How Profits of GCC Banks are affected by Fiscal Imbalances across the Region?

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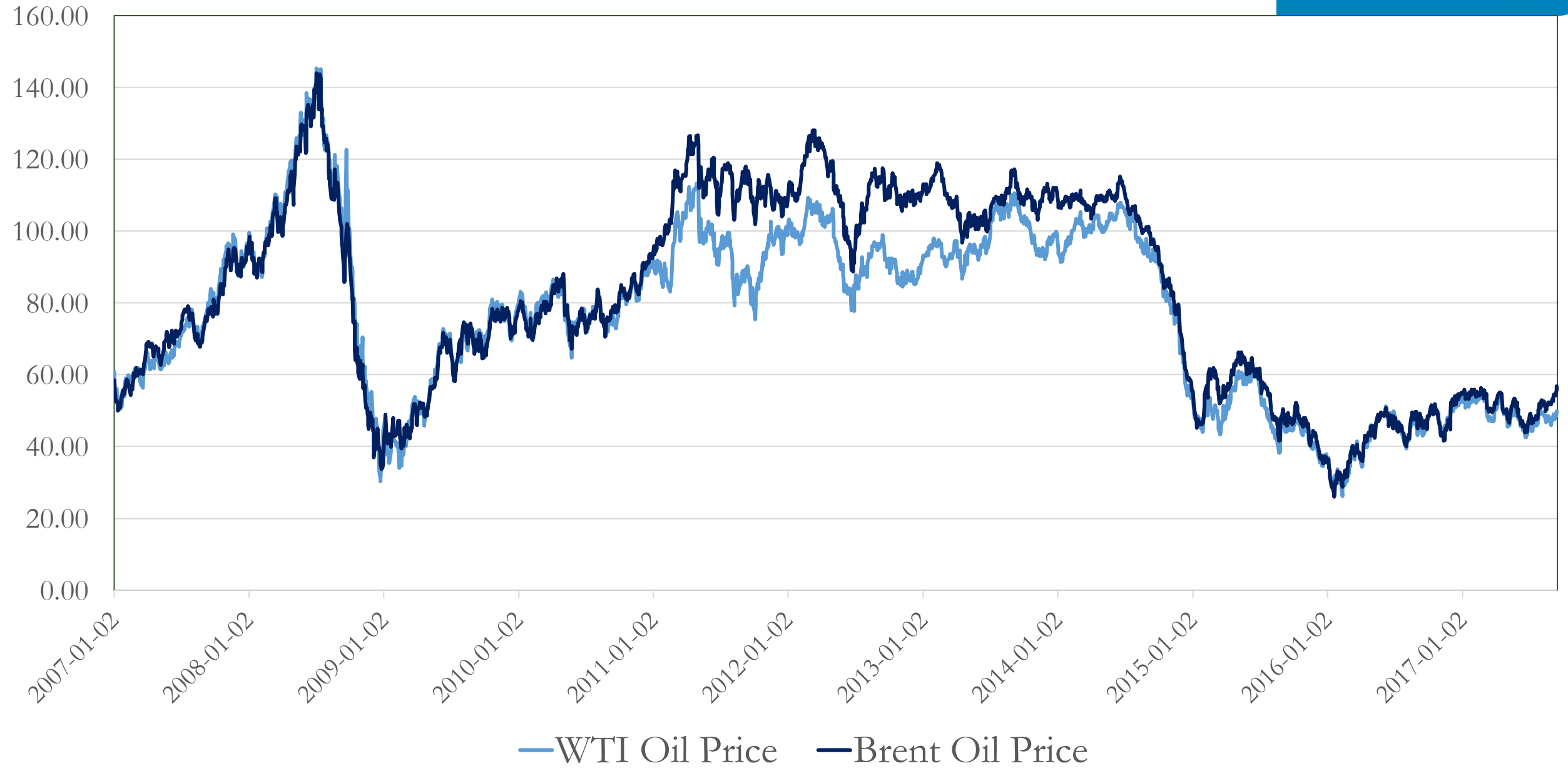
Outlines:

I. Motivations.
II. Literature Review.
III. Model Specification.
IV. Methodology and Data Description.
V. Econometric Results.
VI. Policy Implications.

Motivations

International Oil Prices



GCC Fiscal Breakeven Oil Price

	Breakeven Oil Price (IMF Estimates)		Brent Oil Price Projection (EIA)	
	2017*	2018*	2017∞	2018∞
Saudi Arabia	83.8	74.4	51.07	51.58
UAE	67.0	58.6		
Kuwait	49.1	50.4		
Qatar	52.9	54.9		
Oman	79.2	78.8		
Bahrain	101.1	97.7		

* IMF Regional Economic Outlook: Middle East and Central Asia., 2017

∞U.S. Energy Information Agency

Selected Macroeconomic Indicators for GCC

GCC Region	2000-13	2014	2015	2016	2017* Projection	2018* Projection
Real GDP (Growth)	5.0	3.3	3.8	2.0	0.9	2.5
Real NOGDP (Growth)	7.0	5.3	3.8	1.9	3.0	2.7
Current Account Balance	17.3	13.7	-2.6	-2.0	1.8	2.1
Overall Fiscal Balance	10.8	3.1	-.9.4	-12.0	-6.5	-4.0
Debt to-GDP ratio	29.0	9.0	12.9	20.5	23.0	25.4

Source: IMF MENAP Region: Selected Economic Indicators
Regional Economic Outlook: Middle East and Central Asia Update (April 2017)

I. The GCC macroeconomic Conditions

i. Current Accounts are expected to recover and record surpluses across the region by 2018.

ii. Real Economic growth is projected to pick up to around 2.5% by 2018 .

i. Overall GCC Debt-GDP ratios are within healthy measures.

   i. Saudi Arabia, UAE, and Kuwait enjoy very healthy debt ratio, well below 30% of GDP.
   ii. Qatar and Bahrain are projected to record above 50% and 80% respectively.

I. The GCC macroeconomic Conditions

i. GCC region is expected to reduce fiscal deficits to 4% of GDP.

ii. For 2017 and 2018, total official reserves are projected to cover 11.3 and 10.9 months of total GCC imports respectively.

iii. Non-oil Revenues are projected to rise to 17.3% of GDP by 2018.

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Literature Review

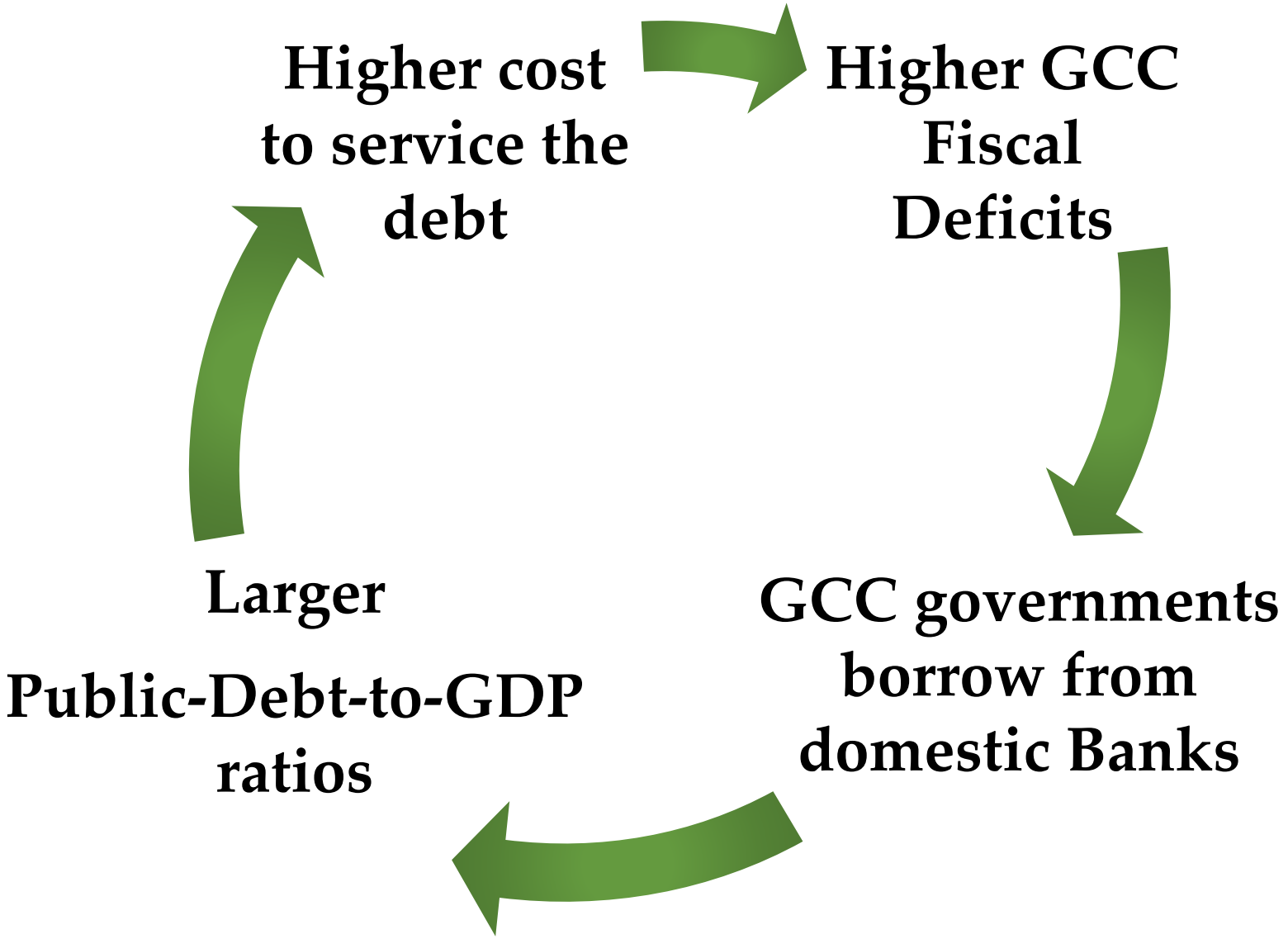
The literature on banking profits and performance is well grounded in a theoretical framework (see Heggestad (1977) , Short (1979), Haslem (1968), and Bourke (1989)). This study is related to two strands within banking literature:

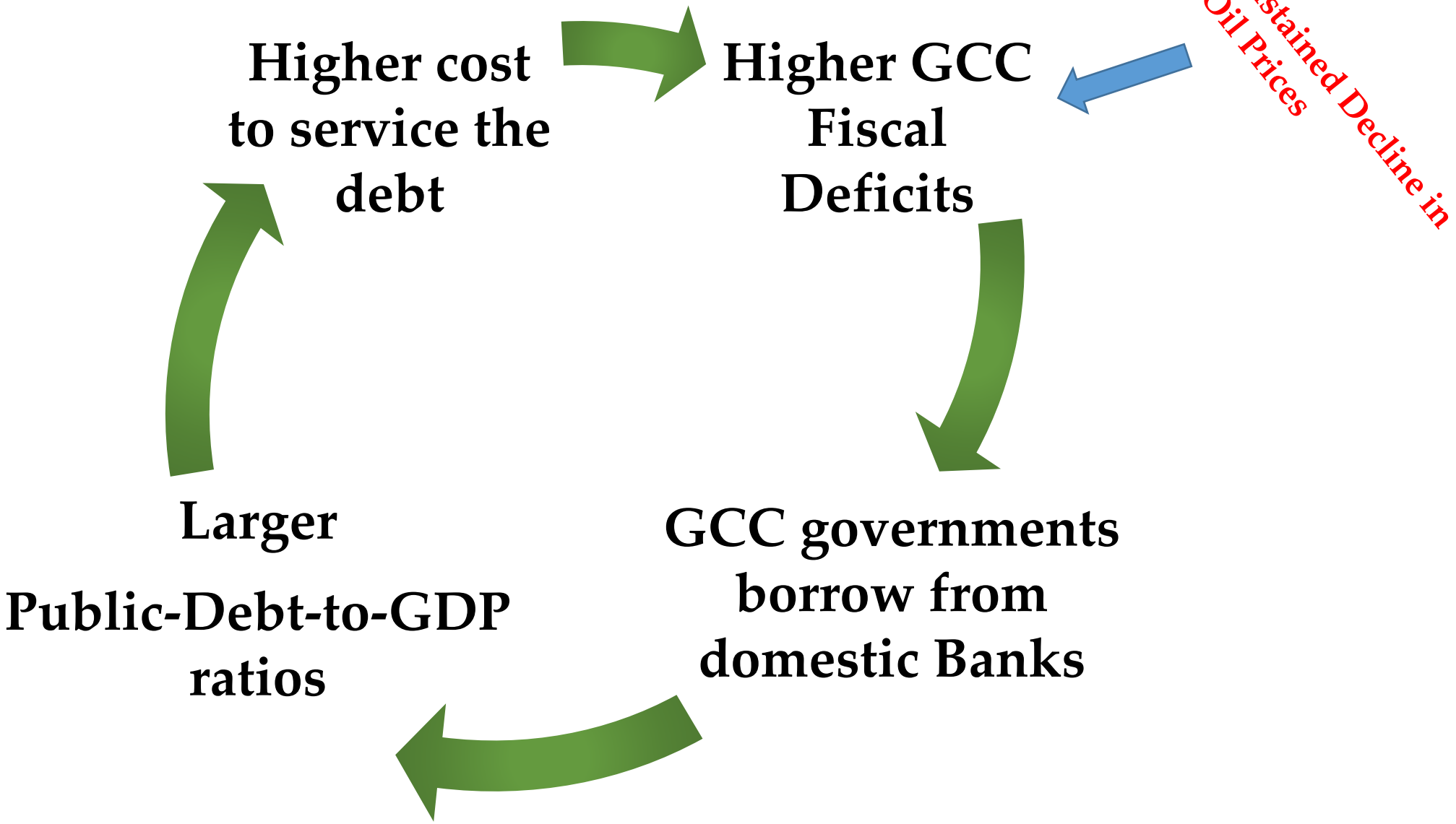
i) The macroeconomic and bank-specific factors:

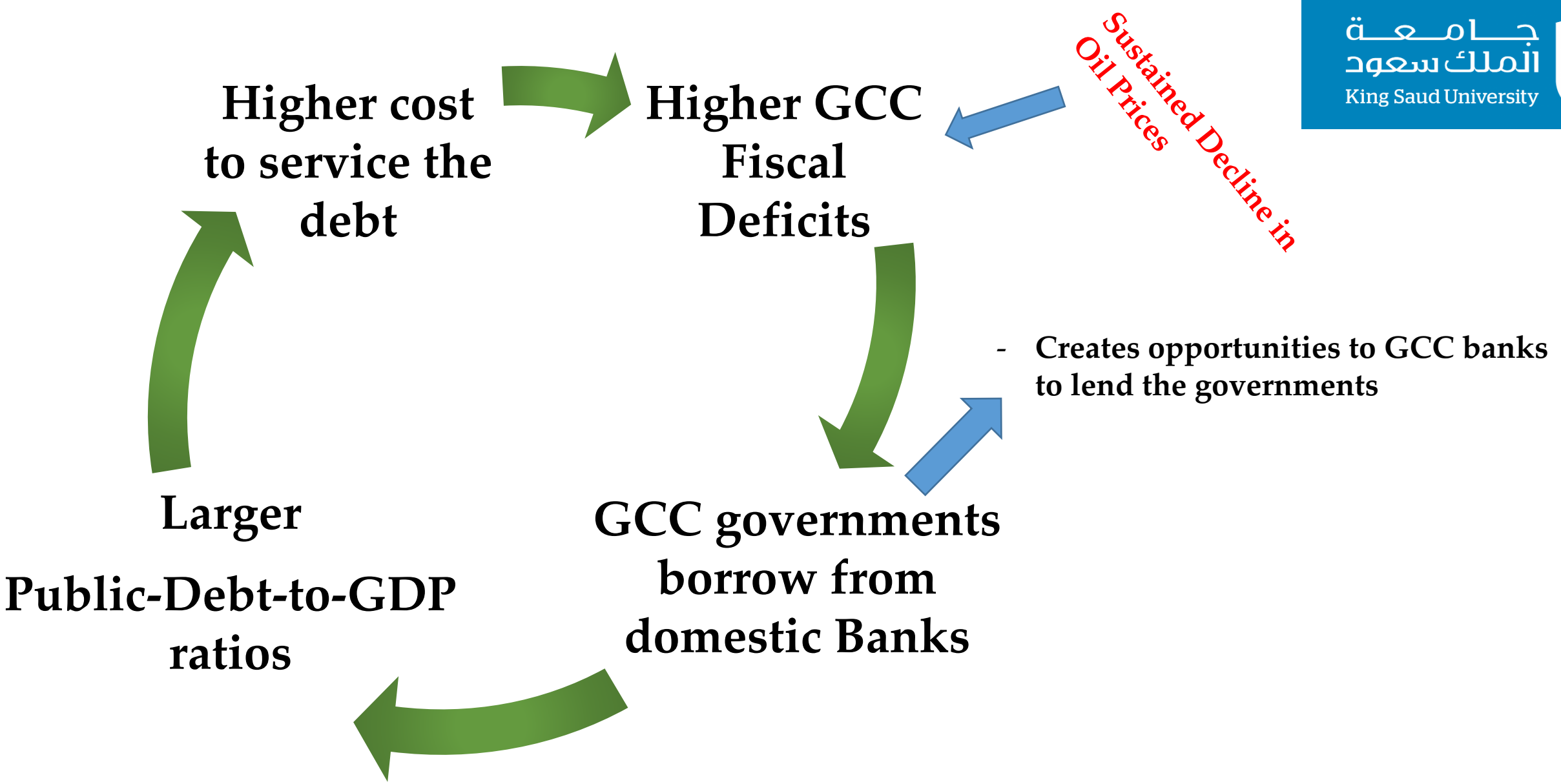
This strand includes Haslem (1968) [management effect], Heggestad (1977) [market structure and banking profits] , Short (1979) [concentration in banking system], (Rao 2005) [UAE cost eff and risk returns], Srairi (2010) [GCC costs and profits efficiency]. Recent work on GCC banks includes Al-Muharrami, Matthews et al. (2006) [GCC banking structure], Mohanty, Lin et al. (2016) [cost and profit efficiencies across Islamic and conventional banks].

ii) Fiscal policies and banking systems (Von Hagen and Ho (2007), Kollmann, Ratto, Roeger and in't Veld (2012) state "Banking shocks and increased government spending explain half of the rise in the public debt/GDP ratio since the onset of the crisis", Kirchner and Wijnbergen (2016) find that fiscal stimuli is less effective when banks are heavily invested in government bonds.

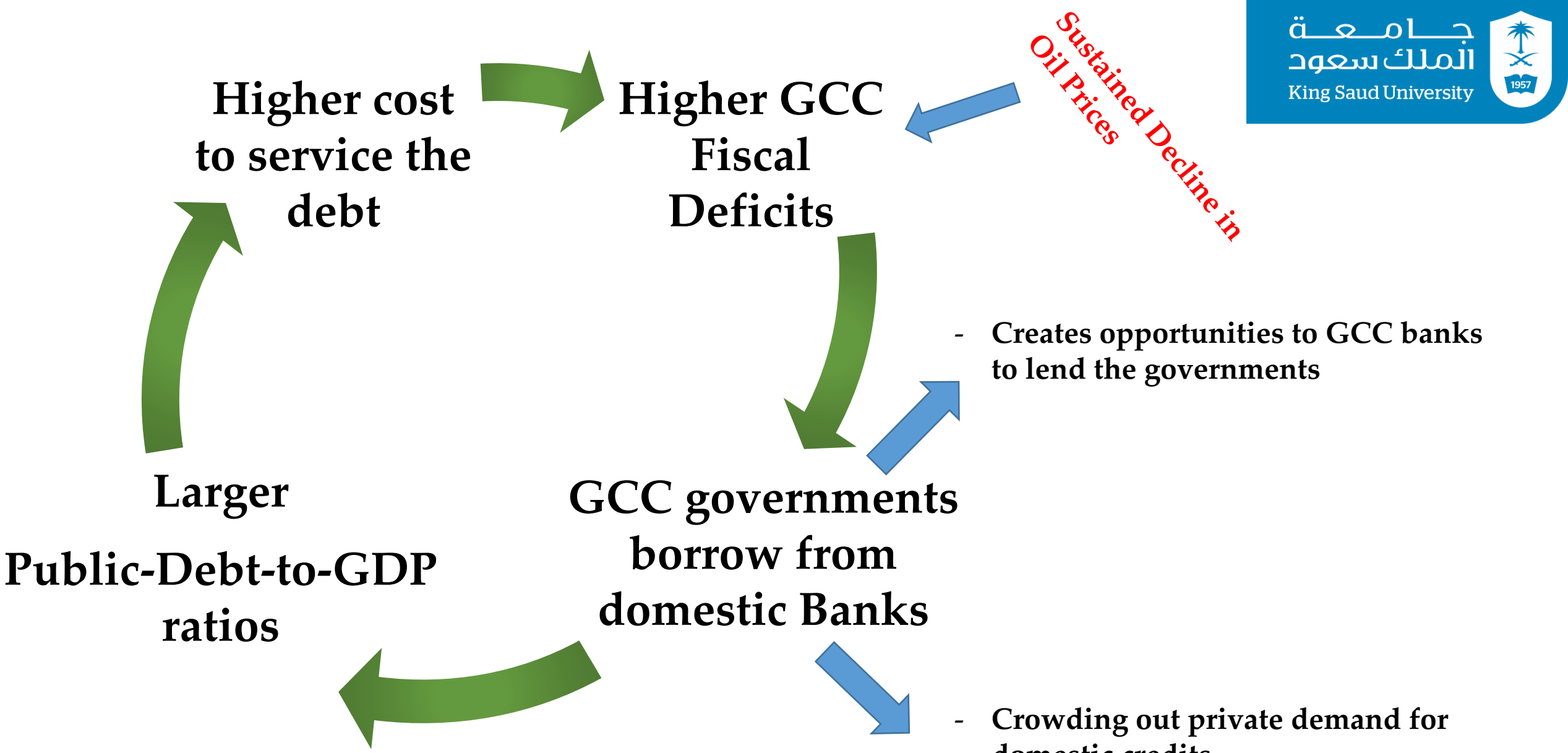
How are banking systems are affected by the fiscal imbalances?




Higher cost to service the debt
Higher GCC Fiscal Deficits
Sustained Decline in Oil Prices
GCC governments borrow from domestic Banks
Larger Public-Debt-to-GDP ratios



- Creates opportunities to GCC banks to lend the governments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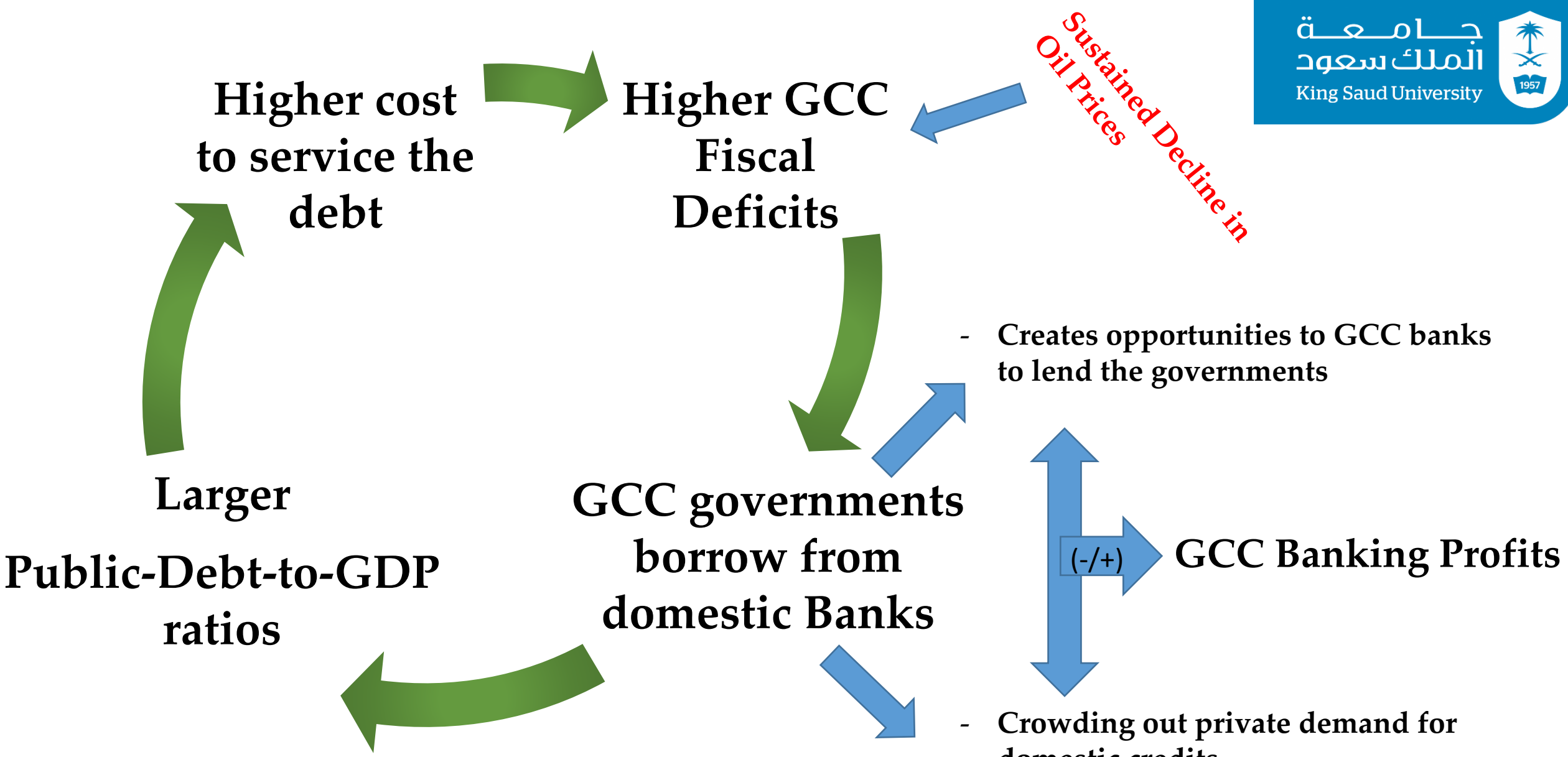
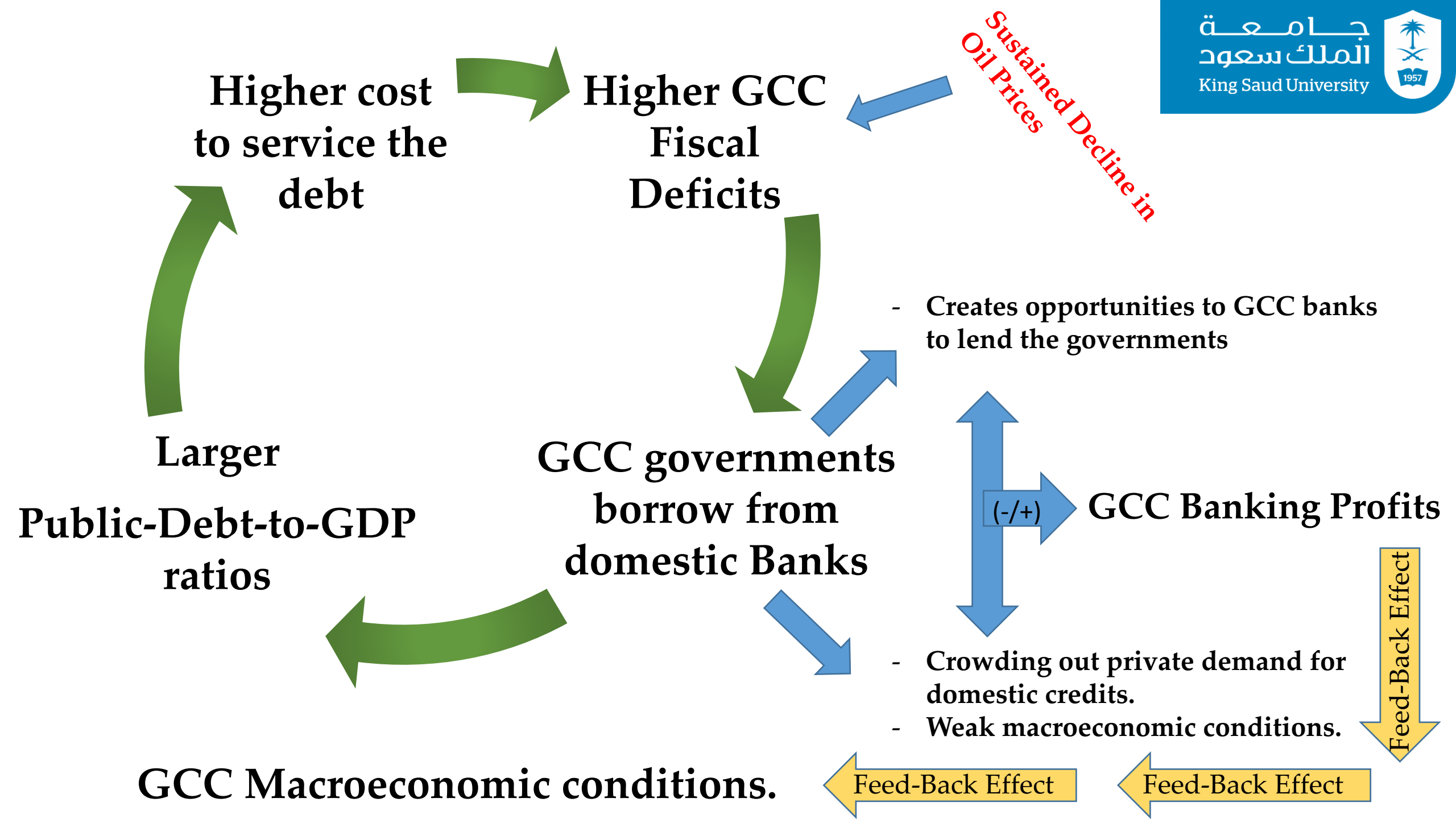
GCC governments borrow from domestic Banks
- Creates opportunities to GCC banks to lend the governments
- Crowding out private demand for domestic credits.
- Weak macroeconomic conditions.




Higher cost to service the debt
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- Creates opportunities to GCC banks to lend the governments
Larger Public-Debt-to-GDP ratios
GCC governments borrow from domestic Banks
(-/+)
GCC Banking Profits
- Crowding out private demand for domestic credits.
- Weak macroeconomic conditions.
Feed-Back Effect
GCC Macroeconomic conditions.
Feed-Back Effect
Feed-Back Effect

Net effects on GCC Banking profits is undetermined.

Sustained Decline in Oil Revenues

Asymmetric effects on GCC banks' profits:

Creates opportunity to lend the government
banking profits (+)

Raises the default rates due to exposure to private sector
banking profits (-)

- **Larger GCC Fiscal Deficits**:
- The GCC governments borrowed domestically and internationally to finance the deficit.
- Cutting government spending and raising taxes (value-added **tax, etc)**

- Slow economic growth (Recession)
- Higher Debt-to-GDP ratio
  - **Debt Sustainability is affected**
- Crowding out private demand due to deficit-financed fiscal expansions

Figure 2 How the banks are affected by Fiscal Imbalances? Theoretical Scenario

Objectives of the Study

- How are the Profits of GCC Banks affected by Fiscal imbalances? namely to:
  - Larger Public-debt-to-GDP across the region.
  - Larger fiscal budget deficits across the region.

Objectives of the Study

- How are the Profits of GCC Banks affected by Fiscal imbalances? namely to:
  - Larger Public-debt-to-GDP across the region.
  - Larger fiscal budget deficits across the region.
- Are there any feedback loop between low banking profits, higher public-debt-GDP, the GCC macro-economic conditions?

Banking profits= f(Macro, Bank-specific, Fiscal)

M=Macroeconomic factors.

B=Bank-specific factors.

F=Fiscal imbalances indicators.

How the GCC banking profits are responding to:

Macroeconomic factors: Oil Price, Non-oil GDP, Stock Prices, and Interest Rates.

Bank-specific factors: Returns on average assets for each bank, Credits-to-Total-Assets for each bank, Nonperforming loans, and Credit growth.

Fiscal imbalances indicators: Fiscal Deficits, Public-debt-to-GDP ratios.

Methodology and Data Description.

Two Approaches:

How ROAA are responding to:

- Bank-specific factors.
- Macro-factors.
- Fiscal imbalance indicators.

- **Fixed Effect Model**
- **Dynamic System GMM**

When Banks are not making profits, are there adverse Feedback Effects to the macroeconomy?

- **Panel Vector Auto regression (PVAR) Analysis**

Dependent Variable	Discerption	
ROAA	Return on Average Assets	
Independent Variables	Discerption	Expected Relation
		+/-
Macroeconomic Factors		
Oil Price Growth	Real international oil price (Log-difference)	+
NOGDP Real Growth	Non-oil GDP (Log-difference)	+
DFiscal Deficit	binary variable with 1 (deficit is larger than 3% of GDP) and 0 (otherwise)	-/+
Government Fiscal Budget	The budget balance as % to GDP	-/+
Bank Specific Factors		
Liquidity	$\left(\frac{\text{Total Loans}}{\text{Total Deposits}}\right)$	+
Credit Risk1 (looking forward)	$\left(\frac{\text{Total Loans}}{\text{Total Assets}}\right)$	-/+
Credit Growth	Total Loans (Log-difference)	+

- **Panel Fixed Effect and System GMM Models:**

$$\mathrm{ROAA}_{i,t} = \gamma_1 \mathrm{ROAA}_{i,t-1} + \gamma_2\ \mathrm{Oil\ Price}_{t-1} + \gamma_3\ \mathrm{Credit\ Growth}_{i,t-1} +$$

$$\gamma_4 \frac{\mathrm{Total\ Credit}}{\mathrm{Total\ Assets}_{i,t-1}} + \mathrm{X}^{\mathrm{County}}{}_{j,t-1}\beta + \lambda_i + \mathrm{e}_{i,t}$$

- **Panel VAR is specified as:**

$$Y_{i,t} = A(l)Y_{i,t-1} + B(l)X_{i,jt-1} + \lambda_i + e_{i,t}$$

Econometric Results

VARIABLES	Model (1) System GMM	Model (2) Fixed Effect
ROAA t−1	0.569***	0.423***
	[0.0833]	[0.0478]
Oil Price Growth t−1	0.000328	0.00501
	[0.00203]	[0.00337]
Stock Price Growth t−1	0.00675***	0.00731***
	[0.00168]	[0.00198]
NOGDP Real Growth t−1	0.0107**	0.0154**
	[0.00459]	[0.00587]
$\left(\frac{\text{Total Credit}}{\text{Total Assets}}\right)_{t-1}$	-0.00305***	-0.00354***
	[0.000867]	[0.000702]
DFiscal Deficit	-0.290	-0.0797
	[0.215]	[0.116]
Debt to GDP ratio t−1	-0.0194**	-0.0248*
	[0.00942]	[0.0146]
Credit Growth t−1	0.00205	0.000980
	[0.00223]	[0.00253]
Hansen test p-value	0.383	
A-B AR(1) test p-value	0.00478	
A-B AR(2) test p-value	0.328	

VARIABLES	Model (3) System GMM	Model (4) Fixed Effect
ROAA t−1	0.574*** [0.0813]	0.423*** [0.0478]
Oil Price Growth t−1	0.000454 [0.00204]	0.00501 [0.00337]
Stock Price Growth t−1	0.00661*** [0.00163]	0.00731*** [0.00198]
NOGDP Real Growth t−1	0.0105** [0.00452]	0.0154** [0.00587]
$\left(\frac{\text{Total Credit}}{\text{Total Assets}}\right)_{t-1}$	-0.00291*** [0.000848]	-0.00354*** [0.000702]
DFiscal Deficit	-0.284 [0.221]	-0.0797 [0.116]
Debt to GDP ratio t−1	-0.0175* [0.00995]	-0.0248* [0.0146]
Credit Growth t−1	0.00209 [0.00223]	0.000980 [0.00253]
Hansen test p-value	0.395	
A-B AR(1) test p-value	0.00462	
A-B AR(2) test p-value	0.321	

VARIABLES	(5) System GMM2	(6) FE2
ROAA t−1	0.547***	0.466***
	[0.109]	[0.0565]
Oil Price Growth t−1	0.00352	0.00424
	[0.00262]	[0.00284]
Interest Rate t−1	-0.0944**	-0.205***
	[0.0368]	[0.0574]
Stock Price Growth t−1	0.00228	0.00167
	[0.00168]	[0.00172]
NOGDP Real Growth t−1	0.0118**	0.0119**
	[0.00557]	[0.00560]
$\left(\frac{\text{Total Credit}}{\text{Total Assets}}\right)_{t-1}$	-0.00383***	-0.00355***
	[0.000355]	[0.000515]
Debt to GDP ratio t−1	-0.0106	-0.0252*
	[0.00953]	[0.0136]
Credit Growth t−1	-0.00176	0.000465
	[0.00337]	[0.00238]
Hansen test p-value	0.290	
A-B AR(1) test p-value	0.0309	
A-B AR(2) test p-value	0.967	

VARIABLES	Model 1 System GMM	Model 1 Fixed Effect	Model 2 System GMM2	Model 2 Fixed Effect
ROAA t−1	0.585*** [0.0786]	0.433*** [0.0468]	0.521*** [0.0778]	0.422*** [0.0527]
Oil Price Growth t−1	0.000642 [0.00208]	0.00622* [0.00342]	0.00215 [0.00346]	0.00596* [0.00310]
Stock Price Growth t−1	0.00696*** [0.00191]	0.00708*** [0.00198]	0.00638** [0.00241]	0.00694*** [0.00204]
NOGDP Real Growth t−1	0.0115** [0.00536]	0.0168*** [0.00580]	0.0107 [0.00632]	0.0168*** [0.00574]
$\left(\frac{\text{Total Credit}}{\text{Total Assets}}\right)_{t-1}$	-0.00398*** [0.000330]	-0.00345*** [0.000612]	0.0233 [0.0451]	-0.00352*** [0.000517]
Government Fiscal Budget t−1	-0.00916 [0.00710]	-0.00874 [0.00600]	-0.0122 [0.00786]	-0.00824 [0.00589]
Debt to GDP ratio t−1	-0.0248** [0.0114]	-0.0264* [0.0148]	-0.0281** [0.0114]	-0.0266* [0.0149]
Credit Growth t−1	0.00481* [0.00267]	0.00178 [0.00249]	0.00314 [0.00362]	0.00132 [0.00261]
Nonperforming Loans t−1			-0.00313 [0.0243]	-0.0126 [0.0211]
Hansen test p-value	0.189		0.824	
A-B AR(1) test p-value	0.00519		0.00612	
A-B AR(2) test p-value	0.355		0.687	

ROAA, Debt-GDP, Nonperforming loans are in ratios.

Discussion

- The estimated coefficients are consistent with theory across the region.

- Macroeconomic factors: GCC banking profits deteriorate as oil price decline, non-oil GDP decline, stock prices decline.
  - However, only non-oil GDP and stock prices are statistically significant.

- Risk taking indicators, higher total credit to total assets (statistically significant) leads to lower returns on assets across the GCC banks
  - Higher nonperforming loan ratios (statistically insignificant) lower returns on assets across the GCC banks.

Discussion

- The estimated coefficients on fiscal imbalance indicators are negative and only debt to GDP ratio is statistically significant.
    - The results show that the movements of government budget from surpluses to deficit lead to lower banking profits across the region but statistically insignificant.
    - The debt to GDP is statistically significant and leads to lower banking profits across the region.

Panel VAR Results

Are there two-way feedback effects between the banking systems, the macroeconomic sector, and the fiscal sector ?

The Identification Scheme of the PVAR

The identification scheme of the panel VAR followed in this study is a recursive Cholesky decomposition with international oil price modeled as an exogenous variable. The domestic variables are ordered as [Debt-GDP, Non-oil GDP, ROAA, and Credit Growth] so that macroeconomic variables Debt-to-GDP and Non-oil GDP are set first, followed by bank-specific variables.

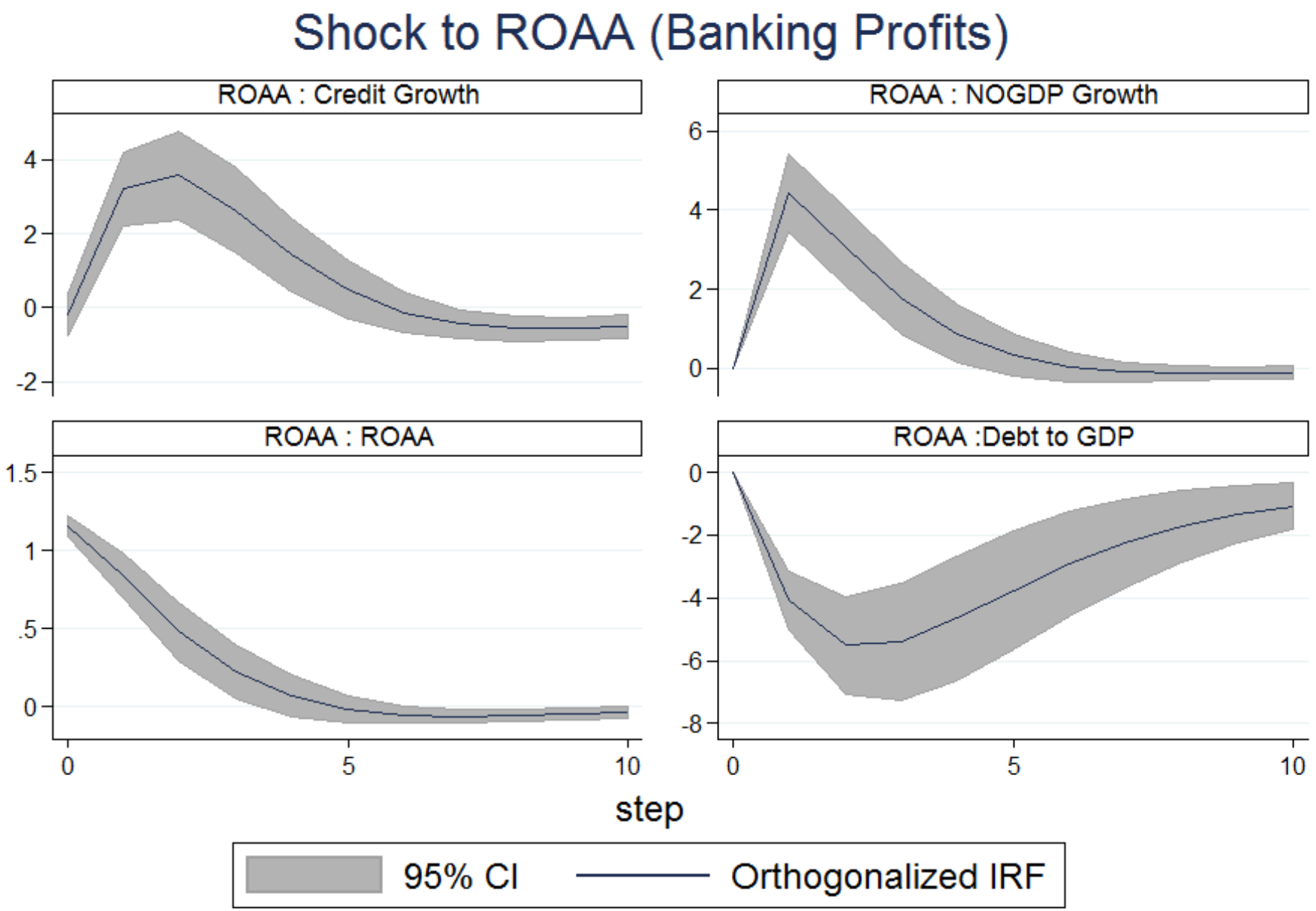

Figure 2 The impulse Responses to a Banking Profits Shock

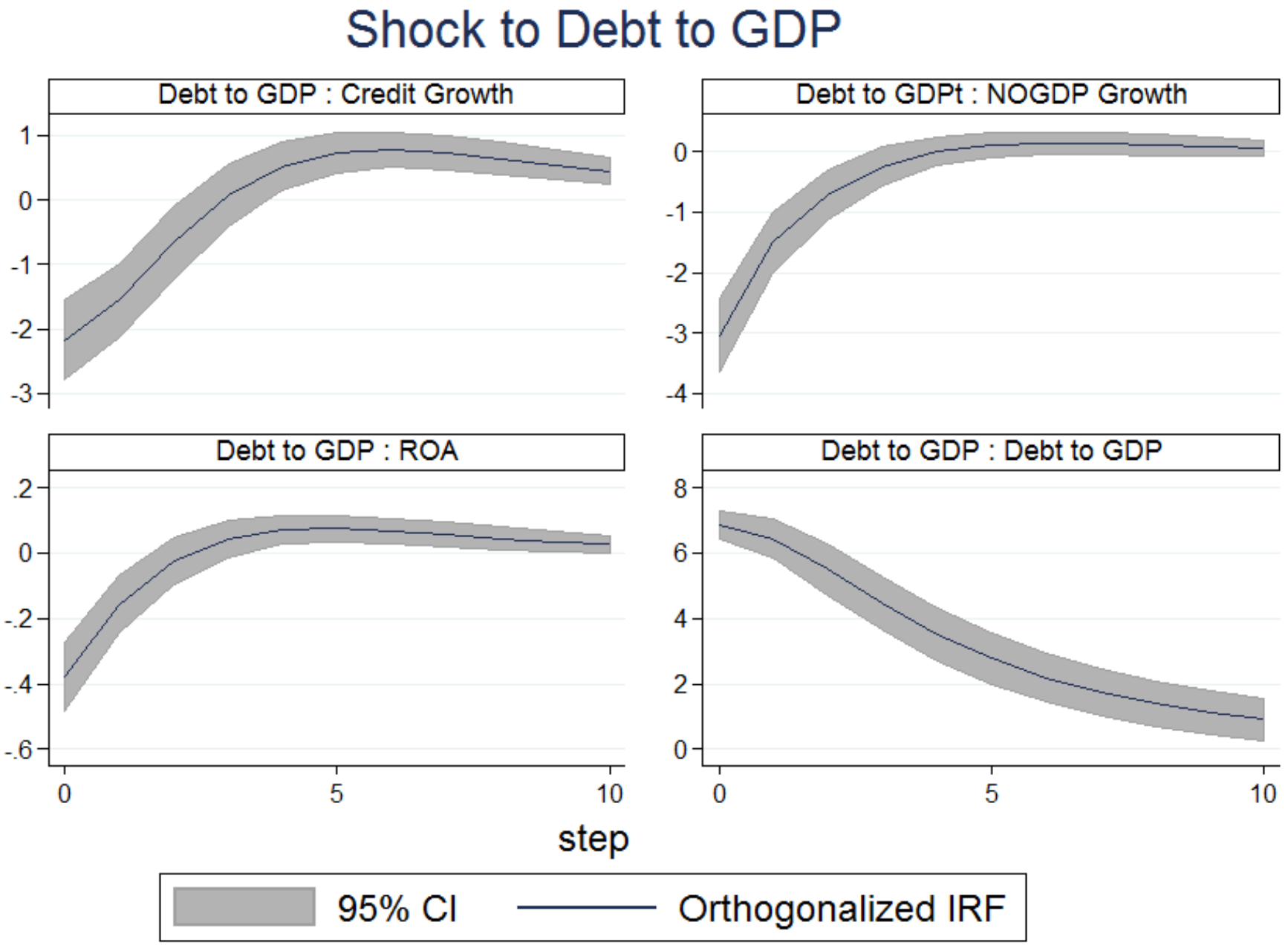

Figure 3 The impulse Responses to a Debt-GDP Shock

Discussion

- A positive shock to banking profits has a persistent, significant, positive effect on non-oil GDP and credit growth across the region.

  - As banking profits increase, credit expansions help more businesses to grow across different non-oil sectors leading to larger GDP and less role for government to intervene. Hence, as a results, public debt-to-GDP declines.

Discussion

- A positive shock to public debt-to-GDP ratio adversely affect banking profits, non-oil GDP growth, and credit growth across the region.
  - An increase in public debt-to-GDP ratio is normally associated with weak macroeconomic conditions.
  - The potential crowding out effect of government demand for credits on privet demand could be another factor.
  - This shock leads to lower credit growth, slower non-oil GDP growth, and lower returns on assets across the region.

Conclusion

Conclusion

- First, larger public debt-to-GDP ratio could adversely weaken the GCC banking profits
  - as private demand for credits is crowded out, banking systems with substantial investments in public debt could see deteriorating profits.
  - However, GCC countries enjoy strong fiscal buffers coupled with active macro-prudential measures, all of which may mute any potential fiscal imbalance adverse shocks.

- Second, the recessionary effects through the channels of slower non-Oil GDP growth and a larger public debt-to-GDP ratios are stronger than those through the channel of fiscal deficits.
  - The interaction between banking systems and real macroeconomic sectors is confirmed, as any disruption in banking profits could weaken economic growth through credit channel, and vice versa.
  - Long-term debt sustainability measures are recommended to mute any adverse shocks.

Conclusion

- Third, future work could identify the threshold point of the public debt-to-GDP ratio, or the point at which banks become reluctant to lend the private sector, in GCC region.
  - This analysis would identify the debt ceiling for policy makers leading to better management of macroeconomic policies (I started working on this part already).
- Fourth, possible limitations of this study are:
  - The sample of banks spans relatively short period (2000-2014) at low frequency data. (this is constrained by data availability)
  - The models used can not incorporate the new fiscal adjustment measures being implemented across the region.
  - The sample only include the largest banks in each country, potentially ignoring how smaller banks are affected.

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Thanks!!