

Foreign Income Growth and Analyst Forecast Optimism*

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Abstract

Purpose – The international market provides a growth momentum for firms by allowing them to tap into a new market. Given information asymmetry between firms and financial analysts, firms' international growth can be perceived as a higher business prospect by analysts. This paper explores the possibility of analysts' over-emphasis on foreign income growth in predicting earnings.

Research design, data, and methodology – We utilize a sample of U.S. firms to test the relationship between foreign income growth and analysts' forecast optimism. Our sample of publicly listed and traded U.S. firms between 1976 and 2016 consists of 6,120 firm-year observations.

Results – Empirical analyses show that firms that show higher international growth in earnings are likely to face forecast inaccuracy by financial analysts. From the perspective of firms, their earnings are less than what analysts forecasted. Contrary to our prediction on the moderating effect of innovative capabilities, optimistic bias is not intensified – rather, it is reduced – when firms have higher innovative capabilities.

Conclusions – Our results imply that while analysts favor firms with higher international growth, innovative capability on the international market places additional risks to firms' operation.

Keywords: Foreign Income; Analyst Forecast; Innovative Capability

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1. Introduction

Among the users of the firms' financial information (e.g., managers, investors, and financial analysts), financial analysts are considered as the most sophisticated user of financial information because they act as intermediary connecting investors to firms by providing professional analysis (Schipper, 1991). Their earnings forecasts guide the market to understand how firms are doing, and the accuracy of such forecasts reflects the level of information asymmetry between the market and the firm (Krishnaswami & Subramaniam, 1999) which is an important issue for both MNEs and IB scholars (Jackson & Deeg, 2008). Among various information about a firm's business, foreign operations imply new market opportunities and risks at the same time. As outcomes for foreign market business are observable, this paper tests whether financial analysts forecast firms' performance accurately based on information on its international growth and if not, whether they have an optimistic bias toward international growth rate.

Previous literature shows that higher involvement in the international market increases the level of difficulty in understanding the firm's foreign operation due to lack of detailed information and higher management discretion over reported earnings (Thomas, 1999; Hermann, Hope, & Thomas, 2008). Few accounting research provides evidence that international diversification decreases forecast accuracy by arguing that the international involvement of firms leads to complexity in valuing firms' business (e.g., Duru & Reeb, 2002). However, we focus on the fact that expanding an international business is one of the growth opportunities that firms have and that investors may value the increase in firms' foreign market focus. International business literature has long been argued the benefits and value of international growth of firms (Sapienza, Autio, George, & Zahra, 2006). As the increase of international performance may show that firm's global strategy has been successful and firms are focusing on foreign market opportunities, it is an important clue in assessing the firm's future growth and prospects. We posit that growth in foreign income is favored by analysts and as a result, they overemphasize such international growth. The optimistic view on international growth is expected to lead to an optimistic forecast on firm performance. That is, over-emphasis on international growth will make analysts issue forecasts with respect to firms' earnings that are more optimistic compared to the firm's actual earnings. While accounting literature argue that foreign market involvement intensifies information asymmetry, we argue that under the given level of asymmetry, the growth rate of foreign income will intensify the analyst's optimistic forecast on firm's earnings. Furthermore, we provide the condition under which such forecast optimism increases. Among various resources firms develop, firms pursue higher innovation capabilities because they are a key source of competitiveness that allows the firm to achieve long-term growth. IB literature has been arguing that such innovative capabilities support firms to exploit the foreign market. In this sense, we predict that analysts will view the international growth of firms with higher capabilities more favorable.

We test the influence of international growth in terms of foreign income (i.e., a percentage of increase in foreign earnings) on analysts' forecast optimism with a sample of U.S. public firms. By merging data from the I/B/E/S and Compustat database, we construct a sample of 6,120 firm-year observations. Empirical analyses show that firms that show higher international growth in earnings are likely to face forecast inaccuracy by financial analysts. From the perspective of firms, their earnings are less than what analysts forecasted. Contrary to our prediction on the moderating effect of innovative capabilities, optimistic bias is not intensified – rather, it is reduced – when firms have higher innovative capabilities. Empirical findings imply that financial analysts indeed have an optimistic bias toward international growth and that they expect that the benefit of international growth is lower for innovative firms.

This paper provides several contributions. Firstly, we provide evidence of analysts' biased preference on the firms' strategic focus on international growth. While prior studies highlighted the impact of international market involvement of firms on task difficulties of financial analysts, our study provides the analysts' stance toward international growth. This confirms that the financial market participants expect firms to participate and grow in the foreign market. While international growth can provide both opportunities and risks, financial analysts put more emphasis on the opportunities. However, this also shows that analysts are experiencing information asymmetry. While they rely on the observable information, i.e., growth rate, in assessing the earnings, unobservable information on a firm's business led them to inaccurately predict the earnings. Firms higher involvement in the international market and the growth in foreign earning generate an optimistic prediction, but it does not naturally lead to a firm's better performance.

Secondly, we also contribute to the literature that investigates the heterogeneity in the valuation of foreign versus domestic components of earnings by finding that internationally diversified firms' innovative capabilities – as measured by R&D investments – actually makes analyst's forecasts less optimistically biased. Contrary to our expectation, we find that internationally diversified firms' innovative capabilities are not necessarily perceived by analysts as advantageous in exploiting foreign growth opportunities. Analysts may be aware that the main technological outputs originate from the firms' home country, rather than foreign markets (Von Zedtwitz & Gassmann, 2002). Thus, internationally diversified firms' innovative capability per se may not be enough. Instead, the extent to which these firms are implementing the internationalization of R&D may be more meaningful in influencing analysts'

perceptions about whether they are more able to exploit foreign growth opportunities. Internationalization of R&D includes activities such as establishing local R&D subsidiaries in foreign markets, which allows the firm to tap into the local scientific community directly (e.g., public R&D institutes) and local talent pools (Awate, Larsen, & Mudambi, 2015). Future research should address whether financial analysts are able to distinguish between the absolute level of innovative capability and the internationalization of R&D in evaluating foreign growth opportunities of internationally diversified firms.

The remainder of the paper is organized as follows. First, section 2 provides a related theory and hypotheses. In the third section, the data and method used for the empirical analysis are explained. The third section will present results, and in the final section, the main conclusions are pointed out, and implications are suggested.

2. Theory and Hypotheses Development

2.1. Foreign Income Growth and Forecast Optimism

Prior studies have argued that the level of foreign earnings is closely related to the complexity in analyzing the firm's business (e.g., Thomas, 1999; Callen, Hope, & Segal, 2005). Duru and Reeb (2002) and Tihanyi and Thomas (2005) provide evidence that international diversification leads to less accurate and more optimistic forecasts. It is understood that these results are mainly due to the difficulty and complexity of the analyst forecasting task (Chen, Ding, & Kim, 2010; Duru & Reeb, 2002). Thomas (1999) and Khurana, Pereira, and Raman (2003) show that stock market underestimates the persistence of foreign earnings as they do not fully understand the origin of firms' foreign earnings.

However, even though the international involvement of firms implies higher complexity in valuing firms' business, firms' focus in the international market is a strategic goal that analysts or investors consider in assessing the firm's future growth and prospects. International growth of firms has long been argued to be important for the firm's long-term growth (Carr, Haggard, Hmieleski, & Zahra, 2010; Sapienza, Autio, George, & Zahra, 2006; Sun, Price, & Ding, 2019). Bodnar and Weintrop (1997) show that foreign earnings have a stronger positive impact on stock returns than domestic earnings. They posit that findings on investors' higher weight on foreign earnings are due to the existence of a growth opportunity in the foreign market. Based on the idea, we argue that analysts will display disproportionate preference on foreign income growth and show an optimistic bias in their earnings forecasts. Easterwood and Nutt (1999) argue that there is a systematic optimism in response to the information that analysts tend to underreact to negative information but overreact to positive information. Such an optimistic bias can take place when analysts regard foreign income growth as good news.

Hence, we predict that higher foreign income growth generates a higher expectation on the firm's growth, and analysts tend to over-estimate earnings forecast. Thus, we hypothesize as following:

H1: Foreign income growth rate is positively associated with forecast optimism.

2.2. The Moderating Effect of Innovative Capability

Firms' innovative capabilities are derived from its efforts to search for new technologies, which is reflected in the level of investment that the firm makes in research and development (R&D) activities. R&D investments are important for firms' long-term success because it leads to organizational learning and innovation (Cohen & Levinthal, 1990). As such, allocating valuable and scarce resources (e.g., capital) into R&D activities is a clear sign of a firm's commitment to building innovation capabilities with a long-term horizon (Anderson & Tushman, 1990; Kor & Mahoney, 2005). Since firms' investments in R&D has the tendency to be distant, its effect on revenues typically occurs over a relatively long period of time (Gentry & Shen, 2013).

Under the circumstances, we suggest that firms with greater innovative capabilities are perceived by financial analysts to be better able to take advantage of foreign growth opportunities. Internationally diversified firms with better innovative capabilities can effectively recognize and identify foreign growth opportunities because they have higher levels of absorptive capacity, which is defined as the ability to identify, assimilate, and exploit the knowledge that exists in the environment (Cohen & Levinthal, 1990). Investments in R&D have been found to contribute to increasing a firm's absorptive capacity because it provides the foundation for accumulating internal knowledge and foster internal knowledge creation (Zahra & Hayton, 2008). Thus, firms with absorptive capacity have a prior knowledge base to identify opportunities, which is critical to eventually successfully pursuing innovation (Knott, 2008;

Todorova & Durisin, 2007). In the context of international diversification, firms investing in R&D possess the absorptive capacity to recognize that there is a growth opportunity in the foreign market they are operating in.

Once foreign growth opportunities are discovered, innovative capabilities also help these firms to translate these opportunities into profits and growth. Identifying foreign growth opportunities is not enough because firms will be able to gain actual returns only when they are able to exploit the identified opportunities. Innovative capabilities allow for firms to better understand the new technology that they access in foreign markets because the internally accumulated knowledge build through R&D investments gives them the insight make more accurate valuations (Lavie & Rosenkopf, 2006; Rosenkopf & Nerkar, 2001). Internationally diversified firms with greater innovative capabilities are also less constrained by barriers that arise from national borders because they are able to tap into various resources in their globally distributed subsidiaries (Hitt, Hoskisson, & Kim, 1997).

In summation, we suggest that analysts perceive that these firms will be better able to exploit foreign growth opportunities since firms with high R&D expenditures have higher innovative capabilities. Thus, we hypothesize as following:

H2: R&D intensity moderates the positive relationship between foreign income growth rate and forecast optimism in such a way that the relationship is stronger when R&D intensity is high.

<Figure 1> displays the theoretical model describing the given hypotheses.

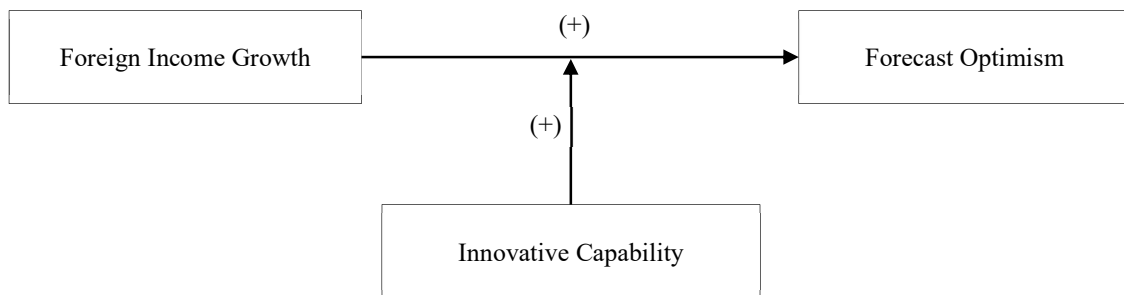


Figure 1: Theoretical Model

3. METHODOLOGY

3.1. Sample and Methodology

Our initial sample is all publicly listed and traded U.S. firms for years between 1976 and 2016. Data on analysts' earnings forecasts are collected from the I/B/E/S database, and accounting-based financial variables are collected from the Compustat database. Our final sample consists of 6,120 firm-year observations.

To correct for within-firm autocorrelation and cross-sectional heteroscedasticity, generalized least squares (GLS) regression is employed. We run a Hausman test and find that the difference in coefficients of the fixed- and random-effects estimations are not systematically different, which suggests that the random-effects specification is more efficient and favored over the fixed-effects specification (Hausman, 1978). Thus, the random-effects GLS regression is used to test our hypotheses. All explanatory variables are lagged by one year.

3.2. Variable Operationalization

Dependent variable. Forecast optimism variable captures the difference between the average of analysts' forecasts on earnings per share (EPS) and the actual EPS firms report. The average of analysts' forecasts is regarded as the "consensus," which is normally viewed as the reference or the target that investors expect firms to meet (e.g., Kasznik & McNichols, 2002). Even though analysts publish their forecasts for several times throughout the year, investors are most sensitive toward the difference between earnings announcement by the firm and the last forecasts before that announcement (Bartov, Givoly, & Hayn, 2002). Following Gentry and Shen (2013), we construct a forecast optimism variable by the following equation:

$$\text{Performance Gap} = (\text{Average EPS Forecast} - \text{Actual EPS}) / \text{Average EPS Forecast}$$

Independent variable. Foreign income growth rate is the annual growth rate of foreign income (i.e., after-tax foreign income). Net income, which represents foreign income after tax) is calculated by deducting foreign income tax and deferred foreign income tax from pretax foreign income.

$$\text{Foreign income growth} = \frac{\text{Net foreign income}_t - \text{Net foreign income}_{t-1}}{\text{Net foreign income}_{t-1}}$$

In this paper, we use the growth rate of foreign income – rather than the absolute level of foreign income – to take into account that financial analysts incorporate how persistent foreign earnings are in each firm. Duru and Reeb (2003) suggest that multinationals’ international diversification increases the complexity of analysts’ forecasting task, which will lead to a compromise in their forecast accuracy. As a result, foreign earnings can be perceived as less persistent due to higher uncertainty (Khurana, Pereira, & Raman, 2003). However, if a firm is able to boost foreign income compared to the previous year, this suggests that it is becoming more capable of exploiting foreign growth opportunities; thus, a proof a more persistent foreign income is presented.

While U.S. SEC guidelines also require firms to disclose earnings by geographic area (e.g., Canada, Europe, Asia/Pacific), it is criticized by the financial community and business scholars that geographic segment earnings disclosures are not useful because of lack of comparability and consistency in segment definition both across firms and over time for the same firm, and insufficient disaggregation (Thomas, 1999). Hence, in this paper, we utilize the foreign earnings information that encompasses all earning from countries other than the U.S.

Moderating variable. To measure firms’ innovative capability, we use R&D intensity as a proxy. Consistent with prior literature (Chen & Miller, 2007; Cohen & Levinthal, 1990), R&D intensity is measured by dividing total R&D expenditure with total sales for each fiscal year.

Control variables. We include a number of control variables that can influence analysts’ earnings forecasts. Analyst followings, which is defined as the number of estimates issued for a given firm at the end of each fiscal year, is controlled for. The level of analyst followings influences analysts’ earnings forecasts because analysts have been found to learn from each other. A higher level of analyst coverage leads to greater availability of information that is the result of research done by other analysts (Lyo & Soo, 1995). In fact, analysts’ forecast revision have been found to be correlated across analysts (Butler & Lang, 1991; Lys & Sohn, 1990; O’Brien, 1990; Stickel, 1990). Inventories of final goods are controlled for because abnormal buildup in final goods inventories has been found to affect analyst forecasts. While excessive inventories in final goods can be produced in anticipation of increased demands, analysts nevertheless face a greater informational disadvantage in predicting how inventories buildup can affect the firms’ future operating performance (Hutton, Lee, & Shu, 2012). Also, marketing capability represents the firm’s ability to differentiate its products from competitors by advertising or promoting its brands (Kotabe, Srinivasan, & Aulakh, 2002). Thus, internationally diversified firms with greater marketing capabilities are likely to be able to better capitalize on foreign growth opportunities in foreign markets (CITATION). We control for marketing intensity, which is measured as the advertising expenses divided by sales, as a proxy for marketing capability. Recoverable slack is the ratio of selling, general & administrative expense (SQ&A) to sales, while available slack is the ratio of current assets to current liabilities (Palmer & Wiseman, 1999). Firms with more slack resources have room to weather adverse times, thereby affecting analysts’ outlook at the firm’s future earnings. Capital expenditure ratio is the ratio of capital expenditure to total assets. The level of capital investment that a firm makes can influence forecast optimism because these firms can potentially be “extreme losers” (Beneish, Lee, & Tarple, 2001). Thus, firms with lower capital expenditure ratios receive more optimistic earnings forecasts from analysts (Jagadeesh, Kim, Krische, & Lee, 2004). Year fixed-effects are also controlled for.

4. Empirical Analysis

4.1. Sample Description

<Table 1> and <Table 2> report the summary statistics and the correlation matrix of the variables employed in the empirical analysis, respectively. It shows that firms with higher foreign income growth rate, higher R&D intensity, and less capital expenditure ratio are more likely to receive more optimistic earnings forecasts from financial analysts.

Table 1: Descriptive Statistics

Variable	Mean	Std.Dev.	Min	Max
Forecast optimism	-0.07	0.37	-1.15	0.67
Foreign income growth rate	1.07	12.42	-21.23	45.34
Domestic income	78.84	661.06	-16443.00	16783.00
R&D intensity	0.12	0.31	0.00	2.23
Analyst followings	8.02	7.26	1.00	43.00
Inventories	126.20	421.21	-1.21	8262.00
Marketing intensity	0.24	0.20	-0.35	0.90
Recoverable slack	0.46	9.34	0.00	725.96
Available slack	-0.22	19.52	-1520.50	56.11
Capital expenditure ratio	0.99	0.77	0.17	3.19

Table 2: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10
1 Forecast optimism	1.00									
2 Foreign income growth rate	0.04*	1.00								
3 Domestic income	0.02	-0.01	1.00							
4 R&D intensity	0.05*	-0.02	-0.03*	1.00						
5 Analyst followings	0.00	-0.07*	0.18*	-0.04*	1.00					
6 Inventories	0.05*	0.19*	0.05*	-0.08*	0.00	1.00				
7 Marketing intensity	-0.02	-0.03*	-0.02	-0.37*	-0.01	-0.08*	1.00			
8 Recoverable slack	0.01	0.00	0.00	0.12*	-0.01	-0.01	0.06*	1.00		
9 Available slack	0.00	0.00	0.00	-0.08*	0.00	0.00	0.04*	0.02	1.00	
10 Capital expenditure ratio	-0.03*	0.04*	-0.02	0.27*	-0.04*	-0.02	-0.22*	0.05*	-0.04*	1.00

Note: P-value in parentheses. (* p<0.05)

4.2. Empirical Results

<Table 3> reports the main empirical results of the tests for the hypotheses presented in the paper. Model 2 and Model 3 consistently shows that foreign income growth rate leads to greater forecast optimism by analysts ($\beta=0.0008$, $p<0.05$ and $\beta=0.0011$, $p<0.01$, respectively). Thus, Hypothesis 1 is supported. In Model 3, R&D investments appears to attenuate – rather than strengthen – analysts’ propensity to issue optimistic earnings forecast for firms with higher foreign income growth rates ($\beta=-0.0041$, $p<0.1$). Thus, hypothesis 2 is not supported.

Table 3: The Effect of Foreign Income Growth and R&D Intensity

	Model 1		Model 2		Model 3	
	Coefficient	p-values	Coefficient	p-values	Coefficient	p-values
Constant	-0.0156	0.967	-0.0153	0.967	-0.0154	0.967
Foreign income growth rate			0.0008*	0.044	0.0011**	0.009
Foreign income growth rate × R&D intensity					-0.0041+	0.070
R&D intensity	0.0488**	-0.005	0.0497**	0.004	0.0494**	0.004
Domestic income	0.0000	0.409	0.0000	0.393	0.0000	0.390
Analyst followings	0.0002	0.754	0.0003	0.651	0.0003	0.650
Inventories	0.0000*	0.016	0.0000*	0.044	0.0000+	0.051
Marketing intensity	0.0368	0.169	0.0370	0.165	0.0372	0.163
Recoverable slack	-0.0000	0.982	-0.0000	0.984	-0.0000	0.961
Available slack	0.0001	0.829	0.0001	0.831	0.0001	0.820
Capital expenditure ratio	-0.1012	0.399	-0.1149	0.339	-0.1108	0.357
Year effect	Included		Included		Included	
Adjusted R-squared	0.031		0.032		0.033	
Observation	6,120		6,120		6,120	

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

5. Conclusion and Discussion

This paper provides empirical evidence on analysts' behavior of optimistic earning forecast. As foreign income growth rate is observable information that implies the firm's international growth, analysts over-estimate firms' earnings when firms experience growth in foreign income level. Our finding shows the existence of information asymmetry between firms and analysts that observable information does not provide a full picture of the firm's business, leading to an inaccurate forecast. A careful assessment of a firm's foreign income growth is needed to reduce any potential negative impact on the market that can arise when the information on real earnings are reported. Also, contrary to our prediction, innovative capabilities do not increase the optimistic bias on earnings forecast. It can be regarded that an innovative firm's international growth is experiencing less bias, and related issues can be explored further.

Also, the current study can be extended by incorporating the heterogeneity in the source of foreign income. Not all foreign markets provide the same level of growth opportunities. There will be differences in the growth prospect among foreign markets because some markets may be characterized by rising consumer demands while other markets may have stable or declining consumer demands (Gaba, Pan, & Ungson, 2002). Compared to entrants in a mature foreign market, pioneering entrants in a more nascent foreign market can potentially gain larger returns if they are successful (Lambkin, 1988). The extent of growth opportunities can also differ across nations because of the differences in the level of institutional development. As institutions refer to the economic, political, legal, and regulatory frameworks that explicitly govern the enforcement of property rights (North, 1990), more developed

institutional frameworks that provide enhanced market stability and reliable legal protection will allow for foreign firms to better exploit the growth opportunities that are present within the nation. Thus, if an internationally diversified firm is expanding to a foreign market with more growth opportunities, then financial analysts may issue even more optimistically biased earnings forecasts.

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