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STOCK MARKET DEVELOPMENT AND ECONOMIC GROWTH: A META-ANALYSIS

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ABSTRACT

Stock markets have become central to debates on long-run development because they can mobilize savings, improve liquidity, diversify risk, and discipline corporate investment, yet empirical findings on their macroeconomic contribution remain fragmented across countries, indicators, and estimation techniques. This study investigates whether stock market development systematically promotes economic growth and whether that relationship depends on the indicator used and on institutional conditions. The paper employs a secondary-research design and meta-analytic direction-of-effect synthesis based on 30 peer-reviewed empirical studies published between 1998 and 2025. Each study is coded by region, period, methodology, stock market proxy, growth measure, institutional conditioning, and overall result direction, and the evidence is summarized with supportive shares, a sign test, and a weighted evidence index. The results show that 17 studies report a clearly positive relationship, 6 report a conditional positive relationship, 6 find mixed or insignificant results, and only 1 reports a net negative result. This yields a supportive share of 76.7% across all included studies and 95.8% among the 24 studies with an identifiable net direction, with the directional sign test rejecting symmetry ($p < 0.001$). The weighted evidence index equals 0.625, indicating moderately strong overall support. Indicator-level coding shows that liquidity-based proxies are more consistently favorable than size-based proxies, while recent threshold and interaction studies reveal that institutional quality shapes the nexus. Overall, the meta-analysis finds that stock market development is usually growth-enhancing, but the effect is heterogeneous rather than automatic, becoming strongest when markets are liquid, regulated, and embedded in supportive institutional environments.

INTRODUCTION

Economic growth depends not only on how much capital an economy accumulates but also on how efficiently savings are mobilized, priced, and allocated toward productive investment. In that sense, the stock market matters because it converts dispersed savings into tradable claims, lowers the cost of capital, generates liquidity for long-horizon investors, and creates public information that disciplines firms and policymakers. The classical finance growth literature therefore treats capital markets as part of the institutional infrastructure of development rather than as a purely speculative arena. Yet the practical question is still unsettled: do deeper stock markets actually raise national income growth, or do they simply expand in response to growth that is already occurring?

This question has become more important in the last few years. The period after 2020 combined pandemic disruption, inflation shocks, exchange-rate volatility, monetary tightening, and uneven institutional resilience across developing and advanced economies. Under these conditions, stock market indicators did not move in a uniform way, and neither did their contribution to growth. Cross-country studies published since 2020 continue to find positive links, but they also show that the relationship is conditional on the composition of finance, market liquidity, institutional quality, and country characteristics. For example, Bawazir et al. (2020) report that liquidity based indicators support growth more clearly than capitalization-based measures in GCC economies. Nathaniel et al. (2020) find that stock market development promotes

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growth in Nigeria in the short run but not consistently in the long run, while Ibrahim et al. (2020) show mixed results across emerging economies. Prats and Sandoval (2020) also document non-uniform causality patterns in Central and Eastern Europe, suggesting that the growth effect is not universal. These studies indicate that the literature has shifted away from asking whether finance matters at all and toward identifying the conditions under which it matters most.

More recent evidence extends that point rather than resolving it. Kengatharan and Vanajah (2021) show that in Sri Lanka market capitalization is growth supporting, whereas turnover is weaker. Ranjit (2021) and Dhungana (2023) report largely positive results for Nepal but note that turnover is less powerful than broader market and savings measures. Setiawan et al. (2021) find positive effects of market capitalization and total stock traded in ASEAN and Central and Eastern European economies, but not for every trading variable. Bekhti et al. (2022) find that capitalization and turnover promote growth in Singapore, whereas traded value results are less favorable. Ben Hamouda (2022) reports bidirectional causality for selected Arab countries, while Gollopeni et al. (2023) find a significant positive growth role for stock market development in developed European countries. In Africa, the recent picture is even more nuanced: Chikwira and Mohammed (2023) find a positive but context sensitive role in Zimbabwe; Eshun and Tweneboah (2024) show that stock market development in ECOWAS can be growth enhancing only once institutional quality crosses a threshold; and Diop et al. (2025) conclude that, when banks and markets are disentangled, stock markets appear more supportive of growth in Sub-Saharan Africa than bank-based finance. Yilmazkuday (2025) generalizes the institutional point by showing that the stock market growth link varies sharply with legal and administrative quality across countries.

The coexistence of positive, mixed, and conditional findings creates a scientific problem rather than a simple literature gap. The first source of difficulty is measurement. Some studies proxy stock market development with size variables such as market capitalization or listed firms, while others emphasize liquidity variables such as turnover or value traded. These indicators capture different mechanisms: size reflects breadth, but liquidity better reflects trading intensity, price discovery, and reallocative efficiency. The second source of difficulty is heterogeneity in empirical design. The literature mixes country time-series models, panel regressions, cointegration tests, GMM estimators, threshold models, and causality frameworks, often using different control variables and sample periods. The third source of difficulty is institutional context. A stock market can expand in size without improving governance, investor protection, disclosure quality, or capital allocation; under those circumstances, the macroeconomic effect may be weak, delayed, or even adverse. Consequently, a single country result or a single indicator cannot settle the broader issue.

The present study addresses this problem through secondary research in the form of a structured meta-analysis based on direction of effect synthesis. Instead of forcing incomparable coefficients into a mechanical pooled elasticity, the paper codes the net direction, indicator content, institutional conditioning, and methodological strength of peer-reviewed empirical studies and then summarizes the evidence with transparent numerical rules. This approach is appropriate because the existing literature rarely reports a common effect size metric across studies, but it does report sufficiently clear directional conclusions to support systematic comparison. The study therefore asks three focused questions: first, whether the global empirical evidence is predominantly supportive of a positive stock market development growth nexus; second, whether liquidity based indicators are more consistently growth enhancing than size based indicators; and third, whether institutional quality and market maturity condition the nexus.

The objective of the paper is to synthesize the empirical record on stock market development and economic growth into a clearer evidence map that identifies the dominant result, the main sources of divergence, and the conditions under which the relationship appears strongest. To achieve that objective, the study compiles 30 empirical papers published between 1998 and 2025 and codes them by sample, method, indicator, direction of result, and contextual moderators. The remainder of the paper is organized as follows. The next section reviews the theoretical and empirical literature and formulates the study hypotheses. The following section explains the materials and methods used to code and synthesize the literature. The results section then reports the numerical evidence from the meta-analysis. The discussion interprets those findings in relation to prior research, and the final section concludes with the paper's contributions, limitations, and directions for future work.

LITERATURE REVIEW

The theoretical link between stock market development and economic growth is rooted in a broader finance growth tradition. Schumpeter (1934) argued that financial arrangements matter because they help select and fund productive innovation. McKinnon (1973) and Shaw (1973) later emphasized financial deepening, highlighting how repression of financial prices and institutions weakens savings mobilization and investment efficiency. In a more formal dynamic framework, Greenwood and Jovanovic (1990) showed that financial development and growth can co-evolve through improved information and capital allocation. King and Levine (1993) and Levine (1991) further reinforced the proposition that finance supports growth by improving project selection, corporate monitoring, risk diversification, and the allocation of resources to high return uses. Within this tradition, stock markets are expected to matter not because higher share prices are inherently desirable, but because well-functioning exchanges can generate liquidity, facilitate valuation, allow investors to diversify risk, and impose market discipline on firms.

The specific channels through which stock markets may influence growth are usually grouped into five mechanisms. First, liquidity reduces the cost of holding long-term projects because investors can sell claims quickly without waiting for the project to mature. Second, price discovery helps information flow from investors to firms, supporting a more efficient allocation of capital. Third, diversified and tradable equity instruments spread risk across time and agents, encouraging investment in productivity-enhancing but uncertain activities. Fourth, listing rules, disclosure standards, and takeover threats can strengthen corporate governance. Fifth, public equity markets complement banks by supplying capital to firms whose funding needs exceed traditional lending structures. Demirgüç-Kunt and Levine (1996) show that stock

market development and financial intermediation often evolve together, suggesting complementarity rather than simple substitution. Beck and Levine (2004) later formalize that complementarity empirically, showing that liquidity-rich markets and bank development both enter positively in growth regressions.

However, theory also provides reasons for caution. Patrick (1966) distinguished the supply-leading view, in which finance drives growth, from the demand-following view, in which financial development largely responds to growth in the real economy. If the demand-following mechanism dominates, then expansion of stock market capitalization may simply mirror rising income rather than cause it. Similarly, rapid market growth may reflect privatization waves, valuation booms, or speculative surges that do not improve the efficiency of capital allocation. Rajan and Zingales (1998) emphasize that financial structures only support development when legal and institutional conditions allow external finance to be used productively. In this sense, a larger stock market is not automatically a better stock market. This theoretical ambiguity is one reason why the literature repeatedly finds differences between size-based indicators and liquidity-based indicators. Market capitalization captures scale, but turnover and value traded better reflect whether investors can actually reallocate capital across firms and sectors at low cost.

The early empirical literature was broadly optimistic but never fully unanimous. Levine and Zervos (1998) provide one of the foundational cross country studies, showing that stock market liquidity predicts future growth, capital accumulation, and productivity growth. Beck and Levine (2004) strengthen that conclusion through dynamic panel methods and again identify liquidity as a particularly strong channel. Historical evidence also supports the supply leading argument in some contexts. Van Nieuwerburgh et al. (2006) show that stock market development preceded and accompanied Belgium's long-run industrial growth, while Adjasi and Biekpe (2006) report a positive effect across African economies, especially in markets with moderate capitalization and middle-income conditions. Yet the same period also generated cautionary results. Ben Naceur and Ghazouani (2007) do not find a robust and independent stock market contribution to growth in the MENA region, and Enisan and Olufisayo (2009) find that the causal relationship varies across African countries rather than behaving uniformly. Boubakari and Jin (2010) similarly show that the growth effect is more evident in mature Euronext markets than in smaller markets, implying that market depth alone is insufficient.

Studies published in the 2010s deepen this tension between supportive average effects and heterogeneous country outcomes. Naik and Padhi (2015) find a supply leading relationship in emerging market economies, reinforcing the traditional pro-growth view. At the same time, Pan and Mishra (2018) show that the Chinese case is more complex and can even produce adverse long-run findings under certain specifications, a result often interpreted as evidence that market size without efficient pricing or governance does not guarantee productive allocation. Qamruzzaman and Wei (2018) show a positive long-run association in Bangladesh, and Mamun et al. (2018) confirm both short-run and long-run positive effects together with bidirectional causality. Fufa and Kim (2018), however, argue that the stock market–growth nexus is more robust in some panels than in others, indicating that country homogeneity matters for inference. Twerefou et al. (2019) report positive but modest contributions in Sub-Saharan Africa, again suggesting that finance may help growth while still leaving the magnitude of the effect context-dependent.

The literature since 2020 is especially useful because it captures post-crisis, post-pandemic, and institutionally differentiated conditions. Bawazir et al. (2020) find that liquidity rather than capitalization is the clearer growth channel in GCC countries, which is analytically important because it directly questions the practice of equating stock market size with stock market development. Nathaniel et al. (2020) find positive short-run but weak long-run effects in Nigeria, while Ibrahim et al. (2020) report mixed findings across emerging economies. Prats and Sandoval (2020) also observe heterogeneous causality patterns in Central and Eastern Europe. Taken together, these studies do not overturn the long-standing positive association between finance and growth, but they do show that the empirical nexus is now better understood as contingent and indicator-specific.

Evidence from 2021 and 2022 continues this pattern of qualified support. Kengatharan and Vanajah (2021) find that market capitalization supports growth in Sri Lanka but turnover does not. Ranjit (2021) also finds a positive contribution of stock market development in Nepal, although liquidity remains weaker than broader market and savings variables. Setiawan et al. (2021) report positive roles for market capitalization and total stock traded across ASEAN and Central and Eastern European economies, but they also observe a negative sign on one trading-based measure. Bekhti et al. (2022) find that capitalization and turnover positively influence growth in Singapore, whereas traded-value results are less favorable. Ben Hamouda (2022) reports bidirectional causality for selected Arab countries and interprets it as support for a mutually reinforcing relationship between stock market development and growth. These papers collectively suggest that supportive results remain common, but they do not eliminate measurement heterogeneity.

The 2023–2025 literature adds two particularly important themes: institutional moderation and the comparative role of banks versus markets. Gollopeni et al. (2023) report a positive stock market contribution to growth across developed European countries, while Dhungana (2023) shows that Nepal also exhibits a positive nexus in both short-run and long-run settings. Li (2024) likewise concludes from comparative evidence that stock market development generally supports growth, though the strength of the relationship depends on efficiency and market structure. Chikwira and Mohammed (2023), working in a volatile market environment, find that capitalization is positive but the broader mechanism remains conditional. The most explicit institutional studies come from Eshun and Tweneboah (2024) and Yilmazkuday (2025). Eshun and Tweneboah demonstrate that stock market development can have a negative growth effect below an institutional threshold and a positive effect above it in ECOWAS economies. Yilmazkuday, using a broader cross-country panel, also shows that institutional quality changes the strength of the relationship rather than merely adding an independent control variable. These results are crucial because they imply that institutional weakness can convert a potentially growth-enhancing market into a weak or even adverse macroeconomic channel.

Another recent theme concerns the composition of finance. Diop et al. (2025) show that when banks and stock markets are disentangled in Sub-Saharan Africa, stock market development appears more supportive of growth than bank-based finance. This matters because earlier literature sometimes treated finance as a single aggregate concept. The newer evidence suggests that markets and banks may have different growth effects depending on country structure, competition, and institutional arrangements. In some economies, especially where banking systems are concentrated or politically directed, equity markets may improve capital allocation by widening funding sources and price discovery. In other economies, shallow or illiquid exchanges may remain too small to generate macroeconomic gains. This helps explain why Ben Naceur and Ghazouani (2007), Bawazir et al. (2020), and Pan and Mishra (2018) obtain less favorable results than Beck and Levine (2004), Naik and Padhi (2015), or Gollopeni et al. (2023).

A second major contradiction in the literature concerns what exactly is meant by "development." The most common measures are market capitalization to GDP, turnover ratio, and value traded to GDP. Yet these variables are not interchangeable. Market capitalization can rise quickly because prices rise, privatization expands the number of listed firms, or a few large corporations dominate the index. Such change may enlarge the market statistically without materially improving its intermediation quality. Turnover and traded value, by contrast, say more about how actively investors use the market to rebalance portfolios and whether prices can incorporate information through regular trading. This distinction appears repeatedly in the recent evidence. Bawazir et al. (2020) favor liquidity over capitalization; Bekhti et al. (2022) find turnover more robust than traded value; Zein (2024) reports a negative sign for capitalization but a positive sign for turnover in OIC countries; and Zulkifli et al. (2024) find that market capitalization in Malaysia is positive yet statistically insignificant. The implication is that stock market size may be a necessary condition for macroeconomic relevance, but liquidity and market efficiency are closer to the actual growth mechanism.

A third contradiction concerns causality. Some studies infer a supply-leading relationship, others find demand following dynamics, and many find bidirectional causality. Mamun et al. (2018) and Ben Hamouda (2022) report bidirectional causality, implying feedback between finance and growth rather than a one-way channel. Zulkifli et al. (2024) find a unidirectional relationship running from GDP to stock market development in Malaysia, supporting the demand-following view. Prats and Sandoval (2020) likewise show that direction can vary by country. This matters because policy interpretation changes substantially depending on the causal structure. If stock markets mostly follow growth, then expanding exchanges will not by itself accelerate development. If the relationship is bidirectional, then reforms to the market and reforms to the real economy must be sequenced together. The empirical record therefore resists overly deterministic interpretations.

Recent comparative studies also highlight regional asymmetry. European evidence is generally more supportive and more stable, which likely reflects deeper liquidity, better investor protection, stronger disclosure systems, and broader institutional maturity. African studies are positive on average but more dependent on thresholds, macroeconomic stability, and regulatory strength. Asian evidence is mixed in an interesting way: Bangladesh, Nepal, and Singapore show mainly positive results, while China and Malaysia illustrate how size or activity can fail to convert smoothly into growth. Cross-regional studies reinforce the same point. The more countries differ in legal systems, market maturity, inflation dynamics, and financial structure, the less likely it is that a single indicator will explain the entire growth effect.

Despite the large literature, three issues remain unresolved. First, the field lacks a transparent synthesis that compares the directional weight of the evidence without pretending that all reported coefficients are commensurable. Second, many studies discuss either capitalization or liquidity, but relatively few syntheses examine which indicator family is more consistently associated with growth across the full literature. Third, the most recent papers increasingly point to institutions as moderators, yet this insight has not been fully integrated into a broader evidence map. These unresolved issues justify a structured secondary study that is narrower than a narrative review and more transparent than impressionistic vote counting.

Accordingly, the purpose of this study is to synthesize the empirical literature on stock market development and economic growth through a coded meta-analysis that identifies the dominant direction of evidence, compares indicator types, and evaluates the role of institutional conditions. Based on the literature reviewed above, the study tests the following hypotheses.

H_1: The dominant empirical evidence indicates a positive relationship between stock market development and economic growth.

H_2: Liquidity-based stock market indicators generate more consistently favorable growth results than size-based indicators.

H_3: The positive stock market development growth nexus is stronger when institutional quality and market maturity are higher.

MATERIALS AND METHODS

This study adopts a secondary-research design and conducts a structured meta-analysis of the literature on stock market development and economic growth. Because the primary studies use heterogeneous stock market indicators, different estimators, different sample periods, and non comparable coefficient scales, a conventional parameter pooling meta analysis would impose a false sense of precision. In this literature, some papers report elasticities, some report standardized coefficients, some emphasize causality tests, and others focus on cointegration or threshold effects. For that reason, the present paper uses a direction of effect synthesis supplemented by transparent numerical coding. This choice follows the logic of synthesis without full coefficient pooling, where the goal is to compare net empirical direction across studies when a common effect-size metric is unavailable or inconsistently reported (Borenstein et al., 2009; McKenzie & Brennan, 2024). The method is therefore meta analytic in the sense that it systematically codes, aggregates, and tests empirical findings across studies, but it avoids a mechanically pooled coefficient that would not be methodologically defensible.

The material for the study consists of peer-reviewed empirical publications that directly examine the relationship between stock market development and economic growth. To be included, a study had to satisfy four conditions. First, it had to treat stock market development as a core explanatory variable rather than a background control. Second, it had to use an explicit stock market indicator such as market capitalization, turnover ratio, value traded, listed firms, market index development, or a documented composite proxy. Third, it had to report an empirical conclusion about the sign or direction of the relationship with growth. Fourth, it had to provide enough methodological and contextual information to permit coding. Studies were excluded if they focused only on stock returns, firm level performance, banking development without a market variable, or purely theoretical discussion with no empirical test. Working papers and conference abstracts were also excluded unless a journal version was identifiable. Applying these criteria yielded a final coded sample of 30 studies published between 1998 and 2025.

The study selection process relied on a structured search of accessible journal websites, DOI landing pages, scholarly metadata pages, and article abstracts identified through targeted keyword combinations such as “stock market development economic growth,” “market capitalization GDP growth,” “turnover ratio growth,” and “institutional quality stock market growth.” The search strategy was designed to maximize coverage of English-language empirical studies across regions while prioritizing articles with identifiable bibliographic metadata and interpretable results. Once candidate studies were identified, each paper was screened for relevance, method, growth outcome, stock market proxy, and clarity of inference. This procedure is appropriate for a theoretical and review-oriented paper because the objective is not to estimate a clinical treatment effect but to build a disciplined evidence map across a diverse empirical literature.

Each included study was coded on seven dimensions. The first dimension was bibliographic identity: author, year, title, journal, and DOI or publisher URL. The second was a sample context: country, region, cross-country panel, or historical case. The third was temporal coverage, including the data period where reported. The fourth was research design, such as ARDL, VECM, panel random effects, GMM, cointegration, or causality analysis. The fifth was variable content, especially whether the stock market proxy was mainly size-based, liquidity-based, or composite. The sixth was institutional conditioning, coded as present when the paper explicitly modelled institutional quality, thresholds, or interaction effects. The seventh was empirical direction. Direction was coded into four ordered categories: Positive, Conditional, Mixed/Insignificant, and Negative.

To make the synthesis reproducible, the directional coding followed explicit rules. A study was coded as Positive when its overall conclusion supported a statistically meaningful growth enhancing effect of stock market development. A study was coded as Conditional when the effect was positive but explicitly dependent on thresholds, country groups, market maturity, or other modifiers. A study was coded as Mixed/Insignificant when findings were contradictory across indicators, weak in statistical support, or insufficiently directional to interpret as clearly supportive or clearly adverse. A study was coded as Negative when its net conclusion indicated that stock market development reduced growth or produced an overall adverse long-run relationship. These categories recognize the actual structure of the literature better than a simple positive-versus-non-positive dichotomy.

For quantitative synthesis, each study was assigned a directional score s_i. Positive studies received 1.0, Conditional studies received 0.5, Mixed/Insignificant studies received 0.0, and Negative studies received -1.0. The first descriptive statistic is the supportive share, which measures the proportion of studies that are Positive or Conditional:

$$P_s = U / N \qquad (1)$$

where U is the number of supportive studies and N is the total number of included studies.

The second statistic is the weighted evidence index:

$$WEI = \Sigma(w_i s_i) / \Sigma w_i \qquad (2)$$

Where s_i is the directional score for study i and w_i is a simple design-quality weight. The weights take the values 1, 2, or 3. A weight of 3 is given to multi-country panel studies, landmark cross-country analyses, or threshold models with relatively stronger inferential designs. A weight of 2 is given to country studies and regional studies using standard time-series or panel methods. A weight of 1 is given to narrower empirical studies or comparative pieces with more limited inferential reach. The weighting scheme does not claim to measure exact study quality; rather, it reduces the influence of narrow single-country designs relative to broader and more methodologically demanding studies. The weighting rule is deliberately transparent and easy to inspect in the accompanying dataset.

The third quantitative component is a sign test applied to the subset of studies with an identifiable net direction. Following the logic of direction of effect synthesis, Positive and Conditional studies are treated as favoring a growth-enhancing interpretation, Negative studies are treated as favoring a growth-reducing interpretation, and Mixed/Insignificant studies are excluded from the sign test because they do not supply a clear directional vote (McKenzie & Brennan, 2024). If stock market development had no systematic effect in the literature, the probability of observing a supportive versus adverse direction would be expected to be symmetrical around 0.5. The sign test therefore evaluates whether the observed supportive count differs materially from that benchmark.

In addition to study level coding, the paper constructs a focused indicator comparison. Where the primary study separately reported conclusions for size-based indicators such as market capitalization or listed firms and liquidity-based indicators such as turnover ratio or value traded, each indicator family received a simple signal score: 1 for positive, 0 for mixed or insignificant, and -1 for negative. This allows a limited but informative cross study comparison of whether

liquidity-oriented measures are more consistently aligned with growth than size oriented measures. Because not every study reports both types of proxies, the number of observations differs between the two indicator families. That limitation is acknowledged explicitly and is one reason why the indicator comparison is treated as supportive evidence rather than as a standalone causal test.

The strengths of this method are threefold. First, it is faithful to the actual reporting practices of the literature. Second, it provides numerical transparency while avoiding spurious coefficient pooling. Third, it allows the analysis to capture contextual moderation, particularly institutional thresholds and market maturity. At the same time, the method has weaknesses. Directional coding cannot capture effect magnitude with the same precision as a common effect meta analysis. The weighting system, while transparent, remains a judgment-based simplification. Publication bias is also possible, because journal articles may be more likely to report supportive relationships than null findings. Finally, the study covers English-language accessible research and may therefore underrepresent evidence from non English outlets. These limitations do not invalidate the synthesis, but they do define the appropriate scope of inference.

The output of the method is presented in two complementary forms. First, the manuscript reports tables and figures summarizing the coded literature by period, region, effect direction, and indicator family. Second, the accompanying spreadsheet provides the full study-level dataset, coding scheme, and summary calculations. This ensures that the paper remains readable while still allowing replication of the directional evidence, weighted evidence index, and indicator comparison.

RESULTS

The coded sample contains 30 empirical studies published between 1998 and 2025. The studies cover single-country cases, regional panels, and large cross-country analyses. In temporal terms, 12 studies belong to the 1998–2019 period and 18 to the 2020–2025 period, which shows that interest in the topic has intensified in recent years rather than faded. Figure 1 presents the publication distribution and shows a visible clustering after 2020. This increase is analytically relevant because the newer studies operate under more volatile macro-financial conditions and more explicit institutional modelling than the earlier literature.

Table 1 summarizes the directional composition of the sample. Of the 30 included studies, 17 are coded as Positive, 6 as Conditional, 6 as Mixed/Insignificant, and 1 as Negative. When Positive and Conditional studies are combined into a single supportive category, 23 of the 30 studies favor a growth-enhancing interpretation of stock market development. The supportive share is therefore 76.7%, with an approximate 95% confidence interval of 59.1% to 88.2%. This result already suggests that the weight of the literature is not balanced evenly between support and skepticism. Instead, the balance of evidence favors a positive relationship, though it does so with non-trivial heterogeneity.

The weighted evidence index provides a second view of the same pattern. Using the predefined directional scores and design weights, the weighted evidence index equals 0.625. Because the index ranges from -1 to 1, a value above 0.6 indicates moderately strong aggregate support. The weighted result is very close to the unweighted evidence mean of 0.633, which is important because it shows that the overall conclusion is not being driven solely by small or narrow studies. Broader cross-country papers and more recent threshold models also tend to support the nexus, even if they often qualify it.

The directional sign test strengthens that interpretation. After excluding the six Mixed/Insignificant studies, 24 studies remain with an identifiable net direction. Among these, 23 favor a positive or conditional-positive interpretation and only one favors a net negative interpretation. Under a null hypothesis of equal probability of supportive and adverse directions, the observed distribution is highly unlikely to arise by chance (two-sided sign-test $p \approx 0.000003$). This does not prove a common effect size, but it does confirm that the literature is directionally asymmetric in favor of growth-enhancing effects.

Table 1. Direction-of-effect composition of the coded sample

Category	Studies	Share of sample	Directional score
Positive	17	56.7%	1.0
Conditional	6	20.0%	0.5
Mixed/Insignificant	6	20.0%	0.0
Negative	1	3.3%	-1.0

A comparison across time periods reveals a subtle but meaningful shift. In the 1998–2019 group, 10 of 12 studies are supportive, giving a support share of 83.3% and an average directional score of 0.667. In the 2020–2025 group, 13 of 18 studies are supportive, yielding a support share of 72.2% and an average directional score of 0.611. The more recent literature is therefore still supportive on balance, but it is also more cautious. This is consistent with the observation from the literature review that newer studies increasingly emphasize thresholds, indicator choice, and institutional moderation. Rather than contradicting the older literature, the post-2020 evidence refines it by showing that the stock market–growth nexus is contingent rather than universally linear.

Regional patterns also differ. Table 2 reports the broad regional distribution. Europe is the most uniformly supportive group in the coded sample: all four European-focused studies are supportive, and the regional evidence index is 0.750. Africa is also strongly supportive overall, with six of seven studies coded as Positive or Conditional and a regional evidence index of 0.643. However, the African evidence is visibly more conditional, especially in the recent ECOWAS and volatile-market studies. Asia contains eight studies, six of which are supportive, with an evidence index of 0.625. The Asian pattern is positive but more polarized because Bangladesh, Nepal, Sri Lanka, and Singapore are favorable cases, whereas

China and Malaysia illustrate weaker or non-significant effects. The cross-regional and other grouped studies are still supportive on average, but less strongly so, with a support share of 63.6% and an evidence index of 0.591. Taken together, these results suggest that H_1 is supported in all major regional clusters, although the strength of support varies.

The indicator comparison offers one of the most substantive findings of the study. For size-based proxies, 23 usable observations were coded across the sample. Of these, 13 are positive, 8 are mixed or insignificant, and 2 are negative, producing an average signal score of 0.478. For liquidity-based proxies, 21 usable observations were available. Of these, 13 are positive, 8 are mixed or insignificant, and none are negative, producing an average signal score of 0.619. In other words, liquidity-oriented indicators not only avoid negative directional outcomes more effectively, they also generate a stronger average signal than capitalization-based measures. This directly supports H_2. The difference is substantively meaningful because it implies that active trading, price discovery, and reallocative efficiency are closer to the actual growth channel than simple market size.

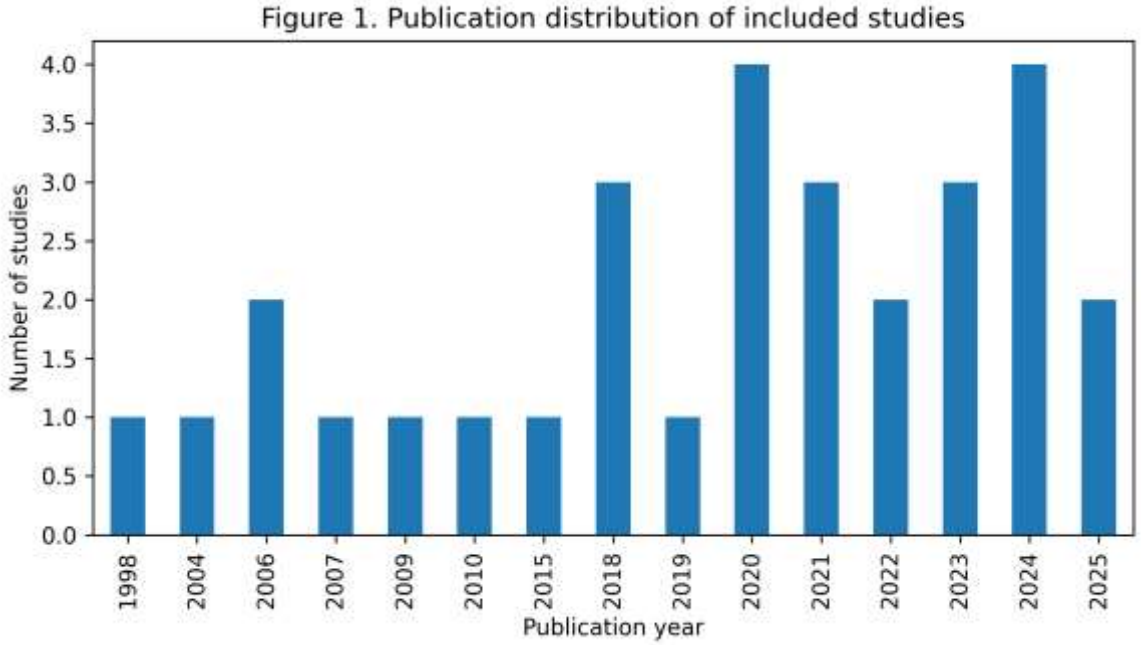

Figure 1. Publication distribution of included studies

This indicator finding is also consistent with the content of the individual studies. Bawazir et al. (2020) explicitly report that liquidity matters more than capitalization. Bekhti et al. (2022) find turnover more favorable than traded value, while Zein (2024) reports a positive turnover effect and a negative capitalization effect in selected OIC countries. Kengatharan and Vanajah (2021) and Ranjit (2021) also find that market capitalization and broader market measures are stronger than turnover in some South Asian cases, reminding us that liquidity does not dominate everywhere. However, the overall coded evidence still favors liquidity proxies when one compares the full literature at the directional level. This helps explain why studies that rely only on capitalization often produce weaker or more ambiguous macroeconomic conclusions.

Institutional conditioning is the second major empirical pattern. Two studies in the coded sample explicitly model institutional quality as a moderating mechanism, and both support a conditional-positive interpretation rather than an unconditional one. Eshun and Tweneboah (2024) show that stock market development can be growth-reducing below a governance threshold but growth-enhancing above it. Yilmazkuday (2025) finds that the positive effect of stock market development varies strongly with administrative and legal institutions across country groups. While the explicit institutional-moderator subsample is small, its consistency is notable. No study that models institutions directly concludes that stock markets are irrelevant; instead, the conclusion is that institutions alter the size and sometimes the sign of the effect. This supports H3 and helps explain why some otherwise similar countries obtain different results in the broader literature.

Table 2. Supportive evidence by broad region and publication period

Grouping	Studies	Supportive	Support share	Average evidence score
1998-2019	12	10	83.3%	0.667
2020-2025	18	13	72.2%	0.611
Africa	7	6	85.7%	0.643
Asia	8	6	75.0%	0.625
Europe	4	4	100.0%	0.750
Cross-regional / other	11	7	63.6%	0.591

The sample also contains evidence on causality structure. Several studies—especially Mamun et al. (2018), Ben Hamouda (2022), and some country findings in Prats and Sandoval (2020)—suggest bidirectional causality. Other studies, such as Zulkifli et al. (2024), are more consistent with a demand-following interpretation in which GDP dynamics lead stock

market development. From the standpoint of the meta-analysis, this means the literature does not support a simplistic one-way mechanism. Rather, the dominant pattern is that stock market development is associated with stronger growth, but feedback effects are common. This is one reason the positive relationship often appears as Conditional rather than uniformly Positive.

Figure 2 visualizes the directional distribution of the entire sample, and Figure 3 compares evidence indices across the main regional groups. Both visuals reinforce the same message. The literature is not evenly divided; supportive studies clearly outnumber skeptical ones. Yet the distribution is not so one-sided that heterogeneity can be ignored. Six Mixed/Insignificant studies and one Negative study remain in the sample, and many of the supportive studies qualify their conclusions by reference to liquidity, maturity, threshold effects, or market structure. Consequently, the results support the existence of a generally positive nexus, but they also reject the stronger claim that stock market development is automatically growth-enhancing in every economy and under every institutional condition.

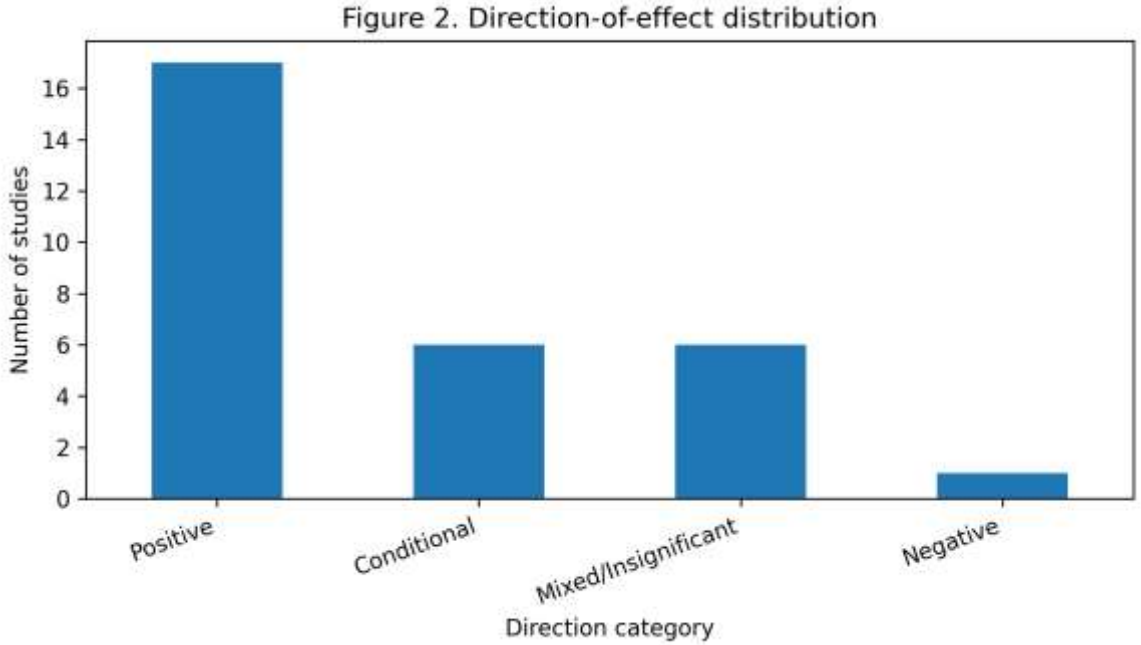

Figure 2. Direction-of-effect distribution

Table 3. Indicator-family comparison

Indicator family	Usable observations	Positive	Mixed/Insig.	Negative	Average signal
Size signal	23	13	8	2	0.478
Liquidity signal	21	13	8	0	0.619

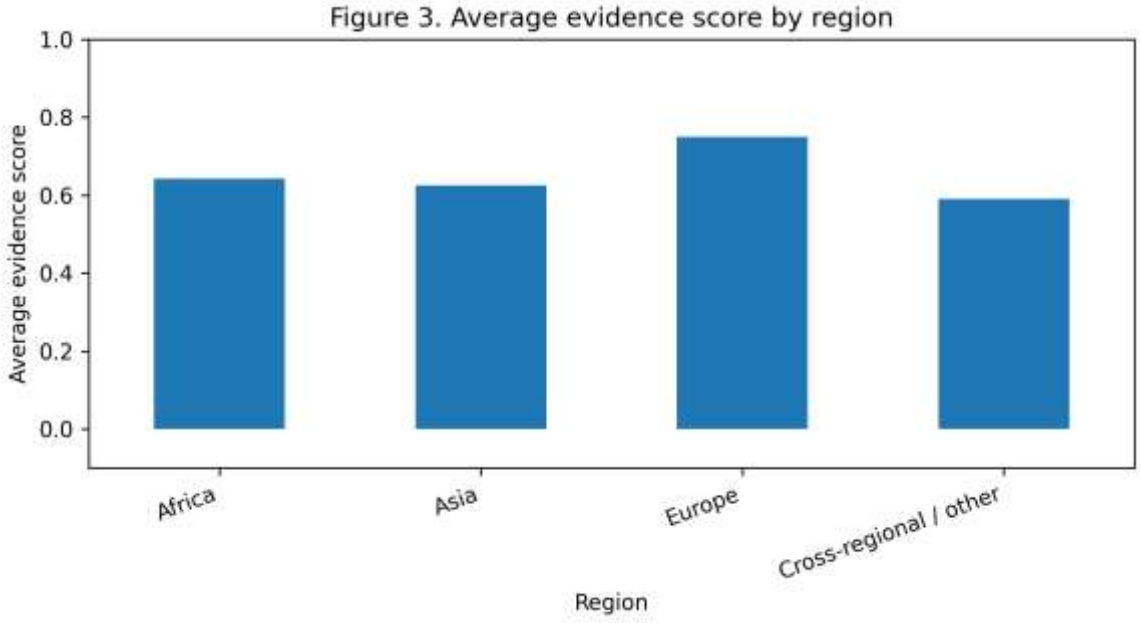

Figure 3. Average evidence score by region

Taken together, the results provide clear support for all three hypotheses. H_1 is supported because supportive findings dominate the sample both in raw counts and in weighted scoring. H_2 is supported because liquidity-based proxies outperform size-based proxies in directional consistency and average signal strength. H_3 is supported because the studies that model institutions directly show that governance and market maturity shape the sign and strength of the nexus. The implication is that the most credible synthesis of the literature is neither "stock markets always cause growth" nor "stock markets do not matter." The more defensible conclusion is that stock market development tends to promote growth, especially when it reflects real liquidity and efficient market functioning within a supportive institutional environment.

DISCUSSIONS

The meta-analysis yields a consistent but qualified conclusion: stock market development is generally associated with stronger economic growth, yet the mechanism operates through liquidity, institutional quality, and market maturity rather than through scale alone. This interpretation is fully aligned with the broader finance growth tradition but is more restrictive than some early optimistic formulations. The evidence does not support the claim that every increase in market capitalization, every listing boom, or every wave of financial liberalization will raise output growth. Instead, the evidence suggests that stock markets matter most when they improve the efficiency of intermediation.

The strongest support in the present study is for H_1, the proposition that the literature is predominantly positive. Both the supportive share and the weighted evidence index point in the same direction, and the sign test shows that this asymmetry is unlikely to be accidental. This pattern confirms the broad message of Levine and Zervos (1998), Beck and Levine (2004), Naik and Padhi (2015), and several recent regional studies: capital markets can contribute to long-run growth by improving the mobilization and allocation of savings. The fact that this result remains visible after adding a large number of recent post-2020 studies is important. It shows that the core finance growth linkage has not disappeared in the face of pandemic volatility, inflation shocks, and policy uncertainty. What has changed is the precision of the claim. The modern literature is less willing to treat the stock market as a homogeneous institutional object.

H_2 receives support because liquidity-based indicators perform better than size-based indicators. This is not a trivial statistical detail; it changes how the nexus should be conceptualized. Size measures such as market capitalization can rise because asset prices rise, because a few dominant firms enter the exchange, or because privatization programs expand listings. In all of these cases, capitalization may increase without generating deeper informational efficiency or greater access to productive capital. Liquidity measures such as turnover and value traded are closer to the actual functions that theory highlights: they reflect how easily investors can enter and exit positions, how actively information is incorporated into prices, and how readily capital can move toward higher-return uses. The literature has long implied this distinction, but the present meta-analysis shows it with unusual clarity across studies and regions.

This finding also helps explain why some results in the literature appear contradictory when they are actually measuring different phenomena. A study that uses market capitalization alone may conclude that the stock market–growth nexus is weak or insignificant, while another study using turnover or traded value may report a stronger and more robust effect. That pattern is visible in Bawazir et al. (2020), Bekhti et al. (2022), Zein (2024), and several South Asian studies. Once these indicators are separated conceptually, the contradiction becomes smaller. Size may capture the breadth of the market, but liquidity captures its operational effectiveness. From a development perspective, the distinction is crucial. A country can build a larger exchange without building a better exchange.

H_3 is also supported, and this may be the most policy-relevant contribution of the paper. Recent threshold and interaction studies show that institutional quality is not a background control; it is part of the mechanism. Investor protection, rule enforcement, accounting quality, regulatory credibility, and administrative effectiveness determine whether equity finance is allocated productively or merely fuels short-lived valuation increases. The ECOWAS evidence in Eshun and Tweneboah (2024) is especially instructive because it shows that the sign of the relationship itself can change when institutions are weak. Yilmazkuday (2025) generalizes the same point across a larger international sample. These findings are consistent with the broader political economy argument that financial markets are not self-executing institutions. Their development has macroeconomic value only when embedded in credible legal and regulatory structures.

The regional evidence reinforces this interpretation. Europe's more uniformly supportive results likely reflect stronger disclosure regimes, larger investor bases, deeper liquidity, and more mature governance arrangements. African and Asian evidence is supportive on average, but also more conditional. That pattern does not indicate that stock markets are less relevant in developing economies. Rather, it indicates that complementary conditions are more binding there. Market expansion in low-depth financial systems may not translate into growth unless firms can issue equity at reasonable cost, households have confidence in investor protection, and macroeconomic instability does not dominate portfolio decisions. This perspective helps reconcile why the African literature can be both positive in aggregate and highly conditional in specific contexts.

The discussion of causality also deserves careful interpretation. Several studies report bidirectional relationships, and a smaller number support the demand-following view. These findings do not weaken the paper's main conclusion. Instead, they imply that stock market development and economic growth can reinforce one another through feedback loops. A growing economy can increase listings, savings, and investor participation, while better-functioning capital markets can lower financing frictions and improve capital allocation. This dynamic view is more realistic than treating finance and growth as isolated domains. It also explains why reforms to stock markets may yield limited results when broader real-sector, legal, and macroeconomic conditions are weak. Financial reform is most powerful when it is coordinated with institutional and productive reforms.

One implication of the present findings is that policymakers and market regulators should be cautious about using a single headline market indicator as evidence of developmental success. Market capitalization is attractive because it is

easy to observe and widely reported, but the meta-analysis suggests that capitalization alone is an incomplete guide. Liquidity, breadth of participation, disclosure quality, and institutional credibility are more informative for judging whether stock market development is likely to support growth. For market operators, this means that reforms aimed at trading infrastructure, settlement efficiency, investor protection, information transparency, and diversified listings may be more growth-relevant than reforms focused purely on enlarging the exchange. For development economists, it means that finance–growth models should be more explicit about which market function is being measured.

The study also has theoretical implications. It supports the finance-led growth view in a conditional sense and rejects both extremes: neither the claim that stock markets are merely speculative appendages of growth nor the claim that they are universally growth-promoting institutions. The results favor a mediated framework in which stock markets contribute to growth through liquidity and information channels, but only when institutional arrangements allow those channels to operate effectively. This perspective integrates the insights of classical financial deepening theory with newer institutional and market-structure arguments. It also explains why the empirical literature has remained mixed despite decades of research. The literature has not been confused; it has often been studying different forms of stock market development under different institutional environments.

Overall, the present findings show that the empirical literature is more coherent than it first appears. The contradictions are not random. They cluster around indicator choice, institutional quality, market maturity, and causality structure. Once those dimensions are made explicit, the stock market development–growth nexus looks neither elusive nor universal, but conditional, intelligible, and economically meaningful.

CONCLUSIONS

The purpose of this study was to synthesize the empirical evidence on the relationship between stock market development and economic growth through a structured secondary review and coded meta-analysis. Using 30 peer-reviewed studies published between 1998 and 2025, the paper examined whether the literature is predominantly supportive of a positive nexus, whether liquidity-based indicators outperform size-based indicators, and whether institutional conditions shape the relationship.

The main result is that the empirical record is clearly supportive, but not unconditional. Seventeen studies report a positive relationship, six report a conditional positive relationship, six are mixed or insignificant, and one is negative. The supportive share of the full sample is 76.7%, and the weighted evidence index is 0.625, indicating moderately strong aggregate support. Among the studies with a clear net direction, the balance of evidence strongly favors a growth enhancing interpretation. This confirms that stock market development is usually associated with stronger economic performance rather than being a neutral macroeconomic feature.

The second major conclusion is that indicator choice matters. Liquidity-based measures such as turnover and traded-value proxies are more consistently aligned with growth than capitalization-based measures. This implies that the developmental value of stock markets lies less in their visible size and more in their ability to facilitate active trading, price discovery, and efficient reallocation of capital. Economies that expand nominal market size without improving these operating characteristics should not expect the same growth payoff as economies that deepen market quality.

The third conclusion is that institutions are not peripheral to the stock market growth nexus. The most recent studies in the sample show that governance quality, regulatory effectiveness, and market maturity change the strength and sometimes even the sign of the relationship. This means that stock market development has the greatest theoretical and managerial relevance when it is supported by credible investor protection, transparent disclosure, effective regulation, and stable macroeconomic conditions. For policymakers and market managers, the practical lesson is that market deepening should be assessed alongside institutional reform, not in isolation.

The paper contributes to the literature in two ways. First, it offers a transparent evidence map that brings together a heterogeneous literature without forcing incomparable coefficients into a misleading pooled estimate. Second, it clarifies why prior studies appear contradictory by showing that much of the divergence comes from indicator choice, regional context, and institutional conditioning. The study therefore adds both theoretical and managerial value by shifting attention from the simple question of whether stock markets matter to the more useful question of what kind of stock market development matters most.

Several limitations should be acknowledged. First, the meta-analysis is based on direction of effect coding rather than a pooled common coefficient, because the underlying studies do not report sufficiently comparable effect sizes. This means that the analysis is strong on directional inference and weaker on exact magnitude. Second, the design-quality weights are transparent but simplified. They improve balance between broad and narrow studies, but they are not a substitute for a formal risk of bias framework. Third, the indicator comparison uses only studies that separately report size and liquidity signals, which reduces the number of observations in that part of the analysis. Fourth, the review focuses on accessible English-language peer-reviewed research and may therefore understate evidence published in other languages or in less visible outlets. Fifth, publication bias remains possible, because journals may be more inclined to publish positive or novel findings than null results.

These limitations suggest several directions for future research. More primary studies should report comparable effect sizes and standard errors for core stock market indicators so that future meta-analyses can pool coefficients more directly. Researchers should also distinguish more systematically among capitalization, traded value, turnover, and composite market quality indices rather than using them interchangeably. Cross-country work would benefit from richer modelling of institutional interactions, especially enforcement quality, judicial efficiency, and investor protection. Finally, there is room for more research on sequencing: whether growth benefits arise first from macroeconomic stabilization, then from stock market deepening, or whether both evolve jointly through feedback loops. Such work would move the literature

beyond the static question of whether stock markets matter and toward the dynamic question of when and how they matter most.

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