

A Soap Opera and Local Economic Activity: Evidence from Jalapão, Brazil

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Abstract

This note asks whether national television exposure can generate local economic activity in a remote area of a developing economy. The Globo soap opera *O Outro Lado do Paraíso*, broadcast from October 2017 to May 2018, featured Jalapão, Brazil. In 2017, GDP per resident in the four treated municipalities was 52 percent of the Brazilian average. Synthetic controls compare this core with other municipalities in Tocantins. From 2018 to 2023, Jalapão had 4.43 formal lodging jobs per 1,000 residents, compared with 0.90 in its synthetic control. The average gap has a two-sided placebo p-value of 0.013 and survives the main specification checks. Total real private-services value added in 2018–2021 is 42.8 percent above its synthetic comparison (two-sided $p = 0.079$), while the per-resident estimate is null. The results show a large formal-employment response in tourism and suggestive evidence of broader services expansion.

Keywords: tourism; media; synthetic control; local economic development; formal employment; Brazil

JEL codes: C21; L83; O12; R11; Z11

1. Introduction

Film and television can redirect demand toward places with limited conventional promotion. Contu and Pau (2022) find that *Game of Thrones* increased visits to filming locations. Nocito et al. (2023) find that Inspector Montalbano increased tourism and local income in Sicily.

We study whether a national cultural product changed local economic activity in a remote part of a developing economy. Globo broadcast *O Outro Lado do Paraíso*, a 172-episode prime-time soap opera, from October 2017 to May 2018. Its leading character lived in Jalapão, where many scenes were filmed. Brazilian soap operas reach large national audiences and can affect behavior (La Ferrara et al. 2012). The broadcast gave the remote region unusually broad exposure.

We ask whether this exposure is visible in formal lodging employment and private-services value added. The treated unit combines Mateiros, Novo Acordo, Ponte Alta do Tocantins, and São Félix do Tocantins, our four-municipality Jalapão core. We construct a synthetic control from other municipalities in Tocantins and match each outcome's path from 2010 to 2017. We treat 2018 as the first affected year and 2019 as the first full year.

We find a large, persistent lodging divergence. In 2018–2023, Jalapão averaged 4.43 formal lodging jobs per 1,000 residents, compared with 0.90 in the synthetic control, a difference equal to 395 percent of the synthetic mean. Its average gap exceeds all 75 well-fitted placebos (two-sided $p = 0.013$). Total real private-services value added also exceeds its synthetic comparison by 42.8 percent in our main specification, over 2018–2021 (two-sided $p = 0.079$). Services per resident do not increase.

The paper contributes evidence from a developing economy, where tourism demand can matter for small labor markets. The strongest result is formal lodging employment, with suggestive evidence of higher aggregate private-services output. The case shows how nationally distributed cultural content can transmit demand to remote economies.

2. Background data and empirical strategy

Jalapão is a sparsely populated region in the eastern part of Tocantins, in the Brazilian Cerrado. The four treated municipalities had approximately 16,400 residents and eleven formal lodging jobs in 2017. Their combined GDP per resident was R\$16,510, 52 percent of the Brazilian level of R\$31,713. Tourism is organized around natural amenities and small settlements.

Employment comes from Brazil's mandatory annual register of formal jobs (RAIS). We count active year-end employment relationships at accommodation establishments (Division 55 of the national industry classification) per 1,000 municipal residents. Population comes from Brazil's national statistical office. The outcome excludes informal guides, family labor, and unregistered accommodation and may capture the formalization of existing activity.

We rebuilt the lodging series from the complete official establishment files for 2006–2024. A municipality-year is coded zero only when the national file has no Division-55 establishment; an observed establishment reporting zero active jobs remains an observed zero.

The second outcome is private-services value added from Brazil's municipal economic accounts. It excludes public administration, defense, public education and health, and social security. We sum the four municipalities and express nominal values in constant 2021 reais using Brazil's official consumer price index. Sector-specific accounts end in 2021, so the analysis covers 2010–2021. We also estimate the outcome per resident.

Identification relies on the timing and national scale of exposure. We fit a separate synthetic control for each outcome. Donor weights are non-negative, sum to one, and minimize prediction error over 2010–2017. To reduce scale sensitivity, we use natural logarithms. For lodging, we add one before taking logs so that observations with zero jobs remain in the sample. For services, we log total inflation-

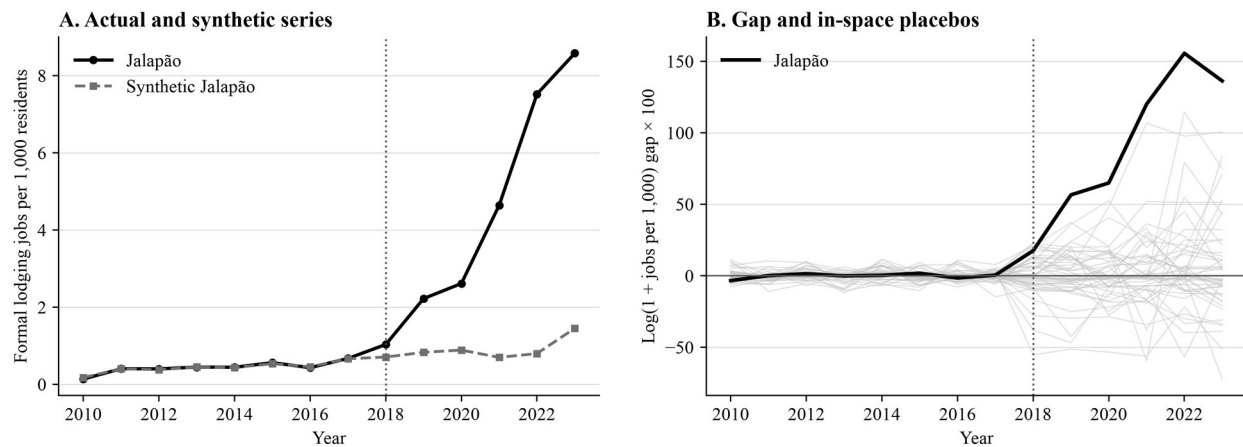
adjusted private-services value added. The lodging pool contains 88 municipalities with a pre-treatment lodging establishment. The services pool contains 124 municipalities. Eleven nearby municipalities are excluded as a conservative spillover buffer. Palmas, the state capital, is excluded from the lodging pool and receives zero services weight.

For inference, we reassign treatment to each eligible donor (Abadie et al. 2010; Abadie 2021). We retain placebos with pre-treatment root mean squared prediction error (RMSPE) no greater than five times Jalapão's and report the empirical ranks of the average post-treatment gap and post/pre-RMSPE ratio. Robustness checks move treatment to 2017, vary the donor pool and matching scale, and add a ridge penalty.

3. Results

Panel A of Figure 1 shows that synthetic Jalapão follows the treated series closely before 2018. Pre-treatment RMSPE is 0.016. In 2017, the actual outcome is 0.671 formal lodging jobs per 1,000 residents and the synthetic value is 0.663. Hence the post-treatment difference does not continue a visible pre-existing divergence.

Figure 1. Formal lodging employment in Jalapão



Note: Panel A reports formal lodging jobs per 1,000 residents. Panel B reports gaps on the logarithmic scale defined in Section 2 for Jalapão and 75 placebos with pre-treatment RMSPE no greater than five times Jalapão's. The dotted line marks 2018. Sources: RAIS/MTE and IBGE.

Table 1. Synthetic-control estimates

Specification	Donors	Actual	Synthetic	Gap	p(gap)	p(ratio)
Panel A Formal lodging jobs per 1,000 residents						
Baseline	88	4.43	0.90	3.54	0.013	0.191
Treatment in 2017	88	3.90	0.55	3.35	0.013	0.227
Include buffer	96	4.43	0.81	3.63	0.013	0.212
Ridge penalty	88	4.43	0.87	3.57	0.013	0.118
Match outcome in levels	88	4.43	0.93	3.51	0.015	0.231
Panel B Inflation-adjusted private-services value added						
Total, R\$ million	124	62.90	44.04	18.85	0.079	0.658
Per resident, R\$	124	3754	3937	-182	0.685	0.815

Note: Panel A reports post-treatment means for 2018–2023, except 2017–2023 in the timing check. Panel B reports means for 2018–2021 in constant 2021 prices. Services exclude public administration, defense, public education and health, and social security. $p(\text{gap})$ is the two-sided empirical rank of the average gap; $p(\text{ratio})$ ranks the post/pre-RMSPE ratio. Both retain placebos with pre-treatment RMSPE no greater than five times Jalapão's.

Table 1 reports the main estimates and robustness checks. The lodging gap is positive in 2018 and grows thereafter. Jalapão has 1.03 lodging jobs per 1,000 residents in 2018, compared with 0.71 in its synthetic control, and 8.58 versus 1.45 in 2023. In raw terms, the four municipalities move from eleven formal lodging jobs and eight recorded establishments in 2017 to 138 jobs and 55 establishments in 2023.

Moving treatment to 2017, including the buffer, adding a ridge penalty, or matching levels yields a lodging gap between 3.35 and 3.63 jobs per 1,000. Additional checks that require positive pre-treatment jobs or admit all municipalities give the same conclusion. Across all lodging specifications, average-gap p-values range from 0.009 to 0.021.

The RMSPE-ratio evidence is weaker. Some placebo municipalities have an almost exact zero pre-fit. Dividing their post-treatment error by a very small pre-treatment RMSPE produces extreme ratios, which is why the baseline ratio p-value is 0.191. We therefore emphasize the gap distribution and report both diagnostics.

Panel B reports the broader activity result. From 2018 to 2021, total real private-services value added averages R\$62.90 million in Jalapão and R\$44.04 million in its synthetic control. The R\$18.85 million gap equals 42.8 percent of the synthetic mean. Its one-sided average-gap p-value is 0.044 and the two-sided value is 0.079. Alternative specifications remain positive, though smaller: moving treatment to 2017 gives 14.3 percent, including the buffer gives 5.3 percent, and ridge regularization gives 14.9 percent. Real services per resident show a –4.6 percent gap (two-sided $p = 0.685$). The total, rather than per-resident, estimates therefore suggest an expansion in aggregate services activity.

4. Concluding remarks

A synthetic control reproduces Jalapão's pre-2018 lodging-employment path closely. Afterward, Jalapão moves persistently above the counterfactual, reaching 8.58 formal lodging jobs per 1,000 residents in 2023, compared with 1.45 in synthetic Jalapão. The result survives simple alternative specifications and is large in average-gap placebo comparisons. In the main specification, total real private-services value added also rises by 42.8 percent relative to its synthetic control, providing complementary evidence of broader economic expansion.

RAIS records formal jobs rather than visitor flows, so the measure may capture both new employment and the formalization of existing activity. Complementary investment may also form part of the local response. The timing, close pre-treatment fit, persistence, and concentration in lodging are consistent with a media-induced tourism response. The case shows how a nationally distributed cultural product can expand formal employment in a remote, relatively low-output economy.

5. Data availability statement

RAIS and IBGE data are public. Replication code and derived data accompany the submission.

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6. Declaration of generative AI use

During the preparation of this work, the authors used OpenAI Codex (GPT-5, OpenAI; accessed September 2026) to assist with software coding, statistical verification, manuscript organization, and the preparation and language refinement of draft prose. The research question, empirical design, interpretation, and conclusions were developed and verified by the authors. The authors reviewed and edited all outputs, confirmed the originality and accuracy of the content, checked the tool's applicable terms of use, and take full responsibility for the integrity of the manuscript, including the accuracy of the references.

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