

# UBT

جامعة الأعمال و التكنولوجيا  
UNIVERSITY OF BUSINESS AND TECHNOLOGY

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# UBT ECONOMIC REVIEW

المنظور الاقتصادي  
لجامعة الأعمال و التكنولوجيا

JULY.25 | ISSUE.10



We're excited to share a new project at the University of Business and Technology – the launch of an Economic Review. As members of the Board of Trustees, we believe this initiative will greatly enhance our institution's academic excellence.

UBT Economic Review is a platform for in-depth analysis and discussions on economic issues that impact our society, both locally and globally. Additionally, this publication aims to enhance our academic community's knowledge and encourage collaboration among scholars and researchers from different fields.

We want to express our appreciation to the editorial committee for their hard work in making this project a reality. Their expertise and dedication will ensure that the Economic Review maintains high standards of academic

quality and relevance.

Finally, we're thrilled to launch UBT Economic Review, and we look forward to its growth and influence in the coming years. Let's embrace this important initiative and continue our commitment to sharing knowledge, fostering intellectual excellence, and making a positive impact on society.

Sincerely,

**Dr. Abdullah Dahlan**

**The Chairman of Board of Trustees**

**The University of Business and Technology**

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# 01

## Real Estate Index

“UBT Economic Review” (UBTER) Real Estate Index section examines the influence of the Saudi real estate market on the economy by analyzing trends, market dynamics, and socioeconomic consequences. It focuses on residential and commercial properties, identifying growth factors, trends, and investment opportunities.

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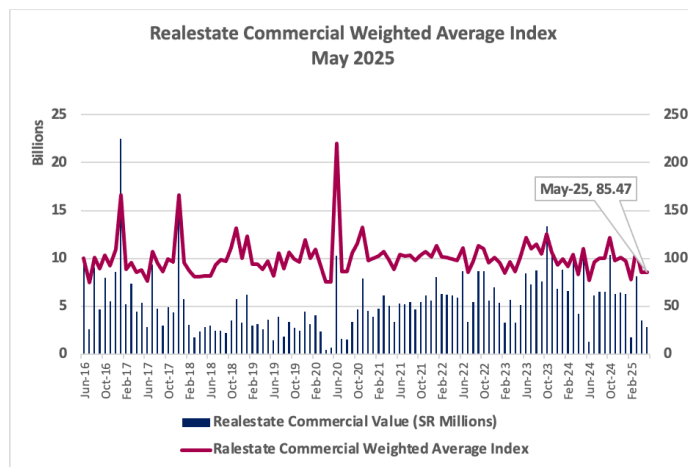
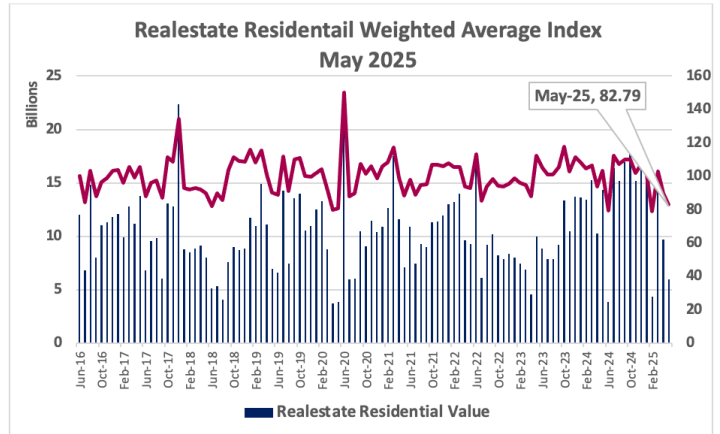
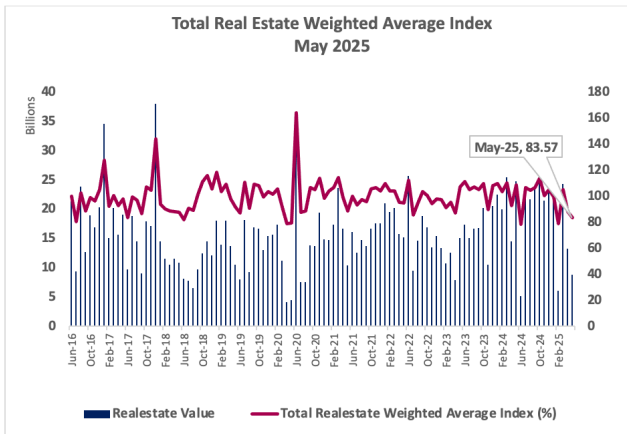
# Executive Summary

The Total Real Estate Index (TREIX) for the Kingdom of Saudi Arabia (KSA) and Taif reveals continued market adjustment trends during March 2025 through May 2025. The TREIX, which encompasses residential, commercial, and agricultural sectors, continues to underscore the prominence of residential properties, maintaining their %65 weighting in the index composition. The Kingdom overall exhibited ongoing market recalibration, with Taif reflecting similar adjustment patterns in its real estate activity. In March 2025, the total real estate transactions across the Kingdom showed continued adjustment at SAR 127.77 billion, with the TREIX at 104.89 points. The market demonstrated further recalibration in April 2025, with total transactions declining to SAR 112.80 billion, while the TREIX decreased to 88.28 points, representing a %15.82 decline. By May 2025, market activity showed additional softening, with transaction values falling to SAR 100.14 billion and the TREIX declining to 83.58 points, a %5.32 decrease from April, continuing the adjustment trend.

In Taif, the real estate market experienced adjustment and recovery trends during the period from March 2025 to May 2025. The Residential Real Estate Index (RRIX) showed consistent moderation patterns, mirroring aspects of the national trend, while the Commercial Real Estate Index (RCIX) demonstrated significant volatility with eventual recovery, reflecting evolving local market conditions and regional economic factors impacting transaction volumes and values.

# Overview

The Total Real Estate Index (TREIX) serves as a comprehensive measure of real estate performance across the Kingdom of Saudi Arabia (KSA), including the city of Taif. This index quantifies the total value of transactions by incorporating three key sectors: residential, commercial, and agricultural. Among various real estate investment options including plots, villas, and apartments, land plots consistently remain the most heavily traded asset class among investors, commanding the highest value.





## KSA Real Estate Market Analysis

The Kingdom of Saudi Arabia's real estate market experienced a continued adjustment cycle during March 2025 through May 2025. The Total Real Estate Index (TREIX) demonstrated ongoing recalibration with progressive moderation, reflecting evolving market fundamentals across residential, commercial, and agricultural sectors.

• **In March 2025**, the total real estate transactions across the Kingdom stood at SAR 127.77 billion, with the TREIX at 104.89 points, maintaining substantial market activity despite the ongoing adjustment phase.

• **By April 2025**, transaction values experienced further moderation to SAR 112.80 billion, with the TREIX declining to 88.28 points, representing a %15.82 decrease and indicating continued market recalibration.

• **In May 2025**, the market demonstrated additional softening with transaction values at SAR 100.14 billion and the TREIX declining to 83.58 points, showing a %5.32 decrease from April.

The comprehensive evaluation of the Kingdom's property sector from March through May 2025 indicates a market experiencing deliberate equilibrium restoration following an earlier corrective period. Transaction volumes exhibited a systematic downward trajectory, declining from SAR 127.77 billion in March to SAR 100.14 billion by

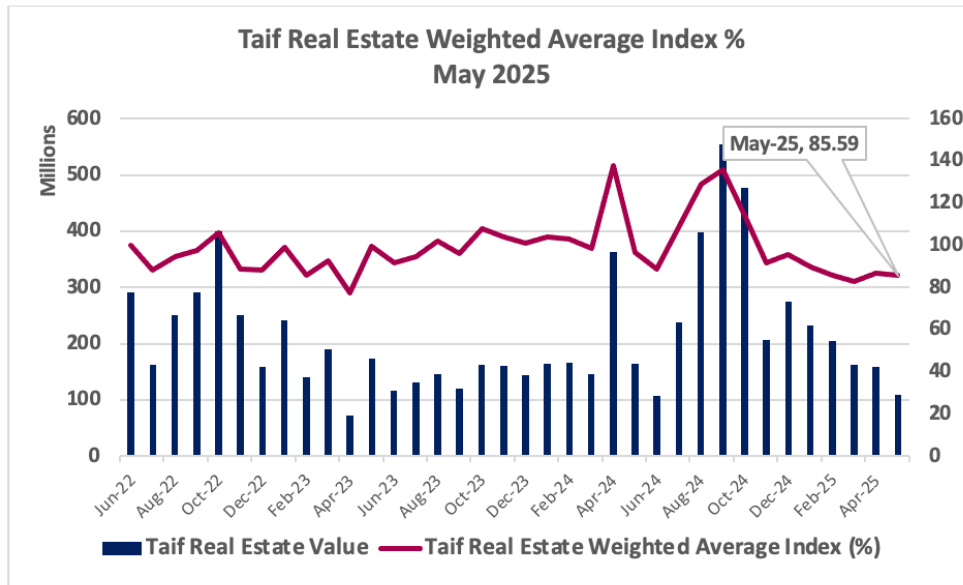
May—reflecting a comprehensive %21.6 contraction attributable to converging macroeconomic factors. Primary market pressures emanated from pronounced petroleum commodity fluctuations, with Brent crude retreating to approximately 70\$ per barrel by March 2025—approaching three-year nadirs and falling substantially beneath the Kingdom's estimated fiscal equilibrium threshold of +90\$ per barrel, as documented in the International Energy Agency's March 2025 Oil Market Report. Market projections anticipate continued petroleum price deterioration across 2026-2025, with Brent crude averaging 63\$ per barrel, potentially amplifying fiscal constraints and substantially expanding the Kingdom's budgetary shortfall. Industry specialists reported measurable activity deceleration commencing in April, correlating with market participant expectations surrounding successive governmental policy implementations targeting structural imbalances, particularly within residential leasing and serviced land classifications. The Total Real Estate Index (TREIX) compression from 104.89 points in March to 83.58 points in May coincided with comprehensive regulatory restructuring enacted in April 2025, including elevation of undeveloped land taxation to %10 and expanded coverage encompassing vacant commercial properties as anti-speculation

countermeasures. Concurrently, the Kingdom registered diminished Foreign Direct Investment capital flows, documenting approximately SAR 14.7 billion reduction during the initial three quarters of 2024 compared to equivalent prior-year periods.

The decelerated decline velocity between April and May (moderating from %15.82- to %5.32-) suggests emerging market stabilization, with sector analysts characterizing this progression as systematic rebalancing consistent with Vision 2030's sustainable development parameters, according to specialized real estate market assessments conducted in 2025.

Notwithstanding these cyclical adjustments, the property sector maintains its strategic importance within the Kingdom's economic architecture and Vision 2030 implementation framework. Underlying structural elements, including supportive governmental policies and sustained development programs, continue providing market foundation. The observed spring adjustment patterns align with historical Saudi real estate market behavior. Industry experts emphasize continued infrastructure capital deployment, ongoing housing program execution, and resilient economic fundamentals as indicators of what appears to constitute a constructive adjustment phase, demonstrating sector maturation through the balance of 2025.



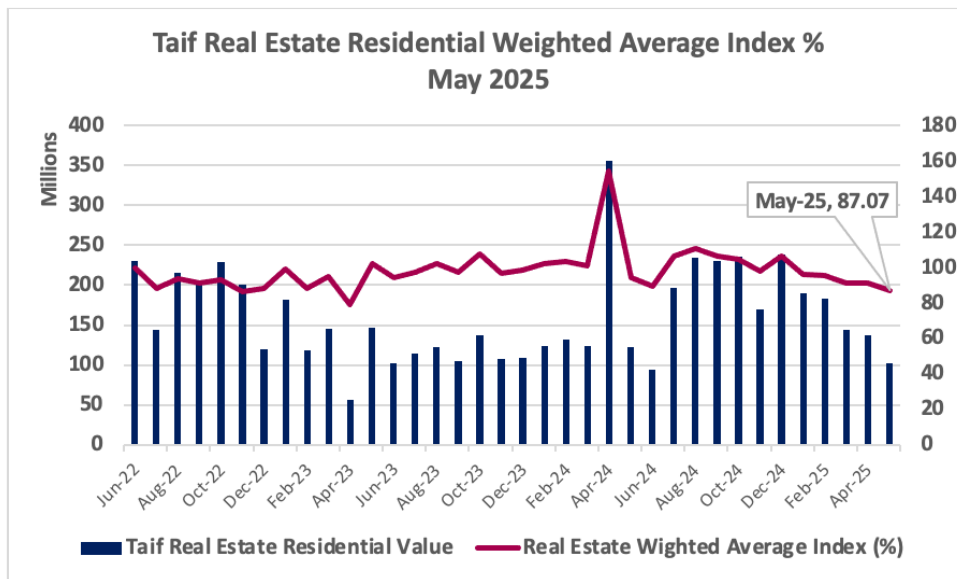


## Taif Real Estate Market Analysis

The real estate market in Taif reflected the broader Kingdom-wide trends from March 2025 to May 2025, showing notable fluctuations in market activity.

- **March 2025** saw transactions valued at SAR 162.17 million, resulting in a TREIX of 82.62 points.
- **In April 2025**, the market showed a moderate decline with transactions of SAR 158.40 million, with the TREIX improving to 86.94 points, a %5.23+ increase from March despite lower transaction volumes.
- **By May 2025**, market activity experienced a substantial decline, with transactions totaling SAR 109.46 million, and the TREIX moderating slightly to 85.59 points, a %1.55 decrease from April.

This period highlighted the mixed dynamics in Taif's real estate market, with transaction values showing progressive decline throughout the quarter while the index demonstrated initial improvement followed by minor adjustment, presenting a complex pattern where index performance diverged from transaction volume trends, indicating underlying market strength despite reduced activity levels.

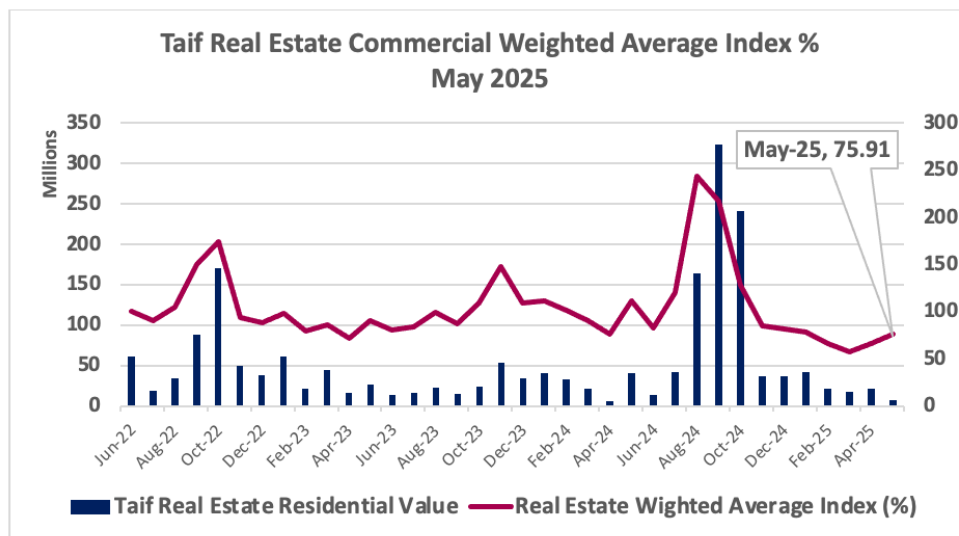


## Residential Real Estate Index (RRIX)

The Residential Real Estate Index (RRIX) for Taif highlights the residential sector’s adjustment patterns from March 2025 to May 2025.

- **In March 2025**, the RRIX recorded transaction values of SAR 144.48 million and an index score of 90.97 points, representing a %4.76 decrease from the previous month, establishing the quarter’s baseline performance.
- **April 2025** saw the RRIX experience marginal improvement to 91.17 points, with transactions at SAR 137.10 million, representing a %0.22 increase in the index and a %5.10 decrease in transaction value from March.
- **In May 2025**, the RRIX demonstrated adjustment to 87.07 points, with residential transactions at SAR 101.77 million, showing a %4.50 decrease in the index and a %25.74 decrease in transaction value from April.

These trends reveal that the residential market in Taif experienced measured adjustment during the spring period of 2025, with the index showing typical seasonal moderation patterns. This reflects specific local market dynamics in Taif’s residential sector, including seasonal patterns typical of mountainous regions where spring represents a transition period before the summer tourism season, alongside natural market recalibration within the region’s real estate landscape.



## Residential Real Estate Index (RRIX)

The Commercial Real Estate Index (RCIX) for Taif illustrates the commercial sector's evolving performance from March 2025 to May 2025.

- **In March 2025**, the RCIX recorded transaction values at SAR 17.70 million and an index score of 57.43 points, establishing the baseline for the quarter's commercial market activity.
- **April 2025** saw the RCIX advance to 66.72 points, corresponding to commercial transactions worth SAR 21.31 million, representing a %16.17 increase in the index alongside a %20.40 increase in transaction volume, indicating strengthening market momentum.
- **In May 2025**, the RCIX demonstrated continued upward trajectory rising to 75.91 points with transactions at SAR 7.69 million, representing a significant %13.77 increase in the index from April, despite a substantial %63.92 decline in transaction volume.

These trends reveal notable growth dynamics within the commercial real estate market during the period from March 2025 to May 2025. The market experienced consistent index improvements across all three months, with particularly strong performance in April and May. According to industry research, Taif's commercial market is significantly influenced by tourism patterns and government infrastructure initiatives that contribute to seasonal investment cycles. The documented steady index growth represents typical pre-summer commercial market strengthening common in tourism-driven markets, with the improvement indicating sustained commercial confidence and strategic positioning ahead of the peak tourism season.

The remarkable divergence between declining transaction volumes in May and continued index growth suggests a shift toward higher-value commercial properties or improved market sentiment independent of transaction frequency, reflecting a maturing commercial real estate environment in Taif.



# 02

## Point of Sales Index

"UBT Economic Review" (UBTER) conducts an analysis of the Point-of-Sales Index in order to gain insights into the Saudi retail industry, including consumer behavior, sales patterns, and the overall health of the sector. The analysis emphasizes Total Point of Sales Values and Foods and Cafes Sales Values, aiming to uncover consumer preferences and market sentiments. In essence, UBTER acts as a platform for exploring the implications of the Point-of-Sales Index, fostering discussions that contribute to the growth and development of the retail industry in Saudi Arabia.

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Total Point of Sales Values, Foods and Cafes Sales Values, and Food and Drink Sales Values (SALEINDEX, FCAINDEX, FDINDEX)

## Executive Summary

The analysis of consumption trends across KSA for Q2025 2, using the SALEINDEX, FCAINDEX, and FDINDEX, indicates dynamic consumer spending patterns. The SALEINDEX, which measures total point of sales values, stood at SAR 58.74 billion in March 2025, decreased significantly to SAR 45.67 billion in April, before recovering to SAR 52.78 billion in May 2025.

The Foods and Cafes Sales Index (FCAINDEX) followed a similar pattern, starting at SAR 15.41 billion in March 2025, declining to SAR 14.09 billion in April, and then increasing to SAR 14.92 billion in May. The Food and Drink Sales Index (FDINDEX) also showed comparable trends, with sales of SAR 8.04 billion in March, decreasing to SAR 6.77 billion in April, before climbing to SAR 7.56 billion in May 2025. These indices reflect dynamic consumer behavior influenced by seasonal trends and economic conditions.

### Key Findings

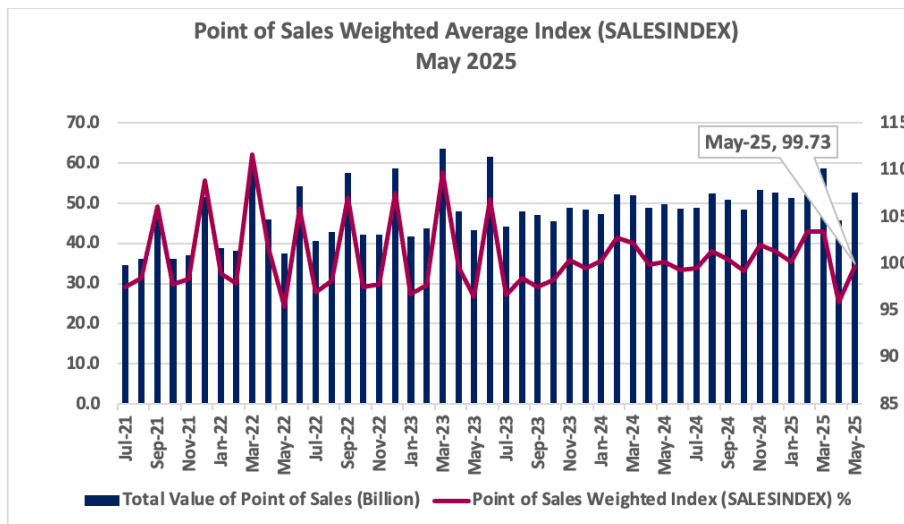
- **Contrasting Sector Performance:** The consumer spending indices experienced a significant dip in April, with SALEINDEX dropping to SAR 45.67 billion before partially rebounding in May to SAR 52.78 billion.
- **Regional and Sector Variations:** National consumer spending indices demonstrated varying degrees of recovery, with the food service sector showing gradual improvement as the FCAINDEX reached SAR 14.92 billion in May 2025.
- **Market Recovery Patterns:** The consumer spending indices all showed recovery in May 2025 following the April decline, with SALEINDEX recovering to %89.8 of March levels, FCAINDEX to %96.8, and FDINDEX to %94.0, highlighting different recovery speeds across consumer market segments.



## Overview

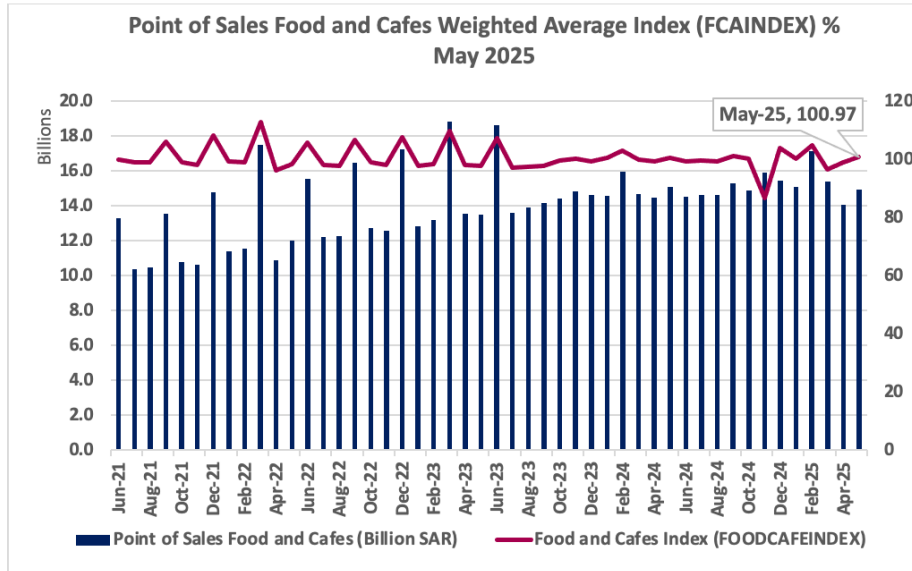
This section analyzes consumption trends in KSA using three main indicators: Total Point of Sales Values (SALEINDEX), Foods and Cafes Sales Values (FCAINDEX), and Food and Drink Sales Values (FDINDEX). These indicators reflect public and private sector expenditure on goods and services during the March-May 2025 period.

### Total Point of Sales Values (SALEINDEX)



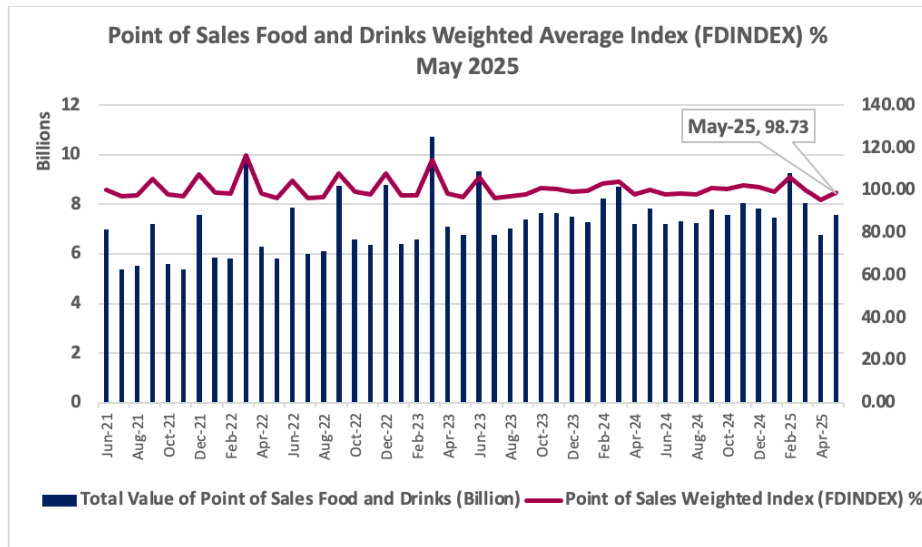
- The Total Point of Sales Index (SALEINDEX) for KSA showed notable variations during the second quarter of 2025:
- **In March 2025**, the SALEINDEX registered 103.38 points, with total point of sales values reaching SAR 58.74 billion, indicating robust consumer spending activity.
- **In April 2025**, the market experienced a significant decline, with sales values dropping to SAR 45.67 billion and the SALEINDEX decreasing to 95.83 points, marking a %7.30- decline from March.
- **By May 2025**, consumer spending showed partial recovery, with sales values rising to SAR 52.78 billion and the SALEINDEX improving to 99.74 points, representing a %4.08 increase from April.

## Foods and Cafes Sales Values (FCAINDEX)



- The Foods and Cafes Sales Index (FCAINDEX) for KSA demonstrated interesting dynamics during this period:
- **In March 2025**, the FCAINDEX stood at 96.55 points, with total sales amounting to SAR 15.41 billion, showing solid performance in the food service sector.
- **In April 2025**, the sector experienced a decline, with sales decreasing to SAR 14.09 billion and the FCAINDEX dropping to 98.84 points, marking a %2.37 increase from March despite lower absolute values.
- **By May 2025**, the sector showed continued improvement, with the FCAINDEX rising to 100.98 points and sales reaching SAR 14.92 billion, reflecting a %2.17 increase from April.

## Food and Drink Sales Values (FDINDEX)



- The Food and Drink Sales Index (FDINDEX) for KSA showed consistent patterns with other indices:
- **In March 2025**, the FDINDEX registered 100.15 points, with total sales in the food and drink sector reaching SAR 8.04 billion, indicating strong consumer demand.
- **In April 2025**, the sector saw a notable decline, with sales dropping to SAR 6.77 billion and the FDINDEX decreasing to 95.55 points, showing a %4.59- reduction from March.
- **By May 2025**, the sector demonstrated partial recovery, with the FDINDEX rising to 98.73 points and sales increasing to SAR 7.56 billion, marking a %3.33 increase from April.

These trends suggest a consistent pattern across all three indices, with a significant dip in April followed by partial recovery in May, indicating resilient overall consumer spending despite notable monthly fluctuations during the second quarter of 2025.

# 03

## Reflecting on Current Issues

UBT Economic Review (UBTER) functions as a platform for in-depth examination of global issues, with a focus on understanding their complexities and providing room for diverse perspectives, research findings, and innovative ideas. It aims to gain deeper insights into the root causes, dimensions and of these issues while also connecting this analysis to Saudi Arabia's Vision 2030, making global issues relevant to national goals. Essentially, this section offers space for reflecting on global issues and exploring emerging topics.

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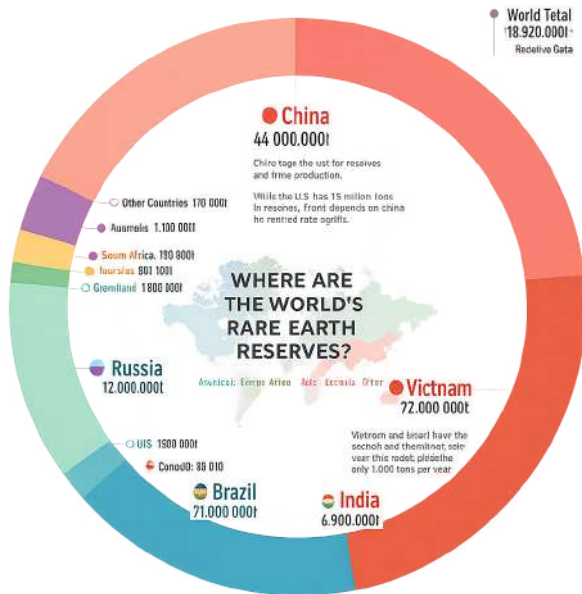


# Rare Earth Elements in a Global Perspective: Economic Dynamics and Geopolitical Implications

The global rare earth elements market stands at a critical juncture where economic opportunity intersects with geopolitical strategy. Despite their name suggesting scarcity, rare earth elements are relatively abundant in Earth's crust, yet economically viable deposits remain geographically concentrated, creating unprecedented supply chain vulnerabilities that ripple through the modern economy.



## 1. Introduction



Rare earth elements comprise 17 metallic elements—the 15 lanthanides plus scandium and yttrium—possessing unique chemical and magnetic properties that have become indispensable for contemporary technology. From the permanent magnets powering electric vehicles to the precision components enabling artificial intelligence systems, these materials form the backbone of the 21st century's technological infrastructure.

Distribution of Global Rare Earth Reserves by Country, 2023  
(in million metric tons) Source: U.S. Geological Survey, 2024

## China's Market Dominance and Strategic Leverage

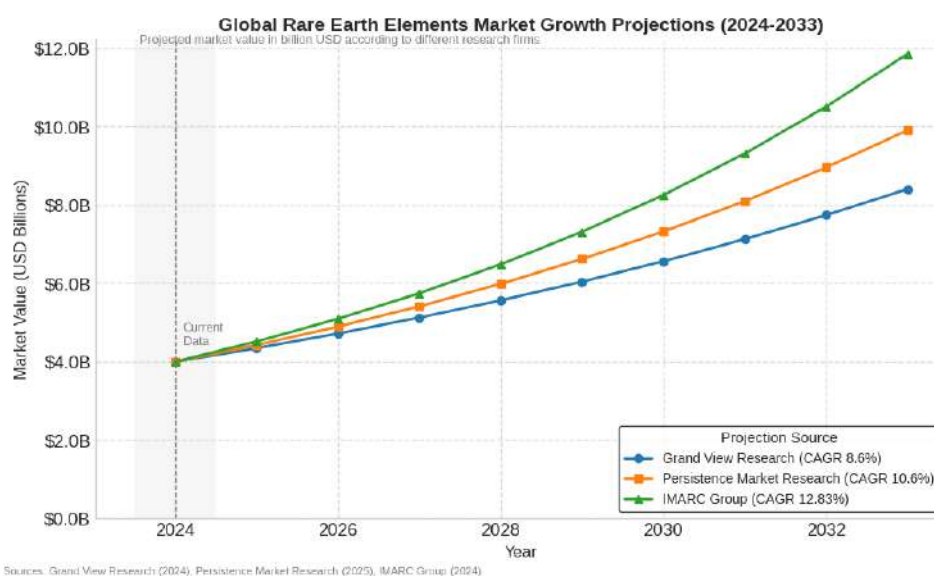
China's control over the rare earth elements market represents one of the most significant concentrations of economic power in the global commodity sector. The country currently controls %60 of global production and %90 of processing capacity [1], a dominance that extends far beyond simple resource ownership to encompass the entire value chain from extraction to finished products.

This market position was further strengthened in March 2025 when China announced the discovery of a major new deposit in Yunnan province containing approximately 1.15 million tonnes of key rare earth elements, including praseodymium, neodymium, dysprosium, and terbium [2]. The strategic importance of this discovery cannot be overstated, as these elements are critical for permanent magnet production in defense and clean energy applications.

China's willingness to leverage this dominance for geopolitical objectives became evident in April 2025 when the country implemented export controls on seven critical rare earth elements in response to U.S. tariffs [3]. This move effectively demonstrated how concentrated market power in critical resources can be weaponized for broader economic and political goals, with China reportedly instructing South Korean companies to halt defense-related exports containing Chinese rare earth materials [4].

## 2. Market Dynamics and Economic Structure

The global rare earth elements market, valued at 3.95\$ billion in 2024, represents a relatively modest figure that belies its strategic importance [5]. However, this market is poised for dramatic expansion, with demand projected to increase six-fold by 2040 according to the International Energy Agency, driven primarily by the global transition to clean energy technologies [6].



The market structure exhibits classic oligopolistic characteristics, with permanent magnets accounting for %42 of total demand, followed by catalysts at %23, metallurgical applications at %15, and electronics comprising the remainder [7]. This demand concentration in high-technology applications explains why relatively modest market values translate into disproportionate strategic importance.

Electric vehicles exemplify this dynamic transformation. These vehicles require six times more mineral inputs than conventional automobiles, with each electric vehicle containing approximately 1 kilogram of rare earth elements in its motors, batteries, and electronic systems [8]. Tesla and other manufacturers have already experienced production delays due to magnet shortages, illustrating how supply constraints in this seemingly small market can disrupt major industrial sectors [9].

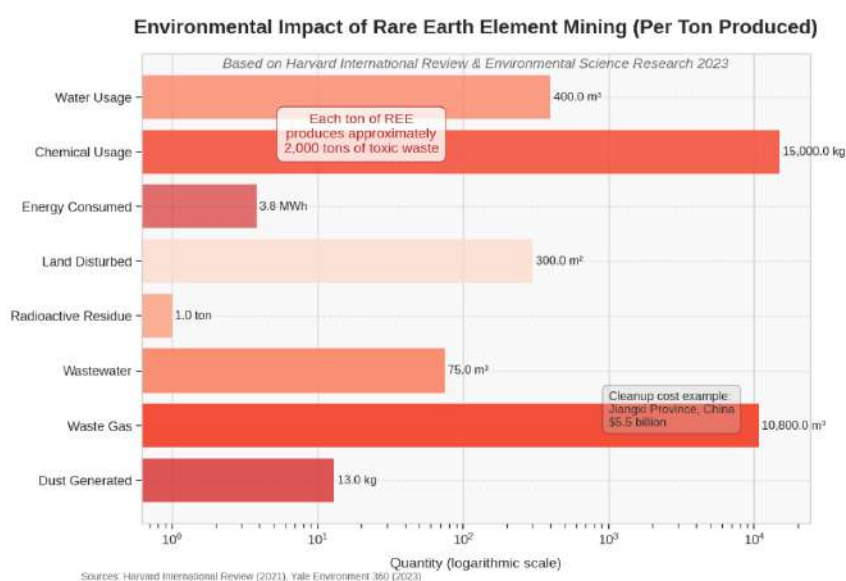
Wind power installations present another significant demand driver, requiring nine times more minerals than gas-fired power plants of equivalent capacity. The rare earth elements used in permanent magnets for wind turbines—particularly neodymium, praseodymium, dysprosium, and terbium—face projected demand increases of seven to twenty-six times over the next 25 years [10].

## Environmental Economics and Hidden Costs

The environmental costs of rare earth element extraction represent a significant market failure, as these externalities are rarely internalized in market pricing. For every ton of rare earth elements produced, mining operations generate approximately 13 kilograms of dust, 12,000-9,600 cubic meters of waste gas, 75 cubic meters of contaminated wastewater, and one ton of radioactive residue [11].

China's Ministry of Industry and Information Technology has estimated cleanup costs for Jiangxi Province alone at approximately 5.5\$ billion, demonstrating the substantial hidden costs embedded in current extraction methods [12]. These environmental liabilities represent a form of subsidization that artificially reduces the apparent cost of rare earth elements while imposing significant long-term burdens on affected communities and ecosystems.

Emerging sustainable technologies offer promising alternatives to traditional extraction methods. «Urban mining» or «waste mining» techniques extract rare earth elements from existing waste streams, including mine tailings and industrial byproducts. Researchers at Georgia Tech have identified significant economic potential in extracting rare earth elements from kaolin mining tailings, potentially bringing materials to market in 5-3 years rather than the decades required for new mining operations [13].



The recycling sector presents particularly compelling opportunities for market development. Currently, less than %1 of rare earth elements are recycled, compared to %70-30 for base metals like aluminum and copper [14]. However, breakthrough developments suggest this dynamic may change rapidly. USA Rare Earths reported successful production of %99.1 pure dysprosium oxide from recycled materials in early 2025, demonstrating the technical feasibility of high-quality secondary production [15].

## Global Supply Chain Diversification Efforts

Recognition of supply chain vulnerabilities has prompted major economies to pursue diversification strategies, though with varying approaches and mixed results. The United States has invested approximately 439\$ million since 2020 to develop domestic rare earth element supply chains, with the Department of Defense targeting complete mine-to-magnet capability for defense applications by 16] 2027].

Australia's Lynas Rare Earths, the largest non-Chinese producer, has expanded its Mount Weld operation with completion expected in 2025, though its output remains modest relative to global demand [17]. The United States has revitalized the Mountain Pass mine in California and is developing processing capabilities, yet MP Materials' Texas facility is expected to produce just 1,000 tons of magnets by late 2025—less than %1 of China's capacity [18]. Ukraine has emerged as a strategically significant potential source, with estimated mineral resources worth nearly 15\$ trillion, including substantial rare earth element deposits. This has attracted intense interest from both the United States and European nations, culminating in a strategic minerals agreement between the U.S. and Ukraine signed in early 20][19] 2025].

However, the economic fundamentals of rare earth element production present substantial barriers to rapid diversification. Traditional mining projects typically require 20-16 years to progress from exploration to production in the United States, though streamlined processes for critical materials can reduce this timeline to 12-8 years [21]. Even with accelerated investment and regulatory support, new production facilities outside China will supply only a fraction of global demand in the near term.

## Technological Innovation and Processing Breakthroughs

### China's Market Power and Strategic Leverage

The rare earth elements sector is experiencing significant technological innovation, particularly in extraction and processing methods. Researchers at the University of Texas at Austin have developed artificial membrane channels with 40 times better selectivity for rare earth ion separation, potentially revolutionizing processing economics and reducing environmental impacts [22].

These technological advances may gradually erode the economic barriers that currently reinforce China's dominant market position. Improved extraction efficiency and reduced processing costs could make previously uneconomical deposits viable for development, potentially reshaping global supply chains over the medium term.

Processing technologies represent particularly promising investment opportunities as new mines develop outside China. The complex chemistry required to separate and purify rare earth elements has historically created significant barriers to entry, but emerging technologies may democratize access to these capabilities [23].

## Geopolitical Economics and Strategic Competition

The concentration of rare earth element production and processing in China represents more than a commercial arrangement—it constitutes a form of economic statecraft that can be leveraged for broader geopolitical objectives. China's April 2025 export restrictions demonstrated this dynamic clearly, as the country used its market dominance to respond to U.S. trade policies in other sectors [24].

The European Union is pursuing a coordinated response through its Critical Raw Materials Act, with France leading initiatives to secure access to Ukrainian mineral resources through long-term economic partnerships rather than military linkages [25]. Japan, following its experience with China's 2010 export restrictions, has established strategic partnerships with Australia while building substantial stockpiles of critical materials [26].

These diversification efforts represent significant economic investments with uncertain returns. While they may reduce long-term vulnerabilities, the immediate economic costs are substantial, and the timeframes required for developing alternative supply chains mean that China will likely maintain its dominant market position for the foreseeable future.



## Investment Landscape and Market Opportunities

The rare earth elements sector presents diverse investment opportunities with varying risk profiles and potential returns. Processing technologies represent particularly attractive areas, as the bottleneck in global supply chains lies not in raw material extraction but in the complex chemistry required to produce market-ready products.

REE Market Share by Application (2024)				
Application	Market Share (%)	Growth Rate (CAGR %)	Key Elements	Key Drivers
Magnets	31.2%	13.6%	Nd, Pr, Dy, Tb	EVs, Wind Power, Electronics
Catalysis	18.7%	9.2%	Ce, La	Auto Industry, Petroleum Refining
Polishing	14.3%	8.7%	Ce, La	Electronics, Optics, Glass
Batteries	11.8%	15.3%	La, Ce, Pr, Nd	Energy Storage, EVs
Ceramics	8.4%	7.5%	Y, Ce	Manufacturing, Electronics
Glass	6.2%	6.8%	Ce, La, Nd	Display Tech, Optics
Other	9.4%	8.0%	Various	Various Applications

### Key Application Insights:

- Magnets represent the largest application segment at 31.2% of the market.
- Battery applications show the fastest growth rate at 15.3% CAGR through 2033.
- Clean tech applications (magnets, batteries) are driving future growth.
- Magnet demand primarily fueled by EVs, wind turbines, and electronics.

Economic Opportunities by Sector (2025-2033)				
Sector	Market Potential (2033)	CAGR (%)	Risk Level	Key Elements
Recycling & Urban Mining	\$3.8 Billion	16.6%	Low	Nd, Pr, Dy, Eu
EV Supply Chain Integration	\$8.2 Billion	14.2%	Medium	Nd, Pr, Dy, Tb
Magnet Manufacturing	\$11.5 Billion	13.1%	Medium	Nd, Pr, Dy, Tb
Wind Power Components	\$5.7 Billion	12.7%	Medium	Nd, Pr, Dy, Tb
Heavy REE Production	\$4.6 Billion	11.8%	High	Dy, Tb, Gd, Ho
Research & Innovation	\$2.5 Billion	11.2%	Medium	All REEs
Processing Technology	\$6.1 Billion	10.9%	High	All REEs
Defense Applications	\$3.2 Billion	9.8%	Medium-High	Sm, Nd, Dy
Supply Chain Services	\$1.8 Billion	8.7%	Low	All REEs
Electronics Manufacturing	\$4.3 Billion	8.4%	Low-Medium	Ce, La, Eu, Y

### Key Investment Opportunity Insights:

- Recycling & Urban Mining sector shows highest growth potential (16.6% CAGR).
- Magnet Manufacturing represents largest market opportunity (\$11.5B by 2033).
- Heavy REE Production carries highest risk but substantial returns.
- EV Supply Chain Integration combines strong growth with medium risk profile.
- Technology and processing sectors critical for supply chain resilience.

Recycling infrastructure offers another compelling investment category, combining environmental benefits with economic returns as circular economy principles gain traction in industrial policy. The development of specialized magnet manufacturing capabilities outside China represents a strategic opportunity with substantial growth potential, though it faces significant competitive challenges from established operations.

Government support through direct investment, loan guarantees, and strategic purchasing commitments will likely determine the economic viability of many rare earth element projects outside China's sphere of influence. This creates a complex interplay between market forces and strategic considerations that will shape the sector's development trajectory.

## Policy Implications and Strategic Recommendations

The global rare earth elements market exhibits significant market failures and strategic vulnerabilities that warrant coordinated policy intervention. Supply concentration creates opportunities for market manipulation, while environmental externalities remain largely unaddressed by existing market mechanisms.

For resource-rich countries, developing value-added processing capabilities rather than simply exporting raw materials offers greater economic benefits and more sustainable development pathways. International partnerships that balance access to capital and technology with equitable distribution of economic gains can support this transition while reducing global supply chain vulnerabilities.

Technology-consuming nations should pursue balanced approaches that combine supply diversification with recycling initiatives and research into alternative materials. While strategic stockpiling provides short-term insurance against supply disruptions, long-term economic resilience requires more fundamental market restructuring and technology development.

International cooperation on sustainable mining standards, technology sharing platforms, and market monitoring mechanisms could help address collective action problems while reducing the risk of destructive competition. A coordinated approach to rare earth element market development would benefit all stakeholders by ensuring stable supply, fair pricing, and minimized environmental impacts.

## Conclusion: Toward a Balanced Global Market

The future of the global rare earth elements market will be determined by how effectively policymakers and industry leaders address the fundamental tensions between economic efficiency, environmental sustainability, and strategic security. The current market structure, dominated by a single country with significant processing advantages, creates systemic risks that extend far beyond commodity pricing to encompass technological innovation, industrial competitiveness, and geopolitical stability.

Market mechanisms alone appear insufficient to address these challenges, given the long development timelines, substantial capital requirements, and complex technical processes involved in rare earth element production. Strategic intervention, coordinated international cooperation, and sustained investment in alternative technologies will be necessary to create a more balanced and resilient global market.

The stakes involved extend beyond the 3.95\$ billion current market value to encompass the entire technological foundation of the modern economy. From electric vehicles and renewable energy systems to artificial intelligence and defense applications, rare earth elements represent a critical chokepoint in the global economy's transformation toward digitalization and decarbonization. Success in addressing these challenges will require unprecedented cooperation between governments, industries, and research institutions across national boundaries. The alternative—continued concentration of supply in a single country amid rising geopolitical tensions—poses unacceptable risks to global economic stability and technological progress.

# 04

## Economic Achievement

Section four of UBT Economic Review highlights a groundbreaking economic discovery or achievement by a Saudi corporation, showcasing the innovative strides and advancements made within the country's business landscape. The section delves into the details of this noteworthy development, shedding light on its significance and impact on the local economic scene

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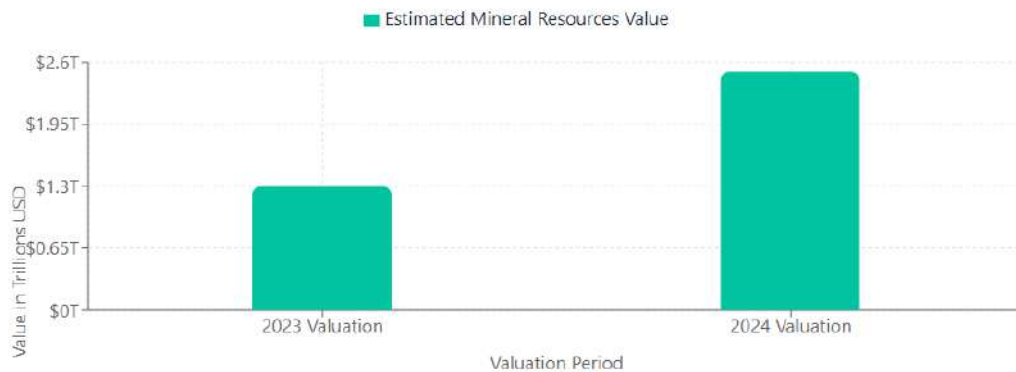
# Economic Transformation Through Critical Minerals: Saudi Arabia`s Strategic Investment in Rare Earth Elements

from resource extraction to value-added processing, fundamentally aligning with the Kingdom`s Vision 2030 diversification objectives. The country`s rare earth elements market is projected to grow at %6.9 CAGR through 1] 2031], positioning the Kingdom as an emerging player in global critical minerals supply chains while China maintains %60 of global production and %90 of processing capacity.

The Kingdom has dramatically reassessed its mineral wealth valuation from 1.3\$ trillion to 2.5\$ trillion in 2] 2024], with rare earth elements representing a significant component of this strategic resource base. This economic transformation analysis examines Saudi Arabia`s capital allocation strategies, competitive positioning, and projected returns on rare earth investments within the broader context of global supply chain diversification.



## Saudi Arabia's Mineral Wealth Reassessment



Source: Saudi Ministry of Industry and Mineral Resources, 2024

Increase of 92.3% due to inclusion of rare earth elements and updated commodity pricing

### Strategic Resource Valuation and Market Entry

Saudi Arabia's mineral sector reassessment reflects sophisticated economic analysis that incorporates both traditional resources and newly identified critical minerals essential for the energy transition economy. The 90% increase in balance sheet valuation announced at the Future Minerals Forum in January 2024 was driven by comprehensive geological surveys applying updated commodity pricing models to existing resources [3].

The rare earth elements component alone could represent 300-250\$ billion in potential mineral wealth based on current market pricing and commodity forecasts [4]. With global rare earth oxide consumption projected to reach 315,000 tons by 2030, and permanent magnets accounting for 42% of market applications, early market entrants with processing capabilities face substantial economic opportunities [5].

## Key Economic Indicators:

- Market size projection: 920\$ million by 2031 for permanent magnets segment
- Gross margins: %40-35 for high-value applications
- Processing cost advantage: %15-12 due to low energy costs (0.05-0.03\$/kWh versus -0.08\$ 0.12/kWh in competing jurisdictions)

## Capital Allocation Strategy and Investment Returns

Saudi Arabia has implemented a 100\$ billion investment commitment for the minerals sector, with 20\$ billion already in final engineering phases or under construction [6]. This represents the largest sectoral investment outside hydrocarbons in the Kingdom's history, with projected economic multiplier effects of 1.8-1.6x on GDP contribution.





### Investment Portfolio Structure:

- 182\$ million exploration incentive program (January 2024)
- 46\$ billion in committed sovereign investments through 2030
- 14\$ billion in public-private partnerships
- 30-25\$ billion allocated for international supply chain investments via PIF

Financial modeling suggests these investments could generate 18-15\$ billion in annual revenue by 2030, representing approximately %6-5 of non-oil GDP [7]. The capital expenditure profile shows front-loaded investment with projected breakeven in 9-7 years, followed by extended production lifecycles of +20 years.

### Technological Partnerships and Processing Capabilities

The Kingdom`s approach emphasizes value-added processing rather than raw material exports, potentially increasing value capture by 5-3× compared to raw material exports alone. Saudi Aramco`s discovery of lithium concentrations exceeding 400 parts per million in operational areas presents particular economic value, with global lithium prices stabilized at approximately 14,500\$ per tonne in Q1

The Ma`aden-Aramco-Lihytech partnership for Direct Lithium Extraction (DLE) technology represents a promising technological advantage. Lihytech Co, incubated by King Abdullah University of Science and Technology (KAUST), specializes in innovative extraction methods that could provide competitive advantages in unconventional source development [9].

## Processing Economics:

- Facility capital requirements: 600-400\$ million for commercial-scale operations (-10,000 15,000 tonnes annual capacity)
- Minimum viable scale: 5,000 tonnes annually for economic returns
- Value chain margin capture: %40-35 additional through vertical integration

## Market Positioning and Competitive Analysis

Saudi Arabia's strategic positioning targets the global processing bottleneck, where China controls %90 of capacity despite holding only %60 of raw materials. The Kingdom aims to capture %8-5 of global market share by 2030 through cost advantages and geographic positioning benefits.

## Competitive Advantages:

- Geographic positioning: %12-8 logistics cost savings compared to trans-Pacific routes
- Energy cost advantage: %15-12 operational cost advantage in energy-intensive separation processes
- Supply security premium: Materials from diverse sources command %8-5 price premiums

Ma`aden`s financial performance demonstrates early strategic success, with Q2025 1 results showing net profit increase of %58 year-on-year to SAR 1.5 billion (400\$ million), operating margin improvement from %22.3 to %28.9, and return on invested capital of 10] %11.4].

## Risk Assessment and Economic Optimization

The rare earth elements sector faces several technical-economic challenges requiring mitigation strategies:

## Primary Risk Factors:

- 1.Process complexity: Specialized separation processes with high facility capital requirements
- 2.Environmental compliance: Traditional processing generates 12-8 tonnes of waste per tonne of rare earth oxides, with remediation costs of 250-180\$ per tonne
- 3.Learning curve effects: First-generation facilities typically achieve only %70-60 of design capacity initially

**Human Capital Investment:** The sector requires approximately 400 specialized mining professionals, creating compensation premiums of %40-30 for experienced engineers and metallurgists. Economic modeling suggests a 30-25\$ million investment in specialized training facilities with potential GDP contributions of 60-45\$ million annually from knowledge transfer activities.

## Economic Forecasting and Strategic Recommendations

Based on comprehensive economic analysis, Saudi Arabia`s rare earth elements sector presents several optimization opportunities:

Economic Projections: Saudi REE Sector Performance Targets			
Metric	Current (2025)	Target (2030)	Growth
Annual Revenue	\$2.5B	\$15-18B	+600-700%
Global Processing Share	0.5%	5-8%	+1,000-1,500%
Non-oil GDP Contribution	1.2%	5-6%	+317-400%
Processing Capacity (tonnes)	1,500	25,000-35,000	+1,567-2,233%
High-Value Jobs Created	450	3,200-4,000	+611-789%
Ma'aden ROI	11.4%	18-22%	+58-93%

## Priority Investment Areas (with projected returns):

1. Midstream processing capacity (IRR: 10-8% :(\$22-18 billion investment yielding 2.8-2.2\$ billion annual revenue by 2030)
2. Knowledge transfer mechanisms (ROI: %250-210 over 10 years): 250\$ million investment creating 3,500-2,800 high-value jobs
3. Circular economy infrastructure (Payback: 5-4 years): Recycling facilities reducing import dependencies by %20-15
4. Strategic stockpile mechanisms: 800-650\$ million investment generating 450-350\$ million annually in economic security benefits

## Market Projections by 2030:

- Potential global processing capacity capture: %10-7
- Annual revenue opportunity: 1.5-1.2\$ billion
- Economic multiplier effect: 1.4x on adjacent manufacturing activities

## Conclusion: Strategic Economic Transformation

Saudi Arabia's entry into rare earth elements processing represents a financially viable pathway toward economic diversification, with potential to contribute significantly to Vision 2030 objectives. The Kingdom's strategy of targeting processing and trading rather than mining alone capitalizes on existing energy cost advantages while addressing global supply chain diversification needs.

The economic rationale demonstrates that early movers in supply diversification capture disproportionate market share and premium pricing. Through strategic capital allocation, technological partnerships, and integrated industrial policy, Saudi Arabia's minerals strategy can deliver transformative economic benefits while positioning the Kingdom as a key player in the mineral foundation of the global energy transition.

The optimized investment scenario shows potential for %60-50 improvement in economic outcomes compared to baseline approaches, emphasizing the importance of accelerated implementation and strategic focus on high-value processing capabilities rather than resource extraction alone.



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