burden has a strong effect on country risk premium. Within the APAC region, a 1 percentage point increase in the average Ad Valorem tariff rate is correlated with a 0.57 percentage point increase in the country risk premium. The effect is much 3 times as pronounced in emerging markets (0.89 pp) compared to developed economies (0.28 pp)

Secondly, the ratio of AI-related services to trade does not appear to be strongly correlated with the country's risk premium.

Thirdly, while AI-related services may not forecast country risk alone, their interaction with tariff burdens offers a protective effect for developed economies. Specifically, when the average ad valorem rises by 1 percentage point, a corresponding increase of 1 percentage point in the share of AI-related services reduces the risk premium by 0.16 percentage points. This means that a corresponding increase in the relative importance of AI-related service exports effectively halves the impact of tariff hikes.

Finally, AI-service trade alone or its interaction with customs burdens does not strongly impact China, India, and other emerging markets within APAC.

## 05 – Predicting Credit Ratings with Machine Learning

Two ordinal categorical machine learning models based on Moody's Credit Rating were fitted to the data. After experimenting with various combinations of disaggregating trade value and ad valorem by importer as features, models from Random Forest (RF) and Multi-layer Neural Network (NN) achieved approximately 75% accuracy in identifying the correct rating using the test set.

The top-performing RF and NN models were used to forecast the effects of a 10% tariff increase on all exports to the US. After factoring in the decline in trade volume with the

US, the predicted ratings largely remained stable, with only a few countries showing marginally lower ratings compared to the baseline upon which the hypothetical scenario was constructed. Therefore, it can be reasonably concluded that US tariffs will not have an outsized impact on sovereign credit ratings.

## 06 – Other Considerations

- Ripple effects like retaliation policies and trade diversification will impact Sovereign Risk Premium, especially in emerging markets
- Country risk premiums influence the cost of funds, which will directly impact asset prices and the interest cost of existing debt.
- The findings in this report are not causal. AI exports are also likely related to other fundamental factors.

## 07 – Technical Notes

### a. Data

- Trade Data at HS6 partner level are obtained from UNComtrade Database using their API.
- Tariff Data at the HS6 partner level are scraped WTOTAO and downloaded from the Market Access Map website.
- Sovereign credit risk and ratings are obtained from NYU Prof. Damodaran's website. Historical records are obtained using the internet archive of the website.
- Other auxiliary data is sourced from the IMF, the Nuffield Politics Research Centre, the Harvard Growth Lab, etc.

### b. Programming

All analyses in this report are coded in Python, and the codes are available on [GitHub](#).