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Market Dynamics in Diverging Economies: A Comparative Study of the MERVAL and S&P 500 Indices

Dinâmica de Mercado em Economias Divergentes: Um Estudo Comparativo dos Índices MERVAL e S&P 500

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Abstract

This paper investigates the co-movement between the Argentine MERVAL index and the U.S. S&P 500 from January 2019 to January 2022, a period marked by intense global financial volatility and domestic macroeconomic instability in Argentina. Using a dataset of monthly adjusted closing prices, we compute percentage changes and assess the degree of correlation through both Pearson and Spearman coefficients. Our results indicate a moderate yet statistically significant relationship between the two indices, suggesting that Argentina's stock market is partially integrated with global trends but still exhibits strong idiosyncratic behavior. Periods of global shocks tend to synchronize the indices, while domestic crises lead to divergence. The findings are discussed in light of previous literature on financial contagion, emerging market integration, and volatility transmission. This study contributes to understanding the asymmetrical dynamics of financial markets in diverging economies and highlights the relevance of context-specific modeling when assessing risk and performance in emerging equity markets.

Keywords: MERVAL Index, S&P 500, Emerging Markets, Stock Market Correlation, Financial Integration, Argentina, Pearson and Spearman Analysis

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Resumo
Este artigo investiga o co-movimento entre o índice argentino MERVAL e o índice estadunidense S&P 500 no período de janeiro de 2019 a janeiro de 2022, caracterizado por intensa volatilidade financeira global e instabilidade macroeconômica doméstica na Argentina. Utilizando um conjunto de dados com preços de fechamento ajustados mensais, calculamos as variações percentuais e avaliamos o grau de correlação por meio dos coeficientes de Pearson e de Spearman. Nossos resultados indicam uma relação moderada, porém estatisticamente significativa, entre os dois índices, sugerindo que o mercado acionário argentino está parcialmente integrado às tendências globais, mas ainda apresenta um comportamento fortemente idiossincrático. Períodos de choques globais tendem a sincronizar os índices, enquanto crises domésticas levam à divergência. Os achados são discutidos à luz da literatura prévia sobre contágio financeiro, integração de mercados emergentes e transmissão de volatilidade. Este estudo contribui para a compreensão das dinâmicas assimétricas dos mercados financeiros em economias divergentes e destaca a relevância de modelos específicos ao contexto para a avaliação de risco e desempenho em mercados acionários emergentes.

Palavras-chave: *Índice MERVAL, S&P 500, Mercados Emergentes, Correlação do Mercado de Ações, Integração Financeira, Argentina, Análise de Pearson e Spearman*

1. Introduction

The comparative behavior of stock markets in emerging and developed economies has been a recurring topic in financial research. Market dynamics often differ due to structural, institutional, and macroeconomic factors. Emerging markets tend to exhibit greater volatility and sensitivity to political or economic shocks, while developed markets are usually more stable, liquid, and resilient to global uncertainty (Bekaert & Harvey, 2003; Estrada, 2000).

Argentina, as a case study, presents persistent macroeconomic instability, characterized by high inflation, recurring currency crises, and inconsistent monetary policies. During the 2019–2022 period, the country experienced significant disruptions, including capital controls, a pandemic-driven recession, and sharp exchange rate devaluations, all of which influenced investor expectations and stock market performance. The MERVAL index, Argentina's benchmark equity indicator, evolved under these conditions within a fragile institutional environment that amplifies financial volatility and undermines investor confidence (Yacoubian, 2021).

In contrast, the United States, represented by the S&P 500 index, maintained relatively robust economic fundamentals over the same period. Despite the severe impact of the COVID-19 crisis, the U.S. equity market quickly recovered, supported by coordinated fiscal and monetary responses, institutional credibility, and investor confidence (Ramelli & Wagner, 2020).

This paper investigates whether the Argentine and U.S. stock markets exhibited similar directional movements or diverged in behavior from 2019 to 2022. Using monthly adjusted closing prices for the MERVAL and the S&P 500, we compute a comparative analysis and evaluate their degree of co-movement. Our aim is to assess whether Argentina’s market mirrored global trends or evolved independently due to its domestic economic circumstances.

2. Literature review

Cross-country stock market comovement has received significant attention in the financial literature, especially regarding emerging versus developed markets. Forbes and Rigobon (2002) introduced the notion that high market correlations during crises may reflect interdependence rather than true contagion. Their findings suggest that, while financial markets do respond jointly to global shocks, the strength of such reactions varies by institutional and economic context.

Emerging economies, particularly in Latin America, display unique patterns of volatility and risk transmission. According to Bekaert, Hoerova, and Lo Duca (2013), volatility in emerging markets is influenced not only by global risk aversion but also by domestic political and financial instability. This distinction is critical in understanding the behavior of Argentina's MERVAL index, which has historically reflected both local macroeconomic imbalances and broader international trends.

Bussière and Fratzscher (2006) argue that early warning systems for financial crises should account for structural weaknesses in emerging markets, such as poor institutional frameworks, limited capital mobility, and vulnerability to external shocks. These characteristics help explain Argentina's idiosyncratic market behavior, particularly during periods of global turmoil. Complementarily, Chiang, Jeon, and Li (2007) propose a dynamic correlation framework to study financial contagion, showing that co-movement intensifies during crises but weakens when structural differences are strong.

During the COVID-19 pandemic, emerging markets responded heterogeneously to global shocks. Gormsen and Koijen (2020) analyzed real-time equity expectations and found that developed markets, particularly the U.S., experienced quicker recovery expectations than most emerging peers. This divergence was attributed to differences in institutional response and investor confidence.

These studies collectively suggest that stock market behavior in emerging economies such as Argentina cannot be fully explained by global trends alone. Instead, local institutional quality, macroeconomic credibility, and investor sentiment play defining roles. The present study adds to this literature by providing a focused comparison between the MERVAL and S&P 500 indices over a three-year period of heightened economic divergence.

3. Methodology

This study adopts a descriptive empirical approach to compare the behavior of the Argentine MERVAL index and the U.S. S&P 500 index over the period January 2019 to January 2022. The primary objective is to examine whether both markets exhibited similar directional trends during a period characterized by global volatility and domestic macroeconomic imbalances in Argentina.

We use a panel of monthly adjusted closing prices, extracted manually from official and verified data sources. For the MERVAL index, values are denominated in Argentine pesos (ARS), while for the S&P 500, the index is recorded in U.S. dollars (USD). Prices correspond to the first trading day of each month, ensuring consistency in temporal alignment. These values were compiled into a consolidated table, where each row represents a month and includes the closing prices of both indices.

In addition , we apply two formulas to evaluate the relationship between the two indices.

The correlation analysis proceeds in two steps:

1. **Pearson correlation coefficient** is used to measure the linear relationship between the monthly returns of the MERVAL and the S&P 500 indices. This method assumes normality and homoscedasticity in return distributions.

2. **Spearman's rank correlation coefficient** is also computed, providing a non-parametric measure of monotonic association between the ranked returns. This is particularly useful given the presence of outliers and the non-normal nature of returns in emerging markets.

No currency conversions or inflation adjustments are applied, as the analysis focuses on **relative directionality and correlation**, not absolute value levels. The combined use of Pearson and Spearman correlations strengthens the robustness of the results by accounting for both linear and monotonic relationships.

Table 1 presents the monthly adjusted closing prices of the MERVAL index (in Argentine pesos) and the S&P 500 index (in U.S. dollars) from January 2019 to January 2022. These values were manually collected from verified financial data platforms and correspond to the first trading day of each month. The table serves as the empirical foundation for the computation of monthly returns and the subsequent correlation analysis discussed in this study.

Table 1. MERVAL vs S&P 500 - Adjusted Close (Jan 2019 to Jan 2022)

Date	MERVAL Adj Close (ARS)	S&P 500 Adj Close (USD)
2019-01-01	36,327.00	2,704.10
2019-02-01	34,486.00	2,784.49
2019-03-01	33,466.00	2,834.40
2019-04-01	29,571.00	2,945.83
2019-05-01	33,950.00	2,752.06
2019-06-01	41,796.00	2,941.76
2019-07-01	42,058.00	2,980.38
2019-08-01	24,609.00	2,926.46
2019-09-01	29,067.00	2,976.74
2019-10-01	34,950.00	3,037.56
2019-11-01	34,500.00	3,140.98
2019-12-01	41,671.00	3,230.78
2020-01-01	40,105.00	3,225.52
2020-02-01	34,973.00	2,954.22
2020-03-01	24,384.00	2,584.59

2020-04-01	32,743.00	2,912.43
2020-05-01	37,825.00	3,044.31
2020-06-01	38,687.00	3,100.29
2020-07-01	49,254.00	3,271.12
2020-08-01	46,835.00	3,500.31
2020-09-01	41,261.00	3,363.00
2020-10-01	45,290.00	3,269.96
2020-11-01	54,573.00	3,621.63
2020-12-01	51,227.00	3,756.07
2021-01-01	48,257.00	3,714.24
2021-02-01	48,432.00	3,811.15
2021-03-01	47,982.00	3,972.89
2021-04-01	49,056.00	4,181.17
2021-05-01	59,269.00	4,204.11
2021-06-01	62,372.00	4,297.50
2021-07-01	66,005.00	4,395.26
2021-08-01	76,452.00	4,522.68
2021-09-01	77,364.00	4,307.54
2021-10-01	83,561.00	4,605.38
2021-11-01	79,316.00	4,567.00
2021-12-01	83,500.00	4,766.18
2022-01-01	90,908.00	4,515.55

Source**:** Elaborated by the authors based on data from Yahoo Finance

4. Results

This section presents the empirical findings based on the monthly adjusted closing prices of the MERVAL and S&P 500 indices between January 2019 and January 2022. The analysis begins with the computation of monthly percentage changes for both indices, which serve as the basis for evaluating the degree of co-movement. By comparing these returns, the study aims to determine whether the Argentine stock market moved in tandem with its U.S. counterpart or followed an independent trajectory. The results include both descriptive comparisons of monthly movements and statistical assessments using Pearson and Spearman correlation coefficients.

Table 2. Monthly Percentage Change in Index Values (January 2019 – January 2022)

Date	MERVAL (ARS)	MERVAL Change (%)	S&P 500 (USD)	S&P 500 Change (%)
2019-01-01	36327.00		2704.10	
2019-02-01	34486.00	-5.07	2784.49	2.97
2019-03-01	33466.00	-2.96	2834.40	1.79
2019-04-01	29571.00	-11.64	2945.83	3.93
2019-05-01	33950.00	14.81	2752.06	-6.58
2019-06-01	41796.00	23.11	2941.76	6.89
2019-07-01	42058.00	0.63	2980.38	1.31
2019-08-01	24609.00	-41.49	2926.46	-1.81
2019-09-01	29067.00	18.12	2976.74	1.72
2019-10-01	34950.00	20.24	3037.56	2.04
2019-11-01	34500.00	-1.29	3140.98	3.40
2019-12-01	41671.00	20.79	3230.78	2.86
2020-01-01	40105.00	-3.76	3225.52	-0.16
2020-02-01	34973.00	-12.80	2954.22	-8.41
2020-03-01	24384.00	-30.28	2584.59	-12.51
2020-04-01	32743.00	34.28	2912.43	12.68
2020-05-01	37825.00	15.52	3044.31	4.53
2020-06-01	38687.00	2.28	3100.29	1.84
2020-07-01	49254.00	27.31	3271.12	5.51
2020-08-01	46835.00	-4.91	3500.31	7.01
2020-09-01	41261.00	-11.90	3363.00	-3.92
2020-10-01	45290.00	9.76	3269.96	-2.77
2020-11-01	54573.00	20.50	3621.63	10.75
2020-12-01	51227.00	-6.13	3756.07	3.71
2021-01-01	48257.00	-5.80	3714.24	-1.11
2021-02-01	48432.00	0.36	3811.15	2.61
2021-03-01	47982.00	-0.93	3972.89	4.24
2021-04-01	49056.00	2.24	4181.17	5.24
2021-05-01	59269.00	20.82	4204.11	0.55
2021-06-01	62372.00	5.24	4297.50	2.22

2021-07-01	66005.00	5.82	4395.26	2.27
2021-08-01	76452.00	15.83	4522.68	2.90
2021-09-01	77364.00	1.19	4307.54	-4.76
2021-10-01	83561.00	8.01	4605.38	6.91
2021-11-01	79316.00	-5.08	4567.00	-0.83
2021-12-01	83500.00	5.28	4766.18	4.36
2022-01-01	90908.00	8.87	4515.55	-5.26

Source: Elaborated by the authors based on data from Yahoo Finance.

To quantify the linear association between the monthly returns of the MERVAL and S&P 500 indices, Pearson's correlation coefficient was computed using the full sample from January 2019 to January 2022. This method captures the strength and direction of a potential linear relationship between the two series of percentage changes. Table 3 summarizes the results.

Table 3. Pearson Correlation – Monthly Percentage Changes (MERVAL vs S&P 500)

Statistic	Value
Pearson's correlation coefficient (r)	0.530
p-value (two-tailed)	0.0008771

Source: Elaborated by the authors using manually computed monthly percentage changes based on data from Yahoo Finance.

In addition to the Pearson coefficient, Spearman's rank correlation was computed to assess the monotonic relationship between the monthly percentage changes of the MERVAL and S&P 500 indices. This non-parametric method evaluates whether both indices tend to move in the same direction, regardless of the magnitude or linearity of their changes. Spearman's approach is particularly useful in the context of emerging markets, where return distributions may deviate from normality and contain outliers. The results are summarized in Table 4.

Table 4. Spearman Correlation – Monthly Percentage Changes (MERVAL vs S&P 500)

Statistic	Value
Spearman's rank correlation coefficient (ρ)	0.393
p-value (two-tailed)	0.0176398

Source: Elaborated by the authors using manually computed monthly percentage changes based on data from Yahoo Finance.

5. Discussion

The results reveal a moderate and statistically significant correlation between the monthly percentage changes of the MERVAL and the S&P 500 indices during the period January 2019 to January 2022. Specifically, Pearson's correlation coefficient was 0.530 ($p = 0.0008771$), indicating a positive linear relationship between the returns of the Argentine and U.S. stock markets. This suggests that, despite substantial differences in macroeconomic and institutional frameworks, both indices exhibited some degree of synchronous behavior.

The Spearman's rank correlation coefficient of 0.393 ($p = 0.0176$) confirms this association from a non-parametric perspective, implying a consistent directional co-movement between the indices, even if the magnitude of monthly changes varied. The statistical significance of both correlations supports the notion that the MERVAL responded, at least partially, to global equity dynamics reflected in the S&P 500.

These insights are in line with empirical studies showing that stock market dynamics in Latin America—including Argentina—tend to exhibit partial and episodic co-movement with U.S. markets, rather than continuous integration. For instance, These results are consistent with empirical evidence showing that stock market integration between Latin America and the United States is limited, context-dependent, and often asymmetric. Coleman, Leone, and de Medeiros (2019) examined the dynamic behavior of six Latin American equity markets, including Argentina, and the S&P 500. Using a principal component analysis, they found that co-movement intensifies during periods of external shocks but significantly weakens during stable market conditions, suggesting episodic rather than permanent integration.

However, the moderate strength of the correlations also highlights the presence of idiosyncratic drivers within the Argentine market. Episodes of domestic economic stress, inflationary surges, and capital control measures may have decoupled MERVAL's trajectory from international trends at specific points during the sample period. For example, the sharp negative return of the MERVAL in August 2019 contrasts with relatively stable U.S. market conditions in the same month, reflecting a localized shock in Argentina's political environment.

Overall, the findings suggest that while the Argentine equity market is not fully integrated with global benchmarks such as the S&P 500, it remains partially exposed to international sentiment and trends. This partial integration has implications for portfolio diversification, sovereign risk assessment, and the interpretation of financial signals in emerging economies.

6. Conclusion

This study examined the comparative behavior of the Argentine MERVAL and U.S. S&P 500 indices over the period January 2019 to January 2022, a time characterized by global volatility and domestic macroeconomic stress in Argentina. By analyzing monthly adjusted closing prices and computing percentage changes, we assessed both linear and monotonic correlations between the two markets using Pearson and Spearman coefficients.

The results reveal a moderate yet statistically significant relationship between the two indices, suggesting that while Argentina's equity market responds to global financial dynamics, it is also driven by domestic idiosyncrasies. The MERVAL exhibited episodic alignment with the S&P 500, particularly during major global shocks, but diverged sharply in moments of local political or economic turmoil. This partial integration reflects the dual influence of international investor sentiment and internal macroeconomic fragilities.

These findings contribute to the broader literature on emerging market behavior by reinforcing the view that financial synchronization is not uniform across countries or time periods. From a policy and investment standpoint, the evidence underscores the importance of strengthening institutional frameworks in emerging economies to reduce vulnerability to external shocks and improve alignment with global markets. For international investors, the partial correlation identified in this study highlights potential diversification opportunities when managing exposure to Latin American equities.

Conflict of Interest

The authors declare no conflict of interest related to the content of this article.

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