

# Impact of Remittances on Financial Development in Vietnam

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## ARTICLE INFO

## ABSTRACT

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This study focuses on the impact of remittances on Vietnam's financial development. The results drawn from its quantitative approach demonstrate that although remittance flows to the country may lead to increase in bank deposits, such increase is not high. On the other hand, reduction in credit demands may be subject to remittance flows, per the financial development based on a few credit growth indicators. In other words, effects of remittance flows, as indicated by VAR model, are not noticeable despite their positive impact, as in examples of increased deposits and remittance payment services on their current growth. Based on these findings, the study suggests several implications that improve the positivity of impact on the financial development.

## 1. General issues regarding financial development

Financial development of a nation acts as one of the stimulants to investment and economic growth, especially in developing countries. It is determined by bank loans to private sector, or market capitalization to GDP, accompanied by income. Developed countries possess better refined financial systems, enabling them to carry out the mediation function more effectively than developing ones. This is realized by the fact that more diversified financial structures have come into effect: capital flows cycling in these economies do not just come from the banking systems but are also derived from bond or stock markets. Developed countries, to put it differently, adopt market-based financial systems, whereas bank-based systems are heavily leaned toward in developing ones.

Basically, financial development can be measured in two perspectives: financial institutions and financial markets.

*Several indicators of financial development from the perspective of financial institutions:*

- Ratio of liquid liabilities to GDP (LLY): This ratio is represented by liquid liabilities as % of GDP; liquid liabilities provide a generalized measure of money supply (M3), broad money, comprising cash and deposits in banking accounts and non-institutional money market accounts. Nevertheless, if M3 data are not available, we can employ M2, which is called narrow money, irrespective of foreign currency term deposit accounts and shares in investment funds and commercial papers (short-term debt instruments).

- Ratio of commercial bank assets to total central bank and commercial bank assets: This indicator is used for estimating the relative importance of commercial banks to the central bank (a country's monetary agency).

- Ratio of non-financial private sector credit to total domestic credit: a measure of bank's financial resources provided for the private sector, representing its importance and/or contribution to the sector.

- Ratio of non-financial private sector loans to GDP: a measure of private sector participation.

- Ratio of domestic credit or bank deposits to GDP: This indicator is used to measure the coverage as well as the role of the banking system in an economy.

- Total number of bank branches or growth in the number: also considered an indicator for evaluating the development of financial institutions in a country.

- Ratio of life insurance premiums and non-life insurance premiums to GDP: This measures the level of development of non-banking financial institutions in an economy.

*Several indicators of financial development from the perspective of financial markets:*

These consist of:

- Market capitalization ratio (as % of GDP);
- Stock market total value traded to GDP (as % of GDP);
- Total domestic debt to GDP (including bonds, treasury bills, and other kinds of short- and long-term paper); and
- Total external debt to GDP (including bonds, treasury bills, and other kinds of short- and long-term paper).

## **2. Reviews of earlier studies on the impact of remittances on financial development**

Empirical evidence on the nexus between remittances and financial development lacks consistency: both positive and negative effects of remittances on financial development are revealed. With regard to the favorable impact, Orozco and Fedewa (2005) report a positive relationship between remittances and financial development in developing countries, attributable to the theory that money cycled through financial institutions may spur beneficiaries to subsequent access to and/or use of other financial products/services. Also, by way of remittance transfer services banks are offered a high chance to approach and learn more about beneficiaries having made no or limited use of banking products/services. For instance, if banks are held in readiness for credit provision for their remittance beneficiaries, remittances will be a contributory factor to credit market growth as these are believed to be stable and come in comparatively large sums. In another circumstance, even if banks are not willing to **extend** their provision, the amount of credit provision for the economy will still increase since remittance flows are expected to continue growing. This is evidenced by the fact that

remittance flows to banks would raise their supply of loanable funds, which accounts for a positive impact of remittances on the credit market development.

Additionally, one distinction of remittances is that these are sent periodically and in relatively high value. Thus, remittance beneficiaries would need a certain financial service that effectively guarantees the safety of their sums of money, although remittances are not transferred via banking systems. In case they are, it is yet more likely that remittance beneficiaries attempt to get acquainted with and flock to use products/services offered by other banking institutions.

The findings in Orozco & Fedewa (2005) are further reinforced by those suggested in the subsequent studies of Munduca (2009), Gupta et al. (2009), Sami (2013), and Ojapinwa and Bashorun (2014), besides Giuliano and Ruiz-Arranz (2009), who assert that remittances can promote financial sector development, particularly in financially less developed economies, and Aggarwal et al. (2011), who **found** that increases in remittances may induce those in the aggregate volume of deposits as well as credit intermediated by financial institutions, thereby fostering financial sector development.

In addition to their positive effects, remittances produce negative ones on financial development in certain countries. Conventionally, they mitigate financial constraints suffered by beneficiaries (budget line will shift to the right). Therefore, when the pressure becomes less intense, credit demand of remittance beneficiaries will fall, exerting partially negative impact on the development of credit market. Furthermore, increased remittances do not necessarily mean an increase in the credit provided for the private sector if they are used for governmental activities. Similar effects occur when banks are not prepared to provide credit for recipients or those who like to take hold of assets with high liquidity. Regarding deposits, these might not increase in amount if remittances are to serve consumption purposes or beneficiaries have no faith in their financial institution or decide on alternative ways to save money.

Accordingly, the existing theory as well as empirical evidence has demonstrated inconsistent effects of remittances on financial development of a certain country. On the one hand, they are crucial in attracting potential customers to banking services, but on the other hand, they account for reduction in credit demand, especially as for remittance beneficiaries. For this reason the following section, by quantitative approach, will be **devoted** to the evaluation of remittance impact on Vietnam's financial development.

### 3. Methodology and research data

VAR model, as employed by Aggarwal et al. (2011) and Sami (2013) is applied in the research. The model is constructed by multiple variables, all of which are endogenous and serve similar functions; hence, VAR acts as a **principal** tool for econometrics and is commonly used to measure macro economic variables. In addition, another important implication of VAR is its analysis of shock transmission mechanisms based on impulse response functions and variance decomposition.

*The basic, reduced-form VAR model has the following form:*

$$y_t = A_1 y_{t-1} + \dots + A_p y_{t-p} + B_0 x_t + \dots + B_q x_{t-q} + C D_t + u_t \quad (2)$$

where  $y_t = (y_{1t}, \dots, y_{kt})$  is a vector of K observable endogenous variables;  $x_t = (x_{1t}, \dots, x_{Mt})$  is a vector of M observable exogenous or unmodelled variables;  $D_t$  contains all deterministic variable which may consist of a constant, a linear trend, seasonal dummy variables as well as user specified other dummy variables; and  $u_t$  is a K-dimensional unobservable zero mean white noise process with positive definite covariance matrix  $E(u_t u_t') = \Sigma_u$ . The  $A_i$ ,  $B_j$  and  $C$  are parameter matrices of suitable dimension.

The variables included in the reported research are remittances (REM), GDP growth (GDP), credit growth (GCREDIT), deposit growth (GDEP), and loan interests (LER), among which GCREDIT and GDEP are proxies for financial development in Vietnam. Relevant sources of the data series are specified as below:

- Data for remittances (REM): collected on the basis of the IMF's Balance of Payments Statistics;
- Data for credit growth (GCREDIT) and deposit growth (GDEP): collected on the basis of the IMF's International Financial Statistics; ratio of growth in year  $t$  to that in year  $t-1$  is calculated;
- Loan interests (LER): collected on the basis of the IMF's International Financial Statistics; and
- GDP growth (GDP): collected on the basis of the GSO's statistics.

The data series collected on a **quarterly** basis between 1996 and 2010 are seasonally adjusted, using X-12-ARIMA (a software package for seasonal adjustment), while logarithm is taken. Stationarity is well satisfied if we calculate first derivative of all the

variables. For that reason, VAR is applicable in determining the correlation in which the calculation of the first derivative is done.

**Table 1**

Statistical description of the variables applied in the model

	GDP	GDEP	GREMVN	LER	GCREDIT
Mean	7.116555	0.085954	0.204765	12.17215	0.072588
Median	7.153263	0.077514	0.070501	11.1775	0.067854
Maximum	9.771181	0.263826	6.422311	21	0.38955
Minimum	3.123255	-0.1334	-0.60515	8.51667	-0.00129
Std. Dev.	1.458092	0.065635	0.912258	3.096513	0.056714
Skewness	-0.48569	-0.17398	5.559387	1.356689	3.04826
Kurtosis	2.991076	4.6906	38.01641	4.318555	17.75611
Sum	426.9933	5.071283	12.08113	730.3288	4.282719
Sum Sq. Dev.	125.436	0.249861	48.26841	565.7152	0.186556
Observations	60	59	59	60	59

**Table 2**

Optimal lag selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-76.94120	NA	1.43e-05	3.034859	3.219025	3.105885
1	-11.47768	116.3796	3.21e-06	1.536210	2.641202*	1.962362*
2	21.27525	52.16208	2.47e-06	1.249065	3.274882	2.030343
3	43.78875	31.68567	2.88e-06	1.341157	4.287800	2.477562
4	84.02693	49.18000*	1.86e-06*	0.776780*	4.644249	2.268311
5	100.3264	16.90317	3.19e-06	1.099022	5.887316	2.945679

Granger causality test, however, is employed, prior to the application of VAR, to check the correlation between the variables in the model. Results of the test indicate that remittances do cause changes in bank deposits but exert no effects on credit growth among Vietnam's commercial banks. Additionally, it establishes that

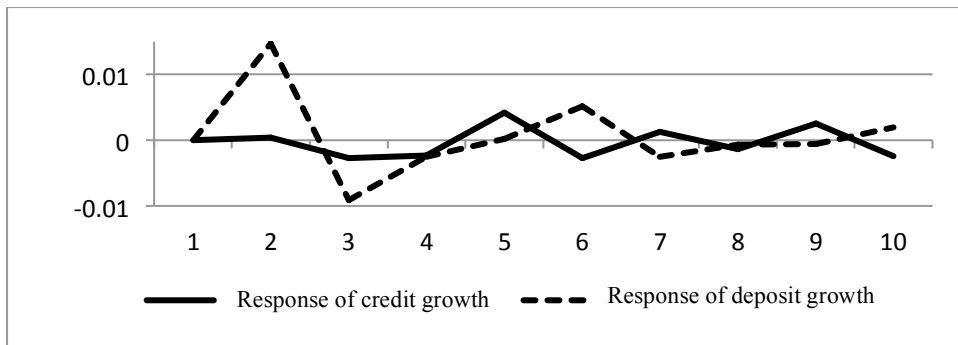
remittances and Vietnam's economic growth are statistically correlated: remittances affect economic growth, which incidentally is crucial in attracting remittances (especially when these are to serve investment purposes).

Interestingly, various tests for stability and autocorrelation among others such as Inverse Roots of AR Characteristic Polynomial, Portmanteau tests for autocorrelations, and Residual heteroskedasticity tests show that five of the variables included in the VAR model are statistically significant, stable, and appropriate for the estimate of remittance impact on Vietnam's financial development. There are 60 observations for the data series, as reported by the statistical description in Table 1. One of the core issues concerning VAR is to identify the optimal lag, which, as demonstrated by the attained results from LR and AIC tests, is confirmed to be of four quarters.

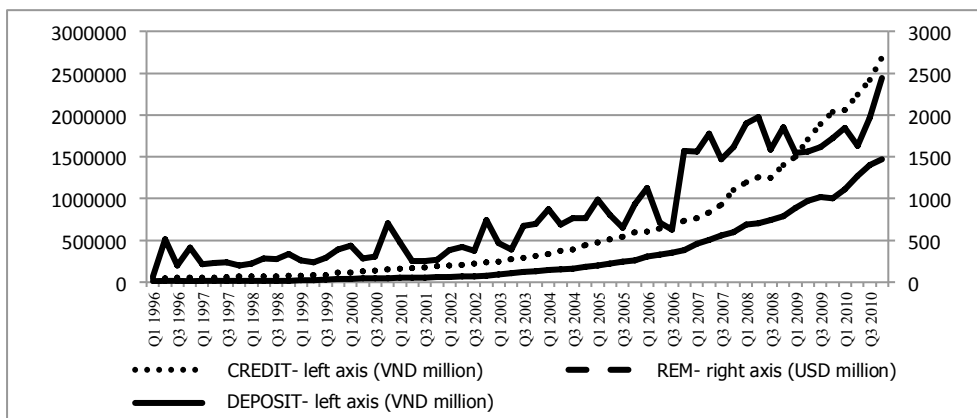
#### **4. Results and discussion**

By and large, the impulse response functions from VAR model demonstrate some of the key findings on the remittance inflows to Vietnam as follows:

First, an increase in remittance shock by 1% may account for an instant increase in deposits, reaching the maximum of 0.3% after two quarters (Figure 1), as evidenced by the fact that remittance flows to Vietnam as often go through formal channels such as banking institutions or professional money transfer services or informal ones. Statistical data presented by Pfau & Long (2006), who have provided much useful description of issues relating to Vietnam's remittance inflows based on VLSS datasets, indicate that 73% of total remittances are used for direct consumption, whereas house construction and non-farm investment receive only 14.4% and 6% of remittances. These findings also imply that through whatever channels the remittances are transferred, recipients are inclined to prompt expenditure as most of them are distributed to be directly consumed. Yet, part of the received amount may still be sent to banks either in saving accounts or for later withdrawals to gradually cover living expenses, which in fact results in increase in bank deposits. On top of that, remittance beneficiaries are usually rural dwellers, who have made no or little use of banking services. Thus, remittances received via banks would encourage them to be more learning about those, allowing banks to extend their operations which are attributable to financial development.



**Figure 1.** Response of credit growth and deposit growth to remittance shocks



**Figure 2.** Process of remittance inflows in conjunction with credit and deposit growth in Vietnam

Figure 2. illustrates the relationship between remittance inflows to Vietnam and credit and deposit growth, both of which represent the extent of financial development in Vietnam. These are shown to be positively related, implying that the research findings based on the Granger causality and VAR model are fairly agreeable with those suggested in earlier studies on the nexus between remittances and financial growth such as Orozco and Fedewa (2005), Giuliano and Ruiz-Arranz (2009), Munduca (2009), Gupta et al. (2007), Aggarwal et al. (2011), Sami (2013), and Ojapinwa and Bashorun (2014).

Second, remittance inflows to Vietnam seemingly exert no profound effects on credit growth. Thus, unlike the positive results produced by deposits, it is shown by the VAR mode that a 1% increase in remittance flows may lead to instant reduction in



bank credit, which may last for up to three quarters after remittance shocks. Afterward, bank credit increase may occur yet remains at a low level. In terms of credit growth, in other words, it seems that remittance flows to Vietnam hardly have positive impact on the financial development of the country, which could be subject to the following conditions:

(i) Remittance beneficiaries in Vietnam are commonly low-income earners, who need to raise loans from different sources for expenditure. Thus, upon reception of remittances provided by overseas relatives, they would request no loans, to wit: their demand for loans becomes unlikely (including those from banking institutions).

(ii) Remittances, one of the capital sources that facilitate economic development in Vietnam, are essential to be adopted in place of bank credit for investment purposes. Hence, the more remittances inflows, the more reduction in bank credit they should cause.

As such, it can be seen that remittances exert unclear impact on financial growth in Vietnam. A close investigation into the figures allows for the impression that this non-interest source of finance has made certain contributions to Vietnam's financial development.

Still, the following variance decomposition from VAR model shows that remittances may not be considered the main factor affecting financial development as they explained only 1.9% of domestic credit variance and 8% of bank deposit variance after 10 quarters. Those truly affecting the variance of deposits and credit of Vietnam's commercial banks do include interest rate and economic growth (Table 3).

**Table 3**

Variance decomposition of credit growth and deposit growth

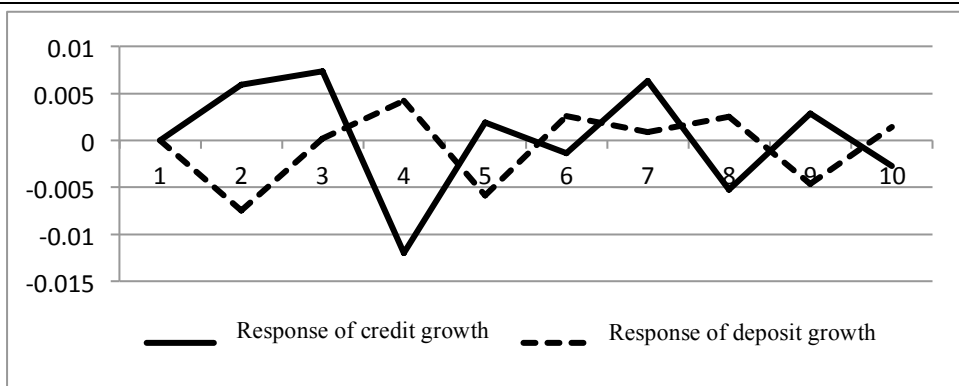
Variance decomposition of credit growth						
Period	S.E.	DCRED	DEP	DGDP	DLER	DREM
1	0.044012	100.0000	0.000000	0.000000	0.000000	0.000000
2	0.045440	94.49561	1.864162	1.694621	1.938836	0.006774
3	0.047340	87.30164	5.072615	3.990267	3.296365	0.339115
4	0.049837	81.08958	5.806065	9.396687	3.189550	0.518116
5	0.051066	77.82794	8.873700	9.084833	3.037940	1.175582

## Variance decomposition of credit growth

Period	S.E.	DCRED	DEP	DGDP	DLER	DREM
6	0.051443	76.76053	9.110898	9.020775	3.674707	1.433094
7	0.051904	75.54945	8.953650	10.33588	3.692749	1.468280
8	0.052509	73.84848	9.944257	11.09468	3.615617	1.496964
9	0.052803	73.19951	9.977238	11.25855	3.860480	1.704215
10	0.053018	72.85233	9.896524	11.43080	3.927339	1.893014

## Variance decomposition of deposit growth

Period	S.E.	DCRED	DEP	DGDP	DLER	DREM
1	0.055128	13.19215	86.80785	0.000000	0.000000	0.000000
2	0.059300	12.01673	80.21958	1.581136	0.000417	6.182140
3	0.061694	12.40670	78.21738	1.461943	0.019741	7.894235
4	0.063351	13.72132	76.62774	1.827320	0.181127	7.642500
5	0.063909	13.70514	75.63071	2.635353	0.517721	7.511078
6	0.064624	14.68339	73.96937	2.738351	0.633714	7.975175
7	0.064711	14.68271	73.81676	2.750233	0.648531	8.101767
8	0.064836	14.77376	73.55103	2.889301	0.704942	8.080963
9	0.065055	14.71855	73.12368	3.379016	0.742924	8.035823
10	0.065214	14.75980	72.99723	3.412356	0.742078	8.088533



**Figure 3.** Response of credit growth and deposit growth to economic growth shocks

Third, it is also implied by the VAR model that economic growth is a stimulant to the financial development in Vietnam, which is **absolutely** compatible with existing literature as well as empirical evidence in different countries. The growth of the economy would be subject to higher income and enhancement in people's awareness of banking services, thereby boosting the extent of financial development (Table 3).

## 5. Conclusion and policy recommendations

In sum, this research has clarified the impact of remittances as well as other factors on financial development in Vietnam. Basically, its findings are consistent with previous studies', demonstrating that remittance inflows to Vietnam may increase bank deposits although the level of increase remains fairly low. In terms of the financial development based on credit growth indicators, the outcome of VAR model indicates that remittances may account for diminishing credit demand. These results seem to contradict each other, yet they in fact are highly consistent with economic theories now that received remittances (besides the expenses) enable people to decide on their saving accounts. In another perspective, however, demands for loans are unlikely as with the amount of remittances received (micro economically speaking), which can partially substitute other sources of investment in the economy, including bank credit (macro economically speaking). In other words, empirical evidence as given by the VAR model shows that impact of remittances has been univocally produced on the financial development in Vietnam although it may seem positive while supporting increasing bank deposits along the growth of remittance payment services.

On the basis of the findings achieved from VAR model, in order to produce a further positive impact of remittances on the financial development in Vietnam, financial policy not only should target the attraction of remittances but also need orient remittance inflows through the formal channels of commercial banks, and as such, these are characterized by the following:

First, regarding the government, the attraction of remittances for Vietnam's financial development comprises:

(i) The government should make an effort to improve labor export policies via mass communication, advertisement, career training, and orientations besides other terms signed with foreign enterprises that ensure income stability for laborers. In addition, labor export agencies should aim at middle- or high-level instead of low-level workers.

(ii) Since immigrants and overseas citizens are also the entities primarily enabling remittance inflows to a country and statistically, there are now approximately 400,000 overseas experts as well as intellectuals holding university degrees or higher, priority should be thus given to the policies on attracting remittances provided by these besides the government's taking specific actions such as setting up effective information systems (that help foster overseas Vietnamese's updating information on the mother country), and enhancing the quality of existing electronic newspapers (by adding special columns for overseas Vietnamese and supporting proper translation into other languages as a way to cultivate close relations between overseas and domestic citizens).

Second, domestic commercial banks in boosting remittances flows through the banking system are recommended to:

(i) Expand promotion efforts and simplify procedure in remittance payment to beneficiaries;

(ii) Coordinate with foreign institutions as a measure to establish a widespread remittance payment network, bolstering up all remittance-related activities; and

(iii) where possible, highlight cross-selling via tailoring remittance-based financial products. By providing diverse financial services (including but not restricted to money transfer), banks, on the one hand, benefits more from their customers who make use of various offered facilities and, on the other hand, can possibly focus remittance flows on economic development goals. How the cross-selling as well as a single service package works is vital to the success of these products, which may be a combination of money transfer and saving or credit operations.

Overall, this paper has presented the impact of remittances on financial development in Vietnam. Several important conclusions have also been arrived at, stressing the positive effects of remittance inflows in accelerating bank deposits and boosting the growth of remittance payment services. Last but not least, policy recommendations aim at further positivity, allowing remittances to exert more significant impact on Vietnam's financial development■

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