12_Bahamas

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1 How has the relationship between trade in services (as a percentage of GDP) and inflation (consumer prices, annual %) evolved in The Bahamas between 1980 and 2015?

1.1 Abstract

Using World Bank World Development Indicators (WDI), this study examines the relationship between trade in services (% of GDP) and inflation (consumer prices, annual %) in The Bahamas between 1980 and 2015. Over this period, inflation declined slightly overall, reflecting gradual stabilization of consumer prices. By contrast, trade in services—historically a central pillar of the Bahamian economy—fell by nearly 50%, with the most dramatic drop occurring between 1996 and 1997. This divergence underscores that while macroeconomic price stability was broadly maintained, the service trade sector experienced substantial structural decline. The findings highlight the multidimensional nature of development in small, service-dependent economies, where resilience in one domain does not guarantee stability in another.

1.2 1. Question

How has the relationship between trade in services (as a percentage of GDP) and inflation (consumer prices, annual %) evolved in The Bahamas between 1980 and 2015?

- **Service trade proxy**: Trade in services (% of GDP)
- **Inflation proxy**: Inflation, consumer prices (annual %)

1.3 2. Data

- **Source**: World Bank World Development Indicators (WDI)
- **Indicators**:
  - Trade in services (% of GDP)
  - Inflation, consumer prices (annual %)
- **Coverage**: The Bahamas, 1980–2015
- **Notes**: National-level data only

1.4 3. Method

1. Filtered dataset for The Bahamas.
2. **Selected relevant columns**: Year, Indicator Name, Value.
3. Pivoted indicators into separate columns and sorted by year.
4. Produced a dual-axis line graph comparing service trade and inflation trends.

(Analysis is descriptive; no causal inference applied.)

1.5 4. Results

- **Trade in services (% of GDP)**: Declined significantly by about 50% over the period, with an especially sharp drop between 1996 and 1997.
- **Inflation (% annual)**: Decreased slightly overall, showing moderate stabilization of consumer prices.
- **Comparison**: While inflation trended downward, trade in services declined steeply, indicating diverging trajectories between external service trade and domestic price stability.

(Figure 1. Trade in Services vs Inflation in The Bahamas, 1980–2015)

(Table 1. Pivoted dataset)

1.6 5. Interpretation

- The Bahamas maintained relative price stability, consistent with efforts to manage consumer inflation.
- Service trade's decline reflects structural vulnerabilities in a tourism- and service-dependent economy, including global competition, regional shocks, and changes in external demand.
- The divergence demonstrates that macroeconomic stability in prices can coexist with sector-specific weakness, underscoring the importance of diversification strategies for small economies.

1.7 6. Limitations

- Analysis focuses only on two indicators; other macroeconomic and sectoral variables (e.g., tourism arrivals, foreign direct investment, exchange rates) are excluded.
- National-level data may obscure differences between sub-sectors within services.
- Descriptive analysis only; causal mechanisms are not tested.

1.8 7. Next Steps / Extensions

- Investigate sector-specific trends within services (e.g., tourism vs financial services) to identify which areas drove the decline.
- Examine the impact of regional/global shocks—such as hurricanes, financial crises, and shifts in travel demand—on service trade.
- Compare The Bahamas with other Caribbean economies to assess whether similar service trade contractions occurred.
- Explore econometric methods to test whether inflation stabilization contributed indirectly to changes in trade competitiveness.

[1]:
```
# How has the relationship between trade in services (as a percentage of GDP)␣
↪and inflation (consumer prices, annual %) evolved in The Bahamas between␣
↪1980 and 2015?

import pandas as pd
import matplotlib.pyplot as plt
import os
```

```
# Folders
data_raw_folder = "data_raw/"
data_clean_folder = "data_clean/"
figures_folder = "figures/"

# Load CSV
filename = "bahamas_combined.csv"  # Filtered dataset with only relevant rows
df = pd.read_csv(os.path.join(data_raw_folder, filename))

# Keep only needed columns
df = df[["Year", "Indicator Name", "Value"]]

# Convert Year and Value to numeric, drop invalid rows
df["Year"] = pd.to_numeric(df["Year"], errors="coerce")
df["Value"] = pd.to_numeric(df["Value"], errors="coerce")
df = df.dropna(subset=["Year", "Value"])

# Pivot indicators into separate columns
df_pivot = df.pivot(index="Year", columns="Indicator Name", values="Value").
 ↪reset_index()
df_pivot = df_pivot.sort_values("Year")

print("Pivoted Bahamas dataset:")
display(df_pivot)

# Interpolate missing values for smooth plotting (optional)
df_plot = df_pivot.interpolate(method='linear')

# Plot the two indicators
plt.figure(figsize=(10,6))
plt.plot(df_plot["Year"], df_plot["Trade in services (% of GDP)"],
         marker='o', linestyle='-', label="Trade in services (% of GDP)")
plt.plot(df_plot["Year"], df_plot["Inflation, consumer prices (annual %)"],
         marker='o', linestyle='-', label="Inflation, consumer prices (annual␣
 ↪%)")

plt.title("Bahamas: Trade in Services vs Consumer Price Inflation (%)␣
 ↪(1980-2015)")
plt.xlabel("Year")
plt.ylabel("Percentage")
plt.legend()
plt.grid(True)
plt.tight_layout()
plt.savefig(os.path.join(figures_folder,␣
 ↪"bahamas_trade_in_services_vs_consumer_price_inflation.png"))
plt.show()
```

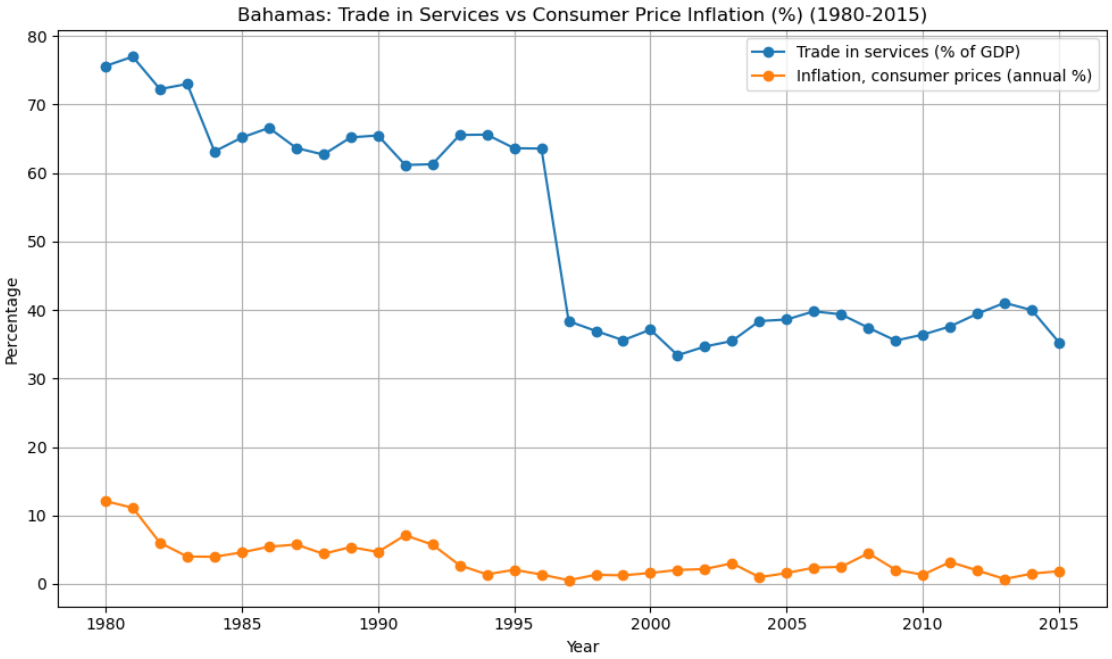
```
# Save cleaned CSV
df_pivot.to_csv(os.path.join(data_clean_folder,␣
 ↪"bahamas_trade_in_services_vs_consumer_price_inflation"), index=False)
```

Pivoted Bahamas dataset:

Indicator Name	Year	Inflation, consumer prices (annual %)
0	1980	12.097837
1	1981	11.114498
2	1982	6.012621
3	1983	4.000000
4	1984	3.966346
5	1985	4.605010
6	1986	5.433782
7	1987	5.756464
8	1988	4.402412
9	1989	5.387658
10	1990	4.669319
11	1991	7.114681
12	1992	5.738199
13	1993	2.722898
14	1994	1.399334
15	1995	2.066995
16	1996	1.379137
17	1997	0.544150
18	1998	1.336613
19	1999	1.254248
20	2000	1.606329
21	2001	2.044990
22	2002	2.173578
23	2003	3.025045
24	2004	0.981914
25	2005	1.591606
26	2006	2.389826
27	2007	2.492578
28	2008	4.489560
29	2009	2.062735
30	2010	1.344027
31	2011	3.198781
32	2012	1.973368
33	2013	0.722415
34	2014	1.513756
35	2015	1.861483

Indicator Name	Trade in services (% of GDP)
0	75.615966
1	76.978619

2	72.242286
3	72.997461
4	63.137524
5	65.165686
6	66.588473
7	63.651439
8	62.684978
9	65.195950
10	65.480101
11	61.170110
12	61.276938
13	65.547865
14	65.596809
15	63.616215
16	63.563314
17	38.356947
18	36.935735
19	35.583632
20	37.131321
21	33.393325
22	34.656976
23	35.479685
24	38.379555
25	38.605489
26	39.803782
27	39.355773
28	37.400974
29	35.533302
30	36.398161
31	37.595390
32	39.448515
33	41.044228
34	39.972906
35	35.255147


Bahamas: Trade in Services vs Consumer Price Inflation (%) (1980-2015)
Trade in services (% of GDP)
Inflation, consumer prices (annual %)
Percentage
Year
80
70
60
50
40
30
20
10
0
1980
1985
1990
1995
2000
2005
2010
2015