The Dollar in an Era of International Retrenchment

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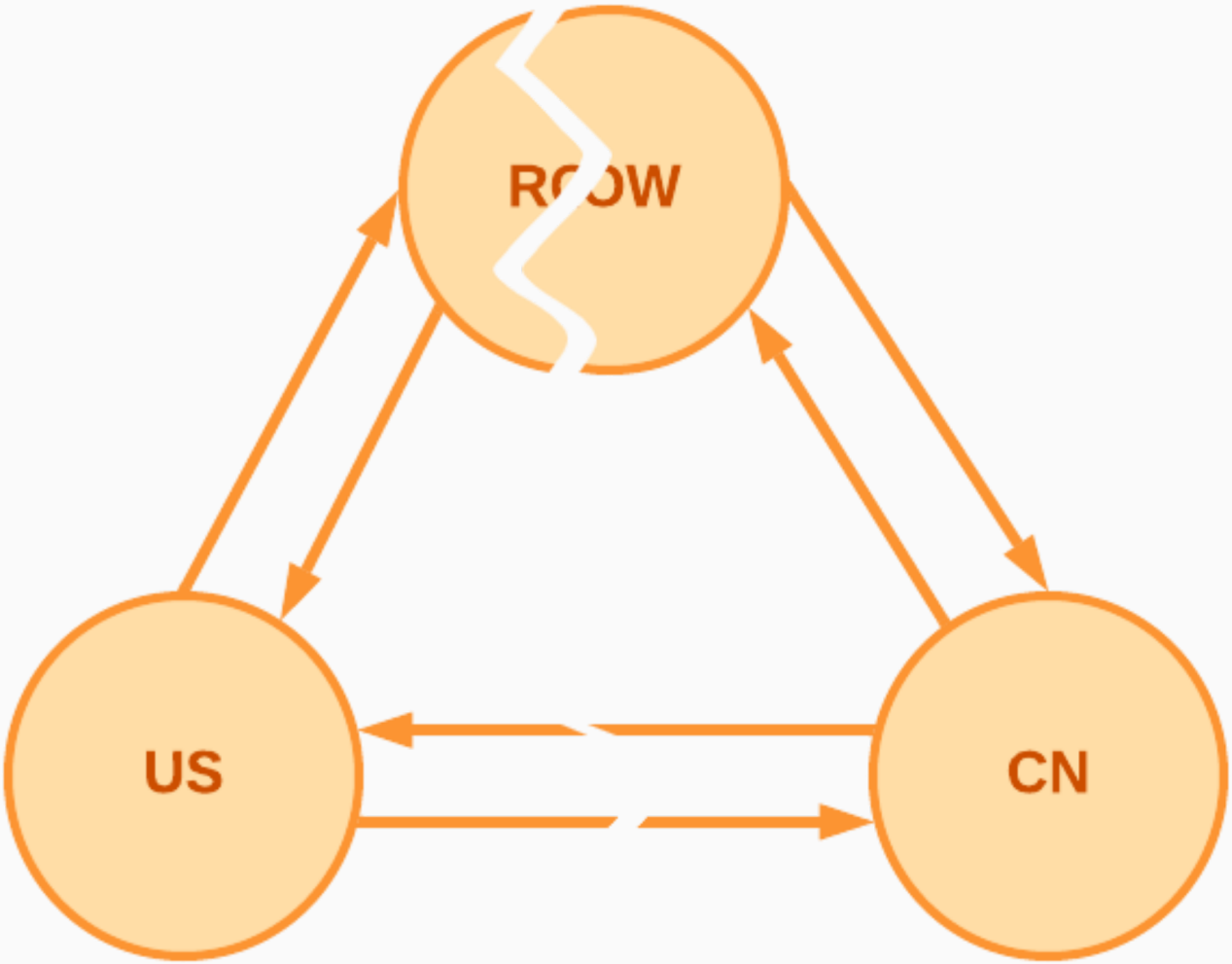
IMF/Norges Bank/IMFER Conference on
The Future of Macroeconomic Policy

June 15, 2023

International Fragmentation - Stylized View



This paper

Could international fragmentation change special role of USD?

- Quantitative theory that links trade and dollar dominance
  - multiple steady states, unique dynamics
  - introduce potential for regional heterogeneity
- Policy tools that change trade and financing patterns
  - tariffs: between the US and China/or between the East/West
  - currency supports: potential to "jumpstart" international currency
  - How do transitions unfold? Welfare implications?
- Bottom lines
  - Dollar dominance is hard to change.
  - Transition can be slow, until it's not...

Model

Model Summary

1. Four regions
   - two big countries: US and CN
   - two regions composed of s.o.e.'s: Region A and Region B
   - baseline: perfect symmetry between US/CN and between A/B
2. Exogenous endowments
3. Consumption is CES of all country's goods
   - home-bias in preferences
4. Trading firms conduct all import/exports
   - trading firms need financing (letter of credit)
   - financing is denominated in either USD or CHY
5. Big countries supply safe assets to world
   - potentially unbalanced trade

Simplified Model

1. Households trade safe assets internationally
   - safe assets used to fund trading firms via search markets
   - earn liquidity premium $\Delta_{jt}^{\$}$

2. Trading firms need safe asset funding to complete int. transactions
   - borrow assets from local households in search markets
   - currency mismatch cost κ (e.g. expected default cost)

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$$1 = \beta E_t \left[\left(\frac{C_{jt+1}}{C_{jt}} \right)^{-\sigma} \frac{1}{Q^{\$}_t \left(1 - \Delta^{\$}_{jt}\right)} \right] \; ; \; \Delta^{\$}_j = \underbrace{\frac{M^F(B^{\$}_j, X_j)}{B^{\$}_j}}_{=\text{prob. lending \$}} \times r$$

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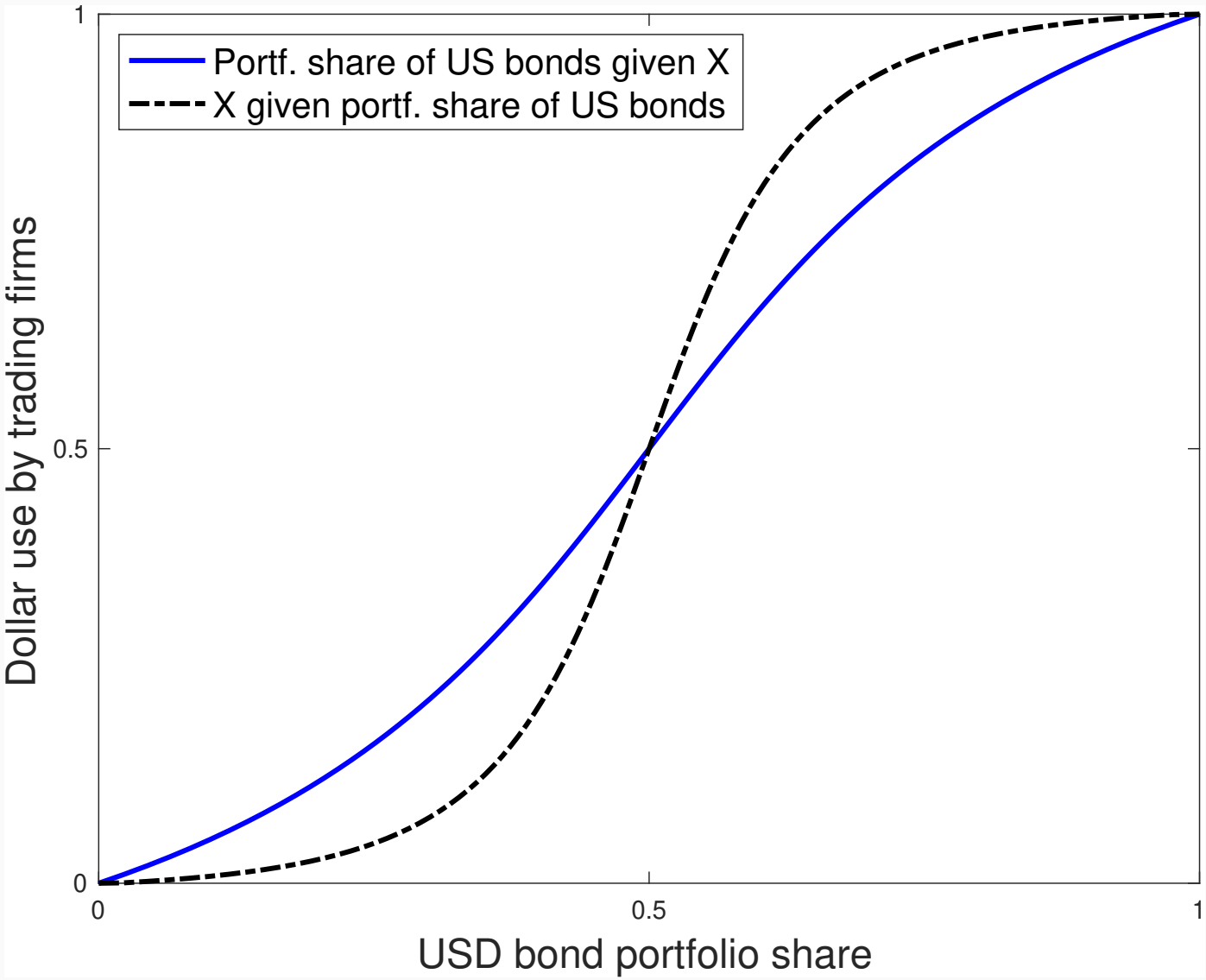
$$V_j^{\$} = \underbrace{\frac{M^F(B_j^{\$}, X_j)}{X_j}}_{=\text{prob. obtaining } \$} \left[\pi - r - \kappa(1 - \bar{X})\right] - \underbrace{\frac{M^F(B_j^{¥}, 1 - X_j)}{1 - X_j}}_{=\text{ prob. obtaining } ¥} \left[\pi - r - \kappa \bar{X}\right]$$

Intuition: Feedback w. Multiple Steady States



Calibration Highlights

Parameter	Concept	Value
$\mu_{us} = \mu_{cn}$	Big country measure	0.200
κ	Mismatch cost	0.010
X_{us}	US dollar share	0.900
X_{cn}	CN dollar share	0.100
η	CES elasticity of substitution	4.000

Concept	Target Value
Gross debt/GDP	0.60
US & CN trade/GDP	0.35
RW trade/GDP	0.55
RW USD use	0.80
Import markup	1.20

Parameter	Concept	Value
$\bar{B}$	US/CH asset supply	1.475
$a_{us} = a_{cn}$	Home bias big countries	0.331
a_j	Home bias RW	0.298
ε^f	Funding match. elas.	0.292
ϕ	Fixed cost of entry	0.083

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Baseline: Multiple Steady States

	USD Coord.				Symmetric*				CNY Coord.			
Moments	US	CN	A	B	US	CN	A	B	US	CN	A	B
Dollar Share	0.90	0.10	0.80	0.80	0.90	0.10	0.50	0.50	0.90	0.10	0.20	0.20
$100\times(i^{¥} - i^{\$})$	1.08	-	-	-	0.00	-	-	-	-1.08	-	-	-
$100\times$Impl. rev./GDP	0.88	0.22	-	-	0.55	0.55	-	-	0.22	0.88	-	-
NFA/GDP	-0.48	-0.34	0.21	0.21	-0.45	-0.45	0.23	0.23	-0.34	-0.48	0.21	0.21
$100\times$Trade bal./GDP	1.12	1.20	-0.61	-0.61	1.31	1.31	-0.69	-0.69	1.20	1.12	-0.61	-0.61

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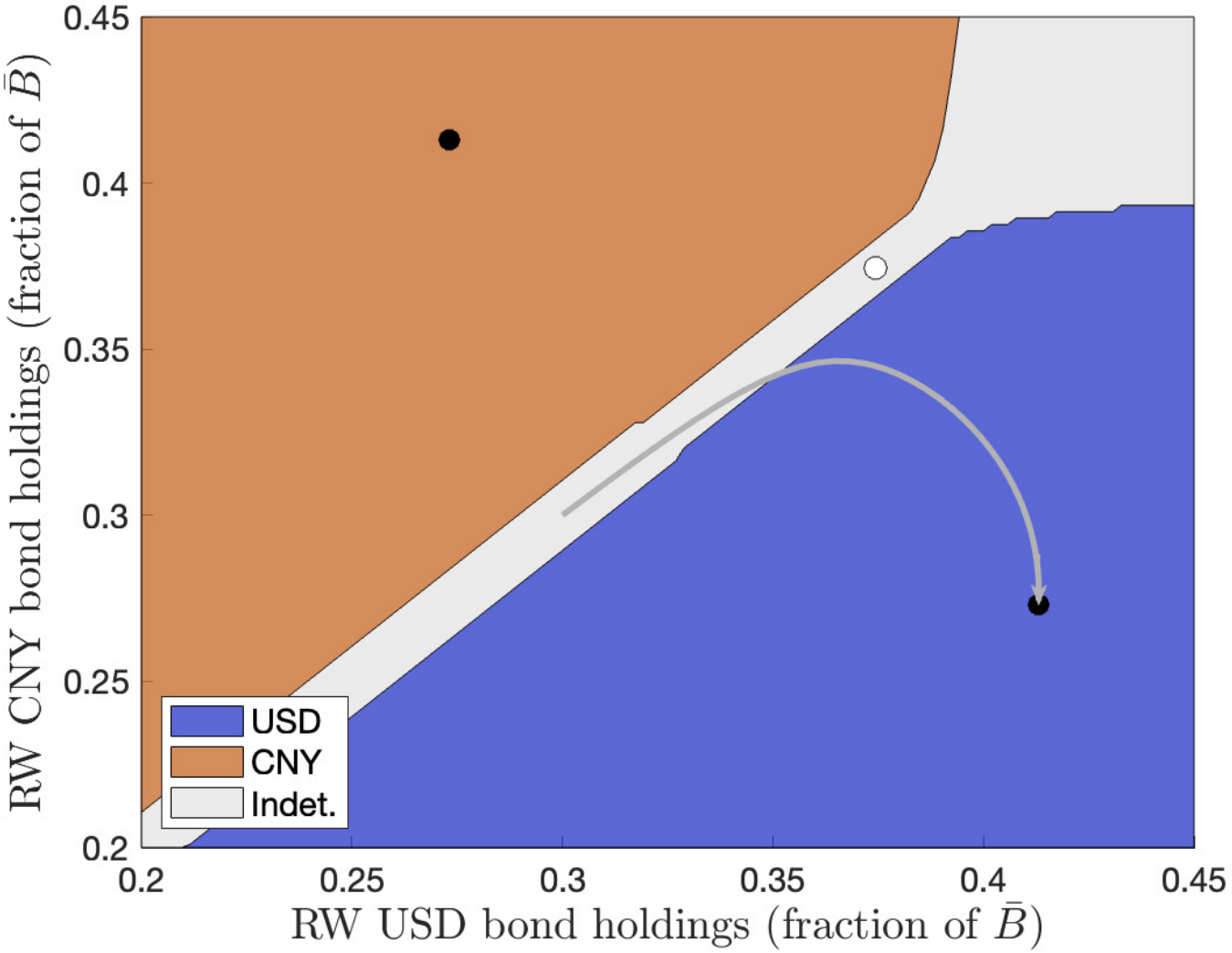
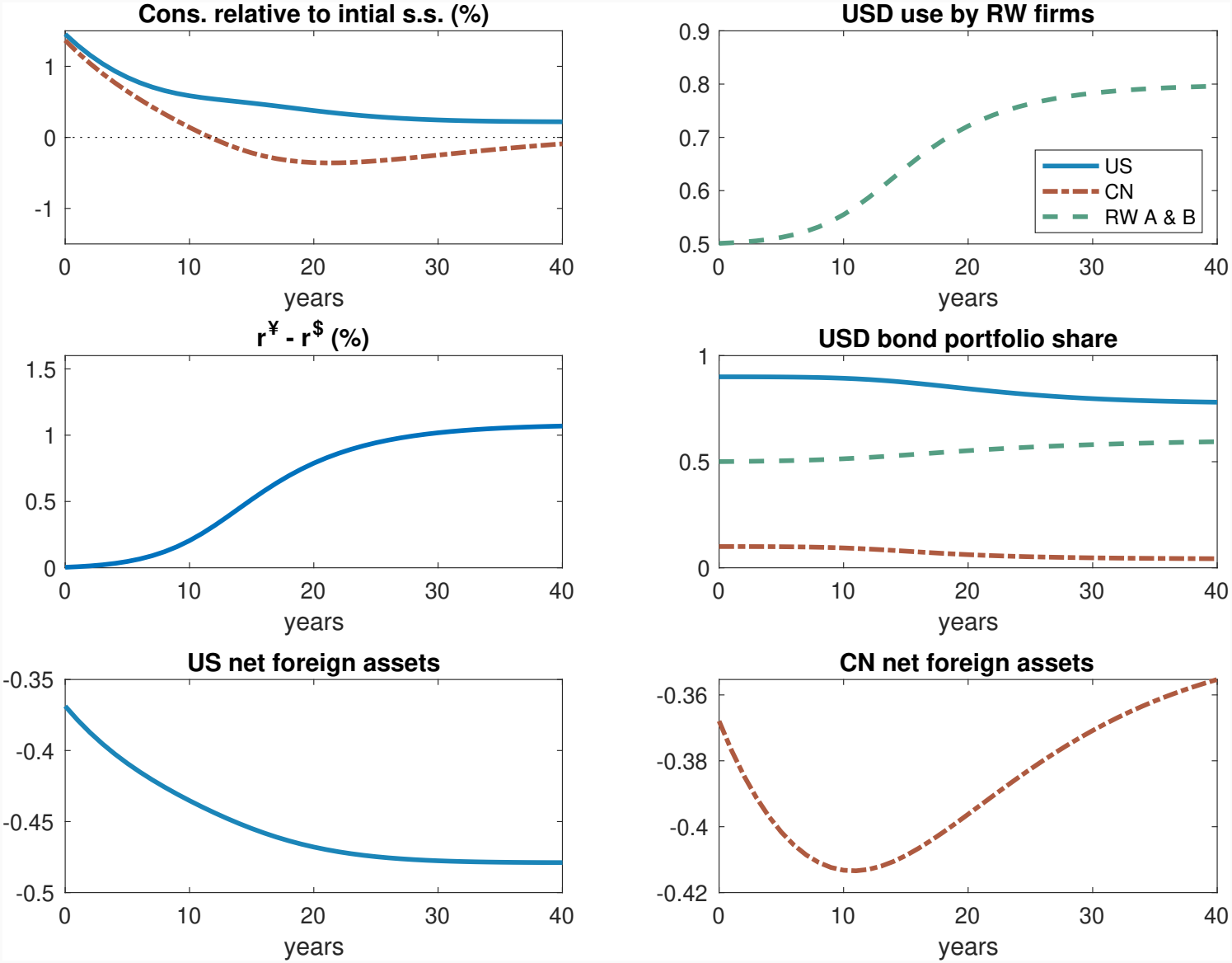
Baseline: Regions of Attraction



Baseline: Transition to USD-dominant Steady State



Policy Experiment I
$\hookrightarrow$ Tariffs

Tariffs and Steady-State USD Usage

- US puts 40% tariff on CH

	USD Coord.			Middle			CNY Coord.		
Scenario	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b
baseline	1.08	0.80	0.80	*0.00*	*0.50*	*0.50*	-1.08	0.20	0.20
unil. US tariff on CN	1.25	0.85	0.85	*-0.25*	*0.44*	*0.44*	-0.98	0.24	0.24

Note: Dashes (-) indicate that no such steady state exists; italics indicate a steady state that is dynamically unstable.

Tariffs and Steady-State USD Usage

- US puts 40% tariff on CH, CH responds in kind

	USD Coord.			Middle			CNY Coord.		
Scenario	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b
baseline	1.08	0.80	0.80	*0.00*	*0.50*	*0.50*	-1.08	0.20	0.20
unil. US tariff on CN	1.25	0.85	0.85	*-0.25*	*0.44*	*0.44*	-0.98	0.24	0.24
tit-for-tat betwn US & CN	1.20	0.83	0.83	*0.00*	*0.50*	*0.50*	-1.20	0.17	0.17

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Tariffs and Steady-State USD Usage

- US puts 40% tariff on Region B

	USD Coord.			Middle			CNY Coord.		
Scenario	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b
baseline	1.08	0.80	0.80	*0.00*	*0.50*	*0.50*	-1.08	0.20	0.20
unil. US tariff on CN	1.25	0.85	0.85	*-0.25*	*0.44*	*0.44*	-0.98	0.24	0.24
tit-for-tat betwn US & CN	1.20	0.83	0.83	*0.00*	*0.50*	*0.50*	-1.20	0.17	0.17
unil. US tariff on RW B	1.43	0.94	0.93	0.01	0.57	0.47	-1.47	0.14	0.06

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Tariffs and Steady-State USD Usage

- US and Region A put 40% tariff on Region CH

	USD Coord.			Middle			CNY Coord.		
Scenario	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b
baseline	1.08	0.80	0.80	*0.00*	*0.50*	*0.50*	-1.08	0.20	0.20
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unil. US tariff on RW B	1.43	0.94	0.93	0.01	0.57	0.47	-1.47	0.14	0.06
coord. US & Reg. A on CN	1.53	0.96	0.90	-	-	-	-	-	-

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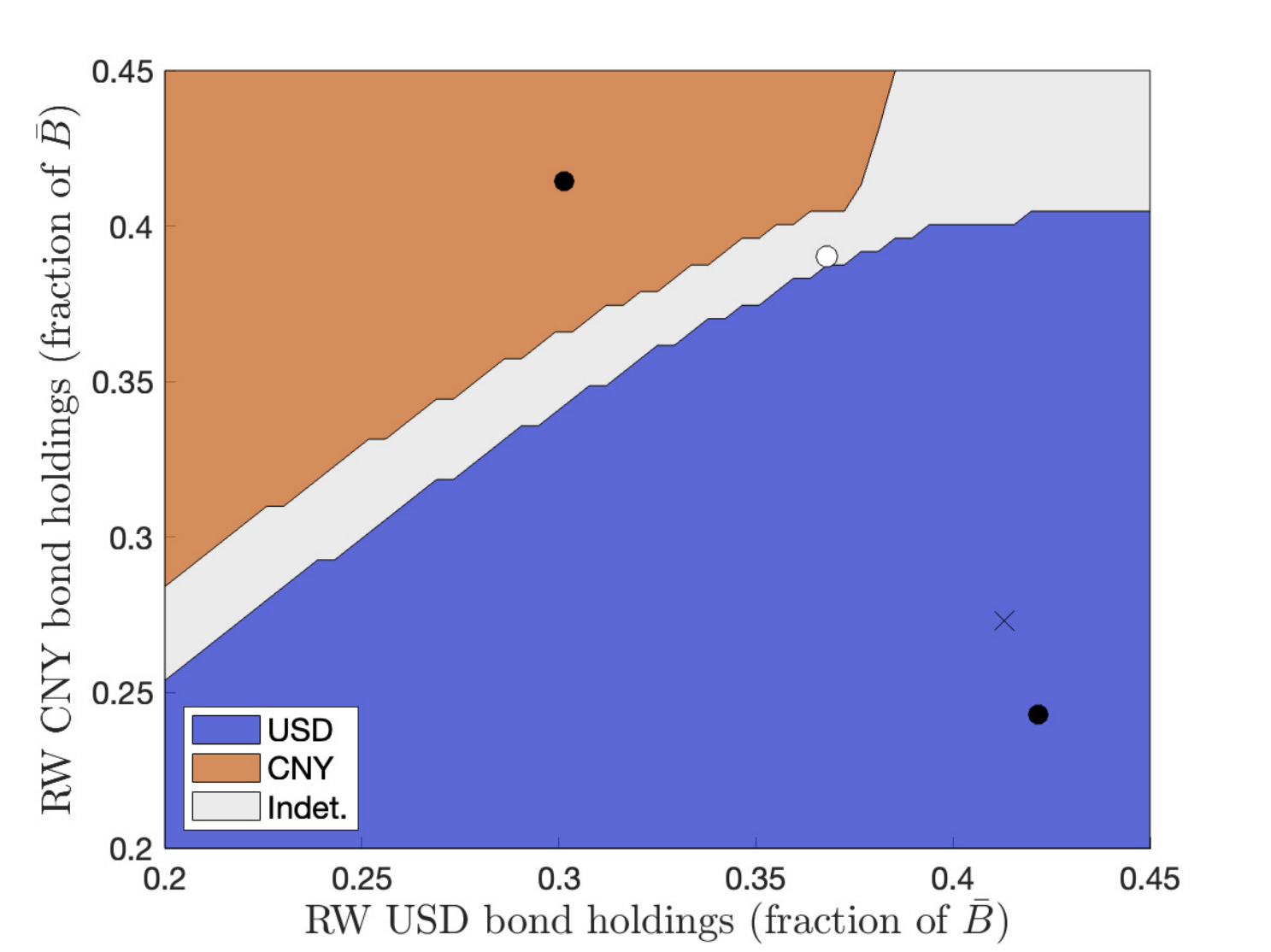
Tariffs and USD Durability

- US puts 40% tariff on CH



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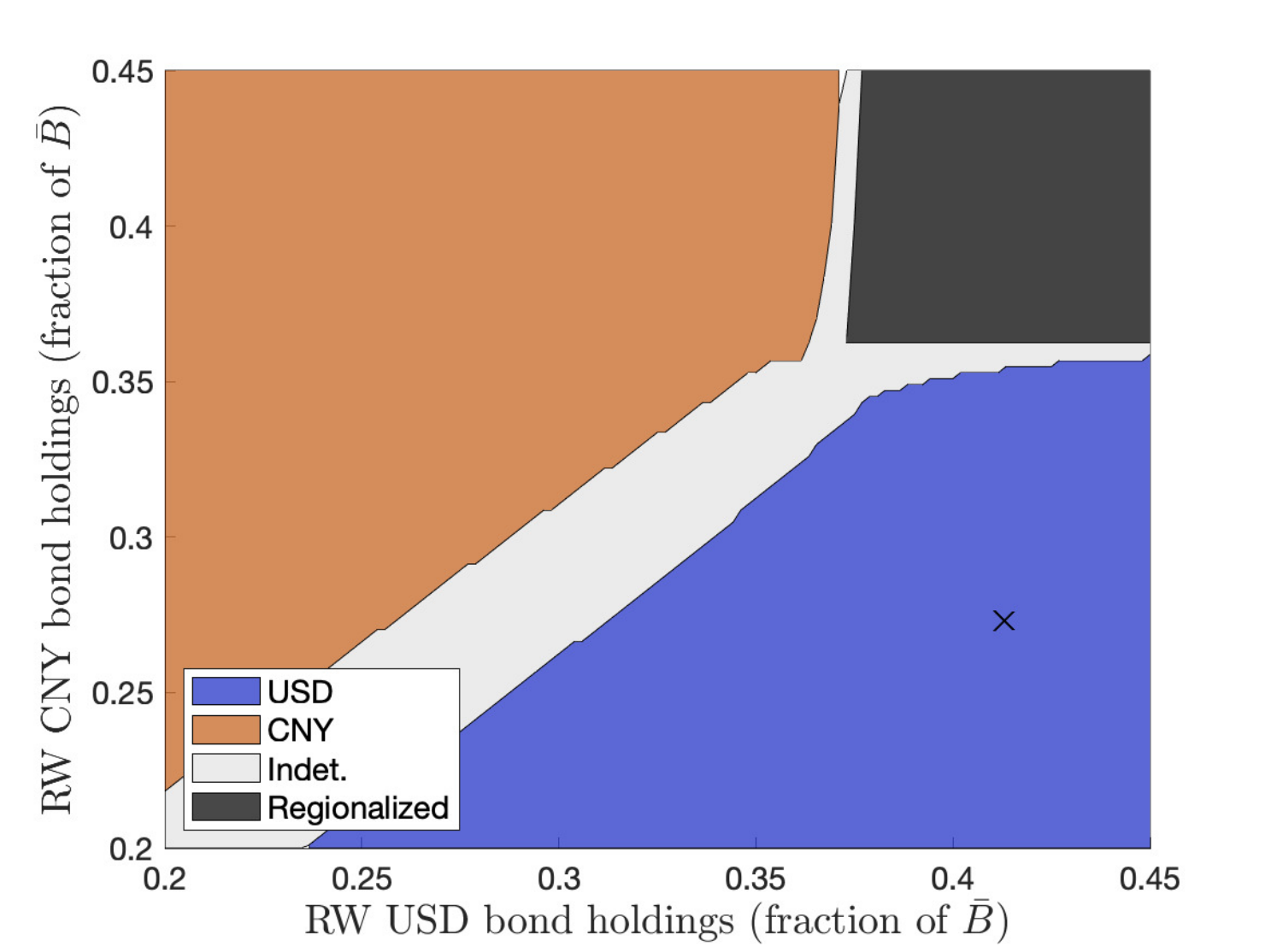

Tariffs Summary

1. Generally small changes relative to status quo
2. Reducing trade with ROW regions can hurt dollar
3. Coordinated US + Region A tariffs makes dollar eq. more stable
   $\hookrightarrow$ ROW trades more with US overall

Policy Experiment II
$\hookrightarrow$ CHY supports

Basic Idea

Background:

- Eichengreen and Kawai (2015), "Renminbi Internationalization ..."
- Prasad (2016), "China's efforts to expand the...use of the Renminbi"
- Bahaj & Reis (2020), "Jumpstarting an International Currency"

Policy induces a fraction z of Region B firms to use CHY *unconditionally*

1. $z = 0.10$ forever
2. $z = 0.20$ for certain number of years

Case 1: z = 0.10 forever

	USD Coord.			Middle			CNY Coord.		
Scenario	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b
baseline	1.08	0.80	0.80	*0.00*	*0.50*	*0.50*	-1.08	0.20	0.20
perm. support for yuan	-	-	-	-	-	-	-1.15	0.19	0.17

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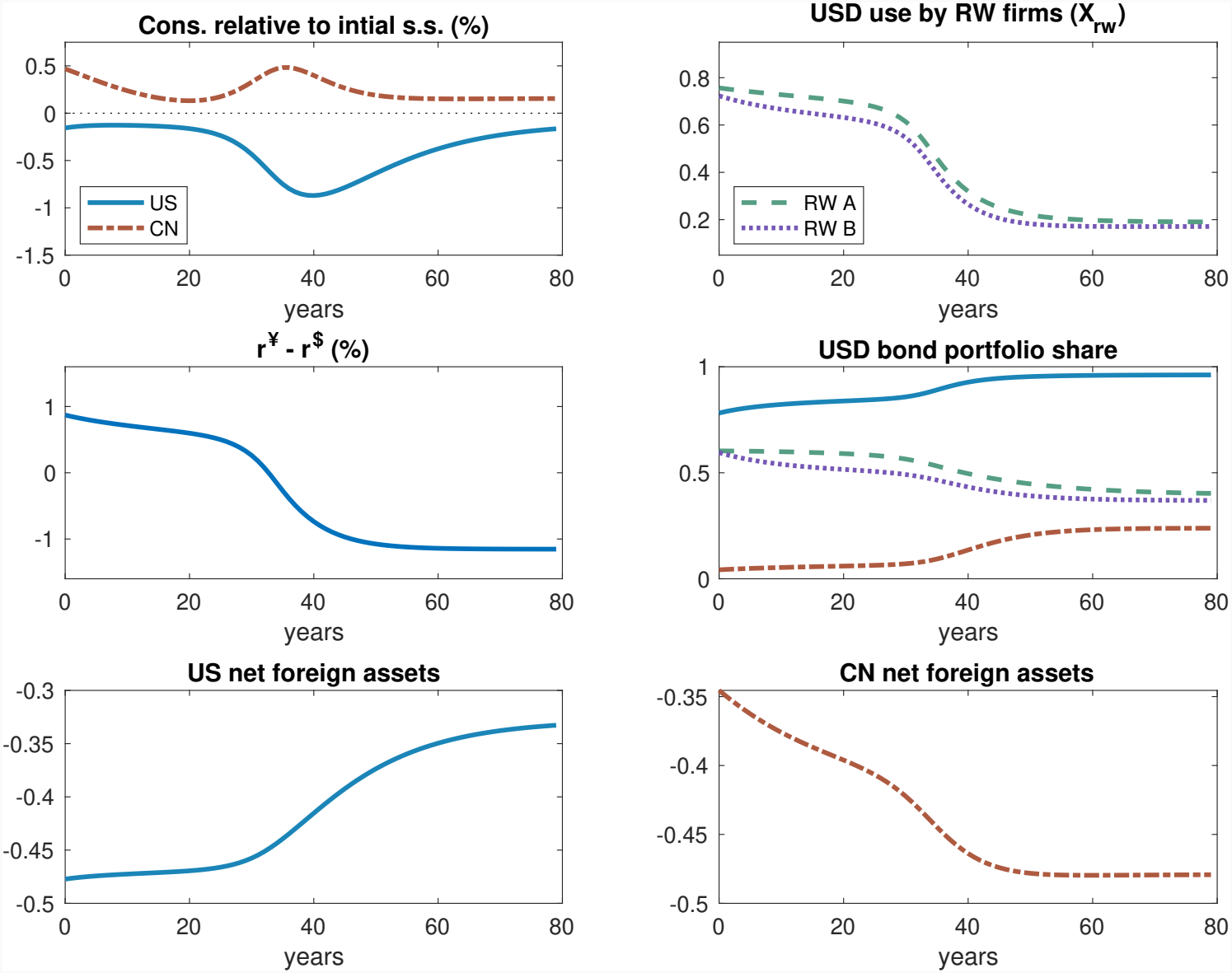
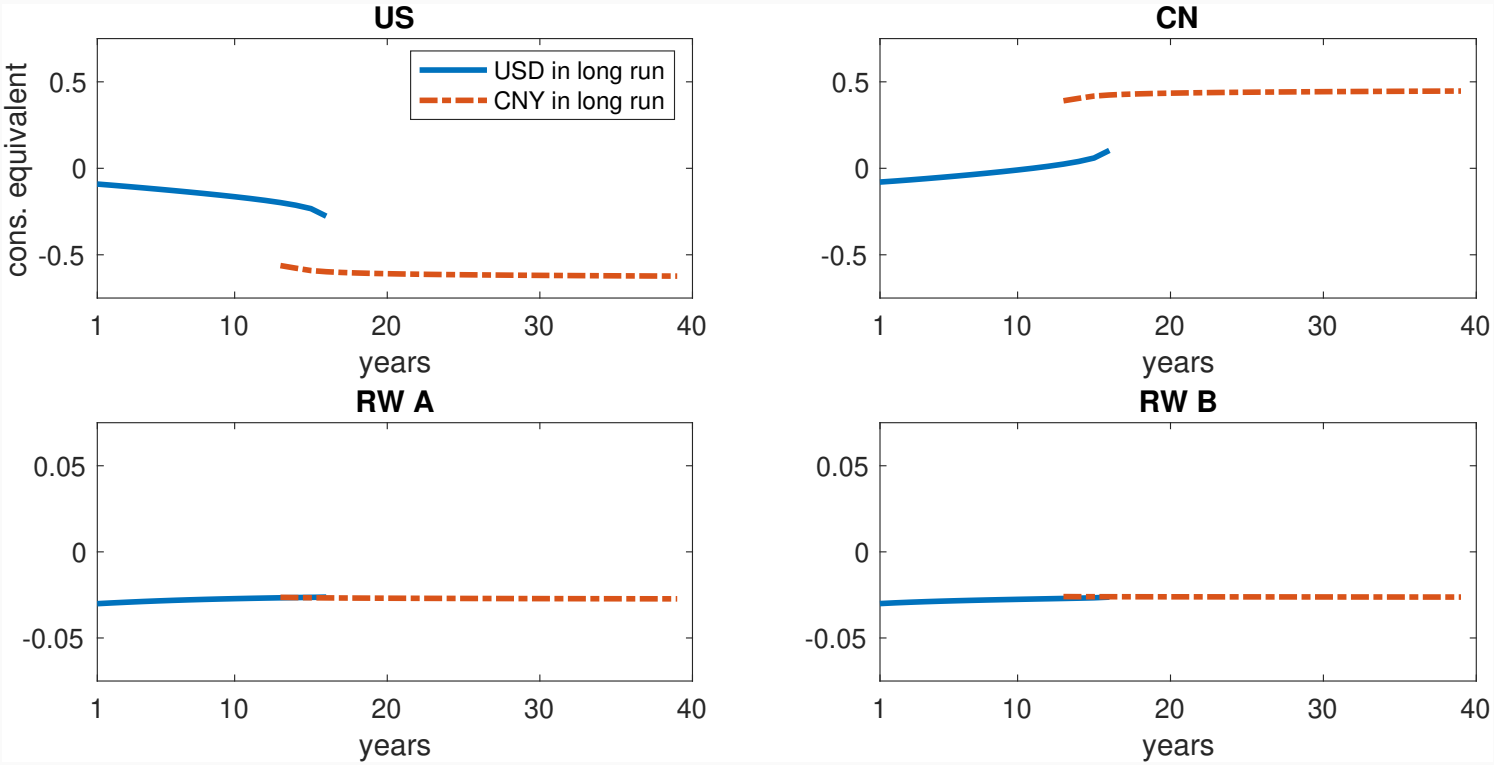
Case 1: z = 0.10 forever



Case 2: z = 0.20 for H years

Outcome depends on duration...



Policy Experiment III
$\hookrightarrow$ Global Trade Conflict

Scenario

- US and Region A put 40% tariff on CN and Region B
- CN and Region B put 40% tariff on US and Region A
- US and CN both induce $z = 0.20$

Scenario

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$$\Downarrow$$

Cross-bloc trade falls 70%

Bloc-specific Dominant Currencies

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Scenario	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b	$i^{¥} - i^{\$}$	X_a	X_b
baseline	1.08	0.80	0.80	*0.00*	*0.50*	*0.50*	-1.08	0.20	0.20
strong fragmentation	-	-	-	-0.00	1.00	0.00	-	-	-

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Welfare Implications

Welfare Relative to Baseline: Permanent Consumption Units (incl. transitions)

Situations in which the dollar remains dominant...

	US	CN	RW A	RW B
unilateral 40% US tariff on CN	-0.21	-0.58	0.03	0.03
tit-for-tat 40% tariff between US and CN	-0.70	-0.76	0.03	0.03
unilateral 40% US tariff on RW B	-0.48	-0.09	0.11	-0.67
coordinated 40% US and RW A tariffs on CN	-0.08	-2.25	-0.23	0.16

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unilateral 40% US tariff on CN	-0.21	-0.58	0.03	0.03
tit-for-tat 40% tariff between US and CN	-0.70	-0.76	0.03	0.03
unilateral 40% US tariff on RW B	-0.48	-0.09	0.11	-0.67
coordinated 40% US and RW A tariffs on CN	-0.08	-2.25	-0.23	0.16

Welfare Relative to Baseline: Permanent Consumption Units (incl. transitions)

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Welfare Relative to Baseline: Permanent Consumption Units (incl. transitions)

Situations in which the dollar loses dominance...

	US	CN	RW A	RW B
permanent support for yuan at 10%	-0.27	0.27	0.00	0.00
temporary (20 yrs) support for yuan at 20%	-0.61	0.43	-0.03	-0.03
strong fragmentation	-2.91	-2.20	-2.90	-2.87
strong fragmentation (counterfactual X)	-2.65	-2.43	-2.88	-2.87

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Conclusion

1. USD dominance is not easy to change
   - tariff policy matters because it changes trading patterns ...
   - but tariff policy must be coordinated with RW countries to have significant impact
2. Direct support for a currency (e.g. yuan) could have bigger impact
   - policy must be large
   - policy must last around 15 years
3. Trade conflict hurts dominant currency country
   - reduces the need for trade financing
   - could change which country's asset behind it
4. If international trade becomes "bifurcated", then currency choices could as well.