Foreign earnings repatriation: the effect of exchange rate volatility and the risk of expropriation

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Abstract

Purpose – This study aims to investigate the impact of exchange rate volatility and the risk of expropriation on the decision to repatriate foreign earnings.

Design/methodology/approach – The current study uses secondary data for foreign subsidiaries of US multinational corporations (MNCs) in 40 countries from 2004 to 2016. We use the dynamic panel difference generalised method of moments (GMM) to estimate the dynamic earnings repatriation model.

Findings – The findings show that foreign subsidiaries of US MNCs in countries with volatile exchange rates tend to repatriate more earnings to the parent company. The findings also reveal that a greater risk of expropriation in the host country leads to the higher repatriation of foreign earnings to the parent company. The findings support the notion that MNCs use the earnings repatriation policy as a means of mitigating risks arising in the host country.

Practical implications – Practical implications for modern managers include shedding light on how financial managers can use earnings repatriation policy to mitigate exchange rate risk and the risk of expropriation in the host country. The findings also contain policy implications at the host country level that how exchange rate volatility and risk of expropriation can reduce foreign investment in the host country.

Originality/value – This study adds to the earnings repatriation literature by analysing the direct effect of exchange rate volatility on earnings repatriation decisions, as opposed to the impact of the exchange rate itself, as suggested by previous research. Hence, the findings broaden our understanding of the direct influence of exchange rate volatility on the decision to repatriate foreign earnings. The present study also examines the role of the risk of expropriation in determining earnings repatriation policy, which has received little attention in prior empirical studies.

Keywords Foreign earnings repatriation, Exchange rate volatility, Risk of expropriation, United States, Multinational corporations

Paper type Research paper

1. Introduction

Exchange rate volatility is a leading issue faced by multinational corporations (Aydoğan and Vardar, 2020; Cuestas *et al.*, 2018). It can impact future cash flows, profitability and firm value (Akay and Cifter, 2014; Boudt *et al.*, 2019). For example, if MNCs' costs and revenues are in different currencies, then exchange rate volatility can affect the future stream of cash flows. Foreign subsidiaries operating in different countries with dissimilar currencies are thus exposed to exchange rate risk.

Exchange rate volatility can affect the decision to repatriate earnings as earnings repatriation from a foreign subsidiary to the parent company requires the host currency to be converted into

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the home currency at the current exchange rate. Exchange rate volatility may positively or negatively impact the value of earnings repatriated by a foreign subsidiary due to the movement of the host country's currency compared to the home currency (Kish and Vasconcellos, 1993). If the host country's currency appreciates compared to the home currency at the time of earnings repatriation, this results in a greater value for the parent company, and vice versa. Thus, volatility in the exchange rate can lead to uncertainty regarding the future stream of earnings repatriation, hence affecting earnings repatriation decisions.

Further, an MNC with a subsidiary abroad faces the risk that the host country may expropriate its investments or that its activities may be affected by unpredictable changes in rules and regulations (Asiedu *et al.*, 2009; François *et al.*, 2020). The lack of a supranational entity to enforce such contracts is one reason why expropriation occurs (Graham *et al.*, 2018). Further, governments are not liable for any breach of contract due to the country's sovereign position (Duanmu, 2014). Although the outright expropriation of assets is now rare in practice (Hajzler, 2014), irregular changes in rules, regulations and the terms of contractual agreements are standard practice, particularly in developing economies (Asiedu *et al.*, 2009). This suggests that the risk of expropriation (in the form of outright expropriation, breaches of contract and restricting the transfer of earnings) can affect foreign subsidiaries' operations.

Akhtaruzzaman *et al.* (2017) and Azzimonti (2018) examined the impact of expropriation risk on foreign direct investment (FDI) flows in developing countries. They found that expropriation risk is a key factor influencing FDI flows to these countries. This implies that MNCs are disinclined to invest in countries where the risk of expropriation is high. The reinvestment of earnings in the host country is also considered an FDI inflow in that country (Azzimonti, 2018). This suggests that, when the risk of expropriation is high in the host country, foreign subsidiaries may prefer to retain fewer earnings and repatriate more earnings to the parent company. Consistently repatriating earnings reduces investment in the host country, which may be expropriated by the state rulers for personal gains, creating the agency problem of state ruler discretion (Stulz, 2005). Consequently, managers tend to be more entrenched in such countries, and the monitoring of their activities is more challenging. This leads to higher agency costs; therefore, MNCs may prefer to repatriate more earnings out of the host country.

The current study utilises annual data to analyse the impact of exchange rate volatility and the risk of expropriation on the earnings repatriation policy of US MNCs. We use the dynamic panel difference generalised method of moments (GMM) to estimate the dynamic earnings repatriation model. All diagnostic tests for the dynamic panel difference GMM were satisfactory. The findings reveal that a significant positive relationship exists between exchange rate volatility and earnings repatriation. This implies that US MNCs repatriate greater earnings from foreign subsidiaries in countries with greater exchange rate volatility. The findings confirm that exchange rate volatility has a first-order effect on earnings repatriation decisions. This study also reveals that a greater risk of expropriation in the host country leads to more foreign earnings being repatriated to the parent company.

The present study contributes to the earnings repatriation literature by examining the direct effect of exchange rate volatility on earnings repatriation decisions, as opposed to the impact of the exchange rate itself, as suggested by previous research (Moore, 2011; Tahir *et al.*, 2018, 2020b). This is because exchange rate volatility is a critical issue faced by MNCs, which can affect profitability, future cash flows and firm value. Hence, the findings further our understanding of the direct influence of exchange rate volatility on decisions to repatriate earnings. The findings also shed light on how MNCs can use earnings repatriation policy to manage exchange rate risk. Finally, this study examines the role of the risk of expropriation in earnings repatriation decisions, which has received little attention in previous empirical studies. The current study is different from the study of Cascino (2021), which discusses the state expropriation risk and the pricing of foreign earnings. However, the present study

investigates the impact of the risk of expropriation on the decision to repatriate foreign earnings, which is a different issue from the pricing of foreign earnings.

The rest of this study is organised as follows. Section 2 provides the theoretical background and develops the hypotheses. Section 3 describes the data, sample selection, empirical model and the econometric estimator applied. Section 4 details and interprets the empirical results. Section 5 provides the conclusions.

2. Theoretical background and hypotheses development

2.1 Theoretical background

The theory of country risk suggests that MNCs operating in different countries are exposed to different types of risks (Feinberg and Gupta, 2009; Zhu and Sardana, 2020). Country risk refers mainly to the situations, conditions and events that can lead to variations in firm performance or a decrease in projected returns in a country (Cavusgil *et al.*, 2020). These risks encompass country-specific political and economic risks (Lessard, 1989; Liu *et al.*, 2020); they occur due to inconsistency and unpredictability in government policies, the outright expropriation of assets, contract enforcement issues, the legal system's (in)effectiveness, the violation of property rights and economic downturns (Erel *et al.*, 2020). Such country risks play a key role in MNCs' foreign market entry strategies and the management of established foreign subsidiaries' ongoing activities (Buckley *et al.*, 2016; Wang and Larimo, 2020), as well as affecting foreign subsidiaries' performance (Liu *et al.*, 2016).

Ramcharran (1999) investigated the impact of country risk on FDI, separating country risk into political risks and economic risks, finding that such risks significantly impact FDI inflows in the host country and that political risk is negatively associated with FDI. Economic risk, however, was found to have a significant positive impact on FDI flows in the host country. Overall, the author's findings suggest that host country risk has a significant impact on FDI.

Quer *et al.* (2007) examined a country's risk effect on decisions regarding entering a foreign market. Their findings revealed that greater risk in the host country leads to entry strategies that involve less resource commitment in that country since higher country risk increases transaction costs related to operating in such environments. Country risk also increases uncertainty regarding firm resources, potentially leading to the expropriation of firm assets, as evidenced by: US MNCs following the Iranian revolution in 1979 (Rothaermel *et al.*, 2006), expropriation orders served on 18 white commercial farmers by the Namibian government in 2005; France's Total and Italy's Eni in Venezuela in 2006; Bolivian president Evo Morales's nationalisation of the country's natural gas industry in 2006 (Li, 2009), and recent fears of expropriation by the Russian government after the Ukraine war.

Feinberg and Gupta (2009) examined, both theoretically and empirically, how MNCs address country risks related to establishing majority – or wholly owned foreign subsidiaries. These authors predicted that the greater the country's risk, the greater the operating integration will be between a foreign subsidiary and its parent company. This strategy aids MNCs in reducing the likelihood of the expropriation of firm resources by the host government since highly integrated activities decrease the economic value of a firm's assets on a stand-alone basis. Further, greater intrafirm integration leads to greater demand for foreign subsidiaries' products and services, as well as limiting the adverse effects of economic downturns in the host country on foreign subsidiaries' revenues. Higher intrafirm integration also increases foreign managers' involvement in MNCs' global networks, which subsequently leads to foreign managers' increased socialisation within MNCs' managerial networks, which helps in aligning foreign managers' goals with those of the parent company.

Deligonul (2020) conceptualised country risk as comprising two components: the risk of holding assets aboard and the risk of operating assets in a foreign country. The former arises due to the ownership of assets in the host country, while the latter relates to the operation of those assets to generate future earnings. This author argued that operating asset risk is the

major problem that MNCs are facing as this generates volatility in the future stream of cash flows, potentially leading to losses.

The theory of country risk provides a theoretical lens through which to view earnings repatriation policy. This is because the earnings repatriation policy can aid MNCs in mitigating country risks through the repatriation of consistent earnings from more risky host countries. This leads to a reduction in investment in such countries, potentially leading to a decrease in the expropriation of firm resources. Further, MNCs may opt for lower repatriation of earnings from countries with a lower rate of ownership and lower operating risks as such countries are characterised by sound economic prospects and do not extensively use expropriation practices. Feinberg and Gupta (2009) highlighted that research on how MNCs address ongoing country risk, as opposed to risk avoidance, is rare. Hence, the present study aims to examine how MNCs address country risk related to the operation of foreign subsidiaries through earnings repatriation policy.

Moreover, Stulz (2005) proposes that state rulers can use state power to expropriate investors. This discretion of state rulers to use state power for their benefit create the agency problem of state ruler discretion. Conversely, corporate insiders who control the firms can use their power to enhance their welfare at the cost of shareholders, which causes the agency problem of corporate insider discretion. He suggests that when the agency problem of state ruler discretion is high, then managers become more entrenched and exploit shareholders. This complementary connection between managerial diversion and state expropriation generates twin agency problems. This is because monitoring of managers is very challenging in countries where state expropriation is high, in such situations, the managers might make decisions that enhance their welfare at the cost of shareholders. Hence, the present study predicts that paying free cash flow to the parent company can reduce the chances of expropriation by state officials and corporate insiders. It implies that twin agency problems lead to higher earnings repatriation.

2.2 Hypothesis development

2.2.1 Exchange rate volatility and earnings repatriation. Kish and Vasconcellos's (1993) profit remittance view suggests that, as the home currency strengthens compared to the foreign currency, the future profits to be remitted from a foreign subsidiary will have a lower discounted value as measured in the home currency. This will therefore reduce the overall performance of the bidding firm because the lower cost of capital due to the strong home currency is offset by the decreased amount of earnings repatriated by the bidding firm at a higher exchange rate. Hence, home currency strength does not affect the performance of the bidding firm.

Kiymaz (2004) found empirical support for the profit remittance view, showing that a strong home currency leads to wealth gains by the bidding firm at the time of acquisition, whereas a weak home currency leads to wealth gains at the time of profit repatriation by the bidding firm. This author further claimed that exchange rate volatility (variations in the exchange rate between the home and foreign currency) affects firm performance during cross-border mergers and acquisitions rather than the strength or weakness of the home currency. The findings revealed that exchange rate volatility has a significant negative effect on firm performance due to uncertainty regarding the repatriation of future earnings streams. This view was supported by Chakrabarti *et al.* (2009), although contradictory results have been reported by several more recent studies (Ahern *et al.*, 2015; Morresi and Pezzi, 2014) that have found that exchange rate volatility has a significant positive impact on firm performance during cross-border mergers and acquisitions.

Uche and Effiom (2021) document a significant positive influence of exchange rate volatility on capital flight. This implies that a volatile currency provides solid reasons for capital flight. They argue that a higher exchange rate volatility leads to a loss of confidence in

the local currency. Consequently, encourages investors to convert and invest in countries with stable exchange rates. Overall, starving the local economy of investable funds.

The profit remittance view provides a theoretical lens through which to view the effect of exchange rate volatility on the repatriation of foreign earnings because it suggests that exchange rate volatility increases uncertainty regarding the repatriation of future earnings streams to the parent company. Therefore, the parent company may prefer to repatriate greater earnings from foreign subsidiaries in countries with greater exchange rate volatility. This argument is also in line with the theory of country risk, which suggests that exchange rate volatility generates uncertainties in future cash flows, which can in turn affect firm value because firm value depends on the stream of future cash flows. The above arguments lead to the following hypothesis.

H1. Exchange rate volatility has a significant positive impact on earnings repatriation.

2.2.2 Risk of expropriation and earnings repatriation. An MNC with a foreign subsidiary is prone to the risk of the host country expropriating its investments or that its activities may be affected by unpredictable changes in rules and regulations (Asiedu *et al.*, 2009). The lack of a supranational entity to enforce contracts is one reason for such expropriation occurring. Further, governments are not liable for breaches of contract due to the country's sovereignty (Duanmu, 2014). Although in practice, the outright expropriation of assets is currently rare (Hajzler, 2014), unpredictable changes in rules, regulations and contractual agreements' terms are common practices, especially in developing economies (Asiedu *et al.*, 2009).

This suggests that the risk of expropriation in the form of outright expropriation, breaches of contract and restricting the transfer of earnings can impact foreign subsidiaries' operations. In line with the theory of country risk, this implies that MNCs may be reluctant to invest in countries where the risk of expropriation is high. Akhtaruzzaman *et al.* (2017) and Azzimonti (2018) revealed that the risk of expropriation discourages FDI in a country. Reinvesting earnings in the host country is also considered part of FDI inflows in that country (Azzimonti, 2018). It implies that, when the risk of expropriation is high in the host country, foreign subsidiaries may opt to retain fewer earnings, thus repatriating more earnings to the parent company.

Consistently repatriating earnings reduces investment in the host country, which may be expropriated by the state rulers for personal gains, creating the agency problem of state ruler discretion (Stulz, 2005). Essentially, state rulers' discretion in using state power for personal gains creates this agency problem. Consequently, foreign managers become more entrenched and the monitoring of their activities becomes more challenging, thus leading to twin agency problems since managers in predatory countries consume more private gains because any money left in the firm may be partially expropriated by the state (Col and Errunza, 2015). Therefore, the parent company may require regular earnings repatriation from foreign subsidiaries operating in such countries. Overall, this will increase agency costs; therefore, MNCs may opt to repatriate more earnings out of the host country:

H2. There is a significant positive relationship between the risk of expropriation in the host country and earnings repatriation.

3. Methodology

3.1 Data and sample selection

The current study uses secondary data for estimation purposes. The data were collected from various sources, including the Bureau of Economic Analysis (BEA), the US Department of Commerce and the World Bank Group's World Development Indicators (WDI). The exchange rate data were obtained from DataStream, which provides detailed data concerning different

countries' exchange rates over time. The sample period ranges from 2004 to 2016. The reason for limiting the data to 2016 is that it is the latest year for which the data is available.

The initial sample comprised the entire population of US MNCs' majority-owned foreign subsidiaries globally covered by the BEA during the study period. Because the present study's focus is on foreign subsidiaries' data, aggregated at the country level, we excluded US MNCs' foreign subsidiaries from countries for which BEA does not provide separate country-level data. The BEA provides separate data for those countries in which US MNCs have a substantial investment. This left the current study with foreign subsidiaries of US MNCs from 57 countries. We further excluded US MNCs' foreign subsidiaries from countries that had pegged the exchange rate during the study period, as well as US MNCs' foreign subsidiaries in the banking, finance and insurance sectors as these sectors have different rules and regulations regarding taxes and income distribution (Beyer *et al.*, 2017), leading to non-financial foreign subsidiaries of the US MNCs in 50 countries. Finally, we excluded countries for which data regarding the risk of expropriation were not available, which reduced the sample to 40 countries.

3.2 Variables

The present study's dependent variable is earnings repatriation, with the earnings repatriation to asset ratio used as a proxy for earnings repatriation. This ratio reflects whether foreign subsidiaries use fixed earnings repatriation policies relative to their assets to ensure that the parent company's interests are protected. This relates to foreign managers' inducement to grow the firm beyond its optimal size (Jensen, 1986). Firm-size growth both increases the resources under managers' control and the opportunity for private gains and value-destroying investments. This is one of the most commonly adopted proxies for earnings repatriation; it is calculated as earnings repatriation normalised by total assets and it has been used in this context in several prior studies (Blouin *et al.*, 2012; Moore, 2011).

The main variables of interest are exchange rate volatility and the risk of expropriation. Exchange rate volatility is measured as the standard deviation in monthly exchange rates, while the risk of expropriation is measured using the La Porta *et al.* (1998) risk of expropriation index. The risk rating assigned to this risk of expropriation index ranges from 0 (indicating an extremely high level of risk) to 10 (indicating an extremely low level of risk). The current study subtracts the index value from 10 so that larger numbers correspond to a higher risk of expropriation.

This study includes a set of control variables that may influence earnings repatriation decisions. For instance, repatriation tax is the tax that MNCs must pay on earnings received from foreign subsidiaries. If the home country uses a worldwide tax system with foreign tax credits for foreign income, then the repatriation tax is the difference between the corporate taxes due upon repatriation in the home country and the foreign corporate taxes paid. As the US had a worldwide tax system during the study period, we measured repatriation tax as the difference between the US corporate tax due upon repatriation and corporate tax paid in the host country. This measure has also been used by Laplante and Nesbitt (2017) and Amberger *et al.* (2019).

The credit market development in the host country can also influence the financing decision of MNCs' foreign subsidiaries because the cost of borrowing is low in countries with developed credit markets, which encourages greater borrowing by foreign subsidiaries (Tahir *et al.*, 2020b). The present study uses the ratio of private credit to GDP as a proxy for credit market development (La Porta *et al.*, 1997). The private credit to GDP ratio has previously been used by Aluko and Kolapo (2020), Al-Nasser Abdallah *et al.* (2020), Tawiah and Gyapong (2021) and Mahmood *et al.* (2021), among others.

The debt to asset ratio is used to control for foreign subsidiaries' financial leverage (Bebenroth and Ahmed, 2021). The asset growth rate is primarily used to measure a firm's investment opportunities (Bolarinwa and Adegboye, 2020). This predicts a firm's future

growth rate based on past data. Greater asset growth suggests a higher investment of funds in business operations and lower earnings repatriation (Tahir *et al.*, 2022). This measure has been used in several prior studies (Bhattacharya *et al.*, 2020; Driver *et al.*, 2019).

Return on assets is used to control for foreign subsidiaries' profitability (Khan *et al.*, 2019). Profitable firms are more likely to repatriate greater earnings to the parent company (Moore, 2011). Finally, the GDP growth rate is used to control for growth prospects at the country level (Carvalho, 2021; Tahir *et al.*, 2020a). A higher GDP growth rate in the host country suggests higher growth opportunities, which consequently increases the necessity for internally generated funds and can lead to lower earnings repatriation (Hasegawa and Kiyota, 2017).

3.3 Empirical model

This study uses a dynamic approach, which includes lagged earnings repatriation as an independent variable to estimate the earnings repatriation model since earnings repatriations are persistent over time and past decisions influence current decisions regarding repatriating foreign earnings (Skinner, 2008). Desai *et al.* (2001, 2007) and Blouin *et al.* (2012) also utilised a dynamic approach to estimate earnings repatriation models. However, they utilised ordinary least squares (OLS), with and without fixed effects, to estimate the earnings repatriation model. In this context, Bond (2002) suggested that OLS, with and without fixed effects, is biased and inefficient for dynamic panel models because lagged earnings repatriation correlates with the error term and leads to endogeneity problems. Dynamic panel difference GMM, in contrast, deals with endogeneity problems through instrumental variables (Arellano and Bond, 1991; Blundell and Bond, 1998). It also accounts for unobserved heterogeneity through first differencing.

They are two variants of GMM estimator, one-step and two-step GMM estimator. However, the two-step GMM estimator's application to finite samples as in this study may lead to biased standard errors (Arellano and Bond, 1991; Blundell and Bond, 1998), a weak over-identification test for instrument validity (Bowsher, 2002) and biased estimated parameters (Windmeijer, 2005). Roodman (2009) suggests that instrument proliferation is the main reason for these issues. Hence, the current study applies the one-step difference GMM estimator to estimate the following dynamic earnings repatriation model due to the above-mentioned issues related to the two-step GMM estimator.

$$DR_{it} = \beta_0 + \beta_1 DR_{it-1} + \beta_2 ERV_{it} + \beta_3 RE_{it} + \beta_4 RT_{it} + \beta_5 CMD_{it} + \beta_6 FL_{it} + \beta_7 INV_{it} + \beta_8 PROF_{it} + \beta_9 GDP_{it} + \mu_i + \varepsilon_{it}$$

where *DR* represents earnings repatriation to asset ratio of foreign subsidiaries of the US MNCs in the country i at time t and DR_{it-1}, *ERV*, *RE*, *RT*, *CMD*, *FL*, *INV*, *PROF*, and *GDP* denote lagged earnings repatriation, exchange rate volatility, risk of expropriation, repatriation taxes, capital market development, investment opportunities, financial leverage, profitability, and GDP growth rate, respectively. β_0 represents the intercept of the equation, μ_i represents time-invariant unobserved heterogeneity and ε_{it} is the error term.

4. Results and discussion

4.1 Descriptive statistics

Table 1 shows the descriptive statistics for the study variables, revealing that, on average, US MNCs' foreign subsidiaries have repatriated 1.8% of earnings scaled by total assets. Earnings repatriation has a standard deviation of 2.46%, suggesting high variation in earnings repatriation among US MNCs' foreign subsidiaries operating in different countries over time. The exchange rate volatility has a mean value of 0.0456 (standard deviation = 0.0507); higher

Variables	Obs	Mean	SD	Min	Max
DR	520	0.0180	0.0246	0.0000	0.3370
ERV	520	0.0456	0.0507	0.0000	0.5943
RE	520	1.7900	1.3950	0.0200	4.7800
RT	520	0.1407	0.1114	0.0000	0.3500
CMD	520	0.9264	0.5037	0.0812	2.3321
FL	520	0.2762	0.1138	0.0525	0.7092
INV	520	0.0813	0.1375	−0.6985	1.1779
PROF	520	0.0739	0.0467	−0.3144	0.2896
GDP	520	0.0317	0.0386	−0.1700	0.3374
Number of countries	40	40	40	40	40

Note(s): *DR* = earnings repatriation to asset ratio; *ERV* = exchange rate volatility; *RE* = risk of expropriation; *RT* = repatriation taxes; *CMD* = credit market development; *FL* = financial leverage; *INV* = investment opportunities; *PROF* = profitability; *GDP* = GDP growth rate

Table 1.
Descriptive statistics

standard deviation values indicate greater exchange rate volatility. Further, the risk of expropriation has a mean value of 1.7900 (standard deviation = 1.3950).

4.2 Regression results

Table 2 presents the results of the dynamic earnings repatriation model using the panel one-step difference GMM estimator. The estimated dynamic panel regression model was well-specified. The required diagnostic tests for difference GMM were found to be acceptable. As anticipated, the null hypothesis that there is no first-order serial correlation (AR1) was rejected, whereas the null hypothesis that there is no second-order serial correlation (AR2) was not rejected. The Hansen test statistics for instrument over-identification was not rejected at conventional significance levels. This implies that the instruments are valid and well-specified.

Variables	GMM
DR_{it-1}	0.3078** (0.1408)
ERV	0.1110** (0.0547)
RE	0.0125** (0.0060)
RT	−0.0792** (0.0341)
CMD	−0.0418** (0.0206)
FL	−0.0302 (0.0542)
INV	0.0016 (0.0130)
PROF	0.1202** (0.0588)
GDP	−0.0046 (0.0584)
Arellano-Bond test for AR1	−1.97 (0.0490)**
Arellano-Bond test for AR2	0.91 (0.2350)
Hansen test of over-identifying restrictions	32.84 (0.2420)
Number of instruments	37
Observations	440
Number of countries	40

Note(s): This table presents the results of dynamic earnings repatriation model using a dynamic panel difference GMM estimator. The dependent variable is earnings repatriation to asset ratio. DR_{it-1} = lagged dividend repatriation; *ERV* = exchange rate volatility; *RE* = risk of expropriation; *RT* = repatriation taxes; *CMD* = credit market development; *INV* = investment opportunities; *FL* = financial leverage; *PROF* = profitability; *GDP* = GDP growth rate; AR1 = the null hypothesis that there is no first-order serial correlation; AR2 = the null hypothesis that there is no second-order serial correlation. Robust standard errors are in parentheses except for the Arellano-Bond tests for serial correlations and the Hansen test of over-identifying restrictions, where the figures represent the *p*-values. ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$

Table 2.
Exchange rate volatility and earnings repatriation

The results reveal a significant positive impact of exchange rate volatility on foreign earnings repatriation. The coefficient of exchange rate volatility is 0.1110, implying that a 1% increase in exchange rate volatility increases earnings repatriation by 0.1110%. It suggests that US MNCs' foreign subsidiaries have repatriated more earnings from countries with greater exchange rate volatility. This is because greater exchange rate volatility increases uncertainty in future earnings streams, which subsequently affects firm value since this is determined by future cash flows. Consequently, the parent company opts to repatriate more earnings from countries with greater exchange rate volatility.

The above finding is in line with the theory of country risk, which suggests that greater exchange rate risk leads to greater earnings repatriation. These findings also provide support for the profit remittance view, which suggests that, as the home currency strengthens compared to the foreign currency, the future profits to be remitted from a foreign subsidiary will have a lower discounted value as measured in the home currency. Further, exchange rate volatility generates uncertainty concerning the repatriation of the future stream of foreign earnings. Consequently, it encourages MNCs to repatriate higher foreign earnings during higher exchange rate volatility.

The findings further indicate a significant positive association between the risk of expropriation and earnings repatriation. This association is statistically significant at 5% level of significance. The risk of expropriation index ranges from 0 to 10, with higher values indicating a lower risk of expropriation (we subtracted the index value from 10 so that larger numbers correspond to a greater risk of expropriation). Hence, a positive coefficient suggests that US MNCs' foreign subsidiaries have repatriated more earnings from countries where the risk of expropriation is high, and vice versa. This is because consistently repatriating earnings reduces investment in the host country, which may be expropriated by the state rulers for personal gains, creating the agency problem of state ruler discretion. Consequently, foreign managers become more entrenched, and the monitoring of their activities becomes more challenging, thus leading to twin agency problems. Hence, the parent company requires regular earnings repatriation from foreign subsidiaries operating in such countries. This finding is in line with the theory of country risk, which suggests that, when the risk of expropriation is high in the host country, foreign subsidiaries may opt to retain fewer earnings, thus repatriating more earnings to the parent company. The finding is also providing support for twin agency problems' argument that paying free cash flow to the parent company can reduce the chances of expropriation by the state officials and corporate managers.

Consistently repatriating earnings reduces investment in the host country, which may be expropriated by the state rulers for personal gains, creating the agency problem of state ruler discretion (Stulz, 2005). Essentially, state rulers' discretion in using state power for personal gains creates this agency problem. Consequently, foreign managers become more entrenched and the monitoring of their activities becomes more challenging, thus leading to twin agency problems since managers in predatory countries consume more private gains because any money left in the firm may be partially expropriated by the state (Col and Errunza, 2015). Therefore, the parent company may require regular earnings repatriation from foreign subsidiaries operating in such countries. Overall, this will increase agency costs; therefore, MNCs may opt to repatriate more earnings out of the host country.

Regarding the control variables that may affect earnings repatriation policy, the lagged earnings repatriation, for example, is statistically significant at the 5% significance level, suggesting that the dynamic regression model is appropriate. The lagged earnings repatriation had a coefficient of 0.3078, i.e. a 1% increase in the previous year's earnings repatriation led to a 0.3078% increase in the current year's earnings repatriation to the parent company. This implies that earnings repatriations are persistent and partially adjusted to target earnings repatriation.

The findings also reveal that higher repatriation taxes and higher credit market development lead to lower earnings repatriation to the parent company. Further, the

coefficient of profitability was positive and statistically significant. This suggests that profitable US MNCs' foreign subsidiaries repatriate more earnings to the parent company because highly profitable firms are most likely to be in the maturity stage, with lower investment opportunities. The agency cost is high in such firms; thus, they opt to repatriate high dividends to reduce the agency cost of free cash flow. Finally, the findings suggest that financial leverage, investment opportunities and GDP growth rate have an insignificant impact on earnings repatriation decisions.

5. Conclusion

The decision to repatriate foreign earnings is a key dimension of multinational financial management. In this context, the present study has examined the impact of exchange rate volatility and the risk of expropriation in the host country on decisions regarding repatriating foreign earnings. The findings show that US MNCs' foreign subsidiaries in countries with volatile exchange rates usually repatriate more earnings to the parent company. This study also reveals that a greater risk of expropriation in the host country leads to greater repatriation of earnings to the parent company. These findings support the notion that MNCs use earnings repatriation policy as a means of mitigating risks related to a host country.

Practical implications for modern managers include shedding light on how financial managers can use earnings repatriation policy to mitigate exchange rate risk and the risk of expropriation in the host country. The findings also contain policy implications at the host country level that how exchange rate volatility and risk of expropriation can reduce foreign investment in the host country. The findings suggest that policymakers in the host countries should actively manage their currencies to reduce exchange rate volatility. It will help to restore the confidence of MNCs in the host currency, thereby leading to a lower rate of earnings repatriation by the MNCs. Moreover, policymakers should also ensure greater protection of foreign investors to retain and attract foreign investment.

This study has a few limitations, which suggests avenues for future research. First, due to the unavailability of data, it uses a cross-sectional index for the risk of expropriation developed by La Porta *et al.* (1998). Future research may utilise a panel data index for risk of expropriation provided by Political Risk Services (PRS). Second, the current study used country-level data as foreign subsidiary level data are confidential, and we had no access to those data. Future research may examine the current issue using foreign subsidiary-level data. Foreign subsidiary level data may generate interesting insights since each foreign subsidiary may respond differently to those risks in the host country.

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