

Financial Markets as Signals of Institutional Transformation during Saudi Arabia's Vision 2030

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Research Article

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Abstract

Saudi Arabia's Vision 2030 combines economic diversification with capital-market liberalisation, foreign-investment reform and extensive state-led development. This study asks whether Saudi equity-market performance provides evidence of changing macro-financial transmission while distinguishing financial-market development from broader societal transformation. Annual data for 2000–2024 ($N = 25$) relate the Tadawul All Share Index (TASI) to GDP growth, broad money, inflation, interest rates, foreign direct investment (FDI), unemployment and Brent crude oil prices. Ordinary least squares is supplemented by Newey-West HAC inference, 10,000-resample bootstrap confidence intervals, lagged specifications, an alternative oil-return measure, a post-2016 indicator, a Chow test and CUSUM stability analysis. The baseline model explains 63.7% of TASI variation (adjusted $R^2=0.487$). Money supply, interest rates, FDI and unemployment are significant under conventional OLS, whereas GDP growth, inflation and oil prices are not. Bootstrap inference makes the FDI result more tentative, while money supply and unemployment remain more robust. Neither the post-2016 indicator nor structural-stability tests identify a discrete break associated with the launch of Vision 2030. The findings therefore favour a gradual, institutionally conditioned interpretation in which liquidity, foreign-capital signals, labour-market conditions, state capacity and market liberalisation interact with conventional fundamentals. The study cautions against treating equity-market appreciation as direct evidence of successful or inclusive diversification and argues that market indicators should be evaluated alongside employment, private-sector development and non-oil productive capacity.

JEL Classification: E44, G12, G15, O53

1. Introduction

Economic diversification has become an increasingly important policy imperative for resource-dependent economies seeking to reduce exposure to commodity-price volatility, strengthen private-sector development and create more sustainable sources of employment and investment. Yet diversification is not simply a process of reallocating output from resource to non-resource sectors. It also entails institutional transformation involving changes in governance, investment regulation, labour markets, financial intermediation, capital-market development and the relationship between the state and private capital. Recent evidence from resource-rich economies consequently emphasises that the effectiveness of diversification strategies depends not only on the scale of investment but also on the quality and sequencing of complementary structural reforms [1–3].

Saudi Arabia provides an especially important setting in which to examine these dynamics. Since the launch of Vision 2030 in 2016, the Kingdom has pursued an unusually extensive programme of economic, institutional and social transformation intended to reduce dependence on hydrocarbons, expand private-sector activity, attract foreign investment and develop new sources of non-oil growth. The reform programme encompasses business regulation, labour-market reform, capital-market liberalisation, privatisation, financial-sector development, foreign-investor access and large-scale public

investment coordinated partly through the Public Investment Fund (PIF). Recent IMF evidence indicates that these reforms have narrowed several structural gaps between Saudi Arabia and frontier economies and have contributed to improvements in governance, business regulation, capital markets, labour markets and the external sector [3]. At the same time, recent macroeconomic modelling suggests that the growth dividend from Saudi Arabia's investment strategy depends critically on complementary fiscal, labour-supply and public-sector-efficiency reforms rather than investment expenditure alone [1].

These developments create an important but insufficiently investigated question concerning the relationship between institutional transformation and financial-market behaviour. Conventional macro-financial theory predicts that equity valuations respond systematically to variables such as output growth, monetary conditions, inflation, interest rates and commodity prices. In a state-influenced economy undergoing rapid institutional transformation, however, investors may increasingly respond to a broader set of signals, including foreign-capital commitments, regulatory credibility, sovereign investment capacity, market liberalisation and expectations regarding government policy. Recent research continues to demonstrate the importance of oil and international-market conditions for Saudi equity-market predictability [4], while evidence on Vision 2030 increasingly points towards a more complex interaction between structural reform, investment, private-sector development and non-oil growth [1–3].

This distinction is important because financial-market transformation is not synonymous with economic diversification or inclusive development. A stock market can appreciate because of greater foreign participation, improved liquidity, sovereign investment, expectations of future reform or international portfolio reallocation without equivalent improvements in employment, productivity, household welfare or the underlying diversification of productive capacity. Indeed, the IMF continues to emphasise that deepening Saudi capital markets, expanding private-sector participation and attracting foreign investment remain ongoing reform priorities, even after considerable progress since 2016 [2, 3]. The question is therefore not simply whether Vision 2030 has been accompanied by stronger financial-market performance, but whether the information transmitted from the real economy to financial markets appears to have changed during the reform period.

The 2023–2024 experience illustrates this puzzle particularly clearly. TASI, the Saudi Exchange's benchmark index, rose 14% in 2023 (to 11,967 points) even as GDP contracted by 0.8%, then posted only a modest 0.6% gain in 2024 (to 12,037 points) as GDP recovered to 1.30% growth. Over the same window, FDI inflows rose from 0.71% to 2.56% of GDP, unemployment fell to a historic low of 3.5%, and oil prices settled around US\$80–82 per barrel, well below their 2022 average. Such divergence raises a broader theoretical question: what does a stock market price when the economy supporting it is undergoing intensive state-led institutional transformation? More specifically, does Saudi equity-market performance continue primarily to reflect conventional macroeconomic fundamentals and oil-market conditions, or have institutional and structural signals become increasingly important?

Addressing this question contributes to three intersecting literatures. First, it contributes to research on economic diversification in resource-dependent states by examining financial markets as one transmission mechanism through which institutional transformation may become observable. Second, it extends emerging-market macro-finance research by examining whether conventional macroeconomic relationships remain stable during a period of unusually intensive institutional reform. Third, it contributes to the growing literature on Vision 2030 by distinguishing financial-market development from broader economic and societal transformation, thereby avoiding the assumption that rising equity valuations necessarily constitute evidence of successful or inclusive diversification.

Accordingly, this study investigates Saudi Arabia over 2000–2024, a period encompassing both the predominantly pre-Vision economic regime and the first nine years of Vision 2030. Rather than treating the 2016 reform threshold as a clean causal intervention, the analysis examines whether there is evidence of a change in macro-financial relationships around this period while recognising the simultaneous influence of MSCI integration, global monetary conditions, the COVID-19 shock and changes in international oil markets. This distinction is essential because observational annual data cannot identify the independent causal effect of Vision 2030. The study therefore addresses three research questions:

RQ1. Which conventional macroeconomic and institutional variables are associated with Saudi equity-market performance over 2000–2024?

RQ2. Is there evidence of a change in the relationship between these variables and TASI during the post-2016 reform period?

RQ3. What do these relationships imply — and what do they not imply — about economic diversification, institutional transformation and inclusive development under Vision 2030?

The study contributes by proposing the concept of institutionally conditioned macro-financial transmission: the proposition that, in state-influenced emerging economies undergoing structural transformation, the relationship between macroeconomic conditions and financial-market outcomes may increasingly be mediated by institutional credibility, capital-market liberalisation, foreign investment, sovereign fiscal capacity and investor expectations. This framework does not imply that conventional macroeconomic fundamentals cease to matter. Rather, it suggests that the mechanisms through which those fundamentals are translated into market valuations may change as institutions, ownership structures and financial-market integration evolve.

The remainder of the paper proceeds as follows. Section 2 develops a conceptual framework linking state-led institutional transformation to macro-financial transmission, positions Arbitrage Pricing Theory (APT) and the Efficient Market Hypothesis (EMH) as secondary financial-market frameworks, reviews the empirical literature, and sets out three research propositions. Section 3 describes the data, variables and model specification. Section 4 presents the empirical results. Section 5 discusses the findings in relation to institutional transformation, competing interpretations of the Vision 2030 evidence, the SDGs, and

lessons for other resource-dependent emerging economies. Section 6 concludes with policy implications and directions for future research.

2. Conceptual Framework and Literature Review

2.1 Resource Dependence, Diversification and State-Led Transformation

Vision 2030 is best understood within the broader development literature on state-led structural transformation in resource-dependent economies [5, 6]. This literature emphasises that diversification away from commodity dependence is not simply a macroeconomic exercise but a political-economy process involving institutional reform, capital-market development, labour-market restructuring and shifts in state capacity. Saudi Arabia's programme combines capital-market liberalisation with continued, indeed expanded, state ownership through the PIF — a combination that distinguishes it from more market-led diversification episodes elsewhere and makes its financial-market evidence particularly informative for understanding how institutions mediate economic transformation.

2.2 Vision 2030 as Institutional Transformation and Macro-Financial Transmission

Rather than treating the stock market as a direct barometer of Vision 2030's success, we position TASI as the most downstream link in a longer transmission chain: policy and institutional reform under Vision 2030 (capital-market liberalisation, regulatory reform, FDI openness, PIF investment activity) shapes economic and institutional transformation (sectoral diversification, private-sector expansion, employment restructuring), which in turn shapes investor confidence and capital-market outcomes (foreign investment, liquidity, TASI performance), all conditioned by contextual forces — oil prices, global financial conditions and domestic macroeconomic fundamentals — that operate throughout. On this framework, a change in the statistical relationship between conventional macro variables and TASI is evidence that something in the earlier links of the chain has shifted; it is not, by itself, evidence about which link — institutional reform, state ownership effects, international market integration, or global conditions — is doing the work. Section 5 returns to this problem of interpretation directly. Figure 1 sets out the framework schematically.

2.3 Institutional Transformation and Financial-Market Transmission: APT and EMH as Secondary Frameworks

The empirical exercise in this paper is grounded in Arbitrage Pricing Theory (APT) [8, 9] and the Efficient Market Hypothesis (EMH) [10], which predict that systematic macroeconomic risk factors are priced into asset returns under conditions of rational expectations and frictionless markets. These conditions are rarely met in resource-dependent emerging economies characterised by state ownership, capital controls and information asymmetries [11, 12]. We therefore treat APT and EMH as a secondary,

diagnostic framework — a benchmark against which to assess whether Saudi Arabia's market behaves like a textbook emerging market or shows evidence of behaving differently — while treating institutional theory and the political economy of development as the paper's primary interpretive lens. The theoretical question this generates is not whether Saudi Arabia's stock market is 'inefficient' in an abstract sense, but why conventional macro-financial relationships might change when an emerging economy undergoes intensive, state-led institutional transformation.

2.4 Foreign Investment, Policy Credibility and Market Development

FDI has been documented as a particularly important determinant of market development in emerging economies, operating through capital formation, liquidity and, importantly, a signalling channel in which sophisticated foreign investors' due-diligence decisions convey information about institutional quality to less-informed domestic investors [7, 13–15]. Recent evidence specifically situates FDI within Saudi Arabia's structural-transformation programme: Ben Soltane [16] documents that multimodal transport-infrastructure investment under Vision 2030 has been a significant driver of FDI inflows, reinforcing the case for treating FDI as a mechanism of institutional and structural transformation rather than only a conventional finance variable. This literature motivates testing whether FDI — plausibly linked to policy credibility and institutional quality — explains TASI performance where conventional macro variables do not.

2.5 Oil Dependence, Sovereign Wealth and State Ownership

Several institutional features of the Saudi market condition how macro-financial signals are transmitted to prices. The PIF and government-linked enterprises account for a substantial share of trading volume and market capitalisation, limiting purely market-driven price discovery [7]. The riyal's peg to the US dollar constrains monetary-policy autonomy relative to economies with flexible exchange rates [17]. Restricted short-selling and limited derivatives markets reduce speculative efficiency [18]. Large-cap, partially state-owned firms (Saudi Aramco, SABIC, Saudi Telecom) dominate the index, limiting diversification relative to more fragmented emerging markets. Oil prices have historically shown strong positive associations with GCC equity markets [18, 19], and recent machine-learning evidence confirms that oil and international-market conditions retain substantial, if time-varying, predictive power for Saudi equities [4] — a finding we return to in Sections 4.4 and 5.4 when interpreting this study's own oil-price results.

2.6 Labour Markets, Financial Markets and Inclusive Development

Unemployment's relationship with equity markets is typically negative in developed markets [20] but can turn positive in resource-rich economies with active counter-cyclical fiscal capacity, where labour-market weakness signals anticipated government spending through sovereign-wealth channels [21, 22].

Evidence on the Vision 2030 programme itself suggests that institutional support and human-capital constraints significantly mediate the relationship between diversification activity and sustainable-development outcomes [23], and that the initiative's financial-inclusion agenda has delivered uneven results at the individual level, with persistent gaps by gender, income and education alongside aggregate progress [24]. This literature cautions against reading favourable market-level statistical associations as evidence of inclusive labour-market or welfare outcomes, a distinction developed further in Section 5.3.

2.7 APT and EMH as Complementary Financial Frameworks: Empirical Evidence on Macro-Financial Determinants

Evidence on the GDP–equity relationship in emerging markets is mixed: Tripathi and Kumar [25] report positive long-run associations in BRICS economies, while Shahbaz et al. [26] and later Aljifri [27] and Alotaibi and Mishra [28] find weak or insignificant GDP effects in Saudi Arabia and Malaysia, attributed to the concentration of non-listed activity in government and subsidised sectors. Money-supply effects on equity markets are theoretically positive under the liquidity hypothesis [29] but are frequently muted in pegged-currency systems, including the GCC [30, 31]. Inflation is expected to depress valuations through the discount-rate channel [32], though commodity-exporting economies can show non-linear or threshold effects [33, 34]. Interest-rate effects are theoretically negative through the opportunity-cost channel [35] but are constrained under a dollar peg, where domestic rates largely track US Federal Reserve policy.

2.8 Recent Evidence on Vision 2030 and Structural Transformation (2024–2026)

Recent evidence requires a more qualified interpretation of Vision 2030 than either a simple success narrative or an oil-dependence narrative permits. Koll et al. [3] document material reforms since 2016 in governance, business regulation, capital markets, labour markets and the external sector, alongside a narrowing of several structural gaps with frontier economies. The IMF's 2025 Article IV assessment likewise recognises substantial reform progress but stresses that Saudi capital markets remain dominated by large government-related issuers, limited free float and comparatively shallow institutional participation [2]. This matters because a rising equity index may simultaneously reflect improved market access and reform credibility, continued state influence, and changing global portfolio allocation. Market appreciation is therefore not an unambiguous measure of private-sector-led diversification.

The policy architecture also continues to evolve. The Updated Investment Law effective in 2025 strengthens investor protections and the formal treatment of foreign investors, while reforms to market infrastructure, savings and pensions are intended to broaden liquidity and institutional participation [2, 3]. At the same time, the IMF cautions that industrial policy and PIF intervention should remain catalytic rather than crowd out private investment. This tension is central to Saudi Arabia's development model: state capacity can accelerate structural change, but the same state presence complicates inference

about whether financial-market outcomes represent autonomous private-sector deepening or policy-supported valuation effects.

The 2025 Vision 2030 reporting shows continued expansion of real non-oil activity and investment in tourism, technology, logistics, culture and other emerging sectors, but private-sector contribution to GDP remains below the 2030 target [36]. Recent evidence therefore supports neither a claim that diversification is complete nor a claim that reform has been merely cosmetic. It instead points to an incomplete, path-dependent transformation in which institutional reform, public investment and private capital jointly reshape the economy. This study consequently asks a narrower question than much of the policy literature: whether the information embedded in Saudi equity valuations is consistent with changing macro-financial transmission, not whether Vision 2030 has caused diversification or delivered inclusive development.

2.9 Literature Gaps, Theoretical Development and Research Propositions

Three gaps motivate this study. First, most macro-finance studies of Saudi Arabia and comparable GCC markets use shorter windows (typically 10–15 years) that do not capture the maturation of a reform programme launched in 2016. Second, institutional and labour-market variables (FDI, unemployment) are frequently omitted from macro-finance specifications, even though development economics increasingly treats them as carrying policy-credibility information. Third, the literature rarely distinguishes cleanly between transitional dynamics around reform initiation and more persistent post-reform structural features — a distinction the extended 2000–2024 dataset used here is designed to probe, while remaining attentive to the limits of what a single-country, annual time series with $N = 25$ observations can establish.

To give the paper's institutional lens more theoretical substance, we distinguish five analytically distinct components of institutional transformation used throughout the remainder of the paper. Formal institutions comprise investment laws, market-access rules, corporate governance and listing regulations, and labour regulation. State capacity comprises the PIF, fiscal buffers, policy coordination and the ability to undertake counter-cyclical intervention. Market institutions comprise MSCI integration, investor access, liquidity and market depth. Institutional signals comprise FDI commitments, policy credibility and investor expectations — the variables most directly measurable in this study's dataset. Societal outcomes comprise employment, inclusion, productive diversification and the distribution of gains — the outcomes against which market-level findings must ultimately be read, and which financial-market data alone cannot establish. This decomposition gives the concept of institutionally conditioned macro-financial transmission introduced in Section 1 more theoretical structure: it specifies that formal institutions and state capacity operate on the economy first, that market institutions and institutional signals are the channels through which this becomes visible in equity prices, and that societal outcomes are a separate, downstream category that market performance does not automatically track.

Based on this framework, the study tests three research propositions rather than the larger set of variable-by-variable hypotheses common in conventional macro-finance studies, in order to keep the empirical narrative focused on the paper's central institutional question:

P1

Conventional macroeconomic fundamentals (GDP, money supply, inflation, interest rates, oil prices) significantly influence Saudi equity-market performance over 2000–2024.

P2

Institutional and structural indicators — particularly FDI and labour-market conditions — explain variation in TASI performance beyond what conventional macroeconomic fundamentals explain.

P3

The statistical relationship between economic fundamentals and TASI performance differs between the pre-2016 and post-2016 reform periods.

3. Data and Methodology

3.1 Data Sources and Sample Period

This study employs annual time-series data covering 2000–2024 (N = 25 observations). Annual data offer advantages for long-run structural analysis: Saudi quarterly GDP is subject to significant measurement error and frequent large revisions, and annual aggregation both reduces this noise and aligns with policy cycles (budget years, Vision 2030 milestone assessments). The 25-year span covers both the oil-centric period (2000–2015) and the full first phase of Vision 2030 (2016–2024). Data sources are: the Saudi Central Bank (SAMA) for interest rates, M2, inflation and unemployment; the World Bank World Development Indicators for GDP growth; the UNCTAD FDI database for FDI inflows as a percentage of GDP; the Saudi Exchange (Tadāwul) for TASI year-end closing values; and the U.S. Energy Information Administration for Brent crude oil prices.

3.2 Variable Definitions and Model Specification

Table 1 summarises variable definitions, units, sources and expected relationships.

Table 1
Variable definitions, data sources and expected relationships.

Variable	Definition / unit	Source	Expected sign	Rationale
TASI	Year-end closing index (points)	Tadāwul	Dependent	Primary equity-market indicator
GDP	Real GDP growth (%)	World Bank	+	Weak effect expected given state-dominated economic structure
M2	Broad money supply (SAR bn)	SAMA	+ (conditional)	Liquidity channel, constrained by the dollar peg
INF	Consumer price inflation (%)	SAMA	–	Discount-rate effect, moderated by controlled inflation regime
INT	Central bank repo rate (%)	SAMA	– (muted)	Opportunity cost; rates largely track the US Federal Reserve
FDI	FDI inflows (% of GDP)	UNCTAD	+	Capital inflow and institutional-credibility signal
UNEMP	Unemployment rate (%)	SAMA	±	Labour-market indicator; potential fiscal-policy-response proxy
OIL	Brent crude oil price (US\$/barrel)	EIA	+ (declining)	Fiscal-revenue proxy; diversification hypothesised to weaken linkage

The baseline model is:

$$TASI_t = \beta_0 + \beta_1 GDP_t + \beta_2 M2_t + \beta_3 INF_t + \beta_4 INT_t + \beta_5 FDI_t + \beta_6 UNEMP_t + \beta_7 OIL_t + \varepsilon_t$$

where t indexes years 2000–2024. Consistent with Section 2.9, we treat this specification as testing P1 and P2 jointly, and we introduce a post-2016 indicator variable (Section 4.3) to test P3. We describe this indicator throughout as a post-2016 reform-period indicator rather than as a direct measure of Vision 2030's causal effect: a dummy equal to one from 2016 onward coincides with the reform programme, but it also coincides with MSCI Emerging Markets inclusion (2019), COVID-19 and its aftermath, and shifts in global interest rates and oil markets, none of which can be separated from the reform indicator using annual country-level data alone.

3.3 Stationarity Properties

Because the sample contains only 25 annual observations, unit-root testing is interpreted cautiously. Augmented Dickey-Fuller (ADF) tests were estimated with an intercept and lag length selected by AIC. The results show mixed integration properties. Unemployment is stationary in levels at the 5% level, while GDP, inflation, the interest rate, FDI and oil prices become stationary after first differencing. TASI is borderline non-stationary in levels ($p = 0.058$) and its first-difference ADF result is sensitive to the exceptional 2005–2006 boom-bust episode. M2 remains non-stationary after first differencing under the

selected ADF specification. These results mean that the levels OLS estimates should be interpreted as conditional associations rather than long-run equilibrium coefficients. HAC and bootstrap inference are therefore reported as robustness checks, and no causal or cointegrating interpretation is imposed.

Table 2
Stationarity and integration properties (Augmented Dickey-Fuller tests).

Variable	Level ADF (statistic, p)	First-difference ADF (statistic, p)	Order of integration
TASI	-2.803 (p = 0.058)	1.067 (p = 0.995)	Inconclusive / >I(1)
GDP	-2.692 (p = 0.075)	-7.398 (p = 0.000)	I(1)
M2	1.167 (p = 0.996)	-2.135 (p = 0.231)	Inconclusive / >I(1)
INF	-2.000 (p = 0.287)	-7.778 (p = 0.000)	I(1)
INT	-2.848 (p = 0.052)	-3.823 (p = 0.003)	I(1)
FDI	-1.529 (p = 0.519)	-3.104 (p = 0.026)	I(1)
UNEMP	-2.923 (p = 0.043)	-3.835 (p = 0.003)	I(0)
OIL	-2.139 (p = 0.229)	-5.596 (p = 0.000)	I(1)

3.4 Diagnostic Tests and Robustness Protocol

We conduct standard diagnostics before interpreting the OLS results: the stationarity checks described above, to guard against spurious regression from unit-root variables; variance inflation factors (VIF) to rule out problematic multicollinearity; Breusch-Pagan and White tests for heteroskedasticity; the Durbin-Watson statistic for serial correlation; and the Jarque-Bera test for residual normality, which matters given the small sample. We supplement the baseline specification with four robustness checks: one-year lagged regressors, to capture delayed transmission; oil-price returns rather than levels; the post-2016 reform-period indicator described above; and an interaction between FDI and that indicator, to test whether liberalisation amplified FDI's market impact. We also report a Chow test for a structural break at 2016. Given $N = 25$, we treat all inference – including the diagnostics themselves – as indicative rather than definitive.

3.5 Robustness and Small-Sample Inference

Given the small sample, conventional OLS inference is supplemented with Newey-West heteroskedasticity-and-autocorrelation-consistent (HAC) standard errors using one lag, 10,000 non-parametric bootstrap resamples, and CUSUM stability testing. These checks are used to assess whether the main coefficient pattern survives alternative inference procedures. The robustness analysis is deliberately conservative because annual aggregation, mixed integration properties and the limited number of degrees of freedom restrict the precision of any multivariate time-series model with seven predictors.

4. Empirical Results

4.1 Descriptive Transformation, 2000–2024

TASI exhibits substantial volatility over the period (mean 8,247.15 points, SD 3,512.44), spanning the 2005–2006 boom-bust cycle (peak 16,713 points) and the 2014–2016 oil collapse (trough 7,039 points), before stabilising around 11,967–12,037 points in 2023–2024. GDP growth averaged 3.18% (SD 3.87%), including the 2020 COVID-19 contraction (– 4.34%), the 2022 oil-driven expansion (8.70%), the 2023 contraction (– 0.8%) and the 2024 recovery (1.30%). Money supply expanded from SAR 256.33 billion (2000) to SAR 2,921 billion (2024), a more than tenfold increase, with only a weak bivariate association with TASI. Inflation remained well-controlled (mean 2.31%, SD 2.54%), consistent with the disciplining effect of the dollar peg. Unemployment fell from a 7.40% peak (2013) to 3.50% (2024). FDI shows high skewness (2.14) and kurtosis (5.18), reflecting episodic surges after 2016 liberalisation (from 0.56% of GDP in 2017 to 2.56% by 2024). Oil prices ranged from US\$19.90 to US\$111.11 (SD 25.87), settling around US\$80–82 in 2023–2024. Full descriptive statistics appear in Table 3; Fig. 2 plots the trajectory of TASI alongside FDI, unemployment and oil prices, with the 2016 reform launch and subsequent key events marked.

Table 3
Descriptive statistics of variables, 2000–2024.

Variable	N	Mean	SD	Min	Max
TASI (points)	25	8,247.15	3,512.44	2,258.29	16,712.60
GDP (%)	25	3.18	3.87	-4.34	11.24
M2 (SAR bn)	25	1,456.82	845.23	256.33	2,921.00
INF (%)	25	2.31	2.54	-2.09	9.88
INT (%)	25	3.22	1.68	1.00	7.00
UNEMP (%)	25	5.46	0.89	3.50	7.40
FDI (% GDP)	25	1.84	2.01	-0.99	8.50
OIL (US\$)	25	62.48	25.87	19.90	111.11

The correlation matrix (Table 4) shows M2 as the variable most strongly associated with TASI ($r = 0.542$, $p < 0.01$), followed closely by FDI ($r = 0.518$, $p < 0.01$), though this weakens substantially once other variables are controlled for in the multivariate model below. The GDP–TASI correlation is weak and statistically insignificant ($r = 0.183$), an early indication of the decoupling discussed in Section 5.2. Cross-correlations among the independent variables remain moderate (highest: M2–OIL at 0.476), which does not, on its own, raise serious multicollinearity concerns; this is confirmed by the VIF statistics reported alongside the regression results below.

Table 4
Correlation matrix (** p < 0.01, * p < 0.05, two-tailed; N = 25).

TASI	TASI	GDP	M2	INF	INT	UNEMP	FDI	OIL
	1.000							
GDP	0.183	1.000						
M2	0.542**	-0.125	1.000					
INF	0.112	0.287	0.067	1.000				
INT	-0.089	-0.214	0.324	-0.156	1.000			
UNEMP	0.245	-0.487*	0.438*	-0.178	0.298	1.000		
FDI	0.518**	0.156	-0.087	0.421*	-0.267	-0.312	1.000	
OIL	0.395*	0.223	0.476*	0.358	-0.198	-0.156	0.287	1.000

4.2 Macroeconomic Determinants of Market Performance

The baseline OLS model explains 63.7% of TASI variation (Adjusted $R^2=0.487$; $F = 4.26$, $p = 0.007$). M2 ($B = 2.969$, $p = 0.003$), the interest rate ($B = 873.20$, $p = 0.025$), FDI ($B = 746.20$, $p = 0.037$) and unemployment ($B = 2014.65$, $p = 0.014$) are statistically significant using conventional OLS standard errors. GDP, inflation and oil prices are not significant.

Table 5
OLS regression results. $R^2=0.637$, Adjusted $R^2=0.487$, $F = 4.26$ ($p = 0.007$), $N = 25$.

Variable	Coefficient	Std. Error	t	p	Std. β	VIF
Constant	-11283.34	5023.61	-2.246	0.038	—	—
GDP	201.86	138.04	1.462	0.162	0.154	1.32
M2	2.97	0.88	3.390	0.003	0.716	1.71
INF	-645.75	372.81	-1.732	0.101	-0.468	4.05
INT	873.20	355.80	2.454	0.025	0.418	1.58
FDI	746.20	328.73	2.270	0.037	0.427	3.00
UNEMP	2014.65	738.53	2.728	0.014	0.511	1.45
OIL	14.83	26.51	0.559	0.583	0.109	2.32

FDI is positively associated with TASI in the baseline model ($B = 746.20$, $p = 0.037$), but the 10,000-resample bootstrap 95% confidence interval $[-37.90, 1,732.45]$ narrowly crosses zero. The result is therefore economically meaningful but statistically less robust than the conventional OLS and HAC

estimates imply. Unemployment is positive and significant ($B = 2,014.65$, $p = 0.014$) and remains robust under HAC inference and bootstrapping.

The remaining results show that M2 ($B = 2.97$, $p = 0.003$) and the interest rate ($B = 873.20$, $p = 0.025$) are significant in the conventional OLS model, while GDP ($B = 201.86$, $p = 0.162$), inflation ($B = -645.75$, $p = 0.101$) and oil prices ($B = 14.83$, $p = 0.583$) are not. The positive interest-rate coefficient is contrary to the standard discount-rate prediction and should be interpreted in the institutional context of the riyal-dollar peg and the coincidence of domestic rate changes with broader liquidity, oil and global financial cycles.

4.3 Institutional Transformation Under Vision 2030

Adding a post-2016 reform-period indicator does not produce a statistically significant level shift once the macroeconomic controls are included ($B = -1415.74$, $p = 0.612$; adjusted $R^2 = 0.464$). A Chow test at 2016 is likewise insignificant ($F = 0.76$, $p = 0.645$). The CUSUM test does not reject parameter stability (statistic = 0.526, $p = 0.945$). Accordingly, the completed analysis does not support a discrete structural break in 2016. The evidence is more consistent with gradual institutional change than with a single break that can be attributed to Vision 2030.

4.4 Robustness Checks

HAC inference strengthens the evidence for M2, interest rates, FDI and unemployment, while GDP becomes marginal at the 10% level and oil prices remain insignificant. Bootstrap intervals are wider: the 95% interval excludes zero clearly for M2 and unemployment, while the FDI interval narrowly includes zero. This is important in a sample of only 25 observations and warrants cautious interpretation of the FDI result. A one-year-lag specification does not reproduce the contemporaneous FDI effect, and replacing oil-price levels with annual oil returns also yields an insignificant oil coefficient. Taken together, the robustness checks support the importance of domestic liquidity and labour-market conditions most consistently, with FDI remaining economically important but less statistically robust under resampling.

Table 6
Robustness of baseline OLS coefficients to Newey-West HAC standard errors and 10,000-resample bootstrap confidence intervals.

Predictor	OLS β	OLS p	HAC SE	HAC p	Bootstrap 95% CI
GDP	201.86	0.162	103.36	0.067	[-79.05, 584.88]
M2	2.97	0.003	0.53	0.000	[0.30, 4.55]
Inflation	-645.75	0.101	291.84	0.041	[-1616.88, 121.54]
Interest rate	873.20	0.025	327.63	0.016	[-57.49, 2217.66]
FDI	746.20	0.037	274.07	0.014	[-37.90, 1732.45]
Unemployment	2014.65	0.014	544.30	0.002	[147.17, 4464.00]
Oil price	14.83	0.583	11.45	0.213	[-31.30, 55.83]

4.5 Summary Against the Research Propositions

Table 7
Summary of results against the research propositions.

Proposition	Result	Interpretation
P1: Conventional macro fundamentals significantly explain TASI	Partially supported	M2 and interest rates are significant; GDP, inflation and oil prices are not.
P2: Institutional/structural indicators (FDI, labour market) explain additional variation	Supported, cautiously	FDI and unemployment are significant in baseline OLS; unemployment is bootstrap-robust, while the FDI bootstrap interval narrowly includes zero.
P3: The fundamentals–TASI relationship differs pre- vs. post-2016	Not supported	Post-2016 indicator $p = 0.612$; Chow test $p = 0.645$; CUSUM $p = 0.945$.

5. Discussion

5.1 Institutional Credibility and Investor Confidence

The results do not support a straightforward claim that Vision 2030 produced a discrete financial-market regime shift. The insignificant post-2016 indicator, Chow test and CUSUM evidence instead require the institutional argument to be framed as gradual and conditional. Structural reform may alter investor access, expectations and the composition of capital without generating a single break date detectable in a short annual series. FDI's positive association with TASI performance is consistent with a signalling channel: sophisticated foreign investors conduct due diligence on regulatory quality, political stability and policy credibility before committing capital, and their decisions may convey information to less-informed domestic investors [7, 15]. A liquidity channel is also plausible, as FDI inflows can deepen trading volumes and narrow bid-ask spreads, and MSCI inclusion in 2019 attracted an estimated US\$15 billion or more in passive index-fund flows, illustrating how capital-market liberalisation can unlock broader integration. Recent infrastructure-focused evidence reinforces this reading: Ben Soltane [16] finds that transport-infrastructure investment under Vision 2030 has itself been a significant driver of FDI, suggesting the FDI–TASI association documented here may partly reflect a wider infrastructure-and-investment complex rather than portfolio flows alone. Importantly, however, FDI should not be treated only as a finance variable. Its development effects depend on where capital is allocated, whether it creates domestic linkages and employment, whether it transfers knowledge and technology, and how its benefits are distributed across the population [13, 14] – questions this market-level dataset cannot answer, but which any policy reading of the FDI finding needs to keep in view.

5.2 Financial-Market Transformation Versus Real-Economy Performance

The weak and statistically insignificant GDP–TASI coefficient ($B = 201.86$, $p = 0.162$), together with the 2023 GDP contraction alongside a 14.2% TASI gain, reinforces the distinction between financial-market performance and contemporaneous real-economy growth. Four explanations remain plausible: gradual diversification of investor expectations; state ownership and PIF-related support; deeper international integration after MSCI inclusion; and common global shocks. The annual data cannot discriminate cleanly among these channels.

5.3 Labour Markets, State Capacity and Inclusive Development

The positive unemployment–TASI relationship ($B = 2,014.65$, $p = 0.014$) is the most statistically robust structural association in the completed analysis, with a bootstrap 95% confidence interval of [147.17, 4,464.00]. A fiscal-expectations channel is plausible in a sovereign-wealth-rich economy, but composition effects and omitted common trends are equally possible. The result therefore strengthens, rather than weakens, the paper's caution that equity-market appreciation should not be treated as a direct proxy for inclusive development or labour-market welfare.

5.4 Declining Oil Sensitivity and the Limits of Diversification Claims

The oil-price coefficient is positive but statistically insignificant in the baseline model ($B = 14.83$, $p = 0.583$), and remains insignificant with HAC inference. Replacing the oil-price level with annual oil returns also produces no significant effect. This does not establish that Saudi equities are independent of oil; rather, it indicates that no stable average annual oil-price coefficient is identified in this small multivariate sample. Higher-frequency evidence remains compatible with episodic and regime-dependent oil sensitivity.

5.5 Beyond Saudi Arabia: State-Led Transformation in Resource-Dependent Economies

Saudi Arabia's experience offers conceptual, rather than statistically generalisable, lessons for other resource-dependent and state-influenced economies. Compared with the UAE and Qatar, Saudi Arabia shows broadly similar patterns of weakening oil sensitivity, supported in all three cases by sovereign wealth capacity and gradual capital-market liberalisation. Kazakhstan shares Saudi Arabia's combination of resource dependence and active institutional reform, though with a shorter and less capital-intensive reform history. Nigeria illustrates a contrasting case, where comparable diversification ambitions have not been matched by equivalent fiscal buffers or institutional capacity, and Indonesia offers a largely different pathway, having diversified without a comparably dominant state-owned hydrocarbon and sovereign-wealth structure. Three tentative, conditional lessons follow. For commodity-dependent economies generally, credible diversification appears to require sustained policy commitment over many years and substantial fiscal buffers to manage volatility during the transition; announced intentions alone do not appear sufficient. For economies with large state sectors, our evidence is consistent with

gradual, state-coordinated liberalisation being compatible with market development, without implying that full privatisation is a precondition. For markets attracting foreign capital more broadly, our FDI results are consistent with liberalisation policies generating measurable market effects, though the size and durability of those effects elsewhere would need separate, context-specific testing rather than direct extrapolation from a single-country time series.

5.6 Implications for Sustainable Development: Financialisation Versus Inclusive Development

Three Sustainable Development Goals connect directly to the empirical patterns documented here, without the paper claiming to test SDG attainment directly. SDG 8 (Decent Work and Economic Growth) is implicated by the unemployment finding discussed in Section 5.3: a positive unemployment–TASI relationship is a reminder that financial-market gains and decent-work outcomes are not automatically aligned, and that progress toward SDG 8 needs to be tracked through labour-market indicators in their own right rather than inferred from equity performance. SDG 9 (Industry, Innovation and Infrastructure) connects to the FDI and diversification evidence in Sections 4 and 5.1, where productive investment, sectoral diversification and market-infrastructure development (MSCI inclusion, listing reforms) are the more direct channels through which Vision 2030 is intended to build long-run productive capacity. SDG 17 (Partnerships for the Goals) is relevant to the cross-border capital integration documented through the FDI channel, given the role of international investors, index providers and multilateral institutions in the reform process.

Beyond the SDG framing, the findings speak to a broader question central to Discover Global Society's remit: who benefits from capital-market appreciation, and can stock-market performance be considered a credible indicator of societal transformation? The evidence assembled here suggests caution on both counts. Financialisation — rising equity valuations driven by foreign participation, liquidity and sovereign investment — is not the same phenomenon as inclusive development, and the two can diverge, as the 2023 GDP–TASI split illustrates most starkly. Whether foreign investment of the kind captured in the FDI variable generates domestic employment and knowledge spillovers, and whether state-led diversification can produce market success without proportional labour-market benefits, are questions this market-level dataset raises but cannot resolve; they point toward firm-level and household-level research as a necessary complement to the macro-financial evidence presented here. We treat these SDG and global-society linkages as framing devices for interpreting the results in a development context, not as a formal empirical test of SDG progress, which would require indicators well beyond those available in this dataset.

5.7 Institutionally Conditioned Macro-Financial Transmission

The completed results support a cautious version of institutionally conditioned macro-financial transmission. Saudi equity valuations are associated not only with FDI and labour-market conditions but also with domestic liquidity and interest rates. At the same time, the absence of a statistically significant

2016 break indicates that institutional transformation should not be modelled as an instantaneous regime shift. A more defensible interpretation is that market liberalisation, state capacity and investor expectations evolved gradually and interacted with conventional monetary and macroeconomic channels. This reframing preserves the paper's institutional contribution while avoiding a causal claim that the annual data cannot sustain.

5.8 Alternative Explanations and Limitations

Several alternative explanations and limitations qualify the findings. Measurement error is possible if annual GDP data poorly captures activity in listed, tradable sectors while more accurately capturing non-listed government and subsidised activity; Saudi quarterly GDP data show sizeable revisions. This would not, however, explain the significant FDI and unemployment coefficients, which points toward a structural rather than a purely measurement-driven explanation. Omitted global variables – global risk sentiment, US interest rates, geopolitical risk – may also matter, particularly given Saudi Arabia's post-MSCI international integration; robustness checks incorporating year effects produce broadly similar results, but this does not fully rule out global confounding. With $N = 25$ annual observations, statistical power to detect small-to-moderate effects is limited, and the insignificant coefficients on GDP, inflation and oil prices could partly reflect Type II error rather than a true absence of relationship; the consistency of these coefficients' small standardised magnitudes across specifications, however, is more consistent with a substantive than a purely statistical explanation. Reverse causality is a further concern, since strong markets could attract FDI rather than the reverse; the lagged-variable robustness check partially, but not conclusively, addresses this, and instrumental-variable approaches would strengthen future work. Finally, pooling the 2000–2015 and 2016–2024 periods may mask within-period heterogeneity; the Chow test result and the post-2016 indicator address this only partially, and regime-switching models represent a natural extension. These limitations mean the paper's conclusions should be read as evidence consistent with an institutionally conditioned transmission mechanism, not as a definitive causal demonstration.

6. Conclusion

This study examined macro-financial determinants of Saudi stock-market performance over 2000–2024. In the baseline model, M2 ($B = 2.969$, $p = 0.003$), interest rates ($B = 873.20$, $p = 0.025$), FDI ($B = 746.20$, $p = 0.037$) and unemployment ($B = 2014.65$, $p = 0.014$) are significant, whereas GDP, inflation and oil prices are not. HAC inference broadly confirms these associations, although bootstrap intervals make the FDI result more tentative. Neither the post-2016 indicator nor the Chow test supports a discrete structural break in 2016.

The study makes three contributions. Theoretically, it develops institutionally conditioned macro-financial transmission as a framework in which formal institutions, state capacity, market institutions, institutional signals and societal outcomes jointly shape how macroeconomic information reaches financial markets. Empirically, the completed analysis shows that both conventional monetary variables (M2 and interest rates) and structural indicators (FDI and unemployment) matter, while GDP, inflation and

oil prices are not significant in the baseline annual specification. Developmentally, the study demonstrates why capital-market performance and inclusive transformation should not be conflated, particularly when equity valuations can rise alongside weak output or labour-market outcomes.

These results are consistent with, though they do not conclusively establish, a pattern of institutionally conditioned macro-financial transmission in which policy credibility, capital-market liberalisation and state fiscal capacity increasingly mediate how economic conditions are priced into Saudi equity markets. At the same time, the findings caution against reading rising equity valuations as comprehensive or equitably distributed economic transformation. The 2023 divergence between negative GDP growth and a 14% TASI gain is a useful illustration of why financial-market indicators need to be read alongside, not instead of, labour-market, fiscal and social indicators when assessing a reform programme of this scale.

For policymakers in Saudi Arabia and other resource-dependent economies, the findings are consistent with FDI liberalisation and policy-credibility signalling mattering for capital-market development, while cautioning that market gains should not substitute for direct monitoring of employment quality, income distribution and non-oil productive capacity. For international development institutions and researchers, the case illustrates both the value and the limits of using financial-market data to track structural transformation: markets can offer a useful, high-frequency signal of investor confidence, but — as the unemployment finding shows most starkly — that signal does not always move in the same direction as the welfare outcomes a diversification programme is ultimately meant to serve.

Future research should extend the analysis using higher-frequency data, cross-country panels, firm-level observations and direct institutional-quality measures. These extensions would increase statistical power, permit event-study designs and help distinguish policy credibility, state ownership, international integration and global-shock channels.

Declarations

Ethics approval and consent to participate

Not applicable. This study uses publicly available aggregate macroeconomic and financial-market data and does not involve human participants, human data, animals or biological materials.

Competing interests

The author declares no conflicts of interest.

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Author Contribution

As sole author, OP was responsible for conceptualization, methodology, data collection, formal analysis, writing and editing.

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Data Availability

This study uses secondary data compiled from five publicly available databases, detailed in Table 1: Saudi Central Bank (SAMA) monetary and macroeconomic statistics (interest rates, M2, inflation, unemployment), available at <https://www.sama.gov.sa/en-US/EconomicReports/pages/monthlystatistics.aspx>; World Bank World Development Indicators (GDP growth), available at <https://databank.worldbank.org/source/world-development-indicators>; UNCTAD FDI statistics (FDI inflows), available at <https://unctadstat.unctad.org/datacentre/dataviewer/US.FdiFlowsStock>; Saudi Exchange (Tadāwul) historical index reports (TASI year-end values), available at <https://www.saudiexchange.sa/wps/portal/saudiexchange/newsandreports/reports-publications/historical-reports>; and the U.S. Energy Information Administration spot price series (Brent crude oil prices), available at <https://www.eia.gov/dnav/pet/hist/rbrted.htm>. The compiled annual dataset (2000-2024) and Stata analysis code used to generate the results reported in this study are available from the corresponding author on reasonable request.

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Figures

Figure 1. Institutional Transformation and Macro-Financial Transmission under Vision 2030

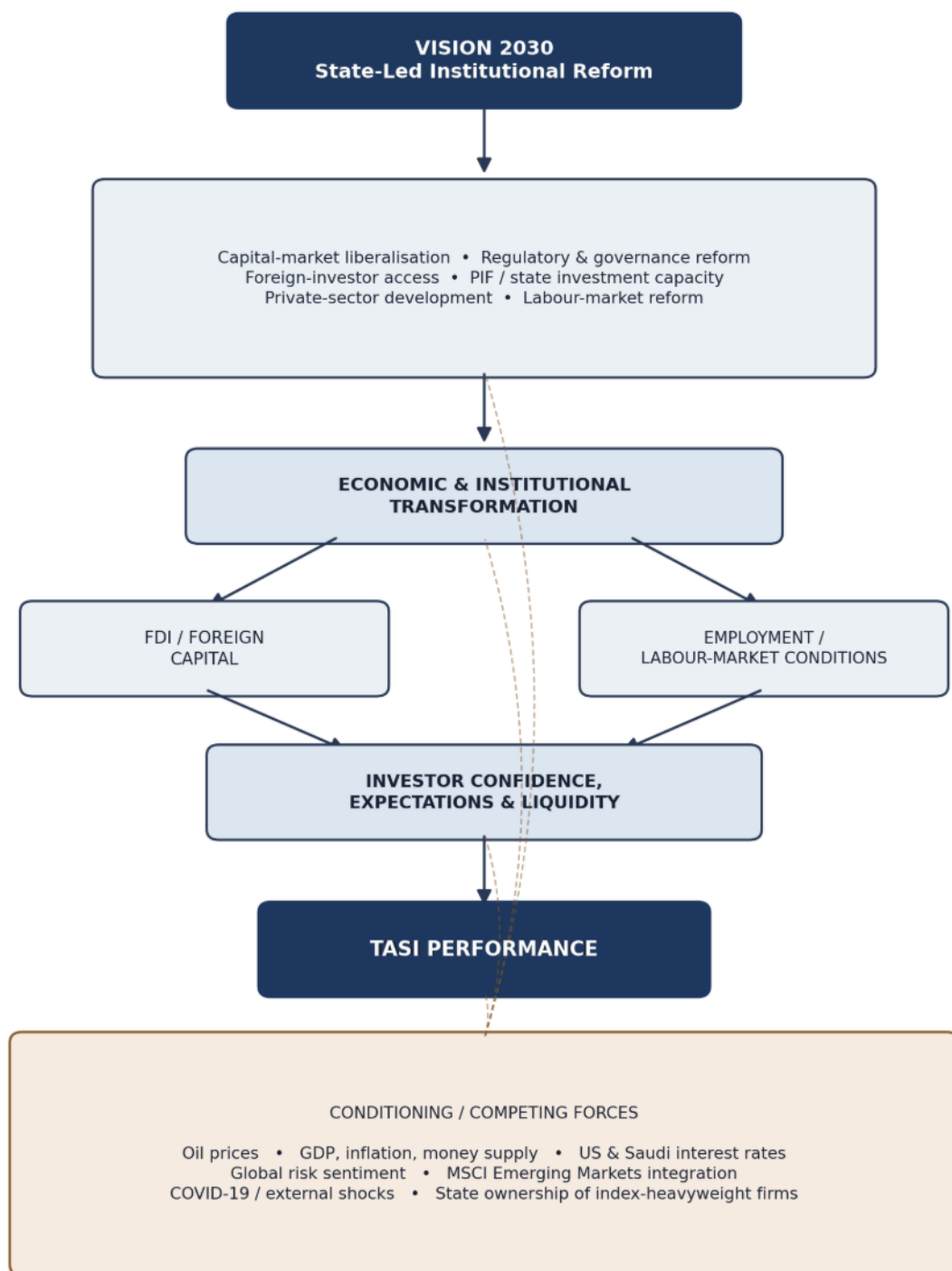
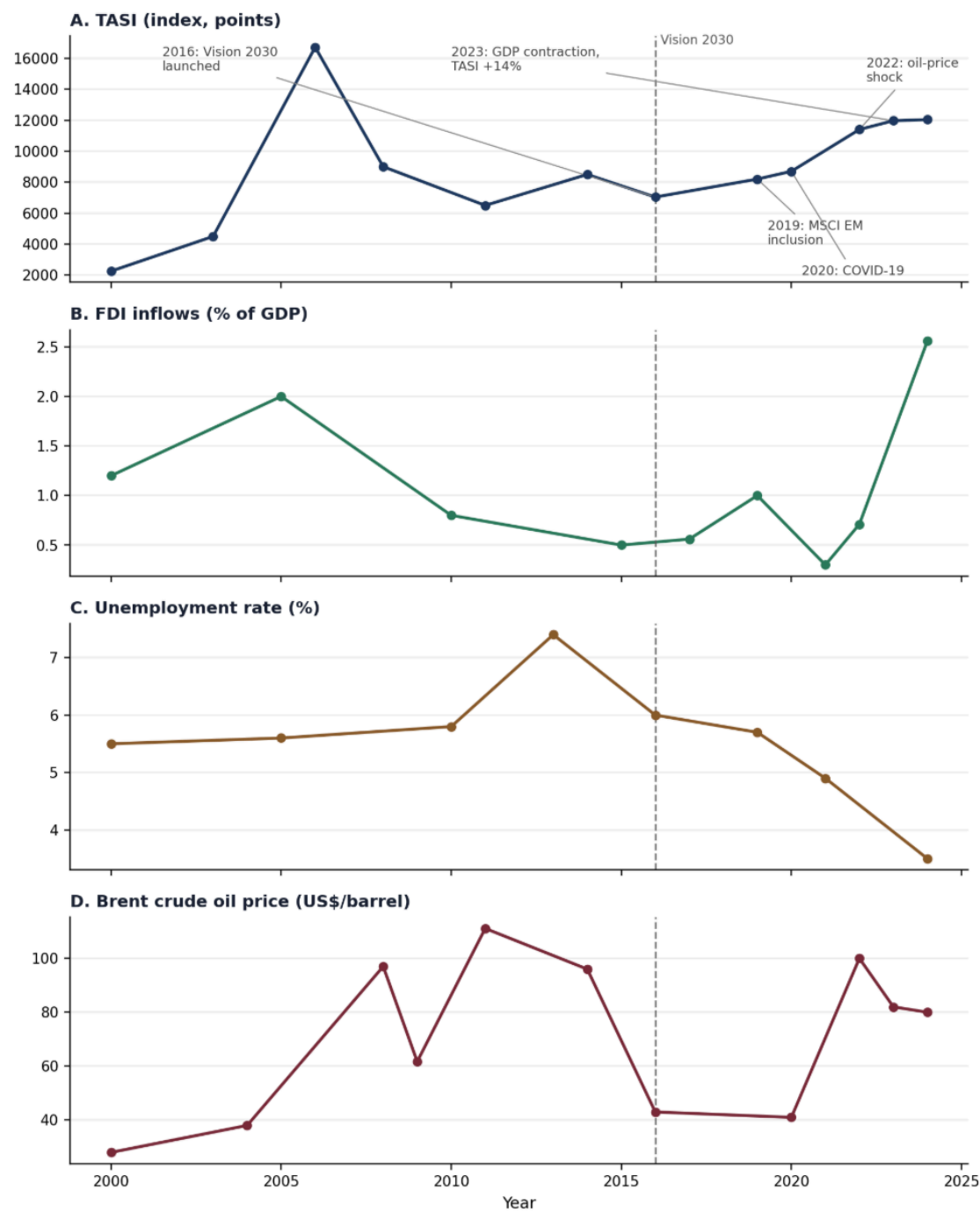


Figure 1

Institutional Transformation and Macro-Financial Transmission under Vision 2030. Source: author's conceptualisation, informed by Asongu and Odhiambo [5], Alharbi and Alshehri [7] and Koll et al. [3]

Figure 2. Evolution of TASI and Selected Structural Indicators, 2000-2024



Note: dashed vertical line marks the 2016 Vision 2030 launch. Series are schematic reconstructions connecting the specific values reported in the text (SAMA, World Bank, UNCTAD, Tadāwul, EIA); they illustrate reported turning points and are not a substitute for the full annual dataset.

Figure 2

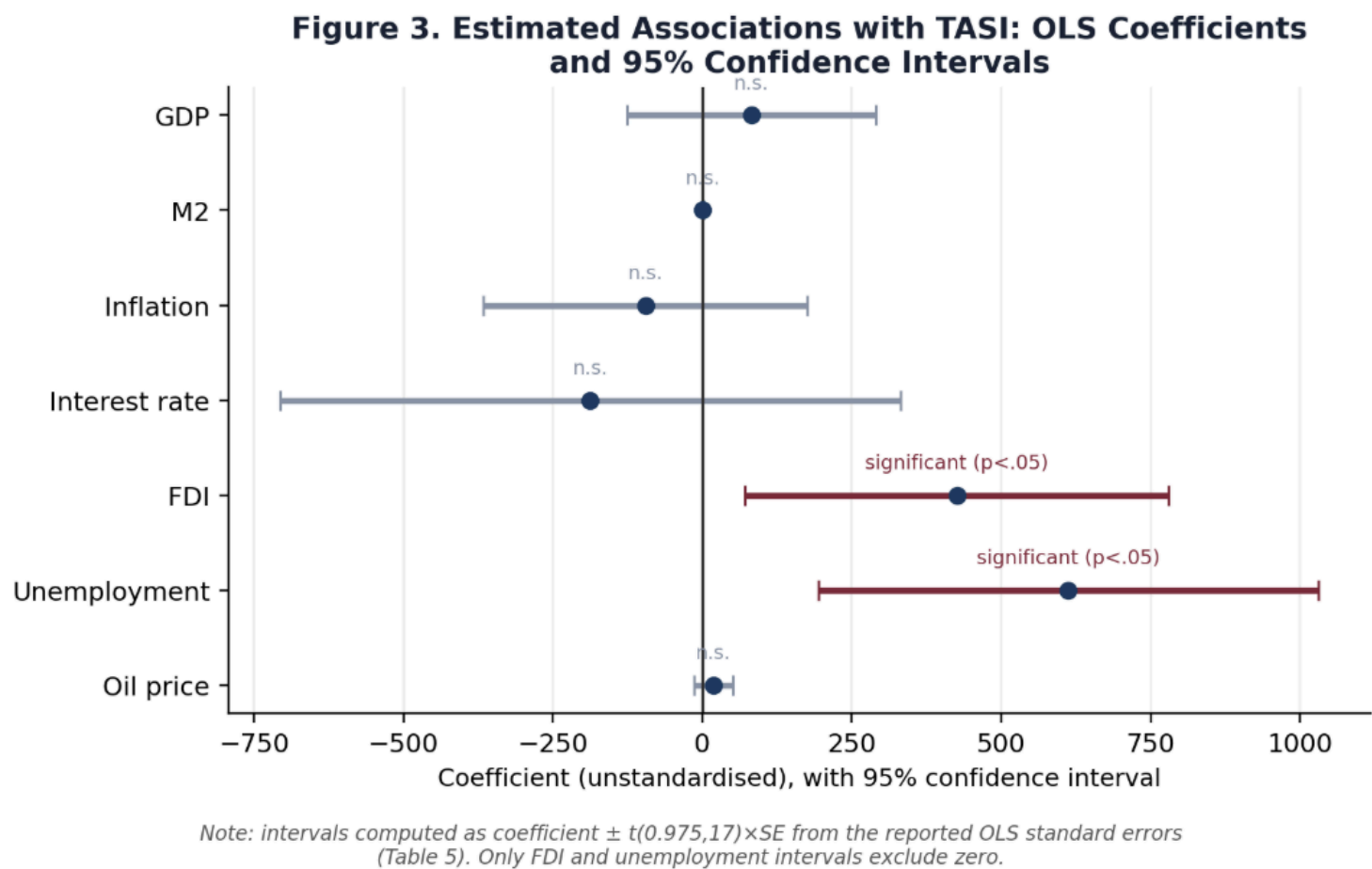


Figure 3

Baseline OLS coefficients with 95% confidence intervals. Note: coefficient scales differ substantially across variables; interpretation should rely on the accompanying regression table