

Bilateral Currency Swaps (BCS): Global situation and relevancy among Arab countries

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ABSTRACT

This study discusses the relevancy of establishing Bilateral Currency Swaps (BCS) agreements between Arab countries, which have received increasing attention at regional and international levels. The assessment approach used in this study analyses the relevancy of a BCS agreement between two Arab countries based on the bilateral trade and financial exposures to the exchange rate risk: the more these exposures are important comparatively to the GDP, the more establishing a BCS agreement is relevant. The study suggests heatmaps showing the bilateral exposures to exchange rate risk by analyzing bilateral trade and foreign investment data along with bilateral exchange rates within the Arab region. Overall, there are at least 3 Arab countries in which establishing a BCS agreement with another Arab country may be relevant with an exposure of bilateral trade and financial investment to the exchange rate risk higher than 0.75% of their GDP. To a lesser extent, the list of relevant BCS agreements between Arab countries can be extended to 7 agreements if considering a 0.5% of GDP threshold for the exposure.

Keywords: Bilateral Currency Swaps, exchange rate, bilateral trade, bilateral foreign investment, Arab countries.

JEL Classification: F10, F21, F31, F33, G15.

INTRODUCTION

Bilateral currency swap agreements (BCS) have been receiving more attention at regional and international levels for their important role in enhancing economic connections, promoting financial collaboration between countries, and aiding in financial stability.

In 2020, BCS agreements between countries reached 1.9 trillion, making these agreements the primary international financing source in the world. BCS agreements are also the fastest growing sovereign financing source, with an average growth rate of 114.3% yearly between 2010 and 2020. During the Covid-19 crisis, the BCS agreements surpassed the traditional sovereign financing sources like the International Monetary Fund and the regional financial institutions, and the share of the BCS agreements exceeded 92 percent of the funds provided by the Global Financial Safety Net (GFSN). More precisely, 1.7 trillion USD of the 1.8 trillion USD provided by the GFSN between February 2020 and March 2021 were BCS agreements.

As shown by these figures, the BCS agreements stood out remarkably among sovereign financing sources during the last decade, raising questions. First, what are BCS and how are they implemented? Second, why are they widely used, and were they useful? Third, from Arab countries' points of view, how can the BCS agreements help strengthen economic and financial Arab integration? And how can this be assessed?

This paper seeks to answer those questions through three main sections. The first section introduces the BCS agreements and sheds light on the BCS motives and considerations. It reviews the empirical studies on their use and the factors behind their remarkable evolution during the last decades. The second section outlines the methodology and data used to answer our research questions. The last section presents the results and discusses the relevancy of establishing BCS agreements between Arab countries.

BCS agreements implementation, motives, and considerations

Bilateral currency swaps (BCS) are contractual agreements between two central banks or authorized entities. Each party exchanges a defined quantity of their respective currencies and agrees to reverse the exchange at a predetermined future date and exchange rate. In other words, a BCS agreement entails two parties, usually two central banks, who agree to exchange currencies at a prearranged rate and time.

Perks *et al.* (2021).

- The Global Financial Safety Net (GFSN) includes in addition to BCS agreements financing from international financial institutions, such as the International Monetary Fund, and regional financial institutions, such as the Arab Monetary Fund, the Latin American Reserve Fund, the Chiang Mai Multilateral Initiative, and the Eurasian Stabilization and Development Fund.
- Hawkins and Prates (2021).

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Operationally, the establishment of a BCS agreement requires three main stages starting with the negotiation and agreement stage. During this stage, the country's officials discuss and agree on the BCS's details, and the key discussions concern the swap size, the exchange rate, the interest rates (if applicable), the collateral requirements, and the dispute resolution. The second stage is the settlement and delivery, when the central banks simultaneously exchange agreed-upon currencies on the predetermined settlement date using existing settlement mechanisms or bilateral arrangements. Finally, the maturity and unwinding stage is when central banks exchange the currencies back at the preset rate. The BCS arrangement is concluded with the final settlement, which includes any remaining interest payments.

Theoretically, a BCS agreement raises many risks, basically, the counterparty risk, if a central bank refuses or is unable to honor the terms of the agreement. BCS agreements also raise the market and the contagion risks as the two currencies of the agreement become linked, and the disturbances associated with a currency may affect the other currency. However, these risks didn't thwart the BCS agreements from being currently the most important and the fastest-growing sovereign financing source in the world. Even before the Covid-19 pandemic crisis, the BCS agreements had surpassed the other components of the GFSN (Figure 1). During the Covid-19 pandemic crisis, the use of BCS reached its peak with a volume of USD 1.9 trillion in 2020.

Many studies highlighted this remarkable evolution and investigated the motives and the considerations behind this surge in the use of the BCS agreements. Overall, two main motives can be enumerated based on the related economic literature review: (i) the financial stability promotion and (ii) the bilateral trade facilitation.

For the first motive, financial stability promotion, BCS agreements are an easy and quick solution to ease pressures in currency funding markets. The concerns related to those pressures can lead to global disturbances in the financial markets. On one hand, BCS agreements can help to reduce the risk premia and stabilize financial conditions during a crisis by being an important source of liquidity. On the other hand, for countries whose local currencies are used internationally, BCS agreements help prevent their economies from financial instability that might result from negative consequences related to international liquidity shortages and exchange rate appreciation.

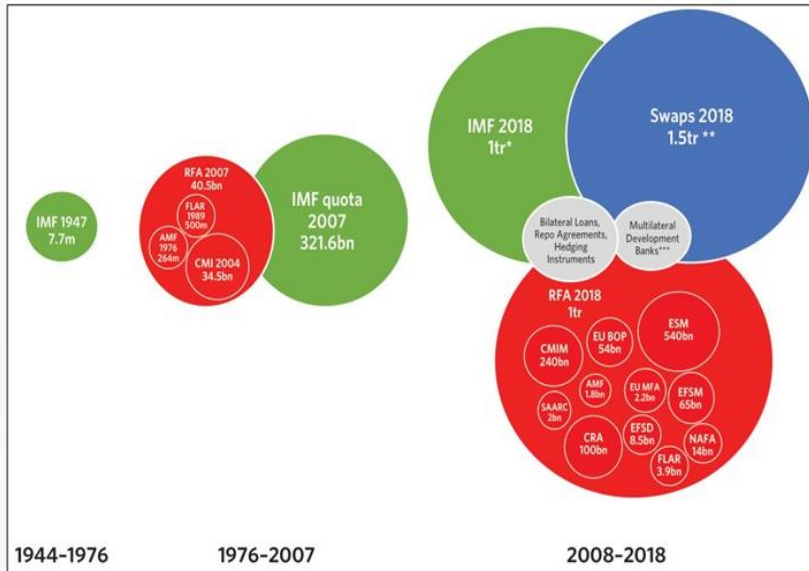
Empirically, Perks *et al.* (2021) found that for emerging market economies, the Credit Default Swap (CDS) spread changes are negatively and significantly linked to the introduction of the Fed's BCS. In other words, the creditworthiness of emerging recipient countries improves when signing up for a Fed's BCS arrangement. Aizenman *et al.* (2021) confirms this result also for advanced economies that have had a BCS arrangement with the Fed.

Nozahie and Ibrahim (2017).

- Perks *et al.* (2021).
- See for example Marques *et al.* (2023), Bahaj and Reis (2022), Destais (2014) or Rose and Spiegel (2012).
- BCS agreement can also be useful for reserve optimization and management as they may help stabilizing the exchange rate without need to intervene in the FX market.

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Source: Mühlich *et al.* (2020).

Notes: (1) Figure's authors used abbreviation as follows: AMF for Arab Monetary Fund; FLAR for Latin American Reserve Fund (according to its Spanish acronym); CRA for Contingent Reserve Arrangement of the New Development Bank; CMIM for Chiang Mai Initiative Multilateralization; SAARC for South Asian Association for Regional Cooperation Swap Arrangement; EFSM for Eurasian Fund for Stabilization and Development; NAFA for North American Framework Agreement; ESM for European Stability Mechanism; EFSM for European Financial Stabilization Mechanism; EU BOP for EU Balance of Payments Assistance; EU MFA for EU Macro Financial Assistance. (2) Figure's authors noted that the total resources stated by the IMF is SDR 978bn; lending capacity is stated to be SDR 715bn (about US\$ 958.1bn) (IMF n.d.a). Authors' data sum up to US\$ 927bn based on member country's quota under normal access (maturity of one year of 145% of paid in quota). (3) Figure's authors noted that the estimated volume for 2018, based on Denbee *et al.* (2016), updated by Essers & Vincent (2017). Mühlich *et al.* (2020) follow Denbee *et al.* (2016) by assuming that the reciprocal nature of currency swaps among advanced economies requires counting each swap twice, and by assuming that the unlimited swap lines between the US Fed and the ECB, Canada, Japan, United Kingdom, and Switzerland can be estimated by the amounts drawn during the global financial crisis, which sums up to about US\$ 600bn.

For the second motive, bilateral trade facilitation, BCS agreements help manage the exchange rate volatility and the currency risk, providing consequently better bilateral trade conditions. BCS agreements set a pre-determined exchange rate. For firms, this means a reduction of the transaction costs related to international invoicing currencies, like the USD, in addition to the hedging costs removal. Successful BCS agreements also give greater international visibility to local currencies, which may encourage further trade-oriented BCS agreements with other countries.

As shown in Figure 2, the People's Bank of China (PBoC) led the expansion of the global BCS network in the aftermath of the 2007-2008 financial crisis. Many studies pointed out that the key motive behind this orientation is to facilitate trade and investment through the internationalization of the renminbi. See for example Perks *et al.* (2021), song and Xia (2020), Mohammed (2019) or Zhang *et al.* (2017).

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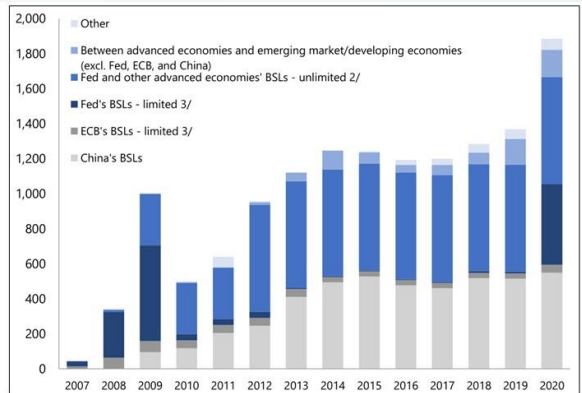
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(RMB), helping thus Chinese and trading partner firms to handle the currency risk and its negative implications on trade. Still, there is no consensus about how far the PBoC succeeded in this.

Figure 2: Volume of Bilateral Swap Lines -BSLs- (billions of USD)

Some studies, such as Zhang *et al.* (2016) or Song and Xia (2020) demonstrated a significant impact of RMB BCS agreements. They provided evidence of the beneficial effects for the economic integration between China and its partners, particularly the Belt and Road countries. In some cases, evidence shows an improvement in bilateral trade values between China and its partners by almost a third, thanks to RMB BCS agreements. Hao *et al.* (2023) confirmed the positive impact of RMB BCS on China's trade partners and added that this impact is not evenly distributed across all partners.



Source: Perks *et al.* (2021).

Notes: (1) Authors noted that the two-way arrangements are counted only once. (2) Authors noted that the permanent swap lines are among the Fed, ECB, Bank of England, Bank of Japan, Swiss National Bank, Bank of Canada. Authors noted also that the estimated amount is based on known past drawings or, if undrawn, on average past maximum drawings of the remaining central bank members in the network, following Denbee *et al.* (2016) methodology. (3) Authors noted that it concerns BCLs with an explicit limit.

Oppositely, other studies, such as McDowell (2019), argued that China's BCS has been ineffective in promoting trade settlement in RMB as well as China's vulnerability to the dollar's structural dominance in trade.

Either under the motive of financial stability promotion or the motive of bilateral trade facilitation, it seems that the use of BCS agreements between countries is subject to geopolitical considerations. In this regard, Sahasrabudde (2019) concluded, after evaluating the Fed's deliberations transcripts about countries' BCS requests, that the Fed was more likely to grant BCS to economies that shared its policy preferences for greater capital account openness but also for diplomatic considerations.

Aizenman *et al.* (2021) raised this point. They mentioned that many observers argue that China's BCS policy is driven by a geopolitical motivation, and given the intensified rivalry between the USA and China, the latter's ambition may also have affected US policy decisions during the COVID-19 crisis.

Methodology and data

A starting point to assess the relevancy of establishing BCS agreements between Arab countries is to assess their bilateral financial and trade linkages. More explicitly, a BCS agreement between two Arab countries will be helpful if there are substantial financial and trade linkages between their economies, or a willing to do so in the future. In that case, hedging against bilateral exchange rate variations provided by BCS can be a key factor to preserve and improve those linkages.

Another aspect to consider in the analysis is the bilateral exchange rate volatility between Arab country. Economies with fixed exchange rates and pegged to the same foreign currency may not be exposed to considerable exchange rate risk, as long as the regime is sustainable. Therefore, this study suggests assessing the relevancy of establishing BCS agreements between Arab countries through three main steps.

The first step aims to build a bilateral exchange rate volatility matrix between Arab countries currencies. For this purpose, this study uses the official local currency exchange rate to USD, available at the World Bank World Development Indicators (WDI) database, to calculate the bilateral exchange rate between each Arab country and the other Arab countries (Equation 1). With 16 available countries in the database, 120 time series of bilateral exchange rate is computed. For the volatility calculation (Equation 2), the study focuses on the last five available years (2018-2022).

$$S_{j,t}^i = \frac{S_{USD,t}^i}{S_{USD,t}^j} \quad (\text{Equation 1})$$

$$\sigma_j^i = \text{standard deviation}(\Delta S_{j,t}^i) \quad (\text{Equation 2})$$

Where $(S_{j,t}^i)$ is the average nominal exchange rate of one local currency unit of the country (i) against the local currency of the country (j) during the year (t) , (σ_j^i) is the bilateral exchange rate volatility between the countries (i) and (j) , and the $(\Delta S_{j,t}^i)$ is the one period log-difference of the exchange rate $(S_{j,t}^i)$.

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The second step assesses the relevancy of a BCS agreement between Arab economies for the motive of bilateral trade facilitation. The analysis is based on the bilateral trade exposure-to-exchange rate risk, which is the conjunction of the bilateral trade exposure between Arab countries and the bilateral exchange rate volatility from the first step. Regarding the bilateral trade exposure of a country to a partner-country, it is calculated as the sum of its exports and imports with this partner over its nominal GDP: more the bilateral trade of a country with another is important relatively to its GDP, more its trade depends on the partner-country (Equation 3).

Algeria, Bahrain, Comoros, Djibouti, Egypt, Emirates, Iraq, Jordan, Kuwait, Lebanon, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Tunisia.

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$$TradeExposure_{i,j,t} = \frac{X_{i,j,t} + M_{i,j,t}}{GDP_{i,t}} \quad (\text{Equation 3})$$

Where $(X_{i,j,t})$ are the exports of the country (i) to its partner (j) during the year (t) , $(M_{i,j,t})$ are the imports of the country (i) from its partner (j) during the year (t) , and $(GDP_{i,t})$ is the nominal GDP of the country (i) for the year (t) .

This study calculates the bilateral trade exposure between Arab countries using the World Integrated Trade Solution (WITS) database provided by the World Bank and the UNCTAD. Similarly to the first step, the trade exposure matrix considers the average of the 2018-2022 period for all 16 available Arab countries. As mentioned, the relevancy of a BCS agreement between Arab economies for bilateral trade facilitation motive depends on the combination of the exchange rate volatility matrix and the trade exposure matrix outcomes: the higher the bilateral trade exposure-to-exchange rate risk is, the more establishing a BCS agreement is relevant (Equation 4).

$$TradeExposure_{i,j,t}^{to-exchange\ rate} = TradeExposure_{i,j,t} * \sigma_j^i \quad (\text{Equation 4})$$

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The third and last step sheds light on the financial stability motive by assessing the bilateral financial exposure-to-exchange rate risk between Arab countries, which is the conjunction of the bilateral financial exposure and the bilateral exchange rate volatility from the first step. The former is calculated as the sum of the absolute value of a country's foreign investment in another partner country and the received foreign investment from that partner over the nominal GDP: more the bilateral foreign investment of a country with another is important relatively to its GDP, more its financial system depends on the partner-country (Equation 5).

$$FinancialExposure_{i,j,t} = \frac{|FI_{i,j,t}| + |FI_{j,i,t}|}{GDP_{i,t}} \quad (\text{Equation 5})$$

Where $(FI_{i,j,t})$ are the foreign investment stock of the country (i) in the partner country (j) during the year (t) , $(FI_{j,i,t})$ are the foreign investment stock of the partner country (j) in the country (i) during the year (t) , and $(GDP_{i,t})$ is the nominal GDP of the country (i) for the year (t) .

This study calculates the bilateral financial exposure between Arab countries using the JRC-ECFIN Finflows database, provided by the European Commission, and contains information on bilateral yearly foreign investment. This database was publicly available in 2020 but reports data up to 2018 and covers only 9 Arab economies

Therefore, our analysis of the financial stability motive of the BCS is limited only to Bahrain, Egypt, Emirates, Kuwait, Lebanon, Morocco, Oman, Qatar, and Saudi Arabia. Also, and due to the data availability only between 2013-2018, our analysis of the financial stability motive assumes that the bilateral financial exposure between Arab countries remained relatively stable between 2013-2018 and 2018-2022 on average, and the analysis is conducted with 2013-2018 data. Regarding the interpretation of the results, the relevancy of a BCS agreement between Arab economies for bilateral financial stability motive depends on the combination of the exchange rate volatility matrix and the financial exposure matrix outcomes: the more the bilateral financial exposure-to-exchange rate risk is high, the more establishing a BCS agreement is relevant (Equation 6).

$$FinancialExposure_{i,j,t}^{to-exchange\ rate} = FinancialExposure_{i,j,t} * \sigma_j^i \quad (\text{Equation 6})$$

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Before exposing the results and despite the advantages of the approach used in this study, it is important to note that this approach considers the historical relationships and assumes that they stand. This can hold at least in the short- and medium-terms for trade and commercial relationships as shifting to new international trade partners usually requires time. However, this assumption is challenged by financial linkages, especially in the case of short-term investments. Also, a high exchange rate risk might itself be an obstacle for bilateral trade and financial development, especially in some cases where other obstacles seem to have limited discouraging impact (geographical proximity, strong cultural ties, ...). Our approach can partially help identify the bilateral exchange rates with high volatility. Still, it does not completely capture the relevancy of BCS agreements for those cases.

Results and discussion

Assessing the relevancy of establishing a BCS agreement relies mainly on the exchange rate volatility for either the financial stability promotion motive or the bilateral trade facilitation motive. Thus, this study starts the relevancy assessment of BCS agreements between Arab countries by assessing their bilateral exchange rates volatility.

Figure 3 summarizes this assessment using a heatmap for the 16 Arab countries in the sample between 2018 and 2022. More precisely, Figure 3 classifies the 120 bilateral exchange rate volatility according to a color scale: the darker the color, the higher the volatility.

Prior to the results analysis, it is worth underlining that the heatmap in Figure 3 is symmetric. In fact, this heatmap is based on the bilateral exchange rate volatility matrix, which is symmetric with the upper triangle elements equal to the lower triangle elements -the volatility of currency A to currency B equals the volatility of currency B to currency A. Also, the bilateral exchange rate volatility matrix is a hollow matrix, meaning that the diagonal elements are all equal to zero - the volatility of a currency to itself – which explains the blank spaces in the heatmap.

Going back to the result analysis, Figure 3 shows that the bilateral volatility of the exchange rate between Arab countries is less than 5% in 59 cases (49.2%) and between 5% and 10% in 44 cases (36.7%), while it is between 10% and 20% in 17 cases (14.2%).

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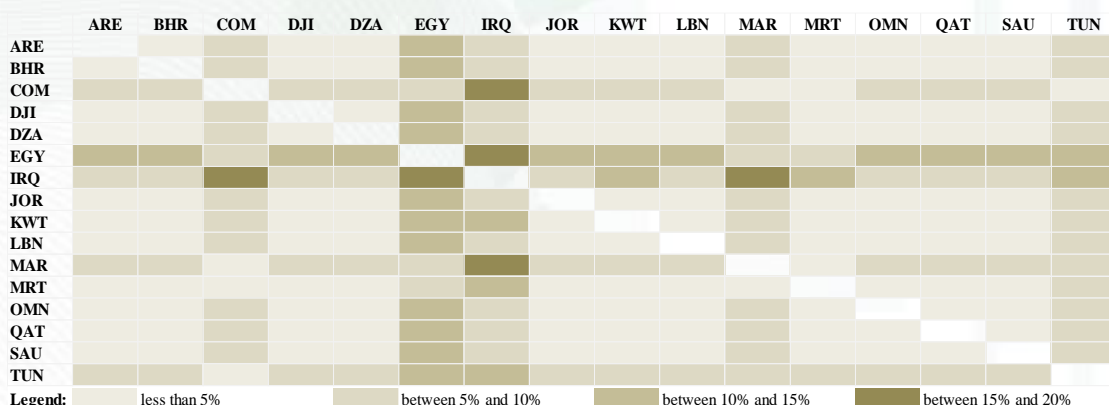


First, most Arab countries with limited bilateral exchange rate volatility have a fixed exchange rate regime. Still, Figure 3 shows that a fixed exchange regime doesn't mean the nonexistence of a bilateral exchange rate risk or the uselessness of BCS. For example, the United Arab Emirates and Morocco have fixed exchange rate regimes, but the bilateral exchange rate regime volatility is between 5% and 10%. The main reason behind this is the differences between exchange rate regime parameters (foreign reference currency, bands, parity, ...). For the example of the United Arab Emirates and Morocco, the former uses the USD as a reference to fix its exchange rate. In contrast, the latter uses a basket of USD and EUR, allowing its exchange rate to vary within a band.

Second, and when considering only the bilateral exchange rate volatilities assessment, the bilateral exchange rate risk between the 16 Arab countries of the sample is, overall, limited, with almost 86% of the bilateral exchange rates having a volatility of less than 10%. It's true that from a business point of view, no exchange rate risk is the best option. However, it is preferable to give priority to handling this risk to the private financial institution instead of using BCS. A BCS agreement might be useful when the exchange risk becomes significantly important to the economy's size.

In fact, the bilateral exchange rate volatility assessment alone is insufficient to assess the need for a BCS agreement. As explained in the last section, an idea about the exchange rate risk exposure in terms of bilateral trade and financial investment is required. This exposure can be high even with limited exchange rate volatility when an economy has a significant trade or financial relationship with another economy relative to its GDP.

Figure 3: Heatmap of the bilateral exchange rate volatility between Arab countries (average 2018-2022)



Source: Authors calculation.

Notes: (1) This Heatmap is based on the bilateral exchange rate volatility matrix which is a symmetric hollow matrix, where the diagonal elements are all equal to zero -volatility of a currency to itself- and the upper triangle elements are equal to the lower triangle elements -the volatility of a currency A to a currency B equals the volatility of a currency B to a currency A. (2) Codes in the figures refer to Arab countries as follows: ARE - United Arab Emirates, BHR - Bahrain, COM - Comoros, DJI - Djibouti, DZA - Algeria, EGY - Egypt, IRQ - Iraq, JOR - Jordan, KWT - Kuwait, LBN - Lebanon, MAR - Morocco, MRT - Mauritania, OMN - Oman, QAT - Qatar, SAU - Saudi Arabia, TUN - Tunisia.

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Figures 4 and 5 summarize the exposures assessment by respectively reporting a heatmap for the trade exposure and a heatmap for the financial exposure. In contrast to the exchange rate volatility heatmap, those heatmaps are not symmetric: the exposure values illustrated by those heatmaps are reported to the corresponding country's GDP for each line to get the exposure relative to the domestic economy size. For example, the first line illustrates the exposure of the United Arab Emirates in terms of its GDP for each Arab country's currency in the columns.

The heatmap in Figure 4 shows that the bilateral trade exposure to exchange rate risk between Arab countries surpasses 0.25% of GDP in very few cases. More precisely, there are 240 possible bilateral trade relationships between the 16 Arab countries in the sample. Still, only 5 of those relationships threaten an Arab economy with a GDP loss higher than 0.25% due to the exchange rate risk. Three of these 5 cases have an exposure between 0.25% and 0.5% of GDP, and they concern United Arab Emirates (with Iraq), Comoros (with United Arab Emirates), and Tunisia (with Algeria). The 2 remaining cases have an exposure between 0.5% and 0.75% of GDP, and concern Djibouti (with Morocco) and Iraq (with United Arab Emirates).

For the bilateral financial exposure to exchange rate risk in the Arab region, the data covers only 9 Arab countries, which means 72 possible bilateral financial relationships. The first heatmap in Figure 5 summarizes those relationships. It shows that the loss risk related to the exchange rate is between 0.25% and 0.5% of the GDP in two cases only: the United Arab Emirates (with Morocco) and Bahrain (with Egypt). If summing up the trade and financial exposures to the exchange rate risk for the 9 Arab countries which data is available, the overall GDP loss is between 0.5% and 0.75% for Bahrain (with Egypt) and between 0.25% and 0.5% for the United Arab Emirates (with Morocco), Kuwait (with Egypt), and Lebanon (with Egypt).

One interesting result from the last analysis is that a country's trade and financial exposures to its bilateral exchange rate with another country may seem limited if taken separately. However, when those two exposures are summed up, it could result in a more significant risk, consequently increasing the potential usefulness of a BCS agreement. This is the case of Bahrain with Egypt, where the overall exposure to exchange rate risk is between 0.5% and 0.75% of Bahrain's GDP. Other Arab countries reached this level only with the trade exposure to exchange rate risk, such as Iraq (with the United Arab Emirates) and Djibouti (with Morocco), and considering bilateral investment may increase even more the exposure to exchange rate risk.

¹⁰ Data regarding financial investment stock between Arab countries is available for 2013-2018. The calculation assumes that the financial exposure remains the same for 2018-2022.

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Figure 4: Heatmap Bilateral trade exposure-to-exchange rate risk matrix between Arab countries (average 2018-2022, percent of GDP)

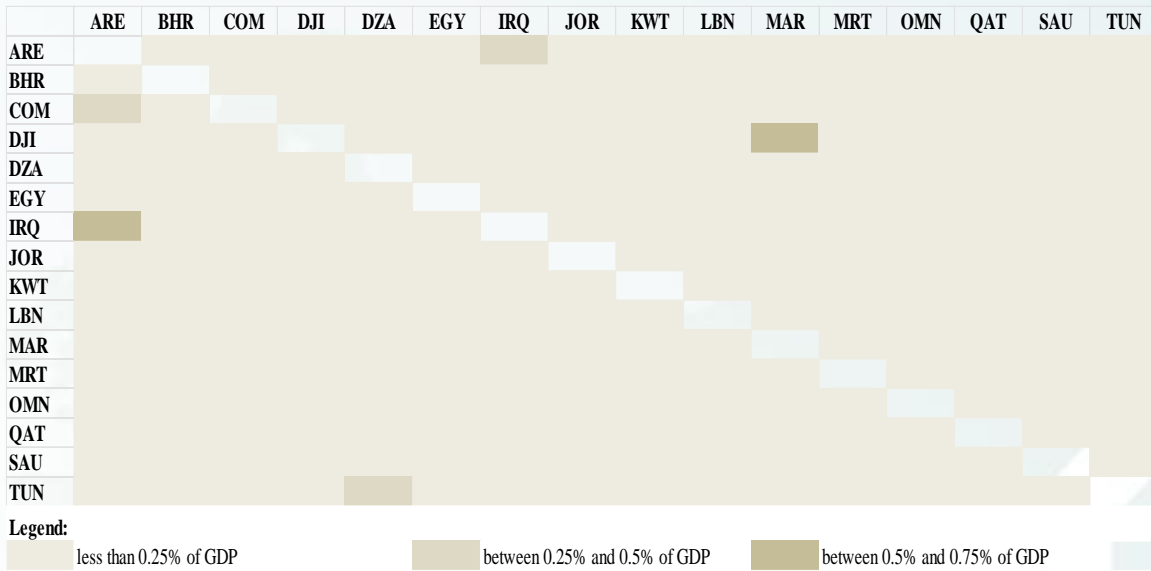
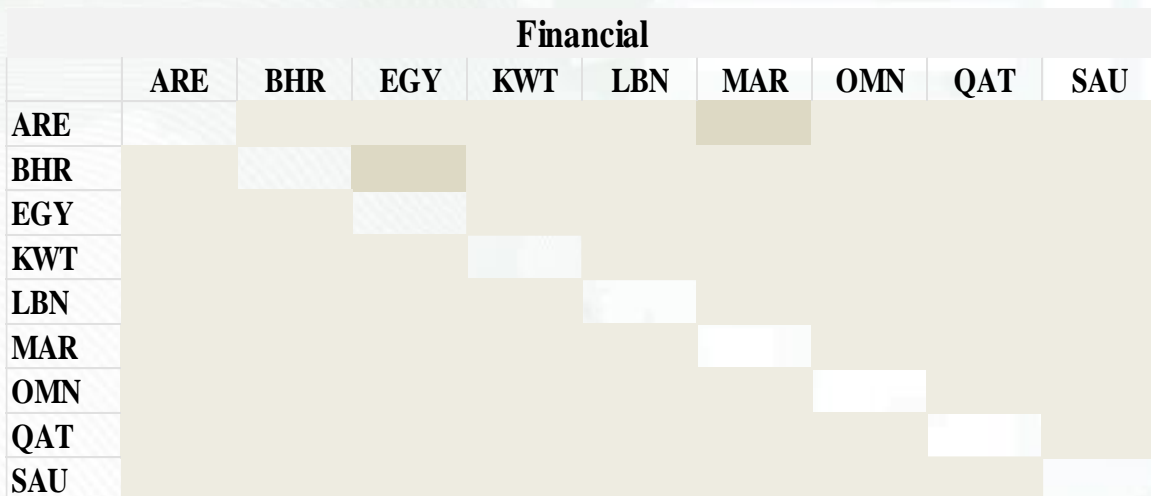
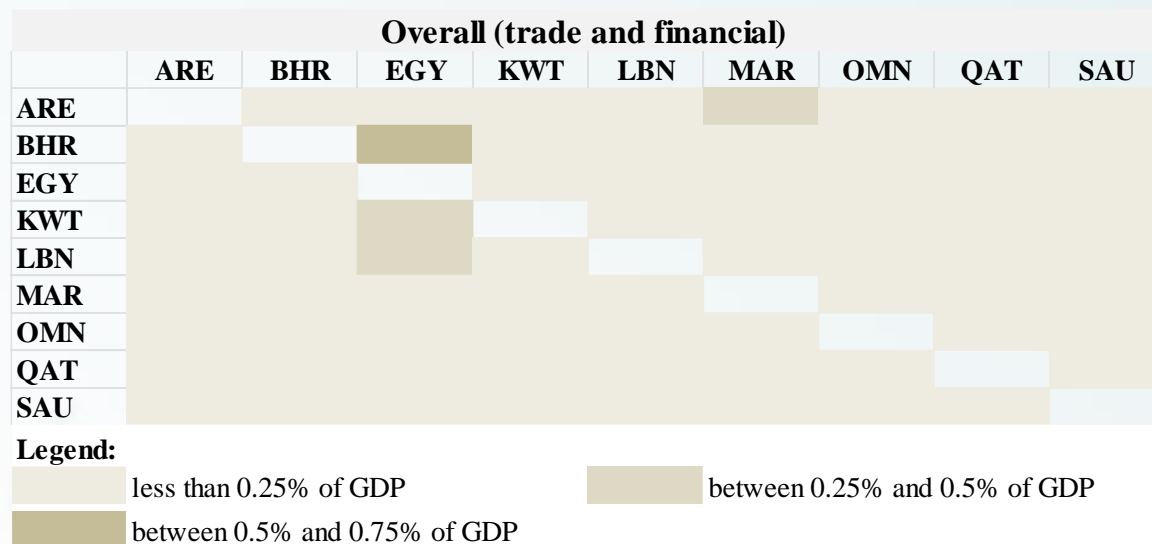


Figure 5: Bilateral financial and overall exposure-to-exchange rate risk matrix between Arab countries (percent of GDP)



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Source: Authors calculation.

Notes: (1) The financial exposure heatmap is based on the bilateral financial exposure-to-exchange rate risk matrix which is a matrix product of the average bilateral exchange rate volatility matrix for 2018-2022 and the average bilateral financial exposure matrix for 2013-2018. (2) The bilateral financial exposure-to-exchange rate risk matrix is a hollow matrix, where the diagonal elements are all equal to zero -exposure risk of a country to itself. (3) The overall exposure heatmap sums up the bilateral trade exposure-to-exchange rate risk matrix from Figure 4 and the bilateral financial exposure-to-exchange rate risk matrix from this Figure. (4) Codes in the matrix refer to Arab countries as follows: ARE - United Arab Emirates, BHR - Bahrain, EGY - Egypt, KWT - Kuwait, LBN - Lebanon, MAR - Morocco, OMN - Oman, QAT - Qatar, SAU - Saudi Arabia.

Overall, there are at least 3 Arab countries which establishing BCS agreements with other Arab countries may help preserve and improve bilateral trade and financial linkages: Bahrain (with Egypt), Iraq (with United Arab Emirates), and Djibouti (with Morocco), if considering an exposure higher than 0.75% of GDP. To a lesser extent, it could also be useful to consider BCS agreements in the case of the United Arab Emirates (with Morocco), Kuwait (with Egypt), Comoros (with United Arab Emirates), and Lebanon (with Egypt) if considering a 0.5% of GDP threshold for the exposure.

The 0.75% of GDP and 0.5% of GDP thresholds remain relative, and lower thresholds might be considered depending on each country circumstances. Thus, it is crucial to consider BCS agreements as a complementary layer within the international and regional financing arrangements that need to strengthen their financial and macroeconomic surveillance mandate and their capacities to support and monitor strong macroeconomic reforms.



Conclusion

This study aims to shed light on the main motives and considerations behind the remarkably increasing use of BCS agreements and the relevancy of establishing BCS agreements between Arab countries. The related economic literature review assessment shows that two main motives can be enumerated: (i) the financial stability promotion motive and (ii) the bilateral trade facilitation motive. In both cases, the main purpose of those agreements is hedging the exchange rate risk.

Based on these findings, this study suggests a new methodology to assess the relevancy of establishing a BCS agreement between two countries. The main idea of this methodology is to assess the bilateral trade and financial exposures to exchange rate risk relative to each of the concerned economies' sizes. The more those exposures are important comparatively to the GDP, the more relevant establishing a BCS agreement is.

Overall, establishing BCS agreements with other Arab countries may help preserve and improve bilateral trade and financial linkages in at least 3 countries due to exposure higher than 0.75% of their GDP. To a lesser extent, if considering a 0.5% of GDP threshold for the exposure, the list of relevant BCS agreements between Arab countries can be extended to 7 agreements.

While these results offer valuable insights to strengthen the economic and financial integration within the Arab region, improper use of the BCS agreements may involve domestic and external risks. The bilateral nature of the BCS agreements makes it difficult to link those agreements to macroeconomic and financial reforms programs or surveillance. This can encourage unsustainable economic policies and facilitate the propagation of financial imbalances between countries.

Therefore, it is crucial to consider BCS agreements as a complementary layer within the international and regional financing arrangements that need to strengthen their financial and macroeconomic surveillance mandate and their capacities to support and monitor strong macroeconomic reforms.

Bibliography

- Aizenman, J., Cheung, Y. W., & Qian, X. (2021). International Reserve Management and Firm Investment in Emerging Market Economies (No. w29303). National Bureau of Economic Research.
- Bahaj, S., & Reis, R. (2022). Central bank swap lines: Evidence on the effects of the lender of last resort. *The Review of Economic Studies*, 89(4), 1654-1693.
- Denbee, E., Jung, C., & Paternò, F. (2016). Stitching together the global financial safety net. *Bank of Italy Occasional Paper*, (322).
- Destais, C. (2016). Central bank currency swaps and the international monetary system. *Emerging Markets Finance and Trade*, 52(10), 2253-2266.
- Essers, D., & Vincent, E. (2017). The global financial safety net: In need of repair?. *Economic Review*, (ii), 87-112.
- Hao, K., & Han, L. (2022). The impact of China's currency swap lines on bilateral trade. *International Review of Economics & Finance*, 81, 173-183.
- Hawkins, P. and Prates, D., M. (2021). COVID-19 Response and Recovery Mobilizing financial resources for development. United Nations Development Account Project.
- McDowell, D. (2019). The (Ineffective) Financial statecraft of China's bilateral swap agreements. *Development and Change*, 50(1), 122-143.
- Mohammed, A. A. (2019). Central bank bilateral currency swap and trade flows: an implication for Renminbi internationalisation.
- Mühlich, L., & Fritz, B. (2021). Borrowing Patterns in the Global Financial Safety Net: Does Governance Play a Role?. *Global Policy*, 12, 47-68.
- Nozahie, N., & Ibrahim, A. (2017). The treatment of currency swaps between central banks: Egypt experience. <https://www.imf.org/external/pubs/ft/bop/2017/pdf/17-25a.pdf>
- Perks, M., Rao, Y., Shin, M. J., & Tokuoka, K. (2021). Evolution of bilateral swap lines. *International Monetary Fund*.
- Rose, A. K., & Spiegel, M. M. (2012). Dollar illiquidity and central bank swap arrangements during the global financial crisis. *Journal of International Economics*, 88(2), 326-340.
- Sahasrabuddhe, A. (2019). Drawing the line: The politics of federal currency swaps in the global financial crisis. *Review of International Political Economy*, 26(3), 461-489.
- Song, K., & Xia, L. (2020). Bilateral swap agreement and renminbi settlement in cross-border trade. *Economic and Political Studies*, 8(3), 355-373.
- Zhang, F., Yu, M., Yu, J., & Jin, Y. (2017). The effect of RMB internationalization on belt and road initiative: Evidence from bilateral swap agreements. *Emerging Markets Finance and Trade*, 53(12), 2845-2857.
- Zhang, L., & Tao, K. (2016). The economics of RMB internationalization. *Asian Economic Papers*, 15(1), 104-123.
- Zucker Marques, M., Mühlich, L., & Fritz, B. (2023). Unequal access to The Global Financial Safety Net: An index for the quality of crisis finance (No. 2023/4). Discussion Paper.



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