

Comparing Global Stock Markets Using Risk Premiums Derived from the Potential Payback Period (PPP)

Comparaison des marchés boursiers mondiaux à l'aide des primes de risque dérivées du Délai de Recouvrement Potentiel (DRP)

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Abstract

Traditional valuation metrics, such as the Price-to-Earnings (P/E) ratio, often offer a limited view of stock market attractiveness because they neglect critical factors like earnings growth, interest rates, and risk. This article proposes the Potential Payback Period (PPP) as a more comprehensive and dynamic valuation tool. The PPP estimates how long it would take for an investor to recover their initial investment, incorporating expected earnings growth and applying discounting to present value. From the PPP, two key indicators are derived: the Internal Rate of Return (IRR) and the Risk Premium (IRR minus the risk-free rate). Using this methodology, the study compares major global stock markets—including those of Taiwan, India, Brazil, Germany, the USA, Japan, and China—to evaluate their risk-adjusted appeal. The findings highlight that markets with higher Risk Premiums tend to deliver stronger performances, while those with negative or insufficient premiums underperform. The article also explores discrepancies, such as the U.S. market's outperformance despite a low premium, due to exceptional earnings growth. This approach introduces an innovative and practical alternative to the P/E ratio, offering investors a more accurate framework for global equity selection based on growth, risk, and return compensation.

Keywords : *Stock Market Valuation ; Potential Payback Period (PPP) ; Risk Premium ; Internal Rate of Return (IRR) ; Earnings Growth ; Global Stock Market Comparison*

Résumé

Les indicateurs traditionnels d'évaluation, tels que le ratio cours/bénéfice (P/E), offrent souvent une vision partielle de l'attractivité des marchés boursiers, car ils ne prennent pas en compte des éléments essentiels comme la croissance des bénéfices, les taux d'intérêt et le risque. Cet article propose le Délai de Recouvrement Potentiel (DRP) comme un outil d'évaluation plus complet et dynamique. Le DRP mesure le temps nécessaire pour qu'un investisseur récupère son investissement initial, en tenant compte de la croissance future des bénéfices et en actualisant ces flux. Deux indicateurs en découlent : le Taux de Rendement Interne (TRI) et la Prime de Risque (TRI moins taux sans risque). À l'aide de cette méthodologie, l'étude compare les principaux marchés boursiers mondiaux — notamment Taïwan, l'Inde, le Brésil, l'Allemagne, les États-Unis, le Japon et la Chine — afin d'évaluer leur attractivité ajustée au risque. Les résultats montrent que les marchés affichant une prime de risque élevée tendent à mieux performer, tandis que ceux avec une prime négative ou insuffisante sous-performent. L'article met également en lumière certaines exceptions, comme la performance élevée du marché américain malgré une faible prime, portée par une forte croissance des bénéfices. Cette approche innovante offre une alternative pertinente au ratio P/E classique.

Mots Clés : *Évaluation des marchés boursiers ; Délai de Recouvrement Potentiel ; Prime de Risque ; Taux de Rendement Interne ; Croissance des Bénéfices ; Comparaison des Marchés Boursiers Mondiaux*

Introduction

In an increasingly complex and interconnected global financial environment, accurately valuing stock markets has become a major challenge for investors and analysts. Traditional valuation tools—most notably the Price-to-Earnings (P/E) ratio—have long been used as benchmarks for assessing market attractiveness. However, these static indicators often fail to capture essential variables such as earnings growth, interest rate levels, and the risk associated with each market. This shortcoming is clearly illustrated by contrasting cases like Brazil, which exhibited the lowest P/E ratio (8.9) yet delivered the worst performance (-8.3%) over the past year, versus the United States, which posted the highest performance (+22.0%) despite a much higher P/E ratio (31.6). Such inconsistencies raise a central question: Can we continue to rely on the P/E ratio as a reliable guide for investment decisions in global stock markets?

To address this question, the present study introduces the Potential Payback Period (PPP) as a more dynamic and comprehensive metric. The PPP measures the time needed for an investor to recover their capital, factoring in projected earnings growth and discounting future cash flows. From this, the Internal Rate of Return (IRR) and the Risk Premium (defined as IRR minus the risk-free rate) are derived—providing a more nuanced evaluation of market performance adjusted for risk.

This paper aims to assess whether the PPP-derived Risk Premium can better explain stock market attractiveness across countries. Using a comparative analysis of major global markets—including Taiwan, India, Brazil, Germany, the USA, Japan, and China—the study evaluates the alignment between each market's risk-adjusted return and its actual performance. Methodologically, the approach combines financial modeling with empirical performance data over the past year.

The remainder of the article is structured as follows: Section 1 presents the key empirical findings, highlighting the relationship between Risk Premium and market outcomes. Section 2 discusses the investment implications of these results and how they may guide strategic allocation. Section 3 concludes with a discussion of the limitations of the P/E ratio and the advantages of adopting the PPP framework for modern financial analysis.

COMPARISON OF STOCK MARKETS WORLDWIDE AS OF FEBRUARY 7, 2025

Country	P/E	g	r	PPP	IRR	Risk Pr.	1-Yr Price Perf.
USA	31.6	15%	4.49%	14.92	4.76%	+0.27%	+22.0%
France	21.2	12%	3.09%	12.56	5.67%	+2.58%	+2.7%
United Kingdom	20.5	15%	4.48%	11.67	6.12%	+1.64%	+12.1%
Germany	21.7	19%	2.38%	10.03	7.15%	+4.77%	+15.3%
Japan	14.9	7.8%	1.30%	10.79	6.64%	+5.34%	+6.1%
Taiwan	21.6	17%	1.54%	10.27	6.98%	+5.44%	+26.3%
China	25.7	25%	1.61%	9.33	7.71%	+6.10%	+19.0%
India	25.5	18%	6.81%	13.05	5.45%	-1.36%	+5.7%
Brazil	8.9	12%	14.77%	9.90%	7.25%	-7.52%	-8.3%

Source: Figures for P/E (Price-to-Earnings Ratio) and g (Earnings Growth Rate) are from Simply Wall Street <https://simplywall.st/markets/us>

r : Risk-Free Rate; PPP: Potential Payback Period; IRR : Internal Rate of Return;

Risk Pr. : Risk Premium (= IRR – r); 1-Y Price Perf. : One-Year Price Performance.

1. Key Findings: Stock Markets Ranked by Risk Premium

This section presents the comparative results of selected global stock markets based on Risk Premiums derived from the Potential Payback Period (PPP). The analysis highlights the extent to which these premiums correlate with actual market performance, offering insights into their effectiveness as forward-looking valuation tools.

1.1. Taiwan: A Model Case of High Risk Premium and Strong Performance (+26.3%)

Taiwan stands out as the most attractive market in this analysis, with a Risk Premium of +5.44%, significantly above the estimated risk threshold. This indicates that investors are more than adequately rewarded for bearing market risk. Correspondingly, Taiwan recorded the highest market return over the reference period (+26.3%). This strong alignment between theoretical valuation and real performance illustrates how a well-compensated risk environment—when coupled with steady earnings growth—can enhance investor confidence and capital inflows.

1.2. India and Brazil: Negative Risk Premiums and Subpar Returns

India (-1.36%) and Brazil (-7.52%) show a stark contrast. These markets exhibit negative Risk Premiums, meaning that their expected returns do not justify the level of inherent risk. The underperformance of these markets—especially Brazil, which registered the worst annual return (-8.3%)—confirms that investors are unlikely to allocate capital where risk is not adequately compensated. In such scenarios, capital tends to flow toward safer assets like bonds, further exacerbating underperformance.

1.3. Germany vs. France and the UK: Risk Premium as a Differentiator in Similar Economies

Within the European context, Germany emerges as the most robust market, with a Risk Premium of +4.77%, compared to lower premiums for France and the UK. Germany also recorded the highest performance in the region (+15.3%). These results suggest that even among economies with similar political and regulatory stability, risk-adjusted return differentials can significantly influence investor behavior. The German case underscores how superior valuation metrics can predict relative performance in otherwise comparable markets.

1.4. USA: Low Risk Premium, Yet Strong Growth-Driven Outperformance (+22.0%)

Despite a modest Risk Premium (+0.27%), the U.S. market achieved the second-best overall performance. This outlier is explained by unexpectedly strong earnings growth—especially among technology firms listed on NASDAQ. These companies delivered high returns despite high initial valuations, reflecting investor optimism around innovation, scalability, and long-term growth. This case demonstrates that while Risk Premiums are effective, they may be temporarily offset by exceptional growth expectations.

1.5. Japan: High Risk Premium Dampened by Currency Headwinds (+6.1%)

Japan's Risk Premium (+5.34%) indicates high theoretical attractiveness. However, its stock market underperformed relative to its valuation potential, posting only +6.1% growth. A major contributing factor was the appreciation of the Japanese Yen, which negatively affected export-oriented companies. This case highlights how macroeconomic factors—particularly exchange rates—can mute the benefits of a favorable Risk Premium.

1.6. China: Strong Premium, Uncertain Outlook due to Geopolitical Tensions

China offers a high Risk Premium (+6.10%), suggesting undervaluation and high potential returns. Nevertheless, escalating trade tensions with the United States have raised investor concerns, leading to more cautious behavior. While the PPP methodology points to strong fundamentals, geopolitical uncertainty introduces volatility that may deter risk-averse capital.

This disconnect reveals the importance of integrating qualitative factors—such as political risk—into financial valuation models.

2. Investment Implications: When Is a Market Worth Investing In?

The practical value of the PPP-derived Risk Premium lies in its capacity to inform investment decisions across heterogeneous markets with varying degrees of volatility, growth prospects, and macroeconomic stability. Unlike simplistic valuation ratios, the Risk Premium offers a forward-looking measure that accounts for both expected returns and market-specific uncertainties.

For investors, especially those seeking opportunities in emerging or volatile economies, interpreting the Risk Premium relative to the inherent risks of a given market is crucial. The central question becomes: **Does the expected return (IRR) sufficiently exceed the risk-free rate to justify the uncertainties borne in that market?**

2.1. Attractive Investment Conditions: High Risk Premium vs. Perceived Risk

When the Risk Premium is **substantially higher than the level of risk perceived by investors**, the market is likely undervalued and thus represents a financially attractive opportunity. This was clearly observed in the case of **Taiwan**, which combined a high Risk Premium (+5.44%) with outstanding market performance (+26.3%). In such cases, the risk-reward trade-off is skewed favorably toward investors, making capital allocation both rational and potentially rewarding.

2.2. Unfavorable Conditions: Negative or Insufficient Risk Premium

Conversely, when the Risk Premium is **low or even negative**, the expected return does not justify the investment risk. **India** (-1.36%) and **Brazil** (-7.52%) are illustrative examples where the lack of sufficient excess return relative to the risk-free rate made these markets unattractive. As a result, they underperformed significantly, with Brazil even delivering negative returns. In such environments, capital tends to flow out of equities and into safer assets like government bonds, compounding the underperformance.

2.3. The European Case: Moderate Risk, Differentiated by Premium

A particularly instructive example is **Germany**, which had the highest Risk Premium among the three major European markets and delivered the strongest performance (+15.3%). While France and the UK operate under similar institutional and macroeconomic frameworks, their lower premiums corresponded with comparatively weaker performance. This shows that even in markets with comparable baseline risks, the Risk Premium serves as a differentiator and predictor of relative success.

In summary, the Risk Premium derived from the PPP model acts as a compass for rational investment: it identifies whether a market offers a fair reward for its risk profile. When integrated into portfolio strategy, this approach enhances the quality of allocation decisions by balancing expected profitability with risk exposure.

Conclusion: Why the PPP, IRR, and Risk Premium Are Superior to the P/E Ratio

This study reaffirms the inadequacy of the Price-to-Earnings (P/E) ratio as a standalone metric for evaluating stock market attractiveness. As evidenced by Brazil's weak performance despite a low P/E, and the United States' strong performance despite a high one, relying solely on this static indicator can lead to misleading investment decisions. In contrast, the Potential Payback Period (PPP) framework, by incorporating earnings growth and discounting mechanisms, offers a more dynamic valuation method. Through the derivation of the Internal Rate of Return (IRR) and Risk Premium, this model provides a richer, risk-adjusted picture of market potential.

The key contribution of this research lies in operationalizing a more forward-looking and comprehensive approach to stock market valuation. It bridges traditional financial theory with empirical analysis, showing that markets offering higher risk premiums tend to yield superior returns—provided those premiums align with macroeconomic and geopolitical realities. From a scientific standpoint, this study adds depth to the literature on valuation models, challenging the overreliance on simplistic ratios and promoting the adoption of multi-factor frameworks that account for growth, risk, and investor compensation.

However, the study is not without limitations. The PPP-based IRR and Risk Premium rely on forecasts of earnings growth and assumptions regarding the discount rate, which may introduce estimation errors. Additionally, qualitative factors such as political instability, regulatory changes, or currency volatility—although acknowledged—are not directly integrated into the quantitative model.

Future research could refine the PPP framework by incorporating scenario analysis, integrating real options theory, or modeling uncertainty using Monte Carlo simulations. Further empirical validation across different timeframes, sectors, and asset classes would also strengthen its applicability.

In an environment of growing complexity and volatility, this paper argues for a paradigm shift: investors and analysts should move beyond static valuation tools and adopt adaptive models like the PPP, which better capture the multidimensional nature of modern financial markets.

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