Bangladesh's 2019 Incentivized Remittance Policy

2022 ASSA Poster Presentation
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What is a remittance?

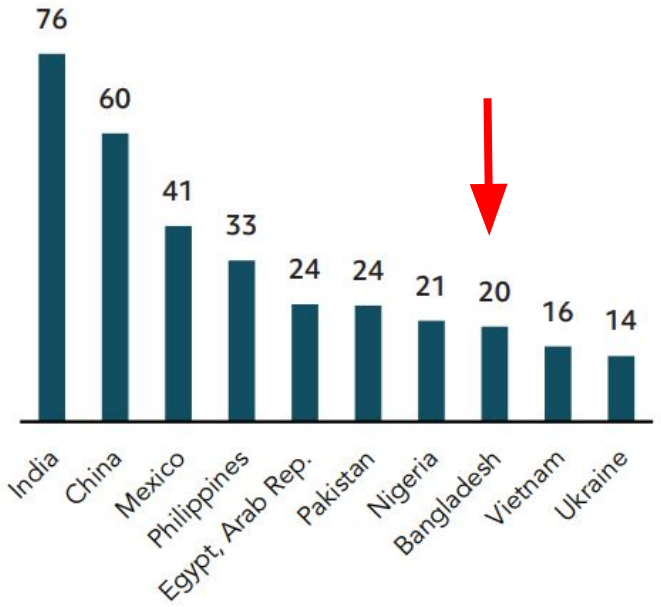
A remittance is a non-commercial transfer of money by a foreign worker with family ties abroad, for household income in their home country. -wikipedia

Bangladesh Quick Facts

Population = 163,000,000
GDP = $304 billion USD (2019)
Migrants ~ 1.4 million/yr
Sq. Miles ~ 57,000

Top Remittance Recipient Countries (2020)

Bangladesh is the 8th largest remittance recipient nation with approximately $20 billion USD received in 2020

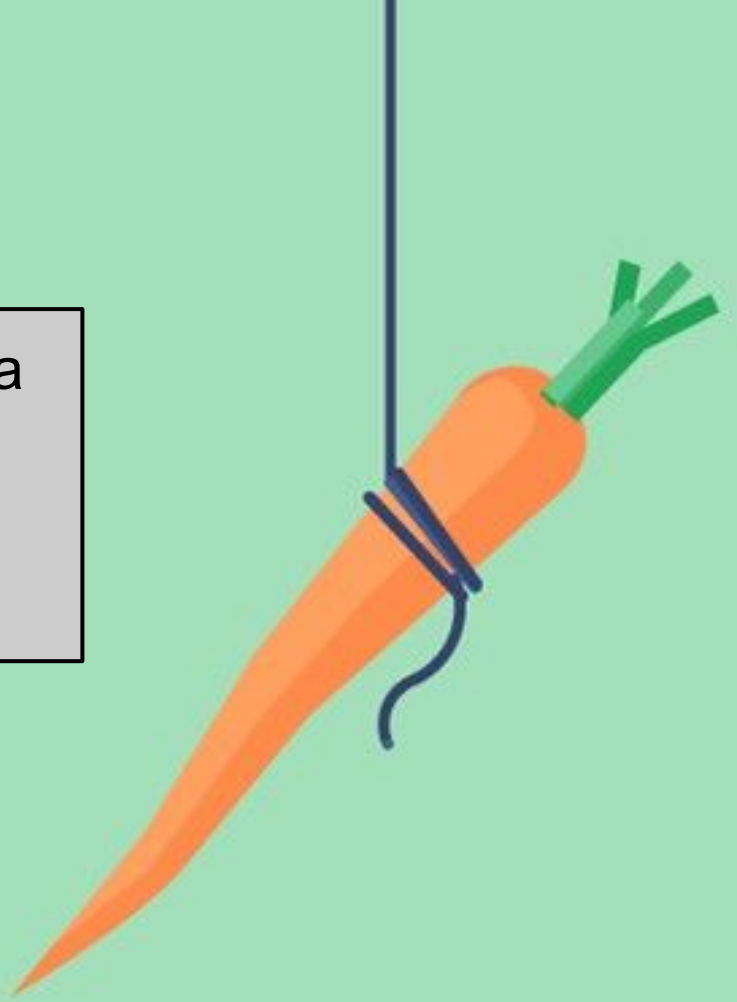


Sources: World Bank staff estimates; World Development Indicators; IMF Balance of Payments Statistics.

What happened?

In July of 2019, Bangladesh enacted a 2% remittance incentive policy.

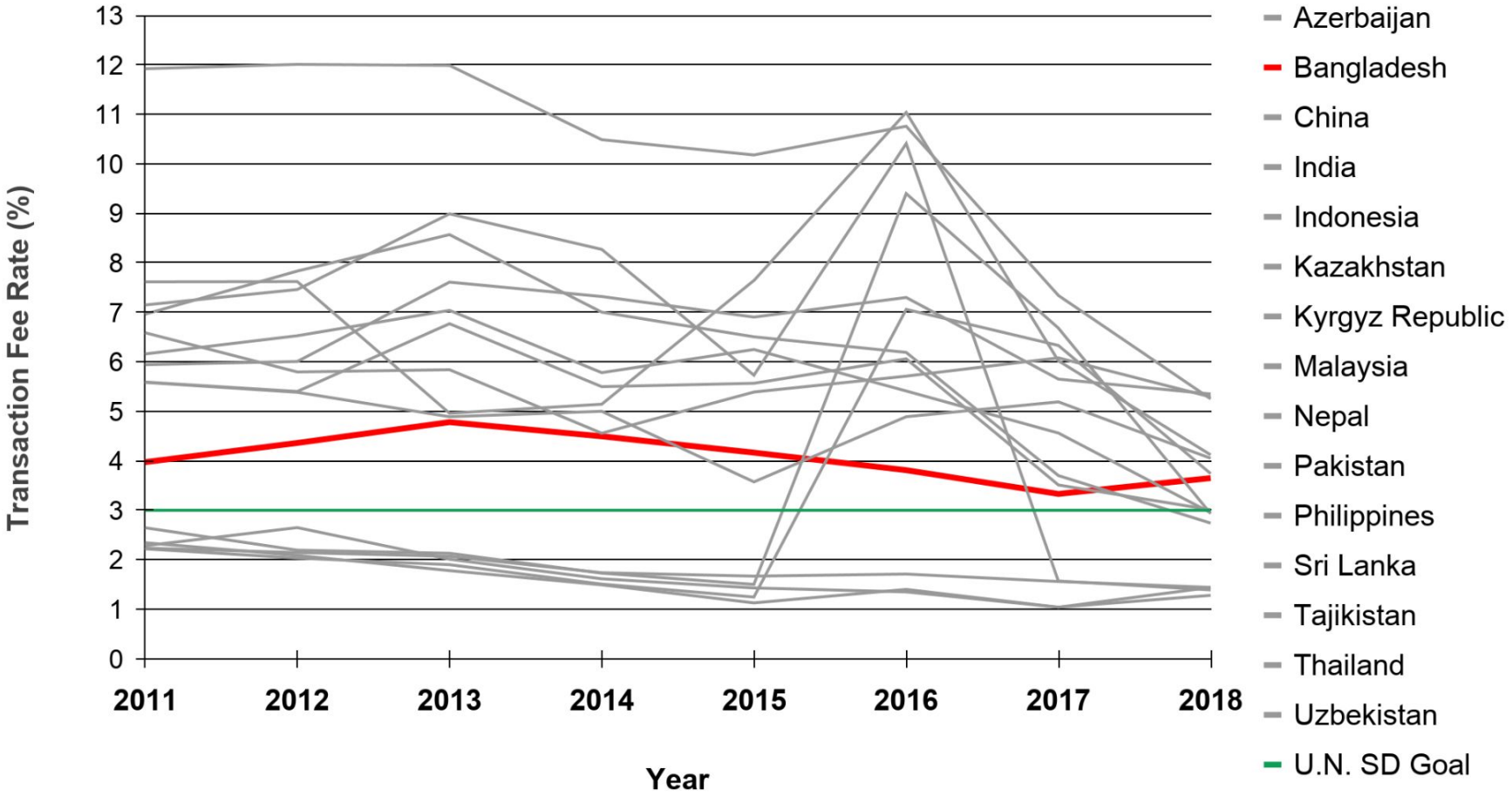
<u>The first of its kind.</u>



Potential Impact:

Reducing remittance fees has the potential to effect on economic development & reduce poverty

Asian Region: Average Remittance Transaction Costs



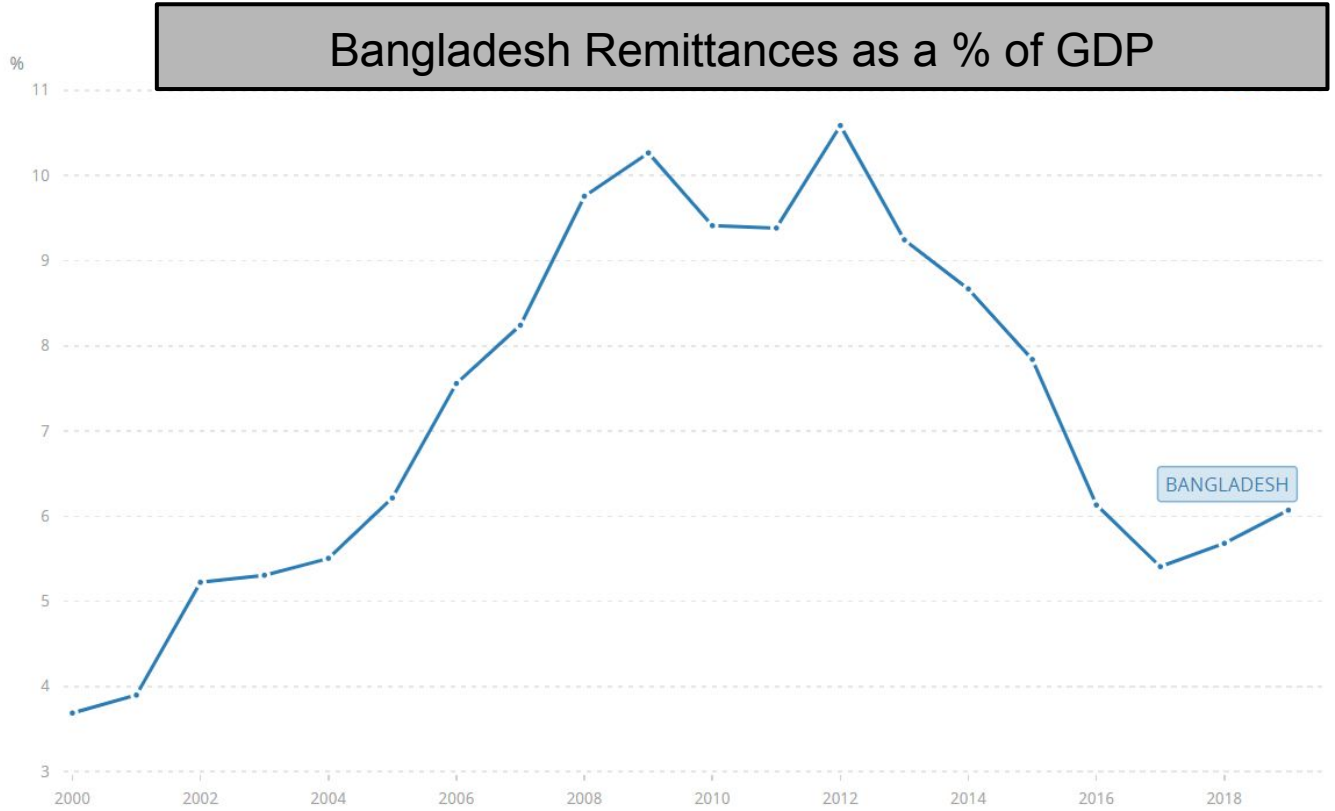
Potential Scaling Effect of Cutting Fees

In 2020 Pakistani researchers found that for every 1% decrease in remittance costs there is a 0.25% to 1.6% increase in remittances.

This is not a 1 percentage point decrease, this is a 1% relative decrease (a 2% decrease on an average 3.75% fee is approx. a 53% cost decrease.)

There is a significant potential upside to invest in reducing fees.

Why Invest in cutting fees?
Reason 1: Remittances as a % of GDP has dropped nearly 50%



Reason 2: Bangladesh Bank Stated Objective

The objective of providing cash incentives is to stimulate wage earners and remitters to continue the flow of foreign remittances in larger volume to contribute to the ongoing economic development of the country.

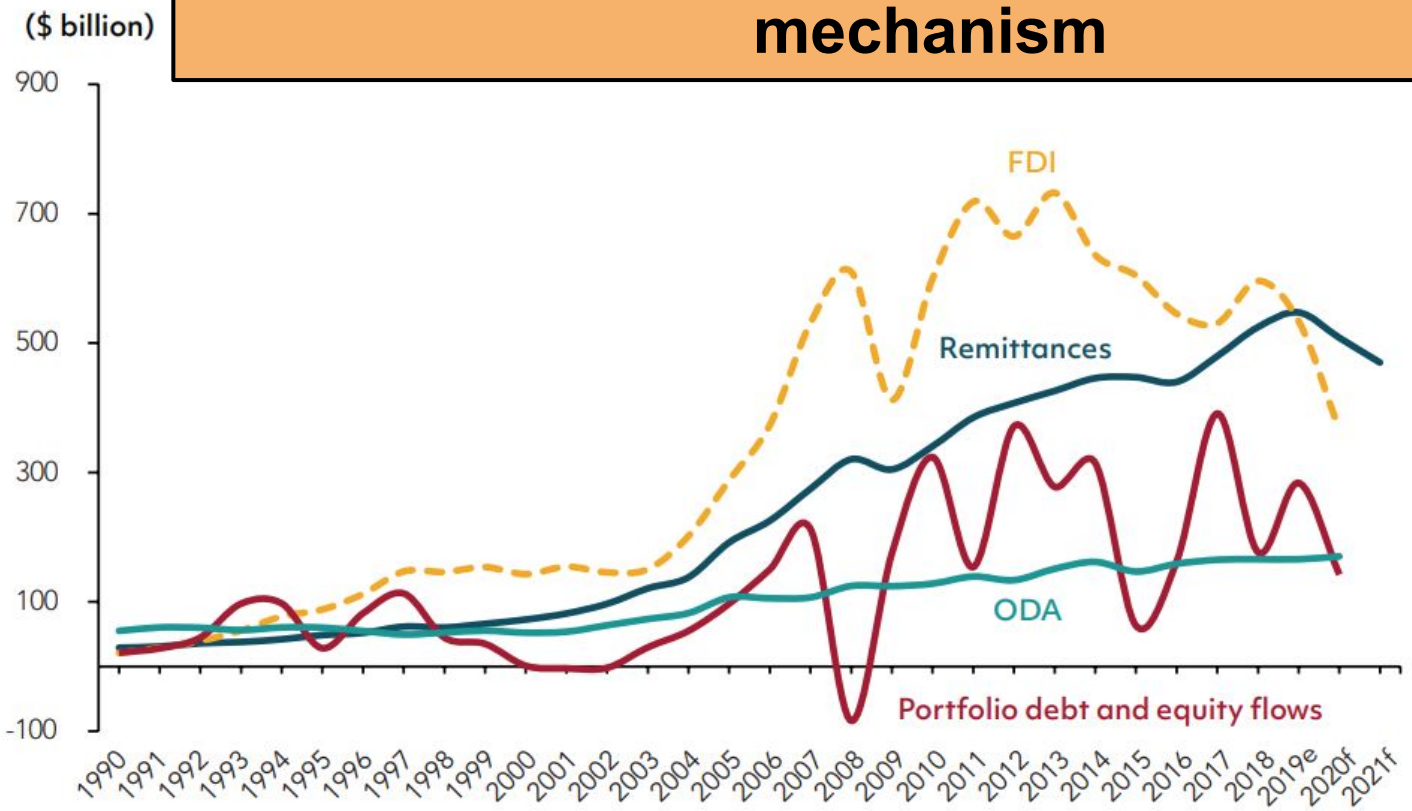
- Bangladesh Bank 2020 Annual Report

Why do these reasons matter?

Remittances are the Largest External Source of Financing

~$550 Billion USD are remitted to Low & Middle Income Nations (2019)

Remittances are largest international financing mechanism



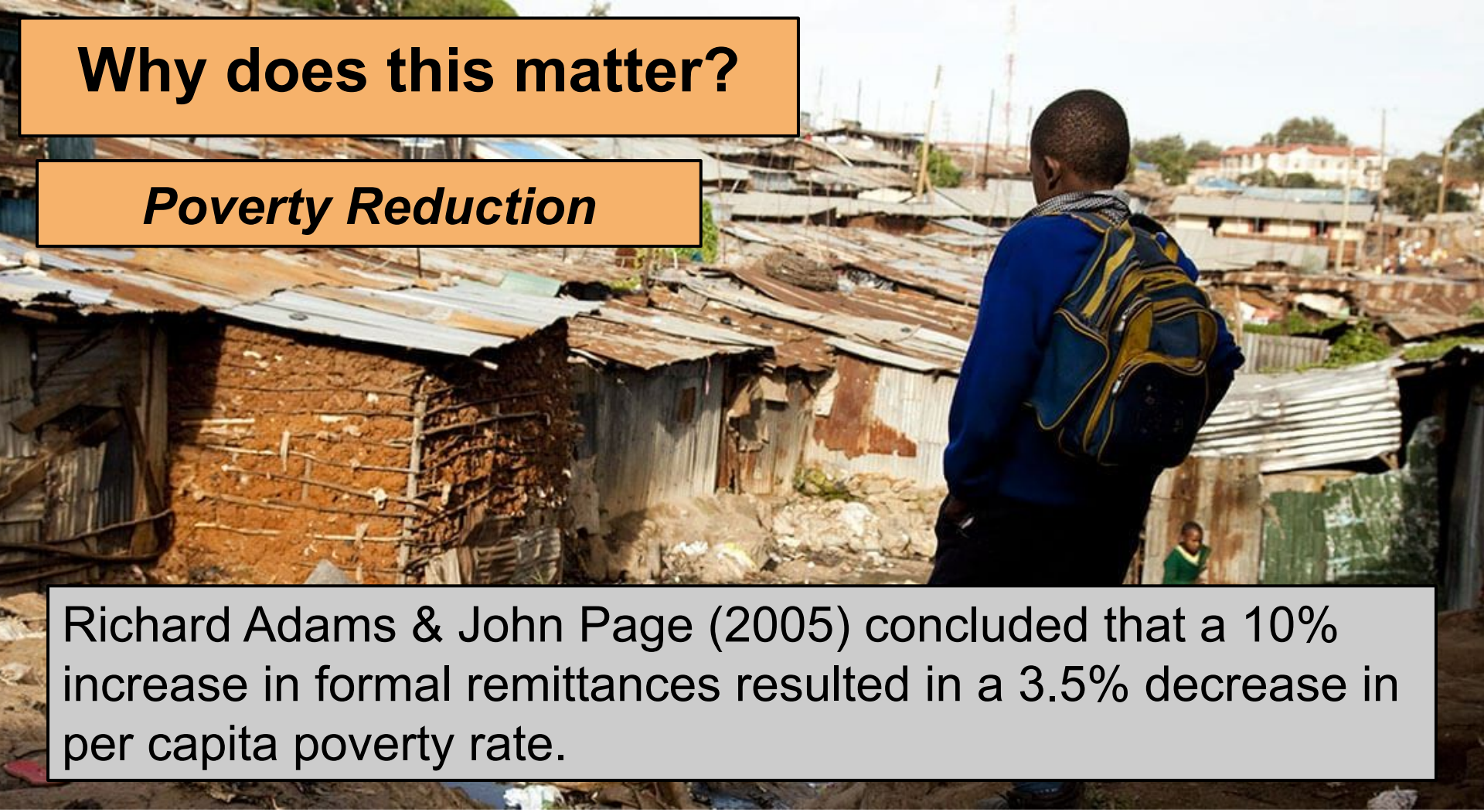
Sources: World Bank–KNOMAD staff estimates; World Development Indicators; International Monetary Fund (IMF) Balance of Payments Statistics. See appendix in the *Migration and Development Brief 32* for forecast methods (World Bank 2020c).
Note: FDI = foreign direct investment; ODA = official development assistance.

Why does this matter?

Remittances are one of the most precise tools in targeting poverty.

Why does this matter?

Poverty Reduction



Richard Adams & John Page (2005) concluded that a 10% increase in formal remittances resulted in a 3.5% decrease in per capita poverty rate.

So, why do remittances and their fees matter?

Remittances are the largest source of foreign financing
Remittances have the precision to reduce poverty
Remittances can increase economic development

AND

Cutting fees can scale for increased returns

Research Question

How will the Bangladesh 2% remittance incentive policy, implemented in July of 2019, affect the overall remittances Bangladesh receives?

Hypothesis

A 2% reduction in remittance fees is a ~53% reduction in the average 3.75% fee.

This paper hypothesizes that Bangladesh's remittances will increase by between 13% to 85%.

What this paper does NOT do?

This paper currently does not answer the question of what was the causal effect size of Bangladesh's incentive policy

But….

This paper DOES contribute:

A **comparative study design** that is blind to outcomes.

A **resilient synthetic control model** capable of evaluating the policies causal effect in 2025.

A **research supported prediction** of 13% to 85% remittance growth.

Using The Synthetic Control Method (SCM)

The synthetic control method was original designed in 2003 by Alberto Abadie and Javier Gardeazabal and refined in partnership with Alexis Diamond and Jens Hainmueller in 2010 and 2015.

It is an established statistical tool with significant importance in determining a causal effect.

Using the Synthetic Control Method (SCM)

"[The Synthetic Control Method] is arguably the most important innovation in the policy evaluation literature in the last 15 years"

(Susan Athey and Nobel Prize Winner Guido W. Imbens, 2017)

SCM Methods

Synthetic Control Method

- Select countries to be used as **units** for comparison
- Select factors that might predict our outcome: **remittances**
- Match real Bangladesh and its synthetic **unit** across those predictors
- Determine weights of donor pool **units**
- Compare real & synthetic outcomes during pre-treatment period
- Bias Testing: Removal of top weighted units

Study Design: Comparative Case Study

Real Bangladesh

BANGLADESH

VS

Synthetic Bangladesh

CAMBODIA

INDIA

KENYA

Study Design: Date Ranges

Pre-treatment period

2005 - 2019

Treatment Month

July 2019

Post-treatment period

2019 - 2025

Real Bangladesh

BANGLADESH

VS

Synthetic Bangladesh

CAMBODIA

INDIA

KENYA

Treatment vs. Control

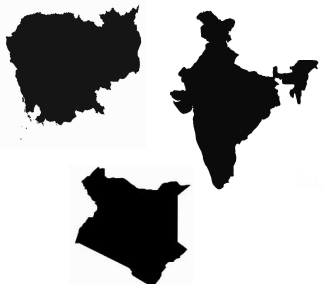
Real Bangladesh

Treatment = Policy

Outcome = Real Remittances

Gap = Effect Size

Synthetic Bangladesh



Control = No Policy

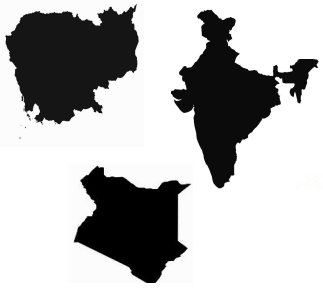
Outcome = Model Remittances

Pre-treatment period	Treatment Month	Post-treatment period
2005 - 2019	July 2019	2019 - 2025

Treatment vs. Control

Real Bangladesh

Synthetic Bangladesh



Treatment = Policy

Control = No Policy

Outcome = Real Remittances

Outcome = Model Remittances

This paper is blind to outcomes, which reduces researcher bias in model selection and design

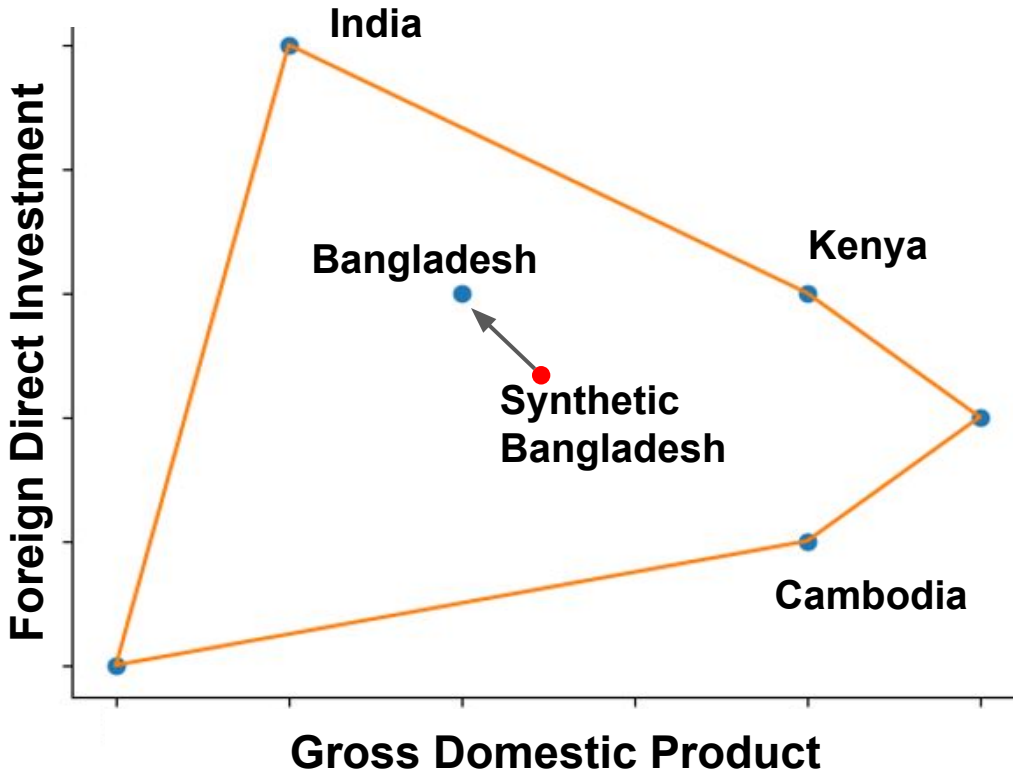
Balance between Synthetic & Real Predictors

Maximum imbalance was 14.46% for agricultural growth
5 of 6 covariates were less than 2% out of alignment

Remittances Predictor	Bangladesh Real	Bangladesh Synthetic	% out of balance	Donor Pool Mean	% out of balance
Primary School Enrollment(Gross Ratio %)	105.699	105.83	0.12%	106.02	0.30%
ln(Development Aid) (USD Millions)	21.41	21.320	0.42%	20.17	5.79%
ln(GDP Purchasing Parity Power) (USD Millions)	7.98	8.03	0.63%	8.86	11.03%
ln(Foreign Direct Investment) (USD Millions)	21.1	20.81	1.37%	21.88	3.70%
ln(Migration Stock)	14.08	13.81	1.92%	12.61	10.44%
Agricultural growth(%)	4.149	3.549	14.46%	3.002	27.65%

Table 1: Balance of remittance predictors in the pre-treatment phase for Bangladesh, Synthetic Bangladesh and the donor pool mean

Donor Unit Selection Methodology
Balancing Predictors via Weighting



The actual model has 6 dimensions

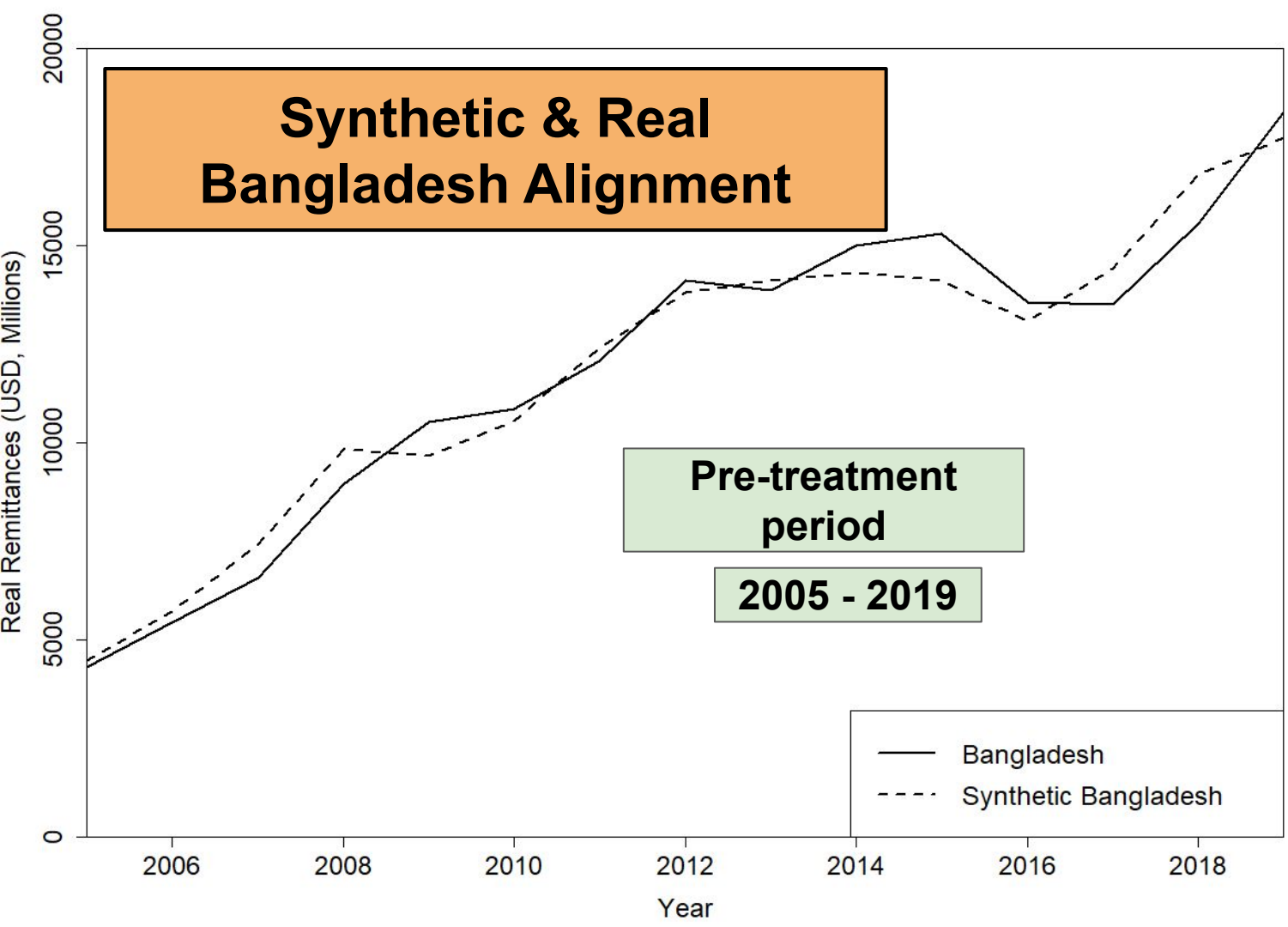
The actual model optimized for 20 countries

Donor Pool Control Countries

Weights	Country	Weights	Country
0.705	Kenya	0.000	Mexico
0.187	India	0.000	Morocco
0.107	Cambodia	0.000	Myanmar
		0.000	Nepal
		0.000	Nigeria
0.000	Albania	0.000	Panama
0.000	China	0.000	Philippines
0.000	Colombia	0.000	Sri Lanka
0.000	Guatemala	0.000	Thailand
0.000	Honduras	0.000	Ukraine
0.000	Malaysia	0.000	Vietnam

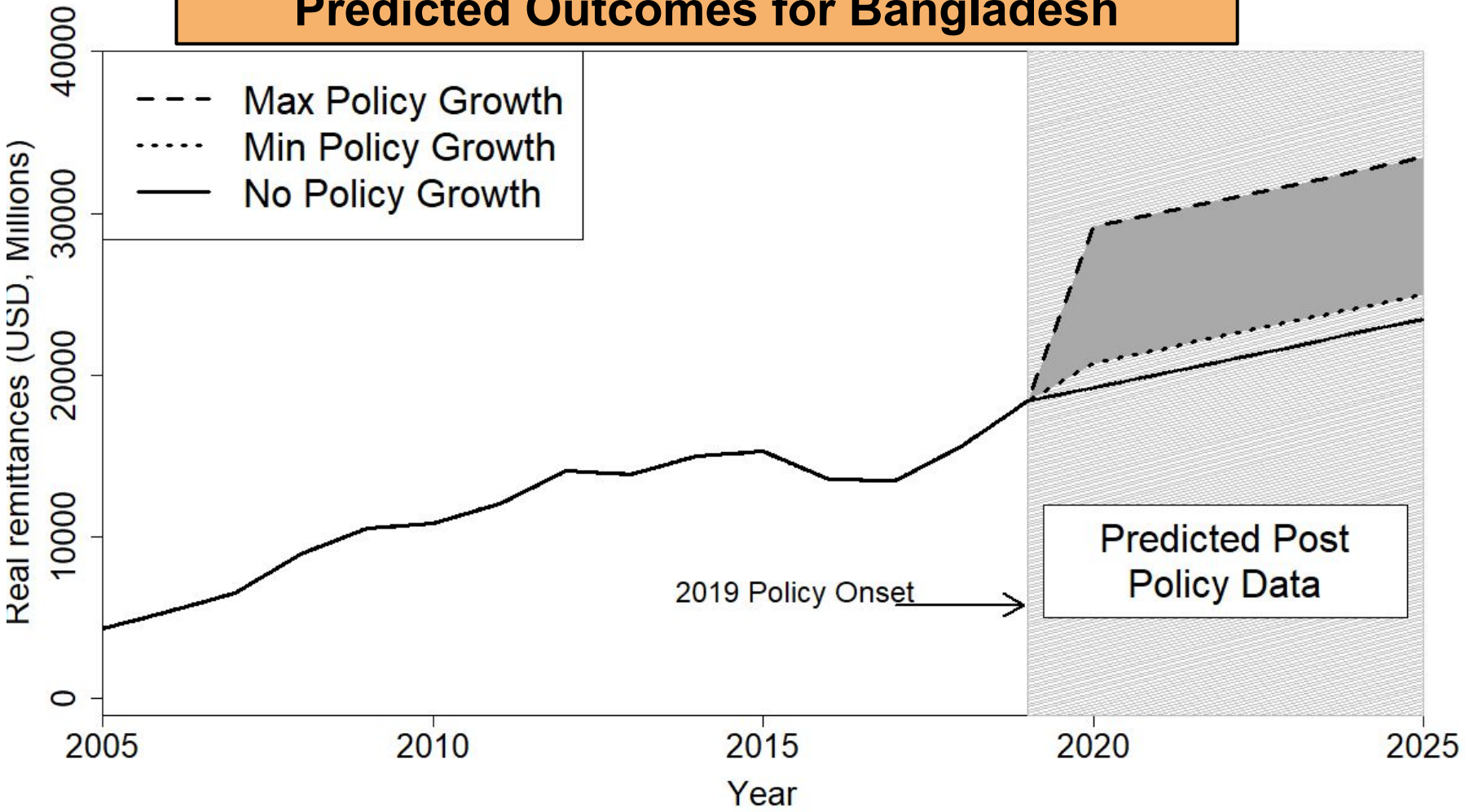
Table 2: Donor pool weights used to create synthetic Bangladesh

Only 3 countries were weighted to represent the synthetic Bangladesh from the 20 donor pool countries

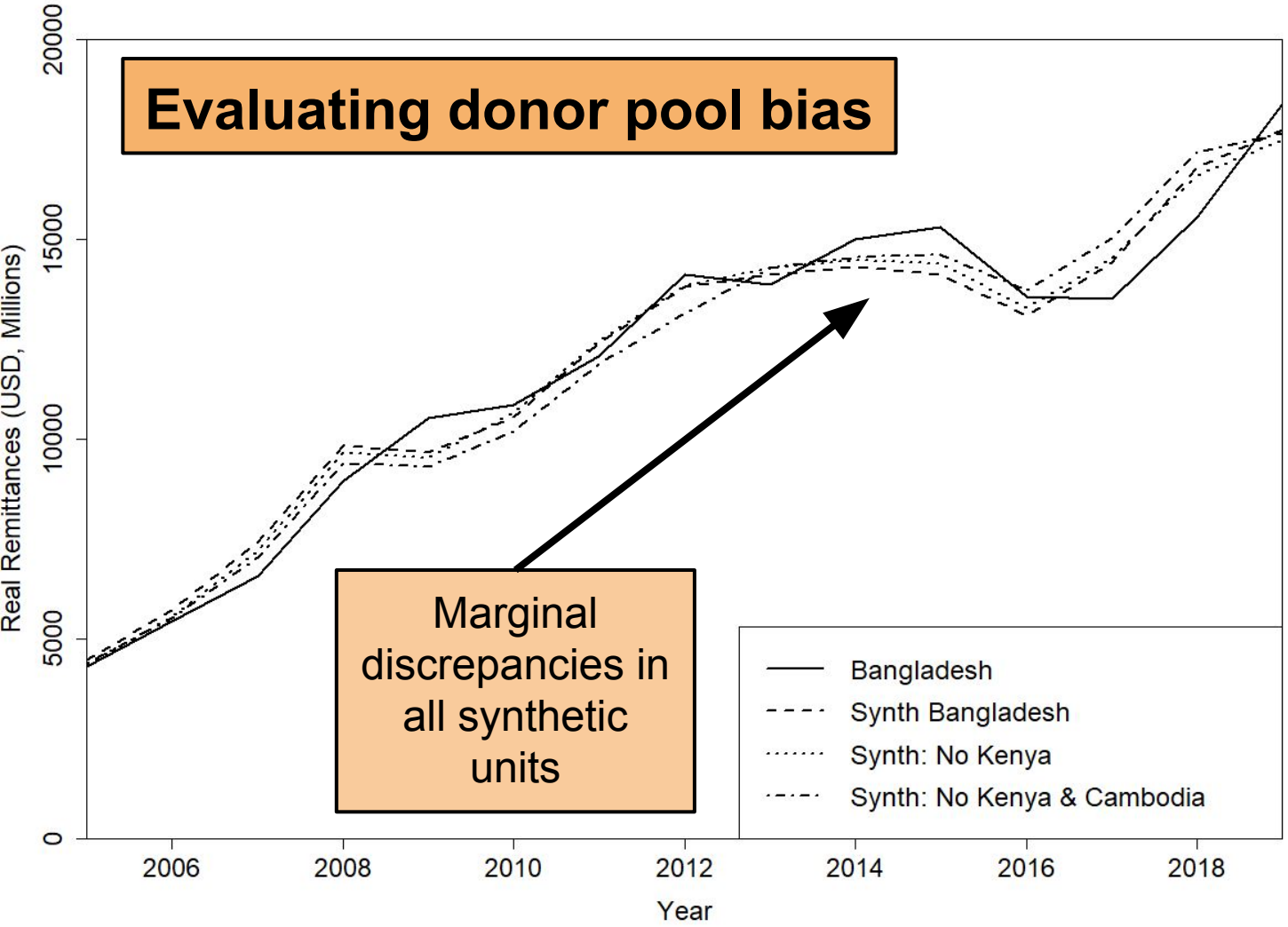


Excellent alignment in the pre-treatment period between Real Bangladesh and its synthetic control unit. (Note the frequent line crossings)

Predicted Outcomes for Bangladesh

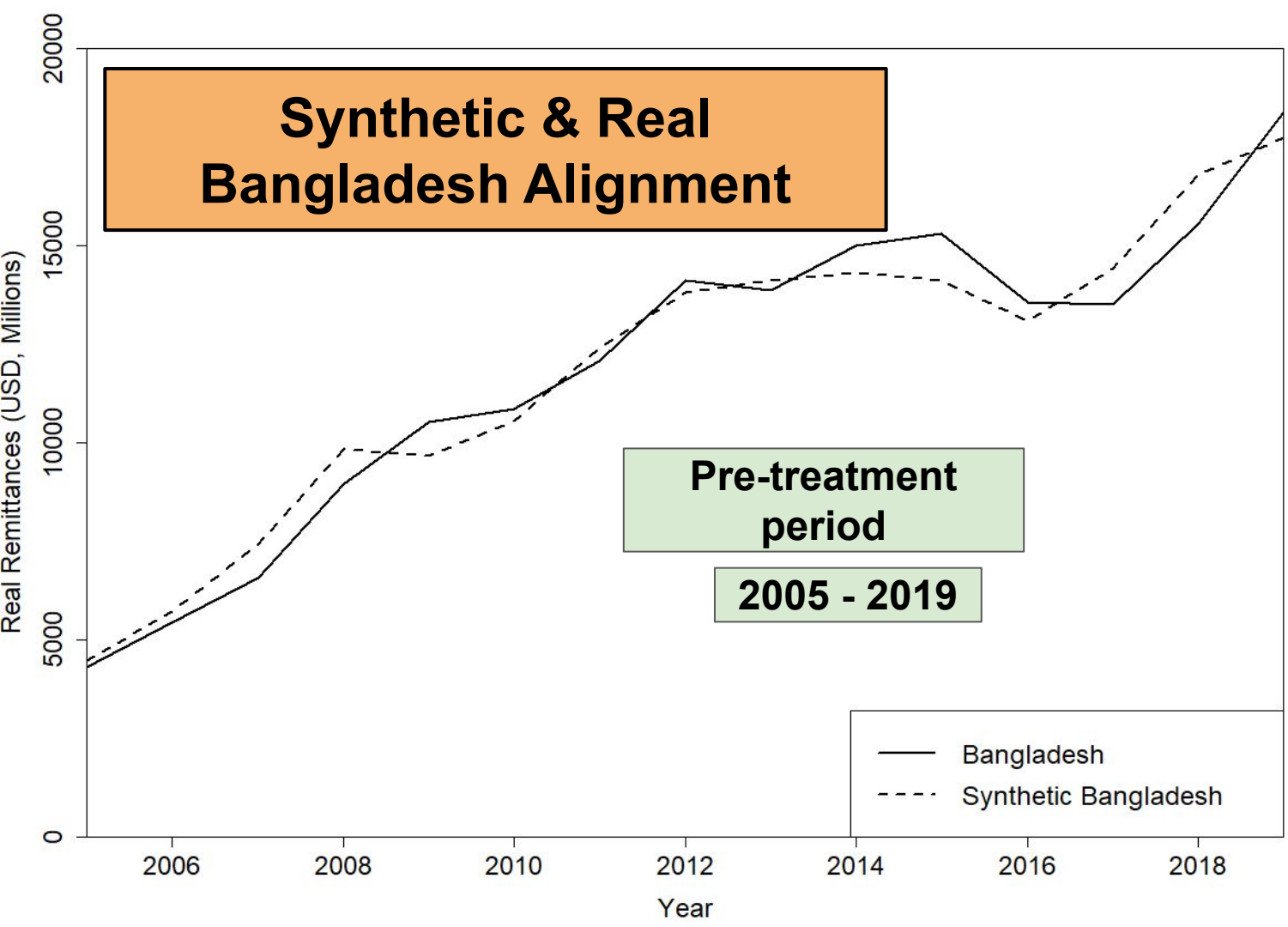


Evaluating donor pool bias



Marginal discrepancies in all synthetic units

The implication is that there is minimal bias associated with control unit selection



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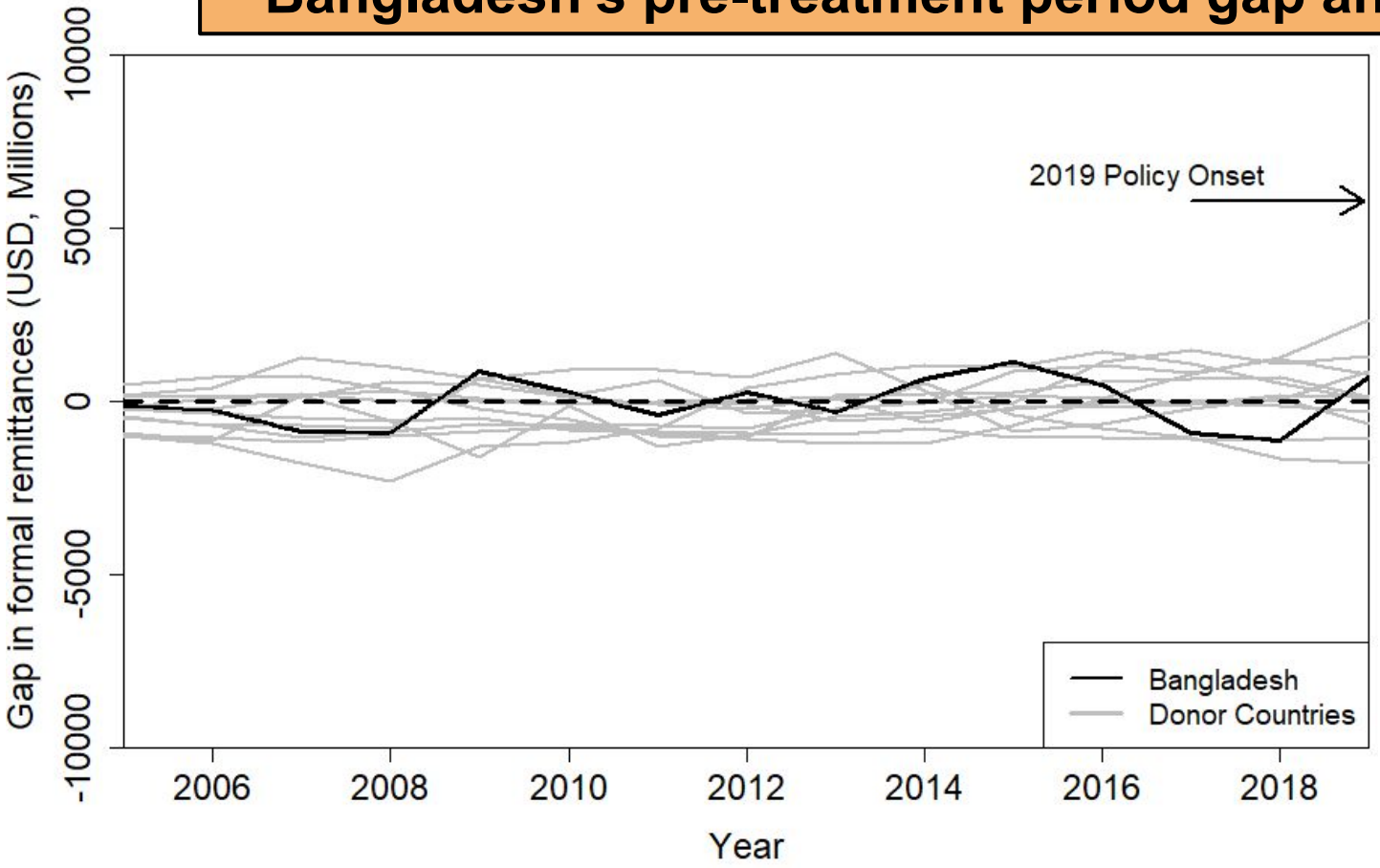
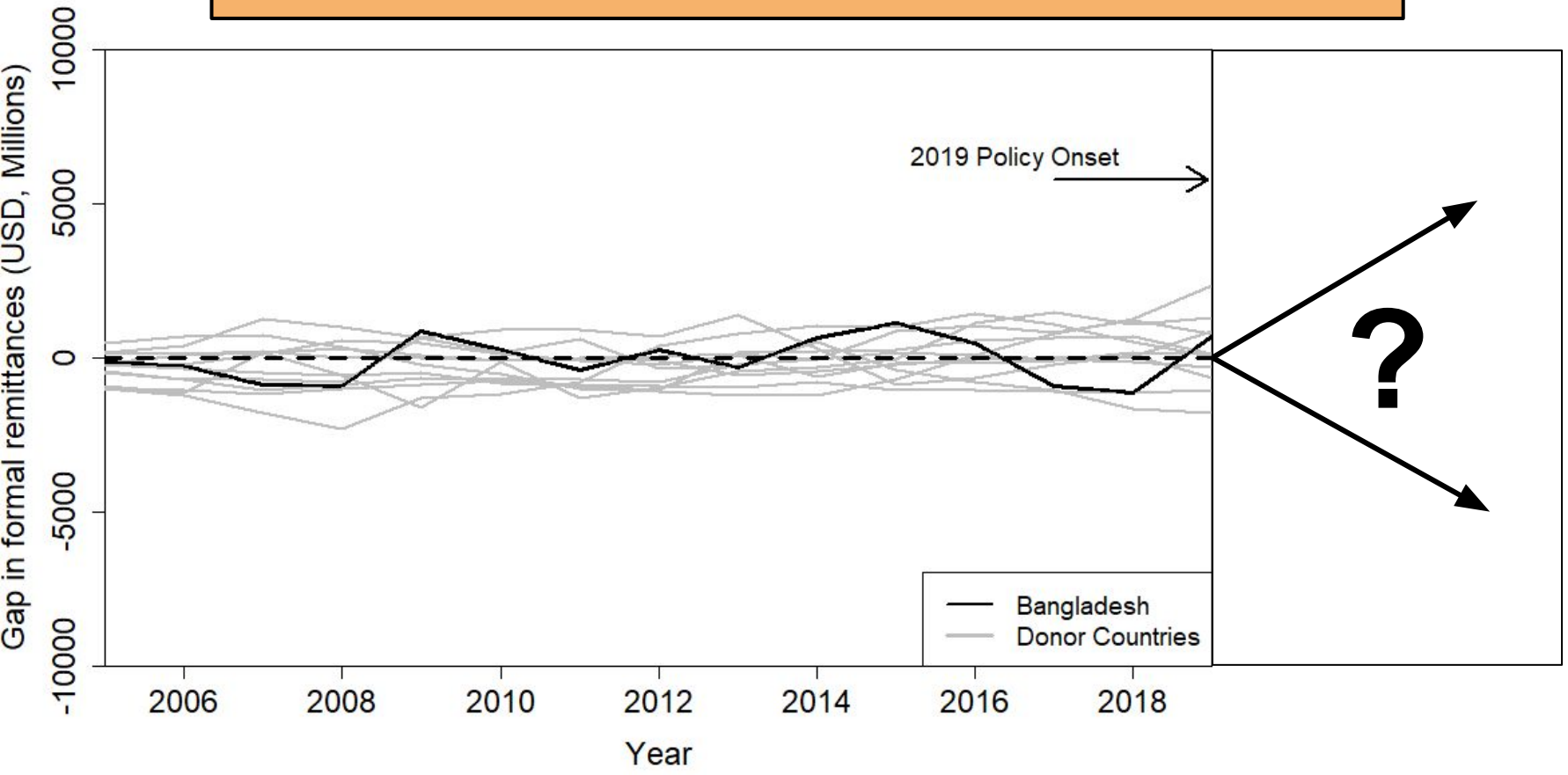
Bangladesh's pre-treatment period gap analysis

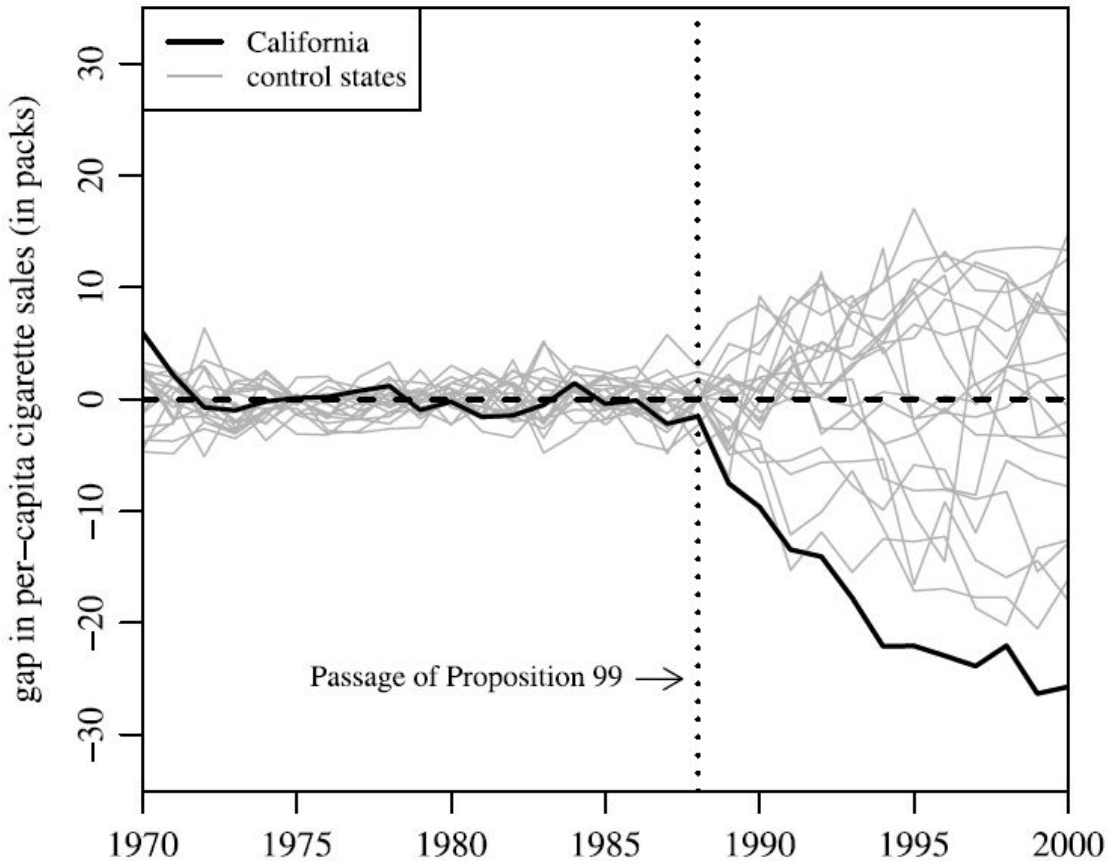


Placebo in place test - evaluate gap for donor countries

Bangladesh's Post-treatment Outcomes?



California's completed gap analysis



Testing all donor states for California demonstrate the largest variance occurs for California.

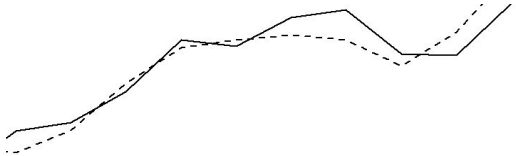
This supports that the effect size is distinct for California's prop 99

Abadie, A., Diamond, A., & Hainmueller, J. (2010). Synthetic control methods for comparative case studies: Estimating the effect of California's tobacco control program. *Journal of the American statistical Association*, *105*(490), 493-505.

Conclusion - The study design had...

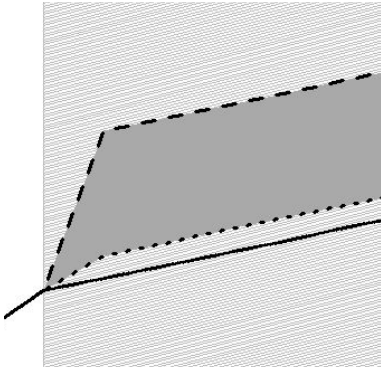
Bangladesh Real	Bangladesh Synthetic
105.699	105.83
21.41	21.320
7.98	8.03
21.1	20.81
14.08	13.81
4.149	3.549

Well Balanced Predictors



Good synth & treatment alignment

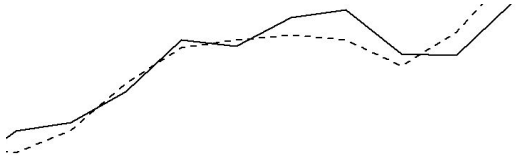
Well aligned pre-treatment donor pool

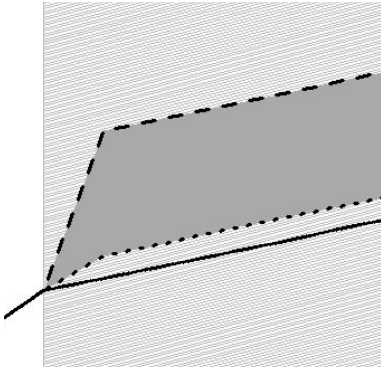


Clear range of predicted outcomes

Therefore...

Bangladesh Real	Bangladesh Synthetic
105.699	105.83
21.41	21.320
7.98	8.03
21.1	20.81
14.08	13.81
4.149	3.549





The results of this study coupled with its blindness to outcomes gives me confidence that this paper's model has the ability to accurately evaluate the causal treatment effect of Bangladesh's remittance incentive program.

END