The Impact of Economic Freedom on Financial Analysts' Earnings Forecast: Evidence from the Asia-Pacific Region

Tony Chieh-Tse Hou
Department of Finance,
National Dong Hwa University, Hualien, Taiwan
E-mail: houc@mail.ndhu.edu.tw

Simon Gao
The Business School, Edinburgh Napier University, Edinburgh, UK
E-mail: s.gao@napier.ac.uk

1. Introduction

Financial analysts are a prominent group of information intermediaries that fulfill an important monitoring function in a financial market. Using a variety of research, analytical and forecasting techniques, analysts provide information covering future earnings forecasts, fundamental research, and ultimately investment recommendations. Analysts’ earnings forecasts (AEFs) are widely used by traders, mutual fund managers, portfolio managers and investors for decision-making (Frankel and Lee, 1998; Ishigami and Takeda, 2018). Prior studies that have documented the importance of AEFs often use proxies based on information quality (e.g., Chen et al., 2015), audit quality (e.g., Behn et al., 2008; Wu and Wilson, 2016), governance effectiveness (e.g., Gul et al., 2013; Verriest, 2014), investor beliefs (Abarbanell et al., 1995), non-financial disclosure (e.g., Dhaliwal et al., 2012), and/or disparities of opinions (e.g., García-Meca and Sánchez-Ballesta, 2006; Chan et al., 2007).
Although previous studies argue that AEFs are informative and valuable to both firms and investors, the literature has also observed behavioral biases of analysts (Lang and Lundholm, 1996; Francis and Soffer, 1997; Lopez and Rees, 2002; Gleason and Lee, 2003; Asquith et al., 2005; Frankel et al., 2006; Call et al., 2009; Lehavy et al., 2011; and Cen et al., 2013). For example, studying the anchoring bias associated with forecast earnings per share (EPS) for forecast errors, earnings surprises, stock returns and stock splits, Cen et al. (2013) find that analysts make optimistic (pessimistic) forecasts when a firm’s forecast EPS is lower (higher) than the industry median.

Brauer and Wiersema (2018) highlight that the influence of regulatory bodies has been ignored and call for more research to address how regulatory changes influence financial analyst interactions with management, analyst coverage, and the accuracy and bias of their stock recommendations. As financial analysts operate as actors within a social network (Brauer and Wiersema, 2018) that is influenced by intersecting of social, economic and political environments, we believe there is a logical connection between economic freedom (EcF) and the accuracy of AEFs. We argue that the accuracy of AEFs is plausibly associated with analysts’ capability of obtaining and interpreting information. Analysts’ capability is largely restrained by social, economic and political environments of an economy where analysts are situated and information is obtained. EcF as a key indicator of interactions of these environments expects to affect the capability of analysts to acquire the quality and quantity of information. It is generally recognized that information is costly and asymmetrically distributed throughout the market and corporations in countries/economies with less EcF have low levels of corporate transparency (Fan and Wong, 2002). In a less transparent or a highly uncertain market, a firm may choose to reveal very little useful information and consequently the analysts will hold a limited amount of valuable information, which ultimately influences the quality of AEFs.

Extending the literature about the influence of regulations, such as compliance with International Financial Reporting Standards (IFRSs), on AEF accuracy/bias, our study demonstrates the relevance of EcF. We argue that an increase of EcF would lead to more transparent financial environments and analysts in an economy with a higher level of EcF expect to produce more accurate earnings forecasts. Furthermore, analysts routinely collect and process an enormous amount of information from corporate managers and subsequently convey the information to investors.
There should be less noise on a market with a higher level of EcF as lower information searching cost for investors from such a market reduces information asymmetry. By contrast, firms’ earnings are more easily manipulated by corporate managers in an economy with a lower level of EcF. As a result, AEFs become less accurate than those in economies with a higher level of EcF. Because managers in economies with less EcF have more incentives to beat the market, we can argue that analysts in those economies tend to issue more optimistic earnings forecasts than analysts in economies with more EcF. Investors in economies with less EcF must spend more time/cost to search for firm-specific information. It further increases the information asymmetric problem.

Our study aims at producing empirical evidence to enhance our understanding of the impact of EcF on AEFs and the diffusion of a firm’s earnings information. To the best of our knowledge, this study is the first of its kind to examine the connection between EcF and AEFs in an international setting. The data is based on EcF scores consisting of five broad areas defined by the Fraser Institute and used in the Economic Freedom of the World (EFW) index: government, protection, money, trade, and regulation. Our sample covers 12 economies, including Australia, China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Singapore, Taiwan, and Thailand.

2. Literature review

Several previous studies have found evidence that AEFs tend to be optimistic comparing to realized earnings (e.g., Galanti and Vaubourg, 2017). Due to economic incentives, analysts may intentionally introduce an optimistic bias in forecasts with a view to gaining access to top executives (Francis and Philbrick, 1993; Das et al., 1998; Lim, 2001; Ke and Yu, 2006), winning investment banking clients (Chan et al., 2007), and generating trading commissions (Jackson, 2005; Cowen et al., 2006). Also, empirical evidence has emerged of the impact of analyst characteristics and personal traits on analysts’ inputs and incentives (e.g., Brown et al., 2015; Jiang et al., 2016). A few studies have examined the relationship between AEF accuracy/bias and government regulations relating to disclosures and reporting (e.g., Hodgdon et al., 2008; Galanti and Vaubourg, 2017).
A considerable amount of research has attempted to find out what influences the optimistic bias of AEFs and most of them are based on a single-country data. The literature provides a few explanations related to firm size, corporate ownership, analyst experience and reputation, complexity of forecasting task, compliance with IFRSs, equity incentive plans, and time-period of forecast. However, the empirical evidence is inconclusive.

A few studies have taken an interest in assessing AEFs around the world and revealed significant differences in their respective accuracy levels (e.g., Luo et al., 2019; Haw et al., 2015; Hope, 2003). While the literature has suggested that the accuracy of AEFs could be related to the accounting, legal and institutional environments in effect, few studies have attempted to identify broader aspects of cultural and institutional factors in analysts’ decisions. Luo et al. (2019) argue that analysts as bounded rational actors are guided by routines, which are based on ‘shared values and norms’ that vary cross-country. Studying the determinants of accuracy of AEFs in the Asia-Pacific region, Black and Carnes (2006) examine whether macroeconomic factors can explain part of the difference in forecast errors. Their findings confirm the argument that those nations that are more open to foreign trade and investment would have more accurate AEFs. In this study, we take a broader approach by examining country/economy-specific characteristics when identifying factors that influence AEF bias. We test whether EcF in an economy affects the accuracy/bias of AEFs.

3. Data and method

3.1 Sample selection

Our sample consists of 7,014 firms from 12 Asia-Pacific economies. The sample data comes from two sources. The primary data comes from the Institutional Brokerage Estimate System (I/B/E/S) International Summary database. Book to market equity value and other financial...
3.2 Empirical model

Our empirical analyses are based on the weighted-least-square regression in which independent variable is EcF and the dependent variable is AEF accuracy. To mitigate the omitted-variables problem, we include a set of explanatory variables, such as size, book-to-market ratio, analyst coverage, analyst dispersion, optimism bias dummy and GDP growth. Because economic data are at the country/economy level and the forecast accuracy are at the firm level, we also perform multilevel regression analysis based on Hox (2002) as a robustness test.

\[
\text{Accuracy}_{t+1} = \alpha_t + EF_{t+1} + Size_{t+1} + BM_{t+1} + NAF_{t+1} + Dispersion_{t+1} + BiasDummy_{t+1} + GDPGrowth_{t+1} + \mu_{t+1}
\]

Accuracy is measured as 1 minus forecast error. Forecast error is measured as the absolute value of difference between a firm’s forecasted and actual earnings, divided by the actual earnings at a forecast date. Bias is measured as the signed forecast error and it is defined as the difference between a firm’s forecasted and actual earnings, divided by the actual earnings at a forecast date. Bias dummy is the optimism bias indicator variable with 1 if optimism or 0 otherwise. Size (ln(MV)) is measured as the natural logarithm of the market value (MV) of the equity for the sample firms in local currency. Book-to-market (BM) is obtained from the DataStream. NAF is the analyst coverage measured by the number of analysts who provide earnings estimates. Dispersion (DISP) is measured as the standard deviation of EPS forecasts divided by the absolute value of the mean EPS forecast.

By and large, EcF can be defined and measured in different ways as shown in the literature (e.g., Hall and Lawson, 2014). We use the EcF data from the EFW reported by the Fraser Institute (Gwartney et al., 2017). Table 2 reports the average ratings of EcF for the 12 economies. The ratings are averaged to derive the summary rating for each economy and are ranged from 1 (lowest) to 10 (highest).
Previous studies also pointed out the importance of legal environment influence on the financial market development and analysts’ forecasts. Table 2 reports mean difference between the common law and civil law economies for the forecast accuracy and bias for the sample period.

4. Empirical results

4.1 The weighted-least-square (WLS) regression

We first apply WLS regression to the panel data and find that overall EcF is positively and significantly (coefficient = 0.1912, \(p\)-value <0.01) associated with AEF accuracy as shown in Table 3. However, since our sample is dominated by China and Japan, the second column report the results that exclude these two countries. Model 2 in Table 3 confirm the results from Model 1 as the coefficient of overall EcF is 0.1644 (\(p\)-value <0.01). Models 3 to 5 look at the specific EcF index. Model 3 in Table 3 finds government, protection, and regulation freedom are positively and significantly related to AEF accuracy, while trade freedom is negatively and significantly related to accuracy. Models 4 and 5 separate samples in accordance with their legal systems. The results reported in Model 5 is similar to Model 3 when we use the whole sample. Model 4 in Table 3 finds, under the common law sample, trade freedom is positively related to AEF accuracy, but regulation freedom is negatively related to AEF accuracy.

4.2 Multilevel regression on accuracy

Table 4 reports the results from multilevel regression analysis with a specification of AEF accuracy for each firm in each economy as the dependent variable. First, the results of Models 1 and 2 confirm the findings shown in Table 3. Both models find the overall EcF is significantly and positively related to accuracy when we use the whole sample, as well as the sample that excludes China and Japan. Model 3 in Table 4 also
confirms the findings of Model 3 in Table 3 that protection and regulation freedom are positively and significantly related to AEF accuracy, while trade freedom is negatively and significantly related to AEF accuracy. When we separately examine the common law (Model 4) and civil law (Model 5) samples, the results also confirm the findings shown in Table 3.

5. Conclusions

Our study investigates the impact of EcF on AEF accuracy and bias. The EcF index measures the degree to which policies and institutions of economies are supportive of EcF in five major aspects: Government, Protection, Money, Trade, and Regulation. With the sample of 7,014 firms from 12 economies in the Asia-Pacific region over the 18-year period from Q1 2000 to Q2 2018, our study presents the following findings. Firstly, it finds an optimistic bias in AEFs in these 12 economies. The optimistic bias is stronger from analysts in economies with less EcF than in more freedom ones. Secondly, analysts are making more accurate earnings forecasts for firms in economies with more EcF, in particular for large firms, value firms, stocks with high analyst coverage, and low dispersion in AEFs. Firm with these characteristics are generally face less information asymmetry problems. These findings may suggest that an increase of EcF would lead to more transparent financial statements, which further increase the accuracy of AEFs. Thirdly, the study finds the optimism bias reduces the earnings forecast accuracy.

Our contribution to the literature is as follows. First, this is the first study of its kind to explore the impact of EcF on AEF accuracy and bias. Our study covers five aspects of EcF, significantly extending the prior limited literature that merely considers the regulatory aspect. Second, we study the determinants of accuracy/bias of AEFs in 12 economies in the Asia-Pacific region with the use of an 18-year dataset that cover the great economic crisis period. Previous studies of this topic were predominately based on a single country data and/or a short period of time. By and large, our findings suggest that equity analysts do provide useful earnings forecasts information to market participants, particularly in economies with more EcF.
Acknowledgement:

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References:


Table 1: Descriptive statistics and correlation coefficients of variables

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<th>Panel A: Mean values of variables</th>
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Panel B: Correlation matrix

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<th>NAF</th>
<th>DISP</th>
<th>Accuracy</th>
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<th>Overall</th>
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<th>Protection</th>
<th>Money</th>
<th>Trade</th>
<th>Regulation</th>
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Notes: ** and * indicate that the coefficients are statistically significant at 0.01 and 0.05 levels, respectively.
Table 2: Mean accuracy and bias for different legal systems

Panel A: Mean accuracy for the Common and Civil Law economies

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Panel B: Mean bias for the Common and Civil Law economies

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<td><strong>0.0248</strong></td>
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<td><strong>0.0722</strong></td>
<td><strong>0.0705</strong></td>
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<td><strong>0.0903</strong></td>
<td><strong>0.0682</strong></td>
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<td><strong>0.0683</strong></td>
<td><strong>0.0999</strong></td>
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<td>(0.66)</td>
<td>(4.94)</td>
<td>(3.22)</td>
<td>(-0.74)</td>
<td>(3.41)</td>
<td>(3.21)</td>
<td>(5.60)</td>
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<td>(8.76)</td>
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Note: Common Law economies include: Australia, Hong Kong, India, Malaysia, New Zealand, and Singapore; Civil Law economies include: China, Indonesia, Japan, South Korea, Taiwan, and Thailand. t-statistics are shown in parentheses. ** and * indicate that the coefficients are statistically significant at 0.01 and 0.05 levels, respectively.
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<th>Variables</th>
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<th>All Model 3</th>
<th>Common Law Model 4</th>
<th>Civil Law Model 5</th>
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<td>0.0002</td>
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Notes: ** and * indicate that the coefficients are statistically significant at 0.01 and 0.05 levels, respectively.
Table 4: Multilevel regression results on accuracy

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<td>-0.0077***</td>
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<td>0.0216*</td>
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Notes: ** and * indicate that the coefficients are statistically significant at 0.01 and 0.05 levels, respectively.