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**Economic and Social Commission for Western Asia**

# **The Sovereign Debt and Financial Sector Nexus in the Arab Region**



**United Nations**  
Beirut

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## Executive Summary

The Arab region contains several countries that suffer high levels of indebtedness, resulting from decades of weak (if not failing) macroeconomic, fiscal, monetary and trade policies. This indebtedness was further exacerbated by political and security unrest, and lastly by the repercussions of Covid-19 crisis. By end 2019, i.e. before the eruption of Covid-19 pandemic, the government debt-to-GDP ratio reached 200 percent in Sudan, which ranked the country third globally in this indicator. Two other Arab countries recorded government debt-to-GDP ratio above 100 percent, namely Lebanon and Bahrain. Several other Arab countries also record considerably high debt ratios, in particular Yemen, Egypt, Jordan, Morocco, and Tunisia. Among other factors, the persistent budget deficit, which is determined by the fiscal policies, is in turn a major determinant of the mounting debt in the Arab region.

This high indebtedness resulted in high debt service burden in the Arab countries, which is financed via increased borrowing, higher taxes, and leading to lower government spending, thus imposing liquidity challenges and limiting fiscal space which could have otherwise been invested in essential public services, and in financing the Sustainable Development Goals in the Arab countries.

Several Arab countries rely heavily on banks to meet their borrowing needs and banks across the Arab region invest considerably in the government securities and dedicate large sums of their resources to finance government budget. The end-2022 data show that approximately 10 percent of the consolidated assets of the Arab banking sector is invested in government debt. The fiscal policies in the Arab countries are indeed responsible for the level of debt held by banks. In particular, budget balance, government debt levels, and interest paid on government debt, are all factors that determine the investment of banks in the domestic sovereign debt.

The interconnectedness between fiscal position and bank lending to the government results in the sovereign-bank nexus phenomenon in the Arab region, which poses risks for fiscal sustainability and financial stability. Moreover, the high levels of bank holdings of government debt in several Arab countries may result in two repercussions: firstly, a high exposure of banks to sovereign risk and ratings downgrade following sovereign downgrade; and secondly, a crowding out effects for private sector and depriving businesses from the needed funding. To avoid such scenarios, proper macroprudential and microprudential framework aiming to mitigate the sovereign-bank nexus must be put in place.

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## 1. Introduction

The Arab banking sector includes about 450 banking institutions operating across the Arab region. The mid-2023 figures show that the consolidated assets of the Arab banks amounted to approximately 4.5 trillion dollars, with consolidated deposit base of approximately 3.1 trillion dollars, and consolidated loans of 3 trillion dollars. As for the consolidated base capital, it reached 500 billion dollars. The Arab banks have large presence outside the Arab region, with a wide network of subsidiaries, branches, and representative offices, concentrating mainly in Europe and Africa. Nonetheless, the overwhelming proportion of bank assets (credit and investment) is invested domestically, including significant percentage in sovereign debt.

The banks in the Arab region play a crucial role in the economic and social development in their countries, in light of the limited role of other funding mechanisms, including capital markets, which are still underdeveloped in the majority of Arab countries, according to the international norms.

All Arab financial markets are bank-based and dominated by the traditional banking products and services. As such, lending is still the most common mean of financing for the private sector, with limited spread of other mechanisms, e.g. private equity, factoring, leasing, etc. As for public sector, the Arab banks are engaged significantly in financing Arab central government budget deficit, as well as public sector enterprises/institutions in countries where this kind of lending is permitted. Nonetheless, the overwhelming proportion of public sector lending is dedicated to financing the budget, and not for instance to financing the infrastructure. In fact, this is resulted from the poor fiscal conditions in several Arab countries, and the tendency of relying on banks, and the ease of borrowing from banks, which hold the majority of national savings. This reliance on bank lending is a phenomenon witnessed in both oil importing and oil exporting Arab countries, and privately- and state-owned banks. Consequently, the data obtained from the Arab central banks show that approximately 10 percent of the consolidated assets of the Arab banking sector is invested in central government debt (excluding other public sector entities), ranging from 0.6 percent in Kuwait up to 33.2 percent in Algeria.

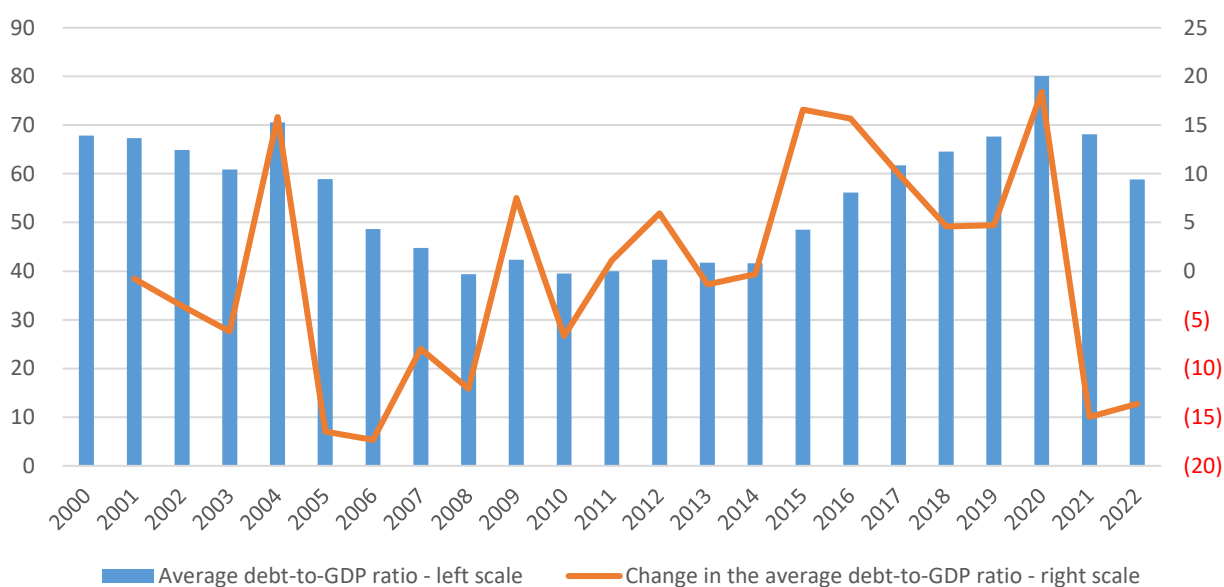
It is worth noting that the fiscal policies adopted in several Arab countries encourage and/or push banks to finance the government budget deficit, which results in exposing banks to sovereign risk. Furthermore, the persistent budget deficit and the inability to repay the due debt, forces Arab governments to borrow more from banks, which further increases bank exposures to sovereign debt.



## 2. The indebtedness of Arab countries and the cost of public debt

Several Arab countries suffer high levels of public debt resulting from decades of weak macroeconomic, fiscal, monetary, and trade policies. By end 2019, i.e. before the spread of Covid-19 pandemic crisis, government debt-to-GDP ratio reached 200 percent in Sudan, which ranked the country third globally in this indicator. Two other Arab countries recorded government debt-to-GDP ratio above 100 percent, namely Lebanon (172.3 percent) and Bahrain (101.6 percent) (see Table 1). The majority of other Arab countries have also recorded considerably high debt ratios, in particular Egypt, Jordan, Morocco, Tunisia, and Yemen.

Figure 1: The (simple) average government debt-to-GDP ratio and the change in ratio in the Arab region (%)



Source: done by the author based on the International Monetary Fund data. Note: this (simple) average is for the following countries: Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, state of Palestine, Sudan, Syria, Tunisia, UAE, and Yemen.

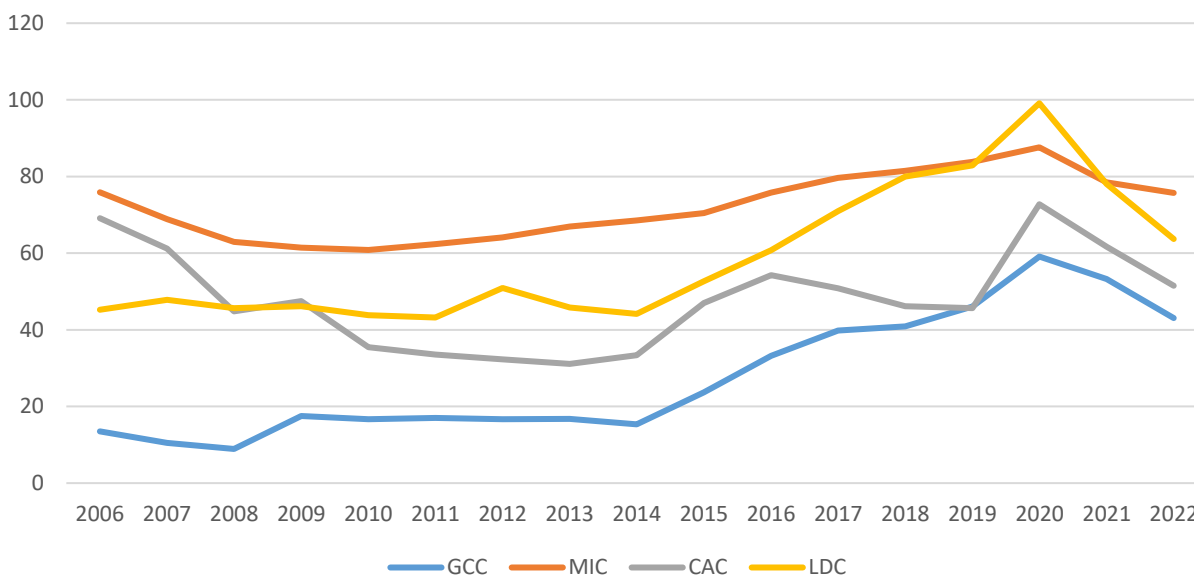
The spread of Covid-19 and the general lockdowns enforced by the authorities in the Arab countries have resulted in almost a total stop of economic activities for a prolonged period. In response to the pandemic, the authorities have provided financial support packages to households and businesses in order to mitigate the long-term impact of the pandemic on the economy. This has forced Arab governments to increase their borrowing, which was coupled with a decline in GDP, resulting in a

further increase in public debt-to-GDP ratios in all Arab countries (except in Lebanon)<sup>1</sup> – mostly the oil exporting countries.

Consequently, debt-to-GDP ratio increased by 86.8 percent in Iraq between end-2019 and end-2020, 53.4 percent in UAE, 43.5 percent in Saudi Arabia, 37.3 percent in Sudan, 32.8 percent in Oman and State of Palestine, 26.5 percent in Bahrain, 19.7 percent in Morocco, 16.9 percent in Qatar, 15.3 percent in Tunisia, 13.0 percent in Algeria, 12.7 percent in Jordan, 7.6 percent in Egypt, and 4.1 percent in Yemen. Overall, the Arab region recorded a 24.9 percent increase in its government debt-to-GDP ratio. .

After recording its historical peak of average government debt-to-GDP ratio of 80.1 percent in 2020, the Arab region’s ratio declined to 68.1 percent in 2021 and 58.8 percent in 2022. This decline was the result of a fall in government debt coupled with an improvement in economic growth in the majority of Arab countries, which depressed their indebtedness ratios, in particular Iraq, Oman, Qatar, Sudan, and the State of Palestine. Finally, the declining trend in the Arab region debt-to-GDP ratio is expected to further continue in 2023.

Figure 2: The (simple) average government debt-to-GDP ratio and the change in ratio in the Arab sub-regions (%)



Source: done by the author based on the International Monetary Fund data. Notes: The Gulf Cooperation Countries group (GCC) includes: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE. The Middle Income Countries group (MICs) includes: Algeria, Egypt, Jordan, Lebanon, Morocco, and Tunisia. The Conflict Affected Countries group (CACs) includes: Iraq, Yemen, and Syria. The Low Income Countries group (LDCs) includes Comoros, Djibouti, Mauritania, and Sudan. No debt data is available for Libya (CAC) and Somalia (LDC).

<sup>1</sup> The government debt-to-GDP ratio in Lebanon has declined in 2020 due to the fact that the majority of this debt is dominated in local currency, which suffered a large depreciation during 2020.

Figure 2 shows the development of the average debt-to-GDP ratios per Arab country groups. Overall, the MIC group average records the highest average, apart from the year 2020 when it was exceeded by the LDC average. On the other hand, the GCC records the lowest average, despite the obvious increase in 2009 and 2014 as result of the decline in oil prices. Figure 2 also shows clearly that the persistent budget deficit in the MICs resulted in mounting government debt in those countries. In parallel, the fall in oil prices in 2009 and 2014 forced the GCC countries to resort to borrowing in the following years, while Covid-19 crisis has resulted in an increase in indebtedness in the four country groups.

In fact, the majority of Arab countries – including oil exporting ones – suffered (and many still suffer) continuous budget deficits, resulting from imbalance between government revenues and expenditures. This is the result of inefficient revenue collection departments, narrow tax base, in addition to large tax avoidance and evasion practices. In parallel, many Arab countries suffer inefficient and ineffective expenditures policies, considerable waste spending, in addition to large amounts dedicated to subsidies (mainly for food and oil). One more element participated in creating a “vicious circle”, where an increase in debt results in higher debt service, which in turn boosts the due debt (e.g. Lebanon). The budget balance is a major determinant of the debt-to-GDP ratio in the Arab countries, and the persistent budget deficit in several Arab countries (e.g. Bahrain, Egypt, Jordan, Lebanon, Morocco, Sudan, Tunisia and Yemen) forces the governments to borrow continuously, resulting in mounting public debt. Moreover, an increase in interest payments (i.e. debt service) participates in increasing the indebtedness of Arab countries, on average.

Table 1: Gross government debt in the Arab countries as percent of GDP (%)

	1990	1995	2000	2005	2010	2015	2019	2020	2021	2022	2023e
Algeria	n.a.	104.0	58.0	26.3	10.5	8.7	46.0	52.0	62.8	52.4	52.2
Bahrain	7.5	14.2	25.7	24.2	30.0	66.2	101.6	128.5	126.3	117.6	124.7
Djibouti	n.a.	n.a.	n.a.	n.a.	27.9	40.3	41.8	42.3	41.0	40.6	39.0
Comoros	108.4	77.9	60.8	39.9	30.5	14.1	22.0	24.0	25.4	29.1	32.5
Egypt	n.a.	n.a.	71.7	98.3	69.6	83.8	80.1	86.2	89.9	88.5	92.9
Iraq	n.a.	n.a.	n.a.	227.3	53.5	56.9	45.1	84.3	59.2	43.3	47.9
Jordan	227.5	117.8	99.3	73.0	59.4	78.4	77.2	87.0	90.9	89.4	87.9
Kuwait	n.a.	78.0	34.9	11.8	6.2	4.7	11.6	11.7	8.7	2.9	3.0
Lebanon	n.a.	n.a.	148.1	178.9	136.8	140.8	172.3	179.2	172.5	163.0	183.5
Mauritania	n.a.	n.a.	55.5	71.1	43.9	58.7	55.7	55.8	50.9	47.7	47.9
Morocco	70.5	72.2	64.9	54.8	45.3	58.4	60.3	72.2	68.9	68.8	68.3
Oman	17.8	21.9	21.7	8.4	5.5	13.9	52.5	69.7	61.3	40.1	42.8
Qatar	12.6	50.2	51.6	19.1	30.4	35.5	62.1	72.6	58.4	45.3	45.5
Saudi Arabia	n.a.	74.2	86.7	37.3	8.4	5.7	21.6	31.0	28.8	22.6	23.6
State of Palestine	n.a.	n.a.	20.0	24.0	22.7	37.1	46.1	61.2	64.3	59.8	58.5
Sudan	n.a.	239.0	143.2	75.5	74.6	93.2	200.3	275.0	187.9	127.6	151.1
Syria	189.8	152.6	152.1	50.7	30.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Tunisia	n.a.	65.6	62.9	50.0	43.4	52.4	67.3	77.6	79.9	79.4	80.0
UAE	n.a.	n.a.	3.1	4.5	19.5	16.1	26.8	41.1	35.9	30.0	30.5
Yemen	n.a.	n.a.	60.8	43.8	42.4	57.1	94.6	98.5	85.1	73.5	68.7

Source: World Economic Outlook database, the International Monetary Fund, April 2023(<https://www.imf.org/en/Publications/WEO/weo-database/2023/April>). The 2021-2023 data for Lebanon has been obtained from Lebanon Economic Monitor report, the World Bank, Spring 2023. Notes: e = expected. n.a. = not available.

The excessive sovereign debt accumulation in several Arab countries comes at a high cost. Beyond the debt service cost, or the interest payments to creditors, the real cost of debt also includes the possibility of debt distress and increased vulnerability to financial crises, constraints on fiscal policy space and effectiveness especially during economic downturns, and the possible crowding out of productivity enhancing private sector investment which in turn deters long-term growth.<sup>2</sup>

The high debt service burden is financed via increased borrowing, higher taxes, and lower government spending, which imposes liquidity challenges and limits fiscal space, which could have otherwise been invested in essential public services, including health, education and infrastructure, and in financing the Sustainable Development Goals (SDGs) in the Arab countries. Moreover, a high public debt-to-GDP ratio and rapid debt accumulation negatively affects investor confidence, obliging governments to pay higher risk premia, which is translated into lower corporate borrowing especially during times of sovereign financial instability, which can ultimately crowd out private investment and consumption.<sup>3</sup>

In addition, the ongoing global monetary tightening initiated by the Fed, translates into a rise in debt service payments and an increase in the cost of existing external debt for many countries in the Arab region. Indeed, several Arab countries, especially low and middle-income, face heavy debt service burden.

Overall, many Arab countries' fiscal policy strategies are based on deficit-financed spending that rely on the issuance of sovereign securities. In fact, well developed domestic sovereign bond markets are prerequisite for such fiscal policy, where deep and liquid government bond markets allow governments to finance – partly – their expenditures through debt issuance at a minimum cost.<sup>4</sup> To facilitate the issuance of government debt, Arab fiscal authorities work on ensuring liquid sovereign bond markets, with diversified and developed investor base. While the current investor base of treasury securities varies considerably across the Arab countries, banks are the major participants in government debt markets.

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<sup>2</sup> Kose, M.A, and others, 2020.

<sup>3</sup> Ibid.

<sup>4</sup> Basel Committee on Banking Supervision, 2018.

### 3. Arab banks' holdings of government debt

#### 3.1 How much government debt do Arab banks hold?

The banks in the Arab region invest considerably in the government securities and dedicate large sums of their resources to finance government budget. In fact, the end-2022 data show the following (Table 2).

- Algerian bank lending is highly concentrated as banks invested 33.2 percent of their total assets<sup>5</sup> in central government debt and 51.9 percent for both government and public sector institutions/enterprises. Note that the first ratio witnessed a considerable increase between 2020 and 2021, jumping from 16.1 percent to 32.6 percent. These numbers are substantially higher than other peer Arab banking sectors. Moreover, lending to state-owned enterprises (SOEs) is highest at state-owned banks, which account for 99.8% of loans to the public sector.<sup>6</sup>
- Bahrain banks invested 8.7 percent of their assets in government debt. Despite the fact that this ratio has never exceeded 10 percent, it recorded a steady increase since 1990 when it recorded 0.4 percent only.
- Comoros banks invested 1.3 percent of their assets in government debt. Banks in Comoros have very low tendency in lending the government, where this ratio never exceeded 3 percent according to the available data.
- Djibouti banks invested 8.1 percent of their assets in government bonds (end-2021). This ratio recorded a peak of 11.9 percent in 2017.
- Egyptian banks invested 14.1 percent of their assets in government debt, and 15.5 percent for the entire public sector (i.e. government and public sector institutions). The first ratio increased approximately five times since 2011, when it reached 2.9 percent only. It is worth noting that about 81 per cent of government securities are held by Egyptian banks.<sup>7</sup> The large exposure to the public sector is a prominent feature of the Egyptian banking sector<sup>8</sup> and it is expected that

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<sup>5</sup> This is the consolidated assets of the entire banking sector.

<sup>6</sup> S&P Global, 2021.

<sup>7</sup> Egypt, Ministry of Finance, 2020.

<sup>8</sup> International Monetary Fund, 2022d.

sovereign exposure<sup>9</sup> will remain high because Egyptian banks remain the main source of financing for the government.<sup>10</sup>

- Iraqi banks invested 11.1 percent of their assets in government debt, and 12.9 percent in the entire public sector. The first ratios recorded a steady growth since 2010, when it recorded 0.6 percent only.
- Jordanian banks invested 22.0 percent of their assets in government debt and 24.3 percent in the public sector entirely. Note that the first ratio doubled over the past 15 years, making the Jordanian banks' exposures to the highly indebted sovereign large.<sup>11</sup>
- Kuwaiti banks invested 0.6 percent of their assets in government debt and 4.9 percent in the entire public sector. The investment of Kuwaiti banks in government debt declined steadily since 2017 where it reached 8.0 percent approximately.
- Lebanese banks invested 6.7 percent of their assets in government debt. Note that this ratio reached a peak of 38.5 percent in 1999 and remained above 20 percent until 2015. Over the past three decades, Lebanese banks were the main source of financing for the government budget.
- Mauritanian banks invested zero percent in government bonds, a steady ratio since 2018. After recording a peak of 19.2 percent in 2005, banks in Mauritania started declining their holding of government debt gradually to reach the zero percent in 2018.
- Moroccan banks invested 16.8 percent of their assets in government debt and 20.9 percent in the public sector entirely. Note that the first ratio has been witnessing a continuous increase since 2016, when it recorded 10.6 percent.
- Oman banks invested 10.7 of their assets in government debt and 20.5 percent in the public sector. The first ratio has been witnessing a steady growth since 2012, when it recorded 0.4 percent only.

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<sup>9</sup> The current international regulatory framework applies a somewhat open-ended definition of "sovereign exposures". The Basel II standardised approach for credit risk refers to claims on "sovereigns", "central banks", and "non-central government public sector entities (PSEs)" in a relatively high-level manner (source: Basel Committee on Banking Supervision, 2023).

<sup>10</sup> Moody's Investor Services, 2019.

<sup>11</sup> International Monetary Fund, 2023e.

- Qatari banks invested 6.1 percent of their assets in government debt, and 19.6 percent in the entire public sector. The first ratio declined continuously since 2017, when it recorded 12.9 percent.
- Saudi banks invested 14.1 percent of their assets in government debt, and 17.6 percent in the public sector. The first ratio witnessed considerable increase since 2012, when it recorded 2.4 percent.
- Banks in the State of Palestine invested 10.4 percent of their assets in government debt, and 10.5 percent with the entire public sector. Compared to 1996, both ratios have increased dramatically, when they recorded 0.8 and 1.0 percent respectively.
- Sudanese banks invested a moderate proportion of their assets in government debt (0.6 percent) and the ratio increases to 3.8 percent with adding the lending to public sector institutions. The first ratio recoded its highest value in 2011 (13.2 percent), while the second ratio recorded its peak in 2015 (21.5 percent). Hence, bank lending to the Sudanese government witnessed a steady decline as well as lending to the state governments and the public enterprises.
- The Tunisian banks invested 12.6 percent of their assets in government debt, where this ratio more than doubled since 2011. In addition to obtaining budgetary transfers equalling 7-8 percent of GDP in recent years, Tunisian SOEs resort also to bank financing to meet their liquidity needs, in particular from state-owned banks. Overall, the stock of bank loans to SOEs equalled approximately 17.0 percent of GDP in 2021.<sup>12</sup>
- Finally, the UAE banks invested 5.8 percent of their assets in government debt, and 12.7 percent when adding the public sector institutions. Noting that both ratios have been stable over the past decade.

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<sup>12</sup> International Monetary Fund, 2021.

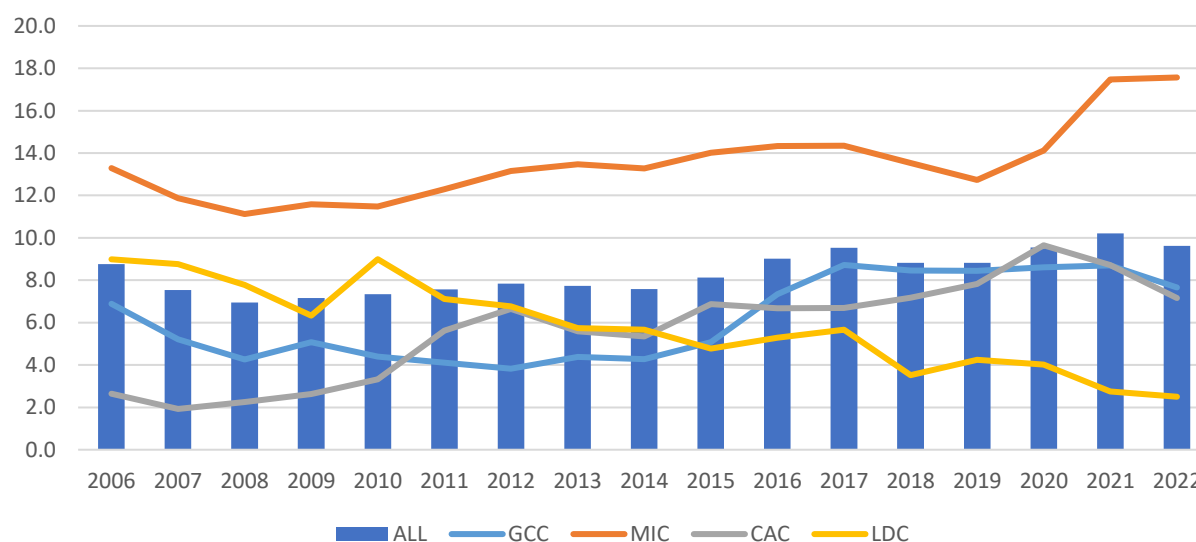


Table 2: Government debt held by banks in the Arab countries as percent of consolidated assets of the entire banking sector (%)

	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019	2020	2021	2022
Algeria	9.5	12.8	31.6	20.8	14.4	16.2	20.3	23.5	15.1	14.7	16.1	32.6	33.2
Bahrain	n.a.	0.5	0.9	1.3	2.6	5.7	7.2	7.9	7.7	8.4	8.9	9.1	8.7
Comoros	n.a.	n.a.	n.a.	n.a.	2.2	1.0	3.1	2.0	1.1	2.8	1.6	2.1	1.3
Djibouti	n.a.	n.a.	n.a.	n.a.	n.a.	7.1	8.6	11.9	7.9	9.2	11.3	8.1	n.a.
Egypt	n.a.	n.a.	3.5	3.1	3.0	4.1	7.5	7.8	10.5	8.9	11.6	13.2	14.1
Iraq	n.a.	n.a.	n.a.	0.1	0.6	8.0	8.8	10.1	12.7	13.8	15.3	12.1	11.1
Jordan	3.4	2.8	5.9	6.3	14.8	23.7	21.8	19.7	20.4	21.3	21.1	21.7	22.0
Kuwait	n.a.	46.5	26.3	11.4	4.6	2.7	5.4	8.0	7.0	3.3	1.9	1.5	0.6
Lebanon	15.3	29.0	34.3	25.8	22.7	20.3	17.0	14.5	13.4	13.1	11.1	9.5	6.7
Mauritania	n.a.	n.a.	0.3	19.2	13.4	4.0	0.7	0.0	0.5	0.0	0.0	0.0	0.0
Morocco	n.a.	n.a.	n.a.	17.0	8.9	11.7	10.6	11.7	13.9	10.0	14.4	15.4	16.8
Oman	n.a.	n.a.	n.a.	n.a.	2.1	4.6	6.0	6.2	6.0	7.3	10.1	12.1	10.7
Qatar	n.a.	n.a.	n.a.	9.5	6.4	6.9	11.0	12.9	10.7	8.6	8.1	7.8	6.1
Saudi Arabia	5.5	11.5	24.3	16.7	4.4	3.9	7.8	10.8	12.7	14.6	14.7	14.7	14.1
State of Palestine	n.a.	n.a.	7.2	10.1	9.3	11.5	10.3	9.5	8.4	9.1	11.2	11.9	10.4
Sudan	n.a.	n.a.	n.a.	5.8	11.4	10.3	9.4	8.4	5.1	4.9	3.2	0.8	0.6
Tunisia	9.8	2.7	6.8	6.7	5.1	8.1	8.8	9.1	7.9	8.3	10.4	12.4	12.6
UAE	6.4	7.1	4.5	6.2	6.2	6.7	6.6	6.5	6.7	8.3	7.9	7.1	5.8

Source: author calculation based on Arab central banks data. Note: n.a. = not available. The figures do not include claims on SOEs.

Figure 3: Government debt held by banks as percent of the consolidated assets of the entire banking sector in the Arab country groups and the region average (%)



Source: done by the author based on the Arab central banks data. Notes: the Gulf Cooperation Countries group (GCC) includes: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE. The Middle Income Countries group (MICs) includes: Algeria, Egypt, Jordan, Lebanon, Morocco, and Tunisia. The Conflict Affected Countries group (CACs) includes: Iraq, Libya, and the State of Palestine. The Low Income Countries group (LDCs) includes Comoros, Djibouti, Mauritania, and Sudan. No debt data is available for Syria (CAC) and Somalia (LDC).

Figure 3 presents the country group simple averages and the simple average of the entire Arab region. It is obvious that the MIC banks have the highest proportion of their assets invested in government debt. In other words, the governments in the MIC Arab countries rely mostly on their banks to finance their budget. In fact, the average government lending-to-asset ratio of MIC banks has been always above the region average, unlike the other three regions. Therefore, the MIC banks have the highest exposure to sovereign risk among all the Arab banks. On the other hand, the GCC and CAC witnessed a continuous increase in bank lending to governments starting 2014, resulting in a gradual increase in sovereign exposure. In fact, bank holdings of government securities in some GCC countries remain high due to higher domestic government borrowing, coupled with banks excess liquidity and high appetite for government securities, and the limited activities in the secondary market.<sup>13</sup>

<sup>13</sup> International Monetary Fund, 2022a.

### 3.2 Why do banks hold government debt?

Banks hold sovereign debt for several of reasons, ranging from portfolio management to regulatory incentives. The following are some of the reasons why banks hold sovereign securities or lend the government.<sup>14</sup>

1. Liquidity management and requirements: banks need to maintain a pool of liquid assets in order to back short-term funding, and in most jurisdictions, sovereign securities are considered as the most liquid assets. The regulatory frameworks, and in particular liquidity standards, favour sovereign debt holding, because sovereign bonds are considered as a store of liquidity. Therefore, sovereign debt is an attractive asset for banks and satisfies liquidity requirement, especially in countries with underdeveloped capital markets, including many Arab countries. In liquidity requirements/measures, Basel III framework includes government securities in the computation of the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). This allows banks with heavy exposure to sovereign debt recording high liquidity level. For instance, the IMF April 2023 Financial Sector Assessment Program for Jordan<sup>15</sup> stated that *“(Jordanian) banks hold ample liquidity and can manage significant liquidity pressures. Their large holdings of government securities and central bank instruments imply low liquidity risk. The authorities implemented in 2021 a minimum liquidity coverage ratio (LCR) requirement of 100 percent both in Jordanian dinar and in all currencies combined. In a scenario with significant liquidity pressures including higher haircuts on government securities, the aggregate all currencies LCR declines from 220 percent to 205 percent, and no bank exhibits a liquidity shortfall”*. Similarly, the IMF December 2022 Financial Exposure and Liquidity Position on Egypt<sup>16</sup> stated that *“The (Egyptian) financial sector has continued to show resilience. Aggregate financial soundness indicators as of June 2022 showed a highly liquid banking sector (liquidity coverage ratios of 990 percent in local currency and 197.1 percent in foreign currency)”*.
2. Portfolio rebalancing: banks tend to rebalance their portfolios during downturns in favour of sovereign debt. To provide an example, it is noticeable that GCC bank holdings of government securities increased during periods of sovereign distress. In particular, in light of sharp decline

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<sup>14</sup> International Monetary Fund, 2018.; European Central Bank, 2018; and Basel Committee on Banking Supervision, 2018.

<sup>15</sup> International Monetary Fund, 2023e.

<sup>16</sup> International Monetary Fund, 2022d.

in oil prices in 2015 and 2020, banks increased their holding of government securities by 0.3 and 0.6 percent successively,<sup>17</sup> which is consistent with the perception that government securities are considered as safe assets during periods of economic downturns.<sup>18</sup>

3. Use as collateral: sovereign debt plays a major role in the payment system as it can be used as collateral to secure credit and support hedging, in addition to bank financial market operations and activities. Given their collateral function, sovereign bonds are an important means of transaction in financial markets, noting that in all Arab countries, government security markets are the deepest and most liquid markets, while other money and capital markets are shallow and illiquid. Hence, the unavailability of treasury securities constrains the collateralisation activities for Arab banks. For instance, in Mauritania, the means of fiscal financing limit the availability of High Quality Liquid Assets in banks' balance sheets, which can be used as collateral for monetary policy implementation and interbank transactions. Consequently, the lack of collaterals (treasury bills) forces banks to store high liquidity.<sup>19</sup>
4. Regulation and financial repression: banks may hold government securities because governments introduce policies – implicitly or explicitly – that encourage or even force them to do so, such as interest rate ceilings or the directed lending to the governments or to public sector enterprises. As noted above, the regulatory frameworks provide more favourable capital treatment for sovereign exposures than for other exposures. In parallel, some jurisdictions enforce a certain percentage of banks' assets to be held in sovereign debt, which could easily lead to undisciplined and mispriced financing of the fiscal deficits.<sup>20</sup> This practice is materialised in countries with overreliance on banks to finance the public sector, whether state-owned as in Algeria or privately-owned as in Lebanon.
5. The Basel Committee on Banking Supervision's credit risk standardised approach provides regulatory exemptions that allow banks to apply zero risk-weights on local currency domestic government bonds regardless of sovereign risk, making them relatively more attractive to banks. Similar to all members of Basel Committee, the Arab supervisory authorities provide

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<sup>17</sup> International Monetary Fund, 2022a.

<sup>18</sup> The literature has indeed found similar results. For instance, Ongena et al. (2016) show that during the euro area sovereign debt crisis, domestic banks, and in particular state-owned, were more likely to purchase domestic sovereign securities than foreign banks when the government had to rollover relatively large amount of maturing debt (Source: Ongena, S. and others, 2016.).

<sup>19</sup> International Monetary Fund, 2023d.

<sup>20</sup> Feyen, E. and Zuccardi, I., 2019.

more favourable regulatory treatment to their banking sector’s exposures to sovereign debt compared to other asset classes. In this regard, the Arab banking regulatory authorities adopt their national discretion and apply zero risk-weights to the sovereign risk exposures denominated in local currency. Moreover, they waive large exposure and/or single obligor limits with no limits and/or haircuts applied to domestic sovereign exposures, which are eligible for consideration as high-quality liquid assets in meeting Basel III liquidity requirements.<sup>21</sup>

Box 1: The interlinkage between government debt and fiscal policy, and bank lending to the governments in the Arab region

The figures on the claims of Arab banks on governments suggest that in many countries (e.g. Algeria, Egypt, Jordan, Morocco, Oman, and Saudi Arabia) banks dedicate considerable proportions of their investments to lending the governments. It could be argued that an increase in government borrowing is paralleled with an increase in bank holdings of government debt. In other words, the more the governments need to borrow, the more the banks are willing to lend it. To test this hypothesis empirically, Table 3 presents the regression estimates for the association between government debt and bank claims on government.

Table 3: the determinants of bank lending to governments in the Arab region – Dependent variable: CLAIMS\_ON\_GOVERNMENT

	1	2	3	4
Constant	-0.042 (1.019)	4.476*** (0.892)	3.753** (1.548)	3.718*** (0.948)
CLAIMS_ON_GOVERNMENT(-1)	0.746*** (0.039)	0.822*** (0.027)	0.747*** (0.044)	0.853*** (0.027)
DEBT	0.103*** (0.022)			
BUDGET		-0.156*** (0.040)		
INTEREST			0.967*** (0.362)	
LIBOR				0.128 (0.177)
GDPG	-0.103* (0.058)	-0.257*** (0.066)	-0.242*** (0.090)	-0.224*** (0.060)
STOCK_MARKET_	0.006	0.004	0.009	0.004

<sup>21</sup> Ibid.

CAPITALISATION	(0.008)	(0.009)	(0.010)	(0.009)
CRISIS	-28.176*** (4.087)	-31.010*** (4.526)	-25.005*** (5.819)	-30.436*** (4.591)
R-squared	0.976	0.975	0.978	0.972
F-statistic	456.690	411.788	355.307	387.633
Prob(F-statistic)	0.000	0.000	0.000	0.000
Durbin Watson stat.	1.924	1.902	1.909	1.872
Observations	202	197	122	207
Hausman test				
Chi-Sq. Statistic	9.903	19.609	24.193	18.286
Prob.	0.078	0.001	0.000	0.002
Method	FE	FE	FE	FE

Notes: Standard error in parentheses. \*\*\*, \*\*, \* denote significant at the 1%, 5% level and 10% level respectively. FE: Fixed Effects. CLAIMS\_ON\_GOVERNMENT: bank claims on government as percentage of GDP. DEBT: government gross debt as percentage of GDP. BUDGET: budget balance as percentage of GDP. INTEREST: the government debt service as percentage of GDP. GDPG: annual real growth rate of gross domestic product. STOCK\_MARKET\_CAPITALISATION: stock market capitalization as percentage of GDP. CRISIS: a dummy variable with the value of 1 in case of banking crisis, zero otherwise. A banking crisis is defined as systemic if two conditions are met: (1) significant signs of financial distress in the banking system (as indicated by significant bank runs, losses in the banking system, and/or bank liquidations), (2) Significant banking policy intervention measures in response to significant losses in the banking system. The first year that both criteria are met is considered as the year when the crisis start becoming systemic. The end of a crisis is defined the year before both real GDP growth and real credit growth are positive for at least two consecutive years (source: the World Bank). Countries included are Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, the State of Palestine Sudan, Tunisia, and UAE. Period: 1990-2022.

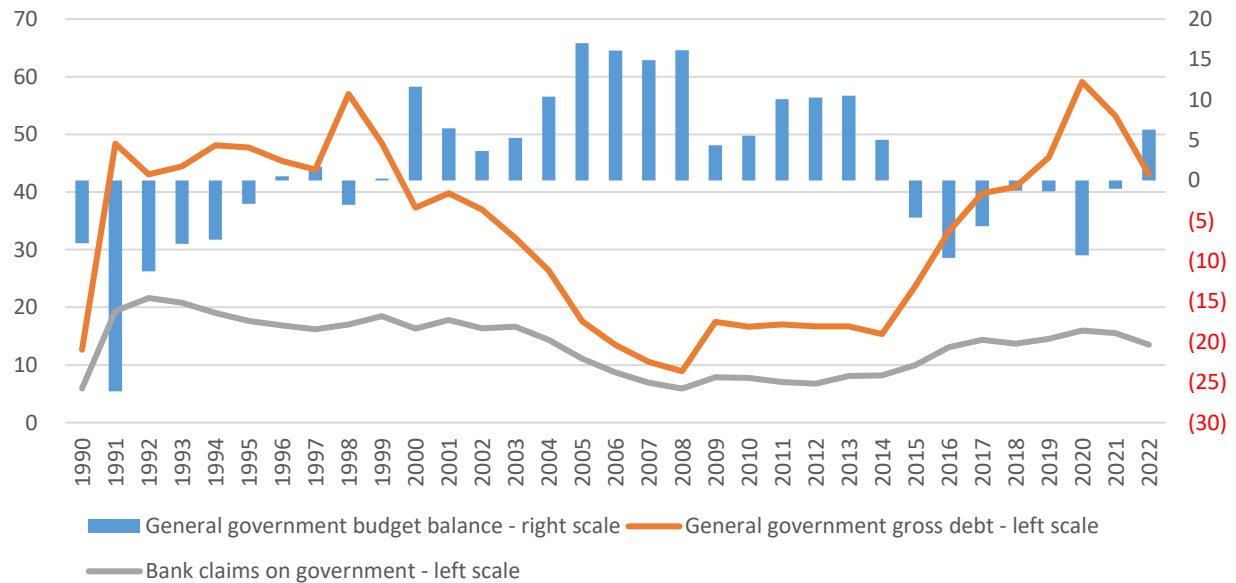
The econometric results in Table 3 present evidence that Arab bank claims on governments (i.e. bank investments in government debt) is directly affected by the amount of government debt. Hence, the more the governments issue debt, the more the banks in the Arab region are **willing** to invest in this debt, or are **pushed** to invest in this debt. This is the result of one or more of the reasons presented in sub-section 3.2. Moreover, the results in Table 3 present interesting conclusion on the impact of fiscal policy in the Arab region on banks. The negative and statistically significant impact of budget balance on bank claims on governments suggests that a deterioration (improvement) in fiscal position results eventually in increasing (decreasing) the lending of banks to governments. Therefore, a budget deficit forces the governments to borrow, which pushes banks to finance this deficit.

The positive and significant impact of interest payments on government debt (shown in the 3<sup>rd</sup> columns of Table 3) suggests that these payments are a major factor that may encourage banks to invest in government debt. Hence, higher interest rate (and thus higher interest payments) persuades Arab banks to dedicate more of their available funds to finance the government.

Finally, the global interest rate, proxied by the 12-month USD LIBOR, is not a major determinant of the amount of sovereign debt held by the Arab banks, as LIBOR lacks a statistically significant impact on CLAIMS\_ON\_GOVERNMENT

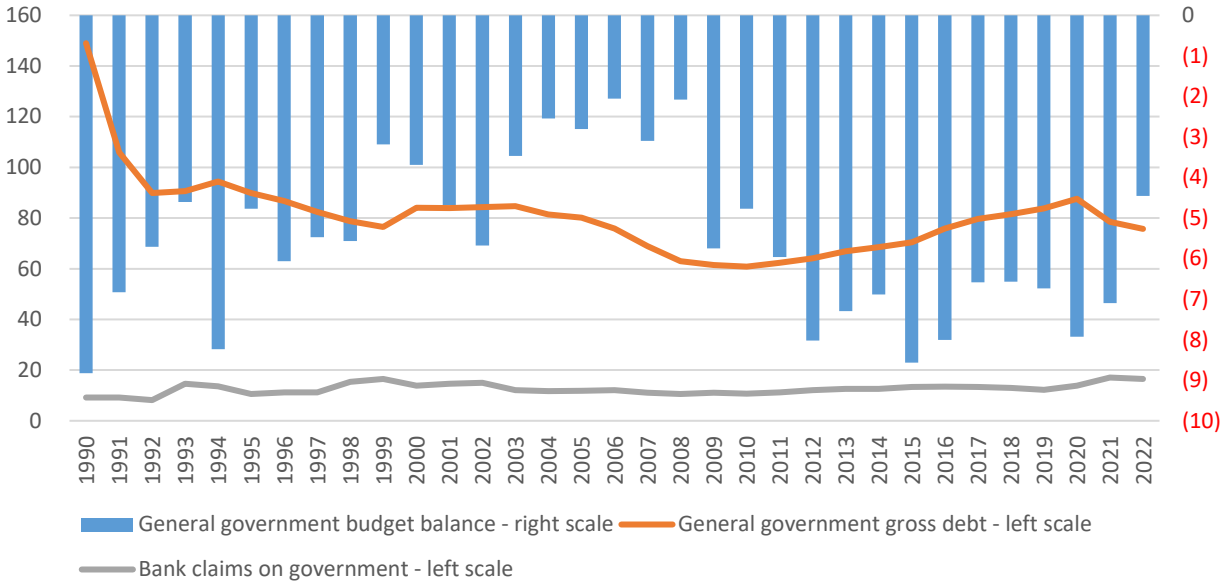
In addition to the econometric evidence presented in Table 3, we can also observe the interconnectedness between government budget, government gross debt, and bank claims on the government (all as percent of GDP), from Figures 4 through 7 and Annex A.

Figure 4: Government budget deficit, government gross debt, and bank claims on the government in the Arab GCC countries – all as percent of GDP (%)



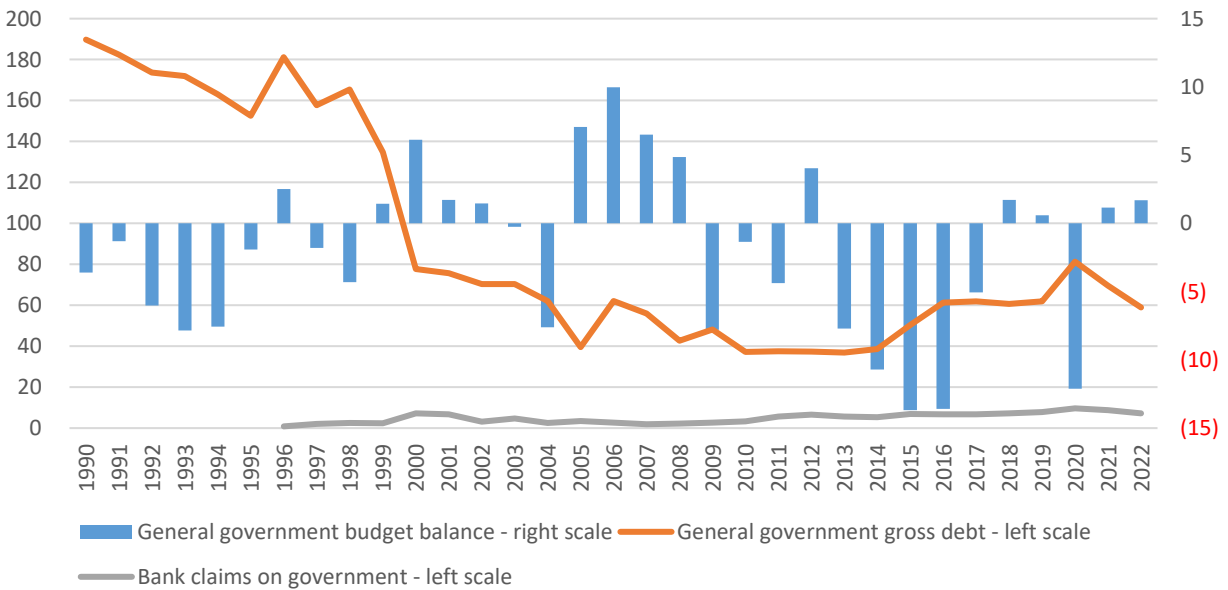
Source: done by the author based on the Arab central banks and International Monetary Fund data. Notes: The Gulf Cooperation Countries group (GCC) includes: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE.

Figure 5: Government budget deficit, government gross debt, and bank claims on the government in the Arab MIC countries – all as percent of GDP (%)



Source: done by the author based on the Arab central banks and International Monetary Fund data. Notes: The Middle Income Countries group (MICs) includes: Algeria, Egypt, Jordan, Lebanon, Morocco, and Tunisia.

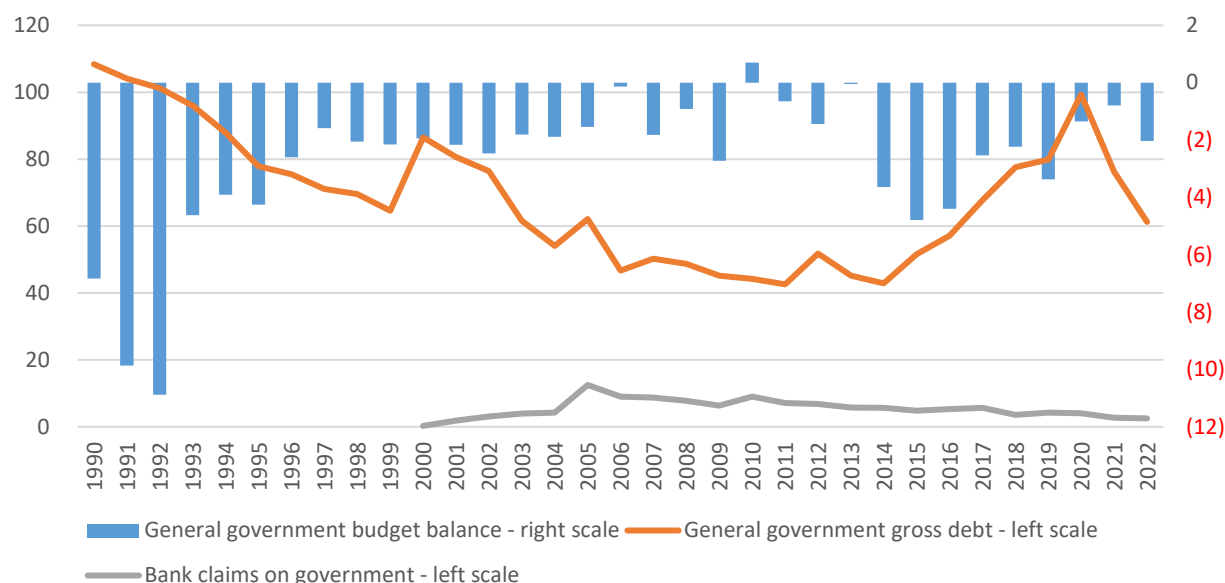
Figure 6: Government budget deficit, government gross debt, and bank claims on the government in the Arab CAC countries – all as percent of GDP (%)



Source: done by the author based on the Arab central banks and International Monetary Fund data. Notes: The Conflict Affected Countries group (CACs) includes: Iraq, Libya, the State of Palestine, Syria, and Yemen.

Figure 7: Government budget deficit, government gross debt, and bank claims on the government in the Arab LDC countries – all as percent of GDP (%)





Source: done by the author based on Arab central banks and the International Monetary Fund data. Notes: The Low Income Countries group (LDCs) includes Comoros, Djibouti, Mauritania, and Sudan. No data is available for Somalia.

Moreover, the correlations presented in Table 4 show a co-movement between government budget balance and gross debt for the GCC, MIC and LDC countries, while no significant correlation for the CAC countries. On the other hand, the association between government debt and bank holding of government securities is obvious for the GCC and MIC countries, while this evidence is not found for the CAC and LDC countries. Overall, we observe from Table 4 that the three variables are associated for both the GCC and MIC groups, unlike the two other groups. For individual countries, the co-movement between these three variables is obvious particularly in Algeria, Bahrain, Jordan (after 2008), Kuwait, Lebanon, Morocco, Qatar, Saudi Arabia, and UAE (See Annex A).

Table 4: Correlations between government budget deficit, government gross debt, and bank claims on the government in the Arab country groups

	GCC			MIC		
	Budget balance	Government debt	Bank claims on government	Budget balance	Government debt	Bank claims on government
Budget balance	1.000			1.000		
Government debt	-0.521***	1.000		-0.421***	1.000	
Bank	-0.438***	0.828***	1.000	-0.341***	0.268***	1.000

claims on government						
	CAC			LDC		
	Budget balance	Government debt	Bank claims on government	Budget balance	Government debt	Bank claims on government
Budget balance	1.000			1.000		
Government debt	0.207	1.000		-0.356***	1.000	
Bank claims on government	-0.198	-0.485***	1.000	-0.359***	0.085	1.000

Source: done by the author based on Arab central banks and the International Monetary Fund data. Notes: \*\*\* denotes significant at the 1% level.

**Box 2: The increase in government borrowing and bank claims on government in the Arab region after the Covid-19 pandemic crisis**

The entire Arab region faced an economic shock in 2020 resulting from Covid-19 pandemic. The policymakers, mainly in the GCC countries, as well as in Jordan, Egypt and Morocco, responded to the pandemic with monetary packages in order to support businesses and households and alleviate the influence of lockdown on local economies. Indeed, the financial vulnerability has been overall contained thanks to the supporting packages, the rebound in economic activities, and the increase in oil prices starting 2021, and because banks in those countries entered the Covid-19 crisis with sound capital base, high liquidity buffers, and good profitability. The Arab banking systems remained well-capitalised during and after the crisis, but their profitability and asset quality have been adversely affected, and the banks faced a tough operational environment resulting from the prolonged crisis and its impact on economic activities.

While the support measures had helped easing the adverse impact of Covid-19 crisis on the economy, they intensified the existing sovereign-bank-real economy nexus and potential vulnerabilities through – at least partly – the higher exposure to sovereign debt. Notably, it was obvious that in 2020, there was a significant increase in both government borrowing and bank claims on government in Algeria, Bahrain, Morocco, Oman, Qatar, Saudi Arabia, UAE, and the State of Palestine, proving the increase in bank exposures to sovereign debt in those countries. Nonetheless, this increase in exposure has not been compensated with high interest rates, where

for instance, the Risk Premium on Lending (lending rate minus treasury bill rate) in Algeria increased from 2.9 to 3.0 percent between 2019 and 2020, while it decreased from -0.67 percent to -1.75 percent in Egypt. No significant changes have been recorded for the other countries.

#### 4. Crowding out effects of sovereign: The impact of public debt held by Arab banks on domestic credit to the private sector

The Arab region has been witnessing a surge in public debt for over a decade, placing it in the zone of debt unsustainability. As macroeconomic and financial conditions tighten, an alarming sovereign-bank nexus has emerged in many Arab economies. Public (government and SOEs) debt constitutes a big share of the banking sector assets in several Arab countries (Table 2).

On average, about one third of domestic credit goes to the public sector in the Arab region, deepening the ties between the sovereign and banking sectors. In particular, holdings of public debt by domestic banking sectors have increased considerably in recent years as banks are playing a key role in financing budget deficits, **since alternative financing options are generally underdeveloped**, resulting in greater interdependence between Arab banks and government debt portfolios and escalating banks' exposure to sovereign risks.

These developments have risen special concerns for domestic credit to the private sector, which refers to financial resources provided to the private sector by financial institutions through loans, purchases of non-equity securities, trade credits and other accounts receivable. With public debt at historically high levels and the sovereign credit outlook deteriorating in many Arab countries, a deeper nexus poses risks of an adverse feedback loop that could amplify macroeconomic shocks and weaken debt sustainability and macroeconomic stability.<sup>22</sup>

An increase in sovereign risk can negatively affect Arab banks' balance sheets and lending appetite, specifically in countries with less-well-capitalised banking systems and/or higher fiscal vulnerabilities such as Lebanon. It can also constrain funding for the domestic private sector, both businesses and households.

**Consequently, higher banks' holdings of sovereign debt tend to be associated with a lower growth of credit to the private sector**, possibly reflecting crowding out due to the following reasons: (1) financial pressures exerted by governments on banks to encourage the latter to

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<sup>22</sup> International Monetary Fund, 2022b.

purchase government bonds, (2) higher interest rates induced by government borrowing reducing demand for credit by the private sector, (3) a lower demand for credit from the private sector in economic downturns associated with higher public financing needs, and (4) a portfolio rebalancing of banks towards safer and more liquid public assets as the quality of private sector loans deteriorates reflected by an increase in non-performing loans.<sup>23</sup> The case of Lebanon is a good example for the first two points in particular, where banks have been sometimes requested to subscribe in government bonds issuances, such as after the Paris II Conference that took place in November 2002, when Lebanese banks invested 4 billion USD in zero-coupon Eurobonds. Moreover, the prevailing high interest rate on government securities boosted borrowing costs, resulting in a decline for the demand for loans by businesses. Specifically, by September 2019, before the eruption of the economic, financial, monetary crisis, the 1-year Lebanese Lira Treasury bills yield was 6.5 percent, and the (weighted average) bank lending interest rate was as high as 10.9 percent.

Many studies have tackled the banks-sovereign nexus in advanced economies, but the empirical analysis of the sovereign debt and financial sector nexus in the Arab region remains limited. In some Arab countries *“public banks still dominate banking sector activities (...), exceeding 70 percent of the share in certain countries (...). [This] hinders competition and leads to an increasing level of credit facilities to the public sector, hence, crowding out private lending”*.<sup>24</sup> A *“significant negative relationship between banks’ holdings of government securities and private sector credit growth in emerging market and developing economies was found, which is not explained by a conventional crowding out of private investment by public investment or higher interest rates induced by public borrowing. Whether this negative relationship reflects a crowding out of private sector credit due to regulation, direct control of banks, or moral suasion (the financial repression hypothesis) or a portfolio rebalancing of banks towards safer and more liquid public assets in stress times (the portfolio rebalancing hypothesis) is however a challenging empirical issue, while both hypotheses can be at work simultaneously”*.<sup>25</sup>

Along these lines, **substantial holdings of domestic sovereign debt by banks increase risks for domestic credit to the private sector in case of a sovereign default.** Banks that hold the most

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<sup>23</sup> Bouis, 2019.

<sup>24</sup> Prasad, A. and others, 2016.

<sup>25</sup> Bouis, 2019.

domestic sovereign debt are those which experience the sharpest decline in credit to the private sector in the event of a sovereign default.<sup>26</sup>

Financial stability in heavily indebted Arab countries could be improved by discouraging banks from holding excessive sovereign bonds and limiting exposure while keeping in mind that banks also hold some sovereign bonds as a natural feature of the financial system and as a result of an optimal business model. The vulnerability of the Lebanese economy, for example, was due to the high level of public debt and the mutual exposure and linkages between banking system credit nexus with sovereign risks of the Lebanese government.<sup>27</sup> The October 2019 figures show that the Lebanese banking sector's aggregate claims on resident private sector represented 17.9 percent of the sector's consolidated balance sheet, while investment in government securities and in central bank term deposits represented 11.9 and 58.7 percent respectively. Moreover, the banking system-wide loan-to-deposit ratio is low compared to its peers due to the large holdings of government and central bank debt and the subdued demand for credit.<sup>28</sup>

In Egypt, loans to the government increased as bank investments continued to move in the direction of public debt instruments at the expense of venturing into real investments. The private sector hence experiences financial repression as its funding needs are crowded out by the large financing needs of the public sector, which has increased its borrowing to refinance growing debt, as debt service consumes around 50 percent of public expenditures. In addition to reflecting crowding out from public sector borrowing, the low credit in Egypt pushes interest rates up and lessens the incentives to lend to the private sector.<sup>29 30</sup>

In Jordan, banks have significant sovereign exposures at 25 percent of total assets and hold over 80 percent of government domestic securities, which can also lead to tightening financing conditions.<sup>31</sup>

In Algeria, overreliance on state-owned banks to finance the public sector can weigh on their liquidity and profitability and crowd out credit to the private sector amid an aggravating sovereign-bank nexus, with claims on the public sector (government and SOEs) constituting around 52

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<sup>26</sup> Dell'Araccia G. and others, 2018.

<sup>27</sup> International Monetary Fund, 2023f.

<sup>28</sup> International Monetary Fund, 2017.

<sup>29</sup> International Monetary Fund, 2016.

<sup>30</sup> Nonetheless, the Egyptian authorities aim to promote financial deepening and inclusion, adopting recently an initiative to require 25 percent of bank lending portfolios to be dedicated for SMEs (Source: International Monetary Fund, 2023a).

<sup>31</sup> International Monetary Fund, 2023b.

percent of banking sector assets in 2022, the highest in the Arab region. This not only crowds-out loans to the private sector, but also amplifies risks to financial stability and debt sustainability, exacerbated by a deterioration in bank asset quality as NPLs. Moreover, Algerian bank balance sheets remain burdened by sometimes unprofitable loans to SOEs and illiquid government debt securities.<sup>32</sup>

The Tunisian banking sector's sovereign exposure increased significantly in recent years in line with higher public borrowing needs, exceeding 12 percent of banking sector assets at end-2022 (Table 2). **The largest exposure is through investments in local-currency treasury bills and bonds (51 percent of total exposure at end-2021).** The Tunisian banking sector also faces high liquidity risks if the government increases its dependence on borrowing from Tunisian banks to enhance public finances, in turn leading to amplified bank exposure to sovereign debt, tighter liquidity conditions for banks, and subsequent crowding-out of domestic credit to the private sector.

In the GCC, higher domestic government borrowing and banks' continued appetite for government securities, given the limited activities in the secondary market and their excess liquidity, have resulted in a significant strengthening of the sovereign-exposure channel. Banks' claims on the public sector increased since the oil shock in 2014, reaching 4.9 percent of total assets in Kuwait, 8.7 percent in Bahrain, 12.7 percent in the UAE, 17.6 percent in Saudi Arabia, 19.6 percent in Qatar, and 20.5 percent in Oman at end-2022.<sup>33</sup> **Nevertheless, despite the increase in exposure to sovereign debt, GCC banks continue to play a central role in supporting the flow of domestic credit to the private sector during and after the pandemic, given the rebounding oil prices and ample financial buffers.** Hence, the amplification of the sovereign-bank nexus in the GCC did not crowd out lending to the economy, where bank holdings of government securities-to-credit to the private sector ratio actually dropped in both Kuwait and Qatar, remained stable in Bahrain, Oman, and Saudi Arabia, while recorded a slight increase in UAE.<sup>34</sup> Moreover, in Oman particularly, private sector credit growth remained slow in 2022, reflecting weak credit demand in sectors mostly hit by Covid-19 pandemic, while lending to government and SOEs increased by 7.6 percent and 14.4 percent respectively.<sup>35</sup>

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<sup>32</sup> International Monetary Fund, 2023c.

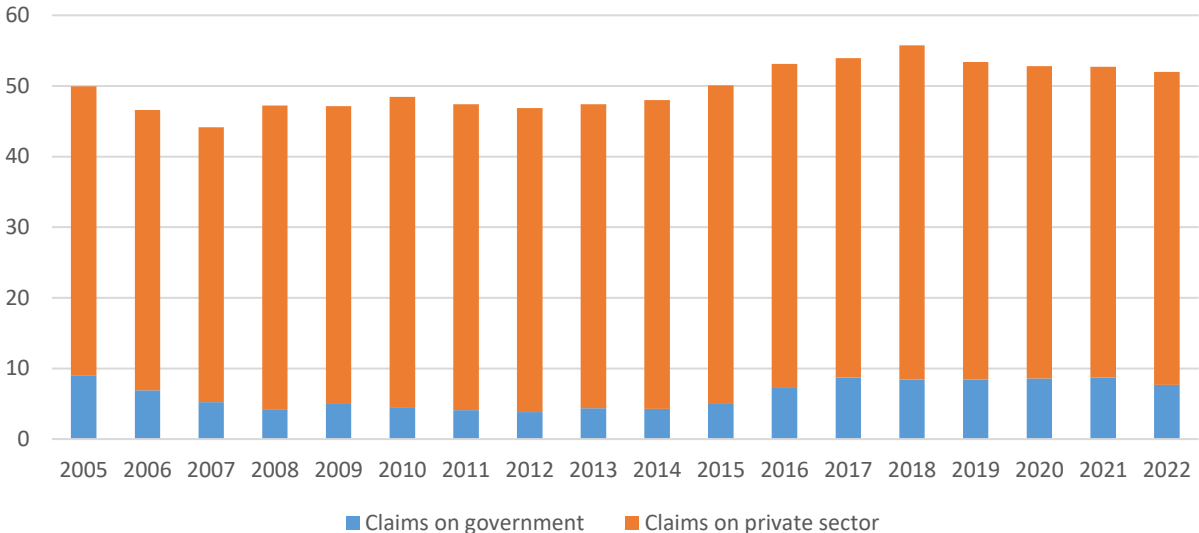
<sup>33</sup> International Monetary Fund, 2022a.

<sup>34</sup> Ibid.

<sup>35</sup> International Monetary Fund, 2022c.

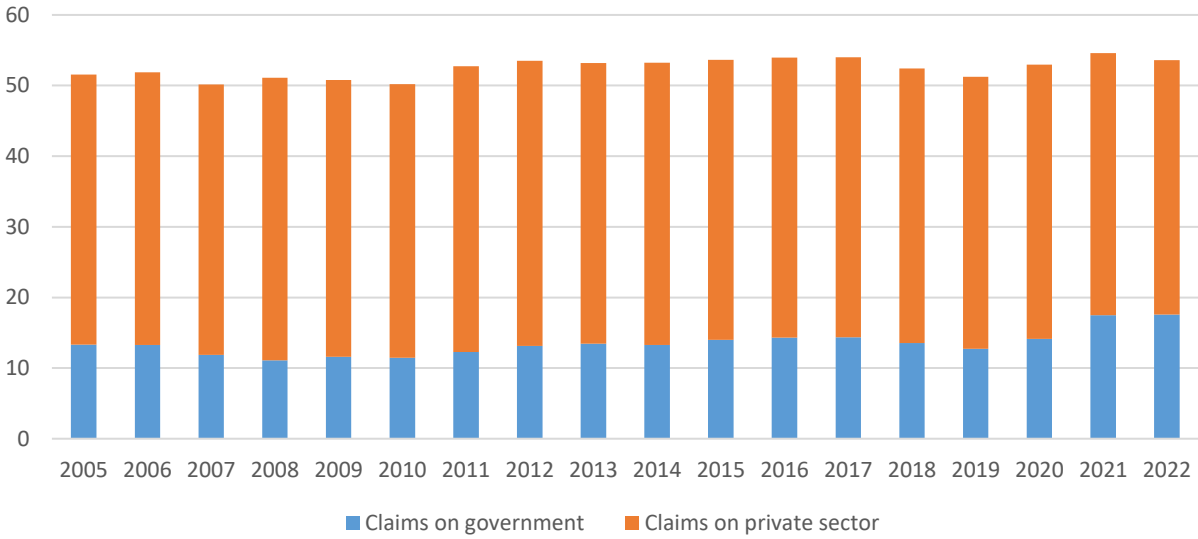
Figures 8-11 and Annex B show the crowding-out effect of domestic credit to the private sector by credit to the public sector as a percent of total banking sector. Firstly, Figure 8 shows slight crowding out effects in the GCC countries between 2017 and 2021. Secondly, Figure 9 shows clear crowding out effects in the MIC countries especially after 2014, which continued till end 2022. Thirdly, Figure 10 suggests the existence of a crowding out effect in the CAC countries between 2011 and 2013, and again in the period 2018-2021. Finally, Figure 11 reveals the absence of crowding out effects in the LDC counties.

Figure 8: Bank claims on government and private sector as percent of total banking sector assets in the GCC counties (%)



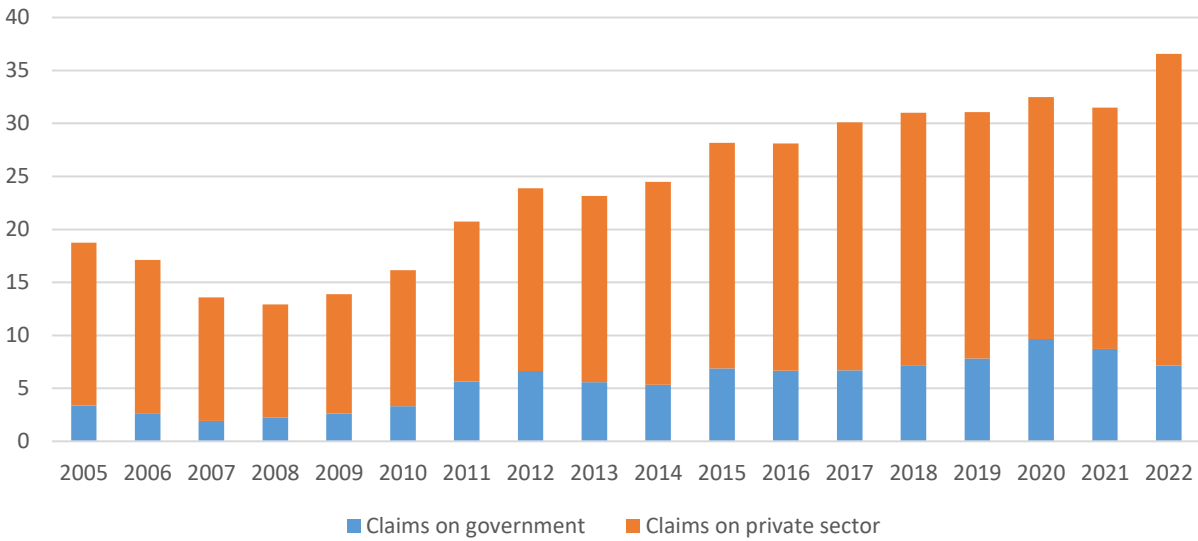
Source: done by the author based on Arab central banks data.

Figure 9: Bank claims on government and private sector as percent of total banking sector assets in the MIC counties (%)



Source: done by the author based on Arab central banks data.

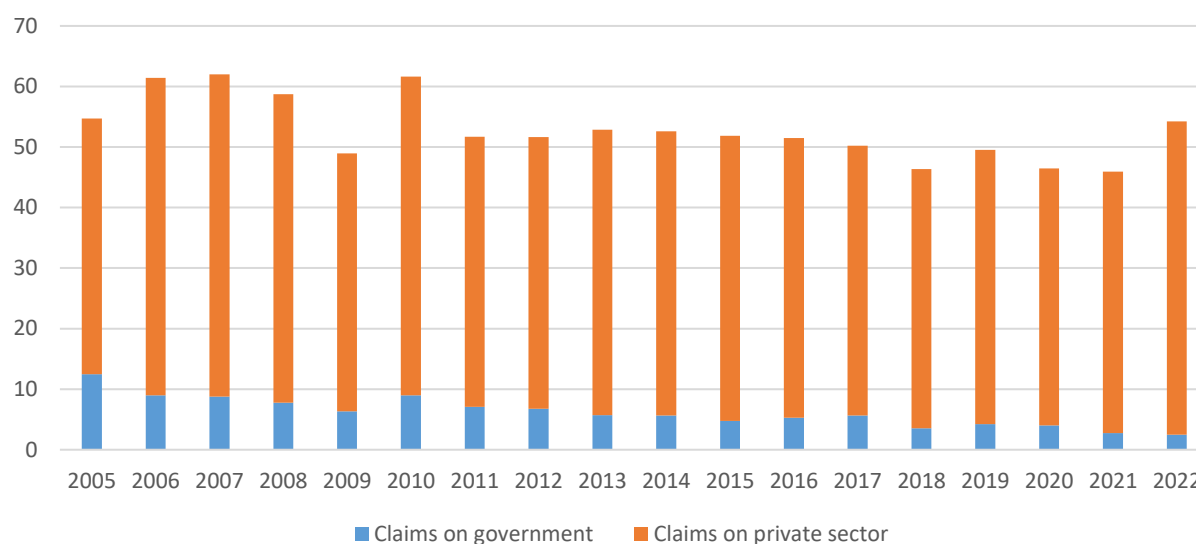
Figure 10: Bank claims on government and private sector as percent of total banking sector assets in the CAC counties (%)



Source: done by the author based on Arab central banks data.



Figure 11: Bank claims on government and private sector as percent of total banking sector assets in the LDC counties (%)



Source: done by the author based on Arab central banks data.

As for individual countries, Annex B shows the existence of crowding out effect in several countries. For instance, in Algeria, more than 60 percent of bank lending is dedicated to the public sector (government and public enterprises), resulting in approximately 52 percent of bank assets invested in sovereign debt, with an increase starting 2020. The Egyptian banks increased their credit to the public sector starting 2014, reaching 40 percent of total credit (and 15 percent of total assets) by end-2022. In Iraq, bank claims on the public sector equals 50 percent of total credit (and 13 percent of total assets), with a slight decline starting 2020. Bank claims on the public sector in Jordan equalled to 40 percent between 2013 and 2015, declined afterwards till 2017, then picked up to reach 35 percent of total claims (and 24 percent of assets) in 2022. In Lebanon, bank claims to the government exceeded 50 percent of total claims between 1996 and 2009 (and exceeded 30 percent of total assets), declining afterwards gradually, but still representing 40 percent of total credit by end-2022. Lending to the public sector in Morocco has been above 20 percent of total lending since 2012, and exceeded 30 percent by end-2022 (also exceeded 21 percent of total assets). Tunisian banks recorded a continuous increase in government lending between 2010 and 2022, where the proportion of credit to the government increased from 10 to 20 percent of total credit.

In the GCC countries, and particularly in Bahrain, bank claims to the government increased continuously since 2011, reaching almost 40 percent of total bank lending in 2022. In Oman, banks

increased their lending to the public sector from 10 percent of total lending in 2014 to 20 percent in 2022. Qatari and UAE banks dedicated approximately 30 percent of their lending to the public sector in 2022. Finally, Saudi banks directed about 20 percent of their credit to the public sector. It is worth noting that the GCC banks are significantly larger than other Arab banks, therefore, their lending capabilities are much higher than their Arab peers. Consequently, even with the same percentage of credit to the private sector, the available amounts for individuals and businesses is considerably larger in the GCC region.

## 5. The sovereign-bank nexus in the Arab region

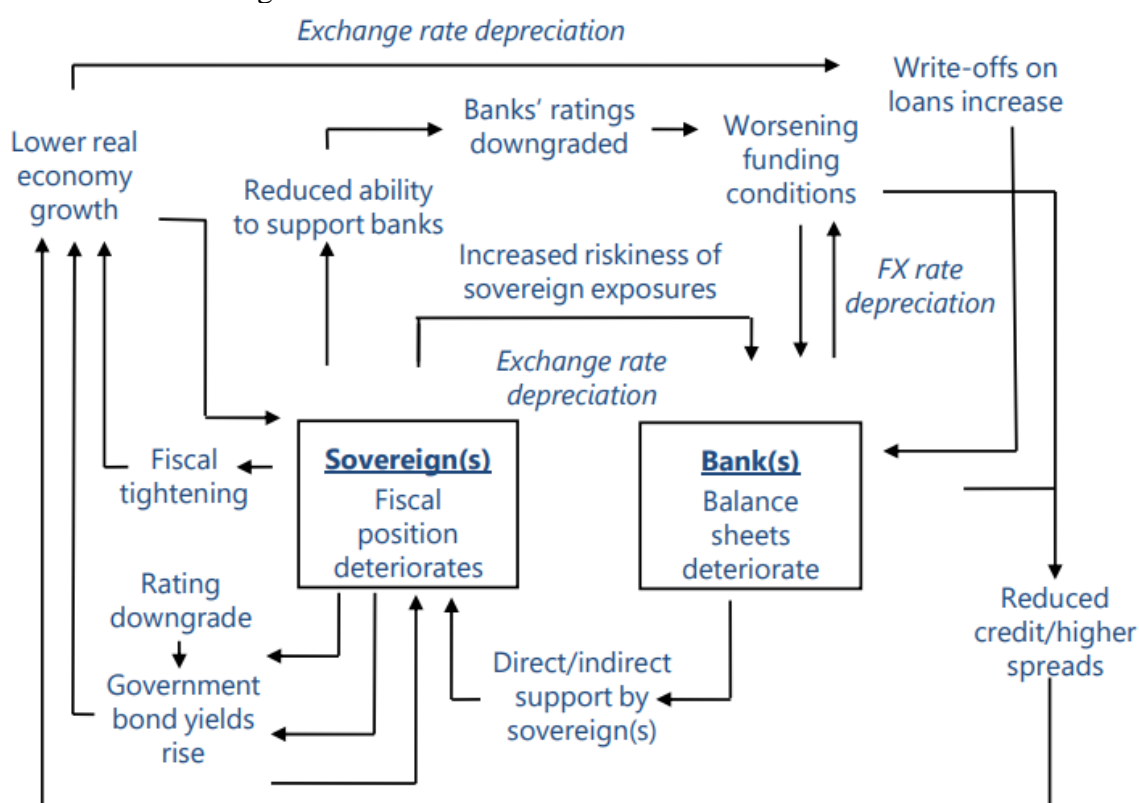
### 5.1 Introduction

In any country, the public and financial sectors are closely interrelated due to the fact that banks and other financial institutions are a main source of funding for governments. In parallel, governments provide the ultimate backstop for the financial sector and support an economy's performance.<sup>36</sup> Consequently, shocks can propagate between sovereign and banks through different channels. An instable financial system can undermine fiscal health, and at the same time, a weak fiscal position can destabilise the financial system. In adverse circumstances, **a crisis originating in the banking system weakens the sovereign position, which in turn, worsens the banking crisis stability. On the other hand, a crisis originating in the sovereign weakens the banking system, which in turn, worsens the sovereign crisis.** Accordingly, the financial health of banks and sovereigns is interconnected in a “sovereign-bank nexus” that could boost and speed up vulnerabilities in each sector, leading to adverse “feedback loops”.

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<sup>36</sup> Bank for International Settlements. Tackling the fiscal policy-financial stability nexus. BIS Working Papers No 1090. Basel, April 2023.

Figure 12: Bank-Sovereign nexus transmission channels



Source: Bank for International Settlements (2023). Tackling the fiscal policy-financial stability nexus. BIS Working Papers No 1090. Basel, April 2023.

The impact of the bank-sovereign nexus depends on several factors, such as jurisdiction-specific factors, the level of dependence between banks and sovereigns, and the intensity of the crisis. In particular, in a severe stress event, or with high bank sovereign exposures, the bank-sovereign nexus may exacerbate the crisis. Past events have provided evidence that banking crises led to sharp increases in sovereign debt in many countries, reflecting direct bailouts and emergency fiscal stimuli. In other countries, fiscal distress and the associated widening in sovereign spreads hit bank balance sheets, which in turn further complicated the fiscal deterioration.<sup>37</sup>

The sovereign and banking sectors are connected through three key channels that enable the transmission of shocks from one sector to the other: (1) **the sovereign exposure channel**, (2) **the safety net channel**, and (3) **the macroeconomic channel**.<sup>38</sup> These channels interact with each other and magnify vulnerabilities in each sector. The following explains how sovereign and banks are linked through these three channels:

<sup>37</sup> Arab Monetary Fund, 2022.

<sup>38</sup> International Monetary Fund, 2018.

1. The sovereign exposure channel: banks hold large amounts of sovereign debt for liquidity management, credit exposure, market-making, and other purposes. Consequently, they are directly exposed to sovereign risk, and at the same time, are important source of financing for the government.
2. The safety net channel: the banking system operates in light of safety net arrangements and backstops provided by both central banks and governments. These arrangements could generate spill overs from bank risks to sovereign risks and vice versa. In particular, an increase in sovereign risk weakens the government's ability to assist the banking system in terms of crises, thereby harming banks. On the other hand, a banking crisis triggers backstops, guarantees, and other costly resolution measures, resulting in an adverse effect on the fiscal position. Furthermore, in some jurisdictions (such as many Arab countries), the significant role played by state-owned banks reinforces this channel.
3. The macroeconomic channel: an increase in sovereign risk could result in contraction in economic activities due to the associated need for fiscal consolidation, higher funding costs throughout the economy, and policy uncertainty. Weaker economic activities will in turn have an adverse impact on the banking system's stability, due to the possible deterioration of banks' loan portfolio resulting from the economic contraction.

Indeed, the sovereign-bank nexus has been rising in the Emerging Markets and Developing Economies, as banks have increased their exposures to their sovereign during the decade following the 2007-08 global financial crisis, relative to their balance sheets and country GDP.<sup>39</sup>

## **5.2 The propagation of shocks from sovereign to banks**

Sovereign exposures can imply several risks for banks. These risks include credit, market, and refinancing risks and arise from actual or expected events, such as missed payments, debt restructuring or outright defaults; currency redenomination, currency devaluations, losses from

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<sup>39</sup> Feyen, E. and Zuccardi, I., 2019. These authors found that the median banking system in the sample under study (140 EMDEs) has witnessed its total exposures to government and non-financial public entities more than double between 2007 and 2017, which tightens the exposure channel.

unanticipated higher inflation, and fluctuations in the value of sovereign exposures.<sup>40</sup> These risks can have influence on banks through the following channels:<sup>41</sup>

1. The direct exposures channel: an increased sovereign risk results in a drop in government security prices and losses on bank sovereign exposures, thus weakening their balance sheets. Even banks holding high rated sovereign securities are subject to this risk. For instance, in the GCC, despite that government securities are considered as safe assets, banks holding such securities are exposed to marking-to-market price fluctuations, which are often linked to fiscal performance through changes in sovereign ratings and risk premiums.<sup>42</sup>
2. The collateral channel: an increase in sovereign risk boost risk premia and reduces the value of sovereign collateral used by banks, thus boosting their funding costs and liquidity needs. In fact, an increase in sovereign risk tightens bank funding conditions as investors perceive banks as riskier and therefore, request higher spreads.
3. The sovereign credit rating downgrades: this generate “cliff effects” and may trigger downgrades to the ratings of other entities in the country since sovereign ratings are set as ceiling on other credit ratings.<sup>43</sup>
4. The government support channel: a weakening of the sovereign position reduces funding benefits banks obtain from implicit and/or explicit government guarantees.
5. The macroeconomic channel: a sovereign shock may trigger a recession, which in turn increases borrowers’ riskiness and bank funding costs and instability. This results in a circle of credit tightening that exacerbate the recession.

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<sup>40</sup> Basel Committee on Banking Supervision, 2018.

<sup>41</sup> Bank for International Settlements, 2023.

<sup>42</sup> International Monetary Fund, 2018.

<sup>43</sup> In fact, Arab banks have been subject in several occasion to rating downgrades as a result of sovereign downgrades. For instance, on November 7, 2019, Moody’s Investors Service downgraded Lebanon’s largest three banks by assets (Bank Audi, Blom Bank, and Byblos Bank) into “junk territory”, reflecting the weakening creditworthiness of the Lebanese government following several weeks of large demonstration. On November 3, 2022, Fitch Ratings downgraded Attijariwafa Bank, Bank of Africa, and Credit Immobilier Et Hotelier’s Long-Term Foreign-Currency and Local-Currency Issuer Default Ratings, following the downgrade of the Morocco sovereign rating on October 23, 2020. On February 1, 2023, Moody’s Ratings downgraded the Long-term Bank Deposit Ratings of Amen Bank, Banque de Tunisie, Banque Internationale Arabe de Tunisie, and Societe Tunisienne de Banque, following the downgrade of Tunisia’s government Long-term Issuer Ratings on January 27, 2023. On May 17, 2023, Fitch Ratings downgraded National Bank of Egypt, Banque Misr, Banque du Caire, and Commercial International Bank’s Long-Term Issuer Default Ratings, following the downgrade of Egypt’s sovereign rating on May 5, 2023.

Box 3: The potential impact of sovereign debt holdings on Arab banking stability

The sovereign-bank nexus can materialise in the Arab region through a possible shock to sovereign, which could propagate to the banking sector. To test this hypothesis, Table 5 presents regression estimates on the association between **banks claims on the government and the occurrence of a banking crisis**.

Table 5: The impact of sovereign debt on banking crises – dependent variable: CRISIS

	1	2	3	4
Constant	0.076** (0.033)	0.042 (0.046)	0.022 (0.020)	0.006 (0.018)
CRISIS(-1)	0.664*** (0.037)	0.590*** (0.590)	0.599*** (0.032)	0.588*** (0.006)
CLAIMS_ON_GOVERNMENT	1.42E-05 (0.000)			
GDPG	-0.002** (0.000)		-0.0004 (0.000)	
INFLATION				
CLAIMS_ON_GOVERNMENT X INFLATION		0.0001*** (1.80E-05)	0.0001*** (1.61E-05)	0.0001*** (1.67E-05)
ODA			0.0002 (0.000)	
FD	-0.061 (0.055)	0.154 (0.122)		-0.032 (0.052)
GCF	-0.001* (0.000)	-0.003*** (0.001)	-0.0009 (0.000)	
R-squared	0.535	0.624	0.609	0.606
F-statistic	69.557	29.251	107.604	156.983
Prob(F-statistic)	0.000	0.000	0.000	0.000
Durbin-Watson statistics	1.917	2.181	2.127	2.108
Observations	308	299	351	310
Hausman test				
Chi-Sq. Statistic	8.695	10.711	8.940	3.270
Prob.	0.128	0.030	0.111	0.351
Method	RE	FE	RE	RE

Notes: Standard error in parentheses. \*\*\*, \*\*, \* denote significant at the 1%, 5% level and 10% level respectively. FE: Fixed Effects. RE: Random Effects. CRISIS: a dummy variable with the value of 1 in case of banking crisis, zero otherwise. A banking crisis is defined as systemic if two conditions are met: (1) significant signs of financial distress in the banking system (as indicated by significant bank runs, losses in the banking system, and/or bank liquidations), (2) Significant banking policy intervention measures in response to significant losses in the banking system. The first year that both criteria are met is considered as the year when the crisis start becoming systemic. The end of a crisis is defined the year before both real GDP growth and real credit growth are positive for at least

two consecutive years (source: the World Bank). CLAIMS\_ON\_GOVERNMENT: bank claims on government as percentage of GDP. GDPG: annual real growth rate of gross domestic product. INFLATION: end of year inflation rate. ODA: official development assistance as percentage of GDP. FD: financial development index. GCF: gross capital formation as percentage of GDP. Countries included are Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Tunisia, UAE, and State of Palestine. Period: 1990-2022.

The econometric results presented in Table 5 show that bank claims on government, i.e. bank exposures to sovereign debt, per se, may not trigger a banking crisis. This is shown by the insignificant effect of bank claims on government on banking crisis in the second column in the table. Nonetheless, the interaction term of bank claims and inflation captured a positive and significant impact on CRISIS, suggesting that a high level of sovereign exposure coupled with high level of inflation triggers a banking crisis. To confirm these results, we replaced the banking crisis as dependent variable with banking sector average Z-score (which measures banking stability), and we found that high bank claims on government coupled with inflationary shock depresses bank stability. An interpretation for this finding is that higher inflation results in deteriorating economic conditions and rising credit risk, which eventually causes banking fragility and possible systemic crisis.

Therefore, an inflationary shock may lead to the emergence of crises in banking sectors that invest heavily in government debt. Consequently, this may provide some evidence about the hyperinflation in Lebanon has participated in the deterioration of the banking sector, which was initially exposed considerably to the sovereign debt.

Regarding individual countries, the IMF 2022 Article IV Consultation on Algeria warned that the financial health of banks deserves closer attention amid an aggravating sovereign-bank nexus. The report added that bank claims on the government and SOEs are high both by historical standards and relative to peer economies. Consequently, an increase in the interlinkages between the balance sheets of the government, non-financial SOEs and state owned banks can intensify sovereign or banking sector stress, hence boosting risks to both financial stability and debt sustainability. These risks are exacerbated by the deterioration in bank asset quality, which is burdened by sometimes unprofitable loans to SOEs and illiquid government securities.<sup>44</sup> The large holdings of government securities by Egyptian banks and the additional exposure via government loans results in linking

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<sup>44</sup> International Monetary Fund, 2023c.

banks' credit profile to that of the government.<sup>45</sup> As for Oman, a considerable sovereign-bank nexus exists, as 30.4 percent of bank deposits are from the sovereign (both government and SOEs), and bank claims on sovereign reached 21.7 percent of total assets at end-2021.<sup>46</sup> Another Arab country that witnesses sovereign-bank nexus is Tunisia, where banks face substantial exposure to credit risk in lending to private sector and SOEs, while having relatively shallow capital buffers and tight liquidity. Bank credit to SOEs results in higher concentration of exposures and mounting sovereign-bank linkages.<sup>47</sup>

### **5.3 The propagation of shocks from banks to sovereign**

If a government is expected to support banks during a banking crisis, a stressed banking system could harm the sovereign's own creditworthiness, where a banking crisis resulting in credit crunch and worse economic conditions could stretch the sovereign's fiscal position.<sup>48</sup> Banks can affect the sovereign in several ways, which raise the risk of an increase in public debt.<sup>49</sup> In particular, the propagation from banks to sovereign can occur through the following channels:

1. The sovereign is directly exposed to banking risks, explicitly through deposit insurance or other guarantees, and implicitly through expectations that it would be obliged to bail-out distressed institutions. Government intervention ranges from purchasing bad assets to recapitalising institutions.
2. The sovereign is indirectly exposed to financial sector shocks through the macroeconomic repercussions of crises. Following a banking crisis, fiscal balances tend to deteriorate.
3. Government usually respond to crises with discretionary fiscal expansions, which results in larger indebtedness.
4. The sovereign is exposed to financial sector risks through currency depreciations and interest rate jumps that accompany financial stress or banking crisis. For instance, if a significant proportion of the government debt is denominated in foreign currency, a depreciation raises

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<sup>45</sup> Moody's Investor Services, Banking System Outlook - Egypt February, 2019 OUTLOOK RESEARCH PUBLICATION Buoyant economy and inter-linkages with sovereign's improving credit profile drive our positive outlook. Moody's report ads that relative to capital, Egyptian banks' sovereign exposure is among the highest of rated banks globally.

<sup>46</sup> International Monetary Fund, 2022c.

<sup>47</sup> International Monetary Fund, 2021.

<sup>48</sup> Basel Committee on Banking Supervision, 2018.

<sup>49</sup> Basel Committee on Banking Supervision, 2023.



the local currency value of this debt. Similarly, if sovereign debt interest rates are variable, higher domestic interest rates boosts quickly the debt service burden.

## 6. Conclusion and policy recommendations

This study highlighted the government indebtedness in the Arab region, and the participation of banks in funding this indebtedness. In addition, this research reviewed the Sovereign-Bank Nexus in the Arab region, its causes and possible repercussions. This Nexus is materialised by the considerable holding of government and SOEs debt by banks in several countries, which might be amplified by the large deposits of government and SOEs in banks (in particular state-owned). This two-way interconnectedness between the public sector and banks in the Arab region poses significant challenges for fiscal sustainability, financial stability, and economic growth. Moreover, the large holdings of sovereign debt by Arab banks not only results in crowding out private sector lending, but also increases risks to the private sector and the broader economy in case of sovereign default.<sup>50</sup> In particular, banks holding the largest amounts of domestic sovereign debt would experience the sharpest decline in credit to the private sector in the event of sovereign default.<sup>51</sup> Therefore, it is crucial to develop a framework to mitigate the risks resulting from the sovereign-bank nexus in the Arab countries. This framework could contain, but not limited to, the following elements:

### 1. Improving data and statistics quality on the interconnectedness between sovereign and banks, and the existence of contingent liabilities

High quality statistics are a prerequisite for sound decision-making across all economic sectors as well as the financial sector. On one hand, the government must adopt transparent and timely information system regarding ownership linkages with SOEs, as well as other contingent liabilities resulting from these linkages. On the other hand, central banks and banks in the Arab region must adhere to international standards to ensure that credit statistics are accurate, timely, reliable, and consistent. The scope of banking (and central banking) statistics in the Arab region should move beyond aggregates to also cover micro and more granulated data, in order to identify early warning signs in the financial system. Moreover, given that a robust data foundation is critical for banking sectors' resilience and continuity, Arab banks must move beyond viewing data as a mere

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<sup>50</sup> Lebanon is an example of this phenomenon.

<sup>51</sup> Gennaioli, N., Martin, A. and Rossi, S., 2018. [not mentioned in references, please add it]

compliance issue, and consider data and statistics as strategic assets which require investment, management, and protection, and hence allocate financial and human resources accordingly.

## **2. Maintain sufficient fiscal and bank buffers in order to reduce the probability and severity of shocks propagating between sovereign and banks**

Regarding sovereign, this requires adopting prudent fiscal buffers, effective revenue and spending management, in addition to sound public debt and fiscal risk management. As for banks, this necessitates maintaining solid, real, and transparent capital adequacy and liquidity buffers. Higher buffers allow both the sovereign and banks to withstand shocks.

## **3. Recognising and addressing the sovereign exposures channel resulting from regulatory treatment or from financial repression**

Basel framework provides incentives that favour sovereign securities over other types of assets regarding credit risk measurement, and liquidity and capital adequacy ratios computation, which results in excessive exposure and credit concentration. It is crucial to adopt measures that permits mitigating such excessive exposure and concentrations.

## **4. Strengthening the governance and improving performance of SOEs**

More developed governance structures and better operational performance for Arab SOEs alleviate their need for government support and/or bank credit. This in turn lowers the reliance of SOEs on government, and their interlinkage with banks, resulting eventually in alleviating the sovereign-bank nexus.

## **5. Developing and deepening the sovereign debt secondary market**

The existence of developed and liquid markets for sovereign securities is necessary to facilitate the conduct of open-market operations by central banks to control market liquidity, and to set security prices. In parallel, the existence of developed financial markets is crucial to determine the liquidity level of treasury securities and decide if they are really eligible to be considered as High Quality Liquid Assets. The lack of developed secondary markets prevents assessing the real marketability of sovereign securities.

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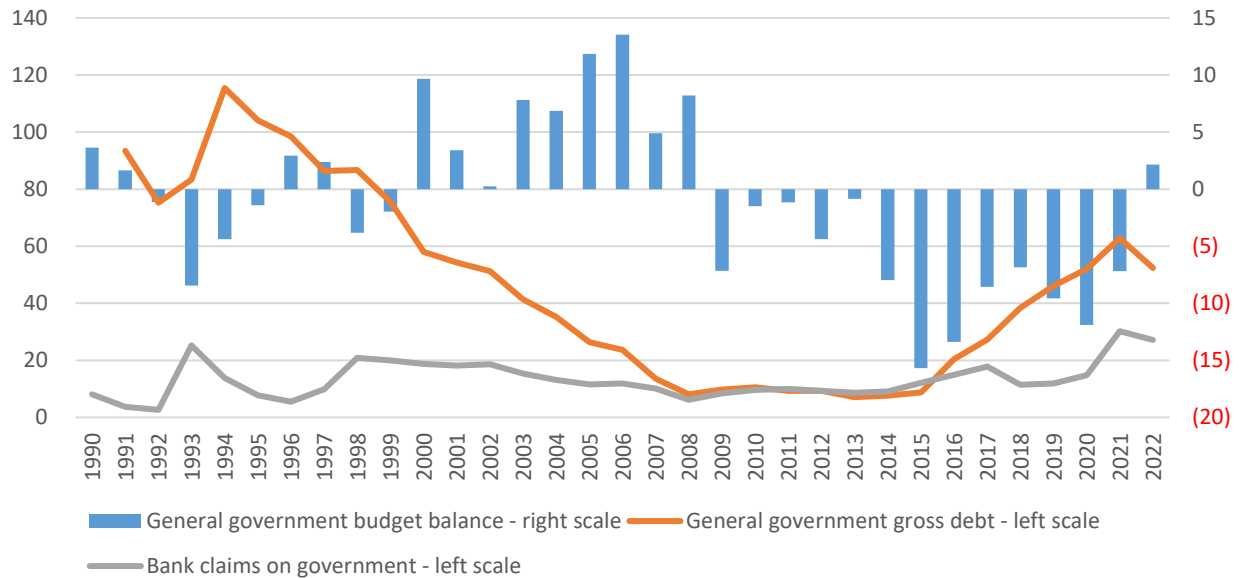
heavily reliant on the government for funding, where government and SOEs deposits represent 43 percent of total deposits.

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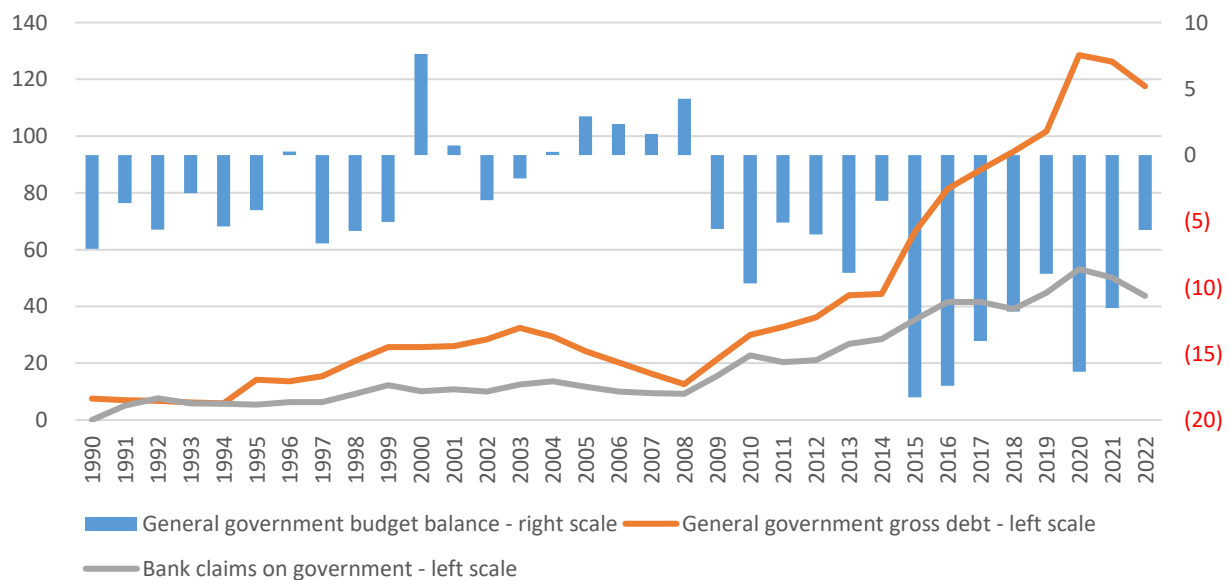
## Annex A: Government budget deficit, government gross debt, and bank claims on the government in the Arab countries – all as percent of GDP (%)

Figure A.1: Government budget deficit, government gross debt, and bank claims on the government in Algeria – all as percent of GDP (%)



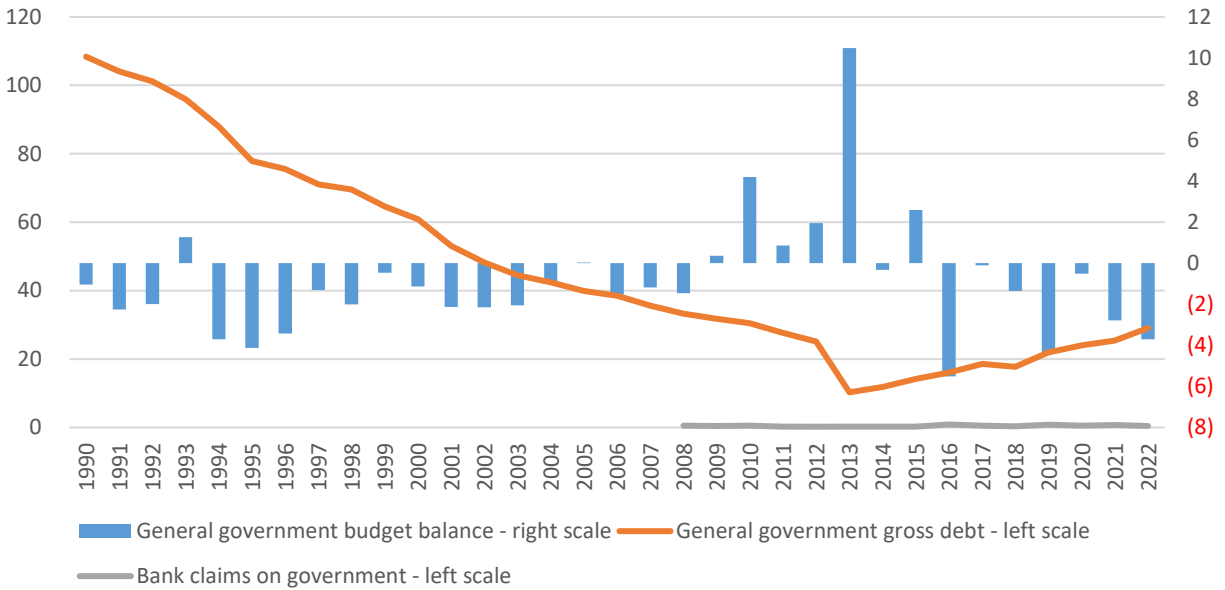
Source: done by the author based on the International Monetary Fund and Central Bank of Algeria data.

Figure A.2: Government budget deficit, government gross debt, and bank claims on the government in Bahrain – all as percent of GDP (%)



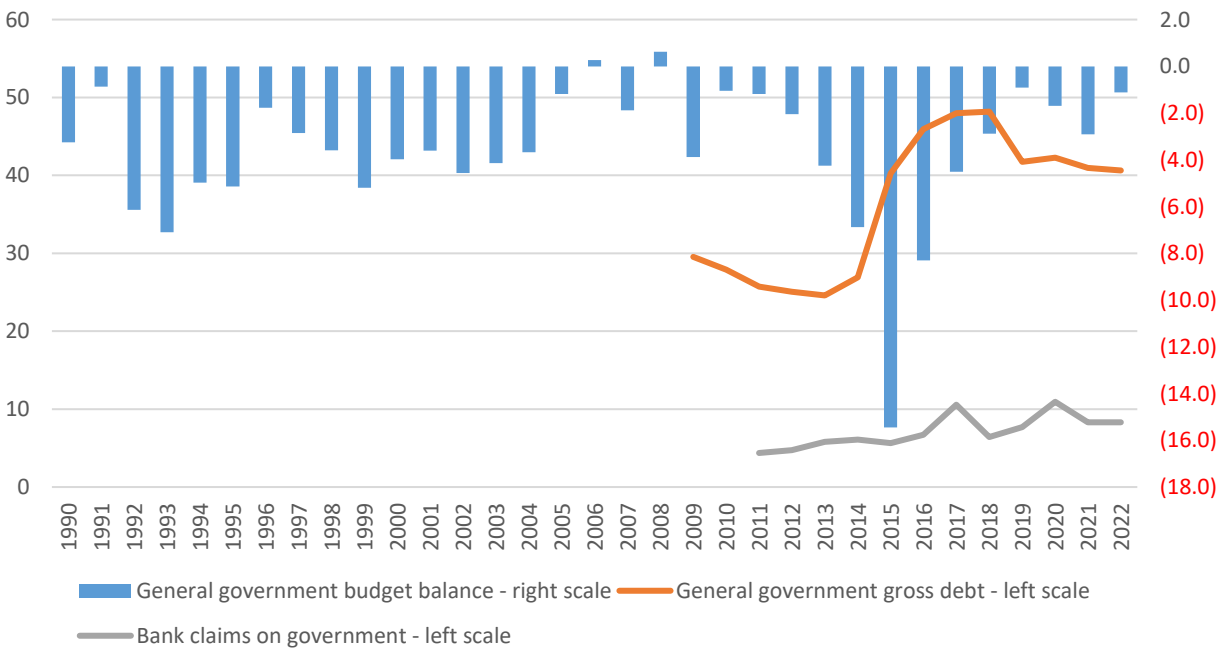
Source: done by the author based on the International Monetary Fund and Central Bank of Bahrain data.

Figure A.3: Government budget deficit, government gross debt, and bank claims on the government in Comoros – all as percent of GDP (%)



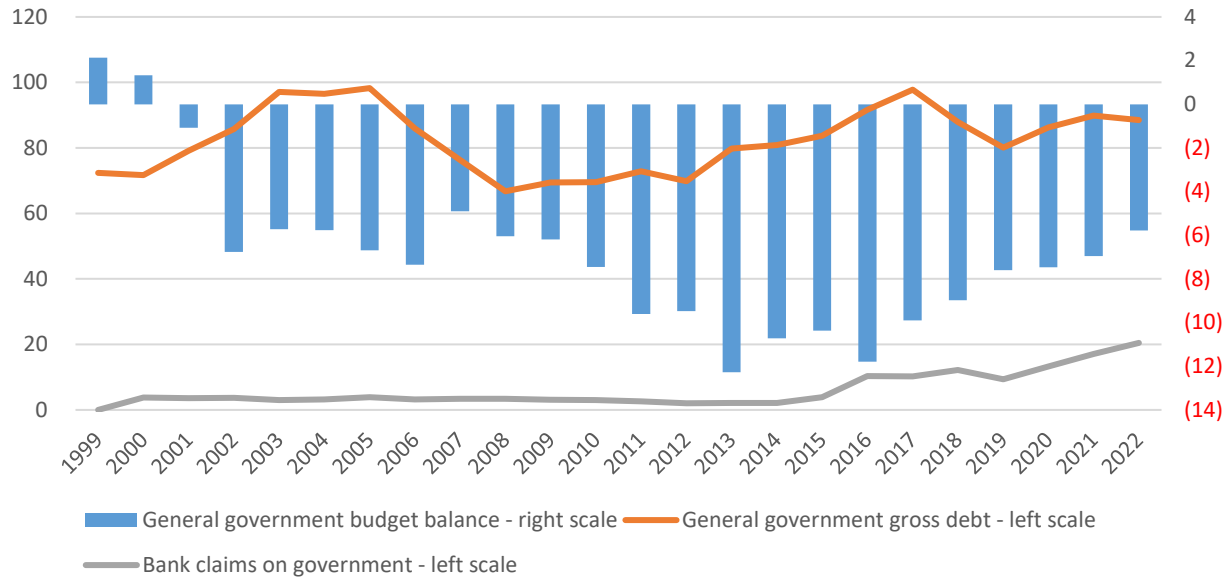
Source: done by the author based on the International Monetary Fund and Central Bank of Comoros data.

Figure A.4: Government budget deficit, government gross debt, and bank claims on the government in Djibouti – all as percent of GDP (%)



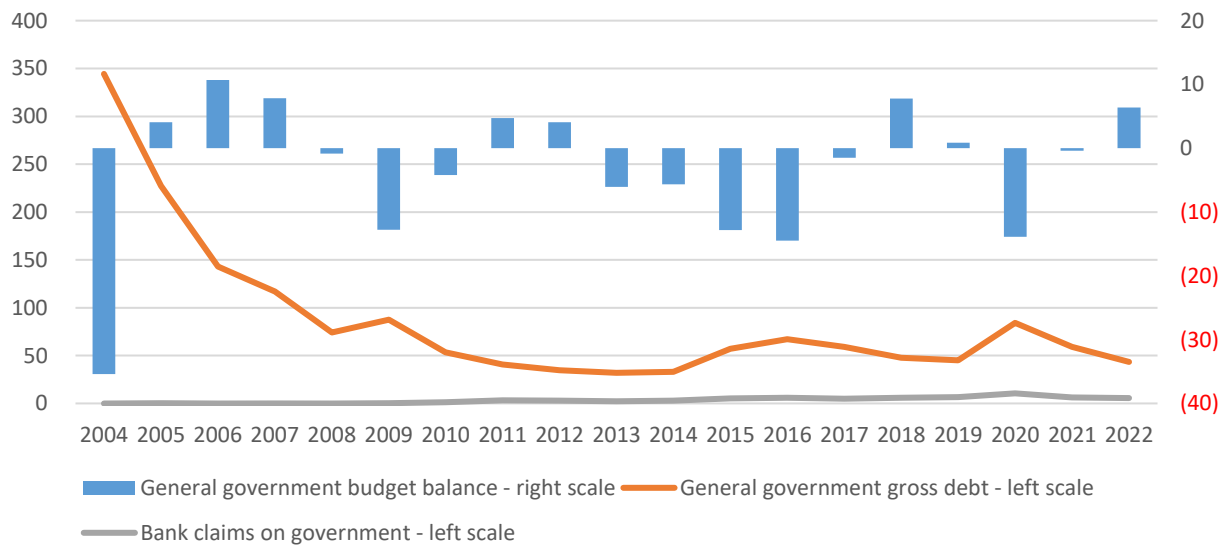
Source: done by the author based on the International Monetary Fund and Central Bank of Djibouti data.

Figure A.5: Government budget deficit, government gross debt, and bank claims on the government in Egypt – all as percent of GDP (%)



Source: done by the author based on the International Monetary Fund and Central Bank of Egypt data.

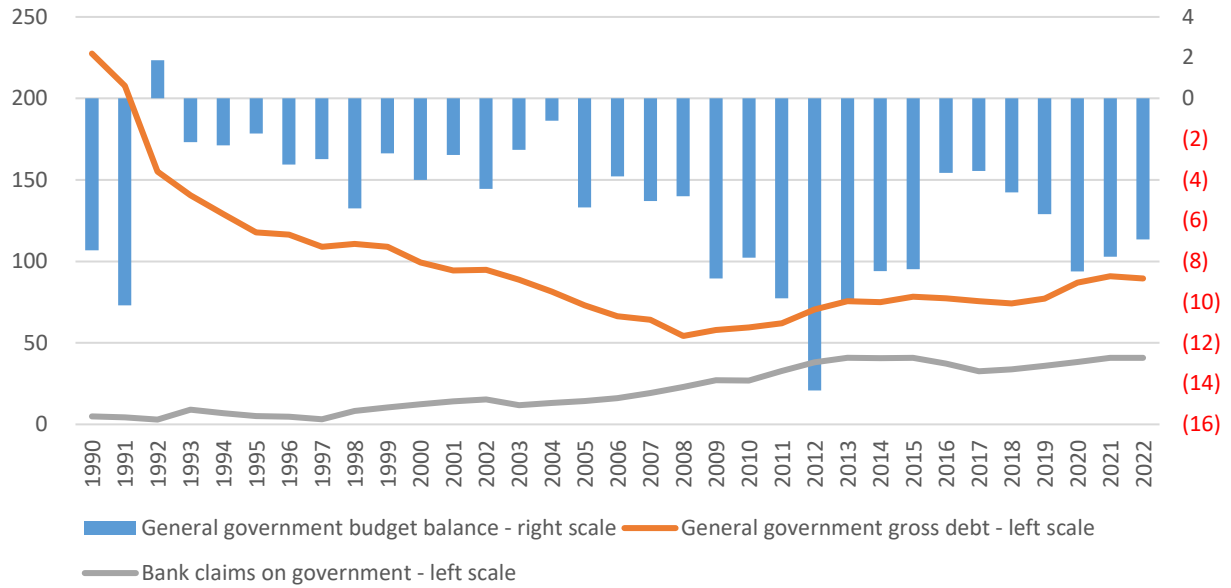
Figure A.6: Government budget deficit, government gross debt, and bank claims on the government in Iraq – all as percent of GDP (%)



Source: done by the author based on the International Monetary Fund and Central Bank of Iraq data.

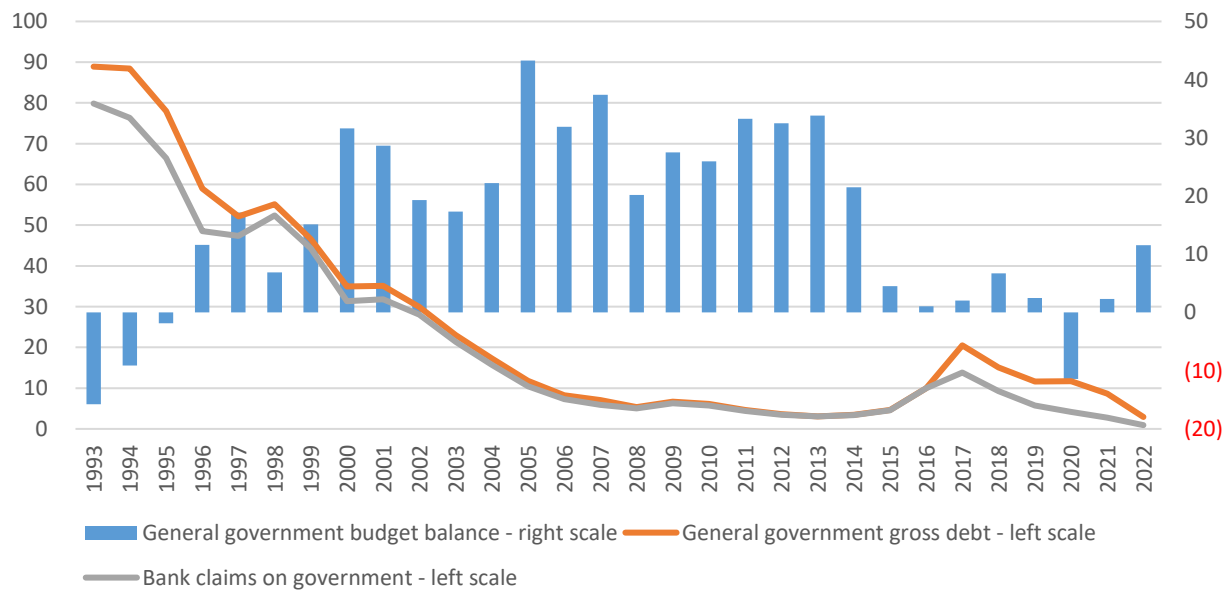


Figure A.7: Government budget deficit, government gross debt, and bank claims on the government in Jordan – all as percent of GDP (%)



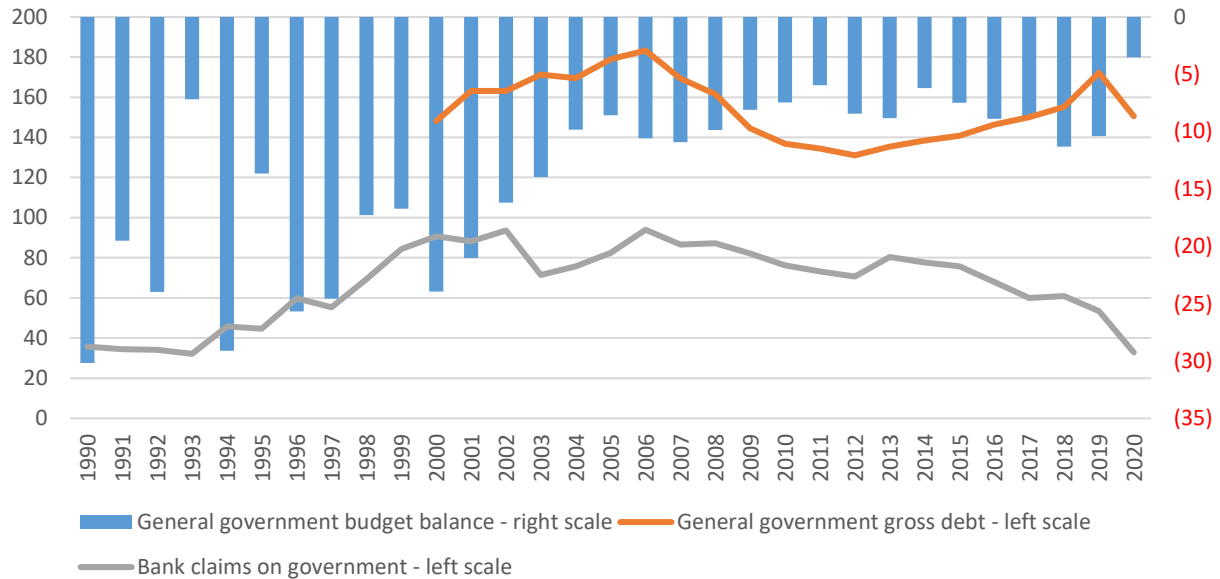
Source: done by the author based on the International Monetary Fund and Central Bank of Jordan data.

Figure A.8: Government budget deficit, government gross debt, and bank claims on the government in Kuwait – all as percent of GDP (%)



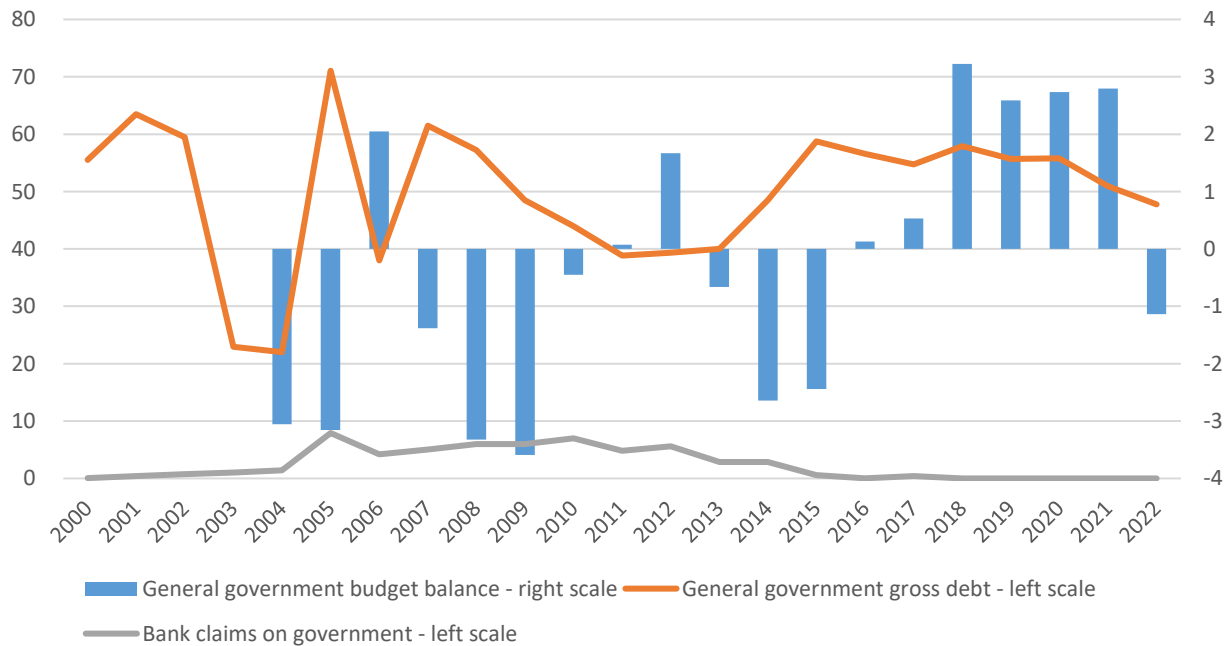
Source: done by the author based on the International Monetary Fund and Central Bank of Kuwait data.

Figure A.9: Government budget deficit, government gross debt, and bank claims on the government in Lebanon – all as percent of GDP (%)



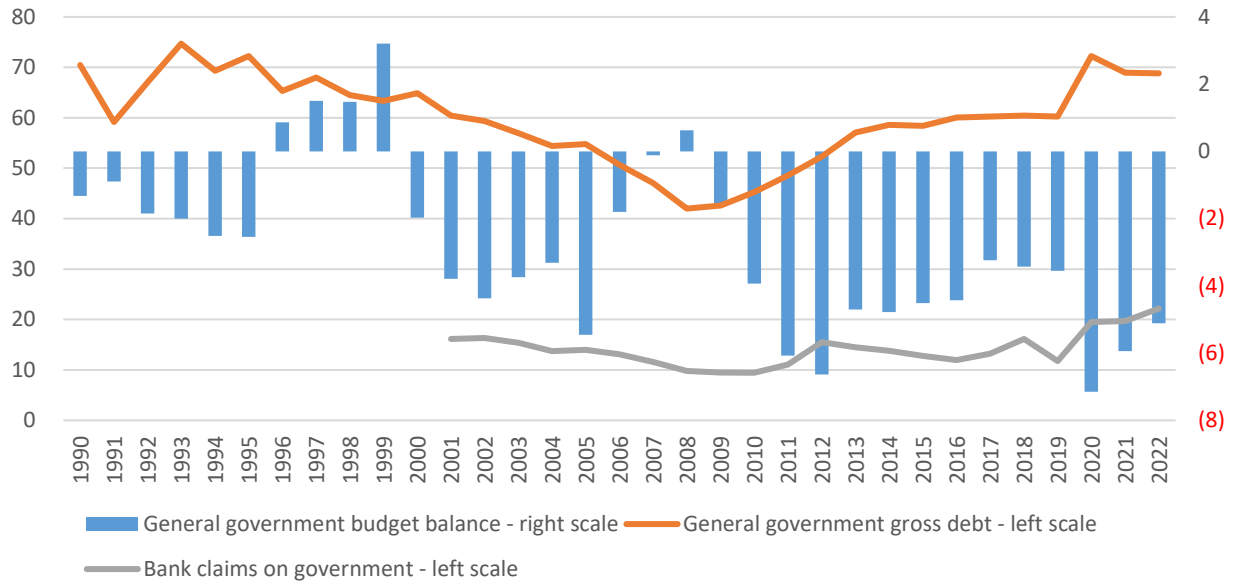
Source: done by the author based on the International Monetary Fund and Central Bank of Lebanon data.

Figure A.10: Government budget deficit, government gross debt, and bank claims on the government in Mauritania – all as percent of GDP (%)



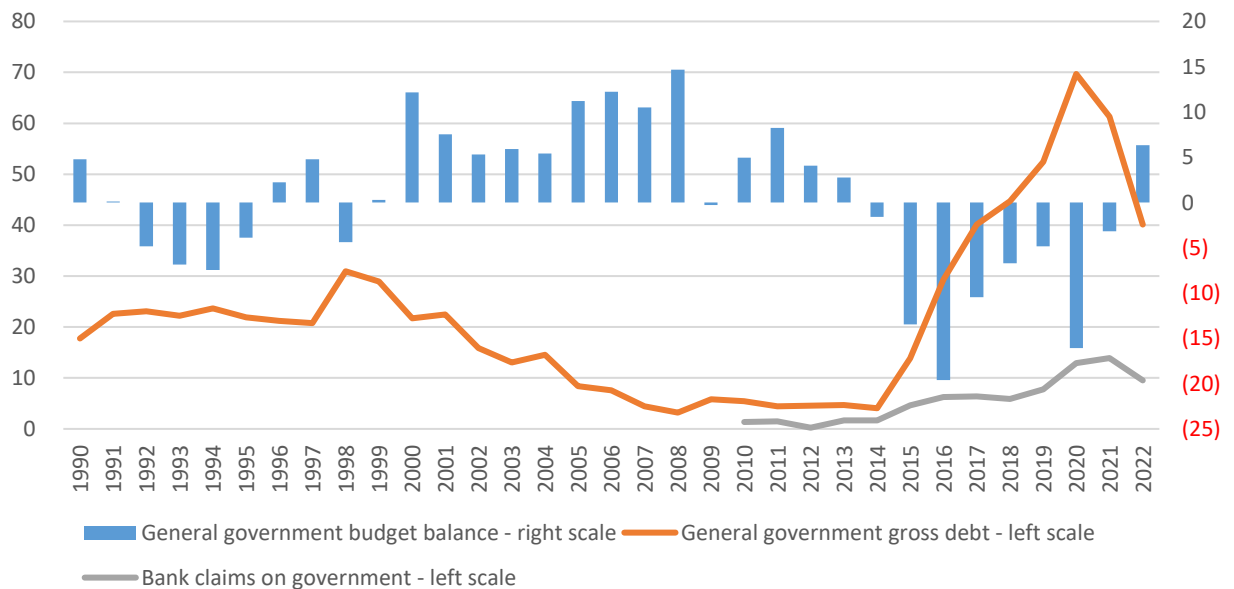
Source: done by the author based on the International Monetary Fund and Central Bank of Mauritania data.

Figure A.11: Government budget deficit, government gross debt, and bank claims on the government in Morocco – all as percent of GDP (%)



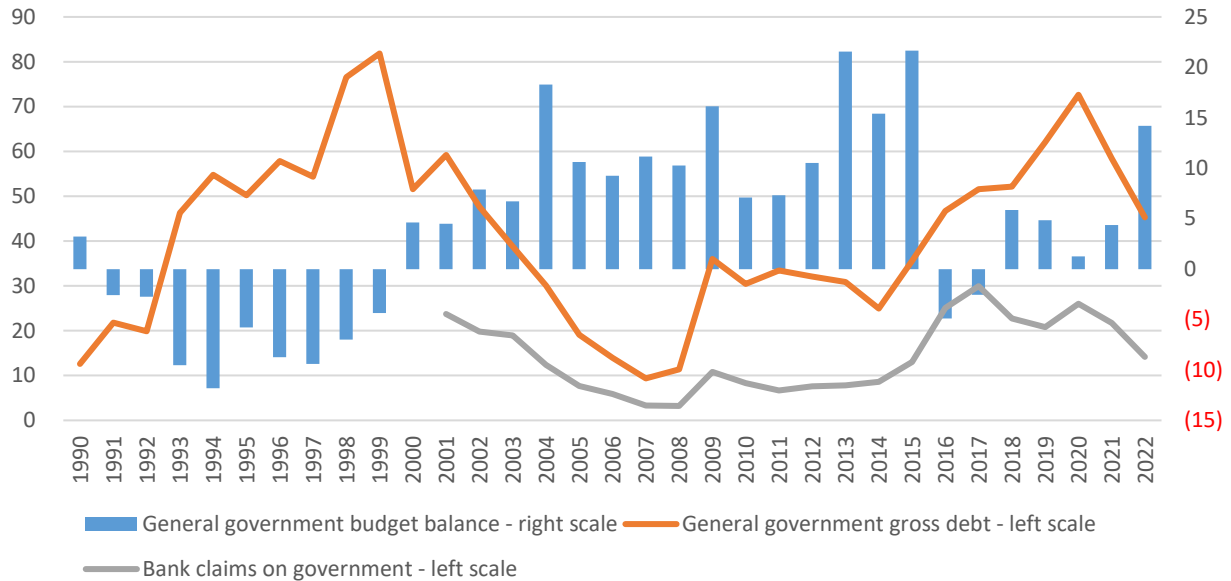
Source: done by the author based on the International Monetary Fund and Central Bank of Morocco data.

Figure A.12: Government budget deficit, government gross debt, and bank claims on the government in Oman – all as percent of GDP (%)



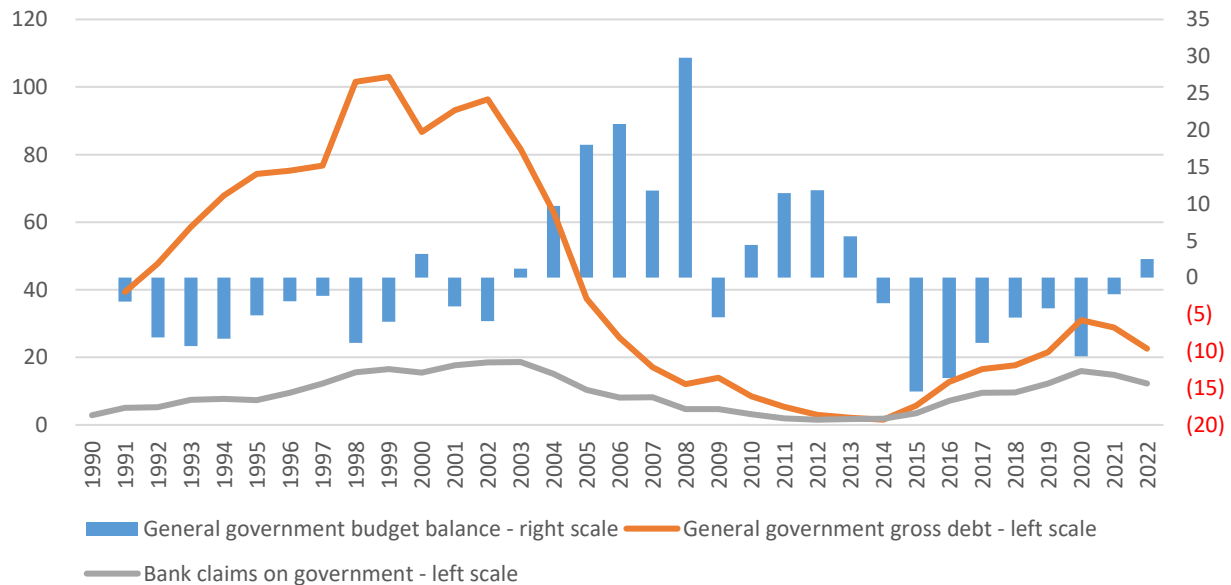
Source: done by the author based on the International Monetary Fund and Central Bank of Oman data.

Figure A.13: Government budget deficit, government gross debt, and bank claims on the government in Qatar – all as percent of GDP (%)



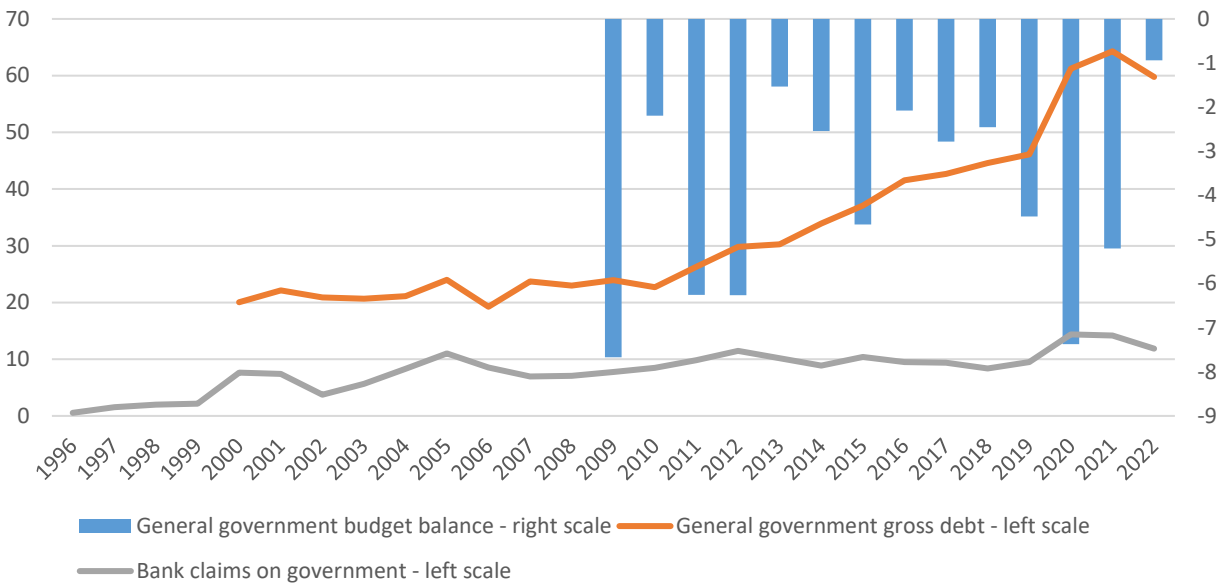
Source: done by the author based on the International Monetary Fund and Central Bank of Qatar data.

Figure A.14: Government budget deficit, government gross debt, and bank claims on the government in Saudi Arabia – all as percent of GDP (%)



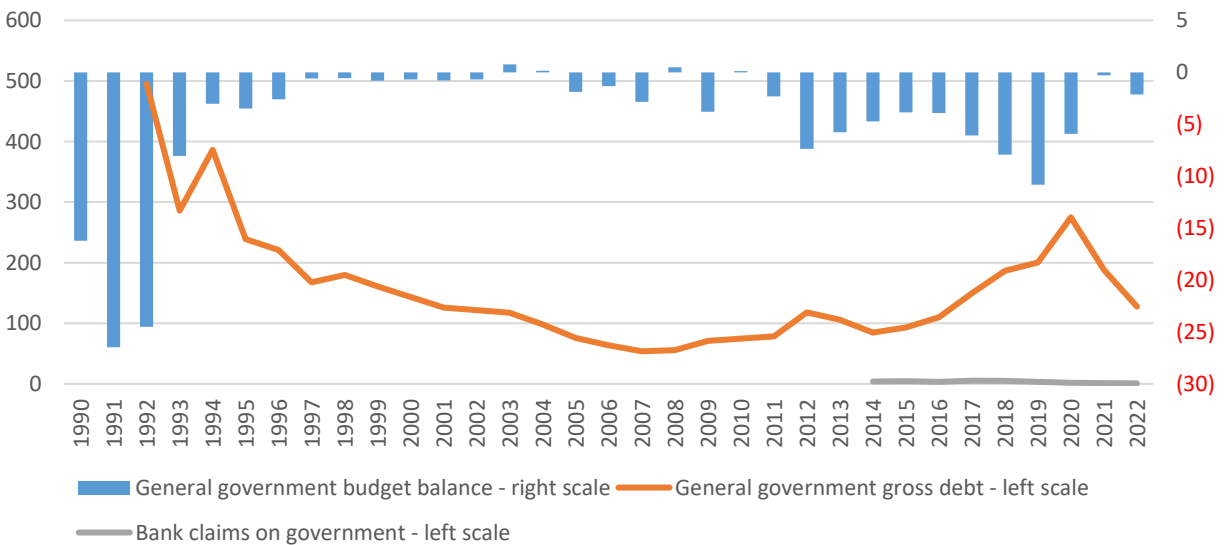
Source: done by the author based on the International Monetary Fund and Central Bank of Saudi Arabia data.

Figure A.15: Government budget deficit, government gross debt, and bank claims on the government in the State of Palestine – all as percent of GDP (%)



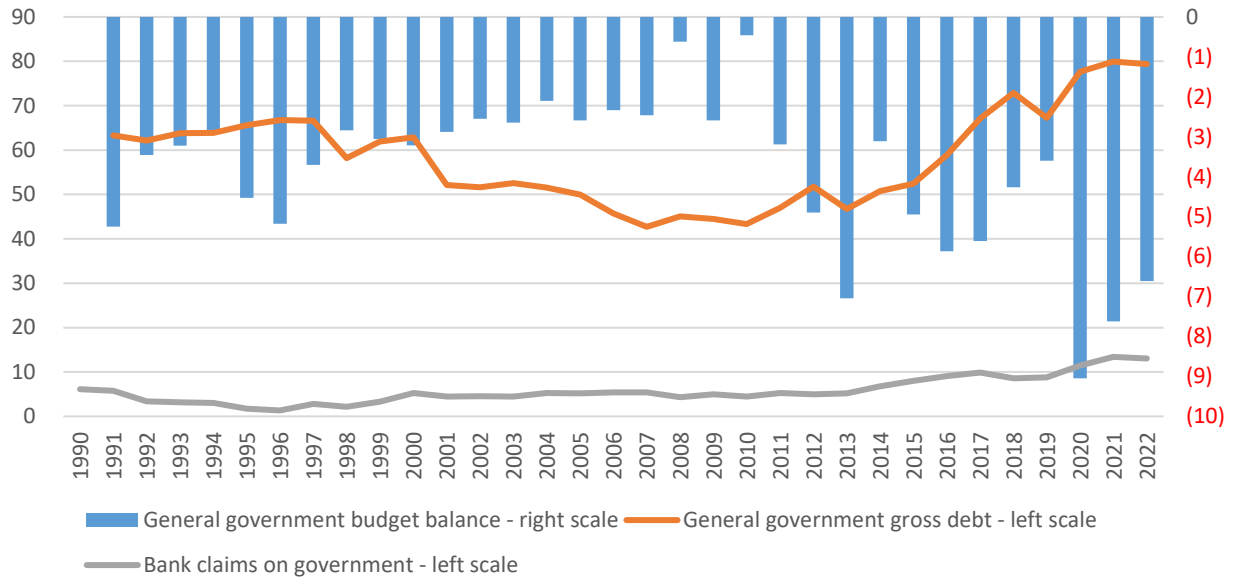
Source: done by the author based on the International Monetary Fund and Palestine Monetary Authority data.

Figure A.16: Government budget deficit, government gross debt, and bank claims on the government in Sudan – all as percent of GDP (%)



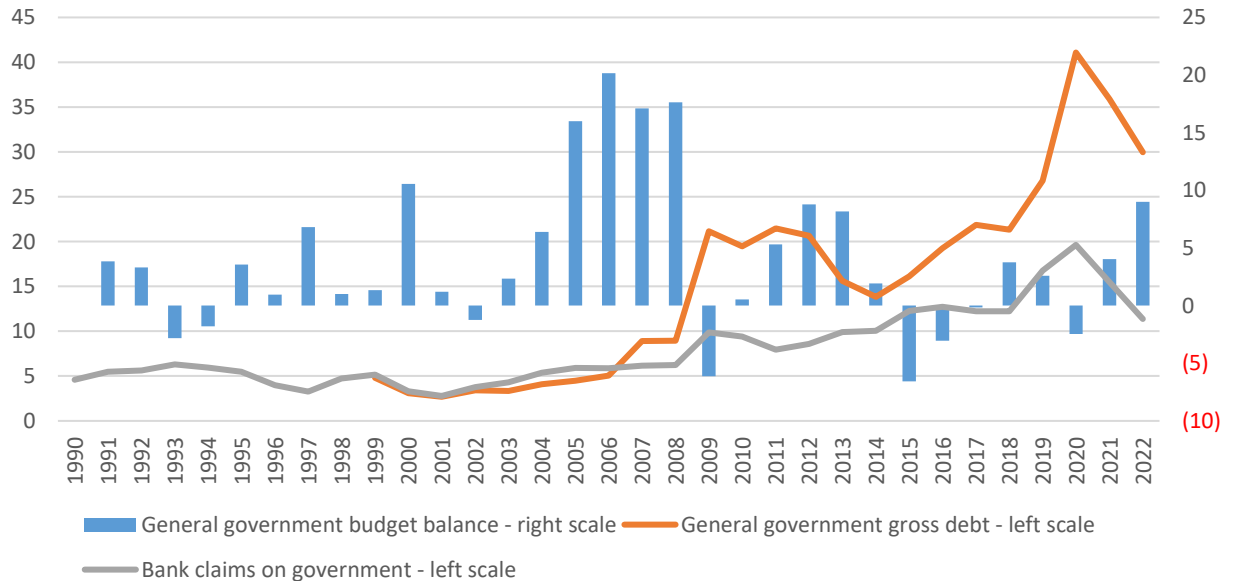
Source: done by the author based on the International Monetary Fund and Central Bank of Sudan data.

Figure A.17: Government budget deficit, government gross debt, and bank claims on the government in Tunisia – all as percent of GDP (%)



Source: done by the author based on the International Monetary Fund and Central Bank of Tunisia data.

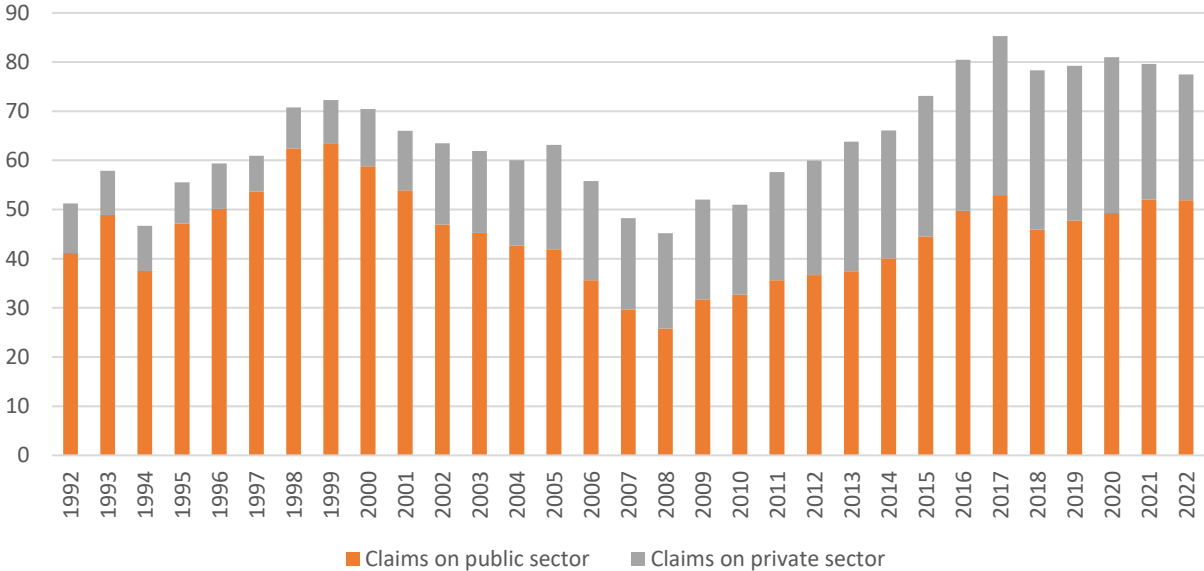
Figure A.18: Government budget deficit, government gross debt, and bank claims on the government in UAE – all as percent of GDP (%)



Source: done by the author based on the International Monetary Fund and Central Bank of UAE data.

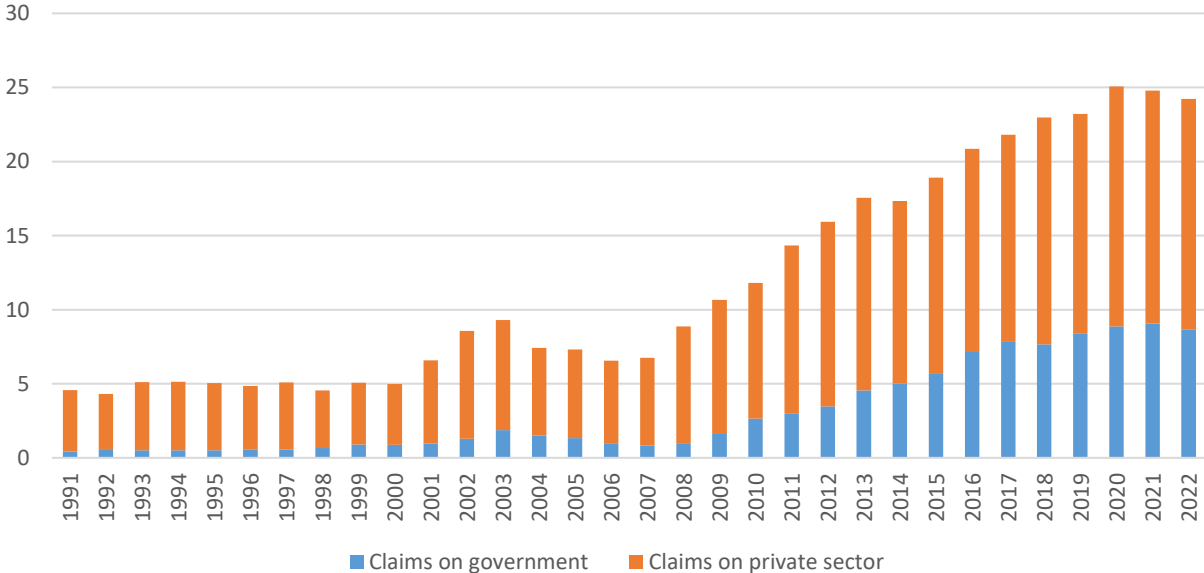
## Annex B: Claims on government, public sector, and private sector as percent of total banking sector assets (%)

Figure B.1: Bank claims on public sector and private sector as a percent of total banking sector assets in Algeria (%)



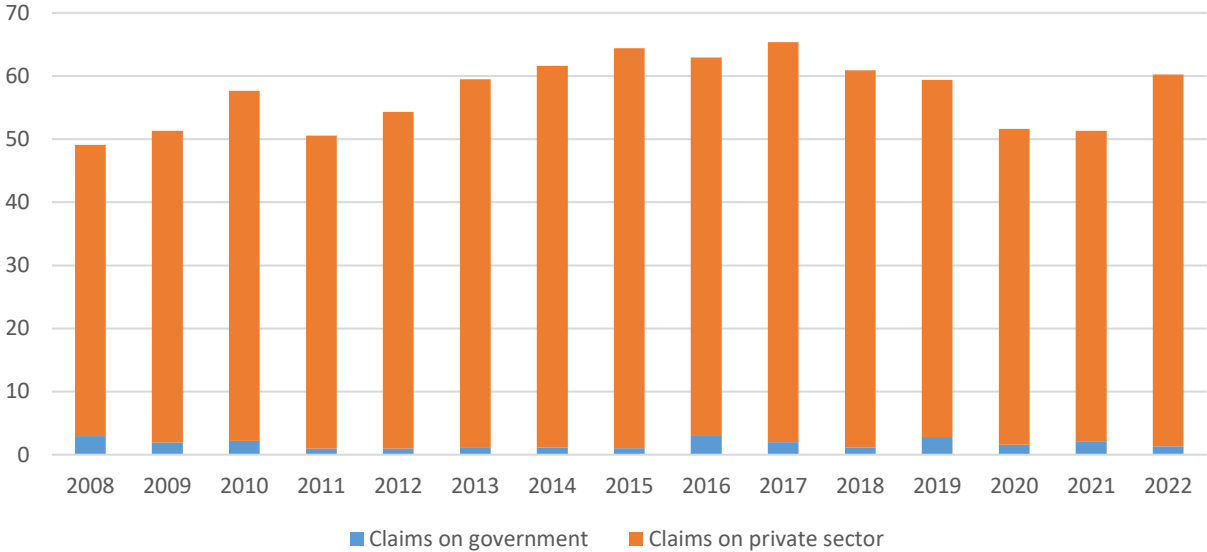
Source: done by the author based on the Central Bank of Algeria data.

Figure B.2: Bank claims on government and private sector as a percent of total banking sector assets in Bahrain (%)



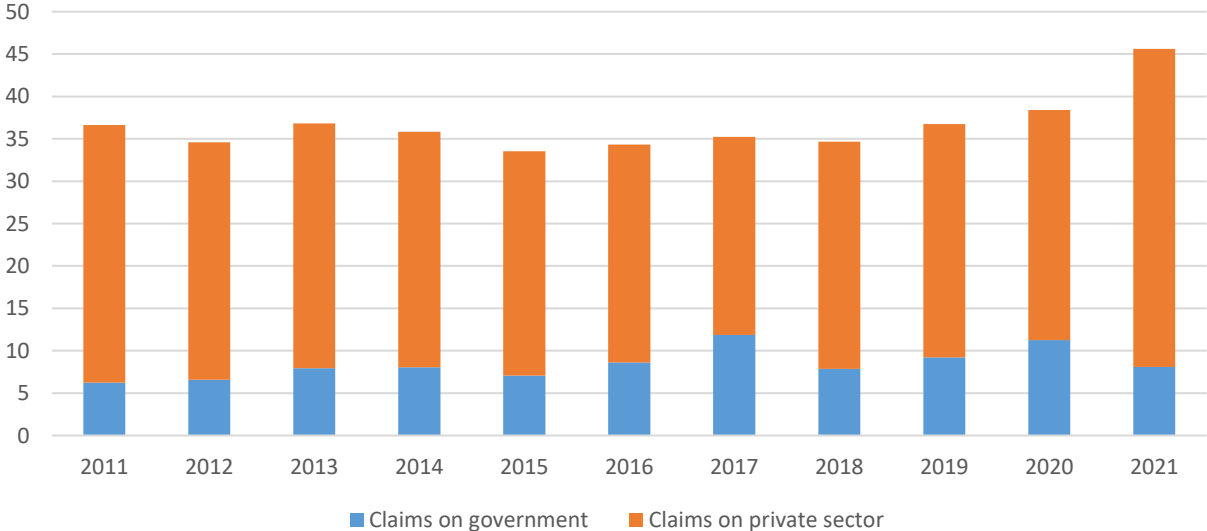
Source: done by the author based on the Central Bank of Bahrain data.

Figure B.3: Bank claims on government and private sector as a percent of total banking sector assets in Comoros (%)



Source: done by the author based on the Central Bank of Comoros data.

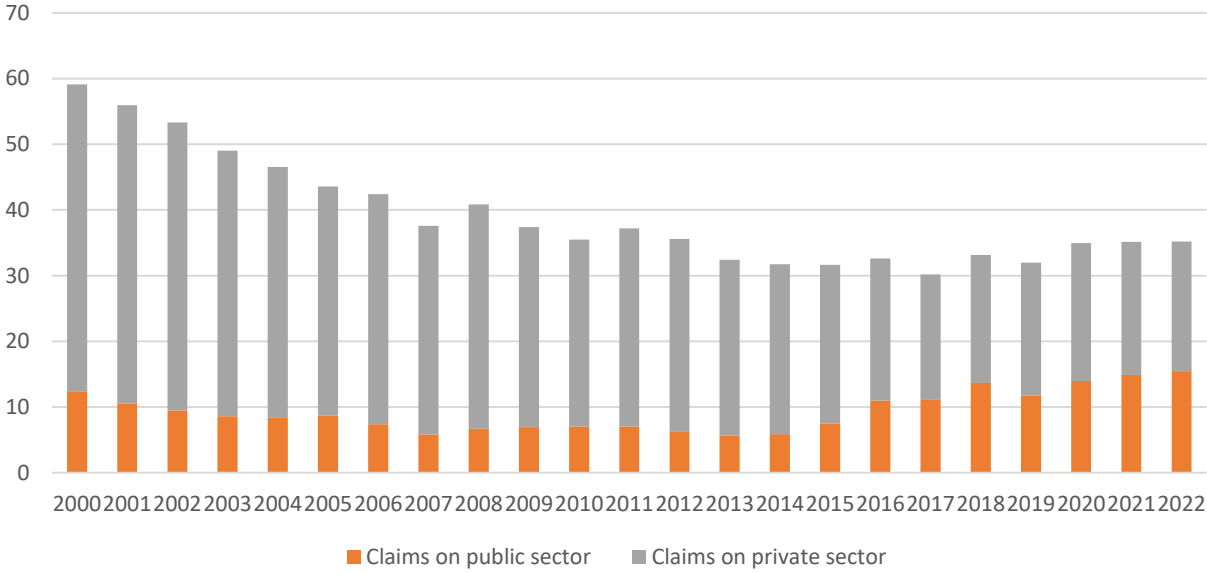
Figure B.4: Bank claims on government and private sector as a percent of total banking sector assets in Djibouti (%)



Source: done by the author based on the Central Bank of Djibouti data.

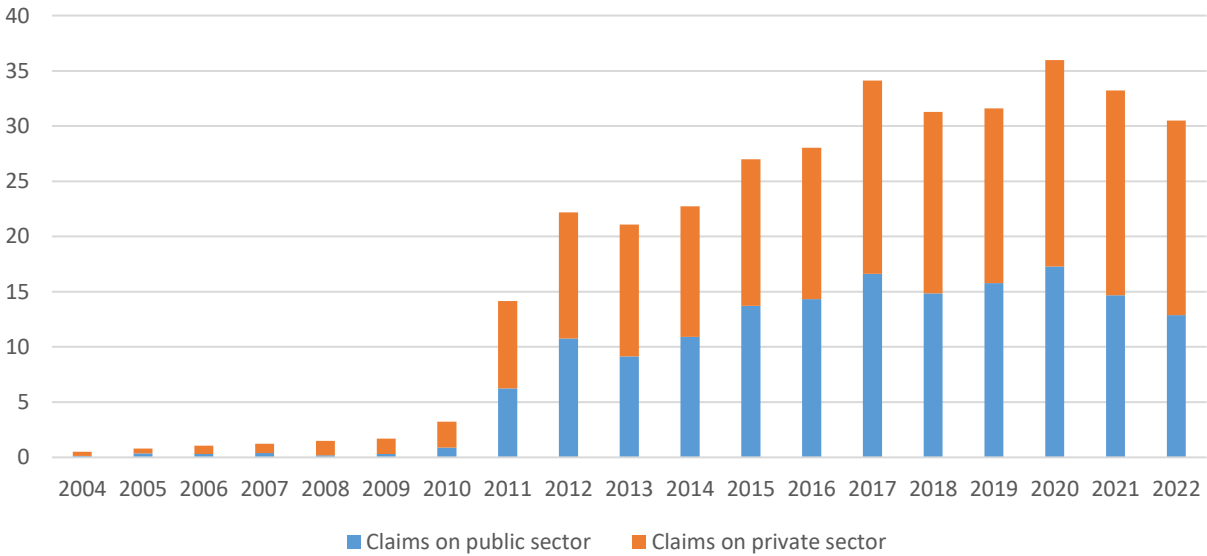


Figure B.5: Bank claims on public sector and private sector as a percent of total banking sector assets in Egypt (%)



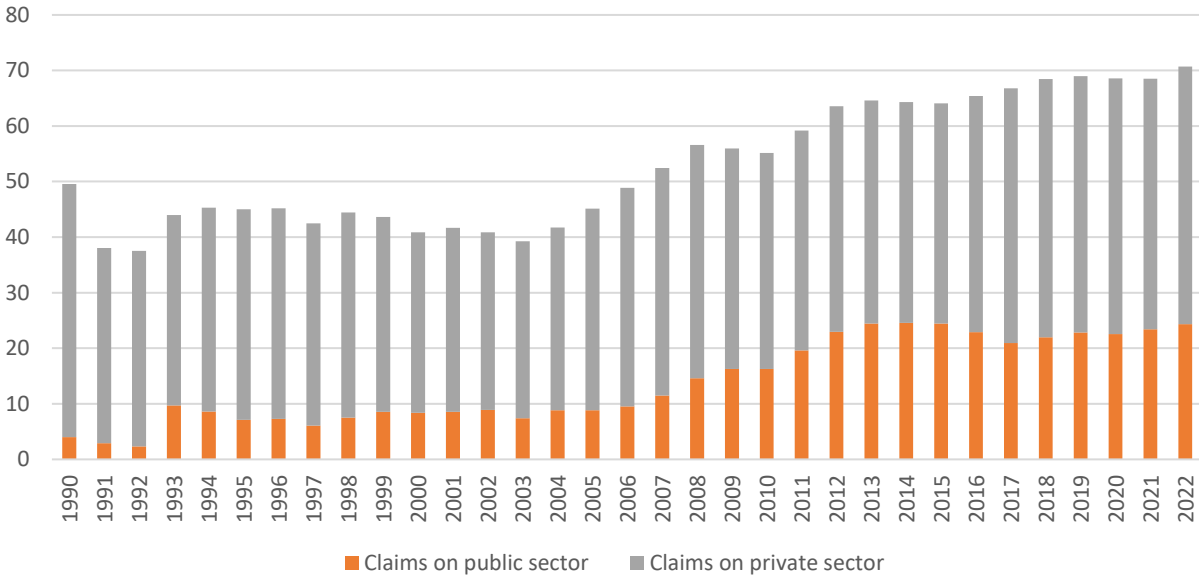
Source: done by the author based on the Central Bank of Egypt data.

Figure B.6: Bank claims on public sector and private sector as a percent of total banking sector assets in Iraq (%)



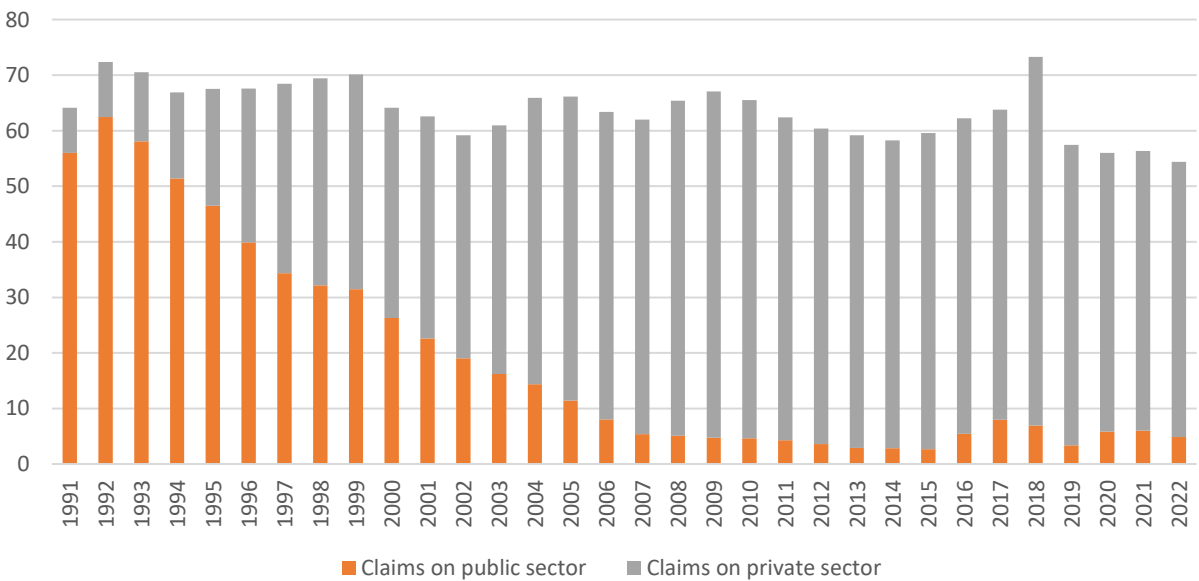
Source: done by the author based on the Central Bank of Iraq data.

Figure B.7: Bank claims on public sector and private sector as a percent of total banking sector assets in Jordan (%)



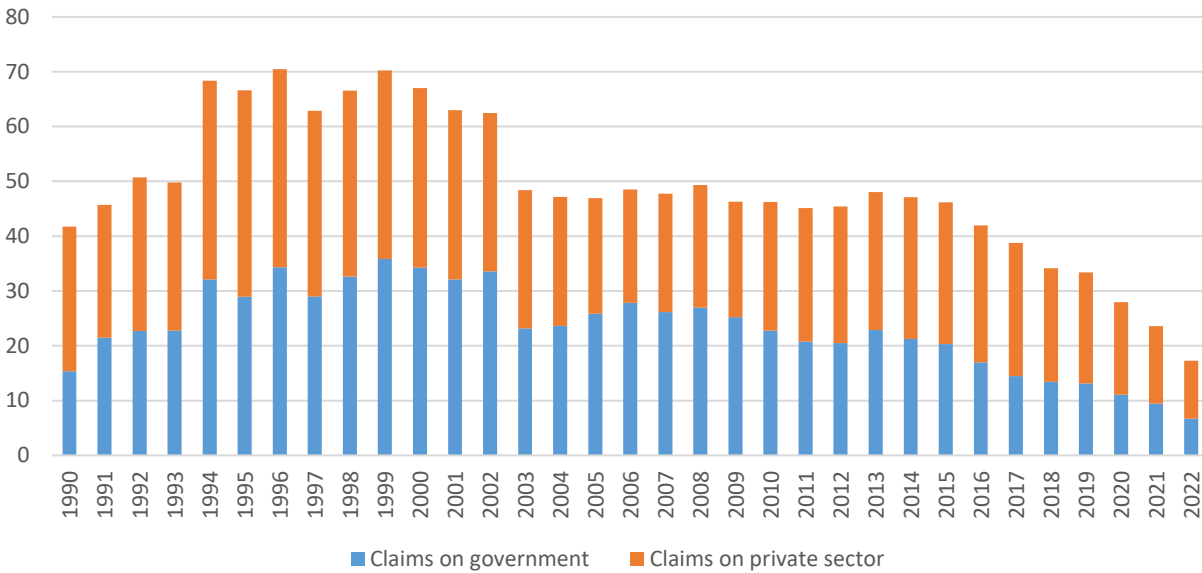
Source: done by the author based on the Central Bank of Jordan data.

Figure B.8: Bank claims on public sector and private sector as a percent of total banking sector assets in Kuwait (%)



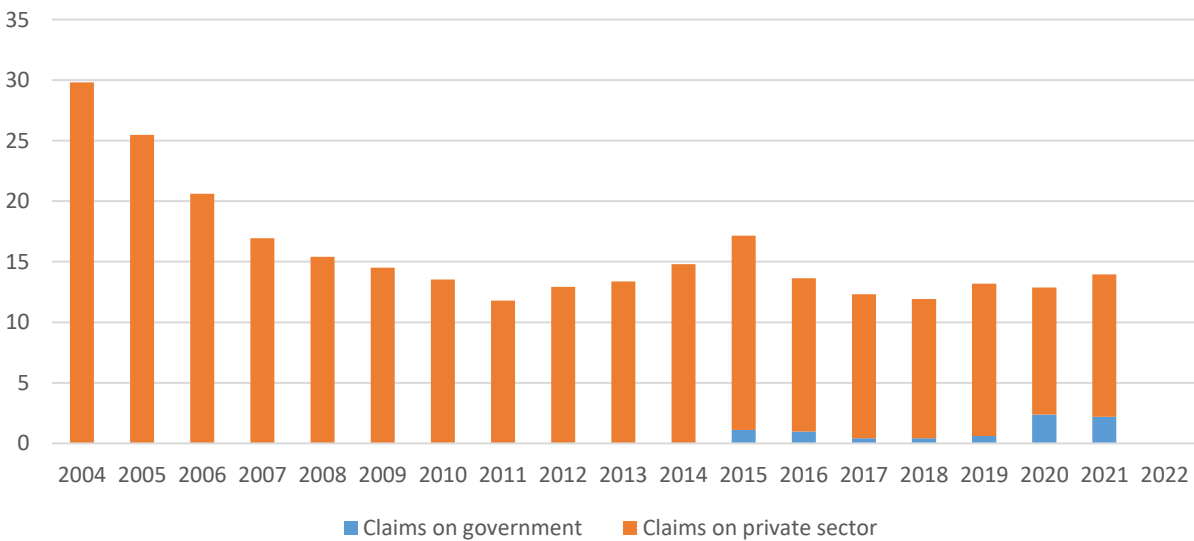
Source: done by the author based on the Central Bank of Kuwait data.

Figure B.9: Bank claims on government and private sector as a percent of total banking sector assets in Lebanon (%)



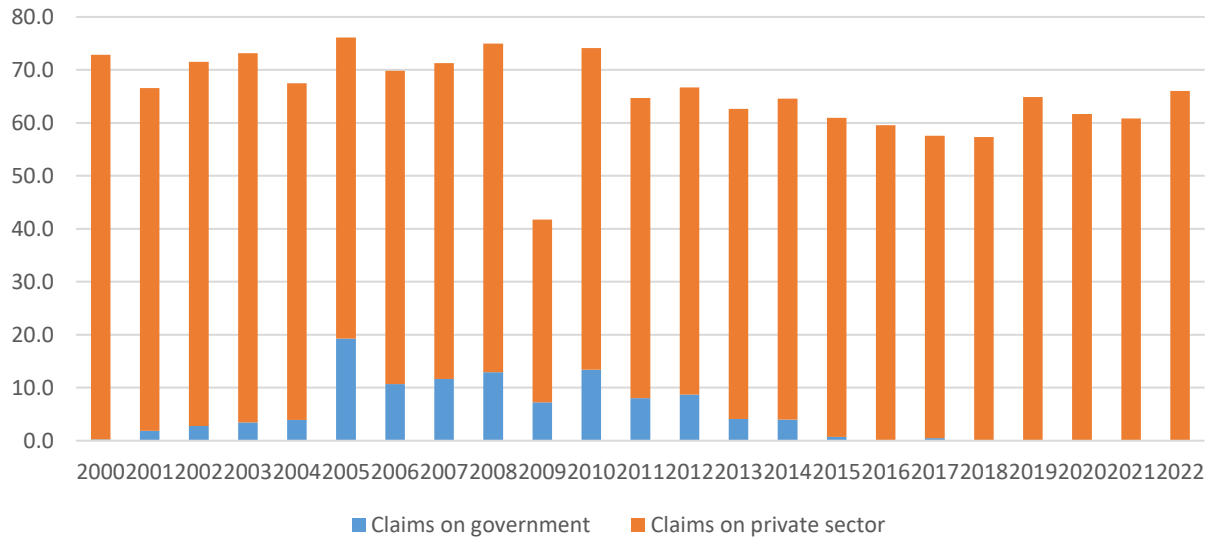
Source: done by the author based on the Central Bank of Lebanon data.

Figure B.10: Bank claims on government and private sector as a percent of total banking sector assets in Libya (%)



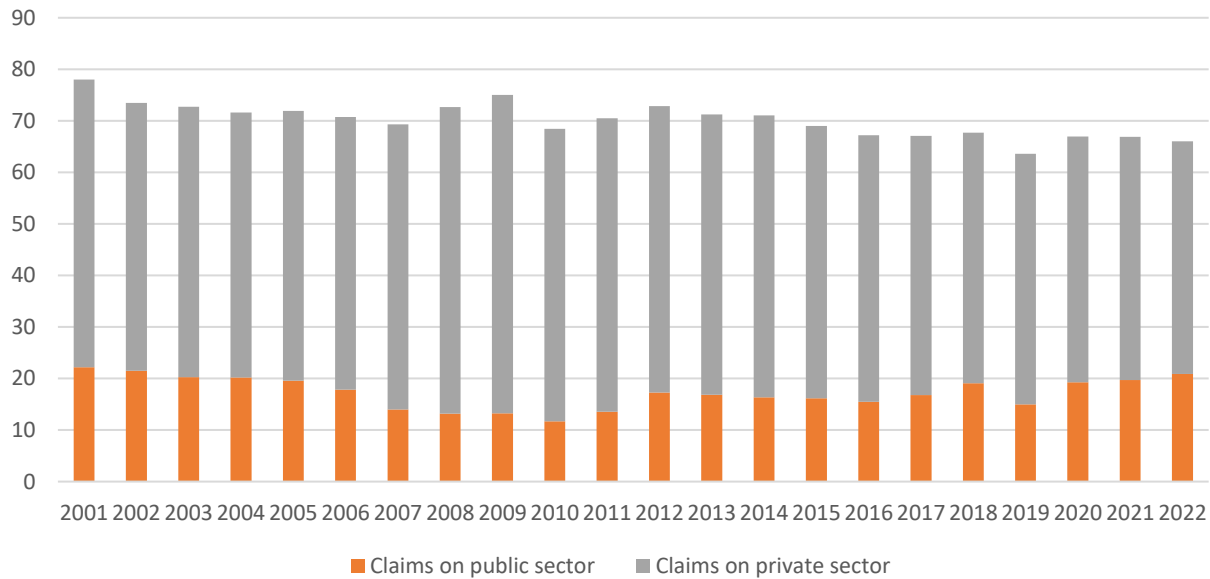
Source: done by the author based on the Central Bank of Libya data.

Figure B.11: Bank claims on government and private sector as a percent of total banking sector assets in Mauritania (%)



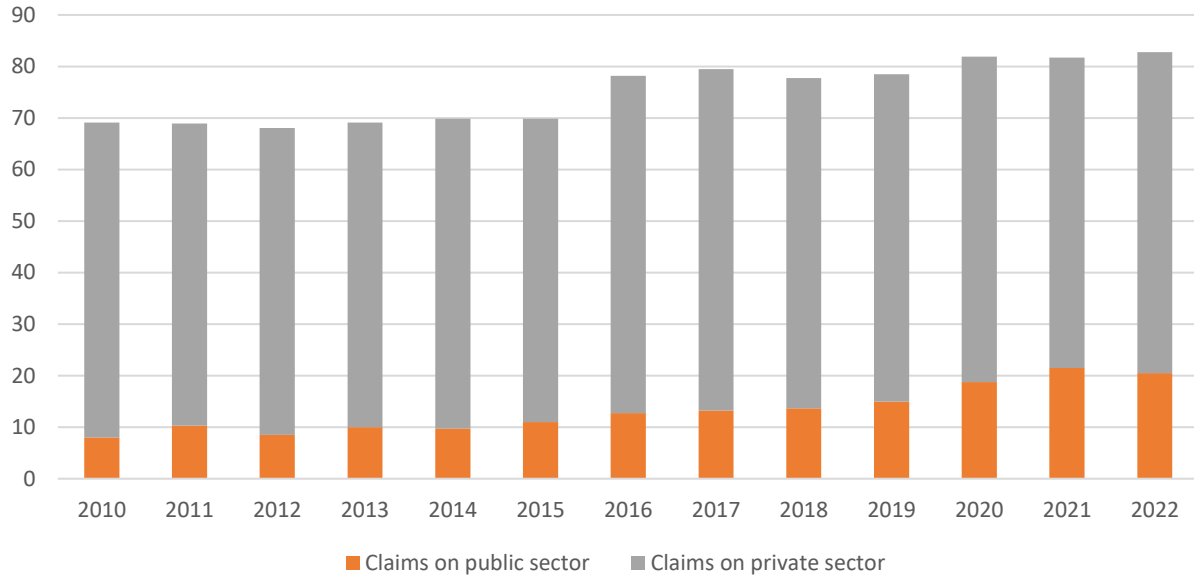
Source: done by the author based on the Central Bank of Mauritania data.

Figure B.12: Bank claims on government, public sector, and private sector as a percent of total banking sector assets in Morocco (%)



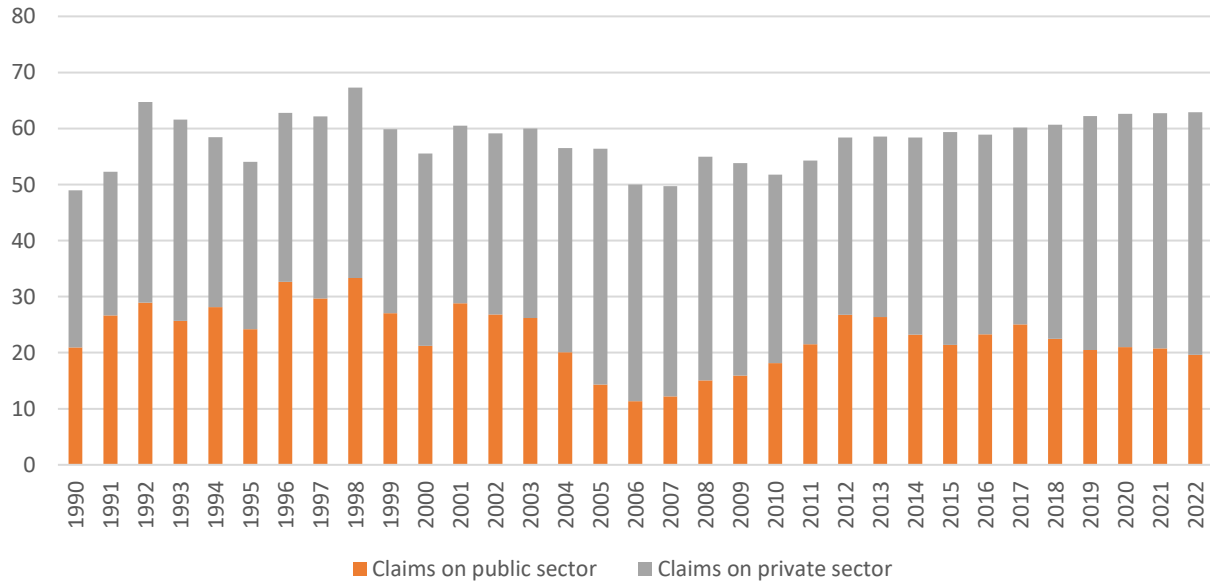
Source: done by the author based on the Central Bank of Morocco data.

Figure B.13: Bank claims on public sector and private sector as a percent of total banking sector assets in Oman (%)



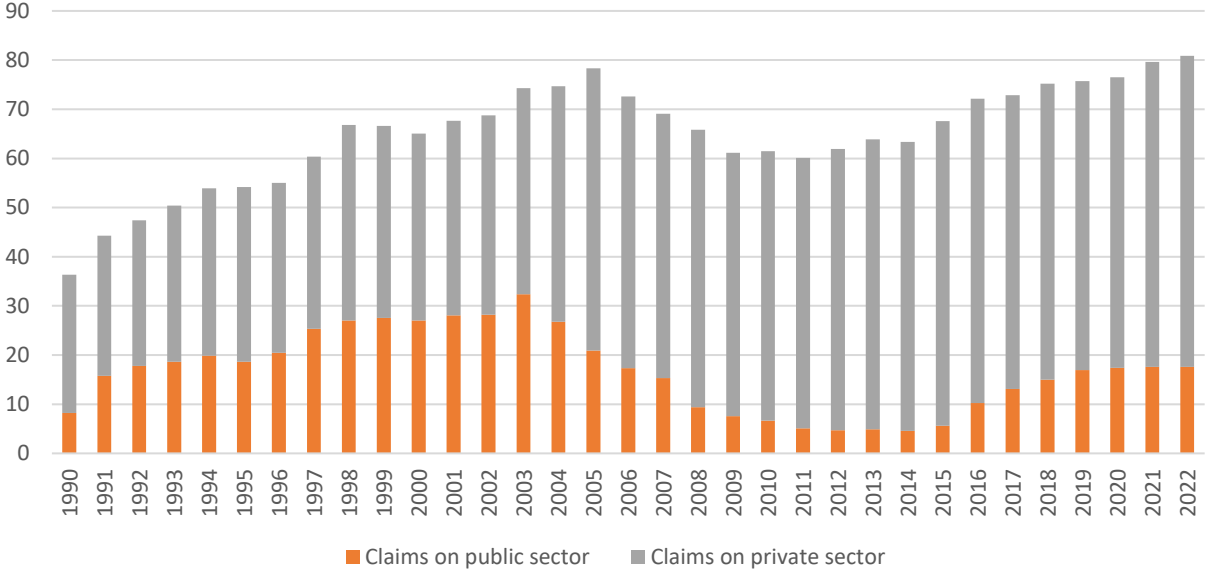
Source: done by the author based on the Central Bank of Oman data.

Figure B.14: Bank claims on public sector and private sector as a percent of total banking sector assets in Qatar (%)



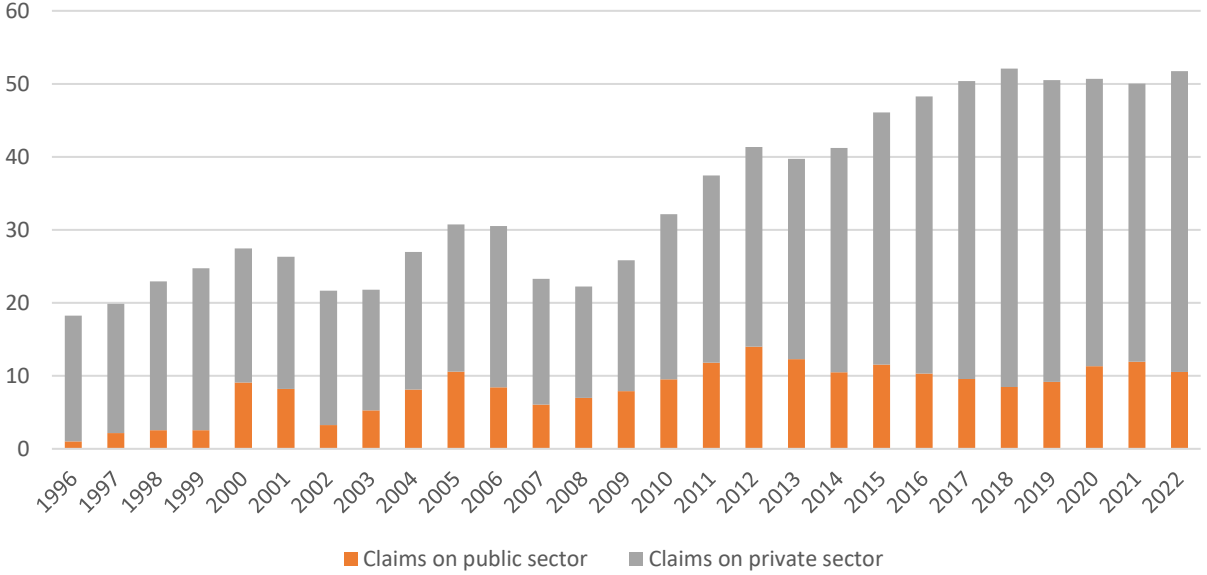
Source: done by the author based on the Central Bank of Qatar data.

Figure B.15: Bank claims on public sector and private sector as a percent of total banking sector assets in Saudi Arabia (%)



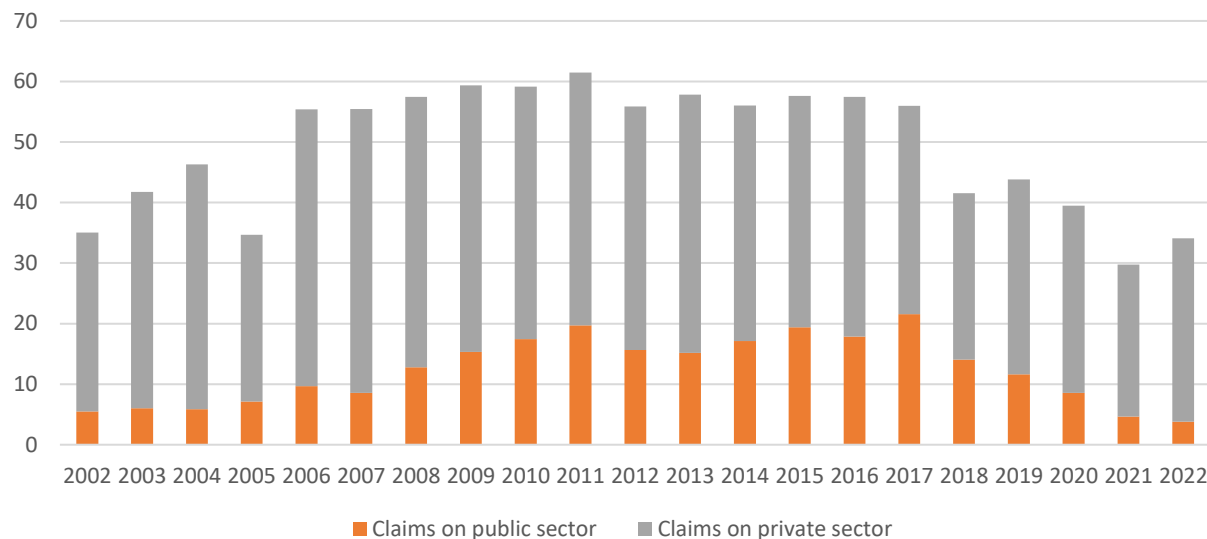
Source: done by the author based on the Central Bank of Saudi Arabia data.

Figure B.16: Bank claims on public sector and private sector as a percent of total banking sector assets in the State of Palestine (%)



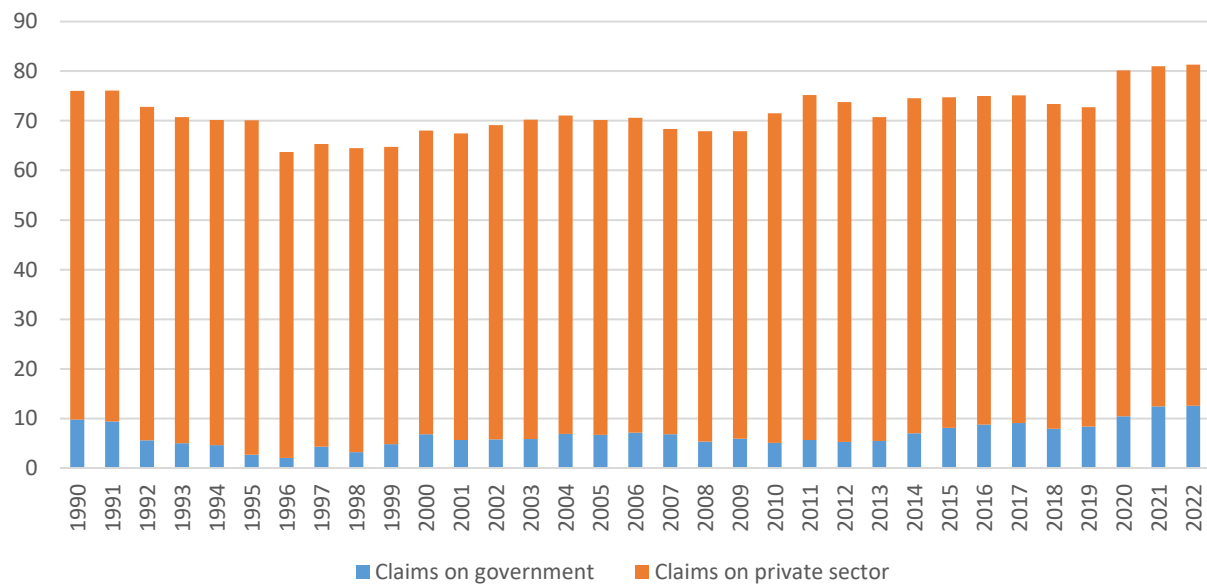
Source: done by the author based on the Palestine Monetary Authority data.

Figure B.17: Bank claims on public sector and private sector as a percent of total banking sector assets in Sudan (%)



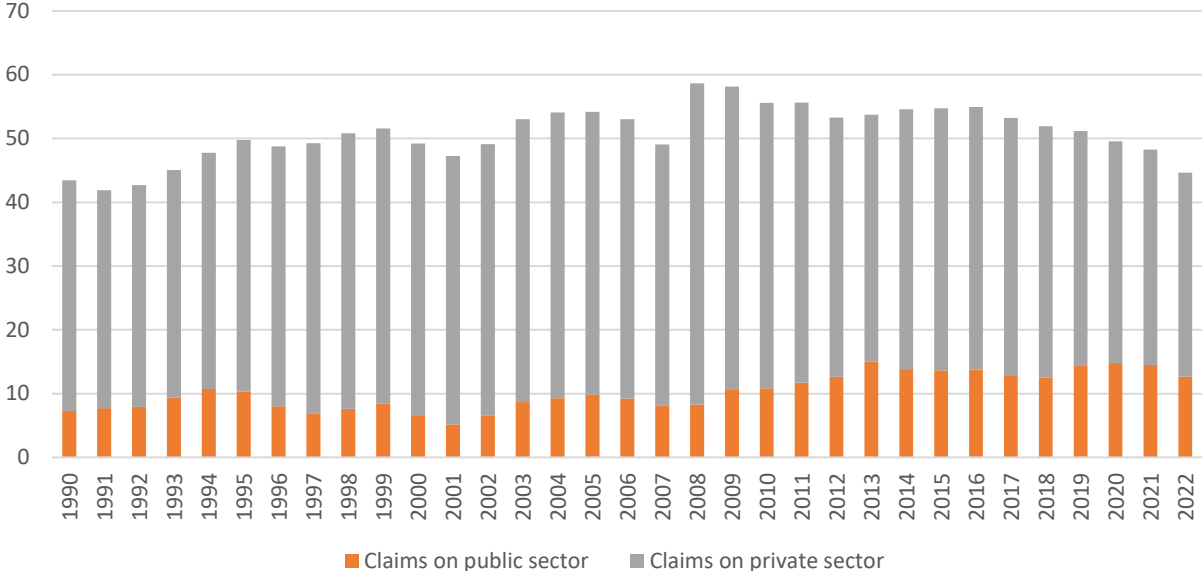
Source: done by the author based on the Central Bank of Sudan data.

Figure B.18: Bank claims on government and private sector as a percent of total banking sector assets in Tunisia (%)



Source: done by the author based on the Central Bank of Tunisia data.

Figure B.19: Bank claims on public sector and private sector as a percent of total banking sector assets in UAE (%)



Source: done by the author based on the Central Bank of UAE data.