Economic Diversification and Global Spillovers of U.S. Monetary Policy: Implications for GCC Economies

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Introduction

- The Gulf Cooperation Council (GCC) member countries have undertaken efforts to diversify their economies and decrease their reliance on hydrocarbon revenues.
- We hypothesize that improved economic diversification may help GCC countries to become more resilient to international financial shocks.
- We focus on global spillovers of U.S. monetary policy.
- We employ Global VAR, smooth varying-coefficient and Bayesian time-varying coefficient regression methodologies.
- Specifically, we study the effect of U.S. monetary policy shocks on GDP growth of other countries including GCC members.
- We consider whether level of economic diversification play a role in vulnerabilities of countries to U.S. monetary policy.
- We contribute by investigating whether economic diversification promotes resilience of economies to U.S. monetary policy spillovers.

U.S. Monetary Policy

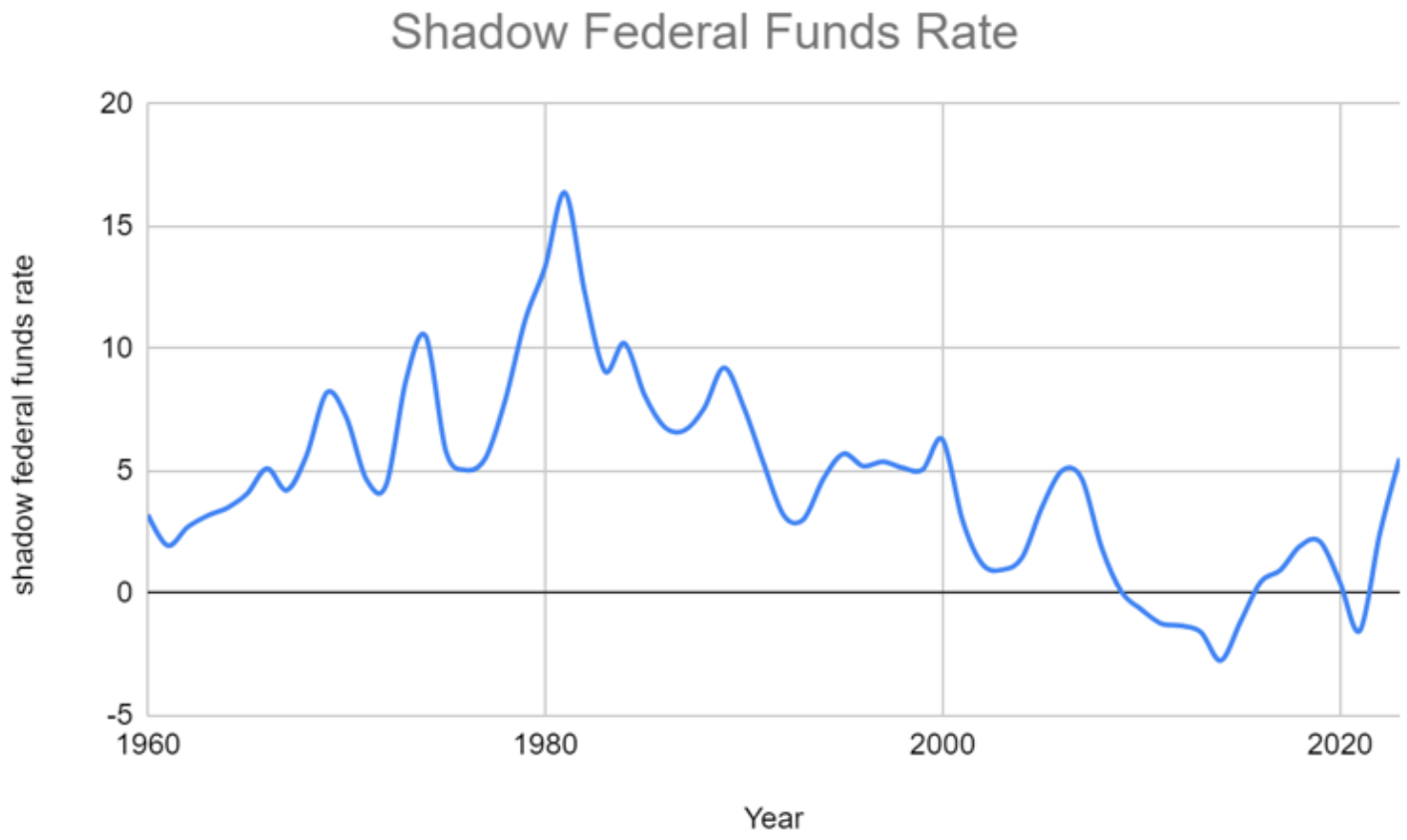


Fig 1. The Wu and Xia (2016) federal funds rate (FFR) from 1960 through 2023.

U.S. Monetary Policy Shocks

Figure 3 shows the U.S. monetary policy shocks calculated using the shadow rate.

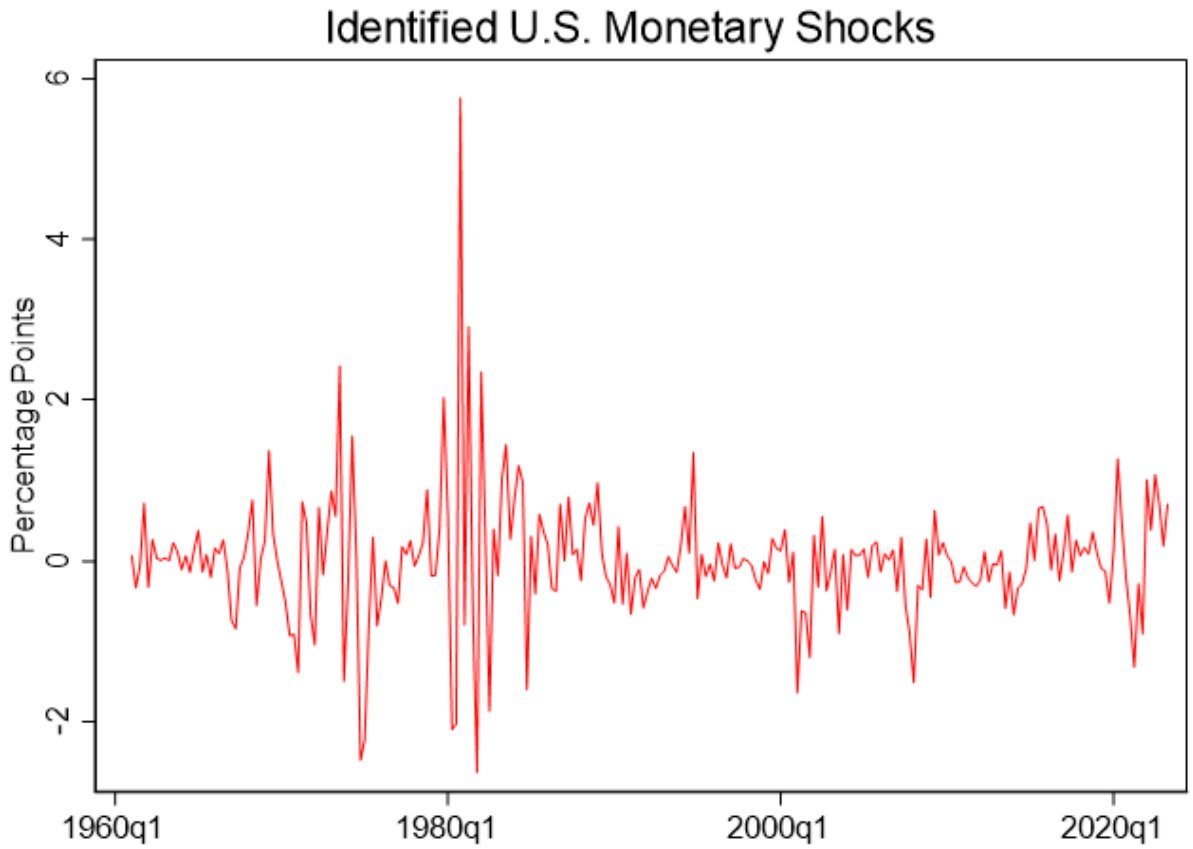


Fig 3. Identified monetary shocks. Note: The shocks are calculated as the residuals of a regression of the shadow federal funds rate on contemporaneous and lagged values of inflation, log U.S. GDP, as well as lagged values of the federal funds rate.

Economic Diversification

- Following Lashitew et al. (2021) we employ two alternative measures:

(1) ratio of per capita manufacturing (service) to per capita GPD

(2) average growth rate of per capita manufacturing.

- Lashitew et al. (2020) argues that average growth rate measure has a cleaner interpretation than competing measures.

Economic Diversification

Figure 2 displays the percentage of manufacturing in 2019 for each country.

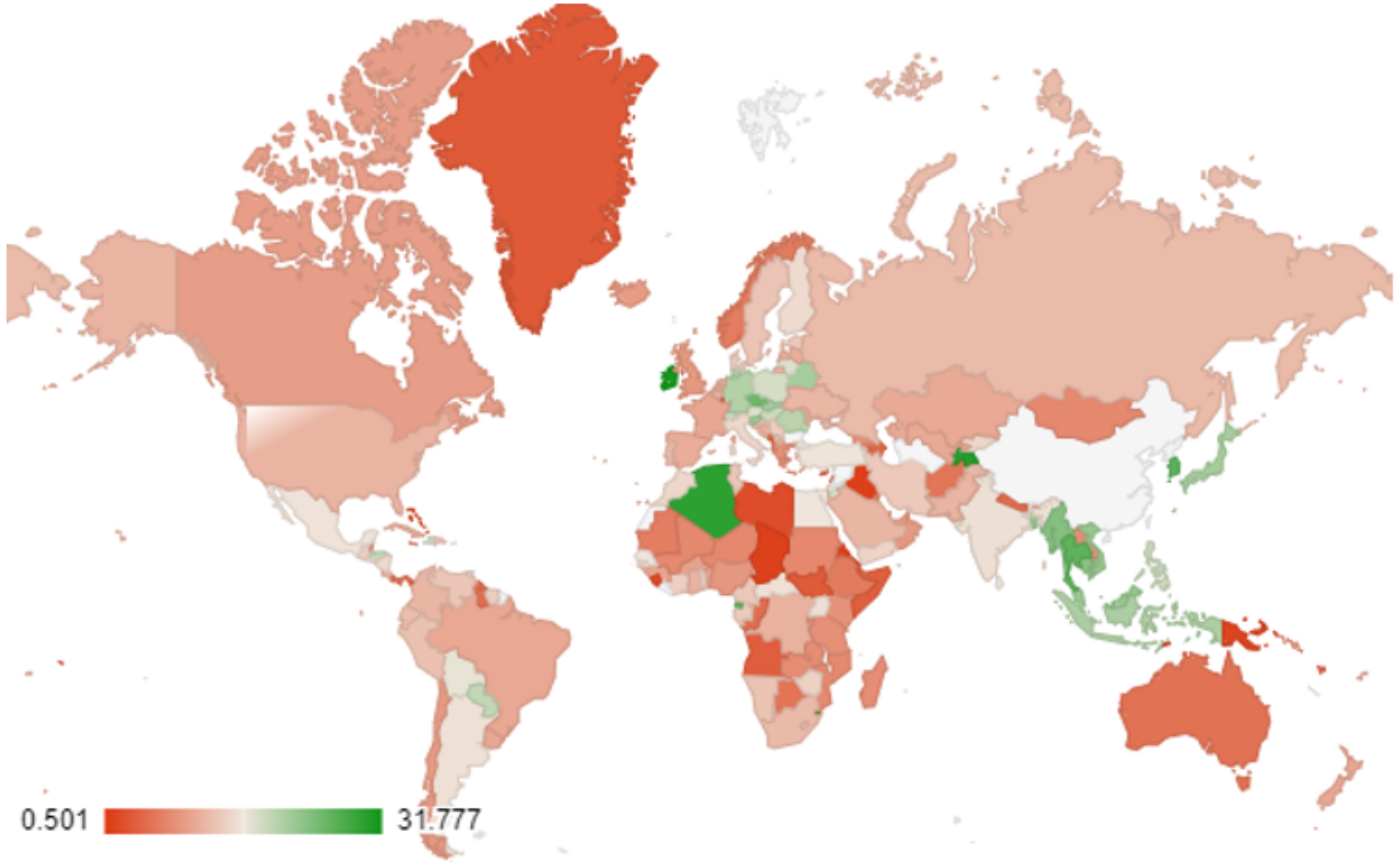


Fig 2. Percentage of manufacturing at the end of the year 2019. Data Source: World Bank World Development Indicators.

Economic Diversification in the GCC

Table 2

Diversification Measures of GCC Countries

Diversification Measure	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
Manufacturing percentage in 2019	14.36	7.48	9.14	8.04	11.77	9.53
Average Growth of manufacturing (1960-2019)	0.46	0.39	8.7	-0.37	3.42	-0.54
Service percentage in 2019	55.4	47.31	48.21	44.32	40.73	50.59
Average Growth of service (1960-2019)	1.37	-2.49	1.93	-0.13	1.86	0.41

Global VAR Analysis

- A three-variable VAR model for individual economies with CPI inflation, log GDP and short-term nominal interest rates.
- Global VAR estimated using quarterly data set.
- For Bahrain, Oman, and United Arab Emirates, we convert annual data into quarterly frequency using Denton's proportional interpolation method. (Iacoviello and Navarro, 2019)

Global VAR Results

Table 3

Summary Statistics of Average Impulse Responses

	Mean	Standard Deviation	Minimum	Maximum
Impulse Response	-0.67	0.61	-2.24	1.18

Global VAR Results

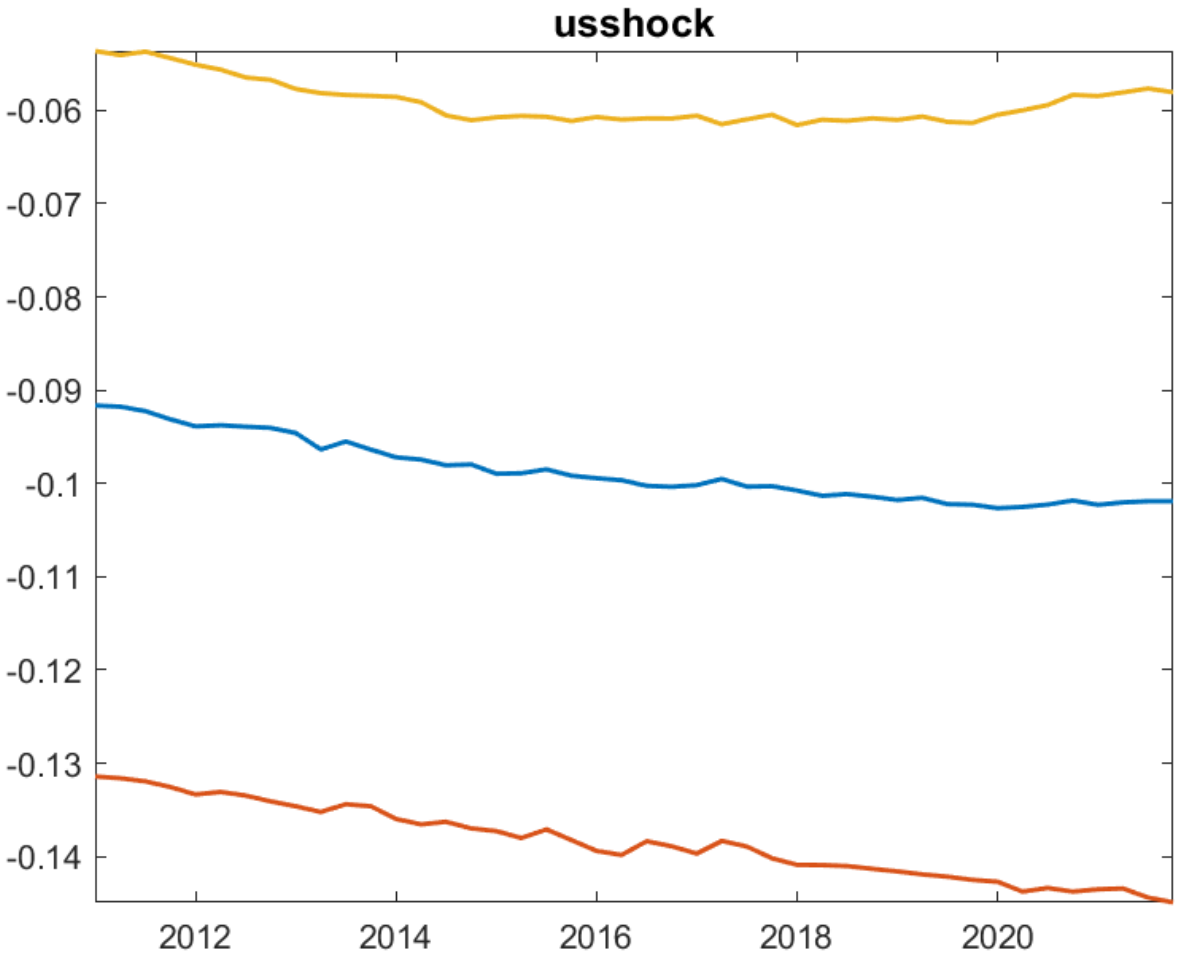
Table 4

Average Impulse Responses of GCC Countries

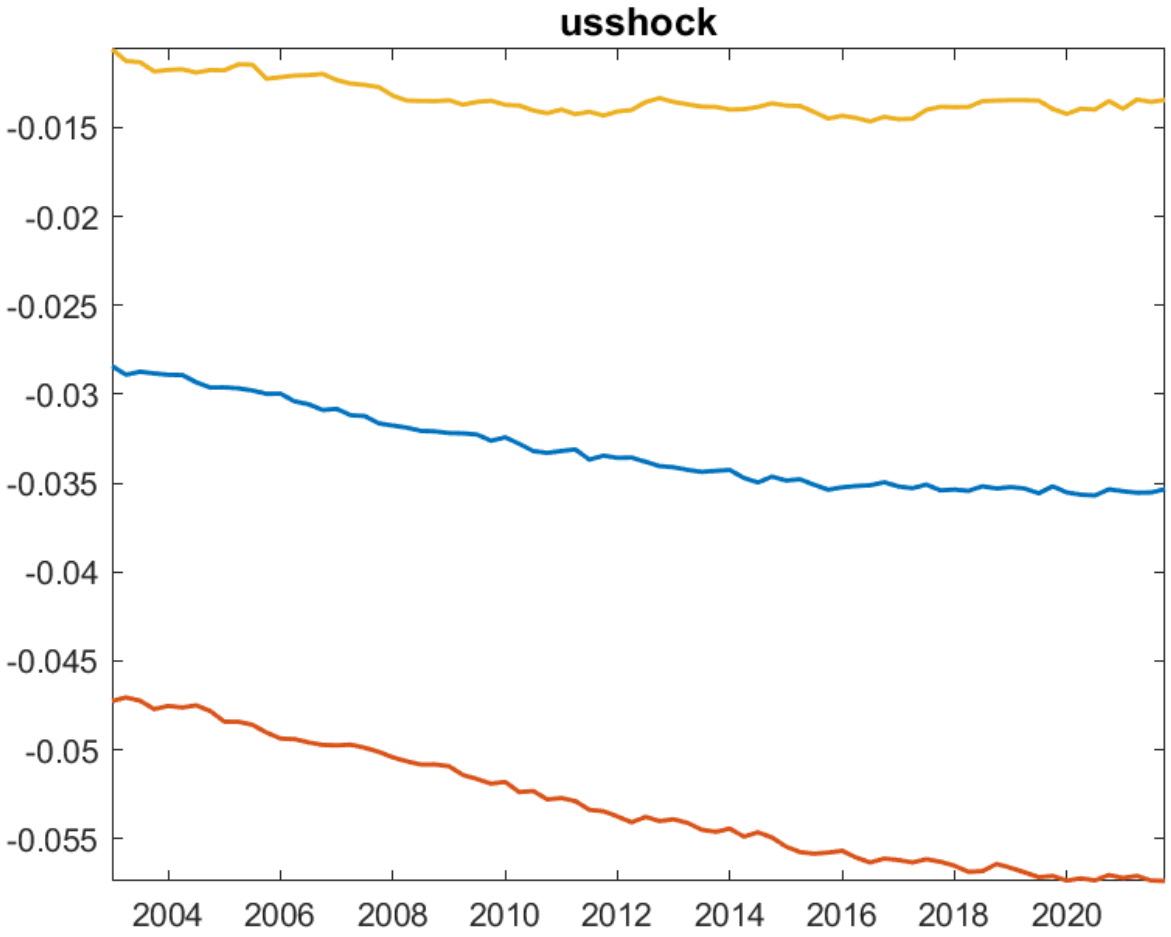
Country	Average Impulse Response
Bahrain	-0.05
Oman	-0.24
Saudi Arabia	-0.19
UAE	-0.23

Note: Average quarterly impulse response for 5 years.

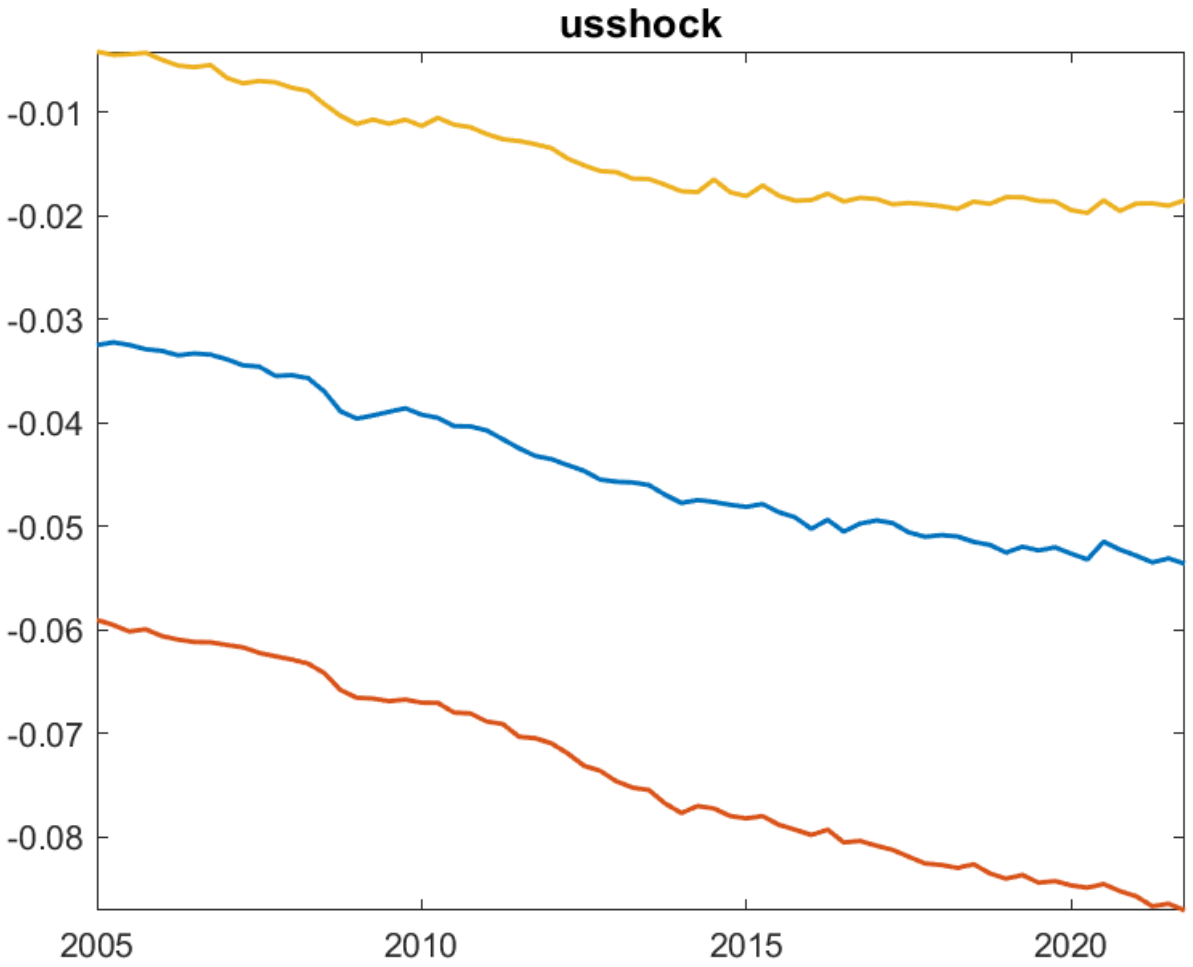
Time-Varying Coefficient Regression Results: Bahrain



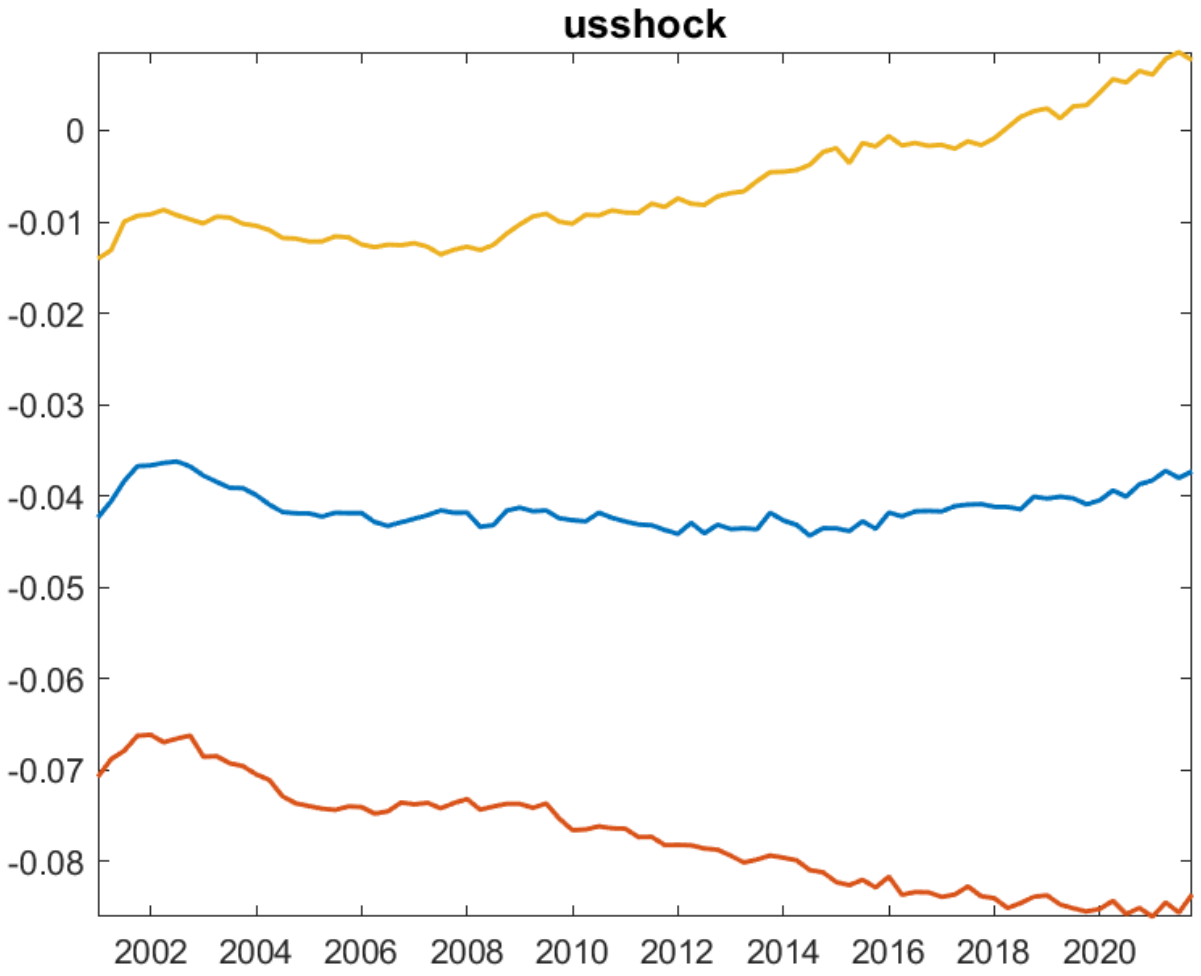
Time-Varying Coefficient Results: Oman



Time-Varying Coefficient Results: Qatar



Time-Varying Coefficient Results: Saudi Arabia



Economic Diversification and Vulnerability to U.S. Monetary Policy Shocks

- We estimate a smooth varying-coefficient model to examine the effect of U.S. monetary policy shocks on different levels of economic diversification.

Economic Diversification and Vulnerability to U.S. Monetary Policy Shocks

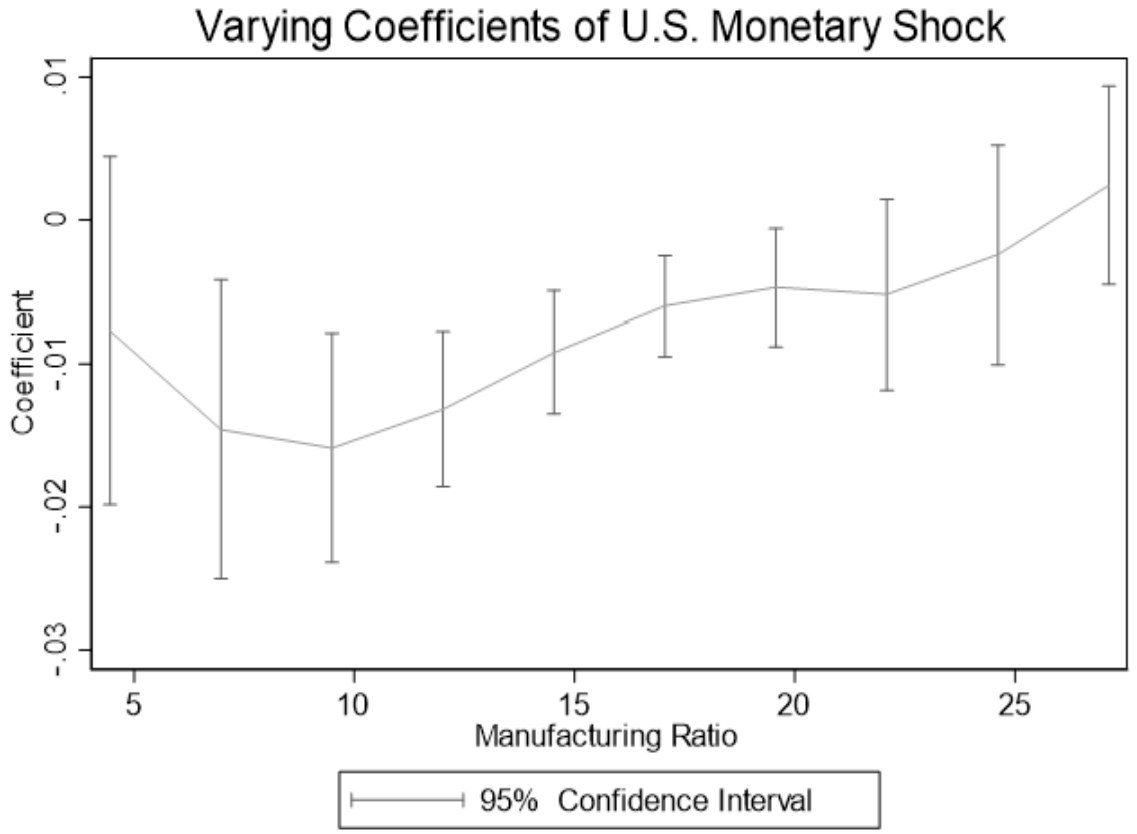


Fig 4. Smooth varying-coefficient estimates of coefficient of U.S. monetary shock on real GDP at different levels of economic diversification.

Table 5

Reaction of Real GDP to U.S. Monetary Shocks at Different Levels of Economic Diversification

Variable	10 Percentile Ratio = 7.53	50 Percentile Ratio = 13.37	90 Percentile Ratio = 19.76	95 Percentile Ratio = 21.01
U.S. Shock	-0.02	-0.01	-0.005	-0.005
	(3.01)**	(4.64)**	(2.21)*	(1.81)
Constant	6.69	3.60	0.803	0.761
	(5.70)**	(7.72)**	(3.86)**	(3.11)**
Number of Observations	1,280	2,114	1,083	829
Country Fixed Effects	YES	YES	YES	YES
Quadratic Time Trend	YES	YES	YES	YES

Note: * $p<0.05$; ** $p<0.01$

Conclusion and Policy Implication

- Our results show that countries react differently to changes in U.S. interest rates.
- We find that countries with higher levels of economic diversification have lower sensitivities to U.S monetary policy shocks.
- We conclude that countries can become significantly more resilient to U.S. monetary policy shocks by improving economic diversification.