

The Impact of Remittances on Domestic Savings: A Comparative Empirical Study of Egypt and the Philippines

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Abstract

The issue of remittances has received considerable critical attention over the last two decades. A key aspect of remittances is their impact on several macroeconomic variables. Remittance flows are a significant part of international capital flows and play a crucial role in the economies of many developing countries. The purpose of this study is to explore the relationship between remittances and domestic savings during the period from 1981 to 2019 using Autoregressive Distributed Lag (ARDL). The study found that the rate of growth of remittances of Egyptian workers abroad has a positive and significant effect on domestic savings in the short and long term. However, there was no evidence that remittances of Filipino workers abroad influence the rate of domestic savings. The most interesting finding was that, even though the number of Egyptian workers abroad is five times the number of Filipino workers abroad, the value of remittances from Egyptians abroad is less than the value of remittances from the Philippines. Future studies on the current topic are therefore recommended.

Keywords: Remittances, Savings, Egypt, Philippines, (ARDL).

JEL classification: F2, F24

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أثر تحويلات العاملين بالخارج على المدخرات المحلية: دراسة تجريبية مقارنة بين مصر والفلبين

ملخص

حظيت قضية تحويلات العاملين بالخارج باهتمام بالغ على مدى العقدين الماضيين. يتمثل أحد الجوانب الرئيسية للتحويلات في تأثيرها على العديد من متغيرات الاقتصاد الكلي. تشكل تدفقات التحويلات جزءًا مهمًا من تدفقات رأس المال الدولي، وتلعب دورًا حاسمًا في اقتصادات العديد من البلدان النامية. تهدف هذه الدراسة إلى استكشاف العلاقة بين التحويلات والمدخرات المحلية خلال الفترة من 1981 إلى 2019 باستخدام نموذج الانحدار الذاتي للإبطاء الموزع (ARDL). وقد توصلت الدراسة إلى أن معدل نمو تحويلات العاملين المصريين بالخارج له تأثيرًا إيجابيًا ومعنويًا على المدخرات المحلية على المدى القصير والطويل. وبالرغم من ذلك، لم يكن هناك دليلًا كافيًا على أن تحويلات العاملين الفلبينيين بالخارج تؤثر على معدل المدخرات المحلية. كما توصلت الدراسة إلى أنه على الرغم من أن عدد العاملين المصريين بالخارج يبلغ خمسة أضعاف عدد العاملين الفلبينيين، فإن قيمة تحويلات المصريين بالخارج أقل من قيمة تحويلات الفلبين. لذلك يوصى بإجراء دراسات مستقبلية حول هذه النتيجة.

الكلمات المفتاحية: تحويلات العاملين بالخارج، الادخار المحلي، مصر، الفلبين، (ARDL).

Introduction

Remittances represent one of the most important sources of foreign exchange earnings for many developing countries (Dhaka, 2020). Remittances differ from external capital inflow such as foreign direct investment, foreign loans, and subsidies due to their stability. In addition, the decrease in remittances may lead to instability in the economy, which causes pressure on fiscal and monetary policies (Meyer et al., 2016). Remittances have recently proven to be resilient during the financial crisis in source countries such as the United States and Western Europe. The crisis reduced migrants' incomes, but migrants attempted to compensate by reducing consumption and rental expenditures. Those affected by the crisis, such as those in the construction industry, moved to jobs in other industries (such as restaurants or agriculture). While the crisis reduced new immigration, it also discouraged return migration because migrants were afraid of being denied re-entry into the host country. As a result, even during the global financial crisis that began in 2008, the number of migrants—and thus remittances—continued to rise. DILIP RATHA, (2023). The literature indicates that one of the positive characteristics of international remittances is that they represent a safe financial resource, especially when the economic performance of the home country is deteriorating. Therefore, remittances also act as a relatively stable source in economies most exposed to global influences and volatility (Kajdi, 2018). The remittances of workers abroad have witnessed a significant increase during the past decades, especially in the developing countries that export labour. The following table shows the development of global remittances and the share of developing countries during the period from 1981 to 2019.

**Table (1): Evolution of global remittances and the share of developing countries.
(1981-2020) (Billion Dollars).**

Year	World	Low- and middle-income countries	Share of developing countries (%)	Year	World	Low- and middle-income countries	Share of developing countries (%)
1981	34,887	17,848	51	2001	140,339	83,586	60
1982	36,041	19,286	54	2002	163,489	98,837	60
1983	36,578	20,848	57	2003	197,183	123,205	62
1984	35,361	20,161	57	2004	226,426	140,688	62
1985	34,556	19,346	56	2005	288,121	194,923	68
1986	40,459	19,692	49	2006	330,409	228,051	69
1987	48,817	22,543	46	2007	398,837	278,446	70
1988	52,361	22,379	43	2008	460,524	323,610	70
1989	54,749	24,364	45	2009	437,247	307,434	70
1990	64,034	28,589	45	2010	474,839	343,162	72
1991	67,754	31,415	46	2011	533,553	387,581	73
1992	75,215	36,752	49	2012	553,426	410,032	74
1993	75,211	38,515	51	2013	586,971	433,057	74
1994	85,677	47,495	55	2014	611,596	451,271	74
1995	97,889	53,001	54	2015	602,849	453,041	75
1996	102,763	57,006	55	2016	597,332	446,251	75
1997	117,242	66,875	57	2017	643,270	486,689	76
1998	114,005	65,089	57	2018	694,479	530,650	76
1999	121,671	68,515	56	2019	714,249	554,218	78
2000	126,750	74,767	59	2020	746	574	77

Source: <https://www.knomad.org/data/remittances>, 2020

In the previous table, the impact of remittances was greater in developing countries, where the average percentage of remittances to developing countries during the period from 1981 to 2020 was about 61.5% of the total global remittances. During the last 10 years, this percentage averaged nearly 75% of global transfers. Therefore, developing countries rely heavily on remittances as an important source of foreign exchange. It also plays an important role in achieving stability in the financial sector, in addition to its contribution to alleviating poverty and providing job opportunities. Remittances are the second most important source of foreign exchange in developing countries after foreign direct investment. According to World Bank data 2019, total foreign direct investment flows to developing countries reached about 696 billion US dollars, while workers' remittances inflows abroad amounted to about 554 billion dollars (Unctad, 2020a). The research problem is: To what extent do domestic savings respond to changes in the number of remittance flows received by workers abroad in Egypt and the Philippines? The central hypothesis addressed in this paper is that the

rate of growth of remittances in Egypt and the Philippines has a positive and significant effect on domestic savings in the short and long term.

It is worth pointing out that the number of international migrants worldwide in 2019 reached 272 million people (3.5% of the world's population), 52% of them are men, 74% of all international migrants of working age (20-64 years). India remained the leading source of migrants (17.5 million), followed by Mexico and China (11.8 million and 10.7 million, respectively). The United States remained the first preferred destination (50.7 million international migrants (IOM, 2020). The following table shows the top ten countries in the world in receiving/sending remittances during the period from 2005-2020.

Table (2): Top 10 countries receiving/sending remittances (2005-2020) (USD billions)

Top 10 countries receiving remittances										
2005		2010		2015		2019		2020e		Remittances as a share of GDP in 2020e (%)
China	23.63	India	53.48	India	68.91	India	83.3	India	75,916	2.9%
Mexico	22.74	China	52.46	China	63.94	China	68.4	China	59,507	0.4%
India	22.13	Mexico	22.08	Philippines	29.8	Mexico	39	Mexico	40,508	3.9%
Nigeria	14.64	Philippines	21.56	Mexico	23.23	Philippines	35.2	Philippines	33,339	8.8%
France	14.21	France	19.9	France	24.06	France	26.8	France	25,318	1%
Philippines	13.73	Nigeria	19.75	Nigeria	21.16	Egypt	26.78	Egypt	24,381	6.7%
Belgium	6.89	Germany	12.79	Pakistan	19.31	Nigeria	23.8	Pakistan	24,136	9.1%
Germany	6.87	Egypt	12.45	Egypt	18.33	Pakistan	22.2	Nigeria	20,971	4.9%
Spain	6.66	Bangladesh	10.85	Germany	15.81	Bangladesh	18.4	Bangladesh	19,758	6.2%
Poland	6.47	Belgium	10.35	Belgium	15.3	Vietnam	17	Vietnam	15,686	5.8

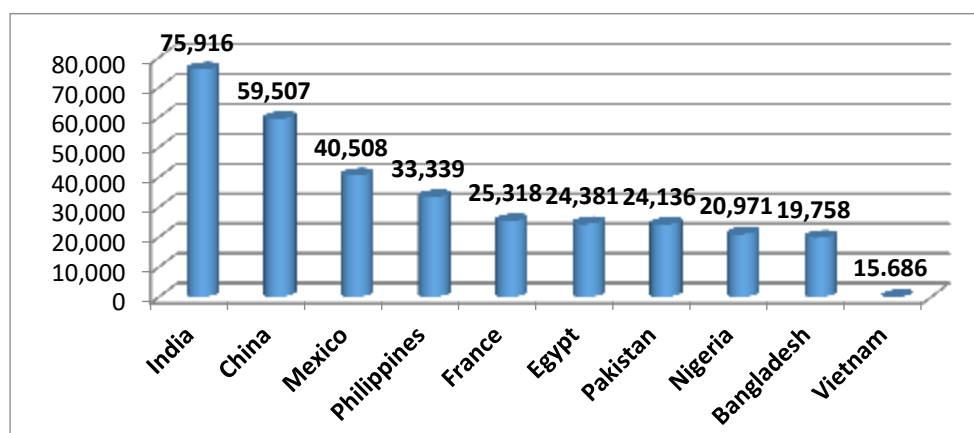
Top 10 countries sending remittances								
2005		2010		2015		2019		Remittances as a share of GDP in (%) 2019
United States	47.25	United States	50.78	United States	61.86	United States	71.562	0.3%
Saudi Arabia	14.30	Saudi Arabia	27.07	United Arab Emirates	40.33	United Arab Emirates	44.959	10.7%
Germany	21.71	Russian Federation	21.45	Saudi Arabia	38.79	Saudi Arabia	31.97	3.9%
Switzerland	10.52	Switzerland	17.76	Switzerland	25.40	Switzerland	28.18	4%
United Kingdom	9.64	Germany	14.68	China	20.42	Germany	24.062	0.6%
France	9.48	Italy	12.89	Russian Federation	19.69	Russian Federation	22.217	1.6%
Republic of Korea	6.9	France	12.03	Germany	18.03	China	15.135	0.1%
Russian Federation	6.83	Kuwait	11.86	Kuwait	15.20	France	15.088	0.6%
Luxembourg	6.7	Luxembourg	10.65	France	12.79	Kuwait	14.782	11%
Malaysia	5.68	United Arab Emirates	10.57	Qatar	12.19	Netherlands	14.548	1.6%

Source: World Bank staff calculation based on data from IMF Balance of Payments Statistics database and data releases from central banks, national statistical agencies, and World Bank country desks. October 2020

Table (2) shows that India, China, Mexico, the Philippines, France, and Egypt are among the largest recipients of remittances in the world 2020, as India ranked first at the global level with remittances amounting to \$ 76 billion, which can be attributed to the deep-rooted family ties; most Indians maintain strong ties to their home country (Siar, S. ,2014). Additionally, the increase in the number of global Indian expats: According to recent reports, over 18 million Indians living abroad in 2020. The Gulf region has the largest Indian diaspora, followed by Western Europe, the United States, and Canada. China came in second place with remittances amounting to \$ 59.5 billion, Mexico came in third place with remittances amounting to \$ 40.5 billion, and the Philippines came fourth in the world with a total of \$ 33.3 billion in remittances. France came in fifth place among the list of the most recipients of remittances from workers abroad, with a value of 25.3, and then Egypt came in sixth place, as Egypt received remittances amounting to 24.4 billion dollars in 2020.

The contribution of the top ten countries in the world to receiving remittances, as a percentage of GDP, differs from one country to another, as Pakistan, the Philippines, and Egypt come on top of the countries that contribute these remittances to their GDP,

with a contribution of 9.1%, 8.8%, 6.7%, respectively, which reflects the importance of these remittances to these countries.



Fig(1). Top ten countries in receiving remittances in 2020 (Billion Dollars)

Figure (1) shows that eight of the top ten countries are in the group of developing countries, except for France and Germany, which are in the group of developed countries.

Remittances decreased during the year 2020 compared to 2019, as remittances decrease in rates ranging from 5% to 13% in seven of the top ten countries that receive remittances, except for Nigeria, Bangladesh, and Mexico, since Mexican immigrants work in the basic services sector in the United States (World Bank, 2021). The reason behind the decline in remittances is due to the Covid-19 crisis, and its global impact, where many immigrants lost their jobs as a result of the crisis (Bisong, et al, 2021). As for Egypt and the Philippines, remittances decreased in 2020 compared to 2019 by 9% and 5%, respectively, as the main consequence of the crisis (Murakami, et al, 2020). A study predicted that remittances from Filipinos abroad will decrease by 14% to 20% as repercussions of the COVID-19 pandemic. (Murakami, et al, 2021). Table (3) shows the relative importance of workers' remittances compared to other sources of foreign exchange in Egypt and the Philippines, during the period from 1981 to 2019.

Table (3): The relative importance of remittances within foreign exchange sources in Egypt and the Philippines (1981 to 2019). (Billion dollars)

Years	Remittances		Foreign direct investment, net inflows		Commodity exports		Services exports		Net official development assistance and official aid received		Total	
	Egypt	Philippines	Egypt	Philippines	Egypt	Philippines	Egypt	Philippines	Egypt	Philippines	Egypt	Philippines
1981	2.2	0.8	0.752	0.172	4	5.72	2.54	2.78	1.3	0.291	10.792	9.763
1982	2.4	1.04	0.294	0.16	4.02	5.02	2.8	2.53	1.46	0.372	10.974	9.122
1983	3.7	1.12	0.49	0.105	3.69	5	3.44	2.09	1.46	0.324	12.78	8.639
1984	3.9	0.718	0.729	0.9	3.86	5.39	2.99	2.16	1.77	0.415	13.249	9.583
1985	3.2	0.806	1.18	0.12	3.84	4.63	3.02	2.75	1.77	0.376	13.01	8.682
1986	2.5	0.861	1.22	0.127	2.63	4.84	3.36	3.02	1.67	0.454	11.38	9.302
1987	3.6	1.02	0.948	0.307	3.12	5.72	3.62	3.02	1.72	0.889	13.008	10.956
1988	3.8	1.26	1.19	0.936	2.77	7.07	4.41	3.69	1.5	0.695	13.67	13.651
1989	3.3	1.36	1.3	0.563	3.12	7.82	4.2	4.15	1.64	0.778	13.56	14.671
1990	4.3	1.46	0.734	0.53	2.6	8.19	6.2	4	6.1	0.773	19.934	14.953
1991	4.1	1.85	0.253	0.544	3.6	8.84	6.7	4.6	5.4	1.1	20.053	16.934
1992	6.1	2.45	0.459	0.228	3.1	9.82	8.8	5.61	3.7	0.949	22.159	19.057
1993	5.7	2.95	0.493	1.2	3.1	11.38	8.9	5.67	2.5	1.6	20.693	22.8
1994	3.7	3.45	1.3	1.6	3.5	13.48	8.2	8.2	2.7	1.4	19.4	28.13
1995	3.2	5.36	0.598	1.5	3.4	17.45	10.2	9.5	2	1	19.398	34.81
1996	3.1	4.88	0.636	1.5	3.5	20.54	10.5	3.02	2.2	0.857	19.936	30.797
1997	3.7	6.8	0.891	1.2	3.9	25.23	10.9	15.08	2	0.86	21.391	49.17
1998	3.4	5.13	1.1	2.3	3.1	29.5	10.7	2.82	2	0.631	20.3	40.381
1999	3.2	6.71	1.1	1.8	3.6	18.4	10.1	19.35	1.6	0.593	19.6	46.853
2000	2.9	5.96	1.2	1.5	5.3	21.84	10.9	14.43	1.4	0.662	21.7	44.392
2001	2.9	8.77	0.51	0.76	4.8	19.5	12.1	12.98	1.3	0.553	21.61	42.563
2002	2.9	9.74	0.647	1.8	5.5	21.47	10.1	12.26	1.3	0.553	20.447	45.823
2003	3	10.24	0.237	0.492	7.4	23.54	10.1	13.28	1	0.553	21.737	48.105

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2004	3.3	11.47	1.3	0.592	9.7	25.82	12.5	13.92	1.5	0.725	28.3	52.527
2005	5	13.73	5.4	1.7	12.9	25.16	14.3	19.13	1.1	0.465	38.7	60.185
2006	5.3	15.49	10	2.7	16.7	30.73	15.5	21.92	0.90	0.588	48.4	71.428
2007	7.7	16.44	11.6	2.9	19.2	32.8	20.3	26.5	1.1	0.595	59.9	79.235
2008	8.7	18.85	9.5	1.3	26.2	34.68	27.6	25.7	1.7	0.636	73.7	81.166
2009	7.2	19.96	6.7	2.1	23.1	29.14	24.1	24.09	0.983	0.669	62.083	75.959
2010	12.5	21.56	6.4	1.1	26.4	36.77	20.4	31.73	0.599	0.34	66.299	91.5
2011	14.3	23.05	-0.4	2	30.5	38.28	18	29.89	0.424	0.582	62.824	93.802
2012	19.2	24.61	2.8	3.2	29.4	46.38	16.3	25.56	1.8	-0.14	69.59	99.61
2013	17.8	26.27	4.2	3.7	29	44.51	20.1	29.81	5.5	-0.36	76.6	103.93
2014	19.6	28.96	4.6	5.7	26.9	49.82	16.6	31.56	3.5	1.92	71.2	117.96
2015	18.3	29.97	6.9	5.6	21.3	43.2	22.1	40.18	2.5	1.68	71.1	120.63
2016	18.6	31.14	8.1	8.3	25.5	42.73	8.9	42.26	2.4	0.515	63.5	124.94
2017	24.7	32.81	7.4	10.3	25.6	51.81	11.7	45.26	0.32	0.284	69.72	140.46
2018	25.5	33.81	8.1	9.6	27.6	51.98	19.6	52.81	2.1	0.16	82.9	148.36
2019	26.8	35.17	9	7.7	28.9	53.48	24.1	53.3	1.8	0.541	90.6	150.19
Average %	8.1	12	3.1	2.3	12	24	11.7	17.2	2	0.7		
Average relative importance of each resource%	22	21.4	8.3	4	32.5	42.8	31.8	30.6	5.4	1.2		

The following figure shows the relative importance of remittances within foreign exchange sources during the period from 1981 to 2019.

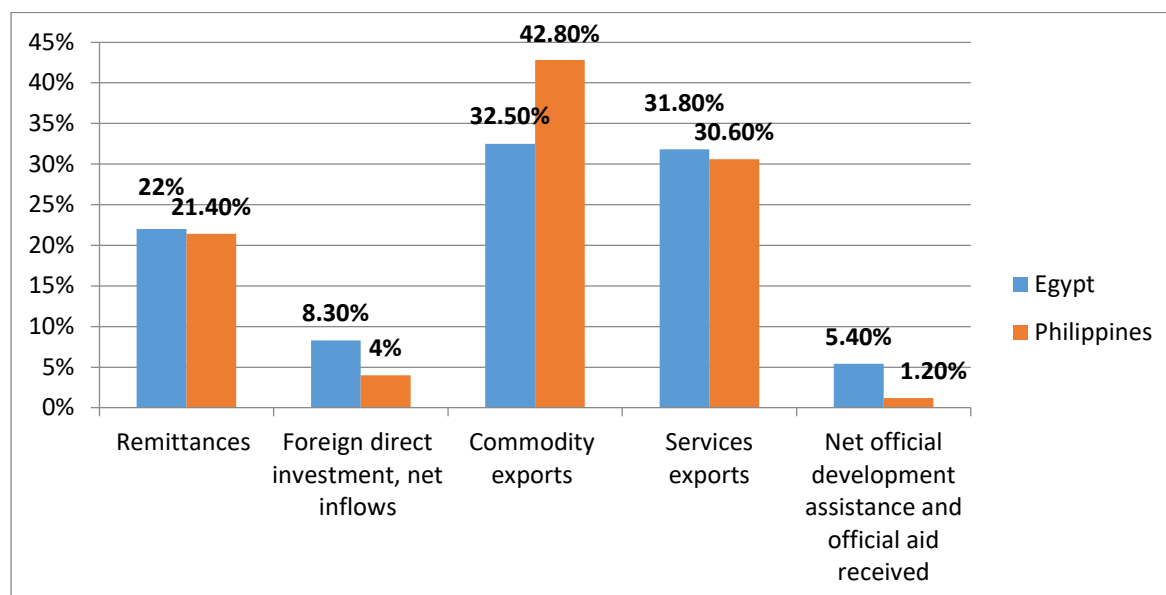


Fig (2). The relative importance of remittances compared to other foreign exchange sources (1990- 2019)

The previous figure shows the relative importance of remittances compared to other sources of foreign exchange during the aforementioned period, as remittances come in third place in foreign exchange sources, after commodity and service exports, in both Egypt and the Philippines, where the average relative importance of remittances reached more than 20 percent in the two countries, which reflects the increasing importance of remittances on the national economy. It should be noted that remittances are considered a relatively stable source of foreign exchange than other sources, especially in light of instability in foreign exchange resources. On the other hand, the following figure shows the evolution of the remittance ratio to GDP in Egypt and the Philippines during the period from 1981 to 2020

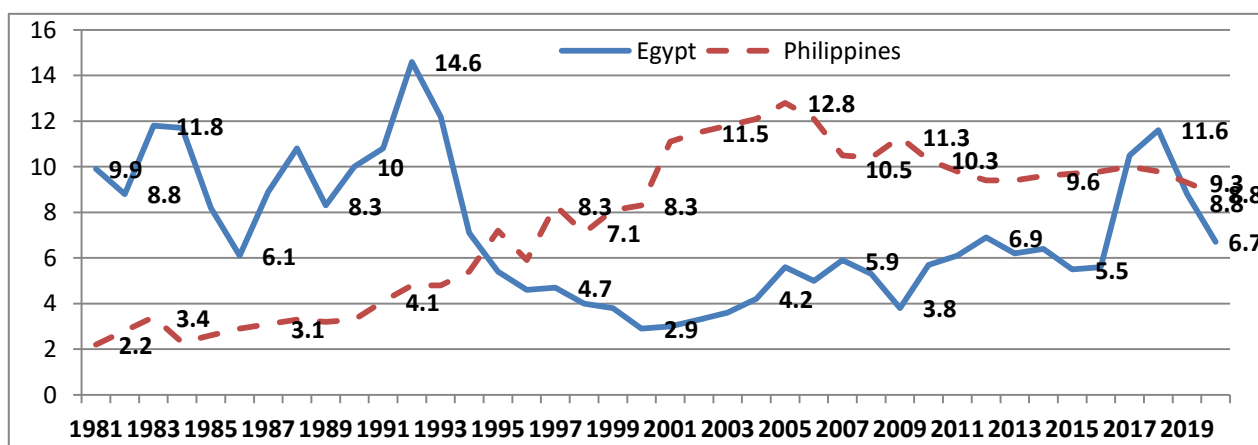


Fig (3): Ratio of remittances to GDP in Egypt and the Philippines (1981-2020)

The rate of increase of remittances as a percentage of GDP in Egypt was higher than Philippines at the beginning of the period considered in the figure (3), since the beginning of 1994, the growth of remittances of Egyptian workers abroad decreased significantly as a result of the developments of the Gulf War; the decrease in oil prices and the increase in the growth of remittances in the Philippines of GDP (Abo Elseoud, 2020). It should be pointed out that the average remittance of workers to GDP in Egypt in the last two years was 10.2%, which is close to 11.1% of the agricultural sector's value added in GDP. The average remittances of workers in the Philippines in the last two years were 9.6% of GDP, which is higher than value added of the agricultural sector of the GDP (9.2%). This indicates the great importance of workers' remittances in both Egypt and the Philippines.

It is necessary here to mention that the number of Egyptians living abroad reached about 10.2 million in 2019, compared to 9.4 million in 2017, the majority of whom are males (CAPMAS, 2020). On the other hand, the number of Filipino workers abroad during the period from April to September 2019 amounted to about 2.2 million; the official workers abroad amounted to 96.8% of the total Filipino workers during the mentioned period. The percentage of female Filipino workers abroad was 56% higher than male Filipinos 44%, (Liao, 2020). The loss of highly educated and skilled workers in the home country is referred to as brain drain (Sutra Dhār, 2020; Gashi, 2018; Ivakhnyuk, 2006). As a result, human capital losses may have a negative impact on economic growth (Hossain et al., 2020). An inspection of the statistics reveals that despite the increase in the number of Egyptian workers abroad by about five times the number of Filipinos abroad, Egypt receives remittances of \$ 27 billion, while the Philippines receives remittances of \$ 35 billion. A possible explanation for this might

be that unlike Filipinos, part of the families of Egyptian workers abroad joins them. Additionally, a part of Filipinos works in highly skilled occupations, and then earn higher salaries (Siar, S. V. 2011). This is a vital topic for future research.

2-Remittances development impact: A review of the literature

A number of cross-sectional studies suggest an association between remittances and domestic savings. However, the literature in the seventies and eighties did not find a positive relationship between remittances of workers abroad and domestic savings, as they found that remittances go either to basic consumption, or to debt repayment (Rempel, et al., 1978; Lipton, 1980; Massey, et al, 1990). Existing research recognizes the positive relationship between remittances domestic savings. Baldé (2011) examines the relationship between remittances and domestic savings in 37 developing countries, in Sub-Saharan Africa, during the period from 1980-2004. (Balde) found that remittances have indirect positive effects on economic growth in sub-Saharan Africa. (Gani, 2016) also examined this relationship on developing countries from Asia, during the period from 2002-2011.(Gani) found that there is a positive correlation between remittance flows in Asian countries with their own savings. He also concluded that the economic growth rate and the real interest rate on deposits and credit provided by the banking sector are important determinants of private savings.

In contrast to Baldé (2011), other studies have found that remittances have a negative impact on domestic savings. As a study (Hossain, 2014) examined the relationship between remittances and domestic savings in 63 developing countries, during the period from 1971-2010. (Athukorala, et al, 2004) also examined the effect of workers 'remittances on saving in India, during the period from 1954-1998. Sabra (2016) also addressed this relationship for selected countries from the Middle East and North Africa. The study of (Benhamou, et al, 2021) also examined a sample of small emerging countries, and found that remittances of workers increase interest in education at the expense of domestic savings. The study (Das, et al, 2010) examined this relationship of 36 developing countries during the period 1980-2006 and concluded that an increase in remittances by 1% increases the rate of consumption by 0.8%.

It is worth noting that the difference in methodology, samples, and the difference in the variables in each study led to a difference in the results for each study, as (Hossain, 2014) found that foreign aid and remittance flows have a significant negative impact on domestic savings. While (Athukorala, et al, 2004) concluded that remittances had a negative impact on savings in India during the period. On the other

Egyptian Review of Development and Planning Dr. Tamer Al nagar – Dr. Karam Gadallah hand (Sabra, 2016) found a positive effect of remittances on both growth and investment, and a negative effect on domestic savings. It was also found (Benhamou, et al, 2021) that workers' remittances increase interest in education at the expense of domestic saving, and that there is a significant negative correlation between domestic savings and remittances in a large group of countries. Using the overlapping generations (OLG) model .(Das, et al, 2010) concluded that remittances are used either to increase consumption or to increase investment in developing countries, as an increase in remittances by 1% increases the consumption rate by 0.8%. While (Akter, 2018) found a positive relationship for remittances working on local savings in Bangladesh at a significant level of 1%, and a similar positive relationship for the Philippines, but at a significant level of 5%, and a negative relationship between the two variables for the state of India.

However, such studies remain narrow in focus dealing only either on many developing countries from different continents, and on one or more countries from the same continent, but it is noticeable that previous studies did not deal with the relationship between two countries from two different continents that are very similar in the same circumstances through conducting a comparative study between them through an empirical method, which is what the current study contributes to. The current study deals with the period from 1981 to 2019, which is a recent period compared to previous studies for the same two countries. In contrast to earlier findings, our study differs because it focuses on two countries with relatively close economic and social variables, but they differ in geographical location.

The aim of this study is to explore the results of evaluating the model that aims to examine the effect of remittances of workers abroad (as an independent variable) on domestic savings (as a dependent variable), in both Egypt and the Philippines. Annual data covering a period of 39 years (from 1981 to 2019) was used, according to the latest available data, which is an appropriate period to examine the effect of remittances on domestic savings. The study relied on data and statistics obtained from the World Development Indicators (WDI), available on the World Bank website. The Philippines was chosen because it is very similar to Egypt, as the two countries are developing countries, and they belong to the group of lower-middle income countries. The Philippines ranks fourth in receiving workers' remittances in 2019, while Egypt ranks sixth, and the Philippines ranks twelfth in terms of population in 2019, while Egypt ranks thirteenth in the same year (World Bank, 2021). The following table shows the similarities between Egypt and the Philippines in a number of variables.

Table (4): The main macro indicators between Egypt and the Philippines

Year	Population, Growth				Growth in final household consumption expenditure per capita (annual %)		Growth in GNI per capita (% per annum)		Gross savings (% of GDP)	
	Philippines		Egypt		Philippines	Egypt	Philippines	Egypt	Philippines	Egypt
	Population	Population, growth	Population	Population, growth						
1980	48.67		44.40		2.66	- 0.66	0.59	4.16	30.49	22.12
1981	50.02	2.77	45.54	2.61	3.50	2.48	- 2.34	8.77	28.09	22.06
1982	51.41	2.76	46.73	2.65	0.93	8.37	- 1.48	2.81	30.62	28.03
1983	52.83	2.74	47.97	2.69	1.24	6.41	- 14.65	7.06	23.77	27.65
1984	54.28	2.73	49.26	2.73	- 0.55	4.93	- 8.81	0.20	18.21	22.86
1985	55.76	2.71	50.60	2.75	3.11	4.07	1.29	0.94	18.49	20.26
1986	57.26	2.67	51.99	2.71	3.46	4.00	3.89	10.70	21.81	25.99
1987	58.79	2.63	53.40	2.60	5.60	4.85	5.22	3.48	22.63	27.37
1988	60.34	2.58	54.79	2.46	4.55	4.55	3.50	1.55	22.17	26.36
1989	61.90	2.52	56.13	2.30	5.22	4.47	5.19	1.78	22.44	31.68
1990	63.45	2.47	57.42	2.16	2.50	4.01	- 0.28	2.15	20.99	34.93
1991	65.02	2.42	58.67	2.07	3.24	3.29	1.08	2.13	20.71	35.48
1992	66.59	2.38	59.88	2.03	2.53	3.00	1.31	0.77	20.35	31.63
1993	68.18	2.35	61.10	2.03	2.91	4.22	2.52	1.84	22.42	23.93
1994	69.78	2.32	62.33	2.03	2.99	3.33	2.79	2.70	21.94	22.24
1995	71.40	2.28	63.60	2.03	3.82	3.99	6.95	3.00	22.41	18.75
1996	73.03	2.25	64.89	2.02	4.33	4.21	3.00	3.39	23.91	17.74
1997	74.67	2.21	66.20	1.99	5.29	3.96	- 0.34	3.83	29.62	18.96
1998	76.33	2.18	67.52	1.95	4.03	4.50	0.48	3.54	35.97	18.90
1999	77.99	2.16	68.83	1.92	5.20	5.00	5.39	4.24	33.39	17.58
2000	79.67	2.12	70.15	1.90	3.94	3.98	0.93	2.26	34.62	18.61
2001	81.37	2.07	71.49	1.88	5.10	2.00	1.56	- 0.53	35.27	18.41

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Year	Population, Growth				Growth in final household consumption expenditure per capita (annual %)		Growth in GNI per capita (% per annum)		Gross savings (% of GDP)	
	Philippines		Egypt		Philippines	Egypt	Philippines	Egypt	Philippines	Egypt
	Population	Population, growth	Population	Population, growth						
2002	83.05	2.00	72.83	1.85	5.38	2.33	2.88	1.04	35.61	18.65
2003	84.71	1.91	74.17	1.82	5.90	2.10	4.36	2.07	36.23	21.11
2004	86.33	1.81	75.52	1.79	4.44	4.83	3.29	2.58	37.77	21.84
2005	87.89	1.73	76.87	1.77	4.18	6.44	2.87	5.81	37.23	22.98
2006	89.41	1.67	78.23	1.79	4.81	6.94	4.52	5.65	36.75	23.56
2007	90.90	1.66	79.64	1.88	3.85	5.73	2.93	5.18	36.02	23.62
2008	92.41	1.68	81.13	2.00	2.53	5.67	1.95	1.97	37.95	16.84
2009	93.97	1.71	82.76	2.14	3.59	4.12	5.29	0.97	39.75	17.95
2010	95.57	1.72	84.53	2.24	5.55	5.53	1.61	- 1.03	36.88	16.87
2011	97.21	1.71	86.42	2.29	6.80	6.48	5.25	0.24	35.13	12.88
2012	98.87	1.66	88.40	2.28	5.82	3.34	5.63	- 0.39	36.35	13.68
2013	100.51	1.59	90.42	2.23	5.78	4.40	4.45	0.83	37.35	11.88
2014	102.11	1.52	92.44	2.17	6.44	3.08	4.46	2.80	35.63	9.59
2015	103.66	1.46	94.45	2.11	7.15	4.65	5.22	2.54	35.05	9.71
2016	105.17	1.41	96.44	2.05	5.96	4.19	5.31	1.45	35.49	10.36
2017	106.65	1.37	98.42	2.00	5.77	0.98	4.44	2.57	33.81	13.89
2018	108.12	2.78	100.39	2.57	5.87	0.95	3.95	2.32	31.76	15.18
Mean		2.12		2.17	2.24	4.12	2.21	2.5	30.1	20.8

The previous table shows that the average gross saving of GDP has reached 21% in Egypt, while the average in the Philippines has reached 30%. For the average growth in per capita national income, it reached 2.7% in Egypt, while this average in Philippines 2.2%. Regarding growth in per capita final expenditures for household consumption, the percentage in Egypt reached 4.12%, while this percentage in the Philippines reached 4.24. In terms of population, the average population growth in Egypt during the period reached 2.17% and reached 2.17% the population was approximately 100 million in 2018, while the average population growth rate in the

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 Philippines was 2.12%. The following table shows the similarities between Egypt and the Philippines in some other economic and social indicators, according to the latest available data. (2021).

Table (5): Economic and Social indicators in Egypt and the Philippines

	Social indices			Economic indices		
	Human Capital Index, upper limit ((scale 0-1	Life expectancy at birth, total ((years	Numerical poverty index compared to the poverty line of \$1.90 per day per capita (2011 PPP) (% of (population	GDP growth (% per (annum	GDP per capita (current (\$US	GDP (current value in (USD
Egypt	0.5	72	2.5	3.3	3876	404
Philippines	0.5	71	3	5.7	3548	394

Source World Bank, 2021

1- Empirical Framework

The research applied the Regression Analysis method. We use the Regression Analysis to understand the economic relationships between a dependent variable and one or more independent variables. Multiple regression analysis (MRA) is a statistical approach for correlating the behaviour or variation of several variables (independent variables) to determine their individual and combined impact on a single factor (referred to as the dependent variable) (R. A. Bell, O. C. Anderson, M. V. Sanders, 2008).

A time-series data is said to be stationary if its value tends to revert to its long-run average value and the properties of the data series are unaffected by changes in time alone. Non-stationary time series, on the other hand, do not revert to their long-run average value, so their mean, variance, and co-variance change over time (Marno Verbeek, 2017). The time series is considered to have a unit root if it is non-stationary. As a result, in econometrics, the stationarity of a time series is tested using the unit root test. The ARDL model is considered as the best econometric method compared to others in a case when the variables are stationary at I (0) or integrated of order I (1). The ARDL is a better model than others to capture the short-run and long-run impact of independent variables on rice production (Duasa, 2007). The following steps are followed to achieve this:

- VAR (vector autoregressive) model

The Vector Autoregressive (VAR) model allows for feedback or reverse causality between dependent and independent regressors based on their prior values. VAR (vector autoregressive) model

The Vector Autoregressive (VAR) model allows for feedback or reverse causality between dependent and independent regressors based on their prior values.

- Determining stationarity of time series

The most common method for testing stationarity is the unit root tests called the Augmented Dickey–Fuller (ADF) test and (Philips-Perron) (PP).

- The cointegration test will be used to test the correlation between two or more non-stationary time series in the long run. In order to accomplish this, (ARDL) will be conducted in addition to a Bounds test for cointegration. (ARDL) model is an ordinary least square (OLS) based model that may be used to represent both non-stationary and mixed order of integration time series; (ARDL) takes sufficient numbers of lags to reflect the process of data generation.

- The relationships between the model variables in the short term are determined by Error Correction Model (ECM) (Engle and Granger, 1987).

A model can be estimated as:

$$(\text{Savings})_t = \beta_0 + (\text{Savings})_{t-1} + \beta_1(\text{GNI})_{t-1} + \beta_3(\text{Rem})_{t-1} + \mu_t$$

Where,

Savings	dependent variable	The rate of change in domestic saving.
Rem	independent variable	The growth of remittances of workers abroad.
GNI	independent variable	Growth in per capita national income.
Mt		a white-noise disturbance term

Table (6): Data

Year	The Philippines			Egypt		
	x1 The growth of remittances of workers abroad. (%)	x2 Growth in GNI per capita (%) (per annum	Y The rate of change in domestic saving. %	x1 The growth of remittances of workers abroad. (%)	x2 Growth in GNI per capita (%) (per annum	Y The rate of change in domestic saving. (%)
1981	27.70	0.5	10.10	-22.00	4.16	22.44
1982	30.00	-0.47	-7.25	9.09	8.77	24.49
1983	7.69	-0.65	-1.36	54.17	2.81	42.30
1984	- 35.89	-11.87	-26.29	5.41	7.06	8.18
1985	12.26	-9.46	-24.61	-17.95	0.2	-4.9
1986	6.82	0.53	-0.83	-21.88	0.94	-6.38
1987	18.47	2.29	31.46	44.00	10.7	25.84
1988	23.53	4.5	19.49	5.56	3.48	-9.03
1989	7.94	3.25	5.97	-13.16	1.55	9.51
1990	7.35	2.31	3.25	30.30	1.78	29.96
1991	26.71	-1.83	-0.85	-4.65	2.15	-4.11
1992	32.43	-0.55	13.81	48.78	2.13	13.71
1993	20.41	0.26	-2.26	-6.56	0.77	-7.54
1994	16.95	3.17	35.16	-35.09	1.84	-9.54
1995	55.36	2.54	13.66	-13.51	2.7	7.73
1996	- 8.96	4.22	14.23	-3.13	3	-5.23
1997	39.34	4.53	9.33	19.35	3.39	9.70
1998	- 24.56	5.27	21.02	-8.11	3.83	15.60
1999	30.80	0.54	40.61	-5.88	3.54	6.59
2000	- 11.18	-1.37	-5.96	-10.94	4.24	2.39
2001	47.15	0.89	-2.22	2.11	2.26	2.51
2002	11.06	1.47	8.82	-0.69	-0.53	-12.9
2003	5.13	2.83	4.27	3.81	1.04	-4.47
2004	12.01	4.27	11.03	10.00	2.07	-4.47
2005	19.70	3.39	17.87	51.52	2.58	30.73
2006	12.82	2.94	17.13	6.00	5.81	26.11
2007	6.13	4.48	20.64	45.28	5.65	24.51
2008	14.66	2.91	13.83	12.99	5.18	25.15
2009	5.89	1.92	2.41	-17.24	1.97	-17.19
2010	8.02	5.31	23.94	73.61	0.97	23.42
2011	6.91	1.47	4.27	14.40	0.001	1.27
2012	6.77	5.34	6.54	34.27	0.24	-9.7
2013	6.75	5.72	12.16	-7.29	0.03	9.79
2014	10.24	4.43	7.64	10.11	0.83	-7.98
2015	3.49	4.55	-1.71	-6.63	2.8	-13
2016	3.90	5.17	2.28	1.64	2.55	2.15
2017	5.36	5.28	4.37	32.80	1.45	-24.38
2018	3.05	4.41	0.59	3.24	2.57	42.15
2019	4.02	3.86	1.42	5.10	2.32	27.58

Egypt:

Cointegration and estimation of parameters in both the long-term and the short-term require determining the optimal lag lengths for the variables. In VAR modelling, selecting an appropriate lag length is critical. Using the available lag length selection criteria, the optimal number of lags can be determined. The Akaika Information Criterion (AIC), the Schwartz Bayesian Criterion (SBC), and the Hannan Quinn criterion are the most commonly used criteria (HQC). The results were as follows:

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-146.8051	NA	272.6373	8.446004	8.490443*	8.461344*
1	-146.7994	0.010734	288.6079	8.502822	8.591699	8.533502
2	-146.7893	0.018427	305.4950	8.559389	8.692704	8.605409
3	-146.7892	0.000235	323.6458	8.616524	8.794278	8.677885
4	-142.6978	7.013788*	271.5007*	8.439874*	8.662066	8.516575

• **Dependent variable (domestic saving)**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-160.3001	NA*	589.5088*	9.217151*	9.261590*	9.232491*
1	-160.1684	0.248473	619.5616	9.266765	9.355642	9.297445
2	-160.1680	0.000615	656.1785	9.323888	9.457204	9.369909
3	-160.1526	0.027275	694.5590	9.380151	9.557905	9.441512
4	-160.1370	0.026828	735.4558	9.436400	9.658592	9.513101

• **Independent variable test (remittances)**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-75.32185	NA*	4.587739*	4.361249*	4.405687*	4.376589*
1	-74.34810	1.836225	4.595125	4.362748	4.451625	4.393429
2	-73.73599	1.119283	4.699510	4.384914	4.518229	4.430934
3	-73.69177	0.078336	4.966203	4.439530	4.617284	4.500890
4	-72.38284	2.243871	4.884014	4.421877	4.644069	4.498578

Indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error, AIC: Akaika information criterion

SC: Schwarz information criterion, HQ: Hannan-Quinn information criterion

Note: Data from table (1)

As shown in the results, the optimal lag length of the dependent variable (domestic saving) is four (Lag=4) as indicated by FPE, AIC and HQ criterion, while the optimal lag length of the independent variables (remittances and national income) is zero (Lag=0).

Unit root test

- Philips-Perron test

(Philips-Perron) test is a unit root test that is used to test the null hypothesis that a time series is of order (1). It is based on the Dickey–Fuller null hypothesis test (Phillips, P. C. B.; Perron, P. (1988). The following table shows the results of stationarity tests, using the Dickey-Fuller and Philips-Perron tests

Table (7): Stationarity tests, using the Dickey-Fuller and Philips-Perron tests

Variable	First difference				Level				Decision
	ADF		PP		ADF		PP		
	trend and intercept	Intercept	trend and intercept	intercept	trend and intercept	intercept	trend and intercept	intercept	
Savings	-3.70 (0.03)	-3.74 (0.007)	-12.34 (0.000)	-12.09 (0.000)	-3.07 (0.12)	-3.21 (0.02)	-5.33 (0.000)	-5.42 (0.000)	I (0)
Rem	-10.24 (0.000)	-10.38 (0.000)	-10.24 (0.000)	-10.38 (0.000)	-6.61 (0.000)	-6.64 (0.000)	-6.61 (0.000)	-6.64 (0.000)	I (0)
GNI	-9.34 (0.000)	-9.41 (0.000)	-9.34 (0.000)	-9.41 (0.000)	-5.17 (0.0008)	-4.27 (0.0004)	-5.17 (0.000)	-4.77 (0.000)	I (0)

Critical value: trend and intercept:

Critical value @ 1% = -4.22

Critical value @ 5% = -3.53

Critical value: intercept:

Critical value @ 1% = -3.61

Critical value @ 5% = -2.94

Note: Data from table (1)

As shown in Table (7), the unit root test results show that all the three variables are stationary at the first difference, whether in intercept only or both trend and intercept, this is for the Philips-Perron test. The ADF tests for stationarity show that all the variables are stationary at the level data at %1 whether in intercept only or both trend and intercept, except the domestic saving variable, which is stationary at 5% in intercept, this means that the three-time series are integrated of order (0).

Based on the results of the unit root test, we can conduct the cointegration test of the variables through the Bounds test for Cointegration, using the ARDL method.

The null and the alternative hypotheses are as follows:

$$H_0: \alpha_1 = \alpha_2 = \alpha_3 = 0$$

$$H_1: \alpha_1 \neq \alpha_2 \neq \alpha_3 \neq 0$$

Table (8): Bounds test for Cointegration

Significance	Critical values	
	I (0)	I (1)
10%	2.63	3.35
5%	3.1	3.87
2.5%	3.55	4.38
1%	4.13	5
F-Statistic	9.052473	

As shown in Table (8), F test = (9.052473) is greater than Critical value @ 1% = (5), then we can reject the null hypothesis (H0) in favour of the alternative hypothesis (H1). That is, there is a long-term relationship between the dependent variable and the independent variables at 1%.

- Cointegration test (long-term)

A cointegration test will be used to test the correlation between the variables in the long-run. The test results were as follows.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.273459	0.070948	3.854355	0.0009
X2	4.117514	0.772347	5.331174	0.0000
C	-7.308141	2.371216	-3.082023	0.0054
EC = Y - (0.2735*X1 + 4.1175*X2 -7.3081)				

The previous model shows the existence of a direct relationship between workers’ remittances and domestic savings in the long term, which is consistent with the economic theory, and therefore the remittances of Egyptian workers abroad had a positive impact on domestic savings. The value of the estimated parameter indicates that the change in remittances of Egyptian workers abroad is by 1 percent, which results in an increase in the growth of domestic savings by approximately 0.27%. It is also noted that the parameter of remittances of Egyptian workers abroad is statistically significant, as the probability value corresponding to the parameter Probe = (0.0009).

There is a direct relationship between per capita national income and domestic savings in the long term, and this relationship was significant at 1% in the long term, with a coefficient of value (4.11), which is consistent with economic theory, and this means that the growth of per capita national income by 1%, this would result in an increase in domestic savings by approximately 4.11%.

- Error Correction Model (ECM)

The Error Correction Model (ECM) determines the short-term relationships between the variables. The test results were as follows

ECM Regression Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(Y(-1))	0.965792	0.260354	3.709527	0.0012
D(Y(-2))	0.659872	0.184231	3.581772	0.0017
D(Y(-3))	0.653700	0.133072	4.912366	0.0001
D(X1)	0.219299	0.064024	3.425241	0.0024
D(X1(-1))	-0.229763	0.090156	-2.548497	0.0183
D(X2)	4.482863	0.798255	5.615827	0.0000
D(X2(-1))	-5.482310	1.301419	-4.212562	0.0004
D(X2(-2))	-3.880019	1.115922	-3.476962	0.0021
D(X2(-3))	-1.580970	0.823319	-1.920239	0.0679
CointEq(-1)*	-2.231318	0.347848	-6.414640	0.0000
R-squared	0.861065	Mean dependent var	0.554272	
Adjusted R-squared	0.811048	S.D. dependent var	22.91472	
S.E. of regression	9.960698	Akaike info criterion	7.670128	
Sum squared resid	2480.388	Schwarz criterion	8.114513	
Log likelihood	-124.2272	Hannan-Quinn criter.	7.823529	
Durbin-Watson stat	2.153465			

* p-value incompatible with t-Bounds distribution.

(ECM) showed that most of the variables are significant at 1%, which means that the independent variables are affected by the dependent variable in the short term. (ECM) also shows that the equilibrium coefficient of ECM (α s) indicates that the speed of the return of the variables to the equilibrium, where the absolute value of the error correction limit coefficient indicates the speed of restoring the equilibrium. The error correction value (CointEq (-1)), which means the error correction speed is negative, which increases the accuracy and validity of the equilibrium relationship in the long run. It is approximately 223%, and it is noted that it has strong significance at 1% (0.0000), which means that 223% of the short-term errors can be corrected per unit time (annually) in order to return to the long-term equilibrium.

(R-squared = (0.86), that is, 86% of the changes in the dependent variable are due to the change in the independent variables, and 14% are due to other factors affecting domestic saving, for example, the interest rate and private consumption. (Adjusted R-squared = 0.81), which indicates that there is a strong correlation between the independent variables and the dependent variable.

- **(Breusch–Godfrey) Test**

The Breusch–Godfrey test is used to determine the validity of certain of the modelling assumptions that come with applying regression-like models to observed data. This test is performed by LM Test, as follows

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.408106	Prob. F(1,21)	0.5298
Obs*R-squared	0.667211	Prob. Chi-Square(1)	0.4140

The results show that the value of (F-statistic) and (Chi-Square) are not significant, which means that the null hypothesis- that states that the model does not get autocorrelation problem- is not rejected, and therefore there is no serial autocorrelation between errors.

- **Heteroskedasticity test**

When the standard deviations of a predicted variable are non-constant over different values of an independent variable or as compared to prior time periods, a Heteroskedasticity test is performed. The results indicate that the (F-statistic) and (Chi-Square) values are not significant, implying that the null hypothesis that the standard deviations are not consistent -is not rejected.

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.624188	Prob. F(12,22)	0.1563
Obs*R-squared	16.44142	Prob. Chi-Square(12)	0.1718
Scaled explained SS	7.815745	Prob. Chi-Square(12)	0.7994

Based on the results of the model, ARDL models are appropriate; it represents a long-term relationship, there is no concern with serial autocorrelation problem or Heteroskedasticity. As a result, we can argue that this estimate is robust and reliable when compared to estimates provided by other methods.

The Philippines:

Using the same testing procedures as in Egypt, the results for the Philippines study were as follows: (Lag length selection)

• **Dependent variable (domestic saving)**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-137.5075	NA*	160.2692	7.914716	7.959155*	7.930057
1	-136.0389	2.769404	156.0514*	7.887938*	7.976815	7.918618*
2	-135.7774	0.478125	162.8263	7.930139	8.063455	7.976160
3	-135.7113	0.117169	171.8511	7.983503	8.161257	8.044863
4	-135.6930	0.031391	181.9423	8.039599	8.261792	8.116300

• **Independent variable (remittances)**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-144.9173	NA	244.7583	8.338133	8.382571	8.353473
1	-142.2847	5.002107	222.7264	8.243697	8.332574	8.274377
2	-138.8710	6.205540*	194.3112*	8.106916*	8.240232*	8.152937*
3	-138.6672	0.361016	203.4742	8.152414	8.330168	8.213774
4	-138.6081	0.101336	214.9207	8.206179	8.428371	8.282879

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-86.44341	NA	8.661644	4.996766	5.041205	5.012106
1	-73.07208	25.21451*	4.271993	4.289833	4.378710	4.320513
2	-71.00996	3.770721	4.021622*	4.229141*	4.362456*	4.275161*
3	-71.00757	0.004243	4.260015	4.286147	4.463901	4.347507
4	-70.84826	0.273104	4.473973	4.334186	4.556379	4.410887

According to the test results, the optimal lag length for the dependent variable (domestic saving) is (1) (Lag=1) as indicated by FPE, AIC and HQ criterion, while the optimal lag length for the independent variables (remittances and national income) is (2) (Lag=2).

- **Unit root test**

Table No (9): Stationarity tests, using the Dickey-Fuller and Philips-Perron tests

Variable	First difference				Level				Decision
	ADF		PP		ADF		PP		
	trend and intercept	intercept	trend and intercept	intercept	trend and intercept	intercept	trend and intercept	intercept	
Savings	-5.75 (0.000)	-5.80 (0.000)	-8.34 (0.000)	-8.43 (0.000)	-3.53 (0.04)	-3.60 (0.01)	-4.36 (0.006)	-4.35 (0.001)	I (0)
Rem	-7.11 (0.0000)	-7.09 (0.0000)	-17.02 (0.000)	-17.30 (0.0001)	-3.76 (0.03)	-3.66 (0.009)	-8.02 (0.000)	-7.89 (0.000)	I (0)
GNI	-6.01 (0.000)	-5.94 (0.000)	-5.99 (0.0001)	-6.09 (0.000)	-4.22 (0.01)	-2.60 (0.10)	-3.76 (0.000)	-2.87 (0.05)	I (0)

Critical value: trend and intercept:

Critical value @ 1% = -4.22

Critical value @ 5% = -3.53

Unit root and stationarity testing reveal that the three variables are stationary in their original form at a level of significance of 5%, whether in trend or in both trend and intercept, indicating that the three-time series are integrated of the order (0).

Table (10): Bounds test for Cointegration

Significance	Critical value	
	I (0)	I (1)
10%	2.63	3.35
5%	3.1	3.87
2.5%	3.55	4.38
1%	4.13	5
F-Statistic	7.048981	

As shown in Table (10), F test = (7.048981) is greater than the critical value @ 1% = (5), then we can reject the null hypothesis (H0) in favour of the alternative hypothesis (H1). That is, there is a long-term relationship between the dependent variable and the independent variables at 1%.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.170282	0.111408	1.528451	0.1372
X2	1.203328	0.681690	1.765213	0.0881
C	3.410973	2.585133	1.319457	0.1973
$EC = Y - (0.1703 \cdot X1 + 1.2033 \cdot X2 + 3.4110)$				

Cointegration test (long-term)

According to the model's findings, the effect of remittances from Filipino workers abroad on domestic savings growth is insignificant, which may be explained by the fact that these remittances are used within the receiving families (increased consumer spending). Several studies have found that remittances of Filipino workers abroad increase consumption of food commodities, in addition to spending on education, health care, and housing (Tchantchane, et al., 2013; Tabuga, 2007; Tullao, et al., 2007). Another study found that remittances from workers in the Philippines increased the tendency to consume food more in families receiving remittances and that these remittances had a positive effect on attracting families out of poverty, in addition to reducing child labour (Ang et al., 2009).

It is worth noting that the average interest rate on deposits in the Philippines in the last 10 years was 2.5%, compared to 8.5% in Egypt (World Bank, 2020), which had a significant impact on workers' remittances on domestic savings in Egypt compared to the Philippines. There is a direct relationship between per capita national income and domestic savings in the long term, and this relationship was significant at the level of 10% in the long term, and with a coefficient of value (0.68), which is

consistent with economic theory, and this means that the growth of per capita national income by 1%, this would result in an increase in domestic savings by approximately 0.68%.

ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(X2)	1.675542	0.554488	3.021784	0.0052
D(X2(-1))	1.440995	0.521377	2.763822	0.0098
D(X2(-2))	0.967716	0.582953	1.660024	0.1077
CointEq(-1)*	-0.946130	0.169622	-5.577880	0.0000
R-squared	0.658625	Mean dependent var		0.077074
Adjusted R-squared	0.626621	S.D. dependent var		16.12510
S.E. of regression	9.853200	Akaike info criterion		7.517909
Sum squared resid	3106.738	Schwarz criterion		7.693855
Log likelihood	-131.3224	Hannan-Quinn criter.		7.579319
Durbin-Watson stat	1.900824			

Error Correction Model (ECM)

(ECM) shows that the equilibrium coefficient indicates that the speed of the return of the variables to the equilibrium, where the absolute value of the error correction limit coefficient indicates the speed of restoring the equilibrium. The error correction value (CointEq (-1)) is negative, which increases the accuracy and validity of the equilibrium relationship in the long run. It is approximately 94.6%, with strong significance at 1% (0.0000), which means that 94.6% of the short-term errors can be corrected per unit time (annually) in order to return to the long-term equilibrium.

(R-squared = 0.65), that is, 65% of the changes in the dependent variable are due to the change in the independent variables, and 35% are due to other factors affecting domestic saving, for example, optimistic and pessimistic expectations of the national economy and their impact on consumption and then saving. (Adjusted R-squared = 0.62), which indicates that there is a strong correlation between the independent variables and the dependent variable.

4-Discussion

To date, several studies have investigated the relationship between remittances and domestic savings. Several lines of evidence suggest that there is a strong relationship between remittances and domestic savings. The current study is relevant; there is a direct relationship between the remittances of Egyptian workers abroad and the growth rate of domestic savings in the long term, which is consistent with the economic theory, and therefore the remittances of Egyptian workers abroad had a positive impact on domestic savings, and the value of the estimated parameter indicates that the change in remittances of Egyptian workers abroad by 1%, which results in an

increase in the growth of domestic savings by approximately 0.27%. It is also noted that the parameter of remittances of Egyptian workers abroad is statistically significant, as the probability value of the parameter Prob = 0.0009. On the other hand, the effect of remittances of Filipino workers abroad on the growth rate of domestic savings was not significant, which is a result in broad agreement with previous studies. It is interesting to note that in the two cases of this study.

The findings of our study have several important implications for future practice. In addition to strengthening cooperation between partners, sending, and receiving countries, and money transfer agencies, it is necessary to reduce transfer restrictions such as administrative procedures and costs of sending money. Remittances face problems such as limited access to banking services due to difficulties with formal sector savings accounts and the use of informal accounts and informal means of transfer which reduces savings.

A key policy priority should therefore be to plan by the government for the long-term care of remittance flows to enhance financial access to facilitate savings and to create an investment climate through easy access to credit and other tools for promoting economic growth. Thus, any investments that developing countries make to upgrade their financial resources will not only facilitate an easy inflow of remittances, but also bring beneficial effects to a wider population.

These results, therefore, need to be interpreted with caution since the developmental implications depend on the end use of the remittance flow. This use can positively affect household consumption which boosts future consumption and may increase imports, reducing savings under lower income conditions. On the other hand, remittances for productive investment must boost demand, employment, cumulative capital, and growth. Therefore, boosting consumption can lead to temporary growth, which crowds out the sustainable growth caused by investment and capital accumulation.

Finally, the macroeconomic impact of remittances can help policy makers develop policies and design institutions that ensure that these external resources are used optimally in light of the country's objectives.

5-Conclusion

This study sets out to investigate the relationship between remittances of working people abroad and domestic savings in Egypt and the Philippines during the period from 1981 to 2019, using the (ARDL) model, and the study found the following:

The average percentage of remittances to developing countries during the period from 1981 to 2020, was about 61.5% of the total global remittances, however, during the last 10 years, the average ratio of this percentage was approximately 75% of the total global remittances.

Remittances come in third place in foreign exchange sources, after commodity and service exports, in both Egypt and the Philippines. The average remittances compared to other foreign exchange sources amounted to 8.1%, and 12% in Egypt and the Philippines, respectively, with a relative importance of 22 % and 21.4%, respectively, after commodity exports, who's the relative importance reached 32.5% and 48.5% in Egypt and the Philippines, respectively.

The average remittances of workers to the GDP in Egypt in the last two years (2018, 2019), represent 10.2%, which is close to the value-added of the agricultural sector in the GDP of 11.1%. While we find that the average remittances of workers in the Philippines in the last two years (2018, 2019) represented 9.6%, which is higher than the value-added of the agricultural sector in the GDP by 9.2%. Taken together, there is sufficient evidence to support the central hypothesis addressed in the current study stating that the rate of growth of remittances in Egypt has a positive and significant effect on domestic savings in the short and long term. However, there is insufficient evidence to support such a claim for the Philippines

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