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
Bangladesh is the 8th largest remittance recipient nation with approximately $20 billion USD received in 2020.
In July of 2019, Bangladesh enacted a 2% remittance incentive policy.

The first of its kind.
Potential Impact:
Reducing remittance fees has the potential to effect on economic development & reduce poverty
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%

Bangladesh Remittances as a % of GDP
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 the largest international financing mechanism.
Why does this matter?

Remittances are one of the most precise tools in targeting poverty.
Richard Adams & John Page (2005) concluded that a 10% increase in formal remittances resulted in a 3.5% decrease in per capita poverty rate.
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.

So, why do remittances and their fees matter?
How will the Bangladesh 2% remittance incentive policy, implemented in July of 2019, affect the overall remittances Bangladesh receives?
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.
The synthetic control method was originally 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

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 VS Synthetic Bangladesh

Real Bangladesh: BANGLADESH
Synthetic Bangladesh: CAMBODIA, INDIA, KENYA
Treatment vs. Control

Real Bangladesh

Treatment = Policy

Outcome = Real Remittances

Gap = Effect Size

Pre-treatment period
2005 - 2019

Treatment Month
July 2019

Synthetic Bangladesh

Control = No Policy

Outcome = Model Remittances

Post-treatment period
2019 - 2025
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

<table>
<thead>
<tr>
<th>Remittances Predictor</th>
<th>Bangladesh Real</th>
<th>Bangladesh Synthetic</th>
<th>% out of balance</th>
<th>Donor Pool Mean</th>
<th>% out of balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary School Enrollment(Gross Ratio %)</td>
<td>105.699</td>
<td>105.83</td>
<td>0.12%</td>
<td>106.02</td>
<td>0.30%</td>
</tr>
<tr>
<td>ln(Development Aid) (USD Millions)</td>
<td>21.41</td>
<td>21.320</td>
<td>0.42%</td>
<td>20.17</td>
<td>5.79%</td>
</tr>
<tr>
<td>ln(GDP Purchasing Parity Power) (USD Millions)</td>
<td>7.98</td>
<td>8.03</td>
<td>0.63%</td>
<td>8.86</td>
<td>11.03%</td>
</tr>
<tr>
<td>ln(Foreign Direct Investment) (USD Millions)</td>
<td>21.1</td>
<td>20.81</td>
<td>1.37%</td>
<td>21.88</td>
<td>3.70%</td>
</tr>
<tr>
<td>ln(Migration Stock)</td>
<td>14.08</td>
<td>13.81</td>
<td>1.92%</td>
<td>12.61</td>
<td>10.44%</td>
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<td>Agricultural growth(%)</td>
<td>4.149</td>
<td>3.549</td>
<td>14.46%</td>
<td>3.002</td>
<td>27.65%</td>
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**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
Only 3 countries were weighted to represent the synthetic Bangladesh from the 20 donor pool countries.

Table 2: Donor pool weights used to create synthetic Bangladesh.
Excellent alignment in the pre-treatment period between Real Bangladesh and its synthetic control unit. (Note the frequent line crossings)
Predicted Outcomes for Bangladesh

- Max Policy Growth
- Min Policy Growth
- No Policy Growth

Real remittances (USD, Millions)

Year

2005 2010 2015 2020 2025

2019 Policy Onset

Predicted Post Policy Data
Evaluating donor pool bias

Marginal discrepancies in all synthetic units

The implication is that there is minimal bias associated with control unit selection
Excellent alignment in the pre-treatment period between Real Bangladesh and its synthetic control unit. (Note the frequent line crossings)
Bangladesh’s pre-treatment period gap analysis

Placebo in place test - evaluate gap for donor countries

2019 Policy Onset
Bangladesh’s Post-treatment Outcomes?

![Graph showing a trend in gap in formal remittances from 2006 to 2018. The graph indicates a steady trend with a notable change in 2019.]
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

Conclusion - The study design had...

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- Well Balanced Predictors
- Good synth & treatment alignment
- Well aligned pre-treatment donor pool
- Clear range of predicted outcomes
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