Analytical Note

China Economic Insights

Macroeconomic Impacts of Trump 2.0 Tariffs on China: A Model-Based Assessment[1]

April 19, 2025

I. Introduction

1. The trade war initiated by the Trump administration in 2018 marked a turning point in U.S.-China economic relations, underscoring broader global trade conflicts. With longstanding allegations against China of unfair trading practices, intellectual property theft, and forced technology transfers, the first Trump administration initially imposed tariffs on a wide range of Chinese goods, starting at US$50 billion and eventually encompassing a total of US$360 billion. China retaliated with its own tariffs on U.S. imports, escalating the conflict into a full-blown trade war. This led to disruptions in global supply chains, diminished bilateral trade volumes, and heightened businesses uncertainty. Consumers in both the U.S. and China faced increased prices due to the tariffs. The phase-one trade deal which was signed in early 2020 halted further tariff hikes, but the existing ones were left unchanged even under the Biden Administration, and exacerbated with new tariffs and other protectionist measures.

2. With Trump's second term, the world faced a renewed wave of protectionism and anti-globalization backlash. President Trump has vowed to impose higher tariffs and stricter import restrictions to reduce reliance on China and to protect and develop industries in the US. Upon assuming office in January 2025, he announced tariffs of 20 percent on China, 25 percent on Canada and Mexico, and 25 percent on steel, aluminum, and automobile imports. On April 2, 2025, the Trump administration officially unveiled a reciprocal tariff policy, signaling a shift toward broader and more aggressive protectionism. In response, China has intensified its retaliatory stance, announcing a 34 precent tariff on selected U.S. imports—a sharp escalation from its earlier, more restrained reactions.[2] The U.S. responded on April 8th by imposing an extra 50 percent tariff on all imports from China, bringing the total cumulative tariff increase on Chinese goods to 104 percentage points. On April 9, China countered by increasing its tariff on U.S. goods to 84 percent. President Trump responded by announcing

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[2] In response to the two rounds of 10 percent U.S. tariff hikes in February and March 2025, China imposed tariffs of 10–15 percent on U.S. coal, LNG, crude oil, agricultural machinery, selected agricultural and food products, and certain automobiles. These measures raised China's average tariff rate on U.S. imports by just 2.5 percentage points in total.

a further 41 percentage point increase in tariff rate on China to 145 precent.[3] On April 11, China increased its retaliatory tariffs on U.S. imports to 125 percent. This sequence of tit-for-tat measures reflects rapidly rising tensions and underscores the growing risk of a full-scale U.S.-China trade war.

3. **This note presents a model-based analysis of the potential impact of tariff policies under Trump's second administration.** It employs a multiregional, intertemporal dynamic general equilibrium model of the world economy to simulate different scenarios for the Trump 2.0 trade war. The modeling exercise attempts to answer the following questions: What are the macroeconomic impacts of the Trump 2.0 tariffs on the Chinese economy? What are the effects of China's retaliatory tariffs against the U.S.? How would fiscal stimulus by the Chinese authorities help mitigate the impacts of trade war? The simulation results suggest that Trump's protectionist trade policies would impose substantial economic costs on the U.S., China, and the global economy. They also highlight the importance of exchange rate flexibility as a shock absorber and the role of expansionary fiscal policies as a stabilization tool for China to mitigate the tariff headwinds.

II. Model

4. **The model employed in this study is a version of a multi-country dynamic general equilibrium model for the world economy, inspired by the new open economy macroeconomics literature.** It combines the long-run properties of neoclassical models with short-run dynamics arising from nominal rigidities à la new Keynesian macroeconomics. The structure of the model closely follows the global integrated monetary and fiscal model (GIMF) developed by the International Monetary Fund (IMF) (Kumhof *et al.* (2010); Anderson *et al.* (2013)). Agents in the model are forward-looking, endowed with perfect foresight and subject to dynamic budget constraints. The model features overlapping generations with agents having finite economic lifetime. This leads to the non-Ricardian feature of the model and makes it suitable for fiscal policy analysis. Countries and regions in the model are linked through trade and financial markets. Nominal price and wage stickiness, as well as real frictions in investment, are incorporated to generate more realistic adjustment dynamics. The presence of nominal price and wage rigidity allows monetary policy to play a key role. Unlike the GIMF, our model is deterministic, excluding stochastic shocks or other uncertainties. The model is set at an annual frequency and calibrated to the world economy of 2023 using macro, trade and production data.[4]

5. **The world economy in the model is segmented into three economic blocs: the US, China, and the rest of the world (ROW).** There are four agents in each region, namely, households, unions, firms, and government. Households have finite lives, facing a constant probability of survival, as in the perpetual youth model consistent with Blanchard (1985) and Yaari (1965). Households consume a basket of goods and services and exhibit habit persistence in their consumption. The model distinguishes two types of households: forward looking ones and liquidity-constrained ones. The former own a portfolio of domestic firms. They also hold two types of nominal bonds: domestic bonds issued by the domestic government denominated in domestic currency, and international bonds issued by the U.S. and denominated in U.S. dollars. International bonds are traded only bilaterally with the U.S.

[3] At the same time, Trump announced an immediate 90-day pause, during which all countries—except China—will have their reciprocal tariff rates temporarily set to the minimum 10 percent.

[4] Detailed specifications of the model are described in Appendix A and key model parameters are reported in Appendix B.

and issued in zero net supply worldwide. The liquidity-constrained households do not have access to domestic or international capital markets. They finance their consumption exclusively with current disposable labor and transfer incomes.

6. The production sector features a continuum of firms that produce differentiated varieties of products. Similarly, each economic bloc features a continuum of unions that purchase labor services from households and supply labor to firms.[5] These unions act as monopolistic suppliers of differentiated labor inputs to domestic firms and face nominal rigidities in wage-setting. They set nominal wages according to constant elasticity downward-sloping demand schedules and quadratic costs of wage adjustment as in Rotemberg (1982). Production activity is characterized by monopolistic competition. Firms set the nominal prices of their products in domestic and export markets to maximize the present discounted value of profits. Similar to wage setting, price changes are subject to adjustment costs, which give rise to nominal price rigidities. Firms' investment is subject to adjustment costs, which allow for the variation in Tobin's *q* and generate plausible investment dynamics.

7. Firms are assumed to follow dominant currency pricing (DCP) when setting prices in the export market. International trade is modeled using a nested Armington structure. Domestic absorption is divided between domestic goods and aggregate imports, with aggregate imports further allocated across sourcing countries, determining bilateral trade flows. Demand for domestic and imported goods is expressed as a composite good defined by the Dixit-Stiglitz aggregator over domestic and imported varieties. Firms set export prices in terms of the U.S. dollar, i.e., traded goods are invoiced in a dominant currency (Gopinath and Itskhoki, 2022). This specification leads to an asymmetric exchange rate pass-through to the import and export prices of non-U.S. regions. Drawing on empirical evidence from the 2018-19 U.S.-China trade war (Cavallo *et al*. (2021); Fajgelbaum and Khandelwal (2022)),[6] we assume that import tariffs are excluded in the price-setting equation of exporters, i.e., any changes in tariffs are fully passed through to consumers.

8. Governments in the model are characterized by their fiscal and monetary policies. Governments collect taxes and issue debt to finance their budget deficits. There are five types of tax in the model: labor income tax, capital income tax, sales tax, import tariff, and lump-sum tax on households. Government consumption and investment are exogenous and the lump-sum tax on households is endogenously adjusted to achieve a target path for the desired government debt-to-GDP ratio. The monetary policy rule in the model follows a Henderson-McKibbin-Taylor rule in which the nominal interest rate depends on the lagged nominal interest rate, the inflation gap and the output growth gap.

III. Impacts of Trade War

9. We model the implications of the Trump 2.0 tariffs and China's retaliatory measures through three scenarios. The first scenario—*Trump tariffs scenario*—simulates the effects of all tariff measures implemented by President Trump in his second term up to the April 2 reciprocal tariff announcement. Goldman Sachs (2025) estimates that the weighted

[5] The introduction of unions is for model simplification, as aggregation across generations would be difficult if nominal rigidities were faced by households rather than unions.

[6] Based on U.S.-China trade and price data from 2018 to 2020, Cavallo et al (2021) found that a 10 percent tariff was associated with a 0.6 percent decrease in ex-tariff price and a 9.4 percent increase in the overall price paid by the importer in the first year in the U.S. market. In contrast, they found a much lower exchange rate pass-through, with a 10 percent depreciation of the U.S. dollar leading to an approximately 2.18 percent increase in import prices.

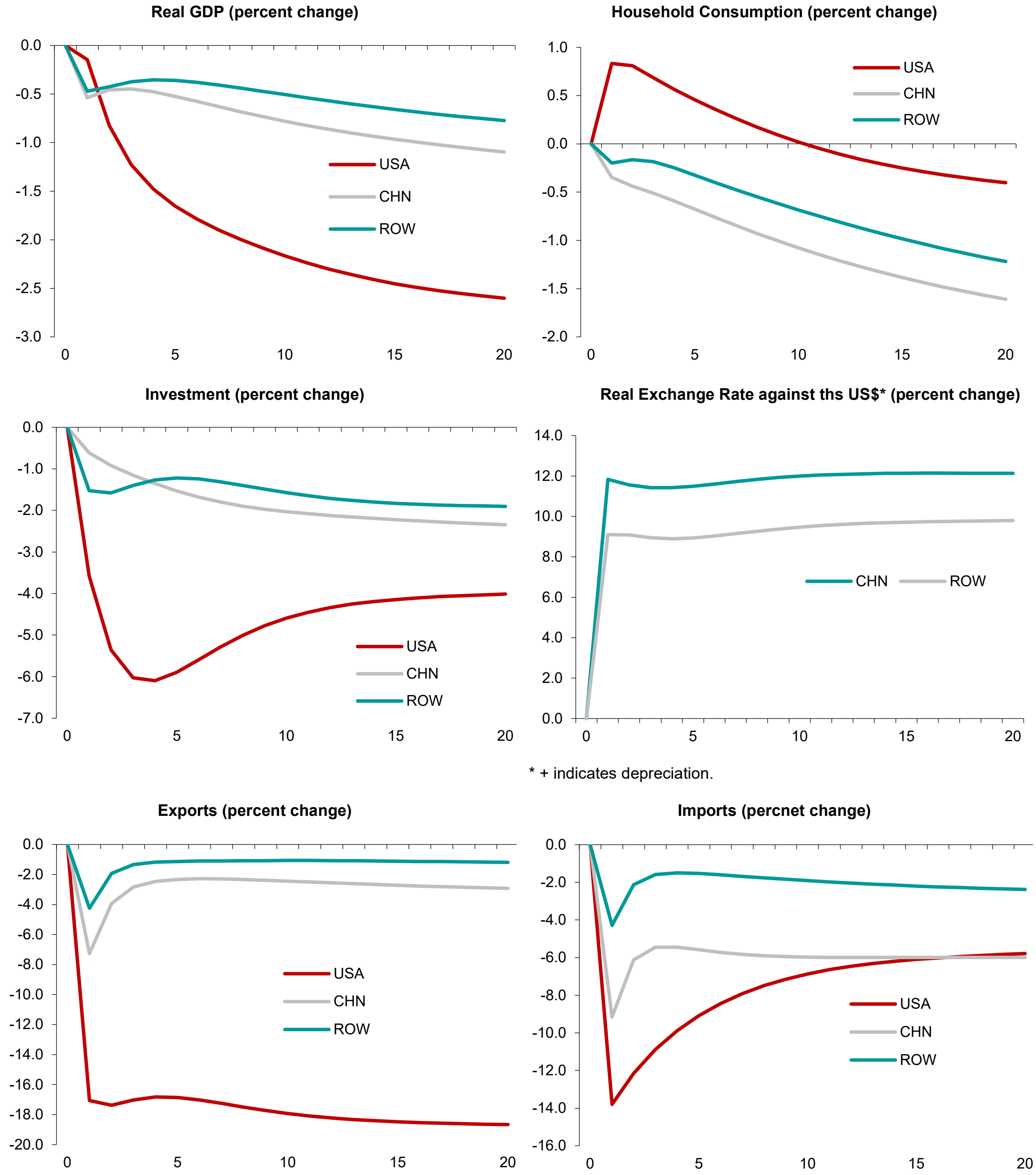
average tariff rate under the U.S. reciprocal tariffs is 18.3 percent. After accounting for product exclusions—such as goods already subject to, or expected to be subject to, sectoral tariffs—the effective rate of reciprocal tariffs is reduced to 12.6 percent, comprising 26.3 percent for China and 10.5 percent for ROW. Incorporating earlier tariffs imposed on China, Canada, and Mexico, as well as the tariffs already applied to steel, aluminum, and autos, this scenario implies tariff increases of 47.5 and 14.3 percentage points on U.S. merchandise imports from China and the ROW, respectively. The second scenario, labeled "China retaliation," builds on the first by incorporating China's countermeasures. In this scenario, China imposes a retaliatory tariff of 36.5 percent on its merchandise imports from the U.S., reflecting the cumulative retaliatory tariffs enacted by China prior to April 5. The third scenario—escalated trade war scenario—extends the second scenario by including additional rounds of retaliatory tariffs exchanged between the U.S. and China between April 8 and 11. This includes a 91 percent increase in tariffs on both sides, resulting a total tariff increase of 145 percent by the U.S. on Chinese goods and 125 percent increase by China on U.S. goods. In all scenarios, tariff increases are assumed to be permanent.

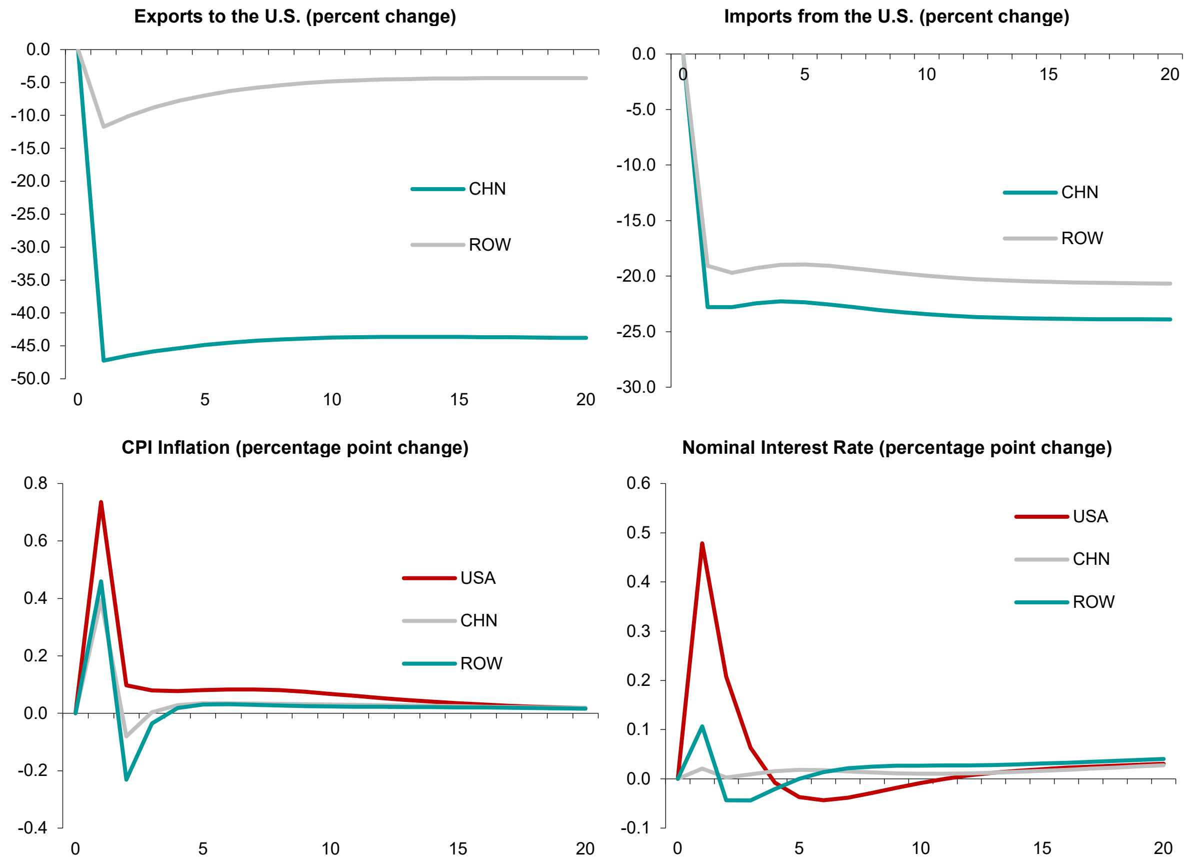
10. The Trump tariffs lead to output losses and temporary inflationary forces in the U.S. Compared to the baseline, U.S. real GDP declines by 0.15 to 1.2 percent in the first three years following the imposition of higher tariffs in the Trump tariffs scenario (Figure 1 and Appendix C). In the long run, there is a permanent decrease in the level of real GDP of 2.9 percent. The tariff hike triggers a one-off rise in domestic prices in the first year, pushing up the Consumer Price Index (CPI) inflation by 0.7 percentage points. Higher inflation prompts an increase in the nominal interest rate through rule-based monetary policy, creating a disinflationary effect in subsequent years. Over time, the inflationary impact of the tariff diminishes, with inflation returning to its target level in the long run.

11. Lower exports and investment drive the contraction of the U.S. real GDP. Higher tariffs weaken import demand and raise the U.S. domestic prices relative to foreign prices, leading to a real appreciation of the U.S. dollar. As tariff hikes immediately raise import prices, U.S. imports decline by 13.8 percent in the initial years. Over time, with the effects of currency appreciation passing through to import prices, the decline in U.S. imports moderates to 5 to 6 percent. The real appreciation of the U.S. dollar dampens the U.S. exports, which fall by 17 percent in the initial five years and by 20 percent in the long run. The declines in exports, combined with a stronger U.S. dollar, reduce the profits earned by the U.S. firms from overseas markets. Moreover, higher costs for imported intermediate goods further erode their overall profitability. The weaker profit outlook depresses private investment, leading to a decline of around 5.5 percent in the first five years. As returns on capital gradually recover alongside slower capital accumulation, the investment contraction moderates over the medium term, stabilizing at a 3.9 percent decline in the long run. Meanwhile, additional tariff revenue—estimated at 1.4 percent of U.S. GDP—is partially redistributed to households through lump-sum transfers. This boosts private consumption in the first decade, partly offsetting the negative effects of declining exports and investment.

12. China and ROW also experience contractions in export and real GDP. The tariff hike affects U.S. trade partners through trade and exchange rate linkages. In the first year following the tariff increase, exports of goods to the U.S. decline by 47.2 percent for China and 11.7 percent for ROW, resulting in an overall export contraction of 7.3 percent and 4.2 percent, respectively. With the effects of their currency depreciation unfolding, the decline in exports gradually eases over time. Due to the dollar pricing mechanism in the model, imports of China and ROW decline sharply in the first year. While their imports from each other progressively recover, imports from the U.S. remain persistently lower, stabilizing at declines of 25 percent and 22 percent, respectively. Alongside export contraction, both private consumption and investment decline in China and ROW compared to the baseline. Overall, real GDP contracts by around 0.5 percent in China and ROW in the first year following the tariff increase. Inflation in both China and ROW increases as well in the first year following the rises in U.S. tariffs, mainly driven by the depreciation of their currencies. However, it declines in the second and third years as the deflationary pressures from weaker growth dominate.

Figure 1. Macroeconomic Impacts under Trump Tariffs Scenario





Source: Model simulations

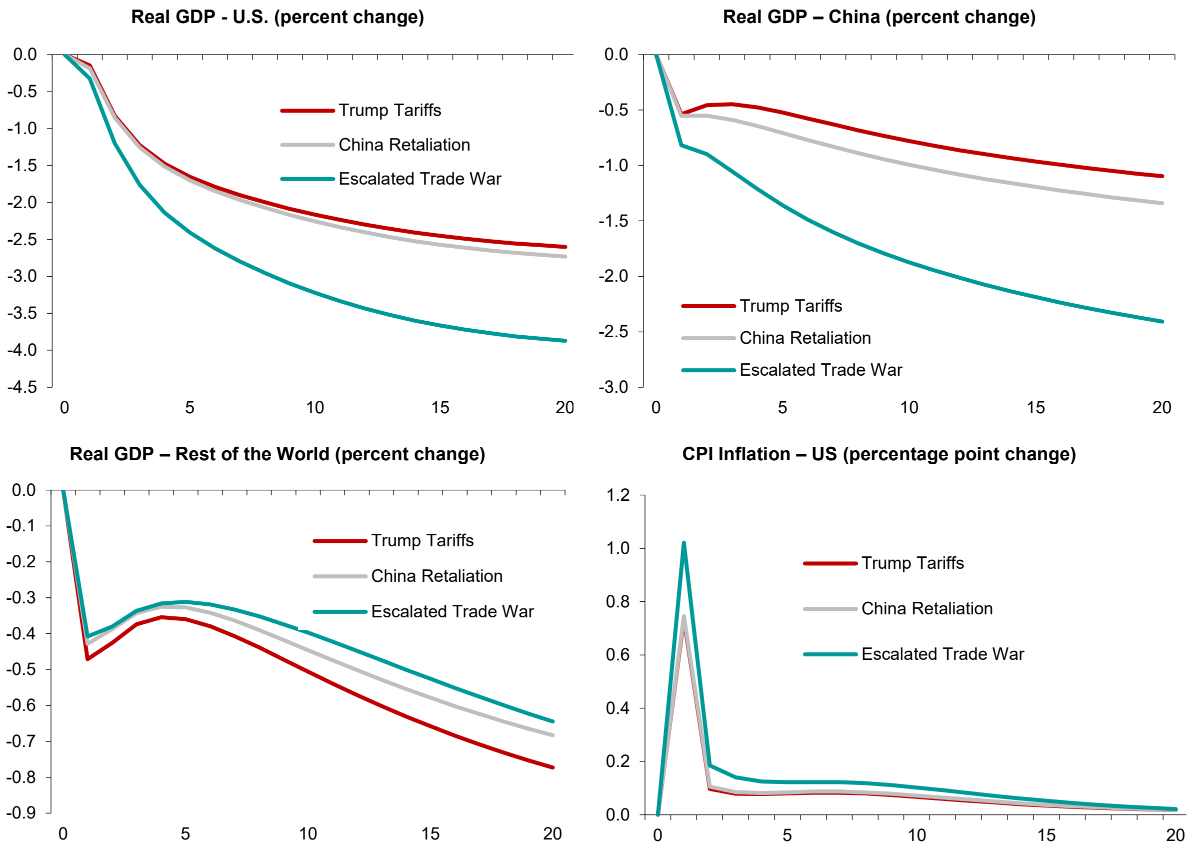
13. **In relative terms, the long-term losses in real GDP for China and the ROW are smaller than those projected for the U.S.** The losses in real GDP in China and ROW narrow slightly after the first year, but gradually widen again, reaching long-term declines of 1.8 percent for China and 1 percent for ROW. Although China faces significantly higher additional tariffs under the Trump 2.0 measures, the simulation results suggest that its near-term economic impact is comparable to that of ROW, reflecting China's lower dependence on trade with the U.S. This implies that economies with more diversified trade structures may be better positioned to absorb the negative spillovers from trade disruptions. Although the U.S. is projected to incur larger relative GDP losses in the long run, the combined economic size of China and the ROW—approximately three times that of the U.S.—means that the absolute long-term GDP losses in these economies are greater. The simulation results indicate that for every one dollar of long-term real GDP loss in the U.S., there is a corresponding loss of approximately 1.14 dollars in the rest of the world (i.e., China plus ROW).

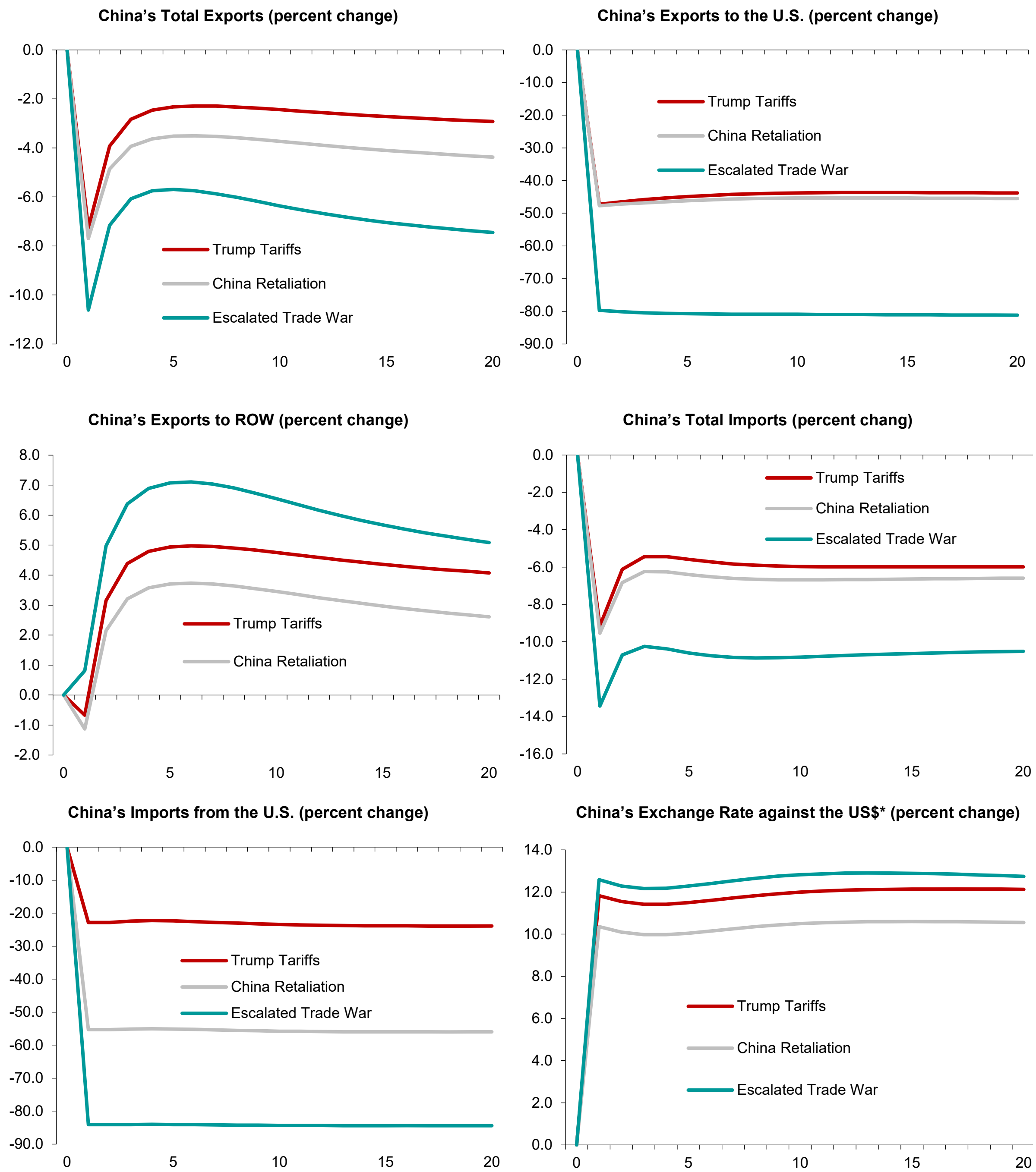
14. **China's tariff retaliation results in additional GDP losses for both the U.S and China, while ROW experiences slight benefits.** Given that exports to China account for only 0.5 percent of U.S. GDP, it is unsurprising that a 36.5 percent tariff imposed by China on the U.S. has only a minor impact on the U.S. Compared to the Trump tariffs scenario, U.S. GDP losses increase by just 0.04 percentage points in the initially years and 0.1 percentage points in the long run (Figure 2 and Appendix C). However, China's tariff retaliation has a more significant negative impact on its own economy, leading to additional output losses of approximately 0.1 percentage points in the short term and 0.3 percentage points in the long

run. With retaliatory tariffs in place, the decline in China's imports from the U.S. escalates from 23 to 25 percent in the Trump tariffs scenario to 55 to 57 percent. While China's exports to the U.S. remain largely unaffected, its exports to ROW increase less, resulting in a larger overall decline in total exports. ROW gains slightly from China's retaliation against the U.S., with GDP losses narrowing by 0.07 percentage points in the long run. This reflects trade diversion effects, as ROW exporters gain market share in both China and the U.S. at the expense of their bilateral trade.

15. **An escalation in tariff retaliation delivers a significant blow to both the U.S. and China, exacerbating global economic losses**. Under the escalated trade war scenario, U.S. GDP losses increase from an average of 0.8 percent to 1.1 percent in the first three years and from 3.0 percent to 4.1 percent in the long run. Meanwhile, the increase in U.S. CPI inflation in the first year rises from 0.75 to 1.0 percentage points (Figure 2). For China, the impact is more severe. Its GDP losses increase by roughly 65 percent relative to the China retaliation scenario, reaching 0.92 percent in the first three years and 3.0 percent in the long run. The additional retaliatory tariff hikes on both sides triggers a sharp contraction in the U.S.-China bilateral trade, with Chinese exports to the U.S. plunging by 80 percent in the first year. As the real depreciation of renminbi (RMB) against the U.S. dollar surges to 12.6 percent, China's exports to ROW increase, partially offsetting the losses in the U.S. market. As a result, China's total exports shrink by 10.6 percent in the first year. Chinese imports from the U.S. also decline by 84 percent in the first year, signaling a significant decoupling of the U.S.–China trade relationship.

Figure 2. Macroeconomic Impacts under the Three Scenarios





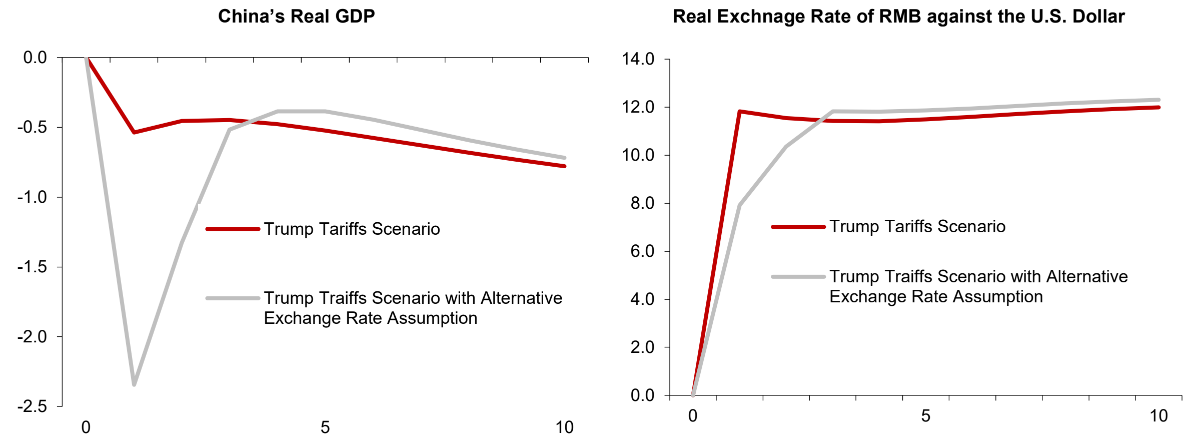
* + indicates depreciation

Source: Model simulations

IV. Possible Policy Responses by China

16. Exchange rate flexibility would play a crucial role in helping China mitigate the economic shocks, should the U.S. implement higher tariffs under Trump's trade policies. The simulation scenarios in the previous section indicate that RMB undergoes a significant real depreciation following the implementation of these tariffs. A weaker RMB moderates import demand and enhances export competitiveness, thereby partly offsetting the adverse impact of higher tariffs on Chinese goods. Because of price rigidities in domestic goods and factor markets, nominal exchange rate changes are often the primary channel to achieve real exchange rate adjustment. A less flexible nominal exchange rate system could hinder this adjustment process, resulting in higher short-term economic costs for China. To assess the implications of reduced exchange rate flexibility, we conduct a separate simulation for the base-case tariff scenario, assuming an alternative adjustment mechanism where capital controls prevent full adherence to the interest rate parity condition, causing RMB to depreciate only partially following the U.S. tariff hikes. Under this alternative assumption, the real exchange rate of RMB depreciates against the U.S. dollar by just 7.9 percent against the U.S. dollar in the first year and 10.4 percent in the second year, compared to the 11.8 percent and 11.6 percent depreciation respectively under the original assumption of more flexible nominal exchange rate. As a result of the smaller depreciation, China's real GDP declines by 2.3 percent in the first year and 1.3 percent in the second year, significantly exceeding the economic losses observed under the original assumption.

Figure 3. Macroeconomic Impacts of the Trump Tariffs under Alternative Exchange Rate Assumption (percent change from the baseline)

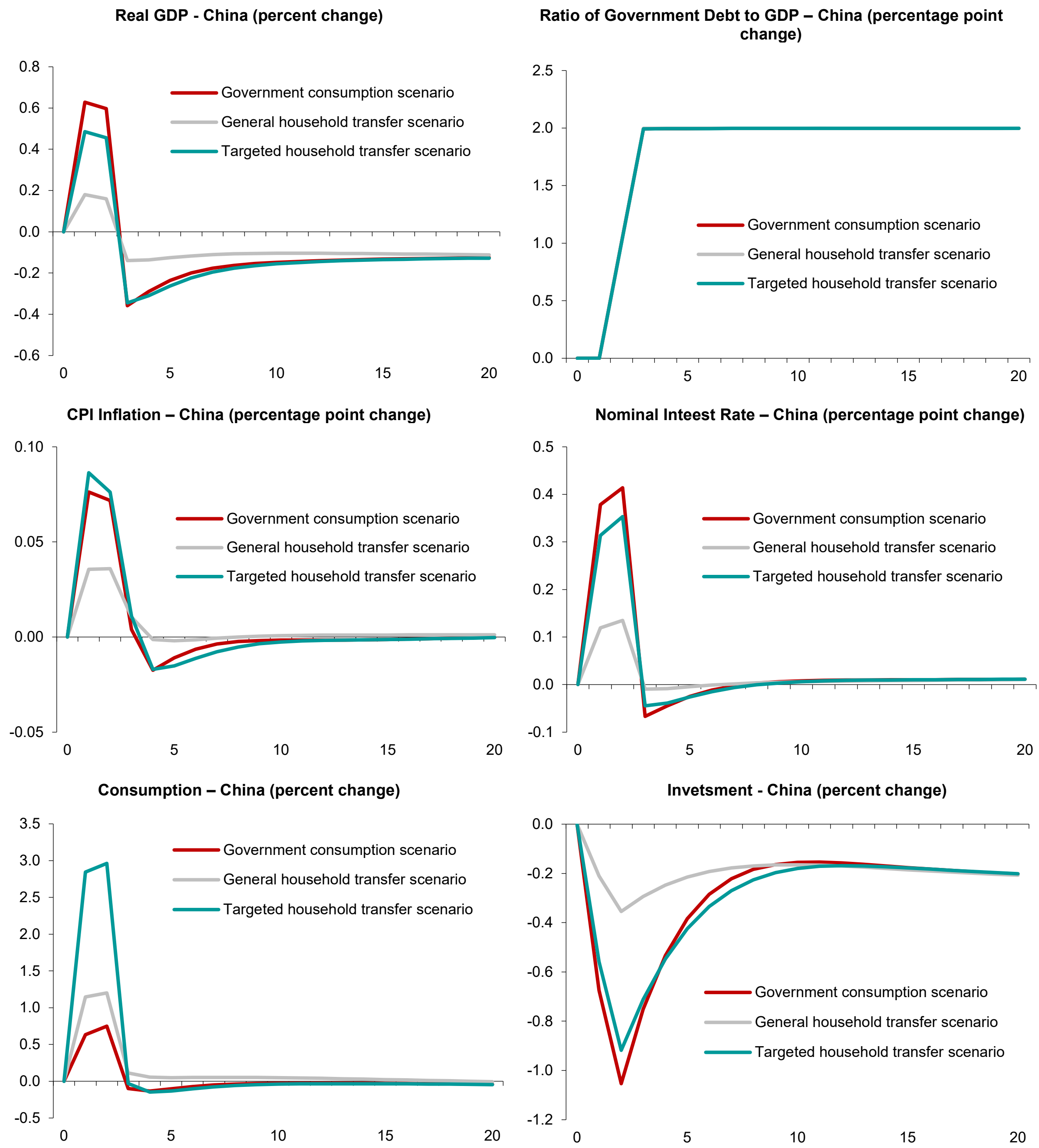


Source: Model simulations

17. Fiscal easing is expected to serve as a key policy tool to counter the headwinds from higher tariffs. In response to the intensified trade tensions under the Trump 2.0 tariffs, China has ramped up fiscal stimulus to cushion the economic impact and stabilize GDP growth. During the recent National People's Congress, the Chinese government announced a series of fiscal stimulus initiatives aimed at supporting the economy amidst external challenges. China set a higher budget deficit target for 2025 at 4 percent of GDP—the highest in recent decades. Quotas for both local and central government special bond net issuances have been raised to fund investment and consumption-supporting initiatives, including consumer goods trade-in programs, equipment upgrades, and strategic investment projects. To assess the impact of expansionary fiscal policies, we simulate three fiscal stimulus scenarios, each assuming a 1 percent of GDP increase in government spending over a two-year period. The *government consumption scenario* assumes the additional spending is allocated to public sector consumption, the *general household transfer scenario* distributes the fund as a lump-sum transfer to all households, while the *targeted household transfer scenario* directs fiscal transfers only to liquidity-constrained households in the model.

18. A temporary 1 percent-of-GDP increase in government consumption boosts Chinese GDP by 0.6 percent during the period of fiscal easing. With the fiscal expansion deployed for two years, real GDP rises during the period of fiscal stimulus, driven by the increases in both public and private consumption (Figure 4). Increased fiscal expenditure leads to more employment and higher wages, thereby boosting household consumption. However, during the stimulus period, China's investment declines by approximately 1 percent, reflecting the crowding-out effect caused by rising interest rates. The 0.6 percent increase in real GDP during the period of fiscal expansion suggests a fiscal multiplier of similar magnitude. After the stimulus, real GDP declines by around 0.3 percent initially, with a long-term GDP loss remaining around 0.1 percent, as the higher permanent government debt raises interest rates and reduces capital stock in the long run. This result highlights the fact that fiscal expansion, while effective as a short-term stimulus, is insufficient to offset the long-term output and welfare losses resulting from tariffs.[7]

Figure 4. Macroeconomic Impacts of China's Fiscal Stimulus



Source: Model simulations

[7] The model underestimates the positive impact of government spending on economic growth as it assumes such spending is non-productive and non-utility- generating. Incorporating public investment and public capital in the model would provide a more accurate assessment of the long-term growth effects of government spending.

19. Compared with increasing government consumption, providing direct transfers to households results in slower economic growth but greater gains in household consumption. Government transfer directly raises household income, but not all of the additional income translates into an expansion in aggregate demand. Forward-looking households—those with access to financial markets—save a portion of their increased income for future consumption, leading to some leakage in the fiscal stimulus impact. With the model assumption that 35 percent of households in China are liquidity-constrained and the remaining 65 percent are forward-looking, the effects of government transfers are mixed. When transfers are distributed across both household types, real GDP rises only marginally by 0.2 percent over the two years of fiscal easing. Household consumption expands by around 0.7 percent, as increased income boosts spending, albeit with some savings leakage. By contrast, when transfers are specifically targeted to lower-income, liquidity-constrained households, who spend their entire current income, the immediate impact on economic growth is significantly stronger. In this scenario, real GDP increases by 0.5 percent, while household consumption surges by 3 percent, demonstrating greater direct benefits to household well-being. As in the previous scenario, investment declines in both transfer scenarios due to higher interest rates and associated crowding-out effects.

V. Conclusion

20. The simulation results indicate substantial economic costs associated with a trade war under Trump 2.0, in which all the countries involved would experience negative impacts. This note has examined the implications of Trump 2.0 tariffs and possible policy response by China to mitigate their adverse effects. Specifically, using a calibrated global dynamic general equilibrium model, we simulate scenarios involving U.S. tariff hikes, China's tariff retaliation, and China's fiscal expansion. Simulation results of these scenarios suggest that tariff policies adopted by President Trump since his second inauguration would cause a sharp slowdown in economic growth and higher domestic prices in the U.S. Meanwhile, China would face output losses and significant declines in trade, but currency depreciation and fiscal stimulus help alleviate some of these negative impacts. The rest of the world would also incur important economic losses. Overall, Trump's protectionist trade agenda —particularly if it escalates into a full-scale trade war—would impose substantial economic costs on the U.S., China and the global economy.

21. In response to Trump 2.0 tariffs, China can employ an array of policy measures, including exchange rate flexibility, accommodative monetary policy, fiscal stimulus, and structural reform. In the short term, a combination of flexible exchange rate and targeted fiscal stimulus can cushion the economy from immediate disruptions. Allowing RMB to adjust freely in a market-driven environment will help sustain export competitiveness amidst turbulent global trade conditions. While expanding government consumption can lift short-term growth more effectively, directing fiscal transfers specifically toward lower-income households can simultaneously achieve economic expansion and promote greater social inclusion. However, macro stimulus policies cannot resolve the long-term adverse effects associated with Trump tariffs. Over the medium to long term, China needs to pivot toward strengthening domestic demand drivers and enhancing industrial capabilities to reduce vulnerability to external shocks. Accelerating trade diversification, expanding economic ties with emerging markets and reinforcing supply chain resilience will also be crucial in navigating an increasingly protectionist global environment. China should reaffirm its commitment to the rules-based multilateral trading system centered on the World Trade Organization (WTO). Demonstrating leadership in upholding global trade norms and promoting openness would help safeguard international trade flows and mitigate the risk of global economic fragmentation.

22. Some important caveats of this study are worth noting. First, the model is highly aggregated and does not capture industry-level heterogeneity and global value chain (GVC) linkages, which are critical to understanding how tariffs propagate through complex production networks. Incorporating multi-sector modeling of industrial chains could better reflect the dynamic nature of global trade structures and capture the tariff-induced reconfiguration of GVC. Second, the model assumes complete pass-through of tariffs to consumer prices. Future work could incorporate richer microfoundations for price-setting behavior to enhance the analysis into the price effects and incidence of tariffs. Third, the current framework is deterministic and excludes policy uncertainty and economic volatility, thereby likely underestimating the impacts of an uncertain trade environment on global economy. Incorporating stochastic shocks would enhance the model's capacity to reflect real-world complexities. Fourth, the model assumes constant death rate excludes bequests and precautionary savings, which may lead to an overestimation of households' short-term consumption responses to shocks. Incorporating age-specific mortality rates and intergenerational transfers would enhance the model's ability to capture the dynamics of consumption behavior. Finally, the model does not explicitly incorporate the linkages through global financial markets and the mechanisms of co-movements in asset prices. As these are important transmission channels through which a trade war may further weaken the global economy, our results likely underestimate the impacts of the Trump 2.0 tariffs. These limitations point to the directions for further research.

References

Anderson, D., B. L. Hunt, M. Kortelainen, M. Kumhof, D. Laxton, D. V. Muir, S. Mursula, and S. Snudden. 2013. "Getting to Know GIMF: The Simulation Properties of the Global Integrated Monetary and Fiscal Model," IMF Working Paper Series, 2013/055, International Monetary Fund

Blanchard, O. 1985. “Debt, Deficits, and Finite Horizons”, *Journal of Political Economy*, Vol. 93, pp. 223-247.

Cavallo, A., G. Gopinath, B Neiman and J. Tang. 2021. "Tariff Pass-Through at the Border and at the Store: Evidence from US Trade Policy." *American Economic Review: Insights* 3 (1): 19–34

Fajgelbaum, P. and A. K. Khandelwal. 2022. “The Economic Impacts of the US–China Trade War.” *Annual Review of Economics*, Vol. 14, pp. 205-228

Goldman Sachs. 2025. “USA: President Trump Announces ‘Reciprocal’ Tariffs.” Economics Research, April 2, 2025

Gopinath, G. and O. Itskhoki. 2022. “Dominant Currency Paradigm: A Review.” In *Handbook of International Economics,* ed. By G. Gopinath, E. Helpman, K. Rogoff, Elsevier, Volume 6, Chapter 2. Pages 45-90

Kumhof, M. and D. Laxton. 2007. “A Party without a Hangover? On the Effects of U.S. Fiscal Deficits.” IMF Working Paper Series, 2007/202, International Monetary Fund

Kumhof, M., D. Laxton, D. Muir and S. Mursula. 2010. “The Global Integrated Monetary Fiscal Model (GIMF) - Theoretical Structure”, IMF Working Paper Series, 2010/34, International Monetary Fund

Rotemberg, J. 1982. “Sticky Prices in the United States.” *Journal of Political Economy* 90(6):1187–1211.

Yaari, M. E. 1965. “Uncertain Lifetime, Life Insurance, and the Theory of the Consumer.” *Review of Economic Studies* 32(2) 137–150*e*

Appendix A: Model Specification

(1) Basic Setup

The model economy consists of three countries (regional blocs) which are indexed by r or s. Each region is populated by overlapping generations households with finite planning horizons as in Blanchard (1985). Households are indexed by age a. In each region there are a continuum of firms and a continuum of unions, which are indexed by $n \in[0,1]$ and $u \in[0,1]$, respectively. t is time index in the model.

The model exhibits an exogenous trend in labor productivity (at rate g-1). For a clear separation of endogenous dynamic from exogenous trend, we present all variables in detrended form through division by g. In each region the CPI is the numéraire of the economy, and all national prices are expressed in terms of domestic consumption units.

In the model description below, subscripts denote the set indexes. The time index, t, is omitted when all variables in an equation are with same time index. Country subscript, r, is also omitted where doing so does not lead to confusion.

(2) Demand and Trade

Domestic demand of each region comprises consumption and investment made by households, government consumption and intermediate demand by firms. A composite good XA is used for final and intermediate demand. The composite good is a constant elasticity of substitution (CES) aggregation of domestic goods, XD and aggregate imports, XM.

$$XA = \left((\alpha^m)^{1/\sigma^m}(XM)^{(\sigma^m-1)/\sigma^m} + \left(\alpha^d\right)^{1/\sigma^m}(XD)^{(\sigma^m-1)/\sigma^m}\right)^{\sigma^m/(\sigma^m-1)} \quad (1)$$

where σ^m is the substitution elasticity between imports and domestic goods. The Armington share parameters α^d and α^m reflect the preference of agents biasing for home or imported products. The sales price for composite goods, PA, is tax-included dual price index defined over the prices of imports and domestic goods:

$$PA = (1+\tau^s)\left(\alpha^m(PM)^{1-\sigma^m} + \alpha^m(PD)^{1-\sigma^m}\right)^{1/(1-\sigma^m)} \quad (2)$$

where τ^s is the sales tax rate.

The demand functions generated from (1) and (2) are:

$$\frac{XD}{XA} = \alpha^d\left(\frac{PA}{(1+\tau^s)PD}\right)^{\sigma^m} \quad (3)$$

$$\frac{XM}{XA} = \alpha^m\left(\frac{PA}{(1+\tau^s)PM}\right)^{\sigma^m} \quad (4)$$

Aggregate import demand XA is a CES aggregation of imports from each region, i.e.:

$$XM_s = \left(\sum_{r\in R}(\alpha_{rs})^{1/\sigma_s^w}(WTF_{rs})^{(\sigma_s^w-1)/\sigma_s^w}\right)^{\sigma_s^w/(\sigma_s^w-1)} \quad (5)$$

where WTF_{rs} represents the quantity of good produced in region r sold in the market of region s and $\sigma^w$is the second-level Armington elasticity of substitution among imports from different regions. The dual price index of aggregate import, PM_s, is defined over the prices of each import supplier, PE_{rs}:

$$PM_s = \left(\sum_{r\in R} \alpha_{rs} \left(\frac{\varepsilon_s}{\varepsilon_r}(1+\tau_{rs})PE_{rs}\right)^{1-\sigma_s^W}\right)^{1/(1-\sigma_s^W)} \tag{6}$$

where τ_{rs} is import tariff rate and ε_r is the CPI-based real exchange rate, expressed as the price of one unit US consumption in terms of domestic consumption.

The demand function generated from (5) and (6) is:

$$\frac{WTF_{rs}}{XM_s} = \alpha_{rs} \left(\frac{\varepsilon_r}{\varepsilon_s} \frac{PM_s}{(1+\tau_{rs})PE_{rs}}\right)^{\sigma_s^W} \tag{7}$$

Each firm is assumed to produce differentiated product, and each variety is an equally imperfect substitute for all others across all varieties. The aggregate demand for domestic goods, XD, and aggregate exports, WTF, are further decomposed into demand for variety provided by each firm, following the standard Dixit-Stiglitz framework:

$$\frac{xd_{n,s}^n}{XD_s} = \left(\frac{PD_s}{p_{n,s}}\right)^{\sigma_s^f} \tag{8}$$

$$\frac{wtf_{n,rs}^n}{WTF_{rs}} = \left(\frac{PE_{rs}}{p_{n,r}}\right)^{\sigma_s^f} \tag{9}$$

where σ^f is the substitution elasticity among varieties of each firm and $p_{n,s}$ represents the price of variety n in region s. $xd_{n,s}^n$ and $wtf_{n,rs}^n$ represent the quantity of domestic demands for variety produced by firm n in region s, and the demand for variety produced by firm n in region r and exported to region s, respectively.

(3) Firms

Production technology of firms is modeled using nested CES functions. At the top level, the output is split into intermediate input and a bundle of capital and labor input. At the second level, the bundle of capital and labor inputs is disaggregated into capital and aggregate labor. Finally, at the bottom level, aggregate labor is decomposed into the differentiated labor input by each union.

Each firm produces a different variety and sets the price of its products in face of isoelastic demand functions in both domestic and foreign markets, as shown in (8) and (9). There is adjustment cost for price setting, which, expressed as a proportion of total sales, is assumed to be given by the following functions:

$$\Gamma_{n,r,t}^{pd} = \frac{\varphi_r^p}{2}\left(\pi_{r,t} \frac{pd_{n,r,t}/pd_{n,r,t-1}}{\Pi_{r,t}} - 1\right)^2 \tag{10}$$

$$\Gamma_{n,r,s,t}^{pe} = \frac{\varphi_s^p}{2}\left(\pi_{r,t} \frac{\varepsilon_{t-1,r}}{\varepsilon_{t,r}} \frac{pe_{n,r,s,t}/pe_{n,r,s,t-1}}{\Pi_{s,t}} - 1\right)^2 \tag{11}$$

where π is domestic CPI inflation rate. The price adjustment cost functions indicate that the adjustment cost is related to changes of nominal prices of products relative to the contemporaneous inflation target for the CPI, indexed by Π. (11) indicates that export prices are set in U.S. dollar, i.e. dominant currency pricing.

A firm n is assumed to maximize the discounted value of current and future dividends, div_n:

$$max \sum_{t=0}^{\infty} \prod_{\tau=0}^{t} \frac{g_\tau \pi_{\tau,r}}{1+i_{\tau,r}} div_{n,r,t}$$

$$div_{n,r,t} = \left(1-\tau_r^k\right) R_{r,t} K_{n,r,t} - I_{n,r,t}^n + R_{r,t}^g K_{n,r,t}^g \quad (12)$$
$$+(pd_{n,r,t} - PX_{r,t}) xd_{n,r,t} (1 - \Gamma_{n,r,t}^{pd}) + \sum_{s\in R} (pe_{n,r,s,t} - PX_{r,t}) wtf_{n,r,s,t} (1 - \Gamma_{n,r,s,t}^{pe})$$

subject to the CES production technology, the demand functions of (8) and (9), the adjustment costs in price setting of (10) and (11), given marginal cost PX, and the law of motion of capital:

$$K_{n,t+1} g_{t+1} = (1-\delta) K_{n,t} + \Gamma_{n,i,t}^I K_{n,t} \quad (13)$$

where δ is the depreciation rate. Γ_n^I is a function of investment/capital ratio with adjustment costs are zero in the steady state:

$$\Gamma_{n,t}^I = \frac{I_{n,t}}{K_{n,t}} - \frac{\varphi^I}{2}\left(\frac{I_{n,t}}{K_{n,t}} - \frac{I_{t-1}}{K_{t-1}}\right)^2 \quad (14)$$

As shown in (12), the firm's dividends include the after-tax return to its private capital, the return to public capital captured by individual firm, and the profits the firm obtains from selling in domestic market and exports. The optimization problem of firm is to determine its levels of investment, labor and intermediate inputs, and set the nominal prices of its products in domestic and export markets to maximize the discounted present value of its dividends. The resulting first order conditions with respect to I and K are:

$$\frac{1}{q_t} = 1 - \varphi^I \left(\frac{I_{n,t}}{K_{n,t}} - \frac{I_{t-1}}{K_{t-1}}\right) \quad (15)$$

$$(1-\tau_t^k) R_t + q_t\left(1-\delta+\Gamma_{n,t}^I\right) - \frac{I_t}{K_t} - q_{t-1}\frac{1+i_t}{\pi_t} = 0 \quad (16)$$

where q is the shadow price of capital, i.e. the Tobin's Q.

The resulting first order conditions with respect to p_d and p_e are:

$$\left(1-\Gamma_{n,r,t}^{pd}\right)\left(pd_{n,r,t}(1-\sigma_r^f) + PX_{r,t}\sigma_r^f\right) = (pd_{n,r,t} - PX_{r,t})\varphi_r^p\left(\frac{\pi_{n,r,t}^{pd}}{\Pi_{r,t}} - 1\right)\frac{\pi_{n,r,t}^{pd}}{\Pi_{r,t}}$$
$$- \frac{g_{t+1}\pi_{t+1}}{1+i_{t+1}}\frac{XD_{r,t+1}}{XD_{r,t}}(pd_{n,r,t+1} - PX_{r,t+1})\varphi_r^p\left(\frac{\pi_{n,r,t+1}^{pd}}{\Pi_{r,t+1}} - 1\right)\frac{\pi_{n,r,t+1}^{pd}}{\Pi_{r,t+1}} \quad (17)$$

$$\left(1-\Gamma_{n,r,s,t}^{pe}\right)\left(pe_{n,r,s,t}(1-\sigma_s^f) + PX_{r,t}\sigma_s^f\right) = (pe_{n,r,s,t} - PX_{r,t})\varphi_s^p\left(\frac{\pi_{n,r,s,t}^{pe}}{\Pi_{s,t}} - 1\right)\frac{\pi_{n,r,s,t}^{pe}}{\Pi_{s,t}}$$
$$- \frac{g_{t+1}\pi_{t+1}}{1+i_{t+1}}\frac{WTF_{r,s,t+1}}{WTF_{r,s,t}}(pe_{n,r,s,t+1} - PX_{r,t+1})\varphi_s^p\left(\frac{\pi_{n,r,s.t+1}^{pe}}{\Pi_{s,t+1}} - 1\right)\frac{\pi_{n,r,s.t+1}^{pe}}{\Pi_{s,t+1}} \quad (18)$$

where $\pi_{n,r,t}^{pd}$ is the inflation rate of variety n in domestic market and $\pi_{n,r,s,t}^{pe}$ is the inflation rate of variety n produced in country r and sold in country s.

The first order conditions with respect to production inputs lead to the following demand functions and price indices of aggregate inputs:

$$VA = \alpha^v \cdot XP \quad (19)$$

$$XAP = \alpha^n \cdot XP \quad (20)$$

$$PX = \alpha^v PVA + \alpha^n PA \quad (21)$$

$$L = \alpha^l \left[\frac{PVA}{W}\right]^{\sigma^v} VA \quad (22)$$

$$K = \alpha^k \left[\frac{PVA}{R}\right]^{\sigma^v} VA \tag{23}$$

$$PVA = \left[\alpha^l (W)^{1-\sigma^v} + \alpha^k (R)^{1-\sigma^v}\right]^{1/(1-\sigma^v)} \tag{24}$$

where *XP, VA, XAP, L, K* represent output, aggregate primary factor, intermediate input, aggregate labor and capital, respectively, and *PX, PVA, PA, W* and *R* are their corresponding price indices. σ^v is elasticity of substitution between labor and capital.

Firms have the CES aggregator of the differentiated labor varieties provided by unions. As firms are assumed to be identical, the aggregate labor demand, L, can be expressed as:

$$L = \left[\int_0^1 (l_u)^{\frac{\sigma^l - 1}{\sigma^l}} du\right]^{\frac{\sigma^l}{\sigma^l - 1}} \tag{25}$$

where l_u is the labor provided by union u and σ^l is the elasticity of substitution across labor varieties. Cost minimization of firms implies that demand for labor u is a function of the relative wage:

$$\frac{l_u}{L} = \left[\frac{w_u}{W}\right]^{-\sigma^l} \tag{26}$$

where w_u is the wage paid to labor u and the wage index W is defined as:

$$W = \left[\int_0^1 (w_u)^{1-\sigma^l} du\right]^{\frac{1}{1-\sigma^l}} \tag{27}$$

(4) Households

In each period, $m_r(1-\theta)$ individuals are born in country *r* and they face a constant probability of death $(1-\theta)$ after their birth. This implies that the total population in country *r* is m_r. We distinguish between two types of households: forward-looking ones denoted by *FL*, and liquidity-constrained ones denoted by *LC*. For a representative household of generation a, its period utility in time *t*, $u_{a,t}$, is a function of its (detrended) consumption c and labor effort l_h.

$$u_{a,t}(c_{a,t}, l^h_{a,t}) = \frac{1}{1-\sigma}\left[\left(c_{a,t}/(\tilde{c}_{t-1})^v\right)^\eta \left(1 - l^h_{a,t}\right)^{1-\eta}\right]^{1-\sigma} \tag{28}$$

where σ is the inverse elasticity of intertemporal substitution and η is the weight of consumption in utility function. The term $\tilde{c}_{t-1}$ represents past per capita consumption of household *h*'s peers, i.e. *FL* households or *LC* households. v parameterizes the degree of habit persistence. This is the "catching up with the Joneses" type of external habit formation. The lifetime utility of age a household at time *t*, $U_{a,t}$, is the sum of discounted period utility:

$$U_{a,t} = \sum_{\tau=0}^{\infty} (g^{1-\sigma}\beta\theta)^\tau u_{a+\tau,t+\tau} \tag{29}$$

where β is the subjective discount rate, possibly time-variable but converging to a steady state constant in the long run.

The decision problem of forward-looking household is to maximize its lifetime utility (29) subject to following sequences of period budget constraints:

$$\theta\big(B_{a+1,t+1}\pi_{t+1} + \varepsilon_t B^*_{a+1,t+1}\pi^*_{t+1} + V_{t+1}x_{a,t+1}\pi_{t+1}\big)g_{t+1} = (1+i_t)B_{a,t}$$
$$+(1+i^*_t)(1-\zeta_t)\varepsilon_t B^*_{a,t} + (V_{t+1}\pi_{t+1}g_{t+1}\theta + Div_t)x_{a,t} \quad (30)$$
$$+TR^{FL}_{a\ \ t} + (1-\tau_l)w^h_t\varphi_a l^h_{a,t} - c_{a,t} - TT_{a,t}$$

In the above expression, B_a is holdings of domestic government bonds by the representative household at age a, denominated in domestic currency. B^*_a is holdings of international bonds by the representative household at age a, denominated in U.S. dollar. π and π^* are domestic CPI inflation rate and the U.S. inflation rate, respectively. i is domestic nominal interest rate and i^* is the nominal interest rate in the U.S. ζ is the risk premium on the international bonds. V denotes the value of a claim to profits of firms in current and all future periods and x_a is the share of firms owned by the representative household at age a. Div is the total dividends paid by all firms to households. TR^{Fl} represents revenue from unions' profits rebated to forward-looking households in a lump-sum way. TT is the lump-sum net taxes for households. Labor incomes $w^h\varphi_a l^h_a$ are taxed at the rate τ^l. φ_a is the labor productivity of age group a, given by:

$$\varphi_a = \frac{m-\theta\chi}{m-\theta}\chi^a \quad (31)$$

where χ<1 determines the speed of productivity decline of an individual household's labor throughout his lifetime.

The first order conditions of the forward-looking household's optimization problem with respect to B, B^*, C, l and x yield to following arbitrage equations:

$$\frac{\pi_{t+1}}{1+i_{t+1}} = \frac{\pi^*_{t+1}}{(1+i^*_{t+1})(1-\zeta)}\frac{\varepsilon_t}{\varepsilon_{t+1}} \quad (32)$$

$$J_{t+1} = \frac{g_{t+1}C_{a,t+1}}{C_{a,t}} = \left(\frac{(1+i_t)\beta_{t+1}}{\pi_{t+1}}\right)^{1/\gamma}\left(\frac{w^h_{t+1}}{w^h_t}\chi\right)^{(1-\eta)(1-1/\gamma)}\left(\frac{C_t}{C_{t-1}}g_{t+1}\right)^{v\eta(1-1/\gamma)} \quad (33)$$

$$\frac{C_{a,t}}{1\text{-}l^h_{a,t}} = \frac{\eta^{Fl}}{1-\eta^{Fl}}w^h_t\varphi_a \quad (34)$$

$$V_t(1+i_t) = Div_t + V_{t+1}g_{t+1}\pi_{t+1} \quad (35)$$

With some algebraic derivations, the aggregate consumption of all forward-looking households can be expressed as a fraction of the sum of their financial wealth, FW, and human wealth, HW:

$$C^{FL}_t\Theta_t = (1+i_t)(HW_t + FW_t) \quad (36)$$

$$FW_t = B_t + \varepsilon_{t\text{-}1}B^*_t + V_t \quad (37)$$

$$HW_t = HWL_t + HWK_t \quad (38)$$

$$HWL_t(1+i_i) = w^h_t L^{Fl}_t + HWL_{t+1}g_{t+1}\pi_{t+1}\theta\chi \quad (39)$$

$$HWK_t(1+i_i) = TR^{FL}_t + HWK_{t+1}g_{t+1}\pi_{t+1}\theta \quad (40)$$

Θ^{-1} is the marginal propensity to consume out of total wealth. The inverse of the marginal propensity of consumption evolves according to:

$$\Theta_t = \frac{1}{\eta^{Fl}} + \frac{\theta J_{t+1}\pi_{t+1}}{1+i_{t+1}}\Theta_{t+1} \quad (41)$$

where J is defined in (33).

Liquidity-constrained households have no access to capital markets. Their decision problem is purely static, confined to the choices of labor supply. Their budget constraints are:

$$c_{a,t} = (1-\tau^l)w^h_t\varphi_a l^h_{a,t} + TR^{LC}_{a,t} - TT_{a,t} \quad (42)$$

The first order conditions with respect to consumption and labor supply leads to following relationship between aggregate consumption and labor supply:

$$\frac{C_t^{LC}}{m \cdot s^{\mathrm{LC}} - L_t^{LC}} = \frac{\eta^{LC}}{1-\eta^{LC}} w_t^h \tag{43}$$

where s_{LC} is the share of liquidity-constrained agents in total households and L_{LC} is the effective aggregate labor supply of liquidity-constrained households.

(5) Unions

In each there is a continuum of unions which buy labor from households and sell labor to firms. They are perfectly competitive in their input markets and monopolistically competitive in their output market. Each union has power to set the nominal wage of the labor they provide. Similar to the price setting by firms, wage changes are subject to adjustment costs. The adjustment costs function of nominal wage is assumed as follows:

$$\Gamma_{u,t}^{w} = \frac{\varphi^w}{2}\left(\pi_t \frac{w_{u,t}/w_{u,t-1}}{\Pi_t} - 1\right)^2 \tag{44}$$

The decision problem of union is to maximize the present discounted value of nominal wages paid by firms minus nominal wages paid out to households, minus nominal wage inflation adjustment costs, by setting the nominal wage:

$$max \sum_{t=0}^{\infty} \prod_{\tau=0}^{t} \frac{g_\tau \pi_{\tau,r}}{1+i_{\tau,r}} \left(w_{u,\tau}(1\text{-}\Gamma_{\mathrm{u},\tau}^{w}) - w_\tau^h\right) l_{u,\tau} \tag{45}$$

subject to demand function (29). The resulting wage setting equation is:

$$\begin{aligned}\frac{w_t^h \sigma^l}{(1-\tau^w) w_{u,t}} &= (\sigma^l - 1)(1 - \Gamma_{u,t}^w) + \varphi^w \left(\frac{\pi_{u,t}^w}{\Pi_t} - 1\right)\frac{\pi_{h,t}^w}{\Pi_t} \\ &\quad - \frac{g_{t+1}}{1+i_{t+1}} \frac{L_{t+1}}{L_t} \varphi^w \left(\frac{\pi_{h,t+1}^w}{\Pi_{t+1}} - 1\right) \frac{\left(\pi_{h,t+1}^w\right)^2}{\Pi_{t+1}}\end{aligned} \tag{46}$$

where $\pi_{u,t}^w = \pi_t \cdot w_{u,t}/w_{u,t-1}$ is the wage inflation rate.

(6) Government

The government has the following budget constraint:

$$\begin{aligned}B_{s,t+1} g_{t+1} \pi_{t+1} \;&=\; (1 + i_{s,t}) B_{s,t} + G_{s,t}^c - \tau_s^k R_{s,t} K_{s,t} - \tau_s^l W_{s,t} L_{s,t} - TT_{s,t} m_s \\ &-\; \tau_s^s PA_{s,t} XA_{s,t} - \textstyle\sum_r \left(\tau_{rs} PE_{rs,t} WTF_{rs,t}\, \varepsilon_{s,t}/\varepsilon_{r,t}\right)\end{aligned} \tag{47}$$

The central bank in each region is assumed to provide a nominal anchor by employing the following monetary policy rule:

$$i_t = i_{t-1} + \omega_\pi(\pi_{t-1} - \Pi_{t-1}) + \omega_y(\Delta GDP_{t-1} - \Delta GDP_{t-1}^T) \tag{48}$$

where ω_π and ω_y are weight parameters for inflation gap and output growth gap, respectively.

(7) Equilibrium

Equilibrium in the composite good market. The intermediate inputs, household consumption, and other final demands constitute the total demand for the same Armington composite goods.

$$XA = C^{FL} + C^{LC} + G^{C} + I \tag{49}$$

Equilibrium in the factor markets. Labor market clearing conditions in each region can be specified as follows:

$$L = L^{Fl} + L^{LC} \tag{50}$$

The international bond is in zero net supply internationally. Market clearing in the international bond markets requires:

$$0 = \sum_r B^*{}_r \tag{51}$$

Appendix B: Key Model Parameters

	Definition	USA	CHN	ROW
$1/\sigma$	Intertemporal elasticity of substitution	0.33	0.33	0.33
s_{lc}	Share of liquidity-constrained households	0.25	0.35	0.30
θ	Probability of survival	0.90	0.90	0.90
χ	Productivity decline rate by age	0.95	0.95	0.95
v	Habit persistence in consumption	0.40	0.40	0.40
σ^{y}	Elasticity of substitution between capital and labor	0.85	0.85	0.85
σ^{m}	Elasticity of substitution between imports and domestic goods	2.00	2.00	2.00
σ^{m}	Elasticity of substitution between imports and domestic services	1.50	1.50	1.50
σ^{w}	Elasticity of substitution between imports from different countries (goods)	2.25	2.25	2.25
σ^{w}	Elasticity of substitution between imports from different countries (services)	1.50	1.50	1.50
σ^{f}	Elasticity of substitution between goods varieties	7.70	7.70	7.70
σ^{l}	Elasticity of substitution between labor varieties	7.30	7.30	7.30
δ	Depreciation rate of capital	0.06	0.09	0.06
$g-1$	Long-term growth rate of the global economy	0.02	0.02	0.02
φ^{I}	Capital adjustment cost parameter	5.00	5.00	5.00
φ^{p}	Price adjustment cost parameter	40.0	40.0	40.0
φ^{w}	Wage adjustment cost parameter	40.0	40.0	40.0
ω^{π}	Monetary policy weight on inflation gap	0.75	0.75	0.75
ω^{y}	Monetary policy weight on output growth gap	0.50	0.50	0.50

Source: Kumhof and Laxton (2017), and author's assumptions on the basis of related GIMF literature.

Appendix C: Simulation Results of Trade War Scenarios (% change from the baseline)

	Trump Tariffs				China Retaliation				Escalated Trade War			
	Year 1	Year 2	Year 3	Steady State	Year 1	Year 2	Year 3	Steady State	Year 1	Year 2	Year 3	Steady State
Real GDP												
USA	-0.1	-0.8	-1.2	-2.9	-0.2	-0.9	-1.3	-3.0	-0.3	-1.2	-1.8	-4.1
China	-0.5	-0.5	-0.4	-1.4	-0.6	-0.6	-0.6	-1.7	-0.8	-0.9	-1.1	-3.0
Rest of the world	-0.5	-0.4	-0.4	-1.0	-0.4	-0.4	-0.3	-0.9	-0.4	-0.4	-0.3	-0.9
CPI inflation (percentage point changes)												
USA	0.7	0.1	0.1	0.0	0.7	0.1	0.1	0.0	1.0	0.2	0.1	0.0
China	0.4	-0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.7	0.0	0.1	0.0
Rest of the world	0.5	-0.2	0.0	0.0	0.4	-0.2	0.0	0.0	0.4	-0.2	0.0	0.0
Consumption												
USA	0.8	0.8	0.7	-0.4	0.8	0.7	0.6	-0.7	0.8	0.6	0.4	-1.7
China	-0.3	-0.4	-0.5	-2.1	-0.3	-0.4	-0.5	-2.3	-0.5	-0.7	-1.0	-3.9
Rest of the world	-0.2	-0.2	-0.2	-1.8	-0.2	-0.2	-0.2	-1.7	-0.2	-0.1	-0.1	-1.7
Investment												
USA	-3.6	-5.4	-6.0	-3.9	-3.5	-5.4	-6.1	-4.1	-4.3	-6.7	-7.9	-5.5
China	-0.6	-0.9	-1.2	-2.4	-0.6	-1.0	-1.3	-2.7	-1.0	-1.8	-2.3	-4.4
Rest of the world	-1.5	-1.6	-1.4	-1.8	-1.4	-1.4	-1.3	-1.7	-1.4	-1.4	-1.2	-1.8
Exports												
USA	-17.1	-17.4	-17.0	-19.8	-17.6	-17.9	-17.6	-20.6	-20.5	-20.9	-20.5	-23.7
China	-7.3	-3.9	-2.8	-2.9	-7.7	-4.9	-3.9	-4.5	-10.6	-7.2	-6.1	-7.5
Rest of the world	-4.2	-1.9	-1.3	-1.1	-3.9	-1.8	-1.3	-1.1	-3.9	-1.7	-1.2	-1.0
Imports												
USA	-13.8	-12.2	-10.9	-5.0	-14.2	-12.8	-11.7	-6.5	-16.5	-15.2	-14.2	-8.5
China	-9.2	-6.1	-5.4	-6.2	-9.5	-6.8	-6.2	-6.8	-13.4	-10.7	-10.3	-10.9
Rest of the world	-4.3	-2.1	-1.6	-2.7	-4.0	-2.0	-1.5	-2.6	-4.0	-1.9	-1.3	-2.6

	Trump Tariffs				China Retaliation				Escalated Trade War			
	Year 1	Year 2	Year 3	Steady State	Year 1	Year 2	Year 3	Steady State	Year 1	Year 2	Year 3	Steady State
Exports to the U.S.												
China	-47.2	-46.5	-45.8	-43.4	-47.7	-47.2	-46.8	-45.3	-79.7	-80.2	-80.5	-81.1
Rest of the world	-11.7	-10.1	-8.8	-3.5	-12.1	-10.7	-9.6	-4.9	-8.9	-7.3	-6.2	-1.5
Imports from the U.S.												
China	-22.8	-22.8	-22.4	-25.0	-55.3	-55.3	-55.1	-56.5	-84.1	-84.1	-84.0	-84.5
Rest of the world	-19.1	-19.7	-19.3	-21.8	-17.6	-18.2	-17.8	-20.3	-19.4	-20.1	-19.6	-22.0
Real exchange rate against the U.S. dollar												
China	11.8	11.6	11.4	12.7	10.4	10.1	10.0	11.0	12.6	12.3	12.2	13.0
Rest of the world	9.1	9.1	8.9	10.5	8.3	8.2	8.1	9.6	8.9	8.8	8.7	10.3

Source: Model simulations.