ECONOMIC AND POLITICAL DRIVERS OF REMITTANCE TRANSFER

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Abstract

This paper explores the political and economic determinants of remittance transfers by foreign workers in hosting countries with an application to the case of the Gulf Cooperation Council (GCC) countries. Our empirical model is estimated with the fixed-effects technique applied on annual data covering the period 1996-2019. The main result confirms that both the economic and political stability do matter to remittance transfers. First, our findings suggest that higher per capita growth across the GCC region tends to discourage remittance transfers. Second, we find a statistically significant and positive relationship between oil prices and remittance transfers. Third, our findings show that political stability across the host countries can shape remittances. Put it simply, higher political stability tends to induce lower remittance outflows. While conventional findings on importance of economic factors for remittances are confirmed, this research signifies that any change in political stability across the GCC might affect decisions made by foreign workers. This finding has general implications for similar regions throughout the world suggesting that political stability has a strong effect on the flow of remittances.

Keywords: *Remittances, political stability, GCC, panel, cross-sectional independency*

JEL classification: *J06, O11, O53*

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1. Introduction

The issue of foreign workers' remittances has been given utmost prioritized among scholars interested in international migration trends. Migration and remittance decisions are interconnected and they need to be treated jointly as they enforce each other (Luxha 2019). Different applications can be seen based on different income clustering (Adedoyin, Satrovic, and Kehinde 2021). The receiving countries may gain better allocation of financial flows into their economies,

as international remittances are considered to fuel foreign exchange reserves across nations (Taylor 2004). For example, remittance inflows to the South East European countries accounted for about 12% of their GDP in 2020 (World Bank 2021). This may be justified by the improvement in economic conditions as well as the infrastructure (Abul and Satrovic 2022). The influence on the host countries might remain controversial depending on the economic and political aspects affecting the decision to remit the workers' money. Although the economic factors influencing remittance flow are important, limited attention has been paid to identifying the political aspects.

The literature on the determinants of remittances is relatively new, as it is about four decades old. Most of the early literature studied the microeconomic determinants of remittances in the host countries. The influential study by Lucas and Stark (1985) identified three main migrants' motives to remit: (1) altruism, (2) self-interest, and (3) enlightened self-interest. In this regard, remittances are based on the attachment of migrants to their home countries (Bahatt and Kharel 2021) or as an informal contract between the migrants and their families in their home countries. This special nature of remittances makes them more stable than other forms of international financial flows, such as capital and foreign direct investments. Many studies have found that remittances are relatively stable (Ratha 2003; Singh 2006; Buch and Kuckulenz 2010). According to Ratha (2003), the altruistic component of remittances reduces their sensitivity to volatility in economic conditions. In contrast, another set of studies has found that remittances are volatile, which may become harmful to remittance-dependent countries (Craigwell, Jackman, and Moore 2010). A recent study by Ziberi and Alili (2021) found a strong effect for remittances on the economic growth in the Western Balkan countries.

This paper attempts to investigate the impact of political instability (besides economic factors) on the outflow of remittances by foreign workers in host countries with an empirical application to the Gulf Cooperation Council (GCC) countries. The choice of the GCC region has been based on the significant size of remittance outflows which accounts for about one quarter of the world, with two of its countries (United Arab Emirates and Saudi Arabia) ranked second and third in 2020 as the main remitting countries (World Bank 2021). The study contributes to the literature in different aspects. First, it identifies the main determinants of foreign workers' remittances across the hosting countries. Second, a few studies have investigated the political determinants of the likelihood of remitting across the hosting countries. Thus, the

study addresses the impact of political stability on remittance outflows across the hosting regions. Such results can help understanding the importance of the political factors as a source to determine remittances dynamics. The political environment, besides the other economic and social factors, may influence the propensity to remit in the host country. Third, to verify public labor policies, the study uses data to better quantify the influence of remittance determinants used in the literature in the GCC region.

In this research, the sample covers the annual panel data of the six GCC countries from 1996 to 2019. The estimated model follows the pooled OLS, random-effects, and fixed-effects techniques. Furthermore, the Hausman test is used to determine the appropriate estimated model. The estimated model also investigates cross-sectional unit independency using the Pesaran's test, Frees' test, and Friedman's test of cross-sectional independence. The determinants of workers' remittances are investigated considering the main macroeconomic factors and political aspects. This helps in identifying whether remittance outflows are caused by only economic factors or political ones also. According to the findings of fixed-effect models, the political and economic factors are the vital determinants of remittance transfers across the GCC regions. In addition, higher remittance outflows are associated with lower per capita growth, as higher per capita income leads to more local investment. This interpretation is supported by the finding of the investment factor to remittances. Furthermore, higher oil prices tend to increase remittance outflows. Importantly, the higher degree of political stability across the GCC regions plays a role in slowing down remittance outflows.

The rest of the paper is organized as follows. Section 2 contains a literature review of selected studies. Section 3 presents an overview of the GCC labor market. Section 4 shows the delivery of the methodology. Section 5 presents the data description. Finally, Section 6 analyzes the main empirical findings of the study, while Section 7 concludes the study and suggests some policy recommendations.

2. Literature review

The growing importance of remittance outflows worldwide in the last few decades has stimulated great research interest by economists (and other social scientists), who have investigated their dynamics and economic impacts. The respective studies have been conducted in various directions based on researchers' interests, which can be divided into two main streams:

the determinants and the impact of remittances. Both streams, in turn, have considered the home (migrant source) country and host (migrant residence) country levels. This study will focus on the determinants of remittance outflows, as it is more relevant to the case of the GCC countries.

On the macroeconomic side, the literature considered various economic indicators that impact the flow of remittances in both the host and home countries. This includes variables such as inflation, interest rate differentials, wages in the host countries, exchange rates, and economic activities in the home and host (destination) countries. Among the first empirical studies that used macro-level data was that of Swamy (1981), who used data from Greece, Turkey, and former Yugoslavia and found that fluctuations in the host country's economic activities played an important role in determining the level of remittance outflows. Since then, more studies have been conducted, with almost a consensus on the importance of the income level (GDP) of the host country as the primary determinant of remittance outflows (Elbadawi and Rocha 1992; El-Sakka and McNabb 1999; Straubhaar 1986). The level of income in the host country has a significant "positive" impact on migrants' wages, which, in turn, determines their behaviors regarding consumption, saving, and, ultimately, the amount they remit. Other studies found a "negative" impact of economic activities in the receiving country on remittance outflows, which is justified by the fact that when economic activities deteriorate in the home country, migrants send more funds to support their families (Greenidge and Moore 2008; Singh et al. 2009). However, a few studies have found no impact of economic activities in the host country on the flow of remittances. For example, Roache and Gradzka (2007) and Vargas-Silva (2008b) found no impact of the US business cycle on remittances to Latin America and Mexico, respectively.

Besides economic activities, researchers explored other macro indicators as potential influencers of remittance outflows, which significantly improved the understanding of the sources of remittances volatility. Among these indicators is the interest rate and return on investment (or, in some studies, the interest rate differential between the host and home countries), which capture the investment motive and thus play a role in migrants' decisions to invest in the host or home country (El-Sakka and McNabb 1999; Aydas, Neyapti, and Metin-Ozcan 2005; Alleyne, Kirton, and McLeod 2008). Moreover, other studies have investigated the role of the exchange rate and (most of them) found that a depreciation in the home country's exchange rate has a positive impact on remittance outflows, as more funds can be transferred at low exchange rates

(Higgins, Hysenbegasi, and Pozo 2004).

Another macroeconomic variable that received attention in the literature is the inflation rate of the host and home countries. In principle, inflation can affect remittance flows through its impact on real income and the purchasing power of both migrants (in the host country) and their families (at home country). On the one hand, high inflation in the home country is a sign of economic and, possibly, political instability (Elbadawi and Rocha 1992) and discourages the flow of remittances (Laniran and Adeniyi 2015). On the other hand, higher inflation in the home country leads to higher remittances to increase family support in these periods (Aydas, Neyapti, and Metin-Ozcan 2005; Elbadawi and Rocha 1992; El-Sakka and McNabb 1999; Glytsos and Katselli 1986; Yuni, Omeze, and Asogwa 2013).

Similarly, inflation in the host country has two possible impacts on remittance outflows. Higher inflation reduces migrants' savings and thus remittances (Victor 2012; Omobitan 2012). Alternatively, higher inflation discourages migrants' consumption and incentivizes them to increase remittances (Bobeva 2017). Trade openness is yet another macroeconomic variable that received attention as a source for economic development (Satrovic 2019). However, with a special attention to the related literature, trade openness is considered as a determinant of remittance outflows. Again, the empirical evidence is divided: some studies found a positive impact (Cooray and Mallick 2013; Omobitan 2012), while others found a negative one (Mourao 2016; Laniran and Adeniyi 2015; Schrooten 2005).

Political stability (i.e. absence of violence or terrorism) has received little attention in the literature despite its direct impact on migration and indirect impact on remittance outflows. As recently evidenced by Parker (2020), violence in the home country significantly increases emigrations. Foreign workers (especially temporary ones as in the case of the GCC countries) are more sensitive to political disturbances so it would trigger higher volumes of remittances. For example, a less stable political environment will discourage migrants from consuming or investing in the host country and thus contribute to higher fund outflows. We believe Wahba (1991) was the first to suggest "that the greater the variance in the government's policies [in the home country], the less will be the migrant's willingness to use official channels" (Whaba 1991, p. 44). A similar conclusion was reached by Abdel-Rahman (2006), whose results indicated that the degree of government stability and the law-and-order indicators reduce the scores of government stability, and that the law-and-order indicators would result in higher remittance outflows from Saudi Arabia.

Another study by Al-Ali, Black and Koser (2001), they assure that factors affecting the remittances in the host country can vary across a range of economic, social and political factors.

Finally, we will consider the studies conducted on the determinants of remittance outflows from the GCC countries, which is the main focus of this study. Before discussing the determinants of remittances, we consider what the literature found regarding the impact of outflows on the GCC economies. Akcay (2019) surveyed the literature on the impact of remittance outflows on host countries and concluded that there are two opposing views. On the negative side, remittance outflows are often viewed as financial leakage. Termos, Naufal, and Genc (2013), Alkhathlan (2013), and Malit Jr. and Naufal (2016) argued that the outflows reduce financial resources that would otherwise be used for domestic consumption and investment, ultimately reducing economic growth. On the positive side, outflows may reduce inflation and promote real economic growth and employment (Hathroubi and Aloui 2016; Khan et al. 2019).

Unfortunately, few studies have investigated the determinants of remittances from the GCC countries despite the significant share of outflows from the region. Notably, studies on the GCC countries generally add the price of oil as an additional determinant of remittance outflows since the oil sector in these countries plays a major role in their economic activities. The first study on the determinants of remittance outflows in the GCC countries was by Abdel-Rahman (2006), who found a positive relationship between the Saudi economy's growth and remittance outflows, which is justified by the fact that as the economy grows, the need for foreign labor increases, subsequently increasing remittances. Ilahi and Shendy (2008) also found that GCC remittance outflows were strongly correlated with GDP growth in the GCC countries. The World Bank (2015) also found that the responsiveness of remittances to changes in the GDP of the GCC countries is large. Umair and Waheed (2017) analyzed the main determinants of remittance outflows from Saudi Arabia to Pakistan and found that economic growth increases remittance outflows, but oil price was found to be insignificant.

A recent study by another study on Saudi Arabia, Snudden (2019) found that migrant wages, the marginal propensity to remit, and migrant labor supply are the major drivers of remittance outflows. De et al. (2019) found that oil prices and remittance outflows illustrate similar movements. Further, they found that non-oil GDP and remittance outflows are positively associated. Another study by Akcay (2019) found that economic growth and financial openness linearly

contributed to remittance outflows from Oman in the long run. Akcay also found that oil price movements are asymmetrically associated with remittance outflows in both the short and long run. Interestingly, the results provided further evidence that positive shocks in oil prices raise remittance outflows, while negative shocks have no significant impact in the long run. Last, Abbas (2020), who investigated the asymmetric impact of oil prices on remittances to Pakistan from GCC countries, found that rising oil prices have a significant positive effect only in the long run, whereas reducing oil prices show a significant negative effect only in the short run. Other findings show that the economic conditions in host countries, exchange rate, and trade relations have positive effects only in the long run.

3. Overview of the GCC Labor Market

Foreign workers (or expatriates as called in the GCC) are a vital factor in the labor market in the GCC countries, as the GCC economies are characterized by their hosting of large numbers of temporary non-immigrant workers. Since the GCC countries do not impose any tax or restrictions on the outflowing money, the expatriate workers transfer billions of dollars annually to their families in their home countries. In this regard, immigrant workers have regularly increased over the past two decades, as the GCC countries are considered one of the attractive destinations for immigrants worldwide due to their high per capita income. This significant increase causes the number of expatriates to exceed the number of nationals in most GCC countries' populations. In addition, this enormous increase in expatriates' numbers has been a serious concern for all GCC policymakers, who have aimed at modifying the demographics with aspiring policies to balance the allocation of expatriates in the labor force with the national population given the foreign workers' importance.

This section elaborates the demography and labor market in each GCC country according to Tables 1 and 2 in Appendix A. For Bahrain, the number of non-Bahrainis has significantly increased over the past two decades to reach as high as 55% of the total population in 2020, compared with 36% in 2000. Given this high share of the non-Bahraini population, the expatriate workers accounted for around 83% of the total employed population over the past 10 years. Consequently, policymakers at the Labor Market Regulatory Authority (LMRA) have adopted comprehensive labor market reforms aimed at allowing Bahrainis to contribute positively and effectively in the job market to attain the goal of making Bahrainis

the best option for employment or what is called "Bahrainization."

The picture has not changed that much in the case of Oman compared to Bahrain. Non-Omanis accounted for 27.5% of the total population in 2000 and increased to as much as 46.5% after 20 years. Consequently, the share of non-Omanis in the total employed population has been steady in the last 10 years, reaching around 78% in 2020. "Omanisation" as a policy has been tackled by policymakers to reduce the economy's dependence on non-Omani workers. To do so, Oman has imposed bans on hiring non-Omanis in different economic sectors, including the private sector, and it has become mandatory for every business to recruit a specific percentage of Omanis.

Among other GCC countries, Qatar and Kuwait have the highest reliance on expatriates. Thus, expatriates reached about 77% and 72% of the total population for Qatar and Kuwait in 2020, respectively, compared with their levels in 2000, which were about 60% and 55%, respectively. Concerning non-national workers, the last 10 years have witnessed a huge increase in non-Qatari workers, reaching about 95% of the total employed population in 2020. This is due to many factors, such as Qatar having the highest GDP per capita worldwide. In addition, hosting the FIFA World Cup in 2022 has played a crucial role in increasing their dependence on foreign workers in the past 10 years. In Kuwait, the number of non-Kuwaiti workers is also very high, reaching about 84% of the total employed population in 2020. Similar to the other GCC countries, this situation has been a challenge for policymakers in Kuwait. Accordingly, the Kuwaiti government has announced an ambitious plan to decrease the number of expatriates by 1.5 million by 2025 to modify the demographics and achieve what is called "Kuwaitization."

Although Saudi Arabia is the biggest economy among the GCC countries, the number of non-Saudis is the lowest compared to its GCC country peers. As of 2020, the number of non-Saudis comprised about 38% of the total population, compared to 25% twenty years earlier. However, the number of non-Saudi workers accelerated in 2020, accounting for about three-quarters of the total employed population, compared to 55% in 2010. As a result, serious attempts have been made by Saudi policymakers to control the labor force and achieve "Saudization."

4. Estimated model

Theoretically, the motivation behind workers' remittances comprises altruistic and self-interest aspects (Schiopu and Siegfried 2006). Such theories

have been used in the literature since then. An argument was made by Taylor and Wyatt (1996) that remittances under constraints of risk and liquidity are significantly influenced by middle-and low-income households.

However, remittances are not only responsive to economic conditions but also other factors. According to studies by Pant and Budha (2016) and Asongu and Nwachukwu (2016), the remittance functional form should be specified as the following:

$$REM_{i,t} = \alpha + \delta_j X_{i,t} + \vartheta_i + \varepsilon_{i,t} \qquad (1)$$

where REM represents workers' remittance, which is a function of some major economic factors; i represents the country at period t; α is a constant; and ϑ denotes country-specific effects. Particularly, the general model can be stated as follows:

$$Y_{it} = \alpha + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \ldots + \beta_k X_{it} + \varepsilon_{it}$$

$$(2)$$

where Y represents workers' remittances, $X_{1t}\ldots X_{it}$ represent the macroeconomic or other factors determining remittances, while ε is the error term. The t symbol represents the time period. This study primarily aims to empirically examine the political and economic determinants of remittance transfers for the GCC countries. It is assumed that remittance outflows are a function of the specific important variable representing the economic and political structures in the GCC regions. The estimated model is extended to include some external factors as proxies for the political factors, considering the political and economic structures of the GCC countries' economies.

Accordingly, the determinants of the workers' remittances are tested using a panel approach to control for the unobserved time-invariant factors. The initial model is estimated using the pooled OLS. The model is then examined using fixed-effect, random-effect, and Hausman tests.

The study uses further checking tests to tackle for cross-sectional dependence. This is true specially when having large cross sectional data. Theoretically, when number of observations (N) is small with a large or sufficient number of time dimensions (T), then in such case there will be a significant interdependency between cross sectional units (Satrovic, Ahmad, and Muslija 2021). According to the panel data literature it is highly common to have the error terms to include cross-sectional dependence which occurs due to the unobserved components and common shocks. The problem occurs as a result of highly integration degrees across countries whether financially or

economically which suggests high interdependencies between these cross units. It is important to mention that if in case of ignoring cross-sectional dependence, this would influence the unbiasedness and inconsistency of panel estimators.

These tests for cross-sectional dependence include the Pesaran's CD test proposed by Pesaran (2021), which assumes zero mean for the residuals of fixed and random effects despite fixed T. This would lead to a symmetrical distribution for disturbances. The second test is the Friedman's test by Friedman (1937) to deal with any remaining cross-sectional dependence on the disturbance. The third test is the Frees' test proposed originally by Frees (1995, 2004). The test, with all cross-sectional units, is based on the availability of observations using a normal approximation to get the critical values available at the Q-distribution.

The data covers the period between 1996 and 2019. The estimated model can be expressed in logarithm form as follows:

$$(\text{Log Remittances})_{it} = \alpha + \beta_1(\text{Population Growth})_{it}$$

$$+\beta_2(\text{Per Capita Growth})_{it} + \beta_3(\text{Inflation})_{it}$$

$$+ \beta_4(\text{Political Stability index})_{it} + \beta_5(\text{Trade Openness})_{it}$$

$$+ \beta_6 \log(\text{Oil Price})_{it} + \varepsilon_t \tag{3}$$

where β represents the estimated coefficients and i and t represent the country and time period, respectively. The dependent variable is represented by remittance outflows measured in nominal US dollar with log form.

The explanatory variables can be classified into three groups, the economic, demographic, and political factors, as follows:
- The economic factors are represented by per capita economic growth, inflation, trade openness, and oil prices.
- The demographic factor is represented by population growth.
- The political factor is represented by the political stability index.

The per capita growth variable is measured by the real GDP per capita, which is used as a proxy for economic growth. The trade openness variable is the ratio of trade as a percentage of GDP for each GCC country, and the inflation variable is measured by the consumer price index based on an annual percentage. Moreover, population growth is measured by the yearly growth rate of the population. Finally, the oil price variable is measured by the yearly average of the Organization of the Petroleum Exporting Countries (OPEC) basket, while the political stability index variable indicates the presence of any type of political instability, including motivated violence.

In the extended model, the per capita growth is replaced by the investment variable, which is then measured by the log of gross fixed capital formation. The reason for including this variable is to further investigate the interpretation of the estimated coefficient for per capita growth, as higher per capita growth indicates more income generation for foreign workers. This further incentivizes them to use their savings in different local investment opportunities, which encourages more remittance outflows.

The independent factors in the estimated model have different propositions, as discussed in previous studies. First are the economic factors. The per capita growth variable is estimated to have either a positive or negative relationship with workers' remittances, as higher per capita income for foreign workers can be an incentive to make more remittances transfers. However, it can also happen that higher per capita income induces foreign workers to engage in more investment opportunities, which reduces remittance transfers. It is noteworthy that the remittances can affect income redistribution in the receiving countries. This is as these remittances will increase income for households which result on reducing poverty across the nation. However, in our case, the focus more is on the hosting countries-GCC countries- which are already considered to have high-middle income. In this sense, the use of the per capita income variable is to represent the standard of living (Satrovic and Dağ 2019). This may be suitable more to the case of GCC as poverty levels are too low. The inflation rate is measured to capture the cost of living in the GCC regions, as higher local inflation means higher depreciation in the exchange rate of the local currency, which may lead to a higher outflow of worker transfers to capitalize on the lower exchange rate. Trade openness indicates the importance of trade for each country, showing the influence of openness of the economy. Higher trade openness reduces the potential for higher workers remittances, as foreign workers consider a safe environment regarding trade. Oil price is used to measure the effect of government spending on the economy. This is because higher oil prices induce higher government spending, which encourages more job opportunities for foreign workers. Accordingly, this would lead them to have more potential to transfer their part of income abroad.

Second is the demographic aspect, where population growth is used as a proxy for the demographic factor. It is expected that higher population growth encourages more worker remittances, as population growth is led by the growth of the foreign population

across the GCC regions. Third is the political aspect, where political stability measures the political environment in the country. Any political disturbance can be justified for more outflows of workers' remittances.

This study's findings contribute to the literature by extending it to examine the case of the GCC. Moreover, the political and demographic aspects may induce further investigations into the sources of the workers' remittances.

5. Data description

The study uses yearly data for the five GCC countries, covering the period between 1996 and 2019. The country sample includes Bahrain, Kuwait, Oman, Qatar, and Saudi Arabia. The United Arab Emirates (UAE) is excluded from the sample due to lack of data availability. The World Development Indicators at the World Bank database are used as the main source of most of the data. The International Financial Statistics at the IMF and the Worldwide Governance Indicators (WGI) are also used to collect the appropriate variables.

For the economic variables, the per capita growth is measured by GDP per capita growth at an annual percentage change, and its data is obtained from the World Bank database. The inflation rate is measured by the annual percentage change of the Consumer Price Index (CPI). The CPI data is obtained from the International Financial Statistics at the IMF database. Data for trade openness is constructed from the World Bank database, and it is measured by the values of exports and imports of goods and services as a share of GDP in nominal prices. Last, the average yearly oil price is obtained from the OPEC database.

For the demographic factor, data for population growth is measured by the annual percentage change of the total population, which is obtained from the World Bank database. Data for political stability is also obtained from the WGI project reports. The index measures the political stability and absence of any sort of disturbances, such as violence or terrorism. The dataset for political stability is measured by Kraay, Zoido-Lobaton, and Kaufmann (1999). The index is estimated with a standard distribution and spans from −2.5 to 2.5.

Regarding missing data, it is noteworthy that the data was obtained from different regional institutions. These institutions include the local Statistical Bureau, GCC Statistical Center, and GCC Central Banks.

6. Empirical results

In Appendix B, Table 1B shows the summary statistics of all the variables used in the main applied model, while the correlation matrix of all variables is shown in Table 2B. Some of the regression testing is provided in Tables 1 through 8 within the text. These include the pooled OLS, fixed effects, random effects, Hausman test, and the cross-sectional unit independency tests using Pesaran's test, Frees' test, and Friedman's test of cross-sectional independence.

In Table 1, the whole sample is estimated using the pooled OLS panel. The main findings show that, generally, the economic and political aspects are all important in influencing the worker's remittances across the GCC countries.

The findings were confirmed later using both fixed (Table 2) and random effects (Table 3) techniques. Across the three tests, the estimated coefficients of per capita growth, trade openness, oil prices, and political stability have consistent significant findings. Results appear to have a negative relationship between per capita growth and workers' remittances across the GCC countries. In addition, higher trade openness is associated with lower workers' remittances. It is also indicated that oil prices positively affect workers' remittances. Regarding the political variable, the political stability variable is shown to be statistically significant with a negative sign.

Table 1. Initial pooled OLS model

Dependent variable: Log Remittances	Pooled OLS Panel
GDP per capita growth (annual %)	−.0344402 ** (.0149189)
Population growth	−.036668 (.0348197)
Inflation, consumer prices (annual %)	−.0476733 * (.0260418)
Political Stability	−.4678155 *** (.1003788)
Trade Openness	−.0336264 *** (.0020788)
Log Oil Price	1.256074 *** (.1040091)
Observation	98
Adj. R^2	0.8065

Note: The table reports the standard error in parentheses

*Significant at 10%, ** Significant at 5%, *** Significant at 1%

Table 2. Base-line fixed effect panel model

Dependent variable: Log Remittances	Parameter Estimates of Fixed Effects
GDP per capita growth (annual %)	−0.038*** (0.012)
Population growth	−0.036 (0.032)
Inflation, consumer prices (annual %)	−0.026 (0.023)
Political Stability	−0.509 ** (0.201)
Trade Openness	−0.011 ** (0.004)
Log Oil Price	0.836 *** (0.115)
Observation	98
Overall R^2	0.528

Note: The table reports the standard error in parentheses

*Significant at 10%, ** Significant at 5%, *** Significant at 1%

Table 3. Base-line random effect panel model

Dependent variable: Log Remittances	Parameter Estimates of Random Effects
GDP per capita growth (annual %)	−0.034 ** (0.015)
Population growth	−0.036 (0.034)
Inflation, consumer prices (annual %)	−0.047 * (0.026)
Political Stability	−0.467 *** (0.104)
Trade Openness	−0.034 *** (0.002)
Log Oil Price	1.256 *** (0.104)
Observation	98
Adj. R^2	0.818

Note: The table reports the standard error in parentheses

*Significant at 10%, ** Significant at 5%, *** Significant at 1%

Subsequently, the Hausman test was used to choose the appropriated model between the fixed and random effects. Accordingly, after implementing the Hausman test in Table 4, the results favor the choice of the fixed-effect model. Hence, estimated findings of the fixed-effect model will be interpreted as preferred results.

Accordingly, selecting the appropriate fixed effects in Table 2 yielded the interpretations for estimated coefficients. The estimated coefficient for per capita growth turned out to be statistically significant with a 1% level of significance. The findings show that higher per capita growth by 1% leads to lower workers' remittances by 3%. This can be explained by the

fact that when the standard of living improves across the GCC countries, it may improve the income-generating sources for foreign workers and increase their disposable income, encouraging them to invest locally. This finding is consistent with the previous studies such as Elbadawi and Rocha (1992), El-Sakka and McNabb (1999), and Straubhaar (1986). Such a relationship between investment and workers' remittances will be later tested using the investment variable as a replacement for per capita growth in Table 8 in the regression model.

The estimated coefficient for trade openness turned out to be statistically significant with a 5% level of significance. The result is consistent with several

Table 4. Hausman Test

Dependent variable: Log Remittances	Fixed Effects	Random Effects	Difference
GDP per capita growth (annual %)	−.0383226	−.0344402	−.0038823
Population growth	.0230139	−.036668	.059682
Inflation, consumer prices (annual %)	−.0266119	−.0476733	.0210614
Political Stability	−.5093621	−.4678155	−.0415466
Trade Openness	−.0105983	−.0336264	.0230282
Log Oil Price	.8364342	1.256074	−.4196399
Chi2 (9)		24.91	
Prob > Chi2		0.0004	

studies among which are Ebeke (2011), and Miao and Qamruzzaman (2021). It suggests that higher trade openness by 1% reduces workers' remittances by 1.05 %. The finding can be explained by the fact that when the GCC countries experience better trade openness, indicating lower trade barriers, it does not necessarily show a higher outflow of remittances. Instead, foreign workers engage in financing other expenses, such as housing, education, and health care, as well as other non-durable goods consumption (Adams 2006).

Regarding oil prices, the estimated coefficient turned to be statistically significant with a 1% level of significance. Thus, higher oil prices by 1% (on average) cause lower workers' remittances by 0.008%. The explanation for this relationship is supported by Naufal and Termos's (2009) argument as well as Morshed and Pitafi (2008). This is because the rise in oil prices can support generating more oil revenues in oil-exporting countries, creating greater investment opportunities at the macroeconomics level and thus growing their economy. Therefore, there will be a higher demand for migrant workers, which causes more outflows of workers' remittances.

Very interestingly, the estimated coefficient for the political stability index turned out to be statistically significant with a 5% level of significance, which is expected to discourage workers' remittances. This result can be explained by the fact that when a country experiences political stability and the absence of violent disturbances, the incentive of foreign workers to remit are lower. This can be more explained by the fact that since the hosting countries (GCC region in this case) are more financially developed compared to the home or receiving countries, then any political instability in GCC can be a source of more remittances outflows. This is as foreign workers would consider the tradeoff between political stability versus the financial development in the host countries.

Concerning the testing for cross-section independence, these tests are presented in Tables 5-7. According to Pesaran's test provided in Table 5, the null hypothesis of no cross-sectional dependence in the estimated model is rejected, as the p-value is less than 5%.

In Table 6, the Frees' test is used. The findings of the test show highly significant results. Frees' test uses a Q-distribution with critical significance values of 0.10, 0.05, and 0.01. The findings show that all Frees' statistics of 0.3169, 0.4325, and 0.6605 are larger than the critical value with 0.10, 0.05, and 0.01, respectively. Thus, Frees' test supports the rejection of the null hypothesis of cross-sectional independence.

Table 5. Tests for cross/sectional independence - *Pesaran's CD test*

Pesaran's test of cross-sectional independence	5.695
Prob.	0.0000
Average absolute value of the off-diagonal elements	0.547

Table 6. Tests for cross/sectional independence -*Frees' test*

Frees' test of cross-sectional independence	2.701
Critical values from Frees' Q-distribution	
α (Critical values)	Frees' statistic
0.10	0.3169
0.05	0.4325
0.01	0.6605

Table 7. Tests for cross/sectional independence - *Friedman's test*

Friedman's test of cross-sectional independence	33.981
Prob.	0.0000

Table 8. Fixed-Effects Regression using Investment

Dependent variable: Log Remittances	Parameter Estimates of Fixed Effects
Investment	.03253 *** (.0099592)
Population growth	.0590065 ** (.0304337)
Inflation, consumer prices (annual %)	−.0505107 ** (.0236967)
Political Stability	−.4026695 * (.2071284)
Trade Openness	.0069722 (.0051219)
Log Oil Price	.7378951 *** (.1158758)
Observation	98
Adj. R^2	0.3697

Note: The table reports the standard error in parentheses

*Significant at 10%, ** Significant at 5%, *** Significant at 1%

In addition, according to Table 7, Friedman's test is used. The findings reveal a rejection of the null of cross-sectional independence supporting the dependency of cross-sectional units.

In a further investigation in Table 8, when per capita growth is replaced by investment, the estimated coefficient of investment turns out to be statistically significant at a 1% level of significance. It suggests that higher local investment leads to more remittance transfers (i.e. Aydas, Neyapti, and Metin-Ozcan 2005; Alleyne, Kirton, and McLeod 2008).

7. Conclusion and policy implications

This study applies a panel approach with the appropriate fixed-effects model. It contributes to the growing remittance's literature by examining the role of economic and political stability factor on the outflow of remittances from the GCC countries. The data sample spans 1996 to 2019. The selection of a period is determined by the data availability. The findings show that both economic and political stability influence the size of expatriates' remittances from GCC countries.

Overall, the results show that remittances are negatively related to per capita income in the host countries, which contradicts the positive relation found in most of the literature. We find this result common, especially in oil-rich countries like the GCC countries. Moreover, we justify this result given the fact that during high-income periods, expatriates tend to spend higher fractions of their incomes in the host countries on durable goods, save more, and even invest in the financial market, which leads to lower remittances. The overall economic activities, again in the oil-rich countries, are captured by the oil price, which turned out to positively influence remittances. The political stability indicator was found to be negative, suggesting that the more politically stable the host country is, the lower the remittances. We interpret political stability in a broader sense, beyond the stability of a political regime, to include public policies that impact the expatriates' wellbeing, that is, immigration, labor market, and financial policies.

For policy implication purposes, hosting countries need to pay more attention to the growing levels of remittance outflows that represent significant leakages from their economies. Expatriates need to be encouraged to keep their earnings in the host countries to enhance the levels of national savings, which have been significantly eroded in recent years as a result of declining oil revenues for the case of GCC countries. Expatriates' savings, if not remitted, can play a significant role in supporting financial markets and providing the needed funds for the growing investments in the areas of economic diversification.

To discourage remittances, governments of hosting countries have to implement expatriate friendly policies. Such policies have to be carefully engineered to balance the interests of both the expatriates and the host countries.

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Appendix A

Table 1A. Number of Expatriates Population in the GCC Countries (Percentage of the Total Population)

	2000	2005	2010	2015	2020
Bahrain	239 361 (36.0%)	404 018 (45.5%)	666 406 (53.7%)	722 487 (52.7%)	936 094 (55.0%)
Kuwait	1 127 640 (55.1%)	1 333 530 (58.7%)	1 874 812 (62.7%)	2 866 136 (74.7%)	3 110 159 (72.8%)
Oman	623 608 (27.5%)	666 164 (26.5%)	816 234 (26.8%)	1 856 226 (43.5%)	2 372 836 (46.5%)
Qatar	359 697 (60.7%)	646 026 (74.6%)	1 456 413 (78.5%)	1 687 640 (65.8%)	2 226 192 (77.3%)
Saudi Arabia	5 263 387 (25.5%)	6 501 819 (27.3%)	8 429 956 (30.7%)	10 771 366 (34.0%)	13 454 842 (38.6%)

Source: United Nations Department of Economic and Social Affairs

Table 2A. Share of national and non-national workers to the total number of employed populations

	2010		2015		2020	
	National workers	Expatriate workers	National workers	Expatriate workers	National workers	Expatriate workers
Bahrain	(17.9%)	(82%)	(16.2%)	(83.7%)	(18%)	(82%)
Kuwait	(17%)	(83%)	(14%)	(86%)	(16%)	(84%)
Oman	(24.5%)	(76%)	(19%)	(81%)	(22%)	(78%)
Qatar	(6%)	(94%)	(5%)	(95%)	(5%)	(95%)
Saudi Arabia	(45%)	(55%)	(43%)	(57%)	(25%)	(75%)

Source: different GCC national authorities statistics and Author calculations.

Appendix B

Table 1B. Descriptive Statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
Log Remittances	104	22.431	1.182	20.142	24.381
Population growth (annual %)	120	4.555	3.491	0.093	17.5109
GDP per capita growth (annual %)	115	−0.1216	3.834	−12.512	15.989
Inflation, consumer prices (annual %)	115	2.395	3.108	−4.863	15.051
Log Oil Price	120	3.822	0.639	2.508	4.695
Political Stability Index	120	0.351	0.619	−1.335	1.224
Trade Openness	118	101.396	27.034	56.088	191.873

Table 2B. Correlation Matrix

Variable	Log Remittances	GDP per capita growth (annual %)	Population growth (annual %)	Inflation, consumer prices (annual %)	Political Stability	Trade Openness	Log Oil Price
Log Remittances	1.000						
GDP per capita growth (annual %)	−0.092	1.000					
Population growth	−0.143	−0.293	1.000				
Inflation, consumer prices (annual %)	0.166	0.081	0.213	1.000			
Political Stability	−0.025	−0.109	0.297	0.045	1.000		
Trade Openness	−0.644	0.034	0.264	0.056	−0.293	1.000	
Log Oil Price	0.417	0.015	0.295	0.519	−0.031	0.216	1.000