

# **Additional Evidence on the Impact of the International Financial Reporting Standards on Earnings Quality: Evidence from Latin America**

**Mauricio Melgarejo**  
**Butler University**

*The purpose of this paper is to explore whether the adoption of the International Financial Reporting Standards (IFRS) has an impact on the quality of earnings in Latin America. Studying a sample of firms from Argentina, Brazil, Chile, Mexico, and Peru, I find that management reports a lower level of discretionary accruals after the implementation of the IFRS. In addition, this study provides evidence that earnings are more persistent and stock prices are more associated with earning numbers after the application of IFRS. This paper provides evidence that earnings quality has increased after the adoption of IFRS in Latin America.*

## **INTRODUCTION**

After the initial implementation of the International Financial Reporting Standards (IFRS) in the European Union (EU) and the progressive implementation of these standards around the world, international accounting research focused on the impact of the IFRS on the quality and properties of accounting information and how the IFRS have influenced financial market participants. A single set of high-quality, understandable, enforceable, and globally accepted financial reporting standards may reduce the differences in specific countries' reporting standards and help to create international capital markets that are more efficient. Between 2009 and 2012, several Latin American (LA) countries adopted the IFRS for all public firms with listed securities in their local stock exchanges. The purpose of this paper is to analyze whether the implementation of the new accounting rules has affected the quality of the accounting information provided by LA firms.

The evidence concerning the impact of the application of the IFRS on the quality of accounting information is not conclusive. Even though several studies have found an increasing quality in financial reports after the voluntary and mandatory implementation of the IFRS (Barth, Landsman, & Lang, 2008; Ahmed, Neel, & Wang, 2013), there are at least two reasons to expect that the IFRS would not improve the quality of accounting information. The IFRS are regarded as standards that are more principle-based than, for example, the rule-based standards used in the United States. The intrinsic flexibility in principle-based standards could provide greater opportunities for managers to manipulate earnings, thereby decreasing accounting quality. In addition, findings in Bradshaw and Miller (2007) suggest that the regulatory and litigation environment is also important to the application of accounting standards. This is especially important in the LA context, because countries in the region suffer from high uncertainty in supervisory structures compared to developed countries.

This paper contributes to the current literature in international accounting and LA studies in several ways. Emerging economies in general, and Latin America in particular, differ from developed economies in that they have institutional weaknesses that cause uncertainty in their regulatory structures (Aulakh & Kotabe, 2008; Khanna & Palepu, 2010). It is important to understand whether the application of new financial reporting rules, operating in such contexts, characterized by high political, social, and economic instability, has an impact on the quality of the accounting information. Adopting internationally recognized accounting standards may promote foreign direct investment, international trade, and capital flows, and may help regional integration (Covrig, DeFond, & Hung 2007). Given that Latin America has become a more globalized region and that the level of foreign investment represented around 3.7% of GDP in 2015, according to the Economic Commission for Latin America and the Caribbean (ECLAC), determining whether the implementation of the IFRS has an impact on the financial information reported by companies may provide relevant evidence for companies and investors interested in maintaining or starting investments in the region.

Using a sample of firms listed on the stock exchanges in Argentina, Brazil, Chile, Mexico, and Peru from 1997 to 2015, I find that after IFRS implementation, LA firms have earnings numbers that are more persistent and more value relevant. In addition, I find that LA firms report less absolute discretionary accruals after the implementation of the IFRS. The effect is similar in all the countries in the sample. The evidence in this paper supports the idea that the IFRS increase the quality of financial reporting in LA.

In the next section, I review the literature about the impact of IFRS on earnings quality around the world, before presenting my hypothesis, models, sample, and main results in subsequent sections. Finally, I present the main conclusions of the analysis.

## **LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT**

In 1975, the International Accounting Standard Committee (IASB) issued the first set of International Accounting Standards (IAS). Since then, several regions and countries have adopted the IAS, later called the IFRS, as a basis for financial reporting presentation. Barth, Landsman, and Lang (2008) present some initial evidence about the impact of the IFRS on the quality of accounting information. Analyzing a set of 327 firms from 21 countries, most of them in Europe, that voluntarily adopted the IAS between 1900 and 2003, they find that IAS adopters present more timely loss recognition, more value relevance, and less earnings management than does a set of matching firms that do not adopt the IAS in the same period. Beginning in 2005, all firms in the EU had to report financial statements using the IFRS. Studying a sample of 1,631 first-time IFRS adopters from 20 countries in the EU, Ahmed, Neel, and Wang (2013) find a high level of income smoothing, a significant increase in aggressive reporting of accruals, and a significant reduction in timeliness of loss recognition for IFRS firms relative to benchmark firms. Chen, Tang, Jiang, and Lin (2010) find a lower magnitude of absolute discretionary accruals and a lower likelihood of managing earnings toward targets after IFRS adoption in 15 EU countries. In addition, Sun, Cahan, and Emanuel (2011) study the earning persistence of a sample of US cross-listed firms from countries that adopted the IFRS. They find earnings that are more persistent for that specific subsample of firms. Studying a sample of firms in Asian and African countries that adopted the IFRS, Chebaane and Othman (2014) find an increased association between earnings per share and book value per share with the stock price after the implementation of the IFRS. The evidence in the initial implementation in the EU, Asia, and Africa supports the idea of high quality of financial information immediately after the implementation of the IFRS.

Some country-specific studies find mixed evidence on the impact of the IFRS on the quality of accounting information. For example, China adopted the IFRS in 2007. Some initial evidence shows that earnings management decreased and value relevance increased in Chinese listed firms after 2007 (Liu, Yao, Hu, & Liu, 2011). Kabir, Laswad, and Islam (2010) find that firms report a high level of discretionary accruals in New Zealand, concluding that earnings management increased with the adoption of the IFRS. Canada adopted the IFRS in 2011. Some initial evidence shows that the IFRS do not have any impact on the quality of Canadian firms' financial statements. Liu and Sun (2015), using a sample of

274 firms, find that the level of discretionary accruals, value relevance, and earning persistence did not change after IFRS implementation. The authors argue that since the IFRS and Canadian General Accepted Accounting Principles (GAAP) are based on a similar conceptual framework, no major changes in the quality of reporting information are expected with the introduction of the IFRS.

Other studies examine the economic consequences associated with mandatory IFRS adoption. For example, there is evidence of lower firm capital costs after the implementation of the IFRS in the EU (Li, 2010), as well as improvements in analyst earnings' forecast accuracy and a reduction in forecast dispersion (Byard, Li, & Yu, 2011). Daske, Hail, Leuz, and Verdi (2008) find an increase in market liquidity after the implementation of the IFRS in 26 countries. These studies conclude that their findings support the idea of an increase in the overall quality of financial reporting following the adoption of the IFRS.

Several countries have adopted the IFRS in the last decade. Argentina adopted the IFRS in 2012, Chile in 2009, Mexico in 2012, Brazil in 2010, and Peru in 2011. There is some initial evidence about the impact of the IFRS on the quality of financial information in LA firms. Jara and Arias (2013) find that Chilean firms present earnings that are more conservative after the implementation of the IFRS. Rodriguez Garcia, Cortez, Mendez, and Garza (2017), analyzing a sample of firms from Mexico, Chile, Brazil, and Argentina, find that after IFRS implementation, firms report earnings information that is more conservative and an association between earning and concurrent market capitalization that is more positive. These two studies use stock market information to derive their proxies of accounting quality. This paper differs from previous studies on the impact of the IFRS in LA by using two metrics of earnings quality derived using accounting information only and one proxy using market data.

The IFRS are viewed as accounting standards that are more principle-based than many local standards (including the US GAAP), which are rule-based systems. Compared to local standards, the IFRS rely more on fair value estimates. For example, under IFRS property, plant and equipment can be reported in the financial statements using fair value, not at historical costs, as required by the LA local standards. Prior studies find that fair value numbers are more relevant (Danbolt & Rees, 2008). In addition, as discussed by Atwood, Drake, Myers, and Myers (2011), if managers use the increased reporting flexibility under the new international set of standards to convey private information, and if the quality and comparability of financial statements are greater for firms reporting under the IFRS, the quality of accounting information may increase after their implementation.

On the other hand, managers can use the increased reporting flexibility under the IFRS to manipulate accounting information, reducing its quality. In addition, several studies find that the impact of the implementation of the IFRS depends on the country's institutional quality (Ball, Robin, & Wu, 2003; Li, 2010) and not only on the quality of the accounting standards. Therefore, the application of the IFRS alone does not guarantee a higher quality of accounting information.

Given the mixed evidence on the effect of the IFRS around the world, the impact of the IFRS on the quality of financial reporting in LA firms is an open empirical question. Consequently, my hypothesis is stated as follows:

H1: The quality of accounting information increased after the implementation of the IFRS in LA.

## **EMPIRICAL MODELS**

Accounting research classifies the proxies of earnings quality into three categories: Properties of earnings numbers, investors' response to earnings, and earnings misstatements (Dechow, Ge, & Schrand, 2010). In this paper, I use two measurements of the properties of earnings, namely, earning persistence and the level of discretionary accruals, and one measure based on the response of investors, namely, the earnings response coefficient (ERC). My first proxy for earning quality is the ERC, which is usually perceived as a measure of value relevance of accounting information. The ERC is a market-based proxy of earnings quality that measures how the change in earnings from one period to another affects firms' stock returns. This metric specifically evaluates how investors react to changes in earnings numbers

reported by firms. I use the long window ERC by regressing the annual stock returns on the annual change in earnings (Hanlon, Maydew, & Shevlin, 2008).

#### Model 1

$$Ret_{i,t} = \alpha_0 + \alpha_1 IFRS_{i,t} + \alpha_2 Ch\_Earn_{i,t} + \alpha_3 IFRS_{i,t} * Ch\_Earn_{i,t} + Country\ Dummies + Year\ Dummies + \varepsilon_{i,t} \quad (1)$$

where  $Ret_{i,t}$  is firm  $i$ 's stock return, including dividends in year  $t$ ;  $Ch\_Earn_{i,t}$  is the annual change, between year  $t-1$  and  $t$ , in firm  $i$ 's earnings before interest and taxes scaled by the beginning of the period total assets; and  $IFRS_{i,t}$  is a dummy variable that takes the value of 1 if firm  $i$  reports financial statements in year  $t$  and 0 for firms reporting financial statements using local standards in year  $t$ . I include the interaction of  $IFRS_{i,t}$  and  $Ch\_Earn_{i,t}$  to measure the effect of changes in earnings on market returns after the implementation of the international standards. I expect the coefficient  $\alpha_3$  to be positive and statistically significant if the IFRS have increased the market relevance of the accounting information. I also include country dummy variables to control for some country-specific characteristics that might impact the persistence of earnings. I also include year dummy variables to control for some time factors that might affect the earning attributes.

The first earnings property that I use as a proxy of earnings quality is earnings persistence. Persistent earnings indicate earnings information that is more sustainable and predictable, which may improve valuation models (Dechow et al., 2010). I estimate earnings persistence by regressing current earnings per share on last year's earnings per share (Francis, LaFond, Olsson, & Schipper, 2004).

#### Model 2

$$EPS_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 EPS_{it-1} + \beta_3 EPS_{it-1} * IFRS_{it} + Country\ Dummies + Year\ Dummies + \varepsilon_{i,t} \quad (2)$$

where  $EPS_{it}$  is firm  $i$ 's earnings per share in year  $t$  and  $EPS_{it-1}$  is firm  $i$ 's earnings per share in year  $t-1$ .  $IFRS_{it}$  is a dummy variable which takes the value of 1 if firm  $i$  reports financial statements using IFRS in year  $t$  and 0 for firms reporting financial statements using local standards in year  $t$ . I include the interaction of the IFRS and the  $EPS_{it-1}$  to measure the effect of changes in earnings on the persistence of earnings after the implementation of the international standards. I also include country and year dummy variables to control for specific country and time factors. I expect the coefficient  $\beta_3$  to be positive and statistically significant if IFRS has increase the persistence of earnings.

The second earnings property that I use as a proxy of earnings quality is a measure of discretionary accruals. As detailed by Dechow et al. (2010), managers may use their discretion when they apply accounting rules. The discretionary accruals proxy for earnings distortions resulted from managerial manipulations. By using managerial discretion in preparing firms' financial statements, managers may report accounting numbers that do not reflect the current financial situation of the firm, confusing users of these reports and therefore decreasing the quality of financial statements. To compute discretionary accruals, I first estimate the Jones (1991) model for each industry-country-year group included in the Economatica database.

#### Jones Model

$$ACC_{i,t}/TA_{i,t-1} = \gamma_0 + \gamma_1 1/TA_{i,t-1} + \gamma_2 Ch\_Sales_{i,t}/TA_{i,t-1} + \gamma_3 PPE_{i,t}/TA_{i,t-1} + \varepsilon_{i,t} \quad (3)$$

where Accruals ( $ACC_{i,t}$ ) is defined as firm  $i$ 's earnings before interest and taxes minus firm  $i$ 's cash flow from operations in year  $t$ ;  $TA_{i,t-1}$  is firm  $i$ 's total assets at the beginning of the year;  $Ch\_Sales_{i,t}$  is measured as firm  $i$ 's change in sales between year  $t-1$  and  $t$ ; and  $PPE_{i,t}$  is firm  $i$ 's gross property, plant, and equipment in year  $t$ . The Jones model has been widely used in the accounting research area to estimate the non-discretionary level of accruals for firm  $i$  in year  $t$ . I use the Economatica industry classification to group firms and run the yearly regression. In addition, I use the Level 2 SIC industry

classification with similar results. To be included in the sample, each industry-country-year group must have at least ten observations.

After estimating the parameters in the Jones m999odel for each industry-country-year group, I compute the residual values to compute the discretionary accruals (DA) for each firm. Then, I regress the absolute value of DA (ADA) on my dummy variable IFRS and other control variables that might affect firms' DA.

Model 3

$$ADA_{i,t} = \delta_0 + \delta_1 IFRS_{i,t} + \delta_2 Size_{i,t} + \delta_3 Leverage_{i,t} + \delta_4 ROA_{i,t} + \delta_5 MB_{i,t} + \delta_6 Turnover_{i,t} + \text{Country Dummies} + \text{Year Dummies} + \varepsilon_{i,t} \quad (4)$$

where  $ADA_{i,t}$  is the ADA for firm  $i$  in year  $t$ ;  $IFRS_{i,t}$  is a dummy variable that takes the value of 1 if firm  $i$  reports financial statements using the IFRS in year  $t$  and 0 for firms reporting financial statements using local standards in year  $t$ ;  $Size_{i,t}$  is the log of total assets for firm  $i$  in year  $t$ ;  $MB_{i,t}$  is the market-to-book ratio of firm  $i$  in year  $t$ ;  $Leverage_{i,t}$  is measured as the total liabilities divided by total equity for firm  $i$  in year  $t$ ; Return on Assets ( $ROA_{i,t}$ ) is measured as firm  $i$ 's earnings before interest and taxes divided by equity in year  $t$ ; and  $Turnover_{i,t}$  is measured as firm  $i$ 's total sales divided by firm  $i$ 's total assets. The coefficient  $\delta_1$  captures the change in ADA after the implementation of IFRS. I expect  $\delta_1$  to be negative and significant if the IFRS have the effect of reducing abnormal discretionary accruals in firms in LA. I include control variables that have been found to have an impact on the level of DA. Previous studies find that larger firms, firms with higher book to market ratio, less leverage, high earnings performance, and lower turnover ratio have lower DA (Skinner & Sloan, 2002; Spathis, Doumpos, & Zopounidis, 2002; Kothari, Leone, & Wasley, 2005; Armstrong, Barth, Jagolinzer, & Riedl, 2010). I also include country and year dummy variables to control for specific country and time factors. Table 1 presents a summary of the significant variables included in the regression analysis.

**TABLE 1  
DEFINITION OF VARIABLES**

Variable	Definition
$EPS_{it}$	Firm's $i$ earnings per share in year $t$
$EPS_{it-1}$	Firm's $i$ earnings per share in year $t-1$
$Ret_{i,t}$	Firm's $i$ stock return including dividends in year $t$
$Ch\_Earn_{i,t}$	Annual change, between year $t-1$ and $t$ , in firm's $i$ earnings before interest and taxes scaled by the beginning of the period total assets
$IFRS_{i,t}$	Dummy variable which takes the value of 1 if firm $i$ reports financial statements using IFRS in year $t$ and 0 for firms reporting financial statements using local standards in year $t$
$ADAC_{i,t}$	Absolute value of discretionary accruals for firm $I$ in year $t$
$Size_{i,t}$	Log of total assets for firm $i$ in year $t$
$Leverage_{i,t}$	Total liabilities divided by total equity for firm $i$ in year $t$
$ROA_{i,t}$	Firm $i$ 's earnings before interest and taxes divided by equity in year $t$
$MB_{i,t}$	Market-to-book ratio of firm $i$ in year $t$
$Turnover_{i,t}$	Firm $i$ 's total sales divided by firm $i$ 's total assets
Brazil	Dummy variable that takes the value of 1 for Brazilian firms
Argentina	Dummy variable that takes the value of 1 for Argentinean firms
Chile	Dummy variable that takes the value of 1 for Chilean firms
Mexico	Dummy variable that takes the value of 1 for Mexican firms
Peru	Dummy variable that takes the value of 1 for Peruvian firms

## SAMPLE AND RESULTS

I use data for all firms in the Economatica database from 1997 to 2015. The database includes financial and market information for all the firms with active securities listed on the Argentinean, Brazilian, Chilean, Mexican, and Peruvian stock Exchanges. In order to estimate the coefficients for the first two models, I use a sample of 4,537 firm-year observations with available data, corresponding to 583 firms: 63 from Argentina, 235 from Brazil, 120 from Chile, 84 from Mexico, and 81 from Peru. To estimate the coefficients of Model 3, I use a sample of 1,802 observations. The sample for estimating this model is reduced because some industry-country-year groups do not have at least 10 observations to estimate the DA using the Jones model. In both samples, I deleted observations in the transition period, one year after and one year before the mandated implementation in each country, to control for early or delayed adoptions and to eliminate major changes in accounting numbers due to the adjustments required by the initial IFRS implementation. I also deleted all the observations with 0 stock liquidity in the market.

Table 2 presents the descriptive statistics of the two samples used in the tests. Panel A presents the numbers for the sample used to test Models 1 and 2. The mean annual return is 8.2% and the scaled mean change in earnings is around 0.023. Around 41% of the observations correspond to observations after IFRS implementation; 17% of the observations are from Argentina, 41% from Brazil, 15.6% from Chile, 10% from Mexico, and 15.1% from Peru. Panel B present the descriptive statistics of the observations used to test Model 3. Almost 74% of the observations are from Brazil, 13% from Chile, 8% from Mexico, and 5% from Peru. Fifty-two percent of the observations correspond to the post-IFRS period.

**TABLE 2**  
**DESCRIPTIVE STATISTICS**

<b>Panel A</b>					
<b>Variable</b>	<b>Lower Quartile</b>	<b>Mean</b>	<b>Median</b>	<b>Upper Quartile</b>	<b>Std. Dev</b>
EPS <sub>it</sub>	-0.003	-1.103	0.054	0.273	8.499
EPS <sub>it-1</sub>	0.001	-1.409	0.058	0.290	8.613
Ret <sub>it</sub>	-0.297	0.082	-0.021	0.354	1.769
Ch_Earn <sub>it</sub>	-0.024	0.023	0.002	0.032	0.693
IFRS <sub>it</sub>	0	0.410	0	1	0.492
Argentina	0	0.170	0	0	0.376
Brazil	0	0.423	0	1	0.494
Chile	0	0.156	0	0	0.363
Mexico	0	0.100	0	0	0.300
Peru	0	0.151	0	0	0.358

**Panel B**

Variable	Lower Quartile	Mean	Median	Upper Quartile	Std. Dev
ADAC <sub>it</sub>	0.034	0.116	0.074	0.143	0.160
IFRS <sub>it</sub>	0	0.522	1.000	1.000	0.500
Size <sub>it</sub>	12.273	13.471	13.558	14.696	1.813
Leverage <sub>it</sub>	0.662	2.201	1.132	2.071	18.365
ROA <sub>it</sub>	-0.005	0.023	0.030	0.068	0.321
MB <sub>it</sub>	0.478	2.365	1.168	3.810	1.257
Turnover <sub>it</sub>	0.336	0.643	0.571	0.904	0.429
Brazil	0	0.743	1	1	0.437
Chile	0	0.134	0	0	0.340
Mexico	0	0.078	0	0	0.268
Peru	0	0.046	0	0	0.210

Table 3 presents the Model 1 regression results. The coefficient on the interaction between the change in earnings and the dummy variable IFRS ( $\alpha_3$ ) is positive and statistically significant (0.185, p-value<0.01). This result provides evidence that the change in earnings numbers is more positively associated with LA firms' annual stock returns after the implementation of the IFRS. In all the regression models, to control for any correlation in the error term across firms, t-stats are computed using cluster robust standard errors by firms to test the statistical significance of the coefficients (Petersen, 2009).

**TABLE 3**  
**REGRESSION RESULTS MODEL 1**

Variable	Estimate	t Value	
Intercept	0.479	10.14	***
IFRS <sub>it</sub>	-0.617	-10.65	***
Ch_Earn <sub>it</sub>	0.036	1.05	
IFRS * Ch_Earn <sub>it</sub>	0.185	2.78	***
Argentina	-0.103	-2.29	**
Brazil	-0.029	-0.38	
Chile	-0.086	-1.89	
Mexico	-0.109	-2.36	**
Year Dummies	Included		
N	4,537		
R2	0.227		

\*\*\*, \*\*, \* denote significance at 1%, 5% and 10% respectively; p-values are calculated using robust standard errors clustered by firm.

Table 4 presents the results of Model 2. The coefficient of  $\beta_3$  is positive and statistically significant (0.457, p-value<0.01). The results provide evidence that earnings numbers reported under the IFRS are more persistent in LA countries after the implementation of the IFRS.

**TABLE 4**  
**REGRESSION RESULTS MODEL 2**

Variable	Estimate	t Value	
Intercept	-0.194	-0.55	
IFRS <sub>it</sub>	1.696	2.36	**
EPS <sub>it-1</sub>	0.198	0.83	
IFRS*EPS <sub>it-1</sub>	0.457	2.74	***
Argentina	0.030	0.13	
Brazil	-1.937	-2.56	**
Chile	0.009	0.01	
Mexico	-0.300	-1.27	
Year Dummies	Included		
N	4,537		
R2	0.475		

\*\*\*, \*\*, \* denote significance at 1%, 5% and 10% respectively; p-values are calculated using robust standard errors clustered by firm.

Table 5 presents the results of Model 3. The coefficient of the dummy variable IFRS is negative and statistically significant (-0.025, p-value<0.01). LA firms present reduced DA after the implementation of the IFRS. The figures for the rest of the control variables are consistent with previous findings. Large firms, more profitable firms, and firms with a high MB ratio show a lower level of ADA. My results provide additional evidence that after the implementation of the IFRS, the quality of accounting reports in LA increased. Firms report earnings that are more persistent; these earnings numbers are more associated with firms' returns, implying higher value relevance of accounting information after the implementation of the IFRS; and management reports lower levels of DA.

**TABLE 5**  
**REGRESSION RESULTS MODEL 3**

Variable	Coefficient	t Value	
Intercept	0.397	6.17	***
IFRS <sub>it</sub>	-0.025	-2.94	***
Size <sub>it</sub>	-0.015	-3.38	***
Leverage <sub>it</sub>	-0.002	-0.23	
ROA <sub>it</sub>	-0.029	-1.76	*
MB <sub>it</sub>	0.001	-2.40	**
Turnover <sub>it</sub>	-0.017	-1.26	
Brazil	-0.057	-2.00	**
Chile	-0.127	-4.49	***
Mexico	-0.057	-1.65	*
Year Dummies	Included		
N	1,802		
R2	0.106		

\*\*\*, \*\*, \* denote significance at 1%, 5% and 10% respectively; p-values are calculated using robust standard errors clustered by firm.

### CONCLUDING REMARKS

This paper provides evidence of the impact of the application of the IFRS in LA. Between 2009 and 2012, Argentina, Brazil, Chile, Mexico, and Peru adopted the IFRS for all public firms with listed securities in their major stock exchanges. After the implementation of the IFRS, public firms present more earnings persistence. Past earnings are more correlated with one-year-ahead earnings information. This may have an impact on securities valuation and the usefulness of accounting information. In addition, I find that changes in earnings are more relevant and more informative about changes in stock prices (returns) during the fiscal period after the implementation of the IFRS. Finally, this paper provides evidence that the level of DA that management reports decreased after the implementation of the IFRS. In general, this paper provides evidence that the quality of accounting information increased in LA firms after the implementation of the IFRS.

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