Application of fundamental analysis to determine the value of accounting information to devaluation process in Mexico: a comparative study 1994 vs. 2008.

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Summary

For a sample of companies listed on the Bolsa Mexicana de Valores, carried out an extension to December 2008, the study of Swanson, Rees and Juarez-Valdez (2003) on the process of devaluation of 1994. The objective of the research was to assess the processes for devaluations of 1994 and 2008, the relevance of fundamental analysis and financial statement information relating to changes in selling and administrative expenses, changes in gross margin, changes in inventories, changes in receivables and leverage, in connection with the predictions of financial analysts about future earnings as well as revisions to these predictions. We used data available in the IBES database of WRDS and Economatica, and applied a regression model to determine the degree of association between variables. The results suggest that in the process of devaluation, fundamental signals have greater explanatory power of earnings per share and forecasts and revisions of financial analysts.

Keywords:
- Devaluation
- Earnings per share
- Financial Statement Analysis
- Financial Forecasts

Resumen

Para una muestra de compañías que cotizan en la Bolsa Mexicana de Valores, se llevó a cabo una extensión a Diciembre del 2008, del estudio de Swanson, Rees y Juárez-Valdez (2003) sobre el proceso devaluatorio de 1994. El objetivo de la investigación fue evaluar, para los procesos devaluatorios de 1994 y de 2008, la relevancia del análisis fundamental y la información de los estados financieros referente a los cambios en los gastos de administración y venta, los cambios en margen bruto, los cambios en inventarios, los cambios en cuentas por cobrar y el apalancamiento, en relación con las predicciones de los analistas financieros acerca de las utilidades futuras así como sus revisiones a estas predicciones. Se utilizaron datos disponibles en las bases de datos IBES del WRDS y Económatica, y se aplicó un modelo de regresión para determinar el grado de asociación entre las variables. Los resultados obtenidos sugieren que en procesos devaluatorios, los signos fundamentales que provienen de la contabilidad y los estados financieros, tienen mayor poder explicatorio sobre las utilidades por acción y sobre los pronósticos y revisiones de los analistas financieros.

Palabras clave:
- Devaluación
- Utilidades por acción
- Análisis de Estados Financieros
- Pronósticos financieros.

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Introduction

At severe economic shocks as devaluation for example, historical earnings lost value relevance, so investors and analysts need further accounting information to estimate future returns. Fundamental analyses approach use detailed information provided in financial statements to provide a more specific analysis of a company performance, rather than earnings. As Swanson, Rees and Juárez-Valdez (2003) explain, as considering changes in key components of operating performance, fundamental analyses has the potential to capture more completely than earnings the value relevance of accounting information after an economic shock as devaluation. For this paper, the specific setting is a comparative study between the economic shock in 1994, in contrast with the economic circumstances in 2008, for a sample of companies that traded on Mexican Bolsa during the period from 1993 to 1998; and 2000/2001 and 2008 periods. We replicate the model proposed by Swanson, Rees and Juárez- Valdez (2003) for 1993 to 1998 period, and applied for 2000, 2001 and 2008 period; to study the relationship between fundamental analyses signals and analysts forecasts in both periods, and to contribute to reliability and validity of the proposed model. In México, it is important to contribute to accounting research field, because it is a way to understand the relationship between market and accounting information; and also because research is a formal way to enhance confidence on market and companies for potential investors, local or foreign. The paper has four more sections, first present literature review and research hypothesis; then describe the research design and the results, and finally the conclusions.

Literature Review and Research Hypothesis

Devaluation setting in México 1994-2008

It is important to note, than México 2008 economic circumstances weren't as 1994 crisis, because 1994 crisis was caused internally, in contrast with 2008, when the country experimented the effects of a financial crises that arose on the United States. The Mexican crisis began with the political tensions during1994. There was capital flight in response to conflict in Chiapas and murder of Luis Donaldo Colosio. These facts, along with a growing current account deficit, brought the peso devaluation at December 1994 (Kalter and Ribas, 1999; Cárcamo and Arroyo, 2009).

Back then, it was necessary to increase interest rates to curb outflow of capital, generating economic recession and bank insolvency. Real GDP fell by 10% during 1995 and inflation reached levels of 52% the same year. Not until the end of 1997 when real GDP recovered completely. Inflation, which in 2000 was 10%, began its descent protected economic stability and reached its lowest level in late 2002. However, as Saavedra (2008) describes, at January of 2008 begins its ascent again orchestrated by the expectation of increase in international prices of raw materials.

In México as in other countries in Latin America, (Adam, 1999; De la Hoz, B;Uzcátegui, S.;Borges, J. and Velazco, A.;2008) when prices rise and a currency devaluation occurs, values

are distorted and financial statements by themselves, do not provide information suitable for management, projects evaluation, budgeting, investment opportunities and evaluation of the investments real rate of return. At capital markets and banking, investors and bankers need more reliable and actual accounting information, for better decisions. Analysts must refine their analyses, and look for additional economic and accounting data, to find relationships that make sense about firm future performance. The next section refers to the relationship between fundamental analyses and analysts forecast, in order to better understanding of a firm performance and expectations.

Fundamental Analysis

By studying the links between fundamental signals and future earnings changes, it´s possible to directly test the validity of the economic intuition that underlies the original construction of the signals. Abarbanell and Bushee, (1997) found that analysts' forecast revisions fail to impound all the information about future earnings contained in the fundamental signals, and tests based on stock returns indicate that investors appear, on average, to recognize this fact, as Greig (1992) suggests about that fundamental analysis identifies equity values not currently reflected in stock prices, and thus systematically predicts abnormal returns.

The interest in fundamental analysis is rooted in the evidence that suggests capital markets might be impound with limited information and that prices might take years before they fully reflect available information. Fundamental valuation can yield a rich return in an inefficient market. For Kothari (2001), evidence of market inefficiency and abnormal returns to fundamental analysis has triggered a surge in research testing market efficiency.

Fundamental and technical analyses are complementary techniques; Bettman, J. L. Sault, S. J. And Schultz, E. L. (2009) found in this combination superior explanatory power, and the forecast earnings measure itself revealed a significant and positive explanatory of price, *forecast* earnings per share not only subsumes current earnings figures, but also offers incremental information about the ongoing value of a firm.

As established before, fundamental analyses contributes to better forecasting, but there is more information to take on account for a more accurate forecast, next section describes complementary evidence about analysts forecasting process and economic conditions.

Analyst's forecasts and their implications

At a devaluation process, it is relevant to know about the relationship between fundamental analyses and analyst forecasts and revisions, because devaluation is a "bad news" context. If a firm didn´t performs as expected, analysts might simply drop it rather than issue a negative forecast, even though they observe significant new information from an earnings announcement. Empirical evidence shows that analysts tend not to follow firms when there are bad news (Ahmed, A. Minsup, S. and Stevens, D.; 2009). Nevertheless, as noted by Elgers, P; Lo, M. and Pfeiffer R (2003), analysts serve as a useful role in improving the information efficiency of securities prices.

In a complex economic environment, investors should consider not only forecast accuracy, but also forecast timing, in assessing analyst ability for forecasting. Analysts with more firm-specific general experience and more accurate prior-period forecasts, employed by larger brokerage firms, and who follow fewer industries and companies tend to forecast later, for more accurate forecasting. (Kim, Lobo, and Song, 2011). These analyst characteristics are positively related to forecast timing and negatively associated with relative forecast error.

And about the analyst media profile, Bonner, S. Hugon, A. Walther, B. (2007) found that the association between the excess returns around the earnings announcement date and the analyst's media coverage, is consistent with investors initially reacting too strongly to forecast revisions issued by "celebrity analysts".

Also the firm itself affects forecast. Firm size, analyst coverage, quality disclosure, diversification, volatility and earnings change, influence the analyst forecast error. The size of the analyzed company has negative and significant influence on the mistake made by the analyst in the issuance of its forecasts. Sánchez-Ballesta y García-Meca, (2005) found an association between the error of prediction on the forecast, and the size of the company.

Although empirical researchers have documented the existence of differential interpretation by analysts and investors of earnings announcements, the factors that drive this differential interpretation remain unknown. Differential interpretation of earnings is: (i) reduced by earnings characteristics reflecting the quality of the earnings; (ii) reduced by firm characteristics reflecting the quality of pre-announcement disclosure; and (iii) reduced by firm characteristics reflecting the cost of acquiring private information to interpret earnings idiosyncratically.

By identifying earnings and firm characteristics that affect differential interpretation, Ahmed, A. Minsup, S. and Stevens, D. (2009), suggests that it is possible to provide insights as to the conditions under which an earnings announcement is less likely to generate newfound disagreement among analysts and investors. Recent theory and evidence suggests that investor disagreement can increase investment risk, increase the cost of capital, and cause stock prices to deviate from fundamental value.

In addition to earnings announcement, existing research suggests that earnings volatility is determined by economic and accounting factors as devaluation for example, and both of these factors reduce earnings predictability. Conditioning on volatility information also allows one to identify systematic errors in analyst forecasts, which implies that analysts do not fully understand the implications of earnings volatility for earnings predictability. If analysts do not fully understand and incorporate the relation between earnings volatility and earnings persistence in forecasting future earnings, using earnings volatility information would allow one to identify predictable patterns in their forecast errors.

It is also possible that analysts understand the implications of earnings volatility for future earnings but their forecasts still reveal predictable errors because of career or incentive concerns as Dichev, I. and Wei Tang, V. (2009) propose. For example, firms with high volatility earnings are likely to have more information uncertainties and more information asymmetries, so analysts may bias their forecasts, hoping to get preferred access to internal data. Besides (Rees, L. 2005), meeting earnings thresholds is more effective at reducing investor uncertainty for firms with relatively low levels of publicly available information

About the relationship between earnings management and analyst´s forecasts, Abarbanell and Lehavy (2003) found a correspondence between extreme, income-decreasing earnings management and extreme, negative analysts' forecast errors. Firms rated a Buy (Sell) are more (less) likely to engage in earnings management, that leaves reported earnings equal to or slightly higher than analysts' forecasts. Other evidence indicates that models that include "other information", measure from the predictions of analysts, are need to be less bias and more accurately (Inchausti and Sánchez, 2006)

Taking into account the preceding information about fundamental analyses and analyst forecasts, the research question for these study was as follows *What is the degree of association between fundamental analyses signals and analysts forecasts and revisions on economic shocks?*, and the research hypothesis was that fundamental analyses signals and analyst forecasts and revisions are related.

What underlies this hypothesis is that accounting information and fundamental signals are more informative during currency devaluations, than earnings past or future behavior; in order to confirm that market prices do not fully reflect fundamental signals in a devaluation setting as Swanson, Rees and Juárez-Valdez (2003) implies in their study, it is relevant to validate this assumption in 2008 economic setting in contrast with 1994. The research design to accomplish the research question and to test the hypothesis is explained in next section.

Research Design

The financial statement and stock price data used in this study were obtained from Economatica database, which provides accounting data and stock returns for Latin American Companies. For Mexican companies, it provides accounting information based on the standardized format used in filing with the Bolsa Mexicana de Valores. This format provides the components of financial statements that are needed for fundamental analyses. The sample consists of all companies traded on the Mexican Stock Exchange during the period 1993-1998, 2000-2001 and 2008.

According with Bulletin B-10 issued by the Instituto Mexicano de Contadores Públicos (IMCP, 1984); companies were obligated to report replacement costs, and price level adjusted accounting information, for balance sheet non-monetary items. Income statement items, as revenues and expenses that occur during the current year are rolled forward into year –end prices using monthly price indexes, from the Mexican Consumer Price Index. Since 2005, the authority to issue financial reporting standards in México, belongs to the Consejo Mexicano de Normas de Información Financiera (CINIF, 2011); and on 2008 issued NIF-B10 about the inflation and devaluation effects on financial information, and established than actualization procedures are no longer mandatory when accumulated inflation rate is less than 26% in the last three periods. This circumstance may have an effect on our 2008 sample accounting information. About association of fundamental signals with analyst´s forecasts, this study examine the usefulness of the fundamental signals in México in predicting future earnings, analysts forecasts revisions and analyst forecast errors using the following equation :

$$Y_{it} = \alpha_0 + \beta_1 PTE_{it} + \beta_2 Inv_{it} + \beta_3 AR_{it} + \beta_4 GM_{it} + \beta_5 S\&A_{it} + \beta_6 Tax_{it} + \beta_7 Lev_{it} + \omega_{it}$$

Where Y represents the change in one year ahead earnings (denoted AE_{it+1}), the revised analyst forecast for year $_{t+1}$ after period t earnings are announced (denoted REV_t) or the analyst forecast

error for year $_{t+1}$ (denoted AFE$_{t+1}$). The change in one year ahead earnings is defined as earnings per share in year $_{t+1}$ minus earnings per share in year t deflated by price at the beginning of the returns accumulation period. As Abarbanell and Bushee (1997), REV$_{it}$ is defined as follows:

$$REV_{it}= [(PostF_{t+1} - E_t) - (PreF_{t+1}-F_t)]/P_{t-1}$$

Where PostF$_{t+1}$ is the first available mean consensus forecast for earnings in year $_{t+1}$ issued subsequent to the year t earnings announcement, E$_t$ is realized earnings in year t, PreF$_{t+1}$ is the first available mean consensus forecast in year t for earnings in year $_{t+1}$, and F$_t$ is the first available mean consensus forecast in year t for year t earnings. REV$_{it}$ can be thought of as the forecast revision (PostF$_{t+1}$-PreF$_{t+1}$) after removing the effect of the current period´s forecast error on the revised forecast of future earnings (removing Et-Ft). Finally, AFEi$_{t+1}$ is defined as realized earnings per share in year $_{t+1}$ minus the first forecasted earnings per share for year $_{t+1}$ issued subsequent to year t earnings announcement, deflated by price at the beginning or the returns accumulation period. For this study, the price considered was the one at month of March of period t. (Swanson, Rees and Juárez-Valdez 2003). All data considered to construct AFEi$_{t+1}$ and REV$_{it}$ were obtained from I/B/E/S data base from WRDS (2011), to ensure the use of the realized earnings construct that analysts are trying to forecast. No further actualization was applied to dependent variables.

A significant coefficient on a fundamental signal indicates the signal is useful in predicting the dependent variable (either realized earnings changes, analysts´ forecast revisions or analysts´ forecast errors). If a fundamental signal is associated with future earnings changes and analysts´ forecasts errors but not with analysts' forecast revisions, then this finding would suggest that analysts do not use the information contained in the signals, and this could be associated with investors earning unusual returns as analysts predicted.

In our Mexican companies' selection (Table 1), sufficient information is available to calculate six fundamental signals, including borrowing costs that were significant in fundamental analyses model. In these signals, a negative sign reflects good news or positive returns, under the most common interpretation by U.S analysts.

Table 1
Mexican Firms

Ticker	Company ID	Ticker	Company ID
@ACY	_ACCELSA	@T7X	_GMODERN
@AP7	_ALFA	@D7D	_KUO
@AH3	_AHMSA	@D3T	_POCHTEC
@A7P	_APASCO	@G73	_GSYR
@C9R	_ARA	@GR4	_HERDEZ
@A6A	_AUTLAN	@I7I	_ICA
		@I7H	_ICH
@A7R	_AXIS	@IC7	_CERAMIC
@NDU	_BACHOCO	@KIM	_KIMBER
@G3R	_BAFAR	@LIV	_LIVEPOL
@BI7	_BIMBO	@GM7	_MASECA
@B7P	_MOVILA	@C8A	_MEXCHEM
@BUK	_BUFETE	@NA9	_NADRO
@GCC	_GCC	@IPN	_PE&OLES
@CEX	_CEMEX	@GE4	_PEPSIGX
@C6N	_AMEXICO	@PD7	_POSADAS
@KO7	_KOF	@GTB	_PINFRA
@CI7	_COMERCI	@GRG	_RCENTRO
@C7L	_CONTAL	@GCA	_SAB
@CF3	_COFAR	@C59	_SANLUIS
@C3E	_CIE	@E7M	_SAVIA
@MZM	_CMOCTEZ	@GP7	_SIDEK
@CYS	_CYDSASA	@9SM	_SIMEC
@DI5	_DINA	@G7R	_SITUR
	_DUTY	@S3A	_SORIANA
@M7N	_EDOARDO	@S7Y	_SYNKRO
@EL1	_ELEKTRA	@TL7	_TELMEX
@EVA	_EMVASA	@TL3	_TLEVISA
@PIB	_EMPAQ	@TM4	_TMM
@BVE	_BEVIDES	@VT	_VITRO
@FEI	_FERIONI	@CRB	_WALMEX
@FEI	_FERIONI	@S7R	_SEARS
@FM4	_FEMSA	@GM9	_GMARTI
@GC7	_GCARSO	@GM1	_GMODELO
@GVI	_GCORVI		
@G7C	_GEUPEC		
@CG8	_GEO		
@GG7	_GIGANTE		
@GA8	_GISSA		

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For Mexican companies, the signals and their signs are discussed on following paragraphs:

1. Inventory: An increase in inventory relative to sales is generally interpreted by financial analysts as a negative signal, because it represents an over investment. In an inflationary economy, an increase in inventory may also be a positive sign if additional inventory has been obtained or produced in anticipation of cost increases. So, for this study an increase in inventory could be either a positive or negative signal in Mexico. The signal is computed as follows:

$$\text{Inventory} = \frac{\text{Inventory}_t - \text{Inventory}_{t-1}}{\text{Inventory}_{t-1}} - \frac{\text{Sales}_t - \text{Sales}_{t-1}}{\text{Sales}_{t-1}}$$

2. Accounts Receivable: Higher receivables could also indicate that the company has relaxed credit terms in order to sustain or raise a given level of sales. In Mexico companies, a negative association is expected between this fundamental signal and returns. The accounts receivable signal is computed as:

$$Ar = \frac{\text{Acct. Rec.}_t - \text{Acct. Rec.}_{t-1}}{\text{Acct. Rec.}_{t-1}} - \frac{\text{Sales}_t - \text{Sales}_{t-1}}{\text{Sales}_{t-1}}$$

3. Gross Margin: A decrease in gross margin signal could be caused by a decrease in sales price or an increase in input costs. Cost increases are more likely when inflation is high, a frequent condition in Mexico past inflationary periods, so a negative sign is expected. The signal is defined as follows:

$$GM = \frac{\text{Sales}_t - \text{Sales}_{t-1}}{\text{Sales}_{t-1}} - \frac{\text{Gross Margin}_t - \text{Gross Margin}_{t-1}}{\text{Gross Margin}_{t-1}}$$

4. Selling and administrative expenses: An increase in administrative expenses relative to sales can indicate a loss of control over fixed expenses that cannot be passed on the customers and will adversely affect future cash flows. In Mexico inflationary periods, when sales can change from period to period, the expected sign is negative and defined as:

$$S\&A = \frac{S\&A_t - S\&A_{t-1}}{S\&A_{t-1}} - \frac{\text{Sales}_t - \text{Sales}_{t-1}}{\text{Sales}_{t-1}}$$

Where S&A represents selling and administrative expenses.

5. Effective Tax Rate: For Mexican companies, a change in effective tax rate is more likely to have a permanent effect on earnings, in the selected periods; Mexican companies pay the greater of an income tax or an asset tax. If the tax rate increases because a firm paid an asset based tax prior year, but now owes an income tax in the current year, then the signal could be positive or negative for Mexico companies. The effective tax rate fundamental signal is calculated by splitting the change in earnings in two components. The first component is the current year´s after tax earnings that would have occurred if the prior year´s tax rate had been in effect. The second component, the tax signal component is the effect of the tax rate change on the current level of earnings. The expression is as follows:

$$E_t = PTE(1 - T_{t-1}) + PTE(T_{t-1} - T_t)$$

6. Borrowing Costs: Leverage is a widely used ratio in fundamental analyses. Because borrowing costs are so volatile in Mexico, the fundamental signal is expected to have a negative sign, and it is defined as:

Lev = Total liabilities
      Total Assets

The next section presents the results about the relationship between fundamental analyses data and analysts earnings forecast revisions, between devaluatory and non devaluatory periods for Mexican companies.

Results

Table 2 reports results of earnings and fundamental analyses signals regressed on analysts´ forecast revisions and analysts´ forecast errors for period 1993-1998, 2000-2001 and 2008. As Swanson et al (2003), the coefficient in PTE is significantly negative for 1993, 1995-1998, 2000-2001 and 2008 periods; with exception for 1994 replication, which indicates that when revising their earnings forecasts (REV_t) analysts anticipate mean reversion that means a decrease in the estimate earnings per share media.

With respect to the fundamental signals in devaluation periods (1994 and 2008), as Swanson et al (2003) found, selling and administrative expenses have a significantly negative association with forecast errors (AFE_{t+1}) for 1994 period, and with analyst forecast revisions for 2008 period. For the non devaluation periods, it´s interesting to note that selling and administrative expenses are also significant for analyst forecast revisions.

About multiple correlation coefficient (R^2), as an estimate for the proportion of variance in the dependent variables (AFE_{t+1} and REV_t) explained by the independent variables as fundamental signals data, fundamental signals explain a higher percentage variance on analysts forecast revision (REV_t) among the companies in the sample, for devaluation periods 1994 and 1998. So, it is possible to infer that fundamental signals are more relevant for analysts´ prediction at devaluation periods.

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Table 2 **Results of Earnings and Fundamental Analysis Signals regressed on analysts´forecast revisions and analysts´forecast errors**

Variable Y	(Intercept)	PTE	INV	AR	GM	S&A	Δ TAX	LEV	R²	# obs
1993,1995-1998										
REV	-.035	**-.018**	-.048	-.027	.077	**.190**	**-.035**	**.198**	29.2%	256
Swanson	-.012	**-.111**	-.021	.002	-.057	**.032**	-.320	.072	15.9%	308
p-value	*.061*	*.000*	*.166*	*.361*	*.223*	*.000*	*.020*	*.000*		
Mean Coef	.031	1.327	-.027	.008	.005	-.003	-.090	.437		
Swanson	-0.008	-.078	-.035	.019	.035	.022	**-.201**	.042		
AFE	**.037**	.002	.018	.003	**-.152**	**-.201**	-.002	**-.184**	15.5%	254
Swanson	.031	-.025	.001	.019	**-.266**	**-.240**	.002	**-.168**	11.0%	308
p-value	*.054*	*.488*	*.608*	*.926*	*.019*	*.000*	*.905*	*.000*		
Mean Coef	-.0407	1.334	-.026	.005	.005	-.003	-.091	.437		
Swanson	0.043	0.037	0.078	0.028	**-0.267**	-0.198	0.085	-0.242		
1994										
REV	**-.082**	-.005	-.009	**.027**	-.100	.016	.000	**.314**	49.6%	50
Swanson	-.039	**-.169**	-.021	.012	**-.150**	**-.140**	-.361	.241	51.4%	46
p-value	*.023*	*.157*	*.656*	*.027*	*.160*	*.606*	*.999*	*.000*		
Mean Coef	.072	.043	.304	.463	.046	.062	-.084	.470		
AFE	**.114**	**-.011**	.029	-.025	-.013	**-.142**	.011	**-.268**	32.4%	50
Swanson	.120	-.126	.001	-.035	**-.225**	**-.337**	.085	-.228	26.70%	46
p-value	*.037*	*.057*	*.331*	*.178*	*.905*	*.004*	*.721*	*.021*		
Mean Coef	-.0254	.0429	.3041	.4628	.0458	.0621	-.0839	.4699		

Table 2   **Results of Earnings and Fundamental Analysis Signals regressed on analysts´forecast revisions and analysts´forecast errors**

(continued)

Variable Y	(Intercept)	PTE	INV	AR	GM	S&A	Δ TAX	LEV	R^2	# obs
2000-2001										
REV	.078	**-.037**	.030	-.094	-.229	**.302**	-.066	-.026	14.50%	93
p-value	.344	.006	.825	.474	.346	.084	.180	.860		
Mean Coef	.0506	1.0189	-.0414	.0032	.0209	.0605	-.1875	.5139		
AFE	-.022	**.064**	.091	-.001	-.298	-.210	.024	-.354	18.8%	94
p-value	.855	.002	.643	.997	.456	.398	.737	.105		
Mean Coef	-.1561	1.1018	-.0368	.0121	.0166	.0630	-.1824	.5062		
2008										
REV	-.010	**-.012**	-.135	.007	-.152	**-.333**	**-.038**	.146	63.4%	29
p-value	.837	.007	.138	.899	.513	.075	.079	.145		
Mean Coef	.0168	1.2204	.0908	.0190	.0170	.0018	.3505	.4773		
AFE	.002	.002	.051	-.028	-.028	-.006	.007	-.027	18.8%	29
p-value	.937	.486	.318	.370	.835	.957	.550	.630		
Mean Coef	-.0026	1.2204	.0908	.0190	.0170	.0018	.3505	.4773		

All signifcant values are in bold

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Conclusions

Considering that the research question for these study was as follows *What is the degree of association between fundamental analyses signals and analysts forecasts and revisions on economic shocks?*, and that the research hypothesis was that fundamental analyses signals and analyst forecasts and revisions are related, we can conclude that accounting fundamental signals, are relevant for analyst forecasts and revisions particularly in devaluation periods.

Analysts affect their forecasts once financial statements are released and earnings are known. Market itself cannot fully impound the effects of an economic shock, at least on a subsequent period. Particularly, selling and administrative expenses, seem as sensitive accounting items, maybe because their discretionary nature, and the fastest possibility of adjusting them in economic shocks periods, as devaluation.

However, it´s important to note that in correlation analyses, most of the variables that are correlated with the dependent variable are also correlated with each other (Kerlinger and Lee, 2002), so in accounting data , there is a high possibility of association between fundamental signals as independent variables themselves. Studying these relationships is interesting for further research, in combination with other variables, for example analysts profile and company features.

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