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**DO MANAGERS REALLY CARE ABOUT  
SHAREHOLDERS' EXPECTATIONS?  
EVIDENCE ON DIVIDEND SMOOTHING ON LATIN  
AMERICAN EMERGING STOCK MARKETS<sup>1</sup>**

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**CZY MENEDŻEROWIE SPÓLEK STARAJĄ SIĘ  
UWZGLĘDNIĆ OCZEKIWANIA AKCJONARIUSZY?  
ANALIZA ZJAWISKA WYGŁADZANIA DYWIDEND  
NA WYBRANYCH GIEŁDOWYCH RYNKACH  
AMERYKI ŁACIŃSKIEJ**

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**Summary:** The main goal of the paper is to examine dividend smoothing behaviour among companies listed on the stock markets in Brazil, Chile, Colombia, Mexico and Peru in the period of 1994-2015. The research sample consisted of 227 companies and 4968 observations. On the basis of Lintner's dividend partial adjustment model, we calculated the speed of dividend adjustment (SOA) in response to the change in earnings. We found many companies with low SOA values, which on the grounds of the classic Linter's approach implies the existence of dividend smoothing. However, the obtained average SOA values varied in four out of five analyzed stock markets from 0.731 for Chile to 0.914 for Brazil. This means that on selected emerging stock markets of Latin America – except Peru – the dividend smoothing has not been confirmed. Moreover, the obtained SOA levels varied among the selected stock markets, which implies that the differences in the speed of dividend adjustment may be driven by either national or stock markets characteristics.

**Keywords:** payout policy, dividend smoothing, emerging markets, Latin American stock markets.

**Streszczenie:** Głównym celem opracowania jest zbadanie występowania zjawiska wygładzania dywidendy (*dividend smoothing*) wśród spółek notowanych na giełdach Brazylii, Chile,

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Kolumbii, Meksyku i Peru w latach 1994-2015. Próba badawcza obejmowała 227 firm i 4968 obserwacji. Na podstawie modelu częściowego dopasowania dywidendy zaproponowanego przez Lintnera [1956] obliczono szybkość dopasowania dywidendy (*Speed Of Adjustment* – SOA) w odpowiedzi na zmianę zysków. W badanej próbie zidentyfikowano wiele spółek, dla których współczynniki SOA przyjmowały niskie wartości. Tym samym stwierdzono, że – uwzględniając klasyczną interpretację modelu Lintnera – spółki te wygładzały dywidendy. Niemniej, uzyskane średnie wartości współczynnika SOA wahały się w przypadku czterech z pięciu analizowanych giełd od 0,731 dla Chile do 0,914 dla Brazylii. Oznacza to, że na wybranych wschodzących giełdach papierów wartościowych Ameryki Łacińskiej – z wyjątkiem Peru – zjawisko wygładzania dywidend nie zostało potwierdzone. Ponadto zróżnicowane poziomy współczynników SOA na badanych rynkach akcji mogą wskazywać, że szybkość dopasowania dywidendy jest uwarunkowana przez specyficzne cechy poszczególnych rynków giełdowych lub krajów.

**Słowa kluczowe:** polityka dywidendy, wygładzanie dywidend, rynki wschodzące, giełdy papierów wartościowych państw Ameryki Łacińskiej.

## 1. Introduction

Dividend payouts have intrigued financial economists for many years. Not surprisingly, from the investors' perspective dividends directly influence the rate of return made on the high-risk investments such as the shares of listed companies. The desire for dividends can also be strengthened as a consequence of the enforced legal requirements in several countries that oblige some of the institutional investors (i.e. pension funds) to spend only the dividend part of their current revenues [Davies, Crawford 2014, p. 701]. Dividend policy is also one of the strategic problems from a company's perspective. First, because of the desire to monetize investment, companies face the shareholders' high demands and strong expectations. Second, the decision to pay dividends lowers the level of available cash resources, which are necessary at least for the forthcoming investment opportunities. Third, if the payout is already agreed, then in what way is a company going to increase shareholders' wealth? Cash, stocks or rather stock repurchase? In fact, these are only introductory issues in the complex problem of corporate dividend behaviour.

Financial economists proposed several theories or hypotheses which often accentuate different views on dividends. Of these, the first theory implies dividend irrelevance for company's value and no impact of dividends on the shareholders' rate of return [Miller, Modigliani 1961; 1963]. The relevance of the dividend policy was highlighted in the works of [Easterbrook 1984; Jensen, Meckling 1976; Jensen 1986] who addressed the agency problem between insiders (managers) and outsiders (shareholders). In this perspective, dividends are a tool to overcome the potential overinvestment of a company and to avoid a company's engagement in less profitable projects. The non-equivalent positions of shareholders and managers within a company are also captured by the dividend signalling theory [Ross 1977],

[Bhattacharya 1979; John, Williams 1985; Miller, Rock 1985; Myers, Majluf 1984]. Dividends carry valuable information for investors about the future prospects of a company and thereby reduce the information asymmetry between insiders and outsiders. The proponents of the third theoretical approach also argued that dividends paid today and potential future capital gains are not, in fact, perfect substitutes for shareholders ('*bird in hand fallacy*'). Thus, because of the lower certainty of capital gains, shareholders 'vote' in favour of dividends [Lintner 1956; Gordon 1959]. More importantly, in his work dated 1956, Lintner was the first author who attempted to describe the exact management's attitude towards payout policy. This pioneering study revealed that managers gradually adjust the dividend payout towards the long-term target payout ratio and smooth dividends relative to earnings.

It is important to note that among the 600 listed companies, Lintner selected 28 for further investigation and conducted interviews with at least two officers/managers responsible for dividend policy. As Lintner reported, managers' opinions towards dividend policy revealed their strong belief that shareholders prefer a relatively stable rate of dividend payouts. Moreover, managers' opinions reflected their conviction that a stable level of dividends improves the company's market valuation. The described empirical observations convinced Lintner to introduce a model in which the gradual adjustment of dividends in response to changes in earnings is purely explained (the partial-adjustment model).

The dividend smoothing hypothesis gained considerable interest and influenced numerous empirical studies conducted mostly on highly developed stock markets. Less attention has been paid to emerging countries which obviously have less mature stock markets. However, in recent years, the stock markets have gained in importance and received attention from the economic policymakers of the emerging countries. Moreover, because of the liberalization processes which resulted in the opening of economies, these stock markets were also affected by trends in the international financial system, i.e. integration and globalization. Thus in this paper we concentrate on the dividend smoothing behaviour in the period of 1994-2015 among companies listed on the selected stock markets of Latin American countries, namely Brazil, Chile, Colombia, Mexico and Peru.

The Latin American stock markets offer an interesting setting to explore dividend smoothing for a number of reasons. First, companies from those five economies are included in the MSCI emerging stock market index, which, in fact, indicates their rising importance in the global capital market. Second, despite the general development processes, the above countries were strongly affected by internal or external financial or currency crises. This implies that the Latin American stock markets are probably more volatile in terms of capitalization and stock market returns. Therefore it is particularly interesting to investigate whether companies listed on these markets are able to smooth dividends relatively to earnings even in more turbulent times. The main goal of the paper is to identify dividend smoothing behaviour among the companies listed on the Latin American stock markets on the basis of the dividend partial adjustment model

[Lintner 1956]. The general research question is the following: can we distinguish companies on the selected emerging stock markets whose dividend policy undergoes smoothing?

Other studies, i.e.: [La Porta et al. 2000; Adjahoud, Ben-Amar 2010], report that every stock market has its own characteristics determined by the legal and economic environment. Moreover, on the stock markets there are listed companies representing different sectors of the economy. This implies that particular stock markets can be dominated by different sectors of the economy.

These statements bring us to the next research question, which is: are there any differences in the level of the dividend smoothing between markets and/or within sectors of the economies? Two hypotheses were formulated to analyse the dividend smoothing behaviour on the selected stock markets.

H1: The effect of dividend smoothing was present on the selected Latin American emerging stock markets in the period of 1994-2015.

H2: The speed of adjustment of dividends varied among the stock markets and sectors of the economy.

In this paper we make four contributions to the existing literature devoted to dividend smoothing. First, we investigate the dividend policy of companies listed on the five emerging stock exchanges while most of the existing literature relates to studies carried out on the developed stock markets. Second, we employ Lintner's dividend adjustment model and contrary to other studies, we calculate the speed of adjustment of dividends separately for each company. This approach demands a longer time series in comparison to panel studies which is an obvious drawback. However, it offers in return stronger control over the obtained results. Moreover, we propose and apply our own original division of the economy into 14 separate sectors. Our conceptualization is based on the mixture of solutions adopted by the London Stock Exchange, the Warsaw Stock Exchange and the Bloomberg's agency. The decision not to use one of those solutions directly comes from the great variety of the selected stock markets. Fourth, in order to verify the significance of the obtained results, we employ either the commonly used parametric tests or their nonparametric equivalents, dependent on the distribution of the speed of adjustment coefficient.

The remainder of the paper is organized as follows. In Section 2 the substantial literature review regarding the dividend smoothing is presented. Attention is particularly paid to the empirical research conducted on the emerging stock markets. The Latin American stock markets are briefly characterized in Section 3, whereas the data, research design and obtained results are discussed in Section 4. The conclusions and implications for further research are presented in the last section.

## 2. Literature review

Lintner's work influenced the research in the field of dividend policy. The results generally confirmed the existence of smoothing behaviour on different stock markets. However, it should be emphasized that in most studies the underlying data covered companies from highly developed/mature stock markets based in advanced economies, among them: [McDonald et al. 1975; Khan 2006; Aivazian et al. 2006; Andres et al. 2009; Leary, Michaely 2011; Michaely, Roberts 2012; Chen et al. 2012; Fama, Blahnik 1968].

In the dividend smoothing literature two distinct approaches of the empirical designs prevailed. The first employed statistical and econometric tools and made use of the financial statements of listed companies as the underlying data of the conducted analysis. Thus, the researchers tried to confirm the smoothing behaviour of dividends in the past – which means already paid dividends. In the second approach, researchers concentrated on managers' decisions and perceptions. Therefore, the focal point was to conduct a survey among managers. The works of Baker et al. [1985], Baker et al. [2001] and Baker and Wurgler [2010], confirmed that dividend policy is relatively stable over time and – as in Lintner's original work – the managers are convinced about the impact of dividends on equity value. The strand of literature based on the survey research was discussed by Baker et al. [2002].

Taking the geographical coverage into account one can see that in recent years there has been a growing interest to investigate the problem of dividend smoothing on the less developed stock markets from emerging countries. Here we can find the studies of Javakhadze et al. [2014], Benavides et al. [2016], Aivazian et al. [2003], Chemmanur et al. [2010], Jeong [2013], Adaoglu [2000], Omet [2004], Al-Najjar [2009], Pandey, Bhat [2007], Tran, Nguyen [2014], Al-Yahyaee et al. [2010], Al-Malkawi et al. [2014], Wolmarans [2003], Al-Ajmi and Hussain [2011], which are briefly discussed below. However, also in this group of studies, except for Javakhadze et al. [2014], and the recently published Benavides et al. [2016] paper, the studies were devoted to one particular country and there was a lack of comparisons in the broader international context.

As was mentioned, one of the most extensive research projects on dividend smoothing was carried out by Javakhadze et al. [2014]. The final sample employed in this study consisted of 2219 companies from 24 countries within the period of 1999-2011<sup>2</sup>. The study proved the existence of dividend smoothing behaviour across countries, but with distinct cross-sectional patterns. Additionally, Javakhadze et al. [2014], confirmed the negative relationship between the concentration in the equity ownership and the level of dividend smoothing i.e. the higher the ownership

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<sup>2</sup> Those countries were: Australia, Austria, Bermuda, the Cayman Islands, China, Denmark, Finland, Germany, Hong Kong, India, Ireland, Japan, Malaysia, the Netherlands, New Zealand, Nigeria, Norway, Pakistan, Singapore, South Africa, South Korea, Sweden and Switzerland.

concentration the lower the speed of adjustment of dividends in response to the change in earnings. Nevertheless, the presence of multiple large block-holders increased the smoothing behaviour. Furthermore, the authors examined other prerequisites of the smoothing behaviour and identified the importance of market-to-book ratio, available cash resources, the level of tangible assets and stock turnover and the moment in the life cycle of a particular company [Javakhadze et al. 2014].

The latest research on dividend smoothing policy of companies from emerging markets was published by Benavides et al. [2016]. The authors investigated public companies from six countries (Argentina, Brazil, Chile, Colombia, Mexico and Peru) during the period of 1995-2013. The sample consisted of 666 companies (3798 observations). The main conclusion of this research was that companies tend to smooth dividends in countries with higher rules of law abidance. The authors employed one of the measures published in the Worldwide Governance Indicators by the World Bank. Additionally, Benavides et al. [2016], confirmed that companies operating in countries with higher scores on the rule of law were also more willing to distribute higher dividends to shareholders.

The international study of the dividend payout policy was examined by Aivazian, Booth and Cleary [2003]. However the study was not focused on the dividend smoothing itself due to the broader international perspective which needs to be mentioned here. The underlying sample covered companies from eight developing economies (India, Jordan, Korea, Malaysia, Pakistan, Thailand, Turkey, Zimbabwe). Additionally, the authors compared the obtained results with the sample of the largest US companies which comprised 99 entities over the same time period. Aivazian et al. [2003], confirmed that there were no differences in the recognized group of dividends' determinants in both groups of companies - from US and emerging economies. The authors established positive relationships between dividend payments and profitability, ROE ratio, market-to-book ratio and negative relationship with debt ratios. Moreover, for the sample from emerging markets the dividends were negatively related to the tangibility of firm assets.

In the extensive study by Chemmanur et al. [2010], the authors analyzed the corporate dividend policies of all industrial and commercial companies listed on the Stock Exchange of Hong Kong in the years 1984-2002. Since this study was designed to allow for comparisons between the Hong Kong and US stock markets, Chemmamur et al. [2010], employed a corresponding sample of all the US-domiciled industrial and commercial corporations listed on the New York Stock Exchange, the American Stock Exchange and the NASDAQ National Market. The tax regime and equity ownership structure in Hong Kong differed significantly from the US market. In general, the obtained results showed that, compared to the US firms, the Hong Kong companies pursued a more flexible dividend policy, and the differences between the dividend policies of firms in these two countries were consistent with the signaling implications of the differences in the tax regimes. Moreover, the dividend payments of the Hong Kong companies were more related to the current net profits

than in the US companies. Thus, the dividend smoothing phenomenon was greater in the US [Chemmanur et al. 2010].

In the Jeong study [2013], the author focused on the dividend smoothing behaviour in Korea. Similarly to Hong Kong, in the Korean tax regime the law and order of financial markets differed significantly from the solutions employed in more developed countries. The analysis covered a sample of 279 firms listed on the Korea Stock Exchange over a 32-year period, from 1981 to 2012. Jeong revealed that the majority of Korean firms smoothed dividends. However, the degree of dividend smoothing of Korean companies was lower than the one observed in the US. Moreover, Jeong indicated the most important determinants of dividend smoothing, which are size, risk, growth and shareholder ownership structure. Larger companies with concentrated ownership, as well as the lower growth firms, smoothed dividends more. Riskier entities tended to smooth dividends more during the sample period, while safer firms smoothed dividends more for the post-liberalization period (1995-2012). Additionally, the results showed that the macroeconomic factors such as tax and interest rates had a significantly positive relationship with the degree of dividend smoothing [Jeong 2013].

Adaoglu [2000], examined the dividend policy of Turkish corporations. The empirical results showed that Turkish companies follow unstable dividend policies. The research period covered the years 1985-1997 but because of the significant change of dividend regulations implemented in 1995<sup>3</sup>, this period was divided into two sub-periods: 1985-1994 and 1995-1997. The investigated sample comprised all industrial and commercial companies traded on the Istanbul Stock Exchange (ISE). For the two sub-periods, 916 and 566 dividend policy observations were obtained respectively. According to Adaoglu's findings, during both time periods the ISE corporations followed unstable dividend policies and companies' earnings were the main factor that determined the amount of cash dividends distributed to shareholders. It should be noted that even though the new regulations imposed flexibility regarding dividend decisions, the Turkish companies did not change the dividend policies. Moreover, an observation was made about the substantial increase in the number of companies that stopped paying cash dividends and used retained earnings for internal financing. The general conclusion was that there were significant differences between dividend policies run by the ISE corporations and companies located in the developed markets.

Contrary to Adaoglu's findings, the survey conducted among Jordanian companies showed that they followed stable dividend policies. Such a conclusion can be found in the papers of Omet [2004] and Al-Najjar [2009]. Omet analyzed a sample of 44 Jordanian companies listed on the Amman Stock Market during the years 1985-1999 (660 observations). The obtained findings indicated that the lagged

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<sup>3</sup> This regulation abandoned the mandatory dividend policy of distributing at least 50% of earnings as cash dividends and granted the ISE corporations the freedom of setting their own dividend policies.

dividend per share factor was more important than the current earnings per share factor in determining the level of the current dividend per share. The empirical results also revealed that taxes imposed on dividends in 1996 did not have any significant impact on the companies' dividend behaviour [Omet 2004]. A few years after Omet's studies, Al-Najjar also confirmed that Lintner's model was valid for the Jordanian companies. These companies had the target payout ratios adjusting relatively slowly but not as slow as the US companies. The data sample that came under his analysis comprised 86 companies (743 observations) and encompassed the period from 1994 to 2003.

The validity of Lintner's model in the emerging markets was also confirmed for the Indian, Vietnamese and Omani markets. Pandey and Bhat [2007], examined the data for 571 Indian firms in the manufacturing sector during the period of 1989-1997 (3997 observations). The empirical results proved the relationship between current dividends as a dependent variable, and current earnings and past dividends as independent ones. The findings also showed that the Indian companies had lower target payout ratios and higher adjustment factors [Pandey, Bhat 2007]. The research concerning the dividend policy behaviour in the Vietnamese stock market was carried out by Tran and Nguyen [2014]. The investigated sample was selected from non-financial companies listed on both the stock exchanges in Ho Chi Minh City and Ha Noi City, which were established in 2000 and 2003 respectively. The sample included 118 non-financial firms with 589 firm-year observations in the period between 2006 and 2011. The findings indicated that the firms listed on the Vietnamese stock market had a stable dividend policy. Al-Yahyaee, Pham and Walter [2010], focused in their research on the Omani market and revealed that the Omani companies adopted a policy of smoothing dividends. It should be noted that this research examined the stability of dividend policy in a unique environment where companies distributed almost 100% of their profits in dividends, were highly levered mainly through bank loans, and there were no taxes on dividends and capital gains. These factors may suggest a diminished role of the dividend stability in Oman contrary to the empirical results. However there were differences in the dividend policies between the Omani companies and those in the developed markets. The Omani market was also in the area of interest of Al-Malkawi et al. [2014]. The authors examined the dividend smoothing behaviour of companies listed on the Muscat Securities Market using Lintner's partial adjustment model. The research sample included 104 firms and covered the period from 2001 to 2010 (936 observations). The empirical results also confirmed the validity of Lintner's model in Oman by showing that companies followed stable dividend policies.

Contrary to the above studies, Wolmarans' [2003] results showed that Lintner's model did not explain dividend payments patterns in the case of the South African companies. But according to Wolmarans, such results may be the consequence of too small a sample used for the research. From the initial group of the largest 200 companies that were listed on the Johannesburg Securities Exchange on 31 December

2000, nearly half of them were excluded from the study as they were not listed for a sufficiently long period (i.e. since 1994). Additionally, the author also excluded companies keeping dividends constant for any two consecutive years during the research period. Thus, the final sample consisted of 97 companies.

Finally it is worth mentioning the research conducted by Al-Ajmi and Hussain [2011], concerning the unique market of Saudi Arabia. This was the first study analyzing the determinants of dividend policy in a country where companies are required to pay Islamic 'zakat'. The authors aimed at, either testing the stability of the dividend policy or finding out how the level of cash flow influenced the company's dividend behaviour. They also identified the factors which determine cash dividend payments and examined the characteristics of dividend-paying and non-paying companies. For this purpose, the authors used a sample of 54 Saudi-listed firms during the period of 1990-2006. According to their findings, the Saudi companies paid out a lower proportion of cash flows compared to the proportion of dividends of reported earnings. Companies also had a more flexible dividend policy since they were willing to cut or skip the dividends' payouts when the profit decreased or even not to pay dividends when they recorded losses. Among the determinants of dividend payments, the authors pointed out the lagged dividend payments, profitability, cash flows and the life cycle. Zakat was also found as a factor explaining the firm's dividend decisions.

### 3. Latin American stock markets – general overview

Except for Colombia, the history of the five selected Latin American capital markets goes back more than 100 years. The origins of the investigated stock markets are found as early as in the nineteenth century when the basic institutional frameworks were established. The Peruvian stock market in Lima was established already in 1857, the Sao Paulo market in Brazil was founded in 1890, the Chilean market in Santiago in 1893, whereas the Mexican stock market dates back to 1895<sup>4</sup>. The stock market in Bogota (Colombia) is the youngest one and was constituted in 1928 [Figureoa 2014].

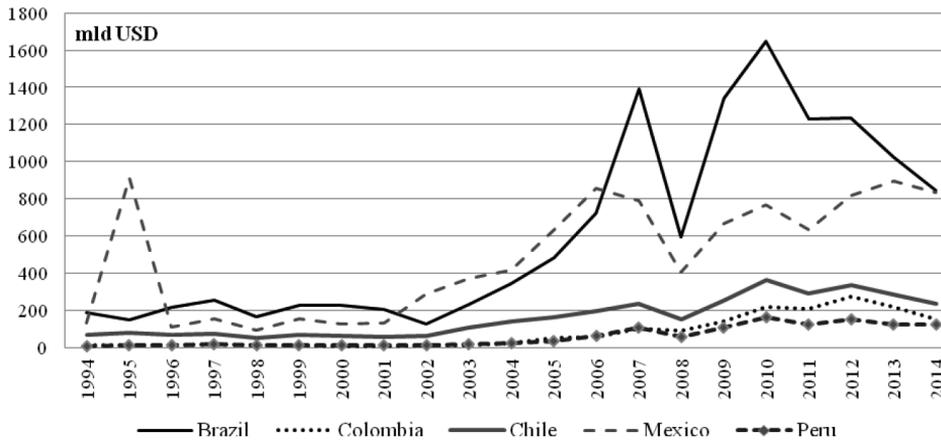
The selected Latin American stock markets are moderately sized regarding capitalization. As of the end of 2014, the mean value of capitalization of the stock markets was equal to 58.1% of GDP. The exact values of capitalization in terms of GDP vary from 34.9% in Brazil, to 91.4% in the Chilean case<sup>5</sup>.

In Figure 1, the separate time series of market capitalization in billions of US dollars for each country are presented, whereas the yearly change in capitalization

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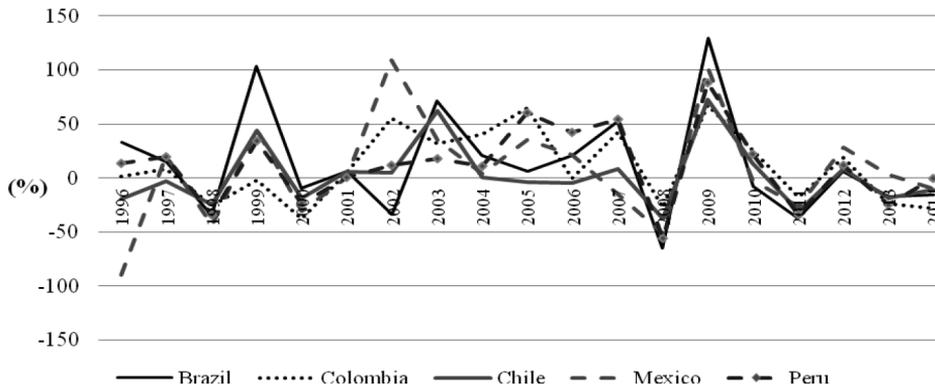
<sup>4</sup> Information from the official website <http://www.bmv.com.mx/en/bmv-group/about-us> (26.11.2016).

<sup>5</sup> For other countries this indicator at the end of 2014 was equal to: 40.5% (Colombia), 59.8% (Peru), 64.1% (Mexico).



**Fig. 1.** Market capitalization of listed companies (both foreign and domestic) in billions USD

Source: own compilation based on the FIAB Federation Iberoamericana de Bolsas Fact Books years 1997–2015.



**Fig. 2.** Change in the market capitalization of listed companies (both foreign and domestic) in % (end of period)

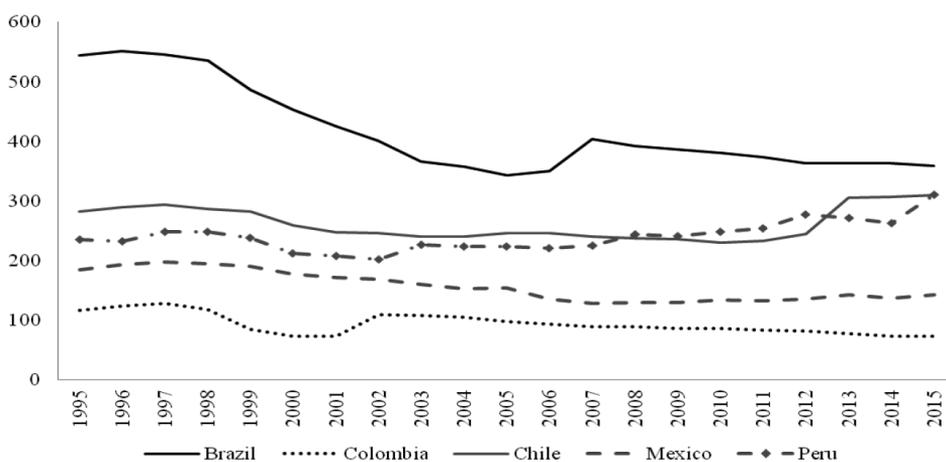
Source: own compilation based on the FIAB Federation Iberoamericana de Bolsas Fact Books years 1997–2015.

is given in Figure 2. The capitalization values cover both the domestic and foreign companies since some of these stock markets are desirable market places for numerous companies from neighbouring countries. In dollar terms, the selected markets accounted for 55.75% of the capitalization of all the stock exchanges that belong to the Federation Iberoamericana de Bolsas (Ibero-American Federation of Stock Exchanges). Thus, Brazil, Chile, Colombia, Mexico and Peru are important

regional trading platforms<sup>6</sup>. Moreover, among the selected stock markets, Brazil and Mexico have the biggest stock markets in dollar terms, while the smallest market belongs to Peru.

On the other hand, data in Figure 1 and Figure 2 prove that these stock markets are rather vulnerable and have suffered from several internal and external economic events. As the IMF [2016] indicates, in the years 1980-2002 the major economies in Latin America experienced economic and financial crises. These trading platforms were also affected by the recent international financial crisis (which began in 2008).

The number of companies listed on the selected Latin American stock markets is moderate. As of the end of 2015, the largest number of companies (both domestic and foreign) was listed on the Brazilian exchange (359) whereas the lowest on the Colombian exchange (73)<sup>7</sup>. Separate times series are presented in Figure 3. Comparing data from 1994 and 2015, it should be noted that the net number of companies in Brazil, Colombia and Mexico was lower. Thus, those markets experienced a more visible delisting process.



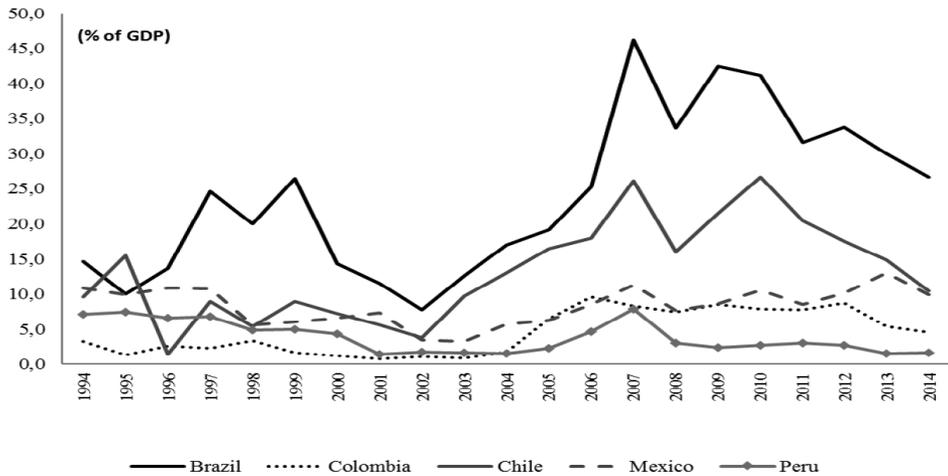
**Fig. 3.** Number of companies listed (end of period)

Source: own compilation based on the WFE Monthly Statistics [2003–2015] and the FIAB Federation Iberoamericana de Bolsas Fact Books years 1997–2002.

More importantly, the selected stock markets are characterized by rather low levels of trading volumes. This problem the IMF attributes to high transaction costs,

<sup>6</sup> Own calculations based on FIAB Fact Book 2015. Ibero-American Stock Exchanges that belong to FIAB are: Argentina, Bolivia, Brazil, Chile, Colombia, Costa-Rica, Ecuador, El-Salvador, Mexico, Panama, Paraguay, Peru, Portugal, Spain, Uruguay, and Venezuela.

<sup>7</sup> For other countries the number of companies listed on the stock exchange in 2015 was equal to: 310 (Chile), 143 (Mexico), 310 (Peru). Data obtained from WFE Monthly Statistics [2015].



**Fig. 4.** Stocks traded, total value (% of GDP)

Source: own compilation based on the WDI Database.

the preference to maintain the ‘buy and hold’ strategy by institutional investors and the IMF, as well as family and conglomerate’s ownership [IMF 2016].

## 4. Empirical research

### 4.1. Research sample and data

The preliminary sample covered 1297 companies listed on five Latin American stock exchanges, namely: BM&FBOVESPA (Brazil), Santiago SE (Chile), Colombia SE (Colombia), Mexican Exchange (Mexico) and Lima SE (Peru). All markets selected to the sample are classified as emerging ones according to the MSCI Market Classification Framework and are included in the MSCI Emerging Market Index. The exact data samples from each stock markets and the filtering rules are presented in Table 1.

For the initial sample of 1297 companies the history of dividend payouts was collected from the Thomson Reuters Eikon 4 which includes all the publicly traded companies on the world’s stock markets<sup>8</sup>. Because of the differences in the accounting standards financial and insurance companies were excluded from the sample. Thus, the initial sample was confined to non-financial and non-insurance companies which paid cash dividends for at least six consecutive years in the period of 1994-2015. Moreover, at this stage, companies that do not follow the regular dividend policy

<sup>8</sup> Data were collected under a Partnership Agreement between the University of Gdansk and the Thomson Reuters company.

**Table 1.** Sample sizes before and after filtering

Country	Initial	Only ordinary dividend payouts for at least 6 consecutive years; without financial sector*	Without missing financial data; exclusion of non-positive EPS observations	With the right (positive) sign of SOA coefficient
Brazil	429	142	102	100
Chile	253	82	80	78
Colombia	144	26	6	5
Mexico	195	43	34	29
Peru	276	44	32	15
Whole sample (no. of firms)	1297	337	254	227
No. of observations	---	---	5572	4968

\* Financial and insurance companies.

Source: own calculations.

and pay only extra or special dividends for many years were also excluded from the sample<sup>9</sup>. At the next stage, the sample sizes were reduced due to the missing financial data. Additionally, to avoid the spurious results of dividend smoothing [Jeong 2013], all the observations with non-positive earnings per share ratio or zero dividends were also excluded. Eventually the requirements mentioned above were fulfilled by 254 companies, including 102 firms in the case of Brazil, 80 for Chile, 6 for Colombia, 34 for Mexico and 32 for Peru. For all of those companies, the speed of dividend adjustment coefficient (SOA) was calculated on the basis of the partial-adjustment model of dividend payout introduced by [Lintner 1956]. Subsequently, in the conclusive sample, we decided to consider only firms with the right (namely positive) sign of the SOA coefficient. Thus, the total number of 1297 companies decreased to 228 companies which fulfilled all criteria: 100 (Brazil), 79 (Chile), 5 (Columbia), 29 (Mexico) and 15 (Peru). Ultimately, the SOA coefficient estimated for one of the Chilean's companies turned out to be a distinctive outlier and was excluded from the study, which reduced the size of the whole research sample to 227 cases and the size of the Chilean subsample to 78 cases, respectively.

## 4.2. Methodology

The first research hypothesis relating to the dividend smoothing occurrence ('the effect of dividend smoothing was present on the selected Latin American emerging

<sup>9</sup> It is pertinent to note that there were several cases when companies paid only extra or special dividends in the long term, even for more than 10 years.

stock markets in the period of 1994-2015') was verified using the partial-adjustment model of dividend payout proposed by [Lintner 1956]:

$$\Delta D_{it} = \alpha_i + \gamma_i (D_{it}^* - D_{i,t-1}) + u_{it}, \quad (1)$$

where  $D_{it}^* = TP_i E_{it}$ ,  $TP_i$  – target dividend payout ratio for firm  $i$ ,  $E_{it}$  – current year's profits after taxes,  $D_{it}^*$  – dividends which a company would have paid in the current year if its dividend were based simply on its fixed target payout ratio  $TP_i$  applied to current profits,  $\Delta D_{it} = D_{it} - D_{i,t-1}$ ,  $D_{it}$  ( $D_{i,t-1}$ ) – amount of dividend paid in year  $t$  ( $t-1$ ),  $\alpha_i$ ,  $\gamma_i$  – structural parameters,  $u_{it}$  – error term.

Using model (1), the speed of adjustment to the target payout ratio is measured by the speed of adjustment coefficient (SOA). The SOA is estimated as  $\hat{\gamma}_i$  from equation (1). The level of dividend smoothing is defined inversely to the speed of adjustment.

Substituting  $TP_i E_{it}$  for  $D_{it}^*$  in equation (1) leads to another specification used in the works of [Fama, Babiak 1968; Dewenter, Warther 1998; Brav et al. 2005; Javakhadze et al. 2014]:

$$\Delta D_{it} = \alpha_i + \gamma_{1i} D_{i,t-1} + \gamma_{2i} E_{it} + u_{it}, \quad (2)$$

where  $D_{it}$  – target level of dividends for firm  $i$  in year  $t$ ,  $E_{it}$  – firm  $i$ 's earnings *per share* in year  $t$ ,  $\gamma_{1i}$ ,  $\gamma_{2i}$  – parameters,  $u_{it}$  – error term. The parameters of equation (2) were estimated using the OLS method.

The SOA coefficient, which indicates how dividends change over the year in response to a change in earnings, was estimated as  $-\hat{\gamma}_{1i}$  from equation (2). In order to control for the scale effects, both dividends and earnings were divided by the number of common shares outstanding [Fama, Babiak 1968; Brav et al. 2005].

In the process of the first research hypothesis verification, we calculated the mean values of the SOA coefficient for each market selected to the sample and checked the normality of its distribution. Moreover, we calculated the other basic descriptive statistics for SOA within each market and made the comparisons between the stock exchanges selected to the sample. Furthermore, to confirm the dividend smoothing occurrence, we employed the parametric test for one mean to find out the statistical significance of the SOA coefficient arithmetic average.

Consistent with the methodology proposed by [Javakhadze et al. 2014], we analyzed how dividend smoothing varies across the sample of the selected stock exchanges. To this end, we formulated the second research hypothesis, namely 'The speed of adjustment of dividends varied among the stock markets and sectors of the economy'. The verification of the hypothesis was conducted in two stages. The first one was referring to the market itself, and the second – to the sector of the economy.

Since the SOA coefficient turned out to be normally distributed, both in five country subsamples and the whole research sample, at the first stage, we employed the parametric test for the difference in means and conducted it for the pairs of the stock

exchanges. The procedure was preceded by performing the Levene's test for equality of variances, which results revealed that the variances in the five country subsamples were not homogenous. Since the assumption of the variances' homogeneity in all the subsamples was not fulfilled, we could not properly interpret the results of the one-way ANOVA analysis. Instead, we employed the non-parametric versions of the one-way ANOVA analysis, namely the Kruskal-Wallis rank test and median test.

At the second stage, we attempted to find out if the level of dividend smoothing was determined by a sector of the economy. To this end, we assigned the companies included in the sample to the specified sector of the economy. We proposed the author's original conceptualization of the division of the economy into 14 sectors, based on the solutions adopted by the London Stock Exchange, Warsaw Stock Exchange and the Bloomberg's agency. The discussed economic sectors division with the number of the research sample companies assigned is presented in Table 2. It is important to note that we do not include in this specification the financial sector since it is not relevant for our further study.

**Table 2.** Sectors of the economy originally proposed for the research sample

No.	Sector	B*	Ch*	C*	M*	P*	Σ
1	Industrial metals, mining, chemicals, forestry & paper	17	10	2	5	3	37
2	Aerospace and defense; automobiles & parts; electronic & electrical equipment; general industrials; industrial engineering; industrial transportation	15	9	0	0	2	26
3	Personal goods	5	1	0	0	0	6
4	Food & drug retailers; food producers & processors, beverages, tobacco	4	16	0	8	3	31
5	Electricity; alternative energy; gas, water & multiutilities; oil & gas producers; oil equipment services & distribution	27	16	1	0	3	47
6	Construction & materials	9	3	1	3	3	19
7	Fixed line telecommunications; media	3	4	0	2	0	9
8	Software & computer services; technology hardware & equipment	2	2	0	0	0	4
9	Leisure; leisure goods; travel & leisure	0	0	0	0	0	0
10	Health care equipment & services; pharmaceuticals & biotechnology	8	3	0	5	0	16
11	Support services; outsourcing	2	0	0	3	0	5
12	Conglomerates and other unclassified services	4	11	1	2	0	18
13	Multiline retail and wholesale	4	3	0	1	1	9
x	Σ	100	78	5	29	15	227

\* Explanation of the abbreviations: B – Brazil, Ch – Chile, C – Colombia, M – Mexico, P – Peru. The financial sector was the 14th sector (not included in the table).

Source: own calculations.

Consequently, we verified whether the distribution of the SOA coefficient within sectors of the economy was normal. Similarly to the analysis conducted for the markets, we formerly calculated the basic descriptive statistics for SOA variable within each sector of the economy, and subsequently we concisely summarized the results of comparisons between the sectors introduced in the research. Regarding the SOA coefficient, it had a normal distribution in all sector subsamples. We used both the parametric test for one mean and the parametric test for the difference in means. Taking into account the results of the Levene's test which revealed the equality of variances in all sector subsamples, we employed the one-way ANOVA analysis.

### 4.3. Empirical results

To measure the degree of dividend smoothing in the selected Latin American stock markets, we estimated for each company included in the sample the parameters of the regression explained by the partial-adjustment model of dividend payout, specified by equation 2. We proceeded with the calculation of the average speed of adjustment (SOA) for each country. The basic statistical characteristics are presented in Table 3.

**Table 3.** Basic descriptive statistics of SOA coefficient within markets

Country	Brazil	Chile	Colombia	Mexico	Peru	Whole sample
Mean	0.9144	0.7312	0.8521	0.8846	0.5146	0.8199
Median	0.9598	0.7033	0.8649	0.8221	0.4949	0.8630
Min.	0.0439	0.0349	0.4544	0.0507	0.0306	0.0306
Max.	1.9944	1.9101	1.3188	1.9852	1.1850	1.9944
St. dev.	0.3348	0.3610	0.3581	0.5660	0.4241	0.4000
Coeff. of var. (%)	36.61	49.36	42.03	63.98	82.41	48.79
Skewness (z-statistic)	-0.0135 (-)	0.3322 (-)	0.2016 (-)	0.3633 (-)	0.3565 (-)	0.1931 (1.1955)
Kurtosis (z-statistic)	0.8630 (-)	0.2068 (-)	-1.7143 (-)	-0.7092 (-)	-1.5041 (-)	0.1520 (0.4725)
JB statistic [p-value]	2.4162 [0.2988]	1.4250 [0.4904]	0.4404 [0.8024]	1.3320 [0.5138]	1.5208 [0.4676]	1.5335 [0.4645]
n	100	78	5	29	15	227
Parametric test for one mean						
t statistic [p-value]	<b>27.3143</b> [0.0000]	<b>17.8914</b> [0.0000]	<b>5.3208</b> [0.0060]	<b>8.4163</b> [0.0000]	<b>4.6994</b> [0.0003]	<b>30.8814</b> [0.0000]

Symbol (-) means that z-statistic was not calculated because of the small size of the subsamples ( $n < 150$ ). Results in bold text indicate the statistical significance at the 5% significance level.

Source: own calculations with Statistica 12.

The mean values of the SOA coefficient range from 0.5146 for Peru to 0.9144 for Brazil. The estimated values of SOA are normally distributed, according to the JB statistics, either within the country subsamples or in the whole research sample. Referring to the results of the parametric test for one mean, we can state that the mean SOA values are positive and significantly different from zero. However, since the speed of adjustment is inversely related to the dividend smoothing [Javakhadze et al. 2014], the results suggest rather low levels of dividend smoothing behaviour among the companies listed on the selected Latin American stock markets. The results of the parametric test for the difference in means between the selected stock markets (countries) are presented in Table 4. The results of the Levene's test indicate that not for all of the analysed country pairs the SOA variances were homogenous: the variance of the SOA coefficient was significantly higher in Brazil compared to Mexico and also higher in Chile compared to Mexico.

Moreover, based on the numbers presented in the fourth and fifth column (t-statistics and corresponding p-values), we are not able to draw the conclusion that the SOA mean values are identical among the Latin American stock markets. Assuming the 5% significance level, we can interpret that the mean value of the speed of dividend adjustment among Brazilian companies is significantly higher compared either to the Chilean or to the Peruvian sample. Furthermore, the mean value of the SOA was significantly higher in Chile compared to Peru, and also in Mexico compared to Peru.

**Table 4.** Results of the parametric test for the difference in means (countries)

Pair*	F stat. Levene's	p-value	t stat.	p-value	Pair*	F stat. Levene's	p-value	t stat.	p-value
B–Ch	2.1654	0.1429	<b>3.5004</b>	0.0006	Ch–M	<b>9.7178</b>	0.0024	–1.3598	0.1822
B–C	0.0825	0.7744	0.4049	0.6864	Ch–P	1.5554	0.2155	<b>2.0692</b>	0.0414
B–M	<b>16.2410</b>	0.0001	0.2707	0.7882	C–M	1.4921	0.2308	–0.1230	0.9029
B–P	3.8159	0.0532	<b>4.1606</b>	0.0001	C–P	0.8613	0.3656	1.5930	0.1286
Ch–C	0.0396	0.8428	–0.7264	0.4697	M–P	1.0446	0.3126	<b>2.2244</b>	0.0315

\* Explanation of the abbreviations of pairs: see Table 2. Results in bold text indicate the statistical significance at the 5% significance level.

Source: own calculations with Statistica 12.

The results obtained from the calculations conducted for the pairs of countries are confirmed by the findings of the Levene's test for equality of variances. The value of the F-statistic distributed as  $F(4.222)$  equals to 5.1197 with p-value  $p = 0.0006$  allows a reformulation that the variances of the SOA coefficient are unequal for the selected stock markets. The results of the Kruskal-Wallis rank test and the median test corroborate the previous findings. Considering that the value of the Kruskal-Wallis rank test (median test) statistic is equal to 17.9151 (11.6190) with the corresponding

**Table 5.** Basic descriptive statistics of SOA coefficient within sectors of the economy

Sector	1	2	3	4	5	6	7	8	9	10	11	12	13
Mean	0.77	0.81	0.91	0.82	0.83	0.76	0.80	0.93	–	1.00	1.03	0.85	0.54
Median	0.85	0.84	0.91	0.82	0.84	0.93	0.75	0.95	–	0.95	1.03	0.90	0.49
Min.	0.19	0.10	0.65	0.03	0.12	0.05	0.25	0.72	–	0.13	0.25	0.16	0.04
Max.	1.32	1.99	1.06	1.82	1.91	1.29	1.49	1.10	–	1.93	1.99	1.49	1.08
St. dev.	0.32	0.41	0.14	0.48	0.36	0.38	0.40	0.16	–	0.49	0.63	0.41	0.42
Coeff. of var. %	41.68	50.08	15.29	59.28	43.69	49.39	50.04	17.34	–	49.48	61.48	47.86	78.19
Skewness	–0.27	0.58	–1.26	0.15	0.28	–0.95	0.47	–0.67	–	0.35	0.61	–0.21	0.17
Kurtosis	–1.17	1.59	2.65	–0.73	0.49	–0.13	–0.44	0.81	–	–0.35	1.39	–0.90	–1.79
JB stat. [p-value]	2.55 [0.28]	2.57 [0.28]	0.85 [0.65]	0.94 [0.62]	0.75 [0.69]	2.54 [0.28]	0.48 [0.79]	0.30 [0.86]	–	0.51 [0.77]	0.23 [0.89]	0.84 [0.66]	0.92 [0.63]
n	37	26	6	31	47	19	9	4	0	16	5	18	9
Parametric test for one mean													
t statistic [p-value]	<b>14.59</b> [0.00]	<b>10.18</b> [0.00]	<b>16.02</b> [0.00]	<b>9.39</b> [0.00]	<b>15.69</b> [0.00]	<b>8.83</b> [0.00]	<b>6.00</b> [0.00]	<b>11.54</b> [0.00]	–	<b>8.08</b> [0.00]	<b>3.64</b> [0.02]	<b>8.87</b> [0.00]	<b>3.84</b> [0.01]

Results in bold text indicate the statistical significance at the 5% significance level.

Source: own calculations with Statistica 12.

p-value 0.0013 (0.0204), at the 5% significance level, we reject the hypotheses that the distributions of the SOA coefficient and its medians are homogeneous among the Latin American stock markets.

The basic descriptive statistics of the SOA coefficient among sectors of the economy are presented in Table 5. As was discussed in the previous section, the companies were assigned to 14 sectors following their basic business activity described in Thomson Reuters Eikon 4 (but the financial sector was excluded from analyses).

The number of firms assigned to the particular sector of economy varies between 0 for sector 9 (leisure) and 47 for sector 5 (electricity). Considering that no companies were assigned to sector 9, we were not allowed to proceed with the statistical hypothesis testing regarding this sector of economy.

**Table 6.** Results of the parametric test for the difference in means (sectors)

Pair*	F stat. Lev.	p-val.	t stat.	p-val.	Pair*	F stat. Lev.	p-val.	t stat.	p-val.	Pair*	F stat. Lev.	p-val.	t stat.	p-val.
1-2	0.41	0.52	-0.49	0.63	3-5	<b>4.90</b>	0.03	0.97	0.35	5-13	0.74	0.39	<b>2.17</b>	0.03
1-3	<b>8.68</b>	0.01	-1.77	0.10	3-6	<b>5.59</b>	0.03	1.37	0.19	6-7	0.00	0.97	-0.24	0.82
1-4	<b>6.41</b>	0.01	-0.47	0.64	3-7	4.52	0.05	0.61	0.55	6-8	2.86	0.11	-0.84	0.41
1-5	0.05	0.83	-0.81	0.42	3-8	0.21	0.66	-0.23	0.82	6-10	0.80	0.38	-1.57	0.13
1-6	0.24	0.62	0.05	0.96	3-10	<b>5.47</b>	0.03	-0.66	0.52	6-11	0.80	0.38	-1.22	0.24
1-7	0.19	0.67	-0.26	0.80	3-11	3.60	0.09	-0.47	0.65	6-12	0.20	0.66	-0.69	0.49
1-8	<b>4.29</b>	0.04	-1.65	0.15	3-12	<b>6.98</b>	0.01	0.46	0.65	6-13	0.38	0.54	1.44	0.16
1-10	2.73	0.10	-1.99	0.05	3-13	<b>10.0</b>	0.01	2.44	0.03	7-8	2.34	0.15	-0.60	0.56
1-11	2.32	0.14	-1.51	0.14	4-5	<b>4.76</b>	0.03	-0.14	0.89	7-10	0.42	0.53	-1.01	0.32
1-12	1.23	0.27	-0.84	0.40	4-6	2.13	0.15	0.40	0.69	7-11	0.45	0.52	-0.84	0.42
1-13	1.63	0.21	1.83	0.07	4-7	1.09	0.30	0.09	0.93	7-12	0.10	0.75	-0.32	0.75
2-3	4.39	0.04	-0.54	0.59	4-8	<b>4.98</b>	0.03	-0.94	0.37	7-13	0.23	0.64	1.36	0.19
2-4	1.90	0.17	-0.02	0.98	4-10	0.09	0.77	-1.19	0.24	8-10	3.00	0.10	-0.27	0.79
2-5	0.18	0.67	-0.18	0.86	4-11	0.02	0.90	-0.88	0.38	8-11	1.97	0.20	-0.31	0.76
2-6	0.01	0.90	0.42	0.68	4-12	0.95	0.33	-0.28	0.78	8-12	3.72	0.07	0.35	0.73
2-7	0.00	0.95	0.08	0.94	4-13	0.31	0.58	1.57	0.13	8-13	<b>5.63</b>	0.04	<b>2.42</b>	0.03
2-8	2.25	0.14	-0.55	0.59	5-6	0.07	0.80	0.66	0.51	10-11	0.06	0.81	-0.13	0.90
2-10	0.63	0.43	-1.29	0.20	5-7	0.05	0.82	0.22	0.83	10-12	0.26	0.61	0.91	0.37
2-11	0.63	0.43	-1.00	0.33	5-8	2.42	0.13	-0.53	0.60	10-13	0.06	0.82	<b>2.35</b>	0.03
2-12	0.10	0.75	-0.32	0.75	5-10	1.79	0.19	-1.43	0.16	11-12	0.40	0.53	0.76	0.46
2-13	0.21	0.65	1.74	0.09	5-11	1.40	0.24	-1.09	0.28	11-13	0.18	0.68	1.76	0.10
3-4	<b>8.95</b>	0.01	0.86	0.40	5-12	0.61	0.44	-0.23	0.82	12-13	0.05	0.82	1.88	0.07

\* The pairs are created for sectors 1-8 and 10-13. Results in bold text indicate the statistical significance at the 5% significance level.

Source: own calculations with Statistica 12.

The mean values of the SOA coefficient are positive and statistically significant at the 5% significance level. They range among the selected sectors starting from the lowest 0.54 (sector 13) and ending with the highest 1.03 (sector 11). However, it must be stressed that the SOA values above 1 are not expected by the Lintner's model and, therefore, the values obtained for sectors 10 and 11, although statistically significant, are not interpretable in terms of the dividend smoothing concept.

The normal distribution of the SOA coefficient was confirmed among all sector subsamples. Such a result enabled us to conduct the parametric test for the difference in means (compare Table 6) as well as the one-way ANOVA analysis (Table 7).

**Table 7.** Results of ANOVA test (sectors)

SOA variable	SS treatment	DF treatment	MS treatment	SS error	df error	MS error	F	p-value
Levene's test	0.9646	11	0.0877	11.1608	215	0.0519	1.6894	0.0772
Analysis of variance	1.7094	11	0.1554	34.4509	215	0.1602	0.9698	0.4750

Source: own calculations with Statistica 12.

The obtained results demonstrate no differences in the SOA variances, as well as no differences in means across the selected sectors. We could observe 12 exceptions (18.2%) in the case of the test for the difference in variances and only three exceptions (4.55%) in the case of the test for the difference in means. The latter were specifically:

1. sector pair 5 and 13 where the level of t-statistics (2.17) and p-value  $p=0.03$  indicate that the mean value of SOA for sector 5 was significantly higher than for sector 13,
2. sector pair 8 and 13 where the level of t-statistics (2.42) and p-value  $p=0.03$  indicate that the mean value of SOA for sector 8 was significantly higher than for sector 13,
3. sector pair 10 and 13 where the level of t-statistics (2.35) and p-value  $p=0.03$  indicate that the mean value of SOA for sector 10 was significantly higher than for sector 13.

The findings were corroborated by the results of the one-way ANOVA analysis which did not reveal differences in means of the SOA coefficient among the selected sectors.

As Lintner [1956] postulates, the SOA coefficients should take positive values in the range between 0 and 1. The low values of SOA correspond with the longer adjustment process in dividends in response to the change in current earnings. The adjustment process takes as many periods as it is necessary to achieve the target payout ratio. Although we found many companies with low SOA values, the country means of SOA values, except Peru, are relatively high. Thus, based on the obtained

results, we found very weak evidence for the first hypothesis and, therefore, this hypothesis was rejected. The effect of dividend smoothing was not present on the selected Latin American emerging stock markets in the period of 1994-2015. However, we found some differences in the speed of dividend adjustment among the selected countries and rather no differences among the sectors of the economy within those countries. Therefore, the second research hypothesis is partially sustained. We can state that the speed of dividend adjustment is determined by the characteristics of the capital market referring to the countries but rather not to sectors of the economy.

## 5. Concluding remarks

In this article, we attempted to identify dividend smoothing behaviour among companies listed in Brazil, Chile, Colombia, Mexico and Peru. The five selected markets are recognized in the MSCI Emerging Market Index, as well as being important regional stock exchanges. However, in comparison to more mature examples (in the United States, the United Kingdom, etc.), Latin American stock markets are moderate in size and are characterized by relatively low levels of trading volume.

Since the dividend smoothing phenomenon was confirmed in many studies encompassing companies listed on mature markets, it is particularly interesting to examine if managers from emerging stock markets follow the same behavioral pattern. In our study, the initial number of companies was 1297. Similarly to other studies, we implemented several necessary conditions – i.e. dividend payout for at least six consecutive years in the period of 1994-2015 – to avoid spurious results. In consequence the final sample encompassed 227 companies with the overall number of observations totalling 4968.

We found little support for the presence of dividend smoothing among the Latin American firms selected to the research sample. Although we found publicly traded Latin American companies with low SOA values, the obtained means of the SOA coefficient for four countries varied from 0.731 (Chile) to 0.914 (Brazil). That – on the grounds of the classic Lintner's approach [Lintner 1956] – indicates that the Latin American firms (apart from those of Peru) listed on the stock exchanges tend not to smooth their dividends. Thus, our results imply that managers from the analyzed companies prefer to adjust dividends forthwith with the change in the current earnings or follow a rather unstable dividend policy. Moreover, the essential finding of Lintner's study – managers believe that shareholders prefer a stable level of dividends – seems not to refer to our sample.

Furthermore, the results of the applied set of statistical measures allow us to confirm the existence of significant differences in the SOA levels among the selected stock markets. Although we did not introduce country level determinants in our study, it is plausible that the differences in the speed of dividend adjustment are driven by national or stock markets characteristics. We also tried to address the

problem of firms heterogeneity. Therefore, we decomposed the concluding sample and assigned each of the 227 companies into 13 sectors according to our original conceptualization of the division of economy. Surprisingly, the levels of the speed of adjustment turned out to be equal among the distinguished sectors. Although we used the Thomson Reuters Eikon database, the product that is widely used by financial professionals and encompasses all international stock markets, it may well be the case that the low number of companies in our sub-samples might have impacted on the obtained results.

We also have to acknowledge that the SOA coefficients obtained in our study are relatively higher in comparison to the results published by Benavides et al. [2016]. Because of the almost identical choice of countries in both studies, the obtained differences require some comments. First, as we reported earlier, we introduced several conditions in our dataset. Among them, the most important was to include only those companies that conducted uninterrupted dividend policy and satisfied shareholders for at least six consecutive years. This condition was not only important in the chosen estimation procedure (OLS) but also we found it fundamental in the dividend smoothing analyses. According to the explanations in Benavides et al. [2016], such a requirement was absent in the process of companies selection. Second, in our study we decided to follow a standard dividend smoothing methodology and, therefore, we checked for the validity of Lintner's partial adjustment model. We literally decided to follow the specification used in the works of [Fama, Babiak 1968; Dewenter, Warther 1998; Brav et al. 2005; Javakhadze et al. 2014]. In the study published by Benavides et al. [2016], the authors decided to construct their own specification regarding the basic equations, as well as the definition of the dependent variable. Contrary to our study, Benavides et al. [2016], used the panel estimation. Third, Benavides et al. [2016] similarly to other studies (such as [Larkin, Leary, Michealy 2014]), excluded the observations below the 2<sup>nd</sup> and above the 98<sup>th</sup> percentile of the distribution to mitigate the effects of outliers. Considering the above three arguments, these could explain the differences in the obtained results in both studies.

There are several issues of dividend smoothing that need to be considered in the further research. First, in this research we primarily concentrated on estimating the levels of the SOA coefficients within the selected Latin American countries. Our main objectives were both to detect the presence of the dividend smoothing phenomenon and to discover how it varied across the sample countries and sectors of the economy. Hence we applied the OLS estimation method, based on cross section data. The subsequent survey relating the levels of the SOA to diverse country, sector and individual characteristics, will entail applying models suitable for panel data. Second, it would be valuable to extend the underlying sample for other emerging stock markets to conduct broader international comparisons. Moreover, since dividend smoothing is thought to mitigate the agency problem, it would be

particularly interesting to investigate measures of agency conflict, as well as other potential determinants related to the company's, as well as the stock markets (country) characteristics.

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